ADVERTISEMENT FOR BID

Project Name: Camelot Tennis Court Replacement

Notice is hereby given to potential Bidders that the Arlington Heights Park District (the "District," "Park District" or "Owner") will receive sealed bids for the above referenced Project until **5/5/2026 at 1:00 PM** at the Arlington Heights Park District, 410 N. Arlington Heights Road, Arlington Heights, Illinois 60004 at which time the bid proposals will be publicly opened and read aloud. The scope of the project includes: Site clearing, earth moving, asphalt and concrete paving, new surfacing, chain link fencing and gates, utility drainage piping, and color coat. This project is expected to start and complete in the fall of 2026.

Each bid must be placed in a sealed opaque envelope and shall be clearly marked **"Sealed Bid – Tennis Court Replacement"** and addressed and delivered to the Arlington Heights Park District, Attention: **BID Dept.**, 410 N. Arlington Heights Road, Arlington Heights, Illinois 60004.

Bid Documents may be obtained from the Arlington Heights Park District website: **https://www.ahpd.org/capital-improvements/rfps-and-bids/.** For more information, contact **Chance Andell, Project Manager at candell@ahpd.org**.

There is a pre-bid meeting at **10:00 AM on 04/23/2026 at Camelot Park, 1005 E. Suffield Dr., Arlington Hts.**

The District reserves the right to waive all technicalities, to accept or reject any or all bids, or to accept only portions of a bid and reject the remainder without disclosure for any reason. Failure to make such a disclosure will not result in accrual of any right, claim or cause of action by any Bidder against the District. Owner will award the Contract to the lowest most responsible and responsive Bidder, as determined by Owner. In considering the Bidder's responsibility, the Owner may evaluate, among other factors, the ability of the Bidder to provide experienced labor sufficient in numbers to timely and properly complete the Work, the financial capability of the Bidder, and the performance of the Bidder on other projects.

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

After the bid opening, no bid may be withdrawn or canceled for a period of (60) calendar days.

The Work of this Project is subject to the Illinois *Prevailing Wage Act*, 820 ILCS 130/0.01 *et seq*. A prevailing wage determination has been made by the Park District, which is the same as that determined by the Illinois Department of Labor for public works projects in Cook County. The Contract entered into for the Work will be drawn in compliance with said law and proposals should be prepared accordingly and provide for payment of all laborers, workmen, and

mechanics needed to perform the Work at no less than the prevailing rate of wages (including the prevailing rate for legal holiday and overtime work as applicable) for each craft, type of worker, or mechanic.

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

The Contractor(s) selected will also be required to comply with all applicable federal, state and local laws, rules, regulations and executive orders, including but not limited to those pertaining to equal employment opportunity.

By Order Of:

Board of Park Commissioners
Arlington Heights Park District

4/10/2026

INSTRUCTIONS TO BIDDERS

DATE: 4/10/2026

BID REQUEST: Camelot Park Tennis Court Replacement

Sealed bids will be accepted until **5/5/2026 at 1:00 PM** and immediately thereafter publicly opened and read aloud at the Arlington Heights Park District Administration Office, 410 N. Arlington Heights Road, Arlington Heights, Illinois 60004. Bids arriving after this time will be rejected and will be returned unopened, including mailed bids regardless of when post marked. All Bidders are welcome to attend the bid opening. After bid opening, bids will be submitted for approval to the Arlington Heights Park District Board of Park Commissioners at a regularly scheduled meeting.

1. Preparation and Submission of Bid Proposal

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

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

Bidders shall return all Bid Documents, including Drawings and Specifications with the bid, and **no sheets shall be detached from any part of the Bid Documents**.

Attached to the Bid Form will be one or more certifications regarding the Bidder's compliance with applicable laws. **Failure of a Bidder to complete/submit a required**

certification shall be the basis for immediate rejection of that Bidder's bid. The certification of the successful Bidder shall become a part of the Contract with the Park District.

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

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

2. Requirement of Bidders

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

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

On a separate sheet, list at least five (5) service contracts your organization has completed in the past two (2) years, which are comparable in scope, giving the name of the client, client contact and telephone number, and length of contract.

On a separate sheet, list all administrative proceedings and litigation filed by or against Bidder in the past five (5) years, including the name and case number, name/jurisdiction of the court or administrative agency, and a summary of each claim/case, including current status and if no longer pending, the disposition. The foregoing includes but is not limited to information regarding any proceedings and actions taken by any governmental agency to debar or disqualify the Bidder from bidding on public contracts, including the name of the agency initiating the proceeding/action, the nature of the proceeding/action, the claimed basis for the proceeding/action and the current status or disposition of the proceeding/action.
Initial here if there is nothing to disclose: _____

On a separate sheet, indicate all instances in which Bidder has been rejected for not being a responsible bidder, giving the name of the client, client contact and telephone number, and an explanation of the circumstances surrounding the rejection.
Initial here if there is nothing to disclose: _____

On a separate sheet, provide a list of all contracts to which you were a party and with respect to which you were declared to be in breach of one or more provisions, giving the type of contract, the project location where applicable, the names and addresses of the parties to the contract, the name of the party declaring the breach, the nature of the claimed breach and current status or resolution of the claim.
Initial here if there is nothing to disclose: _____

Other required submittals include: Bid Proposal; Contractor's Compliance and Certifications. **Failure of a Bidder to complete/submit these documents shall be the basis for immediate rejection of that Bidder's bid**.

3. Examination of Site, Drawings, Specifications

Each Bidder shall visit the site(s) of the proposed Work and fully acquaint himself with conditions, as they exist, and shall undertake such additional inquiry and investigation as he shall deem necessary so that he may fully understand the requirements, facilities, possible difficulties and restrictions attending the execution of the Work under the Contract. Bidder shall thoroughly examine and be familiar with all of the Bid Documents including but not limited to the Drawings and the written Specifications. Any conflicts or discrepancies found between or among Bid Documents, including but not limited to the Drawings and written Specifications, and the site conditions, or any errors, omissions or ambiguities in the Drawings or written Specifications shall be immediately reported to the Park District and written clarification requested prior to submission of a bid.

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

4. Acceptance or Rejection of Bids

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

The Owner reserves the right to (1) reject all bids; (2) reject only certain bids which are non-conforming or non-responsive to the bid requirements; (3) accept only a portion, part or specific items of Work of all and reject others, as the Owner shall in its sole discretion determine to be in its best interest; and/or (4) award the Contract to the responsible Bidder submitting the lowest bid responsive to the bidding requirements. No bid will be accepted from or Contract awarded to any person, firm or corporation that is in arrears or is in default to the Park District upon any debt or contract, or that is a defaulter, as surety or otherwise, upon any obligation to said Park District or that has failed to perform faithfully any previous contract with the Park District.

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

5. Surety

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

The bid security of all except the three (3) lowest responsive and responsible Bidders will be returned after the decision to accept or reject bids by the Arlington Heights Park District Board of Park Commissioners. The bid security of the successful Bidder will be returned after acceptance by the Park District of an acceptable Performance Bond, Labor and Materials/Payment Bond and a certificate of insurance naming the Arlington Heights Park District as the certificate holder and as additional insured, and the successful Bidder has executed and returned to the Park District the Contract for the Work presented by the Park District.

Prior to beginning Work, the successful Bidder shall furnish a Performance Bond, and Labor and Materials/Payment Bond in the amount of 110% of the Contract Sum, using a form similar to the AIA-A312-2010 form, or its current equivalent, or one acceptable to Owner, cosigned by a surety company licensed to conduct business in the State of Illinois and with at least an "A" rating and a financial rating of at least "X" in the latest edition of the Best Insurance Guide. Said bond shall guarantee the faithful performance of the Work in accordance with the Contract, the payment of all indebtedness incurred for labor and

materials, and guarantee correction of Work. The cost of each bond shall be included in the Contract Sum. The Bidder and all Subcontractors shall name the Park District as an obligee on all bonds. Said bonds shall meet the requirements of the Illinois Public Construction Bond Act, 30 ILCS 550/0.01 *et seq.* and any further amendments thereto. Bidder shall include in its Performance Bond and Labor and Material Payment Bond such language as shall guarantee the faithful performance of the Prevailing Wage Act as required in these Bid Documents.

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

6. Withdrawal of Bid

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

7. Award, Acceptance and Contract

Owner will award the Contract to the lowest most responsible and responsive Bidder, as determined by Owner. In considering the Bidder's responsibility, the Owner may evaluate, among other factors, the ability of the Bidder to provide experienced labor sufficient in numbers to timely and properly complete the services, conformity with the Specifications, serviceability, quality, and the financial capability of the Bidder, and the performance of the Bidder on other projects.

The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bid Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

Bids will be awarded to one Bidder for the entire Project or to any series of Bidders for an appropriate proportion of the Project. If specified in the Bid Form, awards will be based upon the submitted unit prices.

The acceptance of a bid will be by a Notice of Award, signed by a duly authorized representative of the Park District; no other act by the Park District shall constitute the

acceptance of a bid. The acceptance of a bid by the Park District shall bind the successful Bidder to execute and perform the Work of the Contract. The successful Bidder to whom the Contract is awarded by the Park District shall sign and deliver to the Park District for execution by the Park District all required copies of the Contract, along with all required insurance and surety documents within ten (10) days after presentation to him of the Contract for signature. In case the Bidder shall fail or neglect to do so, he will be considered as having abandoned the Contract, and as being in default to the Owner. The Owner may thereupon re-advertise or otherwise award said Contract and forfeits the Bid Security.

The Invitation to Bid, Instructions to Bidders, General Conditions, Supplementary and/or Special Conditions, if any, Drawings, Specifications, Contractor Bid Proposal Form, Addenda, if any, Contractors Compliance and Certifications Attachment, and Substance Abuse Certification and the Prevailing Wage Determination and Supersedes Notice comprise the Bid Documents. The Bid Documents, together with the Standard /Form of Agreement between Owner and Contractor AIA Document A101-2017, as modified by the Park District (or such other form of agreement or contract selected by Owner), and the Performance Bond and Labor Material Payment Bond and proof of insurance comprise the Contract Documents.

8. Interpretation of the Contract Documents

The Park District shall in all cases determine the amount or quantity of the several kinds of Work which are to be paid for under this Contract, and shall decide all questions which may arise relative to the execution of the Contract on the part of the Contractor, and all estimates and decisions shall be final and conclusive. The Park District shall have the right to make alterations in the lines, grades, plans, forms, or dimensions of the Work herein contemplated either before or after the commencement of the Work. If such alterations diminish the quantity of the Work to be done, they shall not constitute a claim for damage or for anticipated profits on the work dispensed with, or if they increase the amount of Work, such increase shall be paid according to the quantity actually done and at the price or prices stipulated for such Work in the Contract. The Park District reserves the right to approve, an equal to or superior to product or equipment required under the Specifications, or to reject as not being and equal to or superior to the product or equipment required under the Specifications. If the Bidder is in doubt as to the interpretation of any part of the Bid Documents, or finds errors, discrepancies or omissions from any part of the Contract Documents, he must submit a written request for interpretation thereof not later than three (3) days prior to opening of bids to the Park District. Address all communications to Chance Andell, Project Manager at candell@ahd.org at the Park District. If an error or omission is discovered in the Bid Documents after the bid opening, the Park District reserves the right: i) to determine whether to require the submission of new bids; or ii) if the error or omission is of such a nature that it was reasonably discoverable upon a careful review of the Bid Documents, to award the Contract to the lowest responsive and responsible Bidder as determined by

the Park District and to require that Contractor to perform the Work in accordance with an issued correction by the Park District and/or Architect and for the amount bid by the Contractor. Such decisions are final and not subject to recourse. Errors and omissions made by the Bidder cannot be corrected after the bid opening.

9. Addenda

Questions after the pre-bid that need clarification are due by 4/27/2026 at 10:00 AM. Any interpretation, correction to, or addition to the Bid Documents will be made by email to each prime Bidder of record. The written Addenda constitute the only interpretations of the Bid Documents; the Park District accepts no responsibility for any other claimed interpretations or communications.

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

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

10. Substitutions during Bidding

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

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

The Park District may request additional information or documentation necessary for evaluation of the request for substitution. The Park District will notify all Bidders of

acceptance of the proposed substitute by means of an Addendum to the Bid Documents. Park District's approval of a substitute during bidding does not relieve the Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents, including but not limited to proper performance of all components of the Work and suitability for the uses specified.

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

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

The American Institute of Architects "AIA Document A201-2017 General Conditions of the Contract for Construction," 2007 Edition, as modified by Owner, and included in this Project Manual are the General Conditions.

SUPPLEMENTAL CONDITIONS

The "General Conditions of the Contract, AIA Document A201, 2017 Edition" (the "General Conditions"), as modified by Owner, are hereby amended to include the following:

I. Insurance and Indemnity Requirements

Contractor shall procure and maintain for the duration of the contract, insurance against claims for death, injuries to persons, or damages to property which may arise from or in connection with the performance of work hereunder by the Contractor, his agents, representatives, employees or subcontractors of the types and in the amounts listed below.

A. **Commercial General and Umbrella Liability Insurance.** Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less than **$3,000,000 each occurrence**. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project/location. CGL insurance shall be written on Insurance Services Office (ISO) occurrence form CG 00 01, or a substitute form providing equivalent coverage, and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract). Owner, its elected and appointed officials, officers, employees and agents shall be included as an insured under the CGL, **using ISO additional insured endorsement CG 20 10** or a substitute providing equivalent coverage, and under the commercial umbrella, if any. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance afforded to Owner. There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, or underground property damage.

B. **Continuing Completed Operations Liability Insurance.** Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella liability insurance with a limit of not less than $3,000,000 each occurrence for at least three years following substantial completion of the work. Continuing CGL insurance shall be written on ISO occurrence form CG 00 01, or substitute form providing equivalent coverage, and shall, at minimum, cover liability arising from products-completed operations and liability assumed under an insured contract. Continuing CGL insurance shall have a products-completed operations aggregate of at least two times its each occurrence limit. Continuing commercial umbrella coverage, if any, shall include liability coverage for

damage to the insured's completed work equivalent to that provided under ISO form CG 00 01.

C. **Business Auto and Umbrella Liability Insurance.** Contractor shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than $1,000,000 each accident. Such insurance shall cover liability arising out of any auto including owned, hired and non-owned autos. Business auto insurance shall be written on Insurance Services Office (ISO) form CA 00 0 I, CA 00 05, CA 00 12, or a substitute form providing equivalent liability coverage equivalent to that provided in the 1990 and later editions of CA 00 01.

D. **Workers Compensation Insurance.** Contractor shall maintain workers compensation as required by statute and employers liability insurance. The commercial umbrella and/or employers liability limits shall not be less than $1,000,000 each accident for bodily injury by accident or $1,000,000 each employee for bodily injury by disease. If Owner has not been included as an insured under the CGL using ISO additional insured endorsement CG 20 10 under the Commercial General and Umbrella Liability Insurance required in this Contract, the Contractor waives all rights against Owner and its officers, officials, employees, volunteers and agents for recovery of damages arising out of or incident to the Contractors work.

