Project Manual For:
Downers Grove Grade School District 58
Lester Elementary School & Pierce Downer
Playground Improvements – Phase II

Lester Elementary School
236 Indianapolis Avenue
Downers Grove, Illinois 60516

Pierce Downer Elementary School
1436 Grant Street
Downers Grove, Illinois 60515

Issued for Bid
January 19, 2023

Prepared for:
Downers Grove Grade School District 58
2300 Warrenville Road
Suite 200 NE
Downers Grove, Illinois 60515

Prepared By:
Wight and Company
2500 North Frontage Road
Darien, IL 60561
630-969-7000
A/E Project No. 200036

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SPECIFICATIONS FOR CONSTRUCTION

Project: Lester Elementary School & Pierce Downer Playground Improvements – Phase II

Lester Elementary School
236 Indianapolis Avenue
Downers Grove, IL 60516

Pierce Downer Elementary School
1436 Grant Street
Downers Grove, IL 60515

Project Number: 200036

Owner: Board of Education
Downers Grove Grade School District 58 Administration Center
2300 Warrenville Rd
Suite 200 NE
Downers Grove, IL 60515

Architect: Wight and Company
2500 North Frontage Road
Darien, Illinois 60561
630-969-7000

Facility Construction Subgroup

END OF TABLE OF CONTENTS

SECTION 001116 - NOTICE TO BIDDERS

Notice is hereby given that *Downers Grove Grade School District 58* is accepting sealed bids for *the* ***Downers Grove Grade School District 58 playground improvements.*** Such proposals as herein concerned shall be for the following as described:

LESTER SCHOOL PLAYGROUND AND PIERCE DOWNER SCHOOL PLAYGROUND

SEALED BIDS will be received by *Downers Grove Grade School District 58* at the place, date and time stated below and publicly opened and read there:

PLACE: District Service Center, 1860 63rd street, Downers Grove, IL 60516

DUE DATE:Thursday, February 2, 2023

TIME: 10:00 AM (CST) **(as Date/Time recorded by District 58's receptionist)**

All bids must be sealed and marked on the envelope "Lester Playground and Pierce Downer Playground Phase II" and **must be received no later than 10:00 A.M. on Thursday, February 2, 2023**.

The competency and responsibility of the bidders will be considered in making awards. The successful bidder shall, upon acceptance of his bid, be required to procure and pay for a Performance Bond and Labor and Material Payment Bond in an amount equal to one hundred percent (100%) of the bid. Bonds shall comply with all laws of the State of Illinois governing public contracts let by governmental units. Bid security in the form of a Bid Bond, certified check or cashier's check made payable to Downers Grove Grade School District 58 in an amount equal to not less than ten percent (10%) of the Base Bid shall be submitted with the Bid. Bid security is required of all parties submitting a proposal. A fully executed and compliant Bid Security must be included with the Bid Form. All Contracts for the Construction of Public Works are subject to the Illinois Prevailing Wage Act (820 ILCS 130/1-12).

The Engineer for this project is Wight & Company. All questions concerning this project or those concerning bidding requirements should be directed to: Kyle Buck- kbuck@wightco.com. ***Questions must be received in writing, or via email (kbuck@wightco.com), until 12:00 p.m. Thursday, January 26, 2023.***

The School District reserves the right to reject any or all bids, to negotiate contract terms with various Bidders, and to waive all formalities or irregularities to any bid when such is deemed by the Owner to be in the Owner's best interests.

1) Plans and Specifications can be viewed or downloaded electronically via one of the following:
    a. The District website: www.dg58.org, under ABOUT, and FINANCIAL INFORMATION (any questions regarding shall be directed via Sonali Patil, spatil@dg58.org)

    OR

    b. via buildingconnected.com (Please send email to kbuck@wightco.com to receive electronic invitation after 10:00 AM on Thursday, January 19, 2023.)

Lester Elementary School & Pierce Downer Playground Improvements - Phase II

Downers Grove Grade School District 58

SCHEDULE OF VALUES

NOTES:

1. Bidder to complete Schedule of Values and enter total amount in appropriate space in Bid Form.
2. Owner's estimated quantities given for reference only. Bidder is responsible for performing all quantity take-offs necessary to estimate the work as drawn and specified.
3. The successful bidder will be required to enter into a lump sum contract agreement with the owner. No additional payments will be made due to discrepancies between bidder's estimated quantities, owner's estimated quantities, and the actual installed quantities to construct the work as drawn and specified.
4. This Schedule of Values form will become part of the Contract Documents and will be used as a basis for reviewing the Contractor's Applications for Payment.
5. This Schedule of Values form is available in Microsoft Excel format from the OWNER upon request.

Section	DESCRIPTION	Owner's Estimated QUANTITY	Bidder's QUANTITY	UNIT	UNIT COST	EXTENDED COST	SUBTOTAL
LESTER ELEMENTARY SCHOOL							
0 & 1	**Contracting and General Requirements**						
	Mobilization	1		LS			
	Layout	1		LS			
	Project Management	1		LS			
						Contracting and General Requirements Subtotals:	
116800	**Play Field Equipment & Structures**						
	Purchase of Playground Equipment	1		LS		By Owner	
	Installation of Playground Equipment	1		LS			
						Section Subtotal:	
311000	**Site Clearing**						
	Silt Fence	417		LF			
	Inlet Protection	1		EA			
	Tree Protection Fence	275		LF			
	Temporary Construction Fence	784		LF			
	Removal of Playground Equipment	1		LS			
	Removal of Asphalt Paving	1,140		SF			
	Removal of Concrete Curb	126		LF			
	Excavation, Stockpile, and Respread of Existing Engineered Wood Fiber	239		CY			
						Section Subtotal:	

312000	Earth Moving						
	Earthwork and Regrading	308		CY			
	Topsoil Strip and Respread	173		CY			
	Stone Base Under Engineered Wood Fiber Saftey Surfacing	78		CY			
						Section Subtotal:	

321216	Asphalt Paving						
	Vehicular Asphalt Paving	1,358		SF			
						Section Subtotal:	

321313	Concrete Paving and Curbs						
	Concrete Paving	275		SF			
	Playground Curb	133		LF			
	Playground Ramp	97		SF			
						Section Subtotal:	

321816	Playground Protective Surfacing						
	Engineered Wood Fiber Safety Surfacing	60		CY			
						Section Subtotal:	

323119.23	Oranmental Fence						
	4' Ornamental Fence	248		LF			
						Section Subtotal:	

329200	Turf and Grass						
	Sod	1,311		SY			
	Mulch	5		CY			
						Section Subtotal:	

334200	Storm Utitily Drainage Piping						
	Cleanout	1		EA			
	6" Perforated PVC	120		LF			
	4" Perforated PVC	207		LF			
	4"x4" WYE	3		EA			
	Connect to Existing Storm Sewer	1		LS			
						Section Subtotal:	

	ALLOWANCES						
						Section Subtotal:	

LESTER ELEMENTARY SCHOOL BID TOTAL:

Section	DESCRIPTION	Owner's Estimated QUANTITY	Bidder's QUANTITY	UNIT	UNIT COST	EXTENDED COST	SUBTOTAL
PIERCE DOWNER ELEMENTARY SCHOOL PHASE II							
0 & 1	**Contracting and General Requirements**						
	Mobilization	1		LS			
	Layout	1		LS			
	Project Management	1		LS			
						Contracting and General Requirements Subtotals:	
116800	**Play Field Equipment & Structures**						
	Purchase of Playground Equipment	1		LS		By Owner	
	Installation of Playground Equipment	1		LS			
						Section Subtotal:	
311000	**Site Clearing**						
	Silt Fence	497		LF			
	Inlet Protection	3		EA			
	Tree Protection Fence	100		LF			
	Temporary Construction Fence	541		LF			
	Removals of Playground Equipment	1		LS			
	Removal of Asphalt Paving	143		SF			
	Removal of Timbers	245		LF			
	Removal of Pea Gravel Play Surfacing	128		CY			
	Removal and Salvage of Bench	1		EA			
						Section Subtotal:	
312000	**Earth Moving**						
	Earthwork and Regrading	1		LS			
						Section Subtotal:	
321313	**Concrete Paving and Curbs**						
	Concrete Paving	185		SF			
	Playground Ramp	97		SF			
	Playground Curb	312		LF			
	Concrete Thickened Edge	6		LF			
						Section Subtotal:	
321400	**Unit Paving**						
	Brick Unit Pavers (Donor and Blank)	290		SF		By Owner	
	Brick Unit Pavers Installation	290		SF			
						Section Subtotal:	

321816	**Playground Protective Surfacing**						
	Engineered Wood Fiber Safety Surfacing	230		CY			
						Section Subtotal:	
329200	**Turf and Grass**						
	Sod	1,009		SY			
						Section Subtotal:	
334200	**Storm Utitily Drainage Piping**						
	Cleanout	1		EA			
	8" Perf. HDPE Underdrain Pipe	83		LF			
	8" PVC Storm Sewer Pipe	52		LF			
						Section Subtotal:	
	ALLOWANCES						
						Section Subtotal:	
						PIERCE DOWNER ELEMENTARY SCHOOL PHASE II BID TOTAL:	
						LESTER ELEMENTARY SCHOOL & PIERCE DOWNER ELEMENTARY SCHOOL PHASE II COMBINED BID TOTAL:	

SECTION 002113 – INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.1 INSTRUCTIONS TO BIDDERS

A. The instructions to bidders shall be AIA Document Number A701, 2017 edition, as modified by Section 002213 – Supplementary Instructions to Bidders. The "Instructions to Bidders" referred to throughout these Bidding Documents shall mean the above two documents taken together. Copies of AIA Document A701 may be examined at the Architect's office. Copies may be purchased from the American Institute of Architects local distributor.

B. AIA Document A701 is expressly incorporated herein by reference as if fully set forth.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 002113

SECTION 002213 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

GENERAL

The following supplements modify the "Instructions to Bidders" AIA Document A701, 2017. Where a portion of the Instructions to Bidders is modified or deleted by these Supplementary Instructions to Bidders, the unaltered portions of the Instructions to Bidders shall remain in effect.

ARTICLE 2 - BIDDER'S REPRESENTATIONS

Add Paragraph 2.1.7:

2.1.7 In order to ensure access to all premises involved in the work before visiting the site, contact **Kevin Barto, Director of Buildings & Grounds, 630-719-5858**, for an appointment.

Add Paragraph 2.1.8:

2.1.8 The Bidder by making a Bid represents that the Bidder meets qualifications indicated in the Advertisement for Bid.

ARTICLE 3 - BIDDING DOCUMENTS

3.3 SUBSTITUTIONS

Add Paragraphs 3.3.6 and 3.3.7:

3.3.6 Items of other manufacturers, or design, quality, and capacity, will be considered as alternates or substitutes to those specified or noted on the Drawings only if the Bidder, at the time of submitting their Base Bid (and Alternate Bids), offers to make such substitution and quotes any addition to, or deduction from, the amount of the Base Bid if such substitution should be accepted in the space provided on the Bid Form.

3.3.7 The Owner reserves the right to reject under the Bid any substitute offered for items specified or noted on the Drawings. Only the successful Bidder's proposed Alternates will be evaluated.

ARTICLE 4 – BIDDING PROCEDURES

4.2 BID SECURITY

Change Paragraphs 4.2.1 and 4.2.2 to read:

4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders.

4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the

Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

ARTICLE 5 - CONSIDERATION OF BIDS

5.3 ACCEPTANCE OF BID (AWARD)

Add Paragraphs 5.3.3, 5.3.4, and 5.3.5:

5.3.3 The award of a Contract will be made within 45 calendar days after the opening of proposals, to the lowest responsible and qualified Bidder whose proposal complies with all the requirements prescribed.

5.3.4 No bids will be withdrawn for a period of 45 days after the Bid opening date without consent of the Owner.

5.3.5 If Contracts cannot be awarded promptly, the Owner may permit the three lowest Bidders to substitute bid bonds executed by corporate surety companies satisfactory to the Owner for any cashier's checks or certified checks submitted with their Bids as Bid guarantees, but such substitution shall not be made until a period of 3 days has elapsed after the date of opening Bids.

ARTICLE 6 – POST-BID INFORMATION

Delete Paragraph 6.2 in its entirety, and insert in its place the following:

6.2 Intentionally Deleted.

ARTICLE 8 – ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

Add Paragraph 8.2 - EXECUTION OF AGREEMENT:

8.2 EXECUTION OF AGREEMENT

8.2.1 The Agreement shall be executed by the successful Bidder or Bidders and returned within 5 days after the Contract has been mailed to the Bidder.

8.2.2 If the Bidder or Bidders to whom award is made is a corporation organized under the laws of a state other than Illinois, the Bidder shall furnish the Owner a copy of the corporation's Certificate of Authority to do business in the State of Illinois with the return of the executed Contract. Failure to furnish such evidence of a Certificate of Authority within the time required will be considered as just cause for the annulment of the award and forfeiture of the proposal guarantee to the Owner, not as a penalty, but in payment of liquidated damages sustained as a result of such failure.

Add Paragraph 8.3 - FAILURE TO EXECUTE AGREEMENT:

8.3 FAILURE TO EXECUTE AGREEMENT

8.3.1 Failure of the successful Bidder to execute the Agreement within 5 days after the Contract has been mailed to Bidder shall be just cause for the cancellation of the award and the forfeiture of the Bid guarantee, which shall become the property of the Owner, not as a penalty but in liquidation of damages sustained. Award may then be made to the next lowest responsible Bidder or the Work may be readvertised.

Add ARTICLE 9 – TIME OF COMPLETION:

ARTICLE 9 - TIME OF COMPLETION

9.1.1 Time is of the essence in the completion of the Project and the Contract will be predicated upon full compliance with the Contractor's stated time of completion for Owner's useful occupancy included in his Bid. The Owner will evaluate each Bidder's capability in this regard in awarding the Contract.

9.1.2 Bidders are informed that administrative work must be started immediately following the award and signing of Contracts and Work must be carried on continuously thereafter until completion and be fully completed within the time stated in the Bid Form, except on written order from the Architect. Construction activities must be carefully coordinated with the Owner so as to minimize conflict with normal activities and events.

END OF SECTION 002213

SECTION 004100 - BID FORM

BID DATE: February 2, 2023, at 10:00am (CST)

BID TO: Downers Grove Grade School District 58
District Service Center
1860 63rd Street
Downers Grove, Illinois 60516

BID FROM: _____

_____

_____

BID FOR: Lester Elementary School & Pierce Downer Playground Improvements – Phase II
Downers Grove, Illinois

Project No. 200036

THE UNDERSIGNED:

Acknowledges receipt of:

Plans and specifications for the work indicated above.

Addenda: No. _____, dated _____

No. _____, dated _____

No. _____, dated _____

Having examined the site of the work, and having familiarized himself with local conditions affecting the cost of the work and with all requirements of the bidding documents including Instructions to Bidders, drawings, specifications, and duly issued addenda, as prepared by the Architect, the Bidder hereby agrees to perform all work and furnish all labor, material and equipment specifically required of him by the bidding documents and such additional work as may be included as related requirements in other divisions or sections of the specifications, exclusive of alternate bids.

Agrees:

To furnish and/or install the described material and/or services for stated lump sum price.

To hold this bid open until 45 calendar days after bid opening date.

To accept the provisions of the Instructions to Bidders, Conditions of the Contract, Drawings, specifications, Addenda, and disposition of bid security.

To enter into and execute a contract with the Owner, if awarded on the basis of this bid, and in connection therewith to:

1. Furnish all bonds and insurance required by the bidding documents.
2. Accomplish the Work according to the Contract.
3. Complete the Work within the Contract time herein specified.

BID SECURITY

The undersigned furnishes herewith, as required in the Instructions to Bidders, bid security in the amount of 10 percent of the amount bid in the form of Cashier's Check ___, or Certified Check ___, made payable to the Owner or Bid Bond ___, naming the Owner as obligee. (Bidder to check form of bid security furnished)

It is understood and agreed that should the undersigned fail to enter into a contract with the Owner or furnish acceptable contract security within the time and in the manner herein provided, the bid security shall be retained by the Owner as liquidated damages and not as a forfeiture. As it is impossible to determine precisely an exact amount of damages the Owner will sustain, it is agreed that the bid security is a fair and equitable estimate of such damages.

BASE BID

For all Base Bid construction work, the amount of the bid is:

The sum of: _____ **Dollars** ($_____)

CONSTRUCTION CONTINGENCY ALLOWANCE:

NONE

ALTERNATE BIDS

NONE

UNIT COST

For limited areas requiring repairs:

Unit cost to provide removal and replacement of 5” sidewalk ($_____)/SF

Unit cost to under cut non-passing soils, legally dispose of offsite and replace with CA-1 to the limits of the existing aggregate subbase then cap with 8” to 10” of compacted CA-6

($_____)/CY

Unit cost to furnish and install Tensar Triax TX160 Geogrid ($_____)/SY

Unit cost to provide HMA removal and patching matching the HMA removal and replacement at Pierce Downer Elementary School

($_____)/SF

TIME OF COMPLETION

The Bidder agrees to achieve Substantial Completion on or before August 11, 2023. Site access for construction work shall be as stated below.
Construction Activity Site Access hours: 7:00 a.m. – 3:00 p.m.

BID ACCEPTANCE

If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within the time noted herein, after the date of opening of bids or at any time thereafter before this bid is withdrawn, the undersigned agrees that he will execute a construction contract (AIA Document A101, 2007 Edition) in accordance with the bids as accepted. He will obtain performance and payment bonds with such surety or sureties as the Owner may approve, the cost of which shall be included in the base bid.

The Owner reserves the right to award the contract to its best interests, to reject any of all bids, to waive any informalities in bidding and to hold all bids for the bid guarantee period.

REPRESENTATIONS AND CERTIFICATIONS

The bidder makes the following representations and certifications as part of his bid on the project herein identified in the Bid Form. In the case of a joint venture bid, each party represents and certifies as to his own organization.

SURETY. I have notified a Surety Company that I am submitting a bid for work to be performed on the project. The Surety Company has agreed to issue a performance and labor and material payment bond for my work if my bid is accepted and the contract awarded to me.

AVAILABILITY. The number and amount of contracts and awards pending which I am and/or will be obligated to perform, now and during the course of the project, will not interfere with or hinder the timely prosecution of my work.

INDEPENDENT PRICE DETERMINATION. The contract sum in this bid has been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition.

PREVAILING WAGE. The contractor and each subcontractor shall pay not less than the general prevailing rate of hourly wages for work of a similar character in the locality in which the work is performed and not less than general prevailing rate of hourly wages for legal holidays and overtime work in the performance of work under this contract, as established by the Illinois Department of Labor, pursuant to an act of the General Assembly of the State of Illinois approved June 26, 1941 as amended according to the Illinois Revised Statutes, Chapter 48, Section 39s-1, et seq.

Pursuant to Illinois Revised Statutes, Chapter 48, Section 34s-5, the contractor and each contractor shall keep an accurate record showing the names and occupation of all laborers, workers and mechanics employed by them, and also showing the actual hourly wages paid to each such individual, which record shall be open at all reasonable hours

to inspection by the Owner, its officers and agents, and to agents of the Illinois Department of Labor.

The contractor and each subcontractor hereby agree, jointly and severally, to defend, indemnify and hold harmless the Owner from any and all claims, demands, liens or suits of any kind or nature whatsoever (including suits for injunctive relief) by the Illinois Department of Labor under the Illinois Prevailing Wage Act, Illinois Revised Statutes, Chapter 48, Section 39s-1, et seq., or by any laborer, worker or mechanic employed by the contractor or the subcontractor who alleges that he has been paid for his services in a sum less than prevailing wage rates required by Illinois law. The Owner agrees to notify the contractor or subcontractor of the pendency of any such claim, demand, lien or suit.

The current prevailing wage rates are included in the specifications for reference only. The contractor and subcontractor must pay the prevailing wage rates in effect at the actual time the labor is performed.

CERTIFICATE OF COMPLIANCE WITH ILLINOIS PREVAILING WAGE RATE ACT. Pursuant to the provisions of the Illinois Prevalent Wage Rate Act. (820 ILCS 130/), Bidder hereby certifies that all workers will be paid at the prevailing wage rate as published by the Illinois Department of Labor.

Initials_____

NON-COLLUSION AFFIDAVIT. Bidder has not, nor has any other member, representative, nor agent of the firm, company, corporation or partnership represented by him/her, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting, nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding. Bidder further says that no person or persons, firms or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such bid, or any contract awarded as a direct or indirect result of such bid.

Initials_____

CERTIFICATE OF ELIGIBILITY TO CONTRACT. Pursuant to Section 33 E-11 of the Illinois Criminal Code of 1961 as amended, contractor hereby certifies that neither they nor any of the officers, partners, or owners of this business have been convicted in the past five years of the offense of bid-rigging under Section 33 E-3, nor bid-rotating under Section 33 E-4, nor bribing or attempting to bribe an officer or an employee of the State of Illinois, or made an admission of guilt or such conduct which is a matter of record.

