

NOTICE

Thank you for your inquiry regarding the City of Portage project listed below:

Playground Improvements

If your firm plans to submit a proposal on this project, please send an e-mail response to purchasing@portagemi.gov with the following information:

Firm Name: _____

Project Name: _____

Firm's Contact Person: _____

Telephone Number: _____

Fax Number: _____

E-Mail Address: _____

Postal Address: _____

The City of Portage Purchasing Division will use this information to communicate with you in the event an addendum or change to this project is issued. If you do not send this information to the City of Portage, you will not receive any follow-up notification of any changes to the project.

Date of Issue: April 30, 2014

REQUEST FOR PROPOSALS

The City of Portage will open sealed proposals on Wednesday, May 21, 2014, at 3:00 p.m. prevailing local time in the City Hall Conference Room #1 at 7900 South Westnedge Avenue for:

Playground Improvements at Lakeview, Oakland Drive and Bicentennial Parks, as follows:

You are invited to submit a proposal for this project. Sealed proposals may be mailed or delivered to the City of Portage, Purchasing Department, 7900 South Westnedge Avenue, Portage, MI 49002. Envelopes should be plainly marked:

SEALED PROPOSAL: **Playground Improvements at Lakeview, Oakland Drive
and Bicentennial Parks**

FOR OPENING: **May 21, 2014**

General specifications, description and conditions upon which the bid proposal is to be based are available at the City of Portage website www.portagemi.gov.

The City reserves the right to reject any or all bids, to waive any irregularities, and further reserves the right to accept any bid or parts of bids which it deems to best serve the interest of the City.

There will be a pre-bid meeting at 10:00 AM on May 13, 2014 in Conference Room #1 in the Portage City Hall, 7900 South Westnedge Avenue, Portage, Michigan.

If you have any questions regarding purchasing procedures, please phone the Purchasing Department at (269) 329-4534. If you have any questions regarding the specifications, please contact Woody Isaacs at VIRIDIS Design Group, (269) 978-5143 or woody@virdg.com.

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Attachments

- Plans
- Special Conditions
- Draft Contract Agreement
- Sample Bond Documents

1. INSTRUCTIONS FOR PROPOSAL SUBMISSION

1.1. Examination of Proposal Documents

Before submitting a proposal, companies shall carefully examine the specifications and shall fully inform themselves as to all existing conditions and limitations and shall indicate in the proposal the sum to cover the cost of all items included on the proposal form.

1.2. Withdrawal of Proposals

Any company may withdraw his proposal, either personally or by facsimile or written request, at any time prior to the scheduled closing time for receipt of proposals.

Each proposal shall be considered binding and in effect for a period of ninety (90) days after the date of opening set forth in the advertisement.

1.3. Proposal Opening

Proposals will be opened and publicly read aloud at the time and place set forth in the Request for Proposals.

1.4. Each proposal shall be made on the form provided and, except for proposals submitted via facsimile equipment, shall be submitted in a sealed envelope bearing the title of work and the name of the company, and shall be signed by an individual authorized to execute the proposal on behalf of the company. A complete proposal shall include:

- Two (2) copies of the Proposal
- Two (2) copies of the Information Sheet
- One (1) copy of plans.

1.5. Modifications: Alternate written proposals submitted may be considered; however, final determination as to suitability and/or compliance with specifications of the City will lie with the City. Oral proposals or modifications will not be considered.

1.6. Delivery of Proposals: Proposals shall be delivered by the time and to the place stipulated in the advertisement. It is the sole responsibility of the company to see that its proposal is received in the proper time. Any proposal received after the proposal opening date and time shall be returned to the company unopened.

1.7. Nondiscrimination

The Contractor agrees to comply with the Federal Civil Rights Act of 1964 as amended; the Federal Civil Rights Act of 1991 as amended; the Americans With Disabilities Act of 1990 as amended; the Elliott-Larsen Civil Rights Act, Article 2, Act no. 453, Public Act of 1976 as amended; the Michigan Handicapper’s Civil Rights Act, Article 2, Act. No. 220; Public Act of 1976, as amended and all other applicable Federal, State and Local laws and regulations. Specifically, contractors and subcontractors are required not to discriminate against any employee or applicant for employment with respect to such person’s hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment because of such person’s height, weight, race, color, religion, national origin, ancestry, age, marital status, sex or disability, as defined by law. Breach of this covenant may be regarded as a material breach of the contract.

The City of Portage in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 USC 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all companies that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit proposals in response to this invitation and will not be discriminated against on the grounds of gender, disability, race, color or national origin in consideration for an award.

1.8. Proposals Submitted via Facsimile Equipment

1.8.1. Transmittal page must be plainly marked and sent to (269) 329-4535:

“Sealed Proposal _____ for opening _____”
Proposal Name Date

1.8.2. When proposals are submitted via facsimile equipment, both the original document and the facsimile printout are counterpart originals.

1.8.3. Whenever a proposal guaranty/bond is required, proposals submitted via facsimile equipment can comply with this provision by submitting a facsimile copy of the bond document. When a cashier’s check is elected to meet the proposal guaranty/bond requirement, the cashier’s check must be physically in the possession of the City by the date and time outlined on the Request for Proposals, or such proposal may be considered non-responsive.

1.8.4. In electing to use the facsimile option, the company assumes full responsibility for any and all errors, omissions, or mistakes that result in a proposal not being submitted in a timely manner, whether or not the mistake was the fault of the company.

1.9. Contractor's Insurance

The successful company will also be required to furnish:

- 1.9.1.** Workers compensation insurance, including employer's liability, under the Workers Compensation Statutes of the State of Michigan.
- 1.9.2.** Comprehensive General Liability Policy of at least \$1,000,000 per occurrence for personal injury and property damage.
- 1.9.3.** Comprehensive Automobile Liability Policy of at least \$1,000,000 CSL for bodily injury and property damage on any automobile.
- 1.9.4.** Umbrella or Excess Liability \$2,000,000
- 1.9.5.** ALL INSURERS SHALL BE LICENSED AND AUTHORIZED TO DO BUSINESS IN THE STATE OF MICHIGAN.
- 1.9.6.** These coverages shall protect the contractor, its employees, agents, representatives and subcontractors against the claims arising out of the work performed, and the General Liability and Automobile Liability policies shall contain the following statement:
- 1.9.7.** THE CITY OF PORTAGE, ITS AGENTS, ELECTED OFFICIALS, AND EMPLOYEES ARE INCLUDED AS ADDITIONALLY INSURED PARTY.
- 1.9.8.** ALL COVERAGES MENTIONED ABOVE WILL BE REQUIRED TO HAVE THE POLICIES ENDORSED TO STATE THAT A 30 DAY NOTICE OF CANCELLATION, 10 DAYS FOR NON-PAYMENT OF PREMIUM, SHALL BE SENT TO THE CITY OF PORTAGE.

1.10. Bonds

- 1.10.1. Proposal Guaranty** - Each proposal shall be accompanied by a certified check or proposal guaranty bond acceptable to the City in an amount equal to at least five percent (5%) of the proposal, payable without condition to the City of Portage, as a guaranty that the company, if awarded the proposal, will promptly execute the proposal, and will furnish good and sufficient bond for the faithful performance of the same, and for the payment to all persons supplying labor and material for the work. The proposal guarantees of all companies, except the three (3) lowest, will be returned promptly after the canvass of proposals.
- 1.10.2. PERFORMANCE, MAINTENANCE AND LABOR & MATERIAL BONDS** -- The successful Bidder, simultaneously with the execution of the contract, will be required to furnish a faithful Performance Bond in an amount equal to one hundred percent (100%) of the Contract Amount, a

Maintenance and Guarantee Bond equal to twenty-five percent (25%) of the Contract Amount which shall be effective for two years beyond the date of final payment, and a Labor and Material Payment Bond equal to one hundred percent (100%) of the Contract Amount; said bonds shall be secured from an insurance company satisfactory to the City. Typical Bond forms are included in the Contract Documents.

1.11. Pre-Proposal Meeting

A pre-proposal meeting will be held on Tuesday, May 13, 2014 at 10:00 a.m. in the City Hall Conference Room #1, 7900 South Westnedge, Portage, Michigan. All companies may attend this meeting to acquaint themselves with the peculiarities of the work to be performed and the specific requirements. Staff will be available to answer questions. If necessary, a written addendum will be prepared from the information received at this meeting.

1.12. Proposal Submittals - Proposals will be considered from responsible organizations or individuals now or recently engaged in the performance of public service contracts similar to those described and requested herein. Proposals shall include:

1.12.1. Narrative – Each company is requested to furnish a one to two page narrative statement listing similar contracts it has performed, the general history of its operating organization, and its complete experience.

1.12.2. Equipment – Each company is requested to provide a list of equipment, the manufacturer of the equipment, and a 2-D and 3-D plan layout, in color, for each playground area.

1.12.3. Performance of Work – Each company must provide a list of staff and equipment that will be dedicated to this work. Companies may be requested to demonstrate that staffing and equipment is adequate for this contract and in conjunction with all other work on-hand.

1.12.4. Proposal Page as provided in this request for proposal.

1.12.5. Project Information Sheet as provided in this request for proposal.

1.13. Award

Award will be made to one proposer whose proposal is in the best interest of the City. Each proposal shall have the unit prices and extensions checked for correctness. If discrepancies appear between the item prices and extensions submitted, the unit price submitted for the particular item shall govern, and the dollar amount of the proposal adjusted accordingly. Favorable pricing will be one element of the selection process, but all of the following factors will be used in evaluating proposals received. The factors are presented in no specific order.

- 1.13.1.** Responsiveness to Request for Proposal specifications.
- 1.13.2.** Structure Design -- Nature based equipment for Bicentennial Park; deck height and overall height of structure for Oakland Drive Park.
- 1.13.3.** Price.
- 1.13.4.** Quality of equipment.
- 1.13.5.** Availability of spare parts.
- 1.13.6.** References.
- 1.13.7.** Quality and length of warranties
- 1.13.8.** Comparability of alternate components
- 1.13.9.** Delivery time and availability to meet construction schedule
- 1.13.10.** Demonstrated capability to perform the type of work requested.

Additional information and/or interviews may be requested of company(ies) at the sole discretion of the City, to assist the City in making its award decision.

1.14. Complete Contract

This proposal document, together with its appendixes, amendments, attachments and modifications, when executed, becomes the complete contract between the parties hereto, and no verbal or oral promises or representations made in conjunction with the negotiation of this contract shall be binding on either party.

1.15. Indemnification

To the fullest extent permitted by Laws and Regulations, the Contractor shall indemnify and hold harmless the City and its officers, directors, employees, agents and consultants from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from the performance of the Work or from the failure to comply with any covenant or term of the contract, provided that any such claim, cost, loss or damage: (i) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself), including the loss of use resulting there from or (ii) is caused in whole or in part by any act or omission of the Contractor, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any act or omission of a person or entity

indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such person or entity.

In any and all claims against the City or any consultants, agents, officers, directors or employees of the City by any employee (or the survivor or personal representative of such employee) of the Contractor, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any such Subcontractor, Supplier or other person or organization under workers' compensation Acts, disability benefit Acts or other employee benefit Acts.

Insurance coverage required by the contractor constitutes the minimum requirements and those requirements shall in no way lessen or limit the liability of the contractor under the terms of the contract. The contractor shall procure and maintain at contractor's own cost and expense any additional claims or amounts of insurance that, in the judgment of the City, may be necessary for contractor's proper protection in the prosecution of the work.

- 1.16. Duration Of Proposal** -- Each proposal shall be considered binding and in effect for a period of ninety (90) days after the date of opening set forth in the advertisement.

1.17. City of Portage Contract Conditions and Specifications

All bids submitted shall be in full compliance with the Contract Conditions and Specifications of the City of Portage. The Contract Conditions and Specifications can be obtained from the Purchasing Division. The first set will be provided to the Firm at no cost and subsequent sets or copies must be purchased for \$25.00.

