

Ford River Township Park [Play]
Ford River, Michigan
Grant Number: RP22-0118

Ford River Township Park

[PLAY]

Ford River, Michigan
Bid Documents + Specifications
Grant Number: RP22-0118
Issued: November 2023
Revised: June 3rd, 2024

Owner

Ford River Township
3845 K Road
Ford River, MI 49807
Authorized Representative
Steve Nelson | supervisor@fordriver.org
906.399.6411

Prime Professional

CUPPAD
2950 College Ave
Escanaba, MI 49829
Julia Cogger, PLA | jcogger@cuppad.org
906.280.0820



LANDSCAPE ARCHITECT
LICENSURE STAMP

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END OF SECTION

SECTION 001100 - ADVERTISEMENT

Ford River Township Park Renovation
Ford River, MI

1. **RECEIPT OF BIDS:** Sealed bids for the construction of Ford River Township Park Renovation will be received by Ford River Township, the OWNER, at the Township Hall, 3845 K Road, Ford River, MI 49807 until 4PM local time in effect on **June 20th, 2024**. The envelope containing the bid must be identified on the outside as "**Bid for Ford River Township Park [Play]**." Bids received after this time will not be considered or accepted.
2. **BID OPENING:** The bids will be publicly opened and read at the Ford River Township Hall, at 3845 K Road, Ford River, MI 49807 at 4:15PM local time on **June 20th, 2024**.
3. **SCOPE OF PROJECT:** The project consists of furnishing all labor, materials, tools, equipment, and services necessary to complete site preparation and installation of an exercise area with poured in place rubber surface and multi-person swing with poured in place rubber surface. See attached Drawings and Specifications.
4. **REVIEW OF DOCUMENTS:** Plans and Specifications may be obtained from the Township electronically at no charge. Hard-copy sets may be obtained for a fee of \$60. Contact Steve Nelson at (906)786-8532 or supervisor@fordriver.org .
5. **WITHDRAWAL OF BIDS:** No Bidder may withdraw its proposal for a period of 45 days after the actual date of opening thereof. This time period may be extended by mutual agreement of the Owner and any Bidder or Bidders.
6. **RIGHT TO REJECT BIDS:** The Owner reserves the right to accept any proposal, to reject any and all proposals and to waive any irregularities in proposals. If award is made, it will be to the bidder whose proposal is in the best interest of the Owner.
7. **QUESTIONS OR CLARIFICATION:** All questions are to be directed to the Township Supervisor, Steve Nelson, in writing at 3845 K Road, Ford River, MI 49807 or preferably via email at supervisor@fordriver.org
All questions shall be due 5 days before bid opening.

END OF ADVERTISEMENT

SECTION 001400 – INSTRUCTIONS TO BIDDERS

GENERAL

Work to be done under this Contract is generally described through the Specifications and must be completed fully in accordance with the Contract Documents.

Any Bid which does not conform fully to these instructions may be rejected.

PREPARATION OF BIDS

Bids shall be written in ink or typewritten. Mistakes may be crossed out and corrected and must be initialed and dated in ink by the person signing the Bid.

Bids must be submitted on the Bid Forms provided with each blank properly filled in. If forms are not fully completed it may disqualify the Bid.

Each person signing the Bid certifies that they are the person in the Bidder's firm/organization responsible for the decision as to the fees being offered in the Bid and has not and will not participate in any action contrary to the terms of this provision.

ADDENDA

If it becomes necessary to revise any part of the Bid Documents, notice of the Addendum will be posted on the **Ford River Township Hall message board at: 3845 K Road, Ford River, MI 49807** and online at: <https://fordriver.org/>

Each Bidder must in its Bid acknowledge all addenda which it has received, but the failure of a Bidder to receive or acknowledge receipt of any addenda shall not relieve the Bidder of the responsibility for complying with the terms thereof.

The Township shall not be bound by oral responses to inquiries or written responses other than written addenda.

PRODUCT/SYSTEM SUBSTITUTION

Submit a written Substitution Request Form (Section 01 25 19) to be received no later than 5 days prior to the bid opening for substitution of any product not named. If no substitutions are submitted the specified product shall be incorporated into the work.

Approval of the Substitution Request, if given, will be in the form of an addendum issues prior to scheduled opening date.

BID SUBMISSION

Offers signed, executed, and dated will be received at the time and place indicated in the Advertisement. If the Bid is sent via mail or other delivery system, the sealed envelope shall have a notation "Bid Enclosed" on the face of it.

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Amendments to the submitted offer will be permitted if received in writing prior to Bid closing and if endorsed by the same party or parties who signed and sealed the offer.

DEFINITIONS

Bid Documents: Contract Documents supplemented with Instructions to Bidders, Bid Form, and Appendices.

Bid, Offer, or Bidding: Act of submitting an offer

Bid Sum: Monetary sum identified by the Bidder in the Bid Form.

Product: Includes materials, systems, and equipment

Furnish: Means to supply and deliver to project site, ready for unloading, unpacking, assembly, installation, erection, or placement.

Install: Means to unload, unpack, assemble, erect, place, finish, protect, adjust, and clean or similar requirements.

EXAMINATION OF DRAWINGS, SPECIFICATIONS AND WORK SITE

It is recommended the Bidder visit the site prior to submitting a bid. The bid shall reflect the costs of all items necessary to perform the Work. No allowances will be made to any bidder due to lack of examination of the Contract Documents or inspection of the Work Site.

QUALIFICATIONS

To demonstrate qualification for performing specified Work, Bidders may be requested to submit written evidence of financial position, previous experience, current commitments, license to perform work in the State of Michigan, and similar information as requested by the Owner.

SUBCONTRACTING

The Bidder shall submit a written list of subcontractors and suppliers that they intend to use with the bid.

PROJECT STARTUP/COMPLETION

Work shall be completed to the satisfaction of the Township and Landscape Architect.

Any request for extension of completion date must be made by the Contractor in writing fifteen (15) days prior to the original completion date. The Contractor shall state reason for and the number of days requested for extension. The Contractor shall provide enough proof of the circumstances beyond control (such as extreme weather). Delays caused by Contractor scheduling conflicts will not be considered grounds for extension approval. The Township will only consider an extension of completion after receiving a written request.

PRE-CONSTRUCTION MEETING

Shortly after the contract is awarded, a pre-construction meeting will be arranged to discuss the scheduling and performance of the work. The prime Contractor and each of his Subcontractors shall attend the meeting. The Contractor shall provide at the meeting a construction progress schedule. This meeting may be hosted virtually if it is determined to be necessary.

SECURITY DEPOSIT

1. Bids shall be accompanied by a security deposit as follows: Bid Bond of a sum of no less than 5% of the Bid Sum or Certified check in the amount of 5% of the Bid Sum.
2. Endorsement of Bid Security: Endorse the Bid Bond in the name of the Owner, signed and sealed by the Contractor and Surety. Endorse the certified check in the name of the Owner.

3. Disposition of Bid Guarantees: Each bid guarantee will be retained until the successful Contractor has executed the Contract and furnished the required Performance and Payment Bonds. Bid guarantee of unsuccessful bidders will be returned to them as soon as feasible after the execution of the contract with the successful bidder.
4. Forfeiture of bid Guarantees: Should a bidder fail to enter into a contract and furnish the required bonds within 10 days after the bid is accepted, the bid guarantee will be forfeited to the Owner as liquidated damages, but not as penalty.

PERFORMANCE ASSURANCE

The Bidder will be required to submit a one-hundred percent (100%) performance bond, within ten (10) days of written notice of acceptance of their bid.

HUMAN RIGHTS INFORMATION

The Contractor and all Subcontractors must comply with all requirements of 1976 PA 453 (ElliottLarsen Civil Rights Act), the 1976 PA 220 (Persons with Disabilities Civil Rights Act), and Executive Directive 2019- 09, as amended. Contractor and all Subcontractors must not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, partisan considerations, or a disability or genetic information that is unrelated to the individual's ability to perform the duties of a particular job or position.

DEBARMENT

Submission of a Bid is certification that the Bidder is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the Township will be notified of any changes to this status.

DISCLOSURES

State funds are being used to assist in construction and relevant State requirements will apply.

WORK BY OWNER

Owner will perform following work, which is excluded from work of this contract:

1. Supply and installation of entry sign.
2. Supply and installation of interpretive signage, bike loops, harmony bells, picnic tables, trash receptacles, ~~shade sails~~, native plantings and mulch.

WORK BY OTHERS

Other Contractor will perform following work, which is excluded from work of this contract:

1. Site preparation, supply and installation of 6' wide ADA accessible trail, compacted gravel picnic area, solar light installation and 60' concrete seat wall.

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AWARD OF CONTRACT

1. Owner reserves the right to reject any or all Bids, to waive any and all informalities in the Bids, to negotiate Contract terms with the successful Bidder, and to disregard all nonconforming, nonresponsive, or conditional Bids. The Owner also reserves the right to reject any part of the Bid if they believe it would not be in the best interest of the Project.
2. Owner may conduct investigations as deemed necessary to ensure Bidder, any Subcontractors, Suppliers or others related to doing the proposed Work are all capable and able to complete work in a timely manner.
3. The award of the Contract will be given to the Bidder whose evaluation by the Owner is believed to be in the best interests of the Project.
4. The Owner will give the Successful Bidder Notice of Award within 45 days of the Bid Opening.