E. **General Insurance Provisions.**

1. Evidence of Insurance. Prior to beginning Work, Contractor shall furnish Owner with a certificate of insurance and applicable policy endorsements, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth above. All certificates shall provide for 30 days written notice to Owner prior to the cancellation or material change of insurance referred to therein. Written notice to Owner shall be by certified mail, return receipt requested. Failure of Owner to demand such certificate, endorsement or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance. Owner shall have the right, but not the obligation, of prohibiting Contractor or any subcontractor from entering the Project site until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by Owner. Failure to maintain the required insurance may result in termination of this Contract at Owner's option. With respect to insurance maintained after final payment in compliance with a requirement above, an additional certificate shall provide certified copies all insurance policies required above within 10 days of Owner's written request for said copies.

2. Acceptability of Insurers. For insurance companies which obtain a rating from A.M. Best, that rating should be no less than A VII using the most recent edition of the A.M. Bests Key Rating Guide. If the Bests rating is less than A VII or a Best's rating is not

obtained, tile Owner has the right to reject insurance written by an insurer it deems unacceptable.

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

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

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

F. Indemnification

To the fullest extent permitted by law, the Contractor shall waive all right of contribution and shall indemnify and hold harmless the Owner and its officers, officials, employees, volunteers and agents from and against all claims, damages, losses and expenses, including but not limited to legal fees (attorney's and paralegals fees and court costs), arising out of or resulting from the performance of the Contractor's work, provided that any such claim, damage, loss or expense (i) is attributable to bodily injury, sickness, disease or death, or injury to or destruction of tangible property, other than the work itself, including the loss of use resulting therefrom and (ii) is caused in whole or in part by any wrongful or negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph. Contractor shall similarly protect, indemnify and hold and save harmless the Owner, its officers, officials, employees, volunteers and agents against and from any and all claims, costs, causes, actions and expenses including but not limited to legal fees, incurred by reason of Contractor's breach of any of its obligations under, or Contractor's default of, any provision of the Contract.

BID PROPOSAL

Bidder is:

An Individual:

By: _____(SEAL)
(Individual's Name)
Doing business as _____

Business Address: _____

Phone Number: _____

A Partnership:

By: _____(SEAL)
(Firm Name)
_____
(General Partner)
Business Address: _____

Phone Number: _____

A Corporation:

By: _____ (SEAL)
(Corporation Name)
_____
(State of Incorporation)
By: _____
(Name of Person Authorized to Sign)

Title: _____ Attest _____
(Secretary)

(CORPORATE SEAL)

Business Address: _____

Phone Number: _____

By submission of its bid, the Bidder acknowledges, agrees, represents, declares and warrants:

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

2. To hold the bid open for sixty (60) days subsequent to the date of the bid opening;

3. To enter into and execute a Contract with the Owner within ten (10) days after the date of the Notice of Award, if awarded on the basis of this bid, and in connection therewith to:

   (a) Furnish all bonds and insurance required by the Contract Documents;
   (b) Accomplish the Work in accordance with the Contract Documents; and
   (c) Complete the Work within the time requirements as set forth in the Contract Documents;

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

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

6. To furnish a Bid Bond in accordance with the Instructions to Bidders;

7. To furnish Performance/Labor and Material Payment Bond in accordance with the Instructions to Bidders;

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

9. That he has checked carefully the bid figures and understands that he shall be responsible for any errors or omissions based on these Specifications and alternates as submitted on the Bid Proposal Form;

10. That it is understood and agreed that the Arlington Heights Park District reserves the right to: a) accept or reject any or all bids; b) waive any technicalities; c) award to one Bidder the entire Project or to any series of Bidder for an appropriate proportion of the Project; and d) accept Alternates in any order or combination and to determine low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

Submitted this _____ day of _____, 2026

Name: _____

By: _____

Signature _____

Title: _____

SUBSCRIBED AND SWORN TO before me

this_____ day of _____ 2026

_____

Notary Public

STATE OF ILLINOIS)

)

COUNTY OF _____)

CONTRACTOR COMPLIANCE AND CERTIFICATIONS ATTACHMENT

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

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

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

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

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

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

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

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

G. Contractor shall abide by the "Employment of Illinois Workers on Public Works Act" (30 ILCS 570/0.01 *et seq.*) which stipulates that whenever there is a period of excessive unemployment in Illinois, defined as any month immediately following two (2) consecutive calendar months during which the level of unemployment in Illinois exceeds five percent (5%) as measured by the U.S. Bureau of Labor Statistics in its monthly publication of employment and unemployment figures, the Contractor shall employ not less than ninety percent (90%) Illinois laborers unless otherwise exempted as so stated in the Act. ("Illinois laborer" means any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident). Other laborers may be used if Illinois laborers are not available or are incapable of performing the particular type of work involved if so certified by the Contractor and approved by the Owner.

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

Agreement or for the purpose of otherwise improperly influencing the relationship between the Owner and the Contractor. Additionally, the Contractor shall cause all of its officers, directors, employees, (as the case may be) to comply with the restrictions contained in the preceding sentence.

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

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

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

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

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

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

_____
CONTRACTOR

By: _____
Its: _____

STATE OF _____)
)SS
COUNTY OF _____)

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

Dated:_____

_____
(Notary Public)
(SEAL)

REFERENCES:

List 5 clients for reference checks. Bidder must have completed work of a similar nature for these clients within the last two years. Include both indoor and outdoor court references.

Company Name Contact Person Phone Number

1. _____

2. _____

3. _____

4. _____

5. _____

SUBCONTRACTORS & SUPPLIERS:

The sub-contractors and suppliers listed below will be involved in this contract work in the assignments listed. We understand that any deviation from this list must be requested and approved in writing ten (10) days before the start of the work that is involved. Failure to complete this list will result in rejection of bid. Legal name, current telephone number and address of all subcontractors must be included. Sub-Contractors/Address Ph #'s

Work Assignment/Phone

Suppliers/Address/Phone Material

Add additional sheets, as necessary, for more sub-contractors and vendors.

SUBSTANCE ABUSE PREVENTION PROGRAM CERTIFICATION

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

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

_____
Name of Contractor/Subcontractor (print or type)

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

_____ Dated: _____
Signature of Authorized Representative

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

_____
Name of Contractor/Subcontractor (print or type)

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

_____ Dated: _____
Signature of Authorized Representative

IMPORTANT NOTICE OF RESPONSIBILITY FOR PERIODIC REVISIONS TO PREVAILING WAGE RATES

Revisions of the following Prevailing Wage Rates are made periodically by the Illinois Department of Labor. These may be accessed by computer at https://www.illinois.gov/idol/Laws-Rules/CONMED/Rates/2015/july/COUNTY.HTM. As required by the Prevailing Wage Act, any and all such revisions supersede the Department of Labor's June determination. Bidders and Contractors performing work on this Project are responsible for determining the applicable prevailing wage rates at the time of bid submission and performance of the Work. Failure of a Bidder/Contractor to make such determination shall not relieve it of its obligations in accordance with the Contract Documents. In consideration for the award to it of the Contract for this Project, the Contractor agrees that the foregoing notice satisfies any obligation of the public body in charge of this Project to notify the Contractor of periodic changes in the prevailing wage rates and the Contractor agrees to assume and be solely responsible for, as a material obligation of the Contractor under the Contract, the obligation to determine periodic revisions of the prevailing wage rates, to notify its subcontractors of such revisions, to post such revisions as required for the posting of wage rates under the Act, and to pay and require its subcontractors to pay wages in accordance with such revised rates.

BID FORM

ARLINGTON HEIGHTS PARK DISTRICT
410 N. ARLINGTON HEIGHTS ROAD
ARLINGTON HEIGHTS, IL 60004
847-577-3000

4/10/2026	**5/5/2026**	**10/30/2026**
DATED	**BID OPENING DATE**	**COMPLETION DATE**

Sealed bids will be received by the Arlington Heights Park District until 1:00 PM on May 5, 2026 and then publicly opened for furnishing the following supplies and/or services to be delivered in accordance with the following instructions:

Bid Opening at: Arlington Heights Park District Administration Center
410 N. Arlington Heights Road
Arlington Heights, IL 60004

The Contractor shall commence work no later than August 17, 2026 and perform all work on a regular full-time basis during weekdays until final completion, and shall so schedule the work so that the project is complete and ready no later than October 30,2026.

The bidder hereby acknowledges receipt of the following addenda, if any, distributed by the Arlington Heights Park District.

Addendum No. _____ Date: _____

Addendum No. _____ Date: _____

Addendum No. _____ Date: _____

Total base bid for Camelot Tennis Court Replacement 2026 bid: $ _____

(in words) $ _____

Alternates: 12' Black Vinyl Coated Chain Link Fabric	**555 LF**	**$ _____**
New Bottom Rail Along Perimeter Fence	**555 FL**	**$ _____**
Remove And Replace Existing Fence Posts	**1 LUMP**	**$ _____**

DELIVERY OF SERVICES TO: Camelot Park
1005 E. Suffield Dr.
Arlington Heights, IL 60004

Specifications for Camelot Park Tennis Court Replacement

31-10-00 Site Clearing

31-20-00 Earth Moving

32-12-16 Asphalt Paving

32-13-13 Concrete Paving

32-18-23-.53 Tennis Court Surfacing NEW

32-18-23.53 Tennis Court Surfacing

32-31-13 Chain Link Fences & Gates

32-36-75 Line Primer

33-41-00 Storm Utility Drainage Piping

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SECTION 31 10 00 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Protecting existing trees shrubs plants and grass to remain.
   2. Removing existing trees shrubs plants and grass.
   3. Clearing and grubbing.
   4. Stripping and stockpiling topsoil.
   5. Removing above- and below-grade site improvements.
   6. Disconnecting and capping or sealing site utilities.
   7. Temporary erosion and sedimentation control measures.

1.2 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.

1.3 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

2.1 SOIL MATERIALS

A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 31 Section "Earth Moving".
   1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site.

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.

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 sediment and erosion control Drawings.

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 TREE PROTECTION

A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.

B. Do not excavate within tree protection zones, unless otherwise indicated.

C. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Architect.

3.4 UTILITIES

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

B. Removal of underground utilities is included in Division 33 Sections covering site utilities.

3.5 CLEARING AND GRUBBING

A. 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, and compact each layer to a density required for the proposed condition and as specified in Division 31 Section "Earth Moving”.

3.6 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.

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
   2. Dispose of excess topsoil as specified for waste material disposal
   3. Do not stockpile topsoil within drip line of trees to remain.

3.7 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

3.8 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 31 10 00

SECTION 31 20 00 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Preparing subgrades for walks, pavements, and lawns and grasses.
   2. Drainage course for asphalt paving.
   3. Base course for concrete walks and pavements.
   4. Base course for asphalt paving.
   5. Excavating and backfilling for utility trenches.

B. Related Sections include the following:
   1. Division 01 Section "Allowances" for quantity allowance provisions related to unit-price rock excavation and authorized additional excavation.
   2. Division 01 Section "Unit Prices" for unit-price rock excavation and authorized additional excavation provisions.
   3. Division 31 Section "Site Clearing" for temporary erosion and sedimentation control measures, site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
   4. Division 32 Section "Turf and Grasses" for finish grading, including preparing and placing topsoil and planting soil for lawns.
   5. Division 33 Sections for installing underground utilities and buried structures.

1.2 UNIT PRICES

A. Unit prices for earthwork are included in Division 01 Section "Unit Prices."

B. Quantity allowances for earthwork are included in Division 01 Section "Allowances."

1.3 DEFINITIONS

A. Backfill: Soil 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. Base Course: Course placed between the subbase course and paving.

C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Fill:
   1. Course placed over the excavated subgrade before laying subdrainage pipe and placed around and over the subdrainage pipe.
   2. Course placed over the excavated subgrade before laying separation geotextile fabric and paving base course.

F. 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 Owner. 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 Owner. Unauthorized excavation, as well as remedial work directed by Owner, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Structures: Modular Block Retaining walls, slabs on-grade **(excluding building),** tanks, curbs, sewerage, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface **excluding building**.

I. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below base, drainage fill, or topsoil materials.

J. Utilities: On-site underground pipes, conduits, ducts, and cables.

1.4 SUBMITTALS

A. Product Data: For the following:
1. Geotextiles.

1.5 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.
1. Contractor shall be responsible for contacting the Owner's Geotechnical Testing Agency at those times required by the specifications for the appropriate materials and soils testing.
2. Contractor shall coordinate with the Owner's Geotechnical Testing Agency as to the Testing Agency's requirements for advance notification, but allow for a minimum 24-hr notification.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Architect 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 Owner'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, GC, SC, SW, SP, ML, CL and SM, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification Groups MH, CH, OL, 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.
2. Unsatisfactory soils hereunder are Clean Construction or Demolition Debris (CCDD) as defined by the State of Illinois Environmental Protection Agency and is acceptable as fill material at CCDD facilities.

D. Non-special Waste Containing Soils: Either satisfactory or unsatisfactory soils that contain non-special waste that are non-liquid non-hazardous industrial process and pollution control waste and are excluded from special waste meeting all the requirements of Section 3.475 of the Illinois Environmental Protection Act.
1. Are not CCDD
2. Are not hazardous
3. Are not a liquid (as determined by paint-filter test SW-846 Method 9095)
4. Are not regulated asbestos-containing material as defined in 40 Code of Federal Regulations, Section 61.141
5. Do not contain polychlorinated biphenyls (PCBs) regulated in accordance with 40 Code of Federal Regulations, Part 761
6. Are not formerly hazardous waste rendered non-hazardous
7. Do not result from shredding recyclable metals

E. Non-Hazardous Special Waste Containing Soils: Either satisfactory or unsatisfactory soils that contain special waste as defined by Illinois Environmental Protection Act (Act) Section 809.103 and that has not been determined as hazardous in that Section of the Act.

F. Hazardous Waste Containing Soils: Either satisfactory or unsatisfactory soils that contain hazardous special waste as defined by Section 3.220 of the Illinois Environmental Protection Act and as determined by Section 722.111 of Title 35 of Illinois Administrative Code.

G. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 4 percent organic material content; less than 3 percent stones ¾-inch or larger in any dimension and roots, plants, sod, clay lumps, and other extraneous materials harmful to plant growth.
1. Topsoil shall be free of all deleterious material that may adversely affect the use of the planted surface including any metal, wood, plastic, glass or other manmade materials not intended specifically as a soil supplement.
2. Topsoil shall be free of obnoxious weeds and invasive plants or other undesirable organisms and disease-causing plant pathogens.
3. Topsoil particle sizes shall fall in the following ranges as percentages by mass both separately and in combination:
    a. Clay: 35 percent to 60 percent
    b. Silt: 35 percent to 60 percent
    c. Sand: less than 60 percent
    d. Silt and Clay in combination: less than 65 percent
4. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
    a. Supplement with imported topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 6 inches deep; do not obtain from bogs or marshes.

H. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone ASTM D 2940; conforming to State of Illinois, Dept of Transportation Gradation CA-6.

I. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone; ASTM D 2940; conforming to State of Illinois, Dept of Transportation Gradation CA-6 or CA-7.

J. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; conforming to State of Illinois, Dept of Transportation Gradation per plans.

K. Drainage Course: Narrowly graded mixture of washed crushed stone, or washed crushed or uncrushed gravel; ASTM D 448; coarse-aggregate conforming to State of Illinois, Dept of Transportation Gradation **CA-7**

L. Unsuitable Soil Undercut Area Fill: Per Geotechnical Engineer's Recommendations.

2.2 GEOTEXTILES AND GEOGRIDS

A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
1. Survivability: Class 2; AASHTO M 288.
2. Grab Tensile Strength: 158 lbf; ASTM D 4632.
3. Sewn Seam Strength: 142 lbf ; ASTM D 4632.
4. Tear Strength: 56 lbf; ASTM D 4533.
5. Puncture Strength: 56 lbf ;ASTM D 4833.
6. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
7. Water Flow Rate: 110 gpm minimum; ASTM D 4491
8. Permittivity: 0.02 per second, minimum; ASTM D 4491.
9. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

B. Separation Geotextile: Nonwoven needle punched geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
1. Survivability: Class 1; AASHTO M 288.
2. Grab Tensile Strength: 315 lbf; ASTM D 4632.
3. Sewn Seam Strength: 284 lbf ; ASTM D 4632.
4. Tear Strength: 113 lbf; ASTM D 4533.
5. Puncture Strength: 113 lbf ;ASTM D 4833.
6. Apparent Opening Size: No. 70 sieve, maximum; ASTM D 4751.
7. Water Flow Rate: 110 gpm minimum; ASTM D 4491
8. Permittivity: 0.02 per second, minimum; ASTM D 4491.
9. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

C. Geogrid: Triaxial polypropylene material with the following minimum requirements:

	Properties,	Longitudinal / Transverse	Diagonal	General
2.	Rib Pitch, mm (in)	40 (1.60)	40 (1.60)	
3.	Mid-rib depth, mm (in)	1.4 (0.06)	1.6 (0.06)	
4.	Mid-rib width, mm (in)	1.2 (0.05)	1.0 (0.04)	
5.	Rib shape			rectangular
6.	Aperture shape			triangular
7.	Junction Efficiency, %			93
8.	Isotropic Stiffness Ratio			0.6
9.	Radial stiffness at low strain, KN/M @ 0.5% STRAIN (LB/FT @ 0.5% STRAIN)			300(20,580)
10.	Resistance to chemical degradation			100%
11.	Resistance to ultra-violet light and weathering			70%

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 during earthwork operations.

D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

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. Discharge from dewatering operations must meet with local and State National Pollutant Discharge Elimination System (NPDES) requirements.
   1. Incorporate structural and non-structural Best Management Practices (BMP's) as necessary to meet NPDES and local requirements.
   2. Waste material shall be legally disposed of where mechanical means are used to separate sediments and other pollutants from dewatering discharge water

C. 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 as a minimum to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Where topsoil depth exceeds the proposed subgrade elevation and where within pavement **or synthetic turf** areas, remove all topsoil 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.

B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Architect.
   1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.

a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.

2. Where topsoil depth exceeds the proposed subgrade elevation and where within pavement **or synthetic turf** areas, remove all topsoil encountered.
3. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction.

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1/2 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.7 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit and as indicated. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits as indicated. Remove projecting stones and sharp objects along trench subgrade.

3.8 SUBGRADE INSPECTION

A. Notify Owner's Geotechnical Testing Agency when excavations have reached required subgrade.

B. If Owner's Geotechnical Testing Agency determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with heavy pneumatic-tired equipment 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.
2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. 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.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.9 UNAUTHORIZED EXCAVATION

1. Fill unauthorized excavations under other construction or utility pipe as directed by Owner's Geotechnical Testing Agency.

3.10 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.

3.11 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:
   1. Surveying locations of underground utilities for Record Documents.
   2. Testing and inspecting underground utilities.
   3. Removing concrete formwork.
   4. Removing trash and debris.
   5. Removing temporary shoring and bracing, and sheeting.
   6. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
   1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

3.13 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.

3.14 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 material on surfaces that are muddy, frozen, or contain frost or ice.
   2. Remove and replace, or scarify and air dry otherwise satisfactory material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.15 COMPACTION OF BACKFILLS AND FILLS

A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
   1. Place backfill for self-compacting CA-7 in layers of 12” maximum for material compacted by heavy compaction equipment or by hand operated tampers.

B. Place backfill and fill materials evenly on all sides of structures **excluding buildings** to required elevations, and uniformly along the full length of each structure.

C. Compact materials to not less than the following percentages of maximum dry density according to ASTM D 1557
   1. Under structures, slabs on grade **excluding building,** and steps scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent Modified Proctor.
   2. Under pavements, curbs and walks, scarify and recompact top 4 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent Modified Proctor.
   3. Under lawn or unpaved areas compact each layer of backfill or fill soil material at 85 percent Modified Proctor.

3.16 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.
   2. Walks: Plus or minus 1/2 inch.
   3. Pavements: Plus or minus 1/2 inch.

3.17 SUBSURFACE DRAINAGE

A. Underdrainage Pipe: Specified in Division 33 Section "Storm Utility Drainage Piping."

B. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade, in compacted layers 6 inches (150 mm) thick. Overlay drainage backfill with 1 layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches .
   1. Compact each material layer to **85** percent of maximum dry unit weight according to ASTM D 1557.

3.18 BASE COURSE

A. Place base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place base course under pavements and walks as follows:
   1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
   2. Shape base course to required crown elevations and cross-slope grades.
   3. Place base course 4 inches or less in compacted thickness in a single layer.
   4. Compact 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 1557.

3.19 FIELD QUALITY CONTROL

A. Geotechnical Testing Agency: Owner will 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 1557and ASTM D6938, 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 3500 sq. ft. or less of paved area, but in no case fewer than 2 tests.
   2. Trench Backfill: At each compacted initial and final backfill layer, at least 1 test for each 250 feet or less of trench length, but no fewer than 1 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.

3.20 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.

3.21 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 31 20 00

SECTION 32 12 16 - ASPHALT 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. Section Includes:
   1. Hot-mix asphalt paving.

B. Related Sections:
   1. Division 31 Section "Earth Moving" for aggregate subbase and base courses and for aggregate pavement shoulders.
   2. Division 32 Section "Tennis Court Surfacing" for bituminous surface and binder course.

1.3 DEFINITION

A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
   1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

B. Material Certificates: For each paving material, from manufacturer.

C. Material Test Reports: For each paving material.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of IDOT for asphalt paving work.

C. Preinstallation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
      a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
      b. Review condition of subgrade and preparatory work.
      c. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
      d. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

1.6 WARRANTY

A. Provide a Contractor's warranty covering a period of two (2) years after completion and final acceptance of the Work.
   1. Contractor shall warrant the Work against defects due to faulty materials or workmanship, and shall agree to repair or replace defective work, during the warranty period, without cost to the Owner.
   2.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.
   1. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

B. Paving Geotextile labeling, shipment and storage shall meet ASTM D4873

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
   1. HMA Temperature: Delivered between 250 deg F and 350 deg F
   2. Prime Coat: Minimum surface temperature of 60 deg F
   3. Asphalt Base Course: Minimum surface temperature of 40 deg F in the shade and rising at time of placement.
   4. Asphalt Surface Course: Minimum surface temperature of 45 deg F in the shade at time of placement and rising at time of placement.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F for water-based materials, and not exceeding 95 deg F. When more restrictive, manufacturer limits shall be adhered to.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel.
   1. Used in Surface Course: IDOT B Quality or better
   2. Used in Binder Course: IDOT C Quality or better

C. Fine Aggregate: ASTM D 1073, sharp-edged natural sand or sand prepared from stone, gravel, or combinations thereof.
   1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.
   2. Quality: IDOT B Quality or better.

D. Fractionated Reclaimed Asphalt Pavement (FRAP) shall NOT BE ALLOWED. Job-mix design shall consist entirely of virgin materials.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: AASHTO M 320 and AASHTO MP 1a, PG58-28

B. Prime Coat: ASTM D 2027, medium-curing cutback asphalt matching IDOT MC-30 per Section 1032 of the Standard Specifications for Road and Bridge construction.

C. Water: Potable.

2.3 AUXILIARY MATERIALS

A. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.

B. Sand: AASHTO M 29 Grade Nos. 2 or 3.

C. Paving Geotextile (Reflective Crack Control): AASHTO M 288-06, nonwoven polypropylene; resistant to chemical attack, rot, and mildew; and specifically designed for paving applications.
   1. Weight: ASTM D1910, minimum 4.1 oz/sq. yd.
   2. Grab Tensile Strength: ASTM D4632, minimum 101 lbs
   3. Asphalt Retention: ASTM 6140, minimum 0.20 gal/sq. yd.

D. Joint Sealant: ASTM D 6690 or AASHTO M 324 Type II or III, hot-applied, single-component, polymer-modified bituminous sealant.

2.4 MIXES

A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes designed according to the Illinois Modified Strategic Highway Research Program criteria and the IDOT Special Provision "Superpave Bituminous Concrete Mixtures".
   1. Binder Course Mixture N50, IL-19.0, Surface Course Mixture N50, IL-9.5,Mix "D" designed in accordance with Sections 1030 and Sections 406 and 407 of the Standard Specifications for Road and Bridge Construction and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures."
   2. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
   3. All mixes shall be approved by IDOT for use for the current constructions season. Provide verification and approval letter from IDOT for the mixes proposed.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment 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.
   2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
   3. 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. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd and per Drawings. Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure.
   1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
   2. Protect primed substrate from damage until ready to receive paving.

3.3 PAVING GEOTEXTILE INSTALLATION

A. Apply tack coat uniformly to existing pavement surfaces at a rate of 0.20 to 0.27 gal./sq. yd. and at the rate specified by the manufacturer to meet the asphalt retention properties of the geotextile and the surface being applied to.

B. Asphalt Binder tack coat shall not exceed 320 deg F. Allow sufficient distance between applicator and fabric installation tractor to achieve temperature specified by the geotextile manufacturer for the application.

C. Application of tack coat shall be by distributor spray bar. Hand spraying shall be kept to a minimum.

D. Place paving geotextile promptly according to manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 4 inches and transverse joints 6 inches.
   1. Protect paving geotextile from traffic and other damage and place hot-mix asphalt paving overlay the same day.

3.4 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
   1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
   2. Spread mix at minimum temperature of 250 deg F.
   3. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
   4. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
   1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.5 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
   1. Clean contact surfaces and apply tack coat to joints.
   2. Offset longitudinal joints, in successive courses, a minimum of 6 inches and not more than 12 inches.
   3. Offset transverse joints, in successive courses, a minimum of 24 inches.
   4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints according to AI MS22, for both "Ending a Lane" and "Resumption of Paving Operations."
   5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
   6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.6 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
   1. Complete compaction before mix temperature cools to 195 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
   1. Average Density: 94 percent of reference laboratory density based on AASHTO T 209 and Illinois Modified AASHTO T 166 or “In Place Nuclear Method” according to Illinois Modified ASTM D 2950 but not less than 92 percent nor greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.7 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
   1. Base Course: Plus 1/2 inch, Minus 1/4 inch
   2. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
   1. Base Course: 1/4 inch.
   2. Surface Course: 1/8 inch.
   3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.8 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to AASHTO T 168.
   1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
   2. Field density of in-place compacted pavement to be determined by “In Place Nuclear Method” according to Illinois Modified ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.
   3. Average Density: 94 percent of reference laboratory density based on AASHTO T 209 and Illinois Modified AASHTO T 166 or “In Place Nuclear Method” according to Illinois Modified ASTM D 2950 but not less than 92 percent nor greater than 96 percent.

E. Replace and compact hot-mix asphalt where core tests were taken.

F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.9 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.
   1. Do not allow milled materials to accumulate on-site.

END OF SECTION 32 12 16

SECTION 32 13 13 - 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. Walkways.
   2. Concrete Slab

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. Cure and Seal compound

D. Qualification Data: For testing agency.

E. Field quality-control test reports.

F. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
   1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.

G. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.

H. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.5 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

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 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. Epoxy-Coated Welded Wire Fabric: ASTM A 884, Class A, steel.

B. Epoxy-Coated Reinforcing Bars: ASTM A 775 or ASTM A 934; with ASTM A 615, Grade 60 deformed bars.

C. Epoxy-Coated Joint Dowel Bars: ASTM A 775; with ASTM A 615, Grade 60 , plain steel bars.

D. Epoxy Coated Tie Bars: ASTM A 615/A 615M, Grade 60, deformed.

E. Epoxy-Coated 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. 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 I, gray, Supplement with the following:
      a. Fly Ash: ASTM C 618, Class F/C.

B. Normal-Weight Aggregates: ASTM C 33 Class 4S, coarse aggregate, uniformly graded. Provide aggregates from a single source.
   1. Maximum Coarse-Aggregate Size: 1-1/2” nominal.
   2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

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.

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. 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 and Sealing Compound:
1. ASTM C 309, Type 1, Class A & B.
2. AASHTO M148, Type 1, Class A & B.
3. USDA Compliant

2.5 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

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. Minimum Compressive Strength (14 Days): 3500 psi.
2. Water-Cementitious Materials Ratio at Point of Placement: 0.32-0.44.
3. Slump Limit: 3 inches, plus or minus 1 inch.

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: 5 to 8 percent for 1-inch to 1-1/2-inch nominal maximum aggregate size.

D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

E. 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.

F. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals.

G. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C and ASTM C 1116. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 45 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Proof-roll prepared subbase surface below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding.
   1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
   2. Proof-roll with a loaded 10-wheel tandem-axle dump truck weighing not less than 15 tons.
   3. Subbase with soft spots and areas of pumping or rutting exceeding depth of 1 inch require correction according to requirements in Division 31 Section "Earth Moving."

C. Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

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.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M.

F. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

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. 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/Expansion 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, unless otherwise indicated.
   2. Extend joint fillers full width and depth of joint.
   3. Terminate joint filler not less than 1/2 inch or more than 3/4 inch below finished surface if joint sealant is indicated.
   4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
   5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
   6. 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. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness.
   1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

E. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a 1/4-inch 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. Do not add water to fresh concrete after testing.

G. 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.

H. 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.

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. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.

L. 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, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 75 deg F 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.

M. 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 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.

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 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 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, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
   3. Curing and Sealing 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.
   2. Thickness: Plus 3/8 inch , minus 1/4 inch.
   3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch.
   4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
   5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch.
   6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 in.
   7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.

8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain at least 1 composite sample for each **100 cu. Yd.** or fraction thereof of each concrete mix placed each day.
a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days.
a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 300 psi.

D. Test results shall be reported in writing to Owner, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Owner but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Owner.

G. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.

H. 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.
   1. Remove and replace concrete that is discolored or non-uniform in color.

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 32 13 13

SECTION 32 18 23.53 – TENNIS COURT SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. Contractor shall provide all equipment and materials and do all work necessary to construct the tennis courts including all pavement, color-coat surfacing and tennis court equipment.