1.18. Laws and Municipal Ordinances

The Contractor shall be fully informed of all laws and municipal ordinances and regulation in any manner affecting those engaged or employed in the work, or the equipment and materials used in the work, and all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. The Contractor shall at all times observe and comply with all such existing laws, codes, ordinances, regulations, orders and decrees. In particular, all work shall be in compliance with the Laws of the State of Michigan, City Ordinances, as well as all other bodies having jurisdictional authority.

If the corporation is not a Michigan corporation, a "Certificate of Authority to Transact Business in the State of Michigan" if required by MCLA 450.2001, et. Seq., shall be submitted to the City by the successful bidder.

1.19. Retainage Requirement

In accordance with the State of Michigan Public Act 524 of 1980, retainage will be withheld for any construction contract in excess of \$30,000. Ten percent (10%) retainage will be withheld from the first fifty percent (50%) of the contracted amount.

2. SPECIFICATION

2.1. Project Overview

Lakeview Park – 9345 Portage Road. Work includes but is not limited to the following: Removal of existing swing set including footings. Provide and install new swing set and restoration of play surfacing. Refer to the Drawings and Specifications for full project requirements.

Oakland Drive Park – 7650 Oakland Drive. Work includes but is not limited to the following: Removal of existing play structure footings (removal of existing play equipment by others), removal of existing unitary surfacing including substrate. Provide and install new play structure, concrete playground ramp, and restoration of play surfacing. Composite structures must provide similar deck height and overall height of structure as compared to the basis of design. The composite structure as designed for Oakland Drive Park provides a final deck height of 13'-4" and 22'-11" to top of the roof. Any proposed play structure also must provide 100% ADA accessibility all the way to the highest deck. Refer to the Drawings and Specifications for full project requirements.

Bicentennial Park -- 910 East Milham Avenue. Work includes but is not limited to the following: Removal of existing play structure footings and swing set footings (removal of existing play equipment by others), removal and relocation of playground borders, pavement removal. Provide and install new swing set, play structure and climbing wall, new concrete curbs, new unitary play surfacing including concrete substrate, pea gravel drainage layer, new playground borders, play surfacing and site restoration. Proposed composite structure must also provide similar nature-based play components. Refer to the Drawings and Specifications for full project requirements.

2.2. Project Budget

The total project budget for the four playground areas in the three parks is \$93,000. Proposals must not exceed a grand total of \$93,000.

2.3. Construction Schedule

Begin Contract - June 20, 2014*

Site Prep by - July 28, 2014

Install - August 4, 2014

Substantial Completion – September 5, 2014

*No work shall begin until the contract is fully executed by all parties.

2.4. Payment Schedule (retainage will be withheld per paragraph 1.19)

The following milestone payments will be made after successful completion and/or submission and acceptance of the following work. The percentage represents that portion of the total price to be paid for each playground, upon acceptance by the City.

Milestone Payment No. 1	Earthwork and Site Preparation	20%
Milestone Payment No. 2	Playground equipment including installation	50%
Milestone Payment No. 3	Ramps, surfacing and edging	25%
Milestone Payment No. 4	Site restoration	5%

3. PROJECT INFORMATION SHEET

If adequate space is not provided for complete response, please attach additional pages as necessary and identify by number. Proposals will not be considered responsive unless all requests for information are provided. Please use such terms as none, not applicable, unknown, etc., if requested information does not pertain or cannot be provided.

3.1. Please indicate the response that best describes your business:

Sole Proprietor Partnership Corporation

Other (please explain) _____

3.2. Company Name: _____

Address: _____

Telephone Number: _____ Fax: _____

E-Mail: _____ Web Site: _____

3.3. When Incorporated: _____

Where Incorporated: _____

3.4. Is your Company involved in any proceedings that may affect the ability of the Company to continue under the current Company name for the duration of the project?

Yes No

If yes, please explain (use additional page)

Is your Company up for sale? Yes No

If yes, please explain (use additional page).

3.5. Have you ever declared bankruptcy?

_____Yes _____No

3.6. Experience Statement: Attach a statement providing information detailing the experience you have which you feel will be helpful in evaluating your ability to successfully service the contract.

3.7. References:

3.7.1. Major supplier (i.e., equipment dealer, parts supplier (include name, address and phone)

3.7.2. Other unit of government or school system where you have installed similar equipment.

Unit of Government _____

Contact Person: _____

Phone Number: _____

Unit of Government _____

Contact Person: _____

Phone Number: _____

Unit of Government _____

Contact Person: _____

Phone Number: _____

3.7.3. Subcontractors

Do you propose to use any subcontractors to perform work in accordance with this proposal? Yes No. (If yes, please identify subcontractor and work to be performed.) The company agrees that the following is a complete and accurate list of all sub-contractors to be utilized if awarded this contract. Any change from this list shall be permitted only with the consent of the City.

3.7.4. A Proposal Form (2 copies), an Information Sheet (2 copies), and Additional Information (Narrative, Equipment Listing and Plan Layout of Playgrounds - 1 copy) are required for submission as a part of these specifications. Have all items been included with your proposal?

Yes No If answer is no, please explain.

3.7.5. The award of the contract for playground design and installation services is based upon the draft contract form attached. Is this document, as proposed, acceptable to you if you were to be awarded the proposal? Yes No.

If no, please explain in detail any provisions that would need to be changed, added, or deleted. Please provide replacement language for any unacceptable provisions. (Use additional page(s) if necessary.)

3.8. Contracting Entity:

If bidder is a representative of the contracting entity, provide the full name and address of the contracting entity. The contracting entity is responsible for execution of the contract documents, must be named insured on the certificate of insurance and named as principal on contract bonds.

Business Name & Address: _____

Contact & Phone Number _____

I certify that all information provided above is complete, accurate, and to the best of my knowledge, true. I further certify that I am fully authorized by the Company identified in Question 3.2 above to execute this information sheet on behalf of that Company.

I hereby state that I have read, understand, and agree to be bound by all terms of this Request for Proposal Document.

COMPANY: _____

BY: _____

(Signature)

NAME: _____

(Please Print)

POSITION: _____

TELEPHONE: _____

FAX: _____

E-MAIL: _____

4.0 CITY OF PORTAGE PROPOSAL FORM

The undersigned has examined the specifications and sites of the work and is fully informed of the nature of the work and understands that the quantities shown are approximate and are subject to increase or decrease.

The undersigned hereby proposes to furnish all labor, construction equipment, materials and supplies; and to do all the work in strict accordance with the plans and specifications applying to the work specified for which prices are submitted.

The undersigned hereby acknowledges the fact that the City of Portage will award the project to the successful bidder conditional upon the availability of funds.

The City of Portage reserves the right to accept or reject any or all bids in the best interest of the City. The Contractor's qualifications to complete the work in a timely and satisfactory manner will be considered in making the award.

The undersigned affirms that in making such Proposal neither he nor any company that he may represent, nor anyone in behalf of him or company, directly or indirectly, has entered into any combination, collusion, undertaking or agreement with any other bidder or bidders to maintain the prices of said work, and further affirms that such proposal is made without regard or reference to any other bidder or Proposal and without any agreement or understanding or combination, either directly or indirectly, with any other person or persons with reference to such bidding in any way or manner whatsoever.

The undersigned hereby agrees that if the foregoing proposal shall be accepted by the City, he will within ten (10) consecutive calendar days after receiving notice of the acceptance of such proposal, enter into contract in the appropriate form to furnish the labor, materials and equipment necessary for the full and complete execution of the work, at and for the price named in his proposal; and, he will furnish the labor, materials and equipment necessary for the full and complete execution of the work, at and for the price named in his proposal; and, he will furnish the labor, materials and equipment necessary for the full and complete execution of the work, at and for the price named in his proposal. No contract is created until it is executed by all parties.

The undersigned affirms that he has examined the surface and subsurface conditions where the work is to be performed, the legal requirements and conditions affecting cost, progress or performance of the work and has made such independent investigations as the contract deems necessary.

The undersigned attaches hereto a bidder's bond in the sum of _____

_____ Dollars (\$ _____) as required in the Instructions for Proposal Submission, and the undersigned agrees that, in case he shall fail to fulfill his obligations under the foregoing Proposal and agreement, the City may, at its option, determine that the undersigned has abandoned his rights and interests in such Proposal and that the certified check or bidder's bond accompanying his proposal has been forfeited to the City; but otherwise, the Certified check or bidder's bond shall be returned to the undersigned upon the rejection of his Proposal.

Disclosure: Asphalt, concrete or other material(s) requiring removal from the job site will be disposed of at: _____

 (address of disposal site*)

Name & Address of _____
 Disposal Site Owner _____

*Attach separate Sheet(s) for multiple disposal sites.

Lakeview Park Playground Improvements:

- A. Swing Removal \$ _____
- B. Equipment \$ _____
- C. Installation \$ _____
- D. Other \$ _____

- TOTAL LAKEVIEW PARK \$ _____

Oakland Drive Park Playground Improvements:

- A. Loose Fill Material \$ _____
- B. Concrete Ramp \$ _____
- C. Equipment \$ _____
- D. Equip. Installation \$ _____
- E. Other \$ _____

- TOTAL OAKLAND DRIVE PARK \$ _____

Bicentennial Park Playground Area A Improvements

- A. Site Preparation \$ _____
- B. Loose Fill Material \$ _____
- C. Unitary Surfacing/Install \$ _____
- D. Equipment \$ _____
- E. Equip. Installation \$ _____
- F. Borders/Installation \$ _____
- G. Other \$ _____

- TOTAL BICENTENNIAL PARK AREA A \$ _____

Bicentennial Park Playground Area B (swingset) Improvements

- A. Site Preparation \$ _____
- B. Unitary Surfacing/Install \$ _____
- C. Equipment \$ _____
- D. Equip. Installation \$ _____
- E. Borders/Installation \$ _____
- F. Site Restoration \$ _____
- G. Other \$ _____

TOTAL BICENTENNIAL PARK AREA B \$ _____

Lakeview Park Playground Total \$ _____

Oakland Drive Park Playground Total \$ _____

Bicentennial Park Playground Area A Total \$ _____

Bicentennial Park Playground Area B Total \$ _____

GRAND TOTAL \$ _____

Contracting Entity:

If bidder is a representative of the contracting entity, provide the full name and address of the contracting entity. The contracting entity is responsible for execution of the contract documents, must be named insured on the certificate of insurance and named as principal on contract bonds.

Business Name & Address: _____

Contact & Phone Number _____

BIDDER FIRM: _____

BY: _____
Signature

DATE: _____

BY: _____
Print or Type

POSITION: _____

ADDRESS: _____

PHONE: _____ FAX: _____

PLAYGROUND IMPROVEMENTS AT LAKEVIEW, OAKLAND DRIVE AND BICENTENNIAL PARKS

CITY OF PORTAGE, MICHIGAN

April 2014

OWNER:
City of Portage
7900 S. Westnedge Ave.
Portage, MI 49002

LANDSCAPE ARCHITECT:
VIRIDIS Design Group
313 N. Burdick Street
Kalamazoo, MI 49007
(269) 978-5143

VICINITY MAP (NOT TO SCALE)



BARRIER-FREE NOTES (APPLICABLE TO ALL SHEETS)

BARRIER-FREE PARKING AND ACCESSIBLE ROUTE(S) MUST COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 1:48 (2%) MAXIMUM CROSS-SLOPE ON ACCESSIBLE ROUTE.
- NO CHANGES IN LEVEL GREATER THAN 1/4" ALONG ACCESSIBLE ROUTE, RAMPS OR LANDINGS.
- 1:20 (5%) MAXIMUM LONGITUDINAL SLOPE ON ACCESSIBLE ROUTE (EXCEPT WHERE RAMPS ARE PROVIDED).
- 1:50 (2%) MAXIMUM SLOPE (IN ANY DIRECTION) IN BF. PARKING AND ACCESSIBLES.

