VILLAGE OF WILLIAMS BAY

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NOTICE

FINANCE & PERSONNEL (F&P) COMMITTEE MEETING

MONDAY, MARCH 6, 2023 AT 6:00 PM

AGENDA

The following agenda items may be considered for Discussion, Consideration, or Action

- **I.** Call to Order
- **II.** Roll Call
- **III.** Adoption of ICMA-RC (Mission Square) 457 Plan and Trust and Authorizing the proper Village officials to execute an Administrative Services Agreement with Mission Square
- **IV.** Construction contract by and between Williams Bay and Scherrer Construction for construction of tennis/basketball courts
- **V.** Adjourn

Lowell Wright
Finance & Personnel Chair

Requests from persons with disabilities, who need assistance to participate in this meeting or hearing, should be made to the Village Clerk's office in advance so the appropriate accommodations can be made.

Posted: 03/03/2023 5:00 PM

VILLAGE OF WILLIAMS BAY

To: President Bill Duncan and Village Board Trustees

C: Lori Peternell, Treasurer

From: Dave Bretl, Interim Administrator

Re: Mission Square 457 Plan

Date: 3/2/2023

Recall that we briefly discussed this issue at our last Finance & Personnel meeting. I was not able to provide the documents at the time as they were password protected. I have solved that dilemma and attached the salient documents to this memo.

As part of Dave Lothspeich's contract, the Village is obliged to join the ICMA-RC (now known as Mission Square) section 457 deferred compensation plan if it can be done so at no cost to the Village. The plan allows Dave to contribute money through payroll deduction (pre-tax). The Village offers similar plans (managed by different organizations) to its employees. The reason why this issue was important to Dave is so he could continue with his current deferred compensation plan (maintain his money in one account) rather than start funding a new account.

I am requesting a special committee meeting and board action on this item so we can get the paperwork started on this plan. His first day of work is quickly approaching.

Attached are three documents: 1. Deferred Compensation Plan; 2. Administrative Services Agreement; and 3. Suggested Resolution.

I have reviewed the documents and believe that the Plan is essentially cost-free. There is no employer match. Dave will fund this himself through payroll deductions or contributions consistent with the Plan. The management fee of .55% (of assets under management) paragraph 7(a) of the Administrative Services Agreement is paid from the assets of the Trust, i.e. Dave's money. (Paragraph 7(d)). The Village is obliged to submit employee contributions through Four Square's website and it does appear that an ACH charge would apply. This, however, is *de minimus* (pennies per transaction).

The action that I would request is that you approve the Suggested Resolution (Attachment 3). As I mentioned I am not able to edit this document, so blanks in the document should be filled in as follows:

1. Name of Employer and State: Williams Bay, Wisconsin;
2. Program Coordinator: Village Treasurer;
3. Plan in the form of: ICMA Retirement Corporation Deferred Compensation Plan and Trust;

4. Coordinator: Village Treasurer

The above-stated resolution adopts the Deferred Compensation Plan (Attachment 1 in my packet) as well as the Declaration of Trust beginning on page 28 of Attachment l.

Your motion should also authorize the proper Village Officials to execute the Administrative Services Agreement by and between the Village and Mission Square Retirement (Attachment 2).

Thank you.

Attachment 1

MissionSquare
RETIREMENT

ICMA Retirement Corporation
doing business as

MissionSquare Retirement Governmental 457 Deferred Compensation Plan

TABLE OF CONTENTS

457 GOVERNMENTAL DEFERRED COMPENSATION PLAN AND TRUST

As Amended and Restated

Article I. Purpose

The Employer identified in Article 2.09 hereby establishes and maintains the Employer's Deferred Compensation Plan and Trust, hereafter referred to as the "Plan." The Employer is a State, political subdivision of a State, or an agency or instrumentality of a State or political subdivision, as described in Section 457(e)(1)(A) of the Internal Revenue Code ("the Code").

The primary purpose of this Plan is to provide retirement income and other deferred benefits to the Employees of the Employer and the Employees' Beneficiaries in accordance with the provisions of Section 457 of the Code.

The Employer has determined that the establishment of a deferred compensation plan for the Employees of the Employer serves the interests of the Employer by enabling it to provide reasonable retirement security for its employees, by providing increased flexibility in its personnel management system, and by assisting in the attraction and retention of competent personnel.

This Plan shall be an agreement solely between the Employer and participating Employees. The Plan and Trust forming a part hereof are established and shall be maintained for the exclusive benefit of Participants and their Beneficiaries. No part of the corpus or income of the Trust shall revert to the Employer or be used for or diverted to purposes other than the exclusive benefit of Participants and their Beneficiaries.

The Employer adopts the Group Trust created by the Declaration of Trust of VantageTrust Company.

Article II. Definitions

2.01 **Account.** The bookkeeping account maintained for each Participant reflecting the cumulative amount of the Participant's Deferred Compensation, including any income, gains, losses, or increases or decreases in market value attributable to the Employer's investment of the Participant's Deferred Compensation, and further reflecting any distributions to the Participant or the Participant's Beneficiary and any fees or expenses charged against such Participant's Deferred Compensation.

2.02 **Accounting Date.** For valuing the Trust's assets, as provided in Section 6.06, each business day that the New York Stock Exchange is open for trading.

2.03 **Administrator.** The person or persons named in writing to carry out certain nondiscretionary administrative functions under the Plan, as hereinafter described. The Employer may remove any person as Administrator upon seventy-five (75) days' advance notice in writing to such person, in which case the Employer shall name another person or persons to act as Administrator. The Administrator may resign upon seventy-five (75) days' advance notice in writing to the Employer, in which case the Employer shall name another person or persons to act as Administrator. Unless otherwise provided in the Plan, the Administrator shall act at the direction of the Employer and shall be fully protected in acting on such direction. The Employer may enter into a separate agreement with the Administrator detailing features of the Plan and any elections as to the administration of the Plan.

2.04 Automatic Distribution Date. April 1 of the calendar year after the year the Participant attains age 70½ or, if later, has a Severance Event.

2.05 Beneficiary. The person or persons named by the Participant in his or her Joinder Agreement who shall receive any benefits payable hereunder in the event of the Participant's death. In the event that the Participant names two or more Beneficiaries, each Beneficiary shall be entitled to equal shares of the benefits payable at the Participant's death, unless otherwise provided in the Participant's Joinder Agreement. If no Beneficiary is named in the Joinder Agreement, if the named Beneficiary predeceases the Participant, or if the named Beneficiary does not survive the Participant for a period of fifteen (15) days, then the estate of the Participant shall be the Beneficiary. If a married Participant resides in a community property state, the Participant shall be responsible for obtaining appropriate consent of his or her spouse in the event the Participant names someone other than his or her spouse as Beneficiary; provided, however that solely for purposes of this sentence, the term "spouse" shall have the meaning determined by the Employer.

For purposes of Section 7.09(c), relating to unforeseeable emergency withdrawals, the term Primary Beneficiary means an individual who is named as a Beneficiary under the Plan and who would have an unconditional right to all or a portion of the Participant's account balance under the Plan upon the death of the Participant (or Beneficiary who has inherited an account balance).

2.06 Deferred Compensation. The amount of Includible Compensation otherwise payable to the Participant that the Participant and the Employer mutually agree to defer hereunder (including pursuant to automatic enrollment in Section 4.03), any amount credited to a Participant's Account by reason of a transfer under Section 6.09 or 6.10, a rollover under Section 6.11, or any other amount the Employer agrees to credit to a Participant's Account.

2.07 Dollar Limitation. The applicable dollar amount within the meaning of Section 457(b)(2)(A) of the Code, as adjusted for the cost-of-living in accordance with Section 457(e)(15) of the Code.

2.08 Employee. Any individual who provides services for the Employer, whether as an employee of the Employer, as defined by state law, or as an independent contractor, and who has been designated by the Employer as eligible to participate in the Plan.

2.09 Employer. ________________________ which is a State, political subdivision of a State, or agency or instrumentality of a State, as described in Section 457(e)(1)(A) of the Code.

2.10 457 Catch-Up Dollar Limitation. Twice the Dollar Limitation.

2.11 Includible Compensation. Includible Compensation of a Participant means "compensation," as defined in Section 415(c)(3) of the Code, for services performed for the Employer. Includible Compensation shall be determined without regard to any community property laws. For purposes of a Participant's Joinder Agreement only and not for purposes of the limitations in Article V, Includible Compensation shall include pre-tax contributions (excluding direct employer contributions) to an integral part trust of the employer providing retiree health care benefits.

2.12 Joinder Agreement. An agreement entered into between an Employee and the Employer, including any amendments or modifications thereof, that fixes the amount of Deferred Compensation, specifies a preference among the investment alternatives designated by the Employer, names the Employee's Beneficiary or Beneficiaries, and incorporates the terms, conditions, and provisions of the Plan by reference. A Joinder Agreement includes amounts that an Employer agrees to credit to the Employee's account as "employer contributions."

2.13 **Normal Limitation.** The maximum amount of Deferred Compensation for any Participant for any taxable year (other than amounts referred to in Sections 6.09, 6.10, and 6.11).

2.14 **Normal Retirement Age.** Age 70½, unless the Participant has elected an alternate Normal Retirement Age by written instrument delivered to the Administrator prior to a Severance Event. A Participant's Normal Retirement Age determines the period during which a Participant may utilize the additional catch-up dollar limitation of Section 5.02(b) hereunder and determines the right to receive certain tax free distributions described in Section 7.14. Once a Participant has to any extent utilized the catch-up limitation of Section 5.02(b), his Normal Retirement Age may not be changed.

A Participant's alternate Normal Retirement Age may not be earlier than the earliest date that the Participant will become eligible to retire and receive immediate, unreduced retirement benefits under the Employer's basic defined benefit retirement plan covering the Participant (or a money purchase pension plan of the Employer in which the Participant also participates if the Participant is not eligible to participate in a defined benefit plan of the Employer), and may not be later than the date the Participant will attain age 70½. If the Participant will not become eligible to receive benefits under a basic defined benefit retirement plan (or money purchase pension plan, if applicable) maintained by the Employer, the Participant's alternate Normal Retirement Age may not be earlier than 65 and may not be later than age 70½ (except as provided in the next paragraph). Solely for purposes of the prior two sentences, a plan of the Employer includes a plan maintained by the state (or a political subdivision or agency or instrumentality of the state) in which the Employer is located. In no event may a Participant's normal retirement age be different than the normal retirement age under the Employer's other 457(b) plans, if any.

In the event the Plan has Participants that include qualified police or firefighters (as defined under Section 415(b)(2)(H)(ii)(I) of the Code), a normal retirement age may be designated for such qualified police or firefighters that is not earlier than age 40 or later than age 70½. Alternatively, qualified police or firefighters may be permitted to designate a normal retirement age that is between age 40 and age 70½.

2.15 **Participant.** Any Employee who has joined the Plan pursuant to the requirements of Article IV. Unless the context requires otherwise, the term Participant includes an Employee or former Employee of the Employer who has not yet received all of the payments of benefits to which he/she is entitled under the Plan.

2.16 **Percentage Limitation.** 100 percent of the Participant's Includible Compensation available to be contributed as Deferred Compensation for the taxable year.

2.17 **Plan Year.** The calendar year, unless otherwise elected by the Employer.

2.18 **Severance Event.** A severance of the Participant's employment with the Employer within the meaning of Section 457(d)(1)(A)(ii) of the Code.

In general, a Participant shall be deemed to have experienced a Severance Event for purposes of this Plan when, in accordance with the established practices of the Employer, the employment relationship is considered to have actually terminated. If the Plan does not allow participation by independent contractors of the Employer, a Participant shall also be deemed to have experienced a Severance Event for purposes of the Plan when, in accordance with the established practices of the Employer, the Participant ceases to be an employee and becomes an independent contractor. If the Plan allows participation by independent contractors of the Employer, then in the case of a Participant who is an independent contractor of the Employer, a Severance Event shall be deemed to have occurred when the Participant's contract under which services are performed has completely expired and terminated, there is no foreseeable possibility that the Employer will renew the contract or enter into a new contract for the Participant's services, and it is not anticipated that the Participant will become an Employee of the Employer, or such other events as may be permitted under the Code.

2.19 **Trust.** The Trust created under Article VI of the Plan which shall consist of all compensation deferred under the Plan, plus any income and gains thereon, less any losses, expenses and distributions to Participants and Beneficiaries.

Article III. Administration

3.01 **Duties of the Employer.** The Employer shall have the authority to make all discretionary decisions affecting the rights or benefits of Participants that may be required in the administration of this Plan. The Employer's decisions shall be afforded the maximum deference permitted by applicable law.

3.02 **Duties of Administrator.** The Administrator, as agent for the Employer and subject to oversight by the Employer, shall perform nondiscretionary administrative functions in connection with the Plan, including the maintenance of Participants' Accounts, the provision of periodic reports of the status of each Account, and the disbursement of benefits on behalf of the Employer in accordance with the provisions of this Plan.

Article IV. Participation in the Plan

4.01 **Initial Participation.** An Employee that the Employer elects to be eligible for the Plan may become a Participant by entering into a Joinder Agreement (or by being treated as entering into a Joinder Agreement pursuant to Section 4.03) prior to the beginning of the calendar month in which the Joinder Agreement is to become effective to defer compensation not yet paid or made available, or such other date as may be permitted under the Code. A new employee may defer compensation in the calendar month during which he or she first becomes an employee if a Joinder Agreement is entered into on or before the first day on which the employee performs services for the Employer.

4.02 **Amendment of Joinder Agreement.** A Participant may amend an executed Joinder Agreement to change the amount of Includible Compensation not yet paid or made available that is to be deferred (including the reduction of such future deferrals to zero). Such amendment shall become effective as of the beginning of the calendar month commencing after the date the amendment is executed, or such other date as may be permitted under the Code. A Participant may at any time amend his or her Joinder Agreement to change the Beneficiary or specify investments, and such amendment shall become effective immediately.

4.03 **Automatic Enrollment.**

(a) *If elected by the Employer, the Plan will provide for automatic enrollment.* In this case, an Employee will become a Participant, shall be treated as entering into a Joinder Agreement, and shall have compensation deferred, at the amount equal to the percentage of compensation specified by the Employer, unless the Employee affirmatively elects a different amount (or elects not to enter into a Joinder Agreement) within the initial "opt-out" period specified by the Employer. The "opt-out" period shall be no less than thirty (30) days and no more than ninety (90) days. The Participant will be treated as having entered into a Joinder Agreement at the end of such opt-out period and Default Elective Deferrals shall begin on the first pay period of the following calendar month. Unless otherwise elected by the Employer, these automatic enrollment provisions will also apply when an Employee is rehired. An Employee who becomes a Participant pursuant to this Section 4.03 may amend the Joinder Agreement as provided in Section 4.02.

(b) **Definitions.** *The following definitions shall apply for this Section 4.03:*

(1) **Eligible Automatic Contribution Arrangement ("EACA").** An automatic contribution arrangement that satisfies the uniformity and notice requirements of this Section 4.03.

(2) **Automatic Contribution Arrangement.** An arrangement under which, in the absence of an affirmative election by a Covered Employee, a specified percentage of compensation will be withheld from the Covered Employee's pay and contributed to the Plan as Deferred Compensation.

(3) **Covered Employee.** A Participant identified by the Employer as being covered under the EACA. An independent contractor cannot be a Covered Employee.

(4) **Default Elective Deferrals.** The Deferred Compensation contributed to the Plan under the EACA on behalf of Covered Employees who do not have an affirmative election in effect regarding Deferred Compensation.

(5) **Default Rate.** The percentage of a Covered Employee's compensation contributed to the Plan as a Default Elective Deferral, per pay period, for a given Plan Year. The Default Rate is specified by the Employer.

(c) **Rules of Application**

(1) Default Elective Deferrals will be made on behalf of Covered Employees who do not have an affirmative election in effect regarding Deferred Compensation. The amount of Default Elective Deferrals made for a Covered Employee each pay period is equal to the Default Rate multiplied by the Covered Employee's compensation for that pay period. If the Employer elects, a Covered Employee's Default Elective Deferrals will increase each Plan Year by a designated percentage, per pay period, beginning with the second Plan Year that begins after the Default Rate first applies to the Covered Employee. The increase will be effective beginning with the first pay period that begins in such Plan Year.

(2) A Covered Employee will have a reasonable opportunity after receipt of the notice described in Section 4.03(e) to make an affirmative election regarding Deferred Compensation (either to have no Deferred Compensation contributed or to have a different amount of Deferred Compensation contributed) before Default Elective Deferrals are made on the Covered Employee's behalf. Default Elective Deferrals being made on behalf of a Covered Employee will cease as soon as administratively feasible after the Covered Employee makes an affirmative election. An affirmative election to have no Deferred Compensation contributed, made no later than ninety (90) days after Default Elective Deferrals are first withheld from a Covered Employee's pay, shall be deemed a request for distribution of the Covered Employee's Default Elective Deferrals under Section 4.03(f) of the Plan, unless the Covered Employee affirmatively elects otherwise.

(d) **Uniformity Requirement**

(1) Except as provided in (2), below, if the Employer has elected to have Covered Employees' Default Elective Deferrals increase each Plan Year by a designated percentage, the same percentage of compensation will be withheld as a Default Elective Deferral from all Covered Employees subject to the Default Rate.

(2) Default Elective Deferrals will be reduced or stopped to meet the limitations under Section 457(b) of the Code, and to satisfy any suspension period required after a hardship distribution from another plan maintained by the Employer.

(e) **Notice Requirement**

(1) At least thirty (30) days, but not more than ninety (90) days, before the beginning of the Plan Year, the Employer will provide each Covered Employee a comprehensive notice of the Covered Employee's rights and obligations under the EACA, written in a manner calculated to be understood by the average Covered Employee. If an employee becomes a Covered Employee after the 90th day before the beginning of the Plan Year and does not receive the notice for that reason, the notice will be provided no more than ninety (90) days before the employee becomes a Covered Employee but no later than the date the employee becomes a Covered Employee.

(2) The notice must accurately describe:

(i) the amount of Default Elective Deferrals that will be made on the Covered Employee's behalf in the absence of an affirmative election;

(ii) the Covered Employee's right to elect to have no Deferred Compensation deferred on his or her behalf or to have a different amount of Deferred Compensation deferred;

(iii) how Default Elective Deferrals will be invested in the absence of the Covered Employee's investment instructions; and

(iv) the Covered Employee's right to make a withdrawal of Default Elective Deferrals and procedures for making such a withdrawal.

(f) **Withdrawal of Default Elective Deferrals**

(1) No later than ninety (90) days after Default Elective Deferrals are first withheld from a Covered Employee's pay, the Covered Employee may request a distribution of his or her Default Elective Deferrals. No spousal consent is required for withdrawal under this provision.

(2) The amount distributed from the Plan upon the Covered Employee's request is equal to the amount of Default Elective Deferrals made through the earlier of (a) the pay date for the second payroll period that begins after the Covered Employee's withdrawal request and (b) the first pay date that occurs after thirty (30) days following the Covered Employee's request, plus attributable earnings through the date of distribution. Any fee charged to the Covered Employee for the withdrawal may not be greater than any other fee charged for a cash distribution.

(3) Unless the Covered Employee affirmatively elects otherwise, any withdrawal request will be treated as an affirmative election to stop having Deferred Compensation deferred on the Covered Employee's behalf as of the date specified in Section 4.03(f)(2) above.

(4) Default Elective Deferrals distributed pursuant to this Section 4.03(f) are not counted towards the dollar limitation on Deferred Compensation contained in Section 457(b) of the Code. Matching contributions that might otherwise be allocated to a Covered Employee's account on behalf of Default Elective Deferrals will not be allocated to the extent the Covered Employee withdraws such Deferred Compensation pursuant to this Section 4.03(f) and any

matching contributions already made on account of Default Elective Deferrals that are later withdrawn pursuant to this Section 4.03(f) will be forfeited.

4.04 Vesting of Employer Contributions. If a Participant's Joinder Agreement provides for the Employer to credit Deferred Compensation to a Participant's Account in the form of "employer contributions," such credits shall be immediately vested, except as provided in Section 4.03(f)(4).

Article V. Limitations on Deferrals

5.01 Normal Limitation. Except as provided in Section 5.02, the maximum amount of Deferred Compensation for any Participant for any taxable year, shall not exceed the lesser of the Dollar Limitation or the Percentage Limitation.

5.02 Catch-Up Limitations.

(a) Catch-up Contributions for Participants Age 50 and Over: A Participant who has attained the age of 50 before the close of the taxable year, and with respect to whom no other elective deferrals may be made to the Plan for the Plan Year by reason of the Normal Limitation of Section 5.01, may enter into a Joinder Agreement to make elective deferrals in addition to those permitted by the Normal Limitation in an amount not to exceed the lesser of:

(1) The applicable dollar amount as defined in Section 414(v)(2)(B) of the Code, as adjusted for the cost-of-living in accordance with Section 414(v)(2)(C) of the Code; or

(2) The excess (if any) of:

(i) The Participant's Includible Compensation for the year, or

(ii) Any other elective deferrals of the Participant for such year which are made without regard to this Section 5.02(a).

An additional contribution made pursuant to this Section 5.02(a) shall not, with respect to the year in which the contribution is made, be subject to any otherwise applicable limitation contained in Section
5.01 above, or be taken into account in applying such limitation to other contributions or benefits under the Plan or any other plan. This Section 5.02(a) shall not apply in any year to which a higher limit under Section 5.02(b) applies.

(b) Last Three Years Catch-up Contribution: For each of the last three (3) taxable years for a Participant ending the year before the year he or she attains (or will attain) Normal Retirement Age, the maximum amount of Deferred Compensation shall be the lesser of:

(1) The 457 Catch-Up Dollar Limitation, or

(2) The sum of

(i) The Normal Limitation for the taxable year, and
(ii) The Normal Limitation for each prior taxable year of the Participant commencing after 1978 less the amount of the Participant's Deferred Compensation for such prior taxable years. A prior taxable year shall be taken into account under the preceding sentence only if (x) the Participant was eligible to participate in the Plan for such year, and (y) compensation (if any) deferred under the Plan (or such other plan) was subject to the Normal Limitation.

Should the maximum Deferred Compensation under this Section 5.02(b) be lower in any of the three (3) years than the maximum Deferred Compensation under Section 5.02(a), the Participant may instead defer amounts under 5.02(a) if otherwise permitted and no further deferrals under Section 5.02(b) will be permitted.

5.03 **Sick, Vacation and Back Pay.** If the Employer so elects, a Participant may defer all or a portion of the value of the Participant's accumulated sick pay, accumulated vacation pay and/or back pay, provided that such deferral does not cause total deferrals on behalf of the Participant to exceed the Dollar Limitation or Percentage Limitation (including any catch-up dollar limitation) for the year of deferral. The election to defer such sick, vacation and/or back pay must be made in a manner and at a time permitted under Section 1.457-4(d) of the Income Tax Regulations.

For Plan Years beginning before January 1, 2009, pursuant to proposed IRS regulations issued under Section 415 of the Code, the Plan may permit deferrals from compensation, including sick, vacation and back pay, so long as the amounts are paid within 2½ months following severance from employment and the other requirements of Sections 457(b) and 415 of the Code are met. For Plan Years beginning on or after January 1, 2009, pursuant to final IRS regulations issued under Section 415 of the Code, the Plan may permit deferrals from compensation, including sick, vacation and back pay, so long as the amounts are paid by the later of: (i) 2½ months following severance from employment, and (ii) the end of the calendar year that includes the date of such severance from employment, and the other requirements of Sections 457(b) and 415 of the Code are met. Additionally, the agreement to defer such amounts must be entered into prior to the first day of the month in which the amounts otherwise would be paid or made available.

5.04 **Other Plans.** Notwithstanding any provision of the Plan to the contrary, the amount excludible from a Participant's gross income under this Plan or any other eligible deferred compensation plan under Section 457(b) of the Code shall not exceed the limits set forth in Sections 457(b) and 414(v) of the Code.

5.05 **Excess Deferrals.** Any amount that exceeds the maximum Dollar Limitation or Percentage Limitation (including any applicable catch-up dollar limitation) for a taxable year, shall constitute an excess deferral for that taxable year. Any excess deferral shall be distributed to the Participant in accordance with the requirements for excess deferrals under the Code and Section 1.457-4(e) of the Income Tax Regulations or other applicable Internal Revenue Service guidance.

5.06 **Protection of Person Who Serves in a Uniformed Service.** An Employee whose employment is interrupted by qualified military service under Section 414(u) of the Code or who is on leave of absence for qualified military service under Section 414(u) of the Code may elect to contribute additional Deferred Compensation upon resumption of employment with the Employer equal to the maximum Deferred Compensation that the Employee could have elected during that period if the Employee's employment with the Employer had continued (at the same level of Includible Compensation) without the interruption or leave, reduced by Deferred Compensation, if any, actually made for the Employee during the period of the interruption or leave. This right applies for five (5) years following the resumption of employment (or, if sooner, for a period equal to three (3) times the period of the interruption or leave).

5.07 **Benefit Accruals with Respect to Qualified Military Service.** Notwithstanding any provision of the Plan to the contrary, if the Employer so elects, Participants who die or become Disabled while performing qualified military service (as defined in Code Section 414(u)) with respect to the Employer shall receive Plan contributions as permitted under Code Section 414(u)(9).

5.08 **Benefit Accruals with Respect to Differential Wage Payments.** Unless otherwise elected by the Employer, Plan contributions shall be made based on differential wage payments (as such term is defined in Section 3401(h)(2) of the Code).

Article VI. Trust and Investment of Accounts

6.01 Investment of Deferred Compensation. A Trust described in Section 457(g) of the Code is hereby created to hold all the assets of the Plan for the exclusive benefit of Participants and Beneficiaries, except that expenses and taxes may be paid from the Trust as provided in Section 6.03. The trustee shall be the Employer or such other person that agrees with the consent of the Employer to act in that capacity hereunder.

6.02 Investment Powers. The trustee shall have the powers listed in this Section with respect to investment of Trust assets, except to the extent that the investment of Trust assets is directed by Participants, pursuant to Section 6.05 or to the extent that such powers are restricted by applicable law.

(a) To invest and reinvest the Trust without distinction between principal and income in common or preferred stocks, shares of regulated investment companies and other mutual funds, bonds, loans, notes, debentures, certificates of deposit, contracts with insurance companies including but not limited to insurance, individual or group annuity, deposit administration, guaranteed interest contracts, and deposits at reasonable rates of interest at banking institutions including but not limited to savings accounts and certificates of deposit. Assets of the Trust may be invested in securities that involve a higher degree of risk than investments that have demonstrated their investment performance over an extended period of time.

(b) To invest and reinvest all or any part of the assets of the Trust in any common, collective or commingled trust fund that is maintained by a bank or other institution and that is available to Employee plans described under Sections 457 or 401 of the Code, or any successor provisions thereto, and during the period of time that an investment through any such medium shall exist, to the extent of participation of the Plans, the declaration of trust of such commonly collective, or commingled, trust fund shall constitute a part of this Plan.

(c) To invest and reinvest all or any part of the assets of the Trust in any group annuity, deposit administration or guaranteed interest contract issued by an insurance company or other financial institution on a commingled or collective basis with the assets of any other 457 plan or trust qualified under Section 401(a) of the Code or any other plan described in Section 401(a)(24) of the Code, and such contract may be held or issued in the name of the Administrator, or such custodian as the Administrator may appoint, as agent and nominee for the Employer. During the period that an investment through any such contract shall exist, to the extent of participation of the Plan, the terms and conditions of such contract shall constitute a part of the Plan.

