BID PROPOSAL
AND SPECIFICATIONS

FOR

2025 Dugdale Park Development

BID OPENING:
January 9, 2025 at 10:00 A.M.

Waukegan Park District
1324 Golf Road
Waukegan, Illinois 60087
(847) 360-4700

Prepared By:

UPLAND DESIGN Ltd.
24042 Lockport St., Suite 200, Plainfield, Illinois 60544
1229 N. North Branch Street, #220A, Chicago, Illinois 60642
PH: (815) 254-0091

Project #1262

WAUKEGAN PARK DISTRICT
1324 GOLF ROAD • WAUKEGAN, IL 60087-4831 • PHONE (847) BIG-PARK • PHONE (847) 244-7275 • WWW.WAUKEGANPARKS.ORG
ESTABLISHED 1916

December 18, 2024

Dear Prospective Contractor:

The Waukegan Park District is accepting bids for:

2025 Dugdale Park Development

Bids are due **on Thursday, January 9, 2025, at 10:00 a.m.** at the Park Maintenance Facility, 2211 Ernie Kruger Circle, Waukegan, IL 60087. The bids should be clearly labeled **"2025 Dugdale Park Development"**.

The project scope has been updated. Scope was adjusted to include the following alternates items of asphalt trail paving, asphalt parking paving, native seed restoration, and width of trail paving. See bid drawings for updates to the project scope.

We appreciate your bidding on the enclosed item and welcome the opportunity to do business with you.

If you have any questions, please contact me at **847-360-4755 or by email at tgirmscheid@waukeganparks.org**

Please note the Work of this Project is subject to the Illinois Prevailing Wage Act, 820 ILCS 130/0.01 et seq. A prevailing wage determination has been made by the Park District, which is the same as that determined by the Illinois Department of Labor for public works projects in Lake County. The successful contractor will also provide a certificate of insurance naming the Waukegan Park District as the certificate holder and as additional insured.

Sincerely,

Tim Girmscheid

Tim Girmscheid

Manager of Planning Services

TG/tg

Enclosures: 1

WAUKEGAN PARK DISTRICT

BID DOCUMENTS/PROJECT MANUAL: 2025 Dugdale Park Development

INCLUDING:

- Notice to Bidders
- Section 1: Instruction to Bidders
- Section 2: General Conditions
- Section 3. Supplementary Conditions
- Section 4: Bid Proposal Checklist and Form
  Project List
  Prevailing Wage Determination & Supersedes Notice
  Contractor Compliance and Certifications
  Substance Abuse Prevention Program Certification
  Employment of Illinois Workers of Public Works Act Certification
- Section 5: Location Map
- Section 6: Project Specifications/Documents
- Section 7: Sample Agreement

DATE OF ADVERTISEMENT:
DECEMBER 17, 2024

DUE DATE & BID OPENING:
JANUARY 9, 2025
10:00 AM

WAUKEGAN PARK DISTRICT
PARK MAINTENANCE FACILITY
2211 ERNIE KRUEGER CIRCLE
WAUKEGAN, IL 60087

TENTATIVE DATE OF BID
APPROVAL: JANUARY 21, 2025

DELIVER/MAIL BID TO: TIM GIRMSCHEID

MARKED "SEALED BID: 2025 DUGDALE PARK DEVELOPMENT", WAUKEGAN PARK DISTRICT PARK MAINTENANCE FACILITY
2211 ERNIE KRUEGER CIRCLE
WAUKEGAN, IL 60087

NOTICE TO BIDDERS

The Waukegan Park District, Lake County, Illinois ("Owner" or "Park District"), invites bids for the following project:

1. 2025 Dugdale Park Development

Bid Documents, including Instructions to Bidders, Drawings, Technical Specifications, General and any Special Conditions and Bid Forms including required Contractor certifications, and Prevailing Wage Determination and Supersedes Notice are available **electronically at https://www.waukeganparks.org/business/ or by contacting the Waukegan Park District Parks Department at 847-360-4755 or by email at tgirmscheid@waukeganparks.org, or through BHFX Imaging at https://bhfx.net/.**

Each bid shall be placed in a sealed envelope and clearly marked "SEALED BID: Waukegan Park District, 2025 Dugdale Park Development". The envelope shall be addressed and delivered to and received by the Park District at the following location: Waukegan Park District Park Maintenance Facility, 2211 Ernie Krueger Circle, Waukegan, Illinois 60087. No responsibility shall be attached to any person for premature opening of a bid not properly identified.

Bids shall be received until 10:00 a.m. on Thursday, January 9, 2025. Immediately thereafter, the bids will be publicly opened and read aloud. Bids received after that time or at a different location will be rejected.

The Waukegan Park District reserves the right to waive technicalities, to accept or reject any or all bids, to accept only portions of a bid and reject the remainder. Owner will award the Contract to the lowest most responsible and responsive Bidder, as determined by Owner. In considering the Bidder's responsibility, the Owner may evaluate, among other factors, the ability of the Bidder to provide experienced labor sufficient in numbers to timely and properly complete the services, the financial capability of the Bidder, and the performance of the Bidder on other projects.

Bids shall not include federal excise tax or state sales tax for materials to be incorporated in, or totally consumed in the prosecution of the Work. A tax exemption certificate will be furnished by the Park District at the request of the Bidder. The District's tax exemption number shall only be used by the successful Bidder for the Work of this Project.

No bid may be withdrawn, and all bids shall remain firm for sixty (60) days after the bid opening.

The Work of this Project is subject to the Illinois *Prevailing Wage Act*, 820 ILCS 130/0.01 *et seq*. A prevailing wage determination has been made by the Park District, which is the same as that determined by the Illinois Department of Labor for public works projects in Lake County. The Contract entered into for the Work will be drawn in compliance with said law and proposals should be prepared accordingly and provide for payment of all laborers, workmen, and mechanics needed to perform the Work at no less than the prevailing rate of wages (or the prevailing rate for legal holiday and overtime work) for each craft, type of worker, or mechanic.

The Contractor(s) selected will also be required to comply with all applicable federal, state and local laws, rules, regulations and executive orders, including but not limited to those pertaining to equal employment opportunity. State law mandates an open and competitive bidding process and requires that publicly procured contracts be awarded to the lowest responsible and responsive bidder with no demonstrated preference based on the bidder's location, race and gender. Therefore, the Park District is unable to give preference to competitively bid projects, but does encourage submission from local, women, and minority bidders.

All bids must be accompanied by cashier's check or bid bond payable to the order of the Waukegan Park District for ten percent (10%) of the amount of the bid as provided in the Instructions to Bidders. No proposals or bids will be

considered unless accompanied by such bond or check.

By Order of the Board of Park Commissioners of the
Waukegan Park District

Jay Lerner, Executive Director

Waukegan Park District (847) 360-4725
PUBLISHED DATE: December 17, 2024

SECTION 1: INSTRUCTIONS TO BIDDERS

1.01 GENERAL

The following instructions relate to the proper form and method for submitting the Bid Proposal, the accompanying surety, the provisions for the letting of Contracts, and to such other matters.

1.02 PREPARATION AND SUBMISSION OF BIDS

Each bid must be placed in an opaque-sealed envelope and clearly marked "**SEALED BID: 2025 Dugdale Park Development**," and addressed and delivered to and received by the Park District at the following location: **Waukegan Park District Park Maintenance Facility, 2211 Ernie Krueger Circle, Waukegan, Illinois 60087.** Bids shall be received until **10:00 a.m. on Thursday, January 9, 2025.** Immediately thereafter, the bids will be publicly opened and read aloud. Bids arriving after the specified time or at a different location will be rejected and will be returned unopened, including mailed bids regardless of when post marked.

Bid Documents, including Instructions to Bidders, Drawings, technical Specifications, General and any Special Conditions and Bid Forms including required Contractor certifications, and Prevailing Wage Determination and Supersedes Notice are available **electronically by contacting the Waukegan Park District Park Department at 847-360-4755 or by email at tgirmscheid@waukeganparks.org, or at BHFX Imaging at https://bhfx.net/**. Office hours are Monday-Friday, 7:00 a.m. - 3:30 p.m. Any questions related to the bidding requirements shall be directed to **ASHLEY JOHNSON, PROJECT MANAGER, AT 815-254-0091, x785 OR BY EMAIL AT ajohnson@uplanddesign.com.**

It is the sole responsibility of the Bidder to see that his/her bid is received in proper time. **No faxed or e-mail bid or modification of a bid will be considered**. The Park District is not responsible for the premature opening of bids not marked as required. Any bid opened prematurely due to the failure of the Bidder to mark the envelope in accordance with these Bid Documents may be considered non-responsive. Bidders' prices are to include the delivery of all materials; including plant, equipment, supplies, tools, scaffolding, transportation, insurances, bonds, warranties, and all other items and facilities, and the performance of all labor and services, necessary for the proper completion of the Work except as may be otherwise expressly provided in the Contract Documents. Bids shall not include federal excise tax or state sales tax for materials to be incorporated in, or totally consumed in the prosecution of, the Work. An exemption certificate will be furnished by the Park District upon request of the Bidder.

Bidder must acknowledge all Addenda received in the spaces provided on the Contractor Bid Form. By submitting a bid, Bidder indicates that all considerations issued by Addendum are incorporated in the bid.

As part of the attached Bid Proposal Form will be one or more certifications regarding the Bidder's compliance with applicable laws. **Failure of a Bidder to complete/submit a required certification shall be the basis for immediate rejection of that Bidder's bid**. The certification of the successful Bidder shall become a part of the Contract with the Park District.

The Bidder shall submit its prices on the attached Contractor Bid Form. The Bid Form shall be executed properly and all writing, including all signatures, shall be with black ink. Failure to use the Bid Proposal Form provided may result in rejection of the bid. Do not detach any portion of this document; invalidation of the bid could result.

The Bidder shall specify in figures, in the places provided, a price for each of the separate items called for in the Bid Form.

1.03 REQUIREMENTS OF BIDDERS

Bidders must be able to demonstrate that they: (1) have experience in performing, have successfully performed and are still actively engaged in performing work similar in kind and scope to the Work of the Project; (2) are able to show that they have adequate laborers and materials to successfully complete the Work as indicated in the Bid Documents and within the time required by the Bid Documents. The Contractor shall not have been debarred on determined ineligible for public contracts by any governmental agency.

The following information must be attached to the bid proposal. Failure to do so may result in disqualification of the Bidder.

1. On a separate sheet, **list all construction projects your organization has in progress**, giving the name of the project, project description, project address, owner and telephone number, architect and telephone number, contract amount, percent complete, and scheduled completion date.

2. **On a separate sheet, (see Project List page) list all construction projects your organization has completed in the past three years, which are comparable in scope, giving the name of the project, project description, client and telephone number, architect and telephone number.** Also provide the original contract amount, the final contract amount, the final completion date provided for in the contract and the actual date of final completion. Where the final contract amount is materially greater than the contract amount included in the contract at the time of execution by both parties, provide an explanation of the reason(s) for the increase. Where the actual dates of final completion differ substantially from those dates as included in the contact at time of execution by both parties, explain the reason for the delay in the substantial and/or final completion of the Work.

3. On a separate sheet, **list all administrative proceedings and litigation filed by or against Bidder in the past five (5) years**, including the name and case number, name/jurisdiction of the court or administrative agency, and a summary of each claim/case, including current status and if no longer pending, the disposition. The foregoing includes but is not limited to information regarding any proceedings and actions taken by any governmental agency to debar or disqualify the Bidder from bidding on public contracts, including the name of the agency initiating the proceeding/action, the nature of the proceeding/action, the claimed basis for the proceeding/action and the current status or disposition of the proceeding/action.

4. On a separate sheet, **provide information with respect to all instances in which Bidder has been rejected for not being a responsible bidder**, giving the name of the project, project description, project address, owner and telephone number, architect and telephone number, contract amount, and an explanation of the circumstances surrounding the rejection.

5. On a separate sheet, **provide a list of all contracts to which you were a party and with respect to which you were declared to be in breach of one or more provisions**, giving a the type of contract, the project location where applicable, the names and addresses of the parties to the contract, the name of the party declaring the breach, the nature of the claimed breach and current status or resolution of the claim. If a construction contract, also provide the name, address and telephone number of the Architect and, if applicable also the Construction Manager or Owner's representative.

Other required submittals include: Bid proposal; Contractor's Compliance and Certification Attachment/ Substance Abuse Prevention Program Certification. **Failure of a Bidder to complete/submit these documents may be the basis for immediate rejection of that Bidder's bid**.

1.04 EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS

The Bidder shall visit the site(s) of the proposed Work and become fully acquainted with conditions, as they exist, and shall undertake such additional inquiry and investigation as the Bidder shall deem necessary to fully understand the requirements, facilities, possible difficulties and restrictions attending the execution of the Work under the Contract. The Bidder shall thoroughly examine and be familiar with all of the Bid Documents including but not limited to the Drawings and the Specifications. Any conflicts or discrepancies found between or among the Bid Documents including but not limited to the Drawings and Specifications and the site conditions, or any errors, omissions, or ambiguities contained in the documents shall be immediately reported to the Park District and the Architect [and if a Construction Manager has been designated for the Project, also to the Construction Manager.] and written clarification requested prior to submission of a bid.

The failure or omission of any Bidder to obtain, receive or carefully examine any form, instrument, or information or to visit the Project site(s), and become knowledgeable with respect to conditions there existing, or to seek needed clarification shall in no way relieve any Bidder from any obligations with respect to his bid. By submitting a bid, the Bidder agrees, represents and warrants that he has undertaken such investigation as he deemed necessary, has carefully examined the site(s) and the Bid Documents, has obtained all needed clarifications and where the Bid Documents indicate in any part of the Work, that a given result be produced, that the Bid Documents are adequate and the required result can be produced as indicated. Once the award has been made, failure to have undertaken and completed the foregoing tasks shall not be a cause to alter the original Contract or to request additional compensation.

1.05 ACCEPTANCE OR REJECTION OF BIDS

The Park District may accept the bid of, and award the contract for the Work to, the lowest responsive and responsible Bidder as determined by and in the sole discretion of the Park District.

The Park District reserves the right to: (1) reject all bids; (2) reject only certain bids which are non-conforming or non-responsive to the bid requirements; (3) accept only a portion, part or specific items of Work of bids which are separately set forth on the Contractor Bid Form and reject others, as the Owner shall in its sole discretion determine to be in its best interest; and/or (4) award the Contract to the responsible Bidder submitting the lowest bid responsive to the bidding requirements as determined by the Park District .

In the event of a rejection of a portion, part, or certain items of Work of all bids, the bid of each Bidder shall automatically be deemed reduced by the amount of such rejected part or item at the unit price or other cost designated therefor by that Bidder on its submitted Contractor Bid Form. The successful Bidder so selected may not refuse to enter into a Contract with the Owner on the basis that the Owner awarded a Contract for less than all portions or items of the Work specified in the Bid Documents. The Park District's Board of Park Commissioners reserves the right to waive any technicalities or irregularities, and to disregard any informality in the bids and bidding, when in its opinion the best interest of the Park District will be served by such actions and in accordance with applicable law.

1.06 SURETY

All bids must be accompanied by a bid bond or bank cashier's check payable to the Park District for ten percent (10 %) of the amount of the bid and drawn on a responsive and responsible bank doing business in the United States. All bids not accompanied by a bid security, when required, will be rejected.

The bid security of all except the three (3) lowest responsive and responsible Bidders as determined by the Park District will be returned after the decision to accept or reject bids by the Park District's Board of Park Commissioners. The bid security of the successful Bidder will be returned after acceptance by the Park District of an acceptable Performance Bond,

Labor and Material/Payment Bond and a certificate of insurance naming the Waukegan Park District as the certificate holder and as additional insured, and the successful Bidder has executed and returned to the Park District the contract for the Work presented by the Park District..

Prior to commencing Work, the successful Bidder shall furnish a **Performance Bond,** and Labor and Material/Payment Bond in the amount of **110% of the Contract Sum**, using a form similar to the AIA-A312-2010 form, or its current equivalent, or one acceptable to Owner, cosigned by a surety company licensed to conduct business in the State of Illinois and with at least an "A" rating and a financial rating of at least "A VII" in the latest edition of the Best Insurance Guide. Said bond shall guarantee the faithful performance of the Work in accordance with the Contract, the payment of all indebtedness incurred for labor and materials, and guarantee correction of Work for a period of one (1) year after Final Completion. **The cost of each bond shall be included in the Contract Sum**. The Bidder and all Subcontractors shall name the Park District as an obligee on all bonds. Said bonds shall meet the requirements of the Illinois Public Construction Bond Act, 30 ILCS 550/0.01 *et seq.* and any further amendments thereto. Bidder shall include in its Performance Bond and Labor and Material Payment Bond such language as shall guarantee performance by the Contractor of all of its obligations indicated by the Contract Documents including but not limited to strict compliance with the Prevailing Wage Act.

The Performance Bond and Labor and Material Payment Bond will become a part of the Contract. The failure of the successful Bidder to enter into the Contract and supply the required bonds and evidence of insurance within ten (10) days after the Contract is presented for signature, or within such extended period as the Park District may grant, shall constitute a default, and the Park District may either award the Contract to the next responsible Bidder, or re-advertise for bids. In the event of such default, the Park District need not return the defaulting Bidder's bid surety and may charge against and recover from the defaulting Bidder the full difference between the amount of the Contract awarded to the defaulting Bidder and may charge against the defaulting Bidder for the full difference between the amount for the bid and the amount for which a Contract for the Work is subsequently executed with another contractor, irrespective of whether the amount thus due exceeds the amount of the defaulting Bidder's bid surety.

1.07 WITHDRAWAL OF BID

Bidders may withdraw or cancel their bids at any time prior to the advertised bid opening time by signing and submitting a request for said withdrawal. After the bid opening time, no bid shall be withdrawn or canceled for a period of sixty (60) calendar days.

1.08 ACCEPTANCE AND CONTRACT

The acceptance of a bid will be by a Notice of Award, signed by a duly authorized representative of the Park District; no other act by the Park District shall constitute the acceptance of a bid. The acceptance of a bid by the Park District shall bind the successful Bidder to execute and perform the Work of the Contract. The successful Bidder to whom the Contract is awarded by the Park District shall sign and deliver to the Park District for execution by the Park District all required copies of the Contract, along with all required insurance and surety documents within ten (10) days after presentation to him of the Contract for signature. In case the Bidder shall fail or neglect to do so, he will be considered as having abandoned the Contract, and as being in default to the Owner. The Owner may thereupon re-advertise or otherwise award said Contract and forfeits the Bid Security.

The Invitation to Bid, Instructions to Bidders, General Conditions, Supplementary and/or Special Conditions, if any, Drawings, Specifications, Contractor Bid Form, Addenda, if any, Contractors Compliance and Certifications Attachment, and Substance Abuse Certification and the Prevailing Wage Determination and Supersedes Notice comprise the Bid Documents. The Bid Documents, together with the Standard /Form of Agreement Between Owner and Contractor AIA Document A107 OR other Agreement, as modified by the Park District and included in these Bid Documents, and the Performance Bond and Labor Material Payment Bond and proof of insurance comprise the Contract Documents.

1.09 INTERPRETATION OF THE CONTRACT DOCUMENTS

The Park District shall in all cases determine the amount or quantity of the several kinds of Work which are to be paid for under this Contract and shall decide all questions which may arise relative to the execution of the Contract on the part of the Contractor, and all estimates and decisions shall be final and conclusive. The Park District shall have the right to make alterations in the lines, grades, plans, forms, or dimensions of the Work herein contemplated either before or after the commencement of the Work. If such alterations diminish the quantity of the Work to be done, they shall not constitute a claim for damage or for anticipated profits on the work dispensed with, or if they increase the amount of Work, such increase shall be paid according to the quantity actually done and at the price or prices stipulated for such Work in the Contract. The Park District reserves the right to approve an equal to or superior to product or equipment required under the specifications, or to reject as not being and equal to or superior to the product or equipment required under the Specifications. If a Bidder is in doubt as to the interpretation of any part of the Bid Documents, or finds errors, discrepancies or omissions from any part of the Bid Documents, he must submit a written request for interpretation thereof not later than five (5) days prior to opening of bids. Address all communications to the Park District and to the Architect [and if a Construction Manager has been designated for the Project, also to the Construction Manager. If an error or omission in the Bid Documents is discovered after the bid opening, the Park District reserves the right (i) to determine whether to require the submission of new bids or, (ii) if the error or omission is of such a nature that it was reasonably discoverable upon a careful review of the Bid Documents, to award the Contract to the lowest responsive and responsible Bidder as determined by the Park District and to require that Contractor to perform the Work in accordance with an issued correction by the Architect/Owner and for the amount bid by the Contractor. Such decisions are final and not subject to recourse. Errors and omissions made by the Bidder cannot be corrected by the Bidder after the bid opening.

1.10 ADDENDA

Any interpretation, correction to, or addition to the Bid Documents will be made by written Addendum and will be delivered by mail, email or fax to each Plan holder. The written Addenda constitute the only interpretations of the Bid Documents; the Park District accepts no responsibility for any other claimed interpretations or communications.

It is the responsibility of each Bidder to verify that he/she has received all Addenda prior to submitting a bid. It is also the responsibility of each Bidder to verify that all subcontractors and material suppliers whose prices are incorporated in the Bidder's bid are familiar with the Bid Documents in their entirety, including all Addenda issued up to the time of bid opening.

In the event a conflict or omission is discovered in the Bid Documents after the issuing of the last Addendum such that an interpretation cannot be issued by the Park District prior to bidding, the Bidder is directed to estimate on and provide the quantity and quality of material and labor consistent with the overall represented and indicated Work so as to provide all materials, equipment, labor, and services necessary for the completion of the Work in accordance with the Bid Documents.

1.11 SUBSTITUTIONS DURING BIDDING

Unless otherwise indicated, the use of brand names in the Specifications is used for the purpose of establishing a grade or quality. Bidders proposing to use an alternate that is equal to or superior to in every respect to that required by the Specifications must request approval in writing to the Park District at least seven (7) business days prior to the bid opening and mark the item as 'or approved equal'.

Additionally, Bidders requesting approval for use of an alternate must provide certification by the manufacturer that the substitute proposed is equal to or superior in every respect to that required by the Bid Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated. The Bidder, in submitting the request for substitution, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the request for substitution.

The Park District may request additional information or documentation necessary for evaluation of the request for substitution. The Park District will notify all Bidders of acceptance of the proposed substitute by means of an Addendum to the Bid Documents. Park District's approval of a substitute during bidding does not relieve the Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents, including but not limited to proper performance of all components of the Work and suitability for the uses specified.

Bids proposing alternates not previously approved by the Park District will be considered non-responsive and rejected. The Park District reserves the right to determine whether a substituted selection, in its sole judgment, is equal to or better quality and therefore an acceptable alternate. Such decisions are final and not subject to recourse.

1.12 COMMENCEMENT AND COMPLETION DATES

Commencement Date: The Commencement Date shall be the date established by Owner in a Notice to Proceed issued to the Contractor. It is currently anticipated that Contract award will occur on or about **January 21, 2025,** with a notice to proceed to be issued shortly thereafter, subject to the Contractor providing the required bonds, evidence of insurance and other required submissions.

Substantial Completion Date: September 20, 2025

Final Completion: September 30, 2025

By submission of its bid, the Bidder the Bidder acknowledges, agrees, represents, declares and warrants that it has visited and examined the site, and is fully familiar with and has satisfied itself as to the site and the local and other conditions under which the Work is to be performed, including without limitation, (i) surface conditions of the site and subsurface conditions readily observable or ascertainable upon the exercise of reasonable diligence and all structures and obstructions thereon and thereunder, both natural and manmade; (ii) the nature, location, and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (iii) the quality and quantity of all materials, supplies, tools, equipment, labor, and professional services necessary to complete the Work in the manner and within the cost and time frame indicated by the Contract Documents; and has correlated the Bidder's personal observations with the requirements of and matters indicated in or by the proposed Contract Documents.

SECTION 2: GENERAL CONDITIONS

The General Conditions are the General Conditions of the Contract for Construction, AIA Document AIA A107 (the "General Conditions") OR other Agreement, as modified by the Park District and included in these Bid Documents.

SECTION 3: SUPPLEMENTARY CONDITIONS

The "General Conditions of the Contract, AIA Document A107", (the "General Conditions") OR other Agreement, as modified by Owner, are hereby amended to include the following:

3.01 SCOPE OF WORK

A. The Work is to be done under this Contract, as shown on the Contract plans and described herein shall include the furnishings and complete installation of all materials and any other necessary Work required for proper completion, operation and use of the facilities. All the equipment, materials and labor that may be necessary to complete the Work and place it in satisfactory operation, implied or intended in the written Specifications and Drawings for the **2025 Dugdale Park Development**, shall be furnished and/or installed without extra cost to the Owner.

3.02 CONTRACT DOCUMENTS

A. The Invitation to Bid, Instructions to Bidders, General Conditions, Supplementary and/or Special Conditions, if any, Drawings, Specifications, Contractor Bid Form, Addenda, if any, Contractors Compliance and Certifications Attachment, and Substance Abuse Certification comprise the Bid Documents. The Bid Documents, together with the Standard /Form of Agreement Between Owner and Contractor AIA Document A107 OR other Agreement, as modified by the Park District and included in these Bid Documents, and the Performance Bond and Labor Material Payment Bond and proof of insurance comprise the Contract Documents.

3.03 APPLICABLE LAWS

A. The Contractor shall at all times observe and comply with all Federal, State, and Local laws, regulations and ordinances which in any manner affect the conduct of the Work. Any complaint, claim or action brought against the Contractor for failing to observe or comply with any law, ordinance, or regulation shall be the sole responsibility of the Contractor and shall in no way extend to or expose the Owner to liability and the Contractor shall indemnify and hold harmless the Owner from any and all such complaints, claims, or actions.

All workmanship and materials shall conform and comply with the requirements of the building ordinances and rules and regulations of all departments and bureaus of the county, city and state having lawful jurisdiction. All of said ordinances and rules and regulations are hereby made a part of these Specifications.

PREVAILING WAGE ACT: Contractor shall comply with the Illinois Prevailing Wage Act (820 ILCS 130/.01 et seq.) (the "Act") as required by the Illinois Department of Labor. The Act requires contractors and subcontractors to pay laborers, workers and mechanics performing services on public works projects no less than the "prevailing rate of wages (hourly cash plus fringe benefits) in the county where the work is performed. For information regarding current prevailing wage rates, please refer to the Illinois Department of Labor's website at: https://www2.illinois.gov/idol/laws-rules/conmed/pages/prevailing-wage-rates.aspx. All contractors and subcontractors rendering services under this contract must comply with all requirements of the Act, including but not limited to, all wage, notice and record keeping duties.

CERTIFICATIONS: The Bidder shall complete the Contractor Compliance and Certifications Attachment and the Substance Abuse Prevention Program Certification. Failure to do so may result in disqualification of the Bidder.

CRIMINAL BACKGROUND INVESTIGATIONS: The Contractor shall a conduct criminal background investigation for each laborer, mechanic, and worker employed by the Contractor or any of its Subcontractors on the project in

compliance with federal and state laws and regulations. The Contractor shall not knowingly employ any person on the Project, or allow any person to enter onto Owner's property, who has been convicted for committing or attempting to commit first degree murder, a Class X felony, or any one or more of the following offenses: (i) those defined in Sections 11-1.20, 11-1.30, 11-1.40, 11-1.50, 11-1.60, 11-6, 11-9, 11-14, 11-14.3, 11-14.4, 11-15, 11-15.1, 11-16, 11-17, 11-18, 11-19, 11-19.1, 11-19.2, 11-20, 11-20.1, 11-20.1B, 11-20.3, 11-21, 11-30, 12-7.3, 12-7.4, 12-7.5, 12-13, 12-14, 12-14.1, 12-15, and 12-16, of the Criminal Code; (ii) (ii) those defined in the Cannabis Control Act, except those defined in Sections 4(a), 4(b), and 5(a) of that Act; (iii) those defined in the Illinois Controlled Substances Act; (iv) those defined in the Methamphetamine Control and Community Protection Act; and (v) any offense committed or attempted in any other state or against the laws of the United States, which, if committed or attempted in this State, would have been punishable as one or more of the foregoing offenses. Further, no Contractor shall knowingly employ a person who has been found to be the perpetrator of sexual or physical abuse of any minor under 18 years of age pursuant to proceedings under Article II of the Juvenile Court Act of 1987

3.04 SUBCONTRACTING

A. The Contractor may utilize the services of qualified Subcontractors on those parts of the work which, under normal contracting practices, are performed by Subcontractors specializing in the particular class of work. The Contractor is encouraged to utilize local, women, and minority-owned Subcontractors, when reasonable.
B. The Contractor shall not award any work to any Subcontractor without prior written approval by the Owner, which approval will not be considered until the Contractor submits to the Owner a written statement concerning the proposed award to the Subcontractor.

C. The Contractor shall be as fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

D. Nothing contained in this Contract shall create any contractual relations between any Subcontractor and the Owner.

3.05 APPROVAL OF MATERIALS AND SOURCES OF SUPPLY

A. The Contractor shall furnish to the Owner for approval, immediately after the signing of the Contract, a complete statement of the origin, composition, manufacturer and proposed sources of supply of all materials or equipment required for use in this Work, whether supplied by himself or by any approved Subcontractor. The Contractor shall submit detailed information, literature, plans and such other data required to permit an analysis of the proposed equipment and materials.

3.06 INSPECTION AND TESTING

A. All materials and workmanship if not otherwise stipulated, shall be subject to inspection, examination and test by authorized representatives of the Owner at all times, before, during or after the preparation, during the progress of the Work, or after the Work is completed.

3.07 TITLE OF MATERIALS

A. The Contractor or Subcontractor shall not furnish any materials for the work that are subject to a chattel mortgage or subject to conditions or interest retained by the seller. The materials or equipment must be free of all encumbrances.

3.08 PATENTS, ROYALTIES AND LICENSES

A. The Contractor shall hold and save the Owner and its officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses for or on account of any patent or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the Owner, unless otherwise specifically stipulated in the Contract Documents.

3.09 PERMITS, LICENSES AND CERTIFICATES

A. **The Contractor shall procure the building permit for this Project from the City of Waukegan**. Owner shall either pay the City of Waukegan directly or reimburse Contractor for all required building permits. Reimbursement shall be for exact cost paid by Contractor. No markup shall be paid for permits. The Contractor shall supply all certificates required to show that the Work has been performed in accordance with the building, plumbing, electrical or other codes, rules and regulations of local or other authorities, the Board of Fire Underwriters or such other like bodies, as the Specifications may require directly or indirectly. **The Contractor shall file a contractor's registration application with associated fees, licenses, permit bonds, and insurance certificate with the City of Waukegan Building and Code Enforcement Department** (1-847-625-6868). Contractor registration fees are the responsibility of the Contractor and Subcontractors.

3.10 CONTRACTOR RESPONSIBLE UNTIL WORK COMPLETED

A. The Contractor shall have charge of and be responsible for the entire Work until completed and accepted by the Owner. He shall make no assignment of this Contract without the written consent of the Owner. He shall give his personal supervision to the faithful prosecution of the Work; he shall keep it under his own control; and he shall have a competent representative or foreman on the Work, who shall have full authority to bring about the orderly and efficient prosecution of the same in accordance with the Contract and to supply materials, tools, equipment, and labor without delay.

3.11 WEATHER CONDITIONS

A. If a temporary suspension of Work should occur during inclement weather, the Contractor shall protect carefully all Work and materials under this Contract against damage or injury from the weather. If, in the opinion of the Owner, damage results to either the Work or materials by reason of failure on the part of the Contractor to protect his Work, such materials or Work will be removed and replaced by and at the expense of the Contractor.

3.12 NO CHARGE FOR DELAY

A. Unless otherwise provided in the Contract Documents, the Contractor shall make no charge or claim whatsoever for any hindrance or delay in the progress of the Work.

3.13 COMPLETION DATE AND QUALIFICATION

A. The Work to be performed under this Contract must be **Substantially Completed by September 20, 2025 with Final Completion by September 30, 2025.**

1. The Date of Substantial Completion shall mean when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy the entire Work for use for which it is intended.

B. It is hereby understood and mutually agreed by and between the Contractor and the Owner that the date of beginning and the time for completion as specified in the Contract, is a reasonable time for the completion of the Work, taking into consideration the average weather and industrial conditions prevailing in this locality. The Contractor agrees that time is of the essence of this Contract. If the Contractor shall neglect, fail, or refuse to complete the Work within the time specified in the Contract or any proper extension thereof granted by the Owner, it in no way relieves the Contractor of his responsibility to complete the Work at no additional cost to the Owner. Any extension of the completion date must be agreed upon in writing by the Owner and Contractor. Contractor shall not be responsible for failure to meet the completion date when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner. The Contractor shall not be charged with any excess cost when the delay in completion of the Work is due to:

Any order duly issued by the government (city, county, state or federal);

Any unforeseeable cause beyond the control and without fault or negligence of the Contractor including, but not restricted to, acts of God, severe weather, strikes, acts of the Owner, or acts of another Contractor in the performance of a contract with the Owner (except as provided in paragraph VIII above).

Any delays of Subcontractors or suppliers occasioned by any of the causes specified above.

As otherwise provided for in the General Conditions

3.14 INSURANCE AND INDEMNIFICATION REQUIREMENTS

A. Insurance

1. Commercial General and Umbrella Liability Insurance

Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less that $2,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project/location.

CGL insurance shall be written on Insurance Services Office (ISO) occurrence form CG 00 01 10 93, or at the Park District's sole option on a more current ISO form or a substitute form providing at least equivalent coverage, and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

The Park District shall be included as an insured under the CGL, using ISO additional insured endorsement CG 20 10 or a substitute providing at least equivalent coverage, and under the commercial umbrella, if any. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance afforded to the Park District. If the additional insured have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the Contractor's liability under this insurance policy shall not be reduced by the existence of such other insurance.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, or underground property damage.

2. Business Auto and Umbrella Liability Insurance

Contractor shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than $2,000,000 each accident. Such insurance shall cover liability arising out of any auto including owned, hired and non-owned autos.

Business auto insurance shall be written on Insurance Services Office (ISO) form CA 00 01, CA 00 05, CA 00 12, CA 00 20, or a substitute form providing at least equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage at least equivalent to that provided in the 1990 and later editions of CA 00 01.

3. Continuing Completed Operations Liability Insurance (Only applies if project carries a Guarantee)

Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella liability insurance with a limit of not less than $1,000,000 each occurrence for at least three years following substantial completion of the work.

Continuing CGL insurance shall be written on Insurance Services Office (ISO) occurrence form CG 00 01 10 93, or substitute form providing equivalent coverage, and shall, at minimum, cover liability arising from products completed operations and liability assumed under an insured contract.

Continuing CGL insurance shall have a products-completed operations aggregate of at least two times its each occurrence limit.

Continuing commercial umbrellas coverage, if any, shall include liability coverage for damage to the insured's completed work equivalent to that provided under ISO form CG 00 01.

4. Workers Compensation Insurance

Contractor shall maintain workers compensation as required by statute and employers liability insurance. The commercial umbrella and/or employers liability limits shall not be less than $1,000,000 each accident for bodily injury by accident or $1,000,000 each employee for bodily injury by disease.

If the Park District has not been included as an insured under the CGL using ISO additional insured endorsement CG 20 10 or a substitute endorsement acceptable to the Park District under the Commercial General and Umbrella Liability Insurance required in this Agreement, the Contractor waives all rights against the Park District and its officers, officials, employees, volunteers and agents for recovery of damages arising out of or incident to the Contractor's work.

5. General Insurance Provisions

A. Evidence of Insurance

Prior to beginning work, Contractor shall furnish the Park District with a certificate(s) of insurance and applicable policy endorsement(s), executed by a duly authorized representative of each insurer, and

such other evidence of insurance as shall be requested by the Park District, showing compliance with the insurance requirements set forth above.

All certificates shall provide for 30 days' written notice to the Park District prior to the cancellation or material change of any insurance referred to therein. Written notice to the Park District shall be by certified mail, return receipt requested. Failure of the Park District to demand such certificate, endorsement or other evidence of full compliance with these insurance requirements or failure of the Park District to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

The Park District shall have the right, but not the obligation, of prohibiting Contractor or any subcontractor from entering the project site until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by the Park District.

Failure to maintain the required insurance may result in termination of this Agreement at the Park District's option. With respect to insurance maintained after final payment in compliance with a requirement above, an additional certificate(s) evidencing such coverage shall be promptly provided to the Park District whenever requested. Contractor shall provide certified copies of all insurance policies required above within 10 days of the Park District's written request for said copies.

B. Acceptability of Insurers

For insurance companies which obtain a rating from A.M. Best, that rating should be no less than A VII using the most recent edition of the A.M. Best's Key Rating Guide. If the Best's rating is less than A VII or a Best's rating is not obtained, the Park District has the right to reject insurance written by an insurer it deems unacceptable.

C. Cross-Liability Coverage

If Contractor's liability policies do not contain the standard ISO separation of insureds provision, or a substantially similar clause, they shall be endorsed to provide cross- liability coverage.

D. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to the Park District. At the option of the Park District, the Contractor may be asked to eliminate such deductibles or self-insured retentions as respects the Park District, its officers, officials, employees, volunteers and agents or required to procure a bond guaranteeing payment of losses and other related costs including but not limited to investigations, claim administration and defense expenses.

E. Subcontractors

Contractor shall cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified above. When requested by the Park District, Contractor shall furnish copies of certificates of insurance evidencing coverage for each subcontractor.

B. Indemnification

1. To the fullest extent permitted by law, the Contractor shall waive any right of contribution and shall defend, indemnify and hold harmless the Owner, the Architect and their agents, employees and consultants from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees, costs and economic damages, arising out of, resulting from, or in any way connected with the performance of the Work, provided that any such claim, damage, loss or expense is caused in whole or in part by any act or omission 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 duty to defend herein is separate and distinct from the duty to indemnify and hold harmless, and shall be separately enforceable as such. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to the Owner described in this Agreement.

2. The indemnification obligation under this Paragraph shall not be limited in any way by any limitations on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's' compensation acts, disability benefit acts or other employee benefit acts, and the Contractor and all subcontractors hereby waive any limitations of liability defense based upon such acts, to the fullest extent permitted by law.

3. "Claims, damages, losses and expenses" as these words are used in this Agreement shall be construed to include, but not limited to (1) injury or damage consequent upon the failure of or use or misuse by Contractor, its Subcontractors, agents, servants or employees, of any hoist, rigging, blocking, scaffolding, or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by Owner; (2) all attorneys' fees, expenses and costs incurred in bringing an action to enforce the provisions of this indemnity or any other indemnity contained in the General Conditions, as modified by the Supplementary General Conditions; (3) time expended by the party being indemnified and their employees, at their usual rates plus costs of travel, long distance telephone and reproduction of documents; and (4) error or omission or defect in any submission made to Architect / Engineer for its approval or review.

4. The obligations of the Contractor to indemnify and hold harmless Owner, Architect, their agents, consultants and employees under this Agreement shall not extend to the liability of the Owner and the Architect, their agents, consultants or employees arising out of their own negligence.

3.15 CONTRACTOR PAYMENTS

A. Payment will be made in full upon completion of the Project with Owner's final acceptance. **No payment shall be authorized unless all applicable Waivers of Lien and Contractor's Affidavits are submitted in accordance with the Contract Documents.** The time periods governing Owner's approval, disapproval, and payment of Contractor's applications for payment shall comply with the *Local Government Prompt Payment Act*, 50 ILCS 505/1 *et seq.*

The acceptance by the Contractor of final payment shall constitute a release and waiver of any and all rights and privileges under the terms of the Contract, and shall relieve the Park District from any and all claims or liabilities for anything done or furnished relative to the Work or for any act or neglect on the part of the Park District relating to or connected with the Contract. Any payment, however, final or otherwise, shall not release the Contractor or his sureties from any obligations under the Contract or the performance and payment bonds.

Failure to adhere to the approved progress schedule as specified in the Contract Documents, cooperate with other Contractors, and/or generally hinder the construction progress as determined by the Owner shall be grounds for withholding payments. Failure to supply waivers of lien, and any other supporting documentation as required by Owner, with each request will be considered grounds for withholding partial

payments, and failure to supply final waivers for the entire job on completion shall be grounds for withholding final payment.

The Owner may withhold from the Contractor, in addition to retained percentage, such an amount or amounts as may be necessary to pay just claims for labor and services rendered and materials furnished in or about the Work. The Owner shall have the right, acting as agent for the Contractor, to apply such retained amounts to the payment of such just claims.

3.16 WORK PERFORMANCE

A. The Contractor shall coordinate his Work with all adjacent Work and shall coordinate with all other trades so as to facilitate the general progress of the Work. He shall afford all other trades every reasonable opportunity for the installation of their Work and for the storage of their material.

B. Whenever, in the opinion of the Owner, the Contractor prosecutes or fails to prosecute his Work in such a manner as to hinder or delay the completion of the Work, the Owner may, after five (5) days' written notice to the Contractor order the Contractor to stop the Work, and carry out such Work as is necessary to be done by another Contractor or Contractors not necessarily holding a Contract for such Work on the Project, and in such event may charge the Contractor for such Work as may be performed. Nothing in this paragraph shall be deemed to be a waiver of any other remedies which may be available to the Owner in the event of a default surrender.

3.17 SAFETY OF PERSONS AND PROPERTY

A. The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

1. All employees on the Work and all other persons who may be affected thereby;

2. All the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his Subcontractors or Sub-subcontractors; and

3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

B. The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

C. The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

D. When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

3.18 UNDERGROUND UTILITIES

A. The Contractor is responsible for contacting utility companies and the City of Waukegan or other companies which may have underground structures to locate and determine the exact location of such underground structures. The Contractor will locate and stake all underground structures in the field to include all cable and conduit, gas lines, water lines, and drainage lines. All underground utilities so marked which are disturbed or damaged by the Contractor's operation shall be repaired by competent and qualified specialists at the Contractor's expense. Such repairs shall be made under the direction of the Owner. The Contractor is responsible for contacting utility companies and the City of Waukegan or other companies which may have underground structures to locate and determine the exact location of such underground structures.

3.19 PAYMENTS TO MATERIALMAN, ETC.

A. It is hereby expressly understood and agreed that the said Contractor shall furnish satisfactory evidence, when called for, that all persons who have done work or furnished materials in connection with the performance of the Contract, have been fully paid; otherwise the Owner shall have right to pay all such claims in full, out of any money that may be due to the Contractor under this agreement.

3.20 MODIFICATIONS OF CONTRACT DOCUMENTS AND CONTRACT WORK

A. The Contract Documents may be modified and changed from time to time by written order of the Owner, in a manner not materially affecting the substance thereof, if such changes are necessary to carry out and complete more fully and perfectly the work to be done and performed. The Contractor shall acknowledge, in writing, receipt of every such order. If the changes and modifications increase the expense of the work, the increase expenses shall be paid for by the Owner. If such changes and modifications decrease the expense of the work, the amount of said diminution shall be credited to the Owner. The additional payment or amount credited shall be as a basis previously agreed upon, in writing, by the Owner and the Contractor. No consequential loss or profit on work not executed shall be paid to the Contractor.

B. The amount of compensations to be paid to the Contractor for any changes or alterations, as so ordered, shall be determined:

1. By a lump sum mutually agreed upon by the Owner and the Contractor; or,

2. If the parties cannot agree upon a lump sum, then by the actual net cost in money to the Contractor of the materials and of the wages applied labor (including premiums for Workmen's Compensation Insurance) required for such changes and alterations, plus such rental for plant and equipment (other than small tools) required and approved for such changes and alterations, plus 10% or 15% as compensation for all other items of profit and costs or expenses, including administration, overhead, superintendence, insurance (other than Workman's Compensation), materials used in temporary structures, allowances made by the Contractor to the Subcontractors, additional premiums upon the performance bond of the Contractor, and the use of small tools. The provisions hereof shall not affect the power of the Contractor to act in case of emergency, as herein provided.

   Where proposed changes involve a modification to (i) the Contract Sum; (ii) the Contract Time, or (iii) material change in the Work (i.e., other than minor field changes) a written change order shall be prepared by Contractor. In accordance with the *Criminal Code*, 720 ILCS 5/33 E-9, if a change order or series of change orders authorizes or necessitates an increase or decrease in **either** the cost of the contract by $10,000 or more, **or** the time of completion of the Work by 30 days or more, such changes

may be made only upon the written authorization of **the Executive Director (Secretary of the Board) of the Waukegan Park District,** after approval from the Board of Park Commissioners, including a written determination that:

the circumstances necessitating the change were not reasonably foreseeable at the time the Contract was signed; or

the change is germane to the original Contract as signed; or

the change order is in the best interest of the Owner and is authorized by law.

3.21 CLAIMS OF EXTRA COMPENSATION

A. All claims for extra compensation over and above the amount agreed upon in the contract on account of any alterations or changes, or for any extra work, shall be filed, in writing, with the Owner by the Contractor, having attached thereto a copy of the original order for such alterations or changes or extra work, within thirty (30) days after the completion of said alterations or changes or extra work. The Contractor, before starting work on said alterations or changes or extra work, shall notify the Owner, in writing, of his intentions to file such claims in order that a proper record of such work may be kept by the Owner. Should the Contractor fail to notify the Owner in advance, as required, or to submit his claim within thirty (30) days, as required, it will be taken as conclusive that no claim exists.

3.22 USE OF PREMISES AND REMOVAL OF DEBRIS

A. The Contractor expressly undertakes at his own expense:

1. To take every precaution against injuries to person or damages to property;

2. To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work of any other Contractors;

3. To place upon the Work, or any part thereof, only such loads as are consistent with the safety of that portion of the Work;

4. To frequently clean up all refuse, rubbish, scrap materials, and debris caused by his operations, to the end, that at all times the site of the Work shall present a neat, orderly, and workmanlike appearance; if a clean site is not maintained we will provide warning and 24 hours to fix or we will have our staff fix for $100 per man hour and contractor will be charged.

5. Before final payment, to remove all surplus material, false-work, temporary structures, including foundations thereof, plant of any description, and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition.

3.23 GUARANTEE

A. All work performed shall be guaranteed by the General Contractor to be free from defects in materials and workmanship for a period of one year from the date of final acceptance. The Work shall be left in perfect order at completion and acceptance. Neither the final payment nor the termination of the guarantee period, nor any provision in the Contract Documents shall relieve the Contractor of the responsibility for negligence, faulty

The successful Bidder(s) must present the Park District with two (2) copies of any manufacturer's warranty or guarantee information. If needed, the Bidder agrees to sign over warranties and guarantees to the Park District.

If the Drawings and/or Specifications provide for methods of construction, installation, materials, etc., which the Contractor cannot guarantee for the indicated period, it shall be the responsibility of the Contractor to so inform the Owner in writing before submitting his/her bid. Otherwise, the Contractor shall be held responsible to provide the method of construction, installation, materials, etc., which will be guaranteed for the indicated period of time.

BID PROPOSAL CHECKLIST

Contractor _____

Project_____

Check box if supplied in sealed bid. See bid packet (section 1.03 and others) in bid packet for details.

Core Items in Submittal

- ○ Bid Bond or Cashier's Check – Signed and/or Notarized
- ○ Bid Addendum Acknowledgement (if applicable) - Completed
- ○ Bid Proposal Form – Completed, Signed with Corporate Seal, and Notarized
- ○ Bid Qualification Form – Completed
- ○ 3 Year Project List - Completed
- ○ Contractor's Compliance – Signed and Notarized
- ○ Substance Abuse Program Certification – Signed

Additional attachments from Section 1.03

- ○ Projects in Progress List
- ○ Administrative and Litigation List
- ○ Instances of Bid Rejection List
- ○ Instances of Breach of Contract List

2025 DUGDALE PARK DEVELOPMENT
WAUKEGAN PARK DISTRICT
WAUKEGAN, ILLINOIS

BID PROPOSAL FORM

4.01 BID TO:

Waukegan Park District
(hereinafter called "Owner")
2211 Ernie Krueger Circle
Waukegan, IL 60087

4.02 BID FROM:

_____
(hereinafter called "Bidder")

_____
Address

_____
City, State, Zip Code

_____
Email Address

_____
Contact Person

_____
Telephone Number

_____
Fax Number

4.03 BID FOR:

2025 Dugdale Park Development
WAUKEGAN, ILLINOIS

4.04 ACKNOWLEDGEMENT

The undersigned hereby acknowledges receipt of Invitation of Bids, Instructions to Bidders, the Specifications, Drawing, Conditions, Certifications, and other Contract Documents and acknowledges receipt of the following Addenda:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

4.05 AGREEMENT

A. In submitting the Bid, the undersigned agrees:

1. To hold the Bid open for sixty (60) days from submittal date.

2. That the Bidder has carefully examined the Instructions to Bidders, the Drawings and Specifications, and the Project Manual in its entirety, in order to determine how these affect the bid proposal, the forms of the Contract, the required Contract bonds, and duration thereof, and that the Bidder has inspected in detail the site of the proposed Work, and been familiarized with all of the requirements of construction, and of the governing municipalities under whose jurisdiction the Project falls (its codes, ordinances and construction requirements therein), and understands that in making this proposal, the Bidder waives all rights to plead any misunderstanding regarding the same.

3. To enter into and execute a Contract with the Owner if awarded on the basis of this bid, and furnish all bonds and insurance required by the Contract Documents within fourteen (14) days after receiving Notice to Proceed from the Owner.

4. To accomplish the work in accordance with the Contract Documents.

5. To complete the work by the time stipulated in the Contract Documents.

6. That if this proposal is accepted, the Bidder is to provide all of the necessary equipment, tools, apparatus, labor, and other means of construction, and to do all of the Work and to furnish all of the materials specified in the Contract Documents in the manner and at the time therein prescribed, and in accordance with the requirements set forth.

7. To commence Work as specified in the Instructions to Bidders, and to prosecute the Work in such a manner, and with sufficient materials, equipment and labor as will ensure its completion within reasonable time, it being understood and agreed that the completion within such reasonable time is an essential part of this Contract.

8. The Bidder proposes to utilize the products and services of the following Subcontractors and major suppliers for the completion of the Contract. All Subcontractors shall be approved by the Owner prior to start of their Work on the Project. If no Subcontractors or major suppliers are to be used, indicate "NONE".

(1) _____PH:____/_____
Subcontractor/major supplier
_____
Address
_____

_____
Work to be performed/materials to be supplied

(2) _____PH:____/_____
Subcontractor/major supplier
_____
Address
_____

_____
Work to be performed/materials to be supplied

(3) _____PH:____/_____
Subcontractor/major supplier
_____
Address
_____

_____

4.06 **BID PRICES** For completion of all Work shown on the Drawings and Specifications, the Bidder agrees to perform all Work for the following sums:

A. BASE BID PRICE (Guaranteed Maximum Price)

TOTAL (WRITTEN OUT) _____DOLLARS

$_____

B. ALTERNATE 1: (Guaranteed Maximum Price) (Head-in Parking)_____

TOTAL (WRITTEN OUT) _____DOLLARS

$_____

C. ALTERNATE 2: (Guaranteed Maximum Price) (Asphalt Paving - Trail)_____

TOTAL (WRITTEN OUT) _____DOLLARS

$_____

D. ALTERNATE 3: (Guaranteed Maximum Price) (Central Parking Lot)_____

TOTAL (WRITTEN OUT) _____DOLLARS

$_____

E. ALTERNATE 4: (Guaranteed Maximum Price) (Native Restoration)_____

TOTAL (WRITTEN OUT) _____DOLLARS

$_____

F. ALTERNATE 5: (Guaranteed Maximum Price) (Asphalt Paving Trail - 8' Wide)_____

TOTAL (WRITTEN OUT) _____DOLLARS

$_____

4.07 UNIT PRICE COST SHEET

4.08 REJECTION AND WITHDRAWAL OF BID

A. In submitting this bid, it is understood that the right is reserved by the Owner to reject any and all bids and to waive any informalities. It is agreed that this bid may not be withdrawn for a period of sixty (60) days from the opening thereof.

4.09 TIME OF COMPLETION

A. If awarded the Contract, the undersigned agrees to complete all Work covered by this proposal on or before **September 30, 2025.**

4.10 BID SECURITY

A. Accompanying the proposal is a Bid Bond as surety in the amount of not less than ten percent (10%) of the Total Base Bid payable to Waukegan Park District, which it is agreed will be forfeited if the undersigned fails to execute the Contract in conformity with the Specifications and furnish Performance Bonds, Payment or Labor and Material Bonds, and Certificate of Insurance with Endorsements after notification of the award of the Contract to the undersigned.

4.11 PERFORMANCE/PAYMENT OR LABOR AND MATERIALS BOND

A. The undersigned Bidder agrees to provide Performance, and Payment or Labor and Material Bonds executed in accordance with AIA Document AIA-A312-2010 form, or its current equivalent, or one acceptable to Owner, in the amount of **110% of the Contract Sum** (Total Base Bid and all accepted alternatives and adjustments) the cost of which is included in the Bid.

4.12 CONTRACT DOCUMENTS

A. The successful Bidder may be required to enter into a standard AIA form of Owner-Contractor Agreement appropriate to the form of the project delivery system selected by the Owner (general contractor and/or construction manager) OR other Agreement, as modified by the Owner.

CORPORATION

The Bidder is a Corporation organized and existing under the laws of the State of _____

_____ _____

Print Name Duly Authorized Officer's Signature

_____

Title

CORPORATE SEAL (above)

PARTNERSHIP

The Bidder is a co-partnership consisting of individual partners whose full names are listed below:

_____	_____
Print Name	(Partner's Signature)
_____	_____
_____	_____

INDIVIDUAL

The Bidder is an individual.

_____	_____
Print Name	Individual's Signature

Bidder must have their signature above notarized below regardless of Bidder Type

Sworn and Subscribed to before me this _____ day of _____, 2025.

_____

My Commission Expires _____, 2025.
Notary Public or other Officer authorized to administer oaths

2025 DUGDALE PARK DEVELOPMENT
WAUKEGAN PARK DISTRICT
WAUKEGAN, ILLINOIS

BID QUALIFICATION FORM

4.13 BIDDER QUALIFICATION

_____
Bidder Name

_____
Address

_____
Telephone Number

_____
Fax Number

Number of years in business under this name: _____

Include with this Proposal the information required under 1.03 Requirements of Bidders in the Instructions to Bidders. (See attached pages)

PROJECT LIST

List three (3) of the largest projects completed in the past three (3) years which are similar in scope to the **2025 Dugdale Park Development**.

1. Project Name _____

Description _____

Client Name _____

Original Contract Amount _____Final Contract Amount_____

Contract Final Completion Date _____ Actual Final Completion Date_____

Contact Person _____Phone Number _____Email_____

Architect/Engineer_____Phone Number _____Email_____

2. Project Name _____

Description _____

Client Name _____

Original Contract Amount _____Final Contract Amount_____

Contract Final Completion Date _____ Actual Final Completion Date_____

Contact Person _____Phone Number _____Email_____

Architect/Engineer_____Phone Number _____Email_____

3. Project Name _____

Description _____

Client Name _____

Original Contract Amount _____Final Contract Amount_____

Contract Final Completion Date _____ Actual Final Completion Date_____

Contact Person _____Phone Number _____Email_____

Architect/Engineer_____Phone Number _____Email_____

IMPORTANT NOTICE OF RESPONSIBILITY FOR PERIODIC REVISIONS TO PREVAILING WAGE RATES AND SUPERSEDES NOTICE

Revisions of the following Prevailing Wage Rates are made periodically by the Illinois Department of Labor. These may be accessed by computer athttps://www2.illinois.gov/idol/laws-rules/conmed/pages/prevailing-wage-rates.aspx. As required by the Prevailing Wage Act, any and all such revisions supersede the Park District's June determination. Bidders and contractors performing work on this Project are responsible for determining the applicable prevailing wage rates at the time of bid submission and performance of the Work. Failure of a bidder/contractor to make such determination shall not relieve it of its obligations in accordance with the Contract Documents In consideration for the award to it of the contract for this Project, the contractor agrees that the foregoing notice satisfies any obligation of the public body in charge of this Project to notify the contractor of periodic changes in the prevailing wage rates and the contractor agrees to assume and be solely responsible for, as a material obligation of the contractor under the contract, the obligation to determine periodic revisions of the prevailing wage rates, to notify its subcontractors of such revisions, to post such revisions as required for the posting of wage rates under the Act, and to pay and require its subcontractors to pay wages in accordance with such revised rates.

CONTRACTOR COMPLIANCE AND CERTIFICATIONS

Note: The following certifications form an integral part of the Agreement between the Owner and Contractor. Breach by Contractor of any of the certifications may result in immediate termination of the Contractor's services by Owner.

THE UNDERSIGNED CONTRACTOR HEREBY ACKNOWLEDGES, CERTIFIES, AFFIRMS AND AGREES AS FOLLOWS:

A. Contractor has carefully read and understands the contents, purpose and legal effect of this document as stated above and hereafter in this document. The certifications contained herein are true, complete and correct in all respects.

B. Contractor shall abide by and comply with, and in contracts which it has with all persons providing any of the services or Work on this Project on its behalf shall require compliance with, all applicable Federal, State and local laws and rules and regulations including without limitation those relating to 1) fair employment practices, affirmative action and prohibiting discrimination in employment; 2) workers' compensation; 3) workplace safety; 4) wages and claims of laborers, mechanics and other workers, agents, or servants in any manner employed in connection with contracts involving public funds or the development or construction of public works, buildings or facilities; and 5) steel products procurement.

C. All contracts for this Project are subject to the provisions of the Illinois Prevailing Wage Act (820 ILCS 130/0.01 *et seq.*), providing for the payment of the prevailing rate of wage to all laborers, workmen and mechanics engaged in the Work. Contractor shall pay prevailing rates of wages in accordance with the wage determination included with the Contract Documents and any subsequent determinations issued by the Illinois Department of Labor which shall supersede the determination included in the Contract Documents, all in accordance with applicable law. Contractor is responsible for determining the applicable prevailing wage rates at the time of bid submission and at the time of performance of the Work. Failure of Contractor to make such determination shall not relieve it of its obligations in accordance with the Contract Documents. Contractor shall also comply with all other requirements of the Act including without limitation those pertaining to inclusion of required language in subcontracts, job site posting, maintenance and submission of certified payroll records and inspection of records. Contractor is not barred from entering into public contracts under Section 11a of the Illinois Prevailing Wage Act due to its having been found to have disregarded its obligations under the Act.

D. To the best of Contractor's knowledge, no officer or employee of Contractor has been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois, or any unit of local government, nor has any officer or employee made an admission of guilt of such conduct which is a matter of record.