FINAL INSPECTION FOR ACCEPTANCE AT COMPLETION AND FINAL PAYMENT

A final inspection for acceptance will be made by the Ford River Township Authorized Official and Landscape Architect within seven days of notification from the Contractor that all corrections have been made and that, in the Contractor's opinion, the work is complete. The Authorized Official and Landscape Architect will determine the work is complete and acceptable and notification of the date of acceptance will be sent to the Contractor.

Before final payment is made, the Contractor shall furnish the Ford River Township Authorized Representative with a full release of liens signed by all subcontractors and material providers associated with the Work.

END OF SECTION

SECTION 00 30 00 - BID FORM

DATE _____

PROJECT FORD RIVER TOWNSHIP HALL PARK RENOVATION
OWNER FORD RIVER TOWNSHIP; AUTHORIZED REPRESENTATIVE STEVE NELSON
DESIGN PROFESSIONAL CUPPAD: JULIA COGGER, PLA
BIDDER _____

1.1 ACKNOWLEDGEMENTS

- A. Bidder accepts the provisions of Bidding Documents.
- B. Bidder will enter a contract with the Owner for this work within 60 days after notification of acceptance of this Bid.
- C. Bidder will complete the Work in accordance with the Bidding Documents prepared by CUPPAD.
- D. Bidder has received the following Addenda:
 - No. _____ Dated _____, 20____
 - No. _____ Dated _____, 20____
 - No. _____ Dated _____, 20____
 - No. _____ Dated _____, 20____
 - No. _____ Dated _____, 20____

1.2 BID SUMS

1. **Base Bid:** Bidder will complete the Project for a guaranteed maximum cost of:
_____ Dollars (\$_____)

2. **Unit Prices:** For changing work upon instruction of the Owner or Design Professional, the following unit prices, further described in Section 01 29 00 - Price and Payment Procedures, will apply for the duration of the Project. Unit abbreviations are as follows: LS/Lump Sum, SF/ Square Foot, LF/Linear Foot, CY/Cubic Yard:

Description	Unit of Measure	Add per Unit	Deduct per Unit
Poured in Place Playground Surface	SF Installed	\$_____	\$_____

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BID PROPOSAL

Item No.	Description	Unit of Measure	Quantity	Price per Unit	Total Price
1	PREPARE SITE, INCLUDING DRAINLINE UNDER SURFACE, AND INSTALL POURED-IN-PLACE SURFACING PER MANUFACTURER'S SPECIFICATIONS	SF	490		
2	SUPPLY AND INSTALL EXERCISE AND PLAY EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS: SEE DETAIL 4.2, 4.3, 4.4/ SHEET 7.03 DETAIL 6.5/ SHEET 7.07	LS	1		
	TOTAL BASE BID				

1.3 TIME FOR PERFORMANCE OF WORK

C. Bidder will achieve Substantial Completion of the work on or before **November 22nd, 2024**, with final completion on or before **November 29th, 2024**. If this project needs to extend into spring 2025 a grant extension can be applied for and the contract between the Township and Contractor amended.

Submitted by:

Firm Name _____

By _____

Street Address _____

Signature _____

City, State and Zip Code _____

Title _____

Telephone _____

Bidder is a (corporation) (partnership) (sole proprietorship) (Bidder strike out inapplicable terms Corporations affix Corporate Seal

State in which incorporated: _____

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SUBCONTRACTOR LIST

Bid Date: _____

Contractor: _____

Signature/Title: _____

Bidder shall list all proposed subcontractors, if any, scheduled to perform work and the scope of work to be performed.

It is understood and agreed upon by the Bidder that subcontractors listed herein will perform scope of work as indicated unless specifically approved otherwise in advance by Ford River Township.

SUBCONTRACTOR

SCOPE OF WORK

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NON-DISCRIMINATION STATEMENT

_____ hereby agrees that in hiring of employees for the performance of work under this contract or any subcontract hereunder, no contractor or any person acting on behalf of such contractor shall by reason of race, creed, color or sex discriminate against any citizen in the employment of labor or workers who qualify and who are available to perform the work to which this contract relates.

_____ further agrees that no contractor, subcontractor nor any person acting in his behalf shall in any manner discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed, color, or sex.

By: _____

Title: _____

END OF SECTION

SECTION 00 40 00 – INSURANCE REQUIREMENTS

1. REQUIRED INSURANCE

Contractor shall obtain at Contractor’s expense the insurance specified in this section prior to performing under this Contract and shall maintain it in full force and at its own expense throughout the duration of this Contract and all warranty periods.

1.1 WORKERS COMPENSATION

All employers, including Contractor, that employ subject workers, shall file a certification that he/she carries Worker’s Compensation Insurance.

1.2 COMMERCIAL GENERAL LIABILITY

Commercial General Liability Insurance covering bodily injury, death and property damage in a form and with coverage that is satisfactory to the Township and State. This insurance shall include personal injury liability, products and completed operations. Coverage shall be written on an occurrence basis. Contractor shall provide proof of insurance of not less than the following amounts:

Per occurrence limit for any single claimant: \$1,000,000

Per occurrence limit for multiple claimants: \$1,000,000

1.3 AUTOMOBILE LIABILITY INSURANCE

Automobile Liability Insurance covering all owned, non-owned, or hired vehicles. This coverage may be written in combination with the Commercial General Liability Insurance (with separate limits for “Commercial General Liability” and “Automobile Liability”). Contractor shall provide proof of insurance of not less than the following amounts:

Combined single limit for any single claimant: \$1,000,000

Combined single limit for any multiple claimants: \$1,000,000

2. EXCESS/UMBRELLA INSURANCE

A combination of primary and excess/umbrella insurance is acceptable to meet the minimum insurance requirements. If Excess/Umbrella coverage is used, the Certificate of Insurance must include a list of the policies that fall under the Excess/Umbrella insurance. For example: “The Excess/Umbrella policy is excess over General Liability, Auto Liability, etc.”

3. CERTIFICATE(S) OF INSURANCE

Contractor shall provide to Ford River Township, at the following address, Certificate(s) of Insurance for all required insurance before delivering any Goods and performing any Services required under this Contract.

Ford River Township Hall, 3845 K Road, Ford River MI 49807

The Certificate(s) must specify all entities and individuals who are endorsed on the policy. Contractor shall pay for all deductibles, self-insured retention and self-insurance, if any.

Contractor shall immediately notify Ford River Township of any change in insurance coverage.

END OF SECTION

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SECTION 00 50 00 - AGREEMENT

Between Township and Contractor

Between Ford River Township:
Authorized Representative:
Steve Nelson, Township Supervisor
3845 K Road, Ford River, MI 49807
Email | supervisor@fordriver.org
Phone | 906.786.8532

and the

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

COMPANY: _____

ADDRESS: _____

CITY, ZIPCODE: _____

TELEPHONE NUMBER: _____

Completion of the Ford River Township Hall Park [Play] project includes the following work:

The project consists of furnishing all labor, materials, tools, equipment, and services necessary to complete site preparation and installation of an exercise area with poured in place rubber surface and multi-person swing with poured in place rubber surface. See attached Drawings and Specifications.

The Township and Contractor agree as follows:

1. THE CONTRACT DOCUMENTS:

1.1 The contract documents consist of the Bid Documents + Specifications, the Bid of the Contractor, the Contractor's bid guarantee, this Agreement, any Addenda issued prior to the execution of this Agreement, and the Drawings.

1.2 By executing this Agreement, the Contractor represents that they have visited the site and carefully examined the site, Drawings and Specifications and are satisfied with the same.

1.3 All Drawings, Specifications, and other Contract Documents are and shall remain the property of the Township. They shall not be used on any other project without the prior written consent to the Township.

1.4 The Contractor represents the Subcontractors, Manufacturers and Suppliers engaged in the Project will be familiar with the requirements for performance by them of their obligation.

2. THE CONTRACT PERIOD:

2.1 This Agreement is effective on the date this Agreement has been fully executed by every party. Unless extended or terminated earlier in accordance with its terms, this Contract terminates on _____, 2024.

3. CONSIDERATION

3.1 The maximum not to exceed compensation payable to Contractor under this Agreement, is \$_____.

3.2 All payments shall be made in accordance with payment requirements described in Section 012900.

3.3 The Township will only pay for completed services which are accepted by the Township.

3.4 The Township will not pay Contractor for Materials or Services performed before the date this Agreement becomes effective or after the termination of this Agreement.

3.5 The Township will not pay Contractor any amounts in excess of the not to exceed compensation of this Agreement. If the maximum compensation is increased by amendment of this Agreement, the amendment must be fully effective before the Contractor performs Services subject to the amendment.

4. RESPONSIBILITIES FOR TAXES AND WITHHOLDING

4.1 Contractor shall be responsible for all federal or state taxes applicable to compensation or payments paid to Contractor under this Agreement.

5. REPRESENTATIONS AND WARRANTIES

4.1 Contractor represents and warrants to the Township that they have the power and authority to enter into and perform this Agreement.