(d) To hold cash awaiting investment and to keep such portion of the Trust in cash or cash balances, without liability for interest, in such amounts as may from time to time be deemed to be reasonable and necessary to meet obligations under the Plan or otherwise to be in the best interests of the Plan.

(e) To hold, to authorize the holding of, and to register any investment to the Trust in the name of the Plan, the Employer, or any nominee or agent of any of the foregoing, including the Administrator, or in bearer form, to deposit or arrange for the deposit of securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by any other person, and to organize corporations or trusts under the laws of any jurisdiction for the purpose of acquiring or holding title to any property for the Trust, all with or without the addition of words or other action to indicate that property is held in a fiduciary or representative capacity but the books and records of the Plan shall at all times show that all such investments are part of the Trust.

(f) Upon such terms as may be deemed advisable by the Employer or the Administrator, as the case may be, for the protection of the interests of the Plan or for the preservation of the value of an investment, to exercise and enforce by suit for legal or equitable remedies or by other action, or to waive any right or claim on behalf of the Plan or any default in any obligation owing to the Plan, to renew, extend the time for payment of, agree to a reduction in the rate of interest on, or agree to any other modification or change in the terms of any obligation owing to the Plan, to settle, compromise, adjust, or submit to arbitration any claim or right in favor of or against the Plans to exercise and enforce any and all rights of foreclosure, bid for property in foreclosure, and take a deed in lieu of foreclosure with or without paying consideration therefor, to commence or defend suits or other legal proceedings whenever any interest of the Plan requires it, and to represent the Plan in all suits or legal proceedings in any court of law or equity or before any body or tribunal.

(g) To employ suitable consultants, depositories, agents, and legal counsel on behalf of the Plan.

(h) To open and maintain any bank account or accounts in the name of the Plan, the Employer, or any nominee or agent of the foregoing, including the Administrator, in any bank or banks.

(i) To do any and all other acts that may be deemed necessary to carry out any of the powers set forth herein.

The trustee may authorize the Administrator to exercise these powers as an agent for the trustee, subject to the oversight of the trustee.

6.03 Taxes and Expenses. All taxes of any and all kinds whatsoever that may be levied or assessed under existing or future laws upon the Plan, or in respect to the Trust, or the income thereof, and all commissions or acquisitions or dispositions of securities and similar expenses of investment and reinvestment of the Trust, shall be paid from the Trust. Such reasonable compensation of the Administrator, as may be agreed upon from time to time by the Employer and the Administrator, and reimbursement for reasonable expenses incurred by the Administrator in performance of its duties hereunder (including but not limited to fees for legal, accounting, investment and custodial services) shall also be paid from the Trust.

6.04 Payment of Benefits. The payment of benefits from the Trust in accordance with the terms of the Plan may be made by the Administrator, or by any custodian or other person so authorized by the Employer to make such disbursement. The Administrator, custodian or other person shall not be liable with respect to any distribution of Trust assets made at the direction of the Employer.

6.05 Investment Funds. In accordance with uniform and nondiscriminatory rules established by the Employer and the Administrator, the Participant may direct his or her Accounts to be invested in one (1) or more investment funds available under the Plan (including a fund or investment that consists of or is available through an open brokerage window); provided, however, that the Participant's investment directions shall not violate any investment restrictions established by the Employer. Neither the Employer, the Administrator, nor any other person shall be liable for any losses incurred by virtue of following such directions or with any reasonable administrative delay in implementing such directions.

6.06 Valuation of Accounts. As of each Accounting Date, the Plan assets held in each investment fund offered shall be valued at fair market value and the investment income and gains or losses for each fund shall be determined. Such investment income and gains or losses shall be allocated proportionately among all Account balances on a fund-by-fund basis. The allocation shall be in the proportion that each such Account balance as of the immediately preceding Accounting Date bears to the total of all such Account balances as of that Accounting Date. For purposes of this Article, all

Account balances include the Account balances of all Participants and Beneficiaries.

6.07 Participant Loan Accounts. Participant loan accounts shall be invested in accordance with Section 8.03 of the Plan. Such Accounts shall not share in any investment income and gains or losses of the investment funds described in Sections 6.05 and 6.06.

6.08 Crediting of Accounts. The Participant's Account shall reflect the amount and value of the investments or other property obtained by the Employer through the investment of the Participant's Deferred Compensation pursuant to Sections 6.05 and 6.06. It is anticipated that the Employer's investments with respect to a Participant will conform to the investment preference specified in the Participant's Joinder Agreement, but nothing herein shall be construed to require the Employer to make any particular investment of a Participant's Deferred Compensation. Each Participant shall receive periodic reports, not less frequently than annually, showing the then current value of his or her Account.

6.09 Post-Severance Transfers Among Eligible Deferred Compensation Plans.

(a) Incoming Transfers: A transfer may be accepted from an eligible deferred compensation plan maintained by another employer and credited to a Participant's or Beneficiary's Account under the Plan if:

(1) In the case of a transfer for a Participant, the Participant has had a Severance Event with that employer and become an Employee of the Employer;

(2) The other employer's plan provides that such transfer will be made; and

(3) The Participant or Beneficiary whose deferred amounts are being transferred will have an amount immediately after the transfer at least equal to the deferred amount immediately before the transfer.

The Employer may require such documentation from the predecessor plan as it deems necessary to effectuate the transfer in accordance with Section 457(e)(10) of the Code, to confirm that such plan is an eligible deferred compensation plan within the meaning of Section 457(b) of the Code, and to assure that transfers are provided for under such plan. The Employer may refuse to accept a transfer in the form of assets other than cash, unless the Employer and the Administrator agree to hold such other assets under the Plan.

(b) *Outgoing Transfers*: An amount may be transferred to an eligible deferred compensation plan maintained by another employer, and charged to a Participant's or Beneficiary's Account under this Plan, if:

(1) In the case of a transfer for a Participant, the Participant has a Severance Event with the Employer and becomes an employee of the other employer;

(2) The other employer's plan provides that such transfer will be accepted;

(3) The Participant or Beneficiary and the employers have signed such agreements as are necessary to assure that the Employer's liability to pay benefits to the Participant has been discharged and assumed by the other employer; and

(4) The Participant or Beneficiary whose deferred amounts are being transferred will have an amount immediately after the transfer at least equal to the deferred amount immediately before the transfer.

The Employer may require such documentation from the other plan as it deems necessary to effectuate the transfer, to confirm that such plan is an eligible deferred compensation plan within the meaning of Section 457(b) of the Code, and to assure that transfers are provided for under such plan. Such transfers shall be made only under such circumstances as are permitted under Section 457 of the Code and the regulations thereunder.

6.10 Transfers Among Eligible Deferred Compensation Plans of the Employer.

(a) *Incoming Transfers.* A transfer may be accepted from another eligible deferred compensation plan maintained by the Employer and credited to a Participant's or Beneficiary's Account under the Plan if:

(1) The Employer's other plan provides that such transfer will be made;

(2) The Participant or Beneficiary whose deferred amounts are being transferred will have an amount immediately after the transfer at least equal to the deferred amount immediately before the transfer; and

(3) The Participant or Beneficiary whose deferred amounts are being transferred is not eligible for additional annual deferrals in the Plan unless the Participant or Beneficiary is performing services for the Employer.

(b) *Outgoing Transfers.* An amount may be transferred to another eligible deferred compensation plan maintained by the Employer and credited to a Participant's or Beneficiary's Account under the Plan if:

(1) The Employer's other plan provides that such transfer will be accepted;

(2) The Participant or Beneficiary whose deferred amounts are being transferred will have an amount immediately after the transfer at least equal to the deferred amount immediately before the transfer; and

(3) The Participant or Beneficiary whose deferred amounts are being transferred is not eligible for additional annual deferrals in the Employer's other eligible deferred compensation plan unless the Participant or Beneficiary is performing services for the Employer.

6.11 Eligible Rollover Distributions.

(a) *Incoming Rollovers:* An eligible rollover distribution may be accepted from an eligible retirement plan and credited to a Participant's Account under the Plan. The Employer may require such documentation from the distributing plan as it deems necessary to effectuate the rollover in accordance with Section 402 of the Code and to confirm that such plan is an eligible retirement plan within the meaning of Section 402(c)(8)(B) of the Code. The Plan shall separately account (in one (1) or more separate accounts) for eligible rollover distributions from any eligible retirement plan.

(b) *Outgoing Rollovers:* Notwithstanding any provision of the Plan to the contrary that would otherwise limit a distributee's election under this Section, a distributee may elect, at the time and in the manner prescribed by the Administrator, to have any portion of an eligible rollover distribution paid directly to an eligible retirement plan specified by the distributee in a direct rollover.

(c) *Definitions:*

(1) Eligible Rollover Distribution: An eligible rollover distribution is any distribution of all or

any portion of the balance to the credit of the distributee, except that an eligible rollover distribution does not include: any distribution that is one of a series of substantially equal periodic payments (not less frequently than annually) made for the life (or life expectancy) of the distributee or the joint lives (or joint life expectancies) of the distributee and the distributee's named beneficiary, or for a specified period of ten years or more; any distribution to the extent such distribution is required under Sections 401(a)(9) and 457(d)(2) of the Code; and any distribution made as a result of an unforeseeable emergency of the employee. Subject to Section 9.04 (related to rollovers of Roth amounts), for purposes of distributions from other eligible retirement plans rolled over into this Plan, the term eligible rollover distribution shall not include the portion of any distribution that is not includible in gross income (determined without regard to the exclusion for net unrealized appreciation with respect to employer securities), such as after-tax contributions.

(2) Eligible Retirement Plan: An eligible retirement plan is an individual retirement account described in Section 408(a) of the Code, an individual retirement annuity described in Section 408(b) of the Code, an annuity plan described in Sections 403(a) or 403(b) of the Code, a qualified trust described in Section 401(a) of the Code, or an eligible deferred compensation plan described in Section 457(b) of the Code which is maintained by an eligible governmental employer described in Section 457(e)(1)(A) of the Code, that accepts the distributee's eligible rollover distribution. Effective for distributions after December 31, 2007, a Participant may elect to have any portion of an Eligible Rollover Distribution paid directly to a Roth IRA described in Section 408A of the Code. Such a direct payment, as a qualified rollover distribution described in Section 408A(e)(1) of the Code, would be taxable to the Participant to the extent required by Section 408A(d)(3) of the Code.

(3) Distributee: A distributee includes an Employee or former Employee. In addition, the Employee's or former Employee's surviving spouse and the Employee's or former Employee's spouse or former spouse who is the alternate payee under a qualified domestic relations order, as defined in Section 414(p) of the Code, are distributees with regard to the interest of the spouse or former spouse. For distributions after December 31, 2006 (unless the Employer elected a different effective date in a prior plan document, a distributee includes the Employee's or former Employee's nonspouse designated Beneficiary, in which case, the distribution can only be transferred to a traditional or Roth IRA established on behalf of the nonspouse designated Beneficiary, in the Participant's name, for the purpose of receiving the distribution.

(4) Direct Rollover: A direct rollover is a payment by the plan to the eligible retirement plan specified by the distributee.

(d) *Rollover by a Non-Spouse Designated Beneficiary*

(1) Unless otherwise elected by the Employer, for distributions in Plan Years beginning after December 31, 2006 but on or before December 31, 2009, a non-spouse Beneficiary who qualifies as a "designated beneficiary" under Code Section 401(a)(9)(E) may establish an individual retirement plan that will be treated as an inherited IRA pursuant to the provisions of Code Section 402(c)(11) into which all or a portion of a death benefit distribution from this Plan can be transferred directly. A trust maintained for the benefit of one (1) or more designated beneficiaries shall be treated in the same manner as a designated beneficiary.

(2) Notwithstanding subsection (1), for distributions in Plan Years beginning after December 31, 2009, a non-spouse Beneficiary who qualifies as a "designated beneficiary" under Code Section 401(a)(9)(E) may establish an individual retirement plan that will be treated as an

inherited IRA pursuant to the provisions of Code Section 402(c)(11) into which all or a portion of a death benefit distribution from this Plan can be transferred directly. A trust maintained for the benefit of one (1) or more designated beneficiaries shall be treated in the same manner as a designated beneficiary.

(3) Notwithstanding anything herein to the contrary, a death benefit distribution shall not be eligible for transfer to an inherited IRA to the extent such distribution is a required minimum distribution under Code Section 401(a)(9).

(4) If the dates noted above are modified by the Employer's prior plan document, the December 31, 2009 dates in subsections (1) and (2), above, will be modified, as applicable, by the Employer's prior plan document.

6.12 Trustee-to-Trustee Transfers to Purchase Permissive Service Credit. All or a portion of a Participant's Account may be transferred directly to the trustee of a defined benefit governmental plan (as defined in Section 414(d) of the Code) if such transfer is (a) for the purchase of permissive service credit (as defined in Section 415(n)(3)(A) of the Code) under such plan, or (b) a repayment to which Section 415 of the Code does not apply by reason of subsection (k)(3) thereof, within the meaning of Section 457(e)(17) of the Code.

6.13 Treatment of Distributions of Amounts Previously Rolled Over From 401(a) and 403(b) Plans and IRAs. For purposes of Section 72(t) of the Code, a distribution from this Plan shall be treated as a distribution from a qualified retirement plan described in Section 4974(c)(1) of the Code to the extent that such distribution is attributable to an amount transferred to an eligible deferred compensation plan from a qualified retirement plan (as defined in Section 4974(c) of the Code).

6.14 Employer Liability. In no event shall the Employer's liability to pay benefits to a Participant under this Plan exceed the value of the amounts credited to the Participant's Account; neither the Employer nor the Administrator shall be liable for losses arising from depreciation or shrinkage in the value of any investments acquired under this Plan.

Article VII. Benefits

7.01 Retirement Benefits and Election on Severance Event.

(a) *General Rule:* Except as otherwise provided in this Article VII, the distribution of a Participant's Account shall commence as of a Participant's Automatic Distribution Date, and the distribution of such benefits shall be made in accordance with one of the payment options described in Section 7.02. Notwithstanding the foregoing, but subject to the following paragraphs of this Section 7.01, the Participant may elect following a Severance Event to have the distribution of benefits commence on a fixed determinable date other than that described in the preceding sentence, but not later than April l of the year following the year of the Participant's retirement or attainment of age 70½, whichever is later. The Participant's right to change his or her election with respect to commencement of the distribution of benefits shall not be restrained by this Section 7.01. Notwithstanding the foregoing, the Administrator, in order to ensure the orderly administration of this provision, may establish a deadline after which such election to defer the commencement of distribution of benefits shall not be allowed for those benefits administered by Administrator.

(b) *Loans:* Notwithstanding the foregoing provisions of this Section 7.01, no election to defer the commencement of benefits after a Severance Event shall operate to defer the distribution of any amount in the Participant's loan account in the event of a default of the Participant's loan.

7.02 Payment Options. As provided in Sections 7.01 and 7.04, a Participant may elect to have the value of the Participant's Account distributed in accordance with one of the following payment options, provided that such option is consistent with the limitations set forth in Section 7.03:

(a) Equal monthly, quarterly, semi-annual or annual payments in an amount chosen by the Participant, continuing until his or her Account is exhausted;

(b) One (1) lump-sum payment;

(c) Approximately equal monthly, quarterly, semi-annual or annual payments, calculated to continue for a period certain chosen by the Participant;

(d) Annual Payments equal to the minimum distributions required under Section 401(a)(9) of the Code, including the incidental death benefit requirements of Section 401(a)(9)(G), over the life expectancy of the Participant or over the life expectancies of the Participant and his or her Beneficiary;

(e) Payments equal to payments made by the issuer of a retirement annuity policy acquired by the Employer;

(f) A split distribution under which payments under options (a), (b), (c) or (e) commence or are made at the same time, as elected by the Participant under Section 7.01, provided that all payments commence (or are made) by the latest benefit commencement date permitted under Section 7.01;

(g) Any other payment option elected by the Participant and agreed to by the Employer and Administrator.

A Participant's selection of a payment option under Subsections (a), (c), or (g) above may include the selection of an automatic annual cost-of living increase. Such increase will be based on the rise in the Consumer Price Index for All Urban Consumers (CPI-U) from the third quarter of the last year in which a cost-of-living increase was provided to the third quarter of the current year. Any increase will be made in **periodic payment checks beginning the following January.**

7.03 Limitation on Options. A Participant may not select a payment option under subsections 7.02(a) or (c) if the amount of any such periodic payment is less than $100. No payment option may be selected by a Participant under Sections 7.02 or 7.04 unless it satisfies the requirements of Sections 401(a)(9) and 457(d)(2) of the Code, including the requirement that payments commencing before the death of the Participant shall satisfy the incidental death benefit requirements under Section 401(a)(9)(G) of the Code.

7.04 Minimum Required Distributions. Notwithstanding any provision of the Plan to the contrary, the Plan shall comply with the minimum required distribution rules set forth in Sections 457(d)(2) and 401(a)(9) of the Code, including the incidental death benefit requirements of Section 401(a)(9)(G) of the Code.

(a) *Application of Minimum Distribution Requirements:* The minimum distribution requirements of Section 401(a)(9) of the Code shall only apply to the Plan to the extent that such requirements are applicable by law for a year. Pursuant to the Worker, Retiree, and Employer Recovery Act of 2008 ("WRERA"), required minimum distributions were suspended for 2009.

(b) *Special Rule for Scheduled Installment Payments:* All installment payments scheduled to be distributed to a Participant prior to the effective date of a suspension of the required minimum distribution provisions of Code Section 401(a)(9) shall be distributed as scheduled unless the Participant affirmatively elects to have the payments stopped. Notwithstanding the foregoing, for purposes of this Section 7.04(b), the effective date of the suspension of the required minimum distribution provisions for 2009 shall be deemed January 6, 2009.

7.05 Time and Manner of Distribution.

(a) *Automatic Distribution Date.* The Automatic Distribution Date is April 1 of the year that follows the later of (1) the calendar year the Participant attains age 70½ or (2) retires due to a Severance Event. If the Participant postpones the required distribution due in the calendar year he or she attains age 70½ or severs employment, to the Automatic Distribution Date, the second required minimum distribution must be taken by the end of that year. The Participant's Account will be distributed, or begin to be distributed to the Participant no later than the Participant's Automatic Distribution Date.

(b) *Death of Participant Before Distributions Begin.* Except as otherwise permitted by Section 401(a)(9) of the Code, if the Participant dies before distributions begin, the Participant's Account will be distributed, or begin to be distributed, no later than as follows:

(1) If the Participant's surviving spouse is the Participant's sole Designated Beneficiary, then, distributions to the surviving spouse will begin by December 31 of the calendar year immediately following the calendar year in which the Participant died, or by December 31 of the calendar year in which the Participant would have attained age 70½, if later.

(2) If the Participant's surviving spouse is not the Participant's sole Designated Beneficiary, then distributions to the Designated Beneficiary will begin by December 31 of the calendar year immediately following the calendar year in which the Participant died.

(3) If there is no Designated Beneficiary as of September 30 of the year following the year of the Participant's death, the Participant's Account will be distributed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

(4) If the Participant's surviving spouse is the Participant's sole Designated Beneficiary and the surviving spouse dies after the Participant but before distributions to the surviving spouse begin, this subparagraph 7.05(b), other than subsection 7.05(b)(1), will apply as if the surviving spouse were the Participant.

Distributions are considered to begin on the Participant's Automatic Distribution Date for purposes of this Section 7.05 and Section 7.07, unless Section 7.05(b)(4) applies. If Section 7.05(b)(4) applies, distributions are considered to begin on the date distributions are required to begin to the surviving spouse under Section 7.05(b)(1). If distributions under an annuity purchased from an insurance company irrevocably commence to the Participant before the Participant's Automatic Distribution Date (or to the Participant's surviving spouse before the date distributions are required to begin to the surviving spouse under Section 7.05(b)(1)), the date distributions are considered to begin is the date distributions actually commence.

(c) *Death of Participant On or After Distributions Begin.* Except as otherwise permitted by Section 401(a)(9) of the Code, if the Participant dies on or after distributions begin and before depleting his or her Account, distributions must commence to the Designated Beneficiary by December 31 of the calendar year immediately following the calendar year in which the Participant died.

(d) *Forms of Distribution.* Unless the Participant's Account is distributed in the form of an annuity purchased from an insurance company or in a single-sum on or before the Automatic Distribution Date, as of the first Distribution Calendar Year, distributions will be made in accordance with Sections 7.06 and 7.07. If the Participant's Account is distributed in the form of an annuity contract purchased from an insurance company, distributions thereunder will be made in accordance with the requirements of Section 401(a)(9) of the Code and the Income Tax Regulations.

7.06 Required Minimum Distributions During Participant's Lifetime.

(a) *Amount of Required Minimum Distribution for Each Distribution Calendar Year.* During the Participant's lifetime, the minimum amount that will be distributed for each Distribution Calendar Year is the lesser of:

(1) the quotient obtained by dividing the Participant's Account Balance by the distribution period set forth in the Uniform Lifetime Table set forth in Section 1.401(a)(9)-9, Q&A-2, of the Income Tax Regulations using the Participant's age as of the Participant's birthday in the Distribution Calendar Year; or

(2) if the Participant's sole Designated Beneficiary for the Distribution Calendar Year is the Participant's spouse, the quotient obtained by dividing the Participant's Account Balance by the number in the Joint and Last Survivor Table set forth in Section 1.401(a)(9)-9, Q&A-3, of the Income Tax Regulations using the Participant's and spouse's attained ages as of the Participant's and spouse's birthdays in the Distribution Calendar Year.

(b) *Lifetime Required Minimum Distributions Continue Through Year of Participant's Death.* Required minimum distributions will be determined under this Section 7.06 beginning with the first Distribution Calendar Year and continuing up to, and including, the Distribution Calendar Year that includes the Participant's date of death.

7.07 Required Minimum Distributions After Participant's Death.

(a) *Death On or After Date Distributions Begin.*

(1) Participant Survived by Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is a Designated Beneficiary, the minimum amount that will be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the longer of the remaining Life Expectancy of the Participant or the remaining Life Expectancy of the Participant's Designated Beneficiary, determined as follows:

(i) The Participant's remaining Life Expectancy is calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

(ii) If the Participant's surviving spouse is the Participant's sole Designated Beneficiary, the remaining Life Expectancy of the surviving spouse is calculated for each Distribution Calendar Year after the year of the Participant's death using the surviving spouse's age as of the spouse's birthday in that year. For Distribution Calendar Years after the year of the surviving spouse's death, the remaining Life Expectancy of the surviving spouse is calculated using the age of the surviving spouse as of the spouse's birthday in the calendar year of the spouse's death, reduced by one for each subsequent calendar year.

(iii) If the Participant's surviving spouse is not the Participant's sole Designated Beneficiary, the Designated Beneficiary's remaining life expectancy is calculated using the age of the Beneficiary in the year following the year of the Participant's death, reduced by one for each subsequent year.

(2) No Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is no Designated Beneficiary as of September 30 of the year after the year of the Participant's death, the minimum amount that will be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the Participant's remaining Life Expectancy calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

(b) *Death Before Date Distributions Begin.*

(1) Participant Survived by Designated Beneficiary. Except as permitted by Section 401(a)(9) of the Code, if the Participant dies before the date distributions begin and there is a Designated Beneficiary, the minimum amount that will be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the remaining Life Expectancy of the Participant's Designated Beneficiary, determined as provided in Section 7.07(a).

(2) No Designated Beneficiary. If the Participant dies before the date distributions begin and there is no Designated Beneficiary as of September 30 of the year following the year of the Participant's death, distribution of the Participant's entire Account will be completed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

(3) Death of Surviving Spouse Before Distributions to Surviving Spouse Are Required to Begin. If the Participant dies before the date distributions begin, the Participant's surviving spouse is the Participant's sole Designated Beneficiary, and the surviving spouse dies before distributions are required to begin to the surviving spouse under Section 7.05(b)(1), this Section 7.07(b) will apply as if the surviving spouse were the Participant.

7.08 Definitions.

(a) *Designated Beneficiary.* The individual who is a designated by the Participant (or the Participant's surviving spouse) as the Beneficiary of the Participant's interest under the Plan and who is the Designated Beneficiary under Section 401(a)(9) of the Code and Section 1.401(a)(9)-4 of the Income Tax Regulations.

(b) *Distribution Calendar Year.* A calendar year for which a minimum distribution is required. For distributions beginning before the Participant's death, the first Distribution Calendar Year is the calendar year immediately preceding the calendar year which contains the Participant's Automatic Distribution Date. For distributions beginning after the Participant's death, the first Distribution Calendar Year is the calendar year in which distributions are required to begin under Sections 7.05(b) and (c). The required minimum distribution for the Participant's first Distribution Calendar Year will be made on or before the Participant's Automatic Distribution Date. The required minimum distribution for other Distribution Calendar Years, including the required minimum distribution for the Distribution Calendar Year in which the Participant's Automatic Distribution Date occurs, will be made on or before December 31 of that Distribution Calendar Year.

(c) *Life Expectancy.* Life Expectancy as computed by use of the Single Life Table in Section 1.401(a)(9)-9, Q&A-1, of the Income Tax Regulations.

(d) *Participant's Account Balance.* The Account Balance as of the last Accounting Date in the calendar year immediately preceding the Distribution Calendar Year (valuation calendar year) increased by the amount of any contribution made and allocated or forfeitures allocated to the Account Balance as of dates in the valuation calendar year after the Accounting Date and decreased by distributions made in the valuation calendar year after the Accounting Date. The Account Balance for the valuation calendar year includes any amounts rolled over or transferred to the Plan either in the valuation calendar year or in the Distribution Calendar Year if distributed or transferred in the valuation calendar year.

7.09 Unforeseeable Emergencies.

(a) In the event an unforeseeable emergency occurs, a Participant, or a Beneficiary with a current unconditional right to all or a portion of the Participant's account balance under the Plan following the death of the Participant, may, unless otherwise elected by the Employer, apply to the Employer (or the Administrator, acting on behalf of the Employer) to receive that part of the value of his or her Account that is reasonably needed to satisfy the emergency need. If such an application is approved by the Employer (or the Administrator, acting on behalf of the Employer), the Participant or Beneficiary shall be paid only such amount as the Employer or Administrator deems necessary to meet the emergency need, but payment shall not be made to the extent that the financial hardship may be relieved through cessation of deferral under the Plan, insurance or other reimbursement, or liquidation of other assets to the extent such liquidation would not itself cause severe financial hardship.

(b) An unforeseeable emergency shall be deemed to involve only circumstances of severe financial hardship of a Participant or Beneficiary resulting from an illness or accident of the Participant or Beneficiary, the Participant's or Beneficiary's spouse, or the Participant's or Beneficiary's dependent (as defined in Section 152 of the Code, and, for taxable years beginning on or after January 1, 2005, without regard to Sections 152(b)(1), (b)(2), and (d)(1)(B) of the Code); loss of the Participant's or Beneficiary's property due to casualty (including the need to rebuild a home following damage to a home not otherwise covered by homeowner's insurance, e.g., as a result of a natural disaster); or other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the control of the Participant or the Beneficiary. For example, the imminent foreclosure of or eviction from the Participant's or Beneficiary's primary residence may constitute an unforeseeable emergency. In addition, the need to pay for medical expenses, including non-refundable deductibles, as well as for the cost of prescription drug medication, may constitute an unforeseeable emergency. The need to pay for the funeral expenses of a spouse or a dependent (as defined in Section 152 of the Code, and, for taxable years beginning on or after January 1, 2005, without regard to Sections 152(b)(1), (b)(2), and (d)(1)(B) of the Code) may also constitute an unforeseeable emergency. In addition, loss of property due to theft, legal bills involving criminal charges, and lost or reduced wages of the Participant's or Beneficiary's household may constitute an unforeseeable emergency if extraordinary, unforeseeable, and arising as a result of events beyond the control of the Participant or Beneficiary and otherwise meeting the conditions described in Section 7.09(a). Except as otherwise specifically provided in this Section 7.09(b), the purchase of a home and the payment of college tuition are not unforeseeable emergencies.