1.2 SUBMITTALS

A. Certificates: Submit copies of material's certificates signed by the material producer and the contractor certifying that each item complies with or exceeds specified requirements.

B. Shop Drawings: Submit catalog specification sheets for all tennis court equipment items.

C. Submit 2 sets of tennis court acrylic coating color samples to the Owner for color evaluation.

1.3 QUALITY ASSURANCE

A. Installer must regularly engage in applications of colored acrylic athlete surfaces. Documented experience must be provided. Minimum of 10 projects similar in complexity.

B. Standards of Manufacture: Work shall be in accordance with the applicable sections of the State of Illinois, Department of Transportation, Standard Specifications for Road and Bridge Construction, current edition; the United States Tennis Court and Track Builders Association; and the United States Tennis Association.

C. Surfacing shall conform to the guidelines of the ASBA, (American Sports Builder Association).

D. Allowable tolerances per Section 32 12 16.

1.4 WARRANTY

A. Provide a Contractor's warranty covering a period of two (2) years after completion and final acceptance of the Work.

1. Contractor shall warrant the Work against defects due to faulty materials or workmanship, and shall agree to repair or replace defective work, during the warranty period, without cost to the Owner.
2.

1.5 SUBMITTALS

A. Product Data: For the following:

1. Net posts.
2. Net Anchors.
3. Nets.
4. Sport coating system.
5. Acrylic resurfacer.
6. Line paint.

1.6 PROJECT CONDITIONS

A. Weather Limitations
   1. Do not install when raining or rain is imminent.
   2. Do not install if surface is wet or damp.
   3. Do not apply unless surface and air temperatures are 50°F and rising.
   4. Do not apply if surface temperature is more than 140°F.

B. Asphalt Conditions

   1. New asphalt must cure for a minimum of 14 days.
   2. Asphalt must be free of moisture (surface and/or percolating)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aggregate Base Course, Bituminous Concrete Binder Course and Bituminous Concrete Surface Course per Section 32 12 16 with the following exceptions:

   1. Bituminous Concrete Surface Course Shall Be Mixture N30, IL-9.5, PG58-28. No recycled materials shall be permitted.
   2. Bituminous Concrete Binder Course Shall Be Mixture N50, IL-19.0, PG58-28. No recycled materials shall be permitted.

B. Acrylic Surface Coating System: 100% Acrylic Latex Resurfacer, Product Acrylic Resurfacer 920-29 by California Products Corporation, 150 Dascomb Road Andover, MA, 800-332-6178, or approved equal.

   1. Elite Acrylic Filler Coats (Resurfacer), a product of Elite Sport Coating System, is considered an approved equal for this project.
   2. Resurfacer, Decorative coating, and Striping Paint materials shall be from same manufacturer to ensure compatibility.

C. Decorative Coating: 2 coats sand-based DECO COLOR Multi-purpose acrylic latex coating 920-27 (colors as indicated on Drawings) by Deco Surfacing Systems, 150 Dascomb Road, Andover, MA, 800-332-6178, or approved equal.

   1. Elite Color Concentrate, a product of Elite Sport Coating System, is considered an approved equal for this project.
   2. Resurfacer, Decorative coating, and Striping Paint materials shall be from same manufacturer to ensure compatibility.

D. Striping Paint: Textured, white striping paint 920-22 by Deco Surfacing Systems or approved equal.

   1. Elite Line Paint, a product of Elite Sport Coating System, is considered an approved equal for this project.
      a. Textured line paint.
   2. Resurfacer and Decorative coating, and Striping Paint materials shall be from same manufacturer to ensure compatibility.

E. Concrete footings for tennis net posts shall be Class SI per IDOT Standard Specs, Section 501.13.

2.2 TENNIS COURT EQUIPMENT

A. Tennis Net Post shall be Douglas Premier Round Net Post, or approved equal.

1. Three-inch (3”) O.D.
2. Color: Green

B. Pickleball Net Post shall be Douglas Premier Round Net Post, or approved equal.

1. Three-inch (3”) O.D.
2. Color: Green

C. Tennis Nets shall be Edwards Aussie Tennis Net, or approved equal.

D. Pickleball Nets shall be Edwards Aussie Pickleball Net (36”x22’), or approved equal.

PART 3 - EXECUTION

3.1 GENERAL

A. Preparation of subgrade, construction of base course and bituminous concrete per Section 31 20 00 and Section 32 12 16.

3.2 PLACEMENT OF NET POSTS

A. After asphalt has cured one week, core holes for tennis court and pickleball court net post footings into bituminous concrete pavement to the depth and diameter indicated on the drawings. Care should be taken to avoid damaging the pavement around the net post footings. Restore damaged pavement around the footings.

B. Install net posts and footings plumb per locations and heights indicated on the drawings.

3.3 SURFACE CLEANING

A. Surface shall be thoroughly cleaned. Free of any dirt, debris, or stains.

B. Power washing may be required if embedded dirt, or cement can not be completely removed with blowers or brooms.

C. Oil based materials spills must be treated with detergent and rinsed.

3.4 COURT DEPRESSIONS “BIRDBATHS”

A. Testing: Surface shall be flooded with water by rain or manually with clean water. Surface shall be allowed to drain for 45-60 minutes in sunlight at 70°F. Remaining depressions holding enough water to cover five cent piece (American Nickel) shall be marked.

B. Apply acrylic patch binder mix to depressions and strike off with a straight edge. Before the product begins to dry, feather edges using a trowel, putty knife, or similar method.

C. Repeat testing and acrylic patch binder applications as need to eliminate or reduce depressions to within tolerance.

D. Sand and pre-coat as need to assure repairs are not visible following surface applications.

E. Strictly follow manufacturers mixture guidelines and weather limitations.

3.5 PLACEMENT OF ACRYLIC FILLER COATS (RESURFACER)

A. Allow bituminous concrete surface to cure for 2 weeks before resurfacer placement. Before resurfacer is applied, thoroughly wash asphalt surface to remove all excess oils, dirt and debris. Remove all broken raveling stones. Flood asphalt surface again to determine minor depressions or “bird bath” areas which necessitate leveling with asphalt resurfacer.

B. Apply resurfacer per manufacturer’s rates and procedures to level minor depressions (less than 1/8”) on the tennis court surface. Fill depressions with resurfacer per manufacturer instructions and strike off with a straight edge. Care should be taken to blend the outside edge of the area leveled into the existing surface so as to avoid unsightly ridges or shadows. Apply a minimum of two coats of resurfacer to tennis surface. However, do not exceed the maximum depth of the resurfacer material recommended by the manufacturer.

1. Two (2) coats of properly textured acrylic resurfacer shall be applied to entire surface. Special care shall be taken to keep a wet edge and remain consistent.
2. When surface is completely dry, surface shall be inspected for ridges, bumps and debris. Any inconsistencies shall be corrected prior to color coat applications.
3. Strictly follow manufactures mixture guidelines and weather limitations.

3.6 PLACEMENT OF COLOR COATING

A. Complete through inspection. Asphalt surface shall be well cured, clean and free of dust, dirt and debris. Clean with power vacuum, compressed air and/or water. Remove all raveling or broken asphalt, stones and dirt.

B. Measure and delineate colored court areas per drawings.

1. If the surface is to receive multiple colors, apply chalk lines to distinguish the court area from the perimeter area. Follow USTA guidelines for court dimensions.

C. Placement of multi-purpose DECO COLOR Decorative Coating system (acrylic texture course) coating 920-27 (color-coated border and color-coated playing surface, with colors as indicated on Drawings) shall be prepared and used in accordance with the manufacturer’s recommendations.

1. Elite Color Concentrate, a product of Elite Sport Coating System, is considered an approved equal for this project.
    a. Complete through inspection. Asphalt surface shall be well cured, clean and free of dust, dirt and debris. Clean with power vacuum, compressed air and/or water. Remove all raveling or broken asphalt, stones and dirt.
    b. After acrylic texture course has dried to a firm set, apply one coat of texture acrylic color surface course per manufacturer’s rates and procedures.
    c. Texture acrylic color surface course shall be applied in two (2) applications with a 50-durometer rubber squeegee.
        1) Apply one coat of acrylic texture course per manufacturer’s rates and procedures (see drawings for limits of colored court areas).
        2) No application should be made until the previous application is dry.
        3) After first coat has dried, apply second coat at a 90 degree angle to the first application per manufacturer’s rates and procedures.
2. Acrylic finish course shall include 2 parts multi-purpose decorative coating 920-27, and one-part cool, clean soft water.

3.7 PLACEMENT OF LINE PAINT

A. To well cured, clean and dry tennis court pavement surface, apply white striping paint per manufacturer’s rates and procedures, per specifications of the United States Tennis Court & Track Builders Association and as indicated in the drawings. All dimensions indicated on the

drawings are to the outside of the lines, except the center lines, which are equally divided between right and left service courts.

1. Lines shall be carefully laid out in accordance with the ASBA guidelines.
2. Masking tape shall be applied and rolled to result in a two inch (2”) wide width unless otherwise stated.
    a. All lines shall be straight, well defined with no bleeding.
3. Masked lines shall be primed with acrylic line primer to seal the void between the textured surface and masking tape edge.
    a. If masking tape is used, it should be removed immediately after line paint has dried.
4. One (1) coat of textured white line paint shall be applied by brush or roller. No Spray Applications Permitted.

3.8 PROTECTION

A. No material or equipment shall be stored on site unless it is fully secured.

B. Erect temporary barriers to protect coatings during drying and curing.

C. Lock gates to prevent use for 48 hours or until accepted by owner. Whichever is longer.

3.9 CLEAN UP

A. Site shall be cleared of all construction debris, all was shall be disposed of offsite in accordance with local, state and federal regulations.

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.

B. Remove all barriers and locks.

END OF SECTION 32 18.23.53

SECTION 32 18 23.53 – TENNIS COURT SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. Contractor shall provide all equipment and materials and do all work necessary to construct the tennis courts including all pavement, color-coat surfacing and tennis court equipment.

1.2 SUBMITTALS

A. Certificates: Submit copies of material's certificates signed by the material producer and the contractor certifying that each item complies with or exceeds specified requirements.

B. Submit 2 sets of tennis court acrylic coating color samples to the Owner for color evaluation.

1.3 QUALITY ASSURANCE

A. Installer must regularly engage in applications of colored acrylic athlete surfaces. Documented experience must be provided. Minimum of 10 projects similar in complexity.

B. Standards of Manufacture: Work shall be in accordance with the applicable sections of the State of Illinois, Department of Transportation, Standard Specifications for Road and Bridge Construction, current edition; the United States Tennis Court and Track Builders Association; and the United States Tennis Association.

C. Surfacing shall conform to the guidelines of the ASBA, (American Sports Builder Association).

D. Allowable tolerances per Section 32 12 16.

1.4 WARRANTY

A. Provide a Contractor's warranty covering a period of two (2) years after completion and final acceptance of the Work.

1. Contractor shall warrant the Work against defects due to faulty materials or workmanship, and shall agree to repair or replace defective work, during the warranty period, without cost to the Owner.
2.

1.5 SUBMITTALS

A. Product Data: For the following:

1. Sport coating system.
2. Acrylic resurfacer.
3. Line paint.

1.6 PROJECT CONDITIONS

A. Weather Limitations
1. Do not install when raining or rain is imminent.
2. Do not install if surface is wet or damp.
3. Do not apply unless surface and air temperatures are 50°F and rising.

4. Do not apply if surface temperature is more than 140°F.

B. Asphalt Conditions

1. New asphalt or concrete must cure for a minimum of 14 days.
2. Asphalt must be free of moisture (surface and/or percolating)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aggregate Base Course, Bituminous Concrete Binder Course and Bituminous Concrete Surface Course per Section 32 12 16 with the following exceptions:

1. Bituminous Concrete Surface Course Shall Be Mixture N30, IL-9.5, PG58-28. No recycled materials shall be permitted.
2. Bituminous Concrete Binder Course Shall Be Mixture N50, IL-19.0, PG58-28. No recycled materials shall be permitted.

B. Acrylic Surface Coating System: 100% Acrylic Latex Resurfacer, Product Acrylic Resurfacer 920-29 by California Products Corporation, 150 Dascomb Road Andover, MA, 800-332-6178, or approved equal.

1. Elite Acrylic Filler Coats (Resurfacer), a product of Elite Sport Coating System, is considered an approved equal for this project.
2. Resurfacer, Decorative coating, and Striping Paint materials shall be from same manufacturer to ensure compatibility.

C. Decorative Coating: 2 coats sand-based DECO COLOR Multi-purpose acrylic latex coating 920-27 (colors as indicated on Drawings) by Deco Surfacing Systems, 150 Dascomb Road, Andover, MA, 800-332-6178, or approved equal.

1. Elite Color Concentrate, a product of Elite Sport Coating System, is considered an approved equal for this project.
2. Resurfacer, Decorative coating, and Striping Paint materials shall be from same manufacturer to ensure compatibility.

D. Striping Paint: Textured, white striping paint 920-22 by Deco Surfacing Systems or approved equal.

1. Elite Line Paint, a product of Elite Sport Coating System, is considered an approved equal for this project.
   a. Textured line paint.
2. Resurfacer and Decorative coating, and Striping Paint materials shall be from same manufacturer to ensure compatibility.

E. Concrete footings for tennis net posts shall be Class SI per IDOT Standard Specs, Section 501.13.

PART 3 - EXECUTION

3.1 GENERAL

A. Preparation of subgrade, construction of base course and bituminous concrete per Section 31 20 00 and Section 32 12 16.

3.2 SURFACE CLEANING

A. Surface shall be thoroughly cleaned. Free of any dirt, debris, or stains.

B. Power washing may be required if embedded dirt, or cement can not be completely removed with blowers or brooms.

C. Oil based materials spills must be treated with detergent and rinsed.

3.3 COURT DEPRESSIONS “BIRDBATHS”

A. Testing: Surface shall be flooded with water by rain or manually with clean water. Surface shall be allowed to drain for 45-60 minutes in sunlight at 70°F. Remaining depressions holding enough water to cover five cent piece (American Nickel) shall be marked.

B. Apply acrylic patch binder mix to depressions and strike off with a straight edge. Before the product begins to dry, feather edges using a trowel, putty knife, or similar method.

C. Repeat testing and acrylic patch binder applications as need to eliminate or reduce depressions to within tolerance.

D. Sand and pre-coat as need to assure repairs are not visible following surface applications.

E. Strictly follow manufacturers mixture guidelines and weather limitations.

3.4 PLACEMENT OF ACRYLIC FILLER COATS (RESURFACER)

A. Allow bituminous concrete surface to cure for 2 weeks before resurfacer placement. Before resurfacer is applied, thoroughly wash asphalt surface to remove all excess oils, dirt and debris. Remove all broken raveling stones. Flood asphalt surface again to determine minor depressions or “bird bath” areas which necessitate leveling with asphalt resurfacer.

B. Apply resurfacer per manufacturer’s rates and procedures to level minor depressions (less than 1/8”) on the tennis court surface. Fill depressions with resurfacer per manufacturer instructions and strike off with a straight edge. Care should be taken to blend the outside edge of the area leveled into the existing surface so as to avoid unsightly ridges or shadows. Apply a minimum of two coats of resurfacer to tennis surface. However, do not exceed the maximum depth of the resurfacer material recommended by the manufacturer.