E. Contractor is not barred from bidding on or entering into public contracts due to having been convicted of bid-rigging or bid rotating under paragraphs 33E-3 or 33E-4 of the Illinois Criminal Code. Contractor also certifies that no officers or employees of the Contractor have been so convicted and that Contractor is not the successor company or a new company created by the officers or owners of one so convicted. Contractor further certifies that any such conviction occurring after the date of this certification will be reported to the Owner, immediately in writing, if it occurs during the bidding process, or otherwise prior to entering into the Contract therewith.

F. Pursuant to the Illinois Human Rights Act (775 ILCS 5/2-105), Contractor has a written sexual harassment policy that includes, at a minimum, the following information: (i) a statement on the illegality of sexual harassment; (ii) the definition of sexual harassment under State law; (iii) a description of sexual harassment utilizing examples; (iv) the Contractor's internal complaint process including penalties; (v) the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission and directions on how to contact both; and (vi) protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act. Contractor further certifies that such policy shall remain in full force and effect. A copy of the policy shall be provided to the Illinois Department of Human Rights upon request.

G. Contractor shall abide by the "Employment of Illinois Workers on Public Works Act" (30 ILCS 570/0.01 *et seq.*) which stipulates that whenever there is a period of excessive unemployment in Illinois, defined as any month immediately following two (2) consecutive calendar months during which the level of unemployment in Illinois exceeds five percent (5%) as measured by the U.S. Bureau of Labor Statistics in its monthly publication of employment and unemployment figures, the Contractor shall employ only Illinois laborers unless otherwise exempted as so stated in the Act. ("Illinois laborer" means any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident). Other laborers may be used if Illinois laborers are not available or are incapable of performing the particular type of work involved if so certified by the Contractor and approved by the Owner.

H. (i) Contractor's bid proposal was made without any connection or common interest in the profits anticipated to be derived from the Contract by Contractor with any other persons submitting any bid or proposal for the Contract; (ii) the Contract terms are in all respects fair and the Contract will be entered into by Contractor without collusion or fraud; (iii) no official, officer or employee of the Owner has any direct or indirect financial interest in Contractor's bid proposal or in Contractor, (iv) the Contractor has not directly or indirectly provided, and shall not directly or indirectly provide, funds or other consideration to any person or entity (including, but not limited to, the Owner and the Owner’s employees and agents), to procure improperly special or unusual treatment with respect to this Agreement or for the purpose of otherwise improperly influencing the relationship between the Owner and the Contractor. Additionally, the Contractor shall cause all of its officers, directors, employees, (as the case may be) to comply with the restrictions contained in the preceding sentence.

I. Contractor knows and understands the Equal Employment Opportunity Clause administrated by the Illinois Department of Human Rights, which is incorporated herein by this reference, and agrees to comply with the provisions thereof. Contractor further certifies that Contractor is an "equal opportunity employer" as defined by Section 2000 (e) of Chapter 21, Title 42 of the United States Code Annotated and Executive Orders #11246 and #11375 as amended, which are incorporated herein by this reference.

J. Contractor shall use reasonable effort to employ local, women, and minority. Additionally, Contractor shall use reasonable effort to utilize local, women, and minority owned Subcontractors.

K. Neither Contractor nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

L. Contractor is not barred from contracting with the Owner because of any delinquency in the payment of any tax administrated by the Illinois Department of Revenue, unless it is being contested. Contractor further certifies that it understands that making a false statement regarding delinquency in taxes is a Class A misdemeanor and, in addition, voids the Contract and allows the Owner, a municipal entity, to recover in a civil action all amounts paid to the Contractor.

M. If Contractor has 25 or more employees at the time of letting of the Contract, Contractor knows, understands and acknowledges its obligations under the Illinois Drug Free Workplace Act (30 ILCS 580/1 *et seq*.) and certifies that it will provide a drug-free workplace by taking the actions required under, and otherwise implementing on a continuing basis, Section 3 of the Drug Free Workplace Act. Contractor further certifies that it has not been debarred and is not ineligible for award of this Contract as the result of a violation of the Illinois Drug Free Workplace Act.

N. Contractor knows, understands and acknowledges its obligations under the Substance Abuse Prevention In Public Works Act, 820 ILCS 265/1 *et seq.* A true and complete copy of Contractor's Substance Abuse Prevention Program Certification is attached to and made a part of this Contractor Compliance and Certification Attachment.

O. The Contractor shall comply with the requirements and provisions of the Freedom of Information Act (5 ILCS 140/1 *et. seq*.) and, upon request of the Waukegan Park District's designated Freedom of Information Act Officer (FOIA Officer), Contractor shall within two (2) business days of said request, turn over to the FOIA Officer any record in the possession of the Contractor that is deemed a public record under FOIA.

_____
CONTRACTOR NAME

By: _____ (Signature)

_____ (Printed Name)

Its: _____(Title)

STATE OF _____)
)SS
COUNTY OF _____)

I, the undersigned, a notary public in and for the State and County, aforesaid, hereby certify that _____ appeared before me this day and, being first duly sworn on oath, acknowledged that he/she executed the foregoing instrument as his/her free act and deed and as the act and deed of the Contractor.

Dated:_____

_____
(Notary Public)

(SEAL)

SUBSTANCE ABUSE PREVENTION PROGRAM CERTIFICATION

The Substance Abuse Prevention in Public Works Projects Act, 820 ILCS 265/1 et seq., ("Act") prohibits any employee of the Contractor or any Subcontractor on a public works project to use, possess or be under the influence of a drug or alcohol, as those terms are defined in the Act, while performing work on the project. The Contractor/Subcontractor **[circle one],** by its undersigned representative, hereby certifies and represents to the Waukegan Park District that **[Contractor/Subcontractor must complete either Part A or Part B below]**:

A. The Contractor/Subcontractor **[circle one]** has in place for all of its employees not covered by a collective bargaining agreement that deals with the subject of the Act a written substance abuse prevention program, a true and correct copy of which is attached to this certification, which meets or exceeds the requirements of the Substance Abuse Prevention in Public Works Act, 820 ILCS 265/*1 et seq.* **[Contractor/Subcontractor must attach a copy of its substance abuse prevention program to this Certification.]**

_____
Name of Contractor/Subcontractor (print or type)

_____
Name and Title of Authorized Representative (print or type)

_____ Dated: _____
Signature of Authorized Representative

B. The Contractor/Subcontractor **[circle one]** has one or more collective bargaining agreements in effect for all of its employees that deal with the subject matter of the Substance Abuse Prevention in Public Works Projects Act, 820 ILCS 265/1 *et seq.*

_____
Name of Contractor/Subcontractor (print or type)

_____
Name and Title of Authorized Representative (print or type)

_____ Dated: _____
Signature of Authorized Representative

EMPLOYMENT OF ILLINOIS WORKERS OF PUBLIC WORKS ACT CERTIFICATION

I hereby certify that I have been provided with a copy of the Employment of Illinois Workers of Public Works Act (Page 33, Section G.) and that I am in compliance with the workforce requirements. Furthermore, I accept full liability for present and future compliance with the Act throughout the duration of performance under this contract.

_____

CONTRACTOR NAME

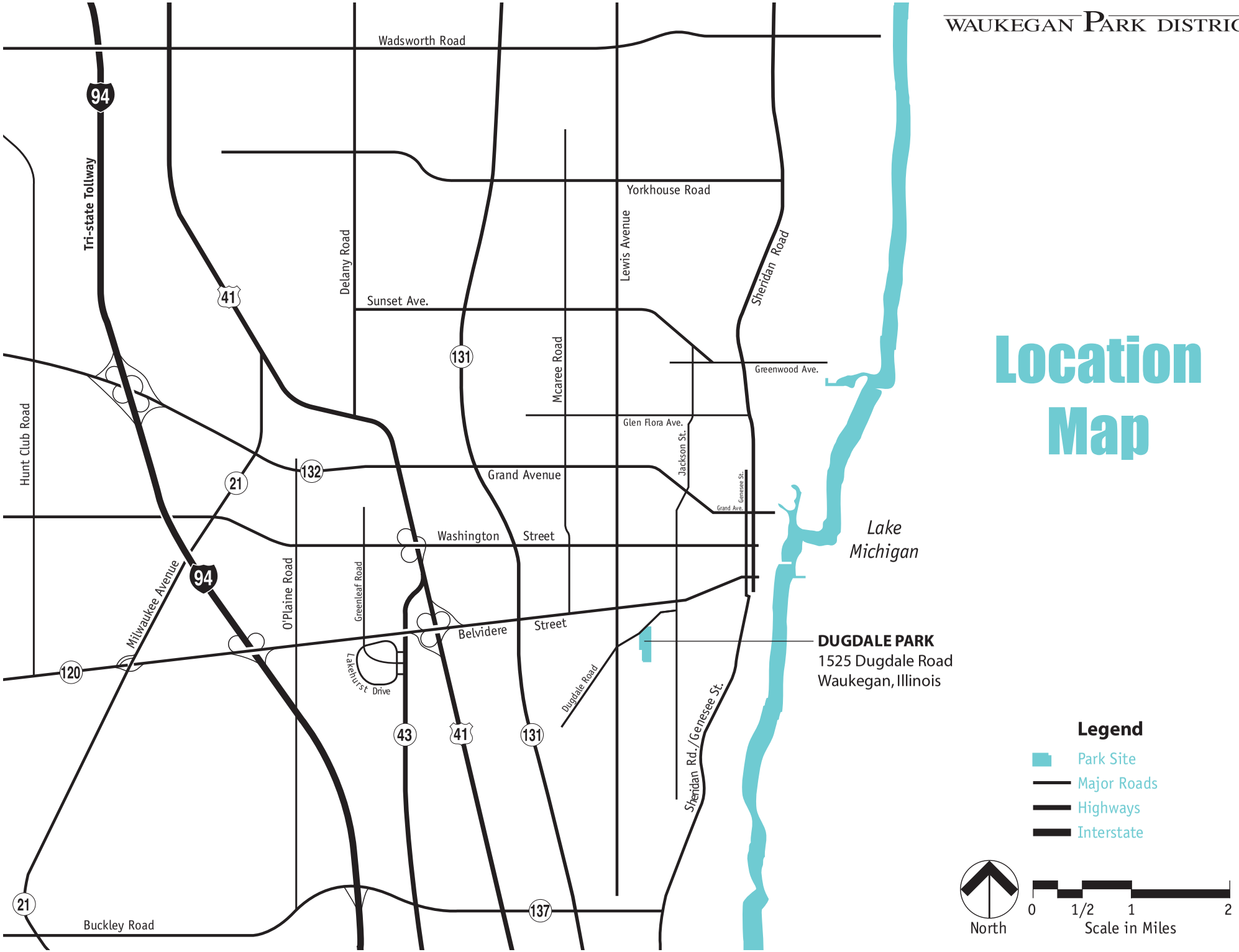
By: _____ (Signature)

_____ (Printed Name)

Its: _____(Title)

WAUKEGAN PARK DISTRICT

Location Map



SECTION 00 0110
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ITEM

END OF SECTION

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: Dugdale Park Renovation.

B. Owner's Name: Waukegan Park District.

C. Architect's Name: Legat Architects.

D. The Project consists of the renovation of an existing park in Waukegan, Illinois. The work includes: including the addition of new play fields, walking trails, and playground, and waterplay equipment.

1. The addition of new playfields, walking trails, and a playground.
2. The addition of new waterplay equipment.
3. Renovation of an existing public restroom building.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 5200 – Agreement Form.

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of alterations work is indicated on drawings.

B. Plumbing:

1. Install new waterplay equipment in designated splashpad area.
2. Upgrade existing plumbing lines and fixtures.

C. HVAC: Install a new exhaust system in the public restroom building.

D. Electrical Power and Lighting:

1. Remove and reinstall existing light fixtures as required to complete installation.
2. Coordinate work around existing power lines at soffit with the Owner and utility company.

E. Fire Suppression Sprinklers: No work.

F. Fire Alarm: No work.

G. Telephone: No work.

H. Security System: No work.

1.04 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the public park during the entire construction period.

B. Owner intends to occupy the Project upon Substantial Completion.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

D. Schedule the Work to accommodate Owner occupancy.

1.05 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.
1. Locate and conduct construction activities in ways that will limit disturbance to site.

B. Provide access to and from site as required by law and by Owner:
1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
2. Do not obstruct roadways, sidewalks, or other public ways without permit.

C. Existing building spaces may not be used for storage.

D. Utility Outages and Shutdown:
   1. Limit disruption of utility services to hours the building is unoccupied.
   2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days' notice to Owner and authorities having jurisdiction.
   3. Prevent accidental disruption of utility services to other facilities.

1.06 WORK SEQUENCE

A. Coordinate construction schedule and operations with Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 1300
SUBMITTALS

1.0 CONTRACTOR'S CONSTRUCTION SCHEDULES

1.1 Immediately after notification of Contract Award, the Contractor shall prepare and deliver to the Owner's Representative for approval, a Construction Schedule. This Schedule shall include a breakdown of the various divisions of the Work and shall show the date of commencement and the date of completion of each division of the Work. This Schedule shall be prepared on the basis of the Contractor's stated Final Completion Date and in consultation with Contractors for any other work involved in the completion of the Project, and with the Owner's Representative's consent or direction, shall be revised from time to time as required. This Schedule shall include the Owner's equipment installation timetable (if any) as furnished by him/her.

2.0 CONTRACTOR PAYOUTS AND LIEN WAIVERS

2.1 Contractor shall submit payment requests in **triplicate** using standard AIA Document G702 "Application and Certificate for Payment.

2.2 Waivers of lien shall be submitted in **triplicate** from all major Subcontractors or suppliers as directed by the Owner.

3.0 SURVEY DATA

3.1 Contractor shall be responsible for properly laying out the Work, and for lines and measurements for the Work executed under Contract Documents. Verify figures shown on the drawings before laying out the Work, and report errors or inaccuracies in writing to the Owner's Representative before commencing work. The Owner's Representative will in no case assume responsibility for laying out the Work.

3.2 Establish necessary reference lines and permanent benchmarks from which built object lines and elevations shall be established. Contractor shall establish two such benchmarks in widely separated locations and be responsible for proper location and level of the work and for maintenance of reference lines and benchmarks. Establish benchmarks and axis lines showing exact floor elevations and other lines and dimensional reference points as required for information and guidance of all trades.

3.3 Each Subcontractor, as it applies to his/her work, shall verify grades, lines, levels, locations, and dimensions as shown on drawings and report any errors or inconsistencies to the Owner's Representative before commencing work. Starting of work by Subcontractor shall constitute acceptance.

4.0 SHOP DRAWINGS, PRODUCT DATA, SAMPLES (SUBMITTALS)

4.1 The contractual requirements for shop drawings, product data, and samples are specified in the General and Supplemental Conditions. The Contractor shall submit shop drawings, product data, and samples.

4.2 Within thirty (30) days after award of Contract, Contractor shall prepare a schedule of specific target dates for submission and return of Owner's Representative reviewed submittals required by Contract Documents.

4.3 No Portion of work requiring such submittal will be permitted to start until submission has been reviewed by the Owner's Representative. Changes or modification to Contract Documents shall not be initiated by corrections to submittals.

4.4 Submittals which reflect major design changes to the Contract Drawings or Specifications must be accompanied by a separate letter justifying change, and will require that a change order be executed prior to acceptance.

5.0 SUBMITTAL PROCEDURES BY CONTRACTOR

5.1 Shop Drawings

A. Submit to the Owner's Representative four (4) copies of Shop Drawings for review. The Owner's Representative's check of any Contractor's Shop Drawings will cover approval of material and design only, and while figures or dimension will be checked in a general way, the responsibility for correctness of all drawings will rest with the Contractor submitting the Shop Drawings. After review, three (3) copies of the Shop Drawings with corrections or accompanying comments will be returned to the Contractor for resubmission, if required, after corrections have been made. For final resubmission, after corrections have been made, the Contractor shall send prints to the Owner's Representative for distribution. The Owner's Representative review of the Shop Drawings does not relieve the Contractor from furnishing materials and performing work as required by the Contract Documents. No extension of time will be granted for review and approval.

5.2 Product Data

A. Submit to the Owner's Representative three (3) copies of the manufacturer's specification, installation instructions and general recommendations for applicable products. Include manufacturer's certification or other data substantiating that the materials comply with the requirements and are recommended by manufacturer for the application shown and specified. Indicate by copy of transmittal form that Installer has received copy of the instructions and recommendations. Hardware schedules and collection of catalog cuts such as light fixtures, site furniture, etc., shall be presented in bound brochures, three (3) copies each.

5.3 Samples

A. Submit to the Owner's Representative two (2) samples and color data information for all finishes and finish materials.

6.0 DISTRIBUTION

6.1 Contractor is responsible for obtaining and distributing required submittal items to his/her Subcontractors and material suppliers after, as well as before, items are stamped "Approved."

7.0 SHOP DRAWINGS FILE TO OWNER

7.1 At completion of construction, Contractor shall furnish for Owner's use one (1) unused copy of all Shop Drawings, manufacturer's diagrams, literature, etc., that were used in execution of the Work.

END OF SECTION

SECTION 01 1500
TEMPORARY FACILITIES

1.0 GENERAL

1.1 Contractor shall provide temporary facilities and controls as specified or as required for protection of the Work in accordance with applicable codes.

1.2 All temporary connections to utilities and services shall be acceptable to Owner and local authorities having jurisdiction thereof. OSHA Standards and Regulations shall apply if more restrictive.

1.3 Contractor shall note that if any part of the permanent building equipment (plumbing, heating, electrical) is used to provide temporary utilities, this shall not void or shorten the equipment guarantee provided by the Contractor and material and equipment supplier and as described in Contract Documents.

2.0 TEMPORARY WATER

2.1 The Contractor shall provide temporary water service for construction operations.

3.0 TEMPORARY SANITARY FACILITIES

3.1 Provide and maintain required sanitary facilities for work force.

4.0 CONSTRUCTION AIDS

4.1 Contractor shall furnish, maintain, and remove at completion, all temporary ladders, ramps, barricades, enclosures, fences, walks and like facilities, as required for proper execution of Work for all trades, except as otherwise specifically required under individual section.

4.2 All such apparatus, equipment, and construction shall meet all requirements of OSHA and other applicable state or local laws.

4.3 Contractor and each of their Subcontractors, for their own use, shall provide all scaffolding required for execution of their own work. Scaffolding shall not be built into walls of buildings.

5.0 WATER AND SNOW CONTROL

5.1 From commencement to final payment Contractor shall keep all parts of the Work free from accumulation of water, snow and ice for the protection of their Work. Protect the Work against weather damage.

6.0 TEMPORARY FIELD OFFICES

6.1 Contractor, at his/her option, shall provide and maintain a field office. Construction sheds, trailers and temporary offices provided by Contractor shall be maintained in good condition. Field office is not a pay item and if included at Contractor's option will be considered incidental to the project cost.

7.0 TEMPORARY LIGHT AND POWER

7.1 The Contractor shall provide electrical power during construction operations.

7.2 Contractor shall provide his own extension cords and lamps, if required, and shall also be responsible to see that these are furnished by or for each of his/her Subcontractors as they may be required.

7.3 Where service of characteristics, quality or locations other than described above may be required, each Contractor requiring same shall provide such additional service and necessary equipment at his/her own expense.

8.0 SHORING AND BRACING

8.1 The Contractor shall provide, install and maintain all shoring and bracing or other devices necessary to maintain all aprons, curbs, pavements, and existing structure, etc., at their present levels and in their present location and condition during construction. Demolish all such work after it is not needed and required and remove it from the premises.

END OF SECTION

SECTION 012100
ALLOWANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Inspecting and testing allowances.

1.02 INSPECTING AND TESTING ALLOWANCES

A. Costs Included in Inspecting and Testing Allowances: Cost of engaging an inspecting or testing agency; execution of inspecting and tests; and reporting results.

B. Payment Procedures:
   1. Submit one copy of the inspecting or testing firm's invoice with next application for payment.

C. Differences in cost will be adjusted by Change Order.

1.03 ALLOWANCES SCHEDULE

A. Concrete Slab Testing Allowance: Include the sum of $2,000.00 for testing (and remediation) of existing concrete floor slabs.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2101
SITE PREPARATION AND PROTECTION OF EXISTING FACILITIES

1.0 GENERAL

1.1 Description

A. This work shall consist of the complete removal of all items called for in the plans and specifications or as otherwise implied in a safe and orderly manner creating as little disturbance as possible.

B. All areas indicated for construction of any kind shall be cleared of any debris, undergrowth, weeds, stumps, roots, and marked trees which might interfere with the progress of that work. Unmarked trees or any plant material indicated to be saved by the Owner or Owner's Representative shall be given special protection as specified.

2.0 PRODUCTS (not applicable)

3.0 EXECUTION

3.1 Safety of Operations

A. Work site safety is the Contractor's responsibility. During removal operations, proper signs and security fence shall be installed by the Contractor prior to commencing work. Barricades shall be used to warn and protect the public against hazards. If a street must be temporarily closed to traffic, it shall be the Contractor's obligation to make arrangements for permission from the governing agency prior to closing. After such approval is obtained, the Contractor shall notify the Owner, local law enforcement, and Fire Department of actual times and dates of closure.

3.2 Protection and restoration of Items to Remain.

A. Locations and dimensions shown in the Drawings for existing facilities are in accordance with available information obtained without uncovering, measuring or other verification and are not guaranteed. The Contractor shall protect from damage private and public utilities encountered during the Work. The Contractor shall, before an excavation begins, call J.U.L.I.E. or Digger (depending on service location).

B. Extreme care shall be utilized when removing any item adjacent to structures, utilities, paving, vegetation or any item not indicated for removal or relocation whether shown on the Drawings or not. These items shall be properly protected as required to keep them from damage or other disturbance of any kind during the course of work. Existing utilities shall be protected and maintained to prevent leakage, settlement or other damage. Damage to any of the above shall be repaired or replaced to former condition as required by the utility company or Owner at the Contractor's expense. Repair of damaged utility shall be completed within 24 hours of damage occurring.

C. The Contractor shall, at no additional cost to the Owner, provide and install safeguards acceptable to the Owner to protect public and private property. During removal operations, proper signs and security fence shall be installed by the Contractor prior to commencing work. Barricades shall be used to warn and protect the public against hazards.

1. If a street must be temporarily closed to traffic, it shall be the Contractor's obligation to obtain permission from the governing agency prior to closing. After such approval is obtained, the

Contractor shall notify the Owner, local law enforcement, and Fire Department of actual times and dates of closure.

2. If public or private property is damaged or destroyed or its use interfered with by the Contractor, the Contractor's agents or the Contractor's employees, such interference shall be terminated and damaged or destroyed property repaired and restored immediately to its former condition by the Contractor at the Contractor's expense.
3. Should the Contractor refuse or not respond promptly to a written request to restore damaged or destroyed property to its original condition, the Owner may have such property restored by other means at the Contractor's expense.

3.3 Protection and Restoration of trees, shrubs, and plant material

A. Trees, shrubs, plants, and other landscaping not designated for removal shall be left in place and protected from damage or injury during construction. The Contractor shall provide full and adequate protection against construction damage to all landscaping that is to remain.
B. No traffic, storage of Equipment, vehicles or materials shall be allowed within the drip line of trees not designated for removal unless plans permit such activity. In addition, plans may indicate no-construction activity areas that are larger than the dripline (see plan notes).
C. Root pruning shall occur on all tree roots larger than one inch, but less than two inches in diameter. Such roots shall be cleanly cut in place. Root pruning shall be done so as not to disturb remaining fibrous roots.
D. Where excavation operations occur and where tree roots 2 inch or greater in diameter are discovered, the Contractor shall promptly notify the Owner's Representative, who will determine how these tree roots are to be handled.
E. Promptly cover exposed roots and maintain moisture on them to keep them alive.
F. Failure to promptly preserve the viability of roots on trees to be saved may result in the Owner making corrective action. Given the urgency needed in keeping desirable tree roots alive, the Owner may take such action following as little as twenty-four-hour notice to the Contractor. Reasonable costs for any and all such action by Owner may be charged to the Contractor and/or deducted from project monies due to the Contractor.

3.4 Plant Damage Compensation

A. The Owner shall be reimbursed for trees or other plant material not ordered or designated to be removed but that are destroyed or irreparably damaged by Contractor operations as determined by the Owner's Representative. At a minimum, the Contractor shall reimburse Upland Design and/or other Owner consultant for time and materials expended related to tree damage (such as meetings, measuring, preparing reports and preparing change orders)
B. Damage to tree trunks, branches and roots shall be reported to the owner's representatives immediately.
C. The penalty for each incidence of trunk damage to trees shall be $450.00. Use current value at time of bidding.
D. The penalty for each incidence of branch or root damage shall be $100.00 Use current value at time of bidding. per caliper inch.

E. The penalty for compaction of soil by unauthorized vehicle travel on the grounds shall be $.45 per square foot (Use current value at the time of bidding) of traveled area.
F. Where the damaged tree is a heritage tree or landscape specimen, the reimbursement amount will be based on a benefit-based-valuation. This service is to be conducted by a certified arborist trained in tree appraisals that is approved by the Owner and the cost of the service will be borne solely by the contractor.
G. The penalty for damage to a shrub shall be the removal and replacement cost as determined by at least two written quotes obtained by the Owner.

3.5 Removal Responsibility

A. All debris, paving, equipment, fencing, trees, stumps, sod or soil to be cleared and removed from the project area shall be legally disposed of off site at the arrangement and expense of the Contractor. No materials will be stockpiled on site for future disposal; materials used for fill or topsoil may be stored on site. No excavation areas will be left in unsafe or unsightly conditions at day's end. The Contractor will be responsible for all transportation and disposal fees associated with this work. Burning of any materials on site is prohibited unless indicated otherwise on plans.

END OF SECTION

SECTION 01 2140
SOIL, CONSTRUCTION & DEMOLITION DEBRIS REMOVAL

1.0 GENERAL

1.1 Introduction

A. Related Documents: All terms and conditions of the Contract apply to this Section.

B. Work included: This specification is for the excavation, stockpiling, loading, hauling, removal, and disposal of any soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, topsoil, CU structural soil/stone, and/or construction and demolition debris. The contractor shall perform the work under this Section in accordance with all applicable local, county, state, and federal regulations. The work shall include the following:

1.2 Removal and disposal

A. Excavation of soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, topsoil, CU structural soil/stone, and/or construction and demolition debris materials to the depth required to complete the proposed site preparation/construction work activities as specified in the Architect/Engineer drawings and specifications.

B. Perform analytical testing by an IEPA-accredited laboratory for waste stream authorizations as necessary to secure authorization to dispose of the material at an appropriately permitted disposal facility.

C. Collect samples only from the excess materials that require offsite disposal. Under no circumstances shall the contractor sample any material that is to remain onsite without authorization directly from the Owner.

D. Obtain authorization from a permitted disposal facility – either a Clean Construction & Demolition Debris facility or a Subtitle D landfill.

E. Load and transport all materials to the approved permitted disposal facility.

F. Prepare daily reports, transport manifests, weight tickets and receipts (as applicable) prior to starting any soil removal activities.

G. Provide copies of all daily reports, transport/waste manifests, weight tickets, and disposal receipts (as applicable) to the Owner's Representative on a daily basis documenting proper disposal of soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, topsoil, CU structural soil/stone, and general construction and demolition debris materials.

1.3 Definitions

A. Agency means Illinois Environmental Protection Agency (IEPA).

B. Board Authorized Representative means the person or entity designated as the official representative of the owner in connection with a project.

C. Clean Construction & Demolition Debris means uncontaminated broken concrete without protruding metal bars, bricks, rock, stone, reclaimed or other asphalt pavement, or soil generated from construction or demolition activities. CCDD may include uncontaminated broken concrete without protruding metal bars, bricks, rock, stone, or reclaimed or other asphalt pavement that has been painted ("painted CCDD") if the painted CCDD is used as fill material at a CCDD

fill operation in accordance with Section 1100. 212 of the Illinois Environmental Protection Act. Clean construction or demolition debris does not include uncontaminated soil generated during construction, remodeling, repair, and demolition of utilities, structures, and roads provided the uncontaminated soil is not commingled with any clean construction or demolition debris or other waste. Uncontaminated soil may include incidental amounts of stone, clay, rock, sand, gravel, roots, and other vegetation.

D. CU structural soil/stone means a uniformly blended mixture of crushed stone, clay, loam and/or hydrogel.

E. Fill means any earthen or non-earthen materials including but not limited to any sediment, granular or cohesive non-native earthen materials, cinders, ash, wood, and brick, concrete, and asphalt fragments, glass, and building debris encountered above naturally occurring undisturbed soils or bedrock in built-up areas.

F. General construction and demolition (C&D) debris means non-hazardous, uncontaminated materials resulting from construction, remodeling, repair, and demolition of utilities, structures, and roads as defined in Public Act 92-0574, The Environmental Protection Act, 415 ILCS 5 Section 3.160 and regulated under Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board; Subchapter i: Solid Waste and Special Waste Hauling. C&D debris may include soil, wall coverings, reclaimed asphalt pavement, rock, plaster, glass, non-hazardous painted wood, drywall, plastics, non-hazardous coated wood, non-asbestos insulation, bricks, wood products, roofing shingles, concrete, and general roof coverings.

G. Permitted Subtitle D landfill means any solid waste landfill facility in any state licensed and/or permitted to accept non-hazardous waste.

H. IEPA means Illinois Environmental Protection Agency.

I. IDOT means Illinois Department of Transportation.

J. Manifest means the form provided or prescribed by IEPA and used for identifying name, quality, routing, and destination of special waste during its transportation from point of generation to the point of disposal, treatment, or storage.

K. Hazardous waste means a waste, or combination of wastes, which has been identified by characteristics or listing as hazardous pursuant to Section 3001 of the Resource Conservation and Recovery Act of 1976, P.L. 94-580, 40 CFR part 261, Illinois Environmental protection Act 415 ILCS 5/3.220, and Section 809.103 of Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board. A waste is classified as hazardous if it exhibits any of the following characteristics: 1) ignitability, 2) corrosivity, 3) reactivity, or 4) toxicity, and as defined in Illinois Administrative Code Title 35, Section 721.103 (35 IAC 721.103).

L. MSDS means Material Safety Data Sheet, required by OSHA for any substances that are toxic, caustic, or otherwise potentially hazardous to workers.

M. Non-Special Waste mean a non-hazardous industrial-process or pollution-control waste that is not a liquid (as determined by paint-filter test SW-846 Method 9095); not regulated asbestos-containing material as defined in 40 Code of Federal Regulations, Section 61.141; does not contain polychlorinated biphenyls (PCBs) regulated in accordance with 40 Code of Federal Regulations, Part 761; is not formerly hazardous waste rendered non-hazardous; and does not result from shredding recyclable metals (e.g. auto fluff).

N. OSHA means Occupational Safety and Health Administration.
O. Soil means any granular or cohesive materials designated for removal as specified in the Architect/Engineer drawings and specifications and includes soils that are determined to be non-special and special waste.
P. Special waste means any wastes as defined in Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board; Subchapter i: Solid Waste and Special Waste Hauling; Part 808: Special Waste Classifications; Subpart A: General Provisions; Section 808.110,

AND

Any wastes as defined in Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board; Subchapter i: Solid Waste and Special Waste Hauling; Part 809: Non Hazardous Special Waste Classifications; Subpart A: General Provisions; Section 809.103.

Q. SROs mean soil remediation objectives for various exposure routes identified in 35 Illinois Administrative Code 742: Tiered Approach to Corrective Action Objectives (TACO).
R. Storm water means water deposited at the site in the form of rain, snow or other natural weather event.
S. TACO means TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES per 35 Illinois Administrative Code 742.
T. Topsoil means soils or black dirt used to promote vegetative growth.
U. USEPA means United States Environmental Protection Agency.

1.4 Submittals

A. Copies of the following submittals shall be prepared and submitted to the Owner and Owner's Authorized Representative at contractor's own cost:

1. Soil, fill, backfill, CU structural soil/stone, construction and demolition debris removal

a. Letter of authorization from the facility where soils (including non-special waste soils and non-hazardous special waste soils), fill, general or clean construction and demolition debris are to be deposited prior to removal from the site.

1.5 Notifications

A. The contractor shall notify the Owner or Owner's Authorized Representative no less than forty-eight (48) business hours prior to loading and transporting any materials from the site.

1.6 Recordkeeping

A. The contractor shall provide documentation of labor, equipment, materials and disposal laboratory analysis used for soil removal, when requested by the Owner's Authorized Representative.

2.0 PRODUCTS

2.1 Removal

A. The contractor shall furnish all necessary means, products, tools, and equipment required to remove soil (including non-special waste soils and non-hazardous special waste soils), fill, backfill, CU structural soil/stone and/or

construction and demolition debris from the site as directed by the Owner's Authorized Representative.

3.0 EXECUTION

3.1 Authorizations

A. Unless otherwise noted on the plans, contractor shall assume removal to subtitle D Landfill for material removal. Contractor is responsible for all documentation for material being removed from the site.

B. Obtain authorization from the permitted disposal facility owner where soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, CU structural soil/stone and/or construction and demolition debris are to be transported, stored, or disposed. The authorization must be signed by a facility representative and shall state that the facility has received a copy of one or more laboratory analyses of representative sample(s) collected from the site by the contractor and has agreed to accept the material. The authorization shall further state that the facility agrees to accept the material for permanent placement on their site and that the material will not be removed from their site unless required by a local, state or federal authority. The authorization shall further state that the facility complies with all local zoning codes, state, federal and local laws, rules, and regulations.

C. Obtain prior authorization from Authorized Representative to backfill excavations and utility lines, and apply topsoil. All backfill, CU structural soil/stone, and topsoil shall comply with site specific project specifications.

D. Haulers for transportation of soils, backfill and topsoil shall hold, and present upon request, a current valid Commercial Driver's License (CDL). Non-hazardous special wastes and hazardous wastes must be hauled by an IDOT-approved, licensed, and permitted transporter and must be visible during transportation.

3.2 Material Sampling

A. Soil, fill, backfill, CU structural soil, construction and demolition debris

1. The contractor shall collect sufficient amount of representative sample(s) from each type of material being removed from the site for analytical testing to obtain authorization for the ultimate disposition of the materials. The contractor is responsible for acquisition of any required permits and payment of all fees.
2. The contractor shall collect samples only from the excess materials that require offsite disposal. Under no circumstances shall the contractor sample any material that is to remain onsite without authorization directly from the Owner.
3. The contractor shall be responsible for obtaining liquid samples as needed for characterization for liquid disposal offsite or disposition onsite as applicable. The contractor is responsible to the acquisition of

any required disposal permits and the payment of any fees associated with liquid disposal.

4. The contractor shall submit the soil and liquid samples (as applicable) to the laboratory and pay for the cost of analyzing the constituents required for the ultimate disposition of soils and liquids.
5. The contractor may collect samples for laboratory analysis or field Photo-ionization Detector (PID) screening, or liquid samples for laboratory analysis.
6. The contractor shall immediately notify the Owner or Owner's representative if any materials, (solid or liquid) requiring special handling (i.e., stained soil, soil with odors, or liquids) are encountered.
7. All excavated soils, liquids, and other material shall be removed from the site in accordance with applicable federal, state, and local regulations.

3.3 Excavation

A. The contractor shall perform excavation of soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, CU structural soil/stone and/or construction and demolition debris as directed by the Owner's Representative.
B. All excavation shall be performed in accordance with OSHA requirements and guidelines. The contractor shall be responsible for its worker's health and safety.

3.4 Hauling

A. The contractor shall remove soils, dusts, rocks, etc. from the exterior of trucks, trailers, or other heavy equipment leaving the site before they leave the site.
B. The contractor shall clean the tractor-trailers or trucks that are loaded with materials for off site placement/salvage by removing clinging soils, or rocks from the exterior of the equipment.
C. The contractor shall not create dust and shall maintain adequate dust suppression equipment on site if conditions warrant.
D. The contractor shall maintain streets clean and free of mud and dirt.
E. The contractor shall conduct soil (including non-special waste soils and non-hazardous special waste soils), fill, backfill, CU structural soil/stone and/or construction and demolition debris removal in a manner that ensures minimum interference with roads; streets, walks and other adjacent occupied and used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from the applicable governing agency and Board Authorized Representative. Provide alternate routes around closed or obstructed traffic ways if required by the governing agency.

3.5 Transportation

A. The contractor shall remove soils, dusts, rocks, etc. from the exterior of trucks, trailers, or other heavy equipment leaving the site before they leave the site.

The contractor shall provide complete copies of all daily reports, weight tickets and receipts (as applicable) for transportation and ultimate off site placement of materials removed from the property to the Board Authorized Representative, review and signature as required.

3.6 Dust Control

A. The contractor shall control dust by all necessary means, including but not limited to covering trucks, stockpiles and open materials, watering haul roads, sweeping paved roads, and limiting the speed of all on-site vehicles.

3.7 Liquid (Water) Management

A. The contractor shall subscribe to a weather notification system and manage the work so as not to accumulate storm water on the site during excavation.

B. The contractor shall ensure that contamination of water, perched water and previously uncontaminated water or perched water does not occur by preventing the contact of such liquid with materials that exceed Title 35: Environmental Protection Subtitle G: Waste Disposal Chapter I: Pollution Control Board Subchapter F: Risk Based Cleanup Objectives, Part 742, Tiered Approach To Corrective Action Objectives, Appendix B, Table A values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. Earthen berms, plastic (polyethylene) sheeting, pumping, and other such means may be used as needed to prevent contaminated water.

C. If the contractor, through negligence, allows storm water to contact materials that exceed Title 35: Environmental Protection Subtitle G: Waste Disposal Chapter I: Pollution Control Board Subchapter F: Risk Based Cleanup Objectives, Part 742, Tiered Approach To Corrective Action Objectives, Appendix B, Table A values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters, the water must be disposed of as water that exceeds Title 35: Environmental Protection Subtitle G: Waste Disposal Chapter I: Pollution Control Board Subchapter F: Risk Based Cleanup Objectives, Part 742, Tiered Approach To Corrective Action Objectives, Appendix B, Table A values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. The contractor will be responsible for the additional costs incurred for any disposal analysis and disposal costs.

3.8 Quality Control

A. Visual inspections and damage repairs shall be made daily by the contractor and/or as directed by the Owner's Authorized Representative to assure that erosion, drainage and containment control measures are functioning properly.

B. The contractor shall take all necessary precautions to protect structures, equipment, pavement, walks and utilities against movement or settlement during the course of work.

C. Damages: Promptly replace or repair any damage caused to adjacent pavement, utilities or facilities by removal operations at no additional cost. Work shall be performed to the satisfaction of the Board Authorized Representative.

D. Utility services: Maintain existing utilities and protect against damage during removal operations.

END OF SECTION

SECTION 01 2500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Section 00 2113 - Instructions to Bidders: Restrictions on timing of substitution requests.

B. Section 01 2200 - Unit Prices, for additional unit price requirements.

C. Section 01 2300 - Alternates, for product alternatives affecting this section.

D. Section 01 3000 - Administrative Requirements: Submittal procedures, coordination.

E. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

F. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Restrictions on emissions of indoor substitute products.

1.03 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
      a. Unavailability.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
      a. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
   1. Note explicitly any non-compliant characteristics.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. No specific form is required. Contractor's Substitution Request documentation must include the following:
      a. Project Information:
         1) Official project name and number, and any additional required identifiers established in Contract Documents.
      b. Substitution Request Information:
         1) Indication of whether the substitution is for cause or convenience.

2) Issue date.
3) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
4) Description of Substitution.
5) Reason why the specified item cannot be provided.
6) Differences between proposed substitution and specified item.
7) Description of how proposed substitution affects other parts of work.

c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
1) Physical characteristics.
2) In-service performance.
3) Expected durability.
4) Visual effect.
5) Sustainable design features.
6) Warranties.
7) Other salient features and requirements.
8) Include, as appropriate or requested, the following types of documentation:
(a) Product Data:
(b) Certificates, test, reports or similar qualification data.
(c) Drawings, when required to show impact on adjacent construction elements.

d. Impact of Substitution:
1) Savings to Owner for accepting substitution.
2) Change to Contract Time due to accepting substitution.

D. Limit each request to a single proposed substitution item.
1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
1. Owner will consider requests for substitutions only if submitted at least 5 days prior to the date for receipt of bids.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Architect will consider requests for substitutions only within 15 days after date of Agreement.

B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

C. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
3. Bear the costs engendered by proposed substitution of:
a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.

D. Substitutions will not be considered under one or more of the following circumstances:
1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
2. Without a separate written request.
3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

B. Include completed Substitution Request Forms as part of the Project record.

END OF SECTION

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Electronic document submittal service.

C. Preconstruction meeting.

D. Progress meetings.

E. Construction progress schedule.

F. Submittals for review, information, and project closeout.

G. Number of copies of submittals.

H. Requests for Interpretation (RFI) procedures.

I. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 016000 - Product Requirements: General product requirements.

B. Section 017000 - Execution and Closeout Requirements: Additional coordination requirements.

C. Section 017800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Architect:
   1. Requests for Interpretation (RFI).
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.
   5. Design data.
   6. Manufacturer's instructions and field reports.
   7. Applications for payment and change order requests.
   8. Progress schedules.
   9. Coordination drawings.
   10. Correction Punch List and Final Correction Punch List for Substantial Completion.
   11. Closeout submittals.

1.04 PROJECT COORDINATOR

A. Project Coordinator: General Contractor.

B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for building access, traffic, and parking facilities.

C. During construction, coordinate use of site and facilities through the Project Coordinator.

D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 011000 - Summary.

F. Coordinate field engineering and layout work under instructions of the Project Coordinator.

G. Make the following types of submittals to Architect through the Project Coordinator:
    1. Requests for Interpretation.
    2. Requests for substitution.
    3. Shop drawings, product data, and samples.
    4. Test and inspection reports.
    5. Manufacturer's instructions and field reports.
    6. Applications for payment and change order requests.
    7. Progress schedules.
    8. Correction Punch List and Final Correction Punch List for Substantial Completion.
    9. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
    1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
    2. Contractor and Architect are required to use this service.
    3. It is Contractor's responsibility to submit documents in allowable format.
    4. Subcontractors, suppliers, and Architect's consultants are to be permitted to use the service at no extra charge.
    5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
    6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
    7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Cost: The cost of the service is to be paid by Contractor; include the cost of the service in the Contract Sum.

C. Submittal Service: The selected service is:

D. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.

E. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 PRECONSTRUCTION MEETING

A. Project Coordinator will schedule a meeting after Notice of Award.

B. Attendance Required:
    1. Owner.
    2. Architect.
    3. Contractor.

C. Agenda:

1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing the parties to Contract and Architect.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required:
1. Contractor.
2. Owner.
3. Architect.
4. Contractor's superintendent.
5. Major subcontractors.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of RFIs log and status of responses.
7. Review of off-site fabrication and delivery schedules.
8. Maintenance of progress schedule.
9. Corrective measures to regain projected schedules.
10. Planned progress during succeeding work period.
11. Coordination of projected progress.
12. Maintenance of quality and work standards.
13. Effect of proposed changes on progress schedule and coordination.
14. Other business relating to work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 CONSTRUCTION PROGRESS SCHEDULE

A. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

B. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
1. Include written certification that major contractors have reviewed and accepted proposed schedule.

C. Within 10 days after joint review, submit complete schedule.

D. Submit updated schedule with each Application for Payment.

3.05 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:

1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit an RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1. Prepare a separate RFI for each specific item.
    a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
    b. Do not forward requests which solely require internal coordination between subcontractors.
2. Prepare in a format and with content acceptable to Owner.
3. Prepare using software provided by the Electronic Document Submittal Service.
4. Combine RFI and its attachments into a single electronic file. PDF format is preferred.

D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
    a. Approval of submittals (use procedures specified elsewhere in this section).
    b. Approval of substitutions (see Section - 016000 - Product Requirements)
    c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
    d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.

E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Owner's, Architect's, and Contractor's names.
3. Discrete and consecutive RFI number, and descriptive subject/title.
4. Issue date and requested reply date.
5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example, routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
   1. Indicate current status of every RFI. Update log promptly and on a regular basis.
   2. Note dates of when each request is made, and when a response is received.
   3. Highlight items requiring priority or expedited response.
   4. Highlight items for which a timely response has not been received to date.

H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
   1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
   1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
   2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
   3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
   4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.06 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.
   4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

3.07 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.08 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.09 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.10 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a separate transmittal for each item.
   2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
   3. Transmit using approved form.
      a. Use form generated by Electronic Document Submittal Service software.
   4. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
   5. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
   6. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
      a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
   7. Schedule submittals to expedite the Project, and coordinate submission of related items.
      a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
      b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
      c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 days.
   8. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
   9. Provide space for Contractor and Architect review stamps.
   10. When revised for resubmission, identify all changes made since previous submission.
   11. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
   12. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work and have received prior approval for their use.
   13. Submittals not requested will not be recognized or processed.

B. Product Data Procedures:
   1. Submit only information required by individual specification sections.
   2. Collect required information into a single submittal.
   3. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:
   1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
   2. Do not reproduce Contract Documents to create shop drawings.
   3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Samples Procedures:
   1. Transmit related items together as single package.
   2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
   3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.

3.11 SUBMITTAL REVIEW

A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.

B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.

C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
   1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.

D. Architect's and consultants' actions on items submitted for review:
   1. Authorizing purchasing, fabrication, delivery, and installation:
      a. "Approved", or language with same legal meaning.
      b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
         1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
      c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
         1) Resubmit corrected item, with review notations acknowledged and incorporated. Resubmit separately, or as part of project record documents.
         2) Non-responsive resubmittals may be rejected.
   2. Not Authorizing fabrication, delivery, and installation:
      a. "Revise and Resubmit".
         1) Resubmit revised item, with review notations acknowledged and incorporated.
         2) Non-responsive resubmittals may be rejected.
      b. "Rejected".
         1) Submit item complying with requirements of Contract Documents.

E. Architect's and consultants' actions on items submitted for information:
   1. Items for which no action was taken:
      a. "Received" - to notify the Contractor that the submittal has been received for record only.
   2. Items for which action was taken:
      a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Quality assurance.

C. References and standards.

D. Testing and inspection agencies and services.

E. Control of installation.

F. Tolerances.

G. Defect Assessment.

1.02 RELATED REQUIREMENTS

A. Section 012100 - Allowances: Allowance for payment of testing services.

B. Section 013000 - Administrative Requirements: Submittal procedures.

C. Section 014216 - Definitions.

D. Section 016000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2023).

B. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.

C. IAS AC89 - Accreditation Criteria for Testing Laboratories; 2021.

1.04 DEFINITIONS

A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.

B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

C. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.

1. Include:
    a. Date issued.
    b. Project title and number.
    c. Name of inspector.
    d. Date and time of sampling or inspection.
    e. Identification of product and specifications section.
    f. Location in the Project.
    g. Type of test/inspection.
    h. Date of test/inspection.
    i. Results of test/inspection.

j. Compliance with Contract Documents.
k. When requested by Architect, provide interpretation of results.

2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be recent or previous test results on material or product but must be acceptable to Architect.

E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

F. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

G. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.
1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.06 QUALITY ASSURANCE

A. Testing Agency Qualifications:
1. Prior to start of work, submit agency name, address, and telephone number, and names of full-time registered Engineer and responsible officer.
2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.

B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

C. Quality-Control Personnel Qualifications. Engage a person with requisite training and experience to implement and manage quality assurance (QA) and quality control (QC) for the project.

1.07 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.08 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Owner will employ services of an independent testing agency to perform certain specified testing; payment for cost of services will be derived from allowance specified in Section 012100; see Section 012100 and applicable sections for description of services included in allowance.

B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

A. See individual specification sections for testing and inspection required.

B. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
   5. Perform additional tests and inspections required by Architect.

6. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the Work.

D. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/inspections.
      d. To provide storage and curing of test samples.
   4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
   5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
   6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Owner, it is not practical to remove and replace the work, Owner will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 4216
DEFINITIONS

PART 1 GENERAL

1.01 SUMMARY

A. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

A. Furnish: To supply, deliver, unload, and inspect for damage.

B. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.

C. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.

D. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.

E. Provide: To furnish and install.

F. Supply: Same as Furnish.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary Controls: Barriers, enclosures, and fencing.

B. Security requirements.

C. Vehicular access and parking.

D. Waste removal facilities and services.

1.02 RELATED REQUIREMENTS

A. Section 015500 - Vehicular Access and Parking.

1.03 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.04 FENCING

A. Provide 6 foot (1.8 m) high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.05 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.06 INTERIOR ENCLOSURES

A. Provide temporary partitions as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.07 SECURITY - SEE SECTION 013553

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.08 VEHICULAR ACCESS AND PARKING - SEE SECTION 015500

A. Coordinate access and haul routes with governing authorities and Owner.

B. Provide and maintain access to fire hydrants, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.09 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5713
EROSION CONTROL

1.0 GENERAL

1.1 Description

A. Erosion Control shall consist of furnishing all labor, materials, tools and equipment necessary to place riprap material, silt fencing, erosion control blankets and triangular silt dikes in the locations indicated on the drawings.

1.2 Incorporated Specifications

A. The following specifications are incorporated into the document

1. "Standard Specifications for Road and Bridge Construction" – latest edition - Illinois Department of Transportation
    a. Section 280 Temporary Erosion Control
    b. Article 1005.01 Stone for Erosion Protection, Sediment Control and Rockfill
    c. Article 1081.10 Special Erosion Control Materials
    d. Article 251.04 Erosion Control Blanket
2. Contractor shall adhere to the above specifications unless applicable items of work or materials are modified herein.

2.0 MATERIALS

2.1 Riprap

A. Riprap fill shall consist of sound, durable cobbles and crushed rock having a maximum diameter of eight inches (8") as measured in the smallest dimension. Riprap shall be well graded and meet the gradation requirements for RR3 in accordance with the above referenced and incorporated specification.

2.2 Silt Fence

A. Silt fence shall be polypropolyne fabric. Stakes for silt fence shall be wooden or metal and at least five feet (5') long.

2.3 Erosion Control Blanket

A. 3:1 and Greater Slopes shall be Curlex I Single Net. As manufactured by:

1. American Excelsior Company, 850 Avenue H East, Arlington, Texas 76011, (800) 777-7645
    a. All staples shall be E-Staple, 4-inch bio-degradable. As manufactured by: American Excelsior Company OR www.Greenstake.com

B. Erosion control blanket shall be approved by the Department of Transportation. All netting shall be single sided and white UV reactive. Netting shall begin to bio-degrade within 15-18 months of installation. Netting shall have an opening between 1/2" x 1/2" and 2" x 1". Staple shall be 100% Polyhydroxyalkanoate (PHA) plastic, biodegradable from microbial activity in accordance to ASTM D5338 and ASTM D5271. Staples shall completely biodegrade within 24 months of installation. Staples shall be 4 inches (4") in length, T-Shaped and have barbed head and shoulders.

2.4 Triangle Silt Dike Barrier

A. Triangular silt dike barrier shall be urethane foam and geotextile fabric and shall have protective aprons on both sides of the barrier. Barrier shall be eight inches (8”) wide.

3.0 EXECUTION

3.1 Riprap Installation

A. Riprap shall be placed in a twelve inch (12”) thick layer or as shown on the drawings or as directed by Owner and worked as required to provide a well graded matrix of stone pieces.

3.2 Silt Fence

A. Silt fencing shall be placed in the locations shown on the plans and in accordance with the above incorporated specifications. Staking shall be a minimum of eight feet (8') apart. Silt fence shall remain in place for the duration of the construction project and shall only be removed with prior approval.

3.3 Erosion Control Blanket

A. Erosion control blankets shall be placed in accordance with the above incorporated specifications. Before barrier installation, ensure areas to be covered are smooth and free of ruts, depressions, rocks or clods over eighteen inches (18”) in diameter, sticks and any other debris that will prevent contact between the blanket and soil. Erosion control blanket to be installed within 24 hours after seeding. Staking shall be a minimum of six feet (6') apart and staked per the manufacturer’s instructions.

3.4 Triangular Silt Dike Barrier

A. Triangular silt dike barrier shall be placed in the locations shown on the plans and in accordance with the above incorporated specifications.

B. Secure triangular silt dike by burying the first six inches (6”) of the leading edge apron in a two to three inch trench. 4 to 5 staples shall be used on the front apron and 4 to 5 staples shall be used on the rear apron on each seven foot (7’) section. Water flow is not allowed under the barrier.

C. The barrier shall remain in place for the duration of the construction project and shall only be removed with prior approval. Contractor shall routinely inspect and maintain the barrier. Contractor to ensure that barrier is free of accumulated silt, debris, and other miscellaneous material. Accumulated sediment deposit shall be removed if more than eight inches (8”). Torn or punctured barrier shall be repaired or replaced as directed by the Owner’s Representative.

D. Contractor shall be required to obtain approval for removal of silt fence. Remove fence, take off site, fill in trenches with topsoil, seed, cover with blanket, and roll as needed to match existing grade and conditions.

END OF SECTION

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Re-use of existing products.

C. Transportation, handling, storage and protection.

D. Product option requirements.

E. Substitution limitations.

F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Section 012500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

B. Section 014000 - Quality Requirements: Product quality monitoring.

C. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

D. Section 017419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 REFERENCE STANDARDS

A. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2; 2017.

B. EN 15804 - Sustainability of Construction Works - Environmental Product Declarations - Core Rules for the Product Category of Construction Products; 2022 (Corrigendum 2021).

C. ISO 14025 - Environmental Labels and Declarations - Type III Environmental Declarations - Principles and Procedures; 2006.

D. ISO 14040 - Environmental Management - Life Cycle Assessment - Principles and Framework; 2006, with Amendment (2020).

E. ISO 14044 - Environmental Management - Life Cycle Assessment - Requirements and Guidelines; 2006, with Amendment (2020).

F. ISO 21930 - Sustainability in Buildings and Civil Engineering Works — Core Rules for Environmental Product Declarations of Construction Products and Services; 2017.

1.04 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

1.05 QUALITY ASSURANCE

A. Environmental Product Declaration (EPD): Publicly available, critically reviewed life cycle analysis having at least a cradle-to-gate scope.
   1. Good: Product-specific; compliant with ISO 14044.

2. Better: Industry-wide, generic; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
3. Best: Commercial-product-specific; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
4. Where demonstration of impact reduction below industry average is required, submit both industry-wide and commercial-product-specific declarations; or submit at least 5 declarations for products of the same type by other manufacturers in the same industry.

B. Health Product Declarations (HPD): Complete, published declaration with full disclosure of known hazards, prepared using one of the HPDC (HPD-OLT) online tools.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

B. Use of products having any of the following characteristics is not permitted:
1. Made using or containing CFC's or HCFC's.
2. Containing lead, cadmium, or asbestos.

C. Where other criteria are met, Contractor shall give preference to products that:
1. If used on interior, have lower emissions, as defined in Section 016116.
2. If wet-applied, have lower VOC content, as defined in Section 016116.
3. Are extracted, harvested, and/or manufactured closer to the location of the project.
4. Have longer documented life span under normal use.
5. Result in less construction waste. See Section 017419
6. Are made of recycled materials.

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 012500 - Substitution Procedures.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Provide protection of stored materials and products against theft, casualty, or deterioration.

B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.

C. Store and protect products in accordance with manufacturers' instructions.

D. Store with seals and labels intact and legible.

E. Arrange storage of materials and products to allow for visual inspection for the purpose of determination of quantities, amounts, and unit counts.

F. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

G. For exterior storage of fabricated products, place on sloped supports above ground.

H. Provide off-site storage and protection when site does not permit on-site storage or protection.

I. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

J. Comply with manufacturer's warranty conditions, if any.

K. Do not store products directly on the ground.

L. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

M. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

N. Prevent contact with material that may cause corrosion, discoloration, or staining.

O. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

P. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 016116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for Indoor-Emissions-Restricted products.

B. Requirements for VOC-Content-Restricted products.

C. Requirement for installer certification that they did not use any non-compliant products.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittal procedures.

B. Section 014000 - Quality Requirements: Procedures for testing and certifications.

C. Section 016000 - Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.

D. Section 079200 - Joint Sealants: Emissions-compliant sealants.

1.03 DEFINITIONS

A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.
   3. Flooring.

B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.

C. Interior of Building: Anywhere inside the exterior weather barrier.

D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
   1. Concrete.
      Clay brick.
   2. Metals that are plated, anodized, or powder-coated.
   3. Glass.
   4. Ceramics.
      Solid wood flooring that is unfinished and untreated.

1.04 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.

B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings; 2005 (Reapproved 2018).

C. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2; 2017.

D. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2020.

E. CHPS (HPPD) - High Performance Products Database; Current Edition.

F. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Current Edition.

G. SCAQMD 1113 - Architectural Coatings; 1977, with Amendment (2016).

H. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).

I. SCS (CPD) - SCS Certified Products; Current Edition.

J. UL (GGG) - GREENGUARD Gold Certified Products; Current Edition.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

C. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

1.06 QUALITY ASSURANCE

A. Indoor Emissions Standard and Test Method: CAL (CDPH SM), using Standard Private Office exposure scenario and the allowable concentrations specified in the method, and range of total VOC's after 14 days.
   1. Wet-Applied Products: State amount applied in mass per surface area.
   2. Paints and Coatings: Test tinted products, not just tinting bases.
   3. Evidence of Compliance: Acceptable types of evidence are the following;
      a. Current UL (GGG) certification.
      b. Current SCS (CPD) Floorscore certification.
      c. Current SCS (CPD) Indoor Advantage Gold certification.
      d. Current listing in CHPS (HPPD) as a low-emitting product.
      e. Current CRI (GLP) certification.
      f. Test report showing compliance and stating exposure scenario used.
   4. Product data submittal showing VOC content is NOT acceptable evidence.
   5. Manufacturer's certification without test report by independent agency is NOT acceptable evidence.

B. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Report of laboratory testing performed in accordance with requirements.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.01 MATERIALS

A. VOC-Content-Restricted Products: VOC content not greater than required by the following:
   1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
   2. Joint Sealants: SCAQMD 1168 Rule.
   3. Paints and Coatings: Each color; most stringent of the following:
      a. 40 CFR 59, Subpart D.
      b. SCAQMD 1113 Rule.
      c. CARB (SCM).

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.

B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 016116.01
ACCESSORY MATERIAL VOC CONTENT CERTIFICATION FORM

FORM

1.01 IDENTIFICATION:

A. Project Name: _____

B. Project No.: _____

C. Architect: _____

1.02 USE OF THIS FORM:

A. Because installers are allowed and directed to choose accessory materials suitable for the applicable installation, there is a possibility that such accessory materials might contain VOC content in excess of that permitted, especially where such materials have not been explicitly specified.

B. Contractor is required to obtain and submit this form from each installer of work on this project.

C. For each product category listed, circle the correct words in brackets: either [HAS] or [HAS NOT].

D. If any of these accessory materials has been used, attach to this form product data and MSDS sheet for each such product.