(c) Unless otherwise elected by the Employer, the determination of any unforeseeable emergency will be expanded to include circumstances of severe financial hardship resulting from an illness or accident of a Primary Beneficiary or other similar extraordinary and unforeseeable circumstances of a Primary Beneficiary that result in a severe financial hardship.

7.10 In-Service Distribution of Rollover Contributions. Effective January 1, 2006, the Employer may elect to allow Participants to receive an in-service distribution of amounts attributable to rollover contributions to the Plan. If the Employer has elected to make such distributions available, a Participant that has a separate account attributable to rollover contributions to the Plan may at any time elect to receive a distribution of all or any portion of the amount held in the rollover account.

7.11 In-Service Distribution to Participants Age 70½ or Older. Unless otherwise elected by the Employer, a Participant who has reached age 70½ and has not yet had a Severance Event, may, at any time, request a distribution of all or a part of his or her Account.

7.12 Distribution of De Minimis Accounts. Notwithstanding the foregoing provisions of this Article VII:

(a) *Mandatory Distribution:* If the value of a Participant's Account is less than $1,000, the Participant's Account shall be paid to the Participant in a single lump sum distribution, provided that:

(1) No amount has been deferred under the Plan with respect to the Participant during the

2-year period ending on the date of the distribution; and

(2) There has been no prior distribution under the Plan to the Participant pursuant to this Section 7.12.

Notwithstanding any other provisions of the Plan to the contrary, if the amount of a Beneficiary's Account following notification of a Participant's death is less than $1,000, the Beneficiary's Account may be paid to the Beneficiary in a single lump sum distribution.

(b) *Voluntary Distribution:* If the value of the Participant's Account is at least $1,000 but not more than the dollar limit under Section 411(a)(11)(A) of the Code, the Participant may elect to receive his or her entire Account in a lump sum payment if:

(1) No amount has been deferred under the Plan with respect to the Participant during the 2-year period ending on the date of the distribution; and

(2) There has been no prior distribution under the Plan to the Participant pursuant to this Section 7.12.

7.13 Deemed Severance from Employment.

(a) Unless otherwise elected by the Employer, effective January 1, 2009, a Participant shall be deemed to have a severance from employment solely for purposes of eligibility to receive distributions from the Plan during any period the individual is performing service in the uniformed services (as defined in chapter 43 of title 38, United States Code) for more than thirty (30) days.

(b) If a Participant receives a distribution pursuant to Section 7.13(a), then during the six-month period beginning on the date of the distribution the Participant shall not be permitted to defer compensation.

(c) If a Participant receives a distribution which could be attributable to: (i) a deemed severance from employment described in subsection (a); or (ii) another distribution event under the Plan, then the distribution shall be considered made pursuant to the distribution event referenced in (ii), and the Participant shall not be subject to the limitation on elective deferrals or Voluntary Employee Contributions set forth in subsection (b).

7.14 Distributions for Health and Long-Term Care Insurance for Public Safety Officers.

(a) If elected by the Employer, for Plan Years beginning after December 31, 2006, Eligible Retired Public Safety Officers may elect after separation from service to have up to $3,000 distributed tax-free annually from the Plan in order to pay for Qualified Health Insurance Premiums for an accident or health plan (including a self-insured plan) or a qualified long-term care insurance contract. The Plan shall make such distributions directly to the provider of the accident or health plan or qualified long-term care insurance contract.

(b) The term "Eligible Retired Public Safety Officer" means an individual who, by reason of disability or attainment of Normal Retirement Age, is separated from service as a Public Safety Officer with the Employer who maintains the eligible retirement plan from which distributions pursuant to this Section are made. The term "Public Safety Officer" has the same meaning given such term by Section 1204(9)(A) of the Omnibus Crime Control and Safe Streets Act of 1968.

(c) The term "Qualified Health Insurance Premiums" means premiums for coverage for the Eligible

Retired Public Safety Officer, his spouse, and dependents, by an accident or health insurance plan or qualified long-term care insurance contract (as defined in Code Section 7702B).

7.15 **EESA Provisions.** The provisions relating to qualified disaster recovery assistance distributions for Participants affected by certain 2008 severe storms, flooding, and tornadoes and repayment thereof, and relating to repayment of prior qualified distributions for home purchases, set forth in Section 702 of the Emergency Economic Stabilization Act of 2008 ("EESA") shall apply to the Plan.

7.16 **KETRA and GOZA Provisions.** The provisions relating to qualified hurricane distributions and repayment thereof set forth in Section 1400Q(a) of the Code, and relating to repayment of prior qualified distributions for home purchases set forth in Code Section 1400Q(b), shall apply to the Plan. These provisions added to the Code by the Katrina Emergency Tax Relief Act of 2005 ("KETRA") and the Gulf Opportunity Zone Act of 2005 (GOZA), permit plans to allow repayments of certain prior qualified distributions for home purchases for Participants affected by Hurricanes Katrina, Rita, and Wilma.

Article VIII. Loans to Participants

8.01 **Availability of Loans to Participants.**

(a) If elected by the Employer, loans will be available to Participants in this Plan. A Participant may apply for a loan from the Plan subject to the limitations and other provisions of this Article.

(b) The Employer shall establish written guidelines governing the granting of loans, provided that such guidelines are approved by the Administrator and are not inconsistent with the provisions of this Article, and that loans are made available to all applicable Participants on a reasonably equivalent basis.

8.02 **Terms and Conditions of Loans to Participants.** Any loan by the Plan to a Participant under Section 8.01 of the Plan shall satisfy the following requirements:

(a) *Availability.* Loans shall be made available to all Participants who are active employees on a reasonably equivalent basis. Loans shall not be made available to terminated Employees, Beneficiaries, or alternate payees.

(b) *Interest Rate.* Loans must be adequately secured and bear a reasonable interest rate.

(c) *Loan Limit.* No Participant loan shall exceed the present value of the Participant's Account.

(d) *Foreclosure.* In the event of default on any installment payment, the outstanding balance of the loan shall be a deemed distribution. In such event, an actual distribution of a plan loan offset amount will not occur until a distributable event occurs in the Plan.

(c) *Reduction of Account.* Notwithstanding any other provision of this Plan, the portion of the Participant's Account balance used as a security interest held by the Plan by reason of a loan outstanding to the Participant shall be taken into account for purposes of determining the amount of the Account balance payable at the time of death or distribution, but only if the reduction is used as repayment of the loan.

(f) *Amount of Loan.* At the time the loan is made, the principal amount of the loan plus the outstanding balance (principal plus accrued interest) due on any other outstanding loans to the Participant from the Plan and from all other plans of the Employer that are either eligible deferred compensation plans described in Section 457(b) of the Code or qualified employer plans under Section 72(p)(4) of the Code shall not exceed the lesser of:

(1) $50,000, reduced by the excess (if any) of

(i) The highest outstanding balance of loans from the Plan during the one (1) year period ending on the day before the date on which the loan is made; over

(ii) The outstanding balance of loans from the Plan on the date on which such loan is made; or

(2) One-half of the value of the Participant's interest in all of his or her Accounts under this Plan.

For the purpose of the above limitation, all loans from all qualified employer plans of the Employer under Code Section 72(p)(4) are aggregated.

(g) *Application for Loan.* The Participant must give the Employer adequate written notice, as determined by the Employer, of the amount and desired time for receiving a loan. No more than one (1) loan may be made by the Plan to a Participant in any twelve-month period, unless a different period is elected by the Employer. No loan shall be approved if an existing loan from the Plan to the Participant is in default to any extent.

(h) *Length of Loan.* Any loan issued shall require the Participant to repay the loan in substantially equal installments of principal and interest, at least monthly, over a period that does not exceed five (5) years from the date of the loan; provided, however, that if the proceeds of the loan are applied by the Participant to acquire any dwelling unit that is to be used within a reasonable time (determined at the time of the loan is made) after the loan is made as the principal residence of the Participant, the five (5) year limit shall not apply. In this event, the period of repayment shall not exceed a reasonable period determined by the Employer. Principal installments and interest payments otherwise due may be suspended for up to one (1) year during an authorized leave of absence, if the promissory note so provides, but not beyond the original term permitted under this subsection (h), with a revised payment schedule (within such term) instituted at the end of such period of suspension.

(i) *Prepayment.* The Participant shall be permitted to repay the loan in whole or in part at any time prior to maturity, without penalty.

(j) Promissory Note. The loan shall be evidenced by a promissory note executed by the Participant and delivered to the Employer, and shall bear interest at a reasonable rate determined by the Employer.

(k) *Security.* The loan shall be secured by an assignment of the participant's right, title and interest in and to his or her Account.

(l) *Assignment or Pledge.* For the purposes of paragraphs (f) and (g), assignment or pledge of any portion of the Participant's interest in the Plan and a loan, pledge, or assignment with respect to any insurance contract purchased under the Plan, will be treated as a loan.

(m) *Other Terms and Conditions.* The Employer shall fix such other terms and conditions of the loan as it deems necessary to comply with legal requirements, to maintain the eligibility of the Plan and Trust under Section 457 of the Code, or to prevent the treatment of the loan for tax purposes as a distribution to the Participant. The Employer, in its discretion for any reason, may also fix other terms and conditions of the loan, not inconsistent with the provisions of this Article, including:

(1) the circumstances under which a loan becomes immediately due and payable, provided, however, with respect loans issued after December 31, 2012, that the loan program shall

not provide that a loan becomes due and payable solely because the Participant requests or receives a partial distribution of the Participant's account balance after termination of employment;

(2) rules relating to reamortization of loans; and

(3) rules relating to refinance of loans.

8.03 Participant Loan Accounts.

(a) Upon approval of a loan to a Participant by the Employer, an amount not in excess of the loan shall be transferred from the Participant's other investment fund(s), described in Section 6.05 of the Plan, to the Participant's loan account as of the Accounting Date immediately preceding the agreed upon date on which the loan is to be made.

(b) The assets of a Participant's loan account may be invested and reinvested only in promissory notes received by the Plan from the Participant as consideration for a loan permitted by Section 8.01 of the Plan or in cash. Uninvested cash balances in a Participant's loan account shall not bear interest. Neither the Employer, the Administrator, nor any other person shall be liable for any loss, or by reason of any breach, that results from the Participant's exercise of such control.

(c) Repayment of principal and payment of interest shall be made by payroll deduction or, Automated Clearing House (ACH) transfer, or with respect to a terminated Employee solely by ACH, and shall be invested in one (1) or more other investment funds, in accordance with Section 6.05 of the Plan, as of the next Accounting Date after payment thereof to the Trust. The amount so invested shall be deducted from the Participant's loan account. A payment intended to be a prepayment or payment of the loan in full may also be made by cashier's check or money order, and shall be invested in accordance with this provision.

(d) The Employer shall have the authority to establish other reasonable rules, not inconsistent with the provisions of the Plan, governing the establishment and maintenance of Participant loan accounts.

Article IX. Roth Provisions

This Article IX has no effect unless and until the Employer affirmatively elects to offer Designated Roth Accounts.

9.01 Definitions. The following definitions shall apply for purposes of this Article IX.

(a) *Designated Roth Account*. A bookkeeping account established and maintained to record the Participant's Roth Elective Deferrals, In-Plan Roth Conversions, rollovers from designated Roth account under other eligible retirement plans, and the income gains and losses thereon. Unless specifically stated otherwise, all references in the Plan to a Participant's Account shall include a Participant's Designated Roth Account.

(b) *In-Plan Roth Conversion*. (1) A distribution from a Participant's Pre-Tax Account that is rolled over to the Participant's Designated Roth Account under the Plan, as described in Code Section 402A(c)(4)(B); or (2) A transfer from an amount in the Participant's Pre-Tax Account not otherwise distributable from the Plan to the Participant's Designated Roth Account under the Plan, as described in Code Section 402A(c)(4)(E), to the extent permitted by Section 9.05(e).

(c) *Pre-Tax Account*. A bookkeeping account established and maintained to record the portion of the Participant's Account attributable to amounts other than Roth Elective Deferrals, In-Plan

Roth Conversions, rollovers from designated Roth accounts under other eligible retirement plans, and the income gains and losses thereon. Unless specifically stated otherwise, all references in the Plan to a Participant's Account shall include a Participant's Pre-Tax Account.

(d) *Qualified Roth Contribution Program.* A program described in paragraph (1) of Code Section 402A(b), under which a Participant may make Roth Elective Deferrals in lieu of all or a portion of the elective deferrals the Participant is otherwise eligible to make under the Plan.

(e) *Roth Elective Deferrals.* Deferred Includible Compensation contributed pursuant to Section 9.02 by a Participant, which amounts are:

(1) designated irrevocably by the Participant at the time of the deferral election as a Roth elective deferral that is being made in lieu of all or a portion of the pre-tax deferrals the Participant is otherwise eligible to make under the Plan; and

(2) treated by the Employer as includible in the Participant's income at the time the Participant otherwise would have received that amount as Includible Compensation.

9.02 Permitted Roth Elective Deferrals

(a) If the Employer elects to offer Designated Roth Accounts, as of the effective date of such election, a Participant shall be permitted to make Roth Elective Deferrals from his or her Includible Compensation in such amount or percentage as may be specified in the Joinder Agreement. A Participant's Roth Elective Deferrals will be allocated to a separate Designated Roth Account maintained for such deferrals as defined in Section 9.01(a) above.

(b) Unless specifically stated otherwise, Roth Elective Deferrals will be treated as Deferred Compensation for all purposes under the Plan.

9.03 Separate Accounting

(a) Contributions and withdrawals of Roth Elective Deferrals, In-Plan Roth Conversions and rollovers from a designated Roth account under an eligible retirement plan will be credited and debited to a Participant's Designated Roth Account.

(b) The Plan will maintain a record of the amount of Roth Elective Deferrals, In-Plan Roth Conversions, and rollovers from a designated Roth account under an eligible retirement plan in each Participant's Designated Roth Account.

(c) Gains, losses, and other credits or charges must be separately allocated on a reasonable and consistent basis to each Participant's Designated Roth Account and Pre-Tax Account under the Plan.

(d) No contributions other than Roth Elective Deferrals, In-Plan Roth Conversions, and rollovers from a designated Roth account under an eligible retirement plan and properly attributable earnings thereon will be credited to each Participant's Designated Roth Account.

9.04 Direct Rollovers

(a) Notwithstanding anything to the contrary in the Plan, a direct rollover of a distribution from a Designated Roth Account under the Plan shall be made only to another designated Roth account under an eligible retirement plan described in Section 402A(e)(1) of the Code or to a Roth IRA described in Section 408A of the Code, and only to the extent the rollover is permitted under the rules of Section 402(c) of the Code.

(b) Notwithstanding anything to the contrary in the Plan, unless otherwise elected by the Employer, the Plan will accept a rollover contribution to a Designated Roth Account only if it is a direct rollover from another designated Roth account under an eligible retirement plan described in Section 402A(e)(1) of the Code, or if the rollover is an In-Plan Roth Conversion defined in Section 10.05.

(c) Eligible rollover distributions from a Participant's Designated Roth Account are taken into account in determining whether the total amount of the Participant's Account balances under the Plan exceeds $1,000 for purposes of mandatory distributions from the Plan.

9.05 In-Plan Roth Conversions. Unless otherwise elected by the Employer, as of the effective date of this Article the Plan shall allow for In-Plan Roth Conversions.

(a) *Tax Treatment.* The amount of an In-Plan Roth Conversion shall be includible in the Participant's gross income, as though it were not part of a qualified rollover contribution.

(b) *Irrevocability.* Any election made by the Participant pursuant to Section 9.05(a) to do an In-Plan Roth Conversion shall be irrevocable.

(c) *Treatment of Loans.* Outstanding plan loans shall be excluded from In-Plan Roth Conversions. Notwithstanding anything herein to the contrary, an In-Plan Roth Conversion shall not accelerate or otherwise cause a Participant to default on an outstanding plan loan.

(d) *Spousal Consent.* Notwithstanding anything herein to the contrary, if the Plan requires spousal consent for a distribution, a married Participant shall not be required to obtain spousal consent in connection with an election to make an In-Plan Roth Conversion.

(e) *In-Plan Roth Conversions of Non-Distributable Amounts.* Effective January 1, 2013, a Participant may transfer, as part of an In-Plan Roth Conversion, an amount that is not otherwise distributable from the Participant's Pre-Tax Account to the Participant's Designated Roth Account. Such transfer shall be treated as a distribution which was contributed in a qualified rollover contribution within the meaning of Code Section 408A(e). Any distribution restrictions that were applicable to the amount before the In-Plan Roth Conversion shall apply to such amount (and earnings and losses thereon) in the Participant's Designated Roth Account. If the Participant's Account or a portion of the Account is subject to a vesting schedule, an In-Plan Roth Conversion is available only if the Account or portion of the Account is fully vested. The Participant may not transfer under this Section 9.05(e) any portion of the Account that is partially vested.

9.06 Availability of Loans from Designated Roth Accounts. A Participant's Designated Roth Account balance can be included to determine a Participant loan amount under Article VIII. However, unless the Employer elects otherwise, Designated Roth Accounts will not be available as a source for loans under the Plan.

Article X. Non-Assignability

10.01 General. Except as provided in Article VIII and Section 10.02, no Participant or Beneficiary shall have any right to commute, sell, assign, pledge, transfer or otherwise convey or encumber the right to receive any payments hereunder, which payments and rights are expressly declared to be non-assignable and non- transferable.

10.02 Domestic Relations Orders.

(a) *Allowance of Transfers:* To the extent required under a final judgment, decree, or order (including approval of a property settlement agreement) that (1) relates to the provision of child support, alimony payments, or marital property rights and (2) is made pursuant to a state domestic relations law, and (3) is permitted under Sections 414(p)(11) and (12) of the Code, any portion of a Participant's Account may be paid or set aside for payment to a spouse, former spouse, child, or other dependent of the Participant (an "Alternate Payee"). Where necessary to carry out the terms of such an order, a separate Account shall be established with respect to the Alternate Payee who shall be entitled to make investment selections with respect thereto in the same manner as the Participant. Any amount so set aside for an Alternate Payee shall be paid in accordance with the form and timing of payment specified in the order. Nothing in this Section shall be construed to authorize any amount to be distributed under the Plan at a time or in a form that is not permitted under Section 457(b) of the Code and is explicitly permitted under the uniform procedures described in Section 10.02(d) below. Notwithstanding the foregoing sentence, if a judgment, decree or order (including approval of a property settlement agreement) that relates to the provision of child support, alimony payments, or the marital property rights of a spouse or former spouse, child, or other dependent of a Participant is made pursuant to the domestic relations law of any State, then the amount of the Participant's Account shall be paid in the manner and to the person or persons so directed in the domestic relations order. Such payment shall be made without regard to whether the Participant is eligible for a distribution of benefits under the Plan. The Administrator shall establish reasonable procedures for determining the status of any such decree or order and for effectuating distribution pursuant to the domestic relations order. Any payment made to a person pursuant to this Section shall be reduced by any required income tax withholding. An Account maintained by the Alternate Payee shall otherwise be treated as if it were a Participant Account.

(b) *Release from Liability to Participant:* The Employer's liability to pay benefits to a Participant shall be reduced to the extent that amounts have been paid or set aside for payment to an Alternate Payee to paragraph (a) of this Section and the Participant and his or her Beneficiaries shall be deemed to have released the Employer and the Plan Administrator from any claim with respect to such amounts.

(c) *Participation in Legal Proceedings:* The Employer and Administrator shall not be obligated to defend against or set aside any judgment, decree, or order described in paragraph (a) or any legal order relating to the garnishment of a Participant's benefits, unless the full expense of such legal action is borne by the Participant. In the event that the Participant's action (or inaction) nonetheless causes the Employer or Administrator to incur such expense, the amount of the expense may be charged against the Participant's Account and thereby reduce the Employer's obligation to pay benefits to the Participant. In the course of any proceeding relating to divorce, separation, or child support, the Employer and Administrator shall be authorized to disclose information relating to the Participant's Account to the Alternate Payee (including the legal representatives of the Alternate Payee), or to a court.

(d) *Determination of Validity of Domestic Relations Orders:* The Administrator shall establish uniform procedures for determining the validity of any domestic relations order. The Administrator's determinations under such procedures shall be conclusive and binding on all parties and shall be afforded the maximum amount of deference permitted by law.

10.03 **IRS Levy.** Notwithstanding Section 10.01, the Administrator may pay from a Participant's or Beneficiary's Account balance the amount that the Administrator finds is lawfully demanded under a levy issued by the Internal Revenue Service with respect to that Participant or Beneficiary or is sought to be collected by the United States Government under a judgment resulting from an unpaid tax assessment against the Participant or Beneficiary.

10.04 **Mistaken Contribution.** To the extent permitted by applicable law, if any contribution (or any portion of a contribution) is made to the Plan by a good faith mistake of fact, then after the payment of the contribution, and upon receipt in good order of a proper request approved by the Administrator, the amount of the mistaken contribution (adjusted for any income or loss in value, if any, allocable thereto) shall be returned directly to the Participant or, to the extent required or permitted by the Administrator, to the Employer.

10.05 **Payments to Minors and Incompetents.** If a Participant or Beneficiary entitled to receive any benefits hereunder is a minor or is adjudged to be legally incapable if giving valid receipt and discharge for such benefits, or is deemed so by the Administrator, benefits will be paid to such persons as the Administrator may designate for the benefit of such Participant or Beneficiary. Such payments shall be considered a payment to such Participant or Beneficiary and shall, to the extent made, be deemed a complete discharge of any liability for such payments under the Plan.

10.06 **Procedure When Distributee Cannot Be Located.** The Administrator shall make all reasonable attempts to determine the identity and address of a Participant or a Participant's Beneficiary entitled to benefits under the Plan. For this purpose, a reasonable attempt means (a) the mailing by certified mail of a notice to the last known address shown on the Employer or Administrator's records, (b) notification sent to the Social Security Administration or the Pension Benefit Guarantee Corporation (under their program to identify payees under retirement plans), and (c) the payee has not responded within six (6) months. If the Administrator is unable to locate such a person entitled to benefits hereunder, or if there has been no claim made for such benefits, the Trust shall continue to hold the benefits due such person to the extent consistent with applicable law.

Article XI. Relationship to Other Plans and Employment Agreements

This Plan serves in addition to any other retirement, pension, or benefit plan or system presently in existence or hereinafter established for the benefit of the Employer's employees, and participation hereunder shall not affect benefits receivable under any such plan or system. Nothing contained in this Plan shall be deemed to constitute an employment contract or agreement between any Participant and the Employer or to give any Participant the right to be retained in the employ of the Employer. Nor shall anything herein be construed to modify the terms of any employment contract or agreement between a Participant and the Employer.

Article XII. Amendment or Termination of Plan

The Employer may at any time amend this Plan provided that it transmits such amendment in writing to the Administrator at least thirty (30) days prior to the effective date of the amendment. The consent of the Administrator shall not be required in order for such amendment to become effective, but the Administrator shall be under no obligation to continue acting as Administrator hereunder if it disapproves of such amendment.

The Administrator may at any time propose an amendment to the Plan by an instrument in writing transmitted to the Employer. Such amendment shall become effective unless, within the 30-day period beginning on the date the Administrator transmits such amendment, the Employer notifies the Administrator in writing that it disapproves such amendment, in which case such amendment shall not become effective. In the event of such disapproval, the Administrator shall be under no obligation to continue acting as

Administrator hereunder.

The Employer may at any time terminate this Plan. In the event of termination, assets of the Plan shall be distributed to Participants and Beneficiaries as soon as administratively practicable following termination of the Plan. Alternatively, assets of the Plan may be transferred to an eligible deferred compensation plan maintained by another eligible governmental employer within the same State if (a) all assets held by the Plan are transferred; (b) the receiving plan provides for the receipt of transfers; (c) the Participants and Beneficiaries whose deferred amounts are being transferred will have an amount immediately after the transfer at least equal to the deferred amount immediately before the transfer; and (d) the Participants or Beneficiaries whose deferred amounts are being transferred are not eligible for additional annual deferrals in the receiving plan unless the Participants or Beneficiaries are performing services for the employer maintaining the receiving plan. In addition, unless otherwise prohibited by applicable law, with respect to Participants or Beneficiaries who cannot be located or who do not elect otherwise, the assets held in the accounts of such Participants or Beneficiaries may be transferred to an individual retirement plan (as defined in Section 7701(a)(37) of the Code) selected by the Employer.

Except as may be required to maintain the status of the Plan as an eligible deferred compensation plan under Section 457(b) of the Code or to comply with other applicable laws, no amendment or termination of the Plan shall divest any Participant of any rights with respect to compensation deferred before the date of the amendment or termination.

Article XIII. Applicable Law

This Plan and Trust shall be construed under the laws of the state where the Employer is located and is established with the intent that it meet the requirements of an "eligible deferred compensation plan" under Section 457(b) of the Code, as amended. The provisions of this Plan and Trust shall be interpreted wherever possible in conformity with the requirements of that Section of the Code.

In addition, notwithstanding any provision of the Plan to the contrary, the Plan shall be administered in compliance with the requirements of Section 414(u) of the Code.

Article XIV. Miscellaneous Items

14.01 Gender and Number. The masculine pronoun, whenever used herein, shall include the feminine pronoun, and the singular shall include the plural, except where the context requires otherwise.

14.02 Electronic Communication and Consent. Unless expressly required otherwise, where this Plan provides that a document, election, notification, direction, signature, or consent will be in writing, such writing may occur through an electronic medium, including but not limited to electronic mail, intranet or internet web posting and online account access, to the fullest extent permitted by applicable law.

DECLARATION OF TRUST

This Declaration of Trust (the "Group Trust Agreement") is made as of the 19th day of May, 2001, by VantageTrust Company, which declares itself to be the sole Trustee of the trust hereby created.

WHEREAS, the ICMA Retirement Trust was created as a vehicle for the commingling of the assets of governmental plans and governmental units described in Section 818(a)(6) of the Internal Revenue Code of 1986, as amended, pursuant to a Declaration of Trust dated October 4, 1982, as subsequently amended, a copy of which is attached hereto and incorporated by reference as set out below (the "ICMA Declaration"); and

WHEREAS, the trust created hereunder (the "Group Trust") is intended to meet the requirements of Revenue Ruling 81-100, 1981-1 C.B. 326, and is established as a common trust fund within the meaning of Section 391:1 of Title 35 of the New Hampshire Revised Statutes Annotated, to accept and hold for investment purposes the assets of the Deferred Compensation and Qualified Plans held by and through the ICMA Retirement Trust.