4.2 The Agreement, when executed, shall be a valid and binding obligation of the Contractor enforceable in accordance with its terms.

4.3 The Contractor has the skill and knowledge to perform the Work in a professional manner and in accordance with standards prevalent in Contractor's industry, trade or profession.

4.4 The Contractor at all times during the term of the Agreement be duly licensed (if applicable) and professionally competent to perform the Work.

6. INDEMNITY

6.1 Contractor shall defend, save, hold harmless, and indemnify the Township and its employees and agents from and against all claims, suits, actions, losses, damages, liabilities, costs and expenses of any nature whatsoever, including attorney's fees, resulting from, arising out of, or relating to the activities of Contractor or its officers, employees, subcontractors, or agents under this Agreement.

7. DEFAULT AND REMEDIES

7.1 Default by Contractor

Contractor shall be in default under this Agreement if:

a. Contractor institutes or has instituted against it insolvency, receivership or bankruptcy proceeding, makes an assignment for the benefit of creditors, or ceases doing business on a regular basis or;

b. Contractor no longer holds a license or certificate that is required for Contractor to perform its obligations under the Agreement, or

c. Contractor commits any material breach or default of any covenant, warranty, or obligation under this Agreement or fails to perform the Services under this Agreement within the time specified herein or any extension thereof.

7.2 Township's Remedies for Contractor's Default

In the event the Contractor is in default under Section 7.1, the Township may pursue any or all of the remedies available to it under this Agreement:

- a. Termination of this Agreement under Section 8;
- b. Withholding all monies due for Materials and Services that Contractor has failed to deliver within any scheduled completion dates or has performed inadequately or defectively.

7.3 Default by Township

The Township shall be in default under this Agreement if:

- a. The Township fails to pay the Contractor any amount pursuant to the terms of this Agreement, and fails to cure such failure within thirty (30) calendar days after Contractor's notice; or
- b. The Township commits any material breach or default of any covenant, warranty or obligation under this Agreement and such breach is not cured within thirty (30) calendar days after Contractor's notice.

7.4 Contractor's Remedies for Township's Default

In the event the Township is in default under section 7.3 or the Township terminates the Agreement under Section 8, the Contractor's sole monetary remedy shall be a claim for the sum designated for completing the Services multiplied by the percentage of Services completed and accepted by the Township, less previous amounts paid and any claim(s) that the Township as against the Contractor. In no event shall the Township be liable to the Contractor for any expenses related to termination of this Agreement for anticipated profits. If previous amounts paid to Contractor exceed the amount due to Contractor under this Section 7.4, Contractor shall pay immediately any excess to the Township upon written demand.

8. TERMINATION

8.1 The Township may terminate this Agreement immediately upon written notice by the Township to the Contractor, upon occurrence of any of the events described in Section 7.1.

8.2 The Contractor may terminate this Agreement immediately upon written notice by the Contractor to the Township, upon occurrence of any of the events described in Section 7.3.

8.3 Upon termination of the Agreement for any reason, Contractor shall immediately deliver to the Township all of the Township's property (including without limitation an Work or Work Products for which the Township has made payment in whole or in part) that is in the possession or under the control of the Contractor in whatever stage of development. Upon receiving a notice of termination of the Agreement, Contractor shall immediately cease all activities under the Agreement, unless the Township expressly directs otherwise in the notice of termination.

9. SEVERABILITY

The parties agree that if any term or provision of this Agreement is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular term or provision held to be invalid.

10. WAIVER

This Agreement and attached Bid Documents, Specifications, and Drawings constitute the entire Agreement between the parties on the subject matter hereof. No waiver, consent, modification or change of terms of this Agreement shall bind all parties unless in writing and signed by both parties and all necessary approvals have been obtained. Such waiver,

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consent, modification or change of terms to this Agreement shall be effective only in the specific instance and for the specific purpose given.

11. CERTIFICATION

Contractor, by execution of this Agreement:

- 1) acknowledges that the Contractor has read this Agreement, understands it, and agrees to be bound by its terms and conditions, and
- 2) certifies and swears under penalty of perjury that to the best of his/her knowledge, the supplied Contractor data is true and accurate.

In witness whereof the Parties hereto have made, executed and delivered this Agreement as of the last date each signatory below has signed this Agreement and all necessary approvals have been obtained.

_____ (Contractor)

By	Title	Date
Ford River Township (Authorized Representative)		

By	Title	Date
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END OF SECTION

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SECTION 01 25 19 - SUBSTITUTION REQUEST FORM

DATE: _____
TO: _____
ATTENTION: _____
PROJECT: _____

We submit for your consideration the following product as a substitution for the specified product:

Section No.	Paragraph	Specified Product
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Proposed Substitution:

Reason for Substitution:

Product Data:

Attach complete technical data for both the specified product and the proposed substitution. Include information on changes to Contract Documents that the proposed substitution will require for its proper installation.

Samples:

Attached Will be furnished upon request

Does the substitution affect dimensions shown on Drawings?

No Yes (explain)

Effects of proposed substitution on other Work:

Differences between proposed substitution and specified Product:

Manufacturer's warranties of the proposed substitution are:

Same Different (explain)

Maintenance service and spare parts are available for proposed substitution from:

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Previous installations where proposed substitution may be seen:

Project: _____	Project: _____
Owner: _____	Owner: _____
Architect: _____	Architect: _____
Date Installed: _____	Date Installed: _____

Cost savings to be realized by Owner, if proposed substitution is approved:

Change to Contract Time, if proposed substitution is approved:

No Change Add _____ days Deduct _____ days

Submittal constitutes a representation that _____ has read and agrees to the provisions of Section 01 29 00.

Submitted by:

Firm Name _____	Date _____
Name _____	Signature _____

For Use by Design Professional:

Based on the information supplied by the _____ the Design Professional has reviewed the proposed substitution on the basis of design concept of the Work and conformance with information given in Contract Documents.

Approved Approved as Noted Rejected

Submit Additional Information:

Firm Name _____	Date _____
Name _____	Signature _____

END OF SECTION

SECTION 01 29 00 - PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 PRODUCT SUBSTITUTION PROCEDURES

- A. Submit a written Substitution Request Form to be received no later than 5 days prior to bid opening for Substitution of any Product not named. If no substitutions are submitted, the specified product shall be incorporated into the Work.
- B. Document each request with complete data substantiating compliance of proposed Substitution with Product specified including written certification that Product conforms to or exceeds all requirements of the Product specified.
- C. Describe in detail any variance to the Product specified. All proposed substitution of specified items shall be substantially the same size, type, construction quality and shall meet the design intent to be considered for substitution for the Product specified.
- D. Submittal of substitution request represents that Contractor:
 - 1. Has investigated proposed substitution and determined that it is equal or superior to specified product.
 - 2. Will coordinate installation of accepted substitution into the Work.
 - 3. Waives claims for additional costs that may subsequently become apparent.
- E. Substitutions will not be considered if:
 - 1. They are indicated on Shop Drawings or other submittals without formal substitution request.
 - 2. Approval will require substantial revision of Contract Documents without additional compensation to Contractor.
- F. Contractor will notify Subcontractor of approval or rejection of each substitution request.
- G. Approval of the Substitution request, if given, will be in the form of an addendum issued prior to scheduled receipt of bid date and hour at local time.

1.2 UNIT PRICES

- A. Provide unit prices for items listed, for inclusion in Contract.
- B. Unit prices will be applicable for duration of Project.
- C. Contract Sum is to be based on quantities of materials indicated in Contract Documents.
- D. If different quantities than those indicated are placed in the Work, unit prices will be used as basis for additions to or deductions from Contract Sum.
- E. Adjustments to Contract Sum will be made by Change Order based on net cumulative change for each item of the Work.
- F. Payment includes full compensation for all required labor, Products, tools, equipment, plant, transportation, services, and incidentals, and for erection, application, or installation of an item of the Work.

PART 2 PRODUCTS:

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PAYMENT APPLICATION AND CERTIFICATE					DATE:				
To Township: Ford River Township C/O Steve Nelson									
3839 K Road, Bark River, MI 49807									
CONTRACTOR:									
ADDRESS:									
PHONE:									
PAYMENT APPLICATION NO:				GRANT NO.:	RP22-0118				
PERIOD: FROM				TO					
CONTRACT TITLE:		Ford River Township Park Renovation							
1	Original Contract Price								
2	Approved Contract Change Orders (No's: _____)			Total Change					
3	Revised Contract Amount (Sum of Lines 1 and 2)								
4	Total Value of Work Performed From Prior Periods (Line 7 Prior Pay App)								
5	Total Value of Work Performed This Period (Estimate Attached)								
6	Total Materials on Hand This Period (Listing Attached if applicable)								
7	Total Value of Work Performed to Date (Sum of Lines 4, 5 and 6)								
8	Percent Project Complete (Line 7 / Line 3 x 100)								
9	Subtotal - Work Completed and Stored This Period (Sum of Lines 5 and 6)								
10	Retainage (_____ 5%)% x Line 9 For This Period								
11	Current Payment Due for Work Completed & Stored This Period (Line 9 less Line 10)								
12	Retainage Held to Date (Line 7 x Line 10 Retainage % Minus Line 13)								
13	Total Retainage Released in Prior Periods								
14	Pursuant to the Contract, Retainage Approved for Release This Period								
15	Total Remaining Retainage Held (Line 12 Minus Line 14)								
16	Total Current Payment Due (Sum of Line 11 and Line 14)								
I, the undersigned, hereby certify that the above charge is true and correct and that payment has not been received.									
Contractor Signature					Printed Name			Date	
This contract does not require prevailing wage rates.									