1.03 VOC CONTENT RESTRICTIONS ARE SPECIFIED IN SECTION 016116.

2.01 PRODUCT CERTIFICATION

A. I certify that the installation work of my firm on this project:
   1. [HAS] [HAS NOT] required the use of any ADHESIVES.
   2. [HAS] [HAS NOT] required the use of any JOINT SEALANTS.
   3. [HAS] [HAS NOT] required the use of any PAINTS OR COATINGS.
   4. [HAS] [HAS NOT] required the use of any COMPOSITE WOOD or AGRIFIBER PRODUCTS.

B. Product data and MSDS sheets are attached.

3.01 CERTIFIED BY: (INSTALLER/MANUFACTURER/SUPPLIER FIRM)

A. Firm Name: _____

B. Print Name: _____

C. Signature: _____

D. Title: _____ (officer of company)

E. Date: _____

END OF SECTION

SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition.

C. Cutting and patching.

D. Surveying for laying out the work.

E. Cleaning and protection.

F. Starting of systems and equipment.

G. Demonstration and instruction of Owner personnel.

H. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.

B. Section 014000 - Quality Requirements: Testing and inspection procedures.

C. Section 015000 - Temporary Facilities and Controls: Temporary exterior enclosures.

D. Section 015000 - Temporary Facilities and Controls: Temporary interior partitions.

E. Section 017419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.

F. Section 017800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

G. Section 017900 - Demonstration and Training: Demonstration of products and systems to be commissioned and where indicated in specific specification sections

Section 078400 - Firestopping.

1.03 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.05 QUALIFICATIONS

A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

1.06 PROJECT CONDITIONS

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
   1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
   2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

D. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

E. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

F. Utilize recognized engineering survey practices.

G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
   2. Grid or axis for structures.
   3. Building foundation, column locations, and ground floor elevations.

H. Periodically verify layouts by same means.

I. Maintain a complete and accurate log of control and survey work as it progresses.

3.04 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 015000 in locations indicated on drawings.

C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
   1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
   2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.

D. Remove existing work as indicated and as required to accomplish new work.
   1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
   2. Remove items indicated on drawings.
   3. Relocate items indicated on drawings.
   4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
   5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
      b. Provide temporary connections as required to maintain existing systems in service.
   4. Verify that abandoned services serve only abandoned facilities.
   5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

F. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.

G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.

H. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

I. Refinish existing surfaces as indicated:
   1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
   2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

J. Clean existing systems and equipment.

K. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

L. Do not begin new construction in alterations areas before demolition is complete.

M. Comply with all other applicable requirements of this section.

3.06 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-complying work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

D. Verify that wiring and support components for equipment are complete and tested.

E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

A. See Section 017900 - Demonstration and Training.

3.11 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean filters of operating equipment.

F. Clean debris from area drains and drainage systems.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 01 7300
EXECUTION REQUIREMENTS

1.0 GENERAL

1.1 Summary

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. General installation of products.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection of installed construction.
6. Correction of the Work.

2.0 PRODUCTS (Not Used)

3.0 EXECUTION

3.1 Examination

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

1. Before construction, verify the location and invert elevation at points of connection of storm sewer, and sanitary sewer.
2. Verify location of existing water lines, electric and private utilities.

B. Acceptance of Conditions: 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. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of conditions.

3.2 Preparation

A. Field Measurements: Take field measurements as required to fit the Work properly. Re-check 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.

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

C. 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 Owner's Representative. 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 Owner promptly.

B. General: Lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated.
3. Inform installers of the lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Owner when deviations from required lines and levels exceed allowable tolerances.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures. Transfer survey markings and elevations for use with control lines and levels. Level foundations from two or more locations.

3.4 Field Engineering

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

3.5 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. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

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

C. 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.

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

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

3.6 Progress Cleaning

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has 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° F.

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

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

F. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

G. 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.

H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period.

I. 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.

3.8 Correction of the Work

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

3.9 Substantial Completion

A. Contractor shall inform Owner/Owner's Rep when they feel Substantial completion has been reached. The Owner/Owner's Rep shall review work with the Contractor and approve or require further correction of the work.

END OF SECTION

SECTION 017419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
   1. Aluminum and plastic beverage containers.
   2. Corrugated cardboard.
   3. Wood pallets.
   4. Clean dimensional wood.
   5. Land clearing debris, including brush, branches, logs, and stumps; see Section 311000 - Site Clearing for use options.
   6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
   7. Glass.
   8. Plastic buckets.
   9. Paint.
   10. Windows, doors, and door hardware.

E. Contractor Reporting Responsibilities: Submit periodic Waste Disposal Reports; report landfill disposal, incineration, recycling, salvage, and reuse regardless of to whom the cost or savings accrues; use the same units of measure on required reports.

F. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.

G. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. Section 015000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

C. Section 016000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

D. Section 017000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

Section 311000 - Site Clearing: Handling and disposal of land clearing debris.

1.03 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
   1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
   2. Submit Report on a form acceptable to Owner.
   3. Landfill Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project disposed of in landfills.
      c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   4. Incinerator Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project delivered to incinerators.
      c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.

d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.

5. Recycled and Salvaged Materials: Include the following information for each:
   a. Identification of material, including those retrieved by installer for use on other projects.
   b. Amount, in tons or cubic yards (cubic meters), date removed from the project site, and receiving party.
   c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
   d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
6. Material Reused on Project: Include the following information for each:
   a. Identification of material and how it was used in the project.
   b. Amount, in tons or cubic yards (cubic meters).
   c. Include weight tickets as evidence of quantity.
7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PROCEDURES

A. See Section 013000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. See Section 015000 for additional requirements related to trash/waste collection and removal facilities and services.

C. See Section 016000 for waste prevention requirements related to delivery, storage, and handling.

D. See Section 017000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Prebid meeting.
   2. Preconstruction meeting.
   3. Regular job-site meetings.

E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
   1. As a minimum, provide:
      a. Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
      b. Separate dumpsters for each category of recyclable.
      c. Recycling bins at worker lunch area.
   2. Provide containers as required.
   3. Provide adequate space for pick-up and delivery and convenience to subcontractors.

4. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 01 7700
PROJECT CLOSEOUT

1.0 CLEANING UP

1.1 Contractors shall, prior to punch list preparation, remove trash and debris and clean all walks, drives and parking areas.

1.2 Upon completion of work, Contractor shall remove all temporary structures, fences, surplus materials, and rubbish of every kind from site and dispose of legally, except in cases where permits require silt fences to remain.

1.3 If Contractor fails to clean up, the Owner may do so and the cost thereof shall be charged to the Contractor as provided in the General Conditions.

2.0 AS-BUILT DRAWINGS/SPECIFICATIONS

2.1 Contractor shall maintain one set of Drawings and one set of bound specifications on which he/she shall record every deviation that is made from original drawings and specifications at the time the change is made.

2.2 Contractor shall keep a neat and complete record of exact manner in which all work is installed. Dimensions shall be included to accurately locate items that will be concealed and which may later be necessary to locate for service.

2.3 This record set of drawings and specifications shall be kept by Contractor at the job site for inspection by the Owner and the Owner's Representative.

2.4 At completion of the Work, Contractor shall arrange above records in order properly indexed and certify by endorsement thereof that each of the revised drawings and specifications is complete and accurate.

2.5 Before final payment is made, the Contractor shall deliver the annotated as-built drawings and specifications to the Owner's Representative. The as-built drawings and specifications created by the Contractor at all times remain the property of the Owner.

2.6 No review or receipt of such records by the Owner or the Owner's Representative of any deviation from the Contract Documents does in any way relive the Contractor from his/her responsibility to perform the work in accordance with the Contract Documents

2.7 Where indicated on the Drawings, as-built drawings shall be a topographic survey that is prepared and sealed by an Illinois licensed surveyor. See Drawings for additional requirements. Items 2.1 through 2.6 above shall also apply.

3.0 PUNCH LIST

3.1 Upland Design Ltd. and the Owner shall make a final inspection of work after

Contractor notifies the Owner that work is substantially complete. The Contractor will be notified in writing of incomplete and/or unaccepted items in a written punch list. These items, if any, are to be corrected or completed before final acceptance is granted by Owner. Failure of the Owner's Representative to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Following Contractor completion of all punch list work, Owner shall provide a written notice of final acceptance to Contractor.

4.0 MAINTENANCE AND OPERATION INSTRUCTION

4.1 Prior to final payment, Contractor shall arrange all technical instruction of Owner's maintenance personnel, either by his/her own or the equipment manufacturer's personnel.

5.0 GUARANTEES

5.1 The Contractor shall guarantee all workmanship and materials, including plant material for a period of one (1) year from the date of the final acceptance letter, except where certain guarantees are otherwise specified in writing to be longer than one year.

5.2 At the completions of the work, all such guarantees covering material, workmanship, maintenance, etc., as specified, shall be procured by the Contractor from the various suppliers and subcontractors, and forwarded to the Owner, together with a letter, addressed to the Owner, giving a summary of guarantees attached stating, the character of work, name of the Contractor, name of the material or equipment supplier, period of guarantee and condition of guarantee. This shall be done within fifteen (15) days of the punch list date.

5.3 Neither the final payment nor termination of the guarantee period, nor any provision in the Contract Documents, shall relieve the Contractor of the responsibility for negligence, faulty materials or workmanship within the extent and period provided by law. Upon written notice, the Contractor shall remedy any defects, and shall pay all expenses for damage to other work resulting from that defect.

5.4 If the drawings and/or specifications provide for methods of construction and installation, or materials which cannot be guaranteed by the Contractor for the indicated period, the Contractor shall so inform the Owner in writing prior to submitting a bid. Otherwise the Contractor shall guarantee all methods of construction and installation, and materials for the indicated period of time.

END OF SECTION

SECTION 017800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project record documents.

B. Operation and maintenance data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Section 017000 - Execution and Closeout Requirements: Contract closeout procedures.

C. Individual Product Sections: Specific requirements for operation and maintenance data.

D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   3. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

1. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

B. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
   2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sections.

E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

D. Include color coded wiring diagrams as installed.

E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

G. Include manufacturer's printed operation and maintenance instructions.

H. Include sequence of operation by controls manufacturer.

I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

J. Provide control diagrams by controls manufacturer as installed.

K. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

L. Include test and balancing reports.

M. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.

F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

J. Arrangement of Contents: Organize each volume in parts as follows:
   1. Project Directory.
   2. Table of Contents, of all volumes, and of this volume.
   3. Operation and Maintenance Data: Arranged by system, then by product category.
      a. Source data.
      b. Operation and maintenance data.
      c. Field quality control data.
      d. Photocopies of warranties and bonds.

3.06 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

SECTION 017900
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products and systems to be commissioned and where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance is required for:
   1. All software-operated systems.
   2. Plumbing equipment.
   3. Electrical systems and equipment.
   4. Items specified in individual product Sections.

C. Training of Owner personnel in care, cleaning, maintenance, and repair is required for:
   1. Finishes, including flooring, wall finishes, ceiling finishes.
   2. Fixtures and fittings.
   3. Items specified in individual product Sections.

1.02 RELATED REQUIREMENTS

A. Section 017800 - Closeout Submittals: Operation and maintenance manuals.

B. Section 019113 - General Commissioning Requirements: Additional requirements applicable to demonstration and training.

C. Other Specification Sections: Additional requirements for demonstration and training.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures; except:
   1. Make all submittals specified in this section, and elsewhere where indicated for commissioning purposes, directly to the Commissioning Authority.
   2. Submit one copy to the Commissioning Authority, not to be returned.
   3. Make commissioning submittals on time schedule specified by Commissioning Authority.
   4. Submittals indicated as "Draft" are intended for the use of the Commissioning Authority in preparation of overall Training Plan; submit in editable electronic format, Microsoft Word 2003 preferred.

B. Draft Training Plans: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit to Commissioning Authority for review and inclusion in overall training plan.
   2. Submit not less than four weeks prior to start of training.
   3. Revise and resubmit until acceptable.
   4. Provide an overall schedule showing all training sessions.
   5. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such a slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
   1. Include applicable portion of O&M manuals.

2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
3. Provide one extra copy of each training manual to be included with operation and maintenance data.

D. Training Reports:
1. Identification of each training session, date, time, and duration.
2. Sign-in sheet showing names and job titles of attendees.
3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.
4. Include Commissioning Authority's formal acceptance of training session.

E. Video Recordings: Submit digital video recording of each demonstration and training session for Owner's subsequent use.
1. Format: DVD Disc.
2. Label each disc and container with session identification and date.

1.04 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.

C. Demonstration may be combined with Owner personnel training if applicable.

D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
1. Perform demonstrations not less than two weeks prior to Substantial Completion.
2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Commissioning Authority will prepare the Training Plan based on draft plans submitted.

B. Conduct training on-site unless otherwise indicated.

C. Owner will provide classroom and seating at no cost to Contractor.

D. Do not start training until Functional Testing is complete, unless otherwise specified or approved by the Commissioning Authority.

E. Provide training in minimum two hour segments.

F. The Commissioning Authority is responsible for determining that the training was satisfactorily completed and will provide approval forms.

G. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

H. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. The location of the O&M manuals and procedures for use and preservation; backup copies.
   2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   3. Typical uses of the O&M manuals.

I. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
   3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
   4. Provide hands-on training on all operational modes possible and preventive maintenance.
   5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
   6. Discuss common troubleshooting problems and solutions.
   7. Discuss any peculiarities of equipment installation or operation.
   8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
   9. Review recommended tools and spare parts inventory suggestions of manufacturers.
   10. Review spare parts and tools required to be furnished by Contractor.
   11. Review spare parts suppliers and sources and procurement procedures.

J. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.

B. Floors and slabs on grade.

C. Concrete reinforcement.

D. Joint devices associated with concrete work.

E. Concrete curing.

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.03 REFERENCE STANDARDS

A. ACI 117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).

C. ACI 301 - Specifications for Concrete Construction; 2020.

D. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.

E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

F. ACI 305R - Guide to Hot Weather Concreting; 2020.

G. ACI 306R - Guide to Cold Weather Concreting; 2016.

H. ACI 308R - Guide to External Curing of Concrete; 2016.

I. ACI 318 - Building Code Requirements for Structural Concrete; 2019, with Errata (2021).

J. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2020.

K. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars; 2019.

L. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2018a.

M. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

N. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.

O. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens); 2021.

P. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.

Q. ASTM C150/C150M - Standard Specification for Portland Cement; 2021.

R. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2016.

S. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).

T. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete; 2017a.

U. ASTM C579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes; 2018.

V. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2019.

W. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.

X. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures; 2016.

Y. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.

Z. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.

AA. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.

AB. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2020.

AC. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.

AD. ASTM C1708/C1708M - Standard Test Methods for Self-leveling Mortars Containing Hydraulic Cements; 2019.

AE. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcing Bars; 2021.

AF. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.

AG. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017.

AH. COE CRD-C 48 - Handbook for Concrete and Cement Standard Test Method for Water Permeability of Concrete; 1992.

AI. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair; 2013.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
   1. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives.

C. Mix Design: Submit proposed concrete mix design.
   1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.

D. Samples: Submit samples of underslab vapor retarder to be used.

E. Samples: Submit two, 12 inch (305 mm) long samples of waterstops and construction joint devices.

F. Test Reports: Submit report for each test or series of tests specified.

G. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.

H. Sustainable Design Submittal: If any fly ash, ground granulated blast furnace slag, silica fume, rice hull ash, or other waste material is used in mix designs to replace Portland cement, submit the total volume of concrete cast in place, mix design(s) used showing the quantity of portland

cement replaced, reports showing successful cylinder testing, and temperature on day of pour if cold weather mix is used.

I. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

J. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

D. For slabs required to include moisture vapor reducing admixture (MVRA), do not proceed with placement unless manufacturer's representative is present for every day of placement.

1.06 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 FORMWORK

A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
   1. Type: Deformed billet-steel bars.
   2. Finish: Epoxy coated in accordance with ASTM A775/A775M, unless otherwise indicated.

B. Steel Welded Wire Reinforcement (WWR): Galvanized, plain type, ASTM A1064/A1064M.
   1. Form: Coiled Rolls.
   2. WWR Style: 4 x 8-W6 x W10 (102 x 203-MW39 x MW65).

C. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch (1.29 mm).
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
   3. Provide stainless steel, galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches (38 mm) of weathering surfaces.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
   1. Acquire cement for entire project from same source.

B. Fine and Coarse Aggregates: ASTM C33/C33M.
   1. Acquire aggregates for entire project from same source.

C. Lightweight Aggregate: ASTM C330/C330M.

D. Fly Ash: ASTM C618, Class C or F.

E. Calcined Pozzolan: ASTM C618, Class N.

F. Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.

G. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Air Entrainment Admixture: ASTM C260/C260M.

C. Waterproofing Admixture: Admixture formulated to reduce permeability to liquid water, with no adverse effect on concrete properties.
   1. Admixture Composition: Crystalline, functioning by growth of crystals in capillary pores.
   2. Permeability of Cured Concrete: No measurable leakage when tested in accordance with COE CRD-C 48 at 200 psi (1.38 MPa); provide test reports.
   3. Products:
      a. Barrier One Concrete Admixtures; WPX Water Proofer: www.barrierone.com/#sle.
      b. ConShield Technologies, Inc; Crystal X: www.conshield.com/#sle.
      c. Euclid Chemical Company; Eucon Vandex AM-10: www.euclidchemical.com/#sle.
      d. Substitutions: See Section 01 6000 - Product Requirements.

2.05 ACCESSORY MATERIALS

A. Underslab Vapor Retarder:
   1. Sheet Material: ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. Single ply polyethylene is prohibited.
   2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
   3. Products:
      a. Stego Industries, LLC: www.stegoindustries.com/#sle.
      b. Tex-Trude, LP; Xtreme Vapor Barrier (20-mil): www.tex-trude.com/#sle.
      c. W. R. Meadows, Inc; PERMINATOR Class A - 15 mils (0.38 mm): www.wrmeadows.com/#sle.
      d. Substitutions: See Section 01 6000 - Product Requirements.

B. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Grout: Comply with ASTM C1107/C1107M.
   2. Height Change, Plastic State; when tested in accordance with ASTM C827/C827M:
      a. Maximum: Plus 4 percent.
      b. Minimum: Plus 1 percent.
   3. Minimum Compressive Strength at 48 Hours, ASTM C109/C109M: 2,000 pounds per square inch (13.7 MPa).
   4. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch (48 MPa).
   5. Products containing aluminum powder are not permitted.

C. Non-Shrink Epoxy Grout: Moisture-insensitive, two-part; consisting of epoxy resin, non-metallic aggregate, and activator.
   1. Composition: High solids content material exhibiting positive expansion when tested in accordance with ASTM C827/C827M.
      a. Maximum Height Change: Plus 4 percent.
      b. Minimum Height Change: Plus 1 percent.
   2. Minimum Compressive Strength at 7 days, ASTM C579: 12,000 pounds per square inch (82.7 MPa).
   3. Products:
      a. Five Star Products, Inc; Five Star DP Epoxy Grout: www.fivestarproducts.com/#sle.
      b. Five Star Products, Inc; Five Star HP Epoxy Grout: www.fivestarproducts.com/#sle.
      c. Substitutions: See Section 01 6000 - Product Requirements.

D. Self-Leveling Cementitious Concrete Floor Topping:

1. Minimum Compressive Strength at 28 Days, ASTM C1708/C1708M: 7,000 pounds per square inch (48 MPa).
2. Products:
    a. ARDEX; Ardex K 13: www.ardexamericas.com.
    b. LATICRETE International, Inc; LATICRETE SUPERCAP SC650-MC: www.laticrete.com/#sle.
    c. Substitutions: See Section 01 6000 - Product Requirements.

2.06 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.

B. Epoxy Bonding System:

C. Waterstops: Bentonite and butyl rubber.
1. Products:
    a. CETCO, a division of Minerals Technologies Inc; WATERSTOP RX: www.mineralstech.com/#sle.
    b. Substitutions: See Section 01 6000 - Product Requirements.

D. Slab Isolation Joint Filler: 1/2 inch (13 mm) thick, height equal to slab thickness, with removable top section that will form 1/2 inch (13 mm) deep sealant pocket after removal.

2.07 CURING MATERIALS

A. Evaporation Reducer: Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement.
1. Products:
    a. Euclid Chemical Company ; EUCOBAR: www.euclidchemical.com/#sle.
    b. Kaufman Products Inc; VaporAid: www.kaufmanproducts.net/#sle.
    c. Nox-Crete Inc; Monofilm: www.nox-crete.com/#sle.
    d. SpecChem, LLC; SpecFilm Concentrate or SpecFilm: www.specchemllc.com/#sle.
    e. W. R. Meadows, Inc ; Evapre or Evapre-RTU: www.wrmeadows.com/#sle.
    f. Substitutions: See Section 01 6000 - Product Requirements.

2.08 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.

B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

C. Normal Weight Concrete:
1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 pounds per square inch (20.7 MPa).
2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
3. Calcined Pozzolan Content: Maximum 10 percent of cementitious materials by weight.
4. Silica Fume Content: Maximum 5 percent of cementitious materials by weight.
5. Water-Cement Ratio: Maximum 40 percent by weight.
6. Total Air Content: 4 percent, determined in accordance with ASTM C173/C173M.
7. Maximum Slump: 3 inches (75 mm).
8. Maximum Aggregate Size: 5/8 inch (16 mm).

D. Slabs-on-Grade:
1. Minimum Compressive Strength: 3500 psi (24.1 MPa) at 28 days.
2. Minimum Cementitious Materials Content: 470 lb/cu. yd. (279 kg/cu. m).
3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
4. Air Content: Do not allow air content of trowel-finished toppings to exceed 3 percent.

5. Reinforcing: WWR: 4 x 8-W6 x W10 (102 x 203-MW39 x MW65).

2.09 MIXING

A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.

B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

C. Do not use expansive component in same concrete batch with MVRA or PIA.

D. Do not use shrinkage-reducing admixture (SRA) in same concrete batch with MVRA or PIA.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent.

C. Prepare existing concrete surfaces to be repaired according to ICRI 310.2R.

D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
   1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
   2. Use latex bonding agent only for non-load-bearing applications.

E. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

F. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches (150 mm). Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.
   1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as indicated on drawings. Do not use sand.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Fabricate and handle epoxy-coated reinforcing in accordance with ASTM D3963/D3963M.

B. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

C. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Place concrete for floor slabs in accordance with ACI 302.1R.

C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

D. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing

laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

F. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 SLAB JOINTING

A. Locate joints as indicated on drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch (5 mm) thick blade and cut at least 1 inch (25 mm) deep but not less than one quarter (1/4) the depth of the slab.

3.06 SEPARATE FLOOR TOPPINGS

A. Prior to placing floor topping, roughen substrate concrete surface and remove deleterious material. Broom and vacuum clean.

B. Place required dividers, edge strips, reinforcing, and other items to be cast in.

C. Apply bonding agent to substrate in accordance with manufacturer's instructions.

D. Apply sand and cement slurry coat on base course, immediately prior to placing toppings.

E. Place concrete floor toppings to required lines and levels.

F. Screed toppings level, maintaining surface flatness of maximum 1:1000.

3.07 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. An independent testing agency, as specified in Section 01 4000, will inspect finished slabs for compliance with specified tolerances.

B. Maximum Variation of Surface Flatness:
   1. Exposed Concrete Floors: 1/4 inch (6 mm) in 10 feet (3 m).
   2. Under Seamless Resilient Flooring: 1/4 inch (6 mm) in 10 feet (3 m).
   3. Under Carpeting: 1/4 inch (6 mm) in 10 feet (3 m).

C. Correct the slab surface if tolerances are less than specified.

D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.08 CONCRETE FINISHING

A. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
   2. Decorative Exposed Surfaces: Trowel as described in ACI 302.1R; take measures necessary to avoid black-burnish marks; decorative exposed surfaces include surfaces to be stained or dyed, pigmented concrete, surfaces to receive liquid hardeners, surfaces to receive dry-shake hardeners, surfaces to be polished, and all other exposed slab surfaces.

B. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.09 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
   1. Normal concrete: Not less than seven days.

C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.

D. Surfaces Not in Contact with Forms:
   1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
   2. Final Curing: Begin after initial curing but before surface is dry.
      a. Moisture-Retaining Sheet: Lap strips not less than 3 inches (75 mm) and seal with waterproof tape or adhesive; secure at edges.
      b. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.10 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

E. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards (76 cu m) or less of each class of concrete placed.

F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

H. Slab Testing: Cooperate with manufacturer of specified moisture vapor reducing admixture (MVRA) to allow access for sampling and testing concrete for compliance with warranty requirements.

3.11 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

3.12 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 024100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

B. Abandonment and removal of existing utilities and utility structures.

1.02 RELATED REQUIREMENTS

A. Section 011000 - Summary: Limitations on Contractor's use of site and premises.

B. Section 011000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.

C. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

D. Section 016000 - Product Requirements: Handling and storage of items removed for salvage and relocation.

E. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of benchmarks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

F. Section 017419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

G. Section 312200 - Grading: Rough and fine grading.

H. Section 312323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

1.03 DEFINITIONS

A. Demolition: Dismantle, raze, destroy or wreck any building or structure or any part thereof.

B. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.

C. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.

D. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.

E. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.04 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Site Plan: Indicate:
   1. Vegetation to be protected.
   2. Areas for temporary construction and field offices.

C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.06 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.
   1. Minimum of three years of documented experience.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 DEMOLITION

A. Remove building components designated for demolition.

B. At areas designated for partial wall removal, provide shoring to maintain structural integrity.

C. Remove other items indicated, for salvage, relocation, and recycling.

Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 312200.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   5. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
   6. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
   7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Protect existing structures and other elements to remain in place and not removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

D. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

E. Hazardous Materials:
   1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

3.03 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone. Identify and mark, in same manner as other utilities to remain, utilities to be reconnected.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
   1. Verify construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from areas that remain occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 015000 in locations indicated on drawings.

C. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.

D. Remove existing work as indicated and required to accomplish new work.
   1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction indicated.
   2. Remove items indicated on drawings.

E. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated.
   1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.

F. Protect existing work to remain.
   1. Prevent movement of structure. Provide shoring and bracing as required.
   2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch to match new work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove materials not to be reused on site; comply with requirements of Section 017419 - Waste Management.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 055000
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel and aluminum items.

1.02 RELATED REQUIREMENTS

A. Section 079200 - Joint Sealants.

1.03 REFERENCE STANDARDS

A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

E. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2018.

F. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.

G. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.

H. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

I. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

J. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.

K. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

L. SSPC-SP 2 - Hand Tool Cleaning; 2018.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Plates: ASTM A283/A283M.

C. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

D. Stainless Steel, General: ASTM A666, Type 304.

E. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.

F. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.

G. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

H. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 MATERIALS - ALUMINUM

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Sheet Aluminum: ASTM B209/B209M, 5052 alloy, H32 or H22 temper.

2.03 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

D. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 FINISHES - STEEL

A. Prime paint steel items.
   1. Exceptions: Galvanize items to be embedded in concrete and items to be embedded in masonry.

B. Prepare surfaces to be primed in accordance with SSPC-SP2.

C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

D. Prime Painting: One coat.

E. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

2.05 FINISHES - ALUMINUM

A. High Performance Organic Coating System: AAMA 2604 multiple coat, thermally cured fluoropolymer system; color as indicated.

B. Apply one coat of bituminous paint to concealed aluminum surfaces in contact with cementitious or dissimilar materials.

2.06 FABRICATION TOLERANCES

A. Squareness: 1/8 inch (3 mm) maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch (1.5 mm).

C. Maximum Misalignment of Adjacent Members: 1/16 inch (1.5 mm).

D. Maximum Bow: 1/8 inch (3 mm) in 48 inches (1.2 m).

E. Maximum Deviation From Plane: 1/16 inch (1.5 mm) in 48 inches (1.2 m).

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Obtain approval prior to site cutting or making adjustments not scheduled.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch (6 mm) per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch (6 mm).

C. Maximum Out-of-Position: 1/4 inch (6 mm).

END OF SECTION

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Self-leveling pourable joint sealants.

C. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.

1.03 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015 (Reapproved 2022).

B. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants; 2018 (Reapproved 2022).

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

D. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2023.

E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2022.

G. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2019 (Reapproved 2020).

H. ASTM D638 - Standard Test Method for Tensile Properties of Plastics; 2022.

I. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

J. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2022.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:

1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
2. List of backing materials approved for use with the specific product.
3. Backing material recommended by sealant manufacturer.
4. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
5. Substrates the product should not be used on.
6. Substrates for which use of primer is required.
7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
8. Sample product warranty.
9. Certification by manufacturer indicating that product complies with specification requirements.

C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

E. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

F. Preinstallation Field Adhesion Test Plan: Submit at least two weeks prior to start of installation.

G. Preinstallation Field Adhesion Test Reports: Submit filled out Preinstallation Field Adhesion Test Reports log within 10 days after completion of tests; include bagged test samples and photographic records.

H. Manufacturer's qualification statement.

I. Installer's qualification statement.

J. Executed warranty.

1.05 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.

D. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
   1. Adhesion Testing: In accordance with ASTM C794.
   2. Compatibility Testing: In accordance with ASTM C1087.
   3. Allow sufficient time for testing to avoid delaying the work.
   4. Deliver sufficient samples to manufacturer for testing.
   5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.

E. Preinstallation Field Adhesion Test Plan: Include destructive field adhesion testing of one sample of each combination of sealant type and substrate, except interior acrylic latex sealants, and include the following for each tested sample.
   1. Identification of testing agency.
   2. Preinstallation Field Adhesion Test Log Form: Include the following data fields, with known information filled out.
      a. Test date.
      b. Copy of test method documents.
      c. Age of sealant upon date of testing.
      d. Test results, modeled after the sample form in the test method document.
      e. Indicate use of photographic record of test.

F. Field Adhesion Test Procedures:
   1. Allow sealants to fully cure as recommended by manufacturer before testing.
   2. Have a copy of the test method document available during tests.
   3. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
   4. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer and report any deficiencies.
   5. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to Owner.
   6. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.

G. Nondestructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Spot Method.

H. Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Destructive Tail Procedure.
   1. Sample: At least 18 inches (457 mm) long.
   2. Minimum Elongation Without Adhesive Failure: Consider the tail at rest, not under any elongation stress; multiply the stated movement capability of the sealant in percent by two; then multiply 1 inch (25.4 mm) by that percentage; if adhesion failure occurs before the 1-inch mark is that distance from the substrate, the test has failed.
   3. If either adhesive or cohesive failure occurs before minimum elongation, take necessary measures to correct conditions and retest; record each modification to products or installation procedures.

I. Field Adhesion Tests of Joints: Test for adhesion using most appropriate method in accordance with ASTM C1521, or another applicable method as recommended by manufacturer.

1.06 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide a 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

C. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Nonsag Sealants:
   1. Bostik Inc: www.bostik-us.com/#sle.
   2. Dow: www.dow.com/#sle.
   3. Momentive Performance Materials, Inc (formerly GE Silicones) : www.momentive.com/#sle.
   4. Pecora Corporation: www.pecora.com/#sle.
   5. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
   6. Substitutions: See Section 016000 - Product Requirements.

B. Self-Leveling Sealants:
   1. Bostik Inc: www.bostik-us.com/#sle.
   2. Dow: www.dow.com/#sle.
   3. Pecora Corporation: www.pecora.com/#sle.
   4. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
   5. Substitutions: See Section 016000 - Product Requirements.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints:
      a. Do not seal exterior joints unless indicated on drawings as sealed.
      b. Seal open joints except open joints indicated on drawings as not sealed.
   2. Interior Joints:
      a. Seal open joints except specific open joints indicated on drawings as not sealed.

B. Exterior Joints: Use nonsag nonstaining silicone sealant, unless otherwise indicated.

C. Interior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
   1. Floor Joints in Wet Areas: Nonsag polyurethane non-traffic-grade sealant suitable for continuous liquid immersion.
   2. Wall, Ceiling, and Floor Joints Where Tamper-Resistance is Required: Non-sag tamper-resistant silyl-terminated polyurethane sealant.

D. Interior Wet Areas: Bathrooms; fixtures in wet areas include plumbing fixtures.

E. Areas Where Tamper-Resistance is Required: As indicated on drawings.

2.03 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products with acceptable levels of volatile organic compound (VOC) content; see Section 016116.

2.04 NONSAG JOINT SEALANTS

A. Nonstaining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
   2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
   3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
   4. Service Temperature Range: Minus 20 to 180 degrees F (Minus 29 to 82 degrees C).
   5. Products:
      a. Dow; DOWSIL 756 SMS Building Sealant: www.dow.com/#sle.
      b. Dow; DOWSIL 795 Silicone Building Sealant: www.dow.com/#sle.
      c. Momentive Performance Materials, Inc/GE Silicones; SCS9000 SilPruf NB - Non-Staining Silicone Weatherproofing Sealant: www.siliconeforbuilding.com/#sle.
      d. Pecora Corporation; Pecora 890 NST (Non-Staining Technology): www.pecora.com/#sle.
      e. Tremco Commercial Sealants & Waterproofing; Spectrem 2: www.tremcosealants.com/#sle.
      f. Tremco Commercial Sealants & Waterproofing; Tremsil 600: www.tremcosealants.com/#sle.

B. Tamper-Resistant, Silyl-Terminated Polyurethane (STPU) Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus and minus 50 percent, minimum
   2. Hardness Range: 25 to 30, Shore A, when tested in accordance with ASTM C661.
   3. Color: Match adjacent finished surfaces.

C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus 100 percent, minus 50 percent, minimum.
   2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
   3. Color: To be selected by Architect from manufacturer's standard range.
   4. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
   5. Products:
      a. Pecora Corporation; DynaFlex: www.pecora.com/#sle.
      b. Tremco Commercial Sealants & Waterproofing; Dymonic 100: www.tremcosealants.com/#sle.
      c. Tremco Commercial Sealants & Waterproofing; Vulkem 116: www.tremcosealants.com/#sle.
      d. W. R. Meadows, Inc; POURTHANE NS: www.wrmeadows.com/#sle.
      e. Substitutions: See Section 016000 - Product Requirements.

   Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.
   6. Movement Capability: Plus and minus 35 percent, minimum.

2.05 SELF-LEVELING JOINT SEALANTS

2.06 ACCESSORIES

A. Sealant Backing Materials, General: Materials placed in joint before applying sealants; assists sealant performance and service life by developing optimum sealant profile and preventing three-sided adhesion; type and size recommended by sealant manufacturer for compatibility with sealant, substrate, and application.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.

E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

D. Preinstallation Adhesion Testing: Install a sample for each test location indicated in the test plan.
   1. Test each sample as specified in PART 1 under QUALITY ASSURANCE article.
   2. Notify Architect of date and time that tests will be performed, at least seven days in advance.
   3. Record each test on Preinstallation Adhesion Test Log as indicated.
   4. If any sample fails, review products and installation procedures, consult manufacturer, or take other measures that are necessary to ensure adhesion; retest in a different location; if unable to obtain satisfactory adhesion, report to Architect.
   5. After completion of tests, remove remaining sample material and prepare joints for new sealant installation.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in an inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

D. Install bond breaker backing tape where backer rod cannot be used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.

C. Non-Destructive Adhesion Testing: If there are any failures in first 100 linear feet (30 linear m), notify Architect immediately.

D. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

END OF SECTION

SECTION 085113
ALUMINUM WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Extruded aluminum windows with fixed sash.

B. Factory glazing.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Wood perimeter shims.

B. Section 072500 - Weather Barriers: Sealing frame to water-resistive barrier installed on adjacent construction.

C. Section 079200 - Joint Sealants: Sealing joints between window frames and adjacent construction.

D. Section 088000 - Glazing.

1.03 REFERENCE STANDARDS

A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights; 2022.

B. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.

C. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products; 2021.

D. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.

E. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.

F. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.

G. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

H. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

I. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

J. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

K. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

L. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

M. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

N. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.

O. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).

P. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors; 2002 (Reapproved 2018).

Q. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference; 2015 (Reapproved 2023).

R. ASTM E1332 - Standard Classification for Rating Outdoor-Indoor Sound Attenuation; 2022.

S. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes; 2023.

T. ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights; 2023.

U. ASTM F588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact; 2017 (Reapproved 2023).

V. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Include component dimensions, information on glass and glazing, internal drainage details, and descriptions of hardware and accessories.

C. Shop Drawings: Indicate opening dimensions, framed opening tolerances, anchorage locations , and installation requirements.

D. Samples:
   1. Framing: Two samples, 12 by 12 inch (300 by 300 mm) in size illustrating typical corner construction, accessories, and finishes.

E. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
   1. Evidence of AAMA Certification.
   2. Evidence of WDMA Certification.
   3. Evidence of CSA Certification.
   4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.

F. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.

G. Manufacturer's Installation Instructions: Include complete preparation, installation, and cleaning requirements.

H. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.

I. Manufacturer's qualification statement.

J. Installer's qualification statement.

K. Specimen warranty.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of AAMA CW-10.

B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C).

B. Maintain this minimum temperature during and 24 hours after installation of sealants.

1.09 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Correct defective work within a five year period after Date of Substantial Completion.

C. Manufacturer Warranty: Provide 5-year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units. Complete forms in Owner's name and register with manufacturer.

D. Manufacturer Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Aluminum Window Manufacturers:
   1. Manko Window Systems, Inc; _____: www.mankowindows.com/#sle.
   2. TRACO: www.traco.com/#sle.
   3. Winco Window Company, Inc: www.wincowindow.com/#sle.
   4. Substitutions: See Section 016000 - Product Requirements.

2.02 BASIS OF DESIGN - CW PERFORMANCE CLASS WINDOWS

A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 having Performance Class of CW, and Performance Grade at least as high as specified design pressure.

B. Substitutions: See Section 016000 - Product Requirements.
   1. For any product not identified as "Basis of Design", submit information as specified for substitutions.

2.03 ALUMINUM WINDOWS

A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
   1. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
   2. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
   3. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
   4. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

B. Fixed, Non-Operable Type:
   1. Construction: Thermally broken.
   2. Glazing: Double; bronze tinted; frosted.
   3. Exterior Finish: High performance organic coatings.
   4. Interior Finish: High performance organic coatings.

2.04 PERFORMANCE REQUIREMENTS

A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
   1. Performance Class (PC): R.

B. Design Pressure (DP): In accordance with applicable codes.

C. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.

D. Wind-Borne-Debris Resistance: Identical full-size glazed assembly without auxiliary protection, tested by independent agency in accordance with ASTM E1996 for Wind Zone 4 - Additional Protection for Large and Small Missile impact and pressure cycling at design wind pressure.

E. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 12.11 psf (580 Pa).

F. Air Leakage: 0.1 cfm/sq ft (0.5 L/sec sq m) maximum leakage per unit area of outside window frame dimension when tested at 1.57 psf (75 Pa) pressure difference in accordance with ASTM E283/E283M.

G. Condensation Resistance Factor of Frame: 50, measured in accordance with AAMA 1503.

H. Overall Thermal Transmittance (U-value): 0.35, maximum, including glazing, measured on window sizes required for this project.

I. Forced Entry Resistance: Tested to comply with ASTM F588 requirements for performance level of Grade 10 for specific window style required.

J. Acoustic Performance: Minimum outdoor-indoor transmission class (OITC) rating of 34, when tested in accordance with ASTM E90 and ASTM E1332.

2.05 COMPONENTS

A. Frames: 2 inch (50 mm) wide by 3.5 inch (90 mm) deep profile, of 0.080 inch (2.032 mm) thick section; thermally broken with interior portion of frame insulated from exterior portion; flush glass stops of snap-on type.

B. Glazing: See Section 088000.

C. Fasteners: Stainless steel.

D. Glazing Materials: See Section 088000.

E. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.
   1. See Section 079200 for additional requirements.

2.06 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Sheet Aluminum: ASTM B209/B209M, 5005 alloy, H12 or H14 temper.

C. Concealed Steel Items: Profiled to suit mullion sections; galvanized in accordance with ASTM A123/A123M.

2.07 FINISHES

A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41, clear anodic coating not less than 0.7 mil (0.018 mm) thick.

B. High Performance Organic Coatings: AAMA 2604; multiple-coat, thermally-cured fluoropolymer system.

C. Finish Color: As selected by Architect from manufacturer's standard range.

D. Apply one coat of bituminous coating to concealed aluminum and steel surfaces in contact with dissimilar materials.

E. Shop and Touch-Up Primer for Steel Components: Zinc oxide, alkyd, linseed oil primer appropriate for use over hand cleaned steel.

F. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall openings and adjoining water-resistive barrier materials are ready to receive aluminum windows; see Section 072500.

3.02 PRIME WINDOW INSTALLATION

A. Install windows in accordance with manufacturer's instructions.

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

D. Install sill and sill end angles.

E. Set sill members and sill flashing in continuous bead of sealant.

F. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

G. Install glass and infill panels in accordance with requirements; see Section 088000.

3.03 TOLERANCES

A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft (1.5 mm/m) non-cumulative or 1/8 inches per 10 ft (3 mm/3 m), whichever is less.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.

B. Provide field testing of installed aluminum windows by independent laboratory in accordance with AAMA 502 and AAMA/WDMA/CSA 101/I.S.2/A440 during construction process and before installation of interior finishes.

1. Field test for water penetration in accordance with ASTM E1105 using Procedure B - cyclic static air pressure difference; test pressure shall not be less than 1.9 psf (91 Pa).
2. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 1.57 psf (75 Pa).

C. Repair or replace fenestration components that have failed designated field testing, and retest to verify performance complies with specified requirements.

3.05 CLEANING

A. Remove protective material from factory finished aluminum surfaces.

B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

D. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

END OF SECTION

SECTION 085666
SECURITY SCREENS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum Surface Mount Security Screens.

1.02 RELATED REQUIREMENTS

A. Section 017419 - Construction Waste Management and Disposal: Disposal of existing security screens.

1.03 REFERENCE STANDARDS

A. American Architectural Manufacturers Association (AAMA).

B. American Society for Testing and Materials (ASTM).

C. Aluminum Association (AA).

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's product literature.

C. Shop Drawings: Show screen profiles, fastening details, and installation instruction.

D. Warranty.

1.05 QUALITY ASSURANCE

A. Screens to meet a minimum Level 6 Security Level.

B. Single Source Responsibility:
   1. Obtain Security Screens, entrances, storefronts, ribbon walls, window walls, curtain walls, window systems, and finish through one source from a single manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.

B. Deliver materials in manufacturer's packaging; include installation instructions.

1.07 WARRANTY

A. System shall be warranted against failure and/or deterioration of metals due to manufacturing process for a period of two (2) years.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer:
   1. Arcadia, Inc; Intruder 168 Series: www.arcadiainc.com.
   2. Substitutions: See Section 016000 - Product Requirements.

2.02 FRAMING MATERIALS AND ACCESSORIES

A. Framing members, transition members, mullions, adaptors, and mounting: Extruded 6063-T6 aluminum alloy (ASTM B221 – Alloy G.S. 10a T6). Minimum .125" wall thickness on all framing members and .090" on all sash extrusions.

B. Perforated steel screen infill to be 14-gauge powder coated steel with an option for any type of woven mesh specified.

C. Screws, fastening devices, and internal components:
   1. Aluminum, stainless steel, or zinc-plated steel in accordance with ASTM.A-164. Perimeter anchors shall be aluminum or steel, providing the steel is properly isolated from aluminum. Provide tamper-proof fasteners where necessary.

2.03 SYSTEM FABRICATION

A. The perforated panel shall be attached between the main frame and interlocking cover plate with tamper resistant screws 3 inches on center maximum.

B. There shall be no exposed fasteners at perimeter sections.

PART 3 EXECUTION

3.01 FINISHING

A. Finish all exposed areas of aluminum and components as indicated.
   1. Fluorocarbon Coating: AAMA 2605.2.
      a. Resin: 70% PVDF Kynar 500 / Hylar 5000.
      b. Color: As selected by Architect.

3.02 EXAMINATION

A. Examine conditions and verify substrate conditions are acceptable for product installation.

3.03 INSTALLATION

A. Install in accordance with approved shop drawings and manufacturers installation instructions.

3.04 PROTECTION

A. Protect installed products from damage until Substantial Completion.

END OF SECTION

SECTION 088000
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 072600 - Vapor Retarders.

B. Section 079200 - Joint Sealants: Sealants for other than glazing purposes.

C. Section 085113 - Aluminum Windows: Glazing provided by window manufacturer.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).

E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

F. ASTM C1036 - Standard Specification for Flat Glass; 2021.

G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

H. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2019.

I. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

J. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.

K. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.

L. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.

M. BS EN 14179-1 - Glass in Building - Heat Soaked Thermally Toughened Soda Lime Silicate Safety Glass - Part 1: Definition and Description; 2016.

N. GANA (GM) - GANA Glazing Manual; 2022.

O. GANA (SM) - GANA Sealant Manual; 2008.

P. GANA (LGRM) - Laminated Glazing Reference Manual; 2019.

Q. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use; 1990 (Reaffirmed 2016).

R. ITS (DIR) - Directory of Listed Products; Current Edition.

S. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.

T. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.

U. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data on Insulating Glass Unit, Glazing Unit, Plastic Sheet Glazing Unit, and Plastic Film Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

D. Samples: Submit two samples 12 by 12 inch (305 by 305 mm) in size of glass units.

E. Certificate: Certify that products of this section meet or exceed specified requirements.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

H. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Insulating Glass Units: One of each glass size and each glass type.

1.06 QUALITY ASSURANCE

A. Perform Work in accordance with GANA (GM), GANA (SM), GANA (LGRM), and IGMA TM-3000 for glazing installation methods. Maintain one copy on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
   1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.
      a. Insulating Glass Certification Council (IGCC).
      b. Safety Glazing Certification Council (SGCC).

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

D. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.07 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F (4 degrees C).

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Insulating Glass Units: Provide a five (5) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

C. Heat Soaked Tempered Glass: Provide a five (5) year manufacturer warranty to include coverage for spontaneous breakage of fully tempered glass caused by nickel sulfide (NiS) inclusions.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Glass Fabricators:
   1. Tecnoglass; Insulating Glass: www.tecnoglass.com/#sle.
   2. Trulite Glass & Aluminum Solutions, LLC: www.trulite.com/#sle.
   3. Viracon, Inc: www.viracon.com/#sle.
   4. Substitutions: See Section 016000 - Product Requirements.

B. Float Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Guardian Glass, LLC: www.guardianglass.com/#sle.
   3. Pilkington North America Inc: www.pilkington.com/na/#sle.
   4. Saint Gobain North America: www.saint-gobain.com/#sle.
   5. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
   6. Substitutions: See Section 016000 - Product Requirements.

C. Etched Glass Manufacturers:
   1. GGI - General Glass International; Satin Etched: www.generalglass.com/#sle.
   2. Walker Glass Company Ltd; Walker Textures - Acid-Etched Glass: www.walkerglass.com/#sle.
   3. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Design Pressure: Calculated in accordance with ASCE 7.
   2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
   3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
   4. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
   1. In conjunction with weather barrier related materials described in other sections, as follows:
      a. Vapor Retarders: See Section 072600.
   2. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
   1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
   2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
   3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
   1. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
   2. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
   3. Heat-Soak Testing (HST): Provide HST of fully tempered glass used on canopy, point-supported, spider wall, high-risk, sloping overhead, horizontal overhead, free-standing

glass protective barrier, or other demanding applications of project, to reduce risks of spontaneous breakage due to nickel sulfide (NiS) induced fractures in accordance with BS EN 14179-1.

2.04 INSULATING GLASS UNITS

A. Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Guardian Glass, LLC: www.guardianglass.com/#sle.
   3. Pilkington North America Inc: www.pilkington.com/na/#sle.Pilkington North America Inc : www.pilkington.com/na/#sle.
   4. Viracon, Apogee Enterprises, Inc: www.viracon.com/#sle.
   5. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
   6. Substitutions: See Section 016000 - Product Requirements.

B. Insulating Glass Units: Types as indicated.
   1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
   2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
   3. Warm-Edge Spacers: Low-conductivity thermoplastic with desiccant warm-edge technology design.
      a. Spacer Width: As required for specified insulating glass unit.
      b. Spacer Height: Manufacturer's standard.
   4. Spacer Color: Black.
   5. Edge Seal:
      a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
      b. Color: Black.
   6. Purge interpane space with dry air, hermetically sealed.

C. Type IG-1 - Insulating Glass Units: Frosted vision glass, double glazed.
   1. Applications: Exterior glazing unless otherwise indicated.
   2. Space between lites filled with air.
   3. Outboard Lite: Fully tempered float glass, 1/4 inch (6.4 mm) thick, minimum.
      a. Tint: Clear.
      b. Coating: Self-cleaning type, on #1 surface.
      c. Coating: Frosted vinyl film, on #2 surface.
   4. Warm-edge spacer.
   5. Inboard Lite: Fully tempered float glass, 1/4 inch (6.4 mm) thick, minimum.
      a. Tint: Clear.
      b. Coating: Low-E (passive type), on #3 surface.
   6. Total Thickness: 1 inch (25.4 mm).
   7. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.28, nominal.
   8. Visible Light Transmittance (VLT): 34 percent, nominal.
   9. Shading Coefficient: 0.82, nominal.
   10. Solar Heat Gain Coefficient (SHGC): 0.25, nominal.
   11. Visible Light Reflectance, Outside: 12 percent, nominal.
   12. Glazing Method: Dry glazing method, gasket glazing.

2.05 GLAZING COMPOUNDS

A. Type GC-1 - Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; gray color.

B. Manufacturers:
   1. Bostik Inc: www.bostik-us.com/#sle.

2. Dow Corning Corporation: www.dowcorning.com/construction/#sle.Dow Corning Corporation: www.dowcorning.com/construction/#sle.
3. Momentive Performance Materials, Inc: www.momentive.com/#sle.
4. Pecora Corporation: www.pecora.com/#sle.
5. Tremco Commercial Sealants & Waterproofing; Proglaze: www.tremcosealants.com/#sle.
6. Substitutions: See Section 016000 - Product Requirements.

2.06 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) by width of glazing rabbet space minus 1/16 inch (1.5 mm) by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch (75 mm) long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

D. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

E. Glazing Clips: Manufacturer's standard type.

2.07 SOURCE QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. Provide shop inspection and testing for Type IG-1 glass.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

C. Verify that sealing between joints of glass framing members has been completed effectively.

D. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

C. Monitor and report installation procedures and unacceptable conditions.

3.06 CLEANING

A. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.

B. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

C. Remove nonpermanent labels immediately after glazing installation is complete.

D. Clean glass and adjacent surfaces after sealants are fully cured.

E. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.07 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

SECTION 090561
COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
   1. Epoxy flooring.

B. Removal of existing floor coverings.

C. Preparation of new and existing concrete floor slabs for installation of floor coverings.

D. Testing of concrete floor slabs for moisture and alkalinity (pH).

E. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
   1. Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.

F. Patching compound.

G. Remedial floor coatings.

H. Remedial floor treatment.

I. Remedial floor sheet membrane.

1.02 RELATED REQUIREMENTS

A. Section 014000 - Quality Requirements: Additional requirements relating to testing agencies and testing.

B. Section 017419 - Construction Waste Management and Disposal: Handling of existing floor coverings removed.

1.03 REFERENCE STANDARDS

A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2023.

B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete; 2020.

C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.

E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

F. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; 2018.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate scheduling of cleaning and testing, so that preliminary cleaning has been completed for at least 24 hours prior to testing.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Visual Observation Report: For existing floor coverings to be removed.

C. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
   1. Moisture and alkalinity (pH) limits and test methods.

2. Manufacturer's required bond/compatibility test procedure.

D. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
   1. Manufacturer's qualification statement.
   2. Certificate: Manufacturer's certification of compatibility with types of flooring applied over remedial product.
   3. Test reports indicating compliance with specified performance requirements, performed by nationally recognized independent testing agency.
   4. Manufacturer's installation instructions.
   5. Specimen Warranty: Copy of warranty to be issued by coating manufacturer and certificate of underwriter's coverage of warranty.

E. Testing Agency's Report:
   1. Description of areas tested; include floor plans and photographs if helpful.
   2. Summary of conditions encountered.
   3. Moisture and alkalinity (pH) test reports.
   4. Copies of specified test methods.
   5. Recommendations for remediation of unsatisfactory surfaces.
   6. Product data for recommended remedial coating.
   7. Submit report directly to Owner.
   8. Submit report not more than two business days after conclusion of testing.

F. Adhesive Bond and Compatibility Test Report.

G. Copy of RFCI (RWP).

1.06 QUALITY ASSURANCE

A. Moisture and alkalinity (pH) testing shall be performed by an independent testing agency employed and paid by Contractor.

B. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
   1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.

C. Contractor's Responsibility Relating to Independent Agency Testing:
   1. Provide access for and cooperate with testing agency.
   2. Confirm date of start of testing at least 10 days prior to actual start.
   3. Allow at least 4 business days on site for testing agency activities.
   4. Achieve and maintain specified ambient conditions.
   5. Notify Architect when specified ambient conditions have been achieved and when testing will start.

D. Remedial Coating Installer Qualifications: Company specializing in performing work of the type specified in this section, trained by or employed by coating manufacturer, and able to provide at least 3 project references showing at least 3 years' experience installing moisture emission coatings.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, handle, and protect products in accordance with manufacturer’s instructions and recommendations.

B. Deliver materials in manufacturer’s packaging; include installation instructions.

C. Keep materials from freezing.

1.08 FIELD CONDITIONS

A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F (18 degrees C) or more than 85 degrees F (30 degrees C).

B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
   1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
   2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
   3. Products:
      a. ARDEX Engineered Cements; ARDEX Feather Finish: www.ardexamericas.com/#sle.
      b. Floor Seal Technology, Inc; Color Match Patch: www.floorseal.com/#sle.
      c. H.B. Fuller Construction Products, Inc; TEC Feather Edge Skim Coat: www.tecspecialty.com/#sle.
      d. LATICRETE International, Inc; SKIM LITE: www.laticrete.com/#sle.
      e. USG Corporation; Durock Brand Advanced Skim Coat Floor Patch: www.usg.com/#sle.
      f. Substitutions: See Section 016000 - Product Requirements.

B. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low-VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.

C. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
   1. Thickness: As required for application and in accordance with manufacturer's installation instructions.
   2. Use product recommended by testing agency.
   3. Products:
      a. ARDEX Engineered Cements; ARDEX VB 100: www.ardexamericas.com/#sle.
      b. H.B. Fuller Construction Products, Inc; TEC LiquiDam: www.tecspecialty.com/#sle.
      c. H.B. Fuller Construction Products, Inc; TEC LiquiDam EZ: www.tecspecialty.com/#sle.
      d. Mapei Corporation; Planiseal VS: www.mapei.com/#sle.
      e. Sika Corporation; Sikafloor Moisture Tolerance Epoxy Primer: www.sikafloorusa.com/#sle.
      f. Substitutions: See Section 016000 - Product Requirements.

D. Remedial Floor Treatment: Penetrating, spray-applied, silicate-based product intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
   1. Use product recommended by testing agency.

E. Remedial Floor Sheet Membrane: Pre-formed multi-ply sheet membrane installed over concrete subfloor and intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.

1. Thickness: 28 mil (0.028 inch) (0.711 mm).
2. Tape: Types recommended by underlayment manufacturer to install membrane and cover seams.
3. Products:
    a. GCP Applied Technologies: www.gcpat.com/#sle.
    b. Mapei Corporation; Planiseal MBT: www.mapei.com/#sle.
    c. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

A. Follow recommendations of testing agency.

B. Perform following operations in the order indicated:
1. Existing concrete slabs (on-grade and elevated) with existing floor coverings:
    a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
    b. Removal of existing floor covering.
2. Preliminary cleaning.
3. Moisture vapor emission tests; 3 tests in the first 1000 square feet (100 square meters) and one test in each additional 1000 square feet (100 square meters), unless otherwise indicated or required by flooring manufacturer.
4. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
5. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
6. Specified remediation, if required.
7. Patching, smoothing, and leveling, as required.
8. Other preparation specified.
9. Adhesive bond and compatibility test.
10. Protection.

C. Remediations:
1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

3.02 REMOVAL OF EXISTING FLOOR COVERINGS

A. Comply with local, State, and federal regulations and recommendations of RFCI (RWP), as applicable to floor covering being removed.

B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

3.03 PRELIMINARY CLEANING

A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.

B. Do not use solvents or other chemicals for cleaning.

3.04 MOISTURE VAPOR EMISSION TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.

B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.

C. Test in accordance with ASTM F1869 and as follows.

D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.

E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet (1.4 kg per 93 square meters) per 24 hours.

F. Report: Report the information required by the test method.

3.05 INTERNAL RELATIVE HUMIDITY TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.

B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.

C. Test in accordance with ASTM F2170 Procedure A and as follows.

D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.

E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.

F. Report: Report the information required by the test method.

3.06 ALKALINITY TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.

B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
   1. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
   2. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch (25 mm) in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.
   3. Use of a digital pH meter with probe is acceptable; follow meter manufacturer's instructions.

C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.07 PREPARATION

A. See individual floor covering section(s) for additional requirements.

B. Comply with requirements and recommendations of floor covering manufacturer.

C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.

D. Do not fill expansion joints, isolation joints, or other moving joints.

3.08 ADHESIVE BOND AND COMPATIBILITY TESTING

A. Comply with requirements and recommendations of floor covering manufacturer.

3.09 APPLICATION OF REMEDIAL FLOOR COATING

A. Comply with requirements and recommendations of coating manufacturer.

3.10 APPLICATION OF REMEDIAL FLOOR TREATMENT

A. Comply with requirements and recommendations of treatment manufacturer.

3.11 INSTALLATION OF REMEDIAL FLOOR SHEET MEMBRANE

A. Install in accordance with sheet membrane manufacturer's instructions.

3.12 PROTECTION

A. Cover prepared floors with building paper or other durable covering.

END OF SECTION

SECTION 096700
FLUID-APPLIED FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fluid-applied flooring and base.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 079200 - Joint Sealants: Sealing joints between fluid-applied flooring and adjacent construction and fixtures.

C. Section 090561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

D. Section 090561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 REFERENCE STANDARDS

A. ANSI/ESD STM7.1 - The Protection of Electrostatic Discharge Susceptible Items Flooring Systems Resistive Characterization; 2021.

B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2023.

C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.

E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

F. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair; 2013.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.

C. Samples: Submit two samples, 2 by 2 inch (50 by 50 mm) in size illustrating color and pattern for each floor material for each color specified.

D. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

E. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and application rate for each coat.

F. Manufacturer's Qualification Statement.

G. Applicator's Qualification Statement.

H. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Top Coat Materials: 2 gallons (8 liters).

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the work of this section.
   1. Minimum three years of documented experience.
   2. Approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store resin materials in a dry, secure area.