IMPORTANT NOTE

PLANS WERE DEVELOPED USING AERIAL PHOTOGRAPHS. INSTALLER / CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS AND ALERT OWNER OF ANY DISCREPANCIES PRIOR TO INSTALLATION OF ANY NEW WORK, INCLUDING BUT NOT LIMITED TO PLAY EQUIPMENT, CURBS OR SURFACING.

SHEET INDEX

1	COVER SHEET
1A	PROJECT AREA MAPS
SITE WORK	
2	SITE PLAN - LAKEVIEW PARK
3	SITE PLAN - OAKLAND DRIVE PARK
4	SITE PLAN - BICENTENNIAL PARK - AREA 1
5	SITE PLAN - BICENTENNIAL PARK - AREA 2
6	SITE DETAILS
7	SITE DETAILS

PLAY EQUIPMENT (DRAWINGS PROVIDED BY OTHERS):

BP-1	BICENTENNIAL PARK - 2D
BP-2	BICENTENNIAL PARK - 3D
BP-3	BICENTENNIAL PARK - 3D
ODP-1	OAKLAND DRIVE PARK - 2D
ODP-2	OAKLAND DRIVE PARK - 3D
ODP-3	OAKLAND DRIVE PARK - 3D
ODP-4	OAKLAND DRIVE PARK - ELEVATION WITH DECK HEIGHTS

DRAWING SCALE NOTE

DRAWINGS WERE ORIGINALLY PREPARED AT 1/8"=1'-0" SIZE, DRAWING SCALE IS RELATIVE TO THE ORIGINAL SIZE AND MUST BE ADJUSTED ACCORDINGLY IF DRAWINGS ARE REDUCED IN SIZE.

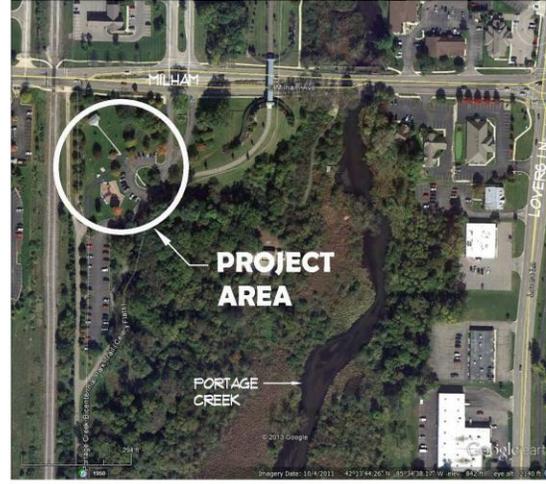
GENERAL NOTES (APPLICABLE TO ALL SHEETS)

1. INSTALLER SHALL VERIFY LAYOUT OF PLAY EQUIPMENT AND BE RESPONSIBLE FOR ALL USE ZONE REQUIREMENTS. ALERT THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONCERNS PRIOR TO INSTALLATION OF EQUIPMENT, CURBS OR SURFACING.
2. INSTALLER IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS (INCLUDING UNDERGROUND UTILITIES WHICH MAY AFFECT THE PROJECT) AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
3. INSTALLER SHALL VERIFY THE NEED FOR A SOIL EROSION CONTROL PERMIT AND OBTAIN THIS AND ANY OTHER NECESSARY PERMITS FOR THE WORK.
4. A SURVEY OF EXISTING CONDITIONS IS NOT AVAILABLE. INSTALLER SHALL FIELD VERIFY ALL CONDITIONS AND MEASUREMENTS NECESSARY FOR THE SUCCESSFUL COMPLETION OF THE PROJECT.
5. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE PROVIDED WITH 6" DEPTH TOPSOIL AND LAWN ESTABLISHMENT AS SPECIFIED.
6. CALL "MISS DIG" AND VERIFY ALL UNDERGROUND UTILITIES BEFORE EXCAVATION AT THE SITE. ANY UTILITIES DISTURBED BY CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. USE PRIVATE UTILITY LOCATOR SERVICE FOR ANY UTILITIES MISS DIG WILL NOT TRACE.
7. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY FOR RESOLUTION.

	SHEET NO. 1
PROJECT NAME: PLAYGROUND IMPROVEMENTS AT OAKLAND DRIVE AND BICENTENNIAL PARKS PORTAGE, MICHIGAN	
DATE: 4/23/14	SCALE: NOT TO SCALE
PROJECT #: 1333	
	
	



LAKEVIEW PARK 9345 PORTAGE ROAD
NOT TO SCALE

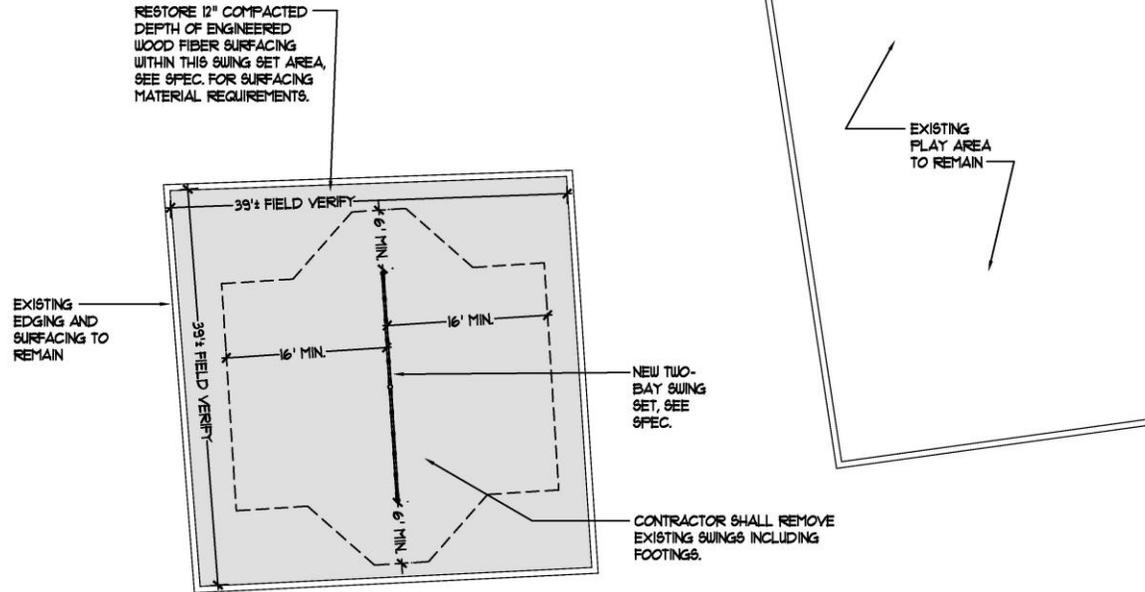


**BICENTENNIAL PARK
(NORTH AREA)** 910 EAST MILHAM
NOT TO SCALE



OAKLAND DRIVE PARK
1650 OAKLAND DRIVE
NOT TO SCALE

		SHEET NO. 1.A	
PROJECT NAME: PLAYGROUND IMPROVEMENTS AT OAKLAND DRIVE AND BICENTENNIAL PARKS PORTAGE, MICHIGAN			
DATE: 4/23/14	SCALE: NOT TO SCALE	PROJECT #: 1333	
			
			



LAKEVIEW PARK

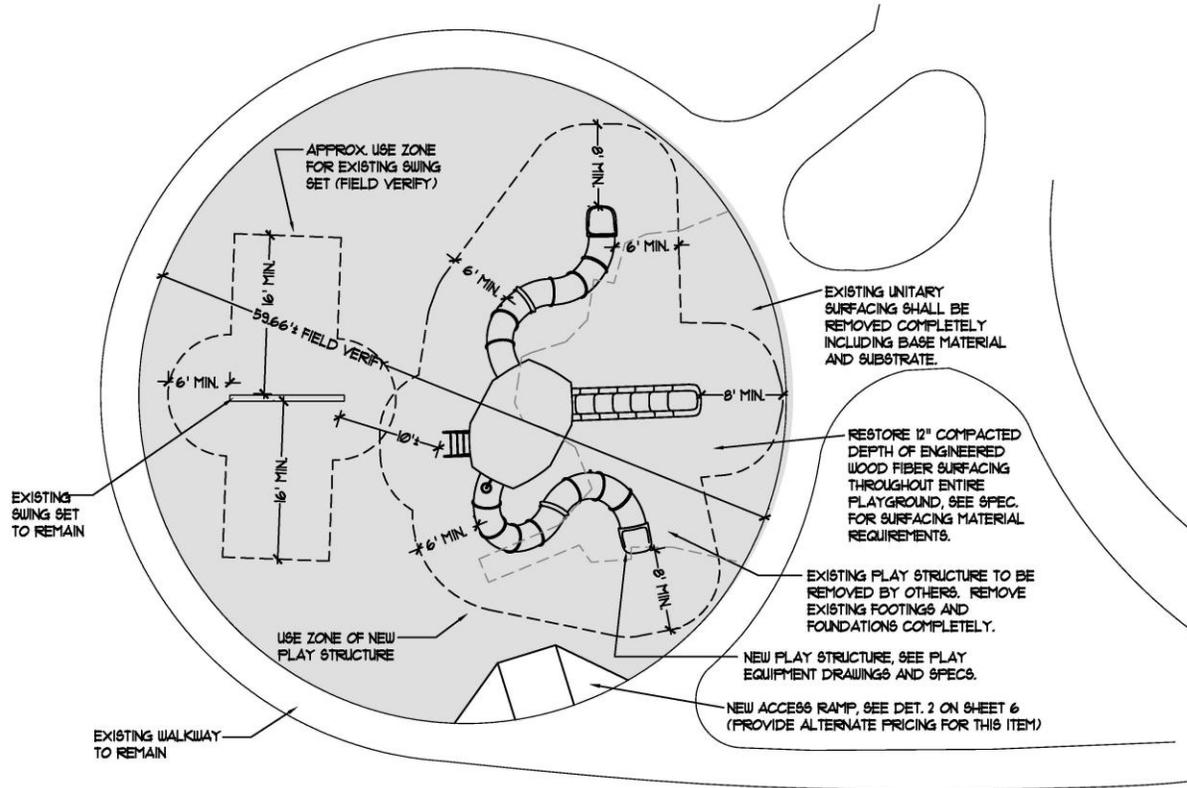


DATE: 4/23/14
 SCALE: 1" = 10'
 PROJECT #: 1333

PROJECT NAME:
 PLAYGROUND IMPROVEMENTS AT
 OAKLAND DRIVE AND
 BICENTENNIAL PARKS
 PORTAGE, MICHIGAN



SHEET NO. 2



OAKLAND DRIVE PARK

			SHEET NO. 3
PROJECT NAME: PLAYGROUND IMPROVEMENTS AT OAKLAND DRIVE AND BICENTENNIAL PARKS PORTAGE, MICHIGAN			
DATE: 4/23/14	SCALE: 1" = 10'	PROJECT #: 1333	
			