NOW, THEREFORE, the Group Trust is created by the execution of this Declaration of Trust by the Trustee and is established with respect to each Deferred Compensation and Qualified Plan by the transfer to the Trustee of such Plan's assets in the ICMA Retirement Trust, by the Trustees thereof, in accord with the following provisions:

(a) Incorporation of ICMA Declaration by Reference; ICMA By-Laws. Except as otherwise provided in this Group Trust Agreement, and to the extent not inconsistent herewith, all provisions of the ICMA Declaration are incorporated herein by reference and made a part hereof, to be read by substituting the Group Trust for the Retirement Trust and the Trustee for the Board of Trustees referenced therein. In this respect, unless the context clearly indicates otherwise, all capitalized terms used herein and defined in the ICMA Declaration have the meanings assigned to them in the ICMA Declaration. In addition, the By-Laws of the ICMA Retirement Trust, as the same may be amended from time-to-time, are adopted as the By-Laws of the Group Trust to the extent not inconsistent with the terms of this Group Trust Agreement.

Notwithstanding the foregoing, the terms of the ICMA Declaration and By-Laws are further modified with respect to the Group Trust created hereunder, as follows:

1. any reporting, distribution, or other obligation of the Group Trust vis-à-vis any Deferred Compensation Plan, Qualified Plan, Public Employer, Public Employer Trustee, or Employer Trust shall be deemed satisfied to the extent that such obligation is undertaken by the ICMA Retirement Trust (in which case the obligation of the Group Trust shall run to the ICMA Retirement Trust); and

2. all provisions dealing with the number, qualification, election, term and nomination of Trustees shall not apply, and all other provisions relating to trustees (including, but not limited to, resignation and removal) shall be interpreted in a manner consistent with the appointment of a single corporate trustee.

(b) *Compliance with Revenue Procedure 81-100.* The requirements of Revenue Procedure 81-100 are applicable to the Group Trust as follows:

1. Pursuant to the terms of this Group Trust Agreement and Article X of the By-Laws, investment in the Group Trust is limited to assets of Deferred Compensation and Qualified Plans, investing through the ICMA Retirement Trust.

2. Pursuant to the By-Laws, the Group Trust is adopted as a part of each Qualified Plan that invests herein through the ICMA Retirement Trust.

3. In accord with the By-Laws, that part of the Group Trust's corpus or income which equitably belongs to any Deferred Compensation and Qualified Plan may not be used for or diverted to any purposes other than for the exclusive benefit of the Plan's employees or their beneficiaries who are entitled to benefits under such Plan.

4 In accord with the By-Laws, no Deferred Compensation Plan or Qualified Plan may assign any or part of its equity or interest in the Group Trust, and any purported assignment of such equity or interest shall be void.

(c) *Governing Law.* Except as otherwise required by federal, state or local law, this Declaration of Trust (including the ICMA Declaration to the extent incorporated herein) and the Group Trust created hereunder shall be construed and determined in accordance with applicable laws of the State of New Hampshire.

(d) *Judicial Proceedings.* The Trustee may at any time initiate an action or proceeding in the appropriate state or federal courts within or outside the state of New Hampshire for the settlement of its accounts or for the determination of any question of construction which may arise or for instructions.

IN WITNESS WHEREOF, the Trustee has executed this Declaration of Trust as of the day and year first above written.

VANTAGETRUST COMPANY

MISSIONSQUARE RETIREMENT

777 NORTH CAPITOL STREET, NE
WASHINGTON, DC 20002-4240

800-669-7400
WWW.MISSIONSQ.ORG

55108-1121-454

Attachment 2

ADMINISTRATIVE SERVICES AGREEMENT

for

Village of Williams Bay

Type: **457**

Account #: **305359**

MissionSquare
RETIREMENT

ADMINISTRATIVE SERVICES AGREEMENT

This Administrative Services Agreement ("Agreement"), made as of this day, (please enter date) ___________________________________, (herein referred to as the "Inception Date"), between the International City Management Association Retirement Corporation doing business as MissionSquare Retirement ("MissionSquare"), a nonprofit corporation organized and existing under the laws of the State of Delaware, and the **Village of Williams Bay** ("Employer"), an **Entity** organized and existing under the laws of the State of **Wisconsin** with an office at **250 Williams Street, Williams Bay, Wisconsin 53191**.

RECITALS

Employer acts as public plan sponsor of a retirement plan ("Plan"), and in that capacity, has responsibility to obtain administrative services and investment alternatives for the Plan;

VantageTrust is a group trust established and maintained in accordance with New Hampshire Revised Statutes Annotated section 391:1 and Internal Revenue Service Revenue Ruling 81-100, 1981-1 C.B. 326, which provides for the commingled investment of retirement funds;

MissionSquare, or its wholly owned subsidiary, acts as investment adviser to VantageTrust Company, LLC, the Trustee of VantageTrust;

MissionSquare has designed, and VantageTrust Company offers, a series of separate funds (the "Funds") for the investment of plan assets as referenced in the Funds' principal disclosure documents, which are the Disclosure Memorandum and the Fact Sheets (together, "MissionSquare Disclosures"); and

MissionSquare provides a range of services to public employers for the operation of employee retirement plans including, but not limited to, communications concerning investment alternatives, account maintenance, account recordkeeping, investment and tax reporting, transaction processing, and benefit disbursement.

AGREEMENTS

1. Appointment of MissionSquare

Employer hereby appoints MissionSquare as administrator of the Plan to perform all nondiscretionary functions necessary for the administration of the Plan. The functions to be performed by MissionSquare shall be those set forth in Exhibit A to this Agreement.

2. Adoption of VantageTrust

Employer has adopted the Declaration of Trust of VantageTrust Company and agrees to the commingled investment of assets of the Plan within VantageTrust. Employer agrees that the investment, management, and distribution of amounts deposited in VantageTrust shall be subject to the Declaration of Trust, as it may be amended from time to time and shall also be subject to terms and conditions set forth in disclosure documents (such as the MissionSquare Disclosures or Employer Bulletins) as those terms and conditions may be adjusted from time to time.

3. Employer Duty to Furnish Information

Employer agrees to furnish to MissionSquare on a timely basis such information as is necessary for MissionSquare to carry out its responsibilities as Administrator of the Plan, including information needed to allocate individual participant accounts to Funds in VantageTrust, and information as to the employment status of participants, and participant ages, addresses, and other identifying information (including tax identification numbers). Employer also agrees that it will notify MissionSquare in a timely manner regarding changes in staff as it relates to various roles. Such notification is to be completed through the plan sponsor website. MissionSquare shall be entitled to rely upon the accuracy of any information that is furnished to it by a responsible official of the Employer or any information relating to an individual participant or beneficiary that is furnished by such participant or beneficiary, and MissionSquare shall not be responsible for any error arising from its reliance on such information. MissionSquare will provide reports and account information to the Employer through the plan sponsor website.

Employer is required to send in contributions through the plan sponsor website. Alternative electronic methods may be allowed but must be approved by MissionSquare for use. Contributions may not be sent through paper submittal documents.

To the extent Employer selects third-party funds that do not have fund profile information provided to MissionSquare through electronic data feeds from external sources (such as Morningstar) or third-party fund providers, the Employer is responsible for providing to MissionSquare timely fund investment updates for disclosure to Plan participants. Such updates may be provided to MissionSquare through the Employer's investment consultant or other designated representative.

4. MissionSquare Representations and Warranties

MissionSquare represents and warrants to Employer that:

(a) MissionSquare is a non-profit corporation with full power and authority to enter into this Agreement and to perform its obligations under this Agreement. The ability of MissionSquare, or its wholly owned subsidiary, to serve as investment adviser to VantageTrust Company is dependent upon the continued willingness of VantageTrust Company for MissionSquare, or its wholly owned subsidiary, to serve in that capacity.

(b) MissionSquare is an investment adviser registered as such with the U.S. Securities and Exchange Commission under the Investment Advisers Act of 1940, as amended.

(c) MissionSquare shall maintain and administer the Plan in accordance with the requirements for eligible deferred compensation plans under Section 457 of the Internal Revenue Code and other applicable federal law; provided, however, that MissionSquare shall not be responsible for the eligible status of the Plan in the event that the Employer directs MissionSquare to administer the Plan or disburse assets in a manner inconsistent with the requirements of Section 457 or otherwise causes the Plan not to be carried out in accordance with its terms. Further, in the event that the Employer uses its own customized plan document, MissionSquare shall not be responsible for the eligible status of the Plan to the extent affected by terms in the Employer's plan document that differ from those in MissionSquare's model plan document. MissionSquare shall not be responsible for monitoring state or local law applicable to retirement plans or for administering the Plan in compliance with local or state requirements regarding plan administration unless Employer notifies MissionSquare of any such local or state requirements.

5. Employer Representations and Warranties

Employer represents and warrants to MissionSquare that:

(a) Employer is organized in the form and manner recited in the opening paragraph of this Agreement with full power and authority to enter into and perform its obligations under this Agreement and to act for the Plan and participants in the manner contemplated in this Agreement. Execution, delivery, and performance of this Agreement will not conflict with any law, rule, regulation or contract by which the Employer is bound or to which it is a party.

(b) Employer understands and agrees that MissionSquare's sole function under this Agreement is to act as recordkeeper and to provide administrative, investment or other services at the direction of Plan participants, the Employer, its agents or designees in accordance with the terms of this Agreement. Under the terms of this Agreement, MissionSquare does not render investment advice, is neither the "Plan Administrator" nor "Plan Sponsor" as those terms are defined under applicable federal, state, or local law, and does not provide legal, tax or accounting advice with respect to the creation, adoption or operation of the Plan and its related trust. MissionSquare does not perform any service under this Agreement that might cause MissionSquare to be treated as a "fiduciary" of the Plan under applicable law, except, and only, to the extent that MissionSquare provides investment advisory services to individual participants enrolled in Guided Pathways Advisory Services.

(c) Employer acknowledges and agrees that MissionSquare does not assume any responsibility with respect to the selection or retention of the Plan's investment options. Employer shall have exclusive responsibility for the Plan's investment options, including the selection of the applicable share class. Where applicable, Employer understands that the MissionSquare Retirement IncomeAdvantage Fund is an investment option for the Plan and that the fund invests in a separate account available through a group variable annuity contract. By entering into this Agreement, Employer acknowledges that it has received the Important Considerations document and the MissionSquare Disclosures and that it has read the information therein concerning the MissionSquare Retirement IncomeAdvantage Fund.

(d) Employer acknowledges that certain such services to be performed by MissionSquare under this Agreement may be performed by an affiliate or agent of MissionSquare pursuant to one or more other contractual arrangements or relationships, and that MissionSquare reserves the right to change vendors with which it has contracted to provide services in connection with this Agreement without prior notice to Employer.

(e) Employer approves the use of its Plan in MissionSquare external media, publications and materials. Examples include press releases announcements and inclusion of the general plan information in request for proposal responses.

6. Participation in Certain Proceedings

The Employer hereby authorizes MissionSquare to act as agent, to appear on its behalf, and to join the Employer as a necessary party in all legal proceedings involving the garnishment of benefits or the transfer of benefits pursuant to the divorce or separation of participants in the Plan. Unless Employer notifies MissionSquare otherwise, Employer consents to the disbursement by MissionSquare of benefits that have been garnished or transferred to a former spouse, current spouse, or child pursuant to a domestic relations order or child support order.

7. Compensation and Payment

(a) **Plan Administration Fee.** The amount to be paid for plan administration services under this Agreement shall be **0.55%** per annum of the amount of Plan assets invested in VantageTrust. Such fee shall be computed based on average daily net Plan assets in VantageTrust.

(b) **Compensation for Management Services to VantageTrust Company, Compensation for Advisory and other Services to the MissionSquare Funds Class M and Payments from Third-Party Investment Options**. Employer acknowledges that, in addition to amounts payable under this Agreement, MissionSquare, or its wholly owned subsidiary, receives fees from VantageTrust Company for investment advisory services and plan and participant services furnished to VantageTrust Company. Employer further acknowledges that MissionSquare, including certain of its wholly owned subsidiaries, receives compensation for advisory and other services furnished to the MissionSquare Funds Class M, which serve as the underlying portfolios of a number of Funds offered through VantageTrust. For a MissionSquare Fund Class R that invests substantially all of its assets in a third-party mutual fund not affiliated with MissionSquare, MissionSquare or its wholly owned subsidiary receives payments from the third-party mutual fund families or their service providers in the form of 12b-1 fees, service fees, compensation for sub-accounting and other services provided based on assets in the underlying third-party mutual fund. These fees are described in the MissionSquare Disclosures and MissionSquare's fee disclosure statement. In addition, to the extent that third-party options are included in the investment line-up for the Plan, MissionSquare receives administrative fees from its third-party settlement and clearing agent for providing administrative and other services based on assets invested in third-party investment options; such administrative fees come from payments made by third-party investment options to the settlement and clearing agent.

(c) **Redemption Fees**. Redemption fees imposed by outside investment options in which Plan assets are invested are collected and paid to the investment option by MissionSquare. MissionSquare remits 100% of redemption fees back to the specific investment option to which redemption fees apply. These redemption fees and the individual investment option's policy with respect to redemption fees are specified in the prospectus for the individual mutual fund and referenced in the MissionSquare Disclosures.

(d) **Payment Procedures**. All payments to MissionSquare pursuant to this Section 7 shall be made from Plan assets held by VantageTrust or received from third-party investment options or their service providers in connection with Plan assets invested in such third-party investment options, to the extent not paid by the Employer. The amount of Plan assets administered by MissionSquare shall be adjusted as required to reflect any such payments as are made from the Plan. In the event that the Employer agrees to pay amounts owed pursuant to this Section 7 directly, any amounts unpaid and outstanding after 30 days of invoice to the Employer shall be withdrawn from Plan assets.

The compensation and payment set forth in this Section **7** are contingent upon the Employer's use of MissionSquare's plan sponsor website system for contribution processing and submitting contribution funds by ACH or wire transfer on a consistent basis over the term of this Agreement.

8. Indemnification

MissionSquare shall not be responsible for any acts or omissions of any person with respect to the Plan or its related trust, other than MissionSquare in connection with the administration or operation of the Plan. Employer shall indemnify MissionSquare against, and hold MissionSquare harmless from, any and all loss, damage, penalty, liability, cost, and expense, including without limitation, reasonable attorney's fees, that may be incurred by, imposed upon, or asserted against MissionSquare by reason of any claim, regulatory proceeding, or litigation arising from any act done or omitted to be done by any individual or person with respect to the Plan or its related trust, excepting only any and all loss, damage, penalty, liability, cost or expense resulting from MissionSquare's negligence, bad faith, or willful misconduct.

9. Term

This Agreement shall be in effect and commence on the date all parties have signed and executed this Agreement, with the Employer signing through DocuSign ("Inception Date"). This Agreement may be terminated without penalty by either party on sixty days advance notice in writing to the other; provided however, that the Employer understands and acknowledges that, in the event the Employer terminates this Agreement (or replaces the MissionSquare PLUS Fund of VantageTrust, as an investment option in its investment line-up), MissionSquare retains full discretion to release Plan assets invested in the MissionSquare PLUS Fund in an orderly manner over a period of up to 12 months from the date MissionSquare receives written notification from the Employer that it has made a final and binding selection of a replacement for MissionSquare as administrator of the Plan (or a replacement investment option for the MissionSquare PLUS Fund).

10. Amendments and Adjustments

(a) This Agreement may be amended by written instrument signed by the parties.

(b) MissionSquare may modify this agreement by providing 60 days' advance written notice to the Employer prior to the effective date of such proposed modification. Such modification shall become effective unless, within the 60-day notice period, the Employer notifies MissionSquare in writing that it objects to such modification.

(c) The parties agree that enhancements may be made to administrative services under this Agreement. The Employer will be notified of enhancements or reduction in fees through electronic messages or special mailings.

11. Notices

Unless otherwise provided in this Agreement, all notices required to be delivered under this Agreement shall be in writing and shall be delivered, mailed, e-mailed or faxed to the location of the relevant party set forth below or to such other address or to the attention of such other persons as such party may hereafter specify by notice to the other party.

MissionSquare: Legal Department, MissionSquare, 777 North Capitol Street, N.E., Suite 600, Washington, D.C., 20002-4240
Facsimile; (202) 962-4601

Employer: at the office set forth in the first paragraph hereof, or to any other address, facsimile number or e-mail address designated by the Employer to receive the same by written notice similarly given.

Each such notice, request or other communication shall be effective: (i) if given by facsimile, when transmitted to the applicable facsimile number and there is appropriate confirmation of receipt; (ii) if given by mail or e-mail, upon transmission to the designated address with no indication that such address is invalid or incorrect; or (iii) if given by any other means, when actually delivered at the aforesaid address.

12. Complete Agreement

This Agreement shall constitute the complete and full understanding and sole agreement between MissionSquare and Employer relating to the object of this Agreement and correctly sets forth the complete rights, duties and obligations of each party to the other as of its date. This Agreement supersedes all written and oral agreements, communications or negotiations among the parties. Any prior agreements, promises, negotiations or representations, verbal or otherwise, not expressly set forth in this Agreement are of no force and effect.

13. Titles

The headings of Sections of this Agreement and the headings for each of the attached schedules are for convenience only and do not define or limit the contents thereof.

14. Incorporation of Exhibits

All Exhibits (and any subsequent amendments thereto), attached hereto, and referenced herein, are hereby incorporated within this Agreement as if set forth fully herein.

15. Governing Law

This Agreement shall be governed by and construed in accordance with the laws of the State of **Wisconsin**, applicable to contracts made in that jurisdiction without reference to its conflicts of laws provisions.

In Witness Whereof, the parties hereto certify that they have read and understand this Agreement and all Schedules attached hereto and have caused this Agreement to be executed by their duly authorized officers as of the Inception Date first above written.

VILLAGE OF WILLIAMS BAY

By ____
Signature/Date

By ____
Name and Title (Please Print)

THE INTERNATIONAL CITY MANAGEMENT ASSOCIATION RETIREMENT CORPORATION doing business as MISSIONSQUARE RETIREMENT

By ____
Erica McFarquhar
Authorized Representative

An execution copy will be provided via DocuSign

Exhibit A

Administrative Services

The administrative services to be performed by MissionSquare under this Agreement shall be as follows:

(a) Participant enrollment services are provided online. Employees will enroll online through a secure site or the Employer will enroll employees through the plan sponsor website.

(b) Establishment of participant accounts for each employee participating in the Plan for whom MissionSquare receives appropriate enrollment instructions. MissionSquare is not responsible for determining if such Plan participants are eligible under the terms of the Plan.

(c) Allocation in accordance with participant directions received in good order of individual participant accounts to investment funds offered under the Plan.

(d) Maintenance of individual accounts for participants reflecting amounts deferred, income, gain or loss credited, and amounts distributed as benefits.

(e) Maintenance of records for all participants for whom participant accounts have been established. These files shall include enrollment instructions (provided to MissionSquare through the participant website or the plan sponsor website), beneficiary designation instructions and all other documents concerning each participant's account.

(f) Provision of periodic reports to the Employer through the plan sponsor website. Participants will have access to account information through Participant Services, Voice Response System, the participant website, and text access, and through quarterly statements that can be delivered electronically through the participant website or by postal service.

(g) Communication to participants of information regarding their rights and elections under the Plan.

(h) Making available Participant Services Representatives through a toll-free telephone number from 8:30 a.m. to 9:00 p.m. Eastern Time, Monday through Friday (excluding holidays and days on which the securities markets or MissionSquare are closed for business (including emergency closings)), to assist participants.

(i) Making available access to MissionSquare's website, to allow participants to access certain account information and initiate certain plan transactions at any time. The participant website is normally available 24 hours a day, seven days a week except during scheduled maintenance periods designed to ensure high-quality performance.

(j) Maintaining the security and confidentiality of client information through a system of controls including but not limited to, as appropriate: restricting plan and participant information only to those who need it to provide services, software and hardware security, access controls, data back-up and storage procedures, non-disclosure agreements, security incident response procedures, and audit reviews.

(k) Making available access to MissionSquare's plan sponsor web site to allow plan sponsors to access certain plan information and initiate plan transactions such as enrolling participants and managing contributions at any time. The plan sponsor website is normally available 24 hours a day, seven days a week except during scheduled maintenance periods designed to ensure high-quality performance.

(l) Distribution of benefits as agent for the Employer in accordance with terms of the Plan. Participants who have separated from service can request distributions through the participant website or via form.

(m) Upon approval by the Employer that a domestic relations order is an acceptable qualified domestic relations order under the terms of the Plan, MissionSquare will establish a separate account record for the alternate payee and provide for the investment and distribution of assets held thereunder.

(n) Loans may be made available on the terms specified in the Loan Guidelines, if loans are adopted by the Employer. Participants can request loans through the participant website.

(o) MissionSquare is authorized by the Employer to establish an unallocated plan level expense account to function as the Administrative Allowance, to be invested as Employer directs.

(p) MissionSquare will determine appropriate delivery method (electronic and/or print) for plan sponsor/participant communications and education based on a number of factors (audience, effectiveness, etc.)

DocuSign

Certificate Of Completion

Envelope Id: 208436D494334FB99D2641769543DED3
Status: Sent
Subject: Please DocuSign: MissionSquare - Village of Williams Bay - New 457 - 305359 - SSC 3767
Source Envelope:

Document Pages: 13	Signatures: 0	Envelope Originator:
Certificate Pages: 2	Initials: 0	MissionSquare Retirement Client Contracts Administ
AutoNav: Enabled		777 North Capitol St. NE
EnvelopeId Stamping: Enabled		washington DC, WA 20002
Time Zone: (UTC-05:00) Eastern Time (US & Canada)		clientcontracts_icma-rc@icmarc.org
		IP Address: 199.91.136.12

Record Tracking

Status: Original 2/16/2023 2:55:47 PM	Holder: MissionSquare Retirement Client Contracts Administ clientcontracts_icma-rc@icmarc.org	Location: DocuSign

Signer Events	Signature	Timestamp
William Duncan bduncan@vi.williamsbay.wi.gov Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign		Sent: 2/16/2023 2:57:49 PM

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp
David Bretl admin@vi.williamsbay.wi.gov Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 2/16/2023 2:57:49 PM Viewed: 2/17/2023 2:24:59 PM
ASA Administration ASA_Administration@missionsq.org Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 2/16/2023 2:57:50 PM
Onboarding - Onboarding@missionsq.org Missionsquare Retirement Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 2/16/2023 2:57:50 PM

Carbon Copy Events	Status	Timestamp
Christopher O'Banner COBanner@missionsq.org Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 2/16/2023 2:57:51 PM

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	2/16/2023 2:57:51 PM

Payment Events	Status	Timestamps

SUGGESTED RESOLUTION
FOR A LEGISLATIVE BODY RELATING TO A 457 DEFERRED COMPENSATION PLAN

Account Number 30-________________________

Name of Employer: ____ State: ________________

Title of Program Coordinator: ____
(see definition below for duties of Program Coordinator)

Resolution of the above named Employer ("Employer")

WHEREAS, the Employer has employees rendering valuable services; and

WHEREAS, the establishment of a deferred compensation plan for such employees serves the interests of the Employer by enabling it to provide reasonable retirement security for its employees, by providing increased flexibility in its personnel management system, and by assisting in the attraction and retention of competent personnel; and

WHEREAS, the Employer has determined that the establishment of a deferred compensation plan to be administered by the ICMA Retirement Corporation serves the above objectives; and

WHEREAS, the Employer desires that its deferred compensation plan be administered by the ICMA Retirement Corporation, and that some or all of the funds held under such plan be invested in VantageTrust, a trust established by public employers for the collective investment of funds held under their retirement and deferred compensation plans;

NOW THEREFORE BE IT RESOLVED that the Employer hereby adopts the deferred compensation plan (the "Plan") in the form of: (Select one)

- ☐ The ICMA Retirement Corporation Deferred Compensation Plan and Trust, referred to as Appendix A
- ☐ The plan provided by the Employer (executed copy attached hereto).

BE IT FURTHER RESOLVED that the Employer hereby adopts the Declaration of Trust of VantageTrust, attached hereto as Appendix B, intending this adoption to be operative with respect to any retirement or deferred compensation plan subsequently established by the Employer, if the assets of the plan are to be invested in VantageTrust.

BE IT FURTHER RESOLVED that the assets of the Plan shall be held in trust, with the Employer serving as trustee, for the exclusive benefit of the Plan participants and their beneficiaries, and the assets shall not be diverted to any other purpose.

BE IT FURTHER RESOLVED that the Employer hereby agrees to serve as trustee under the Plan.

BE IT FURTHER RESOLVED that the ______________________________ (use title of official, not name) shall be the coordinator for this program; shall receive necessary reports, notices, etc. from ICMA Retirement Corporation or VantageTrust; shall cast, on behalf of the Employer, any required votes under VantageTrust; Administrative duties to carry out the plan may be assigned to the appropriate departments, and is authorized to execute all necessary agreements with ICMA Retirement Corporation incidental to the administration of the Plan.

I, ________,Clerk of the (City, County, etc.) of __________________ , do hereby certify that the foregoing resolution, proposed by________________, in the (Council Member, Trustee, etc.) of _____________ was duly passed and adopted in the (Council, Board, etc.) of the (City, County, etc.) of ______________at regular meeting thereof assembled this _____ day of ______________, 20______, by the following vote:

AYES:

NAYS:

ABSENT:

(Seal)

____
Clerk of the (City, County, etc.)

VILLAGE OF WILLIAMS BAY

To: Village Board

C: Doug Snyder
Wayne Edwards
Dave Rowland

From: Dave Bretl

Date: 3/2/2023

RE: Tennis Courts

Recall that the issue of approval of a contract with Sherrer Construction for the installation of tennis and basketball courts was discussed at the last Finance & Personnel Committee meeting. Concerns were raised regarding some of the contract language. I have asked that this be the subject of a special Finance & Personnel Committee meeting with potential board action. The reason for this expedited treatment is because our current low-bidder may not hold pricing beyond March 6. In essence, not to decide this issue would be to decide.

I reviewed the file. **The following are my findings.**

1. It does appear that the project was properly advertised, and bids were publicly opened. The bid tab is attached as Exhibit A.

2. The bid specifications did not provide a form of the contract to be executed; hence the two-page contract from Sherrer (Exhibit B). Ideally the form of the contract to be used is contained in the bid specifications. Sec. 62.15 (3) Stats.

3. The Village's bid specs are attached as Exhibit C as well as two Addenda which appear to have been prepared after contractors raised issues after the specs were advertised and before bid opening. It appears that two diagrams were distributed as part of the bid package (Exhibits D and E).

4. Some of the specifications, such as "six light fixtures mounted on poles," provide the contractor with considerable discretion as to what will actually be installed.

5. I have asked the Village Engineer to review the paving specifications and hope to have that information at our meeting.

6. It is unknown whether the electrical service serving the concession stands will be adequate to support the lighting or whether this is a desirable way to provide power. The latter issue would depend on the future of the concession stand building.

7. The bid of Payne & Dolan is attached for information. (Exhibit F). It raises two salient points in terms of the desirability of raising the profile of the courts as well as the size of the court. The Wisconsin Asphalt Pavement Association WAPA (Exhibit G) recommends that double tennis courts be paved to dimensions of 120 by 114. Our drawing appears to show dimensions of 122 by 110. The length of the courts that we specified would actually accommodate tournament play (not desired from the Village's perspective as I understand it, but certainly not unsafe.) The width is less that the standard if I am reading the WAPA guidance correctly. I have asked the Village Engineer to opine on this issue as well as the orientation of the courts relative to the sun, which is a design issue.

Options

A. We could attempt to negotiate with Scherrer to eliminate or modify contract language that is objectional to the Village, negotiate specific information not detailed in the specifications (like lighting) and additional aggregate and drainage if determined necessary by our engineer. We may be able to come to terms on many of the items; we just need to know what they intend to do before the contract is signed. It is likely, however, that the latter issue (profile of the courts) would not be inexpensive. Given that this was competitively bid, we are not at liberty to arbitrarily increase the contract amount. Any increase in pricing beyond 15 percent, in my opinion would require that this project be rebid.