Initials_____

CERTIFICATE OF COMPLIANCE WITH ILLINOIS DRUG-FREE WORKPLACE ACT. Pursuant to Section 3 of the Illinois Drug-Free Workplace Act, having twenty-five or more employees, contractor does hereby certify that they shall provide a drug-free workplace for all employees engaged in the performance of work under this contract by complying with Illinois Drug-Free Workplace Act, and, further certifies that they are not ineligible for award of this contract by reason of debarment for a violation of the Illinois Drug-Free Workplace Act.

Initials_____

CERTIFICATE REGARDING SEXUAL HARASSMENT POLICY. Pursuant to Section 2-105 of the Illinois Human Rights Act (775 IL-CS5/2-105), contractor certifies they have a written sexual harassment policy that includes, at a minimum, the following information: (I) the illegality of sexual harassment; (ii) the definition of sexual harassment under State law; (iii) a description of sexual harassment, utilizing examples; (iv) an internal complaint process including penalties; (v) the legal recourse, investigative and compliant process available through the Department of Human Rights Commission; (vi) directions of how to contact the Department of Human Rights and Human Rights Commission; and (vii) protection against retaliation.

Initials_____

CERTIFICATE REGARDING CRIMINAL HISTORY RECORDS CHECK. Bidder hereby certifies that the Bidder shall not send to any school building or school property any employee or agent who would be prohibited from being employed by the **District** due to a conviction of a crime listed in 105 ILCS 5/10-21.9. The Contractor shall obtain a fingerprint-based criminal history background check before sending any employee or agent to any school building or school property. Additionally, at least quarterly, the Contractor shall contact the local law enforcement authority where each employee or agent resides to determine if the employee is on the list of registered felons who have committed child sex offenses.

Initials_____

VENDOR DESIGNATION. In order to comply with subsection C of Section 10-20.40 of the Illinois School code added by P.A. 95-707, school districts are required to disclose vendors with whom we have entered a contract or purchased goods in the amount of equal to or greater than $25,000.00. In addition, school districts are required to specify which of the vendors are owned by a person with disabilities, female, minority and/or locally owned.

Please indicate any of the following that apply to your business.

_____ Owned by a Person with Disabilities
_____ Female Owned
_____ Minority Owned
_____ Locally Owned (within school district boundaries)
_____ None of the Above

Initials_____

CERTIFICATE OF BIDDER’S QUALIFICATIONS. Included with bid, Bidder shall submit to the Architect 2 copies of completed American Institute of Architects "Contractor's Qualification Statement" AIA Document A305 (furnished by Bidder), which shall include a certified financial

statement, not more than six months old, or other reasonable proof of financial responsibility, which reflects the true financial condition of the firm. Each Bidder must be able to show financial ability to carry on the Work until the first payment and to carry the financing of the Project between payments until the Contract is completed and accepted. Form shall include names and telephone numbers of architects, owners, and contact persons for each project listed (minimum of ten projects required)."

Initials_____

Signature:

Respectfully submitted this _____ day of _____, 20_____.

Type of Firm (Bidder to indicate)

_____ Individual

_____ Partnership

_____ Corporation

_____ Joint Venture

_____

_____
(Firm Name)

_____
(Address)

_____
(C O R P O R A T E S E A L)

_____
(Telephone Number)

_____
(Bidder's Signature)

_____
(Title)

Subscribed and sworn to me

this _____ day of _____, 20_____.

_____ (N O T A R Y S E A L)

END OF SECTION 004100

SECTION 004343 – PREVAILING WAGE ACT

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 PREVAILING WAGE ACT

A. Pursuant to Illinois Compiled Statutes 820 ILCS 130/0.01 et seq., these specifications list on the following pages, the Illinois Department of Labor prevailing rate of wages for the county where the contract is being performed and for each craft or type of worker needed to execute the contract.

B. Current wage rate information may be obtained from the IDOL website: https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Rates.aspx.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 004343

SECTION 006000 - PROJECT FORMS

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:

1. AIA Document A101-2017 "Standard Form of Agreement between Owner and Contractor Where the Basis of Payment is a Stipulated Sum."

a. AIA Document A101 Exhibit A: Delete Article A.2.2 and in its place, add the following Sections:

§ A.2.2 Liability Insurance

§ A.2.2.1 In any and all claims against the Owner or the Architect / Engineer or any of their agents or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the insurance obligation under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under Workmen's Compensation Acts, disability benefit acts or other employee benefit acts.

§ A.2.2.2 The insurance obligations of the Contractor under this Section shall not extend to the liability of the Architect, his agents or employees 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 failure to give directions or instruction by the Architect, his agents or employees provided that such giving or failure to give is the primary cause of the injury damage.

§ A.2.2.3 The Contractor shall give the Owner an original policy and shall furnish the Architect / Engineer a memorandum copy of said policy. The named insured in this Protective Liability Policy shall be:

1. Downers Grove School District 58
   2300 Warrenville Rd
   Suite 200 NE
   Downers Grove, IL 60515
2. Wight & Company
   2500 North Frontage Road
   Darien, IL 60561

b. AIA Document A101 Exhibit A: Delete Article A.2.3.1 through A.2.3.2 and in its place, add the following Sections:

§ A.2.3.1 Builder's Risk Insurance is required and shall be purchased and maintained until the date established for Substantial Completion of the Project by the Contractor.

§ A.2.3.1.1 The policy shall be a completed Value All-Risk Builder's Risk policy and shall cover all work (including that of all contractors) in the course of construction including temporary structures and materials used in the construction process stored on or within 100 feet of the construction site and while awaiting installation. The policy shall be written in an amount equal to 100-percent of the total sum of all contracts.

§ A.2.3.2 Coverage shall include, but not be limited to:

A. Fire and Extended Coverage (Lightning, wind storm, hail, explosion, riot, civil commotion, aircraft, vehicle and smoke).
B. Vandalism and Malicious Mischief.

§ A.2.3.3 Coverage shall not extend to:

A. Tools and equipment of:

1. Contractors.
2. Subcontractors.
3. The Architect/Engineer.

B. Property owned by employees of any of the foregoing.
C. Vehicles of any kind.
D. Trees and shrubs.
E. Drawings and specifications.

§ A.2.3.4 The Owner and the Architect/Engineer and all other contractors shall be named as additional insured as their interest may appear.

§ A.2.3.5 A deductible clause of $1,000 per loss shall be included. The party purchasing the Builder's Risk Insurance shall be responsible for apportioning the amount of losses within the deductible or portions not insurable amount the insured contractors.

§ A.2.3.6 The policy by its terms or endorsement shall specifically permit and allow for beneficial or partial occupancy prior to completion or acceptance of the Project by the Owner.

§ A.2.3.7 To the extent permitted without penalty, expense, or loss of coverage, the Owner, the Architect/Engineer and each contractor waive all rights each against the others for damages caused by fire or any other peril to the extent any loss or claim is covered by Builder's Risk Insurance or any other permanent insurance applicable to the Project except such rights as they may have to the proceeds of such insurance held by any of the insured as a result of loss. Each insured contractor shall require similar waivers of subrogation from all subcontractors and sub-subcontractors engaged on the Project.

§ A.2.3.8 The prompt repair or reconstruction of the Work as a result of any insured loss or damage shall be the Contractor's responsibility and shall be accomplished at no additional cost to the Owner or Architect/Engineer. The

Contractor shall furnish the proper assistance in the adjustment and settlement of any loss. Loss will be adjustable with and payable to the party purchasing the Builder's Risk Insurance who shall be responsible for apportioning the loss proceeds to each and every entity involved in the loss to the extent of his interest. The policy shall contain a provision that the policy will not be canceled, changed or altered until at least 30 calendar days prior to written notice has been given to the named insured.

c. AIA Document A101 Exhibit A: Delete the semicolon at the end of Section A.3.2.2.2.1 and add: or persons or entities excluded by statute from the requirements of Section A.3.2.5 but required by the Contract Documents to provide the insurance required by that section.

d. AIA Document A101 Exhibit A: Add the following Sections to Article A.3.2.2.2:

.12 Liability insurance shall be written on the comprehensive general liability basis, and shall include, but not be limited to, the following sub-lines:

A. Premises and Operations including x, c, u coverages (explosion, collapse, underground).
B. Products and Completed Operations.
C. Independent Contractor's Protective.
D. Broad Form Comprehensive General Liability Endorsement:

1. Contractual Liability, including Contractors obligation under Section 3.18.
2. Personal Injury & Advertising Injury Liability.
3. Premises Medical Payments.
4. Host Liquor Law Liability.
5. Fire Legal Liability - Real Property.
6. Broad Form Property Damage Liability (including Completed Operations).
7. Incidental Medical Malpractice Liability.
8. Non-owned Watercraft Liability.
9. Limited Worldwide Liability.
10. Additional Persons Insured, including employees for personal and advertising injury.
11. Extended Bodily Injury Liability.
12. Automatic Coverage - Newly Acquired Organizations (90 days).

.13 If liability insurance is written under the new simplified form - Commercial General Liability, the above listed coverages shall be included.

14 If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or retroactive date shall predate the Contract; the termination date of the policy shall be no earlier than the termination date of coverages required to be maintained after final payment, certified in accordance with Section 9.10.2, and an extended period endorsement "Supplemental Tail,"

shall be purchased.

e. AIA Document A101 Exhibit A: Delete Article A.3.2.2 through A.3.2.12 and in its place, add the following Sections:

§ A.3.2.2 The insurance required by Section A.3.2.1 shall be written for not less than the following limits, or greater if required by law:

1. Worker's Compensation:

   a. State: Statutory.
   b. Applicable Federal (e.g., Longshoremen's): Statutory.
   c. Employer's Liability:

   $ 500,000.00 Per Accident.
   $ 500,000.00 Disease, Policy Limit.
   $ 500,000.00 Disease, Each Employee.

2A. If written under Comprehensive General Liability Policy Form (including sub-lines specified in Section 11.1.1.8):

1. Bodily Injury:

   $1,000,000.00 Each Occurrence.
   $1,000,000.00 Aggregate.

2. Property Damage:

   $1,000,000.00 Each Occurrence.
   $1,000,000.00 Aggregate.

3. Bodily Injury and Property Damage combined:

   $1,000,000.00 Each Occurrence.
   $1,000,000.00 Aggregate.

4. Personal Injury:

   $1,000,000.00 Aggregate.

2B. If written under Commercial General Liability Policy Form:

$1,000,000.00 General Aggregate.
$1,000,000.00 Products Completed Operations Aggregate.
$1,000,000.00 Personal and Advertising Injury.
$1,000,000.00 Each Occurrence.
$ 50,000.00 Fire Damage (any one fire).
$ 5,000.00 Medical Expense (any one person).

3. Automobile Liability (including owned, non-owned and hired vehicles):

   a. Bodily Injury:

      $1,000,000.00 Per Person.
      $1,000,000.00 Per Accident.

   b. Property Damage:

      $1,000,000.00 Per Occurrence.

   c. Bodily Injury and Property Damage Combined:

      $1,000,000.00 Per Occurrence.

4. Umbrella Excess Liability:

   $2,000,000.00 Over Primary Insurance.
   $ 10,000.00 Retention for Self-Insured Hazards Each Occurrence.

§ A.3.2.3 Automobile Liability coverage shall be written on a comprehensive automobile policy that includes coverage for owned, non-owned, and hired motor vehicles.

f. AIA Document A101 Exhibit A: At the end of Section A.3.2.5, delete the period and add: including private entities performing Work at the site and exempt from the coverage on account of number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project.

2. The General Conditions for the Project are AIA Document A201-2017 "General Conditions of the Contract for Construction."

   a. The General Conditions are incorporated by reference.

3. The Supplementary Conditions for Project are separately prepared and included in the Project Manual.

1.2 ADMINISTRATIVE FORMS

A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.

B. Copies of AIA standard forms may be obtained from the American Institute of Architects; https://www.aiacontractdocs.org; (800) 942-7732.

C. Preconstruction Forms:

1. Form of Performance Bond and Labor and Material Bond: AIA Document A312, "Performance Bond and Payment Bond."
2. Form of Certificate of Insurance: AIA Document G715-1991, "Supplemental Attachment, ACORD Certificate of Insurance."

D. Information and Modification Forms:

1. Form for Requests for Information (RFIs): AIA Document G716, "Request for Information (RFI)," unless another form is approved by the Architect.
2. Form of Request for Proposal: AIA Document G709, "Work Changes Proposal Request."
3. Change Order Form: AIA Document G701, "Change Order."
4. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G710, "Architect's Supplemental Instructions."
5. Form of Change Directive: AIA Document G714, "Construction Change Directive."

E. Payment Forms:

1. Schedule of Values Form: AIA Document G703, "Continuation Sheet."
2. Payment Application: AIA Document G702/703, "Application and Certificate for Payment and Continuation Sheet."
3. Form of Contractor's Affidavit: AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims" or Chicago Title and Trust Form f.1722 R5/96 and f.3870 R5/96.
4. Form of Affidavit of Release of Liens: AIA Document G706A, "Contractor's Affidavit of Payment of Release of Liens" or Chicago Title and Trust Form f.1722 R5/96 and f.3870 R5/96.
5. Form of Consent of Surety: AIA Document G707, "Consent of Surety to Final Payment."

END OF DOCUMENT 006000

SECTION 007300 - SUPPLEMENTARY CONDITIONS

GENERAL

The following supplements modify AIA Document A201-2017, General Conditions of the Contract for Construction. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 1 - GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

Change Section 1.1.1 to read:

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Advertisement or Invitation to Bid, Instruction to Bidders, Bid Form, the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is a (1) a written amendment of the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the work issued by the Architect.

§ 1.2 EXECUTION, CORRELATION, AND INTENT OF THE CONTRACT DOCUMENTS

Add the following Section 1.2.1.2:

§ 1.2.1.2 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

.1 Modifications.
.2 The Agreement.
.3 Addenda, with those of later date having precedence over those of earlier date.
.4 The Supplementary Conditions.
.5 The General Conditions of the Contract for Construction.
.6 Division 01 of the Specifications.
.7 Drawings and Division 02 to 49 of the Specifications.
.8 Other documents specifically enumerated in the Agreement as part of the Contract Documents.

In the case of conflicts or discrepancies between Drawings and Specifications or within or among the Contract Documents and not clarified by Addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect's interpretation. Large-scale drawings shall take precedence over small-scale drawings; figured dimensions on the Drawings over scaled dimensions and noted materials over graphic representatives.

ARTICLE 3 - CONTRACTOR

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Add the following Sections:

§ 3.2.2.1 The exactness of grades, elevations, dimensions, or locations given on any drawings issued by the Architect / Engineer or the work installed by other contractors, is not guaranteed by the Architect / Engineer or Owner.

§ 3.2.2.2 The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions and locations. In all cases of interconnection of the Contractor's work with existing or other work, Contractor shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, locations or dimensions shall be promptly rectified by the Contractor without extra cost to the Owner.

§ 3.4 LABOR AND MATERIALS

Add the following Section:

§ 3.4.4 The Contractor and each subcontractor shall pay not less than the general prevailing rate of hourly wages for work of a similar character in the locality in which the work is performed and not less than general prevailing rate of hourly wages for legal holidays and overtime work in the performance of work under this Contract, as established by the Illinois Department of Labor, pursuant to the Prevailing Wage Act, 820 ILCS 130/0.01, et. seq. Pursuant to the Prevailing Wage Act, the Contractor and each subcontractor shall keep an accurate record showing the names and occupation of all laborers, workers and mechanics employed by them, and also showing the actual hourly wages paid to each such individual, which record shall be open at all reasonable hours to inspection by the Owner, its officers and agents, and to agents of the Illinois Department of Labor. The Contractor and each subcontractor hereby agree, jointly and severally, to defend, indemnify and hold harmless the owner from any and all claims, demands, liens or suits of any kind or nature whatsoever (including suits for injunctive relief) by the Illinois Department of Labor under the Illinois Prevailing Wage Act, 820 ILCS 130/0.01, et. seq., or by any laborer, worker or mechanic employed by the Contractor or the subcontractor who alleges that he/she has been paid for his services in a sum less than prevailing wage rates required by Illinois law. The Owner agrees to notify the Contractor or subcontractor of the pendency of any such claim, demand, lien or suit. The current Prevailing Wage Rates are included in these specifications as Appendix 1 for reference only. Contractor must pay prevailing wages in effect at time labor is performed.

§ 3.6 TAXES

Change Section 3.6 to read:

§ 3.6 The Owner is exempted by Section 3 of the Illinois Use Tax Act (Section 3, House Bill 1610, approved July 31, 1961, 35 ILCS 105/3 from paying any of the taxes imposed by the Act and Sales to Owner are exempt by Section 2, House Bill 1609, approved July 31, 1961, 35 ILCS 120/2) from any of the taxes imposed by the Act. The

Department of Revenue of the State of Illinois under Rule No. 15, issued August 9, 1961, has declared that sales of materials to construction contractors for conversion into real estate for schools, governmental bodies, agencies and instrumentalities are not taxable retail sales.

ARTICLE 8 - TIME

§ 8.3 DELAYS AND EXTENSIONS OF TIME

Add the following Section:

8.3.2.1. Notwithstanding any other provision in the Contract Documents to the contrary, no claim for damage or any claim other than for extension of time as herein provided shall be made or asserted against the Owner by reason of any delays caused by the reasons herein above mentioned.

Section 8.3.3. Delete the term “either party” and replace it with “the Owner.”

ARTICLE 9 - PAYMENTS AND COMPLETION

§ 9.3 APPLICATIONS FOR PAYMENT

Add the following Section 9.3.1.3:

9.3.1.3 Until substantial completion, the Owner shall pay 90 percent of the amount due the Contractor on account of progress payments.

ARTICLE 11 - INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S INSURANCE AND BONDS

Delete Section 11.1.2 and substitute the following:

§ 11.1.2 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds may be obtained through the Contractor's usual source and the cost thereof shall be included in the Contract sum. The amount of each bond shall be equal to 100 percent of the Contract sum.

§ 11.1.2.1 The Contractor shall require the attorney-in-fact who executed the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

Add the following sentence to Section 11.1.4:

On the Certificate of Insurance, delete in the cancellation provision the following words, "Endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives."

§ 11.3 WAIVERS OF SUBROGATION

Add the following sentence: The waiver of subrogation contained herein shall be effective as against all corporations or entities providing insurance coverage to or for

the Project or any person or entity performing work on the Project, and the waiver includes, but is not limited to, insurance coverage provided by private sector insurers and self-insured contractors or corporations.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

§ 13.5 INTEREST

Delete in its entirety. All references to interest payments throughout the Contract Documents are hereby voided.

Add the following Section 13.6:

§ 13.6 REGULATIONS

§ 13.6.1 The Contractor or subcontractor warrants that he/she is familiar with and he/she shall comply with Federal, State and local laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Contract including without limitation Workmen's Compensation Laws, minimum salary and wage statutes and regulations, laws with respect to permits and licenses and fees in connection therewith, laws regarding maximum working hours. No plea of misunderstanding or ignorance thereof will be considered.

13.6.1.1 Whenever required, the Contractor or subcontractor shall furnish the Architect / Engineer with satisfactory proof of compliance with said Federal, State and local laws, statutes, ordinances, rules, regulations, orders and decrees.

13.6.2 Each contractor shall carefully examine the Occupational Safety and Health Act (OSHA) of 1970, published in May 1971, as issued by the Federal Register, and the specific regulations governing procedures, techniques, safety precautions, equipment design, and the configuration of the same as required under this Act and each contractor agrees as evidenced by his submission of a bid to comply with all terms of the Act and to perform and complete in a workmanlike manner all work required in full compliance with said Act.

13.6.3 Each bidder agrees as evidenced by his submission of a bid to comply with all terms of the Equal Employment Opportunity Clause of the Illinois Fair Employment Practices Commission.

ARTICLE 15 – CLAIMS AND DISPUTES

15.4 ARBITRATION

Delete Section 15.4 in its entirety. All references to “arbitration” throughout the Contract Documents are hereby voided.

END OF SECTION 007300

SECTION 011000 - 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:

1. Project information.
2. Work covered by the Contract Documents.
3. Work schedule.
4. Access to site.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and drawing conventions.
8. Miscellaneous provisions.

B. Related Requirements:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Lester Elementary School & Pierce Downer Playground Improvements – Phase II, project number 200036.

1. Project Location
   a. Lester Elementary School, 236 Indianapolis Avenue, Downers Grove, IL 60516
   b. Pierce Downer Elementary School, 1436 Grant Street, Downers Grove, IL 60515.

B. Owner: Board of Education, Downers Grove Grade School District 58 Administration Center, 2300 Warrenville Rd, Suite 200 NE, Downers Grove, IL 60515.

C. Architect / Engineer: Wight & Company, 2500 North Frontage Road, Darien, Illinois 60561.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work consists of asphalt, concrete, earthwork, site utilities, site furnishings, fencing, and landscape restoration.

B. Type of Contract: Project will be constructed under a single prime contract.

1.5 WORK SCHEDULE

A. Conduct the Work in one phase in the following order:

1. Pre-Construction Meeting: To be determined.
2. Start of General Construction: **June 12th, 2023**.
3. Substantial Completion: **August 11th, 2023**.

1.6 ACCESS TO SITE

A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.