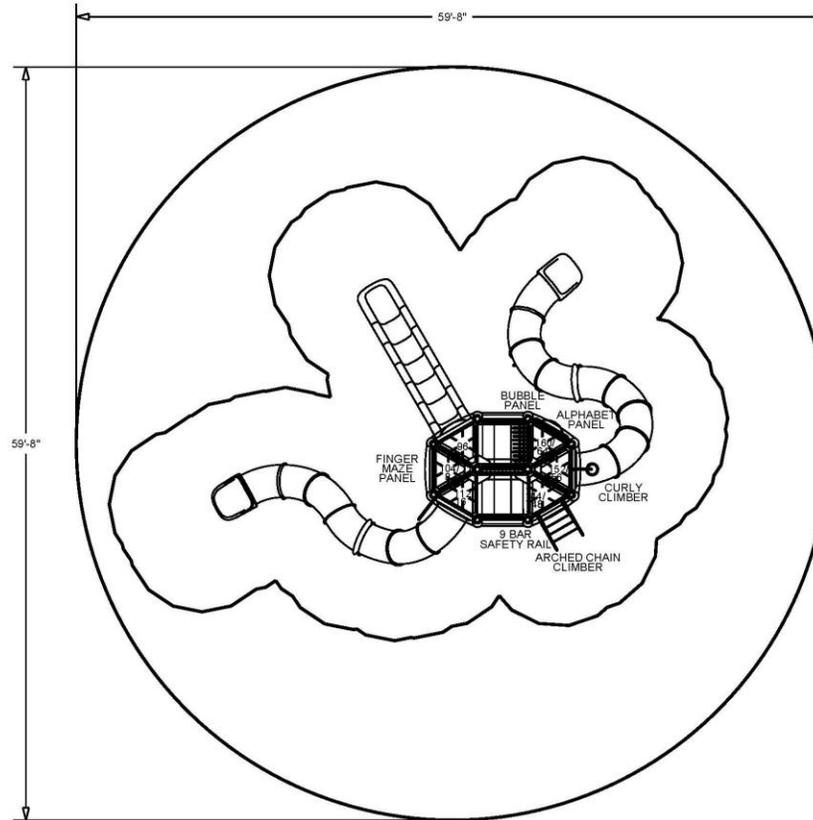
THIS PLAYGROUND
WILL ACCOMMODATE
47 CHILDREN

LEED points for
this structure
2

NOTES

Scale*: 1/8"=1'

1. The 2010 American with Disabilities Act (ADA) along with Architectural Barriers Act (ABA) Accessibility Guidelines requires you by law to make your park/play area accessible when viewed in its entirety. Please consult the Accessible Guidelines.
 2. For play equipment to be considered accessible an accessible route must be available within the play area to all identified accessible components per ADA and ABA.
 3. When adding to an existing play area, it is important to consider the total elevated components to ground level requirements including accessible routes.
 4. All deck heights are measured from the top of the finished protective surfacing material.
 5. Fall absorbing protective surfacing material is required under and around all play equipment within the play area.
 6. The minimum recommended use/fall zone around each play structure and/or independent play equipment is outlined on the layout drawing.
 7. Age appropriate label locations are marked with a double asterisk. (**)
 8. All post lengths are identified by text showing the post lengths, i.e. 96 represents a 96 inch post. Scale for reference only. Use dimensions as shown.
- * Scale for reference only. Use dimensions as shown.



Area: 2795 sq. feet
Perimeter: 187 feet

Project:
Oakland Drive Park

PlayArea:1

Age group:5-12
Post type:Galv. 13ga. / Plastic
KB Accent Color:Blue
Kid Builder Post Color:Tan
KB Pnl/Cwl Tunnel Cir:Forest Green
KB Roof Color:Forest Green
KB Sid/Float Stone Cir:Forest Green
KB Vinyl color:Blue
KB Hex Ribs Assy:Blue
KB Hex Wedge Assy:Blue
Quantum Slide Cir:Blue
Mount Option:Buried

Playground Layout
Compliance:

- ✓ CPSC Handbook for Public Safety
- ✓ ASTM F1487

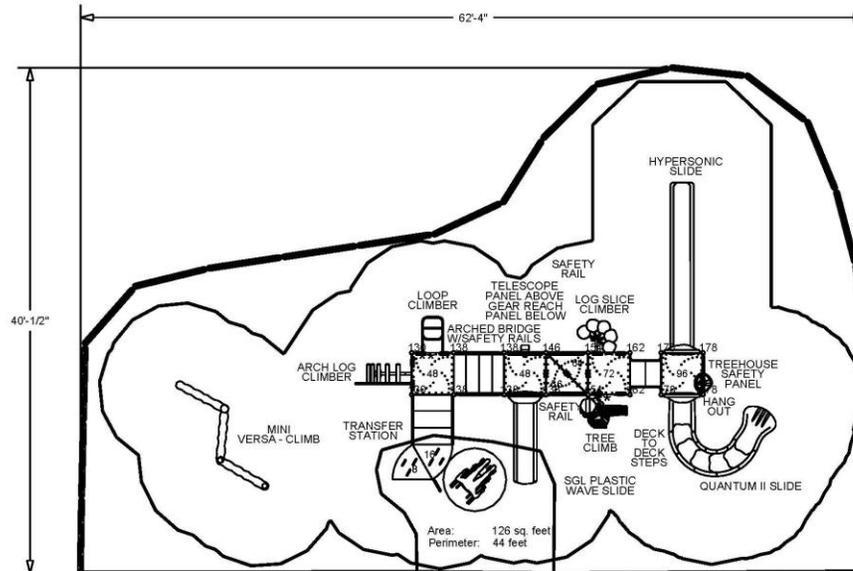
This play equipment complies with the safety performance specifications of ASTM for children 5-12 years old. Not all equipment may be appropriate for all children. Supervision is required.

THIS PLAYGROUND
WILL ACCOMMODATE
48 CHILDREN

LEED points for
this structure
2

NOTES

- Scale: 1/8"=1'
- The 2010 American with Disabilities Act (ADA) along with Architectural Barriers Act (ABA) Accessibility Guidelines requires you by law to make your park/play area accessible when viewed in its entirety. Please consult the Accessible Guidelines.
 - For play equipment to be considered accessible an accessible route must be available with in the play area to all identified accessible components per ADA and ABA.
 - When adding to an existing play area, it is important to consider the total elevated components to ground level requirements including accessible routes.
 - All deck heights are measured from the top of the finished protective surfacing material.
 - All absorbing protective surfacing material is required under and around all play equipment within the play area.
 - The minimum recommended use/fall zone around each play structure and/or independent play equipment is outlined on the layout drawing.
 - Age appropriate label locations are marked with a double asterisk (**).
 - The requirement for a Play Builder installation is that the post can not be set prior to installing the decks.
 - All post lengths are identified by text showing the post lengths, i.e. 2210 or 87 represents a 2210mm or 87 inch post. Scale for reference only. Use dimensions as shown.
 - Elevated Play Activities Total: 9
 - Accessible By Transfer: 9 (5 req)
 - Accessible By Ramp: 0 (0 req)
 - Ground Level Activity Type: 3 (3 req)
 - Ground Level Activity Quantity: 3 (3 req)
- * Scale for reference only. Use dimensions as shown.



Area: 126 sq. feet
Perimeter: 44 feet

PlayArea:2
Product line: TraditionalPlay
Age group:2-12
Post type:N/A
VersaClimb Plastic Clr: Tan
VersaClimb Mounting:Buried
Mount Option:Buried

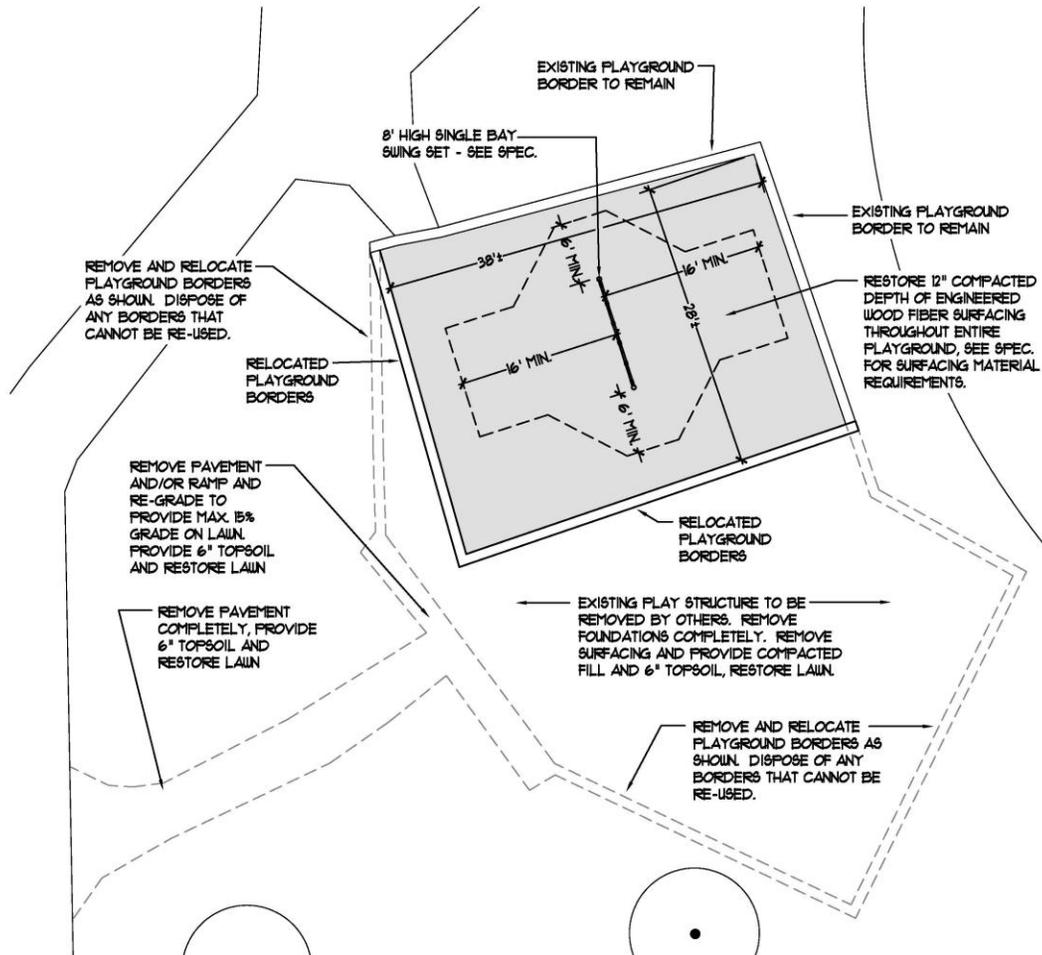
Area: 1741 sq. feet
Perimeter: 205 feet

Project:
Bicentennial Park

Playground Layout
Compliance:

- ✓ Final Access Board Regulations
- ✓ CPSC Handbook for Public Safety
- ✓ ASTM F1487

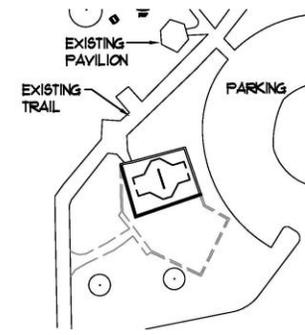
This play equipment complies with the safety performance specifications of ASTM for children 2-12 years old. Not all equipment may be appropriate for all children. Supervision is required.



PLAYGROUND AREA

1" = 10'

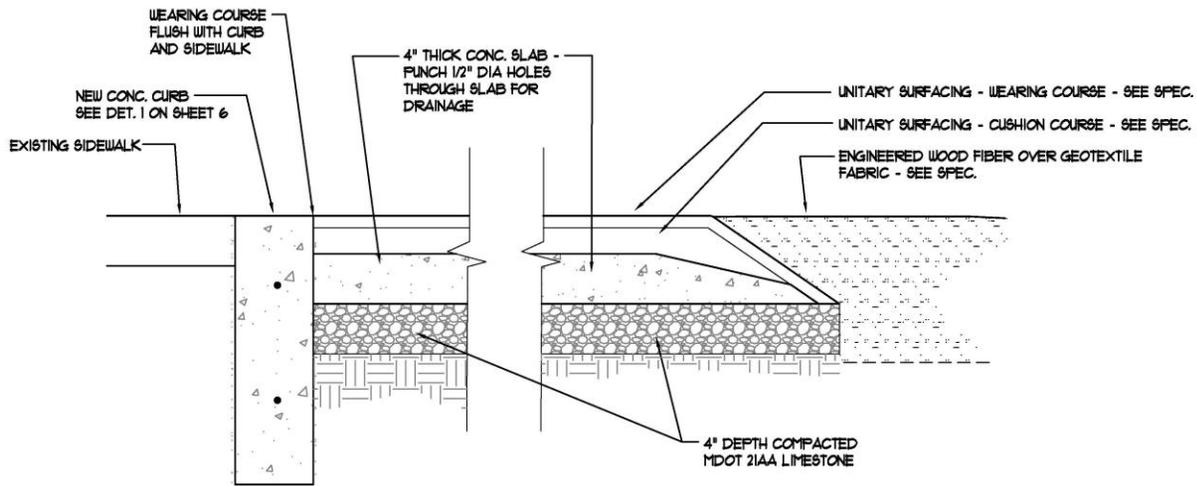
BICENTENNIAL PARK - AREA 2



SITE MAP

1" = 60'

		SHEET NO. 5	
PROJECT NAME: PLAYGROUND IMPROVEMENTS AT OAKLAND DRIVE AND BICENTENNIAL PARKS PORTAGE, MICHIGAN			
DATE:	4/23/14	SCALE:	VARIES
		PROJECT #:	1333
			
			



1 Unitary Play Surfacing (Bicentennial Park)
Not to Scale

		
DATE: 4/23/14	SCALE: NOT TO SCALE	PROJECT #: 1333
PROJECT NAME: PLAYGROUND IMPROVEMENTS AT OAKLAND DRIVE AND BICENTENNIAL PARKS PORTAGE, MICHIGAN		
		SHEET NO. 7

SECTION 116800 - PLAY FIELD EQUIPMENT AND STRUCTURES

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes freestanding and composite structure playground equipment.
- B. Related Sections:
 - 1. Section 321816.13 "Playground Protective Surfacing" for protective surfacing under and around playground equipment.