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PART 3 EXECUTION:

INVOICING

A. Contractor to submit an initial invoice for the supply and delivery of materials needed to complete the proposed Work utilizing the Application and Certificate for Payment form in Part 2.

B. Contractor to submit a final invoice upon completion of the Project Work and acceptance of the work by the Township, utilizing the Application and Certificate for Payment form in Part 2. A 10% retainage will be held until 30 days post completion of the project.

END OF SECTION

SECTION 01 30 00- ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 PROJECT COORDINATION

- A. Project work to commence once signed contract is in place and pre-construction meeting has been held.

1.2 PROJECT MEETINGS

- A. Schedule and administer pre-construction meeting, substantial completion site walk through, and final completion site walk through with additional site meetings as deemed necessary.

1.3 SUBMITTAL FORMAT

- A. Submit Project documentation electronically in PDF format.

1.4 PROGRESS SCHEDULE

- A. Submit a Progress Schedule within 60 days after date of Notice to Proceed.
- B. Updating:
 - 1. Submit updated schedule along with each Application for Payment.
 - 2. Identify changes occurring since previous submission.
 - 3. Indicate progress and projected completion date of each activity.
 - 4. Provide narrative report including discussion of problem areas, corrective action taken, description of revisions, and other items affecting progress of the Work.

1.5 PROJECT SUBMITTALS

- A. Action Submittals:
 - 1. Shop Drawings: For Playground and Exercise Equipment components
 - a. Identify details by reference to sheet and detail numbers shown on Drawings.
 - 2. Product Data: Manufacturer's standard schematic drawings and diagrams; modify and supplement standard information to provide information applicable to work.
- B. Informational Submittals:
 - 1. Informational submittals do not require Design Professional's responsive action except to require resubmission of incomplete or incorrect information.
 - 2. Design data and calculations:
 - a. Accuracy of design data and calculations is responsibility of Contractor.
 - b. When products or systems are specified to be designed by professional engineer, provide documents signed and sealed by professional engineer licensed in State in which Project is located.
 - 3. Test reports and certifications:
 - a. Document that products meet or exceed specified requirements.
 - b. Submit supporting data as required.
 - c. Submittals may be recent or previous test results on material or product.
 - 4. Manufacturer's installation instructions: Include instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing.
- C. Contractor's Responsibilities:

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1. Review submittals prior to forwarding to Design Professional. Verify field measurements, construction criteria, catalog numbers, and similar data.
 2. Contractor's responsibility for errors, omissions, or deviations from requirements of Contract Documents is not relieved by Design Professional 's review.
 3. On resubmittals, indicate changes made other than those requested by Design Professional.
- D. Design Professional's Responsibilities:
1. Review for conformance with Project design concept and requirements of Contract Documents.
 2. Design Professional is not responsible for verification of field measurements, construction criteria, catalog numbers, and other similar data.
 3. Review of separate item does not constitute review of an assembly.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01 42 13 – ABBREVIATIONS AND ACRONYMS

PART 4 GENERAL

4.1 SUMMARY

A. Section Includes: Abbreviations and acronyms of industry organizations.

4.2 ACRONYMS

A. Abbreviations and acronyms used in Contract Documents refer to recognized names of organizations according to following list.

B. Contract Documents may not utilize all abbreviations and acronyms, and other abbreviations and acronyms may appear in individual specification sections that are not listed below.

ACRONYM OR ABBREVIATION	ENTITY	WEBSITE
ACI	American Concrete Institute	www.aci-int.org
AI	Asphalt Institute	www.asphaltinstitute.org
AISC	American Institute of Steel Construction	www.aisc.org
AITC	American Institute of Timber Construction	www.aitc-glulam.org
ANSI	American National Standards Institute	www.ansi.org
APA	Engineered Wood Association www.apawood.org	
ASCC	American Society of Concrete Contractors	www.asconline.org
ASCE	American Society of Civil Engineers	www.asce.org
ASTM	ASTM International	www.astm.org
AWS	American Welding Society	www.aws.org
CRSI	Concrete Reinforcing Steel Institute	www.crsi.org
CSPC	United States Consumer Product Safety Commission	www.cpsc.gov
FSC	Forest Stewardship Council	www.fscus.org
GA	Gypsum Association	www.gypsum.org
GS	Green Seal, Inc.	www.greenseal.org
ISO	International Organization for Standardization	www.iso.org
NLGA	National Lumber Grades Authority	www.nlga.org
NRCA	National Roofing Contractors Association	www.nrca.net
SSPC	Society for Protective Coatings	www.sspc.org
USGBC	U.S. Green Building Council	www.usgbc.org

PART 5 PRODUCTS

Not used

PART 6 EXECUTION

Not used

END OF SECTION

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 7 GENERAL

7.1 GENERAL PRODUCT REQUIREMENTS

- A. Products Incorporated into Work:
 - 1. Comply with requirements specified unless a substitution request has been approved by Design Professional.
 - 2. Do not use products for purposes other than that for which they were designed.
 - 3. Do not use materials containing asbestos or other known hazardous materials in the Work.

- B. Manufacturer's Instructions:
 - 1. When specifications require that installation comply with manufacturer's instructions, obtain copies from manufacturer and distribute to applicable parties.
 - 2. Deliver, store, handle, and install products in accordance with manufacturer's instructions.

- C. Transportation, Handling and Storage:
 - 1. Coordinate delivery of products with construction schedule.
 - 2. Deliver products in manufacturer's original, undamaged containers or packaging, with identifying labels intact.
 - 3. Prevent damage to products and packaging.

7.2 PRODUCT OPTIONS

- A. When Products are Specified By:
 - 1. Reference standard: Select any product meeting specified standard. Submit Product Data to substantiate compliance of selected product with specified requirements.
 - 2. Naming two or more acceptable products: Select any named product.
 - 3. Naming two or more manufacturers and description of required product attributes: Select Product of any named manufacturer. Submit Product Data to substantiate compliance of selected product with specified requirements.
 - 4. Naming single product followed by "or approved equal": Submit Substitution Request Form for any product not listed.

PART 8 PRODUCTS

Not used

PART 9 EXECUTION

Not used

END OF SECTION

SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 10 GENERAL

10.1 SUMMARY

- A. This Section includes general procedural requirements for measurement and layout of the site, reporting any discrepancies, cutting and matching paved and graded surfaces, cleaning the site, protecting installed work and project closeout procedures.

PART 11 PRODUCTS

Not used

PART 12 EXECUTION

12.1 PREPARATION

- A. Existing Conditions:
 - 1. The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work verify the existence of mechanical and electrical systems and any other construction that may affect the Work.
- B. Field Measurements:
 - 1. Take field measurements as required to properly fit proposed Work. If discrepancies exist, immediately upon discovery of the need for clarification of Contract Documents, submit a request for information to the Landscape Architect. Include a detailed description and photo of the problem encountered together with recommendations for changing the Contract Documents.

12.2 CONSTRUCTION LAYOUT

- A. Verification:
 - 1. Before proceeding to lay out Work, verify layout information in Drawings in relation to property survey and existing benchmarks. If discrepancies exist, promptly notify the Landscape Architect.
 - 2. Layout the work establishing benchmarks and control points to set lines and levels and establish dimensions.
 - 3. Verify the location, level and plumb, of every major element as the Work progresses. Notify Landscape Architect when deviations exist. Record any deviations made from layouts illustrated on Drawings.

12.3 CUTTING AND PATCHING

- A. Execute cutting and patching of work required to make component parts fit properly, remove and replace defective or ill-timed work, and provide routine penetrations of nonstructural surfaces.
- B. Execute cutting and patching to prevent damage to other work and to provide proper surfaces to receive repairs and new work.
- C. Refinish surfaces to provide even finish:
 - 1. Continuous surfaces: To nearest intersections.
 - 2. Assembly: Refinish entirely.

12.4 CLEANING

- A. Progress Cleaning: Maintain areas free from waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
- B. Final Cleaning:
 - 1. Execute final cleaning prior to final inspection.
 - 2. Clean surfaces exposed to view; remove labels, stains, and foreign substances.
 - 3. Sweep paved areas of site; rake clean landscaped areas.
 - 4. Remove waste and surplus materials, rubbish, and construction facilities from site.

12.5 PROTECTING INSTALLED WORK

- A. Protect installed work from construction operations.
- B. Provide special protection when required in individual specification sections.