B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy of Project site and use by the public.
2. Driveways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Use of Existing Building: Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.7 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

1.8 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Work shall be generally performed inside the existing building during normal business working hours of **7:00 a.m. to 3:00 p.m.**, Monday through Friday, except otherwise indicated.

1. Weekend Hours: As approved by Owner.
2. Early Morning Hours: As approved by Owner.
3. Hours for Utility Shutdowns: As approved by Owner.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Owner not less than three days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Owner's written permission.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

E. Restricted Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

F. Employee Identification: Owner will provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

G. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be

interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
3. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.10 MISCELLANEOUS PROVISIONS

A. Materials used in this Project shall be polychlorinated biphenyl (PCB), mercury, and asbestos free. No PCB, mercury, or asbestos-containing-building materials (ACM), as defined by federal regulation A.H.E.R.A., E.P.A., and Illinois Department of Public Health are permitted for this Project.

B. Installation of a product on surfaces prepared by others constitutes acceptance of the surface.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012500 – SUBSTITUTION PROCEDURES

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 substitutions.

B. Related Requirements:

1. Division 01 Section "Alternates" for products selected under an alternate.
2. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use facsimile of form provided in Project Manual.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication, or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner

and separate contractors, that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect / Engineer will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect / Engineer will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect / Engineer does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect / Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect / Engineer will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Requested substitution provides sustainable design characteristics that specified product provided.
c. Substitution request is fully documented and properly submitted.
d. Requested substitution will not adversely affect Contractor's construction schedule.
e. Requested substitution has received necessary approvals of authorities having jurisdiction.
f. Requested substitution is compatible with other portions of the Work.
g. Requested substitution has been coordinated with other portions of the Work.
h. Requested substitution provides specified warranty.
i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not Allowed.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012519 – SUBSTITUTION REQUEST FORM

Please refer to Section 016000 – Product Requirements. Substitution requests will not be considered without submittal of this completed form.

REFERENCE TO: *Lester Elementary School & Pierce Downer Playground Improvements – Phase II* Project No. 200036

Having reviewed the requirements for the above Project, we hereby submit for consideration the following item in lieu of the specified item.

1. Section:_____ Specified Item: _____
2. Proposed Substitution: _____
3. Reason for Substitution: _____
4. Supporting Data Attached: _____

   Yes _____ No ___ Technical data, including laboratory tests, if applicable.

   Yes _____ No ___ Complete information on changes to Drawings/ Specifications that proposed substitution will require for proper installation.

   Yes _____ No ___ Effects of substitution on drawing dimensions.

5. Yes _____ No ___ The undersigned will pay for changes to the building and systems design, including engineering and detailing costs caused by the requested substitution.
6. Yes _____ No ___ Does the substitution effect other trades? Describe:

_____

7. Describe differences between proposed substitution and specified item:

_____

8. Yes _____ No ___ Maintenance and services parts will be as readily available as for specified item.
9. Yes _____ No ___ Manufacturer's guarantees for the proposed and specified items are the same; describe differences:

_____

The undersigned state that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item:

Submitted by:

Company: _____

Address: _____

_____

By: _____

Date: _____

Telephone: _____

Fax: _____

For Use by Architect:

Accepted: _____ Accepted as noted: _____

Not Accepted ___ Received too late: _____

By: _____

Date: _____

Remarks: _____

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

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 specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Requirements:

1. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect / Engineer will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect / Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect / Engineer are not instructions either to stop work in progress or to execute the proposed change.
2. Within 10 days after receipt of Proposal Request, submit a detailed quotation of cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. Provide a detailed labor, material and equipment breakdown.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

c. Allow, for changes in the work other than that covered by Allowances, Alternates, or Unit Prices, an added percentage to compensate for the Contractor’s profit margin, on the following basis:

1) For work performed by the Contractor’s own forces, 10 percent.
2) For work performed by Subcontractors to the contractor, 5 percent.

d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Allow, for changes in the work other than that covered by Allowances, Alternates, or Unit Prices, an added percentage to compensate for the Contractor’s profit margin, on the following basis:

a. For work performed by the Contractor’s own forces, 10 percent.
b. For work performed by Subcontractors to the contractor, 5 percent.

5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship.
6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.5 ADMINISTRATIVE CHANGE ORDERS

A. Unit-Price Adjustment: See Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.6 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect / Engineer will issue a Change Order for signatures of Owner and Contractor.

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect / Engineer may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 – PAYMENT PROCEDURES

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 necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Division 01 Section “Unit Prices” for administrative requirements governing use of unit prices.
2. Division 01 Section “Contract Modification Procedures” for administrative procedures for handling changes to the Contract.
3. Division 01 Section “Construction Progress Documentation” for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.
4. Section 018113.13 "Sustainable Design Requirements " for administrative requirements governing submittal of cost breakdown information required for sustainable design documentation.

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

a. Contractor's Construction Schedule.
b. Application for Payment forms, including Continuation Sheets.
c. List of subcontractors.
d. Schedule of alternates.
e. List of products.
f. List of principal suppliers and fabricators.
g. Schedule of submittals.

2. Submit the Schedule of Values to the Architect / Engineer at the earliest possible date but no later thanfourteen days before the date scheduled for submittal of the initial Applications for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:

    a. Project name and location.
    b. Name of the Architect.
    c. Project number.
    d. Contractor's name and address.
    e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

    a. Related Specification Section or Division.
    b. Description of Work.
    c. Name of subcontractor.
    d. Name of manufacturer or fabricator.
    e. Name of supplier.
    f. Change Orders (numbers) that affect value.
    g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

        1) Labor.
        2) Materials.
        3) Equipment.

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.

    a. Include separate line items under Contractor and principal subcontracts for sustainable design documentation and other Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.

4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.

5. If previously approved in writing by the Owner that it is in the Owner's best interest to purchase materials before they can be installed, and to store the materials off-site, provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment include materials or equipment purchased or fabricated and stored, but not yet installed.

    a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.

6. Provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

    a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

8. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect / Engineerand paid for by the Owner.

    1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

    1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.

C. Payment-Application Forms: Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment.

D. Application Preparation: Complete every entry on the form. Notarize and execute by a person authorized to sign legal documents on behalf of the Contractor. Architect / Engineerwill return incomplete applications without action.

    1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.

2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

E. Stored Materials: If previously approved in writing by the Owner, include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to the Architect / Engineerby a method ensuring receipt within 24 hours. One copy shall be complete, including waivers of lien and similar attachments, when required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Architect.

G. Certified Payroll Report: With each Application for Payment, submit a certified payroll report for the period covered by the Application for Payment, as required by Public Act 94-0515 from every contractor or subcontractor who performs work for the Project.

H. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics liens from subcontractors, sub-subcontractors and suppliers for the construction period covered by the previous application.

1. Submit partial waivers on each item for the amount requested in the previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.
3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

5. Waiver Forms: Submit waivers of lien on Chicago Title Insurance Company forms, F1722 R5/92 and F3870 R5/92 and executed in a manner, acceptable to the Owner.

I. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following:

1. List of subcontractors.
2. List of principal suppliers and fabricators.
3. Schedule of Values.
4. Sustainable design submittals for project materials cost data.
5. Contractor's Construction Schedule (preliminary if not final).
6. Schedule of principal products.
7. Sustainability action plans.
8. Schedule of unit prices.
9. Submittal Schedule (preliminary if not final).
10. List of Contractor's staff assignments.
11. List of Contractor's principal consultants.
12. Copies of building permits.
13. Copies of authorizations and licenses from governing authorities for performance of the Work.
14. Initial progress report.
15. Report of preconstruction meeting.
16. Certificates of insurance and insurance policies.
17. Performance and payment bonds.

J. Application for Payment at Substantial Completion: After Architect / Engineer issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G707, "Consent of Surety to Final Payment."
5. Evidence that claims have been settled.
6. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
7. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

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 provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Coordination Drawings.
4. Administrative and supervisory personnel.
5. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

C. Related Requirements:

1. Division 01 Section “Construction Progress Documentation” for preparing and submitting the Contractor's Construction Schedule.
2. Division 01 Section “Execution” for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 01 Section “Closeout Procedures” for coordinating Contract closeout.

1.3 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.

3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

1.6 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
f. Indicate required installation sequences.
g. Indicate dimensions shown on the Drawings. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Review: Architect / Engineer will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect / Engineer determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect / Engineer will so inform Contractor, who shall make changes as directed and resubmit.

C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
2. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format.
3. Architect / Engineer will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.

    a. Architect / Engineer makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
    b. Digital Data Software Program: Drawings are available in AutoCAD Architecture 2008.
    c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect / Engineer of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 3 days of the meeting.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

    a. Tentative construction schedule.
    b. Phasing.
    c. Critical work sequencing and long-lead items.
    d. Designation of key personnel and their duties.
    e. Lines of communications.

f. Procedures for processing field decisions and Change Orders.
g. Procedures for RFIs.
h. Procedures for testing and inspecting.
i. Procedures for processing Applications for Payment.
j. Distribution of the Contract Documents.
k. Submittal procedures.
l. Sustainable design requirements.
m. Preparation of record documents.
n. Use of the premises and existing building.
o. Work restrictions.
p. Working hours.
q. Owner's occupancy requirements.
r. Responsibility for temporary facilities and controls.
s. Procedures for moisture and mold control.
t. Procedures for disruptions and shutdowns.
u. Construction waste management and recycling.
v. Parking availability.
w. Office, work, and storage areas.
x. First aid.
y. Security.
z. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect / Engineer of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Sustainable design requirements.
i. Review of mockups.
j. Possible conflicts.
k. Compatibility requirements.
l. Time schedules.
m. Weather limitations.
n. Manufacturer's written instructions.
o. Warranty requirements.
p. Compatibility of materials.

q. Acceptability of substrates.
r. Temporary facilities and controls.
s. Space and access limitations.
t. Regulations of authorities having jurisdiction.
u. Testing and inspecting requirements.
v. Installation procedures.
w. Coordination with other work.
x. Required performance results.
y. Protection of adjacent work.
z. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of record documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Submittal of written warranties.
d. Requirements for completing sustainable design documentation.
e. Requirements for preparing operations and maintenance data.
f. Requirements for delivery of material samples, attic stock, and spare parts.
g. Requirements for demonstration and training.
h. Preparation of Contractor's punch list.
i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
j. Submittal procedures.
k. Coordination of separate contracts.
l. Owner's partial occupancy requirements.
m. Installation of Owner's furniture, fixtures, and equipment.
n. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: Conduct progress meetings at weekly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

        1) Review schedule for next period.

    b. Review present and future needs of each entity present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Status of sustainable design documentation.
        5) Deliveries.
        6) Off-site fabrication.
        7) Access.
        8) Site utilization.
        9) Temporary facilities and controls.
        10) Progress cleaning.
        11) Quality and work standards.
        12) Status of correction of deficient items.
        13) Field observations.
        14) Status of RFIs.
        15) Status of proposal requests.
        16) Pending changes.
        17) Status of Change Orders.
        18) Pending claims and disputes.
        19) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

    a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or

recognized. Issue revised schedule concurrently with the report of each meeting.

F. Coordination Meetings: Conduct Project coordination meetings at weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    c. Review present and future needs of each contractor present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site utilization.
        8) Temporary facilities and controls.
        9) Work hours.
        10) Hazards and risks.
        11) Progress cleaning.
        12) Quality and work standards.
        13) Change Orders.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

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 documenting the progress of construction during performance of the Work, including the following:

1. Startup construction schedule.
2. Contractor's construction schedule.
3. Construction schedule updating reports.
4. Daily construction reports.
5. Site condition reports.
6. Special reports.
7. Construction photographs.

B. Related Requirements:

1. Division 01 Section “Submittal Procedures” for submitting schedules and reports.
2. Division 01 Section “Quality Requirements” for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

B. Event: The starting or ending point of an activity.

C. Float: The measure of leeway in starting and completing an activity.

1. Float is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

D. Major Area: A story of construction, a separate building, or a similar significant construction element.

E. Milestone: A key or critical point in time for reference or measurement.

1.4 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF electronic file.

B. Startup construction schedule.

1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.

E. Construction Schedule Updating Reports: Submit with Applications for Payment.

F. Daily Construction Reports: Submit at weekly intervals.

G. Material Location Reports: Submit at weekly intervals.

H. Site Condition Reports: Submit at time of discovery of differing conditions.

I. Special Reports: Submit at time of unusual event.

J. Construction Photographs: Submit digital photograph image files within three days of taking photographs.

1. Digital Camera: Minimum sensor resolution of 8 megapixels.
2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect.

d. Name of Contractor.
e. Date photograph was taken.
f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
g. Unique sequential identifier keyed to accompanying key plan.

1.5 COORDINATION

A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
4. Startup and Testing Time: Include not less than 15 days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
6. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use of premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

D. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.

1. Refer to Division 01 Section "Payment Procedures" for cost reporting and payment procedures.

2.2 STARTUP CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within seven days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for commencement of the Work. Base schedule on the Preliminary Construction Schedule and whatever updating, and feedback was received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.4 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (see special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Partial completions and occupancies.
18. Substantial Completions authorized.

B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.5 SPECIAL REPORTS

A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

3.2 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.

C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties from different vantage points, as directed by Architect. Show existing conditions adjacent to property.

1. Flag construction limits before taking construction photographs.

2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take 20 photographs monthly, coinciding with cutoff date associated with each Application for Payment. Photographer shall select vantage points to best show status of construction and progress since last photographs were taken.

E. Final Completion Construction Photographs: Take 20 photographs after date of Substantial Completion for submission as Project Record Documents. Architect / Engineer will direct photographer for desired vantage points.

1. Do not include date stamp.

END OF SECTION 013200

SECTION 013300 – SUBMITTAL PROCEDURES

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 requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:

1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering,

manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect / Engineer and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

3. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled date of fabrication.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect / Engineer for Contractor's use in preparing submittals.

1. Architect / Engineer will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.

    a. Architect / Engineer makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    b. Digital Drawing Software Program: The Contract Drawings are available in AutoCAD Architecture 2008.
    c. Contractor shall execute a data licensing agreement in the form of Agreement included in Project Manual.
    d. The following digital data files will by furnished for each appropriate discipline:

        1) Floor plans.
        2) Reflected ceiling plans.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect / Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect / Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 10 days for review of each resubmittal.

D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.

    a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Transmittal Form for Electronic Submittals: Use software-generated form from electronic project management software or electronic form acceptable to Architect, containing the following information:

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name of Contractor.
    e. Name of firm or entity that prepared submittal.

f. Names of subcontractor, manufacturer, and supplier.
g. Category and type of submittal.
h. Submittal purpose and description.
i. Specification Section number and title.
j. Specification paragraph number or drawing designation and generic name for each of multiple items.
k. Drawing number and detail references, as appropriate.
l. Location(s) where product is to be installed, as appropriate.
m. Related physical samples submitted directly.
n. Indication of full or partial submittal.
o. Transmittal number numbered consecutively.
p. Submittal and transmittal distribution record.
q. Other necessary identification.
r. Remarks.

5. Metadata: Include the following information as keywords in the electronic submittal file metadata:

a. Project name.
b. Number and title of appropriate Specification Section.
c. Manufacturer name.
d. Product name.

E. Options: Identify options requiring selection by Architect.

F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect / Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Submit electronic submittals via email as PDF electronic files.

    a. Architect / Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect / Engineer will return two copies.
3. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect / Engineer will not return copies.
4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

    a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams showing factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.

d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data in the following format:

a. PDF electronic file.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
3. Submit Shop Drawings in the following format:

a. PDF electronic file.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of applicable Specification Section.
e. Specification paragraph number and generic name of each item.

3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect / Engineer will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured, and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect / Engineer will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

5. Submit product schedule in the following format:

    a. PDF electronic file.

F. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

G. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

H. Application for Payment and Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

K. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

L. Sustainable Design Submittals: Comply with requirements specified in Division 01 Section "Sustainable Design Requirements."

M. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports

on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

U. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

V. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

W. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

X. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. Action Submittals: Architect / Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect / Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

B. Informational Submittals: Architect / Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect / Engineer will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may be returned by the Architect / Engineer without action.

END OF SECTION 013300

Electronic File Release and Disclaimer

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<Date>

<Name>
<Company>
<Address>
<Town, State, Zip Code>

<Project Name>
<Project Number>

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- Wight & Company extends no warranty of any kind, either express or implied, with respect to the Electronic Files or contents thereof. The Recipient agrees to indemnify and hold harmless Wight from any and all claims, actions, causes, loss of services, lost profits, interruptions, of service or business, or any other incidental, consequential or other damages, expenses or compensation, whether known or unknown, arising from the provision or use of these Electronic Files, including attorney's costs and fees, incurred by Wight as a result of the provision of these Electronic Documents to the Recipient. This release shall expressly include, by way of description but not limitation, any claims relating to the accuracy and completeness of these Electronic Files, their compatibility to the Recipient's hardware or software, any viruses transmitted in or with the Electronic Files (known or unknown), the suitability of the Electronic Files for the recipient's intended purpose (whether express or implied), the interpretation of the Electronic Files by any individual entity, or party, and any other claim. The Recipient is advised to check all electronic media for viruses upon receipt.
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- Electronic Files shall not be considered Documents of Record. Documents of Record shall be hard copies accompanied by the Professional's stamp and signature. If inconsistencies are discovered, stamped and signed hard copies shall govern over these Electronic Files.
- These Electronic Files are provided for the sole use and exclusive use of the Recipient only within the scope the above mentioned Project. Any reproduction, distribution, or use of the file by any party other than the Recipient without the prior express written consent of Wight is strictly prohibited.
- Any use, storage, or distribution of these files denotes acceptance of this contract.

In the above referenced document, "Wight" and "Professional" refers to Wight or any affiliates, consultants, agents, and employees of Wight. "Recipient" refers to the person, organization, and affiliations that this document is addressed to. "Electronic Files" refer to the electronic files provided with this release and disclaimer.

Software Application	Release	Operating System	
Quantity	**Date**	**Media**	**Files**	**File Size**

The above mentioned files will be forwarded to the Recipient upon return receipt of this agreement to Wight, signed by the Recipient to accept the terms of this agreement.

Very truly yours,
Wight & Company
<Name>
<Title>

cc:

Signature

Recipient's Name (Please Print)

Title

Company

Date

SECTION 014000 - QUALITY REQUIREMENTS

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 quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Mockups establish the standard by which the Work will be judged.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect / Engineer for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect / Engineer for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

1.6 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Ambient conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations.

Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
e. When testing is complete, remove test specimens, assemblies, and mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect / Engineer seven days in advance of dates and times when mockups will be constructed.
3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.

    a. Allow seven days for initial review and each re-review of each mockup.

6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed, unless otherwise indicated.

1.8 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

    a. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

F. Testing Agency Responsibilities: Cooperate with Architect / Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect / Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field-curing of test samples.
5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 20 days of date established for the Notice to Proceed.

1. Distribution: Distribute schedule to Owner, Architect, Construction Manager, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.9 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect / Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect / Engineer with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

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 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. “Approved:” When used to convey Architect's action on Contractor's submittals, applications, and requests, “approved” is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. “Directed:” A command or instruction by Architect. Other terms including “requested,” “authorized,” “selected,” “approved,” “required,” and “permitted” have the same meaning as “directed.”

D. “Indicated:” Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including “shown,” “noted,” “scheduled,” and “specified” have the same meaning as “indicated.”

E. “Regulations:” Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. “Furnish:” Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. “Install:” Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. “Provide:” Furnish and install, complete and ready for the intended use.

I. “Project Site:” Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and

effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source and make them available on request.

1.4 ABBREVIATIONS AND ACRONYMS

A. Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entity indicated in Gale Research's “Encyclopedia of Associations” or in Columbia Books' “National Trade & Professional Associations of the U.S.”

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

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 requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.

B. Temporary utilities include, but are not limited to, the following:

1. Water distribution.
2. Temporary electric power distribution.
3. Sanitary facilities, including drinking water.
4. Storm and sanitary sewer.

C. Support facilities include, but are not limited to, the following:

1. Temporary enclosures.
2. Waste disposal services.
3. Construction aids and miscellaneous services and facilities.

D. Security and protection facilities include, but are not limited to, the following:

1. Temporary fire protection.
2. Barricades, warning signs, and lights.
3. Environmental protection.

1.3 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

1. Building code requirements.
2. Health and safety regulations.
3. Utility company regulations.
4. Police, fire department, and rescue squad rules.
5. Environmental protection regulations.

B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety

Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."

1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.4 FIELD CONDITIONS

A. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.

B. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.

C. Water: Provide potable water approved by local health authorities.

2.2 EQUIPMENT

A. General: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.

B. Water Hoses: Provide 3/4-inch, heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.

C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

F. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

G. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary connection to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction.

B. Temporary Water Service: Use of Owner's existing water service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.

C. Temporary Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.

D. Temporary Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

E. Toilets: Use of the Owner's existing toilet facility will be permitted, so long as facilities are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to the condition prevalent at the time of initial use.

F. Drinking-Water Facilities: Use of the Owner's existing drinking water facilities will be permited, so long as facilities are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to the condition prevalent at the time of initial use.