1.3 DEFINITIONS

- A. Fall Height: According to ASTM F 1487, "the vertical distance between a designated play surface and the protective surfacing beneath it."
- B. HDPE: High-density polyethylene.
- C. IPEMA: International Play Equipment Manufacturers Association.
- D. LLDPE: Linear low-density polyethylene.
- E. MDPE: Medium-density polyethylene.
- F. Use Zone: According to ASTM F 1487, the "area beneath and immediately adjacent to a play structure or equipment that is designated for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting the equipment."

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For playground equipment and structures. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Initial Selection: For each type of playground equipment and structure indicated.
 - 1. Manufacturer's color charts.
 - 2. Include similar Samples of playground equipment and accessories involving color selection.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Extent of surface systems and use zones for equipment.
 - 2. Critical heights for playground surfaces and fall heights for equipment.
- B. Qualification Data: For qualified Installer.
- C. Product Certificates: For each type of playground equipment, from manufacturer.
- D. Material Certificates: For the following items, signed by manufacturers:
 - 1. Shop finishes.
- E. Field quality-control reports.
- F. Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For playground equipment and finishes to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm whose playground equipment components have been certified by IPEMA's third-party product certification service.
 - 1. Provide playground equipment and play structure components bearing the IPEMA Certification Seal.
- B. Installer Qualifications: An employer of workers approved by manufacturer.
- C. Safety Standards: Provide playground equipment complying with or exceeding requirements in ASTM F 1487 and CPSC No. 325.
- D. Preinstallation Conference: Conduct conference at Project site.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of playground equipment that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Steel: Comply with the following:
1. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M, hot-dip galvanized and powdercoated.
 2. Steel Pipe: ASTM A 53/A 53M or ASTM A 135/A 135M standard-weight, hot-dip galvanized and powdercoated.
 3. Steel Tubing: ASTM A 513, cold formed, 11 gauge, minimum tensile strength 48,000 PSI, hot-dip galvanized including inside with pure zinc meeting ASTM B-6 applied at 3.5 tenths of an ounce per square foot and powdercoated.
 4. Steel Sheet: ASTM A 1011/A 1011M, hot-dip galvanized not less than G60 (Z180) coating designation and powdercoated.
 5. Perforated Metal: Steel sheet not less than 0.120-inch (3.0-mm) uncoated thickness; hot-dip galvanized and powdercoated; manufacturer's standard perforation pattern.
 6. Expanded Metal: Manufacturer's standard carbon-steel sheets complying with ASTM F 1267, Type II (expanded and flattened); deburred after expansion.
 7. Woven Wire Mesh: Manufacturer's standard, with wire complying with ASTM A 510 (ASTM A 510M).
- B. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666; Type 304; finished on exposed faces with No. 2B finish.
- C. Opaque Plastic: Color impregnated, UV stabilized, and mold resistant.
1. Polyethylene: Fabricated from virgin plastic resin; rotationally molded HDPE, LLDPE, or MDPE with not less than 1/4-inch (6-mm) wall thickness. Rotationally molded plastic shall comply with ASTM standards D-790, D-638, D-648 and be rated UL94.
- D. Chain and Fittings: ASTM A 467/A 467M, Class CS, 4/0 or 5/0, welded-straight-link coil chain; hot-dip galvanized. With commercial-quality, hot-dip galvanized steel connectors and swing or ring hangers.
- E. Castings and Hangers: Malleable iron, ASTM A 47/A 47M, Grade 32510, hot-dip galvanized.
- F. Post Caps: Cast aluminum or color-impregnated, UV-stabilized, mold-resistant polyethylene or polypropylene; color to match posts.
- G. Platform Clamps and Hangers: Zinc-plated steel, not less than 4.5 mm nominal thickness.
- H. Hardware: Manufacturer's standard; commercial-quality; corrosion-resistant; hot-dip galvanized steel and iron, stainless steel, or aluminum; of a secure and vandal-resistant design.
- I. Fasteners: Manufacturer's standard; corrosion-resistant; hot-dip galvanized or plated steel and iron, or stainless steel; permanently capped, and theft resistant.

2.2 PLAYGROUND EQUIPMENT FABRICATION

- A. General: Provide sizes, strengths, thicknesses, wall thickness, and weights of components as indicated but not less than required to comply with structural performance and other requirements in ASTM F 1487. Factory drill components for field assembly. Unnecessary holes in components, not required for field assembly, are not permitted. Provide complete play structure, including supporting members and connections, means of access and egress,

designated play surfaces, barriers, guardrails, handrails, handholds, and other components indicated or required to comply with referenced standards for equipment indicated.

1. Composite Play Structure: Provide complete play structure, designed to be modular, linked, and expandable, forming one integral unit for more than one play activity.
- B. Metal Frame: Fabricate main-frame upright support posts from metal pipe or tubing with cross-section profile and dimensions as indicated. Unless otherwise indicated, provide each pipe or tubing main-frame member with manufacturer's standard drainable bottom plate or support flange. Fabricate secondary frame members, bracing, and connections from either steel or aluminum.
- C. Play Surfaces: Provide manufacturer's standard elevated drainable decks, platforms, landings, walkways, ramps, and similar transitional play surfaces, designed to withstand loads; fabricated from perforated metal made into floor units with slip-resistant foot surfaces. Fabricate units in manufacturer's standard modular sizes and shapes to form assembled play surfaces indicated.
 1. Elevated Play Surfaces: Provide protective devices, completely surrounding play surface except for access openings, if play-surface heights above protective surfacing exceed requirements in ASTM F 1487 or CPSC No. 325.
 2. Stepped Play Surfaces: Provide protective infill between stepped platforms.
- D. Protective Barriers: Fabricated such that openings within the barrier and between the barrier and the play surface preclude passage of the torso probe according to the most stringent requirements in ASTM F 1487 and CPSC No. 325. Provide barriers designed to minimize the possibility of climbing, free of hand- and footholds, and configured to completely surround the protected area except for access openings. Extend barriers above the protected elevated surface for use by age group indicated. Fabricate from the following:
 1. Welded metal pipe or tubing with vertical bars.
- E. Guardrails: Provide guardrails configured to completely surround the protected area except for access openings. Fabricate from welded metal pipe or tubing. Extend guardrails to comply with requirements for use by age group indicated.
- F. Handrails: Welded metal pipe or tubing.
 1. Provide handrails at heights to comply with requirements for use by age group indicated according to ASTM F 1487 and CPSC No. 325.
- G. Roofs and Canopies: Manufacturer's standard, designed to be positioned overhead and to discourage and minimize climbing by users.
 1. Fabricated from metal or opaque plastic.
- H. Signs: Manufacturer's standard sign panels, fabricated from opaque plastic with graphics molded in, attached to upright support posts.

2.3 FREESTANDING PLAYGROUND EQUIPMENT AND STRUCTURES

- A. Available Manufacturers and Substitution Requests: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, those listed below. Substitutions may be considered by the City, however, at a minimum, all of the following supporting information must be provided with the bid for consideration:

- Plans, drawn to scale, showing proposed play equipment, extent of use zones, and fall heights of proposed equipment. **Plans must demonstrate how the proposed play equipment fits within the playground area shown.**
 - Plans and perspective / 3D view(s) of proposed equipment (front and rear) drawn to fit a 24x36" (or smaller) sheet. Do not provide catalogs.
 - Detailed narrative, matrix or other information describing in detail how the proposed substitute playground equipment meets or exceeds the play value of the basis-of design equipment.
 - **Note: Composite structures must provide similar deck height and overall height of structure as compared to the playground equipment drawings provided. The composite structure for Oakland Drive Park provides a final deck height of 13'-4", and 22'-11" to top of the roof. Any proposed play structure also must provide 100% ADA accessibility all the way to the highest deck. Proposed composite structure for Bicentennial Park must also provide similar nature-based play components.**
- B. Swing Set: Contemporary style with single post legs.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Landscape Structures: 177332A, 177333A.
 - b. Kompan: M964.
 - c. Game Time: 81751.
 - d. Miracle: 714-735-6S.
 - e. Little Tikes: Max-Play.
 - 1) At Lakeview Park, provide two-bay swing set with 2 belt seats and 2 toddler seats.
 - 2) At Bicentennial Park, provide single bay swing set with 2 belt seats.
 2. Frame: Galvanized-steel pipe or tubing connected frame sections, powdercoated.
 - a. Leg Upright(s): Not less than 5-inch (127-mm) OD.
 - b. Overhead Beam: Not less than 2-3/8-inch (60-mm) OD.
 - c. Color: As selected by Architect from manufacturer's full range.
 3. Overhead Beam Height: 96 inches (2440 mm) from pivot point above protective surfacing.
- C. Climbers: Vertical climbing wall, 10' long by 6' high.
1. Colors: As selected by Architect from manufacturer's full range.
- 2.4 COMPOSITE PLAYGROUND EQUIPMENT AND STRUCTURES
- A. Composite Structures (see playground equipment drawings): Assembled from manufacturer's standard modular-sized units.
1. Frame: Galvanized-steel, powdercoated pipe or tubing frame sections connected with clamps.
 - a. Main Frame Posts: Not less than 5-inch (127-mm) OD (for Oakland Drive Park), not less than 3.5-inch (89-mm) OD (for Bicentennial Park).

- b. Color: As selected by Architect from manufacturer's full range.
- 2. Platforms: Perforated metal, powdercoated. .
 - a. Color: As selected by Architect from manufacturer's full range.
- 3. Roofs: Plastic.
 - a. Color: As selected by Architect from manufacturer's full range.
- 4. Refer to the playground equipment drawings for other required elements.

2.5 CAST-IN-PLACE CONCRETE

- A. Concrete Materials and Properties: Comply with requirements in ACI 301 to produce normal-weight, air-entrained concrete with a minimum 28-day compressive strength of 3000 psi (20.7 MPa), 3-inch (75-mm) slump, and 1-inch- (25-mm-) maximum-size aggregate.

2.6 IRON AND STEEL FINISHES

- A. Galvanizing: Hot-dip galvanized products made from rolled-, pressed-, and forged-steel shapes, castings, plates, bars, and strips indicated to be galvanized to comply with ASTM A 123/A 123M.
 - 1. Hot-dip galvanized steel and iron hardware indicated to be galvanized to comply with ASTM A 153/A 153M.
 - 2. Galvanized-Steel Sheet: Commercial steel sheet, hot-dip galvanized, complying with ASTM A 653/A 653M for not less than G60 (Z180) coating designation; mill phosphatized.
- B. Baked-Enamel or Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for applying and baking to achieve a minimum total dry film thickness of 5 mils. The powdercoat shall comply with ASTM standards D02794, B-117, G-26 AND D-3359-B.
- C. PVC finish for decks: Textured PVC coating shall be an average of 3mm (.125") thick. PVC coating shall be oven cured and textured for traction when wet or dry.