12.6 CLOSEOUT PROCEDURES

- A. Submit written certification that the Work is complete in accordance with Contract Documents and ready for final inspection.
- B. Submit final statement of accounting showing:
 - 1. Original Contract Sum.
 - 2. Additions and deductions.
 - 3. Retainage withheld from previous payments.
 - 4. Adjusted Contract Sum.
 - 5. Previous payments.
 - 6.- Sum remaining due.
- C. Final payment will be made after following closeout submittals have been received from Contractor:
 - 1. Evidence of compliance with requirements of governing authorities.
 - 2. Project Record Documents.
 - 3. Operation and Maintenance Data.
 - 4. Warranties.
 - 5. Extra stock and maintenance materials.
 - 6. Evidence of payment and release of liens.
 - 7. Certificate of insurance for products and completed operations.

12.7 CLOSEOUT SUBMITTALS

- A. Project Record Documents:
 - 1. Maintain at site one working copy of Contract Documents.
 - 2. Mark record documents during construction to record actual construction:
 - a. Drawings:
 - 1) Location of underground and internal utilities referenced to visible features.
 - 2) Changes of dimension and detail.
 - 3) Changes made by Change Order or other modification.
 - 4) Details not on Contract Documents.
 - b. Project Manual and Addenda:
 - 1) Manufacturer, trade name, catalog number, and supplier of each product and item of equipment installed.
 - 2) Changes made by Change Order or other modification.

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- 3) Other matters not originally specified.
 3. Submit electronically in PDF format.
- B. Operation and Maintenance Data:
1. Product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.
 2. List name, address, and telephone number of subcontractor, installer, or maintenance contractor for each product
 3. Include local source of supply for parts and replacement.
 4. Submit electronically in PDF format.
- C. Warranties:
1. Assemble warranties provided by manufacturers, suppliers, and subcontractors.
 2. Review each warranty for compliance with requirements of Contract Documents.
 3. Submit electronically in PDF format.
- D. Submit documents along with final Application for Payment.

END OF SECTION

SECTION 02 00 00 – SITE WORK

PART 1 GENERAL

- A. Description of Work
 - 1. The work to be performed under this section consists of furnishing all labor, materials, and equipment necessary to prepare the site for proposed improvements.
- B. Stripping of vegetation, grading or other soil disturbance shall be done in a manner which minimizes soil erosion.
- C. Whenever feasible natural vegetation shall be retained and protected.
- D. Temporary seeding, mulching or stabilization measures shall be taken to protect exposed critical areas if construction ceases for more than 45 days.
- E. Sediment shall be retained on-site
- F. Conduct site clearing operations to ensure minimum interference with driveways, parking lots, walks and other occupied facilities without permission from the Owner.
- G. Provide protections necessary to prevent damage to existing improvements indicated to remain in place.
- H. Quality Assurance
 - 1. State and local code requirements shall control the disposal of debris removed and hauled from the construction site.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 INSPECTION AND PROTECTION

- 1. Examine the site to determine condition under which the work is to be done.
- 2. Locate and identify existing utilities within contract work area. Provide adequate means for protection of utilities and services designated to remain. Repair utilities damaged during site work operations at Contractor's expense.
- 3. If existing utilities are found to interfere with the facilities being constructed, immediately notify the Landscape Architect and await resolution.
- 4. Take all necessary precautions to protect and remaining structures, paving, planting, etc. on the site from any damage due to operations.
- 5. Barricade open holes and depressions occurring as part of the work until they are backfilled and finish graded.

3.2 EROSION CONTROL

- 6. Strip topsoil to whatever depth encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.
- 7. Stockpile topsoil in storage pile as indicated in the Drawings and freely drain surface of water. Cover storage pile if necessary to prevent erosion.

3.3 CLEAN UP

Leave the site "broom clean" in all areas.

END OF SECTION

SECTION 11 68 13 – PLAY EQUIPMENT

PART 1 GENERAL

1.1 The work to be performed under this section consists of furnishing all materials, equipment, and labor necessary to supply and install the proposed playground equipment, exercise equipment, and safety surfacing as featured in the Drawings (or approved equal).

1.2 Submittals to include manufacturer's technical data and installation instructions for each item of equipment required, including proof of meeting or exceeding safety standards outlined below and warranties.

1.3 Provide statement of accessibility from manufacturer including the total number of play components as well as total number of accessible components. Provide both plan view and 3-dimensional views of equipment.

1.4 Safety Standards and Certifications

a. Products comply with the American Society for Testing and Materials (ASTM) designation F1487 98(or current issue) "Standard Consumer Safety Performance Specification for Playground Equipment for Public Use."

b. Products must meet or exceed the requirements outlined in the U.S. Consumer Product Safety Commission (CPSC) Handbook for Public Playground Safety (Publication No. 325).

c. Manufacturer has ISO 14001 and ISO 9001 certification guaranteeing the highest standards for environmentally responsible manufacturing and quality-control standards in manufacturing are met.

PART 2 PRODUCTS

2.1 Provide the following components listed under either (choose one) Option A, Option B, Option C **or approved equal** as shown on the Drawings.

Option A: Features 1-3 listed below are locally represented by Penchura, contact Doug Smith, doug@penchura.com or by phone 906-286-2370.

1. (1) Healthbeat Pull-Up/Dip: Product: 192460

2. (1) Healthbeat Elliptical: 192457

3. (1) Oodle Swing: 173592

Option B: Features 1-2 listed below are locally represented by American Athletix, contact Joshua Erdman, joshua@parkvisionplay.com or by phone 616.405.0986.

1. (1) Birds Nest Swing, 8 ft H, 1 Shell Seat: Product: KSW92007-0910

2. (1) Free Runner/Cross Trainer: KPX225-3617

Option C: Features 1-4 listed below are locally represented by Midstates Recreation, contact Becca Button, beccab@midstatesrecreation.com or by phone 989-941-7731.

1. (1) ExoOne 2-Person Skier with Embedded Anchor
2. (1) ExoOne Chest Press/Lat Pull Combo with Embedded Anchor
3. (1) Playworld Hoopla Swing: 350-HOOPLA

2.2 Product Warranty Must Meet or Exceed:

1. Limited warranty for as long as the product is owned: Steel deck support posts, stainless steel hardware, clamps, deck hangers, post caps, and cast aluminum parts, except as otherwise specified below.
2. Limited 25-year warranty: Spring Mates® aluminum castings
3. Limited 15-year warranty: Perforated steel decks and stairs, steel rails, stationary weldments, rotationally-molded and sheet plastic components, recycled plastic lumber, roof panels, and stainless steel slides, except as otherwise specified below.
4. Limited 10-year warranty: Fiberglass signage, accessible swing seats, Fun Centers™, FirstPlay™ play structures, pre-cast PolyFiberCrete® or reinforced concrete products, Timber Stacks™ Robinia timbers and galvanized hardware, fabric shade steel frames and Shadesure and Colourshade FR fabrics (Note Exception: Limited Five (5) Year Warranty on fabrics in colors Red, Yellow, Electric Purple, Zesty Lime, Cinnamon, and Olive.)
5. Limited 5-year warranty: Steel reinforced cable net and rope fittings and connections (Note Exception: Warranty does not cover normal wear and tear such as fraying or fading of cable coating), PlaySimple® play structures, DropZone Tower™, LiveWire Zip Line™ (except as otherwise specified below), AeroGlide™, Border Timbers™, flex treads, wood and polycarbonate panels, Eco-Armor coating and PVC coating (against cracking and peeling), site amenities (i.e. benches, tables, litter receptacles, and bike racks), GFRP (Glass Fiber Reinforced Polymer) products, and motion/moving play components and parts.
6. Limited 3-year warranty: Steel coil and C springs, flat webbing nets (excluding normal wear and tear), electronic panel speakers, sound chips, and circuit boards.
7. Limited 1-year warranty: NEOS®, electronic based play products, swing chain, swing clevises, swing galvanized attachment hardware, molded rubber bumpers, handholds, swing seats, and any other materials or custom products not covered above, all high wear items such as trolleys, cables, wheels, and bumper stops related to rail and cable ride products. (*For NEOS only, an extended 3-year warranty is available for purchase, providing 4 years of cumulative coverage.)

PART 3 EXECUTION

- 3.1 Playground Equipment must be installed by a Certified Playground Safety Inspector or installer must be approved by the manufacturer's representative.
- 3.2 Inspection: Verify gradients and elevations of base. Beginning of installation means acceptance of existing conditions.
- 3.3 Install all equipment per manufacturer's specifications.

END OF SECTION

SECTION 31 23 00 - EXCAVATION AND FILL

PART 1 GENERAL

Not Used

PART 2 PRODUCTS

2.1 MATERIALS

- A. Suitable bedding material of sand or granular material as specified by playground and safety surfacing manufacturer
- B. Common Fill: Reused site soils free from trash, debris, roots over 1 inch in diameter, matted roots, rocks over 4 inches in diameter, topsoil, and other deleterious material.

PART 3 EXECUTION

3.1 EXCAVATING

- A. Strip existing topsoil from area where proposed play and exercise area and associated poured in place safety surfacing are located on Drawings. Excavate to grades and subgrades indicated on Drawings.
- B. Make excavations large enough to permit placing and inspection of work.