B. Store materials for three days prior to installation in area of installation to achieve temperature stability.

1.07 FIELD CONDITIONS

A. Maintain minimum temperature in storage area of 55 degrees F (13 degrees C).

B. Store materials in area of installation for minimum period of 24 hours prior to installation.

C. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after installation of materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fluid-Applied Flooring:
   1. Dex-O-Tex; Colorflake: www.dex-o-tex.com.
   2. Dur-A-Flex; Dur-A-Chip; Armor Top with Epoxy Grip: www.dur-a-flex.com.
   3. Stonhard; Stonshield: www.stonhard.com.
   4. Substitutions: See Section 016000 - Product Requirements.

2.02 FLUID-APPLIED FLOORING SYSTEMS

A. Fluid-Applied Flooring: Epoxy, with aggregate.
   1. Aggregate: Silica sand.
   2. System Thickness: 15 mils (0.38 mm), nominal, dry film thickness (DFT).
   3. Texture: Slip resistant.
   4. Sheen: High gloss.
   5. Color: As selected by Architect.

2.03 ACCESSORIES

A. Base Caps: Zinc with projecting base of 1/8 inch (3 mm); color as selected.

B. Cant Strips: Molded of flooring resin material.

C. Subfloor Filler: Type recommended by fluid-applied flooring manufacturer.

D. Primer: Type recommended by fluid-applied flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive flooring.

C. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of materials to subfloor surfaces.

D. Cementitious Subfloor Surfaces: Verify that substrates are ready for fluid-applied flooring installation by testing for moisture and alkalinity (pH).
   1. Test in accordance with Section 090561.
   2. Obtain instructions if test results are not within limits recommended by fluid-applied flooring manufacturer.
   3. Follow moisture and alkalinity remediation procedures in Section 090561.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.

B. Prepare concrete surfaces according to ICRI 310.2R.

C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.

D. Vacuum clean substrate.

E. Apply primer to surfaces required by flooring manufacturer.

3.03 INSTALLATION - ACCESSORIES

A. Install cant strips at base of walls where flooring is to be extended up wall as base.

B. Install terminating cap strip at top of base; attach securely to wall substrate.

3.04 INSTALLATION - FLOORING

A. Apply in accordance with manufacturer's instructions.

B. Apply each coat to minimum thickness required by manufacturer.

C. Finish to smooth level surface.

D. Cove at vertical surfaces.

3.05 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Test installed floor surface in accordance with ANSI/ESD STM7.1 .

3.06 PROTECTION

A. Prohibit traffic on floor finish for 48 hours after installation.

B. Barricade area to protect flooring until fully cured.

END OF SECTION

SECTION 099113
EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Non-metallic roofing and flashing.
   6. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, zinc, and lead.
   7. Floors, unless specifically indicated.
   8. Glass.
   9. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
   1. Where sheen is specified, submit samples in only that sheen.
   2. Where sheen is not specified, submit each color in each sheen available.
   3. Allow 30 days for approval process, after receipt of complete samples by Architect.

D. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

E. Manufacturer's Instructions: Indicate special surface preparation procedures.

F. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.

2. Extra Paint and Finish Materials: 1 gallon (4 L) of each color; from the same product run, store where directed.
3. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

B. Paints:
1. Behr Paint Company: www.behr.com/#sle.
2. PPG Paints: www.ppgpaints.com/#sle.
3. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

C. Primer Sealers: Same manufacturer as top coats.

D. Substitutions: See Section 016000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
3. Supply each paint material in quantity required to complete entire project's work from a single production run.
4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content: Comply with Section 016116.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

E. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.

2.03 PAINT SYSTEMS - EXTERIOR

A. Paint GE-OP-3A - Exterior Gypsum Board and Exterior Plaster, Opaque, Alkyd, 3 Coat:
   1. One coat of alkyd primer sealer.
   2. Flat: Two coats of alkyd enamel.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
   1. Stain Blocking Primer; MPI #136.
      a. Products:
         1) PPG Paints Seal Grip Interior/Exterior Alkyd Universal Primer/Sealer, 17-941NF. (MPI #136)
         2) Sherwin-Williams Extreme Block Stain Blocking Primer. (MPI #136)
         3) Vista Paint Corporation; 4200 Terminator II: www.vistapaint.com/#sle.
         4) Substitutions: See Section 016000 - Product Requirements

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Sacrificial Anti-Graffiti Coating: Clear, wax emulsion for coating porous or painted surfaces; capable of being removed from substrate with only hot water.
   1. Products:
      a. Tex-Cote LLC; Sacrificial Graffiti Gard System: www.texcote.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

C. Patching Material: Latex filler.

D. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Exterior Plaster and Stucco: 12 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Exterior Plaster: Fill hairline cracks, small holes, and imperfections with exterior patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

E. Apply each coat to uniform appearance.

F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.

G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for field inspection.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

3.07 SCHEDULE - PAINT SYSTEMS

A. Exterior Plaster: Finish surfaces exposed to view.
   1. Exterior Walls (Exterior Plaster and Stucco): GE-OP-3L.

END OF SECTION

SECTION 099123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Materials for backpriming woodwork.

D. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.

E. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Floors, unless specifically indicated.
   6. Glass.
   7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.

B. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating; 2023.

C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.

D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

E. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

F. SSPC-SP 6/NACE No.3 - Commercial Blast Cleaning; 2006.

G. SSPC-SP 13/NACE No.6 - Surface Preparation of Concrete; 2018.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
   2. MPI product number (e.g., MPI #47).
   3. Cross-reference to specified paint system products to be used in project; include description of each system.
   4. Manufacturer's installation instructions.

C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
   1. Where sheen is specified, submit samples in only that sheen.

2. Where sheen is not specified, submit each color in each sheen available.

D. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

E. Manufacturer's Instructions: Indicate special surface preparation procedures.

F. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Paint and Finish Materials: 1 gal (4 L) of each color; from the same product run, store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F (3 degrees C) above the dew point, or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F (10 degrees C) for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 fc (860 lux) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

B. Paints:
   1. Behr Paint Company: www.behr.com/#sle.
   2. PPG Paints: www.ppgpaints.com/#sle.
   3. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

C. Substitutions: See Section 016000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.

1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
3. Supply each paint material in quantity required to complete entire project's work from a single production run.
4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content: See Section 016116.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

E. Colors: To be selected from manufacturer's full range of available colors.
1. Selection to be made by Architect after award of contract.
2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
3. Extend colors to surface edges; colors may change at any edge as directed by Architect.
4. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling under which they are mounted.
5. In utility areas, finish equipment, piping, conduit, and exposed duct work in colors according to the color-coding scheme indicated.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, aluminum, and acoustical ceilings.
1. Two top coats and one coat primer.
2. Top Coat(s): High Performance Architectural Interior Latex; MPI #138, 139, 140, 141, or 142.
    a. Products:
        1) Behr Ultra Scuff Defense Interior Semi-Gloss [No.3750].
        2) PPG Paints Pitt-Glaze WB1 Epoxy, 16-1510 Series, Semi-Gloss. (MPI #141)
        3) Sherwin-Williams Pre-Catalyzed Waterbased Epoxy, Semi-Gloss. (MPI #141)
        4) Sherwin-Williams Scuff Tuff Interior Waterbased Enamel, Semi-Gloss, S26-50 Series.
        5) Substitutions: See Section 016000 - Product Requirements

B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
1. Medium duty applications include doors and door frames.
2. Two top coats and one coat primer.
3. Top Coat(s): Interior Epoxy-Modified Latex; MPI #115 or 215.
    a. Products:
        1) PPG Paints Aquapon WB EP Two-Component Waterborne Epoxy Coating, 98E-1/98E-98 Series, Gloss. (MPI #115)
        2) Sherwin-Williams Pro Industrial Waterbased Catalyzed Epoxy, Gloss. (MPI #115)
        3) Substitutions: See Section 016000 - Product Requirements

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

1. Alkali Resistant Water Based Primer; MPI #3.
    a. Products:
        1) Behr Concrete and Masonry Bonding Primer [No.880]. (MPI #3)
        2) PPG Paints Perma-Crete Interior/Exterior Alkali Resistant Primer, 4-603XI. (MPI #3)
        3) Sherwin-Williams Loxon Concrete and Masonry Primer Sealer, LX02W50. (MPI #3)
        4) Substitutions: See Section 016000 - Product Requirements
2. Interior/Exterior Latex Block Filler; MPI #4.
    a. Products:
        1) Behr Pro Block Filler Primer [No.PR050]. (MPI #4)
        2) PPG Paints; Perma-Crete Concrete Block & Masonry Surfacer/Filler, 4-100XI. (MPI #4)
        3) Sherwin-Williams ConFlex Block Filler. (MPI #4)

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been adequately prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
    1. Gypsum Wallboard: 12 percent.
    2. Plaster and Stucco: 12 percent.
    3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
    4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Concrete:
    1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
    2. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi (10,350 to 27,580 kPa) at 6 to 12 inches (150 to 300 mm). Allow to dry.
    3. Clean concrete according to ASTM D4258. Allow to dry.
    4. Prepare surface as recommended by top coat manufacturer and in accordance with SSPC-SP 13/NACE No.6.

H. Masonry:
   1. Remove efflorescence and chalk. Do not coat surfaces if moisture content, alkalinity of surfaces, or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
   2. Prepare surface as recommended by top coat manufacturer.
   3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi (4,140 to 10,350 kPa) at 6 to 12 inches (150 to 300 mm). Allow to dry.

I. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

J. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high-alkali surfaces.

K. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

L. Galvanized Surfaces:

M. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
   3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning in accordance with SSPC-SP 6/NACE No.3. Protect from corrosion until coated.

N. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

O. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

D. Sand wood and metal surfaces lightly between coats to achieve required finish.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for field inspection.

B. Owner will provide field inspection.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

3.07 SCHEDULE - PAINT SYSTEMS

A. Concrete, Concrete Masonry Units (CMU), Concrete Block, Brick Masonry: Finish surfaces exposed to view.
   1. Interior: CI-OP-3L, semi-gloss.

B. Wood: Finish surfaces exposed to view.
   1. Interior Trim and Frames: WI-OP-3A, semi-gloss.

C. Steel Doors and Frames: Finish surfaces exposed to view; MI-OP-3A, gloss.

END OF SECTION

SECTION 102113.17
PHENOLIC TOILET COMPARTMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Phenolic toilet compartments.

B. Urinal and vestibule screens.

1.02 RELATED REQUIREMENTS

A. Section 102800 - Toilet, Bath, and Laundry Accessories.

1.03 REFERENCE STANDARDS

A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.

B. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2024.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work with placement of support framing and anchors in walls and ceilings.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on panel construction, hardware, and accessories.

C. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.

D. Samples: Submit two samples of partition panels, 2 by 2 inch (50 by 50 mm) in size illustrating panel finish, color, and sheen.

E. Manufacturer's Installation Instructions: Indicate special procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Phenolic Toilet Compartments:
   1. All American Metal Corp - AAMCO: www.allamericanmetal.com/#sle.
   2. Bradley Corporation: www.bradleycorp.com.
   3. ASI Accurate Partitions: www.asi-accuratepartitions.com/#sle.
   4. Substitutions: Section 016000 - Product Requirements.

2.02 PHENOLIC TOILET COMPARTMENTS

A. Toilet Compartments: Factory fabricated doors, pilasters, and divider panels made of solid phenolic core panels with integral melamine finish, floor-mounted unbraced.
   1. Color: Single color as selected.

B. Doors:
   1. Thickness: 3/4 inch (19 mm).
   2. Width: 24 inch (610 mm).
   3. Width for Handicapped Use: 36 inch (915 mm), out-swinging.
   4. Height: 58 inch (1473 mm).

C. Panels:
   1. Thickness: 1/2 inch (13 mm).
   2. Height: 58 inch (1473 mm).

D. Pilasters:
   1. Thickness: 3/4 inch (19 mm).

2. Width: As required to fit space; minimum 3 inch (76 mm).

E. Screens: Without doors; to match compartments; mounted to wall with two panel brackets with vertical support/bracing same as compartments.

2.03 ACCESSORIES

A. Pilaster Shoes: Formed ASTM A666 Type 304 stainless steel with No. 4 finish, 3 inch (76 mm) high, concealing floor fastenings.
   1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.

B. Head Rails: Hollow anodized aluminum, 1 inch by 1-1/2 inch (25 mm by 38 mm) size, with anti-grip profile and cast socket wall brackets.

C. Wall and Pilaster Brackets: Polished stainless steel; manufacturer's standard type for conditions indicated on drawings.

D. Attachments, Screws, and Bolts: Stainless-steel, tamper-proof type.
   1. For attaching panels and pilasters to brackets: Through-bolts and nuts; tamper proof.

E. Hardware: Polished stainless steel:
   1. Pivot hinges, gravity type, adjustable for door close positioning; two per door.
   2. Door Latch: Slide type with exterior emergency access feature.
   3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
   4. Coat hook with rubber bumper; one per compartment, mounted on door.
   5. Provide door pull for outswinging doors.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify correct spacing of and between plumbing fixtures.

C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.

B. Maintain 3/8 inch to 1/2 inch (9 mm to 13 mm) space between wall and panels and between wall and end pilasters.

C. Attach panel brackets securely to walls using anchor devices.

D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

E. Field touch-up of scratches or damaged finish will not be permitted. Replace damaged or scratched materials with new materials.

3.03 TOLERANCES

A. Maximum Variation From True Position: 1/4 inch (6 mm).

B. Maximum Variation From Plumb: 1/8 inch (3 mm).

3.04 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch (5 mm).

B. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.

C. Adjust adjacent components for consistency of line or plane.

END OF SECTION

SECTION 102800
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial toilet accessories.

B. Under-lavatory pipe supply covers.

C. Electric hand/hair dryers.

D. Diaper changing stations.

1.02 RELATED REQUIREMENTS

A. Section 102113.17 - Phenolic Toilet Compartments.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASME A112.18.9 - Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures; 2011 (Reaffirmed 2022).

C. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless-Steel Tubing for General Service; 2022.

D. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless-Steel Sheet, Strip, Plate, and Flat Bar; 2023.

E. ASTM C1036 - Standard Specification for Flat Glass; 2021.

F. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2024.

G. ASTM C1822 - Standard Specification for Insulating Covers on Accessible Lavatory Piping; 2021.

H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

I. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use; 2022.

J. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).

K. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Commercial Toilet, Shower, and Bath Accessories:
   1. American Specialties, Inc: www.americanspecialties.com/#sle.
   2. Bradley Corporation: www.bradleycorp.com/#sle.
   3. Georgia-Pacific Professional: www.gppro.com/#sle.

4. Kimberly-Clark Corporation; Kimberly-Clark Professional ICON Collection: www.kcprofessional.com/#sle.
5. Substitutions: Section 016000 - Product Requirements.

B. Under-Lavatory Pipe Supply Covers:
1. Plumberex Specialty Products, Inc: www.plumberex.com/#sle.

C. Electric Hand/Hair Dryers:
1. American Specialties, Inc: www.americanspecialties.com/#sle.
2. Dyson Inc; Dyson Airblade 9kJ: www.dyson.com/#sle.
3. Excel Dryer: www.exceldryer.com/#sle.
4. Substitutions: Section 016000 - Product Requirements.

D. Diaper Changing Stations:
1. American Specialties, Inc: www.americanspecialties.com/#sle.
2. Bradley Corporation: www.bradleycorp.com/#sle.
3. Koala Kare Products: www.koalabear.com/#sle.
4. Substitutions: 016000 - Product Requirements.

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
1. Grind welded joints smooth.
2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.

B. Keys: Provide six keys for each accessory to Owner; master key lockable accessories.

C. Stainless Steel Sheet: ASTM A666, Type 304.

D. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.

E. Mirror Glass: Vandal-resistant, bright-polished stainless steel - Type 430.

F. Adhesive: Two component epoxy type, waterproof.

G. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

H. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.03 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

B. Shop Primed Ferrous Metals: Pretreat and clean, spray apply one coat primer and bake.

C. Back paint components where contact is made with building finishes to prevent electrolysis.

2.04 COMMERCIAL TOILET ACCESSORIES

A. Toilet Paper Dispenser: Double roll, surface mounted bracket type, stainless steel, spindleless type for tension spring delivery designed to prevent theft of tissue roll.

B. Paper Towel Dispenser: Folded paper type, stainless steel, semi-recessed, with viewing slots on sides as refill indicator and tumbler lock.
1. Capacity: 300 C-fold minimum.
2. Products:
a. AJW Architectural Products: www.ajw.com/#sle.
b. American Specialties, Inc: www.americanspecialties.com/#sle.
c. Substitutions: Section 016000 - Product Requirements.

C. Automated Soap Dispenser: Liquid soap dispenser, wall-mounted, with stainless steel cover and window to gauge soap level, tumbler lock.
1. Minimum Capacity: 48 ounces (1.5 liters).
2. Products:
a. AJW Architectural Products: www.ajw.com/#sle.

b. American Specialties, Inc: www.americanspecialties.com/#sle.
c. Kimberly-Clark Corporation; Kimberly-Clark Professional ICON Electronic Skin Care Dispenser: www.kcprofessional.com/#sle.
d. Substitutions: Section 016000 - Product Requirements.

D. Mirrors: Stainless steel framed, with bright-polished stainless steel viewing surface.
1. Size: As indicated on drawings.
2. Frame: 0.05 inch (1.3 mm) angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
3. Backing: Full mirror sized, minimum 0.03 inch (0.8 mm) galvanized steel sheet and nonabsorptive filler material.
4. Fixed Tilt Mirrors: Minimum 3 inches (75 mm) tilt from top to bottom.
5. Products:
a. AJW Architectural Products: www.ajw.com/#sle.
b. American Specialties, Inc: www.americanspecialties.com/#sle.
c. Bobrick: www.totalrestroom.com.
d. Substitutions: Section 016000 - Product Requirements.

E. Grab Bars: Stainless steel, smooth surface.
1. Standard Duty Grab Bars:
a. Push/Pull Point Load: 250 pound-force (1112 N), minimum.
b. Dimensions: 1-1/4 inch (32 mm) outside diameter, minimum 0.05 inch (1.3 mm) wall thickness, exposed flange mounting, 1-1/2 inch (38 mm) clearance between wall and inside of grab bar.
c. Finish: Satin.
d. Length and Configuration: As indicated on drawings.
e. Products:
1) AJW Architectural Products: www.ajw.com/#sle.
2) American Specialties, Inc: www.americanspecialties.com/#sle.
3) Substitutions: Section 016000 - Product Requirements.

F. Combination Sanitary Napkin/Tampon Dispenser with Disposal: Stainless steel, surface mounted.
1. Door: Seamless 0.05 inch (1.3 mm) door with returned edges and tumbler lock.
2. Cabinet: Fully welded, 0.03 inch (0.8 mm) thick sheet.
3. Operation: 25 cent coin required to operate dispenser. Provide locked coin box, separately keyed.
4. Minimum capacity: 15 napkins and 20 tampons.
5. Products:
a. AJW Architectural Products: www.ajw.com/#sle.
b. American Specialties, Inc: www.americanspecialties.com/#sle.
c. Substitutions: Section 016000 - Product Requirements.

G. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking bottom panel with full-length stainless-steel piano-type hinge, removable receptacle.

2.05 UNDER-LAVATORY PIPE AND SUPPLY COVERS

A. Under-Lavatory Pipe and Supply Covers:
1. Insulate exposed drainage piping, including hot, cold, and tempered water supplies under lavatories or sinks to comply with ADA Standards.
2. Exterior Surfaces: Smooth non-absorbent, non-abrasive surfaces.
3. Construction: 1/8 inch (3.2 mm) flexible PVC.
a. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
b. Comply with ASTM C1822, type indicated.
c. Comply with ASME A112.18.9.

d. Comply with ICC A117.1.
e. Microbial and Fungal Resistance: Comply with ASTM G21.

4. Color: White.
5. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces.
6. Products:
   a. Plumberex Specialty Products, Inc; Plumberex Handy-Shield Maxx: www.plumberex.com/#sle.
   b. Plumberex Specialty Products, Inc; Plumberex Trap Gear: www.plumberex.com/#sle.
   c. Substitutions: See Section 016000 - Product Requirements.

2.06 ELECTRIC HAND/HAIR DRYERS

A. Electric Hand and Hair Dryers: Traditional fan-in-case type, with downward fixed nozzle.
   1. Operation: Automatic, sensor-operated on and off.
   2. Mounting: Wall-mounted - surface.
   3. Cover: Stainless steel with brushed finish.
      a. Tamper-resistant screw attachment of cover to mounting plate.
      b. Screened or shielded air intake.
   4. Air Velocity: 18,000 linear feet per minute (91 m/s), minimum, at full power.
   5. Heater: 500 W, minimum, at full power.
   6. Fan/Heater Control: Field adjustable down to approximately half-speed with corresponding reduction in heat output.
   7. Total Wattage: 1400 W, maximum.
   8. Runtime: Field adjustable or automatic, up to 35 seconds.
   9. Air sanitizing and deodorizing without use of chemicals.
   10. Runtime as Hair Dryer: 80 seconds, nominal.
   11. Warranty: 3 years.
   12. Electric Hand Dryer Products:
      a. Excel Dryer Inc; ThinAir Hand Dryer: www.exceldryer.com/#sle.
      b. Excel Dryer Inc; XLERATOR: www.exceldryer.com/#sle.
      c. World Dryer Corporation; VERDEdri: www.worlddryer.com/#sle.
      d. Substitutions: Section 016000 - Product Requirements.

2.07 DIAPER CHANGING STATIONS

A. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
   1. Material: Polyethylene.
   2. Mounting: Surface.
   3. Color: As selected.
   4. Minimum Rated Load: 250 pounds (113.4 kg).

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. For electrically operated accessories, verify that electrical power connections are ready and in the correct locations.

D. Verify that field measurements are as indicated on drawings.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.
   1. Grab Bars: As indicated on drawings.
   2. Mirrors: 40 inch (1016 mm), measured from floor to bottom of mirrored surface.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

SECTION 11 6813
PLAYGROUND EQUIPMENT – (Owner purchase equipment)

1.0 GENERAL

1.1 Description

Note – The Contractor **IS NOT** responsible for the purchase of the play equipment to be installed in this bid.

A. Playground equipment installation shall consist of all labor, equipment and materials necessary for complete installation of play equipment or site furniture specified.

B. As part of this work, the Contractor shall coordinate with manufacturer for the delivery and secure storage of all play equipment. Contract bid includes the coordination and labor necessary to install a complete playground system. This shall also include checking freight tickets, providing a copy to the Owner's Representative and inspection of items shipped.

1.2 Specifications and Standards

A. Play equipment installation shall conform to the most current standard:

1. ASTM 1487-Specification for Playground Equipment for Public Use
2. ASTM F1292-Specification for Attenuation of Surface Systems Under and Around Playground Equipment
3. United States Consumer Product Safety Commission Handbook for Public Playground Safety, latest publication
4. American with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities: Play Areas: Final Rule

1.3 Submittals

A. Provide a copy of freight ticket for equipment to Owner/Owner’s rep

2.0 MATERIALS

A. Play Equipment

All equipment shall be as designated on the plans. The Contractor shall not modify equipment.

3.0 EXECUTION

3.1 Installation

A. All equipment detailed on the drawings and specified herein shall be installed per manufacturer’s specifications and recommendations, unless otherwise described specifically herein, or on the plans.

B. Contractor shall obtain instructions for proper installation from the specific manufacturer. If any manufacturer does not provide installation specifications after request by the Contractor, the Owner’s representative shall be notified before installation occurs.

C. Contractor shall uncrate, inspect, clean and assemble all playground equipment and site furniture as necessary to install complete and usable items. If there are discrepancies with the items shipped, the Contractor is responsible for coordination of obtaining the correct materials at no cost to the Owner.

D. Concrete footings shall be installed at all play equipment. Concrete shall conform to concrete specification. Footings shall be dimensioned as per the manufacturer’s specification and/or the plans and details, which ever specifies the larger dimensions.

E. Contractor shall be responsible for trimming all bolts and other similar fastener items to meet specifications noted herein. Contractor shall ensure all tags, staples and stickers are removed from play equipment except for those required by incorporated specifications and standards.

END OF SECTION

landscape structures

Dugdale Park

WUK23DUG1 • 6.14.2024

nuToys Leisure Products

182503
WELCOME SIGN
(LSI PROVIDED)
5–12 YEARS

TRANSFER
POINT

265928
HEDRA W/SLIDEWINDER
LEFT, PERF & PERF
PANELS

22 1/2

TRANSFER
POINT

78

55

ARCH
CLIMBER

LADDER
RAIL DISCS

205160
CUBE

NESTING
PUZZLE

STEEL
DRUM

ACTIVITY TABLE
WITH BENCH

SLOTTED
PUZZLE

PUZZLE
PANEL

18 1/2

25 3/4

MAGNET
STACK

MIRROR
PANEL

12

32

6 1/4

TRANSFER
POINT

STEERING WHEEL

TABLE PANEL

MANIPULATIVE
ARROW PANEL

CRAWL–THROUGH
PANEL

CURVED SLIDE

ACCESSIBLE
ROUTE OF
TRAVEL

182503
WELCOME SIGN
(LSI PROVIDED)
2–5 YEARS

152179
SADDLE SPINNER
16" SEAT HEIGHT

177344
SINGLE POST SWING
52" BURY

176038
FULL BUCKET SEAT
W/PROGUARD CHAINS
8' BEAM HEIGHT

177351
MOLDED SEAT/HARNESS
W/PROGUARD CHAINS
8' BEAM HEIGHT

177345
SINGLE POST SWING
ADDITIONAL BAY
52" BURY

174018
BELT SEAT
W/PROGUARD CHAINS
8' BEAM HEIGHT

174018
BELT SEAT
W/PROGUARD CHAINS
8' BEAM HEIGHT

237297
FRIENDSHIP
SWING W/SINGLE
POST FRAME
ADDITIONAL BAY
52" BURY
PROGUARD
CHAINS

277369
WHIRLYQ
SPINNER
SM ONLY

ACCESSIBLE
AREA

198213
ZIPKROOZ ASSISTED 50'
ADDITIONAL BAY

18

18

194663
ZIPKROOZ 50'

landscape structures

nuToys
LEISURE PRODUCTS
1-800-526-6197

Dugdale Park
Waukegan, IL
CODE: WUK23DUG1

SCALE: IN FEET
0' 1' 5' 10'

5/7/24 DRAWN BY: TM
STRUCTURE DIMENSIONS:
ACTUAL SIZE:
AREA REQUIRED:

REVISED 6/14/2024

SECTION 12 9300
SITE FURNITURE – Contractor purchase site furniture

1.0 GENERAL

1.1 Description

Note – The Contractor **SHALL BE** responsible for the purchase of all site furniture as described on the plans.

A. This work shall consist of all labor, equipment and materials necessary for complete installation of all specified site furniture. Site furniture that is specified in and around play areas shall also conform to SECTION 11 6813, Playground Equipment.

B. As part of this work, the Contractor shall coordinate with Owner for delivery, and storage of site furniture. Contract bid includes the coordination and labor necessary to install site furniture completely. This shall also include checking freight ticket, providing a copy to the Owner's representative, and inspection of items shipped. Contractor to provide secure storage of equipment prior to installation. In the event of damaged or missing parts, the Contractor shall immediately notify the distributor/vendor and the Owner.

1.2 Submittals

A. Provide copy of freight ticket to Owner/owner's representative

2.0 MATERIALS

2.1 Site Furniture

A. All site furniture shall be as designated on the plans or approved equals as per the Specifications. The Contractor shall not modify site furniture.

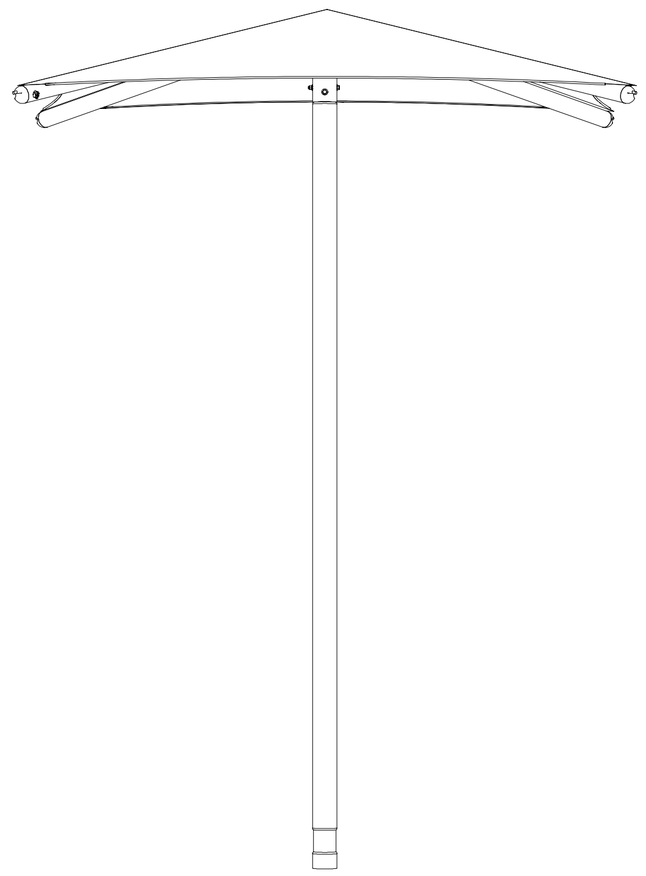
3.0 EXECUTION

3.1 Installation

A. All site furniture shall be installed as per manufacturer's specifications and recommendations and shall follow all plans and details. Wherever the details and manufacture's specifications do not agree on footing size, the larger footing shall prevail. Wherever the details and manufacturer's specifications do not agree on any other item, the Owner shall be notified and a decision rendered.

B. Contractor shall be responsible for trimming all bolts and other similar fastener items to within one-quarter inch (1/4") of the nuts/fasteners. All fasteners shall be secured in a manner that will prevent removal: such as peening, tack welding, or tamper proof fasteners.

END OF SECTION



ABBREVIATION KEY			
ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION
CL	CENTER LINE	QTY	QUANTITY
FFE	FINISH FLOOR ELEVATION	O.C	ON CENTER
FFL	FINISH FLOOR LEVEL	SQ	SQUARE
HSS	HOLLOW STRUCTURAL SECTION	U.N.O	UNLESS NOTED OTHERWISE
ID	INTERNAL DIAMETER	KSI	KIPS PER SQUARE INCH
LBS	POUND	TYP	TYPICAL
TOF	TOP OF FOOTING	EQ	EQUAL

DESIGN INFORMATION

CODE AND LOADS:
- BUILDING CODE: IBC-2018
- SQUARE FOOTAGE - 100 SQ FT.
- OCCUPANCY CLASSIFICATION - U (UTILITY & MISCELLANEOUS).
- CONSTRUCTION TYPE - II
- SINGLE STORY STRUCTURE.
- RISK CATEGORY II.

LOADS:
- DEAD LOAD= SELF WEIGHT.
- LIVE LOAD = 5 PSF.
- DESIGN WIND LOAD Vult= 130 MPH 3.0 Sec. Gust
- EXPOSURE: D.
- GROUND SNOW LOADS: 9 PSF

SOILS:
- THIS STRUCTURE WAS NOT DESIGNED FOR A FLOOD HAZARD AREA.
- SOILS WERE EVALUATED USING VALUES OBTAINED FROM IBC, TABLE 1806.2 AND ASSUMING SOIL TYPE 5.
- ALLOWABLE BEARING 1500 PSF.
- LATERAL BEARING: 100 PSF/FT (UP TO 200 PSF/FT AS PER IBC).

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING:
   1.1. AMERICAN INSTITUTE OF STEEL CONSTRUCTION - "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.".
   1.2. AMERICAN WELDING SOCIETY - "STRUCTURAL WELDING CODE" AWS D1.1.
   1.3. AMERICAN SOCIETY FOR TESTING AND MATERIALS - AS REFERENCED HEREIN.
   1.4. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) - AS REFERENCED.
2. THE FABRIC MEMBRANE IS NOT DESIGNED OR INTENDED TO BE WALKED ON IT IS DESIGNED ONLY TO WITHSTAND WIND AND SNOW LOADS SPECIFIED ABOVE.
3. DO NOT SCALE OFF OF DRAWINGS.
4. TENSION CABLE FABRIC TO 350 LBS MIN.

MATERIALS:
5. STRUCTURAL MEMBERS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS U.N.O.
   5.1. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500, GRADE C.
   5.2. ALL PLATES AND BARS SHALL CONFORM TO ASTM A 36.
   5.3. ALL BASEPLATES SHALL CONFORM TO ASTM A-572 GRADE 50.

WELDS:
6. ALL WELDS SHALL BE CONTINUOUS WHERE LENGTH IS NOT GIVEN.
7. ALL WELDS SHALL DEVELOP THE FULL STRENGTH OF THE WEAKER MEMBER.
8. ALL WELDS SHALL BE MADE USING E70XX .035 OR .045 WIRE.
9. ALL WELDED JOINTS SHALL CONFORM TO AWS PRE QUALIFIED WELDED JOINTS AS DESIGNATED BY THE STANDARD WELD SYMBOLS AND TERMS AS SHOWN ON THE DRAWINGS.
10. WELDS SHALL BE MADE ONLY BY OPERATORS WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TESTS, AS PRESCRIBED IN THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY, D1.1, "STRUCTURAL WELDING CODE", TO PERFORM THE TYPE OF WORK REQUIRED.
11. WELDING OF FIELD CONNECTIONS SHALL NOT BE ALLOWED.
12. ALL FILLET WELDS SHALL BE A MINIMUM OF 3/16" U.N.O.
13. SPECIAL ATTENTION SHALL BE GIVEN TO WELDS IN AREAS IN DIRECT CONTACT WITH SHADE FABRIC TO ENSURE THAT THESE WELDS ARE GROUND SMOOTH AND DO NOT HAVE SHARP EDGES OR BURRS.

BOLTED CONNECTIONS:
14. FIELD CONNECTIONS SHALL BE BOLTED AS INDICATED ON THE DRAWINGS.
15. ALL LOCK WASHERS SHALL BE SPLIT-RING.
16. ALL BOLTS SHALL BE TIGHTENED TO A SNUG CONDITION.
17. TOLERANCES ON HOLES FOR CONNECTING PLATES AND BOLTED ELEMENTS IN FIELD SHALL BE +1/8" LARGER THAN THE NOMINAL DIAMETER OF THE BOLT, FOR BASE PLATES IT SHALL BE 1/4" LARGER. BOLT HOLES IN METAL PARTS MAY BE CUT USING A FLAME CUTTING MACHINE.
18. ALL CAP SCREWS SHALL BE GRADE 8 MANUFACTURED IN ACCORDANCE WITH ASTM A354 STANDARD SPECIFICATIONS FOR ALLOY STEEL, QUENCHED AND TEMPERED. ADDITIONALLY, THE CAP SCREWS SHALL CONFORM TO THE DIMENSIONAL REQUIREMENT SPECIFIED IN ANSI/ ASME B18.2.1 FOR HEXAGON CAP SCREWS.
19. ALL FLAT WASHERS SHALL BE GRADE 8 FLAT WASHERS MANUFACTURED IN ACCORDANCE WITH ASTM F436 STANDARD SPECIFICATIONS FOR HARDENED STEEL WASHERS. THE FLAT WASHERS SHALL MEET THE DIMENSIONAL REQUIREMENT SPECIFIED IN ANSI/ ASME B18.22.1 FOR HARDENED STEEL WASHERS.
20. ALL LOCK WASHERS SHALL BE GRADE 8 LOCK WASHERS MANUFACTURED IN ACCORDANCE WITH ASTM F436 STANDARD SPECIFICATIONS FOR HARDENED LOCK WASHERS. THE LOCK WASHERS SHALL MEET THE DIMENSIONAL REQUIREMENT SPECIFIED IN ANSI/ ASME B18.21.1 FOR HARDENED STEEL LOCK WASHERS.
21. ALL HEX NUTS SHALL BE GRADE 8 NUTS MANUFACTURED IN ACCORDANCE WITH ASTM A563 STANDARD SPECIFICATIONS FOR CARBON AND ALLOW STEEL NUTS. THE NUTS SHALL MEET THE DIMENSIONAL REQUIREMENT SPECIFIED IN ANSI/ ASME B18.2.2 FOR HEXAGON NUTS.
22. ALL HARDWARE COMPONENTS SHALL HAVE A YELLOW ZINC FINISH APPLIED THROUGH AN ELECTROPLATING PROCESS, MEETING THE REQUIREMENTS OF ASTM B633.

STEEL CABLES:
23. STRUCTURAL WIRE ROPE CABLES SHALL CONFORM TO THE LATEST REVISION OF ASTM A 603, "STANDARD SPECIFICATION FOR ZINC-COATED STEEL STRUCTURAL WIRE ROPE.".
24. ALL WIRE ROPE CABLE SHALL BE 7X19 STRAND CORE GALVANIZED WIRE ROPE WITH A BREAKING STRENGTH VALUE OF: 1/4" DIAMETER: 7,000 LBS.
25. CABLES SHALL BE FED THROUGH THE FABRIC SLEEVES AROUND THE PERIMETER OF THE CANOPY AND TENSIONED UNTIL THE FABRIC REACH A TAUGHT APPEARANCE.
26. ANY LONG-TERM CABLE SAG SHALL BE MINIMIZED DURING THE MAINTENANCE RE-TIGHTENING VISITS AS REQUIRED.

EXECUTION:
27. STEEL FABRICATOR SHALL PROVIDE EFFECTIVE, FULL TIME QUALITY CONTROL OVER ALL FABRICATION ACTIVITIES.
28. VISUAL INSPECTION SHALL BE PERFORMED TO ENSURE ALL WELDS CONFORM TO AWS STANDARDS
29. GRIND ALL SHARP EDGES AND CORNERS SMOOTH.

CONCRETE:
30. CONCRETE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
   30.1. AMERICAN CONCRETE INSTITUTE (ACI) 318: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   30.2. ASTM C94: STANDARD SPECIFICATION FOR READY-MIXED CONCRETE.
   30.3. ASTM C150: STANDARD SPECIFICATION FOR PORTLAND CEMENT.
   30.4. ASTM C33: STANDARD SPECIFICATION FOR CONCRETE AGGREGATES.
31. ALL CONCRETE SHALL BE READY-MIX.
32. MIX DESIGN SHALL BE DEVELOPED BY A QUALIFIED CONCRETE TECHNOLOGIST OR MIX DESIGN PROFESSIONAL IN ACCORDANCE WITH ACI 318 GUIDELINES.
33. ALL CONCRETE PLACEMENT SHALL BE PERFORMED BY EXPERIENCED PERSONNEL USING PROPER EQUIPMENT AND TECHNIQUES TO ACHIEVE THE SPECIFIED CONSOLIDATION AND FINISH.
34. ALL CONCRETE SHALL BE PLACED WITHIN THE TIME LIMITS SPECIFIED IN ASTM C94 TO ENSURE PROPER WORKABILITY AND STRENGTH DEVELOPMENT.
35. ALL CONCRETE SHALL BE ADEQUATELY CURED TO PROMOTE HYDRATION AND ACHIEVE THE SPECIFIED STRENGTH AND DURABILITY.
36. ALL CONCRETE, IF REQUIRED, SHALL BE TESTED IN ACCORDANCE WITH ASTM C31/C31M FOR COMPRESSIVE STRENGTH AND ASTM C39/C39M FOR CYLINDER TESTING.
37. CONCRETE SPECIFICATIONS SHALL BE AS FOLLOWS:
   37.1. 28 DAY STRENGTH: f'c=3,000 PSI (MIN.).
   37.2. SLUMP: 3-5.
   37.3. TYPE II/V PORTLAND CEMENT.
   37.4. AGGREGATE SHALL CONFORM TO ASTM C-33.
   37.5. NO AIR ENTRAINMENT REQUIRED.
38. ALL CONCRETE STEEL REINFORCEMENT SHALL CONFORM TO ASTM A-615 GRADE 60.
39. REINFORCING STEEL SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL AND RSI MANUAL OF STANDARD PRACTICE.
40. REINFORCING CONCRETE COVER SHALL BE 3" MIN.
41. ALL ANCHOR BOLTS SET IN CONCRETE SHALL COMPLY WITH ASTM F-1554 GRADE 55.
42. ALL NON-SHRINK GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI AND SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C-109, ASTM C939, ASTM C1090 WHEN APPLICABLE.
43. GROUT LEVELING BED THICKNNES 2 ½" MAX.

FABRIC NOTES:
44. FABRIC SHALL BE MANUFACTURED BY GALE PACIFIC; NO SUBSTITUTIONS ARE ALLOWED.
45. FABRIC SHALL BE HIGH DENSITY POLYETHYLENE (HDP) MATERIAL.
46. THE FABRIC SHALL ACHIEVE AN ULTIMATE TENSILE CAPACITY WHEN TESTED PER ASTM D-5034:
47. WARP DIRECTION OF 150 LB AT 66% MAX ELONGATION.
48. WEFT DIRECTION OF 529 LB AT .58% MAX ELONGATION.
49. SHEAR MODULUS OF 350 LBF/SQIN MIN.
50. THE FABRIC SHALL RETAIN 80% OF ITS TENSILE AND TEARING STRENGTH AFTER ULTRAVIOLET EXPOSURE PER ASTM G53 USING A 313 NM LIGHT SOURCE FOR 500 HOURS WHILE MOISTENED FOR 1 HOUR EVERY 12 HOURS.
51. FABRIC SHALL REQUIRE ANNUAL INSPECTION AND MAINTENANCE.
52. IT IS RECOMMENDED THAT THE FABRIC TOP SHALL BE REMOVED PRIOR TO NATURAL EVENT WHERE THE SNOW AND WIND EXPECTATIONS EXCEEDS THE DESIGN LOADS INDICATED IN GENERAL NOTES. THE OWNER ACCEPTS FULL RESPONSIBILITY OF REMOVING THE FABRIC FROM THE STEEL FRAME WHEN ANY OR ALL OF THESE CONDITIONS MAY OCCUR.
53. ALL FABRIC SHALL CONFORM TO FIRE PROPAGATION PERFORMANCE CRITERIA OF NFPA 701 OR HAVE A FLAME SPREAD INDEX NOT GREATER THAN 25 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

PAINT
54. ALL PAINT WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
   59.1. ASTM D520 - STANDARD SPECIFICATION FOR ZINC DUST PIGMENT.
   59.2. ASTM D3363 - STANDARD TEST METHOD FOR FILM HARDNESS BY PENCIL TEST.
   59.3. ASTM D7091 - STANDARD PRACTICE FOR NONDESTRUCTIVE MEASUREMENT OF DRY FILM THICKNESS
   59.4. ASTM D3359 - STANDARD TEST METHODS FOR RATING ADHESION BY TAPE TEST.
55. ALL STRUCTURAL STEEL SHALL BE GRIT BLASTED PRIOR TO PAINT.
56. ALL WORK SHALL BE FREE OF OIL, GREASE AND MACHINING CHIPS BEFORE BLASTING.
57. SURFACE PREPARATION PRIOR TO PAINTING SHALL BE EXECUTED IN ACCORDANCE TO COMMERCIAL BLAST CLEANING SSPC-SP6 OR NACE #3.
58. THE ABRASIVE MEDIA FOR CLEANING SHALL BE A STEEL GRIT G50.
59. ALL STRUCTURAL STEEL EXCEPT EMBEDDED ITEMS, SHALL BE PAINTED WITH TWO SHOP COATS (3.0 MILS THICK. MIN.) FIRST COAT WITH ZINC RICH PRIMER AND A SECOND COAT OF A WEATHER RESISTANT POWDER COATING BASED ON POLYESTER TGIC (PROSHIELD).
60. A TOTAL OF 2% OF ALL PAINT PAINTED PARTS SHALL PASS ADHESION TEST AS PER ASTM D-3359.
61. THE PAINT SYSTEM SHALL PASS 2000 HOURS OF SALT SPRAY RESISTANCE AS PER ASTM B-117.
62. ALL PAINT SHALL BE A APPLIED USING AN Application Process AS FOLLOWS:
63. APPLY THE ZINC-RICH PRIMER POWDER COATING USING ELECTROSTATIC SPRAY EQUIPMENT.
   63.1. ACHIEVE A DRY FILM THICKNESS (DFT) OF 3 MILS FOR THE PRIMER LAYER - ASTM D7091.
   63.2. CURE THE PRIMER LAYER ACCORDING TO A GEL STATE.
   63.3. APPLY THE POLYESTER TOPCOAT POWDER COATING OVER THE PRIMER LAYER.
   63.4. ACHIEVE A DFT OF 3 MILS FOR THE TOPCOAT LAYER.
   63.5. CURE THE POWDER COAT SYSTEM IN A CONTROLLED TEMPERATURE OVEN AT A MINIMUM OF 400 DEGREES F.

skyways
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ISO 14001:2015 CERTIFIED ISO 9001:2015 COMPANY

AISC CERTIFIED FABRICATOR Certification Type BU

Skyways
by Landscape Structures Inc.
8131 Forney Rd.
Dallas TX, 75227
playlsi.com

Stamp:

NOT FOR CONSTRUCTION

Project Info:

SPP 10X10X10 Entry PIH

Project No.

Sheet title

Cover Sheet

Sheet Size:

"D" 34"x22"

Reference Scale: 1" 1/2" 1/2" 1/2"

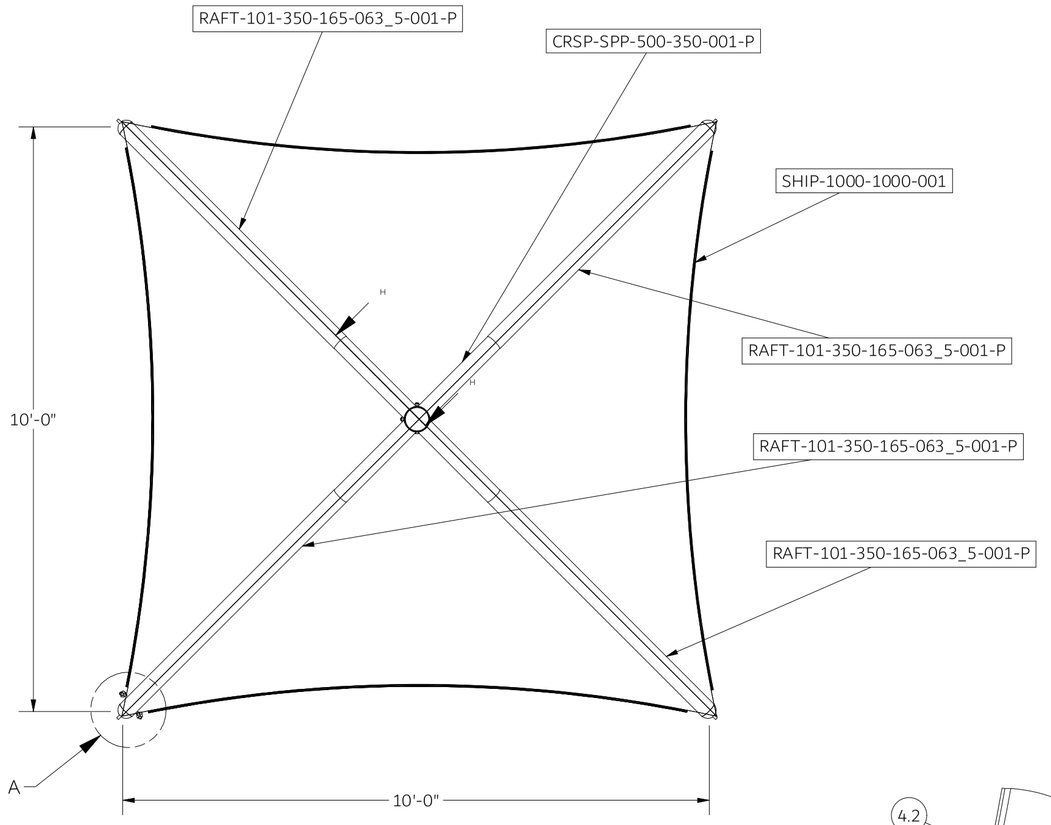
Revisions

#	Revision	Date	By
A	For Approval	07/23/24	KS

Date: 07/23/24
Drawn by: KS
Designed by: FP
Approved by: TM
Drawing: SPP-020-1000-1000-316125-001

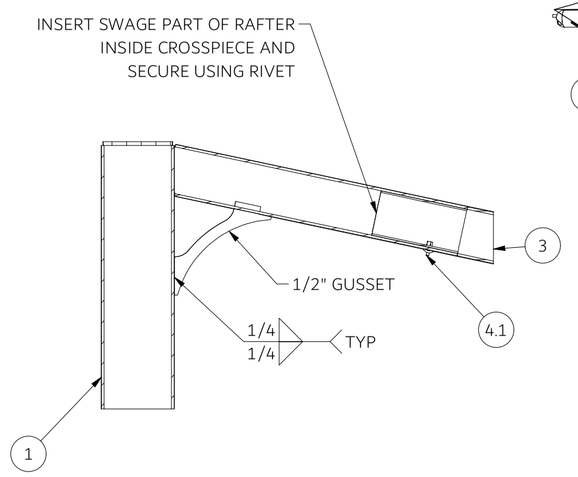
Sheet:

1

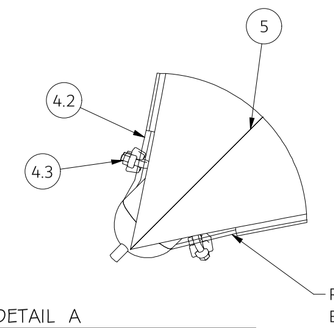


N
Plan

PLAN VIEW (CANOPY COVERAGE 100 SQ FT)
SCALE 1/2"= 1'
SHADE IS TRANSPARENT IN THIS VIEW

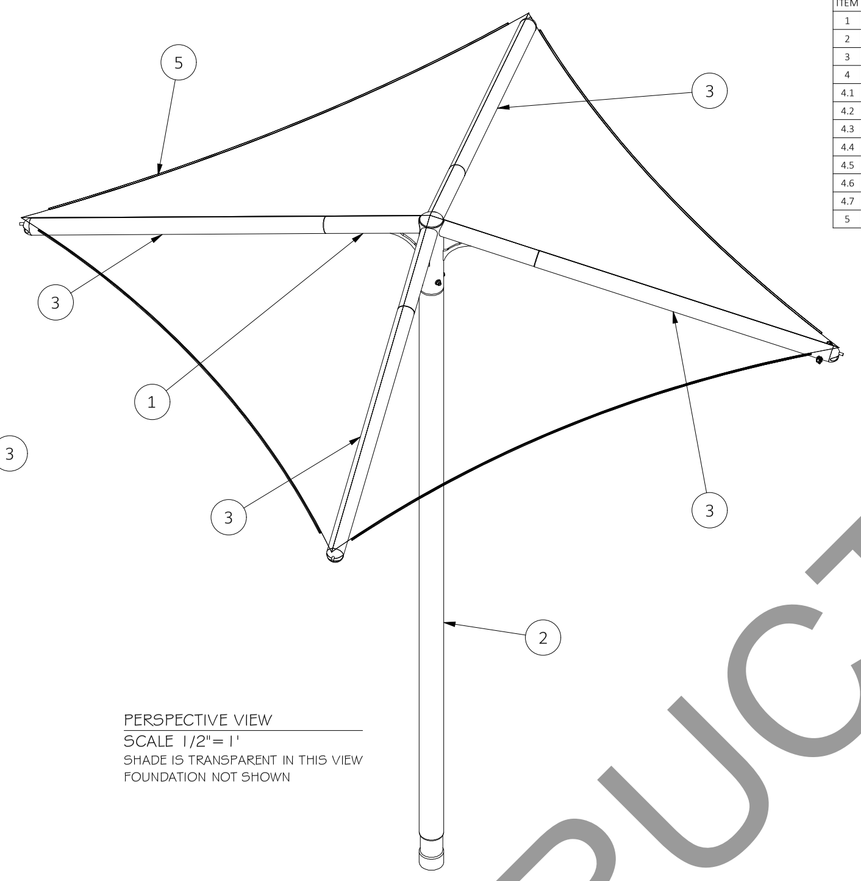


SECTION H-H
CROSSPIECE-RAFTER CONNECTION
SCALE 1 1/2"= 1'



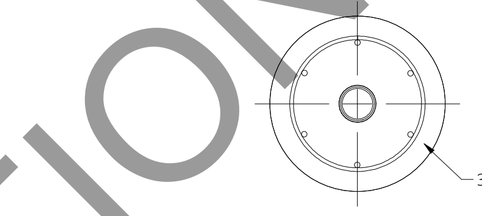
DETAIL A
SHADE-CABLE CONNECTION
SCALE 2"= 1'

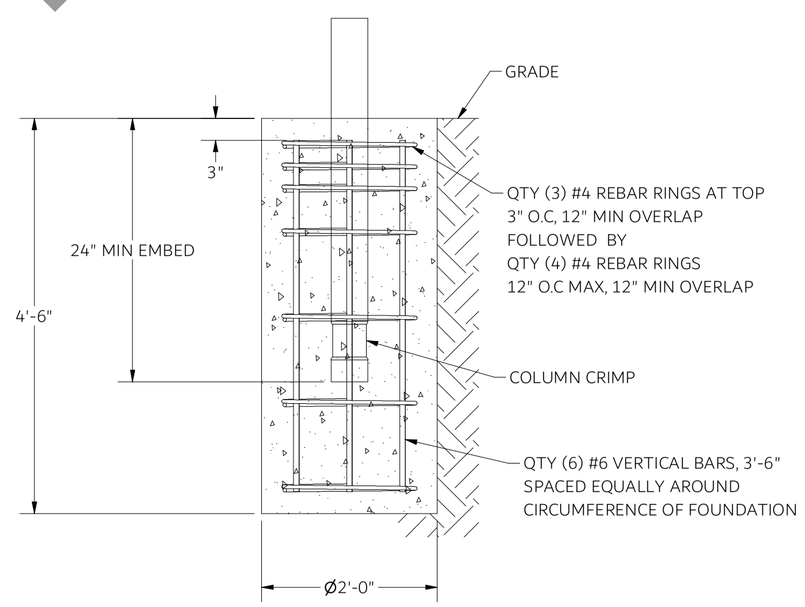
ROUTE 1/4" CABLE THROUGH
END CAP GROOVE INTO
FABRIC SLEEVE



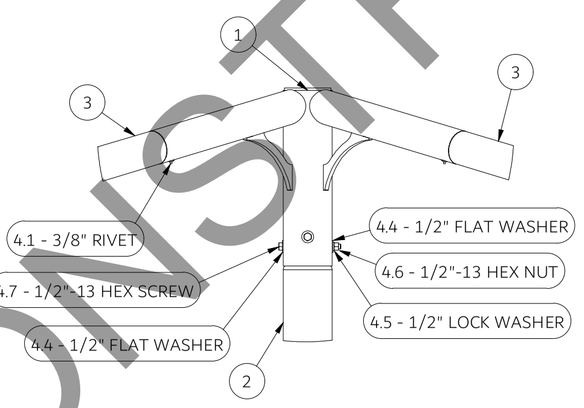
PERSPECTIVE VIEW
SCALE 1/2"= 1'
SHADE IS TRANSPARENT IN THIS VIEW
FOUNDATION NOT SHOWN

Subassemblies Part List					
ITEM	QTY	PART NUMBER	AX Part Number	DESCRIPTION	MASS
1	1	CRSP-SPP-500-350-001-P	318322	SPP Crosspiece 5.0" to 3.5" 318322, CRSP-SPP-500-350-01- Painted	59.693 lbmass
2	1	CSRT-500-188-163_0-001-P		Swedge Column 5" OD, 0.188" WT, A500 GRADE C, Painted, CSRT-500-188-163_0-001-P	130.797 lbmass
3	4	RAFT-101-350-165-063_5-001-P	322729	Rafter HSS 3.5" x 0.165" Wall, A500 GRADE C, 63.5" Length-RAFT-101-350-165-063_5-001-Painted	33.953 lbmass
4	1	PCK-SPP-1000-001	322723	Hardware Package, SPCP, 10" x 10" Shade, 1/4" Cable and Clamps, PACK-SPP-1000	2.792 lbmass
4.1	4	RVT-DK-375-112-001	279316	Rivet 3/8" x 3/8" D/N/ AS - Grip Range: Min = .313, Max = .438	0.011 lbmass
4.2	1	CBL-025-060_0	303682	Steel Cable 1/4" HDG 60'	1.277 lbmass
4.3	2	CLCM-25	259617	HDG Cable Clamp 1/4"	0.223 lbmass
4.4	4	FLWA-500-02-01-01	257135	1/2" Flat Washer G-8 Yellow Zinc	0.029 lbmass
4.5	2	LOWA-500-03-01-01	257188	1/2" Split lock Washer G-8 Yellow Zinc	0.01381 lbmass
4.6	2	HNT-500-13-04-01-01	257177	1/2" - 13 UNC Hex Nut G-8 Yellow Zinc	0.043 lbmass
4.7	2	HCS-500-13-600-01-01-01	257156	Hex Cap Screw 1/2"- 13 UNC X 6" G-8 Yellow Zinc	0.400 lbmass
5	1	SHIP-1000-1000-001	322728	Single Pole Pyramid, Shade, 10x10 Square,SHIP-1000-1000-001	5.176 lbmass

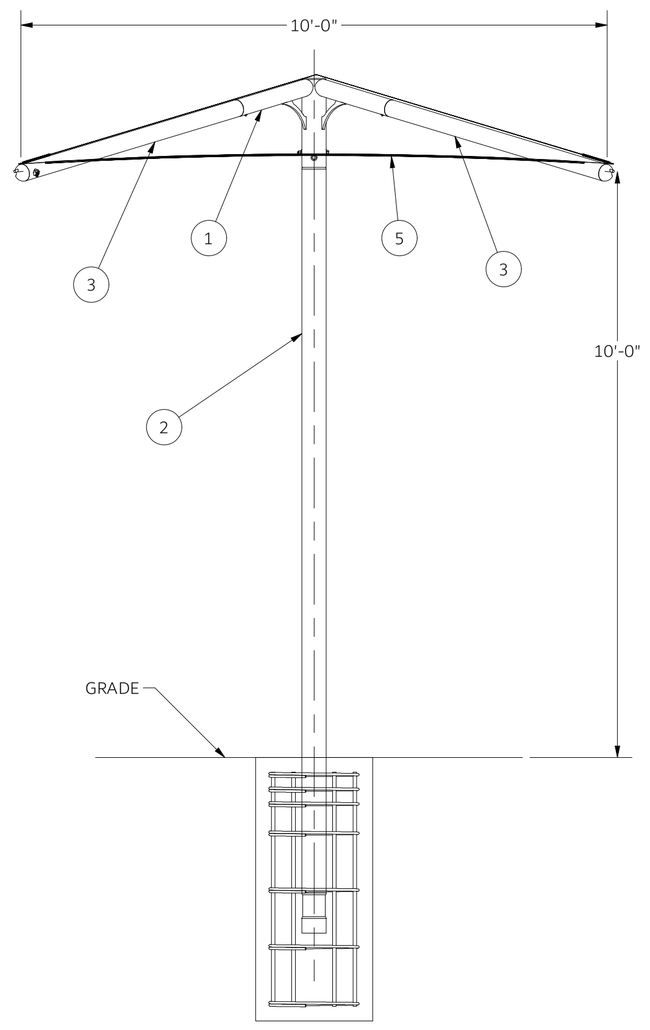




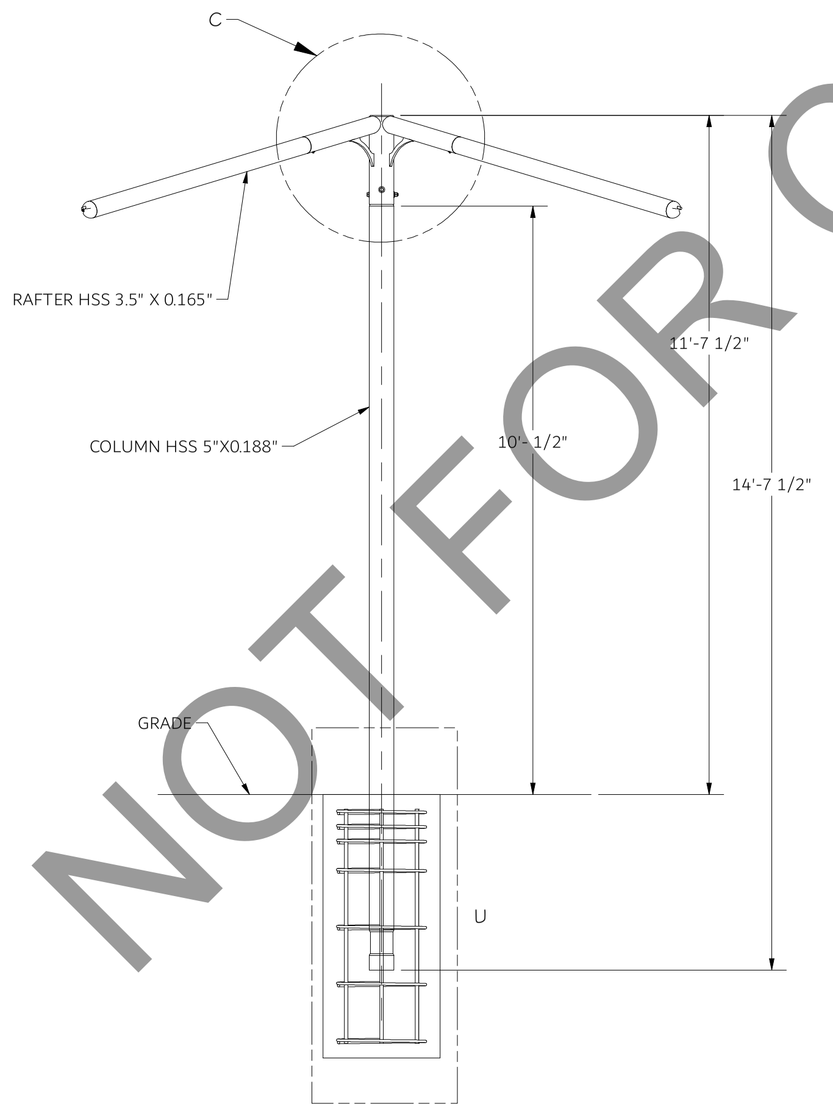
DETAIL U
OPTION 1 NON CONSTRAINED FOUNDATION
SCALE 3/4"= 1'



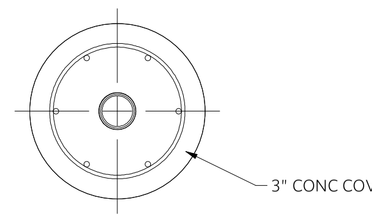
DETAIL C
CROSSPIECE-COLUMN & CROSSPIECE-RAFTER
FASTENING DETAIL
SCALE 1" = 1'-0"
SHADE IS NOT SHOWN IN THIS VIEW

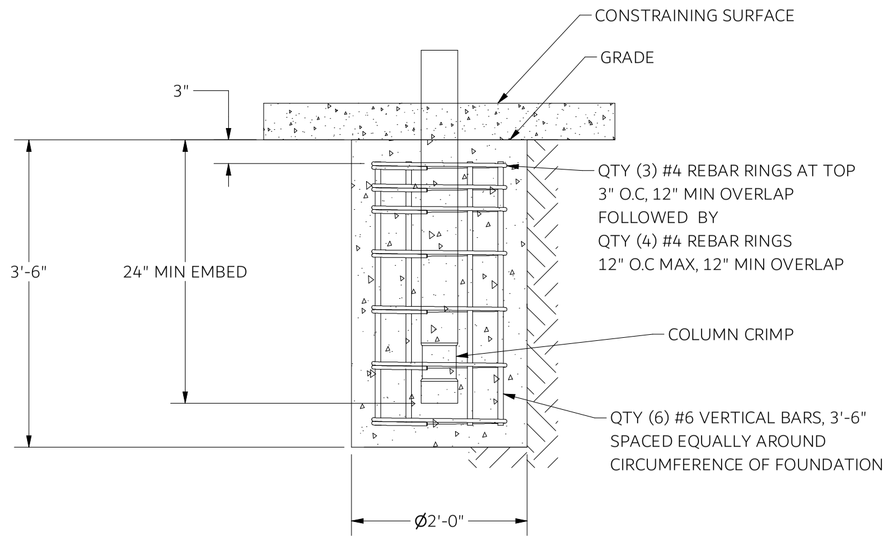


PLAN SOUTH ELEVATION
OPTION 1 NON CONSTRAINED FOUNDATION SHOWN
SCALE 1/2"= 1'



PLAN EAST ELEVATION
SCALE 1/2"= 1'
SHADE NOT SHOWN





OPTION 2- CONSTRAINED FOUNDATION
SCALE 3/4"= 1'

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AISC CERTIFIED FABRICATOR Certification Type BU

Skyways
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8131 Forney Rd.
Dallas TX, 75227
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Stamp:

NOT FOR CONSTRUCTION

Project Info:

SPP 10X10X10 Entry PIH

Project No.