G. Sewers and Drains: Use of the Owner's existing sewers and drains will be permitted, so long as facilities are are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to the condition prevalent at the time of initial use.

1. Provide temporary connections to remove effluent that can be discharged lawfully.
2. Filter out excessive amounts of construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.

3.3 SUPPORT FACILITIES INSTALLATION

A. Locate support facilities for easy access.

1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet of building lines. Comply with requirements of NFPA 241.

C. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
2. Store combustible materials in containers in fire-safe locations.
3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
4. Provide supervision of sources of fire ignition.

B. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

C. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

D. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage.

1. Maintain operation of temporary enclosures and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Termination and Removal: Unless the Architect / Engineerrequests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the Contractor's property.
2. At Substantial Completion, clean and renovate permanent facilities used during the construction period, but not limited to, the following:

    a. Replace air filters and clean inside of ductwork and housings.
    b. Replace significantly worn parts and parts subject to unusual operating conditions.

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

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 selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Division 01 Section "Alternates" for products selected under an alternate.
2. Division 01 Section "Substitution Procedures" for requests for substitutions.
3. Division 01 Section "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect / Engineer will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect / Engineer will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

    a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    b. Use product specified if Architect / Engineer does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect / Engineer will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:

    a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements.
    b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

4. Manufacturers:

    a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
    b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a

product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect / Engineer from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect / Engineer will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect / Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect / Engineer may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION REQUIREMENTS

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 general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Cutting and patching.
2. Progress cleaning.
3. Protection of installed construction.

B. Related Requirements:

1. Division 01 Section "Summary" for limits on use of Project site.
2. Division 02 Section "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
2. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's

aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainability requirements indicated.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect / Engineer for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping, underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect / Engineer promptly.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where other contracts worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017419 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

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 disposing of nonhazardous demolition and construction waste.

B. Related Requirements:

1. Division 31 Section "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

1.4 ACTION SUBMITTALs

A. Waste Management Plan: Submit plan within 7 days of date established for the Notice to Proceed.

1.5 INFORMATIONAL SUBMITTALS

A. Landfill Disposal Records: Indicate receipt and acceptance of waste by landfills licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.6 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review

methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan including responsibilities of waste management coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review waste management requirements for each trade.

1.7 WASTE MANAGEMENT PLAN

A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

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 contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Electronic Closeout Documentation
5. Final cleaning.
6. Repair of the Work.

B. Related Requirements:

1. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
2. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
3. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.

1.3 ACTION SUBMITTALS

A. Product Data: For cleaning agents.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Divisions 02 through 33 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Divisions 02 through 33 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.

5. Submit test/adjust/balance records.
6. Submit sustainable design submittals required in Division 01 sustainable design requirements Section and in individual Division 02 through 33 Sections.
7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.

4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training."
6. Advise Owner of changeover in heat and other utilities.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect / Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect / Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect / Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect / Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use form acceptable to Architect.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Contractor.
    e. Page number.

4. Submit list of incomplete items in one of the following format:

    a. MS Excel electronic file. Architect / Engineer will return annotated file.
    b. PDF electronic file. Architect / Engineer will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect / Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

1. Warranty Electronic File: Scan warranties and assemble complete warranty submittal package into a single indexed electronic PDF file with links enabling

navigation to each item. Provide bookmarked table of contents at beginning of document.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.10 ELECTRONIC CLOSEOUT DOCUMENTATION

A. General: Provide a complete project closeout documentation package in electronic format. This package shall include:

1. Issued for Construction Plans, Specs
2. Project Record Documents.
3. **Approved** Submittals.
4. Operation and Maintenance Manuals.
5. Warranties.
6. Owner training Videos (.WMV or .MP4 Format)
7. Project Contact Directory.

B. The Electronic Closeout Documentation shall be prepared by BHFX Imaging. **Contractors are responsible for all Closeout Fees.** Please contact Sarah Jacobs at 847-593-3161 x. 206 or sarah.jacobs@bhfx.net for Pricing and Closeout Organization Information

C. In order to facilitate the Electronic Closeout Documentation process, comply with the following procedures:

1. Contact BHFX Imaging for a Project Order Form a minimum of three months prior to the date of Substantial Completion to schedule a pre-closeout meeting. Review the following:

a. Format of documents: PDF electronic format for all documents.
b. Folder structure for storage and transfer of files.
c. Schedule for collection and turn-over of closeout documentation.
d. Record Document format procedures: Provide clean and accurate paper copies of the marked-up Record Documents (Drawings and Specifications) for scanning.
e. Provide contact information for the individual responsible for the collection and transfer of the Electronic Closeout Documentation Package contents.
f. Review a complete listing of Electronic Closeout Documentation Package contents.

2. Multi-Building Projects - Submittals must be sorted by building

a. Each submittal must be assigned to a building
b. Submittals pertaining to multiple buildings must be labeled or tagged with all buildings associated with that particular file.
c. Building specific folders can be generated. Files pertaining to multiple buildings must be added to all appropriate folders

3. Provide all documentation to BHFX Imaging for processing no later than 30 days after the date of Substantial Completion.

4. Schedule a training conference with the Owner's Representative, Architect, Construction Manager and BHFX Imaging to present the completed Electronic Closeout Documentation Package.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid

disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
q. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.

2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 017823.16 - MAINTENANCE DATA

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 preparing maintenance manuals, including the following:

1. Maintenance documentation directory.
2. Maintenance manuals for the care and maintenance of products, materials, and finishes.

B. Related Requirements:

1. Division 01 Section “Submittal Procedures” for submitting copies of submittals for maintenance manuals.
2. Division 01 Section “Closeout Procedures” for submitting maintenance manuals.
3. Division 01 Section “Project Record Documents” for preparing Record Drawings for maintenance manuals.
4. Divisions 02 through 48 Sections for specific maintenance manual requirements for products in those Sections.

1.3 COORDINATION

A. Where maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

1.4 SUBMITTALS

A. Operations and Maintenance Manuals Submittal: Submit 2 copies of each manual in final form at least 15 days before final inspection. Architect / Engineer will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Architect's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Architect's comments.

PART 2 - PRODUCTS

2.1 MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. Table of contents.

B. Tables of Contents: Include a table of contents for each maintenance manual.

2.2 MANUALS, GENERAL

A. Organization: Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.
7. Cross-reference to related systems in other maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components.
    b. Identify each binder on front and spine, with printed title “MAINTENANCE MANUAL,” Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Supplementary Text: Prepared on 8-1/2-by-11-inch, 20-lb/sq. ft. white bond paper.
4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to maintenance manuals.

B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper maintenance.

D. Comply with Division 01 Section “Closeout Procedures” for the schedule for submitting maintenance documentation.

END OF SECTION 017823.16

SECTION 017839 - PROJECT RECORD DOCUMENTS

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 Project Record Documents, including the following:

1. Record Drawings.
2. Miscellaneous record submittals.

B. Related Requirements:

1. Division 01 Section “Closeout Procedures” for general closeout procedures and electronic closeout documentation.
2. Division 01 Section “Maintenance Data” for operation and maintenance manual requirements.
3. Divisions 02 through 48 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit copies of record Drawings as follows:

a. Submit PDF electronic files of scanned marked-up record prints and one of file prints

B. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding archive photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Changes made by Change Order or Construction Change Directive.
d. Changes made following Architect's written orders.
e. Details not on the original Contract Drawings.
f. Field records for variable and concealed conditions.
g. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with red-colored lines. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Annotated PDF electronic file with comment function enabled.
2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
3. Refer instances of uncertainty to Architect / Engineer for resolution.

4. Architect / Engineer will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.

    a. See Section 013300 "Submittal Procedures" for requirements related to use of Architect's digital data files.
    b. Architect / Engineer will provide data file layer information. Record markups in separate layers.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect.
    e. Name of Contractor.

2.2 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and

in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 018113.26 - SUSTAINABLE DESIGN REQUIREMENTS

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 general requirements and procedures for compliance with sustainability requirements.

B. Related Requirements:

1. Specific requirements for sustainability are also included in other Sections.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site. Review sustainability requirements and action plans for compliance with requirements.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Respond to questions and requests from Architect / Engineer about sustainability requirements that are the Contractor responsibility, that depend on product selection or product qualities, or that depend on Contractor's procedures.

1. Document responses as informational submittals.

1.5 ACTION SUBMITTALS

A. General: Submit sustainable design submittals required by other Sections.

B. Sustainability design submittals are in addition to other submittals.

1. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated sustainability requirements.

C. Sustainability Design Documentation Submittals:

1. Environmental Product Declarations (EPDs) complying with sustainability requirements indicated.
2. Documentation for products that comply with sustainability requirements for multi-attribute optimization.

    a. Include documentation for any applicable third-party certifications.

3. Documentation complying with Division 01 Section "Construction Waste Management and Disposal."
4. Product Data for adhesives and sealants used inside weatherproofing system, indicating laboratory test reports showing compliance with requirements for low-emitting materials.
5. Laboratory test reports for flooring, indicating compliance with requirements for low-emitting materials.
6. Construction Indoor-Air-Quality (IAQ) Management:

    a. Construction IAQ management plan.
    b. Product Data for temporary filtration media.
    c. Product Data for filtration media used during occupancy.
    d. Construction Documentation: Six photographs at three different times during construction period, along with brief description of SMACNA approach employed, documenting implementation of IAQ management measures, including protection of ducts and on-site stored or installed absorptive materials.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For sustainability coordinator.

B. Project Materials Cost Data: Provide statement indicating total cost for materials used for Project. Costs exclude labor, overhead, and profit. Include breakout of costs for the following categories of items:

1. Plumbing.
2. Mechanical.
3. Electrical.
4. Specialty items such as elevators and equipment.

C. Sustainability Action Plans: Provide preliminary submittals within 30 days of date established for the Notice to Proceed indicating how the following requirements will be met:

1. List of proposed products with EPDs.
2. List of proposed products complying with requirements for multi-attribute optimization.
3. Waste management plan complying with Section 017419 "Construction Waste Management and Disposal."

D. Sustainable Design Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with sustainable design action plans.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide products and procedures necessary to meet sustainability requirements in this Section. Although other Sections may specify some requirements that contribute to sustainability requirements, Contractor shall provide additional materials and procedures necessary to achieve sustainability requirements indicated.

B. At least 20 different products from at least five different manufacturers shall have EPDs that comply with sustainability requirements. Industrywide (generic) EPDs shall be valued as one-half of a product.

C. Products indicated in other Sections shall have publicly released reports that comply with sustainability requirements for raw material source and extraction reporting.

2.2 LOW-EMITTING MATERIALS

A. The following products and systems, where field applications that are inside the weatherproofing system, shall comply with requirements of California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

1. Adhesives and sealants.
2. Flooring systems.

PART 3 - EXECUTION

3.1 NONSMOKING BUILDING

A. Smoking is not permitted within the building or within 25 ft. of entrances, operable windows, or outdoor-air intakes.

3.2 CONSTRUCTION WASTE MANAGEMENT

A. Comply with Division 01 Section "Construction Waste Management and Disposal."

3.3 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

A. Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction."

1. If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period as specified in Division 01 Section "Temporary Facilities and Controls," install MERV 8 filter media at each return-air inlet for the air-handling system used during construction.
2. Replace air filters immediately prior to occupancy with new filters specified in Division 23 Section "Particulate Air Filtration."

3.4 INDOOR-AIR-QUALITY (IAQ) ASSESSMENT

A. Flush-Out:

1. After construction ends, prior to occupancy and with all interior finishes installed, perform a building flush-out by supplying a total volume of 14,000 cu. ft. of outdoor air per sq. ft. of floor area while maintaining an internal temperature of at least 60 deg F and a relative humidity no higher than 60 percent.
2. If occupancy is desired prior to flush-out completion, the space may be occupied following delivery of a minimum of 3500 cu. ft. of outdoor air per sq. ft. of floor area to the space. Once a space is occupied, it shall be ventilated at a minimum rate of 0.30 cfm per sq. ft. of outside air or the design minimum outside air rate, whichever is greater. During each day of the flush-out period, ventilation shall begin a minimum of three hours prior to occupancy and continue during occupancy. These conditions shall be maintained until a total of 14,000 cu. ft./sq. ft. of outside air has been delivered to the space.

B. Air-Quality Testing: Owner will engage testing agency to perform the following:

1. Conduct baseline IAQ testing, after construction ends and prior to occupancy, using testing protocols consistent with the EPA's "Compendium of Methods for the Determination of Air Pollutants in Indoor Air," and as additionally detailed in other sections.
2. Demonstrate that contaminant maximum concentrations listed below are not exceeded:

    a. Formaldehyde: 27 ppb.
    b. Particulates (PM10): 50 mcg/cu. m.
    c. Ozone: 0.075 ppm, according to ASTM D5149.
    d. Total Volatile Organic Compounds (TVOC): 500 mcg/cu. m.
    e. 4-Phenylcyclohexene (4-PH): 6.5 mcg/cu. m.
    f. Carbon Monoxide: 9 ppm and no greater than 2 ppm above outdoor levels.
    g. Target Chemicals in California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Table 4-1 (except formaldehyde).

3. For each sampling point where maximum concentration limits are exceeded, take corrective action until requirements have been met.
4. Air-sample testing shall be conducted as follows:

    a. All measurements shall be conducted prior to occupancy but during normal occupied hours, and with building ventilation system starting at the normal daily start time and operated at the minimum outside airflow rate for the occupied mode throughout the duration of the air testing.
    b. Building shall have all interior finishes installed including, but not limited to, millwork, doors, paint, carpet, and acoustic tiles. Nonfixed furnishings such as workstations and partitions are encouraged, but not required, to be in place for the testing.
    c. Number of sampling locations varies depending on the size of building and number of ventilation systems. For each portion of building served by a separate ventilation system, the number of sampling points shall not be less than one per 5000 sq. ft.. For large open spaces, one sampling point per 50,000 sq. ft. may be used.
    d. Air samples shall be collected between 3 and 6 ft. from the floor to represent the breathing zone of occupants, and over a minimum four-hour period.

END OF SECTION 018113.26

SECTION 024113.13 – PAVING REMOVAL

PART 1 - GENERAL

1.1 WORK INCLUDES

A. All labor and equipment to remove the existing bituminous concrete pavement, concrete drives, slabs, pavement pads, curbs, gutters, brick or block walls and sidewalk as required by the contract documents.

1.2 RELATED DOCUMENTS

A. Specified Elsewhere:
1. 024113.15 – Saw Cutting Pavement
2. 312000 – Earth Moving
3. 321216 – Hot Mix Asphalt Paving
4. 321383 – Portland Cement Concrete Sidewalks

1.3 QUALITY ASSURANCE

A. The following documents shall provide the standards for construction within the Village of Downers Grove unless otherwise stated in these specifications. In the event of conflict between these specifications and the existing Village codes, the Village codes will prevail.

1. The Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, and the latest editions of Supplemental Specifications and Recurring Special Provisions (herein referred to as the “Standard IDOT Specifications”).

B. Exceptions: All references in the Illinois Department of Transportation Standard Specifications to method of measurements and compensation shall not apply.

PART 2 - PRODUCTS (NOT APPLICABLE)
PART 3 - EXECUTION

A. The material removed shall be disposed of legally by the Contractor away from the site.

B. Sawing to a full depth of pavement, before removal operations begin, will be required for any joint between surface to be removed and surface to remain.

C. The Trade Contractor shall use extreme care when removing material adjacent to existing construction. Any damage to the brick walls, foundation, or any other building feature or to adjacent pavement, curbs or sidewalks, shall be repaired by the Contractor to the satisfaction of the Construction Manager without additional compensation.

END OF SECTION 024113.13

SECTION 024113.15 – SAW CUTTING PAVEMENT

PART 1 - GENERAL

1.1 WORK INCLUDES

A. This item consists of sawing joints in the pavements in order to separate that portion to be removed from that which will remain in place. This work must be performed at the locations specified on the plans and as otherwise designated by the Engineer.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, including but not limited to:
   1. 321216 – Hot Mix Asphalt Paving
   2. 321383 – Portland Cement Concrete Sidewalks

B. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions (herein referred to as the "Standard IDOT Specification"). (Method of Measurement and Basis of Payment shall not apply.)

1.3 QUALITY ASSURANCE

A. The following documents shall provide the standards for construction within the Village of Downers Grove unless otherwise stated in these specifications. In the event of conflict between these specifications and the existing Village codes, the Village codes will prevail.
   1. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)

B. Exceptions: All references in the Illinois Department of Transportation Standard Specifications to method of measurements and compensation shall not apply.

1.4 SUMMARY

A. The Contractor must saw a full depth vertical cut at locations where pavement removal is required as noted on the plans. It is the responsibility of the Contractor to determine the composition and thickness of the existing pavement, and the extent to which it is reinforced. No additional compensation will be allowed because of variations from the assumed thickness or from thickness shown on the plans or for variations in the amount of reinforcement. Should the Contractor deface the edge, a new sawed joint must be constructed and any additional work, including removal and replacement, will be done at the Contractor's expense.

B. The Contractor must make all saw cuts with a concrete sawing machine meeting the approval of the Construction Manager.

END OF SECTION 024113.15

SECTION 116800 - PLAY FIELD EQUIPMENT AND STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Freestanding playground equipment and structures.
2. Composite playground equipment and structures.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show fabrication and installation details for playground equipment and structures.

C. Coordination Drawings: Plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:

1. Extent of surface systems and use zones for equipment.
2. Critical heights for playground surface, or fall heights for equipment.

D. Samples: For each type of exposed finish.

E. LEED Submittals:

1. Credit MR 7: Certificates of chain-of-custody signed by manufacturers certifying that products specified to be made from certified wood were made from wood

obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria." Include evidence that mill is certified for chain-of-custody by an FSC-accredited certification body.

F. Product certificates.

G. Material Certificates: Wood Preservative Treatment: Include certification by treating plant that states type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.

H. Product test reports.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

B. Manufacturer Qualifications: A firm whose playground equipment components have been certified by IPEMA's third-party product certification service.

C. Forest Certification: For the following playground equipment using wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria."

1. <**Insert list of playground equipment and structure components.**>

D. Safety Standards: Provide playground equipment complying with or exceeding requirements in the following:

1. ASTM F 1487.
2. CPSC No. 325.

E. Preinstallation Conference: Conduct conference at Project site.

1.4 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of playground equipment that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including <**Insert type of failure**>.
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: [**Two**] [**Five**] <**Insert number**> years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.
3. Basis-of-Design Product: The design for each piece of playground equipment is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Extruded Bars, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
2. Cast Aluminum: ASTM B 179.
3. Flat Sheet: ASTM B 209 (ASTM B 209M).

B. Steel: Comply with the following:

1. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M[**, hot-dip galvanized**].

2. Steel Pipe: ASTM A 53/A 53M or ASTM A 135, standard-weight[**, hot-dip galvanized**].
3. Steel Tubing: ASTM A 500 or ASTM A 513, cold formed[**, hot-dip galvanized**].
4. Steel Sheet: ASTM A 1011/A 1011M[**, hot-dip galvanized**].
5. Perforated Metal: Steel sheet not less than [**0.0747-inch (1.9-mm)**] <**Insert thickness**> uncoated thickness; [**hot-dip galvanized,**]manufacturer's standard perforation pattern.
6. Expanded Metal: ASTM F 1267, Type II (expanded and flattened), Class [**1,**] [**2,**] [**3/4 No. 13**] <**Insert style**> [**manufacturer's standard**] carbon-steel sheets, [**hot-dip galvanized,**]deburred after expansion.
7. Woven Wire Mesh: Manufacturer's standard, with wire complying with ASTM A 510 (ASTM A 510M).

C. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666; Type 304.

D. Chain and Fittings: ASTM A 467/A 467M, Class CS, 4/0 or 5/0, welded-straight-link coil chain; [**hot-dip galvanized**] [**zinc plated**]. With commercial-quality, [**hot-dip galvanized**] [**zinc-plated**] steel connectors and swing or ring hangars.

E. Castings and Hangers: Malleable iron, ASTM A 47/A 47M, Grade 32510, hot-dip galvanized.

F. Post Caps: [**Cast aluminum**] [**or**] [**color-impregnated, UV-stabilized, mold-resistant polyethylene or polypropylene**]; color to match posts.

G. Platform Clamps and Hangers: [**Cast aluminum**] [**or**] [**zinc-plated steel, not less than 0.105-inch- (2.7-mm-) nominal thickness**].

H. Hardware: Manufacturer's standard; commercial-quality; corrosion-resistant; hot-dip galvanized steel and iron, stainless steel, or aluminum; of a secure and vandal-resistant design.

I. Fasteners: Manufacturer's standard; corrosion-resistant; hot-dip galvanized or plated steel and iron, or stainless steel; permanently capped, and theft resistant.

J. Softwood Plywood: DOC PS 1, exterior.

K. Wood: Species indicated[**, free of heart center**].

1. Douglas fir.
2. Pine.
3. Western red cedar.
4. Redwood.
5. <**Insert species.**>

L. Opaque Plastic: Color impregnated, UV stabilized, and mold resistant.

1. Polyethylene: Fabricated from [**virgin**] [**96 percent recycled, purified, fractional-melt**] <**Insert percentage of recycled plastic and resin characteristics**> plastic resin; rotationally molded HDPE, LLDPE, or MDPE with not less than 1/4-inch (6-mm) wall thickness.