B. The Village could re-bid the project with new specifications. If this is the course of action, I would recommend that the Village Engineer be directed to perform this work.

C. Rebidding will take some time. If this is the desired course of action then you need to decide when you want the old courts removed. Recall that you authorized a contract with Odling Construction to perform this work. We have yet to execute that contract, however, pending your direction.

I hate to make a "federal case" over tennis and basketball courts, however, they will be with the Village for a long time. If they crack, are prone to flooding or not well-lit they will not serve their intended purpose.

Exhibit A

VILLAGE OF WILLIAMS BAY, WI

BID OPENING

BID# WB-2022-02

DATE: 12-2-2022

TIME: 12:15pm

VENDOR	AMOUNT	BID BOND Y/N
1. Wolf Paving	$255,673	Y
2. Payne & Dolan	$470,000	Y
3. Scherrer Const.	$219,500	Y
4. Tenex Contractors	$399,950	Y
5.		
6.		
7.		
8.		

Exhibit B

Construction Services Agreement ("Agreement") Date: January 6, 2023

1. Contractor: Scherrer Construction Co., Inc. 601 Blackhawk Drive, Burlington, WI 53105 and

Owner: Village of Williams Bay, 250 Williams St., P.O. Box 580, Williams Bay, WI 53191

for good and valuable consideration, agree that Contractor shall furnish the services, material, labor, equipment, tools, and supervision necessary to construct, install and perform at the Project Location for and on behalf of the Owner, the following scope of work (described as the "Work"):

In accordance with the terms of the Invitation to Bid, WB-2022-02, Theatre Rd. Tennis and Basketball Courts and the related Technical Specifications dated November 1, 2022, and which are incorporated herein by reference (the "Project"). Any inconsistency or conflict between the Invitation to Bid and Technical Specifications and this Agreement, the Invitation to Bid and Technical Specifications shall apply.

Project Location: Theatre Road Park, Williams Bay

2. Start Date: April 1, 2023

Completion Date: June 30, 2023

3. The Work shall be performed by Contractor for the stipulated sum of $219,500.00 ("Contract Price") and paid by Owner as follows:

(a) Upon notice by Contractor that the Work has been completed, Contractor shall submit its single invoice for the Work. Owner shall inspect the Work promptly and identify any punch list items for Contractor to correct.

(b) Following prompt completion of the punch list items, Owner shall remit payment in full to Contractor within ten (10) days and upon receipt of payment, Contractor shall furnish Owner with any and all final lien waivers for the Work performed.

(c) Interest shall be due and payable by Owner on late and failed payment(s) at the rate of eighteen percent (18%) per annum from the date payment was due until paid.

4. Any changes in the scope of the Work (including contract time or Contract Price) shall be evidenced by a change order signed by the parties.

5. (a) Contractor represents and warrants that it shall carry its normal and customary insurance coverages and limits for the type of Work performed and as required by the Invitation to Bid, including workers compensation insurance as required by state law to protect it from bodily injury or property damage claims arising out of its operations under this Agreement, whether the operations are by Contractor, Contractor's consultants or subcontractors, anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Owner shall be included as an additional insured under Contractor's commercial general liability policy. Contractor shall provide Owner with a certificate of insurance and all required endorsements prior to commencement of the Work or as Owner may request.

(b) Owner shall carry its normal and customary general liability insurance. Unless otherwise agreed, Owner shall secure and maintain property insurance written on a builder's risk "all risks" completed value or equivalent policy form and sufficient to cover the total value of the subject property including the value of the Work to its full insurable value (replacement cost basis). This insurance shall include the interests of the Owner as "first named insured" and Contractor, subcontractors and sub-subcontractors in the Project as "named insureds." Upon request, Owner shall provide Contractor with a certificate of insurance reflecting coverage set forth above.

(c) Owner and Contractor waive all rights against each other and any of their subcontractors, suppliers, agents, and employees, and each of the other, for damages caused by fire or other causes of loss to the extent those losses are covered by property insurance or other insurance applicable to the Project, except such rights as they have to the proceeds of such insurance. The policies shall provide such waivers of subrogation by endorsement or otherwise.

6. Contractor warrants that the Work shall be in accordance with the terms of the Agreement and free from material structural defects and performed using the standard of care and skill ordinarily applied under construction industry standards for work performed under similar conditions at the time and location of the Project and shall return and repair any Work not in accordance herewith for a period of one (1) year from the date of completion of the Work. All product warranties, if any, are deemed assigned from Contractor to Owner to the extent allowed.

7. (a) If the performance of the Work is delayed by the act, neglect or default of Owner or Owner's agent, or any other reason or reasons beyond Contractor's reasonable control, including without limitation damage caused by smoke, fire or other casualty, strikes, shortage of materials or labor, transportation delays, Contractor's inability to obtain materials and/or supplies after exercising commercially reason efforts as applied in the construction industry due to (or reasonably arising out of) tariffs or similar restrictions, weather conditions, or change orders, unusual delay in deliveries, the unavailability of goods or materials or the disruption of supply chains (including long lead times for goods or materials), including, but not limited to, those resulting from the Coronavirus COVID-19 or other infectious disease, epidemic and pandemic (collectively referred to as a "Disease"), a local, state or federal government or agency order related to a Disease (including those associated with public health and safety), the inability of Contractor or a subcontractor (or sub-subcontractor) to supply sufficient labor as a direct or indirect result of a Disease (all of the above being an "Excusable Delay"), then the completion date shall be extended for a period reasonably equivalent to the time lost by reason of such delay.

(b) Within a reasonable time following the date Contractor knows, or with reasonable diligence should know of an Excusable Delay, Contractor shall notify Owner of the extension of time resulting from such delay. The extension of time shall be based upon Owner's and Contractor's reasonable determination of the delay period. Any time extension to the completion date shall be documented in a change order.

(c) Costs incurred by Contractor in its reasonable determination associated with corrections, mistakes or defects of any kind, or resulting from delays set out in Section 7(a) above impacting Contractor's performance of the Work or the time to complete the Work, or where the scope of the Work under the Contract requires clarification or correction, shall be borne by the Owner, except to the extent such clarification, correction, mistake or defect was caused by the negligent act or omission of the Contractor.

8. (a) Owner and Contractor shall communicate with each other as to any day-to-day inquires and matters relating to performance of the Work as follows: the Contractor's representative is Joe Ehlen (joeehlen@scherrerconstruction.com), and Owner's representative is Becky Tobin (admin@williamsbay.org). All formal notices are to be in writing and (a) delivered personally to the attention of the party executing this Agreement at the address listed on the first page hereof; or (b) mailed by certified mail, postage prepaid, to the attention of the party executing this Agreement at the address listed on the first page hereof. All notices shall be deemed served upon delivery or two (2) days following deposit of the notice in the U.S. mail.

(b) Any dispute involving this Agreement shall be resolved by litigation in a court of competent jurisdiction in the county where the Work is performed. Contractor and Owner waive claims against each other for any and all indirect or consequential damages of any kind arising from an alleged breach or nonperformance under this Agreement.

(c) The performance and interpretation of this Agreement shall be governed in accordance with the laws of the State of Wisconsin. It shall not be construed against the drafter.

(d) AS REQUIRED BY THE WISCONSIN CONSTRUCTION LIEN LAW, CLAIMAINT HEREBY NOTIFIES OWNER THAT PERSONS OR COMPANIES PERFORMING, FURNISHING, OR PROCURING LABOR, SERVICES, MATERIALS, PLANS OR SPECIFICATIONS FOR THE CONSTRUCTION ON OWNER'S LAND MAY HAVE LIEN RIGHTS ON OWNER'S LAND AND BUILDINGS IF NOT PAID. THOSE ENTITLED TO LIEN RIGHTS, IN ADDITION TO THE UNDERSIGNED CLAIMANT, ARE THOSE WHO CONTRACT DIRECTLY WITH THE OWNER OR THOSE WHO GIVE THE OWNER NOTICE WITHIN 60 DAYS AFTER THEY FIRST PERFORM, FURNISH OR PROCURE LABOR, SERVICES, MATERIALS, PLANS OR SPECIFICATIONS FOR THE CONSTRUCTION. ACCORDINGLY, OWNER PROBABLY WILL RECEIVE NOTICES FROM THOSE WHO PERFORM, FURNISH, OR PROCURE LABOR, SERVICES, MATERIALS, PLANS, OR SPECIFICATIONS FOR THE CONSTRUCTION, AND SHOULD GIVE A COPY OF EACH NOTICE RECEIVED TO THE MORTGAGE LENDER, IF ANY. CLAIMANT AGREES TO COOPERATE WITH THE OWNER AND THE OWNER'S LENDER, IF ANY, TO SEE THAT ALL POTENTIAL LIEN CLAIMANTS ARE DULY PAID.

Owner	**Contractor**
Village of Williams Bay	Scherrer Construction Co., Inc.
By: ____________________	By: ____________________
Becky Tobin, Village Administrator	Ben Templin, Executive Vice President
(print name and title)	(print name and title)

Exhibit C

VILLAGE OF WILLIAMS BAY

WB-2022-02
INVITATION TO BID
THEATRE RD. TENNIS AND BASKETBALL COURTS
WILLIAMS BAY, WISCONSIN

The Village of Williams Bay is currently accepting sealed bids for the purchase and construction of new tennis and basketball courts to be located at the Village park on Theatre Rd.

Contracts are awarded to the lowest, most qualified, responsible, and responsive bidder based on the base bid and full consideration of any or all alternatives, as may be in the best interest of Williams Bay. In determining the award of the contract, Williams Bay will consider the scope of the work involved, time of delivery, competency of bidder, bidder's ability to render satisfactory service, and past performance. If two or more bidders submit identical bids, Williams Bay will make award to bidder of its choice and such decision will be final.

Instructions for Bid:

Bidders are required to submit two (2) copies (one original marked as such and one copy) of their bid in a sealed envelope marked #2022-02 to Tina Kolls, Village Clerk, 250 Williams Street, PO Box 580 Williams Bay, WI 53191. All bids must be received by 12:00 p.m. (local time), Friday December 2, 2022. Any bid submitted after this date and time will be rejected. Vendors are responsible for ensuring that the above office receives their bid before the deadline. No faxed bids will be accepted. Bid packets must be clearly labeled with vendor name, return address, bid title, date and the name of the vendor's primary contact for bid questions.

Bids shall be signed with name printed next to the signature. Where Bidder is a Corporation, Bid must be signed with the legal name of the Corporation followed by the legal signature of an officer authorized to bind the Corporation to the contract.

Bidder must be licensed to do business in the State of Wisconsin when required by law.

All questions concerning this Invitation to Bid shall be submitted, in writing, to Becky Tobin, Village Administrator. Questions shall be received by 12:00 noon (local time), November 22, 2022. Questions shall be emailed to admin@williamsbay.org. If necessary, answers to questions will be provided to all specification holders in the form of an addendum.

Site Tour:

Contractors may view the site by contacting the Public Works Director, Wayne Edwards, at (262) 245-2706 or wedwards@williamsbay.org.

Addenda:

All changes in or interpretation of the Bidding Documents prior to bid opening will be made in written addenda issued by the Village of Williams Bay to each recipient of the Bidding Documents on record. All addenda will be issued no later than 72 hours prior to bid opening.

Projected Timetable:

Issue Invitation to Bid	11/1/2022
Questions Due	11/22/2022-12:00 p.m.
Amendments Issued by	11/29/2022-12:00 p.m.
Bids Due	12/2/2022-12:00 p.m.
Committee Approval	12/14/2022
Village Board Approval	12/19/2022

The above schedule is for informational purpose only and is in no way binding upon the Village of Williams Bay.

Bid and Presentation Costs:

Williams Bay will not be liable in any way for any costs incurred by the offerors in the presentation of their Bid in response to this Invitation to Bid nor for the presentation of their Bid and/or participation in any discussion or negotiations.

Compliance With Invitation to Bid:

Bids submitted shall be in strict compliance with the Invitation to Bid. Failure to comply with all provisions on the ITB may result in disqualification. Failure to visit the site or failure to examine any and all contract documents will in no way relieve the successful Bidder from necessity of furnishing any materials or equipment, or performing any work, that may be required to complete the work in accordance with the drawings and specifications. Neglect of the above requirements will not be accepted as reason for the delay in the work or additional compensation.

Implied Requirements:

Products and services that are not specifically addressed in the Invitation to Bid, but which are necessary to provide functional capabilities proposed by the offeror, must be included in the bid.

Non-Discrimination:

In connection with the performance of work under the contract, the contractor agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disability as defined in s.51.01 (5)(a), sexual orientation, national origin, or military service as defined in 111.355(1), Wis. Stats. This provision shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor further agrees to take affirmative action to ensure equal employment opportunities. The contractor agrees to post in conspicuous places, availability for employees and applications for employment, notices to be provided by the contracting officer setting forth the provisions of the non-discrimination clause (Wisconsin Statutes S.16.765 (2).

Indemnification:

The contractor to perform services for Williams Bay shall indemnify, hold harmless, and defend Williams Bay, its officers, agents and employees from any and all liability including claims, demands, losses, costs, damages and expenses of any kind and description or damage to person or property arising out of or in connection with or occurring during the course of any agreement between the contractor and Williams Bay where such liability is founded upon or grows out of the acts, omissions, negligence or misconduct of any agents or employees of the contractor.

Insurance Requirements:

The Contractor further agrees that in order to protect itself and Village, it will at all times during the term of this agreement keep in force and effect worker's compensation, comprehensive general, and auto liability insurance policies by a company or companies authorized to do business in Wisconsin with limits of:

Personal and bodily injury	Per person	$1,000,000
	Per accident	$2,000,000
Property damage:	Each occurrence	$500,000
	Aggregate	$500,000

Coverage shall apply as primary with the Village of Williams Bay named as an additional insured. Contractor shall also provide a copy of the additional insured endorsement. Contractor shall furnish satisfactory proof of insurance to the Village prior to the date of Contract Execution or commencing work for the Village.

Modification and Withdrawal:

Bids may not be modified after submittal. Bidders may withdraw Bids at any time before the Bid opening but may not resubmit them. No Bid may be withdrawn or modified after the Bid opening except where the award of Contracts has been delayed for more than 60 days from the day of the Bid opening.

Proof of Competency of Bidder

Any Bidder may be required to furnish evidence satisfactory to Williams Bay that they Bidder and proposed subcontractors have sufficient means, expertise, financial ability, and experience in the types of work bid to assure completion of the Contract in a satisfactory manner.

Deviations and Exceptions:

Deviations and exceptions from terms, conditions, or specifications will be described fully under the bidder's letterhead, signed, and attached to the Bid. In the absence of such statements, the bid will be accepted as in strict compliance with all terms, conditions, and specifications and the bidder shall be held liable. When substitutions are bid, they must be identified by manufacturer, stock number, and other descriptive information to establish equivalencies. Williams Bay will be the sole judge of equivalency.

Debarment:

The Contractor certifies through signing their Bid that neither the Contractor nor any of its principals are debarred, suspended, proposed for debarment, or declared ineligible by any federal department or agency. In addition, the Contractor shall notify Williams Bay within five business days in writing by registered mail if the Contractor or its principals receive a designation from the federal government that they are debarred, suspended, proposed for debarment, or declared ineligible by a federal agency.

Termination for Default:

The contract may be terminated by the Village of Williams Bay, in whole or in part, in writing, whenever the Village determines that the Contractor has failed to meet performance requirements of the Contract.

Cancellation:

Failure to maintain the required certificates of insurance, permits, licenses and bonds will be cause for contract termination. If the Contractor fails to maintain and keep in force the required insurance, Williams Bay shall have the right to cancel and terminate the contract without notice.

Williams Bay reserves the right to cancel a purchasing contract in whole or in part without penalty due to the non-appropriation of funds or for failure of the contractor to comply with terms, conditions, and specifications of the contract.

Force Majeure:

Neither party to this agreement shall be liable to the other for any cost or damages if the failure to perform the Contract arises out of causes beyond the control and without the fault or negligence of the parties. Such causes may include, but are not restricted to, acts of God, fires, quarantine restriction, strikes and freight embargoes. In all cases, the failure to perform must be totally beyond the control and without fault or negligence of the party.

Permits, Licenses, and Fees:

The selected vendor shall be responsible for obtaining all permits, licenses, certifications etc. required by Federal, State, County and Municipal laws, regulations, codes, and ordinances for the performance of the work required in these specifications and to conform with the requirements of said legislation.

Bid Performance Security:

Each proposal shall be accompanied by a certified check, payable to the Village of Williams Bay, or satisfactory bid bond, in the amount of 5% of the gross bid as a guarantee that if the bid is accepted as the successful bid, such successful bidder will execute and file the proposed contract and performance bond within ten (10) days after notice of award of contract. The certified check will be returned to all unsuccessful bidders after awarding the contract to the lowest responsible bidder. The certified check of the lowest responsible bidder will be returned upon delivery of the product. Failure to submit the performance security may result in rejection of the bid.

Work Changes:

Williams Bay reserves the right to order work changes in the nature of additions, deletions, or modifications without invalidating the Contract.

Technical Specifications
For
Purchase and Construction of Tennis and Basketball Courts
WB-2002-02

Located at

Theatre Rd. Park
Williams Bay, Wisconsin

Prepared By

The Village of Williams Bay

November 1, 2022

Summary of Work

Project Overview:

This project consists of constructing two (2) tennis courts and two (2) half basketball courts. The total area is approximately 18,200 S.F. Project will include fencing, net posts, goal posts, nets, hoops, lighting, and landscaping.

Project Scope:

1. Project Management: This work includes responsible daily onsite management of the project, drawings for local building permits, plan printing, dust protection, site protection, signage, general job site cleanup, and project insurance. Complete administrative management throughout the project and complete documentation expected at completion of the project.

2. Excavate grass and dirt to establish sub-grade. Export to the Village fill site, nearby. There is to be a 1% cross slope for tennis courts and flat at the basketball area. Compact sub-grade.

3. Install 8" crushed stone base. Laser-grade for 1% slope east and flat west; 0% slope north/south tennis courts. Fine grade and compact.

4. Hot asphalt pave 3 1/2" average compacted thickness in 2 layers, on separate days. Stagger paving joints. Includes 12.5 mm binder, 2" thick and LT-9.5 mm surface, 1 1/2" thick.

5. Install 4 coat acrylic color surface for 2 tennis courts. Includes 2 coats of black textured acrylic resurfacer and 2 coats of Pro-Blue play areas, Medium Green foul areas. All coats to be cross applied. All material is 100% acrylic base.

6. Layout and install white masked tennis lines, blended yellow pickleball lines, two (2) sharing the same net.

7. Layout and install two (2) half-court basketball lines on unsealed asphalt with airless sprayed white lines.

8. Two (2) steel 10 feet tall basketball baskets, fan-shaped, rust-free backboard has support braces for stability. Steel double-rim goal with no-fail net lock system has a steel backplate. Pole provides 48-inch safe-play area and is buried 48 inches into the ground.

9. Install two (2) regulation tennis court nets. High performance 42ft tennis nets (regulation doubles). Materials should include heavy duty 3.5 mm braided HDPE net twine & features and quad-stitched optic white headband. An 8kg net conforms to ITF Tournament Regulations.

10. Install 464’ of 10’ high galvanized chain link fence, with 1 5/8” top rail. Chain link fabric galvanized 9-gauge wire, 2’ mesh. Line posts 2” OD, 2240 galvanized steel pipe, spaced 10’ on center, driven 4’. 2-3” OD. 2240 galvanized steel pipe, end posts, driven 5’. Fence is only around the tennis courts. Fence should include a gate on the south end of the tennis courts.

11. Landscaping around the perimeters shall include applying topsoil if needed, leveling off the dirt, and planting grass seed.

12. Install electricity from the concession building to the new courts.

13. Install a minimum of six (6) light fixtures for the tennis courts and minimum of four (4) light fixtures for the basketball court. All lighting should be LED Sports lights mounted to a pole. Lighting system shall include push button court lighting controls and glare shield visor to limit light pollution.

*** Construction shall be in the spring of 2023 and be completed no later than May 31, 2023. Contractor shall coordinate the start date with the Village Administrator.

WB-2022-02
Invitation to Bid
Construction of Tennis and Basketball Courts
for the
Village of Williams Bay, Wisconsin

To: Village of Williams Bay
Village Administrator
250 Williams Street, PO Box 580
Williams Bay, WI 53191

I (We)____,
(A Corporation) (A Partnership) (An Individual)
a responsible Bidder, have received the specifications prepared by the Village of Williams Bay for the above referenced project. I (We) have also received Addenda Nos. _________________ and have included their provisions in this Bid. (NA if there are no Addenda)

I (We) have examined the Bid Specifications and agree to enter into and execute a contract, if awarded, on the basis of this Bid. The Bid price shall be based on the complete work, as described in the Bidding Documents, including all costs incidental to the work, unless specifically indicated otherwise.

I (We) will perform all the work for the stipulated sum of:

<u>Base Bid:</u> (all specified work including any Addenda)

____**(Dollars) $**_____________________

Estimated Start Date: ____________________________________

Estimated Completion Date: ____________________________________

***List any deviations or additional information to your bid on company letterhead.

Bid prepared by: ____
Signature Print Name & Title

Company: ____

Address: ____

Email Address: ____

VILLAGE OF WILLIAMS BAY

WB-2022-02
INVITATION TO BID
THEATRE RD. TENNIS AND BASKETBALL COURTS
WILLIAMS BAY, WISCONSIN

November 21, 2022

ADDENDUM 1

1. Remove all language in item #10 on the Scope of Work (page 8 of 9 in the bid document).

2. Item #10 will read as follows:

    Install 464' of 10' high galvanized chain link fence with 1 5/8" top rail. Chain link fabric galvanized 9-gauge wire 2" mesh. Line posts 2 1/2 " OD, SS40, galvanized steel pipe, spaced 10' on center, driven 5'. Corner and gate posts 3" OD, SS40, driven 6'. Fence is only installed around the tennis court.

250 Williams Street | PO Box 580 | Williams Bay | WI | 53191 | USA | williamsbay.org
Phone: 262-245-2700 | Fax: 262-245-2705

VILLAGE OF WILLIAMS BAY

WB-2022-02
INVITATION TO BID
THEATRE RD. TENNIS AND BASKETBALL COURTS
WILLIAMS BAY, WISCONSIN

November 29, 2022

ADDENDUM 2

1. Construction shall be in the spring of 2023 and be completed no later than ~~May 31~~ June 30, 2023.

2. The tennis court gate shall be 4ft wide. The height of the gate should be a minimum of 6ft tall within the full height of the fence.

3. The basketball court shall have a maximum 1% slope from the crown. The Village intends to use the basketball court as an ice rink in the winter months.

4. The surface asphalt material mix design should be virgin materials and follow ASBA guidelines.

250 Williams Street | PO Box 580 | Williams Bay | WI | 53191 | USA | williamsbay.org
Phone: 262-245-2700 | Fax: 262-245-2705

Exhibit D

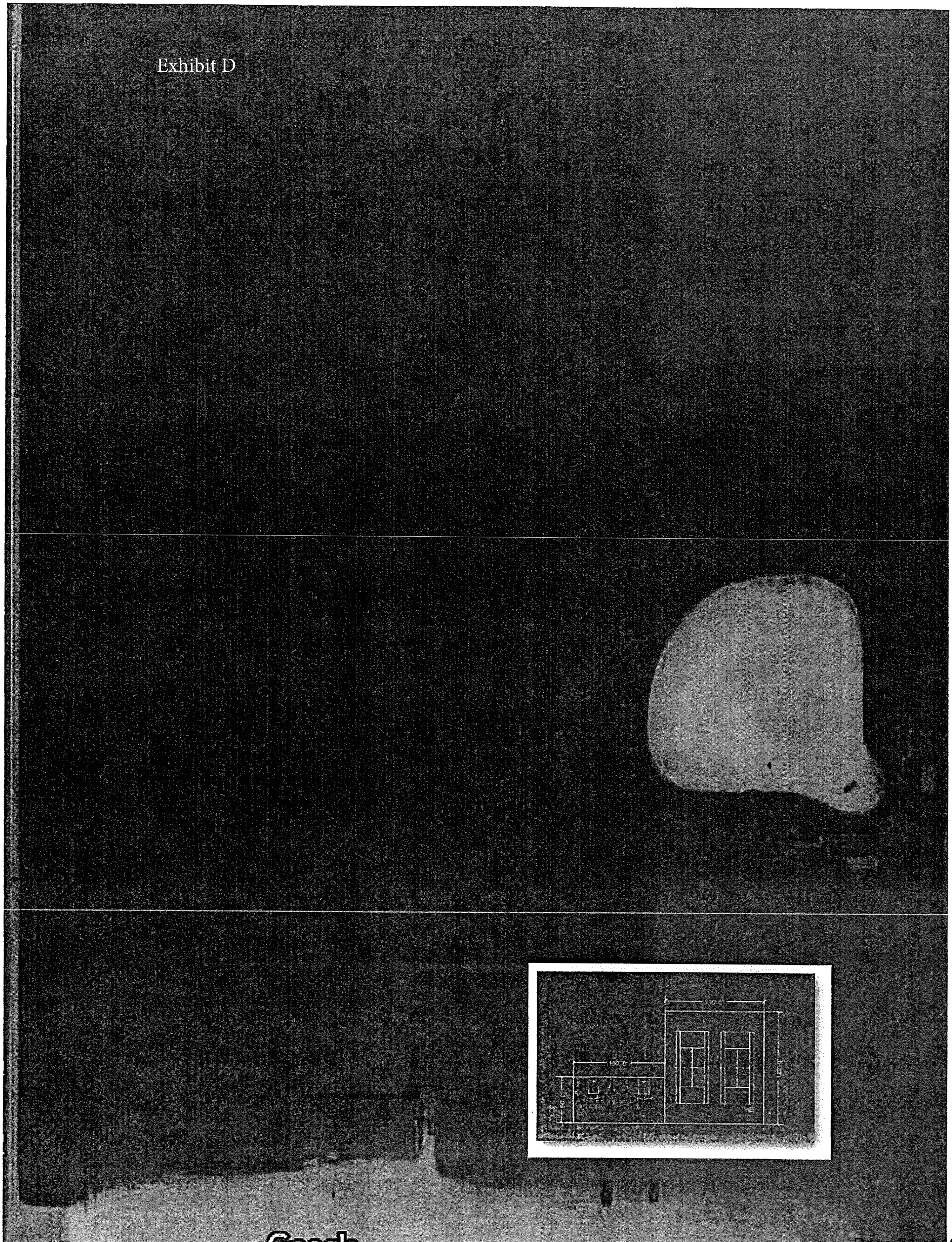

Exhibit E

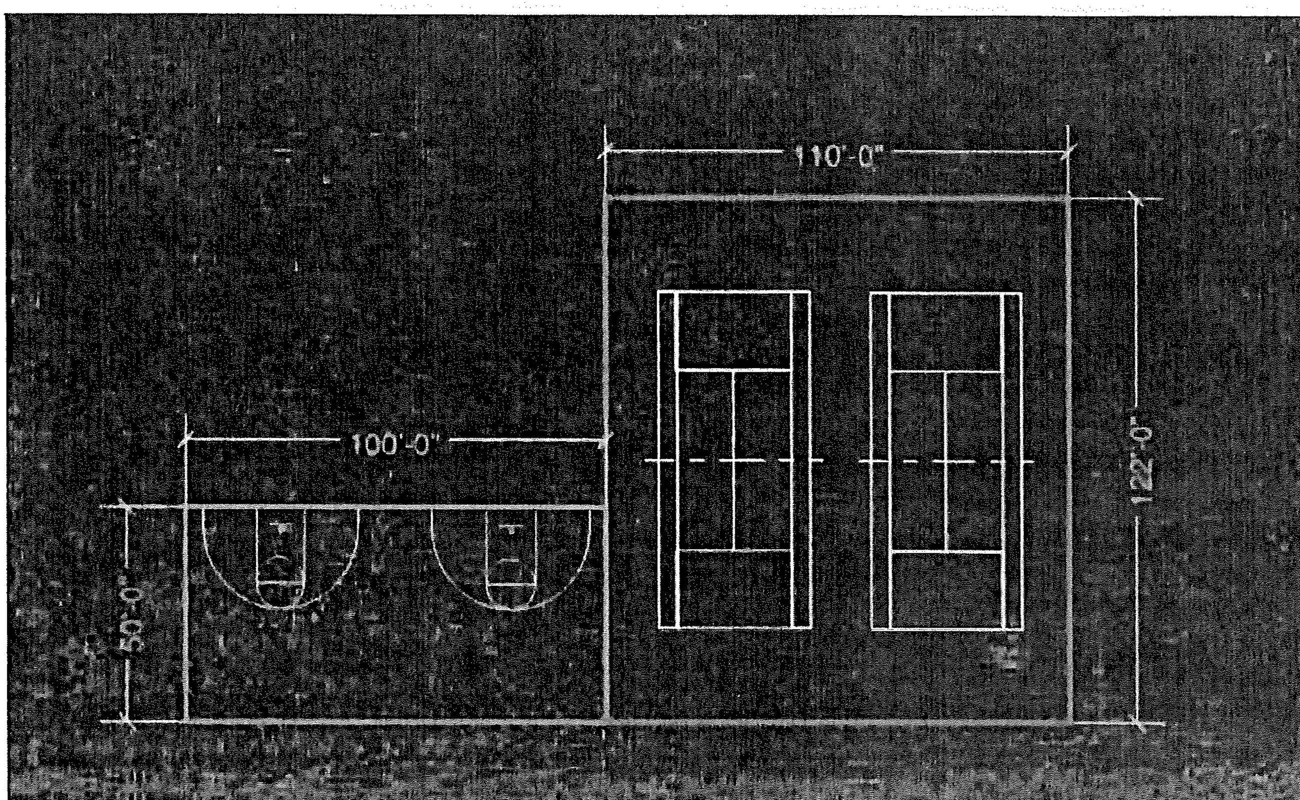

Exhibit F

Payne+Dolan
A WALBEC COMPANY
An Equal Opportunity & Affirmative Action Employer
N3 W23650 Badinger Road | Waukesha, WI 53188
262.524.1700 | walbecgroup.com