END OF SECTION

~~SECTION 32 12 16 - ASPHALT SURFACING~~

~~PART 1 — GENERAL~~

~~1.1 — QUALITY ASSURANCE~~

~~A. — Installer Qualifications: Firm specializing in work of this Section with minimum 2 years experience.~~

~~PART 2 — PRODUCTS~~

~~2.1 — MATERIALS~~

~~A. — Hot Mix Asphalt Concrete:~~

~~1. — 2.5" MDOT Bituminous mix LVSP~~

~~B. — Granular Sub-Base Course:~~

~~1. — Type: To be 3" crushed stone or pit run gravel, free of shale, clay, friable material, and debris, graded in accordance with ASTM C136, or latest revised issue, within the following limits:~~

Sieve Size	Percent Passing
2-1/2 inch	100
2 inch	90-100
1-1/2 inch	35-70
1 inch	0-15
1/2" inch	0-5

~~2. — Crushed Granular Base: To be 3/4" crushed granular base consisting of sound, durable particles free from clay, organic material, or other deleterious matter, evenly graded. Within the following limits:~~

Sieve Size	Percent Passing
1 inch	100
3/4 inch	90-100
1/2 inch	
3/8 inch	20-55
No. 4	0-10

~~3. — Asphalt Cement: ASTM D946~~

~~4. — Aggregate: Graded in accordance with AI MS-2~~

~~5. Primer: AI MS-19~~

~~6. Tack Coat: AI MS-19~~

~~2.2 — MIXES~~

~~A. — Binder Course: Coarse graded aggregate, 4.5 to 6.0 percent asphalt cement by weight.~~

~~B. — Surface Course: Fine graded aggregate, 5.0 to 7.0 percent asphalt cement by weight.~~

~~PART 3 — EXECUTION~~

~~3.1 — INSTALLATION~~

~~A. — The work to be performed under this section consists of furnishing all labor, materials, and equipment to construct asphalt paving as indicated on the drawings and as directed in the field.~~

~~B. — Do Not install hot mix asphalt concrete pavement, base, or sub-base during heavy rain or snowfall, cool temperatures, or other unsuitable conditions as determined by Owner's Representative. Place paving under favorable weather conditions with base and sub-base surface dry and stable. Air temperature must be at least 42 degrees Fahrenheit to place asphalt mixture.~~

- ~~C. Examine substrates and notify Owner's Representative of any deficiencies related to compaction or incorrect grades or slopes. Ensure deficiencies are corrected prior to commencement of work in this Section.~~
- ~~D. Prepare sub-grade to grade specified on Drawings allowing for positive drainage.~~
- ~~E. Sub-grade shall be compacted to 95% of Maximum Density. Verify the gradients and elevations of the subgrade and base are correct to allow installation as per the details and meet the intended finished grades. Notify Owner's Representative of any discrepancies prior to proceeding with installation.~~
- ~~F. Spread sub-base coarse aggregate over subgrade in maximum 3-inch lifts and compact to 98% of Maximum Density.~~
- ~~G. Spread base course (on compacted sub-base course) of aggregate in maximum 3-inch lifts. Compact to 98% of Maximum Density.~~
- ~~H. Ensure all aggregate is evenly compacted and provide Owner's Representative a minimum 48-hr notice prior to desired paving time to allow for inspection.~~
- ~~I. Place depth of asphalt concrete to thicknesses, grades and lines as shown on the contract documents or as directed by Owner's Representative. To be placed in compacted lifts of specified thicknesses. Arrange for and complete paving in a continuous operation.~~
- ~~J. Lower Course: Machine place to specified compacted thickness (max lifts of 2 inches after compaction) over compacted and graded aggregate base. Some areas may require thicker applications to fill in low spots and to ensure positive drainage.~~
- ~~K. Upper Course: Machine place to minimum specified compacted thickness (max lifts of 1.5 inches after compaction) over compacted lower course. Hand place/tamp as required around all site fixtures.~~
- ~~L. When asphalt concrete meets site fixtures, furnishings, walls, walks, or other flare the asphalt upwards around the base of the fixture to allow for positive drainage away from the fixture while remaining in compliance with the overall grading and drainage plans.~~
- ~~M. Commence rolling or manual compaction immediately after the bearing capacity is adequate to support the required compaction equipment, without undue displacement of material or surface cracking.~~
- ~~N. The finished surface is to be smooth and rolling to allow for positive drainage of all areas.~~
- ~~O. All asphalt edges shall have a uniform, beveled, tidy and straight appearance. Both lower and upper course joints shall be homogenous with the rest of the surface and carefully matched for texture and elevation.~~

END OF SECTION

~~SECTION 32 15 00 - AGGREGATE SURFACING~~

~~PART 1 - GENERAL~~

~~1.1 - None~~

~~PART 2 - PRODUCTS~~

~~2.1 - MATERIALS~~

~~A. - Topcoat Aggregate:~~

- ~~1. - Type: Smith Construction, Inc. Trail Mix (or approved equal)~~
- ~~2. - Size: 3/8" minus~~

Sieve Size	Percent Passing
3/8 inch	100
1/4 inch	65
3/16 inch	50
1/8 inch	35
1/16 inch	25

~~B. - Basecoat Aggregate:~~

- ~~1. - Type: 21AA crushed stone down to fines~~
- ~~2. - Size: 1" minus~~

~~2.2 - ACCESSORIES~~

~~A. - Edging: Aluminum (see SECTION 32 15 01)~~

~~PART 3 - EXECUTION~~

~~3.1 - INSTALLATION~~

- ~~A. - Prepare sub-grade to grade specified on Drawings allowing for positive drainage.~~
- ~~B. - Sub-grade shall be compacted with a vibratory compactor or 3 1/2 ton drum roller.~~
- ~~C. - Spread basecoat aggregate over subgrade in maximum 3-inch lifts and compact with a vibratory compactor or 3 1/2 ton drum roller.~~
- ~~D. - Spread topcoat of aggregate in maximum 3-inch lifts. Wet surface or wait for gentle rain or heavy morning dew to moisten material prior to compacting with a vibratory compactor or 3 1/2 ton roller.~~
- ~~E. - Ensure all aggregate is evenly compacted and installed between edging without spillover.~~

END OF SECTION

SECTION 32 18 20 - PLAYGROUND PROTECTIVE POURED IN PLACE RUBBER SURFACING

PART 1 GENERAL

1.1 SUBMITTALS

A. Action Submittals:

1. Product Data: Manufacturer's descriptive data and product attributes for surfacing including ASTM F 1292 test data identifying the critical height rating of the surface.
2. Provide shop drawings illustrating the requirements for the site prior to installation of the poured in place rubber surface

Warranty

Standard warranty period is for 5 years from completion of installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Following manufacturers are acceptable if products meet specified requirements (or approved equal):

1. Pro-Techs Surfacing. <http://www.pro-techssurfacing.com>
2. SurfaceAmerica. www.surfaceamerica.com
3. SofSurface. <https://www.sofsurfaces.com/>
4. DuraPlay Safety Surfaces. <https://duraplay.com/>
5. Softline Solutions. <https://www.softlinesolutions.net/>

B. PLAYGROUND SURFACING

1. Type: 2-layer poured-in-place consisting of a baselayer of 100% post-consumer recycled, 3/8" shredded, SBR (styrene butadiene rubber) and high-grade aromatic polyurethane. The top surface consists of EPDM (Ethylene Propylene Diene Monomer) rubber with the black EPDM being post-industrial material ranging in size from 1-3mm and high-grade aromatic or aliphatic polyurethane.
2. Comply with ASTM F1292 and ASTM F1951.
3. Top surface thickness is 0.5" nominally.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL PER MANUFACTURER'S INSTRUCTIONS:

1. PREPARATORY WORK

EPDM Rubber materials should be protected from exposure to harmful environmental conditions (moisture) and at a minimum temperature of 40 degrees F and a maximum temperature of 95 degrees F. Install surfacing system when minimum ambient temperature is 40 degrees F and maximum ambient temperature is 95 degrees F. Basemat may be installed in a light rain. Do not install Topcoat in any type of moisture or precipitation.

2. SUBSTRATE PREPARATION

Compacted Stone Base: Substrate must be in accordance with surfacing manufacturers Compacted Stone Base Installation Instructions before Perma-Play 2-Layer Poured-In-Place Playground Surfacing can be applied.

3. NOTE: Proper drainage is crucial to the longevity of the Perma-Play 2-Layer Poured-In-Place Playground Surfacing. Inadequate drainage will cause premature breakdown of the product in affected areas; and void the warranty.

- ##### B. Perma-Play 2-Layer Poured-In-Place Playground Surfacing (or approved equal) cannot proceed until all applicable site work, including substrate preparation, fencing, playground equipment

installation and other relevant work, has been completed and approved by the manufacturer's representative.

C. BASEMAT PRIMER

Using a bristle brush, apply ample urethane primer to all curbing and or vertical substrates, which the rubber surfacing system will contact.

BASEMAT INSTALLATION

Using screed sticks and gauge poles, install the basemat rubber materials to 1/8" – 1/4" higher than required thickness. Using pool trowels, pull the basemat material together using consistent pressure throughout. Repeat the process until all areas, including use zones, comply with the architectural plans and specification requirements. Allow basemat to cure for sufficient time (24 hours) so that indentations are not left in the basemat material. Installation contractor must verify that the basemat has cured sufficiently before applying the finished topcoat

TOPCOAT PRIMER

Using a bristle brush apply urethane binder to the existing 1/2" of curbing and any other vertical structures within the installation areas, and also to the basemat material at a minimum of 2" around the perimeter of the topcoat area.