2.7 STAINLESS-STEEL FINISHES

- A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
- B. Bright, Cold-Rolled, Unpolished Finish: No. 2B.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, site surface and subgrade drainage, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading required for placing protective surfacing is completed unless otherwise permitted by Architect.
 - B. Proceed with installation only after unsatisfactory conditions have been corrected.
- 3.2 PREPARATION
- A. Verify locations of playground perimeter and pathways. Verify that playground layout and equipment locations comply with requirements for each type and component of equipment.
- 3.3 INSTALLATION, GENERAL
- A. General: Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.
 1. Maximum Equipment Height: Coordinate installed heights of equipment and components with finished elevations of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.
 - B. Post and Footing Excavation: Excavate holes for posts and footings as indicated in firm, undisturbed or compacted subgrade soil.
 - C. Post Set with Concrete Footing: Comply with ACI 301 for measuring, batching, mixing, transporting, forming, and placing concrete.
 1. Set equipment posts in concrete footing. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at the correct angle, alignment, height, and spacing.
 - a. Place concrete around posts and vibrate or tamp for consolidation. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
 2. Embedded Items: Use setting drawings and manufacturer's written instructions to ensure correct installation of anchorages for equipment.
 3. Concrete Footings: Smooth top, and shape to shed water.
- 3.4 FIELD QUALITY CONTROL
- A. Tests and Inspections: For playground and playground equipment and components during installation and at final completion and to certify compliance with ASTM F 1487 and CPSC No. 325.
 - B. Prepare test and inspection reports.
 - C. Notify Architect and Owner 48 hours in advance of date and time of final inspection.

END OF SECTION 116800

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Protecting existing trees shrubs groundcovers plants and grass to remain.
 - 2. Removing existing trees shrubs groundcovers plants and grass.
 - 3. Clearing and grubbing.
 - 4. Stripping and stockpiling topsoil.
 - 5. Removing above- and below-grade site improvements.
 - 6. Temporary erosion and sedimentation control measures.
- B. Related Sections include the following:
 - 1. Division 31 Section "Earth Moving" for soil materials, excavating, backfilling, and site grading.
 - 2. Division 23 Section "Turf and Grasses" for finish grading including preparing and placing planting soil mixes and testing of topsoil material.

1.3 DEFINITIONS

- A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1/2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.

1.4 MATERIAL OWNERSHIP

- A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.
 1. Restore damaged improvements to their original condition, as acceptable to Owner.
- D. **Burning is not permitted.**

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 UTILITIES

- A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.
 1. Verify that utilities have been disconnected and capped before proceeding with site clearing.
- B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.

1. Arrange with utility companies to shut off indicated utilities.
- C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Construction Manager not less than two days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Construction Manager's written permission.
- 3.4 CLEARING AND GRUBBING
- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.
1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
 2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
 3. Grind stumps and remove roots, obstructions, and debris extending to a depth of 6 inches below exposed subgrade.
 4. Use only hand methods for grubbing within tree protection zone.
 5. Chip removed tree branches and dispose of off-site.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches (200 mm), and compact each layer to a density equal to adjacent original ground.
- 3.5 TOPSOIL STRIPPING
- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
1. Remove subsoil and nonsoil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
1. Limit height of topsoil stockpiles to 72 inches (1800 mm).
 2. Do not stockpile topsoil within tree protection zones.
 3. Dispose of excess topsoil as specified for waste material disposal.
 4. Stockpile surplus topsoil to allow for respreading deeper topsoil.
- 3.6 SITE IMPROVEMENTS
- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
 - 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
 - 2. Paint cut ends of steel reinforcement in concrete to remain to prevent corrosion.

3.7 DISPOSAL

- A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
 - 1. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Preparing subgrades for walkways, paving, play equipment and surfacing.

1.3 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.
- C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 - 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- E. Fill: Soil materials used to raise existing grades.
- F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- G. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- H. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Owner and then only after arranging to provide temporary utility services according to requirements indicated.
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Architect's written permission.
 - 3. Contact utility-locator service for area where Project is located before excavating.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM, or a combination of these groups; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Engineered Fill: MDOT Class II sand.
- E. Bedding Course: MDOT Class II sand.
- F. Base for Asphalt Paving and Sidewalks: MDOT 21AA natural aggregate.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31 Section "Site Clearing."

- C. Protect and maintain erosion and sedimentation controls, which are specified in Division 31 Section "Site Clearing," during earthwork operations.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
 - 2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

3.5 EXCAVATION FOR PAVED AREAS, PLAY EQUIPMENT AND SURFACING

- A. Excavate surfaces under pavements, play equipment and surfacing areas to indicated lines, cross sections, elevations, and subgrades.

3.6 SUBGRADE INSPECTION

- A. Notify Architect when excavations have reached required subgrade.
- B. Proof-roll subgrade, in the presence of Owner's testing agent, with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons (13.6 tonnes) to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 - 1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph (5 km/h).
 - 2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

- C. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
 - D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.
- 3.7 STORAGE OF SOIL MATERIALS
- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.
- 3.8 BACKFILL
- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
 - 2. Surveying locations of underground utilities for Record Documents.
 - 3. Removing concrete formwork.
 - 4. Removing trash and debris.
 - 5. Removing temporary shoring and bracing, and sheeting.
 - B. Place backfill on subgrades free of mud, frost, snow, or ice.
- 3.9 SOIL FILL
- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
 - B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
 - 2. Under walks and pavements, use satisfactory soil material.
 - C. Place soil fill on subgrades free of mud, frost, snow, or ice.
- 3.10 SOIL MOISTURE CONTROL
- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.11 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
 - 1. Under paved and play equipment areas, scarify and recompact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill soil material at 95 percent.
 - 2. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.12 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
 - 2. Walks and Pavements: Plus or minus 1/2 inch (13 mm).

3.13 SUBBASE AND BASE COURSES

- A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase and base course under pavements and walks as follows:
 - 1. Place base course material over subbase course under hot-mix asphalt pavement.
 - 2. Shape subbase and base course to required crown elevations and cross-slope grades.
 - 3. Place subbase and base course 6 inches (150 mm) or less in compacted thickness in a single layer.
 - 4. Place subbase and base course that exceeds 6 inches (150 mm) in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick.
 - 5. Compact subbase and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.14 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
 - 1. Paved Areas: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 2000 sq. ft. (186 sq. m) or less of paved area or building slab, but in no case fewer than 3 tests.
- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION 312000

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes exterior cement concrete pavement for the following:
 - 1. Curbs, sidewalks and ramps.
- B. Related Sections include the following:
 - 1. Division 31 Section "Earth Moving" for subgrade preparation, grading, and subbase course.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:
 - 1. Aggregates.
- D. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:
 - 1. Cementitious materials.
 - 2. Steel reinforcement and reinforcement accessories.
 - 3. Admixtures.
 - 4. Curing compounds.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.
- C. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
 - 1. Use flexible or curved forms for curves with a radius 100 feet (30.5 m) or less.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420); deformed.
- B. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60 (Grade 420). Cut bars true to length with ends square and free of burrs.
- C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete, and as follows:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout the Project:
 - 1. Portland Cement: ASTM C 150, Type IA, gray.

- B. Normal-Weight Aggregates: MDOT 6A limestone.
- C. Water: ASTM C 94/C 94M.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.4 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- E. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
- F. White Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B.

2.5 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D994.
- B. Chemical Surface Retarder: Water-soluble, liquid-set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of 1/8 to 1/4 inch (3 to 6 mm).

2.6 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.
- B. Proportion mixtures to provide normal-weight concrete with the following properties:
 - 1. Compressive Strength (28 Days): 4000 psi (27.6 MPa).

2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
 3. Slump Limit: 5 inches (125 mm), plus or minus 1 inch (25 mm).
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
1. Air Content: 6-1/2 percent plus or minus 1.5 percent for 1-inch (25-mm) nominal maximum aggregate size.
- D. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
- 2.7 CONCRETE MIXING
- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.
1. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
 - 1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.
 - 1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
 - 2. Provide tie bars at sides of pavement strips where indicated.
 - 3. Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 - 4. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
 - 5. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
 - 1. Locate expansion joints at intervals of 50 feet (15.25 m), unless otherwise indicated.
 - 2. Extend joint fillers full width and depth of joint. Install joint filler in accordance with manufacturer's instructions.
 - 3. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 - 4. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Edging: Tool edges or curbs, and joints in concrete after initial floating with an edging tool to a 1/4-inch (6-mm) radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- H. Place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.
 - 1. Remove and replace concrete that has been placed for more than 15 minutes without being covered by top layer, or use bonding agent if approved by Architect.
- I. Screed pavement surfaces with a straightedge and strike off.
- J. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- K. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mix designs.
- L. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
 - 2. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch (1.6 to 3 mm) deep with a stiff-bristled broom, perpendicular to line of traffic.

3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 - 1. Moist Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.9 PAVEMENT TOLERANCES

- A. Comply with tolerances of ACI 117 and as follows:
 1. Elevation: 1/4 inch (6 mm).
 2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
 3. Surface: Gap below 10-foot- (3-m-) long, unlevelled straightedge not to exceed 1/4 inch (6 mm).
 4. Joint Spacing: 3 inches (75 mm).
 5. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
 6. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.11 REPAIRS AND PROTECTION

- A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
- B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
- C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 321816.13 - PLAYGROUND PROTECTIVE SURFACING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Unitary synthetic poured rubber seamless surface.
 - 2. Organic loose-fill surface.
 - 3. Polyethylene playground borders.
- B. Related Sections:
 - 1. Section 312000 "Earth Moving" for filling and grading.

1.3 DEFINITIONS

- A. Critical Height: Standard measure of shock attenuation. According to CPSC No. 325, this means "the fall height below which a life-threatening head injury would not be expected to occur."
- B. SBR: Styrene-butadiene rubber.

1.4 PERFORMANCE REQUIREMENTS

- A. Impact Attenuation: According to ASTM F 1292.
- B. Accessibility of Surface Systems: According to ASTM F 1951.
- C. Minimum Characteristics for Organic Loose-Fill Surfaces: According to ASTM F 2075.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each playground surface system, include materials, plans, cross sections, drainage, installation, and edge termination.
- C. Samples for Initial Selection: For each type of playground surface system indicated.

1. Include similar Samples of playground surface system and accessories involving color selection.
- D. Samples for Verification: For each type of playground surface system indicated.
1. Minimum 6-by-6-inch (150-by-150-mm) Sample of synthetic rubber seamless surface.
 2. Minimum 1-quart (0.95-L) loose-fill surface sealed in a container.
- 1.6 INFORMATIONAL SUBMITTALS
- A. Coordination Drawings: Plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from Installers of the items involved:
 1. Extent of surface systems and use zones for equipment.
 2. Critical heights for playground surfaces and fall heights for equipment.
 - B. Qualification Data: For qualified Installer.
 - C. Product Certificates: For each type of unitary synthetic playground surface system, from manufacturer.
 - D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each unitary synthetic playground surface system.
 - E. Material Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each loose-fill playground surface system.
 - F. Field quality-control reports.
 - G. Warranty: Sample of special warranty.
- 1.7 CLOSEOUT SUBMITTALS
- A. Maintenance Data: For playground surface system to include in maintenance manuals.
- 1.8 QUALITY ASSURANCE
- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
 - B. Source Limitations: Obtain playground surface system materials, including primers and binders, from single source from single manufacturer.
 1. Provide secondary materials including adhesives, primers, and repair materials of type and from source recommended by manufacturer of playground surface system materials.
 - C. Standards and Guidelines: Comply with CPSC No. 325, "Handbook for Public Playground Safety"; ASTM F 1292; and ASTM F 1487.