1. Two (2) coats of properly textured acrylic resurfacer shall be applied to entire surface. Special care shall be taken to keep a wet edge and remain consistent.
2. When surface is completely dry, surface shall be inspected for ridges, bumps and debris. Any inconsistencies shall be corrected prior to color coat applications.
3. Strictly follow manufactures mixture guidelines and weather limitations.

3.5 PLACEMENT OF COLOR COATING

A. Complete through inspection. Asphalt surface shall be well cured, clean and free of dust, dirt and debris. Clean with power vacuum, compressed air and/or water. Remove all raveling or broken asphalt, stones and dirt.

B. Measure and delineate colored court areas per drawings.

1. If the surface is to receive multiple colors, apply chalk lines to distinguish the court area from the perimeter area. Follow USTA guidelines for court dimensions.

C. Placement of multi-purpose DECO COLOR Decorative Coating system (acrylic texture course) coating 920-27 (color-coated border and color-coated playing surface, with colors as indicated on Drawings) shall be prepared and used in accordance with the manufacturer’s recommendations.

1. Elite Color Concentrate, a product of Elite Sport Coating System, is considered an approved equal for this project.
    a. Complete through inspection. Asphalt surface shall be well cured, clean and free of dust, dirt and debris. Clean with power vacuum, compressed air and/or water. Remove all raveling or broken asphalt, stones and dirt.
    b. After acrylic texture course has dried to a firm set, apply one coat of texture acrylic color surface course per manufacturer's rates and procedures.
    c. Texture acrylic color surface course shall be applied in two (2) applications with a 50-durometer rubber squeegee.
        1) Apply one coat of acrylic texture course per manufacturer's rates and procedures (see drawings for limits of colored court areas).
        2) No application should be made until the previous application is dry.
        3) After first coat has dried, apply second coat at a 90 degree angle to the first application per manufacturer's rates and procedures.
2. Acrylic finish course shall include 2 parts multi-purpose decorative coating 920-27, and one-part cool, clean soft water.

3.6 PLACEMENT OF LINE PAINT

A. To well cured, clean and dry tennis court pavement surface, apply white striping paint per manufacturer's rates and procedures, per specifications of the United States Tennis Court & Track Builders Association and as indicated in the drawings. All dimensions indicated on the drawings are to the outside of the lines, except the center lines, which are equally divided between right and left service courts.

1. Lines shall be carefully laid out in accordance with the ASBA guidelines.
2. Masking tape shall be applied and rolled to result in a two inch (2") wide width unless otherwise stated.
    a. All lines shall be straight, well defined with no bleeding.
3. Masked lines shall be primed with acrylic line primer to seal the void between the textured surface and masking tape edge.
    a. If masking tape is used, it should be removed immediately after line paint has dried.
4. One (1) coat of textured white line paint shall be applied by brush or roller. No Spray Applications Permitted.

3.7 PROTECTION

A. No material or equipment shall be stored on site unless it is fully secured.

B. Erect temporary barriers to protect coatings during drying and curing.

C. Lock gates to prevent use for 48 hours or until accepted by owner. Whichever is longer.

3.8 CLEAN UP

A. Site shall be cleared of all construction debris, all was shall be disposed of offsite in accordance with local, state and federal regulations.

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.

B. Remove all barriers and locks.

END OF SECTION 32 18.23.53

SECTION 32 31 13 – CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Chain-link fences.
2. Gates: Swing.

B. General Scope of Work: Provide all fabrication, labor, materials, and accessories as required to provide the chain-link fences and gates indicated on the Drawings, as described in the Specifications, and as needed for a complete and proper installation including, but not limited to the following:

1. Contact JULIE: Prior to commencing any work including demolition, call 811 and comply with all requirements of the Illinois Underground Utilities Facilities Damage Prevention Act.
   a. In addition, review and mark with the Owner's representative any locations of known private underground utilities.
2. Post Footings:
   a. Depth: The bottom of all new concrete post footings must be a minimum of 4'-0" below grade.
      1) All post footing holes must be inspected by the Construction Manager or Engineer before the Contractor can proceed with the installation of the posts and concrete footings.
   b. Diameters: Minimum 12 inches diameter or four times the post diameter, whichever is larger.
   c. Top: The top of all post footings to be 2 inches above grade and tooled and sloped to direct water away from posts.
   d. Concrete Mix: All new concrete footings to be ready-mix 4,000 PSI air-entrained concrete. Site-mixed concrete is not permitted. Submit mix designs to the Construction Manager for review and approval.
   e. Concrete Testing by Owner: Test cylinders must be taken by the Owner's material testing company per the requirements of the concrete specifications.
   f. Refer to the Concrete Paving Specification for additional information and requirements.
3. Fencing Requirements:
   a. Vinyl Coating: Fence systems shall have fence posts and rails vinyl coated and manufactured in accordance with Federal Specification RR-F-191/3D, Class 1, Grade A or B; or ASTM- F-761. The framework for shall have a 10 to 15 mil coating per ASTM F-1043.
   b. Fabric:
      1) Fence Material: Fused and bonded vinyl clad coating (color black unless noted otherwise on Drawings) over a galvanized or aluminized steel core wire manufactured in accordance with ASTM F-668 class 2a or 2b, minimum 9 gauge (0.148 inch) steel core before coating.
      2) Fence Mesh Size: 2 inches.

3) Heights: Where fence heights are indicated on the Drawings or described in the Specifications, the height refers to the fence fabric height.
4) Selvage:
    a) Top Selvage: Knuckle selvage.
    b) Bottom Selvage: Knuckle selvage.
5) Fence Ties:
    a) Material: All fence ties to be galvanized steel. Aluminum ties are not permitted.
    b) Rail Tie Spacing: 18 inches o.c.
    c) Line Post Tie Spacing: 12 inches o.c.

c. Posts & Rails:
1) Post and Rail Material: Fence systems shall have fence rails vinyl coated and manufactured in accordance with Federal Specification RR-F-191/3D, Class 1, Grade A or B; or ASTM- F-761. The framework for shall have a 10 to 15 mil coating per ASTM F-1043.
2) Fence Dome Caps, Splices, Fittings, Etc.: Match the material of the posts and rails.
3) Maximum Post Spacing: 10'-0" unless otherwise indicated in drawings
4) Terminal Posts: 3 inch outside diameter.
    a) Provide brace rails and 3/8 inch diameter adjustable truss rods at all terminal posts on fences 72 inches and higher.
    b) Provide tension bands at 12 inches o.c.
5) Line Posts:
    a) 4’-0” High Fences: 2.5 inch outside diameter
    b) 10’-0” And 12’-0" High Fences: 3 inch outside diameter.
6) Top/Bottom Rails: 1-5/8 inch outside diameter.
7) Mid-Rails:
    a) 10’-0" And 12’-0” High Fences: Provide continuous 1-5/8 inch outside diameter mid-rails in addition to brace rails.
8) Brace Rails: 1-5/8 inch outside diameter.
9) Gate Posts:
    a) 4 inches outside diameter.

d. Gates:
1) Types: Single swing and double swing.
    a) Refer to the Drawings for sizes and locations.
2) Swing Gates:
    a) Comply with ASTM F 900 and as specified below.
    b) Frames: 1-7/8 inch outside diameter full perimeter frames.
    c) Diagonal Member: Provide a 1-5/8 outside diameter diagonal member welded to perimeter frame for each gate leaf.
    d) Connections: Fully weld all connections and vinyl coated after welding.
    e) Provide heavy-duty gate hinges allowing 180 degree inward swing.
    f) Provide single and double gate latches. Padlocks to be provided by the Owner.
    g) At double gates, provide gate stops, and anchor center stops and keepers in concrete, 12 inches in diameter with bottom 4'-0" deep below grade.
    h) Materials: Match materials of adjacent fence.

e. Hog Rings:
1) Hog Rings: Provide galvanized steel wire hog rings at maximum 18 inches o.c. Finish to match fence fabric.

C. Related Sections:

1. Section 01 21 00 "Allowances" for Owner's contingency allowance.

2. Section 32 13 13 "Concrete Paving" for cast-in-place concrete post footings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates.

1. Fence and gate posts, rails, and fittings.
2. Chain-link fabric, reinforcements, and attachments.
3. Gates and hardware.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware, gate operation, and operational clearances.

C. Samples for Initial Selection: For components with factory-applied finishes.

D. Samples for Verification: Prepared on Samples of size indicated below:

1. Vinyl Coated Components: In 6-inch (150-mm) lengths for components and on full-sized units for accessories.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of chain-link fence, and gate, from manufacturer.

B. Product Test Reports: For framing strength according to ASTM F 1043.

C. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For the following to include in emergency, operation, and maintenance manuals:

1. Fence finishes.
2. Gate hardware.

1.6 QUALITY ASSURANCE

1. Project Superintendent: The Contractor must provide a dedicated, full-time, superintendent at the project site at all times when workers are at the Project Site.
2. Better Business Bureau Rating: The Contractor must have an "A" rating or better with the Better Business Bureau to be considered a qualified bidder or contractor.

1.7 PROJECT CONDITIONS

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

1.8 WARRANTY

A. Warranty: Written warranty form in which Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Faulty operation of gate operators and controls.

b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Vinyl coated steel Wire Fabric: Wire with a diameter of 0.148 inch (3.76 mm).
   a. Mesh Size: 2 inches (50 mm).
   b. Coat selvage ends of fabric that is metallic coated before the weaving process with manufacturer's standard clear protective coating.
3. Selvage: Knuckled at both selvages.

2.2 FENCE FRAMING

A. Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 and as listed previously in this Specification.

2.3 SWING GATES

A. General: Comply with ASTM F 900 for gate posts and single and double swing gate types.

1. Gate Leaf Width: As indicated.
2. Gate Fabric Height: As indicated.

B. Pipe and Tubing:

1. Zinc-Coated Steel: Comply with ASTM F 1043 and ASTM F 1083; coating and finish to match fence framing.
2. Gate Posts: Round tubular steel.
   a. Single Swing Gates: 4 inches outside diameter.
   b. Double Swing Gates: 4 inches outside diameter.
3. Gate Frames and Bracing: Round tubular steel.

C. Frame Corner Construction: Welded.

1. Provide interior diagonal bracing for each leaf.

D. Hardware:

1. Hinges: 180-degree inward swing.
2. Latches permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
3. Padlock and Chain: Padlocks and chains provided by Owner.

2.4 FITTINGS

A. General: Comply with ASTM F 626.

B. Post Caps: Provide for each post.

1. Provide line post caps with loop to receive top rail.

C. Rail and Brace Ends: For each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches (152 mm) long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate rails in the fence line-to-line posts.

E. Tension Bars: Steel, length not less than 2 inches (50 mm) shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

F. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.

G. Tie Wires, Clips, and Fasteners: According to ASTM F 626.

1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
   a. Hot-Dip Galvanized Steel: 0.148-inch- (3.76-mm-) diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
      1) Aluminum tie wires are not permitted.

H. Finish:

1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz. /sq. ft. (366 g /sq. m) zinc.
   a. Polymer coating over metallic coating.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Construction Manager.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 50 feet between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

B. Do not proceed with any new construction work until the Contractor has contacted JULIE and had all underground utilities located and marked.

3.3 INSTALLATION, GENERAL

A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.

1. Provide gates in sizes, types, and locations indicated on the Drawings.
   a. Notify the Owner and Construction Manager of any potential conflicts between the

fence installation and located underground public or private utilities.

3.4 CHAIN-LINK FENCE INSTALLATION

A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

1. Before setting posts, all post excavations must be reviewed and approved by the Owner or Construction Manager.

B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
   a. Exposed Concrete: Extend 2 inches (50 mm) above grade; shape to a crown and smooth to shed water.

C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more.

D. Line Posts: Space line posts uniformly at 10 feet (3 m) o.c.

E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric 72 inches (1830 mm) or higher, on fences with top rail and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

F. Top/Bottom Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

G. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2 inches (50 mm) between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

H. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches (380 mm) o.c.

I. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts at 12 inches (300 mm) o.c. and to braces at 24 inches (610 mm) o.c.

J. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.5 GATE INSTALLATION

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

3.6 ADJUSTING

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

B. Lubricate hardware and other moving parts.

3.7 DEMONSTRATION

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

END OF SECTION

SECTION 32 36 75 – LINE PRIMER

PART 1 - GENERAL

1.1 SUMMARY

A. General Description: Line Primer is a 100% acrylic clear drying emulsion primer that is applied prior to White Line Paint. The use of Line Primer assures crisp, sharp lines and a professional quality finish to the court surface. Line Prime does not contain any asbestos, Lead, or Mercury.

1. Basic Uses: Designed to fill the minor voids between the tape and the court surface.

B. Safety Guidelines: Always wear the recommended personal protective equipment. Avoid contact with eyes, skin, and clothing.

C. Storage and Packaging Line Prime should be kept dry and cool. Storage temperature should be between 10°C (50°F) and 38°C (100°F). Do not store in direct sunlight.

1. Packaging: 2 gallon unit (2 gallon units are packaged in jugs at 1 gallon each).

D. Coverage Depending on the surface porosity and texture the consumption rate is 500 - 600 feet of 2” line per gallon. One set of tennis court lines typically requires 1-gallon of Line Primer.

E. Installation Guidelines Apply Line Primer undiluted with a paintbrush or roller after masking tape is put down. Line Primer dries within 10 to 15 minutes in good weather conditions. Do not apply masking tape and Line Primer if rain is imminent. Once Line Primer is dry, White Line Paint may be applied. Remove masking tape immediately after playing lines are dry.

F. Limitations Rev 1 WB 12.16.15 Line Primer

1. Minimum surface and application temperature: 10°C (50°F)
2. Maximum surface and application temperature: 54°C (130°F)
3. Do not allow product to freeze.
4. Do not dilute with water.
5. Do not apply when rain is imminent.
6. Completed projects should be allowed a minimum for 48 hours drying time before releasing for play.

1.2 SUBMITTALS

A. Submit line primer material product data and specification information provided by the manufacturer.

B. Furnish the manufacturer’s material product data and specification information stating the color finish system is especially made for use on tennis courts.

1.3 QUALITY ASSURANCE

A. Quality assurance personnel will perform intermittent inspections during the filling and color finish system operations.

B. The Contractor is to supply the barrel or tote product and manufacturing production numbers for each barrel or tote of acrylic resurfacer or color product used on this project before any application of products.

PART 2 - PRODUCTS

A. Application:

1. Apply the line striping paint according to the U. S. Tennis Association and ITF Specifications. Do not apply the line striping paint in windy conditions. Lines that are found to be crooked, wavy or out of line shall be colored out and restriped at no additional cost to the Owner. Lines shall be masked. Line dimensions shall meet or exceed the following ITF tolerances.

2. If line corrections need to be made, it is at the sole discretion of the Engineer if the playing surface needs to be repainted. Any cost for such work shall be paid for by the Contractor.