Sheet title

Cover Sheet

Sheet Size:

"D" 34"x22"

Reference Scale:

1" 1/2" 1/2" 1/2"

Revisions

#	Revision	Date	By
A	For Approval	07/23/24	KS

Date:
07/23/24
Drawn by:
KS
Designed by:
FP
Approved by:
TM
Drawing:
SPP-020-1000-1000-316125-001

Sheet:

2

SECTION 12 9353
PICNIC SHELTER – Wood Construction

1.0 GENERAL

1.1 Description

A. This work shall consist of all labor, equipment and materials necessary for complete installation of a wood construction picnic shelter as called for in the plans and details.

B. All work, which is without a specification herein, shall be performed in accordance with local codes and ordinances.

1.2 Related Sections

A. Section 32 1313– Concrete Paving

B. Section 07 3100– Roofing

C. Section 09 9623– Anti-Graffiti Coatings

1.3 Submittals

A. Three original sets of Shop Drawings for permit submittal

B. Structural calculations for permit submittal

C. Drawings/Calculations to meet the version of IBC that is current in the jurisdiction that will be providing the building permit. It is the manufacturer's responsibility to determine which codes/code version that the building is to be design to meet. The code version is to be indicated on the submittals.

D. Drawings and calculations are to be sealed by architect/structural engineer licensed in the state of Illinois.

1.4 Delivery, Storage, and Handling

A. Contractor shall order and be responsible for delivery, storage and security of the parts and materials until final acceptance. Unload materials with necessary equipment, store covered out of the weather. Inspect parts, compare with manufacturer's bill of material and report any missing or non-conforming parts to the manufacturer.

1.5 Sequence and Scheduling

A. Sequence shelter installation with other work to minimize possibility of damage and soiling during remainder of construction period. Where possible, install after other finishing operations have been completed.

2.0 PRODUCTS

2.1 Substitutions – Requests for substitutions must be approved by the Owner prior to installation. When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

Equipment

A. All proprietary items shall be considered specified as "or equal". All equivalent substitutions must be approved by Owner's Representative.

B. All fixtures shall be supplied with the complimentary accessories and parts required for proper installation and operation.

2.2 The Contractor shall supply and install the shelter wholly and completely with all hardware, fixtures, utilities, components and coatings necessary to provide a finished product. The shelter shall be the Romtec picnic shelter model 3010 as depicted in the plans or approved equal. The shelter shall be surface mounted to concrete piers using base shoes provided by the manufacturer.

A. The Schedule of Electrical Fixtures is on the plans.

B. The Schedule of Paint and Coatings is on the plans.
C. Roofing will be as specified on the plans and related specifications.
D. All steel parts shall be factory finished in powder coated steel, black color.

2.3 Stain Materials

A. All wood components shall be stained with one coat primer and two coats stain. Formulation, brand and color of stain shall be as specified on the plans and schedules.
B. Use only new, unopened paint purchased for this job.
C. Deliver in the original packages and use without adulteration.
D. Mix thoroughly prior to application dispersing the pigments evenly throughout the vehicle.
E. Store paint in airtight containers in area where temperatures are above freezing.

2.4 Roofing Materials

A. Shall be as specified in related section

3.0 EXECUTION

3.1 Installation

A. Verify that all components and parts have been delivered. If not, contact manufacturer to obtain the correct parts.
B. The contractor shall not modify equipment
C. All equipment detailed on the drawings shall be provided and installed per the manufacturer's plans and specifications.
D. The Contractor shall un-crate, clean and assemble all parts as necessary to install complete a usable item.
E. Contractor shall set the shelter on prepared footings and foundation. Footings and foundations shall be as per details. Foundation will be constructed to local codes, and good construction practices for the specific site conditions. Foundation footings shall be plumb and level with each other.
F. Remove all stickers, staples, tags and packing materials from the equipment except for those required by law.

3.2 Painting and Staining

A. All coatings shall be applied strictly according to manufacturer's instructions including surface preparation, application method, and timing, use of tack coats, re-coating and curing.
B. Store paint and stain materials according to manufacturer's instructions.
C. Complete with anti-graffiti coatings, see related section.

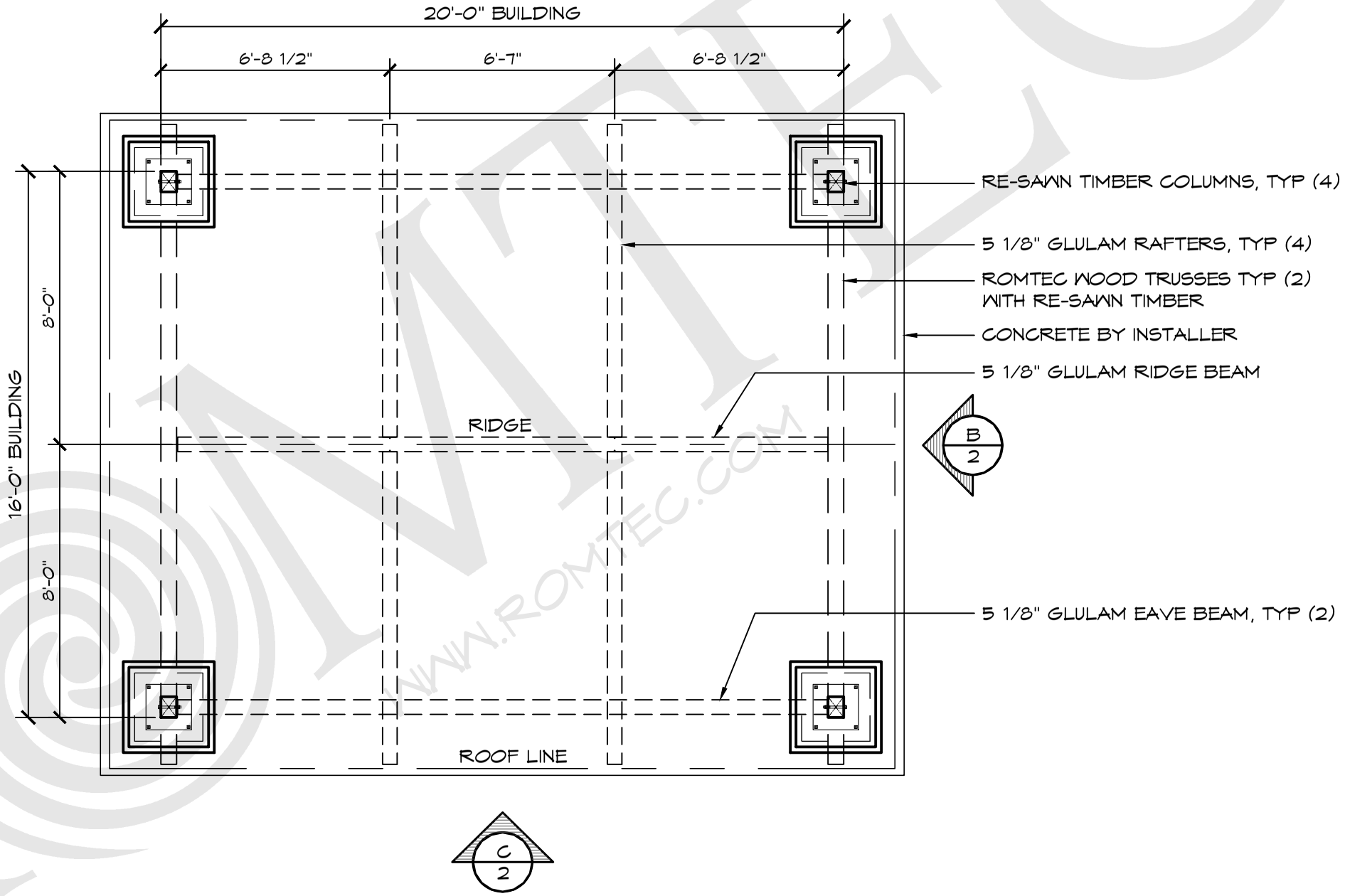
3.3 Cleaning

A. Clean and polish exposed surfaces, using materials and methods recommended by manufacturer.

3.4 Protection

A. Protect accessories against damage during remainder of construction period, complying with manufacturer's directions.
B. At direction of Owner, repair or replace any damaged fixtures and accessories.

END OF SECTION



1 FLOOR PLAN

SCALE: 1/4" = 1'-0"

A
D B
C

ROMTEC
18240 NORTH BANK ROAD - ROSEBURG, OR 97470
(541) 496-3541 FAX (541) 496-0803

PRELIMINARY

PROJECT: UPLAND DESIGN
DUGDALE PARK SHELTER
WAUKEGAN, ILLINOIS

SHEET TITLE: FLOOR PLAN

PROJECT#: 2121

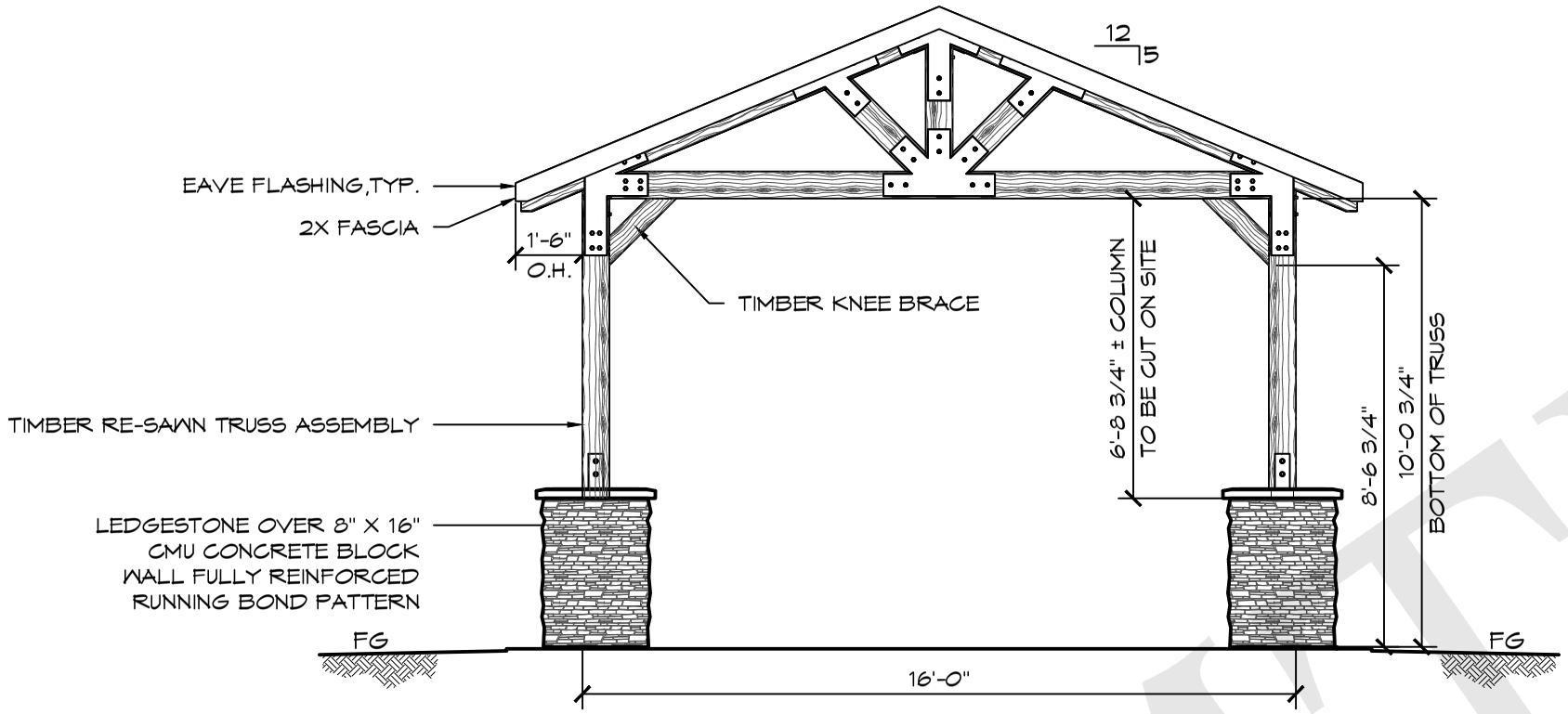
DATE: 7/26/2023

REVISIONS

REV.	DATE:	BY

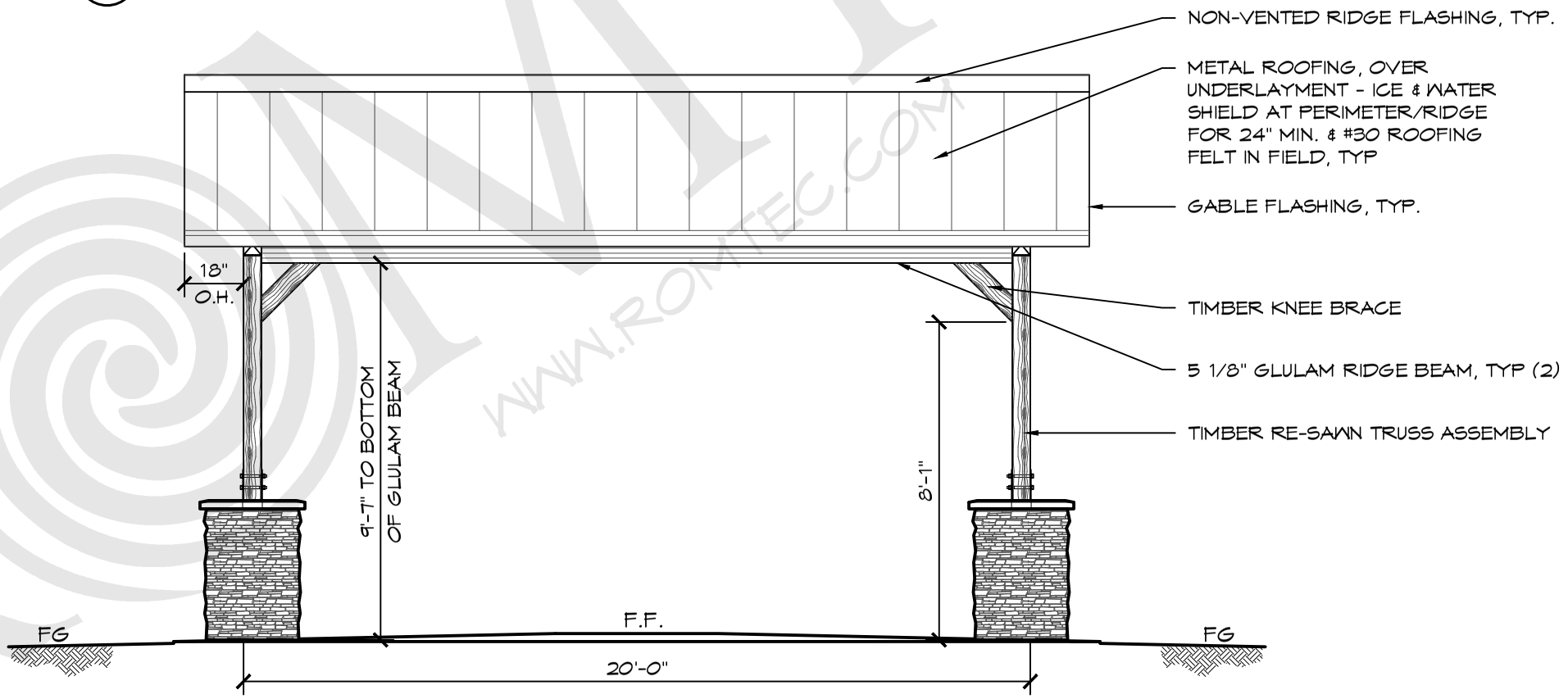
DRAWN BY: JRM

SHEET NO. 1



B ELEVATION VIEW

SCALE: 1/4" = 1'-0"



C ELEVATION VIEW

SCALE: 1/4" = 1'-0"

ROMTEC
18240 NORTH BANK ROAD - ROSEBURG, OR 97470
(541) 496-3541 FAX (541) 496-0803

PRELIMINARY

PROJECT:
UPLAND DESIGN
DUGDALE PARK SHELTER
WAUKEGAN, ILLINOIS

SHEET TITLE: ELEVATION VIEW

PROJECT#: 2121

DATE: 7/26/2023

REVISIONS

REV.	DATE:	BY

DRAWN BY: JRM

SHEET NO. 2

SECTION 22 0601
WATER DISTRIBUTION – Drinking Fountains

1.0 GENERAL

1.1 Description

A. This work consists of equipment, labor and materials required for the complete installation of drinking fountain, buffalo box, hose bib, lock box, and dry well as specified in the plans. All installations shall include all necessary pipes and fittings to complete the systems in proper working order.

1.2 Code and Regulations

A. All work shall be in complete conformance to all local, state and federal codes, ordinances and regulations. **The Contractor is responsible for obtaining all Permits and for scheduling necessary inspections with the appropriate municipality.**

B. During installation, proper signs and barricades shall be used to warn and protect the public against hazards. No trenches or pits shall be left open overnight.

1.3 Submittals

A. Contractor shall submit two copies of specification sheets for drinking fountain, fountain colors, buffalo box, and back-flow-preventor to Owner/Owner's representative.

B. Contractor is responsible to submit any and all test reports and/or letters of approval or rejection from the appropriate municipality to the Owner/Owner's representative.

C. Submit cut sheet or shop drawings of the back flow preventer and the cleanout to the owner/owner's representative for approval.

D. Submit letter of approval for the final testing of the drinking water following inspection by the appropriate municipality.

2.0 MATERIALS -

2.1 Pipes and Fittings

2.1.1 The Contractor shall use one inch (1") or ¾" Type K, soft temper copper water tubing from the end of the existing water supply line to the drinking fountain. Tubing shall match existing size.

2.1.2 The drinking fountain shall be connected with 1-1/2" PVC drainpipe to proposed dry well.

2.2 Drinking Fountain (Most Dependable Fountain, or equal.

2.2.1 Drinking fountain shall be Most Dependable Fountain #10145SM Accessible Fountain, or approved equal, with a surface mount base, hose bib, and lock box. All fittings and connections necessary for installation shall be supplied by the Contractor.

2.3 Buffalo Box

2.3.1 Reuse existing Buffalo box if possible.

2.4 Backflow preventor and clean-out

2.4.1 Backflow Preventor shall be installed to meet all current local codes and State of Illinois requirements. It shall be sized for the existing water line. A clean out shall be provided and installed. A disconnect shall be installed so the Backflow Preventor can be removed prior to freezing weather. Submit cut sheets and shop drawings for approval prior to purchase.

2.5 Valve Box

2.5.1 Valve box shall be sized to fit back-flow preventor and clean out. Top of box shall have hinged lid with simple square key access. Box and lid to be non-ferrous metal construction.

2.6 Dry Well

2.6.1 Dry well shall be a Reinforced Concrete Pipe set on end, 24” diameter, 4’ deep with a cast iron frame and lid. Lid to be solid, no grate. Submit lid cut sheet or shop drawing for approval prior to purchase.

3 EXECUTION

3.1 Trenching and Filling

3.1.1 Trenching shall be kept away from the base of existing trees a minimum of ten feet (10'), unless otherwise approved by the Owner’s Representative. Backfill material placed around pipe shall be sand, free from all rocks which are capable of damaging the pipe or its coating. Fill shall be placed and hand tamped in six inch (6") layers

3.2 Drinking Fountain Installation

3.2.1 All pipe shall be laid to a minimum depth of four feet (4') measured from the existing ground surface or established grade to the top of the barrel of the pipe. No pipe shall pass through or come into contact with any other pipe or utility.

3.2.2 The drinking fountain installation shall be according to the manufacturer's specifications and shall include all fixtures.

3.3 Buffalo Box Installation

3.3.1 Existing buffalo box shall be relocated and reused by Contractor. Install with a (5') depth and locate as indicated on the drawings. Only brass adapters will be acceptable for the connection between box and the supply line.

3.4 Wastewater Piping

3.4.1 The drinking fountain drain to the dry well shall be connected with a drainpipe to the dry well. The drainpipe shall be pitched to provide proper drainage from the fountain without clogging and so that wastewater does not back-up from the dry well.

3.5 Dry Well

3.5.1 Install dry well in lawn area. Top of lid to be flush with finished grade of lawn. Bottom to be 4’ minimum. Fill 30” of pipe with 2” river rock. Top 18” of pipe to be open.

3.6 Water System Approval

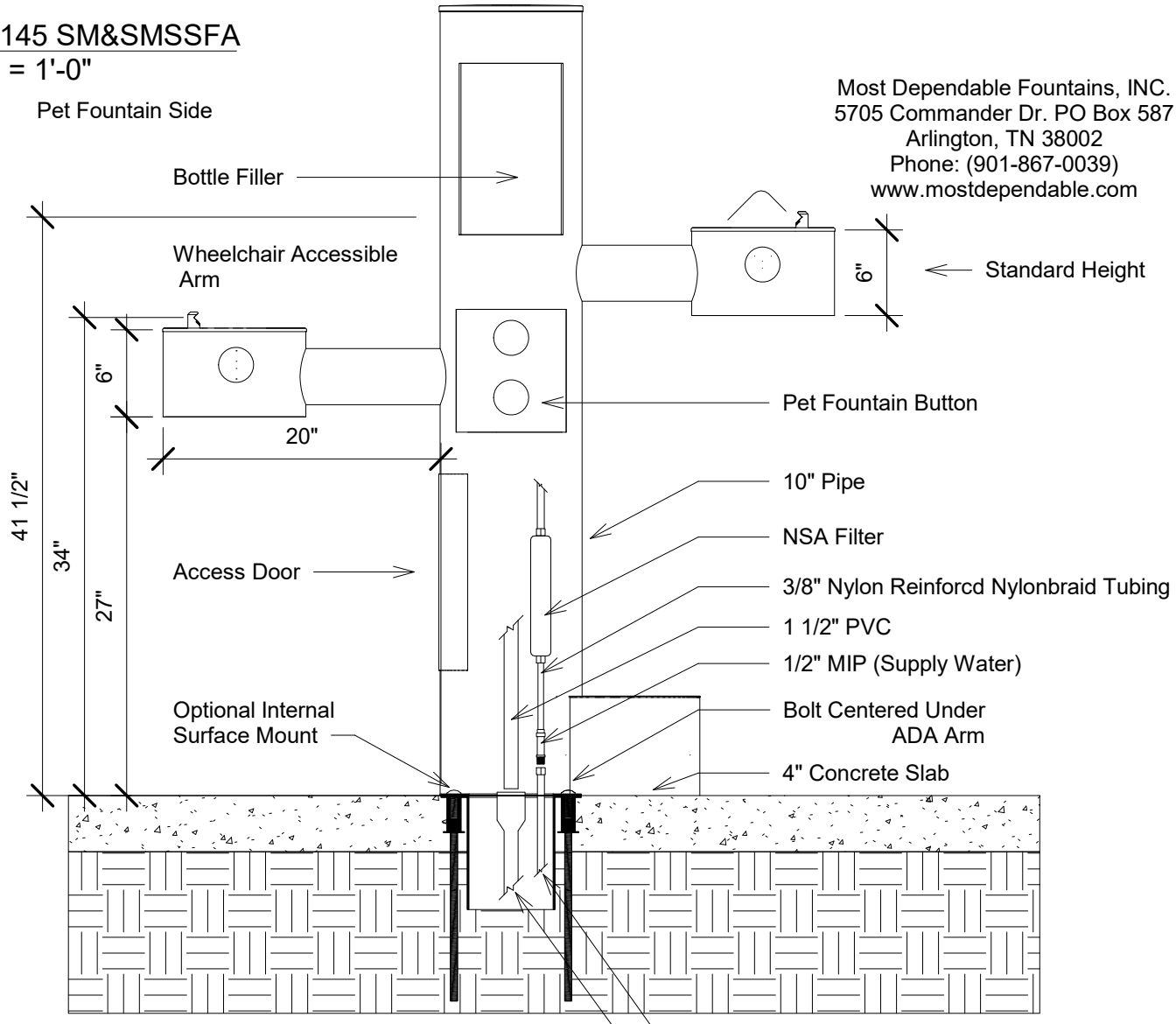
3.6.1 When water system is in working order but before it is open to normal use, the lines shall be well flushed, and the system shall be inspected by the City and Owner’s Representative. The water shall be tested by an approved testing service prior to being available for public use. Test results shall be provided to the Owner and Owner’ Representative.

END OF SECTION

Most Dependable Fountains, INC.
5705 Commander Dr. PO Box 587
Arlington, TN 38002
Phone: (901-867-0039)
www.mostdependable.com

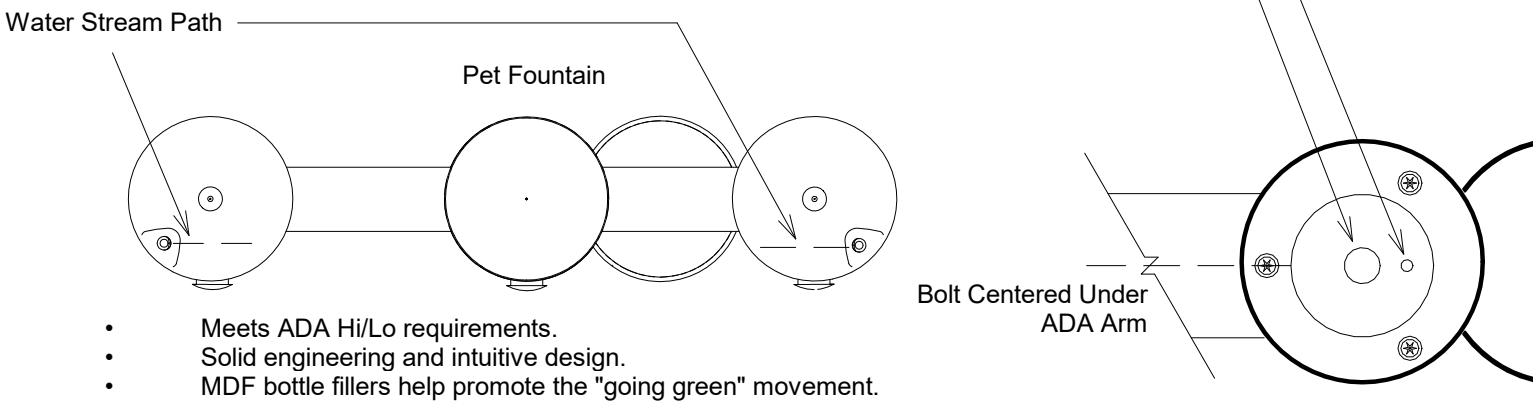
1 10145 SM&SMSSFA
1" = 1'-0"

Pet Fountain Side



Note:
3" Air Gap Between Water Fixture & Top of Pet Bowl Rim

2 Top View
1" = 1'-0"



- Meets ADA Hi/Lo requirements.
- Solid engineering and intuitive design.
- MDF bottle fillers help promote the "going green" movement.
- Includes water filter.
- Sanitary recessed spout.
- Maintenance friendly and built "tank tough".
- Push button requires less than 5 lbs of pressure to operate.
- One piece welded construction with steel.
- Optional 10" stainless steel surface carrier is recommended for easier installation.
- Simple winterization if applicable.
- Supply connection stops above grade behind the access door.
- All products including 'SS' are powder coated for extra protection.
- Weight: 240 lbs.

SECTION 22 8621
SPLASH PAD EQUIPMENT

1.0 GENERAL

1.1 Description

A. Splash pad equipment shall consist of all labor, equipment and materials necessary for complete installation of play equipment or site furniture specified.

1.2 Related Specifications

A. Standards

1. Installation shall conform to the following:
    a. ASTM 1487-17-Specification for Playground Equipment for Public Use
    b. American with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities: Play Areas: Final Rule
    c. Local Codes and State of Illinois Plumbing Code

1.3 Summary

A. This section includes splash pad equipment consisting of the following:

1. Upright spray features
2. Activator
3. Controller
4. All required water distribution equipment and associated piping as shown on plans.

1.4 Submittals

A. Provide all Manufacturer's information on the equipment, installation instructions, and maintenance kit including touch up paint to the Owner.

B. Provide shop drawings for all components, and water recirculation system equipment including piping diagram (if applicable) to the Owner/Owner's representative for approval.

2.0 PRODUCTS

2.1 Spray Equipment

A. All equipment shall be as designated on the plans or approved equal. The contractor shall not modify equipment.

B. For spray equipment to be purchased by contractor, contractor is responsible for purchasing, unloading and verification, storing and installation of equipment.

C. See Plans for Model, Manufacturer and Distributor

3.0 EXECUTION

3.1 Installation

A. All equipment detailed on the drawings and specified herein shall be installed per manufacturer's specifications and recommendations, unless otherwise described specifically herein, or on the plans.

B. Contractor shall acquire instructions for proper installation from the specific manufacturer. If any manufacturer does not provide installation specifications after request by the Contractor, the Owner's representative shall be notified before installation occurs.

C. Contractor shall uncrate, clean, and assemble all splash pad equipment as necessary to install complete and usable item. Contractor shall notify the Owner's representative of any issues with the equipment such as damage during shipping or missing components.

D. Concrete footings shall be installed at all spray equipment. Concrete shall conform to concrete specification. Footings shall be dimensioned as per the manufacturer's specifications and/or the plans and details, which ever specifies the larger dimensions.
E. Contractor shall be responsible for trimming all bolts and other similar fastener items to meet specifications noted herein. Contractor shall ensure all tags, and stickers are removed from play equipment except for those required by law.
F. Provide electrical grounding for spray features.

END OF SECTION

All 3D renders shown are for illustration purposes only. Actual colors, textures and finishes may differ from renders.

Play Value Planning

Aquatic play may feel spontaneous, but it actually requires lots of planning. We design every play experience to keep families engaged, boost dwell times, and increase return visits.

To build lasting memories among moms, dads, and little ones of all abilities, we carefully consider how to integrate products that cater to everything from the location's footprint and capacity to its demographics and theming objectives.

Sensory
Stimulates & develops multiple sense experiences

Spray
Encourages teamwork & competition

Tactile
Promotes discovery of water textures

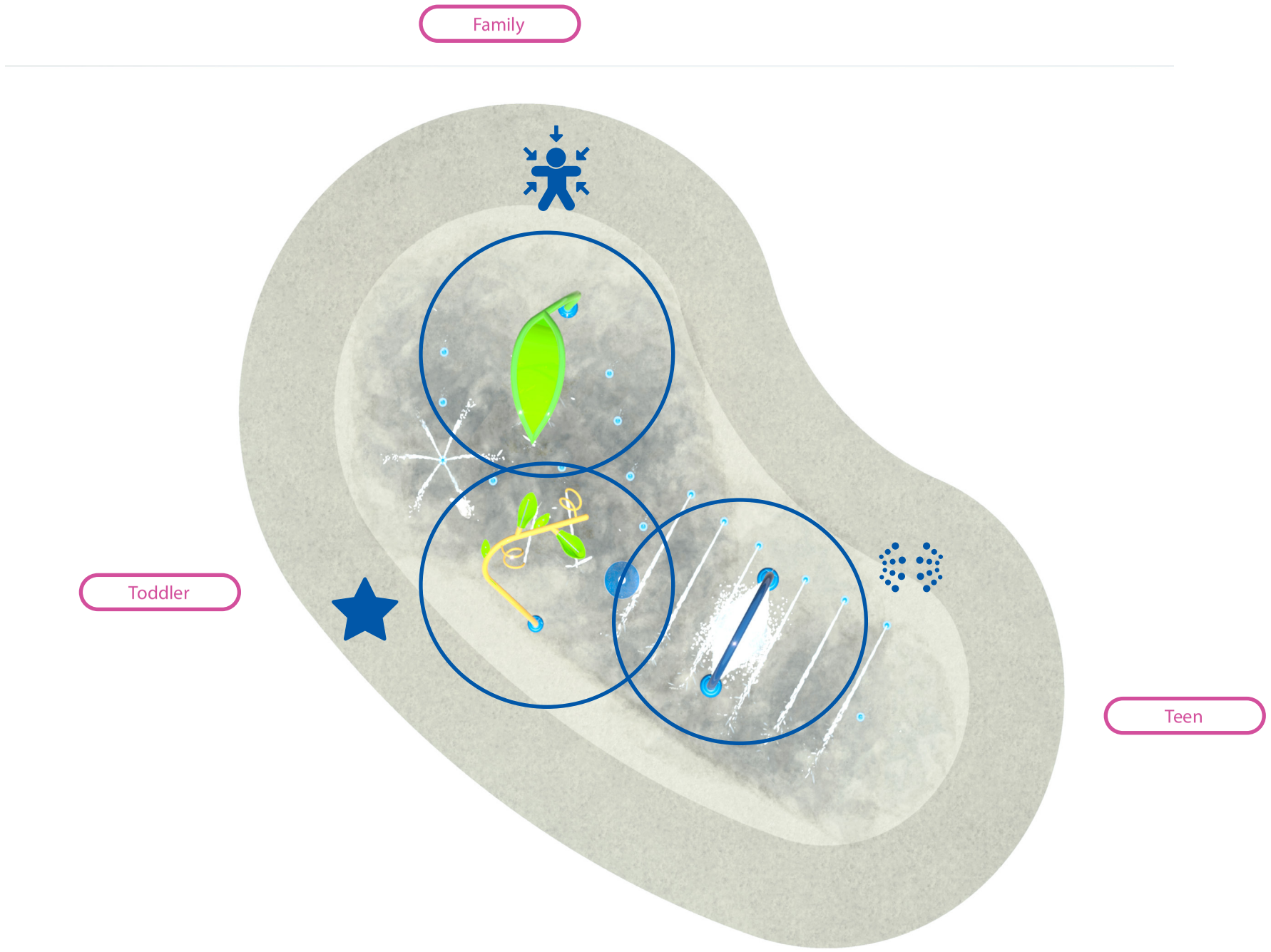
Iconic
Features interactive fun & serves as a social gathering place

Circuit
Encourages physical development

Flow
Develops discovery & learning

Kinetic
Features interactive fun & encourages movement

Misty
Cloud-like experience gives refreshing thrills



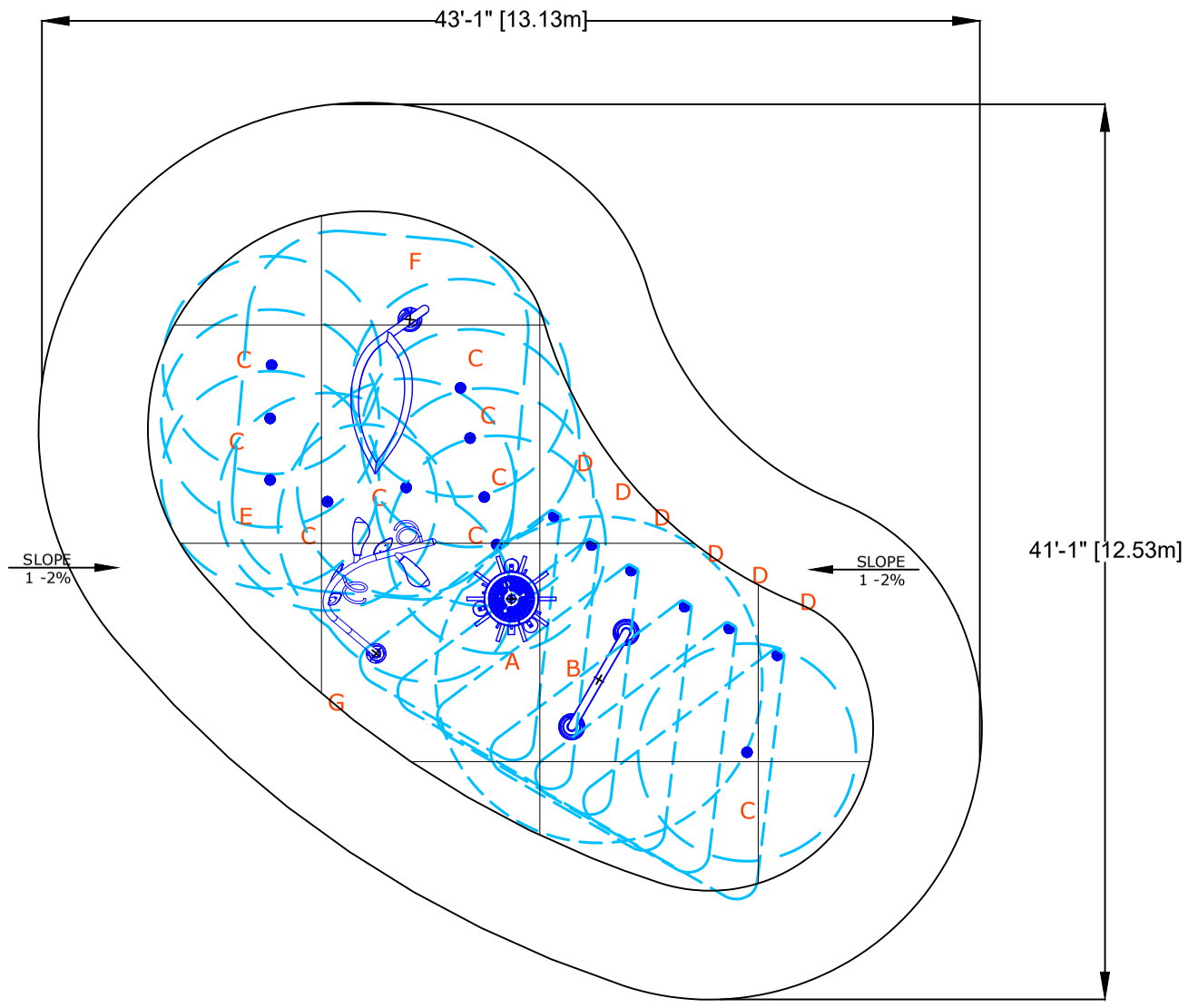
SPLASHPAD DIMENSION

TOTAL AREA :	1170 ft²	109 m²
SPRAY AREA :	601 ft²	56 m²
GRID SIZE :	10 x 10 ft	3 x 3 m

PRODUCT LEGEND

REF	PRODUCT	QTY	GPM	LPM
A	Smart point N4 VOR 1901	1		
B	Arch VOR 0515	1	13.5	51
C	Spraylink™ Jet N°1 VOR 3000	9	22.5	85.1
D	Spraylink™ Arch VOR 3002	6	9	34
E	Spraylink™ Geyser VOR 3005	1	5	18.9
F	Leaf N°2 VOR 7657	1	5.5	20.8
G	Vine VOR 7784	1	5	18.9
		QTY	GPM	LPM
	TOTAL	20	60.5	228.7

5'[1.5m] SPRAY FREE CONCRETE AREA ALL AROUND THE SPLASHPAD



NOTE: QUANTITY AND LOCATION OF DRAINS BASED ON VORTEX RECOMMENDATIONS.
MODIFICATIONS MAY BE REQUIRED DUE TO SPECIFIC SITE CONDITIONS AND/OR LOCAL CODE.

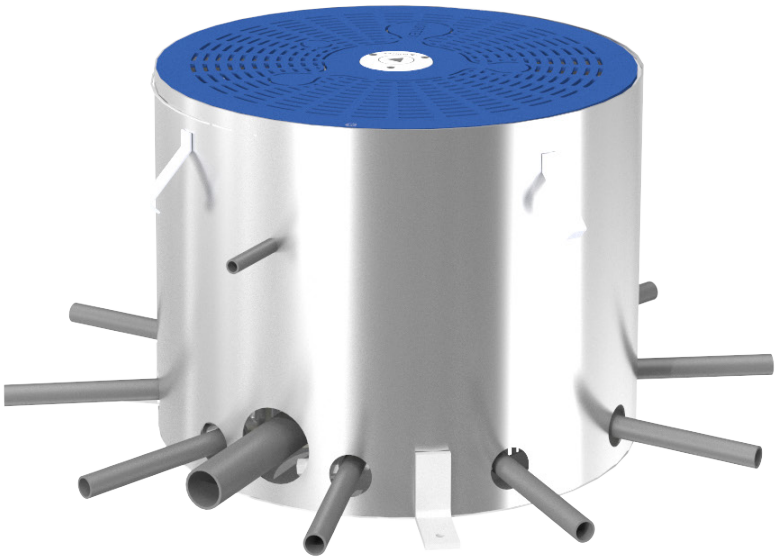
Dugdale Park Splashpad, IL

42400 Version_B July 09,2024

SPLASHPAD LAYOUT DRAWING

SCALE :1/8":1'

11" X 17" sheet size



with post or foot activator

**The product shown in the image may differ from the actual product sold.*

SMARTPOINT™ Nº1

The Smartpoint™ Command Center (SPCC) is the cost effective control solution for Splashpads® with Smartflow™.

Powered with 24 VAC, it combines a foot or post activator, controller, water distribution system and drain for simplified operation.

VORTEX

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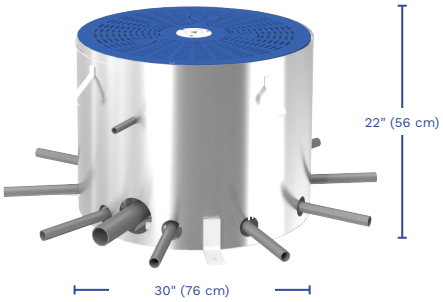
1.877.586.7839 (free USA/CANADA)
+1.514.694.3868 (INTERNATIONAL)

PRODUCT HIGHLIGHTS

- Require low maintenance and is easy to operate
- Engineered to fully integrate with existing city water source
- Activator signals with light when in function
- Manifold made of stainless steel pre-assembled valves
- Standard model comes with up to 10 outputs with max flow capacity of 72 GPM (273 LPM)
- Pressure regulator included
- Skidsafe, anti-slip, and no protrusions or small finger and toe entrapments powder coated drain cover
- Max flow capacity for drain of 295 GPM (1 117 LPM) with a 6” drain line
- Meets ASTM F2461 and CSA Z614-98 regulations for public playgrounds
- Additional electrical connections required

SPECIFICATIONS



H./W./L.
22 / 30 / 30 in
56/76/76 cm

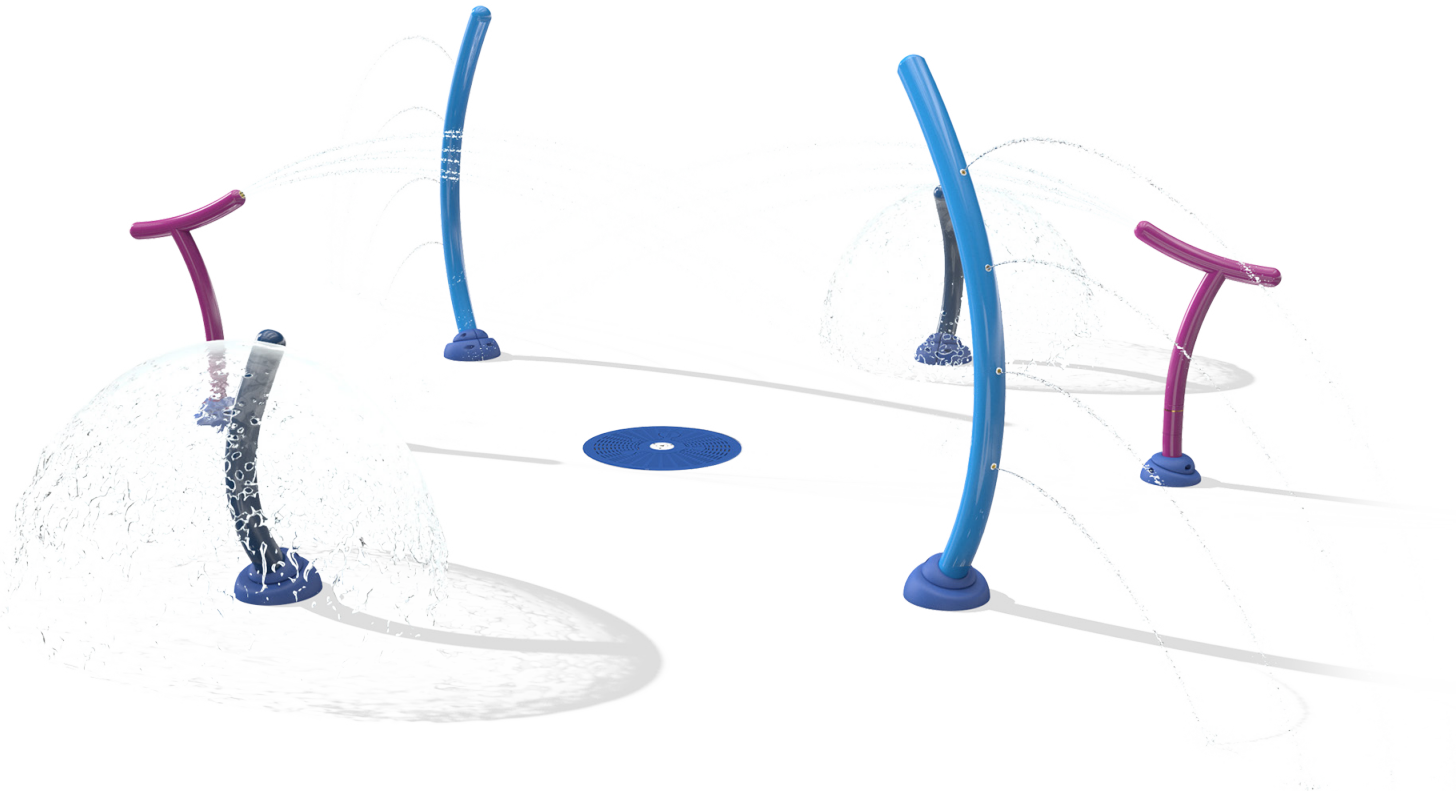
Material
Stainless steel and PVC

Dia. Cover plate
29.5 in
74.93 cm

Color choices
Vortex blue RAL 5017

Flow
Max flow 72 GPM (273 LPM)

ALL-IN-ONE COMMAND CENTER FOR SPLASHPADS®



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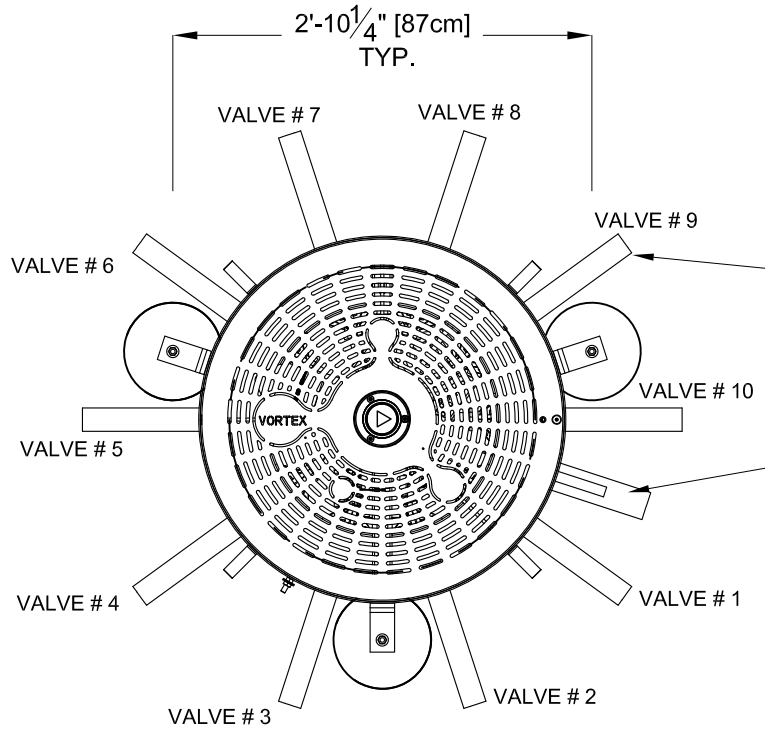
NOTE:

1- "BY INSTALLER/BY CONTRACTOR "MAY REFER TO SERVICE PROVIDERS OTHER THAN THE EQUIPMENT MANUFACTURER. PLEASE REFER TO PROJECT SPECIFICATION FOR DETAILS OF RESPONSIBILITY.

2- FOR VERSION WITH FOOT ACTIVATOR, OPERATOR MUST KEEP DRAIN CLEAR TO AVOID STANDING WATER PLAYSTART WILL NOT OPERATE IN STANDING WATER CONDITION

3- CAUTION : RESPECT THE ELECTRICAL POLAROTY WHEN WIRING INPUT POWER-WIRING MUST PERFORMED ACCORDING TO THE WIRES LABELS. GREAT CARE SHOULD BE TAKEN BEFORE UNDERTAKING EXTENSION, ALTERATION OR REPAIR THAT ALL ELECTRICAL CONDUCTORS ARE HAVING THE MANUFACTURE LABELS. WARRANTY IS VOIDED IF THE ELECTRICAL WIRING INSTRUCTIONS ARE NOT FOLLOWED.



OUTLET 1"(25mm)
(BY VORTEX)

RECOMMENDED WATER LINE INLET SIZE: 2"(50mm) PIPING & CONNECTION (BY INSTALLER)
PIPING ARE RECOMMENDED TO HAVE A 1-2% SLOPE FOR WINTERIZING DRAINAGE

15.5"X13.5"X6.6" TIMER POWER PACK (BY VORTEX) (REMOTE INSTALLATION BY INSTALLER)

3/4" (20mm) ELECTRICAL CONDUIT SLIP CONNECTION (LINE CONNECTION SUPPLIED BY INSTALLER)

PIPING AND CONNECTION (BY INSTALLER)

NOTE:
USE EXPANSION FOAM TO FILL GAP BETWEEN PIPES AND HOUSING TO PROTECT CONCRETE FROM SEEPING INSIDE HUB COMMAND CENTER.

3/8" (10mm) EARTH GROUNDING STUD

ACTIVATOR

CONCRETE SURFACE, VERIFY LOCAL CODE FOR TYPE, THICKNESS & REINFORCEMENT REQUIREMENTS.

120VAC 2AMPS
(240VAC 1AMPS)
(BY INSTALLER)

24 VAC - 14AWG
(BY INSTALLER)
(REFER TO NOTE 3)

2'-2" [66cm]
1'-10 1/2" [57cm]
1'-9" [54cm]

COMPACTED GRANULAR(BY INSTALLER).

1-2% SLOPE

3" x 8" Ø (76mm x 203mm) CONCRETE LEVELING BASE (x3)
(BY INSTALLER)

1-2% SLOPE

PIPING AND CONNECTION BY INSTALLER
SEE PIPING AND ELECTRICAL SCHEMATIC FOR SIZES & QUANTITIES

6" (150mm)FLEXIBLE COUPLING (BY VORTEX)

6" (150mm) P.V.C DRAIN LINE CONNECTED TO DRAINAGE SYSTEM. ENSURE P-TRAP IS BELOW FROST LINE TO PREVENT FREEZING (BY INSTALLER)

3 X 3/8" (10mm) S.S. HEIGHT & LEVELING CONTROL ANCHOR STUDS WITH HARDWARE.
DRILL & EPOXY GROUT STUDS (DONE BY INSTALLER)

Ø 2'-6" [76cm]

6'-5 1/2" [197cm]

PRODUCT NAME: SMARTPOINT No1-10V_SV_2_AC_FOOT ACTIVATOR_PR			
PRODUCT NUMBER: VOR-1910.0B00	DATE: 05/27/19	SHEET NO: 1/1	11"x17" SHEET SIZE

VORTEX

**The product shown in the image may differ from the actual product sold.*

Ideal age group: For all ages

VOR 0515
ARCH

PRODUCT HIGHLIGHTS

- Cross through the misty water effect for an instant soak
- Encourages different types of game playing
- Stimulates the imagination and creativity

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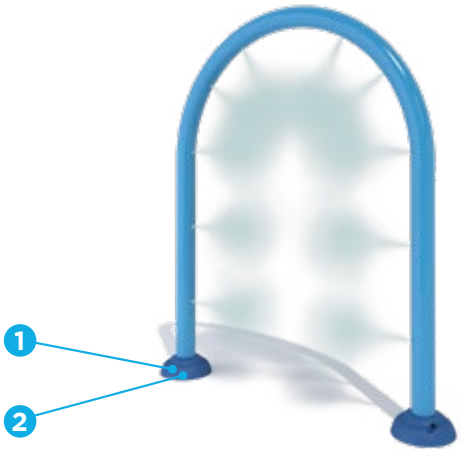
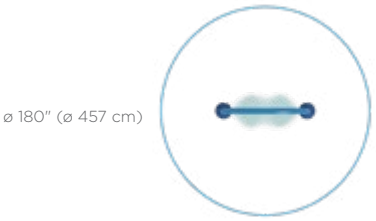


Spray Zone



H/W/L	Pressure
87/74/14 in 221/188/36 cm	10–25 PSI 0.7–1.7 BAR

Flow	Smartflow

9–18 GPM
34.1–68.1 LPM

Color Choices: Vortex colors

VORTEX EXCLUSIVE TECHNOLOGIES

This product features the following technologies that are unique to Vortex.