To: Village of Williams Bay

December 2nd 2022

Theatre Rd Tennis and Basketball Courts, Williams Bay WI

Payne and Dolan Recommendations

- 120' wide tennis court to meet 2022 WAPA sport court design guide. This allows proper spacing between fence and court, as well as between the courts (Bid pricing is based on the current width of 110' per drawing)
- Importing fill or aggregate to raise the profile of the tennis and basketball courts approx. 1' to install underdrain, and maintain proper drainage away from courts (Bid pricing does not include this)

Exclusions/Clarifications

- Bid Pricing is based on information given in the RFP
- No EBS
- Assumes current electrical panel in concession stand can support new lighting without updated panel
- Does not include any maintenance or repair of existing roadways or parking lots

ORIGINAL

WB-2022-02
Invitation to Bid
Construction of Tennis and Basketball Courts
for the
Village of Williams Bay, Wisconsin

To: Village of Williams Bay
Village Administrator
250 Williams Street, PO Box 580
Williams Bay, WI 53191

I (We) Payne & Dolan, Inc., A Corporation,
(A Corporation) (A Partnership) (An Individual)
a responsible Bidder, have received the specifications prepared by the Village of Williams Bay for the above referenced project. I (We) have also received Addenda Nos. 1 & 2 and have included their provisions in this Bid. (NA if there are no Addenda)

I (We) have examined the Bid Specifications and agree to enter into and execute a contract, if awarded, on the basis of this Bid. The Bid price shall be based on the complete work, as described in the Bidding Documents, including all costs incidental to the work, unless specifically indicated otherwise.

I (We) will perform all the work for the stipulated sum of:

<u>Base Bid:</u> (all specified work including any Addenda)

FOUR HUNDRED SEVENTY THOUSAND **(Dollars) $** 470,000-

Estimated Start Date: APRIL 15TH 2023

Estimated Completion Date: JUNE 30TH 2023

***List any deviations or additional information to your bid on company letterhead.

Bid prepared by: [signature] Jake Brucker, Agent
Signature Print Name & Title

Company: Payne & Dolan, Inc.

Address: W6380 Design Drive, Greenville, Wisconsin 54942

Email Address: JBrucker@payneanddolan.com

ORIGINAL

CERTIFICATE OF CORPORATE RESOLUTION
PART OF THE MINUTES OF MEETING OF DIRECTORS

RESOLVED, that Kurt Bechthold, Mark E. Filmanowicz, Todd B. Hughes, Steven D. Higgins, Charles E. Bechthold, Brian Endres, John C. Bartoszek, Diane Gadzalinski, Kelly Hetherington, Andrew Schmidt, David L. Bechthold, Raymond A. Postotnik, Brian Enders, Christopher Urech, Tyler Winter, Christopher J. Winiecki, Carrie Van Vonderen, Sam Bilhorn, Jake Brucker, Jeffrey Batchelor, Cecilia McCormack, Bridget Kraus and Emily Ayling shall have the authority to sign all contracts for and within the State of Wisconsin and on behalf of Payne and Dolan, Inc.

I, Mark E. Filmanowicz, do hereby certify that I am the duly elected and qualified Secretary and the custodian of the records of Payne and Dolan, Inc., a corporation organized and existing under and by virtue of the laws of the State of Wisconsin; that the foregoing is a true and correct copy of a certain resolution duly adopted at a meeting of the Board of Directors of said corporation convened and held in accordance with the law and the bylaws of said corporation on the 8th day of December 2021, and that such resolution is now in full force and effect.

IN WITNESS WHEREOF, I have signed my name this 2nd day of Dec , 2022

Mark E Fil

Mark E. Filmanowicz, Secretary

inc\crm\Corporate_Resol_PAD_WI.doc

Exhibit G

2022
Sport Court DESIGN GUIDE

WAPA
WISCONSIN ASPHALT PAVEMENT ASSOCIATION

Wisconsin Asphalt Pavement Association
4600 American Parkway, Suite 201
Madison, Wisconsin 53718
608-255-3114
info@wispave.org

Sport Court Design Guide
Version 2022.0
November 1, 2022
wispave.org

INSIDE FRONT COVER
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Foreword

Purpose of this Guide

Outdoor public sport courts have become an increasingly popular attraction. These courts, which often use asphalt materials in their design and construction, can help a community demonstrate its investment and commitment to its residents by increasing an area's aesthetic appeal, adding safe areas for socialization and promoting exercise and fitness.

As consumer demand for sport court installations continues to rise, the Wisconsin Asphalt Pavement Association (WAPA) has developed the 2022 Sport Court Design Guide to provide general guidance and an overview of the construction process. While the playing surface materials on athletic sport courts/running tracks may vary, the steps involved in constructing the asphalt layers below the surface are generally the same.

This guide is intended to assist owners, contractors, design professionals, and hot mix asphalt suppliers in the design and installation of hot mix asphalt for athletic purposes; however, it is not intended to serve as a replacement for any project-required specification. As a result of the wide variation in construction methods, site conditions and materials availability, WAPA recommends consulting the services of a qualified and experienced design professional prior to using this guide for any specific project.

This document will reference the WAPA Asphalt Pavement Design Guide (**wispave.org/designguide**) regarding material requirements and selections for use. Additional information and guide specifications for the construction of asphalt athletic facilities are available from the American Sports Builders Association (ASBA) and other resources listed at the end of this document.

WAPA's Objectives

WAPA and its members are dedicated to fulfilling the following objectives:

- Maintaining strong working relationships through partnerships with industry leaders, governmental agencies, and transportation construction organizations.
- Educating professional engineers, government employees, and the public at large about the latest advancements in asphalt technology as well as the advantages and benefits of asphalt pavements.
- Promoting public interest in the durability, sustainability, economic responsibility, safety features, and other benefits gained through the use of asphalt materials.
- Providing guidance and solutions through proper planning, analysis, design, construction techniques, and maintenance to help keep asphalt the pavement of choice in Wisconsin.

The ultimate quality of an asphalt paving project is directly related to the experience, skill, professionalism, and equipment of the contractor doing the project. This is why WAPA urges consumers to be sure that bidders for their asphalt paving projects are properly qualified asphalt pavers.

WAPA takes pride in presenting the 2022 Sport Court Design Guide and will be happy to provide readers with additional information.

Table of Contents

List of Figures

List of Tables

1 Introduction

1.1 Using Asphalt for Sport Courts

Across the United States, asphalt is the preferred foundational material for outdoor sport court construction projects. It's an even more logical solution for use here in Wisconsin, where extreme temperature changes and humidity levels can wreak havoc on other types of materials. It offers additional advantages as well, such as:

- **Comfort.** The softness of asphalt materials put less stress on a player's joints.
- **Cost-Effectiveness.** Asphalt is an economical and easy-to-maintain material.
- **Durability.** Asphalt pavements are relatively weather resistant and can be constructed to need only periodic maintenance.
- **Adaptability.** Asphalt offers excellent adhesion for many surface types to meet a variety of sporting needs.
- **Reliability.** Asphalt holds paint well, ensuring lines and boundaries remain vibrant over time.
- **Safety.** Asphalt offers high skid resistance, giving players the confidence they need to perform their best.

1.2 Common Types of Sport Court Applications

Asphalt pavement can be used as a surface for any outdoor activity requiring a hard surface. The most common sporting applications for asphalt pavements are tennis courts, basketball courts, pickleball courts, and running tracks.

As discussed in Chapter 5, asphalt can also be used beyond the court to improve players' experience. A paved apron around the court of play extends the usable area, while edging around the perimeter of the court adds an attractive finishing touch. Finally, an asphalt parking lot and pathway to the court allows players and spectators to easily access the space.

1.3 Organization of this Guide

This guide is organized into the following chapters:

- **Chapter 2. Supply and Workforce** identifies the issues to address before choosing a contractor/material supplier for the design and construction of a sport court.
- **Chapter 3. Court Design** provides an overview of common asphalt sport courts and the locational issues that should be considered.
- **Chapter 4. Materials and Hot Mix Asphalt Mixture Designs** gives technical details regarding asphalt pavement designs.
- **Chapter 5. Site Grading/Subgrade Preparation** provides information for selecting and preparing a site.
- **Chapter 6. Construction** offers recommendations for successfully installing a sport court.
- **Chapter 7. Repair, Reconstruction and Renovation** supplies solutions for fixing aging or deteriorating courts.
- **Chapter 8. Cleaning and Care Instructions** suggests recommendations for maintaining a completed sport court.
- **Chapter 9. Steps to Ensure a Successful Project** summarizes guidance from the American Sports Builders Association (ASBA).
- **Chapter 10. References and Links** provides a list of the resources used in this publication.

2 Supply and Workforce

2.1 Qualified Suppliers

Construction of an athletic sport court consists of one or more layers of hot mix asphalt (HMA) placed on a properly prepared foundation. The low-volume asphalt mixtures used for athletic purposes consist of a blend of dense/well-graded aggregates and specified type(s) and grade(s) of asphalt binder.

The manufacturing facility should be capable of producing HMA in accordance with requirements detailed in this guide and all applicable Wisconsin Department of Transportation (WisDOT) specifications on an ongoing and consistent basis. Please contact a WAPA member or the WAPA office if you would like additional information regarding mixtures produced within the state of Wisconsin. A list of WAPA members can be found on WAPA's website at **wispave.org/member-listing**.

Additional information regarding quality asphalt pavements can be found in Chapter 2 of the **WAPA Asphalt Pavement Design Guide.**

WAPA recommends that the contractor/material supplier demonstrate the ability to provide the following:

- Program oversight and quality control of testing measures performed both at the asphalt plant and on the job site.
- A list or organizational chart showing key personnel and their responsibilities at the asphalt plant or laboratory.
- The necessary equipment, materials and labor to install the HMA in accordance with applicable contract documents.

In addition, WAPA recommends the contractor appoint a single person to be responsible for overseeing the previously listed activities and to serve as the point of contact for the owner. This individual should be knowledgeable in all aspects of asphalt mix design, production and installation, and have the ability to authorize any necessary corrective actions or adjustments.

2.2 Workforce Considerations

HMA full-depth pavements, overlays, repairs and coatings should be completed in such a manner as not to unduly delay the progress of the project. Every attempt should be made to complete the upper layer placement without cold joints. The timing and process should be discussed with the owner before proceeding with the work.

3 Court Design

3.1 Overview

Traditional sport courts are comprised of four different layers: subgrade, aggregate base course, hot mix asphalt, and playing surface.

The bottom layer, or the *subgrade layer*, is intended to serve as a barrier between the ground, preventing roots and organic matter from damaging the court. This layer also provides a soil base with a consistent line and grade to support the court's construction.

The second layer, or *aggregate base course*, accommodates proper subsurface drainage and protects the court from frost damage.

The third layer, or *HMA layer(s),* vary greatly depending on the application but is designed to create a stable surface atop which the playing surface will be placed.

The fourth and final layer is called the *playing surface layer*. This is the layer that's visible when looking at a sport court. There are many different playing surface types and coatings, all of which perform best when placed over smooth, sustainable asphalt properly constructed by a qualified contractor.

Additional material details and specifics are provided in Chapter 5 of this Guide.

3.2 Orientation Relative to the Sun

When evaluating the location of an athletic sport court design, it should be laid out to minimize players looking into the sun when serving or when following the flight of a ball. The court should also be laid out to avoid distracting shadow lines and patterns on the court surface in accordance with the ASBA.

It is not unusual to orient a sport court to match a specific season. Courts in the northern United States, for example, are generally used from late April to October. Therefore, northern courts usually are oriented according to the summer solstice occurring approximately mid-season and, therefore, an average of the varying solar angles during this period.

Orientation can be more specific. If a court is to be used most often in the afternoon hours during the spring, as is the case with many collegiate facilities, the court should be oriented west of north for the months of April and May to minimize conflict with the afternoon sun. If the court is to be used for a specific tournament held at the same time each year, the court can be oriented properly for the actual hours of play of the final match. Additional information is provided by the ASBA and can be found at **https://sportsbuilders.org/**.

3.3 Location Relative to Other Factors

Orientation also should take into consideration other structures and features on the site, neighboring property, vehicle and pedestrian traffic and prevailing winds. Property lines, zoning requirements, topography of the site and efficient site utilization should be considered as well.

Another consideration when choosing a sport court site is trees and existing vegetation. Trees in close proximity to the sport court's site should be removed to prevent damage to the court surface from roots, debris, shadowing and staining.

3.4 Court Layouts

Tennis

The basic layout for a tennis court is illustrated below in **Figure 1**.

A single court is typically a minimum of 60 feet by 120 feet, while a double court is 120 feet by 114 feet and 120 feet by 168 feet for a triple court.

Additional references and full details can be found on the **ASBA's Court's Division website**.

Back Space

Tournament tennis requires a minimum of 21 feet from base line to fixed obstruction (i.e., backstop, wall, etc.). In non-tournament play, this distance may be reduced to 18 feet.

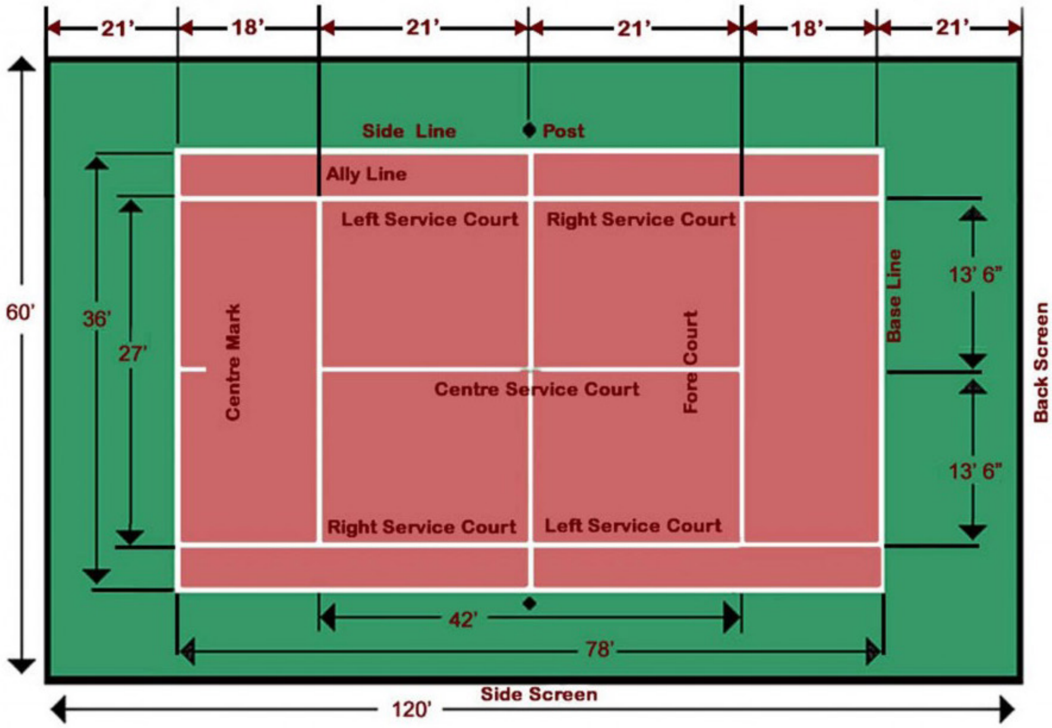

Figure 1. Layout of a Tennis Court.[1]

Side Space

No less than 12 feet is required from the sideline of a tennis court to a fixed obstruction (i.e., side stop, light pole, wall, etc.). Where courts are in battery and where netting is used between courts, the netting is considered to be a movable obstruction, in which case 9 feet is considered a minimum between sideline and netting. This dimension does not restrict obstructions at the net line, such as the net post of the adjacent court or light standards.

Clearance Between Courts

Where courts are constructed within the confines of a common enclosure, the distance between side lines should be not less than 12 feet. Where space permits, additional space between side lines is recommended to enhance play.

Overhead Clearance

The space directly above the area within the playing lines should be free from any overhead obstructions for outside play. Obstructions should be at least 21 feet above the baseline, but 38 feet is recommended over the net line.

Stadium-Tournament Court

For tournament play where judges are required, a clear area a minimum of 70 feet by 130 feet should be provided. This allows a minimum clear playing area of 60 feet by 120 feet with an additional perimeter area for judges as well as a safe overrun area for the players.

Basketball

Common basketball court dimensions are as follows:

- NBA/NCAA regulation basketball court dimensions are 94 feet long by 50 feet wide.
- High school basketball courts measure 84 feet long by 50 feet wide.
- Jr. high school basketball courts measure 74 feet long by 42 feet wide.

An illustration of an NCAA-regulation basketball court is depicted in Figure 2.

A half-court, which is precisely half the size of a full-size basketball court, can offer a great solution for smaller outdoor areas.

Pickleball

The official USA Pickleball Rulebook states that "2.A.3. The minimum playing surface measures 30 feet wide and 60 feet long." Figure 3 shows an illustration of a pickleball court.

1. Image courtesy of Virginia Asphalt Pavement Association. This drawing is intended only for purposes of example and should not be used for design.

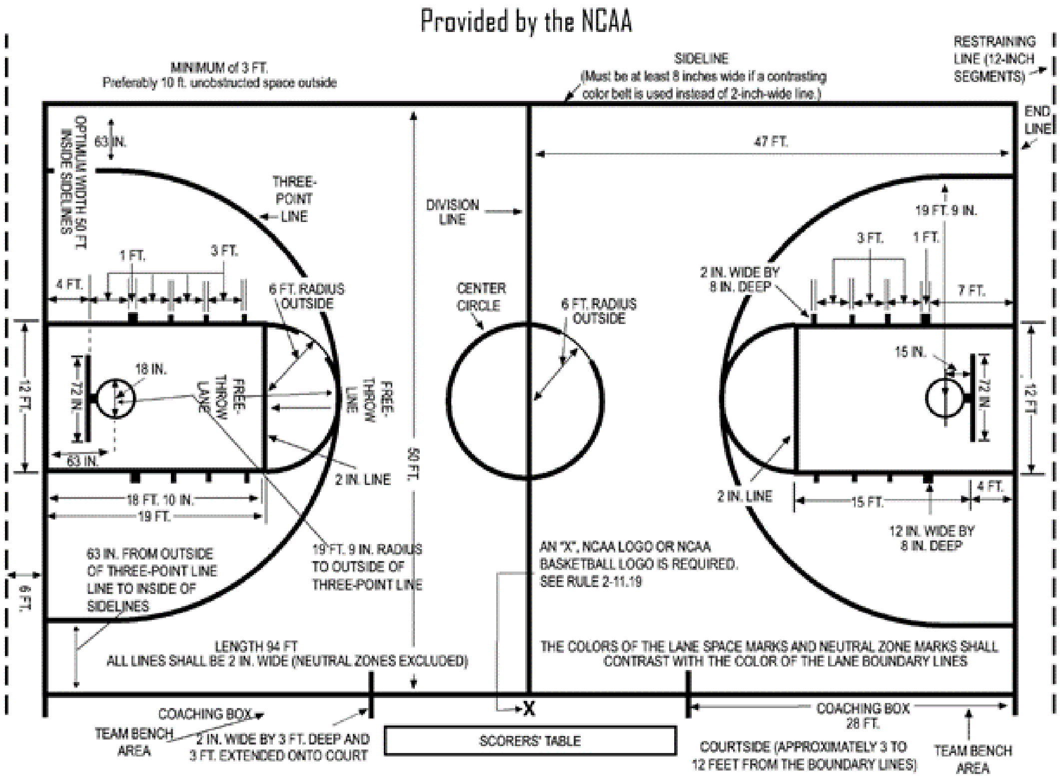

Figure 2. Layout of a Basketball Court.[2]

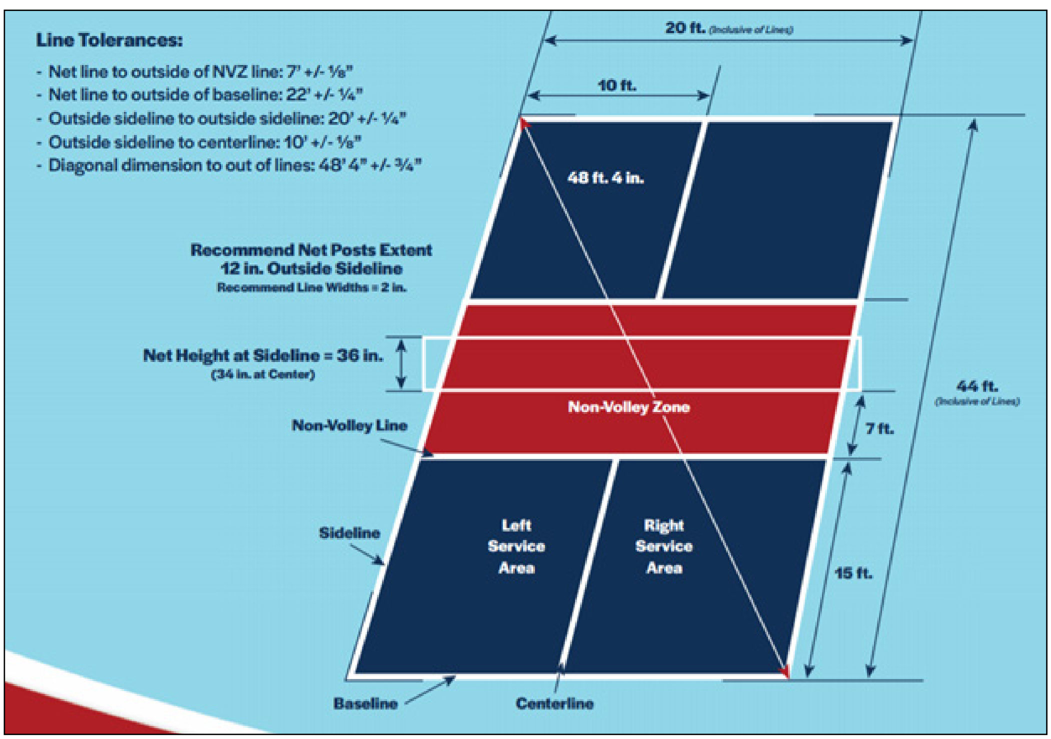

Figure 3. Diagram of a Pickleball Court.[3]

2. Image courtesy of NCAA. This drawing is intended only for purposes of example and should not be used for design.
3. Image courtesy of USA Pickleball. This diagram is intended only for informational purposes and should not be used for design.

4 Materials and Hot Mix Asphalt Mixture Designs

4.1 Hot Mix Asphalt Mix Design Recommendations

Mix designs should be created in accordance with the WisDOT Mix Design Method, or alternatively the Asphalt Institute Manual Series #2 (MS-2), current edition or equivalent. The HMA mix designs developed should meet the Superpave Method for compactive effort in the laboratory meeting the requirement of a WisDOT LT HMA Mixture.

Alternate low volume asphalt mix designs may be allowed with the Engineer's approval prior to time of bidding (Asphalt Institute MS-2 50-gyration mix).

The mix designs should be approved prior to use, and any WisDOT design being used should be approved for the current construction year. Additional information can be found in Chapter 4 of the **WAPA Asphalt Pavement Design Guide**.

Aggregate Recommendations

Master gradation ranges for aggregates used in asphalt mixtures are specified by WisDOT as shown in Table 1. The aggregate blend should consist of hard durable particles containing no more than a combined total of one percent, by weight, of lumps of clay, loam, shale, soft particles, organic matter, adherent coatings, and other deleterious material when tested according to AASHTO T112. If the blend contains materials from different deposits or sources, the material from each deposit or source should be verified to meet the minimum requirements listed in Table 2 on page 7.

Performance Graded (PG) Binder Recommendations

Binder(s) should meet typical agency specification for new construction on low volume roadways (WisDOT PG58-28/southern region and PG58-34/northern region). The typical binder designation used is an “S,” or standard grade; however, for increased durability and protection from weathering an "H" grade binder is recommended. Additional details regarding binder designations can be found in Chapter 3 of the **WAPA Asphalt Pavement Design Guide**.

Recycled/Reclaimed Asphalt Materials (RAM) Recommendations

Reclaimed Asphalt Pavement (RAP), with percentages given by total weight:

- May be used up to 20 percent in the Lower Layer and Leveling Layers

The current ASBA Tennis Courts Construction & Maintenance Manual does not recommend the use of RAP in the upper layer. However, per the ASBA Asphalt Guidelines if documentation can prove/show that all the aggregates within the RAP are hard, uniform, free of contaminants, and won't rust, then RAP is allowed at the architect's/engineer's discretion. WAPA advises no more than 15 percent RAP in the upper layer.