TOPCOAT INSTALLATION

Screed the EPDM topcoat rubber granules to a nominal 5/8" thickness to allow for compaction. Using a pool trowel, pull together material using consistent pressure throughout to produce the end result of 1/2" thickness. Any area less than 2500 sf will be completed seamlessly as conditions allow.

- D. Allow topcoat to cure for 24 hours to 72 hours contingent on the humidity and temperature. Protect newly installed topcoat from foot traffic or equipment usage until the Poured-In-Place Playground Surfacing has fully cured.

E. MAINTENANCE/CLEANING

Using a standard leaf blower or broom, remove any lightweight debris such as leaves, trash, etc. Using a watering hose or a pressure washer, not exceeding 1000 PSI, rinse off all excess debris from the surface. While surface is wet, apply a mild cleaning detergent and agitate lightly with a soft bristle brush. Repeat as necessary. Once clean, final rinse with low-pressure water from a hose to remove any excess- cleaning agents.

F. QUALITY ASSURANCE

QUALIFICATIONS – Utilize an installer certified and trained by the manufacturer of playground surfacing system, having experience with other projects of the scope and scale of the work described in this section.

CERTIFICATIONS – Certification by manufacturer that installer is an approved applicator of Perma-Play 2-Layer Poured-In-Place Playground Surfacing (or approved equal).
International Play Equipment Manufacturers Association (IPEMA) Certified

END OF SECTION

~~SECTION 32 32 23 – SEGMENTAL RETAINING WALL SYSTEM~~

PART 1: GENERAL

1.01 ~~_____~~ Description

- ~~A. Work shall consist of furnishing materials, labor, equipment and supervision to install a plantable segmental retaining wall system in accordance with plans and specifications and in reasonably close conformity with the lines, grades, design and dimensions shown on plans or established by Owner's Authorized Representative.~~

1.02 ~~_____~~ Reference Standards

~~_____~~ A. Segmental Retaining Wall Units

- ~~1. ASTM C 140 – Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units~~
- ~~2. ASTM C 1372 – Standard Specification for Dry-Cast Segmental Retaining Wall Units~~

~~_____~~ B. Not Applicable

~~_____~~ C. Soils

- ~~1. ASTM D 698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort~~
- ~~2. ASTM D 2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)~~
- ~~3. ASTM D 422 – Standard Test Method for Particle-Size Analysis of Soils~~
- ~~4. ASTM D 4318 – Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils~~
- ~~5. ASTM G 51 – Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing~~

~~_____~~ D. Drainage Pipe

- ~~1. ASTM F 405 – Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings~~

~~E. Engineering Design~~

- ~~1. "NCMA Design Manual for Segmental Retaining Walls," 3rd Edition, 2009.~~

- ~~F. Where specifications and reference documents conflict, the Owner's Authorized Representative shall make the final determination of applicable document.~~

1.03 ~~_____~~ Submittals

- ~~A. Materials Submittals: The Contractor shall submit manufacturers' certifications two weeks prior to start of work stating that the SRW units and geosynthetic reinforcement meet the requirements of Section 2 of this specification.~~

1.04 ~~_____~~ Delivery, Storage and Handling

- ~~A. Contractor shall check materials upon delivery to ensure that the specified type and grade of~~

~~materials have been received and proper color and texture of SRW units have been received.~~

~~B. Contractor shall store and handle materials in accordance with manufacturer's recommendations and in a manner to prevent deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping or other causes.~~

~~C. Contractor shall prevent excessive mud, wet concrete, epoxies and similar materials that may affix themselves from coming in contact with materials.~~

~~D. Contractor shall protect materials from damage; no damaged material shall be incorporated into the segmental wall.~~

PART 2: MATERIALS

2.01 Segmental Retaining Wall Units

~~A. SRW units shall be machine formed, Portland cement concrete blocks specifically designed for retaining wall applications. SRW units currently approved for this project are:~~

~~_____~~
~~VERSA-LOK Mosaic® Retaining Wall System that includes three unit types: VERSA-LOK Standard units, VERSA-LOK Cobble® units and VERSA-LOK Accent® units, or Approved Equal~~

~~B. Color of SRW units shall be _____.~~

~~C. Finish of SRW units shall be split face.~~

~~D. SRW unit faces shall be of straight geometry.~~

~~E. SRW unit height shall be both 4 and 6 inches.~~

~~F. SRW units shall be designed to stack in "panels" 10 inches high by 24 inches wide consisting of the three SRW unit types that can be stacked in varied patterns to create a random look.~~

~~G. SRW units shall provide a minimum weight of 120 psf wall face area.~~

~~H. SRW units shall be solid through the full depth of the unit.~~

~~I. SRW units shall have a depth (front face to rear) to height ratio of 2:1, minimum.~~

~~J. SRW units shall be capable of being erected with the horizontal gap between adjacent units not exceeding 1/8 inch.~~

~~K. SRW units shall be interlocked with connection pins that provide 3/4 inch setback from unit below (4 and 6 inch high units stacked alternately, yielding an overall 8.5 degree cant from vertical).~~

~~L. SRW units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the structure. Any cracks or chips observed during construction shall fall within the guidelines outlined in ASTM C 1372.~~

~~M. Concrete SRW units shall conform to the requirements of ASTM C 1372 and have a minimum net average 28 days compressive strength of 3000 psi. Compressive strength test specimens shall conform to the saw cut coupon provisions of ASTM C 140.~~

~~N. SRW units' molded dimensions shall not differ more than ± 1/8 inch from that specified, as measured in accordance with ASTM C 140. This tolerance does not apply to architectural~~

~~surfaces, such as split faces.~~

~~2.02 Segmental Retaining Wall Unit Connection Pins~~

- ~~A. SRW units shall be interlocked with VERSA-TUFF® Snap-Off connection pins or Approved Alternate, 6.8 inches in length, with a section that can snap off, yielding a 4.6 inch long pin. The pins shall consist of glass reinforced nylon made for the expressed use with the SRW units supplied.~~

~~2.03 Not Applicable~~

~~2.04 Leveling Pad~~

- ~~A. Material for leveling pad shall consist of compacted sand, gravel, or combination thereof (USCS soil types GP, GW, SP and SW) and shall be a minimum of 6 inches in depth. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit.~~

~~2.05 Drainage Aggregate~~

- ~~A. Drainage aggregate shall be angular, clean stone or granular fill meeting the following gradation as determined in accordance with ASTM D 422:~~

<u>Sieve Size</u>	<u>Percent Passing</u>
1 inch	100
3/4 inch	75-100
No. 4	0-60
No. 40	0-50
No. 200	0-5

~~2.06 Drainage Pipe~~

- ~~A. The drainage collection pipe shall be a perforated or slotted PVC, or corrugated HDPE pipe. The drainage pipe may be wrapped with a geotextile to function as a filter.~~
- ~~B. Drainage pipe shall be manufactured in accordance with ASTM F 405 or ASTM F 758.~~

~~2.07 Reinforced Backfill Soil~~

- ~~A. The reinforced soil material shall be free of debris. Unless otherwise noted on the final, P.E.-sealed, retaining wall plans prepared by the Wall Design Engineer, the reinforced material shall consist of the inorganic USCS soil types GP, GW, SW, SP and SM, meeting the following gradation, as determined in accordance with ASTM D 422:~~

<u>Sieve Size</u>	<u>Percent Passing</u>
1 inch	100
No. 4	20-100
No. 40	0-60
No. 200	0-35

- ~~B. The maximum particle size of poorly graded gravels (GP) (no fines) should not exceed 3/4 inch unless expressly approved by the Wall Design Engineer and the long term design strength (LTDS) of the geosynthetic is reduced to account for additional installation damage from particles~~

~~larger than this maximum.~~

~~C. The plasticity of the fine fraction shall be less than 20.~~

~~D. The pH of the backfill material shall be between 3 and 9 when tested in accordance with ASTM G 51.~~

2.08 — Geotextile Filter

~~A. Drainage geotextile shall consist of geosynthetic specifically manufactured for use as a preambled soil filter that retains soil while still allowing water to pass throughout the life of the structure. The type and placement of the geotextile filter material shall be as required by the Wall Design Engineer in their final wall plans and specifications.~~

PART 3: DESIGN PARAMETERS

3.01 — Soil

~~A. Should the actual soil conditions observed during construction differ from those assumed for the design, design shall be reviewed by the Owner's Authorized Representative.~~

PART 4: CONSTRUCTION

4.01 — Inspection

~~A. The Owner or Owner's Authorized Representative is responsible for verifying that the materials supplied by the Contractor meet all the requirements of the specification. This includes all submittals for materials and design, qualifications and proper installation of wall system.~~

~~B. Contractor's field construction supervisor shall have demonstrated experience and be qualified to direct all work at the site.~~

4.02 — Excavation

~~A. Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over excavation. Over excavation shall be filled with compacted infill material, or as directed by the Wall Design Engineer, at the Contractor's expense.~~

~~B. Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation. Excavation support, if required, is the responsibility of the Contractor.~~