M. Transparent Plastic: Abrasion-resistant, UV-stabilized monolithic polycarbonate sheet; [**clear, colorless**] <**Insert color tint**>; not less than 3/16 inch (5 mm) thick.

2.3 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment: Pressure-treat wood according to AWPA C2 (lumber) and AWPA C9 (plywood).

2.4 PLAYGROUND EQUIPMENT FABRICATION

A. Metal Frame: Fabricate main-frame upright support posts from metal pipe or tubing with cross-section profile and dimensions as indicated.

B. Provide necessary rebates, lugs, and brackets to assemble units and to attach to other work.

C. Provide castings that are sound and free of warp, cracks, blowholes, or other defects that impair strength or appearance.

D. Wood Frame: Fabricate main-frame upright support posts from wood species and with profile and dimensions as indicated.

1. Surfaced members smooth on all sides[**and with all edges rounded**] [**, and obtained from sources that participate in sustained yield programs**].

E. Composite Frame: Fabricate main-frame upright support posts from metal and plastic with profile and dimensions as indicated.

F. Play Surfaces: Provide manufacturer's standard elevated drainable decks, platforms, landings, walkways, ramps, and similar transitional play surfaces.

G. Elevated Play Surfaces: Guardrails or protective barriers completely surround elevated play surface except for access openings, if play-surface heights above protective surfacing exceed the following for use by age group indicated:

1. Elevated surface greater than 20 inches (510 mm) intended for use by children aged 2 through 5.
2. Elevated surface greater than 30 inches (760 mm) intended for use by children aged 5 through 12.

H. Stepped Play Surfaces: Provide [**manufacturer's standard**]infill between stepped platforms [**according to referenced standards**] [**and**] [**where indicated on Drawings**].

I. Protective Barriers and Guardrails: Fabricate according to ASTM F 1487.

J. Handrails: Welded metal pipe or tubing, OD [**between 0.95 and 1.55 inches (24.1 and 39.4 mm)**] [**1.25 inches (32 mm)**]. Provide handrails at height for use by age group indicated below:

1. Ages: Between [**2 and 5**] [**and**] [**5 and 12**] years.
2. Height of Top Surface: [**29 inches (737 mm) intended for use by children aged 2 through 5**] [**and**] [**38 inches (965 mm) intended for use by children aged 5 through 12**].
3. Close exposed ends of handrails with returns with clearance of 1/4 inch (6 mm) or less.

K. Roofs and Canopies: Manufacturer's standard [**plastic**] [**steel**] [**wood**]<**Insert description**>.

L. Signs: Manufacturer's standard sign panels, fabricated from [**opaque plastic with graphics molded in**] [**wood with painted graphics**] <**Insert description**>, attached to upright support posts.

1. Text: <**Insert content.**>

2. Colors: <**Insert colors or manufacturer's designation.**>

2.5 FREESTANDING PLAYGROUND EQUIPMENT AND STRUCTURES

A. Swings, [**Single**] [**Multiple**] Axis:

1. [**Available**]Products:

a. BCI Burke Company, LLC; <**Insert product name or designation**>.
b. Columbia Cascade Company; <**Insert product name or designation**>.
c. GameTime; <**Insert product name or designation**>.
d. Kompan; <**Insert product name or designation**>.
e. Landscape Structures Inc.; <**Insert product name or designation**>.
f. Little Tikes Commercial Play Systems, Inc.; <**Insert product name or designation**>.
g. <**Insert manufacturer's name; product name or designation.**>

2. Basis-of-Design Product: <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

a. <**Insert, in separate subparagraphs, manufacturer's name.**>

3. Frame: Galvanized steel pipe or tubing connected frame sections and angled, two-leg, upright end supports.

a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

4. Frame: Wood connected frame sections and angled, two-leg, upright end supports.

5. Overhead Beam Height: [**96 inches (2440 mm)**] [**10 feet (3 m)**] [**Height as indicated on Drawings**] <**Insert dimension**> from pivot point above protective surfacing.
6. Chain: [**Standard link**] [**Short link not permitting finger penetration**] [**Manufacturer's standard**].
7. Swing Connector: [**S-hook**] [**Double clevis and bolt link**].
8. Swing Hanger: Galvanized [**stamped steel clamp and ductile-iron pivot**] [**heavy-duty ductile iron**] [**manufacturer's standard**].
9. Swing Seats: [**EPDM rubber**] [**Injection molded plastic**] <**Insert material**>, [**enclosed infant seat**] [**flexible seat**] [**tire**] <**Insert type of seat**>.

    a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

10. <**Insert feature.**>

B. Slides[**and Tubes**]: Fabricated from [**stainless steel**] [**opaque plastic**] [**aluminum**].

1. [**Available**]Products:

    a. BCI Burke Company, LLC; <**Insert product name or designation**>.
    b. Columbia Cascade Company; <**Insert product name or designation**>.
    c. GameTime; <**Insert product name or designation**>.
    d. Kompan; <**Insert product name or designation**>.
    e. Landscape Structures Inc.; <**Insert product name or designation**>.
    f. Little Tikes Commercial Play Systems, Inc.; <**Insert product name or designation**>.
    g. <**Insert manufacturer's name; product name or designation.**>

2. Basis-of-Design Product: <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

    a. <**Insert, in separate subparagraphs, manufacturer's name.**>

3. Slides: [**Straight**] [**Spiral, quarter turn**] <**Insert configuration**>[**, single**] [**, side by side**].

    a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

4. Tube, round, not less than [**24-inch (610-mm)**] [**30-inch (760-mm)**] diameter.
5. <**Insert feature.**>

C. Merry-Go-Rounds: Rotating [**platform**] [**seating**] around a vertical axis.

1. [**Available**]Products:
   a. BCI Burke Company, LLC; <**Insert product name or designation**>.
   b. Columbia Cascade Company; <**Insert product name or designation**>.
   c. GameTime; <**Insert product name or designation**>.
   d. Kompan; <**Insert product name or designation**>.
   e. Landscape Structures Inc.; <**Insert product name or designation**>.
   f. Little Tikes Commercial Play Systems, Inc.; <**Insert product name or designation**>.
   g. <**Insert manufacturer's name; product name or designation.**>

2. Basis-of-Design Product: <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

   a. <**Insert, in separate subparagraphs, manufacturer's name.**>

3. Rotating Mechanism: Permanently sealed and lubricated ball bearings with [**hydraulic**] [**mechanical**]-speed limiting device.
4. Platform: Round, [**dish-shaped**] [**flat**] [**flat, dimpled**] steel sheet, not less than 0.1196-inch- (3.038-mm-) nominal thickness, with slip-resistant footing.

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

5. Handholds and Handrails: Metal pipe or tubing.

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

6. Capacity: [**Single user**] [**Two users**] [**Five users**] [<**Insert number**> **users**].
7. <**Insert feature.**>

D. Tunnels (Crawl Tubes): Fabricated from [**stainless steel**] [**opaque plastic**].

1. [**Available**]Products:

2. BCI Burke Company, LLC; <**Insert product name or designation**>.
   a. Columbia Cascade Company; <**Insert product name or designation**>.
   b. GameTime; <**Insert product name or designation**>.
   c. Kompan; <**Insert product name or designation**>.
   d. Landscape Structures Inc.; <**Insert product name or designation**>.

e. Little Tikes Commercial Play Systems, Inc.; <**Insert product name or designation**>.
f. <**Insert manufacturer's name; product name or designation.**>

3. Basis-of-Design Product: <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

a. <**Insert, in separate subparagraphs, manufacturer's name.**>

4. Shape: [**Straight**] [**Curved, quarter turn**] <**Insert configuration**>.
5. Tube, round, not less than [**24-inch (610-mm)**] [**30-inch (760-mm)**] diameter.

a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

6. <**Insert feature.**>

E. Climbers: Fabricated from steel with [**galvanized**] [**PVC-plastisol**] <**Insert finish**> finish.

1. [**Available**]Products:

a. BCI Burke Company, LLC; <**Insert product name or designation**>.
b. Columbia Cascade Company; <**Insert product name or designation**>.
c. GameTime; <**Insert product name or designation**>.
d. Kompan; <**Insert product name or designation**>.
e. Landscape Structures Inc.; <**Insert product name or designation**>.
f. Little Tikes Commercial Play Systems, Inc.; <**Insert product name or designation**>.
g. <**Insert manufacturer's name; product name or designation.**>

2. Basis-of-Design Product: <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

a. <**Insert, in separate subparagraphs, manufacturer's name.**>

3. Horizontal ladder[**with hand rings**].
4. Vertical fence.
5. Chain or cable [**ladder**] [**walks**].

a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

6. <**Insert feature.**>

F. Spring [**Rocking-Rider**] [**Seesaw**]:

1. [**Available**]Products:

    a. BCI Burke Company, LLC; <**Insert product name or designation**>.
    b. Columbia Cascade Company; <**Insert product name or designation**>.
    c. GameTime; <**Insert product name or designation**>.
    d. Kompan; <**Insert product name or designation**>.
    e. Landscape Structures Inc.; <**Insert product name or designation**>.
    f. Little Tikes Commercial Play Systems, Inc.; <**Insert product name or designation**>.
    g. <**Insert manufacturer's name; product name or designation.**>

2. Basis-of-Design Product: <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

    a. <**Insert, in separate subparagraphs, manufacturer's name.**>

3. Seat: [**Cast aluminum**] [**Molded HDPE or other plastic**] [**Wood**] <**Insert materials**>[**; with**] [**handholds**] [**and footrests**].

    a. Seat Style: <**Insert type animal, vehicle, or other description.**>
    b. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

4. Base: [**One**] [**Two**] coil spring(s) with steel base plate.
5. Capacity: [**Single user**] [**Two users**] [<**Insert number**> **users**].
6. <**Insert feature.**>

2.6 COMPOSITE PLAYGROUND EQUIPMENT AND STRUCTURES

A. Composite Structure: Fabricated from [**steel**] [**wood**] [**opaque plastic**].

1. [**Available**]Products:

    a. BCI Burke Company, LLC; <**Insert product name or designation**>.
    b. Columbia Cascade Company; <**Insert product name or designation**>.
    c. GameTime; <**Insert product name or designation**>.
    d. Kompan; <**Insert product name or designation**>.
    e. Landscape Structures Inc.; <**Insert product name or designation**>.

f. Little Tikes Commercial Play Systems, Inc.; <**Insert product name or designation**>.
g. <**Insert manufacturer's name; product name or designation.**>

2. Basis-of-Design Product: <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

   a. <**Insert, in separate subparagraphs, manufacturer's name.**>

3. Frame: Galvanized steel pipe or tubing frame sections connected with [**bolts**] [**clamps**].

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

4. Frame: Wood frame sections connected with bolts.
5. Horizontal Ladder Beam Height: [**60 inches (1524 mm)**] [**84 inches (2130 mm)**] [**Height as indicated on Drawings**] <**Insert dimension**> above protective surfacing.
6. Platforms: [**Perforated metal**] [**Wood**] [**Manufacturer's standard**] <**Insert material**>.

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

7. Roofs: [**Perforated metal**] [**Wood**] [**Manufacturer's standard**] <**Insert material**>.

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

8. Equipment: Include the following play event components:

   a. Slide.
   b. Crawl tube[**with spy holes**].
   c. Horizontal ladder.
   d. Log roll.
   e. <**Insert feature.**>
   f. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

9. Accessories: <**Insert accessory.**>
10. Arrangement: [**As indicated**] [**Manufacturer's standard**].
11. Capacity: [**10**] [**20**] <**Insert number**> users.
12. Age Appropriateness: [**2 through 5 years**] [**5 through 12 years**] <**Insert age group**>.
13. <**Insert type of equipment.**>

2.7 CAST-IN-PLACE CONCRETE

A. Concrete Materials and Properties: Comply with requirements in [**Division 03 Section "Cast-In-Place Concrete"**] [**ACI 301**].

B. Concrete Materials and Properties: Dry-packaged concrete mix complying with ASTM C 387.

2.8 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.9 ALUMINUM FINISHES

A. Baked-Enamel Finish: Prepare, treat, and coat metal to comply with paint manufacturer's written instructions.

B. PVC Finish: Manufacturer's standard, UV-stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish.

C. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

2.10 IRON AND STEEL FINISHES

A. Galvanizing: Hot-dip galvanize to comply with ASTM A 123/A 123M.

1. Hot-dip galvanize steel and iron hardware indicated to be galvanized to comply with ASTM A 153/A 153M.
2. Galvanized Steel Sheet: Commercial steel sheet, hot-dip galvanized, complying with ASTM A 653/A 653M for not less than G60 (Z180) coating designation; mill phosphatized.

B. Powder-Coat Finish: Prepare, treat, and coat ferrous metal to comply with resin manufacturer's written instructions.

C. Baked-Enamel Finish: Apply manufacturer's standard two-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat.

D. PVC Finish: Manufacturer's standard, UV-stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with minimum dry film thickness of [**80 mils (2 mm)**] [**100 mils (2.5 mm)**] <**Insert thickness**>.

E. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

2.11 STAINLESS-STEEL FINISHES

A. Bright, Cold-Rolled, Unpolished Finish: No. 2B finish on exposed faces.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. General: Comply with manufacturer's written installation instructions, unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.

1. Maximum Equipment Height: Coordinate installed heights of equipment and components with finished elevations of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.

B. Post and Footing Excavation: Excavate holes for posts and footings as indicated in firm, undisturbed or compacted subgrade soil.

C. Post Set on Subgrade: Level bearing surfaces with drainage fill to required elevation.

D. Post Set with Concrete Footing: Comply with ACI 301 for measuring, batching, mixing, transporting, forming, and placing concrete.

1. Set equipment posts [**in**] [**on**] concrete footing.
2. Embedded Items: Use setting drawings and manufacturer's written instructions to ensure correct installation of anchorages for equipment.

END OF SECTION 116800

SECTION 311000 – SITE CLEARING

PART 1 - GENERAL

1.1 WORK INCLUDES

A. All labor, materials, and equipment required to complete site clearing and disposal shown on the drawings.

1.2 RELATED DOCUMENTS

A. Specified elsewhere within these specifications:
   1. 312000 – Earth Moving

1.3 QUALITY ASSURANCE

A. Unless specifically stated in the specifications, the following documents shall provide general requirements and covenants applicable to construction within the Village of Downers Grove, IL. In the event of conflict between the contents of this document and the existing Village codes, the decision of the Village codes will prevail.
   1. Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)

1.4 JOB CONDITIONS

A. Restore damaged improvements to their specified condition acceptable to the Construction Manager. When required by the drawings, control monuments shall be re-established.

B. Provide protection of property adjoining the project and limit work to the construction area delineated by the silt fence as shown on the drawings.

C. Materials removed from the site shall be disposed of off the site in a legal manner.

1.5 JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS (JULIE)

A. The Trade Contractor is responsible for calling JULIE at 1-800-892-0123 at least 48 hours prior to beginning any excavation. The Trade Contractor shall notify the Construction Manager with the JULIE dig number at least 48 hours prior to beginning any excavation. The Trade Contractor is responsible for maintaining utility marking throughout construction.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. Equipment shall be at the option of the Trade Contractor within the limits of the "Construction Requirements" of Section 201 of the Standard Specifications.

2.2 DISPOSAL

A. Disposal of surplus materials shall be in accordance with Article 202.03 of the Standard Specifications.

B. Disposal of unstable and unsuitable material shall be off the site in a legal manner at a location provided by the Trade Contractor. Unsuitable and unstable material includes but is not limited to rocks, trees, stumps, and soil not suitable for compaction.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine the area where and conditions under which clearing and site preparation are to be performed. Notify Construction Manager in writing of conditions detrimental to proper and timely completion of the work.

3.2 SITE CLEARING

A. Clearing and site preparation shall be performed in accordance with Section 201 of the Standard Specifications.
   1. Remove vegetation, improvements or obstructions interfering with installation of new construction.
   2. Fill depressions caused by clearing operations with satisfactory soil material, unless further excavation or earthwork is indicated. Place fill material in horizontal layers not exceeding six inches loose depth, and thoroughly compact to specified density.
   3. Existing roadways and drainage structures that are to remain shall be protected and maintained in their present condition. All items damaged shall be repaired at the Trade Contractor's expense.

END OF SECTION 311000

SECTION 312000 – EARTH MOVING

PART 1 - GENERAL

1.1 WORK INCLUDES

A. All labor, materials, and equipment required to complete site grading as shown on the Grading Plans for this project, including building excavation, and site preparation.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, including, but not limited to:
   1. 311000 – Site Clearing
   2. 312333 – Trenching and backfill

B. Work under this Section shall be done in accordance with the applicable provisions of the “Code of Ordinances”, latest edition, as adopted by the Village of Downers Grove, Illinois.

1.3 QUALITY ASSURANCE

A. Unless specifically stated in the specifications, the following documents shall provide general requirements and covenants applicable to construction within the Village of Downers Grove. In the event of conflict between the existing Village codes and the contents of this document, the former will supercede the latter and/or the decision of the Village will prevail.
   1. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)
   2. I.S.P.E., Consulting Engineers Council of Illinois, et. al., Standard Specifications for Water and Sewer Main Construction in Illinois, latest revision.

B. Testing Laboratory Services:
   1. The Owner shall secure and pay for the services of a Geotechnical Engineer to classify existing soil materials, to recommend and to classify proposed borrow materials when necessary, to verify compliance of materials with specified requirements, and to perform required field and laboratory testing.

C. The Contractor shall not rely on the Owner to provide Source Site Certifications for removal of any materials.

D. Form LPC-663, Uncontaminated Soil Certification by Licensed Professional, can be downloaded from http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/forms/clean-construction-demo-debris/index.html

E. The contractor shall provide the Owner and the engineer with copies of all executed forms, documents, and correspondences regarding Clean Construction Demolition Debris (CCDD).

1.4 SUMMARY

A. Section Includes:
1. Site clearing.
2. Earth moving and excavation.
3. Utilities trenching.
4. Grading.
5. Backfilling.
6. Filling.
7. Compacting.

1.5 REFERENCES

1. ASTM D 1556-00 -- Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.

2. ASTM D 1557-02 -- Test Methods for Laboratory Compaction Characteristics of Soils Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).

3. ASTM D 2167-94(2004) -- Standard Test Method for Density and Unit Weight of Soil In-Place by the Rubber Balloon Method.

4. ASTM D 2487-00-- Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

5. ASTM D 2922-01 -- Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

6. ASTM D 3017-01 -- Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

7. ASTM D 698-00a --Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).

8. ASTM D448-03a -- Standard Classification for Sizes of Aggregate for Road and Bridge Construction

1.6 SUBMITTALS

A. Test Reports: Testing laboratory will submit the following reports directly to the Construction Manager and shall copy the Trade Contractor:
1. Analysis of soil materials, whether procured on or off site, and including fill, backfill, and borrow materials.
2. Verification of each footing subgrade.
3. In-place density test reports.

4. Moisture-density relationship test reports.
5. Compressive strength or bearing test reports.

1.7 SITE CONDITIONS

A. Traffic: Do not interfere with or close public ways without permission of governing authorities. Do not interfere with adjacent private facilities.

B. Site Utilities:
1. Advise utility companies of excavation activities before starting excavations. Locate and identify underground utilities passing through work area before starting work.
2. If underground utilities are encountered in locations other than indicated, immediately advise Utility Owners before proceeding. Amend project record documents to show actual locations.
3. Protect existing utilities indicated to remain.
4. Do not interrupt existing utilities without advance notice to and written approval from the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Where sufficient approved materials are not available from required excavations on site, obtain and pay for materials from approved sources off site without charge to the Owner.

B. For each soil material proposed for use as fill or backfill, whether obtained on or off site, testing laboratory shall classify soil material, develop Proctor curve, and perform any other tests required.

C. Obtain approval of the Geotechnical Engineer and Construction Manager for each soil material.

D. Topsoil: Refer to landscape drawings.

E. Satisfactory Topsoil: Fertile agricultural soil, typical for locality, capable of sustaining vigorous plant growth; free of subsoil, rocks larger than 2 inches in diameter, clay, toxic matter, plants, weeds, and roots.

F. Backfill and Fill Materials: Materials classified as satisfactory.

G. Satisfactory Soil Material (ASTM D 2487): Free of stones larger than 2 inches in any dimension, trash, debris, organic material, other objectionable material and classified as follows:

1. GW (well-graded gravel).
2. GC (clayey gravel).
3. SW (well-graded sand).
4. SC (clayey sand).
5. CL (lean clay).

H. Unsatisfactory Soil Material (ASTM D 2487):
1. GP (poorly graded gravel).
2. GM (silty gravel).
3. SP (poorly graded sand).
4. SM (silty sand).
5. ML (silt).
6. OL (organic clay).
7. OL (organic silt).
8. CH (fat clay).
9. MH (elastic silt).
10. OH (organic clay).
11. OH (organic silt).
12. PT (peat).