TOEGUARD™

- Soft-touch Elastomer
- Protects children's toes from anchoring hardware
- Durable, vandal resistant, resistant to chemicals
- Infused with a UV resistant bright color
- Available in one or two pieces ensuring tight fit to post

SAFESWAP™ ANCHORING SYSTEM

- Attractive ground caps are substituted for future play products
- Easily add future play elements with no change to infrastructure
- Easily move products from one location to another at no additional cost
- Provides flexibility to spread investment over time as capital becomes available
- Structural stainless steel base for maximum strength
- Optional interim spray cap (as shown)

WATER EFFECTS

- Misty water jet (9)

VORTEX
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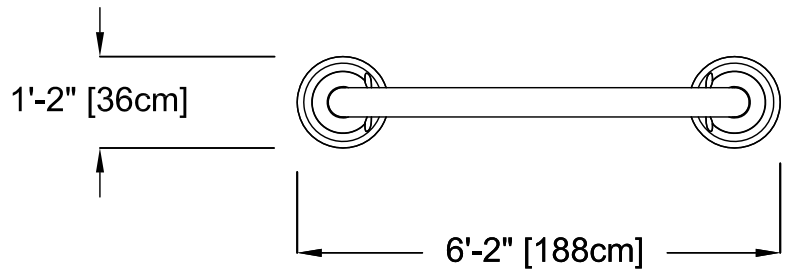
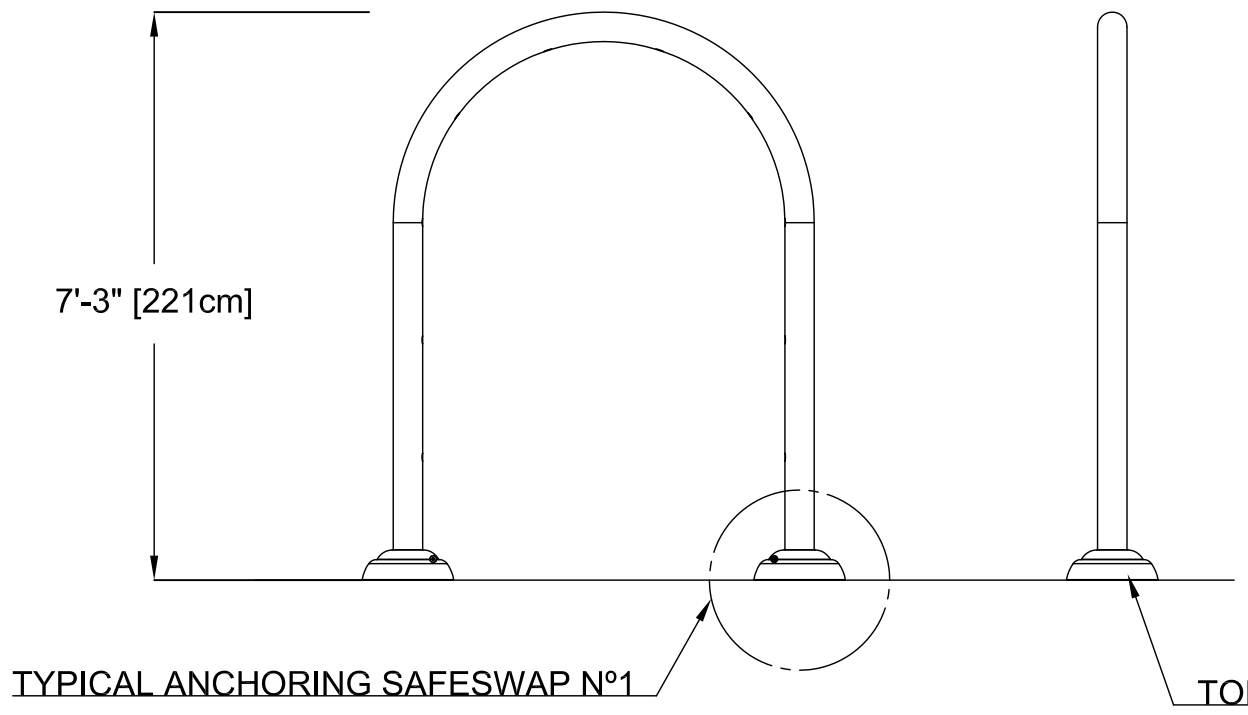
PLAN VIEW

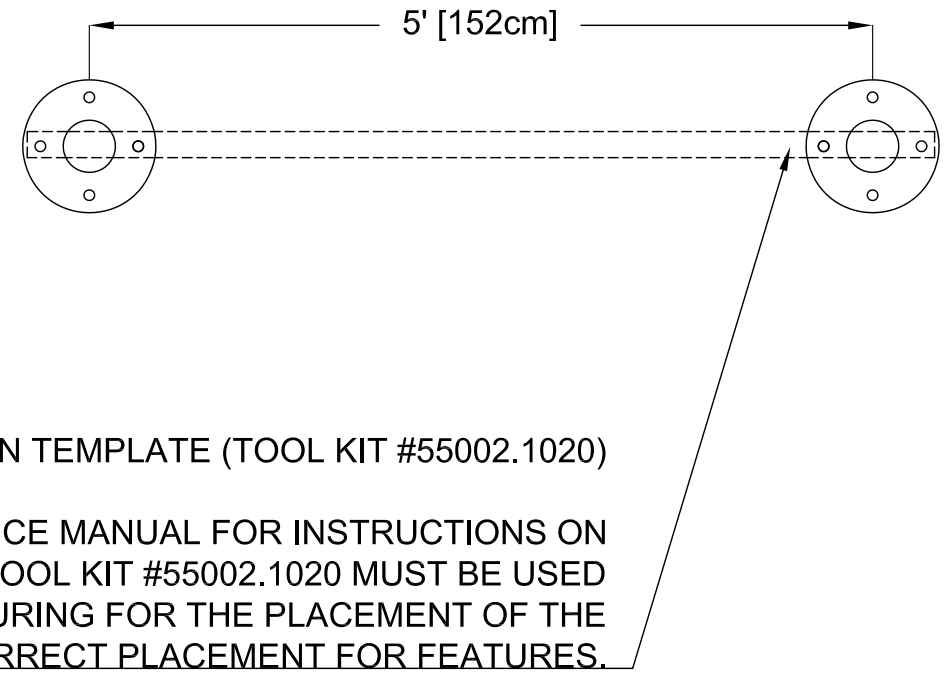


FRONT ELEVATION VIEW



SIDE ELEVATION VIEW

ANCHORING LOCATIONS



INSTALLATION TEMPLATE (TOOL KIT #55002.1020)

REFER TO MAINTENANCE MANUAL FOR INSTRUCTIONS ON INSTALLATION DETAIL AND TOOL KIT #55002.1020 MUST BE USED DURING CONCRETE POURING FOR THE PLACEMENT OF THE SAFESWAP TO ENSURE CORRECT PLACEMENT FOR FEATURES.

VOR-0515.2XXX ARCH (Construction Detail)

PRODUCT NAME: ARCH	PRODUCT INFORMATION		
PRODUCT NUMBER: VOR-0515.2XXX	DATE: 06/15/09	SHEET NO: 1/1	11"x17" SHEET SIZE

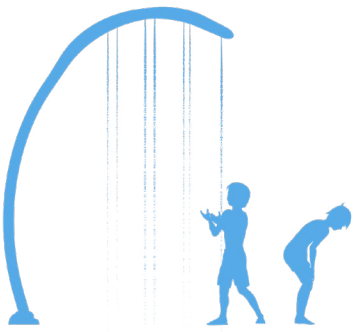
VORTEX

Ideal age group: For all ages

VOR 7657
LEAF N°2

PRODUCT HIGHLIGHTS

- Promotes movement and spatial awareness
- Play under the water jets, cross through the water streams without getting wet, or hide underneath the leaf for an immersive water effect
- Water streams flow straight down from an exclusive nozzle that can be adjusted on site to ensure a straight down rain effect is properly achieved



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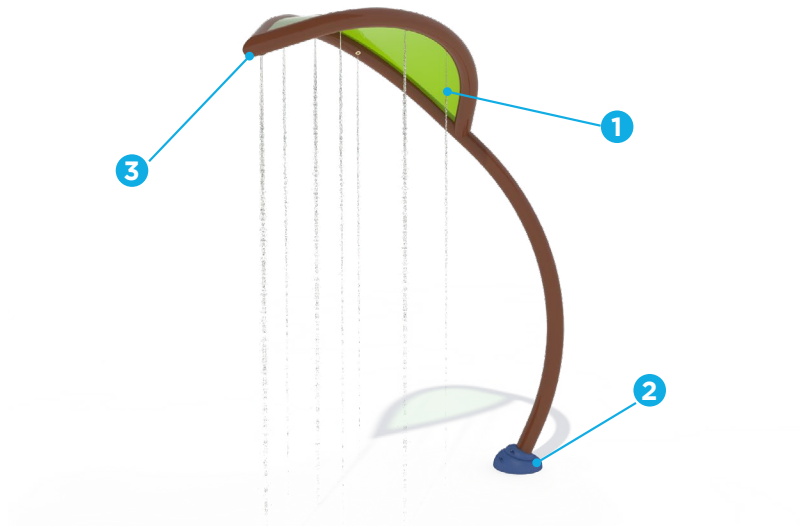
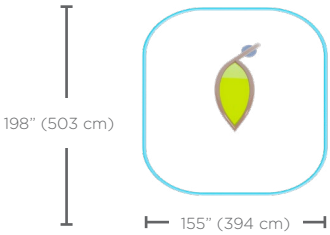


Spray Zone



H/W/L	Pressure
129/97/35 in 327/246/89 cm	5-10 PSI 0.3-0.7 BAR

Flow	Smartflow
3-8 GPM 11.4-30.3 LPM	- -

Color Choices: Vortex color and polish

VORTEX EXCLUSIVE TECHNOLOGIES

This product features the following technologies that are unique to Vortex.

SEEFLOW™

- Impact-resistant polymer
- Resistant to UV rays and chemicals
- Colorful reflections are created with the combination of bright colors, water, and sunlight
- Manufactured with up to 40% pre-consumer recycled materials
- Reusable at the end of life

TOEGUARD™

- Soft-touch Elastomer
- Protects children's toes from anchoring hardware
- Durable, vandal resistant, resistant to chemicals
- Infused with a UV resistant bright color
- Available in one or two pieces ensuring tight fit to post

LINEFLOW™ NOZZLE

- Precisely orient the stream of water with the internal Brass marble
- Compact design provides better product integration
- Easy to adjust for the most efficient use of water based on your installation
- Made of lead-free brass for maximum durability

WATER EFFECTS

- Vertical water jet (7)

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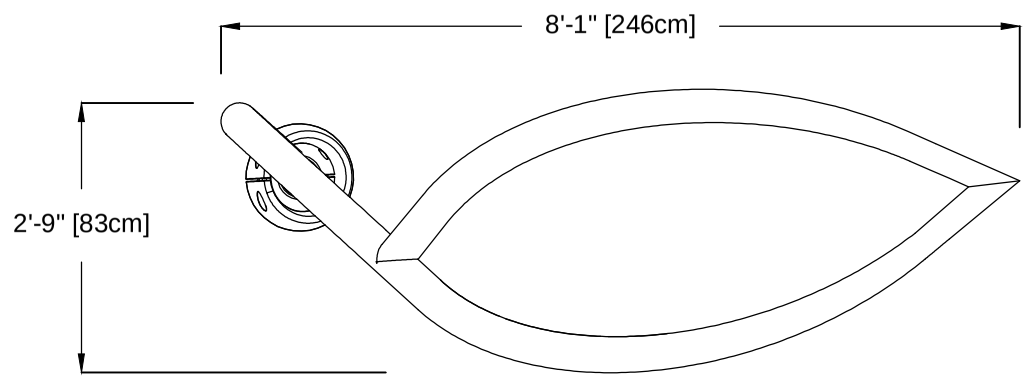
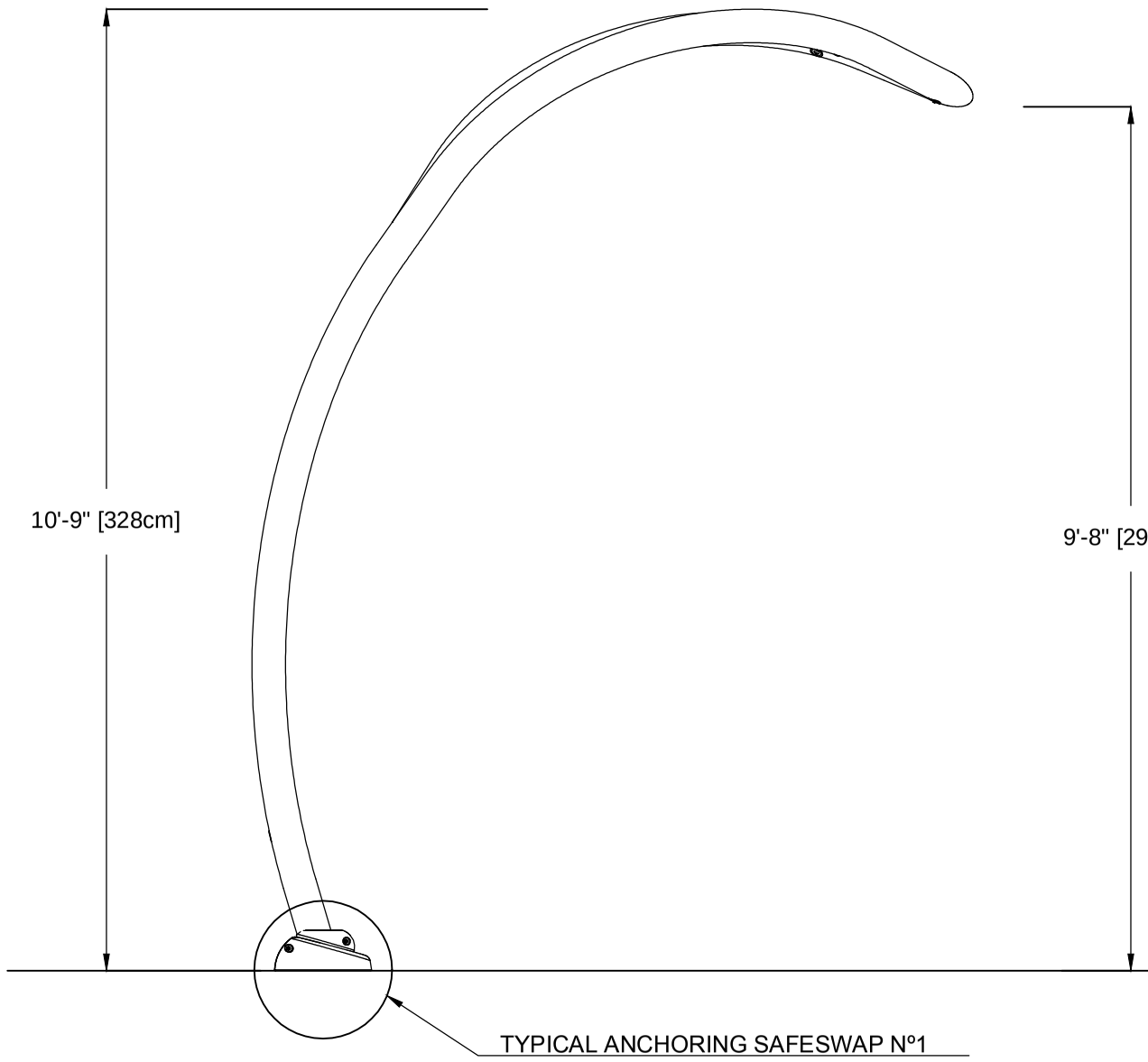
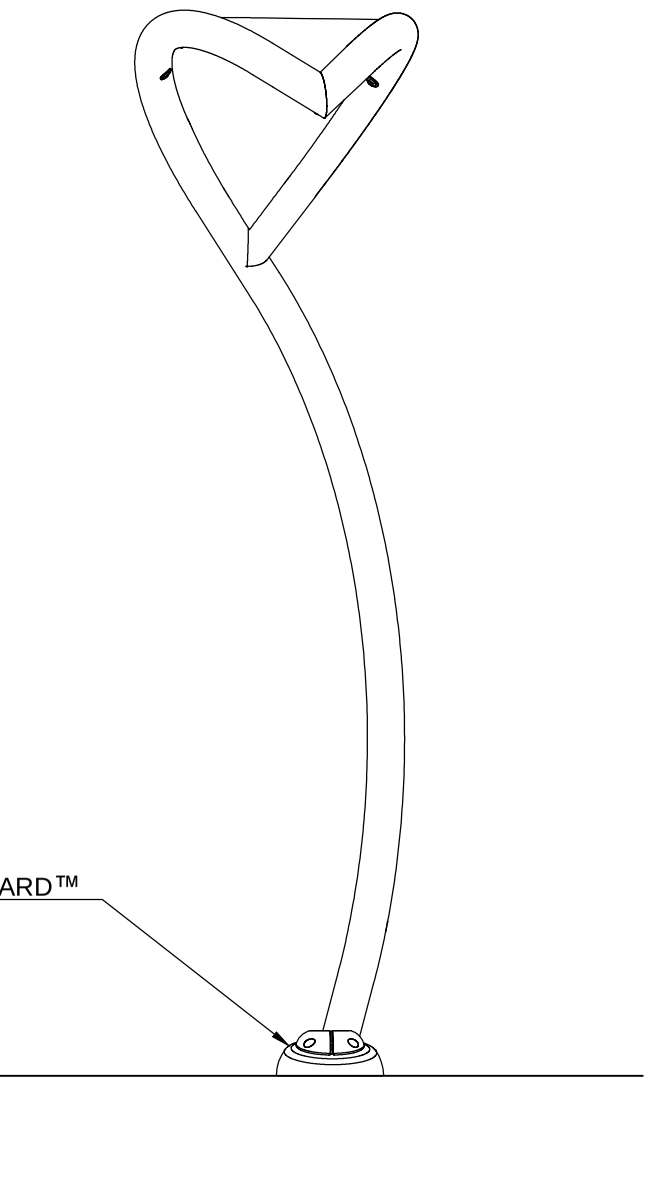
PLAN VIEW



FRONT ELEVATION VIEW



SIDE ELEVATION VIEW



PRODUCT NAME: LEAF Nº2		PRODUCT INFORMATION	
PRODUCT NUMBER: VOR-7657.2XXX	DATE: 10/22/15	SHEET NO: 1/1	11"x17" SHEET SIZE

VORTEX

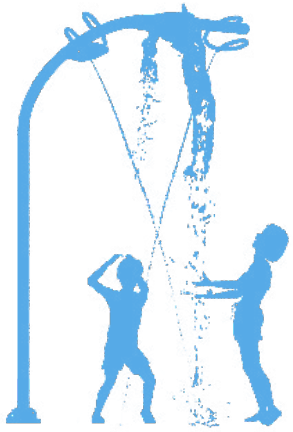
**The product shown in the image may differ from the actual product sold.*

Ideal age group: for all ages

VINE

PRODUCT HIGHLIGHTS

- Anticipate when the dumping Seeflow™ will spill over
- Creates an interactive and engaging environment
- Provides a visual experience by casting colorful shadows with the Seeflow™



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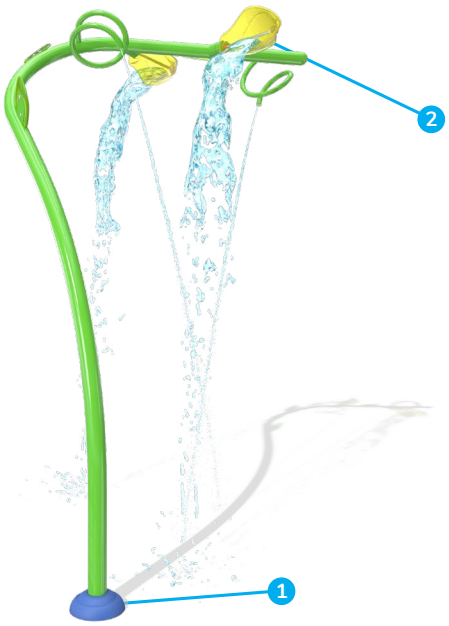
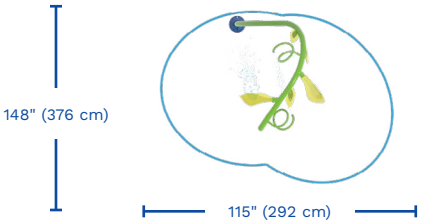


Spray Zone



H/W/L	Pressure
131/58/76 in	5-6 PSI
333/148/193 cm	0.3-0.4 BAR

Flow	Smartflow
4-6 GPM	-
15.1-22.7 LPM	-

Color choices: Vortex colors or polished

VORTEX EXCLUSIVE TECHNOLOGIES

This product features the following technologies that are unique to Vortex.

1

TOEGUARD™

- Soft-touch elastomer
- Protects children's toes from anchoring hardware
- Durable, vandal resistant, resistant to chemicals
- Infused with a UV resistant bright color
- Available in one or two pieces ensuring tight fit to post

2

SEEFLOW™

- Impact-resistant polymer
- Resistant to UV rays and chemicals
- Colorful reflections are created with the combination of bright colors, water, and sunlight
- Manufactured with up to 40% pre-consumer recycled materials
- Reusable at the end of life

WATER EFFECTS

- Dumping Seeflow™ (2)
- Vertical Jet (2)

VORTEX

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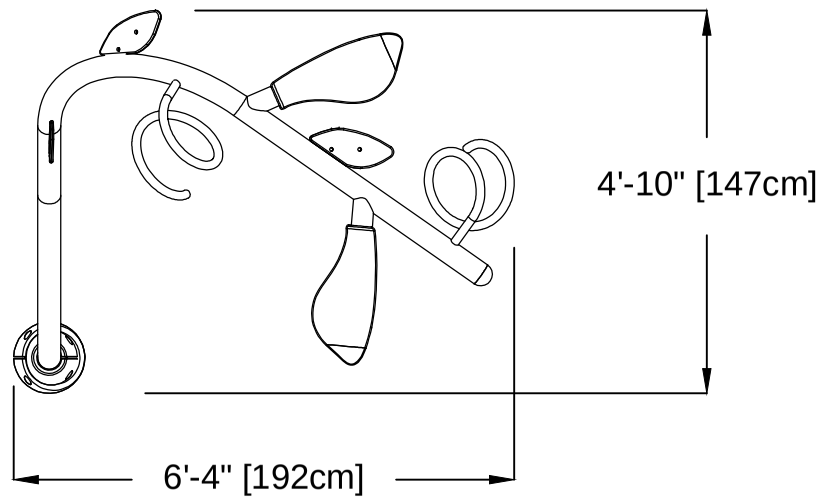
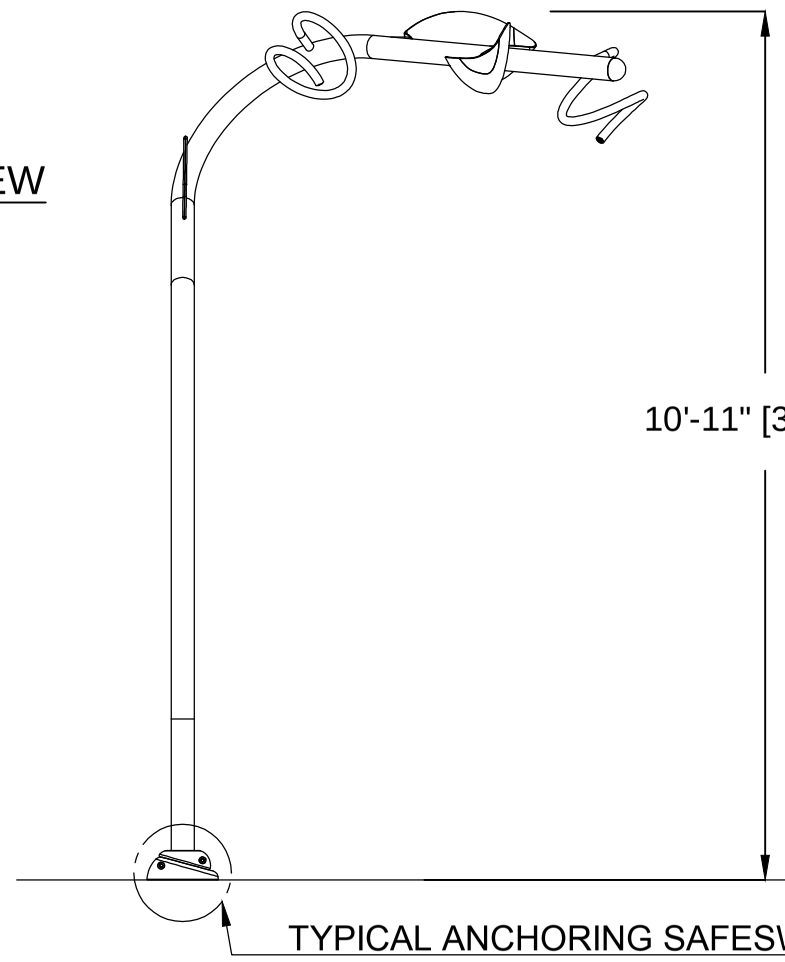
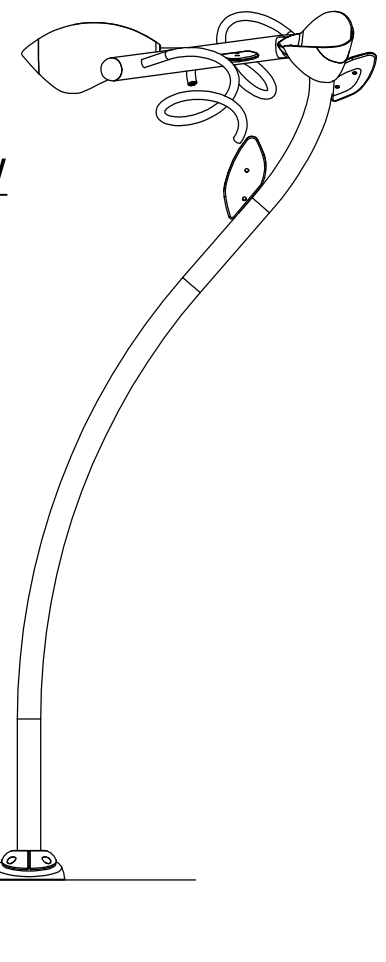
PLAN VIEW



FRONT ELEVATION VIEW



SIDE ELEVATION VIEW



PRODUCT NAME: VINE		PRODUCT INFORMATION	
PRODUCT NUMBER: VOR-7784.2XXX	DATE: 11/03/15	SHEET NO: 1/1	11"x17" SHEET SIZE

VORTEX

**The product shown in the image may differ from the actual product sold.*
**Water jet heights may not always be equals depending on water flow.*

Ideal age group: For all ages

VOR 3000
SPRAYLINK™ JET N°1

PRODUCT HIGHLIGHTS

Spraylink™ is a cutting-edge ground spray collection. With a wide variety of water effects and designs to choose from, these ground sprays are a sustainable solution perfect for any sized Splashpad®.

- Enjoy running your feet and hands through soft water jets
- Provides high interactivity with low water consumption
- Offers many imaginative play opportunities
- Designed and manufactured with sustainability at the forefront
- One-size interchangeable nozzles for all Spraylink™ items

VORTEX

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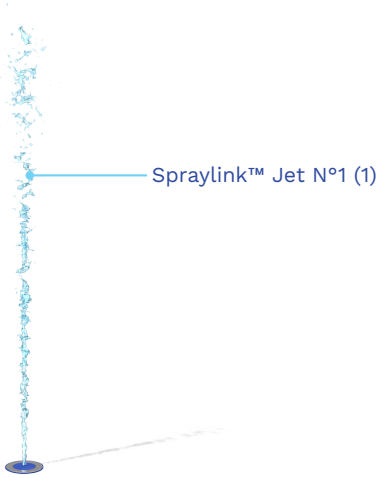
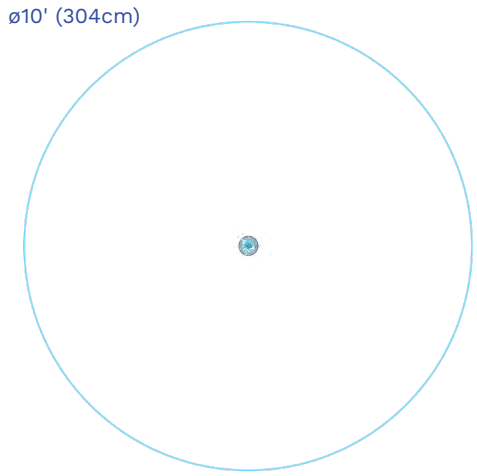
+1.514.694.3868 (INTERNATIONAL)

SPECIFICATIONS



SprayZone



Recommended jet height: 5' (152cm)

H./W./L.
0/5.3/5.3 in
0/13.5/13.5 cm

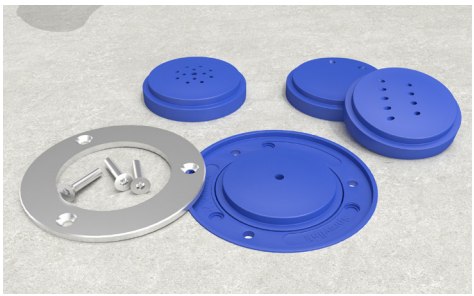
Color choices
Colors as shown

Flow
2-3 GPM
7.5-11 LPM

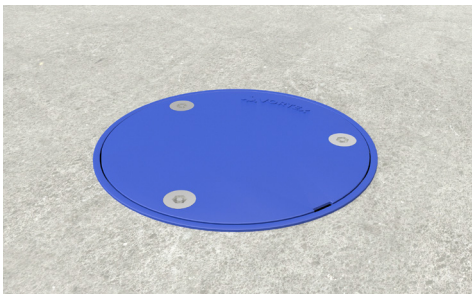
Pressure
2-4 PSI
0.1-0.3 BAR

ADVANTAGES

Easy on-site assembly and installation



One-size interchangeable nozzle
(sufficient flow and sprayzone required)



Easy maintenance and winterization

INSTALLATION

- Follow Installation guide provided.
- Polymer encapsulated assembly, no earth grounding and bonding recommended for Spraylink™ system. Follow local code.
- Replace nozzle and ring with provided cap for winterization.

VORTEX

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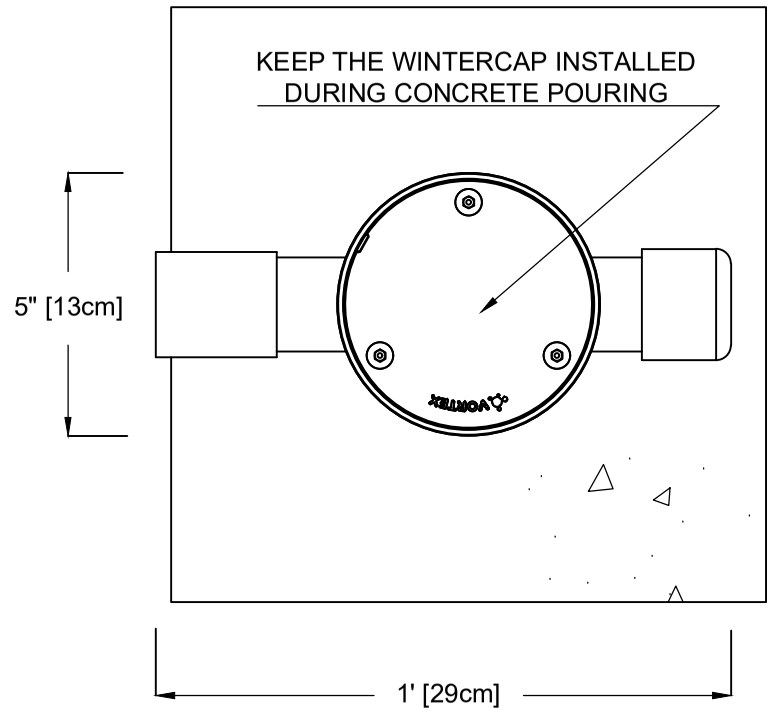
NOTES:

1) “BY INSTALLER/BY CONTRACTOR“ MAY REFER TO
SERVICE PROVIDERS OTHER THAN THE EQUIPMENT MANUFACTURER.
PLEASE REFER TO PROJECT SPECIFICATION FOR DETAILS OF RESPONSIBILITY.

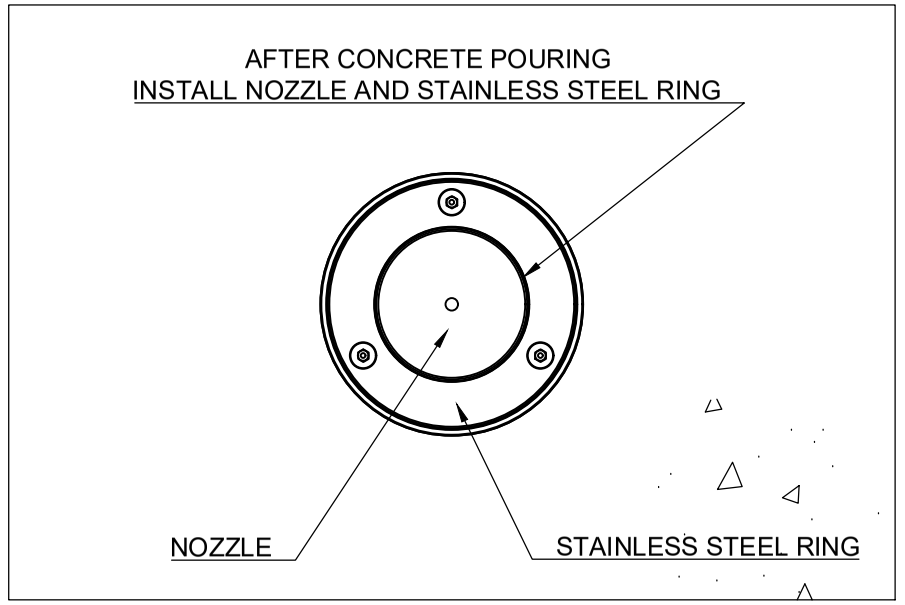
2) POLYMER ENCAPSULATED ASSEMBLY
NO EARTH GROUNDING AND NO BONDING RECOMMENDED FOR SPRAYLINK™ SYSTEM
FOLLOW LOCAL CODE

3) REFER TO INSTALLATION GUIDE FOR MORE DETAILS.

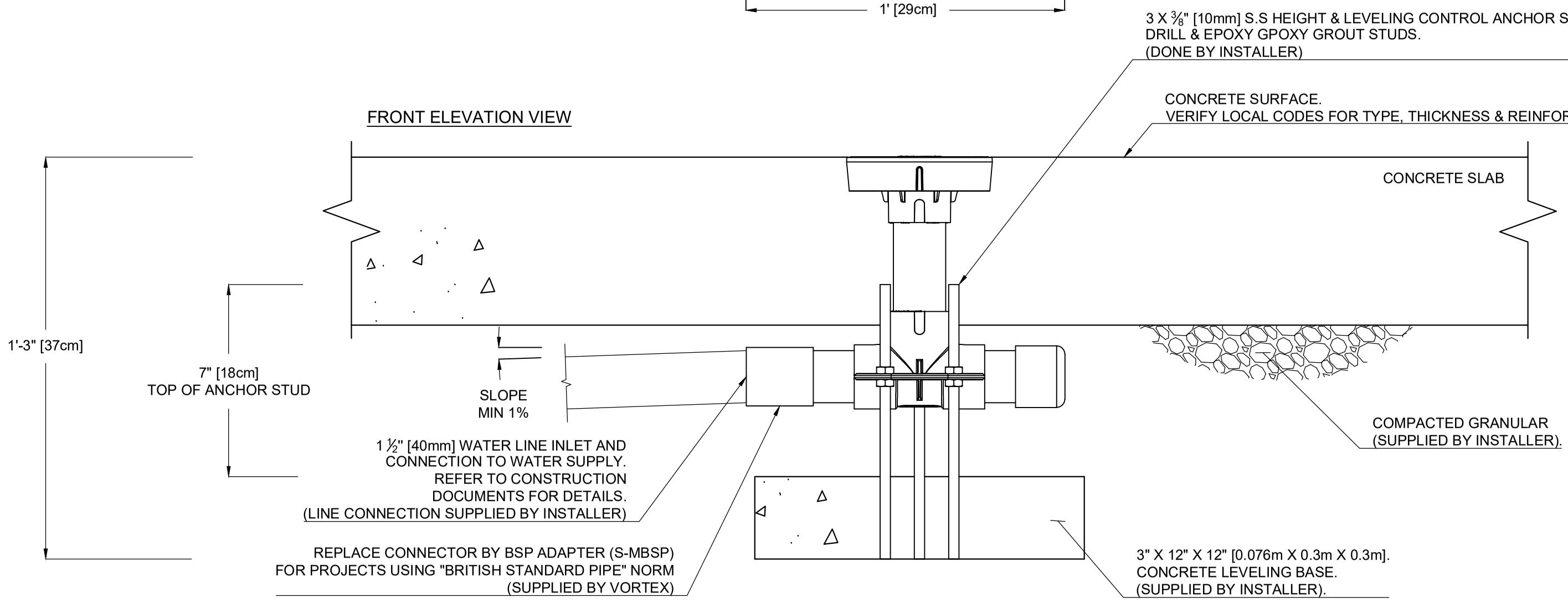
PLAN VIEW



PLAN VIEW

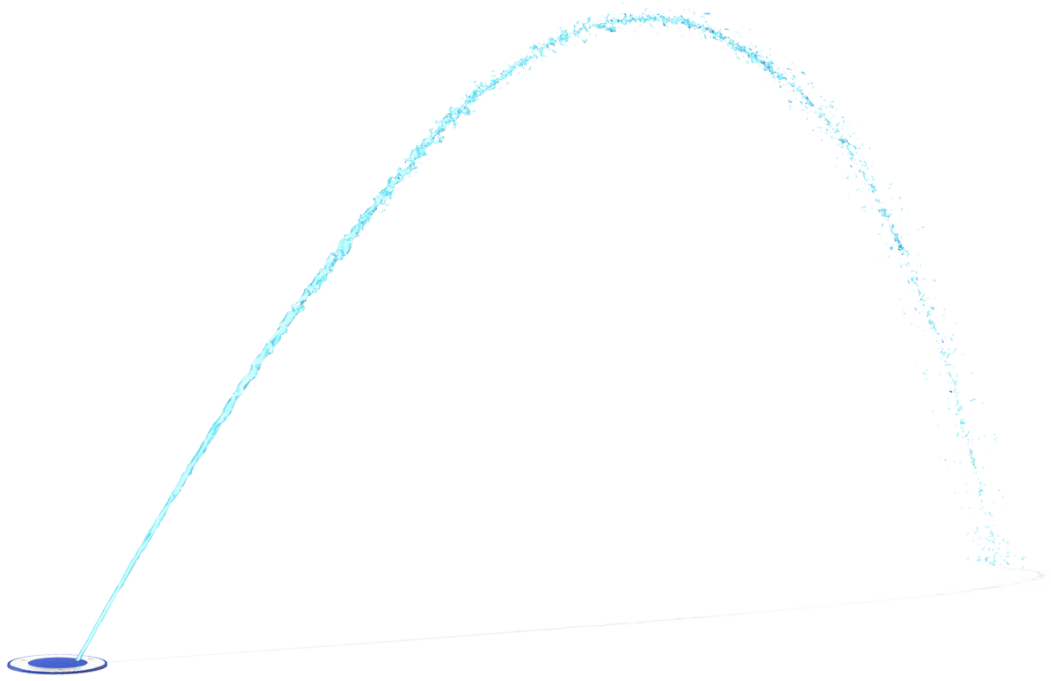


FRONT ELEVATION VIEW



PRODUCT NAME: SPRAYLINK JET NO.1		PRODUCT INFORMATION	
PRODUCT NUMBER: VOR 3000	DATE: 01/05/23	SHEET NO: 1/1	11"x17" SHEET SIZE

VORTEX



**The product shown in the image may differ from the actual product sold.*
**Water jet heights may not always be equals depending on water flow.*

Ideal age group: For all ages

VOR 3002
SPRAYLINK™ ARCH

PRODUCT HIGHLIGHTS

Spraylink™ is a cutting-edge ground spray collection. With a wide variety of water effects and designs to choose from, these ground sprays are a sustainable solution perfect for any sized Splashpad®.

- Enjoy running your feet and hands through soft water jets
- Creates a tunnel effect where kids can cross under
- Provides high interactivity with low water consumption
- Designed and manufactured with sustainability at the forefront
- One-size interchangeable nozzles for all Spraylink™ items

VORTEX

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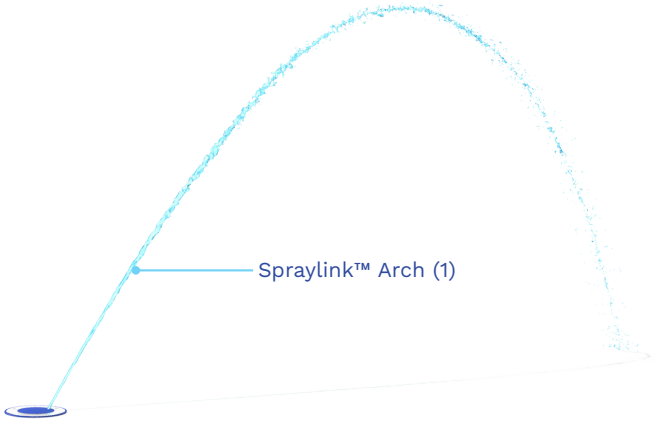
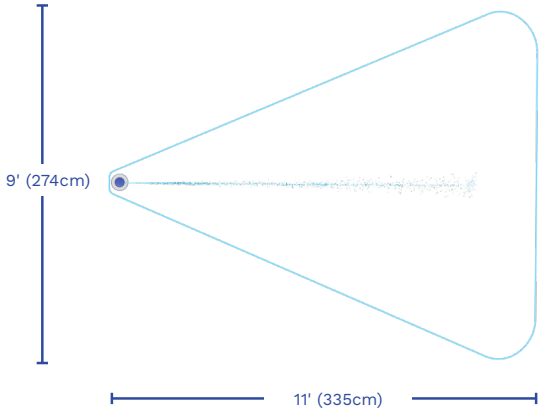
SPECIFICATIONS



SprayZone



Recommended jet height: 4' (123cm)
Recommended jet lenght: 7' (213cm)

H./W./L.
0/5.3/5.3 in
0/13.5/13.5 cm

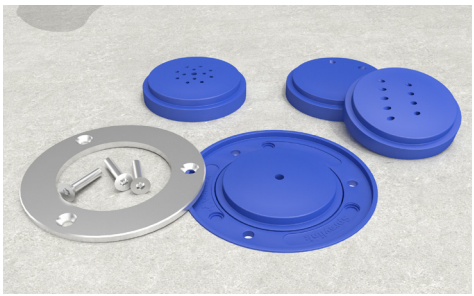
Color choices
Colors as shown

Flow
1-2 GPM
4-7.5 LPM

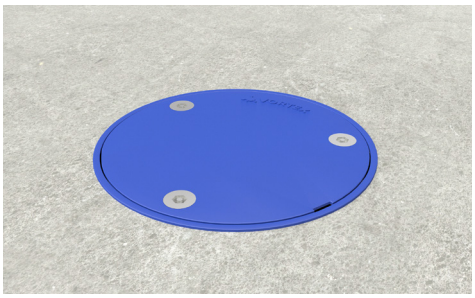
Pressure
2-6 PSI
0.1-0.4 BAR

ADVANTAGES

Easy on-site assembly and installation



One-size interchangeable nozzle
(sufficient flow and sprayzone required)



Easy maintenance and winterization

INSTALLATION

- Follow Installation guide provided.
- Polymer encapsulated assembly, no earth grounding and bonding recommended for Spraylink™ system. Follow local code.
- Replace nozzle and ring with provided cap for winterization.

VORTEX

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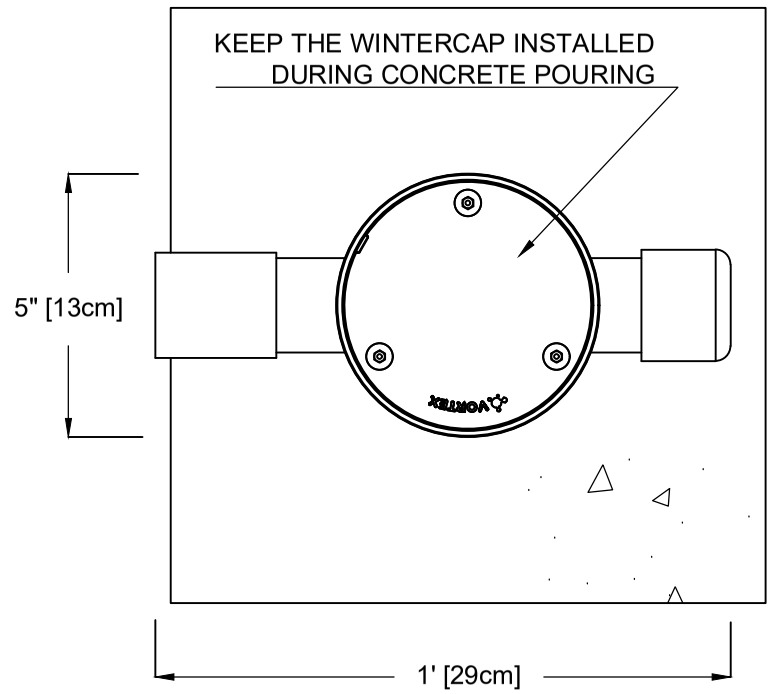
PLEASE REFER TO PROJECT SPECIFICATION FOR DETAILS OF RESPONSIBILITY.

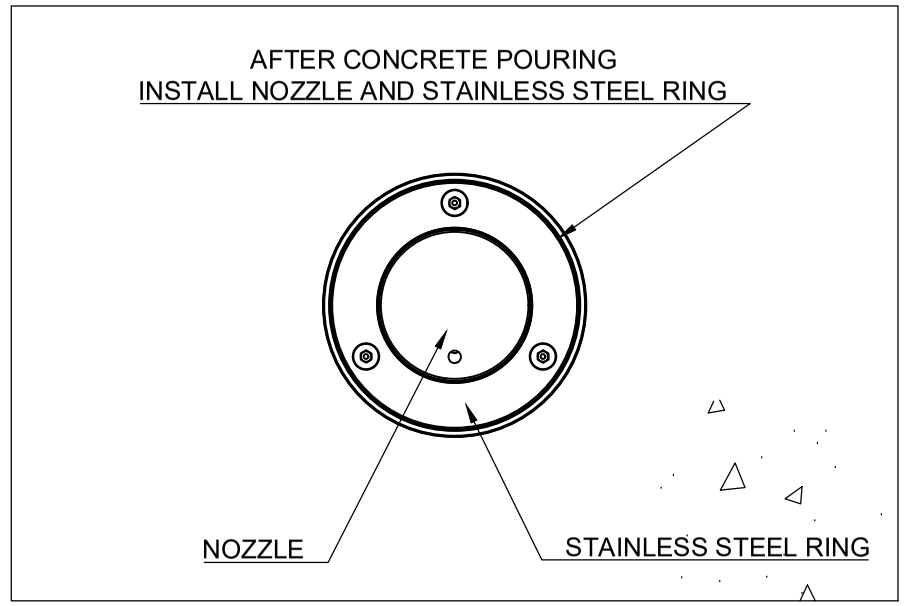
2) POLYMER ENCAPSULATED ASSEMBLY
NO EARTH GROUNDING AND NO BONDING RECOMMENDED FOR SPRAYLINK™ SYSTEM
FOLLOW LOCAL CODE

3) REFER TO INSTALLATION GUIDE FOR MORE DETAILS.

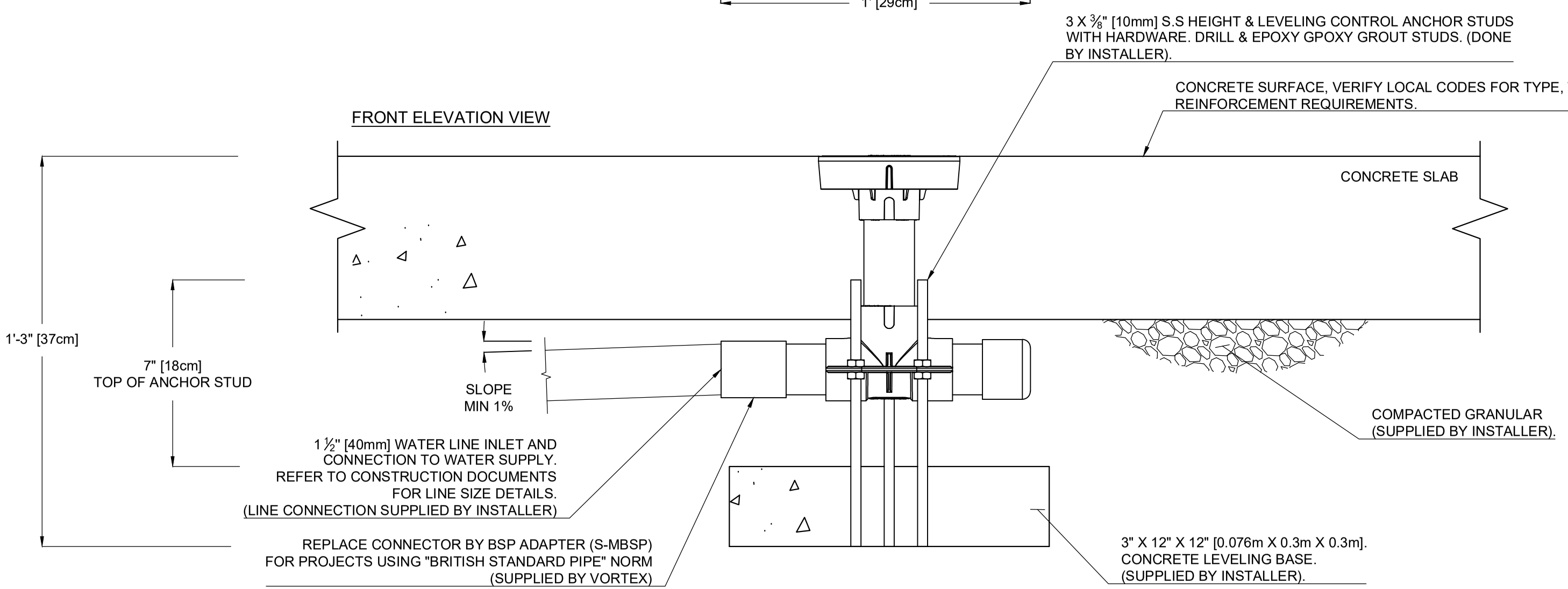
PLAN VIEW



PLAN VIEW

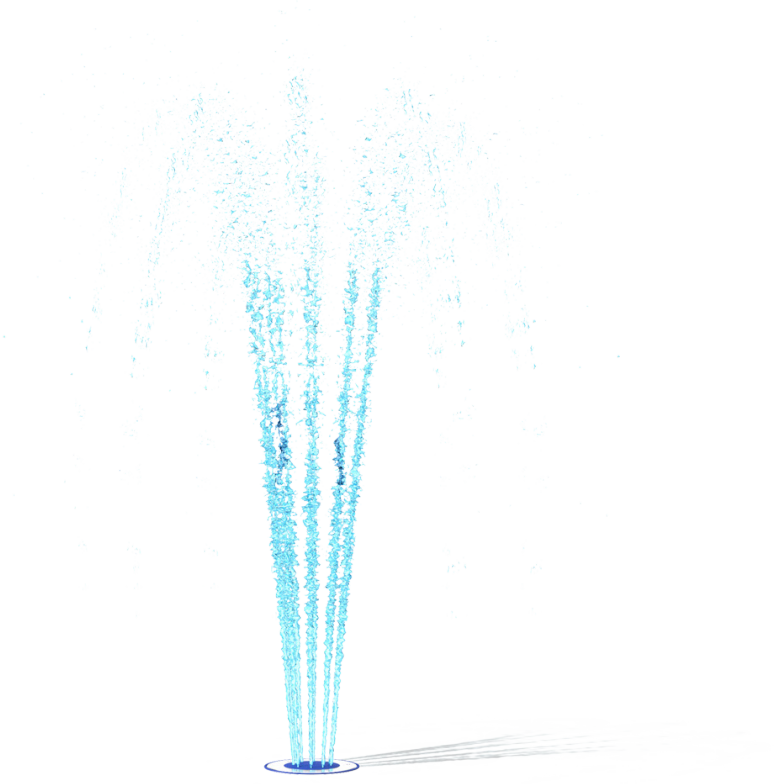


FRONT ELEVATION VIEW



PRODUCT NAME: SPRAYLINK ARCH		PRODUCT INFORMATION	
PRODUCT NUMBER: VOR 3002	DATE: 01/06/23	SHEET NO: 1/1	11"x17" SHEET SIZE

VORTEX



**The product shown in the image may differ from the actual product sold.*
**Water jet heights may not always be equals depending on water flow.*

Ideal age group: For all ages

VOR 3005
SPRAYLINK™ GEYSER

PRODUCT HIGHLIGHTS

Spraylink™ is a cutting-edge ground spray collection. With a wide variety of water effects and designs to choose from, these ground sprays are a sustainable solution perfect for any sized Splashpad®.

- Enjoy running your feet and hands through soft water jets
- Provides high interactivity with low water consumption
- Offers many imaginative play opportunities
- Designed and manufactured with sustainability at the forefront
- One-size interchangeable nozzles for all Spraylink™ items

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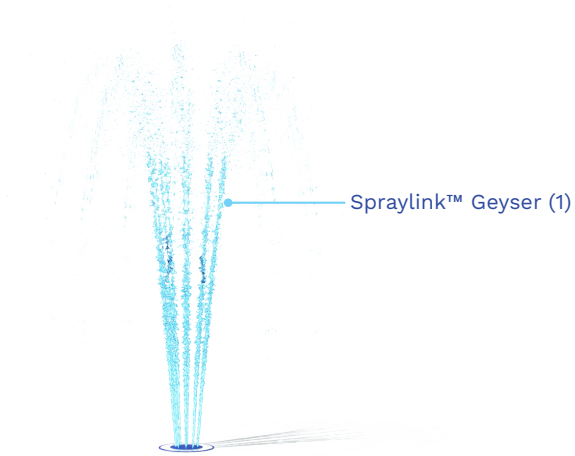
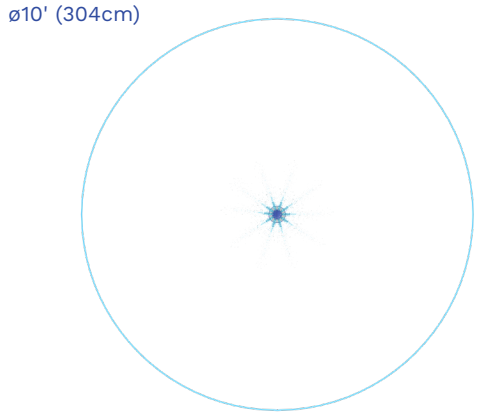
SPECIFICATIONS



SprayZone



Recommended jet height: 5' (152cm)

H./W./L.
0/5.3/5.3 in
0/13.5/13.5 cm

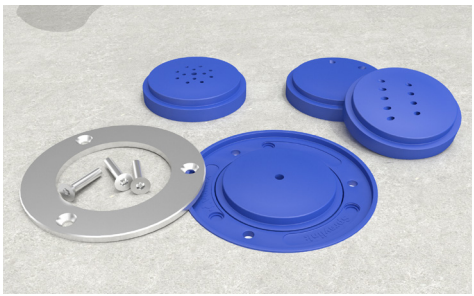
Color choices
Colors as shown

Flow
4-6 GPM
15-23 LPM

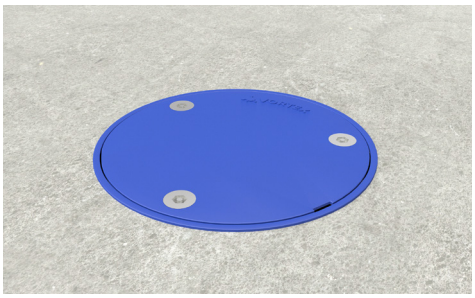
Pressure
2-4 PSI
0.1-0.3 BAR

ADVANTAGES

Easy on-site assembly and installation



One-size interchangeable nozzle
(sufficient flow and sprayzone required)



Easy maintenance and winterization

INSTALLATION

- Follow Installation guide provided.
- Polymer encapsulated assembly, no earth grounding and bonding recommended for Spraylink™ system. Follow local code.
- Replace nozzle and ring with provided cap for winterization.

VORTEX

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NOTES:

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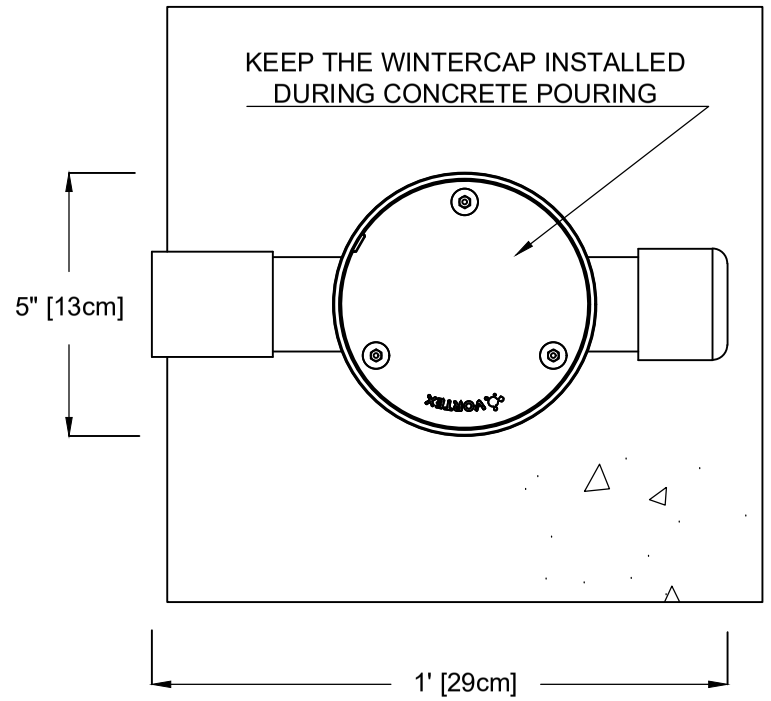
PLEASE REFER TO PROJECT SPECIFICATION FOR DETAILS OF RESPONSIBILITY.