All RAP should be crushed and screened over the appropriate screen deck to minimize any "oversized" material, based on the hot mix asphalt NMAS size of the mixture being used.

- No Reclaimed Asphalt Shingles (RAS) are allowed in athletic sport court facilities HMA regardless of layer.

Table 1. Aggregate Gradation Master Range and VMA Requirements

Sieve	Percent Passing by Designated Sieves (Nominal Size)			
	No. 3 (19.0mm)	No. 4 (12.5mm)	No. 5 (9.5mm)	No. 6 (4.75mm)
25.0mm	100	–	–	–
19.0mm	90 - 100	100	–	–
12.5mm	90 max	90 - 100	100	–
9.5mm	90 max	90 - 100	100	–

Table 1. Aggregate Gradation Master Range and VMA Requirements

Sieve	Percent Passing by Designated Sieves (Nominal Size)			
	No. 3 (19.0mm)	No. 4 (12.5mm)	No. 5 (9.5mm)	No. 6 (4.75mm)
4.75mm	—	—	90 max	100
2.36mm	23 -49	28 - 58	32 - 67	90 max
1.18mm	—	—	—	30 - 55
0.60mm	—	—	—	
.075mm	2.0 - 8.0*	2.0 - 10.0*	2.0 -10.0*	6.0 - 13.0*
% VMA	13.0 min	14.5 min	15.5 min	16.0 - 17.5

* These values should include additional amount of anticipated breakdown during production.

WAPA recommends that submitted HMA mix designs should contain the following information:

- Individual aggregate gradations and consensus property data.
- Plot (0.45 power graph) of final aggregate blend.
- Bulk (dry) specific gravity of all aggregates and final blend (Gsb) including natural/virgin materials as well as reclaimed asphalt pavement (RAP).
- Asphalt PG binder(s) used in asphalt mixture(s) (certification or bill of lading).
- Optimum percent asphalt binder (Pb) at design and production (regressed air voids for WisDOT designs).
- Bulk specific gravity (Gmb) of mix at design and calculated for production (regressed for WisDOT designs).
- Theoretical maximum specific gravity (Gmm) at design and calculated for production (regressed for WisDOT designs).
- Voids in the mineral aggregate (VMA) and voids filled with binder (VFB).
- Dust-to-binder ratio using Pbe.
- All design data and associated design curves.
- Any current quality control testing of the mixture, aggregates, and RAP proposed to be used on the project should be available upon request.

Table 2. Mix Design Method Recommendations

Aggregate Properties	Superpave
LA Wear (AASHTO T96) 100 revolutions (max % loss)	13
500 revolutions (max % loss)	50
Soundness (AASHTO T104)	12
Freeze/Thaw (AASHTO T103 as modified in CMM 860.2.7) (specified counties, max % loss)	18
Fractured Faces (ASTM D5821 as modified in CMM 860.7.2) (1 face, % by count)	65
Flat & Elongated (ASTM D4791) (max % by weight)	5 (5:1 ratio)
Fine Aggregate Angularity (AASHTO T304, method A, min)	40[1]
Sand Equivalency (AASHTO T176, min)	40
Clay Lumps and Friable Particle in Aggregate (AASHTO T112)	≤1%
Mixture Properties	**Superpave**
Air Voids @ Optimum AC with 2-hr aging (cure time)	4.0%[2]
Compactive Effort	Gyrations
Nini	6
Ndes	40*
Nmax	60
Voids Filled with Binder (VFB or VFA)	68 - 80[3]
Dust to Binder Ratio (% passing 0.075mm/Pbe)	0.6 to 1.2[4]
Tensile Strength Ratio	75% min[5][6]

* 50 gyrations if done per Asphalt Institute MS-2.
[1] 4.75mm mixture (#6 WisDOT mix) requirement is 43.
[2] Determine the target JMF asphalt binder content for production from the mix design data corresponding to 3.0 percent air voids (97 percent Gmm) target at the design number of gyrations (Ndes). Add liquid asphalt to achieve the required air voids at Ndes.
[3] 4.75mm (#6 WisDOT mix) requirement is 67-79.
[4] 4.75mm (#6 WisDOT mix) requirement is 1.0 to 2.0.
[5] Eliminates freeze-thaw conditioning cycles from the TSR test procedure testing.
[6] Run TSR at asphalt content corresponding to 3.0 percent air void regressed design using distilled water for testing.

4.2 Mixture Testing Recommendation

Testing required to validate or control the mix supplied is the Paving Contractor's responsibility and should be included in the bid cost for providing these HMA items. Daily Gmm values should be made available to the contractor's density technician for verifying in-place density within a timely manner from the start of production. Asphalt content, gradation, Gmm, and Gmb testing should be performed on the first day of installation for each mixture used. Testing will continue for every 500 tons, with a minimum of one test required daily once production exceeds 100 tons.

Quality control sampling/testing should be completed in accordance with WisDOT standards/guidance/procedures at the above mentioned frequency.

Table 2 lists the requirements for a mixture design with an understanding that these properties will vary during mixture production. Quality control testing will target percent air voids (Va) and percent 0.075mm gradation within +/-1.0 percent. The voids in mineral aggregate (VMA) design target is a minimum, but should not exceed more than -0.3 percent from target. The asphalt binder content (Pb) should not exceed more than -0.4 percent from the design target.

Density Testing Recommendation

Traditional HMA construction allows for additional consolidation of the pavements placed for a certain period of time due to its flexible nature. However, for this type of construction there is no additional loading or compactive effort, so the in-place density will remain throughout the pavement life. This makes the densification of the HMA layers a very critical component to the success of the project.

The average sub-lot (daily or 500 tons, whichever is less) in-place density requirement for upper layer mixtures shall target 94.0 percent of Gmm with no value less than 92.5 percent of Gmm. Lower layer and leveling installation of asphalt shall target 92.0 percent of Gmm.

Record Keeping

Printed records of mixture components, test results, certifications, etc. should be available upon request for each day of HMA production.

These material recommendations are a collection of WisDOT standard specifications and guidance documents, ASBA Executive Summary on Asphalt, ASBA Guidelines for Tennis Court Construction and ASBA Asphalt Guidelines.

5 Site Grading/Subgrade Preparation

ASBA has stated that the greatest single factor in the deterioration of recreational surfaces is the presence of standing water on or free water beneath the surface. Proper site preparation is critical to the long-term performance of sport court facilities. Since these facilities typically require large site areas, cutting and filling is common. In addition, topsoil, rocks, tree stumps, large roots or other deleterious material must be removed from the site, and any holes filled and compacted. Any low areas must be raised by the addition of suitable structural fill. Both existing soil and fill material must be compacted before construction can continue. Suitable fill material must be stable, compactible, and free of organic matter that will decompose and settle over time.

Appropriate fill material should be placed in lifts no greater than 6 inches and thoroughly compacted (95 percent of Standard Proctor) before the next layer is placed over suitable structural soils. Fill should not be placed over wet soils. This process should be repeated until the desired grade shown on the plans or established by the owner has been achieved.

Proof-rolling is also recommended as a good indication of the stability of the pavement subgrade. Proper grading of the site and proper slope of the playing surface provides a means of removing water from the court surface. Excavation, filling, grading and compaction of the site and construction of the subgrade should be performed in such a way that the finished court surface is 6 to 12 inches above the surrounding ground (depending on the type of court being constructed), and slopes between 0.83 percent (1:120) and 1.00 percent (1:100). The subgrade should be shaped to true and even lines to ensure a uniform thickness of aggregate base course. The subgrade surface should have a maximum variance of +/- half an inch. The base course depth should be suitable to support both asphalt paving equipment and material delivery vehicles.

5.1 Drainage and Slope Provisions

Each court should be sloped in a true plane. The court should slope side to side, end to end or corner to corner. The natural slope of the terrain where the court is being constructed should be considered and the shortest direction for good drainage and water removal should be chosen.

Tennis courts should not slope from the net line toward the baselines or from the baselines toward the net, since this has the effect of raising or lowering the net. Neither should they be sloped from the center line to the sides since this creates a ridge in the court. The entire court should be sloped in one plane. When multiple courts are constructed adjacent to one another, a drainage swale in the asphalt between the courts is desired.

Consideration should be given to blending the plane of the tennis court back into the surrounding surface. The maximum slope for the lawn surface should be 10 percent (1:10) within 5 feet of the edge of the asphalt.

Stormwater runoff can cause erosion, surface abrasion or undermining of the areas around the edges of the court where the storm water is discharged, leading to pavement failure. Channel drains are an effective way to intercept the water on the courts but must be kept out of the area of play.

Some sites may require retaining walls to stabilize cut and fill, and drainage should be included with all walls. This includes footing drains as well as weep holes (openings in the wall to permit passage of water collected behind the wall and placed so they do not drain directly onto the court, causing staining and degradation of the court surface). If a retaining wall abuts the court surface, a channel drain should be constructed between the wall and the court.

5.2 Soil Conditions

Proper grading and adequate compaction play a huge role with regard to a successful project.

Most sites will require a soils investigation to determine soil type and subsoil conditions, depth to ground water and surface drainage patterns of the site. Although soil survey reports are available, it is recommended in most situations that soil borings or test pits be taken and evaluated by a geotechnical engineer.

If no soil problems are suspected, hand-dug test pits or backhoe excavation may provide sufficient information to determine if a particular site is suitable. This will also provide information with regard to topsoil removal, requirements for excavation and/or fill and water-management needs.

Sand and gravel, sandy loam and sandy clay, drain and dry quickly and compact well and are desirable soils for this type of construction. Peat, humus and loam are composed largely of decaying organic material, are difficult to compact and often settle as decomposition continues. These soils also absorb water, which makes them more susceptible to freeze-thaw concerns. Organic soils should be removed and replaced with a suitable structural fill to support construction equipment and prevent premature failure of the asphalt pavement.

Any soft areas showing signs of rutting or pumping from construction equipment loading should be mitigated prior to stone placement and again prior to asphalt paving.

5.3 Surface Drainage Types

Surface drainage controls the removal of above-ground storm water. Surrounding areas should not drain onto the court. There are three types of surface drainage systems: open, closed and combination.

Open drainage systems use swales (a natural drainage channel covered with vegetation, usually grass) and gutters (a paved swale) to divert water away from tennis courts by gravity.

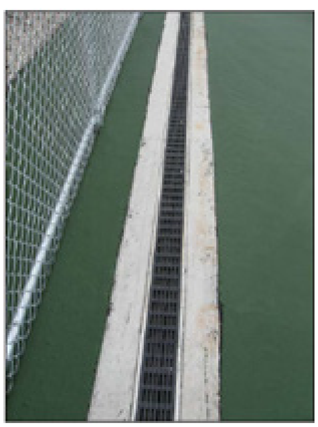

Figure 4. An image of an open drain.[4]

Closed drainage systems are made up of pipes linking drainage structures such as channel drains and catch basins. With a closed system, water is not guided along the surface; it is collected by the structures and diverted through pipes. A grated drain, or channel drain, is a type of gutter with a grate on top that prevents debris from entering. Channel drains can also be set at a uniform grade, eliminating the need for a sloped swale or gutter.

An effective way to capture stormwater from a court and the surrounding area is to install catch basins and underground piping. Catch basins are installed below grade with a grate on top. Water is directed by swales, gutters or subsurface piping to the catch basin, which directs it into pipes to carry it away from the site.

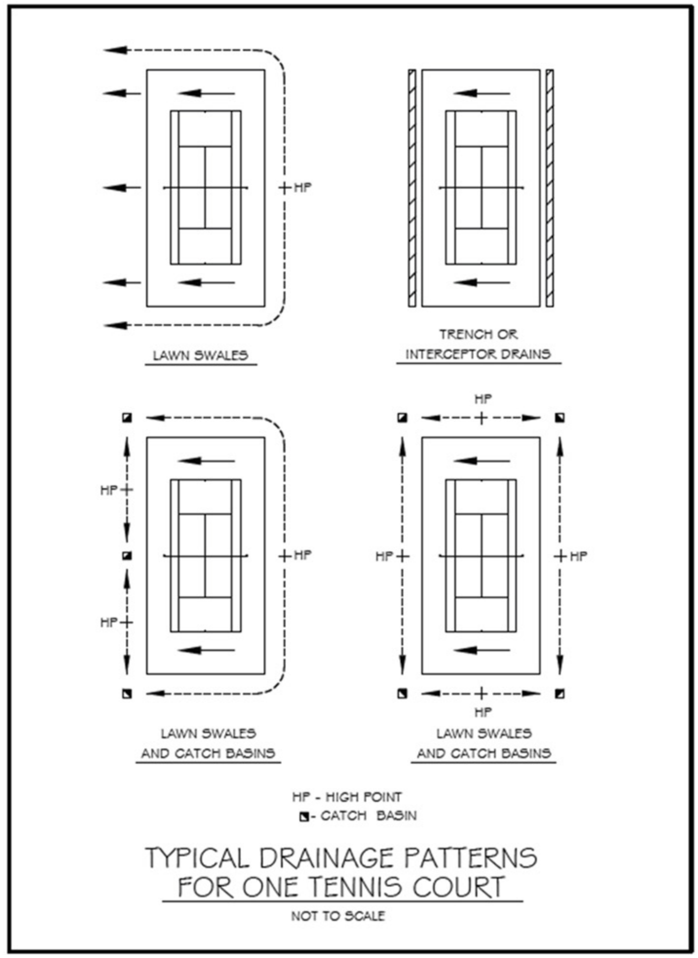

Figure 5. A diagram of tennis court drainage designs.

Combination systems describe most surface drainage systems, which are made up of a combination of swales, gutters, catch basins and/or pipes.

5.4 Surface Drainage Considerations

Surface drainage must be engineered based on the tributary area, the types of soils, the ground cover and similar site factors. Stormwater management has become increas-

4. The images on this page are provided courtesy of ASBA.

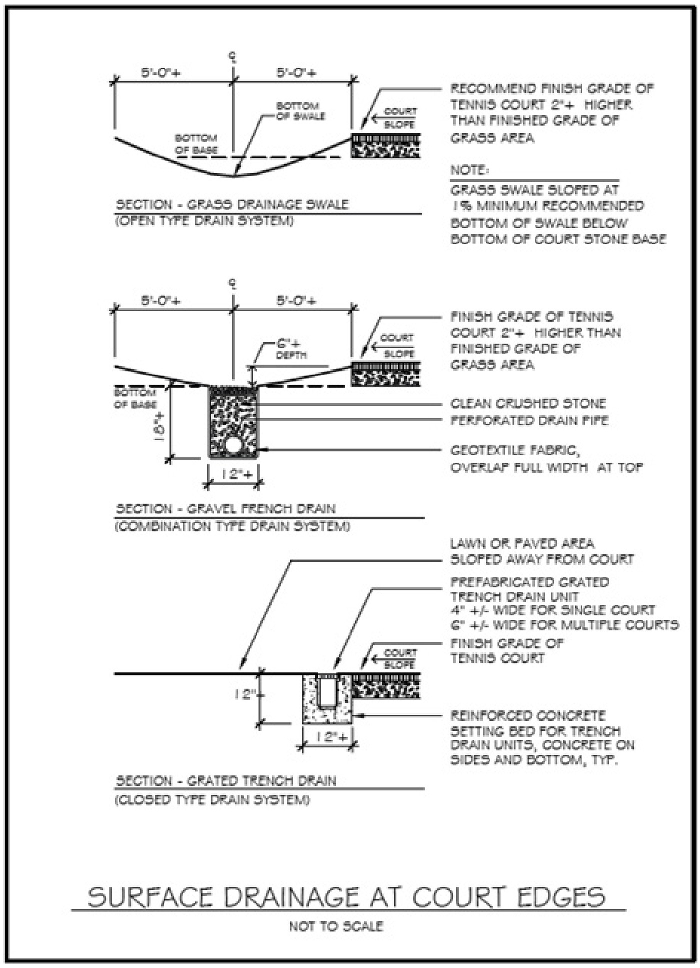

Figure 6. Surface drainage at court edges.[5]

ingly important and must be carefully considered when selecting a site.

All surface drainage systems should be sized to convey frequent stormwater flows from the tennis court as well as areas around the court. Drainage is critical to the success of the tennis court surface, therefore water should be collected and conveyed away from the court pavement, keeping the pavement subbase and subgrade dry.

Figure 7. An image of a French drain.[6]

5.5 Subsurface Drainage

Subsurface drainage addresses the management of water below ground that is present in soil or rock. One way of controlling subsurface water is by construction of a gravel trench drain, also called a French drain, which places an underground barrier between the court and subsurface water. The most common type of French drain consists of a trench around the perimeter of the facility and at least 5 feet outside of the edge of pavement to prevent water from percolating

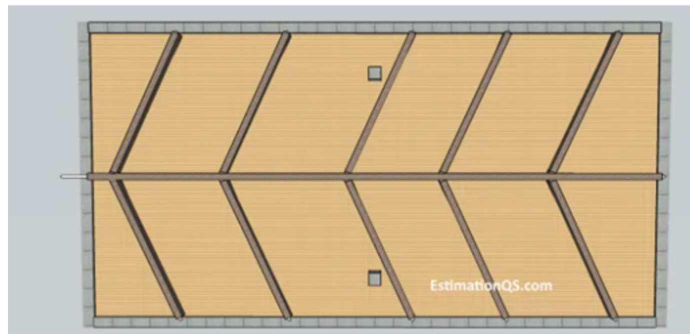

Figure 8. An illustration of drain tiles placed in a herringbone pattern.[7]

out of the drain and under the court. The trench should be 12 to 24 inches wide and usually 24 to 48 inches deep. If the drain is placed on aggregate base and not at the bottom of the trench, it should be at least 18 inches deep, but not less than the depth of the subgrade of the court(s), depending on local conditions.

Figure 9. An image of a finished trench.[8]

Drain tile is another form of a French drain used to collect and redirect the subsurface water. The pipes will be placed in a herringbone pattern as shown in Figure 8. A 1.5- by 2-inch-deep trench will be dug below subgrade for each of the drain pipes. The center pipe (4-inch diameter) is approximately 120 feet long. The connecting pipes (3-inch diameter) are placed in a herringbone pattern at a 25-degree angle from the center pipe and are roughly 30 feet long.

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5. **Image provided courtesy of ASBA.**
6. **Image provided courtesy of ASBA.**
7. Illustration courtesy of Estimationqs.com.
8. **Image provided courtesy of ASBA.**

Traditionally, a geotextile fabric is used to line the bottom of the trench and up the sides. Open-graded drainage material is placed in the bottom of the drainage trench as pipe bedding to move the water away from the court; a slope of at least 1 percent (1:100) is desired. Next, a perforated pipe is installed on top of the aggregate, perforations down. A porous cover (geotextile filter fabric) is placed over the pipe to prevent silt or other materials from clogging the pipe. The remainder of the trench is backfilled with open-graded drainage material and finished with smaller washed stone for an open drain or, when a closed drain is required, with sod or a drainage swale. Usually, French drains are covered with grass and do not handle large volumes of surface drainage. The drains are used as a capillary barrier to prevent any vertical movement of the water and to move it away from the site.

In the case of both surface and subsurface drainage, proper slope and consistency of grade is important. It is also important that an appropriate means of disposing of the collected water be identified and conform to local, state and federal regulations for stormwater management.

6 Construction

6.1 Placement of Layers

Climate plays a critical role in the development/construction of the sport court facilities. The more frequent the freeze-thaw cycles and the greater the depth the ground freezes, the more carefully soil conditions, drainage and subgrade construction must be considered.

The material recommendations in this section are a collection of WisDOT standard specifications and guidance documents, ASBA Executive Summary on Asphalt, ASBA Guidelines for Tennis Court Construction and ASBA Asphalt Guidelines. See Chapter 9 of this document for links.

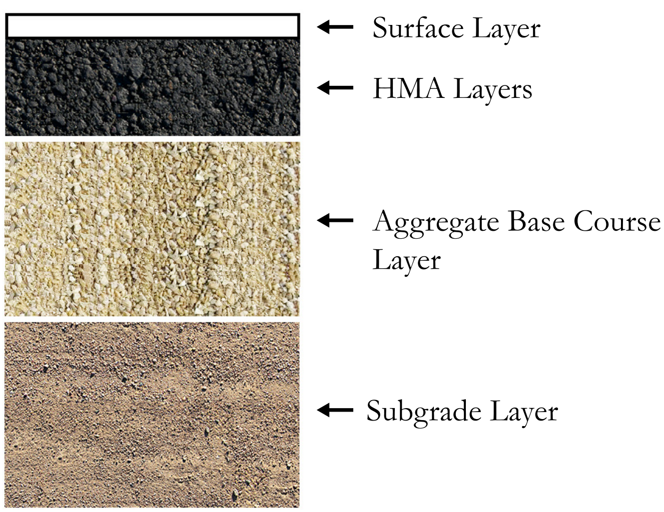

Figure 10. Asphalt Sport Court Layers

Subgrade Layer Preparation

A soil examination should be conducted to determine its suitability as a foundation material. Trees and other vegetation, including root systems, must be removed from the site and the soil treated with a sterilizing agent that will effectively inhibit future flora growth.

The site should be excavated and filled to provide the finished grades shown on the plans or established by the owner. Because the earth subgrade must serve both as a working platform to support construction equipment and as the foundation for the pavement structure, it is imperative that the subgrade is properly compacted and graded. All topsoil should be removed and low-quality soils should be improved by adding cement or other suitable admixtures such as lime or granular materials. Any soft, yielding material should be replaced with a suitable material that is not greater than 6-inch lifts and compacted to a density of 95 percent standard density at optimum moisture. Good compaction is particularly important in sport court construction, as subsequent settlement of the subgrade may cause cracking in the court surface.

All excavating, filling, grading requirements and compacting work of the subbase should be performed so that the finished subgrade is 6 to 12 inches above the surrounding ground and slopes not less than 0.83 percent (1:120) and not more than 1 percent (1:100). The subgrade should be shaped to true and even lines to ensure a base course that is uniformly thick. The subgrade surface should have a maximum variance of plus or minus 1/2 inch.

Aggregate Base Course Layer

The crushed aggregate should be placed and compacted to a uniform thickness and required density with a maximum grade variance of 1/2 inch in 10 feet measured in any direction. All aggregate material should conform to Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction Section 305. Additional details can be found in Chapter 3 of the **WAPA Asphalt Pavement Design Guide**. The compaction of this material is critical to the performance of the completed asphalt pavement, regardless of the thickness of the course being placed. Compacted thickness will depend on local soil and climatic conditions but compacted aggregate thickness should not be less than 4 inches. For poor or questionable soil types, use a minumum thickness of 8 inches.

The base aggregate material should be placed in a manner that produces uniform thickness, and compacted to 95 percent Standard Proctor test at a minimum with equipment capable of providing uniform density.

HMA Placement Recommendations

Hot mix asphalt should not be placed when the base aggregate is wet or contains excessive moisture, when the temperatures are below 50F, or during rainy weather.

Prior to placement of successive pavement layers, the previous course should be cleaned and, if needed, a tack coat of emulsified asphalt applied. The tack coat may be eliminated if the previous course is freshly placed and thoroughly cleaned. The tack coat material should meet the Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction Section 455 using the appropriate material types and application rate(s). See Appendix A for additional details.

HMA Lower Layer

The specified thickness of the lower layer should be placed in one lift on the prepared aggregate base course layer. The HMA mixture should have a maximum aggregate size of 3/4 inch to 1/2 inch (WisDOT Gradations No. 3 or 4) per WisDOT Standard Specification Table 460-1 to a compacted thickness of not less than 2 1/4 inches or 1 3/4 inches respectively. The material should be compacted using the appropriate equipment to achieve the required uniform density previously identified in Chapter 4. The finished base should conform to the true lines and grade as established on the plans or by the owner with a variance of not more than 1/2 inch when measured with a 10-foot straight edge.

It is recommended that the lower layer(s) should not remain without the upper layer being placed over an extended period of time. The lower layer should be kept clean and must be completely dry before proceeding. If the minimum thicknesses referenced above cannot be met, the upper layer mixture should be installed as an additional lower layer.

HMA Leveling Layer

If the minimum required thickness of the HMA lower layer is unable to be constructed, an HMA leveling layer should be placed over the aggregate base course. The mixture should have a maximum aggregate size of 1/2 inch to 3/8 inch (WisDOT Gradations No. 4 or 5) per WisDOT Standard Specification Table 460-1, and a compacted thickness of not less than 1 1/2 inch.

This mix should be spread and compacted by methods and in a manner that produces a uniform density and thickness but does not require density testing. The finished leveling layer should not vary more than 1/4 inch in 10 feet when measured in any direction.

HMA Upper Layer

There can be only one upper layer, all other layers are considered to be lower layers.

The upper layer should be installed uniformly, to all finished lines and grades. It should be smooth, durable, stable and impervious to protect the lower layer(s). It is recommended that the upper layer shall be built with a fine-graded mixture having a maximum aggregate size of 1/2 inch or 3/8 inch (WisDOT Gradations No. 4 or 5) per WisDOT Standard Specification Table 460-1. It is recommended that the upper layer be installed to a minimum compacted thickness of 1 3/4 inch or 1 1/4 inch.

Recycled Asphaltic Materials (RAM)

RAM is comprised of asphalt millings, HMA pavement demolition or reclaimed asphalt shingles (RAS). RAS is not to be used in any of the HMA layers.

In years past RAP had not been accepted for use in these types of pavements, but is now recognized as providing many benefits and good sustainable practice. Usage is restricted. See Chapter 4 for additional guidance.

Curing

The recommended cure time should be a minimum of 45 days before the wearing/playing surface is applied. Follow the manufacturer's recommendations for application of the playing surface material.

6.2 Additional Considerations During Construction Phase

In-Ground Posts

Tennis

Net posts are most commonly made out of steel, however aluminum posts are now being manufactured to resist rusting, and wooden or brass options are also available. Net posts should be set in sleeves for easy maintenance and resurfacing.

For tennis, net posts should be set 3 feet outside the sideline, which is 42 feet apart, center-to-center for doubles play, and 33 feet apart, center-to-center for singles play.

Post foundations should be 24 inches in diameter at the top, 30 inches in diameter at the bottom, and not less than 36 inches in depth. All underground footings should be installed prior to asphalt paving. Post footings should be 6 inches deeper than the frost depth, not to exceed 42 inches. The dimension between posts is 33 feet on single courts and 42 feet on double courts. The standard net is 42 feet in length by 3 feet 3 inches high. The standard net for doubles is 42 feet in length by 3 feet 6 inches high.

Basketball
For NCAA-regulation courts, the hoop post should be placed four feet from the court edge and the top of the hoop should be 10 feet above the playing surface.

Pickleball
Like tennis, a pickleball net will span the width of the court. Posts to support the net should have a diameter of no more than 3 inches and be placed 22 feet apart on the court side-lines.

Perimeter Edging

If desired, an edging of brick, concrete, steel, or treated wood can be installed around the entire perimeter of the court area. Sections may be left open to allow trucks and other equipment to enter and leave the court area until other work specified herein has been completed. Top elevation of the edging should be 1/2 inch below the finished grade level and the court's surface course should start tapering 6 inches away to meet it.

Figure 11 depicts an illustrated cross-section of an optional court edging.

Apron

For tennis, the overall dimensions of an individual court should be 61 feet by 121 feet to provide a 6-inch apron around the court, or 62 feet by 122 feet to provide a 1-foot apron around the court. This additional footage helps keep vegetation away from the perimeter, facilitates landscape maintenance and adds to the overall cosmetics. Fencing should remain at 60 feet by 120 feet and should be installed after HMA paving and prior to placement of the wearing/playing surface.