I. Aggregate Fill outside Tree Drip Line: Crushed Concrete; 100 percent passing a 1-1/2-inch sieve; not more than 2 percent passing a No. 4 sieve

J. Aggregate Fill within Tree Drip Line: Clean, crushed rock or gravel or uncrushed gravel; 100 percent passing a 1-1/2-inch sieve; not more than 2 percent passing a No. 4 sieve.

K. Subbase Material: Well-graded, clean, sound, durable particles of crushed concrete, crushed blast furnace slag, and screenings. Obtain the Construction Manager's approval of source, quality, and gradation.

2.2 PLASTIC WARNING TAPE

A. Acid- and alkali-resistant polyethylene film specifically manufactured for marking and identifying underground utilities.
1. Minimum width, 2 inches; minimum thickness, 4 mils.
2. Metallic core encased in protective jacket against corrosion and detectable by metal detector when tape is buried 1 foot deep.
3. Continuous printed inscription shall describe utility. Tape color:
a. Electric: Red.
b. Gas: Yellow.
c. Water system: Blue.
d. Sewer: Green.
e. Phone: Orange

PART 3 - EXECUTION

3.1 PREPARATION

A. Protection: Provide markers indicating limits of work and clear identification of items and areas requiring protection utilizing construction fencing as necessary.

B. Provide barricades, warning signs, and warning lights around open excavations as necessary to prevent injury to persons.

C. The Trade Contractor is solely responsible for determining the potential for injury to persons and damage to property.
   1. Where such potential is present, take appropriate protective measures.
   2. Protect persons from injury and protect existing and new improvements from damage caused directly or indirectly by construction operations.

D. Do not allow excavation subgrades and soil at foundations to be subjected to freezing temperatures or frost. Provide protective insulating materials as necessary. Should prepared, compacted subgrades be damaged by freezing, remove soil materials to the depth required by the Geotechnical Engineer and replace and recompact in conformance with specified requirements.

3.2 EROSION CONTROL

A. To the maximum extent practicable, prevent erosion or displacement of soils and discharge of soil-bearing water runoff to adjacent properties and waterways.

B. Provide erosion control during the entire project in accordance with applicable regulations, including Section 313500 - Slope Protection, and as shown on the drawings.

3.3 PROTECTION OF TREES

The Contractor shall contract with an Arborist to obtain recommendations for tree preservation alternatives and procedures, as required.

A. Provide temporary guards to protect trees and vegetation to remain. Place guards so as to prevent all forms of vehicular traffic or parking within drip lines.
   1. Do not allow excess foot traffic within drip lines.
   2. Do not stockpile construction materials, soil, or aggregates within drip lines.
   3. Water trees and other vegetation to remain within limits of the area of construction activities as required to maintain their health during course of construction operations.

B. Excavate within drip line of trees only where indicated.

C. Where underground utilities must pass within drip line, hand-dig tunnels to avoid cutting main lateral roots and taproots. Minor roots may be cut only when necessary.

D. Where excavation must occur within drip line, hand excavate to avoid damage to roots. Minimize over-excavation by providing sheeting in lieu of sloped embankments.
   1. Re-establish exposed roots in areas to be backfilled where practicable. Extend excavation along major roots to facilitate gradual bending of roots into backfill areas. Cut roots only where roots cannot be re-established.
   2. Where root system is damaged or cut back, prune branches to maintain root/branch balance.

E. Immediately protect exposed roots until re-establishment in backfill. Cover with approved mulching material and keep continuously moist.

F. Maintain existing grade within drip line of trees, unless otherwise indicated.

G. Lowering Grades:
1. Follow recommendations of Arborist to achieve required grades and optimize chances of survival for trees. Use hand excavation within drip line.
2. Prune branches as recommended by Arborist and provide further maintenance as recommended by Arborist until substantial completion.

H. Raising Grades:
1. Minor fills less than 6 inches: Place specified topsoil without compacting, and finish grade by hand.
2. Moderate fills, 6 to 12 inches:
a. Place aggregate fill on existing grade. On all sides of tree trunk, hand place aggregate fill within an 18 inch radius of trunk up to a level approximately 2 inches above finish grade.
b. Elsewhere within drip line, hand place aggregate fill up to 6 inches below finish grade, then hand place 6 inches of topsoil to finish grade. Slightly over fill to allow for future settlement.
c. Finish grade by hand without compacting fill.

I. Where cutting is required, cut branches and roots using properly sharpened tools and without breaking members.

3.4 CLEARING AND GRUBBING

A. Remove any trash or debris from site, including below-ground portions. Completely remove existing trees indicated to be removed, including stumps and roots.

B. Remove all vegetable matter from within the limits indicated on the drawings.
1. Fill holes thus created with approved, compacted soil.
2. Remove and dispose of grass and other vegetation before stripping topsoil. Strip topsoil down to subsoil without contaminating topsoil with subsoil.
3. Stockpile in a manner to freely drain surface water and to prevent contamination by subsoil or other materials; cover if necessary to prevent wind-blown dust.
4. Do not strip topsoil within driplines of trees indicated to remain.

3.5 DEWATERING

A. Do not allow surface or ground water to flow into or accumulate in excavations.

B. Do not allow water to flow in an uncontrolled fashion across the project site or to erode slopes or to undermine foundations. Do not allow water to be diverted onto adjacent properties. Arrange excavation operations so as to provide continual and effective drainage of excavations.

C. Provide and maintain temporary diversion ditches, dikes, and grading as necessary; do not use trench excavations for this purpose. When required by surface or subsurface water conditions, provide sumps, wellpoints, french drains, pumps, and other control measures necessary to keep excavations free of water. When existence of ground water near or above final excavation level is indicated or suspected, provide control measures prior to excavating to water level and maintain water level continuously below working level.

3.6 EXCAVATION

A. General: Excavation includes the removal of any materials necessary to achieve the required subgrade elevations and includes reuse or disposal of such materials.

B. Unnecessary Excavation: The expense of excavation of materials outside of limits indicated or ordered in writing by the Geotechnical Engineer and the correction thereof to the satisfaction of the Engineer shall be borne by the Trade Contractor.
1. Unnecessary excavation under footings: Either deepen footings to bear on actual subgrade elevation without changing top elevations or place concrete fill up to required elevation, as required by the Geotechnical Engineer.
2. Unnecessary excavation other than under footings: Either place compacted fill or otherwise correct conditions, as required by the Engineer.

C. Approval of Subgrade: Notify the Engineer when required elevations have been reached.
1. When required by the Geotechnical Engineer due to the unforeseen presence of unsatisfactory materials or other factors, perform additional excavation and replace with approved compacted fill material in accordance with the Geotechnical Engineer's instructions.
2. Payment for unforeseen additional work will be made in accordance with established unit prices or, if none, in accordance with provisions for changes in the work. No payment will be made for correction of subgrades improperly protected against damage from freeze-thaw or accumulation of water, or for correction of otherwise defective subgrades.

D. Excavation Stabilization: Wherever it is possible to slope faces of excavations to achieve stabilization, do so in compliance with requirements of governing authorities. Otherwise, provide shoring and bracing.
1. Design, provide, maintain, and remove shoring and bracing in compliance with requirements of governing authorities. Remove temporary shoring and bracing when stabilization is no longer required.

E. Excavation for Structures:
1. Excavate beyond footings and foundations so as to allow proper construction and inspection of concrete formwork and other materials. Excavate to the required elevation.

a. Tolerance: Plus or minus 0.10 foot.

F. Excavation for Footings and Foundations:
1. Delay excavation to final grade and final compaction until just before concrete will be placed.
2. Remove any loose or sloughed material and adjust excavations to conform to required lines, grades, and tolerances and to form a suitable bearing surface. Do not disturb bottom of completed excavations.

G. Excavation for Pavements: Excavate, shape, and compact to the lines, subgrade elevations, and cross sections indicated.

H. Excavation for Trenches:
1. Unless otherwise required, begin trenching, utility installation, and backfilling at lowest portion of utility line, working toward highest portion of line.
2. Dig trenches to uniform widths indicated.
a. Where indicated trench widths are exceeded, redesign, stronger pipe, or special installation procedures may be required by the Engineer at no additional cost to the Owner.
3. Unless otherwise indicated, trench walls for piping shall be vertical from trench bottom to one foot above top of pipe or to top elevation of initial backfill, whichever is higher.
4. Excavate trenches to the depths necessary to achieve required flow lines and invert elevations and to prevent freezing of liquids or frost heave during winter.
5. Dig trenches so as to provide not less than the following minimum cover:
a. Water lines: 5.5 feet.
b. Gas distribution: 3 feet.
c. Electric lines: 2 feet.
d. Sanitary sewer: In accordance with plans.
Storm sewer: In accordance with plans.
6. Trench bottoms: Unless otherwise indicated, excavate and shape trench bottoms as follows:
a. Support pipes and conduit up to 5 inches diameter on smooth, accurately graded subgrade. Shape surface by hand to provide continuous support on undisturbed soil for bell and body of pipe and joints, fittings, and body of conduit.
b. Support pipes and conduit 6 or more inches diameter on 4 inches of approved subbase material. Place and carefully compact additional layer of subbase material of depth required to support pipe haunches. Shape surface to provide continuous support for bell and body of pipe and joints, fittings, and body of conduit.

I. Clean Construction Demolition Debris:

1. The contractor shall be responsible for the lawful removal of all excavated material, soil, clean construction and demolition debris in accordance with Public Act 96-1416. All costs for but not limited to removal, hauling, disposing fees, charges, documenting, testing or certifications related to Public Act 96-1416 shall be incidental to the cost of the contract.

2. If the Contractor chooses to dispose of surplus soil material at a registered uncontaminated soil fill location, Form LPC-663 must be executed and submitted to the operator of that location prior to material being delivered to the location. The contractor shall take care not to stockpile or mix together clean material with contaminated material or material from another site before hauling material for off-site disposal.
3. The contractor shall provide the Owner and the engineer with copies of all executed forms, documents, and correspondences regarding Clean Construction Demolition Debris (CCDD).

3.7 STORAGE

A. Stockpile materials to be used for filling and backfilling, including excavated materials classified as satisfactory soil materials, at locations indicated or as directed. Stockpile in a manner to freely drain surface water; cover if necessary to prevent wind-blown dust.
   1. Store soil materials without intermixing. Protect from contamination with other soils or debris.
   2. Do not stockpile materials inside of drip line of trees to remain.
   3. Install silt fence around the perimeter at each stockpile.
   4. If a stockpile is to remain in place for over 30 days, it shall be seeded with temporary seeding.

3.8 PLASTIC WARNING TAPE

A. Install tape directly above utilities, 4 to 6 inches below finished grade.

3.9 BACKFILLING

A. Preparation: Backfill excavations as soon as practicable. Complete the following operations before backfilling:
   1. Inspection and acceptance of below-grade construction.
   2. Inspection, testing, and approval of underground utilities.
   3. Surveying of underground utilities for record documents.
   4. Concrete formwork removal.
   5. Removal of loose material, muck, debris, and trash from excavation.
   6. Installation of temporary or permanent horizontal bracing for structures to receive backfill.

B. Remove temporary shoring and bracing as the work progresses and when its use is no longer necessary.

C. Testing of Piping:
   1. Before performing testing of utilities (specified elsewhere):
      a. Backfill and compact utility trenches to a level as required by local ordinances or IDOT.

D. Backfilling near footings, general: Where trenches occur underneath of footings, or where trench bottoms occur below and within 18 inches horizontally of footing bottoms, backfill trench with concrete to top of footing and up to 4 feet perpendicularly from each face of footing.

E. Installation: Place approved soil materials in layers to required elevations. Do not place material on muddy or frozen surfaces or on surfaces containing frost.

F. Installation: Place satisfactory soil materials in layers to required subgrade elevations.

3.10 FILLING

A. Preparation: Verify that area has been stripped of vegetation including roots below grade. Remove and dispose of any unsatisfactory soils.
   1. When filling slopes steeper than 1 in 4 rise, plow, step, or break up surfaces to promote bond of new to existing material.
   2. Should density of subgrade to receive fill be less than specified for fill, break up and pulverize subgrade to a depth of at least 6 inches, moisture condition if necessary, and recompact to required density at optimum moisture content.

B. Installation: Place fill materials to required elevations in maximum lifts of 6 inches. Provide fill materials beneath each area as indicated.
   1. Planted areas: Satisfactory soil materials.
   2. Paved areas: Combination of subbase material and satisfactory soil materials as indicated on drawings.
   3. Piping/conduit: Subbase material and/or imported trench backfill where indicated and required; otherwise use satisfactory soil materials.

3.11 PAVEMENT SUBBASE COURSE PLACEMENT

A. Place lifts such that compaction true to grade and level is accomplished with a minimum of surface disturbance and segregation or degradation of materials. Maintain grade control and cross section by means of line and grade stakes. Maintain moisture content within prescribed limits during placing and compacting.

B. When the total thickness of subbase is less than the maximum lift thickness permitted, place material in a single lift. When the total thickness of subbase is greater than the maximum lift thickness permitted, place materials in two or more lifts of uniform thickness with no lift less than 3 inches in thickness.

C. Cut any overbuild to grade. Should top elevation be lower than allowable tolerances, scarify to a depth of 3 inches, add new material, and recompact to bring to grade within required tolerances.

3.12 COMPACTION

A. Place materials used in backfilling and filling in layers not exceeding loose depths as follows:
   1. Heavy equipment compaction: 8 inches.
   2. Hand-operated tampers: 4 inches.

B. Place material simultaneously on opposite sides of walls, small structures, utility lines, etc. to avoid displacement or overstressing.

C. In-Place Density Requirements: Compact soil to not less than the values given below, expressed as a percentage of maximum density at optimum moisture content.
   1. Unpaved areas: Top 6 inches of subgrade and subsequent lifts - 90 percent.
   2. Building and Paved areas: Top 12 inches of subgrade and subsequent lifts - 95 percent.
   3. Utility trenches: Compact backfill and fill materials to in-place density specified for applicable area of trench, as required by ISPE Standard Specifications.

D. Moisture Control: During compaction, control moisture of subgrades and subsequent lifts to within tolerances from optimum moisture content as recommended by testing laboratory. Wet surface with water when additional moisture is required. Aerate soil to aid in drying or replace soil when excessive moisture is present.

3.13 GRADING

A. General: Smooth grade to a uniform surface that complies with compaction requirements and required lines, grades, and cross sections and is free from irregular surface changes.

B. Provide smooth transition between existing adjacent grades and changed grades. Cut out soft spots, fill low spots, and cut down high spots to conform to required surfaces tolerances.

C. Slope grades to direct water away from structures and to prevent ponding. Finish subgrade to required elevations within the following tolerance:
   1. Unpaved areas: Plus or minus 0.10 foot.
   2. Paved areas: Plus or minus 0.1 foot.
   3. Exterior steps and ramps: Plus or minus 0.05 foot.

3.14 PROOFROLLING

A. After completion of required compaction and immediately prior to proceeding with subsequent construction, proofroll in the presence of the Construction Manager, Engineer, and testing laboratory representative.

B. The test vehicle for proofrolling shall consist of a tandem axle truck loaded to a minimum gross weight of 40,000 lb, and verification of vehicle weight must be presented at time of proofroll.

C. Proof roll as required by the Municipality Standard Specifications and IDOT Standard Specifications.

D. Proofroll Areas to Receive: Pavement, and any areas required by the engineer

3.15 FIELD QUALITY CONTROL

A. Testing Laboratory Services: Provide timely notice to testing laboratory. Do not proceed with construction until testing of each subgrade and lift of fill or backfill has been performed and required inspections and approvals have been obtained.

B. Maximum Density at Optimum Moisture Content: Determine in accordance with ASTM D 1557, Procedure C.
1. For each subgrade, fill, and backfill material, perform one moisture-density relationship test for each 1500 cubic yards, or fraction thereof, of material used.

C. In-Place Density Tests: ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2922 (nuclear method), as applicable.
1. When ASTM D 2922 is used, check and adjust calibration curves using ASTM D 1556 only. ASTM D 3017 shall be performed to measure water content of soil at the time in-place density tests are conducted. Calibrate density and moisture gages at the start of testing on each type of material encountered and at intervals as directed.

D. Footing Subgrades: Test footing subgrades to determine bearing capacity of each soil stratum encountered. At the option of the Geotechnical Engineer and Construction Manager, visual inspection of subsequent similar subgrades and comparison with tested strata may be allowed.

E. Areas under Slabs and Pavements: Conduct not less than one in-place density test of subgrade and one in-place density test of each compacted fill or backfill layer for every 3000 square feet of overlying paved area, but in no case less than 3 tests per lift.

F. Foundation Wall Backfill: Conduct not less than 2 in-place density tests per lift.

G. Trench Backfill: Conduct not less than 2 in-place density tests per lift per trench.

H. If testing service reports indicate that subgrade or fills are below specified density, scarify or remove and replace to the required depth, recompact, and retest at no cost to the Owner.

3.16 MAINTENANCE

A. Completed Areas: Protect from damage by pedestrian or vehicular traffic, freezing, erosion, and contamination with foreign materials. Repair and re-establish grades to specified tolerances in settled, eroded, or rutted areas.

B. Damaged Areas: Where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction and whether due to subsequent construction operations or weather conditions, restore materials to required conditions: Scarify or remove and replace to the required depth, return to

optimum moisture content, and compact materials to the required density before continuing construction.

C. Correction: Should settling occur within the project correction period, remove finished surfacing, add additional approved material, compact material, and reconstruct surfacing. Construct surfacing to match and blend in with adjacent surfacing as nearly as practicable.

3.17 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Stockpile any excess satisfactory topsoil in locations on site as directed by the Construction Manager. Properly dispose of unsatisfactory topsoil off site as directed by the Construction Manager.

B. Remove any material not required for use on the project (including unsatisfactory soil, excess satisfactory soil, trash, and debris) and legally dispose of it off the Owner's property.

B. On-site burning is not permitted.

END OF SECTION 312000

SECTION 312333 – TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.1 WORK INCLUDES

A. All labor, materials, and equipment required for satisfactory trenching, backfilling, compaction and removal of excess excavation for sanitary sewers, storm sewers and water main. Electrical and communications conduits covered elsewhere.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
1. 311000 – Site Clearing
2. 312000 – Earth Moving
3. 334000 – Storm Drainage Utilities

B. Work under this Section shall be done in accordance with the applicable provisions of the “Code of Ordinances”, latest edition, as adopted by the **Village of Downers Grove**, Illinois.

1.3 QUALITY ASSURANCE

A. Unless specifically stated in the specifications, the following documents shall provide general requirements and covenants applicable to construction within the **Village of Downers Grove**. In the event of conflict between the existing **Village** codes and the contents of this document, the former will supercede the latter and/or the decision of the **Village** will prevail.

1. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)
2. I.S.P.E., Consulting Engineers Council of Illinois, et. al., Standard Specifications for Water and Sewer Main Construction in Illinois, latest revision.

1.4 PROJECT RECORD DOCUMENTS

A. Record the limits of Trench Backfill.

END OF SECTION 312333

SECTION 321216 – HOT MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 WORK INCLUDES

A. All labor, materials, and equipment required to satisfactorily complete paving as shown on the plans.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, including but not limited to:
   1. 312000 – Earth Moving
   2. 312333 – Trenching and Backfilll

A. Work under this Section shall be done in accordance with the applicable provisions of the "Code of Ordinances", latest edition, as adopted by the Village of Downers Grove, Illinois.

1.3 QUALITY ASSURANCE

A. Unless specifically stated in the specifications, the following documents shall provide general requirements and covenants applicable to construction within the Village of Downers Grove, Illinois. In the event of conflict between the contents of this document and the existing Village codes, the former will supercede the latter and/or the decision of the Village will prevail.
   1. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)
   2. I.S.P.E., Consulting Engineers Council of Illinois, et. al., Standard Specifications for Water and Sewer Main Construction in Illinois, latest revision.

1.4 SUMMARY

A. This section includes provisions for IDOT Hot Mix Asphalt. Mix shall be IDOT approved design:

   PAVEMENT:
   1. Base Course - Aggregate Base (CA-6), Compacted, Min 8" unless otherwise stated in plans.
   2. Binder Course – HMA Binder Course IL-19.0 N50., Min 2.5" unless otherwise stated in plans
   3. Surface Course - HMA Surface Course IL-9.5 Mix D N50. Min. 1.5" unless otherwise stated in plans.

B. Proofrolling of prepared base is included in Section 312000 – EARTH MOVING

1.5 SUBMITTALS

A. Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections:
   1. Material Certificates: Provide copies of materials certificates signed by material producer and Trade Contractor, certifying that each material item complies with, or exceeds, specified requirements.

END OF SECTION 321216

SECTION 321373 - CONCRETE PAVING JOINT SEALANTS

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. Cold-applied joint sealants.
2. Joint-sealant backer materials.
3. Primers.

B. Related Requirements:

1. Division 07 Section "Joint Sealants" for sealing nontraffic and traffic joints in locations not specified in this Section.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Paving-Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. Product Testing: Test joint sealants using a qualified testing agency.