B. Acceptable products:

1. The following manufacturers are approved for this project, any other manufacturers need written approval by the Engineer before bidding.

a. Laykold
b. Decoturf/California Sports Surfaces
c. ***Elite Sport Coating System***
d. ***SportMaster Color Coating System***

END OF SECTION 32 36 75

SECTION 33 41 00 - STORM UTILITY DRAINAGE PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes gravity-flow, non-pressure storm drainage outside the building.

B. Related Sections include the following:
1. Division 23 Sections.

1.3 DEFINITIONS

A. PVC: Polyvinyl chloride plastic

B. HDPE: High Density Polyethylene.

1.4 PERFORMANCE REQUIREMENTS

A. Gravity-Flow, Nonpressure, Drainage-Piping Pressure Ratings: At least equal to system test pressure.

1.5 SUBMITTALS

A. Product Data: For the following:
1. Piping materials.

B. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic structures, pipe, and fittings in direct sunlight.

B. Protect pipe, pipe fittings, and seals from dirt and damage.

C. Handle precast concrete manholes and other structures according to manufacturer's written rigging instructions.

1.7 PROJECT CONDITIONS

A. Site Information: Perform site survey and verify existing utility locations.

B. Locate existing structures and piping to be closed and abandoned.

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

1. Notify Owner no fewer than two days in advance of proposed interruption of service.
2. Do not proceed with utility interruptions without Architect's written permission.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with the requirements of the Drawings and Authorities Having Jurisdiction.

2.2 PIPES AND FITTINGS

A. Corrugated HDPE Drainage Tubing and Fittings: AASHTO M 252, Type S, with smooth waterway for coupling joints.
   1. Soiltight Couplings

B. PVC Sewer Pipe and Fittings:
   1. PVC Sewer Pipe and Fittings, 15” and Smaller: ASTM D 3034, SDR 26, gasketed joints.
      a. Gaskets: ASTM F 477, elastomeric seals.

2.3 PERFORATED-WALL PIPES AND FITTINGS

A. Perforated PVC Sewer Pipe and Fittings: AASHTO M 278, bell-and-spigot ends.
   1. 6-inch and Smaller: ASTM F 405 or AASHTO M 252, Type CP; corrugated, for coupled joints.

2.4 SPECIAL PIPE COUPLINGS AND FITTINGS

A. Comply with ASTM C 1173, elastomeric, sleeve-type, reducing or transition coupling, for joining underground nonpressure piping. Include ends of same sizes as piping to be joined, and corrosion-resistant-metal tension band and tightening mechanism on each end.

B. Sleeve Materials: ASTM C 1173, rubber or elastomeric sleeve and band assembly fabricated to mate with OD of pipes to be joined, for nonpressure joints.
   1. Sleeve Material for Plastic Pipe: ASTM F 477, elastomeric seal.
   2. Sleeve Material for Dissimilar Pipe: Compatible with pipe materials being joined.

C. Shielded Couplings: ASTM C 1277 assembly of metal shield or housing, corrosion-resistant fasteners, and rubber sleeve with integral, center pipe stop.
   1. Heavy-Duty, Shielded, Stainless-Steel Couplings, 10-inch and Smaller: With ASTM A 666, Type 301 or Type 304, stainless-steel shield; 2 or more stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve.

D. Unshielded Flexible Couplings: Elastomeric sleeve with stainless steel tension band and tightening mechanism on each end.

2.5 CATCH BASINS

A. Normal-Traffic, Precast Concrete Catch Basins: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for rubber gasketed joints.
   1. Gaskets: ASTM C 443, rubber.

B. Steps: Steel Reinforced Plastic or Cast Iron individual steps. Wide enough to allow worker to place both feet on one step and is designed to prevent lateral slippage off step. Cast or anchor

steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from invert to finished grade is less than 60 inches

C. Frames and Covers: ASTM A 48, Class 35 gray iron castings designed for heavy-duty service.

D. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.

E. Adjusting Rings: Interlocking rings with level or sloped edge in thickness and diameter matching manhole frame and cover. Include sealant recommended by ring manufacturer.

2.6 CONCRETE

A. General: Cast-in-place concrete according to ACI 318, ACI 350R, and the following:
1. Cement: ASTM C 150, Type II.
2. Fine Aggregate: ASTM C 33, sand.
3. Coarse Aggregate: ASTM C 33, crushed gravel.
4. Water: Potable.

B. Portland Cement Design Mix: 4000 psi minimum, with 0.45 maximum water-cementitious ratio.
1. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
2. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed steel.

2.7 CLEANOUTS

A. PVC Cleanouts: PVC body with PVC threaded plug. Include PVC sewer pipe fitting and riser to cleanout of same material as sewer piping.
1. Light Duty: In earth or grass foot-traffic areas.
2. Medium Duty: In paved foot-traffic areas.
3. Heavy Duty: In vehicle-traffic service areas.
4. Extra-Heavy Duty: In roads.

2.8 AREA DRAINS

A. Drain Basins and inline Drains: PVC Subsurface inlet per ASTM D2321 guidelines, Nyloplast or approved Equal.
1. H-20 rated installation in paved areas.
2. H-10 rated installation in pedestrian areas.
3. Frame and Grate Shall Be Ductile Iron ASTM A536 grade 70-50-05.
4. Lids shall be bolted.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Division 2 Section "Earthwork."

3.2 PIPING APPLICATIONS

A. Refer to Part 2 of this Section for detailed specifications for pipe and fitting products listed below. Use pipe, fittings, and joining methods according to applications indicated.

3.3 INSTALLATION, GENERAL

A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical.

B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line, and pull past each joint as it is completed.

C. Use manholes for changes in direction, unless fittings are indicated. Use fittings for branch connections, unless direct tap into existing sewer is indicated.

D. Use proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

E. Install gravity-flow piping and connect to building's storm drains, of sizes and in locations indicated. Terminate piping as indicated.

F. Extend storm drainage piping and connect to building's storm drains, of sizes and in locations indicated. Terminate piping as indicated.

3.4 PIPE JOINT CONSTRUCTION AND INSTALLATION

A. General: Join and install pipe and fittings according to installations indicated.

B. PVC Sewer Pipe and Fittings:
1. Join pipe and gasketed fittings with gaskets according to ASTM D 2321.

C. Join piping made of different materials or dimensions with couplings made for this application. Use couplings that are compatible with and that fit both systems' materials and dimensions.

3.5 CATCH-BASIN INSTALLATION

A. Construct catch basins to sizes and shapes indicated.

B. Set frames and grates to elevations indicated.

3.6 CLEANOUT INSTALLATION

A. Install cleanouts and riser extension from sewer pipe to cleanout at grade. Use fittings to match the sewer pipe at branches and riser extensions to cleanouts. Install piping so cleanouts open in direction of flow in sewer pipe.

B. Set with tops maximum 1 inch above surrounding earth grade or flush with pavement grade

3.7 AREA DRAIN INSTALLATION

A. Install per manufacturer’s recommendations.

B. Install type of drains in locations indicated.

C. Set drain frames and covers with tops flush with pavement surface.

D. Provide concrete ring around and beneath grate and frame per manufacturer's recommendations.

3.8 TAP CONNECTIONS

A. Make connections to existing piping and underground structures so finished Work complies as nearly as practical with requirements specified for new Work.

B. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch overlap, with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.

C. Make branch connections from side into existing piping, 21-inch or larger, or to underground structures by cutting opening into existing unit large enough to allow 3 inches of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall, unless otherwise indicated. On outside of pipe or structure wall, encase entering connection in 12 inches of concrete for minimum length of 12 inches to provide additional support of collar from connection to undisturbed ground.
   1. Use concrete that will attain minimum 28-day compressive strength of 3000 psi, unless otherwise indicated.

D. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

3.9 FIELD QUALITY CONTROL

A. Clear interior of piping and structures of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed.
   1. In large, accessible piping, brushes and brooms may be used for cleaning.
   2. Place plug in end of incomplete piping at end of day and when work stops.
   3. Flush piping between manholes and other structures to remove collected debris, if required by authorities having jurisdiction.

B. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
   1. Submit separate reports for each system inspection.
   2. Defects requiring correction include the following:
      a. Alignment: Less than full diameter of inside of pipe is visible between structures.
      b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
      c. Crushed, broken, cracked, or otherwise damaged piping.
      d. Infiltration: Water leakage into piping.
      e. Exfiltration: Water leakage from or around piping.
   3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
   4. Reinspect and repeat procedure until results are satisfactory.

C. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
   1. Do not enclose, cover, or put into service before inspection and approval.
   2. Test completed piping systems according to authorities having jurisdiction.
   3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
   4. Submit separate reports for each test.

5. Replace leaking piping using new materials and repeat testing until leakage is within allowances specified.

3.10 CLEANING

A. Clean interior of piping of dirt and superfluous materials.

END OF SECTION 33 41 00

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SOIL AND MATERIAL CONSULTANTS, INC.

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www.soilandmaterialconsultants.com

December 13, 2022
File No. 26874

Mr. Tyler Quattrocchi
Arlington Heights Park District
410 N. Arlington Heights Road
Arlington Heights, IL 60004

Re: Geotechnical Investigation
Camelot Park
Arlington Heights, Illinois

Dear Mr. Quattrocchi:

The following is our report of findings for the geotechnical investigation completed at the Camelot Park Tennis Courts in the Village of Arlington Heights, Illinois.

The investigation was requested to determine current pavement and subsurface soil conditions at select boring locations. The findings of the field investigation and the results of laboratory testing are intended to assist in evaluation and possible reconstruction of the tennis courts.

SCOPE OF THE INVESTIGATION

The field investigation included obtaining 4 pavement cores and soil borings at the locations requested and as indicated on the enclosed location sketch. The boring locations were established using field taping methods and accuracy.

The pavement materials were cored to determine material types and thicknesses at each location. We auger drilled the borings to depths of 15.0 feet below existing surface elevations. Soil samples were obtained using a split barrel sampler advanced utilizing an automatic SPT hammer. Soil profiles were determined in the field and soil samples returned to our laboratory for additional testing including determination of moisture content. Cohesive soils obtained by split barrel sampling were tested further to determine dry unit weight and unconfined compressive strength.

The results of all field determinations and laboratory testing are included in summary with this report

RESULTS OF THE INVESTIGATION

The summary table below indicates pavement materials and thicknesses encountered. Please refer to the individual core logs and pictures for more detailed information.

Core	HMA Surface (in.)	HMA Binder (in.)	Total HMA (in.)	Granular Base (in.)	Total Pavement (in.)
101	1.5	1.25	2.75	7.5//	10.25
102	1.5	1.0	2.5	7.75	10.25
103	1.5	1.75	3.25	9.0	12.25
104	1.75	1.25	3.0	8.25	11.25

(//) indicates the granular base was contaminated with soil

Fill soil conditions were encountered at each of the boring locations. Composition of the fill includes the presence of clay/silt and topsoil mixtures extending to depths of 3.5 feet to 6.5 feet at borings B-101, B-103 and B-104 with the fill at boring B-102 extending to a depth of 10.5 feet. The clay/silt fill soils are present closer to the surface and appear to have been placed in a somewhat controlled manner. The deeper fill at boring B-102 consisted of topsoil fill with moisture contents in excess of 26% determined. The limits of fill placement were not determined within the scope of this investigation. Larger debris may also be present within the fill but was not encountered during the investigation. The fill soil conditions are found to overlie the apparent natural topsoil at borings B-101 and B-103 which extended to depths of 6.0 feet to 8.0 feet.

Underlying natural soil conditions include the presence of cohesive soils. These are generally classified as very tough to very hard clay/silt mixtures with lesser portions of sand and gravel. A weaker seam of high moisture content cohesive soil was encountered at approximately 6.0 feet below the surface of boring B-104.

Non-cohesive soils were also encountered as indicated at the bottom of borings B-102 to B-104. These include medium dense to dense sand/gravel mixtures in a saturated condition. Cobbles and boulders may be present within the site soils at any elevation, although none were encountered while drilling.

The boring logs indicate the depth at which subsurface water was encountered in the bore holes at the time of the drilling operations and during the period of these readings. It is expected that fluctuations from the water levels recorded will occur over a period of time due to variations in rainfall, temperature, subsurface soil conditions, soil permeability and other factors not evident at the time of the water level measurements.

DISCUSSION

The existing tennis courts at Camelot Park have experienced significant longitudinal and transverse cracking. The cracks have occurred between the tennis net post foundations and in open areas on the courts. Based on historic aerial images it appears tennis courts have been present in the current location since 1972 and we understand the most recent rehabilitation occurred in 2010. The most recent rehabilitation is believed to have consisted of a total reconstruction of the tennis court pavement with new granular base and asphalt pavement installed.

The perimeter fence and light standards do not show any obvious signs of movement. We would expect the fill soils to have experienced the majority of settlement as they are believed to have been in-place since 1972 when the original tennis courts were constructed.

The excessive pavement cracking could be the result of poor placement of the bituminous concrete along with the presence of crushed concrete base. The crushed concrete base may have acted as a low-strength stabilized base which deteriorated over time and may have caused reflective cracking. Additional pavement cracking is likely the result of shrinkage of the asphalt surface along with freeze/thaw cycles of the asphalt pavement against the frost-depth concrete foundations for the tennis court nets and fence posts.

If our assumptions are accurate the tennis court pavement should be considered for a total reconstruction. This would include full-depth removal of the asphalt pavement and granular base.

The subgrade would then be excavated to the design elevation, compacted and proof rolled. Proof-rolling may reveal areas of unstable soil conditions, requiring additional removal and replacement with large crushed limestone, possibly in conjunction with the use of an appropriate geotextile fabric or geo-grid. The placement of the crushed limestone bridging material, possibly in conjunction with the use of an appropriate geotextile fabric or geo-grid, should only proceed after review of the proof-roll conditions by the Soil Engineer. Long-term settlement of pavement surfaces may occur locally as the bridged soils desiccate.

Underdrains should be installed in order to assist with drainage and alleviate potential frost heave. The new crushed limestone aggregate base would then be placed and compacted followed by the placement of the design thickness of HMA binder and surface. Placement of expansion joint material can be considered between the frost-depth concrete foundations and the HMA pavement to allow frost-heave movement between the tennis court pavement and the concrete foundations.

Additionally, consideration should be given to removing the tennis net foundations and replacing with drilled pier foundations extending at least 60 inches below the surface to prevent uplift from frost heave.

CONCLUSION

The information within this report is intended to provide initial information concerning subsurface soil and water conditions on the site. Variations in subsurface conditions are expected to be present between boring locations due to naturally changing and filled soil conditions.

Our understanding of the proposed improvements is based on limited information available to us at the writing of this report. The findings of the investigation and the recommendations presented are not considered applicable to significant changes in the scope of the improvements or applicable to alternate site uses. We recommend that proposed pavement and grading plans be reviewed by our office to determine if additional considerations are necessary to address anticipated subsurface conditions.

The soils exposed in soil undercut areas should be evaluated for suitability prior to placement of structural fill, as previously indicated in this report. Soils and aggregates placed as structural fill should be tested as the work progresses to verify that minimum compaction requirements have been met.