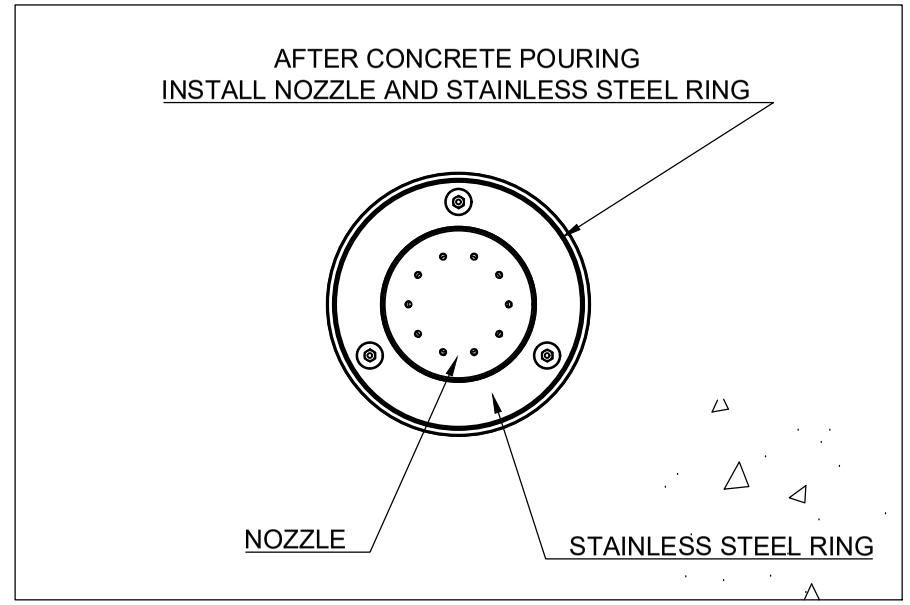
2) POLYMER ENCAPSULATED ASSEMBLY
NO EARTH GROUNDING AND NO BONDING RECOMMENDED FOR SPRAYLINK™ SYSTEM
FOLLOW LOCAL CODE

3) REFER TO INSTALLATION GUIDE FOR MORE DETAILS.

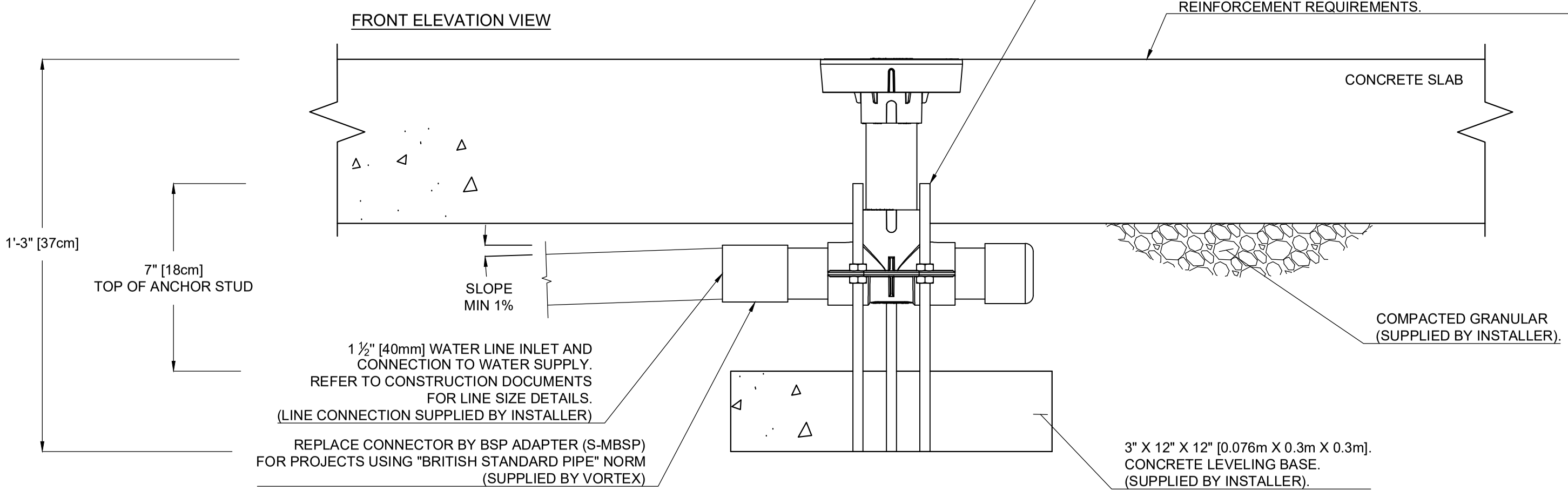
PLAN VIEW



PLAN VIEW



FRONT ELEVATION VIEW



PRODUCT NAME: SPRAYLINK GEYSER		PRODUCT INFORMATION	
PRODUCT NUMBER: VOR 3005	DATE: 01/06/23	SHEET NO: 1/1	11"x17" SHEET SIZE

VORTEX

SAFESWAP™
ANCHORING SYSTEM

Any aquatic facility requires a significant infrastructure investment. Concrete, plumbing equipment, electrical equipment and earthwork represent a large portion of the overall cost. With proper master planning, Vortex's unique Safeswap™ anchoring system provides owners with the flexibility to add new products, interchange products or completely replace products without any modifications to the infrastructure.

EXPANSION

The Vortex Safeswap™ solution allows owners to make their investment in play products over time as capital becomes available. The infrastructure planning will take into consideration the future play elements to be added. In the interim, the future play products are substituted by an attractive Safeswap™ ground spray.

INTERCHANGE

For owners of several Vortex Splashpads®, the Safeswap™ solution provides the ability to interchange products from one location to the other, creating novelty without additional costs.

TRANSFORM

Although Vortex products will last for decades, some owners may want to transform the look of their facility or provide guests with new attractions. Safeswap™ makes it feasible to swap out a few products or change from one Vortex design line to another, effectively transforming the appearance of the facility without the costs associated with infrastructure modifications.

VORTEX
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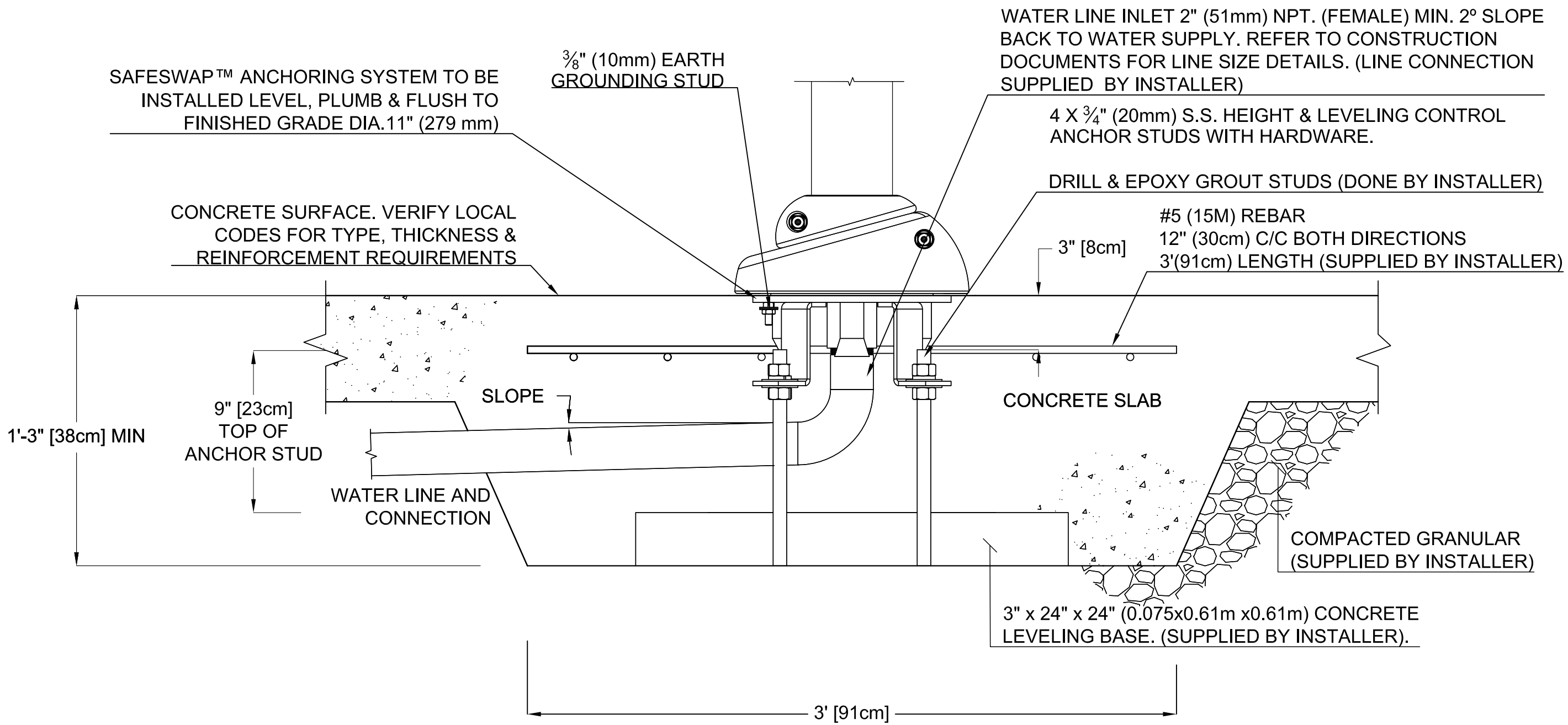
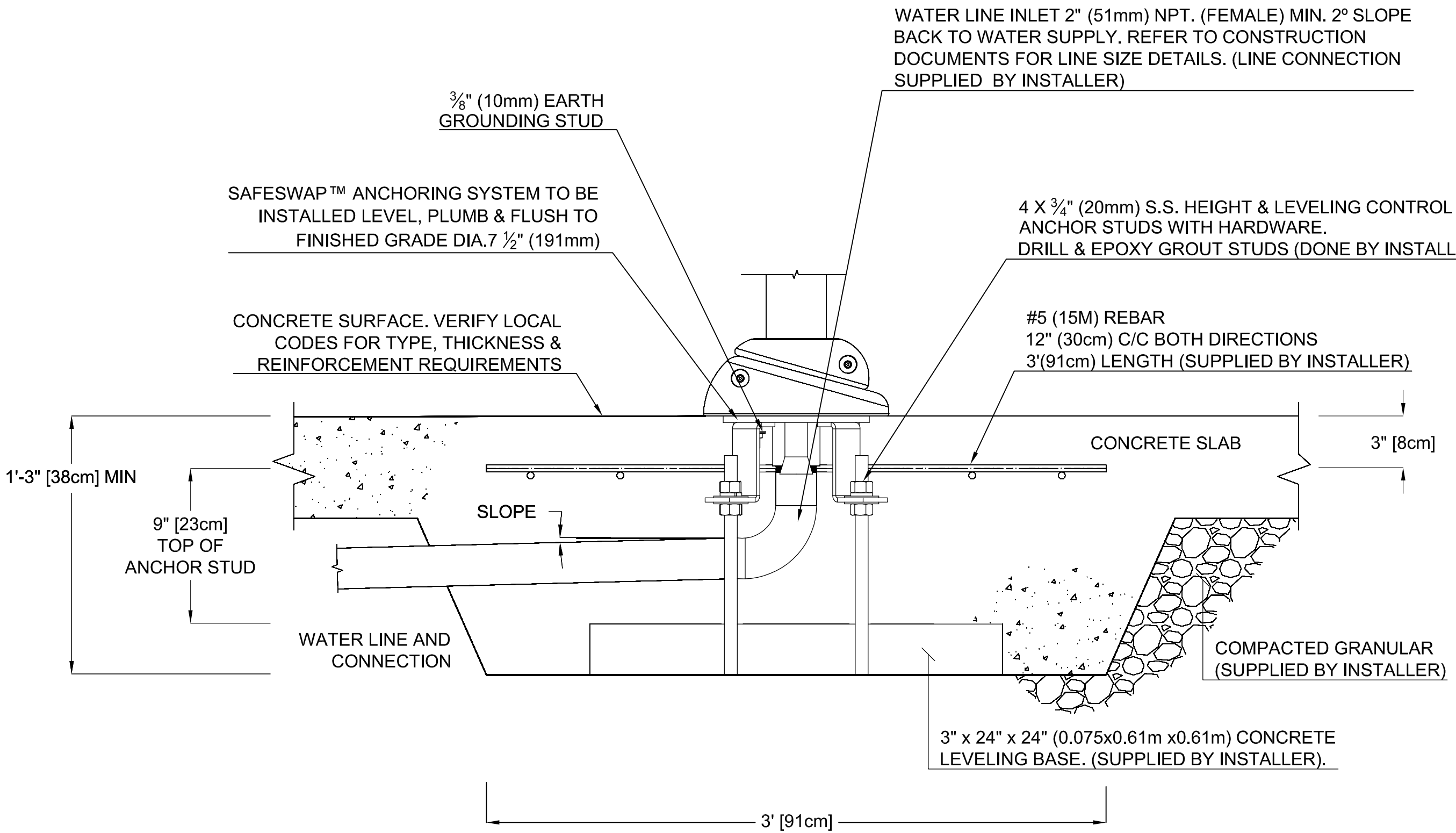
1.877.586.7839 (free USA/CANADA)
+1.514.694.3868 (INTERNATIONAL)



SAFESWAP N° 1 (Construction Detail)
LARGE

PRODUCT NAME: SAFESWAP Nº1	PRODUCT INFORMATION		
PRODUCT NUMBER: 55000.0430	DATE: 04/06/12	SHEET NO: 1/1	11"x17" SHEET SIZE

VORTEX



VOR-55000-0570 SAFESWAP Nº2 MEDIUM (Construction Detail)

PRODUCT NAME: SAFESWAP Nº2 MEDIUM	PRODUCT INFORMATION		
PRODUCT NUMBER: VOR-55000-0570	DATE: 12/13/17	SHEET NO: 1/1	11"x17" SHEET SIZE

VORTEX

SECTION 26 0120
WIRES AND CABLES

1.0 GENERAL

1.1 Description of Work

This work shall consist of furnishing and installing all wires and cables as shown in the plans, or as directed by the Engineer. The work shall include all labor, materials, tools and equipment necessary to furnish, place, and connect all wires, cables, and associated items.

1.2 References

Except as modified herein, the Work shall conform to the applicable portions of Sections 801, 810, 821, 825, and 1085 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

1.3 Quality Assurance

Comply with the provisions of the following codes:

A. National Electric Code (NEC)
B. NFPA 70 "National Electrical Code." Conform to applicable codes and regulations regarding toxicity of combustion products of insulating materials.
C. UL Compliance: Provide components which are listed and labeled by UL under the following standards.
    1. UL Std. 486A - Wire connectors and soldering lugs for use with copper conductors.
    2. UL Std. 854 - Service entrance cable.

2.0 PRODUCTS

2.1 Wires and Cables

The material shall meet the requirements of Article 1066 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

A. Conductor Material: Copper for all wires and cables.
B. Conductor sizes indicated are based on copper.
C. Insulation: Provide cross-linked polyethylene all on conductors.

2.2 Connectors for Conductors

A. Provide UL-listed factory-fabricated, solderless metal connectors of sizes, amp city ratings, materials, types and classes for applications and for services indicated. Use connectors with temperature ratings equal to or greater than those of the wires upon which used.
B. For each electrical connection, provide complete assembly of materials, including but not necessarily limited to, pressure connectors, terminals (lugs), electrical insulating tape, electrical solder, electrical soldering flux, heat--shrinkable insulating tubing, cable ties, solderless wire-nuts, and other items and accessories as needed to complete splices and terminations of types indicated.

C. Provide electrical connectors and terminals which mate and match, including sizes and ratings, with equipment terminals and are recommended by equipment manufacturer for intended applications.
D. Provide electrical insulating tape, heat-shrinkable insulating tubing and boots, electrical solder, electrical soldering flux, wire nuts and cable ties as recommended for use by accessories manufacturers for type services indicated.

3.0 EXECUTION

3.1 Installation Requirements

Work under this item shall be performed in accordance with Section 817 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

A. Install electrical cables, wires, and connectors in compliance with the NEC.
B. Pull conductors simultaneously where more than one is being installed in same conduit.
C. Use pulling means such as fish tape, cable, rope, and basket weave wire/cable grips which will not damage cables or conduits. Do not use rope hitches for pulling wire or cable.
D. Keep conductor splices to a minimum.
E. Install splice and tap connectors which are compatible with conductor material, and which possess equivalent or better mechanical strength and insulation rating than conductors being spliced.
F. Provide a minimum of 18" of length of conductors within electrical enclosures and train the conductors to terminal points with no excess.

   Bundle multiple conductors, with conductors larger than No. 10 AWG cabled in individual circuits. Make terminations so there is no bare conductor at the terminal.
G. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A and UL 486B.
H. Install electrical connections as indicated, in accordance with equipment manufacturer's written instructions and with recognized industry practices, and complying with applicable requirements of UL, NEC and NECA's "Standard of Installation" to ensure that products fulfill requirements.
I. Coordinate with other work, including wires/cables, conduits and equipment installation, as necessary to properly interface installation of electrical connections for equipment with other work.
J. Cover splices with electrical insulating material equivalent to, or of greater insulation resistivity rating, than electrical insulation rating of those conductors being spliced.

K. Prepare cables and wires, by cutting and stripping jacket and insulation properly to ensure uniform and neat appearance where cables and wires are terminated. Exercise care to avoid cutting through tapes which will remain on conductors. Also avoid "ringing" copper conductors while skinning wire.

L. Trim cables and wires as short as practicable and arrange routing to facilitate inspection, testing and maintenance.

M. All wire/cable shall be installed with care to prevent damage to the cable insulation. The contractor shall check the wire/cable for defects as it is being installed. Any defects found shall be reported to the Engineer, and if they may be remedied, they shall be repaired to the satisfaction of the Engineer, or the wire/cable shall be replaced as directed.

N. The wire/cable shall be pulled into the conduit with a minimum of dragging on the ground or pavement. This shall be accomplished by means of reels mounted on jacks or other suitable devices conveniently located for unreeling wire/cable directly into conduit in such a manner as to not damage the wire/cable.

O. Where lubricants are necessary to facilitate installation of the wire/cable, only a vegetable based lubricant may be used for plastic coated wire/cable.

P. Bends in the wire/cable shall conform to the recommended minimum radius as outlined in the NEC.

Q. The wire/cable shall be color coded so that each lead of all circuits may be easily identified and lighting units connected to the proper leg as indicated on the plans and wiring diagram. The smallest conductor or equipment grounding conductor shall always be green in color.

R. All wire or cable in the distribution and control cabinets shall be properly trained and have sufficient slack provided for any rearrangement of equipment for future additions.

S. Any wire/cable terminations or splices, where approved, shall be made in a workmanlike manner. All connectors and insulating tapes and materials shall be approved by the Engineer. Splices and terminations shall be considered incidental to the installation of the wire/cable, and no additional payment shall be made for same.

3.2 Field Quality Control

A. Prior to energizing, check installed wires and cables with megohm meter to determine insulation resistance levels to assure requirements are fulfilled in accordance with Section 801.13 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

B. Prior to energizing, test wires and cables for electrical continuity and for short-circuits.

C. Subsequent to wire and cable hook-ups, energize circuits and demonstrate proper functioning. Correct malfunctioning units, and retest to demonstrate compliance.

4.0 PAYMENT

4.1 Payment

The work covered under this section shall be paid per lineal foot as shown in the Schedule of Prices.

END OF SECTION

SECTION 26 0195
ELECTRICAL IDENTIFICATION

1.0 GENERAL

1.1 Section Includes
- A. Nameplates and labels.
- B. Wire and cable markers.
- C. Conduit markers.
- D. Field-painted identification of conduit.

1.2 Reference Standards
- A. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

1.3 Quality Assurance
- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and shown.

2.0 PRODUCTS

2.1 Nameplates and Labels
- A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
- B. Locations:
  1. Distribution panelboards
     a. Individual distribution panelboard circuits
  2. Safety Switches.
- C. Letter Size:
  1. Use 1/8 inch (3 mm) letters for identifying individual equipment and loads.
  2. Use 1/4 inch (6 mm) letters for identifying grouped equipment and loads.

2.2 Wire Markers
- A. Description: Cloth type wire markers.
- B. Locations: Each conductor at panelboard gutters, pull boxes, outlet boxes, and junction boxes each load connection.
- C. Legend:
  1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.
  2. Control Circuits: Control wire number indicated on schematic and interconnection diagrams on drawings.

2.3 Underground Warning Tape
- A. Description: 4 inch (100 mm) wide plastic tape, detectable type colored red with suitable warning legend describing buried electrical lines.

3.0 EXECUTION

3.1 Preparation

A. Degrease and clean surfaces to receive nameplates and labels.

3.2 Installation

A. Install nameplates and labels parallel to equipment lines.

B. Secure nameplates to equipment front using screws.

C. Secure nameplates to inside surface of door on panelboard that is recessed in finished locations.

D. Identify underground conduits using underground warning tape. Install one tape per trench at 3 inches (75 mm) below finished grade.

END OF SECTION

SECTION 26 0533
CONDUIT RUNS

1.0 GENERAL

1.1 Description of Work

A. This Work shall consist of constructing conduit trenches and conduit runs at the locations shown in the plans, or as directed by the Engineer. This work shall include trench and backfill, conduit runs, electrical identification, regrading, and all labor, tools, and equipment necessary to install the conduit runs to connect all components of the electrical wiring and the power source, including clean-up and restoration of the locations.

1.2 References

A. Work under this item shall be performed in accordance with Sections 801, 806, 810, 812, 813, 814, 815, 821, and 1003 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified; as well as all applicable portions of the National Electric Code (NEC) and National Electrical Manufacturer's Association (NEMA).

1.3 General Requirements

A. Coordinate site clearing operations with Engineer to ensure minimum interference with fences, roads, streets, sidewalks and/or adjacent facilities.

B. Provide protection to prevent damage to existing structures, trees, roadway, sidewalk and/or other improvements on the job site. Restore any damaged improvement to its original condition as acceptable to parties having jurisdiction, with no additional compensation due the Contractor.

2.0 PRODUCTS

2.1 Conduit Bodies

A. General: Types, shapes, and sizes shall be as required to meet individual applications and NEC requirements.

B. Unless otherwise noted, all conduit is to be rigid galvanized steel conforming to Articles 1085.15 and 1085.16 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

2.2 Electrical Warning Tape

A. The material shall meet the requirements of Article 1085.23 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

2.3 Trench Backfill

A. The material shall have an FA 6 gradation conforming to Article 1003.04 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified; except wet bottom boiler slag as defined in Article 1003.01 will not be permitted.

3.0 EXECUTION

3.1 Installation Requirements

A. Work under this item shall be performed in accordance with Article 810.03 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

1. Complete installation of electrical conduits before starting installation of conductors within conduits.

B. Prevent foreign material from entering conduits by using temporary closure protection.

C. Protect stub-ups from damage where conduits rise from concrete foundations. Arrange so curved portion of bends is not visible above the finished slab.

D. Make bends and offsets so the inside diameter is not effectively reduced. Unless otherwise indicated, keep the legs of a bend in the same plane and the straight legs of offsets parallel.

E. The contractor shall exercise care in installing the conduit to ensure that it is smooth, free from sharp bends or kinks, and has the minimum practical number of bends. Crushed or deformed conduit will not be accepted. All conduit and fittings shall have the burrs and rough edges smoothed, and all conduit runs shall be cleaned and swabbed before installation of electric cables

F. All conduit is to contain fish tape or pull wires for wire pulls. Use No. 14 AWG zinc-coated steel or monofilament plastic line having not less than 200-lb tensile strength.

G. Install conduit sealing fittings in accordance with the manufacturer's written instructions. Locate fittings at suitable, approved, accessible locations and fill them with UL-listed sealing compound. For concealed conduits, install each fitting in a flush galvanized steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install conduits sealing fittings at the end points.

H. Stub-up Connections: Extend conduits above concrete foundation or ground 6", unless otherwise noted on plans. Extend conductors to equipment with rigid steel conduit. Where equipment connections are not made under this contract, install screwdriver-operated threaded flush plugs flush with slab.

I. Conceal all conduits, unless indicated otherwise. Install conduits at proper elevations.

J. Electrical Warning Tape is to be installed in all conduit trenches, at the location shown on the Drawings.

3.2 Trench and Backfill

A. Work under this item shall be performed in accordance with Article 868.03 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified. Trench backfill shall be in accordance with section 2.03 of this specification.

4.0 PAYMENT

4.1 Payment

4.2 Payment shall be paid per lineal foot as shown in the Schedule of Prices.

END OF SECTION

SECTION 31 2000
EARTHWORK

1.0 GENERAL

1.1 Description

A. The work consists of all work as called for by plans and/or proposal form and may include the following: rough and finish grading to approved grade stakes; excavation of organic or unstable soils; excavation of debris and rocks; excavation, stockpiling and redistribution of topsoil; placement of sand or gravel base; placing and grading supplemental topsoil; and all other grading and excavation operations. Unless otherwise called for in the plans and specifications, work shall conform to all applicable Soil Erosion and Sedimentation Control Regulations as enacted in the County, City/Village, Soil and Water Conservation District, etc. having jurisdiction over the project location.

1.2 Submittals

A. Contractor shall submit samples and information to the Owner's Representative on the location of the source for any proposed materials to be brought on site. Source shall be subject to approval before use.

2.0 PRODUCTS

2.1 Fill Materials

A. Fill and backfill materials shall be clean, porous, granular materials free of clay, rock or gravel larger than two inches (2") in any dimension, debris, frozen material, vegetation or other deleterious matter. Contractor shall be permitted to use material excavated as part of this project as backfill material provided that excavated material meets all other requirements herein and is free of trash and other debris. Sod shall not be used for fill.

B. Fill material must be approved by the Owner's Representative before being placed. When suitable materials are not available from the excavation they shall be provided by the Contractor from off-site sources.

2.2 Topsoil

A. Topsoil is defined as follows: all topsoil shall be fertile, friable natural topsoil, typical for this locality. It shall not contain a mixture of subsoil or slag and shall be free of lumps, stones, plants or roots, stalks or other extraneous matter and shall not be used while in a frozen or muddy condition. Topsoil shall have an acidity range of pH 5.5 to pH 7.5 and shall contain not less than five percent nor more than twenty percent organic matter as determined by loss on ignition of moisture free sample dried at 100 degrees centigrade. Topsoil shall be classifiable as loam, silt loam, silty clay loam, or sandy clay loam, as determined from the Natural Resources Conservation Service - USDA triangular soil texture chart. Topsoil shall be used in the upper six inches (6") of all seeded areas.

2.3 Base Material

A. Base materials shall conform to specified detail and shall be properly graded mixture of natural or crushed gravel, crushed stone, or natural processed sand that will readily compact to the required density and remain in that condition.

3.0 EXECUTION

3.1 Layout

A. The corners of the designated areas, including separate paving, surfacing, and lawn, shall be determined by careful survey according to plans and details. Stakes shall be set indicating the exact position of these corners and the final elevation of the indicated area.

B. Before any excavation or filling operation begins, approval of the location and the proposed elevation must be obtained from the Owner's Representative. If existing conditions are at variance with the drawings, the Owner's Representative shall be notified before proceeding with the work and adjustments made only as directed.

C. Back-filling shall be done only after the Owner's Representative has inspected and approved sub-grade. Notice that the work is ready for inspection shall be given promptly, and 48 hours minimum shall be allowed for making necessary examinations. Failure to comply may require excavation to previous grade and the performance of back-filling operations again at no additional cost to the Owner.

3.2 Stripping Topsoil

A. Prior to the stripping of topsoil, all areas within the grading limits containing existing debris shall be cleaned sufficiently to permit easy use of the topsoil free of unmanageable debris. Topsoil in areas that are to be graded shall be stripped to the depth designated and stockpiled in an area approved by the Owner's Representative. This is the first supply of topsoil to be used for spreading over disturbed or graded areas. The site shall be excavated to provide a sub-grade which shall be shaped to true and even lines so as to assure a uniform thickness of the base course or other surfacing installation. Excess material and debris generated from this work shall be hauled from the site at the Contractor's expense.

3.3 Unsatisfactory Materials

A. Unsuitable materials or unstable bearing soil for structures and pavements shall be excavated to stable soil and replaced with an approved sand, gravel or soil and compacted as specified.

3.4 Excavation for Structures

A. Excavation for all structures, paving, and site improvements shall be to the tolerances specified and shall extend sufficient distances from footing and foundations to permit placing and removal of forms, installation of services, and other construction operations and inspections.

3.5 Dewatering

A. Site is to be maintained in dry condition in excavations and areas to be filled. Fill, topsoil, or sub-base shall not be placed in water or excessively damp conditions. It is the Contractor's responsibility to remove water and maintain dry conditions.

3.6 Placing Fill

A. During grading and filling operations, all fill shall be placed in five inches (5"), or less layers and compacted by operating heavy track, or rubber tired equipment over it or with compaction equipment. Fill and backfill shall be so placed as to

cause minimum disturbance to underlying soils. Material shall have the correct moisture content. Wet soil shall be disked or otherwise scarified to allow each layer to dry.

B. Holes, pits and removed footings shall be filled and compacted to within six inches (6") of the surrounding grade with approved clean fill and then topped with six inches (6") compacted topsoil. Filling holes shall be considered incidental to the Contract.

3.7 Compaction

A. Fill and sub-base material shall be compacted to not less than the 95% ASTM D1557 or Proctor Density. Compaction of topsoil in lawn areas shall be 85% of proctor density.

3.8 Grade Tolerance

A. All earthwork shall be within one-half inch (1/2" or 0.042') of the elevations called for on the plans. All pavement grading shall be within one quarter inch (1/4" or 0.021') of the elevations called for in the plans. All grading shall drain uniformly to designated low points and all changes in elevation and transition areas shall be with gentle, rounded gradients. The grade tolerance allowed shall not create a situation where a walk or area becomes inaccessible per the Americans with Disabilities Act. If this occurs the work shall be removed at the cost of the Contractor and reinstalled to meet current ADA standards.

END OF SECTION

SECTION 32 1217
ASPHALT PAVING – SPORT COURTS

1.0 GENERAL

1.1 Description

A. This work consists of providing all labor, material, tools and equipment necessary to install asphaltic concrete paving, prime, and tack coats for tennis, pickleball, and/or basketball court paving as shown on the drawings.

1.2 Code and Regulations

A. Materials and methods used in the fulfillment of this Contract shall conform to the State of Illinois Standard Specifications for Road and Bridge Construction, latest edition, hereby referred to as "State Specifications" and all supplemental specifications and provisions adopted prior to the date of the Invitation to Bid for this project.

1.3 Submittals

A. Provide product data for each product specified

B. Job-Mix Designs: For each job mix proposed.

1. Job-mix design documentation shall include the amount of RAP material, by percentage of total mix, to be utilized.
2. Job-mix design documentation shall clearly indicate source/origin of RAP material.

C. Qualification Data: For IDOT qualified asphalt manufacturer.

D. Material Certificates: For each paving material, from manufacturer

E. Material Test Reports: For each paving material and mix.

F. Court Color Finish material product data, and color selection sheets for approval by Owner/Owner Rep.

2.0 MATERIALS

2.1 Crushed Aggregate Base

A. CA-6 crushed aggregate, Class B, shall be placed, to a compacted depth as indicated on the plans as a base course. The aggregate shall be thoroughly dry, unyielding and free of screening and dirt before proceeding with priming and paving, in accordance with material and placement standards of Section 301 of the State Specifications.

2.2 Prime Coat

A. The prime course shall consist of cutback asphalt MC-30 in conformance with Section 406 of the State Specifications. Bituminous prime coat shall be applied with the application rate being a minimum of 0.30 gallons per square yard. Priming shall be applied through the use of a pressurized distributor vehicle or hand sprayer, at a rate of 0.2 to 0.5 gallons per square yard. Excess prime showing on the surface after the curing period, shall be blotted with sand prior to placement of the asphalt. All work and materials shall conform to applicable provisions of Section 406 of the IDOT Standard Specifications.

2.3 Asphalt Binder Course

A. The bituminous concrete binder course shall be HMA binder Course Mix, IL19.0, N50, conforming to Section 406 of the IDOT Standard Specifications. All work and materials shall be performed in accordance with applicable provisions of Section 406 of the IDOT Standard Specifications. The minimum thickness of the completed bituminous binder course shall be as noted on the plans measured at any point on the pavement surface.

2.4 Asphalt Surface Course

A. The bituminous surface course shall be HMA surface Course Mix, IL9.5, N50 conforming to Section 406 of the IDOT Standard Specifications. Class "B" (modified) constructed on previously placed bituminous binder course. The minimum thickness of the finished bituminous surface course shall be as shown on the plans as measured at any point of the pavement surface. The work and materials shall conform to applicable provisions of Section 406 of the Standard Specifications except as revised herein. The aggregate used in the preparation of the surface mixture shall conform to the following gradation:

Passing ½" sieve	100%
Passing #4 sieve	65% - 85%
Passing #10 sieve	50% - 65%
Passing #40 sieve	10% - 27%
Passing #200 sieve	5% - 7%

B. The finished surface shall be true, uniform in texture, free from ruts, depressions, cracks, tears and checks, in conformance with Section 406 of the State Specifications. When tested, water should not stand or pool twenty-four hours after flooding

C. The finished surface shall be true, uniform in texture, free from ruts, depressions, cracks, tears and checks, in conformance with Section 406 of the State Specifications. When tested, water should not stand or pool twenty-four hours after flooding

2.5 Caulk for Tennis Court

A. As manufactured by: Nova Sports U.S.A. www.novasports.com or approved equal.

B. Install per manufacturer recommendations:

1. Clean crack so that it is free of all vegetation and debris. Remove all lost pavement from crack.
2. Install backer rod (must be wider than crack) into crack, top of rod 3/16" below surface or fill crack with clean sand to within 3/16" of surface
3. Using a broad knife, squeegee rubber, or similar tool, fill crack to refusal with Novacaulk #1. It is important to exert some pressure when placing the Novacaulk into the void so that the material comes in contact with the walls of the crack.
4. Allow the Novacaulk to set. (4 hours during ideal drying conditions - longer when damp or cool).
5. Apply a coat of Novacaulk #2 over the crack. This coat should be thicker directly over the crack and taper to a feather edge. This application should be wider than the actual crack by 3 to 6 inches on both sides. Extremely wide cracks my need a second application of Novacaulk #2 and probably the repair should extend further out to the side. Novacaulk #2 is easily spread with a squeegee when first placed on the pavement. If, after a few minutes, it becomes difficult to spread smoothly, sprinkle a few drops of water over the repair. This will make the material easier to smooth.

2.6 Color Finish materials for sport courts

A. Plexipave Systems by California Products Corp
www.californiasportsurfaces.com
Elite Sport Coating Systems www.ustenniscc.com

Laykold Systems by Laykold www.laykold.com
Duracourt Outdoor Coatings www.duracourt.net
Or other approved equal products

B. Plexipave Court Patch Binder. Mixed with 100 pounds of 60-80 mesh clean silica sand (dry), 3 gallons "Court Patch Binder" and 1 to 2 gallons Portland Cement (dry) – depending on humidity and temperature.

C. Plexipave Acrylic Resurfacer – Mixed with 55 gallons acrylic resurfacer, 20-40 gallons water, 600-800 pounds (60-mesh) sand.

D. Fortified Plexipave – Mixed with 30 gallons Plexipave Color Base, 20 gallons Plexichrome and 20 gallons water.

E Plexipave Textured Line Paint (white).

F. Colors for Tennis and Basketball or other applicable sport to be as indicated on plans.

3.0 EXECUTION

3.1 Methods

A. Construction methods shall follow the specifications described herein.

3.2 Protection of Vegetation

A. Protection of existing vegetation shall conform with Specification 01 2100 as contained in this Specifications document. Protected vegetation shall include all trees, shrubs, plants or other vegetation within or adjacent to the construction area.

B. At no time shall any material or equipment be stored, nor any construction activity take place within the drip line of any tree, within or adjacent to the construction area, without the written approval of the Owner/Owner's representative.

3.3 Restoration

A. The Contractor shall be responsible for the restoration of adjacent turf or planting areas disturbed or damaged through the fulfillment of this Contract.

B. Disturbed areas shall be restored by the placement of pulverized topsoil raked smooth and level with the finished pavement surface, free of any stones or debris. Seeding shall be as per landscape specification.

3.4 Prime and Tack Coat

A. All work shall be in accordance with the Standard Specifications. If asphaltic surface course is not applied the same day as binder course, the binder surface shall be tack coated prior to surface paving. Prior to placement of tack coat the surface shall be thoroughly cleaned and swept. Tack coat shall be applied at a rate of 0.08 gallons per square yard immediately prior to placement of asphaltic surface course.

3.5 Joints

A. Joints between successive day's work shall be constructed and treated as to insure thorough and continuous bond between the old and new mixtures.

B. Transverse construction joints shall be constructed by cutting the material back for its full depth so as to expose the full depth of the course. Where a header is used, the cutting may be omitted provided the joint conforms to the specified thickness. These joints shall be treated with tack coat material applied with a hose and spray nozzle attachment to fully coat the joint surface.

C. Longitudinal joints shall be made by overlapping the screed on the previously laid material for a width of not more than two inches (2"), and depositing a sufficient amount of asphaltic mixture so that the finished joint will be smooth and tight. Binder course and surface course shall be placed with longitudinal joints at right angles to one another. Longitudinal joints in the surface course

shall at no time be placed immediately over similar joints in the binder course beneath. A minimum distance of twelve inches (12") shall be permitted between the location of the joints in the binder course and the location of similar joints in the surface course above.

D. All costs for furnishing and applying tack coat to butt joints as specified above shall be considered incidental.

3.6 Testing

A. Contractor shall coordinate with Owner for testing of asphalt courses. Owner or Owner's agent shall perform testing of asphalt courses.

B. Both asphalt courses shall meet minimum 89% maximum density.

3.7 Bituminous Paving

A. Bituminous paving work shall include the construction of plant mixed asphaltic concrete pavement in the areas shown on the drawings. All work shall be performed in accordance with Section 406 of the Standard Specifications.

B. Prior to commencement of paving operations, Contractor shall examine the finished pavement bed. Contractor shall notify Owner of any areas of suspected instability.

C. Completed binder course shall not vary from the required grade more than one-fourth inch (1/4") in ten feet (10') when measured in any direction.

D. Surface course finish shall be smooth with no pockets that will retain water and shall not vary more than one-eighth inch (1/8") under a ten foot (10') straight edge. Entire surface shall drain and shall be without flat areas.

E. Allow surface course to cure for fifteen (15) days prior to application of color finish system. Verify cure time with manufacturer.

3.8 Expansion Joint Saw cuts at Tennis

A. Saw cut finished asphalt surface one-half inch (1/2") wide at locations indicated on plans. Apply Nova Caulk at cleaned saw cut.

3.9 Color Finish System

B. Prior to application of the color finish system, flood the court surface with water, preferably by rainfall, and allow to drain for forty-five (45) minutes. Any depressions holding water deeper than one-sixteenth inch (1/16") shall be marked to identify extent of such areas. Patch and level areas with color finish system materials per manufacturer's directions, as follows:

1. Asphalt or acrylic resurfacer mixed with silica sand.
2. For depressions deeper than one-sixteenth inch (1/16"), use Court Patch Binder mixed as indicated with Portland Cement, Silica Sand and water

A. Continue flooding, marking, and patching operations until uniform surface is obtained. Due to minimum pitch of surface, water will not "rush" off the surface nor will court dry off immediately. Some squeegee work may be necessary to accelerate drying time.

B. Allow patched bituminous surface course to cure for five (5) days before application of color finish course.

C. Net sleeves, fencing, and other court equipment shall be installed prior to color coat.

3.10 Color Finish Course

A. Color finish course shall be applied by an experienced manufacturer approved applicator and in accordance with the manufacturer's printed instructions. The materials shall be applied using a soft rubber squeegee (spraying not permitted). Asphaltic emulsion is not an acceptable base coat.

B. Bituminous surface course and each coat of color finish course shall be thoroughly clean and dry to receive initial and subsequent coats of color finish

course. Perform no work when rain is imminent or when the surface temperature is below or is likely to fall below 50° F. or above 140° F. during application work.

1.2 The color finish course consists of three (3) applications of “Plexipave Acrylic Texture Coat System” or approved equal. Control surface texture during application to provide a slow surface speed.

A. Apply “Plexipave Acrylic Resurfacer” in a minimum of one coat to obtain a per coat application rate of 0.05 to 0.07 gallons per square yard based on undiluted material.

B. Finished surface shall be smooth, free of ridges, valleys, and tool marks.

C. Apply “Mineral Filled Fortified Plexipave Coat” in two (2) applications to obtain a total quantity of not less than application rate of 0.15 and no more than 0.23 gallons per square yard based on undiluted material.

3.11 Playing Lines

A. Accurately locate and mark two inch (2”) wide playing lines with three inch (3”) base lines (tennis court) according to the court layouts shown on the Project Drawings.

B. Mask edges and paint lines with white Plexicolor textured line paint in accordance with manufacturer’s standard instructions. Use of traffic, oil, alkyd, or solvent vehicle type paint is prohibited. All paint line edges to be short and crisp. Spraying is prohibited.

C. Do not commence painting playing lines until a minimum of 48 hours after completion of color finish course.

END OF SECTION

SECTION 32 1313
CONCRETE CURB AND GUTTER

1.0 GENERAL

1.1 Description of Work

A. This Work shall consist of constructing concrete curb, curb and gutter, and median at the location shown on the plans, or as directed by the Owner/Owner's Rep. This work shall include all excavation and backfill; preparation of subgrade; furnishing, placing, and compacting sub-base granular material, Type B; furnishing, installing, and removal of formwork; furnishing and installing reinforcement; furnishing and placing concrete, Class SI, and constructing expansion joints; regrading; and all labor, materials, tools, and equipment necessary to complete the work as specified, including clean up and restoration of the location.

1.2 References

A. Except as modified herein, the Work shall conform to the applicable portions of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified, Sections 311, 420, 424, 508, 606, 1006, 1020 and 1051.

1.3 Submittals

A. The Contractor shall submit concrete mix design(s) for review and approval by the Owner/Owner's Rep prior to using the materials on site, and shall furnish copies of the manufacturer's Specifications, including methods of application and installation for the admixtures, and bonding agents. All mix designs shall be IDOT mix designs approved for the ready-mix supplier.

1.4 Quality Assurance

A. Except as specified in this section herein, construct formwork to provide completed cast-in-place concrete surfaces complying with the tolerances specified in ACI 347. Before concrete placement, check the lines and levels of erected formwork. Make corrections and adjustments to ensure proper size and location of concrete members and stability of forming systems. During concrete placement, check formwork and related supports to ensure that forms are not displaced and that completed work will be within specified tolerances.

2.0 PRODUCTS

2.1 Sub-base Granular Material, Type B

A. The material shall have a CA-6 gradation conforming to Article 1004.04 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified, except wet bottom boiler slag as defined in Article 1004.01 will not be permitted.

2.2 Formwork

A. Formwork shall meet the requirements of Article 1103.05 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

1. Form Materials: Form concrete surfaces with plywood, lumber, metal, or other acceptable material. Provide lumber that is dressed on at least two edges and one side for tight fit.
2. Form Coating: Provide commercial formulation, form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatment of concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compound.

2.3 Concrete Materials

A. Concrete materials shall meet the requirements of Sections 1020, 1021, 1022, and 1023 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified. The concrete shall be Class SI and meet the following requirements:

1. Portland Cement: ASTM C150, domestic brand, Type I, normal Portland Cement; Type III for high-early strength Portland Cement as per the requirements of Section 1001 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified. The same brand of Portland Cement shall be used for exposed concrete throughout the job unless a change is approved by the Owner's Rep. Air entraining cement is not acceptable.
2. High-early strength concrete may be used subject to Owner/Owner's Rep approval. All provisions of the specifications shall apply except that the 7 day compressive strength shall equal the 28 day compressive strength required for normal concrete.
3. Admixtures: Admixtures shall meet the requirements of Article 1020.05 and Section 1021 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
4. Water-Reducing Admixture: As per the requirements of Article 1021.03 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
5. Air-Entraining Admixture: Use air-entraining admixtures in all concrete, as per the requirements of Article 1021.02 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified. Add air entraining admixture at the manufacturer's prescribed rate to result in concrete at the point of placement having an air content of not less than 5% nor more than 8% of the volume of the concrete.
6. Fly Ash: Shall not be used.
7. Calcium Chloride: Shall not be used.
8. Concrete Curing Materials: Burlap curing blankets, waterproof paper blankets, white polyethylene sheeting, and burlap-polyethylene blanket shall meet the requirements of Section 1022 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
9. Curing and Finishing Materials

a. Liquid Membrane-Forming Compounds for Curing Concrete: Fed. Spec. TT-C-800A, Type I Styrene Acrylate or Type II Chlorinated Rubber; non-pigmented; "Kure-N-Seal" (Sonneborn Div. of Contech Inc.), "Dekote T130" (W.R. Grace & Co.) or "CR-26" (W.R. Meadows, Inc.)
b. Curing compounds shall be guaranteed not to affect the bond, adhesion or effectiveness of damp-proofing, or surface treatments.

10. Ready Mix Concrete:
    a. All ready-mixed concrete shall comply with Article 1020.11 of the Standard Specifications
    b. The ready-mixed concrete producer shall submit duplicate delivery tickets, one for the Contractor and one for the Owner/Owner's Rep, with each load of concrete delivered to the site.
    c. Delivery tickets shall provide the following information:
        1. Date
        2. Name of ready-mix concrete plant
        3. Contractor
        4. Job location
        5. Type of cement (Standard or H.E.S.)
        6.Cement content in bags per cubic yard of concrete
        7. Track number
        8. Time dispatched, and time unloaded
        9. Amount of concrete in load in cubic yards
        10. Admixtures in concrete, if any

2.4 Reinforcement

A. Reinforcement bars shall be epoxy coated, deformed bars, Grade 60 conforming to Article 1006.10 (b) of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
B. Dowel bars shall be epoxy coated, smooth bars, Grade 70 through 80, conforming to Article 1006.11 (b) of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
C. Welded wire fabric shall be 6" x 6" (W2.9 x W2.9) conforming to Article 1006.10 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
D. Tie wire shall be black annealed wire, 16 gauge or heavier if necessary for providing cage rigidity. Where the tie wire is in contact with epoxy-coated bars, the tie wire shall be epoxy coated.

3.0 EXECUTION

3.1 Sub-Base Granular Material Type B

A. Work under this item shall be performed in accordance with Section 311 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

1. Unless otherwise indicated on the Drawings, the Contractor shall construct a granular subbase under all curbs, curbs and gutters, and medians.
2. The granular material shall be compacted to not less than 95 percent of the standard laboratory density.
3. The subbase granular material shall not be placed on a wet subgrade, a subgrade rutted by the Contractor's equipment, or a non-compacted and "Proof rolled" subgrade.
4. The subgrade shall be prepared. Preparation of the subgrade shall not be paid for separately but considered incidental to the Work.
5. It is understood that a certain amount of sub-base granular material may be displaced into the existing soil when the material is placed and compacted, however, any such material will not be measured for payment and the cost thereof considered incidental to the item.
6. The contractor will be required to drain off all rainfall as rapidly as possible and maintain the subgrade in a dry, smooth and compacted condition until the granular material is placed.
7. The Owner's Rep may restrict hauling over the completed or partially completed work after inclement weather or at any time when the earth subgrade is soft and there is a tendency for the earth to work into the granular material.

3.2 Concrete Formwork

A. Work under this item shall be performed in accordance with Section 420 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

1. Design Of Work:
    a. The design and engineering of the formwork, as well as its construction, shall be the responsibility of the Contractor and shall conform to "Recommended Practice for Concrete Formwork", ACI 347.
    b. Forms shall conform to shape, lines and dimensions shown on the Drawings. They shall be designed to safely resist the pressure and weight of the concrete, and shall be properly tied and braced or shored so as to maintain position and shape.
    c. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.
2. Construction Formwork:
    a. General: Construct all required forms to be substantial, sufficiently tight to prevent leakage of mortar, and able to withstand internal pressure when filled with wet concrete.
    b. Layout:
        1. Form all required cast-in-place concrete to the shapes, sizes, lines and dimensions indicated on the Drawings.
        2. Exercise particular care in the layout of forms to avoid necessity for cutting of concrete after forms have been removed.

3. Make proper provision for all openings, offsets, recesses, anchorage, blocking and other features of the Work as shown or required.
4. Carefully examine the Drawings and Specifications and consult with other trades as required, relative to provision for openings, anchor bolts and other items in the forms.

c. Tolerances: Construct all forms straight, true, plumb and square within a tolerance horizontally of 1/8 inch and a tolerance vertically of 1/8 inch.

d. Wetting: Keep forms sufficiently wetted to prevent joints opening up before concrete is placed.

3. Work Prior To Concrete Placement:

a. Form Coatings: Coat form contact surfaces with form-coating compound before reinforcement is placed. Do not allow excess form-coating material to accumulate in the forms or to come into contact with surfaces which will be bonded to fresh concrete. Apply in compliance with manufacturer's instructions. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust stained steel formwork is not acceptable.

b. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is to be placed. Retighten forms immediately after placement as required to eliminate mortar leaks.

c. Edge Forms and Screed Strips: Set edge forms or bulkheads to obtain required elevations and contours in the finished slab surface. Provide and secure units to support types of screeds required.

d. Once forms are set and at least 24 hours prior to the placement of concrete, the Contractor shall notify the Owner’s Rep that the formwork is ready for final inspection.

e. Removal of Formwork: Side forms not supporting vertical loads may be removed after cumulative curing at not less than 50° F for 24 hours after placing concrete, providing the concrete is sufficiently hard not to be damaged by form removal operations and providing that curing and protection operations are maintained.

f. Reuse Forms: Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form-coating compound material to concrete contact surfaces as specified for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces.

3.3 Concrete Placement

A. Work under this item shall be performed in accordance with Section 420 of the "Standard Specification for Road and Bridge Construction”, latest edition, as

adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

1. Pre-placement Inspection: Before placing concrete, inspect and complete the formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other trades to permit the installation of their Work; cooperate with other trades in setting such work as required. Thoroughly wet wood forms immediately before placing concrete, as required where form coatings are not used. Coordinate the installation of joint materials with placement of forms and reinforcing steel.
2. General Requirements: Comply with Section 420 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
3. Temperature Control for Placement: Comply with Article 1020.14 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
4. Concrete Curing and Protection: Concrete curing shall meet the requirements of Article 1020.13 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
5. Concrete Joints: Expansion joints, construction joints, and control joints shall be as shown on the Drawings, and as specified. Additional construction joints shall be subject to approval by the Engineer.
6. Concrete Finishing:
    a. Horizontal concrete surfaces shall be finished as per Article 424.06 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
    b. Vertical concrete surfaces shall be finished smooth and even, and given a light brush finish while the concrete is still workable. The edges shall be rounded with approved finishing tools having the radii shown on the plans.
7. Curb and curb and gutter shall be constructed according to Article 606.06 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
8. Concrete medians shall be constructed according to Article 606.09 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
9. The distance between expansion joints in curb, curb and gutter and median adjacent to flexible pavement shall not exceed 100 feet. Expansion joints shall also be placed at the beginning and end of all short radius curves as directed by the Engineer.

3.4 Reinforcement

A. Work under this item shall be performed in accordance with Section 508 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.

1. The placement of reinforcement shall meet the requirements of Articles 420.09 and 420.10 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
2. The reinforcement bars shall be securely tied to prevent displacement during the concreting operation.
3. All reinforcing bars shall be placed with a tolerance of 1/2" to provide for adequate protective concrete cover, unless stated specifically on the Plans.
4. Coordinate with the Engineer at least 24 hours prior to placement of concrete to arrange for inspection of steel reinforcement.
5. Reinforcement bar supports shall meet the requirements of Article 420.10 of the "Standard Specification for Road and Bridge Construction", latest edition, as adopted by the State of Illinois Department of Transportation (IDOT), except as herein modified.
6. The reinforcement bars, when delivered on the job, shall be stored above the surface of the ground on wooden or padded steel cribbing, and shall be protected from mechanical injury and from deterioration by exposure. When placed in the work, they shall be free from dirt, paint, oil or other foreign substances.
7. All systems for handling epoxy-coated reinforcement bars shall have padded contact areas. The bars or bundles shall not be dropped or dragged.
8. Epoxy-coated reinforcement bars to be cut in the field shall be either sawed or sheared but shall not be frame cut. Patching of the bars cuts shall be in accordance with ASTM specifications. Placing and securing of the reinforcement bars shall be in accordance with Article 508.05. All tie wire shall be epoxy coated.

4.0 PAYMENT

4.1 Payment

A. Payment shall be per lineal foot as shown in the Schedule of Prices.

END OF SECTION

SECTION 32 1313
CONCRETE PAVING - Fiber

1.0 GENERAL

1.1 Description

A. This work shall consist of all labor, equipment and materials necessary for complete installation of concrete work: slabs, paving, curbs, walls, footings, and concrete work as called for in the plans and details.

B. All work, which is without a specification herein, shall be performed in accordance with the Standard Specifications for Road and Bridge Construction, latest edition adopted by the Illinois Department of Transportation.

1.2 Submittals

A. Mix Design: Submit proposed mix design for approval.

B. One copy of the delivery ticket shall be furnished to the Owner's Representative at the time the truck arrives at the job site.

2.0 MATERIALS

2.1 Crushed Aggregate Base

A. CA-6 crushed aggregate, Type B, shall be placed, to a compacted depth as indicated on plans, as a base course. The aggregate shall be thoroughly dry, unyielding and free of screening and dirt before proceeding with priming and paving, in accordance with material and placement standards of IDOT State Specifications.

2.2 Concrete Materials

A. The concrete shall be constructed of Portland Cement Concrete Type A, which shall have a minimum of six (6) bags of type one cement per cubic yard. Concrete shall meet ASTM C94.

B. The coarse aggregate used shall contain a maximum of 2%, by volume, deleterious material (commonly called chert free aggregate) and the maximum size of the stone shall be three-quarter inch (3/4").

C. Air content shall be not less than 5%, or more than 8%, and the slump shall not exceed four inches (4"). Fourteen (14) day compressive strength tests resulting in less than 3500 p.s.i. shall be cause for removal and replacement at Contractor's cost. Portland Cement shall conform to the requirements of the current ASTM Specifications for Air-Entraining Portland Cement.

2.3 Metal Reinforcing

A. Metal shall be fabricated conforming to the most current standard of ASTM A616, Deformed Billet-Steel Bars for Concrete Reinforcement of the grades indicated on the drawings. Welded wire mesh or fabric shall conform to Specifications for Welded Steel Wire Fabric for Concrete Reinforcement ASTM 185-current year.

2.4 Fiber Reinforcing

A. Fiber reinforcing material to be SINTA F19 or approved equal, manufactured from 100% virgin polypropylene in a microfilament form and contain over 50 million individual fibers for each 1.0 lb/yd3 dosed. Product shall be engineered specifically for use in concrete, alkali resistant, non-absorptive and completely non-corrosive. Product shall comply with ASTM Designation C 1116 Standard

Specification for Fiber-Reinforced Concrete and Shotcrete, Type III Synthetic Fiber-Reinforced Concrete or Shotcrete.

B. Fibers shall be 20 mm (3⁄4 in.) multifilament polypropylene fibers as supplied by GCP Applied Technologies, Cambridge, MA 02140, or approved equal. Required dosage rate shall be as specified by the design engineer or architect. Product shall be used in strict accordance with the supplier's recommendations and within time as specified in ASTM C94. The fibers shall comply with ASTM Designation C1116 Type III 4.1.3 and with applicable building codes. Certification of compliance shall be made available on request. Standard ACI 302 procedures for placing, finishing and curing shall be followed when using SINTA F19

2.5 Additives

A. Additives that have not been aforementioned within this specification shall not be used in any concrete without written approval from the Owner or Owner's Representative.

2.6 Forms

A. Forms shall be of lumber with a minimum two-inch (2") nominal thickness and six-inch (6") nominal width or steel with equal rigidity. They shall be held securely in place by stakes, braces, or other means and shall not allow concrete leakage. Forms for curves shall be flexible or shall be curved forms conforming to radius of curves shown on drawings. The use of straight sections will not be permitted for curves. Forms shall be clean and those for surfaces to be exposed shall produce a smooth, even finish without fins or board marks.

2.7 Expansion Joint Material

A. Expansion joint material shall meet the Illinois Department of Transportation Standard for Road and Bridge Construction, latest edition, Section 1051.00 Preformed Expansion Joint Fillers. Approved filler shall be as described in Section 1051.03 Bituminous Preformed Joint Filler and 1051.04 Preformed Fiber Joint Filler and 1051.05 Bituminous Preformed Inorganic Fiber Joint Filler and 1051.08 Preformed Closed Cell Plastic Joint Filler. All applicable sections shall apply for the above approved items.

3.0 EXECUTION

3.1 Concrete Mixing

A. Concrete shall be mixed only as required for immediate use and any which has developed initial set shall not be used. Concrete, which has partially hardened, shall not be re-tempered or re-mixed. The use of a fractional sack of cement will not be permitted unless the fractional part is measured by weight. The mixer shall be cleaned thoroughly each time when out of operation for more than thirty minutes.

B. Concrete mixes will be measured as described in the current Method Test for Consistency of Portland Cement Concrete of the ASTM Designation C-143. The concrete shall at times be of such consistency and workability, that it will puddle readily into corners and angles of the forms and around joint, dowels, tie bars and reinforcement without excessive spading, segregation or undue accumulation of water.

C. The mixing of concrete in truck mixers in route from the batching plant to the site will not be allowed without prior approval. Mixing shall take place at the

batching plant. The mixing shall be done on a level area, sloping not more than two percent in any direction.

D. The concrete shall be discharged within a period of one hour after the introduction of the mixing water with the dry materials or within a period of 1-1/2 hours after the cement has been placed in contact with the aggregates. It shall be within the specified limits for consistency and air content and it shall not be segregated.

3.2 Sub-grade

A. Sub-grade or base shall be accurately graded and compacted as specified in Section 31 2000, EARTHWORK. The sub-grade or base shall be moistened just before the concrete is placed.

3.3 Forms

A. The forms shall be set so that concrete slabs will have a slope of not less than one-quarter inch (1/4") per foot. Forms shall be held in line and grade by stake or braces at intervals to produce layout as specified in plans. Straight lines shall change to curve where line is tangent to curve. Forms shall be constructed in a manner that will permit their removal from exposed areas without damage to fresh concrete. Forms shall be of the full depth of the structure. Provide uniform bearing for all forms. The inside surface of the forms shall be oiled with a light, clear paraffin-base oil which will not discolor or otherwise injuriously affect the concrete as on walls or other exposed surfaces. All forming shall be approved by Owner or Owner's Representative before pouring concrete.