1.7 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F].
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

2.2 COLD-APPLIED JOINT SEALANTS<***TWO SEALANT TYPES ARE INCLUDED: SILICONES, WHICH LAST LONGER THAN URETHANES BUT COST MORE; AND URETHANES THAT ARE LESS EXPENSIVE. TWO FORMULATIONS ARE INCLUDED: SINGLE- AND MULTI-COMPONENT. SINGLE COMPONENT SEALANTS ARE MOISTURE-CURED AND REQUIRE 40 DEG F AND RELATIVE HUMIDITY OF 40 TO 70 PERCENT. MULTI-COMPONENT SEALANTS ARE CHEMICALLY CURED AND REQUIRE 40 DEG F BUT DO NOT HAVE A HUMIDITY REQUIREMENT***>

A. Single-Component, Nonsag, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type NS.<***FOR SLOPING JOINTS. PRIMING MAY NOT BE REQUIRED***>

1. Products: Subject to compliance with requirements, provide one of the following:

a. Crafco Inc; RoadSaver Silicone.
b. Dow Corning Corporation; Dow Corning® 888 Silicone Joint Sealant.
c. Pecora Corporation; 301 NS.

B. Single-Component, Self-Leveling, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type SL.<***FOR LEVEL JOINTS. PRIMING MAY NOT BE REQUIRED***>

1. Products: Subject to compliance with requirements, provide one of the following:

a. Crafco Inc; RoadSaver Silicone SL.
b. Dow Corning Corporation; Dow Corning® 890-SL Silicone Joint Sealant.
c. Pecora Corporation; 300 SL.
d. Sika Corporation; Joint Sealants; Sikasil 728 SL.

C. Single Component, Nonsag, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use T.<***FOR SLOPING JOINTS. PRIMING IS NOT REQUIRED***>

1. Products: Subject to compliance with requirements, provide one of the following:

a. BASF Building Systems; Sonolastic NP 1.
b. Sika Corporation, Construction Products Division; Sikaflex – 1a.
c. Tremco Incorporated; Vulkem 116.

D. Multicomponent, Nonsag, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type M, Grade NS, Class 25, for Use T.<***FOR SLOPING JOINTS. PRIMING IS NOT REQUIRED***>

1. Products: Subject to compliance with requirements, provide the following:

a. BASF Building Systems; Sonolastic NP 2.
b. W. R. Meadows, Inc; Pourthane NS.
c. Pecora Corporation; Dynatred.
d. Sika Corporation; Joint Sealants; Sikaflex 2c NS EZ Mix.

E. Single Component, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type S, Grade P, Class 25, for Use T.<***FOR LEVEL JOINTS. PRIMING IS TYPICALLY NOT REQUIRED***>

1. Products: Subject to compliance with requirements, provide one of the following:

a. BASF Building Systems; Sonolastic SL 1.
b. Bostik, Inc.; Chem-Calk 950.
c. Pecora Corporation; Urexpan NR-201.
d. Sika Corporation. Construction Products Division; Sikaflex - 1CSL.
e. Tremco Incorporated; Vulkem 45.
f. W. R. Meadows, Inc; Pourthane SL.

F. Multicomponent, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type M, Grade P, Class 25, for Use T.<***FOR LEVEL JOINTS. PRIMING IS REQUIRED***>

1. Products: Subject to compliance with requirements, provide the following:

a. BASF Corporation; Construction Systems; Sonolastic SL2.
b. Bostik, Inc; Chem-Calk 555-SL.

c. Pecora Corporation; Urexpan NR-200.
d. Sika Corporation; Joint Sealants; Sikaflex 2c SL.
e. Tremco Incorporated; THC 900/901.

2.3 JOINT-SEALANT BACKER MATERIALS

A. Joint-Sealant Backer Materials: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by joint-sealant manufacturer, based on field experience and laboratory testing.

B. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D 5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.

C. Backer Strips for Cold-Applied Joint Sealants: ASTM D 5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.4 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Before installing joint sealants, clean out joints immediately to comply with joint-sealant manufacturer's written instructions.

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

A. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.

B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions.

C. Install joint-sealant backings to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of joint-sealant backings.
2. Do not stretch, twist, puncture, or tear joint-sealant backings.
3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install joint sealants immediately following backing installation, using proven techniques that comply with the following:

1. Place joint sealants so they fully contact joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:

1. Remove excess joint sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

3.4 CLEANING AND PROTECTION

A. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.

B. Protect joint sealants, during and after curing period, from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

3.5 PAVING-JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Joints within concrete paving[<**PJS-#**>]<***REVISE TO DRAWING DESIGNATION OR DELETE IF NO DESIGNATION***>.

1. Joint Location:

a. Expansion and isolation joints in concrete paving.
b. Contraction joints in concrete paving.
c. Other joints as indicated.

2. Joint Sealant:<***DELETE TYPES NOT REQUIRED***> [**Single-component, nonsag, silicone joint sealant**][**Single-component, self-leveling, silicone joint sealant**][**Multicomponent, nonsag, urethane, elastomeric joint sealant**][**Single component, pourable, urethane, elastomeric joint sealant**][**Multicomponent, pourable, urethane, elastomeric joint sealant**].
3. Joint-Sealant Color: Manufacturer's standard.

END OF SECTION 321373

SECTION 321383 – PCC SIDEWALKS

PART 1 - GENERAL

1.1 WORK INCLUDES

A. All labor, materials, and equipment required to complete in place the P.C. Concrete Sidewalk as indicated on the drawings, as hereinafter specified or as required to properly complete the WORK.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, including, but not limited to:
1. 311000 – Site Clearing
2. 312000 – Earth Moving
3. 321216 – HMA Paving
4. 321313 – Concrete Paving

A. Work under this Section shall be done in accordance with the applicable provisions of the “Code of Ordinances”, latest edition, as adopted by the **Village of Downers Grove**, Illinois.

1.3 QUALITY ASSURANCE

A. Unless specifically stated in the specifications, the following documents shall provide general requirements and covenants applicable to construction within the **Village of Downers Grove**, Illinois. In the event of conflict between the contents of this document and the existing **Village** codes, the former will supercede the latter and/or the decision of the **Village** will prevail.
1. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)
2. I.S.P.E., Consulting Engineers Council of Illinois, et. al., Standard Specifications for Water and Sewer Main Construction in Illinois, latest revision.

1.4 SPECIAL REQUIREMENTS:

Submittal Requirements – Utilize a lighter concrete with a reflectivity of at least 0.3 to mitigate urban heat island effects for all surface type applications. This requirement will not be necessary for concrete roadway patching applications which will be overlaid with a bituminous binder and surface.

1.5 MATERIALS:

A. Cement
For all Concrete Pavements – Blended Hydraulic Cement: ASTM C 595, Type 1 (SM) using a mixture of Portland Cement and not more than 25% by weight of ground granulated blast furnace slag to achieve a white looking concrete with a reflectivity of at least 0.3.

PART 2 - EXECUTION

2.1 CONSTRUCTION

A. Handicap ramps shall be constructed where shown on the plans and as per the latest Illinois Accessibility Code Standards.

END OF SECTION 321383

SECTION 321400 – UNIT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Unit pavers set in aggregate setting beds.

B. Related Requirements:

1. Division 32 Section “Earth Moving” for excavation and compacted subgrade.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.4 ACTION SUBMITTALS

A. Product Data: For the following:

1. Pavers.

B. Sieve Analyses: For aggregate setting-bed, according to ASTM C 136.

C. Samples for Initial Selection: For the following:

1. Each type of unit paver indicated.
2. Joint material involving color selection.

D. Samples for Verification Purposes:

1. Full size units of each type of unit paver indicated. Assemble not less than five Samples of each type of unit on suitable backing and grout joints.
2. Joint material.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of unit pavers, joint materials, and setting materials from one source with resources to provide materials and products of consistent quality in appearance and physical properties.

B. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE AND HANDLING

A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

B. Store aggregates where grading and other required characteristics can be maintained, and contamination avoided.

1.7 FIELD CONDITIONS

A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

PART 2 - PRODUCTS

2.1 UNIT PAVERS

A. Concrete Pavers: Solid interlocking paving units complying with ASTM C 936 and resistant to freezing and thawing when tested according to ASTM C 67, made from normal-weight aggregates.

1. Available Products: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following, or approved equal:

a. Unilock, Aurora, IL 1.800.864.5625.
1) Paver Type I
a) Series 3000
b) Color: Onyx Black
c) Thickness: 2 ¾”

d) Face Size and Shape: 4” x 8”
e) Laying pattern – Outer soldier course per Decorative Paver Layout, see Civil Details

2) Paver Type II
a) Belpasso
b) Color: Castano
c) Thickness: 2 ¾”
d) Face Size and Shape: 8” x 8”
e) Laying pattern – Inner soldier course per Decorative Paver Layout, see Civil Details

3) Paver Type III
a) Umbriano
b) Color: Summer Wheat
c) Thickness: 2 ¾”
d) Face Size and Shape: 56% - 16” x 16”, 29% - 8” x 16”, 14% - 8” x 8”
e) Laying pattern – Unilock laying pattern “Umbriano A”, see Civil Details

2.2 AGGREGATE SETTING BED MATERIALS

A. Graded Aggregate for Base: Sound, crushed stone or gravel complying with CA-6, base-course material.

B. Limestone Screening Setting Bed: Fine, crushed limestone.

C. Sand for Joints: Unilock Unicare Sweeping Jointing Sand or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas indicated to receive paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Proof-roll prepared subgrade according to requirements in Division 32 Section “Earth Moving” to identify soft pockets and areas of excess yielding. Proceed with unit paver

installation only after deficient subgrades have been corrected and are ready to receive base course for unit pavers.

3.3 INSTALLATION, GENERAL

A. Do not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be visible or cause staining in finished work.

B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.

C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.

D. Joint Pattern: As indicated.

E. Tolerances: Do not exceed 1/16-inch unit-to-unit offset from flush (lippage) nor 1/8-inch in 24 inches and 1/4-inch in 10-feet from level, or indicated slope, for finished surface of paving.

F. Provide edge restraints as indicated. Install edge restraints before placing unit pavers.

1. Install edge restraints to comply with manufacturer's written instructions. Install stakes at intervals required to hold edge restraints in place during and after of unit paver installation.

G. Provide steps made of pavers as indicated. Install paver steps before installing adjacent pavers.

3.4 AGGREGATE SETTING-BED APPLICATIONS

A. Compact soil subgrade uniformly to at least 95 percent of ASTM D 1557 laboratory density.

C. Place aggregate base, compact to 100 percent of ASTM D 1557 maximum laboratory density, and screed to depth indicated.

D. Place setting bed and screed to a thickness of 1 inch to 1-1/2 inch, taking care that moisture content remains constant and the density is loose and constant until pavers are set and compacted.

E. Treat setting bed with herbicide to inhibit growth of grass and weeds.

F. Set pavers with a minimum joint width of 1/16-inch and a maximum of 1/8-inch, being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines. Fill gaps between units that exceed 3/8 inch with pieces cut to fit from full-size unit pavers.

G. Vibrate pavers into leveling course with a low amplitude plate vibrator capable of a 3,500- to 5,000-pound compaction force at 80 to 90 Hz. Perform at least 3 passes across paving with vibrator. Vibrate under the following conditions:

1. After edge pavers are installed and there is a completed surface or before surface is exposed to rain.
2. Before ending each day's work, fully compact installed concrete pavers within 36 inches of the laying face. Cover pavers that have not been compacted, and leveling course on which pavers have not been placed, with nonstaining plastic sheets to protect it from rain.

H. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove surplus sand. Leave a slight surplus of sand on the surface for joint filling.

I. Do not allow traffic on installed pavers until sand has been vibrated into joints.

J. Repeat joint filling process 30 days later.

3.5 REPAIR, POINTING, CLEANING, AND PROTECTION

A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment to eliminate evidence of replacement.

END OF SECTION 321400

SECTION 321613 – CONCRETE CURBS AND GUTTERS

PART 1 - GENERAL

1.1 WORK INCLUDES

A. All labor, material, and equipment required to complete the construction of concrete curb and combination concrete curb and gutter as indicated on the drawings, as hereinafter specified; or as required to properly complete the WORK.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, including but not limited to:
1. 311000 – Site Clearing
2. 312000 – Earth Moving

B. Work under this Section shall be done in accordance with the applicable provisions of the “Code of Ordinances”, latest edition, as adopted by the Village of Downers Grove, Illinois.

1.3 QUALITY ASSURANCE

A. Unless specifically stated in the specifications, the following documents shall provide general requirements and covenants applicable to construction within the Municipality. In the event of conflict between the existing Municipal codes and the contents of this document , the former will supercede the latter and/or the decision of the Municipality will prevail.

1. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)

2. I.S.P.E., Consulting Engineers Council of Illinois, et. al., Standard Specifications for Water and Sewer Main Construction in Illinois, latest revision.

END OF SECTION 321613

SECTION 323119.23 – ORNAMENTAL FENCES

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. Ornamental aluminum fences.

B. Related Requirements:

1. Division 03 Section "Cast-in-Place Concrete" for concrete post concrete fill.
2. Division 31 Section "Earthwork" for site excavation, fill, and backfill where ornamental metal fences are located.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For ornamental metal fences. Include plans, elevations, sections, details, and attachments to other work.

C. Samples: For each fence material and for each color specified.

1. Provide Samples 12 inches in length for linear materials.

1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for ornamental tubular picket fences, including finish, indicating compliance with referenced standard.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

B. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Include 10-foot length of fence complying with requirements.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

C. Preinstallation Conference: Conduct conference at Project site.

PART 2 - PRODUCTS

2.1 ALUMINUM

A. Aluminum, General: Provide alloys and tempers with not less than the strength and durability properties of alloy and temper designated in paragraphs below for each aluminum form required.

B. Extrusions: ASTM B 221, Alloy 6063-T5.

C. Tubing: ASTM B 429, Alloy 6063-T6.

D. Plate and Sheet: ASTM B 209, Alloy 6061-T6.

E. Die and Hand Forgings: ASTM B 247, Alloy 6061-T6.

F. Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

2.2 MISCELLANEOUS MATERIALS

A. Concrete: Normal-weight, air-entrained, ready-mix concrete complying with requirements in Division 03 Section "Cast-in-Place Concrete" with a minimum 28-day compressive strength of 3000 psi, 3-inch slump, and 1-inch maximum aggregate size.

B. Nonshrink Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107 and specifically recommended by manufacturer for exterior applications.

2.3 GROUNDING MATERIALS

A. Grounding Conductors: Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.

1. Material above Finished Grade: Copper.
2. Material on or below Finished Grade: Copper.
3. Bonding Jumpers: Braided copper tape, 1 inch wide, woven of No. 30 AWG bare copper wire, terminated with copper ferrules.

B. Grounding Connectors and Grounding Rods: Comply with UL 467.

1. Grounding Rods: Copper-clad steel.

a. Size: 5/8 by 96 inches.

2.4 ORNAMENTAL ALUMINUM FENCES

A. Ornamental Aluminum Fences: Fences made from aluminum extrusions.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Ameristar Fence Products; Echelon II 3-Rail Majestic Style , or comparable product by one of the following:

a. Alumi-Guard, Inc.
b. Carfaro, Inc.
c. Delair Group, L.L.C.
d. Elegant Aluminum Products, Inc.
e. Elite Fence Products, Inc.
f. Iron Eagle Industries, Inc.
g. Japra Group International.
h. Jerith Manufacturing Company, Inc.
i. Master Halco.
j. Merchants Metals; a division of MMI Products, Inc.
k. Royal Aluminum and Steel, Inc.
l. Specrail; a division of Porcelen LLC.

B. Posts: Square extruded tubes.

1. Line Posts: 2-1/2 by 2-1/2 inches with 0.080-inch wall thickness.
2. End and Corner Posts: 2-1/2 by 2-1/2 inches with 0.080-inch wall thickness.

C. Post Caps: Aluminum castings that cover entire top of posts.

D. Rails: Extruded-aluminum channels, 1-3/4 by 1-3/4 inches with 0.120-inch-thick sidewalls and 0.100-inch-thick top.

E. Pickets: Extruded-aluminum tubes, 1 inch square, with 0.062-inch wall thickness.

1. Terminate tops of pickets at top rail for flush top appearance.
2. Picket Spacing: 4 inches clear, maximum.

F. Fasteners: Manufacturer's standard tamperproof, corrosion-resistant, color-coated fasteners matching fence components with resilient polymer washers.

G. Fabrication: Assemble fences into sections by fastening pickets to rails.

1. Fabricate sections with clips welded to rails for fastening to posts in field.
2. Drill clips for fasteners before finishing.

H. Finish: Baked enamel or powder coating.

2.5 ALUMINUM FINISHES

A. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 2 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, construction layout, and other conditions affecting performance of the Work.

B. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

C. 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 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

1. Construction layout and field engineering are specified in Division 01 Section "Execution."

3.3 ORNAMENTAL FENCE INSTALLATION

A. Install fences according to manufacturer's written instructions.

B. Post Excavation: Drill or hand-excavate holes for posts in firm, undisturbed soil. Excavate holes to a diameter of not less than 4 times post size and a depth of not less than 24 inches plus 3 inches for each foot or fraction of a foot that fence height exceeds 4 feet.

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 and sleeves and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

    a. Exposed Concrete: Extend 2 inches above grade. Finish and slope top surface to drain water away from post.

3. Posts Set in Concrete: Extend post to within 6 inches of specified excavation depth, but not closer than 3 inches to bottom of concrete.
4. Posts Set into Voids in Concrete: Form or core drill holes not less than 3/4 inch larger than outside diagonal dimension of post.

    a. Extend posts at least 5 inches into concrete.
    b. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink grout, mixed and placed to comply with grout manufacturer's written instructions. Finish and slope top surface of grout to drain water away from post.

5. Space posts uniformly at 8 feet o.c.

3.4 GROUNDING AND BONDING

A. Fence Grounding: Install at maximum intervals of 1500 feet except as follows:

    1. Fences within 100 Feet of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet.

B. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of crossing and at a maximum distance of 150 feet on each side of crossing.

C. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at the grounding location.

D. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.

E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

    1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
    2. Make connections with clean, bare metal at points of contact.
    3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
    4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
    5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

F. Bonding to Lightning-Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning-protection down conductor or lightning-protection grounding conductor, complying with NFPA 780.

3.5 FIELD QUALITY CONTROL

A. Grounding-Resistance Testing: Owner will engage a qualified testing agency to perform tests and inspections.

1. Grounding-Resistance Tests: Subject completed grounding system to a megger test at each grounding location. Measure grounding resistance not less than two full days after last trace of precipitation, without soil having been moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural grounding resistance. Perform tests by two-point method according to IEEE 81.
2. Excessive Grounding Resistance: If resistance to grounding exceeds specified value, notify Architect promptly. Include recommendations for reducing grounding resistance and a proposal to accomplish recommended work.
3. Report: Prepare test reports certified by a testing agency of grounding resistance at each test location. Include observations of weather and other phenomena that may affect test results.

END OF SECTION 323119.23

SECTION 323300 - SITE FURNISHINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes site furnishings.
   1. Bench
   2. Basketball Hoop

B. Related Requirements:

   1. Division 03 Section "Cast-in-Place Concrete" for concrete for piers and bases.

1.3 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for each furnishing.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Instructions: Submit manufacturer's printed instructions for maintenance of installed work, including methods and frequency recommended for maintaining optimum condition under anticipated use conditions. Include precautions against materials and method that may be detrimental to finishes and performance.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm (material producer) with not less than 3 years of production experience, whose published literature clearly indicates general compliance of products with requirements of this Section.

B. Installer Qualifications: Engage an experienced installer who has completed installations of site improvements similar in material, design, and extent to those indicated for the Project and that has resulted in construction with a record of successful in-service performance.

C. Proprietary names and model numbers used to designate products are not intended to imply that products named are required or to exclude equal products of other manufacturers.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in original factory wrappings and containers, clearly labeled with identification of manufacturer, brand name, and lot number. Store materials in original undamaged packages and containers, inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity; laid flat, blocked off ground to prevent sagging and warping.

B. Comply with instructions and recommendations of manufacturer for special delivery, storage, and handling requirements.

1.7 SEQUENCING AND SCHEDULING

A. Sequence accessory installation with other work to minimize possibility of damage and soiling during remainder of construction period.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Design, fabricate, and install site improvements to withstand a wind pressure of 100 mph on the total area in all directions.

2.2 SITE FURNISHINGS

A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated

1. Bench: 6’ Bench, straight section 6-foot length. Manufactured by Dumor, contact Kevin Driscoll with NuToys Leisure Products, 708-579-9055
   a. Model Number: 88-60PL
   b. Frame Color: Black
   c. Slats: Recycled Plastic Slats
   d. Slats Color: Cedar
   e. Mount: S-2 Surface Mount Supports

2. Basketball Hoop: Model BA873U-BK Basketball Goal System, Manufactured by Bison and represented by NuToys Leisure Products, contact is Kevin Driscoll, 708-579-9055, kevind@nutoys4fun.com
   a. 9’ Basketball Hoop
      1) Post #BA873U-BK: Heavy Duty 6” Square Post with 5’ offset

a) Powder Coat Color: Black
2) Backboard: Polycarbonate 42”x72”
3) Goal #33U: Double-Rim Heavy-Duty Recreational Flex Basketball Goal
4) Net #BA501H: Nylon Net
5) Post Pad #BA870PP: Outdoor Safe Stuff Pole Padding – 6” Poles
a) Color: Black

b. 10’ Basketball Hoop

1) Post #BA873U-BK: Heavy Duty 6” Square Post with 5’ offset
a) Powder Coat Color: Black
2) Backboard: Polycarbonate 42”x72”
3) Goal #BA32: Heavy-Duty Single Rim and Recreational Flex Basketball Goal
4) Net #BA501H: Nylon Net
5) Post Pad #BA870PP: Outdoor Safe Stuff Pole Padding – 6” Poles
a) Color: Black

2.3 MATERIALS

A. Concrete: Provide concrete for post bases, piers and footings to comply with requirements of Division 03 Section "Cast-in-Place Concrete," for exterior use.