If you have any questions concerning the findings or recommendations presented in this report, please let us know.

Very truly yours,

SOIL AND MATERIAL CONSULTANTS, INC.

Thomas P. Johnson, P.E.
President

TPJ
Enc.

N

SMC	SOIL AND MATERIAL CONSULTANTS, INC.	LOCATION SKETCH
Client:	ARLINGTON HEIGHTS PARK DISTRICT	
Project:	CAMELOT PARK	
Location:	ARLINGTON HEIGHTS, ILLINOIS	
File No. 26874	Date: 11-29-22	Scale: NONE

SOIL AND MATERIAL CONSULTANTS, INC.

8 W. COLLEGE DR. • SUITE C • ARLINGTON HEIGHTS, IL 60004

Date: 11/29/22

File No.: 26874

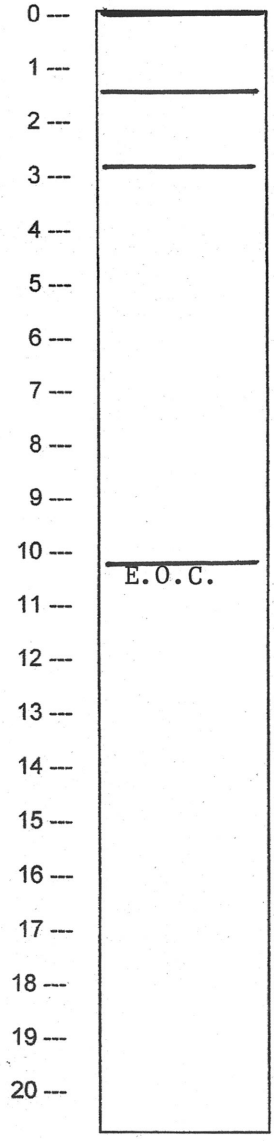
CORE LOG

Client: Arlington Heights Park District Reference Camelot Park, Arlington Hts., IL

Core No: 101 Work Done By: DB & AD

Location of Core: SEE SKETCH

Comments:



Type of Material	Recovery
Court Surface	
1-1/2" Bituminous concrete - surface	Full
1-1/4" Bituminous concrete - binder	Full
7-1/2" Crushed concrete with fines, contaminated with soil	Partial
Total 10-1/4"	

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Date: 11/29/22

File No.: 26874

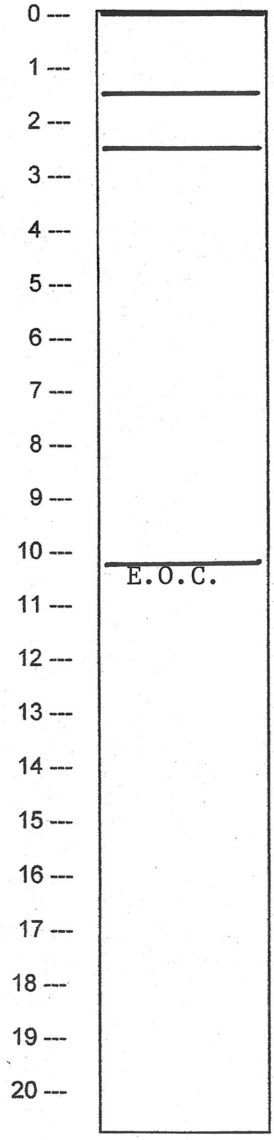
CORE LOG

Client: Arlington Heights Park District Reference Camelot Park, Arlington Hts., IL

Core No: 102 Work Done By: DB & AD

Location of Core: SEE SKETCH

Comments:



Type of Material	Recovery
Court Surface	
1-1/2" Bituminous concrete - surface	Full
1-0" Bituminous concrete - binder	Full
7-3/4" Crushed concrete with fines	Partial
Total 10-1/4"	

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Date: 11/29/22

File No.: 26874

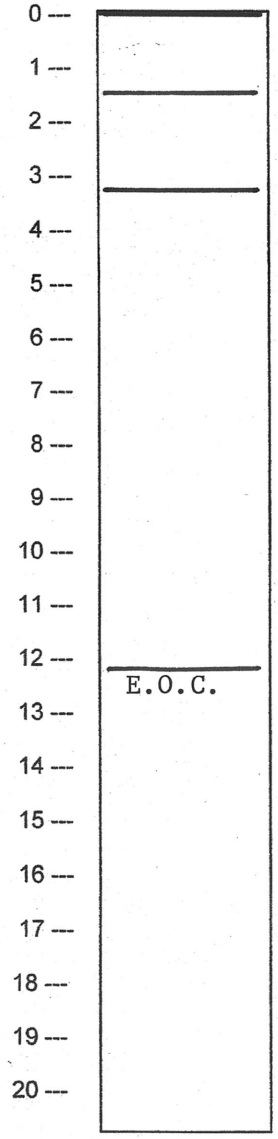
CORE LOG

Client: Arlington Heights Park District Reference Camelot Park, Arlington Hts., IL

Core No: 103 Work Done By: DB & AD

Location of Core: SEE SKETCH

Comments:



Type of Material	Recovery
Court Surface	
1-1/2" Bituminous concrete - surface	Full
1-3/4" Bituminous concrete - binder	Full
9-0" Crushed concrete with fines	Partial
Total 12-1/4"	

G-333

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Date: 11/29/22

File No.: 26874

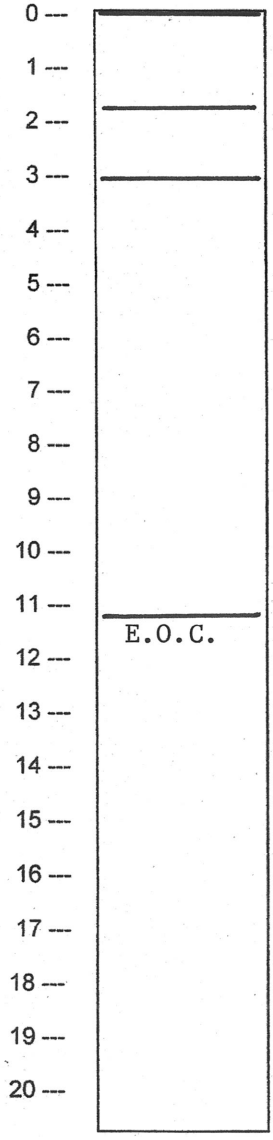
CORE LOG

Client: Arlington Heights Park District Reference Camelot Park, Arlington Hts., IL

Core No: 104 Work Done By: DB & AD

Location of Core: SEE SKETCH

Comments:



Type of Material	Recovery
Court Surface	
1-3/4" Bituminous concrete - surface	Full
1-1/4" Bituminous concrete - binder	Full
8-1/4" Crushed concrete with fines	Partial
Total 11-1/4"	

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SOIL BORING LOG 101

Logged By: CS **Page:** 1 of 1

Client: Arlington Heights Park District **File No.** 26874 **Date Drilled:** 11/28/22

Reference: Camelot Park
Arlington Heights, IL

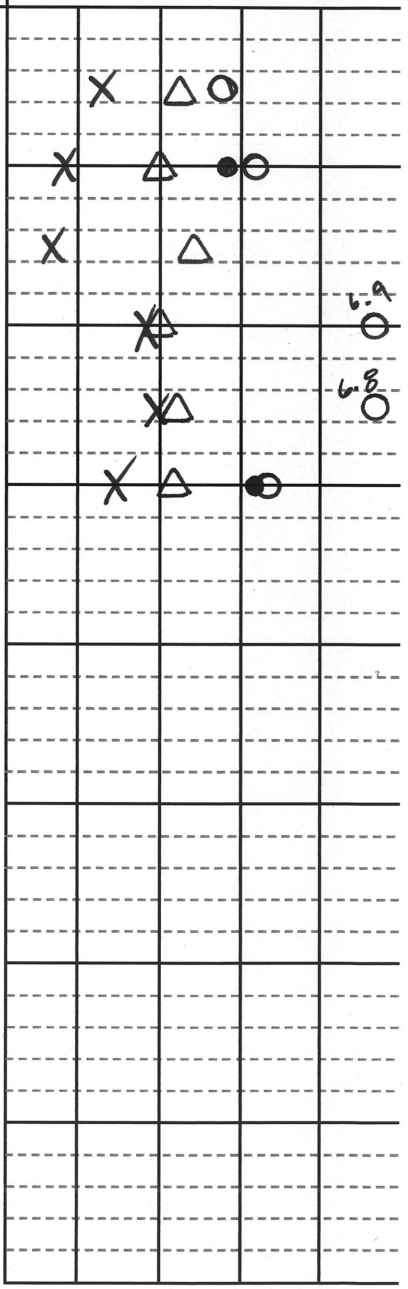
Comments:

Equipment: ☒D - 25 ☐ D - 50 ☐Hand Auger ☐Other

depth, ft.	CLASSIFICATION Elevation Existing Surface	standard penetration ×	moisture content △	dry unit weight lbs./cu.ft. ɣ	unconfined compressive strength ○
	(See Core Log)				
	Brown-gray-black clay, some silt, trace sand & gravel, damp, very tough - Fill	13	21.7	107.0	2.8
5		8	19.6	110.1	3.1
	Black silt, some clay, trace sand & roots, damp, loose (topsoil)	7	25.1		
	Brown clay, some silt, trace sand & gravel damp, hard	18	19.8	111.6	6.9
10		19	20.5	113.9	6.8
	Gray clay, some silt, trace sand & gravel, damp, very tough	14	21.4	109.5	3.4
15	End of Boring				
20					
25					
30					
35					
40					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
△ moisture content, %
10 20 30 40



Water encountered at dry feet during drilling operations (W.D.)
Water recorded at dry feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

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SOIL BORING LOG 102

Logged By: CS **Page:** 1 of 1

Client: Arlington Heights Park District

File No. 26874 **Date Drilled:** 11/28/22

Reference: Camelot Park
Arlington Heights, IL

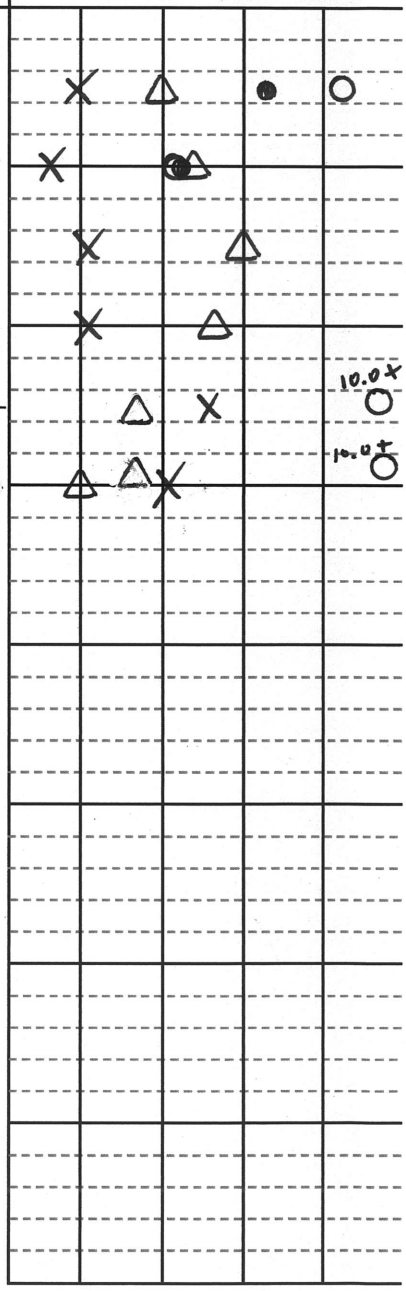
Comments:

Equipment: ☒D - 25 ☐ D - 50 ☐Hand Auger ☐Other

depth, ft.	CLASSIFICATION Elevation Existing Surface	standard penetration ×	moisture content Δ	dry unit weight lbs./cu.ft. ɣ	unconfined compressive strengh ○
	(See Core Log)				
	Brown-gray clay,some silt,trace sand & gravel,damp,hard - Fill	10	19.8	114.3	4.3
5	Brown-gray clay,some silt,trace sand & gravel,damp,very tough - Fill	6	23.5	104.2	2.1
	Black silt,some clay,trace sand,roots & gravel,damp,medium dense (topsoil) - Fill	11	29.5		
10		11	26.9		
	Brown clay,some silt,trace sand & gravel damp,very hard	26	17.4	115.9	10.0+
15	(a) see below	21	16.3 10.1	120.0	10.0+
	End of Boring				
	(a) Gray fine sand & gravel,medium-coarse sand,saturated,medium dense				
20					
25					
30					
35					
40					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
Δ moisture content, %
10 20 30 40



Water encountered at 14.5 feet during drilling operations (W.D.)
Water recorded at 13.0 feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

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SOIL BORING LOG 103

Logged By: CS **Page:** 1 of 1

Client: Arlington Heights Park District

File No. 26874 **Date Drilled:** 11/28/22

Reference: Camelot Park
Arlington Heights, IL

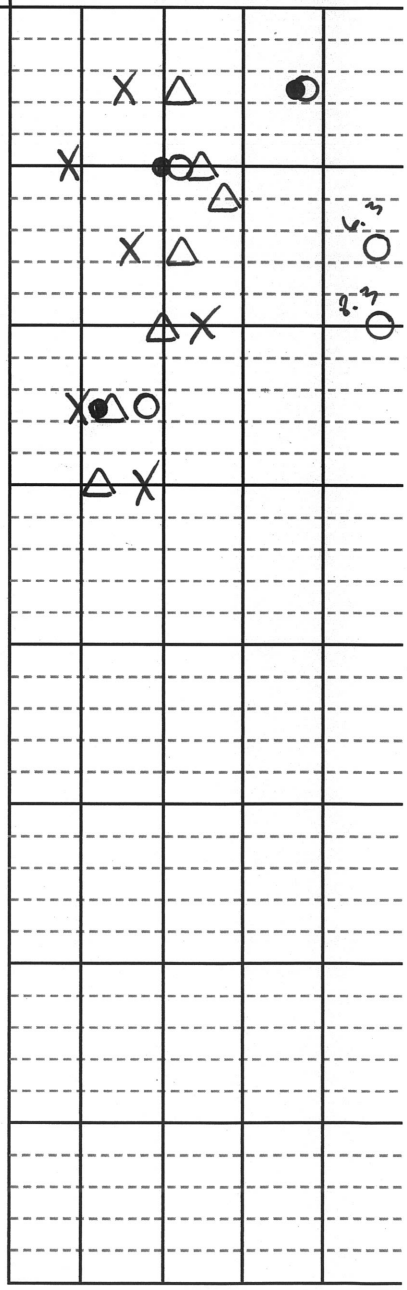
Comments:

Equipment: ☒D - 25 ☐ D - 50 ☐Hand Auger ☐Other

depth, ft.	CLASSIFICATION Elevation Existing Surface	standard penetration ×	moisture content Δ	dry unit weight lbs./cu.ft. ɣ	unconfined compressive strengh ○
	(See Core Log)				
	Brown-gray-dark brown clay,some silt, trace sand & gravel,damp,very tough - Fill	15	20.9	110.6	3.9
5	(a) see below	8	25.4 28.7	100.8	2.2
	Brown clay,some silt,trace sand & gravel damp,hard to very hard	16	21.6	109.4	6.3
10		25	20.1	109.7	8.3
	Brown clay,some silt,trace sand & gravel damp,tough	9	14.3	130.1	1.9
15	(b) see below	17	12.2		
	End of Boring				
	(a) Black silt,some clay,trace sand & roots,damp (topsoil)				
20	(b) Gray fine sand & gravel,some medium-coase sand,saturated,medium dense				
25					
30					
35					
40					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
Δ moisture content, %
10 20 30 40



Water encountered at 14.0 feet during drilling operations (W.D.)
Water recorded at 14.0 feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

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SOIL BORING LOG 104

Logged By: CS **Page:** 1 of 1

Client: Arlington Heights Park District **File No.** 26874 **Date Drilled:** 11/28/22

Reference: Camelot Park
Arlington Heights, IL

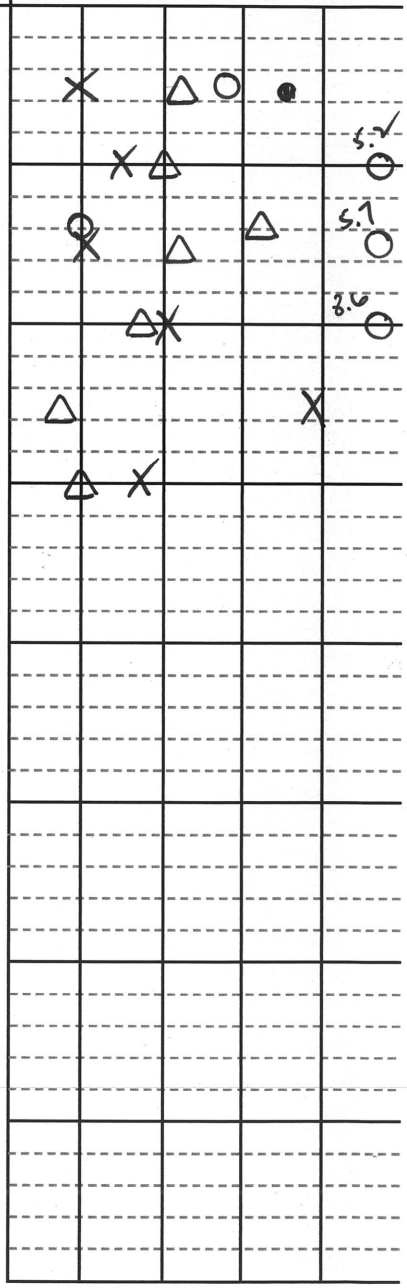
Comments:

Equipment: ☒D - 25 ☐ D - 50 ☐Hand Auger ☐Other

depth, ft.	CLASSIFICATION Elevation Existing Surface	standard penetration ×	moisture content Δ	dry unit weight lbs./cu.ft. ϒ	unconfined compressive strength ○
	(See Core Log)				
	Brown-gray-dark brown clay, some silt, trace sand & gravel, damp, very tough-Fill	10	21.9	107.0	2.9
5	Brown-gray to brown clay, some silt, trace sand & gravel, damp, hard	15	20.2	111.7	5.2
	Brown-gray to brown clay, some silt, trace sand & gravel, damp, tough to hard	32.0 11	83.4 20.7	1.0 111.4	5.7
10	(large rock at 11.0')	21	18.0	116.0	8.6
	Gray fine sand & gravel, some medium-coarse sand, saturated, dense	39	9.0		
	Gray fine sand & gravel, some medium coarse sand, saturated, medium dense	17	9.7		
15	End of Boring				
20					
25					
30					
35					
40					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
Δ moisture content, %
10 20 30 40



Water encountered at 11.5 feet during drilling operations (W.D.)
Water recorded at 11.5 feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

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GENERAL NOTES

SAMPLE CLASSIFICATION

Soil sample classification is based on the Unified Soil Classification System, the Standard Practice for Description and Identification Soils (Visual-Manual Procedure), ASTM D-2488, the Standard Test Method for Classification of Soils for Engineering Purposes, ASTM D-2487 (when applicable), and the modifiers noted below.

CONSISTENCY OF COHESIVE SOILS

Term	Qu-tons.sq.ft.	N (unreliable)
Very soft	0.00 – 0.25	0 – 2
Soft	0.26 – 0.49	3 – 4
Stiff	0.50 – 0.99	5 – 8
Tough	1.00 – 1.99	9 –15
Very Tough	2.00 – 3.99	16 – 30
Hard	4.00 – 7.99	30 +
Very Hard	8.00 +	

RELATIVE DENSITY OF GRANULAR SOILS

Term	N – blows/foot
Very Loose	0 – 4
Loose	5 – 9
Medium Dense	10 – 29
Dense	30 – 49
Very Dense	50 +

IDENTIFICATION AND TERMINOLOGY

Term	Size Range
Boulder	over 8 in.
Cobble	3 in. to 8 in.
Gravel - coarse	1 in. to 3 in.
- medium	3/8 in. to 1 in.
- fine	#4 sieve to 3/8 in.
Sand - coarse	#10 sieve to #4 sieve
- medium	#40 sieve to #10 sieve
- fine	#200 sieve to #40 sieve
Silt	0.002 mm to #200 sieve
Clay	smaller than 0.002mm

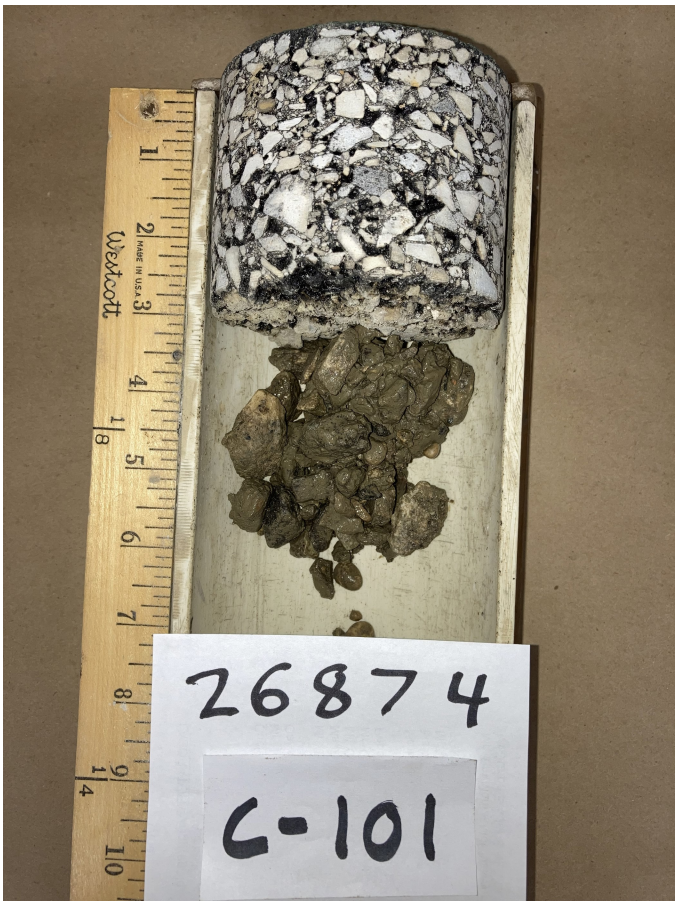
Modifying Term	Percent by Weight
Trace	1 – 10
Little	11 – 20
Some	21 – 35
And	36 – 50

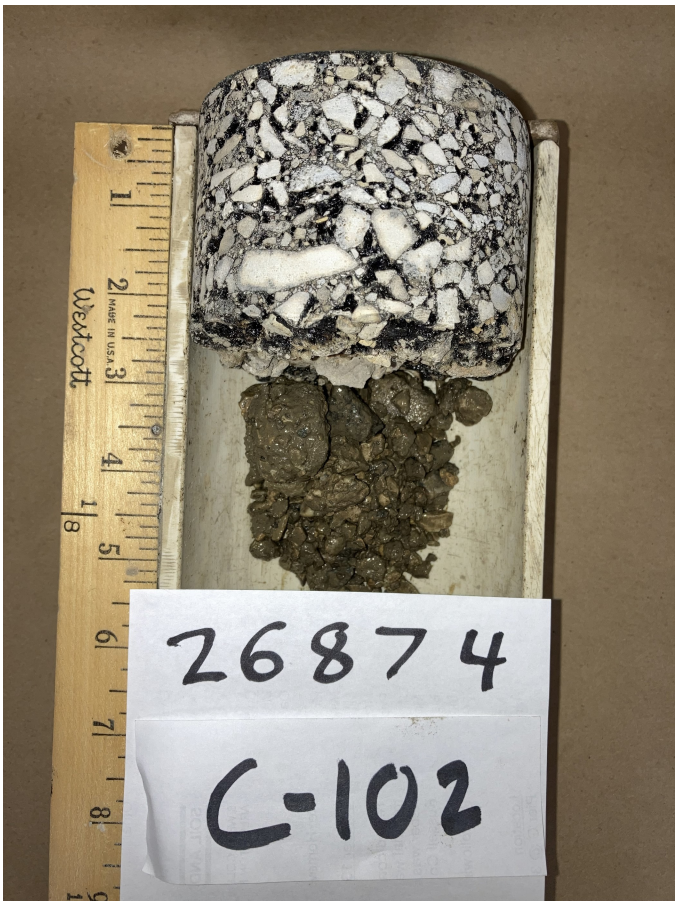
Moisture Content

Dry
Damp
Very Damp
Saturated

DRILLING, SAMPLING & SOIL PROPERY SYMBOLS

- CF - Continuous Flight Auger
- HS - Hollow Stem Auger
- HA - Hand Auger
- RD - Rotary Drilling
- AX - Rock Core, 1-3/16 in. diameter
- BX - Rock Core, 1-5/8 in. diameter
- NX - Rock Core, 2-1/8 in. diameter
- S - Sample Number
- T - Type of Sample
- J - Jar
- AS - Auger Sample
- SS - Split Spoon (2 in. O.D. with 1-3/8 in. I.D.)
- ST - Shelby Tube (2 in. O.D. w/ith1-7/8 in. I. D.)
- R - Recovery Length, in.
- B - Blows/6 in. interval, Standard Penetration Test (SPT)
- N - Blows/foot to drive 2 in. O.D. split-spoon sampler with 140 lb. hammer falling 30 in., (STP)
- Pen. - Pocket Penetrometer readings, tons/sq.ft.
- W - Water Content, % dry weight
- Uw - Dry Unit Weight of soil, lbs./cu.ft.
- Qu - Unconfined Compressive Strength, tons/sq.ft.
- Str - % Strain at Qu.
- WL - Water Level
- WD - While Drilling
- AD - After Drilling
- DCI - Dry Cave-in.
- WCI - Wet Cave-in.
- LL - Liquid Limit, %
- PL - Plastic Limit, %
- PI - Plasticity Index (LL-PL)
- LI - Liquidity Index [(W-PL)/PI]


26874
C-101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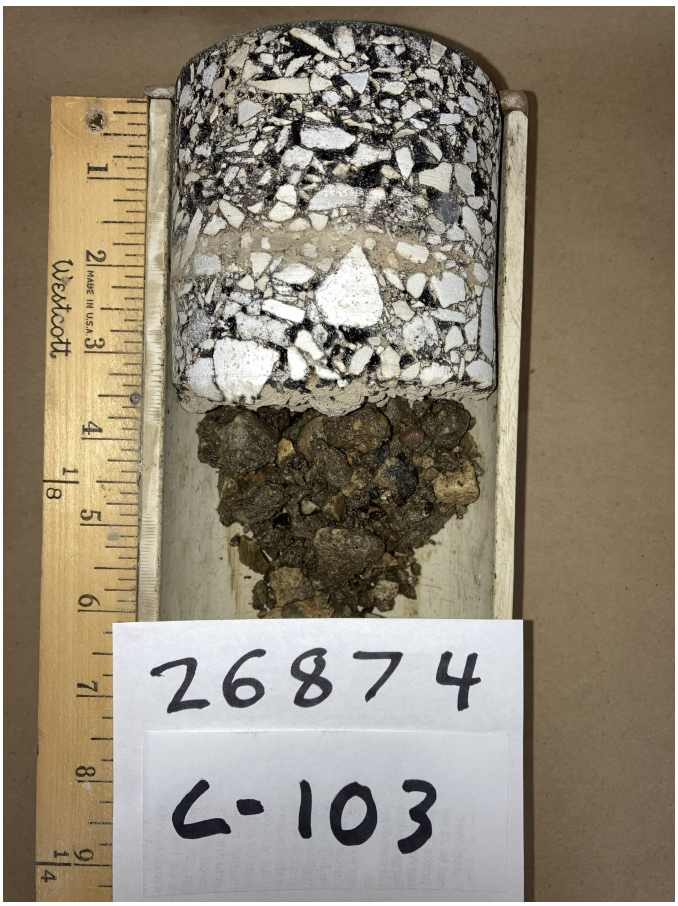
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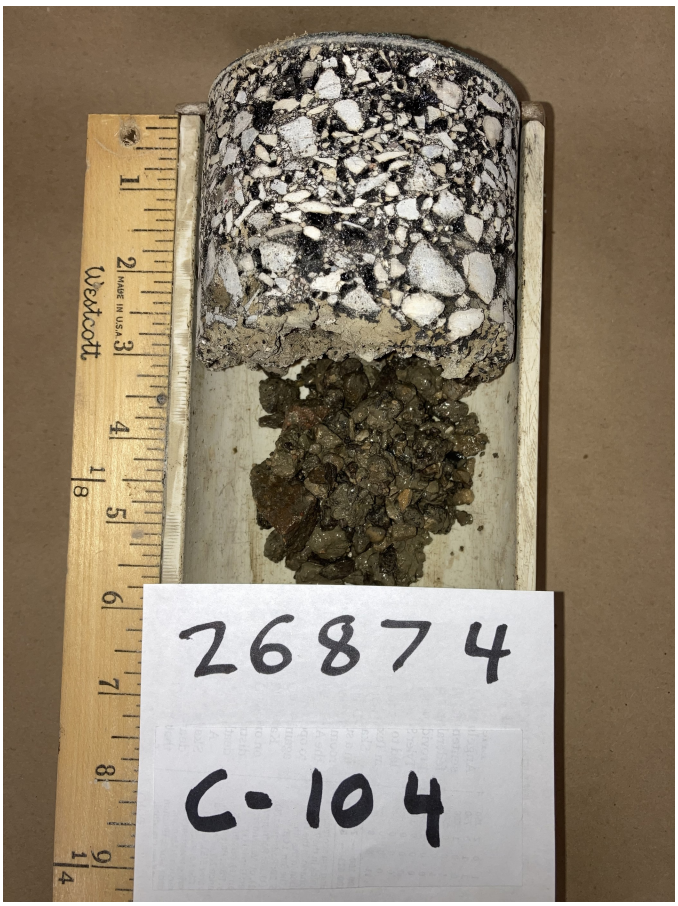
C-103


26874
C-104

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