1.9 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit playground surface system installation to be performed according to manufacturers' written instructions and warranty requirements.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of playground surface system that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
 - a. Reduction in impact attenuation.
 - b. Deterioration of surface and other materials beyond normal weathering.
 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 UNITARY SYNTHETIC SEAMLESS SURFACE

- A. Surface System: Poured-in-place, two-layer system with wearing course over cushion course. Provide manufacturer's standard thickness as required for overall thickness indicated, tested for impact attenuation according to ASTM F 1292 and for accessibility according to ASTM F 1951.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Fibar Group LLC (The); FibarPIP Poured-in-Place Surfacing.
 - b. GameTime, a PlayCore, Inc. company; GT Impax Poured Rubber.
 - c. No Fault Sport Group, LLC; Safety Surface.
 - d. Play Safe Surfacing, Inc.; EPDM Pour-N-Place.
 - e. Safe Guard Surfacing Corp.; Poured-in-Place.
 - f. Surface America Incorporated; Play Bound Poured-in-Place.
 2. Wearing Course: Formulation of EPDM rubber particles, with minimum of 20 percent and maximum of 26 percent of ethylene propylene-diene-saturated polymethylene main chain along with other organic and inorganic components.
 3. Cushion Course: Manufacturer's standard blend of SBR rubber and polyurethane, site mixed and applied.
 4. Binder: Weather-resistant, UV-stabilized (aromatic binder acceptable), flexible, nonhardening, 100 percent solids polyurethane complying with requirements of authorities having jurisdiction for nontoxic and low VOC content.
 5. Overall Thickness: Not less than as required for fall height of playground equipment, or 3", whichever is greater.
 6. Primer/Adhesive: Manufacturer's standard primer and weather-resistant, moisture-cured polyurethane adhesive suitable for unit, substrate, and location indicated.
 7. Color(s): As selected by Architect from manufacturer's full range. Wearing course shall be 50% black, 50% selected color. Cushion course shall be black.

8. Edge details, flush at existing sidewalk, tapered at loose-fill, per manufacturer's recommendation.

2.2 ORGANIC LOOSE-FILL SURFACE

- A. Engineered Wood Fibers: Random-sized wood fibers, in manufacturer's standard fiber size, approximately 10 times longer than wide; containing no bark, leaves, twigs, or foreign or toxic materials according to ASTM F 2075; graded according to manufacturer's standard specification for material consistency for playground surfaces and for accessibility according to ASTM F 1951.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Fibar Group LLC (The); Fibar System [100] [200] [300].
 - b. GameTime, a PlayCore, Inc. company; GT Impax Fiber.
 - c. SofSolutions Inc.; SofFall.
 - d. Zeager Bros., Inc.; Wood Carpet.
 2. Uncompressed Material Depth: Not less than 12 inches (300 mm).
- B. Stabilizing Mats: Manufacturer's standard, water-permeable PVC or rubber mats tested for impact attenuation according to ASTM F 1292, and rated for use in the following locations:
 1. Under and in front of slide exits.
 2. Under and around swings.
 3. At finished grade around transfer stations at accessible perimeter.
 4. Size: 36 by 36 inches (914 by 914 mm).
 5. Color): Black.

2.3 LOOSE-FILL ACCESSORIES

- A. Polyethylene Playground Borders: Anchored-in-place, weather-resistant containment barrier designed to minimize sharp edges, protrusions, and tripping hazards; formed by interconnected, modular units.
 1. Polyethylene Units: UV-light-stabilized polyethylene, approximately 5" wide by 12" deep, not less than 1/4-inch (6-mm) wall thickness; made into smooth-surfaced straight and curved units with radiused exposed edges and integral, molded-in color; in manufacturer's standard sizes.
 - a. Color: As selected by Architect from manufacturer's full range.

2.4 GEOSYNTHETICS

- A. Drainage/Separation Geotextile: Nonwoven, needle-punched geotextile, manufactured for subsurface drainage applications and made from polyolefins or polyesters. Complying with the following minimum properties determined according to ASTM D 4759 and referenced standard test methods:
 1. Weight: 4 oz./sq. yd. (136 g/sq. m) according to ASTM D 5261.
 2. Water Flow Rate: 100 gpm/sq. ft. (68 L/s per sq. m) according to ASTM D 4491.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for maximum moisture content, subgrade and substrate conditions, drainage, and other conditions affecting performance of the Work.
- B. Hard-Surface Substrates: Verify that substrates are satisfactory for unitary playground surface system installation and that substrate surfaces are dry, cured, and uniformly sloped to drain within recommended tolerances according to playground surface system manufacturer's written requirements for cross-section profile.
 - 1. Concrete Substrates: Verify that substrates are dry, free from surface defects, and free of laitance, glaze, efflorescence, curing compounds, form-release agents, hardeners, dust, dirt, loose particles, grease, oil, and other contaminants incompatible with playground surface system or that may interfere with adhesive bond. Determine adhesion, dryness, and acidity characteristics by performing procedures recommended in writing by playground surface system manufacturer.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Prepare substrates to receive surfacing products according to playground surface system manufacturer's written instructions. Verify that substrates are sound and without high spots, ridges, holes, and depressions.
- B. Concrete Substrates: Provide sound surface free of laitance, efflorescence, curing compounds, and other contaminants incompatible with playground surface system.
 - 1. Repair unsatisfactory surfaces and fill holes and depressions.
 - 2. Mechanically scarify or otherwise prepare concrete substrates to achieve recommended degree of roughness.
 - 3. Saw cut concrete for terminal edges of playground surface systems as indicated.
 - 4. Treat control joints and other nonmoving substrate cracks to prevent telegraphing through playground surface system.

3.3 INSTALLATION, GENERAL

- A. General: Comply with playground surface system manufacturer's written installation instructions. Install playground surface system over area and in thickness indicated.

3.4 INSTALLATION OF SEAMLESS PLAYGROUND SURFACE SYSTEMS

- A. Seamless Surface: Mix and apply components of playground surface system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface and impact-attenuating system of total thickness indicated.
 - 1. Substrate Primer: Apply over prepared substrate at manufacturer's standard spreading rate for type of substrate.

2. Poured Cushion Course: Spread evenly over primed substrate to form a uniform layer applied at manufacturer's standard spreading rate in one continuous operation, with a minimum of cold joints.
3. Intercoat Primer: Over cured cushion course, apply primer at manufacturer's standard spreading rate.
4. Wearing Course: Spread over primed base course to form a uniform layer applied at manufacturer's standard spreading rate in one continuous operation and, except where color changes, with no cold joints. Finish surface to produce manufacturer's standard wearing-surface texture.
5. Edge Treatment: As indicated. Fully adhere edges to substrate with full coverage of substrate. Maintain fully cushioned thickness required to comply with safety performance requirements.
6. Filler/Sealant: Mask area surrounding cutouts around playground equipment supports and other obstructions. Apply a full bead of filler/sealant, filling cutouts immediately after laying tile with cutout.

3.5 GEOSYNTHETIC INSTALLATION

- A. General: Install geosynthetics according to playground surface system manufacturer's and geosynthetic manufacturer's written instructions.
 1. Geotextiles: Completely cover area indicated, overlapping sides and edges a minimum of 4 inches (100 mm) with manufacturer's standard treatment for seams.

3.6 INSTALLATION OF LOOSE-FILL PLAYGROUND SURFACE SYSTEMS

- A. Loose-Fill Edgings: Place as indicated, and permanently secure in place and attach to each other according to edging manufacturer's written instructions.
- B. Loose Fill: Place playground surface system materials including manufacturer's standard amount of excess material for compacting mechanically to required depths after Installation of playground equipment support posts and foundations.
- C. Stabilizing Mats: Coordinate installation of mats and mat anchoring system with placing and compacting of loose fill. Coordinate placement relative to finish surface with Owner's Representative.
- D. Compacting and Grading: Uniformly compact and grade loose fill according to manufacturer's written instructions to an even surface free from irregular surface changes as indicated.
- E. Finish Grading: Hand rake to a smooth finished surface and to required elevations.

3.7 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Remove and replace applications of playground surface system where test results indicate that it does not comply with requirements.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with requirements.

3.8 PROTECTION

- A. Seamless Systems: Prevent traffic over system for not less than 48 hours after installation.

END OF SECTION 321816.13

1.7 PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods.
 - 1. Spring Planting: April 15 through May 15.
 - 2. Fall Planting: August 15 through September 15.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 90 percent pure seed, and not more than 0.5 percent weed seed:

General Lawn Areas

*Kentucky bluegrass	30%
*Perennial Rye	30%
*Turf Type Tall Fescue	40%

* minimum of three cultivars

2.3 FERTILIZER

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition: Fertilizer compositions in subparagraphs below are examples only. Revise to suit Project. If using as a soil amendment, revise fertilizer mix to remedy deficiencies found in soil tests.
 - 1. Nitrogen: 3 to 5 pounds per 1000 square feet.
 - 2. Phosphate: 1.3 pounds per 1000 square feet.
 - 3. Potassium: 5 pounds per 1000 square feet.

2.2 PLANTING SOILS

- A. Planting Soil: Existing, native surface topsoil formed under natural conditions with the duff layer retained during excavation process and stockpiled on-site. Verify suitability of native surface topsoil to produce viable planting soil.

2.3 MULCHES

- A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- B. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

2.4 PESTICIDES

- A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 - 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

TURF AND GRASSES

1. Protect adjacent and adjoining areas from hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

3.3 TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches (150 mm). Remove stones larger than 1 inch (25 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 1. Spread planting soil, apply fertilizer on surface, and thoroughly blend planting soil.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 2. Spread planting soil to a maximum depth of 6 inches (150 mm) to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet. **Final planting soil compaction must not exceed 85 percent.**
 - a. Spread approximately 1/2 the thickness of planting soil over loosened subgrade. Mix thoroughly into top 2 inches (50 mm) of subgrade. Spread remainder of planting soil.
 - b. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
 2. Loosen surface soil to a depth of at least 8 inches (200 mm). Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches (100 mm) of soil. Till soil to a homogeneous mixture of fine texture.
 - a. Apply fertilizer directly to surface soil before loosening.
 3. Remove stones larger than 1 inch (25 mm) in any dimension and sticks, roots, trash, and other extraneous matter.
 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future. Final planting soil compaction must not exceed 85 percent.
- E. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 SEEDING

- A. Sow seed with a "Brillion" or equivalent drill seeding machine. Do not broadcast or drop seed. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
 - 2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a total rate of 5 to 6 lb/1000 sq. ft.

3.5 HYDROMULCHING

- A. Hydromulch: Mix specified fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
 - 1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
 - 2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre (15.6-kg/92.9 sq. m) dry weight.

3.6 TURF RENOVATION

- A. Renovate existing turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.
 - 1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
 - 2. Install new planting soil as required.
- B. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.
- C. Remove topsoil containing foreign materials such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.
- D. Mow, dethatch, core aerate, and rake existing turf.
- E. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.
- F. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.
- G. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches (150 mm).
- H. Apply soil amendments and initial fertilizers required for establishing new turf and mix thoroughly into top 4 inches (100 mm) of existing soil. Install new planting soil to fill low spots and meet finish grades.
- I. Apply seed and hydromulch as required for new turf.

- J. Water newly planted areas and keep moist until new turf is established.

3.7 SATISFACTORY TURF

- 1. Satisfactory Seeded Turf: In the sole opinion of the Owner, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 2 by 2 inches.

- B. Use specified materials to reestablish turf that does not comply with requirements, until turf is satisfactory.

3.8 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

- B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.9 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades and remove after plantings are established.

END OF SECTION 329200

DRAFT CONTRACT AGREEMENT

Following is a “*draft copy*” of the contract that will be executed by the City and the Firm for the completion of this project.

CITY OF PORTAGE

CONTRACT

THIS CONTRACT made the _____ day of _____, 2014, by and between _____, hereinafter called the “Contractor,” and the City of Portage, 7900 South Westnedge Avenue, Portage, Michigan 49002, hereinafter called the “City.”