B. Fasteners: Provide fasteners fabricated from metals that are noncorrosive to materials of site improvements and mounting surfaces.

C. Anchors and Inserts: Use nonferrous metal or hot-dipped galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install furnishings according to manufacturers' written instructions, using fasteners that are appropriate to substrate and recommended by manufacturer of unit. Install furnishings plumb and level, firmly anchored in locations and at heights indicated.

B. Post Bases, Piers, and Footings:

1. Drill or use a post-hole digger to hand-excavate holes for posts in firm, undisturbed or compacted soil, to the minimum diameter recommended by the manufacturer, but not less than 4 times the largest post cross-section. Excavate hole depths approximately 3 inches lower than the required post bottoms, with bottom of posts set not less than 36 inches below finished grade surface.

2. Protect portion of post above ground from concrete spattering. Place concrete around post and vibrate or tamp for consolidation. Check each post for vertical and top alignment and hold in position until concrete has achieved its final set. Unless otherwise indicated, extend concrete base 2 inches above grade and trowel to a crown to shed water.

3.2 ADJUSTING AND CLEANING

A. Adjust furnishings for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.

B. Clean and polish exposed surfaces, using materials and methods recommended by the manufacturer.

3.3 PROTECTION

A. Protect furnishings against damage during remainder of construction period, complying with manufacturer's instructions.

END OF SECTION 323300

SECTION 329200 - LAWNS AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Sodding.
   2. Fertilizer.
   3. Maintenance.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, including, but not limited to:
   1. Section 311000 Site Clearing
   2. Section 312000 Earth Moving

1.3 REFERENCES

A. Illinois Department of Transportation “Standard Specifications for Road and Bridge Construction” (Standard Specifications) most recent edition.

1.4 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

E. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

F. Weeds: Vegetative species other than specified species to be established in given area.

1.5 SUBMITTALS

A. Product Data: For seed mix, fertilizer, mulch and other accessories as indicated.

B. Certification of grass seed and of each seed mixture for turfgrass sod.

C. Operation and Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer

1.6 INSPECTION

A. Become familiar with project requirements, site and existing conditions impact on scope of work.

B. Inspect existing conditions to verify all previous grading conforms with the drawings and specifications prior to commencing any work under this Section. Report any discrepancies to Landscape Architect.

C. Failure to report discrepancies to Landscape Architect implies acceptance of existing conditions. Any necessary corrections will be at no cost to the Owner.

1.7 QUALITY ASSURANCE

A. Installer's Field Supervision: Provide at least one person thoroughly trained and experienced in the skills required completely familiar with the design and application of the work described in this Section, and who shall be present at all times during progress of the work under this Section and shall direct all work required and performed under this Section.

B. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.

C. Seed: Conform to current U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act of August 9, 1939 and all subsequent revisions thereto, and the requirements of the state seed laws.

D. Perform Work in accordance with Standard Specifications.

E. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory.

1. Report suitability of topsoil for lawn growth. State-recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory topsoil.

1.8 QUALIFICATIONS

A. Seed Supplier: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing work of this section with minimum five years documented experience.

1.9 WORKMANSHIP

A. During seeding, keep all areas neat and clean and with precautions taken to avoid damage to existing plants, turf and structures.

B. Remove all debris and waste material resulting from seeding operations from the project and the area cleaned up upon completion of seeding operation.

C. Repair or restore to original condition any damaged areas caused by the landscape contractor.

1.10 PROTECTION AND REPAIR

A. Use all means necessary to protect site seeding areas before, during, and after installation and to protect the installed work and materials of all other trades.

B. In the event of damage to the site seeding areas including mulch or erosion control blanket, immediately make all repairs or replacements necessary to the approval of the Owner and at all no additional cost to the Owner.

C. Install necessary barricades, temporary fences or signs to protect newly seeded or hydro-seeded/mulched areas until acceptance of the Work.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Sod: Harvest, deliver, store, and handle sod according to requirements in TPI's "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in its "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.

C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

D. Protect seed, and other required materials against weather conditions and injuries during transit and job storage.

E. Deliver all items to the site in their original containers with all labels intact and legible at time of Owners representative inspection.

F. Use all means necessary to protect all items before, during and after installation and to protect the installed work and materials of all trades

G. Replacements:
   1. Repair all damaged or rejected materials immediately
   2. Make all repairs and replacements necessary to the approval of the Owners Representative at no additional cost to the owner.

1.12 GUARANTEE

A. Guarantee this portion of the through the maintenance period and until final acceptance (See Part 3, Acceptance of this section.)

B. Within the guarantee period, replace all lawn areas which have failed to flourish and produce a stand of turf acceptable to the Owner due to defective materials or workmanship, or unfavorable weather conditions.

C. The decision of the Owner for replacement Work shall be conclusive and binding upon the Contractor.

D. The Contractor is responsible for all damage to persons or property caused by defective materials or workmanship or by the re-working of areas not acceptable.

1.13 MAINTENANCE SERVICE

A. Initial Lawn Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3.
   1. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established. Minimally, maintenance activities shall occur from initial planting through 30-days after substantial completion.
   2. When initial maintenance period has not elapsed before end of planting season, or if lawn is not fully established, continue maintenance during next planting season.

PART 2 - PRODUCTS

2.1 TURFGRASS AND BUFFALO GRASS SOD

A. Turfgrass Sod: Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with TPI's "Specifications for Turfgrass Sod Materials" in its "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.
   1. HGT sod by Sod Solutions, available from:
      a. Payne Sod Farm / Manteno, IL 60950 / 815.468.6400 / www.paynesodfarm.com
      b. Central Sod Farm / Plainfield, IL 60585 / 800.310.0402 / www.centralsodil.com
   2. Turfgrass Species: Kentucky Bluegrass.

B. Buffalo Grass Sod: shall be nursery grown sod consisting of a blend of 100% improved Buffalo Grass species and be a minimum of two years growth. Sod shall show evidence of dense well-rooted growth and be practically free from weeds and non-Buffalo Grass species. Grass height of sod shall be approximately 2 inches. Sod shall be raked free of undesirable debris. Sod shall be as specified as follows or an approved equal:
   1. Buffalo Grass Sod shall be Legacy variety or approved equal.
   2. It shall contain no bent grass, quack grass or other noxious weed growth and shall be free from fungus and other pests and/or diseases.
   3. It shall be of firm, tough texture, having a compact growth of grass and good root development.
   4. The sod root zone shall be of good, fertile, natural field soil and free from stones and debris and the sod shall contain sufficient moisture to maintain its vitality during transportation.

C. Harvesting of Sod:
   1. Mowing: Before being cut and lifted, the sod shall have been mowed at least twice with a lawn mower, with the final mowing not more than seven days before the sod is cut.
   2. Cutting: The sod shall be carefully cut into uniform strips one inch thick, and 36-inches long. All strips shall be of the same width, which may be from 12-inches to 18-inches. Strips less than 12-inches or more than 18-inches in width will not be accepted. Each strip shall be rolled as compactly as is possible without breaking the turf.
   3. Sod cut for more than 24 hours shall not be used without the approval of the engineer.

D. Inspection of Sod
   1. All sod shall be fresh and green when placed. Any sod that is dried out, burned, inferior in quality, or in any way failing to meet the requirements of these

specifications will be rejected and the Contractor shall immediately remove such rejected material from the premise and supply suitable material in its place.

2.2 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 4 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
   a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient.
2. Topsoil Source: Amend existing in-place surface soil to produce topsoil. Verify suitability of surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
   a. Surface soil may be supplemented with imported or manufactured topsoil from off-site sources.

2.3 FERTILIZER

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, phosphorous, and potassium. Provide both fertilizers at the specified rates, total target of 1 LB/1000 SF of nitrogen.
   1. Pro Ap Professional Turf Fertilizer 12-25-12 with 25% Duration starter fertilizer, available from National Seed, or equal:

a. N-Nitrogen 13%
   1) 9.75% Ammoniacal Nitrogen
   2) 3.25% Urea Nitrogen
b. P-Phosphoric Acid 25%
c. K-Potash 12%
d. Application rate: 4 LB/1000 SF = N 0.52 LB, P 1.0 LB and K 0.48 LB
   1) 50-pound bag will cover 12,500 SF

2. EndoRoots 3-3-4 with mycorrhizae, available from Nation Seed, or equal:
   a. N-Nitrogen 3%
   b. P-Phosphate 3%
   c. K-Soluble Potash 4%
   d. Application Rate: 16.6 LB/1000 SF = N 0.5 LB, P 0.5 LB, K 0.7 LB
      1) 50-pound bag will cover 3,000 SF

PART 3 - EXECUTION

3.1 LAWN PREPARATION

A. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 8 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
   1. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.
   2. Spread planting soil mix to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

      a. Reduce elevation of planting soil to allow for soil thickness of sod.

B. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
   1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
   2. Loosen surface soil to a depth of at least 8 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 6 inches of soil. Till soil to a homogeneous mixture of fine texture.

3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

D. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

E. Before planting, restore areas if eroded or otherwise disturbed after finish grading.

F. If, as a result of rain, the prepared seed bed becomes crusted or eroded, or if eroded places, ruts, or depressions exist for any reason, the Contractor shall rework the soil until it is smooth and reseed such areas which are reworked. After the area has been properly shaped, fertilized, and seeded, the blanket shall be laid out flat, evenly, and smoothly, without stretching the material. The erosion control blanket shall be placed so that the netting is on the top and the fibers are in contact with the soil.

G. For placement in ditches, the erosion control blanket shall be applied parallel to the centerline of the ditch so that there are no longitudinal seams within 2 feet of the bottom centerline of the ditch. The blanket shall be toed in on the upslope edge and shingled or overlapped with the flow.

H. On slopes, the blanket shall be applied either horizontally or vertically.

3.2 SODDING

A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across angle of slopes exceeding 1:3.
2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 2 inches below sod.

3.3 LAWN MAINTENANCE

A. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations, until work under this contract has been completed and accepted by the Owner.
   1. Watering:
      a. The seed bed shall be kept moist but not wet during the period of seed germination. Care must be taken that the seed bed does not dry out in spots.
      b. During germination, the water shall penetrate to a depth of 1-inch into the seed bed.
      c. After germination, as the grass roots go deeper into the soil, the quantity of water shall be increased so that the depth of penetration is a minimum of 3-inches.
      d. If water is not available on site, the Contractor shall supply water from his own source. The Contractor shall furnish the hose and proper equipment for watering purposes.

B. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.

C. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Mowing operations shall be the sole responsibility of the contractor during construction and until substantial completion.

3.4 PROTECTION AND REPAIR

A. The Contractor is responsible for the proper care of the seeded areas during the period when the vegetation is being established.
   1. Newly seeded areas shall be protected against traffic or other use, by enclosing the areas with snow fencing or other approved barrier.
   2. “NEWLY SEEDED” or other appropriate approved warning placards shall be posted until all work under the contract is completed and accepted.

B. Repair: If at any time before completion and acceptance of the entire work covered by this contract, any portion of the surface becomes gullied or otherwise damaged following seeding, dies due to lack of water, becomes rutted due to improper protection, has been winter-killed or otherwise damaged or destroyed, the affected portion shall be repaired to re-establish the condition and grade of the soil prior to seeding and shall then be reseeded as specified herein by the Contractor, at no additional cost to the Owner.

3.5 SATISFACTORY LAWNS

A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

B. Satisfactory Sodded Lawn: At end of maintenance period, a healthy, well-rooted, even-colored, viable lawn has been established, free of weeds, open joints, bare areas, and surface irregularities.

C. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

3.6 ACCEPTANCE

A. Completion of the Work: Upon completion of work, the Contractor shall notify the Landscape Architect and the Owner at least ten (10) days prior to requested date of substantial completion of all or portions of the work. Landscape Architect will review all the work and prepare a punch list of work not installed or not installed in conformance with the contract documents. All work in the punch list must be completed within five (5) working days from date of issue. Where work does not comply with requirements, replace rejected work and continue specified protection and maintenance until reviewed by Landscape Architect and found to be acceptable.

B. Certificate of Substantial Completion: Certificate of substantial completion will be issued for acceptable work at sole discretion of the Landscape Architect. If punch list items are issued with the certificate, they must be corrected within five (5) working days. If items are not corrected within five (5) working days than the certificate of substantial completion will be revoked and reissued when the punch list items are corrected.

C. Final Acceptance: After the 30-day maintenance period following the date of substantial completion the Landscape Architect and the Owner will review the work for final acceptance. Upon satisfactory completion of repairs and / or replacements the Landscape Architect will certify, in writing, final acceptance of the work, which will serve as evidence that Contractor's obligations have been met.

END OF SECTION 329200

SECTION 330513 – MANHOLES AND STRUCTURES

PART 1 - GENERAL

1.01 WORK INCLUDES

A. Storm sewer manholes, catch basins and inlets, sanitary sewer manholes and water main valve vaults, as specified on the plans.

1.02 RELATED WORK

A. Specified elsewhere:
1. 312333 – Trenching and Backfill
2. 334000 – Storm Drainage Utilities

1.03 QUALITY ASSURANCE

A. The following documents shall provide the standards for construction within the **Village of Downers Grove**, Illinois unless otherwise stated in these specifications. In the event of conflict between these specifications and the existing **Village** codes, the **Village** codes will prevail.
1. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)
2. I.S.P.E., Consulting Engineers Council of Illinois, et. al., Standard Specifications for Water and Sewer Main Construction in Illinois, latest revision.

B. Utility Compliance: Comply with local utility regulations and standards pertaining to storm sewerage systems.

C. Exceptions: All references in the Illinois Department of Transportation Standard Specifications and the Standard Specifications for Water and Sewer Main Construction in Illinois to method of measurements and compensation shall not apply.

1.04 SUBMITTALS

A. Manufacturer's Data.
1. Manufacturer's standard data sheet showing compliance with applicable codes and specifications. Data shall indicate joint material for joining of precast sections. Submit data on: sanitary sewer manholes, storm sewer manholes, storm sewer catch basins, water main valve vaults and other associated structures.

PART 2 - PRODUCTS
2.01 PRECAST SECTIONS

A. Sanitary and storm sewer manholes and precast storm sewer inlets shall be precast concrete in accordance with ASTM C478. Manholes less than four feet in depth shall have precast concrete flat slab top while manholes greater than four feet in depth shall have precast concrete cone sections unless shown otherwise on the drawings. All joints between precast sections shall be made with a rubber gasket. Manhole steps shall be cast iron or reinforced plastic. Manhole frame shall be sealed to top precast section with bitumastic material. Access hatches where shown on the drawings shall be cast in place. Pipe openings shall be equipped with a cast in place flexible pipe seal. Storm Sewer Manholes shall meet the requirements of IDOT Standard Specifications Section 602.

2.02 FRAMES AND COVERS

A. Storm Manhole Frames and Covers: Type as specified on the plans, from East Jordan Foundry Company, Neenah Foundry Company, or approved equal. Solid lids are to have the word “STORM” indented and cast into the lid.

B. Sanitary Manhole Frames and Lids: Lids are to be solid, self-sealing with a pick hole. Product is to be from East Jordan Foundry Company, Neenah Foundry Company, or approved equal. The word “SANITARY” is to be indented and cast into the lid.

C. Water Valve Vaults Frames and Lids: Lids are to be solid, self-sealing with a pick hole. Product is to be from East Jordan Foundry Company, Neenah Foundry Company, or approved equal. The word “WATER” is to be indented and cast into the lid.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine the area where and conditions under which manholes, catch basin or vaults are to be installed. Notify Engineer in writing of conditions detrimental to proper and timely completion of the work.

3.02 COORDINATION

A. Schedule work and notify all crafts in time so that provisions for their work can be made without delaying the project.

3.03 INSTALLATION

A. Excavation
   1. In order to permit the joints to be installed properly and also to permit proper compaction of the backfill material, the excavation shall be made to a diameter of at least two feet greater than the outside diameter of the structure.

B. Subbase Preparation
   1. Adequate foundation for all manhole structures shall be obtained by

removal and replacement of unsuitable material with well-graded granular material, by tightening with coarse ballast rock, or by such other means provided for foundation preparation of the connected sewers.

C. Manhole Base Installation (Precast Base)
1. A well-graded granular bedding course conforming to the requirements for aggregate for trench backfill (Section 312300), not less than four inches in thickness and extending to the limits of the excavation, shall be firmly tamped and made smooth and level to assure uniform contact and support of the precast element. A precast base section shall be carefully placed on the prepared bedding so as to be fully and uniformly supported in true alignment and making sure that all entering pipes can be inserted on proper grade.

D. Precast Manholes
1. Precast manholes may be constructed with a precast base section or a monolithic base structure as specified. Precast sections shall be placed and aligned to provide vertical sides and vertical alignment of the ladder rungs. The completed manhole shall be rigid, true to dimensions and shall be watertight.
2. All lift holes on precast elements shall be completely filled with an approved bitumastic material. All joints between precast elements on sanitary sewer manholes shall be made with an O-ring rubber or neoprene gasket.

E. Construction Details
1. Inlet and Outlet Pipes for Break-in Connections. Pipe or tile placed in the masonry for inlet or outlet connections shall extend through the wall and beyond the outside surface of the wall a sufficient distance to allow for connections, and the masonry shall be carefully constructed around them so as to prevent leakage along the outer surfaces. Special care shall be taken to see that the openings through which pipes enter the structure are completely sealed by use of nonshrink, non-metallic grout. A rubber gasket shall be installed on the barrel of the pipe prior to grouting it in place. No break-in connections will be allowed without written authorization from the Construction Manager.
2. Placing Castings: Casting adjustments of less than two inches shall be with mortar. The mortar shall be mixed in proportion of one part cement to three parts sand, by volume, based on dry materials. Castings shall be set accurately to the finished elevation so that no subsequent adjustment will be necessary. Castings shall be sealed to concrete sections with bitumastic material.
3. Manhole Inverts: Construct manhole flow channels of concrete of sewer pipe, which shall be of semicircular section conforming to the inside diameter changes in size or grade gradually, and changes in direction shall be by true curves. Provide channels for all connecting sewers to each manhole and benching shown on the drawings.

F. Backfill
1. The space between the sides of the excavation and the outer surfaces of the manhole shall be backfilled with aggregate for trench backfill when

the manhole is within a pavement area or when the nearest point of the excavation for the manhole falls within two feet of the pavement edge.

G. Cleaning
1. All newly constructed manholes shall be cleaned of all accumulation of silt, debris or foreign matter of any kind and shall be free of such accumulations at the time of final inspection.

END OF SECTION 330513

SECTION 334000 – STORM DRAINAGE UTILITIES

PART I - GENERAL

1.1 WORK INCLUDES

A. All labor, materials, and equipment required to satisfactorily install the storm sewer and appurtenances as shown on the plans.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, including, but not limited to:
   1. 312333 – Trenching and Backfill

B. Work under this Section shall be done in accordance with the applicable provisions of the “Code of Ordinances”, latest edition, as adopted by the Village of Downers Grove, Illinois.

1.3 QUALITY ASSURANCE

A. Unless specifically stated in the specifications, the following documents shall provide general requirements and covenants applicable to construction within the **Village of Downers Grove** In the event of conflict between the existing **Village** codes and the contents of this document, the former will supercede the latter and/or the decision of the **Village** will prevail.

   1. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, latest revision, along with the Supplemental Specifications and Recurring Special Provisions. (Method of Measurement and Basis of Payment shall not apply.)
   2. I.S.P.E., Consulting Engineers Council of Illinois, et. al., Standard Specifications for Water and Sewer Main Construction in Illinois, latest revision.

B. Environmental Compliance: Comply with applicable portions of local Environmental Agency regulations pertaining to storm sewerage systems.

C. Utility Compliance: Comply with local utility regulations and standards pertaining to storm sewerage systems.

1.4 SUMMARY

A. This Section includes storm sewerage system piping and appurtenances as indicated on the plans outside the building to the point of disposal.

1.5 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and

Division 1 Specification Sections:

1. Product data for drainage piping specialties.
2. Shop drawings for precast concrete storm drainage manholes, catch basins and inlets, including frames, covers, and grates.

1.6 PROJECT CONDITIONS

A. Site Information: Perform site survey, research public utility records, and verify existing utility locations. Verify that storm sewerage system piping may be installed in compliance with original design and referenced standards.

1.7 PROJECT RECORD DOCUMENTS

A. Record location of pipe runs, service connections, manholes, cleanouts, and invert elevations.

B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

END OF SECTION 334000