3.4 Reinforcement

A. All steel reinforcement shall be accurately placed in position shown on plans and firmly held during the placing of concrete. When placed in the work, steel shall be free from dirt, rust, mill scale, paint, oil or other foreign material. Bars shall be placed with a variation in spacing between adjacent bars of not more than one-sixth of the spacing shown on the plans, and the clear distance from the near surface of the concrete and the reinforcement shall not vary from the distance shown on the plans by more than one-fourth the plan distance. Bars shall be tied at all intersections except where the spacing is less than one foot in each direction in which case every other intersection shall be tied. Supports for reinforcement which are to remain in the work shall be either precast concrete blocks of approved shape and dimensions or approved preformed steel bar-chairs.

B. Bars shall not be spliced except as provided on the plans or as authorized by the Owner or Owner's Representative.

C. SINTA™ F19 fiber may be added to concrete at any point during the batching or mixing process. SINTA™ F19 may be added to the aggregate during weighing or charging, or to the central mixer or truck before, during, or after charging. The load must be mixed at high speed for 5 minutes, or 70 revolutions, after the addition of the SINTA™ F19 to ensure uniform distribution. The standard range of addition for SINTA™ F19 is ¾ to 3 lbs/yd (450 to 1800 g/m) of concrete. Typically, 1½ lbs/yd (900 g/m) of SINTA™ F19 provides excellent results. Higher addition rates may be used to produce concrete when special properties are required.

3.5 Placing Concrete

A. Placing concrete shall not be permitted until the sub-grade and forms have been approved by the Owner or Owner's Representative. The concrete shall be placed in one pour for the full depth of stated structure unless otherwise approved by the Owner or Owner's Representative. The concrete shall be placed in successive batches for the entire width of structure. It shall be struck off from 1/2" to 3/4" higher than the finished grade, tamped until all voids are removed and free mortar appears on the surface. Finally, it shall be thoroughly spaded along the edges, struck off to the proper grade, and finished to a plane, even surface with floats and trowels. The final troweling shall be done with steel trowel, leaving a smooth even surface.

3.6 Finishing

A. After the water sheen has disappeared, the surface shall be given a final finish by brushing with a whitewash brush. The brush shall be drawn across the sidewalk or structure at right angles to the edges of the walk or structure, with adjacent strokes slightly overlapping, producing a uniform, slightly roughened surface with parallel brush marks. Brush marks should be of a depth to produce a light broom finish.

B. Edges on all concrete shall be rounded to a radius of one-quarter inch (1/4") with a finishing tool unless otherwise specified. All joints shall be rounded with a double edging tool having a radius of one-quarter inch (1/4") on each side and the surface shall then be brushed lightly to produce a slightly roughened surface and remove the finishing tool marks.

C. The surface shall be divided by grooves called contraction joints constructed at right angles to the centerline of the sidewalk or structure. These joints shall extend to one-quarter inch (1/4") the depth of the sidewalk, shall be not less than one-eighth inch (1/8") and no more than one-quarter inch (1/4") in width, and shall be edged with a jointing or edging tool having one-quarter inch (1/4") radius. The joints shall be five feet (5’) apart on sidewalks and ten feet apart on curbs unless otherwise specified.

D. Expansion joints shall be placed between all separate pours, all structures and at thirty foot intervals on both sidewalks and curbs.

3.7 Sandblast Finish

A. Specified sandblast surfaces to be finished with silica sand suitable for intended purpose at least twelve (12) days after the concrete has been poured. Sandblast depth per plans, exposing the aggregate but not so deep as to drive the aggregate out of the wall or create voids in the surface. Create uniform pattern and exposure while avoiding over-blasting. Seal all surfaces with two (2) coats approved clear sealer after concrete has fully cured and dried.

B. Sandblast sample shall be created by the Contractor for approval by Owner’s Representative before work commences.

3.8 Protection

A. Protection of Concrete shall be performed in following manner:

1. Protection Against Vandalism: The Contractor shall take all necessary precautions to ensure the protection of work against vandalism or graffiti. Any work, which is blemished in the finish, will be cause for rejection of flat work or curbing.
2. Protection Against Rain: The Contractor shall take such precautions as are necessary to protect the concrete from damage.

3. Hot Weather Limitations - Casting of concrete during hot weather shall be limited by the temperature at the time of placing. Concrete shall not be cast when the temperature is above 90° F. Care shall be taken to properly wet and protect all concrete placed indirect sun or in hot weather.
4. Cold Weather Limitations - No concrete shall be placed unless the temperature of the air in the shade and away from artificial heat is at least 32° F and rising unless specifically approved. All concrete poured at less than 40° F, or at a time when within 24 hours of pouring concrete the temperature shall dip below 40° F shall be insulated. The Contractor shall be responsible for the concrete placed during cold weather and any concrete injured by frost action shall be removed and replaced at Contractors expense.

3.9 Curing

A. Forms shall be left in place for a period of not less than 12 hours. Immediately after they have been removed, all porous or honeycomb areas thus uncovered shall be filled smooth with mortar consisting of one part cement and two parts fine aggregate. Also, the ends of all expansion joints shall be cut open to the full width of the expansion joint material.
B. Placing concrete, once started, shall be a continuous operation. No portion of a walk, curb or paved area shall be partially poured except as shown for installation of joints.

3.10 Footings

A. Concrete footings shall be sloped at the top to ensure drainage away from the embedded item (post or otherwise). All footings shall be constructed as indicated on the detail drawings. All footings unspecified on drawings shall be according to the manufacturer's specifications of the product to be footed, but depth of all footings shall be a minimum of 42” below finished grade.

END OF SECTION

SECTION 32 1816
SAFETY SURFACES - ENGINEERED WOOD FIBER

1.0 GENERAL

1.1 Description

Safety surfacing consists of providing all material and labor necessary for complete installation of engineered wood fiber (EWF) safety surfacing in playground areas.

All materials and installation shall conform to ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment. All materials shall have been tested according to the ASTM F1292 specifications and shall meet or exceed all requirements for height of equipment installed or height of existing equipment that is specified to remain. Testing shall have been completed within 5 years of installation.

All materials shall meet ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment. All materials shall have been tested according to the ASTM F1951 specifications and shall meet or exceed all requirements. Testing shall have been completed within 5 years of installation.

All materials shall meet ASTM F2075 Standard Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment.

1.2 Submittals

A. A sample of EWF surface shall be submitted to the Owner/Owner's Representative for approval.
B. A copy of the most current test results, from an independent testing laboratory, for the EWF documenting that it meets all related ASTM standards as called for above. **These items shall be approved prior to ordering or delivery to the site.**
C. A delivery ticket for material shall be made available upon request.

2.0 MATERIALS

2.1 Engineered Wood Fiber

1. Shredded wood fiber shall be made from only hardwoods, and be free of bark, leaves, twigs, and all debris.
2. Sizing shall comply with ASTM F2075 sieve size requirements with no more than 15% fines to aid compaction.
3. No chemical treatment or additives are allowed. This material shall meet the ASTM specifications listed in section 1.1.

2.3 Filter Fabric

Filter fabric shall be Typar Filter Fabric by Dupont or Geo-Textile fabric by Geo-Synthetics or approved equal.

3.0 EXECUTION

3.1 Subgrade

Surfacing shall be built on a prepared sub-grade as per appropriate detail on plans. All stones, rocks, pieces of concrete, roots or any other debris shall be removed. The prepared sub-grade shall be clear, level and compacted. Any stumps or roots shall be removed to eighteen inches (18”) below finished grade.

3.2 Filter Fabric

Filter fabric shall cover 100% of sub-grade for engineered wood fiber surfacing and sand surfacing sub-grade. At filter fabric seams, a six-inch (6”) overlap with pinning shall be installed.

3.3 Engineered Wood Fiber

Install surfacing in four-inch (4”) layers over filter fabric. Compact each layer using a 3-ton eccentric hand-operated vibrator roller, a 2-1/2 ton plate compactor or equal. The material shall be compacted approximately 30%. Add successive four inch (4”) lifts and repeat process until material is installed to specified depth. Prior to the final compacting, surface shall be level.

END OF SECTION

SECTION 32 3113
CHAIN LINK FENCE

1.0 GENERAL

1.1 Description

A. Fence and gate installation shall consist of furnishing all labor materials, tools and equipment necessary to install fences and gates: fence sections, posts, fasteners, footings, and as called for in the plans and details.

1.2 Product Handling and Storage

A. Contractor shall order and take delivery of all products and materials. Upon receipt, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism, and theft.

1.3 Incorporated Specifications

A. All work shall also conform to the American with Disabilities Act standards as indicated in the plans and specifications. All work not conforming to said standards shall be removed and reinstalled at the contractor's expense.

B. Standard of manufacture: comply with the most current version of the Chain Link Fence Manufacturer's Institute Product Manual.

2.0 MATERIALS

2.1 Scope

A. This specification covers poly vinyl chloride (PVC) coated chain link fence materials, including chain link fabric, framework, fittings and components. For all components listed, the specification shall be the same for PVC coated chain link. PVC shall be finished in solid black color coating.

2.2 Fabric

A. Chain Link -Use chain link fabric as noted on the plans to obtain the required height requirement indicated on drawings. Chain link fabric mesh size and gauge shall be as noted on the plans. Fabric shall be knuckled at both selvages. Furnish one piece fabric width for fencing up to 12' high. Fencing of 20' height shall be two pieces.

B. PVC Coating over galvanized steel or aluminum wire: ASTM F668, the wire gauge specified for PVC coated wire is that of the metallic coated steel core wire.

1. Class 2B extruded and fused
2. Color: Black shall be in compliance with ASTM F934
3. Wire to have 75,000 psi (517 MPa) tensile strength.

2.3 Framework

A. All line posts, terminal posts, top rails and intermediate rails, bottom rails, accessories and fittings shall be PVC coated as per plan and bid item.

2.4 Line Posts

A. Shall be the following:

1. 2-1/2" O.D. Schedule 40, ASTM A-1083, 3.65 pound/ L.F.

2.5 Gate Posts/Terminal Posts

A. Gate and Terminal posts shall be 3" O.D. Schedule 40 ASTM A-1083 3.65 pound/LF or approved equal.

2.6 Top, Intermediate, and Bottom Rails

A. Rails shall be fabricated from lengths 21 feet or longer to use the longest lengths available, with expansion type couplings, approximately 6" long for each joint. Provide means for attachment:

1. 1-5/8" O.D. Schedule 40, ASTM A-1043, 2.27 pounds/L.F.

2.7 Fabric Ties

A. Fabric ties used to secure fabric to framework shall be 9-gauge extruded aluminum. If Fabric is PVC coated the ties shall be PVC coated per ASTM F668.

2.8 Hog Rings, Bolts, and Nuts

A. The above components shall be PVC coated per specification and as noted on the plans.

2.9 Post Brace Assembly

A. Provide per plan, an adjustable tension rod brace at gate posts and at both sides of corner and pull posts. Tension rod shall be min. 3/8" (0.375") diameter rod with an adjustable tightener.

B. Provide per plan, a horizontal brace rail located at mid-height of the fabric. Use the same material as top rail.

2.10 Caps, Bands, and Connectors

A. All caps, bands and connectors shall be made of galvanized pressed or cast steel, or aluminum alloy. If aluminum or PVC coated the coating shall be bonded and applied as stated in 2.3. Provide a weather tight closure cap designed to receive top rail.

2.11 Stretcher (Tension) Bars

A. One-piece lengths 2 inches less than the full height of fabric with a minimum cross section of 3/16" x ¾". Provide one stretcher bar for each end post, and 2 for each corner and pull post, except where fabric is integrally woven into post.

2.12 Gates

A. Fabricate perimeter frames of gates from metal and finish to match fence framework. Assemble gate frames by welding. Provide security against removal or breakage connections. Paint or coat welds to match fence fabric.

B. Install horizontal and vertical members to ensure proper gate operation and attachment of fabric, hardware and accessories.

C. Provide same fabric as fence. Install fabric with Stretcher (Tension) bars at vertical edges and at top and bottom edges as indicated on the plans. Attach tension bands to gate frame at not more than 12" on center.

D. Swing gates: fabricate perimeter frames of minimum 1 7/8" O.D., SS 40 PVC coated pipe frame, braced with 1-5/8" O.D. SS 20 PVC coated pipe. trussed with 3/8" PVC coated rod with tension adjusting device, welded construction, filled with fabric to match fence.

E. Swing gate hardware: provide hardware PVC coated; ASTM F934 as follows:

1. Hinges: size and material to suit gate size, non-lift—off-type, offset to permit 180 degrees gate opening. Provide three (3) hinges for each leaf over six (6) feet nominal height.
2. If for standard chain link fence gate installation: Accessible latch: Forked type or plunger-bar type to permit operation from either side of gate, with padlock eye as integral part of latch. Keeper: Provide keeper which automatically engages gate leaf and holds it in open position until manually released. Double gates: Include locking device and padlock eyes as integral part of latch, permitting both gate leaves to be locked with single padlock.

2.13 Concrete Footings

A. Concrete shall conform to the standard ASTM- C-94, 3500 p.s.i. at 28 days.

3.0 PART 3.0 - EXECUTION

3.1 General

A. Installation shall conform to ASTM F-567 and as described in these specifications. Installation shall be made in a workmanlike manner by skilled mechanics, experienced in erection of this type of fence. The fence shall be erected on lines and to grades as provided by plans and approved by the Owners Representative. Do not begin installation and erection before final grading is completed.

3.2 Posts

A. All posts shall be set in concrete footings in the ground. The diameter of the footings shall be a minimum of twelve inches (12") for line posts and a minimum of eighteen inches (18") for gate and corner posts. All footings shall slope away from the posts to assure proper drainage. Posts shall be set in footings to depth of 42" below finished grades in undisturbed or compacted soil.

B. Excavation for footing holes shall be drilled or hand excavated with a post hole digger. Place post centered in hole and place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment and hold in position during finishing operations. Allow concrete to cure at least 75% of its maximum 28-day compressive strength but in no case sooner that three days after placement before rails, tension wires, and fabric is installed. Do not stretch tension fabric and wires.

3.3 Top/Intermediate and Bottom Rails

A. Top rails shall be run continuously through posts caps, bending to radius for curved runs. Provide expansion couplings as recommended by fencing manufacturer.

B. Intermediate rails shall be installed on all fencing 10' tall or greater continuous except at gate openings. On all 8' tall or greater fencing bottom rails shall be continuous except at gate openings. Intermediate rail shall be installed at Terminal Posts.

3.4 Brace Assemblies

A. Install brace assemblies so posts are plumb when diagonal rod is under proper tension.

3.5 Fabric Connections

A. The fabric shall be stretched to proper tension between terminal posts and securely fastened to framework members as covered in the material specifications. The bottom of the fabric shall be held as uniformly as is practical, one-half to three-quarter inches (1/2" – ¾") above finished grade.

B. The chain link fabric shall be securely fastened to all terminal posts using Three sixteenths inch by three-quarter inch (3/16" – ¾") tension bars with heavy 11-gauage 1" wide pressed steel banks spaced approximately Twelve inches (12") apart. Bands to be equipped with three-eighths inch (3/8") diameter carriage bolts and nuts. The fabric to be fastened to all line posts with heavy 6-guage tie wires approximately twelve inches (12") apart and to the top rail with 9-guage tie wires on approximately twenty-four-inch (24") centers.

C. Install fabric on security side or field side of fence, and anchor to framework so that fabric remains in tension after pulling force is released.

3.6 Stretcher (Tension) Bars

A. Thread through stretcher bars to fabric four inches (4”) on center and secure to posts with metal bands spaced twelve inches (12”) on center.

3.7 Spacing of Posts

A. Maximum spacing between fence posts shall be 8’-0” set posts at a uniform interval.

3.8 Gates

A. Shall be of widths as indicated on the drawings and be full height panels with manufacturer’s standard bracing system.
B. Center hold down socket shall be fitted with concrete collar lift rod and padlocking device.
C. All fittings, framework and fabric to be galvanized or aluminum coated except where PVC coated fencing is indicated.
D. Install gates plumb, level and secure for full opening without interference.
E. Install ground set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.9 Tie Wires

A. Use U-shaped wire, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least 2 full turns. Bend ends of wire to minimize hazard to persons or clothing.
B. Tie fabric to line posts, with wire ties spaced 12” o.c. Tie fabric to rails and bracers with wire ties spaced 24” o.c., Tie fabric to tension wires, with hog rings spaced 24” o.c.

3.10 Fasteners

A. Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.11 Cleaning

A. The contractor shall clean the job site of excess materials: top soil from post hole excavations may be scattered uniformly away from posts, unsuitable material including rocks and clay shall be removed from the site by the Contractor.

3.12 Protection of Work

A. It is the Contractors responsibility to protect fence work from vandalism, defacement, and weather. Any work damaged will not be accepted and shall be removed and replaced at the Contractor’s expense.

3.13 Restoration

A. The contractor shall be responsible for the restoration of adjacent turf or planting areas disturbed or damaged through the fulfillment of this contract. Disturbed areas shall be restored by the placement of pulverized topsoil raked smooth and level with the finished pavement surface or adjacent lawn area, free of any stones or debris, seeded with a grass seed mixture approved by the Owner’s Representative. Contractor shall ensure no concrete debris or remnants from concrete trucks remain on site.

END OF SECTION

SECTION 32 3119
ORNAMENTAL METAL FENCES AND GATES - Aluminum

1.0 GENERAL

1.1 Description

A. Fence installation shall consist of furnishing all labor materials, tools and equipment necessary to install fences: fence sections, posts, fasteners, footings, as called for in the plans and details.

B. The basis of design is the Ameristar Montage Plus system or an approved equal.

1.2 Product Handling and Storage

A. Contractor shall order and/or have fabricated and take delivery of all products and materials. Upon receipt, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism, and theft.

1.3 Incorporated Specifications

A. All work shall also conform to the American with Disabilities Act standards as indicated in the plans and specifications. All work not conforming to said standards shall be removed and reinstalled at the contractor's expense.

B. Section 31 2000 – Earthwork

C. Section 32 1313 - Concrete

1.4 Submittals

A. Provide manufacturer's literature, specification sheets and shop drawings of proposed fence, gates, latch systems, posts, etc., as called for in the plans, for approval by Owner/Owner's representative

2.0 MATERIALS

2.1 Materials

A. The specified or approved fence manufacturer shall supply a total ornamental metal fencing system including all components required.

1. The aluminum material for the fence panels and posts shall conform to the requirements of ASTM B221
2. All fence material shall have a yield strength of 45,000 psi.
3. All fence material shall have a minimum zinc (hot-dip galvanized) coating weight of 0.60 oz/sq.ft., and have a coating designation of G-60.

B. The material for the pickets shall be .75 square and .045" wall thickness, rails shall be 1.5" x 1.4375" x 14 gauge, and posts shall be 2 ½" dia. X 16 gauge

C. All materials shall meet the vertical and horizontal load and infill requirements of ASTM F2408.

2.2 Finish

A. The fence system shall be coated using an inline electrode position coating (E-coating) process consisting of a multistage pretreatment/wash and a duplex application of epoxy primer and acrylic topcoat. The minimum cumulative coating thickness of epoxy and acrylic topcoat shall be 2 mils.

B. Finish shall be black

C. The fence system coating shall be capable of meeting the performance requirements described in the following table.

Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 1,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822 D2244, D523 (60˚ Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

2.3 Gates

A. Gates shall be fabricated by the same manufacturer as the fence in the same color, style and finish.

B. As noted on the plans and details the gate shall be furnished with a keyed panic bar latch system; 40xW series, as manufactured by Detex Corporation, or approved equal.

3.0 EXECUTION

3.1 Preparation

A. Fence installation shall be laid out by the contractor in accordance with the construction plans. Layout shall be approved by the Owner's Representative prior to beginning installation.

3.2 Installation

A. If ground mounted, the footings shall be dug to full depth and posts placed in the center of each footing. Each fence posts shall be installed in a concrete footing 42" deep and 12" diameter. Each gate post shall be installed in a concrete footing 42" deep and 18" diameter. Fence posts, panels and gates shall be installed according to manufactures specifications. Panels shall be attached to posts using fasteners supplied by the manufacturer.

B. If surface mounted, the installer shall follow the mounting detail as shown on the construction detail sheet of the plan set.

3.3 Cleaning

A. The contractor shall clean the job site of excess materials: post hole excavations shall be scattered uniformly away from posts.

3.4 Protection of Work

A. It is the Contractors responsibility to protect fence work from vandalism, defacement, and weather. Any work damaged will not be excepted and shall be removed and replaced at the Contractor's expense.

3.5 Restoration

A. The contractor shall be responsible for the restoration of adjacent turf or planting areas disturbed or damaged through the fulfillment of this contract. Disturbed areas shall be restored by the placement of pulverized topsoil raked smooth and level with the finished pavement surface or adjacent lawn area, free of any stones or debris, seeded with a grass seed mixture approved by the Owner's Representative. Contractor shall ensure no concrete debris or remnants from concrete trucks remain on site.

END OF SECTION

SECTION 32 9219
LAWN SEEDING

1.0 GENERAL

1.1 Description

A. This work consists of complete construction of lawn areas including: finish grading, tilling, cleaning seed bed, seeding, blanket, fertilizing, weed control, and mowing.

1.2 Submittals

A. Grower and/or supplier's product data sheet showing the percentages and most current grass seed varieties being used in the specified seed mix for Owner/Owner's Rep approval.

B. One seed tag for each seed type used on the site shall be saved and delivered to the Owner.

2.0 MATERIALS

2.1 Seed

A. Seed shall be delivered to the site in the original sacks as received from the producer, and each sack shall be tagged in accordance with the agricultural seed laws of the United States and the State of Illinois. Each sack shall be tagged showing the dealer's guarantee as to the year grown, percentage of purity, percentage of germination and the date of the test by which the percentages of purity and germination were determined. All seed sown shall have a date of test within six (6) months of the date of sowing.

B. Any seed delivered prior to use shall be stored in such a manner that it will be protected from damage by heat, moisture, rodents, or other causes.

C. **Lawn areas to be renovated** shall be seeded with a uniform seed mixture consisting of 50% Perennial Ryegrass using 25% each of two different varieties and 50% Bluegrass using 25% each of two different varieties. Approved seed mix for areas to be renovated or an approved equal:

Field of Dream Reseeder Mixture by ConServ FS

2.2 Blanket

A. Blanket shall be excelsior for slopes greater than 1:4 and straw based on slopes less than 1:4. Both shall be woven so as to prevent flyaway of fibers. Blanket shall be of consistent thickness, with fibers evenly distributed throughout the entire area of the blanket. The top and bottom of each blanket shall be covered with photodegradable or biodegradable netting. Material shall not contain any weed seed or chemical additives. Blanket stakes shall be bio-degradable (not metal).

2.3 Fertilizer

A. Fertilizer shall be Nitrogen, Phosphorous and Potassium in the following mixes:

1. New Seeding Areas: 13-25-12 with 30% of nitrogen in slow release formula
2. Over-seed Areas: 22-3-11 with 50% of nitrogen in slow release formula

3.0 EXECUTION

3.1 Seeding Operations

A. Remove all debris, including large stones, roots and construction materials. Fill all depressions in lawn area with topsoil prior to top dressing operations. No debris may be buried in pits on the site.
B. Topsoil shall be applied at 6" depth. Topsoil may be blended with sand up to a ratio of 3 parts topsoil to 1 part sand to facilitate application. Contractor shall till; fine grade; remove all clumps, clay, sod clods, and undesirable materials. Seed bed shall be approved by Owner's representative before seeding.
C. Seed shall be applied at the rates listed below for a dense stand with a Brillion, slit seeder, or other mechanical seeder. For new seeded areas, the entire seed bed area shall be covered with bio-degradable blanket. All seed areas must be completely and uniformly covered. Re-seed areas shall have no blanket applied.

3.2 Seeding Rates

A. Seed shall be applied at the following rates - except if dormant seeding is completed in late fall, then rates to be doubled:

Seed	Rate per 1000 square feet
Field of Dreams Athletic Mix	4.5 pounds
Field of Dreams Reseeder Mix (over seed in Spring)	2.5 pounds

3.3 Fertilizing

A. NEW SEEDING AREAS: 1.5 pounds of nitrogen fertilizer shall be applied per 1,000 square feet of turf shall be applied at time of initial seeding. See 2.3 for fertilizer mix. It shall be applied evenly over the planting area.
B. RESEEDED AREAS: 0.75 pounds of nitrogen per 1,000 square feet shall be applied at time of overseeding, unless another amount is specified on plan. See 2.3 for fertilizer mix.

3.4 Repairs

A. The Contractor shall be responsible for the repair of any damage to existing lawns, which may result from his work, and such repairs shall be made swiftly in a thorough and workmanlike manner, with minimum inconvenience to the Owner and users of the site. Where lawn areas have been disturbed or damaged, the damaged lawn areas, ruts and depressions shall be cultivated, filled with topsoil, settled to proper grades and seeded. Repairs shall be made to the satisfaction of the Owner or Owner's representative.

3.5 Maintenance

A. It is the responsibility of the Contractor to maintain all seeded lawn areas; this may include cultivation, reseeding, fertilizing, watering, mowing, and the control of weeds until final acceptance has been granted. The Contractor shall mow the grass to a three -inch (3") height if it reaches a four-inch (4") height any time prior to final acceptance. The Owner's representative shall inspect the conditions of the stand to determine satisfaction or the need to improve the stand. Satisfaction is based on 95% coverage over the entire new seeding area and over-seed areas. Maintenance shall continue by the Contractor until acceptance has been granted.

3.6 Watering

A. Watering must be started immediately after the seed is installed. Watering should begin as soon as an area large enough to put down a sprinkler is ready.

B. Thoroughly soak the seed and the soil under the seed. It should be moist at least 2 inches deep. Corners shall be noted and may need to be hand watered to ensure full coverage.
C. After the first watering, water enough to keep the soil under the seed moist, but not muddy. In cool weather this may mean watering only every 3 or 4 days. In very hot weather, you may have to water daily. **Do not allow the seed or soil underneath to dry out between watering**.
D. In about two weeks the seed should have begun to knit to the soil underneath and the watering can be lessened to once or twice per week depending on the weather conditions.
E. If an irrigation system is in place, it is the responsibility of the Contractor to ensure that the system is working and is covering all new seed areas. This responsibility continues until the site is turned over to the owner.
F. Watering shall continue and be maintained by the contractor for at least 30 days beyond substantial completion. It is the contractor's responsibility to meet lawn establishment requirements – additional watering by contractor may be needed.

END OF SECTION

SECTION 32 9220
NATIVE PERMANENT SEEDING

1.1 GENERAL

1.1 Description

A. This work consists of complete construction of native seed areas including: removal of existing lawn areas, cleaning seed bed, seeding, fertilizing, erosion control blanket, straw blanket, weed control, and maintenance.

1.2 Schedule:

1. Permanent seed installation shall be performed immediately in areas where all work is complete. Seeding shall take place before June 10th or after October 15th.
2. Cover crop seed may be installed after these dates but must be mowed and bailed and reseeded with permanent matrix during approved time frame. Approval from the owner must be received before planting is started.
3. First Mowing: at 12" height of plants in planted area.

1.3 Submittals

A. Seed mix proof of origin

B. Seed bed preparation material method in writing to the Owner's Representative a minimum one week prior to commencement for approval.

2.1 MATERIALS

2.1 Seed

A. All seed shall be healthy, and true to species and variety. All materials shall be provided by a certified nursery and shall be free of pests and disease.

B. Seed shall be delivered to the site in the original sacks as received from the producer, and each sack shall be tagged in accordance with the agricultural seed laws of the United States and the State of Illinois. Each sack shall be tagged showing the dealer's guarantee as to the year grown, percentage of purity, percentage of germination and the date of the test by which the percentages of purity and germination were determined.

C. Any seed delivered prior to use shall be stored in such a manner that it will be protected from damage by heat, moisture, rodents, or other causes.

D. The seed mixes shall be supplied in pounds of Pure Live Seed (PLS) for grass species. Native grass and forb seed species will be local genotype and will be from a radius of 150 miles from the site.

E. Proof of origin shall be presented to the Owner's Representative at the site prior to any plant installation. Seed will be specified as 'weed free' according to the association of Official Seed Analysis: Rules for Testing Seeds, Journal of Seed Technology, 1991.

F. The Seed Mixes shall consist of the species shown on the plans. The seeding mixtures shall be installed in locations designated on the plan and as directed by the owner's representative.

2.2 Equipment

A. All equipment shall meet the requirements of the following Articles of Section 1100 – Equipment of Illinois Roads and Bridges Specifications, most recent edition.

1. Section 1101.08(c) - Hydraulic Seeder
2. Section 1101.08(e) - Broadcast Seeder
3. Section 1101.08(g) - Rangeland Type Drill Seeder

2.3 Straw blanket.

A. Seed areas shall require straw blanket (except on side slopes which will have erosion control blanket). Straw blanket shall be net free within 12 months and shall be 99% weed-free (No plastic netting in blanket).

2.4 Fertilizer

A. No fertilizer required.

3.1 EXECUTION

3.1 Bed Preparation

A. Preparation shall include application of herbicide applied by a licensed herbicide applicator to effectively control weed species without damaging desirable vegetation. The seed bed shall be free of weeds, and seeding shall occur no less than 14 days after herbicide application.

B. For bare earth seeding, CONTRACTOR shall remove clumps, stones, roots, and sticks prior to seedbed preparation activities. CONTRACTOR shall prepare the seedbed with a disk or unique rake (harrow) to reduce clod size to a maximum diameter of 1-inches and eliminate rivulets, gullies, crusting, and caking. The disk shall be in good condition with sound, unbroken blades and weighted as necessary to achieve a minimum 3-inch tillage depth.

1. Following disking of all bare earth seeding areas, CONTRACTOR shall prepare the seedbed further with a unique rake or harrow to reduce clod size and create a smooth and level seedbed.
2. Working wet soils shall not be conducted. Following these seedbed preparation activities, the ground surface shall have minimum compaction, be smooth and level, and be free of debris to promote good seed-soil contact.

3.2 Seeding Conditions

A. Contractor shall examine the grade, verify the elevations and water levels, observe the conditions under which work is to be performed, and notify the Owner's representative of unsatisfactory conditions. Proceeding with the work constitutes acceptance of existing conditions, including current water levels and soil condition.

B. Seeds shall not be sown until the seedbed has been approved by the Owner's representative.

C. The Owner's representative shall be on site during seeding. The Contractor must notify the Owner's representative 48 hours in advance of seed installation.

3.3 Seeding Methods

A. No seed shall be sown during high winds, rain events, or when the ground is not in a proper condition for seeding, nor shall seed be sown until the purity test has been completed for the seeds to be used, and shows that the seed meets the noxious weed seed requirements.

B. For the native seeding areas, it is anticipated that seed will be broadcast on the surface using an ATV or by hand due to the limited size and accessibility. Following seeding, the surface will be raked by hand to incorporate the seed into the soil.

3.4 Species substitutions

A. Prior to installation, the Owner's representative shall review any species substitutions and reserves the authority to deny use of any species if deemed inappropriate for the site. Any species substitutions and/or change in quantity shall be discussed and approved by Owner's representative during the pre-planting site meetings as specified below. CONTRACTOR shall plan on attending one (1) on-site pre-planting meetings in early spring (anticipated to be in April and/or early May) to evaluate hydrologic conditions and discuss overall plant installation approach. At the pre-planting meeting, CONTRACTOR shall provide a plant installation work plan that documents the anticipated plant installation logistics, plant installation schedule (plant delivery schedule) and any proposed changes to plant species and/or quantities as a result of observed site conditions.

3.5 Notification and documentation

A. The contractor shall notify Owner's representative at least two working days prior to seed installation and indicate the seed installation method to be used. After completion of seeding, CONTRACTOR shall provide the Owner's representative with copies of all seed receipts and labels, notated with the date of seed installation, seed origin, % PLS, and conditions under which the seeding was performed.

3.6 Repairs

A. The Contractor shall be responsible for the repair of any damage to existing lawns and natural areas, which may result from his/her work, and such repairs shall be made swiftly in a thorough and workmanlike manner, with minimum inconvenience to the Owner and users of the site. Where areas have been disturbed or damaged, the damaged areas, ruts and depressions shall be cultivated, filled with topsoil, settled to proper grades and seeded. Repairs shall be made to the satisfaction of the Owner or Owner's representative.

3.7 Maintenance

A. It is the responsibility of the Contractor to maintain all seeded areas; this may include cultivation, reseeding, watering, mowing, and the control of weeds until final acceptance has been granted. The Contractor shall mow the seeded areas when plants reach a twelve -inch (12") height. The areas shall be mowed to a 6" height. The Owner's representative shall inspect the conditions of the stand to determine satisfaction or the need to improve the stand. Maintenance shall continue by the Contractor until acceptance has been granted.

3.8 Performance standard

A. All seeded areas shall be established per the Natural Area Maintenance Specification 32 9400.

END OF SECTION

SECTION 32 9300
LANDSCAPING

1.0 GENERAL

1.1 Description

A. This work consists of supplying and installing plant materials; preparing and placing all topsoil, planting mix, fertilizer, mulch, and related items and furnishing and installing ground cover, perennials, annuals, shrubs, and trees. The Contractor shall be responsible for furnishing all materials, equipment, and labor necessary to complete the work and for maintenance in accordance with the plans and specifications.

1.2 Acceptance

A. Acceptance of plant material shall be given by the Owner's Representative before plant material is installed and again after installation. Rejected plants shall be immediately removed from the site at the Contractor's expense.

B. Final inspection of all plantings will be made at the conclusion of the work. The work will be accepted by the Owner upon the satisfactory completion of all work but exclusive of the replacement of plant materials. At the time of final acceptance of the project, all constructed areas must be free of weeds.

1.3 Guarantee Period

A. The guarantee period for all planting shall begin at the date of written acceptance by the Owner or Owner's representative and shall continue for a period of twelve months.

B. The Contractor shall replace as weather conditions permit, all plants 1/3 dead or more, and all plants not in a vigorous, thriving condition noted at the end of the guarantee period.

C. Plants used for replacement shall be of the same size and variety specified in the plant list. Replacement plants shall be furnished, planted and mulched as specified herein and guaranteed for one year following the acceptance of the replacement work at no additional cost to the Owner.

1.4 Utility Responsibility

A. The Contractor is responsible for damage to underground utilities. All locations shall be checked for the presence of utilities. Call JULIE (Joint Utilities Locating Information for Excavators) toll free at 1-800-892-0123.

2.0 MATERIAL

2.1 Planting Mix

A. Planting mix shall be 80% topsoil, 10% mushroom compost, and 10% sand. The three shall be mixed thoroughly. Planting mix shall be free of weed seeds.

2.2 Topsoil

A. Topsoil shall meet technical specification Section 31 2000, Earthwork.

2.3 Mulch

A. Mulch shall be rough cut and shredded hardwoods cured for a minimum of one year. No color additive. No weeds.

2.4 Plant Material

A. Plant materials shall be freshly dug vigorous plants of specimen quality, symmetrical, thickly branched, tightly knit plants, true to species and variety and conforming to the measurements specified in the plant list and complying with ANSI Z60.1-2014. All plants shall be free of disease, insect pests, eggs, larva, and shall have healthy, well-balanced root systems. Specified plants of the same species and variety shall be matched specimens from a single block source and shall not be pruned before delivery. Standards for measurement, branching and grading of plant material shall be in conformance with current codes and standards recommended by the American Association of Nurserymen, Inc., as stated in the American Standard for Nursery Stock

B. Balled and burlapped (BB) plants shall be dug with firm natural balls of earth, with sufficient diameter and depth to include all fibrous and feeding roots. No plants moved with a ball will be accepted if the ball is cracked or broken before or during planting operations.

C. All plants shall have been grown under climatic conditions similar to those in the locality of the project for at least two years. Plants shall have been transplanted or root pruned at least once in the past three years. No heeled-in plants or plants from cold storage will be accepted.

D. Substitutions will not be permitted. If proof is submitted that specified plants or sizes are unobtainable, a proposal will be considered for the nearest equivalent size or variety.

E. All plants shall conform to the measurements specified in the plant list; exceptions are as follows:

1. When size substitutions are necessary, the contractor shall request approval from the Owner's Representative in writing. It is up to the Owner's Representative to approve in writing requested substitutions.

3.0 EXECUTION

3.1 Planting Operations

A. Weather Conditions: Planting shall be done under favorable weather conditions or as authorized by the Owner's Representative.

3.2 Transportation and Delivery

A. All plants that cannot be planted immediately on delivery shall be set on the ground or in a trench and the balls well covered with soil, manure or other acceptable material to prevent freezing, drying or over watering conditions. The Contractor shall notify the Owner's Representative at least 48 hours in advance of the anticipated delivery of any plant material for on-site approval.

B. Plants transported to the site in open vehicles shall be covered with tarpaulins or other suitable covers securely fastened to the body of the vehicles and covered shipments shall be adequately ventilated to prevent overheating of the plants.

C. All plants shall be kept moist, fresh and protected for the entire period during which the plants are being handled in transit or in temporary storage. No plant shall be so bound with rope or wired at any time as to damage the bark, break branches, or destroy the plant's natural shape.

3.3 Installation

A. Prior to excavation, the Contractor will stake all trees and mark shrub locations and perennial bed locations for approval of the Owner's Representative.

Whenever the Contractor is in doubt as to the proper location or spacing of plants, he shall request clarification. The Contractor is responsible for stripping sod from proposed planting areas and leveling soil according to drawings and specifications. This is considered incidental to the contract and will not be paid for separately. All planting pits shall be excavated to the full depth of the plant ball or container. The ball top shall be properly set to finished grade. All excavated material not used in the soil mixture or soil backfill shall be removed and legally disposed of off site.

B. Excavation: The diameter of each planting pit shall be a minimum of twenty-four inches (24") greater than the diameter of the plant ball for trees and large shrubs and twelve inch (12") greater than diameter of small shrubs.

C. Set plants in center of pits plumb and straight and at such a level that after settlement, the base of the plants will be at the finished grade. Set plants upright and faced to give the best appearance or relationship to each other or adjacent structures.

D. When balled and burlapped trees are set, compact planting mixture around base of ball to fill all voids. All burlap, ropes and wires shall be removed from the sides and top of balls. No wire or wire baskets shall remain in the ground after planting.

E. Immediately after the plant pit is back filled, a shallow basin slightly larger than pit shall be formed with a ridge of soil to facilitate watering. Strip sod from around the planting pit to form a six foot (6') diameter circle of bare ground around trees or to form a planting bed for shrubs as shown in the drawings.

F. All non-turf soil surface in planting areas shall be mulched. Mulch shall be no less than three inches (3") deep, and no greater than four inches (4") deep. Mulch shall not come in contact with trunk of trees.

3.4 Pruning

A. Each tree and shrub shall be pruned in accordance with standard horticultural practice to preserve the natural character of the plant and in the manner fitting its use in the landscape design.

1. All dead wood or suckers and all broken or badly bruised branches shall be removed.
2. Pruning shall be done with clean, sharp tools.
3. Flowering trees shall be pruned only to remove dead and broken branches or branches that rub.

3.5 Watering and Maintenance

A. At the time of planting, water is to be applied lightly until six inches (6") to eight inches (8") depth of wetness is met. Every effort shall be made to water from early morning to approximately one (1) hour before mid-day. Where watering systems exists, the Contractor shall utilize the systems in the manner they were intended.

B. Contractor shall water plant material from the point when it is installed to thirty days after substantial completion is met for the entire project. Watering shall take place so that no less than 1" of water is applied to each plant within any seven day period.

C. Prior to final acceptance of the project, the Contractor shall inspect the plantings throughout the growing season and take necessary steps to control insect and blight attack. The Contractor shall also inspect the plantings after severe storm and exercise all corrective measures required to maintain finished quality appearance and good plant vigor.

D. No pesticides or herbicides shall be applied to any plant material without the approval of the Owner's Representative. Care shall be taken in watering plant material so as not to over water or in any way damage the plants. The Contractor is encouraged to monitor the soil moisture condition frequently and water when necessary to improve the percentage of plant survival. The Owner will not take over watering of plant material until thirty days after substantial completion of the project is met.

3.6 Tree Watering Bags

A. Slow-Release Irrigation Tree Bag: UV-light-stabilized nylon-reinforced polyethylene sheet manufactured for drip irrigation of plants and emptying its water contents over an extended time period. Provide one bag for each new tree installed, incidental to contract. Contractor shall fill bags with water per manufacturer's recommendations based on tree caliper size and weather demands at the time of installation through 30 days beyond substantial completion.

B. Tree bags as manufactured by DeWitt Dew Right, Treegator, or approved equal.

END OF SECTION

SECTION 33 4616
UNDERDRAINAGE

1.0 GENERAL

1.1 Summary

A. This Section covers provision and installation of Under Drains for the Playground.

2.0 PRODUCTS

A. General: Furnish drainage pipe complete with bends, reducers, adapters, couplings, collars, and joint materials.
B. Polyvinyl Chloride Pipe: ASTM D 2729.
C. Perforated Polyvinyl Chloride Pipe ASTM D 2729
D. Provide clean out as on plans.
E. Filter Fabric
1. Manufacturer's standard nonwoven geotextile fabric of polypropylene or polyester fibers, or a combination of them. Use "3401 Geofabric" by Typar or approved equal.

2.1 Materials

A. Backfill materials and their installation shall be as described in Section 31 2000 - Earthwork

3.0 EXECUTION

3.1 Inspection

A. General: Examine subgrade surfaces to receive under drainage system to verify suitability. Do not begin installation until subsurface conditions are satisfactory to accept drainage system.

3.2 Installation

A. Under Drainage System: Excavate for under drainage system after subgrade material has been compacted but before drainage fill course has been placed. Provide a clear horizontal distance between perforated drain pipe and trench wall on both sides not less than 4”, unless otherwise shown. Grade bottom of trench excavations to required slope and compact to a firm, solid bed for drain system.
B. Apply a minimum 4” layer of compacted bedding material below the perforated drain pipe, raising low areas and creating a firm base at the correct levels. Where unsatisfactory bearing soil occurs, excavate to a minimum depth of eight inches below the pipe invert and place compacted granular fill to reach invert levels.
C. Overlay bedding with one layer of synthetic drainage fabric. Overlap fabric edges at least 4 inches.
D. Laying Drain Pipe: Lay drain pipe on compacted bedding. Provide full bearing for each pipe section throughout its length to true grades and alignment, and continuous slope in direction of flow.
1. Lay fabric wrapped perforated pipe with perforations down and joints tightly closed in accordance with pipe manufacturer's recommendations. Provide collars and couplings as required.
E. Join and install PVC pipe as follows:
1. Installation in accordance with ASTM D 2321.

F. Testing Drain Lines: Test or check lines before backfilling to assure free flow. Remove obstructions, replace damaged components, and retest system until satisfactory. Owner must approve operation of system prior to covering it up.
G. Washed Gravel: Place layer of washed gravel over drainage pipe and drainage fabric to depth indicated or, if not indicated, to a depth of not less than 4 inches around sides and 12 inches on top of drainage pipe.
H. Fill to Grade: Apply fabric and backfill as required on plans.

END OF SECTION

AGREEMENT FOR 2025 DUGDALE PARK DEVELOPMENT

This Agreement for the **2025 Dugdale Park Development** (the "Agreement") is made this **___ day of _____, 2024**, by and between the Waukegan Park District, an Illinois park district ("Park District") and _____, an Illinois corporation ("Contractor"). Park District and Contractor are hereinafter sometimes collectively referred to as the "Parties" or individually as "Party."

WITNESSETH

That the Park District and Contractor, for the consideration hereinafter named, agree as follows:

1. Labor and Materials

The Contractor shall provide all labor, equipment and materials required to complete the following work at **1525 W. Dugdale Road,** Waukegan, Illinois 60085 ("Project Site(s)"): **Dugdale Park**, and all other and incidental and collateral work necessary to properly complete the project (the "Work"), as indicated in Contractor's Proposals, dated **_____, 2024**, attached to and incorporated as part of this Agreement as **Exhibit B** ("Contractor's Proposal").

2. Contract Documents

The Contract Documents consist of this Agreement between the Park District and the Contractor; the Bid/Project Documents/Specifications: **2025 Dugdale Park Development**, attached to and incorporated as part of this Agreement as **Exhibit A;** Contractor's Proposals, attached to and incorporated as part of this Agreement as **Exhibit B**; Contractor's Compliance and Certifications Attachment, attached to and incorporated as part of this Agreement as **Exhibit C**; Insurance and Indemnification Requirements and Contractors Certificate(s) of Insurance, attached to and incorporated as part of this Agreement as **Exhibit D**; Prevailing Wage Supersedes Notice, attached to and incorporated as part of this Agreement as **Exhibit E**; Performance and Labor and Material Bonds, attached to and incorporated as part of this Agreement as **Exhibit F-1 and F-2**; and any modifications issued after the execution of this Agreement.

3. Commencement of Work and Final Completion

Contractor shall commence the Work immediately upon receipt of a Notice to Proceed issued by the Park District for the Work. Contractor shall achieve Final Completion of the Work on or before **September 30, 2025.**

4. Performance and Supervision of Work

Contractor agrees to perform all Work in a good and workmanlike manner in accordance with the Contract Documents. Contractor shall not interfere in any way with and shall cooperate fully with other contractors used by Park District for any other work at the Project Site. Contractor shall

supervise and direct the Work using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work.

5. Performance and Payment Bonds

Prior to beginning Work, Contractor shall furnish a Performance Bond, and Labor and Materials/Payment Bond in the amount of **110% of the Contract Sum**, using a form similar to the AIA-A312-2010 form, or its current equivalent, or one acceptable to Owner, cosigned by a surety company licensed to conduct business in the State of Illinois and with at least an "A" rating and a financial rating of at least "A VII" in the latest edition of the Best Insurance Guide. Said bond shall guarantee the faithful performance of the Work in accordance with the Contract, the payment of all indebtedness incurred for labor and materials, and guarantee correction of Work. The cost of each bond shall be included in the Contract Sum. Contractor and all Subcontractors shall name the Park District as an obligee on all bonds. Said bonds shall meet the requirements of the Illinois Public Construction Bond Act, 30 ILCS 550/0.01 *et seq.* and any further amendments thereto. Contractor shall include in its Performance Bond and Labor and Material Payment Bond such language as shall guarantee the faithful performance of the Prevailing Wage Act as required in the Contract Documents. The Performance Bond and Labor and Materials/Payment Bond will become a part of the Contract Documents.

6. Contract Sum

The Park District agrees to pay Contractor for the proper and timely performance of the Work in strict accordance with the Agreement as follows: Lump Sum of _____ **Dollars and ____Cents ($_____).**

The foregoing Lump Sum payment includes the following alternates, if any: N/A

7. Payment

Payment shall be made by the Park District to the Contractor upon the Park District's receipt of: a) a monthly invoice itemizing the Work properly performed, as determined by the Park District, for the period covered by the invoice; b) Contractor's and all subcontractor's waivers of liens to date for all labor and materials used in the Work; and c) Contractor's affidavit, containing such information to comply with the Illinois Mechanics Lien Act (770 ILS 60/0.01 *et seq*.) and showing in detail the sources of all labor and materials used on the Work, including names and addresses of subcontractors and materials suppliers, amounts paid to each, together with all other documents as shall be necessary, in the sole judgment of the Park District, to waive all claims of liens to date and comply with all applicable state and local laws. All waivers of lien shall include a representation by the Contractor that all labor has been paid in accordance with Illinois prevailing wage laws and all materials have been taken from fully paid stock and transported to the job site in the Contractor's own vehicles or supporting waivers of lien from material suppliers and transporters are attached.

Payments of all invoices, and any late payment penalties, shall be governed by the Local Government Prompt Payment Act (50 ILCS 505/1 *et seq*.).

8. Cleaning Up

Contractor shall keep the premises and surrounding area free from accumulation of debris and trash related to the Work. At the completion of the Work, Contractor shall remove its tools, construction equipment, machinery and surplus material; and shall properly dispose of waste materials. Contractor shall clean up and keep all streets, sidewalks and other public ways used for access to the Project Site free from accumulation of spillage of fill or soils or other materials caused by operations under the Contract Documents. Contractor shall strictly comply with all laws and regulations pertaining to same and shall be solely responsible for, and shall pay any fines or penalties assessed as the result of, any violation.

9. Warranty; Correction of Work

Contractor warrants to the Park District that: (1) materials and equipment furnished under the Contract Documents will be new and of good quality; (2) the Work will be free from defects not inherent in the quality required or permitted; and (3) the Work will conform to the requirements of the Contract Documents.

All warranties shall include labor and materials and shall be signed by the manufacturer or subcontractor as the case may be and countersigned by the Contractor. All warranties shall be addressed to the Park District and delivered to the Park District upon completion of the Work and before or with the submission of request for final payment. Except as otherwise provided in this Agreement or elsewhere in the Contract Documents, all warranties shall become effective on the date of Final Completion of the entire Work, and shall run for a twelve (12) month period, unless a longer period is provided for by law. Where warranties overlap, the more stringent requirement shall govern.

Contractor shall correct any portion of the Work deficiently or defectively performed, and replace defective or nonconforming materials, even though such deficiency, defect or nonconformity may be discovered more than one year after delivery and acceptance of the Work by the Park District, if the correction is of a latent defect and arises from poor workmanship or improper materials or is required to be made to workmanship or materials covered by the Contractor or subcontractors contrary to the Park District's request or to requirements specifically expressed in the Contract Documents and was therefore not visible for inspection by the Park District at the time the Work was performed.

10. Safety of Persons and Property

A. Contractor shall take reasonable precautions for the health and safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

i. employees engaged in the Work and other persons who may be affected thereby;
ii. the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's subcontractors or sub-subcontractors; and

iii. other property at the Project Site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

B. Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

C. The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

D. When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

E. Contractor shall promptly remedy damage and loss to Park District property caused in whole or in part by the Contractor, a subcontractor, a sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible, except to the extent said damage or loss is attributable to acts or omissions of the Park District or anyone directly or indirectly employed by Park District, or by anyone for whose acts Park District may be liable, and not attributable to the fault or negligence of the Contractor.

F. Contractor shall designate a responsible member of Contractor's organization at the site whose duty shall be the prevention of accidents and general workplace safety. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Park District.

11. <u>Termination</u>

A. The Park District may, at any time, terminate the Agreement in whole or in part for the Park District's convenience and without cause. Termination by the Park District under this section shall be by a notice of termination delivered to the Contractor specifying the extent of the termination and the effective date. Upon receipt of a notice of termination, the Contractor shall immediately, in accordance with instructions from the Park District: (1) cease operation as specified in the notice; (2) place no further orders; (3) enter into

no further subcontracts for materials, labors, services or facilities except as necessary to complete continued portions of the Work; (4) terminate all subcontracts and orders to the extent they relate to the Work terminated; (5) proceed to complete the performance of Work not terminated; and, (6) take actions that may be necessary or that the Park District may direct, for the protection and preservation of the terminated Work. The Contractor shall recover payment for approved and properly performed Work completed prior to the effective date of termination and for proven, out-of-pocket costs with respect to materials and equipment ordered but not used by Contractor for the Work prior to receipt of the notice of termination. Contractor shall not be entitled to damages or lost profits resulting from termination for convenience under this Section.

B. Park District may terminate the Agreement, in whole or in part, for cause as follows:

(i) In the event Contractor breaches any of the provisions of this Agreement, Park District may terminate the Agreement immediately upon written notice to Contractor, if Contractor shall not have cured such breach within forty eight (48) business hours after Park District shall have first notified Contractor of such breach in writing or, if by its nature the breach is not capable of being cured within said forty-eight (48) business hours, Contractor shall not have commenced such cure within said forty-eight (48) business hours and diligently pursued same to completion; provided, however, that if Contractor shall have repeatedly breached the same or other provisions previously, Park District may terminate the Agreement immediately without affording Contractor an opportunity to cure the breach, upon written notice to Contractor, and further provided that failure to maintain required insurance coverage shall be cause for immediate termination of the Agreement, or the immediate suspension of the Agreement until such insurance has been obtained and satisfactory proof thereof provided to Park District, in either case upon written notice to Contractor without opportunity to cure.

(ii) In the event Contractor shall have: (a) filed a voluntary petition in bankruptcy or made an assignment for the benefit or creditors; or (b) consented to the appointment of a receiver or trustee for all or a part of its property; or (c) an involuntary petition in bankruptcy shall have been filed in regard to Contractor and the same shall not have been dismissed within thirty (30) days of such filing, then in said event the Agreement shall automatically terminate.

Upon termination of this Agreement for any reason, the rights and obligations of the Parties shall cease automatically except for the rights and obligations of the Parties accruing but unsatisfied prior to termination.

C. Should this agreement be terminated due to the inability or unwillingness of the Contractor to perform the work described under this agreement, the Contractor is responsible for paying any and all costs associated with the termination, including but not limited to, a new bid to procure services for project completion, fees to secure the worksite

until work can be completed, and attorney's fees. After a formal bidding process has been completed by the Park District, and a new contractor is selected, based on statutorily defined procedure, the Contractor is also responsible for paying any cost above that which he/she had originally bid in the Bid Document.

12. Insurance

Contractor will procure and maintain the insurance coverages provided in **Exhibit D**, attached to and incorporated by this reference in this Agreement, or such other insurance coverages as shall be required by the Park District's insurer or the risk management agency of which the Park District is a member.

13. Indemnification

Contractor shall indemnify and hold harmless the Park District and its officers, officials, employees, volunteers and agents in accordance with **Exhibit D.**

14. Compliance with Laws and Permits

Contractor shall comply with all applicable local, state and federal codes, laws, ordinances, rules and regulations, including but not limited to those laws specified in the Contractor's Compliance and Certifications Attachment. Contractor shall be licensed and bonded to perform the Work hereunder and shall, at its sole cost and obligation, be responsible for obtaining all permits required to perform its duties under this Agreement. Any breach by Contractor of the foregoing laws, regulations and rules shall constitute a breach by Contractor of this Agreement.

15. Local, Women, and Minority Hiring Encouraged

Contractor shall use reasonable effort to employ local, women, and minority. Additionally, Contractor shall use reasonable effort to utilize local, women, and minority owned Subcontractors.

16. Choice of Law and Venue

This Agreement is governed by the laws of the State of Illinois. Any suit or action arising under this Agreement shall be commenced in the Circuit Court of Lake County, Illinois, but only after exhausting all possible administrative remedies. Contractor, its successors or assigns shall maintain no suit or action against the Park District on any claim based upon or arising out of this Agreement or out of anything done in connection with this Agreement unless such action shall be commenced within one year of the termination of this Agreement. Contractor acknowledges that each provision of this Agreement is important and material to the business and success of the Park District, and agrees that any breach of any provision of this Agreement is a material breach of the Agreement and may be cause for immediate termination of this Agreement. In the event of a breach, Contractor shall also pay to the Park District all damages (including, but not

limited to, compensatory, incidental, consequential, and punitive), which arise from the breach, together with interest, costs, and the Park District's reasonable attorneys' fees.

17. No Liability

The Park District is not responsible or liable for any injury, damages, loss or costs sustained or incurred by any person including, without limitation Contractor's employees, or for any damage to, destruction, theft or misappropriation of any property, relating in any way, directly or indirectly, to Contractor's Work and obligations under this Agreement. The Park District is not liable for acts or omissions of Contractor or any of Contractor's employees, subcontractor's, agents or other persons purporting to act at the direction or request, on behalf, or with the implied or actual consent, of Contractor.

18. No Third-Party Beneficiary

This Agreement is entered into solely for the benefit of the contracting Parties, and nothing in this Agreement is intended, either expressly or impliedly, to provide any right or benefit of any kind whatsoever to any person and/or entity who is not a party to this Agreement or to acknowledge, establish or impose any legal duty to any third party. Nothing herein shall be construed as an express and/or implied waiver of any common law and/or statutory immunities and/or privileges of the Park District and/or Contractor, and/or any of their respective officials, officers and/or employees.

19. No Waiver

Waiver of any of the terms of this Agreement shall not be valid unless it is in writing and signed by all Parties. The failure of claimant to enforce the provisions of this Agreement or require performance by opponent of any of the provisions, shall not be construed as a waiver of such provisions or affect the right of claimant to thereafter enforce the provisions of this Agreement. Waiver of any breach of this Agreement shall not be held to be a waiver of any other or subsequent breach of the Agreement.

20. Independent Contractor

Contractor acknowledges that it is an independent contractor; that it alone retains control of the manner of conducting its activities in furtherance of this Agreement; that it, as well as any persons or agents as it may employ, are not employees of the Park District; and that neither this Agreement, nor the administration thereof, shall operate to render or deem either Party hereto the agent or employee of the other.

21. Non-Assignment

This Agreement is non-assignable in whole or in part by the Contractor, and any assignment shall be void without prior written consent of the Park District.

22. Notices

All notices required or permitted to be given under this Agreement shall be deemed given when such notice is hand delivered; or when such notice is sent by facsimile transmission provided such transmission together with fax machine generated confirmation of such transmission is also sent on the transmission date to the other Party by United States mail, with postage therewith prepaid; or when such notice is deposited in the United States mail, with postage thereon prepaid, addressed to the other Party at the following addressees:

If to Park District:
Waukegan Park District 2211
Ernie Krueger Circle
Waukegan, IL 60087
(Fax) 847-244-7345
Attention: Tim Girmscheid

If to Contractor:
_____
_____
_____, IL _____
(Fax) _____
Attention: _____

23. Entire Agreement; No Amendment

This Agreement and the Bid Document together contains the entire agreement between the Parties, and no statement, promise or inducement made by either Party to the agency of either Party that is not contained in this written Agreement shall be valid or binding. No modification of this either Agreement shall be effective unless in writing dated a date subsequent to the date of this either Agreement and signed by an authorized representative of each Party. If this Agreement and the Bid Document are found to be in conflict, the Bid Document controls.

24. Headings

The headings for each paragraph of this Agreement are for convenience and reference purposes only and in no way define, limit or describe the scope or intent of said paragraphs or of this Agreement nor in any way affect this Agreement.

25. Severability

The invalidity of any section, paragraph or subparagraph of this Agreement shall not impair the validity of any other section, paragraph or subparagraph. If any provision of this Agreement is determined to be unenforceable, such provision shall be deemed severable and the Agreement may be enforced with such provision severed or as modified by such court.

26. No Waiver of Tort Immunity Defenses

Nothing contained in this Agreement is intended to constitute nor shall constitute a waiver of the rights, defenses, and immunities provided or available to Park District under the Illinois Local Governmental and Governmental Employees Tort Immunity Act with respect to claims by third parties.

IN WITNESS WHERE OF the Parties hereto have set their respective hands and seals the day and year first above written.

WAUKEGAN PARK DISTRICT	_____
By: _____	By: _____
Anton L. Matthews	Printed Name: _____
Its: President; Board of Commissioners	Its: _____