4.03 — Foundation Preparation

~~A. Foundation soil shall be proof rolled and compacted to 95% standard Proctor density and inspected by the Owner's Geotechnical Engineer prior to placement of leveling pad materials.~~

4.04 — Leveling Pad Construction

~~A. Leveling pad shall be placed as shown on the final retaining wall plans with a minimum thickness of 6 inches. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit.~~

- ~~B. Granular leveling pad material shall be compacted to provide a firm, level bearing surface on which to place the first course of units. Well-graded sand can be used to smooth the top 1/4 inch to 1/2 inch of the leveling pad. Compaction will be with mechanical plate compactors to achieve 95% of maximum standard Proctor density (ASTM D 698).~~

4.05 ~~SRW Unit Installation~~

- ~~A. All SRW units shall be installed at the proper elevation and orientation as shown on the final, P.E. sealed wall plans and details or as directed by the Wall Design Engineer. The SRW units shall be installed in general accordance with the manufacturer's recommendations. The specifications and drawings shall govern in any conflict between the two requirements.~~
- ~~B. For ease of installation, generally the base course of SRW units shall be all 6-inch high Standard units placed on the leveling pad. The units shall be leveled side-to-side, front-to-rear and with adjacent units, and aligned to ensure intimate contact with the leveling pad. The base course is the most important to ensure accurate and acceptable results. No gaps shall be left between the front of adjacent units. Alignment may be done by means of a stringline or offset from baseline to the back of the units. Placing panels of Mosaic directly on the leveling pad is also acceptable. In this case, the entire 10-inch high course of panels must be installed before the level and alignment can be checked.~~
- ~~C. All excess debris shall be cleaned from top of units and the next course of units installed on top of the units below.~~
- ~~D. Mosaic panels shall be placed on the units below. Each panel shall be installed completely prior to installing horizontally adjacent panels. Each Mosaic panel shall be 10 inches high by 24 inches wide, consisting of one Standard unit, one Cobble unit, and two Accent units. With each adjacent panel, the units at the bottom of the panels should be alternated from 4-inch high units to 6-inch high units. As an example, one panel shall have Accent units at the base of the panel with Standard and Cobble units on top. The next adjacent panel shall have the Standard and Cobble units at the bottom and Accent units on top. The order of the Cobble and Standard units shall be randomly mixed within the panels to avoid a repetitive pattern. The entire length of each 10-inch high course of panels shall be installed before starting the next course of panels.~~
- ~~E. Each unit in a Mosaic panel shall be pinned to the units below in the following manner: Two VERSA-TUFF connection pins shall be inserted through the pin holes of each unit into receiving slots in units below, creating an approximate 3/4-inch setback from the unit below. Pins shall be fully seated in the pin slot below. When pinning 4-inch high Accent units, the top 2 inches of the 6.8-inch VERSA-Tuff Snap-off pin will initially extend above the Accent unit. The top of the pin shall be snapped off by hitting the top of the pin from the side. Once pinned, the units shall be pushed forward to remove any looseness in the unit-to-unit connection.~~

~~Prior to placement of next course of panels, the level and alignment of the units shall be checked and corrected where needed.~~

- ~~F. The next course of panels shall be placed so that it is staggered at least 4 inches from the vertical joints between the panels below. The patterns in the Mosaic panels generally shall not line up with the course below. The bond of the panels shall be varied on subsequent courses to create a random look.~~
- ~~G. Layout of curves and corners shall be installed in accordance with the wall plan details or in general accordance with SRW manufacturer's installation guidelines. Walls meeting at corners~~

~~shall be interlocked by overlapping successive courses.~~

~~H. Procedures C. through G. shall be repeated until reaching top of wall units, just below the height of the cap units. Geosynthetic reinforcement, drainage materials, and reinforced backfill shall be placed in sequence with unit installation as described in Section 4.06, 4.07 and 4.08.~~

4.06 — ~~Drainage Aggregate and Drainage Material Placement~~

~~A. Drainage aggregate shall be installed to the line, grades and sections shown on the final sealed retaining wall plans. Drainage aggregate shall be placed to the minimum thickness shown on the construction plans between and behind units (a minimum of 1 cubic foot for each exposed square foot of wall face unless otherwise noted on the final wall plans).~~

~~B. Drainage collection pipes shall be installed to maintain gravity flow of water outside the reinforced soil zone. The drainage collection pipe shall be installed at the locations shown on the final construction drawings. The drainage collection pipe shall daylight into a raingarden, at an elevation below the lowest point of the pipe within the aggregate drain. Drainage laterals shall be spaced at a maximum 50-foot spacing along the wall face.~~

4.07 — ~~Backfill Placement~~

~~A. The reinforced backfill shall be placed as shown in the final wall plans in the maximum compacted lift thickness of 8 inches and shall be compacted to a minimum of 95% of standard Proctor density (ASTM D 698) at a moisture content within -1% point to +3% points of optimum. The backfill shall be placed and spread in such a manner as to eliminate wrinkles or movement of the geosynthetic reinforcement and the SRW units.~~

~~B. Only hand-operated compaction equipment shall be allowed within 3 feet of the back of the wall units. Compaction within the 3 feet behind the wall units shall be achieved by at least three passes of a lightweight mechanical tamper, plate, or roller.~~

~~C. At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing and reinforced backfill to direct water runoff away from the wall face.~~

~~D. At completion of wall construction, backfill shall be placed level with final top of wall elevation. If final grading, paving, landscaping and/or storm drainage installation adjacent to the wall is not placed immediately after wall completion, temporary grading and drainage shall be provided to ensure water runoff is not directed at the wall nor allowed to collect or pond behind the wall until final construction adjacent to the wall is completed.~~

4.08 — ~~SRW Caps~~

~~A. SRW caps shall be properly aligned and glued to underlying units with VERSA-LOK adhesive, a flexible, high-strength concrete adhesive. Rigid adhesive or mortar are not acceptable.~~

~~B. Caps shall overhang the top course of units by 3/4 inch to 1 inch. Slight variation in overhang is allowed to correct alignment at the top of the wall.~~

~~END OF SECTION~~

~~SECTION 32 92 00 – SEEDING AND MULCHING~~

~~PART 1 – GENERAL~~

~~1.1 – DESCRIPTION OF WORK~~

~~A. The work to be performed under this section consists of furnishing all labor, materials, and equipment necessary to seed and mulch all disturbed areas, complete for the proposed improvements in accordance with the specifications and as directed in the field.~~

~~PART 2 – PRODUCTS~~

~~2.1 – SEED~~

- ~~A. Provide fresh, clean, vendor mixed new crop seed. All seed shall be labeled.~~
- ~~a. Grass seed shall be spread at a 5#/1,000 square feet and combined with 50% red clover (*Trifolium pratense*)~~
 - ~~i. Grass mix: 30% red fescue, 20% annual ryegrass, 20% perennial ryegrass~~

~~2.2 – MULCH~~

- ~~a. Clean wheat, oat or barley straw, well seasoned before baling. Free from mature seed bearing stalks or roots of prohibited or noxious weeds.~~

~~2.3 – TOPSOIL~~

- ~~a. Provide a friable loam topsoil, typical of that cultivated locally, containing not more than 6-8 percent decayed organic matter (humus) and no weeds.~~

~~PART 3 – EXECUTION~~

~~3.1 – GENERAL~~

- ~~A. Coordinate work on the site to ensure completion of potentially site altering work has been completed prior to seeding.~~
- ~~B. The Contractor shall test the soil for the appropriate pH. The test results shall be submitted to the Landscape Architect. If needed, the Contractor shall apply agricultural liming material.~~
- ~~C. Finely grade and rake topsoil smooth with no stones larger than 2" in diameter. The seeding shall be completed within three days after completion of final grading or as soon thereafter as conditions are favorable. The seed shall be broadcast uniformly over the seedbed. The approved mulch shall be applied over the seeded area at a rate of 1 bale per 1,000 square feet for straw.~~
- ~~D. Washouts and damages to seeded areas are the responsibility of the Contractor and shall be repaired in accordance with these specifications. Remove all excess materials and debris from site, clean all pavements, and restore all damaged turf areas to their original condition.~~

~~END OF SECTION~~

SECTION 33 46 00 – SUBDRAINAGE

PART 1 GENERAL

1.2 DESCRIPTION OF WORK

- A. The work to be performed under this section consists of furnishing all labor, materials, and equipment necessary to excavate and prepare trenches, install draitile in proposed poured in place rubber surfacing areas and backfill in accordance with the drawings, specifications and as directed in the field.

PART 2 PRODUCTS

2.1 Drain Tile

- A. Corrugated, 4" diameter drain tile, perforated, with sock.

PART 3 EXECUTION

3.1 EARTHWORK

- A. Excavation, trenching and backfilling are specified in Division 31 Section "Excavation and Fill."

3.2 PIPE INSTALLATION

- A. Drawings indicate general locations of drain tile. Install piping as indicated to the extent practical. Install beginning at low point, true to grades and alignment indicated with unbroken continuity. Place couplings according to manufacturer's instructions.
- B. Inspect piping to ensure drainage channel is unobstructed after installing backfill.

END OF SECTION