WITNESSETH, THAT the Contractor and the City for the consideration stated herein agree as follows:

ARTICLE I - SCOPE OF WORK

The Contractor shall perform everything to be performed and shall provide and furnish all of the labor, materials, necessary tools, expendable equipment, and all utility and transportation services required to perform and complete in a workmanlike manner all the work required for the _____ all in strict accordance with the Plans and Specifications, including any and all addenda, which plans and specifications are made a part of this contract, and in strict compliance with the Contractor’s proposal and other contract documents herein mentioned which are a part of this contract; and the Contractor shall do everything required by this contract and the other documents constituting a part hereof.

ARTICLE II - COMPENSATION TO BE PAID TO THE CONTRACTOR

In consideration of the completion of the work described herein and in fulfillment of all stipulations of this contract to the satisfaction and acceptance of the City, the City shall pay and the said Contractor further agrees to receive and accept payment based on the prices bid per unit for material and labor as set forth in the conformed copy of the Contractor’s proposal (or bid) as filed with the City on the _____ day of _____, 2014, the sum of which shall be,

_____	\$ _____
(amount in words)	(in figures)

as full compensation for furnishing all the equipment and materials, and for the costs of all premiums on insurance and bonds and for doing all the work contemplated and specified in this contract; also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the same; and for all risks of every description connected with the work; and for well and faithfully completing the work and the whole thereof, in full compliance with the Plans and Specifications and the requirements under them. Payments are to be made to the Contractor in accordance with and subject to the provisions embodied in the contract documents hereto attached.

ARTICLE III - COMPONENT PARTS OF THIS CONTRACT

This contract consists of the following component parts, all of which are as fully a part of this contract as if herein set out verbatim, or, if not attached, as if hereto attached.

1. Contract (this document)
2. City of Portage Contract Conditions and Specifications
3. Notice to Bidders
4. Instructions to Bidders
5. Specifications
6. Supplementary Conditions
7. Special Provisions
8. Plans
9. Contractor's Proposal (or bid)

In the event that any provision in any of the above component parts of this contract conflicts with any provision in any other of the component parts, the provision in the component part first enumerated above shall govern over any other component part which follows it numerically, except as may be otherwise specifically stated.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed in four original counterparts the day and year first above written.

(SEAL)

CONTRACTOR

Attest:

By: _____
Signature

Print name and Title

Print Name and Title

(SEAL)

CITY OF PORTAGE

Attest:

By: _____
Maurice S. Evans, City Manager

Approved as to Form:

Randall L. Brown, Portage City Attorney

INSTRUCTIONS FOR EXECUTING CONTRACT WITH CITY OF POTAGE

A. If the contractor is a corporation, the following certificate must be executed:

I, _____, certify that I am the Secretary of
print or type name
the corporate entity named as Contractor in the contract and that such corporate entity is a
corporation in good standing in the State of _____ and has authority
print or type name of state
to transact business in the State of Michigan. [If the corporation is not a Michigan corporation, then
a “Certificate of Authority to Transact Business in the State of Michigan” must be attached.] I
certify that the contract between the City of Portage and
_____, Inc.
print or type name of corporation
was validly executed on behalf of the corporation by _____
print or type name
who was then the _____ of said corporation and has the
print or type name of title
authority to bind the corporation to the contractual agreements pursuant to the authority of its
governing body and by-laws and is within the scope of its corporate powers.

Print or type name of corporation

Dated: _____, 20____ By: _____
Its: _____

B. If contractor is an LLC, the following certificate must be executed:

I, _____, certify that I am a member of the
print or type name
Limited liability company named as Contractor in the contract and that such LLC is in good
standing in the State of _____ and that the LLC has the
print or type name of state
authority to transact business in the State of Michigan. [If the LLC is not a Michigan LLC, then a
“Certificate of Authority to Transact Business in the State of Michigan” must be attached.] I certify
that the contract between the City of Portage and _____
LLC
print or type name of LLC
was validly executed on behalf of the LLC by _____
print or type name
who was then a member of said LLC and has the authority to bind the LLC to contractual
agreements and that such contract is within the scope of its powers.

Print or type name of LLC

Dated: _____, 20____ By: _____
Its: _____

C. If the contractor is a sole proprietorship/partnership, the following certificate must be executed:

I, _____, certify that I am the
owner/partner of the company named as Contractor in the contract and that I have the authority to
bind _____, to
contractual _____, to
agreements. _____

print or type name

print or type name of business (insert d/b/a if one exists)

Print or type name of company/DBA

Dated: _____, 20____ By: _____
Its: _____

Notes to Certificate:

1. The full name and business address of the Contractor must be inserted in the contract and the contract must be signed with his/her official signature. The name of the signing party or parties are to be typewritten or printed under all signatures of the contract.
2. If the contract is signed by the secretary of the corporation, the above certificate must be executed by some other officer of the corporation, under the corporate seal. In lieu of the foregoing certificate, there may be attached to the contract copies of so much of the records of the corporation and will show the official character and authority of the officers signing, duly certified by the secretary or assistant secretary under the corporate seal to be true copies.
3. If the Contractor is operating as a partnership, each partner must sign the contract, or if not signed by each partner, there must be attached to the contract a duly authenticated power of attorney evidencing the signer's (signers') authority to sign such contract and on behalf of the partnership.
4. If the Contractor is an individual, the trade name (if the Contractor is operating under a trade name) must be indicated in the contract and the contract must be signed by such individual. If signed by someone other than the Contractor, there must be attached to the contract a duly authenticated power of attorney evidencing the signer's authority to execute such contract for and in behalf of the Contractor.
5. If an LLC, the contract must be signed by a member of the LLC. If signed by someone other than the member, there must be attached to the contract the duly authenticated power of attorney evidencing the signer's authority to execute such contract for and on behalf of the contractor.

CITY OF PORTAGE

LABOR AND MATERIAL BOND

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, hereinafter called the Principal, and

_____, hereinafter called the Surety, are held and firmly bound unto

CITY OF PORTAGE, 7900 South Westnedge Avenue, Portage, Michigan 49002, in the sum of

_____ Dollars (\$_____) lawful money of the United

States of America, to the Payment whereof, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this _____ day of _____, _____.

WHEREAS, the above named Principal has entered into a certain contract with the CITY OF PORTAGE dated the _____ day of _____, _____ (hereinafter called the "Contract") for _____ (**name of project**), which contract and specifications for said work shall be deemed a part hereof as fully if set out herein.

AND WHEREAS, this bond given in compliance with and subject to the provisions of Act No. 213 of the Public Acts of Michigan, for the year 1963.

NOW, THEREFORE, the condition of this obligation is such that if payment shall be made by the Principal to any Subcontractor or by him or any Subcontracts as the same may become due and payable of all indebtedness which may arise from him to a Subcontractor or a party performing labor or furnishing materials or supplies, or any Subcontractor to any person, firm, or corporation on account of any labor performed or materials or supplies furnished in the performance of said contract, then this obligation shall be void, otherwise the same shall be in full force and effect.

AND PROVIDED, that any alterations which may be made in the terms of said contract, or in the work to be done under it, or the giving by the party of the first part to said contract any extension of Labor and Material Bond time for the performance of said contract or any other forbearance on the part of either party to the other, shall not in any way release the Principal and the Surety or either of them, their heirs, executors, administrators, successors or assigns from any liability hereunder, notice to the Surety of any such alterations, extensions of time or of any forbearance being hereby waived.

IN WITNESS THEREOF, the parties thereto have caused this instrument to be executed by their respective authorized officers this _____ day of _____, _____.

Signed, sealed, and delivered in
the presence of:

:

PRINCIPAL:

Its: _____

SURETY:

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, THAT

_____ Contractors, as principal and

_____, as surety, are held and

firmly bound unto the _____

in the sum of _____

Dollars (\$ _____) to be paid to the City for which payment well and truly to be made we, jointly and severally bind ourselves, our heirs, executors, administrators, and assigns firmly by the presents.

THE CONDITIONS OF THE ABOVE OBLIGATIONS ARE SUCH THAT, WHEREAS, the said

_____ did, on the _____ day of _____,
20_____

enter into contract with the City for
the _____.

NOW, THEREFORE, if said Contractor shall save and hold harmless the said CITY from all public liability and damages of every description in connection therewith, shall well and faithfully in all things fulfill the said contract according to all the conditions and stipulations therein contained in all respects, and shall save and hold harmless the said CITY from and against all liens and claims of every description in connection therewith, then this obligation shall be void and of no effect; but otherwise it shall remain in full force and virtue, and, in the event that said CITY shall extend the time for completion of said work or otherwise modify elements of the contract in accordance with provisions thereof, such extension of item or modification of the contract shall not in any way release the sureties of this bond.

WITNESS our hands and seal this _____ day of _____, 20_____.

WITNESSES:

Principal (Seal)

Surety (Seal)

MAINTENANCE AND GUARANTEE BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
_____, Contractor, as principal and
_____, as surety are held and firmly bound
unto the City of Portage, Michigan, 7900 South Westnedge Avenue, Portage, Michigan 49002,
hereinafter known as the City, in the sum of _____
Dollars (\$) _____) to be paid to said City, its legal
representatives and assigns, for which payment well and truly be made, we bind ourselves, our
heirs, executors, administrators, successors and assigns, and each and every one of them jointly,
firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20____.

WHEREAS, the above named Principal has entered into a certain contract with the City of
Portage, Michigan, dated this _____ day of _____, 20____
wherein the said principal covenanted and agreed as follows, to wit:

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that by and
under said contract, the above named principal has agreed with the City that for a period of two (2)
years from the date of payment of Final Estimate, to keep in good order and repair any defect in all
the work done under said contract wither by the principal or his subcontractors, or his material
supplies, that may develop during said period due to improper materials, defective equipment,
workmanship or arrangements, and any other work affected in making good such imperfections,
shall also be made good all without the consent or approval of the principal after the final
acceptance of the work, and that whenever directed to do so by the City, by notice served in writing,
either personally or by mail, on the principal at

_____ or _____
_____ legal representatives, or successors, or on the surety at

WILL PROCEED at once to make such repairs as directed by said City and in case of failure to do
so within one week from the date of service of such notice, or within reasonable time not less than
one week, as shall be fixed in said notice, then the said City shall have the right to purchase such
materials and employ such labor and equipment as may be necessary for the purpose, and to
undertake, do and make such repairs and charge the expense thereof to, and receive same, from said
principal or surety.

If any repair is necessary to be made at once to protect life and property, then and in that case, the said City may take immediate steps to repair or barricade such defects without notice to the Contractor. In such accounting the said City shall not be held to obtain the lowest figures for the doing of the work, or any part thereof, but all sums actual paid therefore shall be charged to the principal surety. In this connection the judgement of the said City is Final and conclusive. If the said principal for a period of two (2) years from the date of payment of Final Estimated, shall keep said work so constructed under said contract in good order and repair, excepting only such part or parts of said work which may have been disturbed without the consent or approval of said principal after the final acceptance of the same, and shall whenever notice is given as hereinbefore specified, at once proceed to make repair as in said notice directed, or shall reimburse the City for any expense incurred by making such repairs, should the principal or surety fail to do as hereinbefore specified, and shall fully indemnify, defend and save harmless the said City from all suits and actions for damages of every name and description brought or claimed against it for or on account of any injury or damage to person or property received or sustained by any party or parties, by or from any of the acts or omissions or through negligence of said principal, servants, agents, or employees in the prosecution of the work included in said contract, and from any and all claims arising under the Worker's Compensation Act, so-called, of the State of Michigan, then the above obligation shall be void, otherwise too remain in full force and effect.

IN WITNESS THEREOF, the parties hereto have caused this instrument to be executed by their respective authorized officers this _____ day of _____, 20____.

Signed, sealed, and Delivered
in the Presence of:

Principal _____(Seal)

Surety _____(Seal)