Figure 12 shows a cross section of an optional court ex-tended apron.

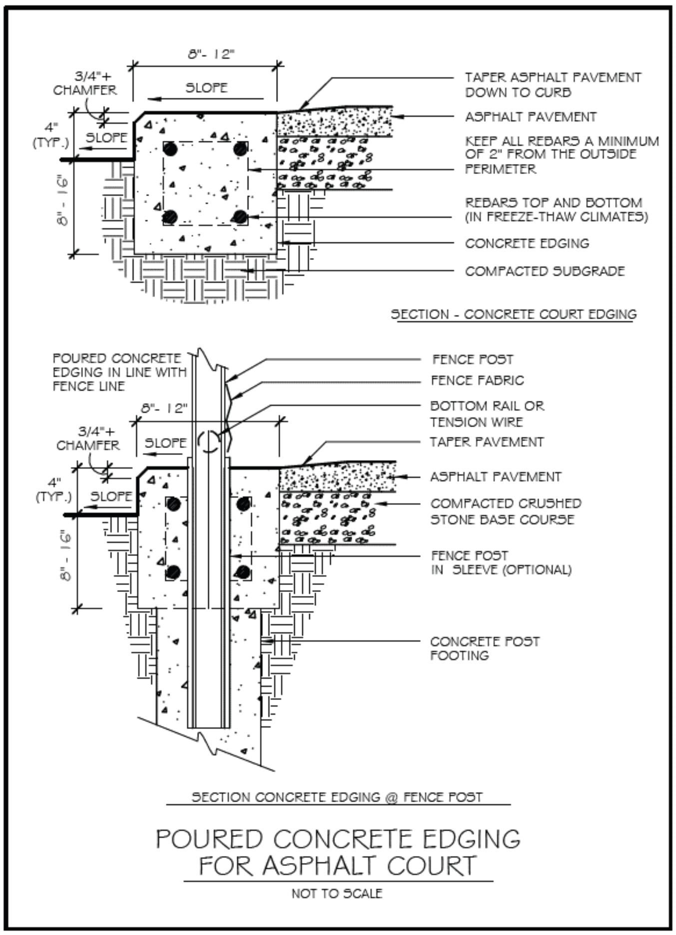

Figure 11. Typical Asphalt Court Edging with Brick or Concrete Block.[9]

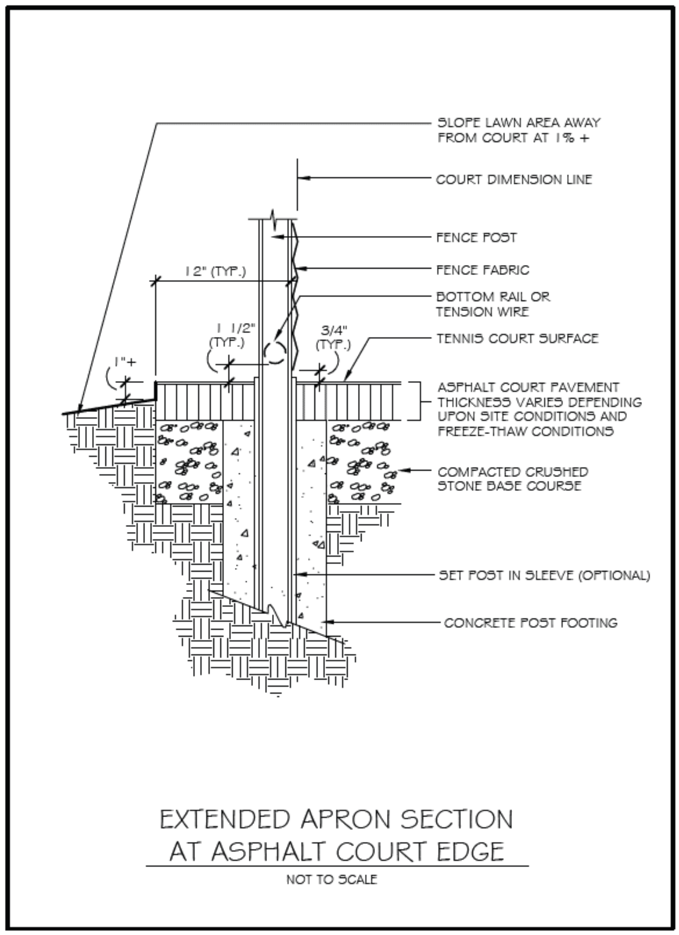

Figure 12. Extended Apron Section at Asphalt Court Edge.

9. The images on this page are provided courtesy of ASBA.

Lighting Recommendations

Lighting is key for safety and illuminating the fast-moving play on the courts. Players need to be able to react quickly and visibility is essential to gameplay. Other considerations include:

Quality of light

- Light should be uniformly spread throughout the area of play.
- Light should adequately render color.
- Glare should be minimized as much as possible by avoiding reflective surfaces and controlling the amount of light on the court.

Sources of light

- High Intensity Discharge (HID) lamps last on average 12,000 hours and require a warm-up time of 3-12 minutes but achieve maximum light output.
- LED lighting lasts up to 100,000 hours, costs less than other options and requires less maintenance. This type of lighting can be used with dimmers.

Wiring recommendations

- Installed underground if possible, outside of the court area.
- Consider wiring multiple courts separately so each can be operated individually to save costs.

Light poles

- Installed a minimum distance of 5 feet away from the sideline to light poles, and consider adding padding if poles are inside the fence.
- Centered on or immediately outside the fence or court if possible.
- Should not be used as fence posts.
- Generally, the bigger the area, the higher the light poles need to be.

Fencing

The primary purpose for adding a fence around a sport court is to keep the ball within the court during play. Chain-link fencing is most commonly used and should be rust-proof and free of protrusions that could injure players. Wooden fencing, walls, hedges and netting can also serve a similar purpose.

For pickleball, fencing or an acceptable alternative can improve play when installed across the back of the court (backstop) and along each sideline from the corner 20 feet to 40 feet up the sidelines (side stop). The area up to 40 feet on either side of the net can be left open or shorter fencing may be used. Additional guidance from USA Pickleball includes:

- Backstops should be a minimum height of 10 feet, but taller if there are problems associated with the ball leaving the confines.
- Side stops should not be less than 3 feet in height. Minimum height should be the same as the backstop for at least 20 feet from the backstop, with 30 feet being more recommended.
- Gates should be present on both ends of the court to allow access, and wide enough to allow for wheelchairs/maintenance equipment.
- Windbreaks are recommended to deflect the wind from interfering with play, while also providing a background against which the ball can be seen.

Where local conditions dictate additional security or ball retention, a higher backstop may be required. For residential courts, 8 feet in height is adequate when the adjacent area is such that a ball going over the backstop or side stop can be retrieved without personal hazard or hardship and without undue intrusion on adjoining property.

Landscaping

When landscaping, carefully consider the type of vegetation being planted, its potential growth and future effects. Avoid planting trees too close to the court's edge, as branches could eventually hang over the court and contribute to shade, leaves and other debris that can contaminate the surface, and roots below ground that may one day affect the court's structure and stability.

7 Repair, Reconstruction and Renovation

Many court surface failures are likely due to poor design, poor construction, poor maintenance, inadequate materials and/or poor drainage.

7.1 Asphalt Pavement Problems

Cracking

The most common problem with asphalt courts is pavement cracking. Cracking of asphalt is caused, at least in part, by the natural tendency of asphalt to shrink as it weathers, oxidizes and ages. One method of delaying or deterring cracking is the installation of control joints. This method makes use of the natural tendency of asphalt to crack where it is weakest. During construction, the asphalt pavement is saw-cut under the net and between courts in a multicourt project. These saw cuts provide a place for movement and shrinkage of the pavement when contraction occurs, preventing or minimizing the number and severity of cracks in other portions of the pavement. In addition, cracks from one court in a multi-court battery will stop at the control joint and will not travel to the adjacent court. The asphalt pavement is routed (saw-cut) two-thirds to three-quarters its thickness, and the cut is filled with an elastomeric crack sealant. The sealant will require supplemental work every one to two years as it degenerates through expansion and contraction of the cracks.

There are different types of asphalt cracks that occur for different reasons. An experienced contractor or design professional can help determine the specific types and causes of cracking and can recommend a method of repair.

Hairline Cracks

Hairline cracks are small irregular cracks that occur over large areas of the court. They are typically superficial and do not affect the play of the game. Such cracks may be caused by natural weathering or aging, by foreign matter in the asphalt or coating material, by improper application of coating, by improper asphalt mix design, or by stripping. If untreated, hairline cracks will develop into more serious types of cracks and will require more extensive repair.

Alligator Cracking

Alligator cracking is a pattern of interlocking cracks over the surface, resembling an alligator hide. Such cracking may vary in depth from a very faint surface pattern to full-depth cracking. Alligator cracking may be a sign of an inadequately prepared subgrade, or compacting HMA that was placed too thin or using a roller that was too heavy.

Shrinkage Cracks

Shrinkage cracks, or stress cracks, are a random pattern of interconnected cracks with irregular angles and sharp corners. They are small cracks, usually 1/16 of an inch or less. Shrinkage cracks may be caused by the weathering of the asphalt, by improper mix design, or by issues with the surface coating or its application.

Structural Cracks

Structural cracks penetrate through the asphalt pavement. They may result from the natural aging and shrinking of asphalt pavement, lack of proper subgrade preparation, improper or lack of drainage, or non-uniform base or asphalt thickness/compaction. Often structural cracks appear as straight parallel lines running lengthwise on the court (in the vicinity of the paving joints).

Reflection Cracks

Reflection cracks occur in asphalt surface overlays and mirror a crack pattern in the old pavement underneath. They are caused by movement in the pavement beneath the overlay or in the subgrade or, if present in an asphalt overlay of a concrete court, they may follow the joints or cracks in the original concrete slab.

Radial Cracks

Cracks sometimes appear at the point where concrete net post, light pole or fence post footings meet the asphalt court pavement. They occur because the concrete footing material and the asphalt court material expand and contract at different rates in response to temperature changes. Footing cracks can be avoided or minimized by using round post footings and by recessing the footing below asphalt courses, leaving a continuous asphalt surface course.

Stripping

Stripping can be a problem in new asphalt pavements. It shows up as many fine hairline cracks in the pavement. Stripping occurs when water gets into the asphalt mix with the aggregate and prevents the asphalt from adhering to the aggregate. Where stripping occurs, depending on the severity, repairs may include everything from recoating to reconstruction.

Heaving

Heaving, or upheaval, is the result of localized movement of some portion of the pavement. In heaving, a portion of the pavement is pushed up, often by frost expansion or by the swelling of moisture-laden expansive soil beneath the court, cracking the asphalt pavement. Reconstruction is usually required to remedy major upheaval. However, prior to reconstruction, the cause of the upheaval should be identified and corrected or the condition will recur. Heaving may be caused by tree roots, water freezing and expanding under the asphalt, geologic conditions and other forms of vegetation. This heaving sometimes appears as localized bumps in the surface. Proper repair of these surface imperfections would require grinding or removal of the impurity and patching.

Raveling

Raveling is the spalling or crumbling of the surface of a pavement, resulting in a pockmarked appearance after construction. It is caused by oxidation of the surface as a result of prolonged wear and exposure to UV radiation.

Depressions

There are several types of depressions in sport court facilities:

Loads that are not evenly distributed can result in point loading damage. For tennis courts that host advanced competitions, net support posts may be used to keep the net higher. Those posts are under a lot of pressure from the net wire and can penetrate into the asphalt layer if they do not have a cap on them to distribute the load. Other point loading damage can be caused by chairs, benches, receptacles or other items. placed on the playing surface that don't adequately disperse the loading.

Dents (divots) are small depressions, usually caused by racquets hitting the court, by stones or hard-soled street shoes. Such dents generally do not affect play. They can, however, be repaired individually, using patching material, or be corrected by resurfacing or by an overlay as part of a larger repair project.

Birdbaths are defined as any areas where standing water more than 1/16 of an inch deep remains after drainage of the area has ceased, or after one hour at 70 degrees Fareinheit in sunlight. Such minor depressions delay play after a rain event and may cause staining on the court as they dry.

Major depressions, accompanied by cracking of the pavement, are most often caused by insufficient compaction of the subgrade, decay of organic material beneath the court, or water under the court causing undermining in the subgrade. Reconstruction is usually required to remedy major depressions. However, prior to reconstruction, the cause of the collapse of the pavement should be identified and corrected, or the condition will recur.

Bubbling in Surface Coatings

Bubbles in the color coating on asphalt courts most often are caused by moisture between the pavement and the coating material. The moisture can come from a variety of sources. Moisture trapped below the asphalt can be drawn up through the pavement, or the water may come from the pavement itself if the asphalt isn't completely cured prior to the application of coating materials.

Whenever water is present on, in, or beneath a sport court pavement, heat from a warm day may draw the moisture upward to the surface where it vaporizes and expands. The trapped vapor then breaks the bond between the coating and the pavement, forming a bubble. At times, these bubbles may open or crack the coating.

Bubbles also may form between layers of coating. Coating products that aren't fully dry before successive coats are added is another potential source of bubbling and/or coating failure.

If larger amounts of moisture are present, if too many layers of surface coatings have been applied, if the coats are too thick or if an impermeable coating material is used, the water cannot permeate the coating and bubbles are inevitable.

Small bubbles may be punctured with a sharp object and pressed down, which may allow the coating to re-adhere. Stepping down on bubbles will only be effective if there is still liquid under the bubble. If not, adhesive must be injected with a syringe to facilitate rebonding.

Large bubbles most likely will need to be cut out and patched with new materials. If the entire surface of the court shows bubbling or if bubbling recurs, one approach is to remove the coating by shot-blasting, hydroblasting or grinding, then recoating the court.

Installation of a vapor barrier or barriers in construction, construction of proper drainage, proper curing of the asphalt prior to coating, along with proper installation of coatings should prevent bubbling. When recoating an existing court, it is often better to remove old coats before applying new coating, since each additional layer of coating reduces the permeability of the surface, increasing the likelihood of bubbling.

7.2 Hard-Court Repair and Recoating

An asphalt sport court that is structurally sound with a proper slope, evenness and good drainage can be preserved with repair and recoating. This process may include the following:

- The court surface should be cleaned to promote the adhesion of the new surface coatings. Surface cleaning should include scraping, sanding, brooming and/or power washing to clean the surface and remove stains.
- Coatings that are delaminating or bubbling need to be removed down to the asphalt pavement layer.
- Any cracks within the court surface should be sealed and sanded to prevent the introduction of water into the pavement subbase and subgrade. Cracks can be repaired with a variety of products; those 1/8 inch wide or less can be filled with a flexible sealant preapproved by the coating manufacturer. Larger cracks can treated with one of several membrane systems that "bridges" the crack and slows down the reopening of the cracks.
- Any low areas should be filled and leveled with patching compounds to re-establish the evenness of the court surface.
- High areas, if any, should be leveled by scraping, milling or grinding of the asphalt to reestablish the evenness of the court surface.
- Depending on the seriousness of deterioration or cracking and the number of repairs, one or more layers of the surfacing material may be applied in repaired areas, or over the entire pavement area.
- The court should then be recoated with multiple coats of an appropriate surface coating by a qualified contractor, according to the manufacturer's instructions.

Crack Repairs

The appropriate method of crack repair depends on the type and size of the crack to be repaired and the underlying problems that caused the crack. Most commonly, small cracks are treated with a crack filler. The crack is first cleaned and dried, then the crack filler is worked into the crack. The crack must be filled; it cannot merely be covered or bridged. Pressure on the filler should be applied in all directions so that the crack repair material fills all spaces. Once the crack is completely filled, excess material on the surface is removed. When the crack filler has dried, the surface of the filled crack is smoothed to remove any ridges.

Birdbath Repairs

Birdbaths, or low spots, can be repaired by patching. First, the court should be flooded to identify the low lying areas, and marked with soapstone or chalk. Next, the area should be cleaned and allowed to dry. A tack coat should be applied to the area within the marked line. The birdbath should then be filled with a thin coat or several thin coats of patching material. The patch should be leveled with a straightedge and the area around the patch should be feathered and smoothed to meet the existing pavement. Finally, the patch should be allowed to cure, sanded or smoothed of all rough textures, and recoated according to the manufacturer's instructions.

Recoating

Repaired areas and crack filling may leave a court with an unattractive freckled appearance; of which recoating will fix. Recoating also will correct other cosmetic defects, shallow depressions or shallow cracks.

Upon completion of the surface repairs, one or more resurfacing coats are applied. This material, specially designed for sport court resurfacing, helps fill minor imperfections in the surface and provides a smooth and uniform base for recoating. After the drying and curing of the resurfacing coats, multiple layers of color coatings are applied to produce the final playing surface.

Pavement Overlays

Existing sport court pavements that are badly cracked, yet maintain reasonable slope and evenness, may be overlaid using a variety of industry-recognized overlay processes while leaving the existing pavement structure in place. Any overlay process should ensure existing pavement cracks will not reflect up through the newly installed overlay. For example, the installation of a new asphalt pavement overlay directly on top of a badly cracked existing pavement will most likely crack at the same locations as the existing pavement cracks. This is referred to as "reflective cracking."

A layer of stone screenings is effective in retarding the transfer of cracks from the old pavement to a new overlay. A minimum 2-inch layer of processed stone is installed over the existing pavement (consult a local sport court contractor to determine the appropriate thickness). The processed stone layer can also be used to correct any court slope issues that may prevent water from properly draining off the court surface.

After the installation of the layer of stone screenings, it is necessary to select the type, thickness and number of layers of asphalt to be overlaid.

In some instances the existing pavement structure is deteriorated to the point that a new structure needs to be established prior to being overlaid. If the structure is concrete, the slab may need to be "fractured" or "cracked" and re-seated prior to the asphalt overlay.

Before any overlay is to be considered, the owner must first adequately address drainage on and around the sport court which is key to the overall success of overlay, and the long-term playability of the court playing surface. Before undertaking any hard-court repair or resurfacing, attention should be paid to the existing drainage systems on and around the court(s). Improper drainage makes surface damage more likely and more severe, especially in our climate with the amount of freeze-thaw activity. Wet soil under the court will expand and contract in response to temperature, causing the surface to heave or to settle. Poor surface drainage also may cause dirt or silt to accumulate on the court surface or cause damage to color coating systems. Also, poor surface drainage can cause soil erosion around the perimeter of the court.

An inspection of the site on and around a sport court should be conducted to establish the necessary drainage repairs or construction to protect the tennis court from the effects of surface and subsurface water. To alleviate potential drainage issues, the following remedial measures should be considered (for more on drainage, see Chapter 5):

- **Swales:** Swales around the tennis court area can capture surface water and convey stormwater away from sport court pavements before impacting the court.
- **French drains:** French drains can intercept groundwater before it has a chance to collect under the tennis court pavement.
- **Channel drains:** Channel drains can collect water from pavement areas and efficiently convey it away from the court.
- **Ground elevation adjacent to courts:** Areas around the court should not slope toward the sport court pavement. Sufficient regrading of areas outside the tennis court fence should direct water away from the court pavement.
- **Sod and/or landscaping higher than the court surface:** Lawn or planting areas adjacent to the court pavement should be regraded to ensure water will effectively drain off the pavement after rain or snow.

8 Cleaning and Care Instructions

Sport court surfaces normally require only minimal maintenance, but the amount of maintenance needed will depend largely on the court's location, environment and how much it's used.

Courts should be swept with a traditional broom, leaf blower, or water broom approximately once per week depending on the severity of surface contamination.

Heavy airborne pollution, such as dust, leaves and vehicle fumes, can quickly settle onto the court surface. In a heavy maintenance environment, it is recommended that foreign debris be hosed off at least once per week to minimize build-up. If the surface becomes dirty or stained, it can be cleaned with a light-duty wet scrubber/vacuum machine with a soft brush attachment. A non-residual organic cleaning solution may be used but should be applied in accordance with the manufacturer's specifications for the particular surface type and stain.

Note: Powdered calcium hypochlorite solution should not be used on the playing surface because it can leave a white residue on the surface after drying. Solvent based/scouring type products, i.e., solvent thinners and similar products should similarly not be used on some surfaces. Always test cleaners and methods on a small portion of the surface before applying to the entire area. Contact your local authority prior to commencement of cleaning to conform to the environment requirements in your area.

8.1 Mold Growth and Tree or Plant Contamination

It is recommended to prune overhanging trees or plants to prevent excess surface contamination and staining.

Mold may build up on areas of the surface where plant/leaf contamination occurs or where water pools after rain. These areas should be cleaned on a regular basis using the following methods:

a) Hose off foreign debris with the aid of a stiff bristle broom.

b) Saturate the surface with clean water.

c) Use a diluted solution of sodium hypochlorite (liquid pool chlorine); dilution rate is dependent on the severity of mold growth.

d) Sweep solution over the moldy area and soak for 10-15 minutes. Do not allow to dry.

e) Hose off surface thoroughly with clean water to remove all residual solution.

f) Heavily contaminated surfaces may require additional treatment, or in severe cases, high-pressure water blasting and sodium hypochlorite treatment.

8.2 Food and Drink Contamination

Wash any food or drink contamination immediately for best results. If staining has occurred, the same cleaning methods suggested for dirt or other contaminations are recommended.

8.3 Other Contaminations

Animal droppings and worms will cause degradation of some types of playing surfaces. These contaminations should be removed immediately by mechanically scraping them off or by high-pressure washing.

In severe cases where surface blistering or peeling of the surface is visible, the asphalt below may have received damage as well. If this happens, the surface can be patched with recommended surface materials.

Bird/wildlife contamination can usually be removed by a non-residual organic cleaner with a stiff-bristle brush/broom and hosed off with plenty of clean water.

Only white-soled or non-staining/marking shoe types should be used when playing on the court surface. If dark-colored rub marks appear, they can usually be removed with a non-residual organic cleaner and stiff-bristle brush. Some rubber types are difficult to remove when they are fresh; weathering will usually make it easier for these marks to be removed.

Shoe sole marking will be more noticeable and prevalent with new surfaces. Wipe shoes before entering court to prevent stones, twigs, or other sharp objects from becoming embedded into the surface.

Chewing gum is very difficult to remove from court surfaces. Mechanical scraping is recommended.

Grease and oil stains can be removed with a non-residual organic cleaner. It may require several applications to remove the grease/oil contamination. Thoroughly hose off the surface with clean water after the application of the detergent solution.

8.4 Avoiding Surface Damage

The playing surfaces are highly resistant to damage from normal use. However, metal racquets that forcefully impact the court surface can cause slight cuts in the surface. Such damage is usually confined to the top layers and can be readily repaired. Chairs, benches, waste receptacles, umpire stands, etc. should have padded bases on the legs to minimize damage to the surface. Distribute all loading to avoid point source loads which can cause damage to the surface.

8.5 Drying the Court Surface

After rain, game play can resume quickly by simply removing excess water with a wide sponge roller or squeegee. Most court surfaces are slip-resistant when damp.

8.6 Additional Information

More tips can be found in ASBA & USTA'S Tennis Court Construction & Maintenance Manual, and a cleaning checklist can be found on SportMaster's **website**.

9 Steps to Ensure a Successful Project

Summarized from ASBA Asphalt Guidelines (**https://cdn.ymaws.com/sportsbuilders.org/resource/resmgr/track_division_page_documents/asphalt_guidelines.pdf**)

Equipment Needs

The asphalt plant should be capable of producing the quantities of asphaltic mixtures required.

Tack distributor truck must have an insulated tank, heating system, and a calibrated distributor capable of maintaining a uniform application of emulsified asphalt under pressure throughout the area to be paved. This requires a pump in good working order, full circulating spray bars, and free flowing nozzles. Small, isolated areas may be tacked with a wand.

Haul trucks shall have smooth, clean and tight metal beds that do not have mixture sticking to the truck box and from which the entire quantity of HMA can be discharged smoothly into the paving equipment. Asphalt release agents are allowed to be used in the haul trucks to keep the mixture from adhering to the truck box as long as they are on the WisDOT approved products list. Trucks for hauling asphalt mixture shall be in good, safe working condition.

Paving equipment must be capable of placing, spreading and finishing courses of HMA to the specified thicknesses. HMA shall be free of marks, segregation and placed to the required uniform elevation with a smooth texture not showing tearing, shoving, or gouging.

Auger extensions are required while pavers are extended beyond the basic screed width.

Paving equipment shall be self-propelled and capable of maintaining the line and grade shown on the plans with suitable electronic equipment. The screed shall be straight and true with no bow and utilizing a vibratory screed. Hand work shall be minimized to ensure the best possible finished surface. It is recommended that paving equipment be equipped with sonar pods or no contact skis for sport court asphalt construction. Additionally, it should be equipped with automatic slope control to maintain required tolerances. Rollers shall conform to the manufacturer's specifications for all ballasting. It is recommended that one vibratory roller be used with two rollers as a minimum.

(Three rollers are encouraged when tonnage is greater than 300 tons/day). Rollers shall be of good condition and capable of compacting the HMA to the minimum in-place density required by contract.

Ensure the subgrade is stable, the aggregate base course layer is compacted, level and stable, and drainage has been properly considered before the installation of the HMA layers. Perform work in appropriate weather conditions that are dry with no rain, snow, or other forms of precipitation falling or imminent (anticipated during installation of the HMA).

Apply tack during appropriate weather conditions and protect the tack coat from equipment traffic so as not to wear and track the material. Allow the tack coat to 'break', i.e., turn from a brown to a black color (indicating the water has evaporated) prior to installation of the HMA. If subsequent HMA layers lifts are laid beyond 24 hours, apply tack coat at the rate per current WisDOT standard specifications. All vertical edges abutting proposed asphalt surfaces shall receive a tack coat. Excessive tack coat applications, drooling, or pooling shall be swept with a broom to ensure proper bonding of the HMA occurs, wait until emulsion cures or breaks.

Pavement Placement

HMA mixture will generally arrive on the project between 270 and 300 degrees Fahrenheit (see producer recommendation) in accordance with good weather conditions and an air temperature of 50 degrees Fahrenheit and rising for placement of all asphalt layers.

Establish an acceptable rolling pattern with the assistance of a density technician on the first day of construction. It's recommended to track and record temperatures, equipment, rolling pattern, and in-place density results throughout the project.

The upper layer HMA longitudinal joints shall be smooth and true. It is recommended that there be no mat deviation from level and true.

It is recommended that where practical, the entire upper layer shall be paved on the same day. If a cold seam will occur it should be agreed to with the Owner in advance (i.e., occur near, or at a planned saw and seal joint, under the fence line, etc.).

Rolling shall start as soon as the HMA can be compacted without displacement. Rolling shall continue until the HMA is thoroughly compacted and all roller marks have disappeared.

Smoothness shall meet the requirements of no greater than 1/4 inch in 10 ft. for the lower and leveling layers, and 1/8 inch in 10 ft. for the upper layer per the ASBA manual.

Thickness of the overall mat shall be within 1/4 inch of the specified plan thickness at all locations, with no negative deviation for the upper layer mixture.

Paving Joint Best Practices [Install/build control joints per the contract details]:

- Minimize construction, longitudinal, and transverse joints left open for an extended period of time.
- Construct longitudinal joints by paving them "hot" as much as practical.
- Compact all joints and provide a neat, uniform and tightly bonded joint that will meet both surface tolerances and density requirements. Adjacent passes should be overlapped by 2 inches and placed at the appropriate height needed to produce a smooth joint.
- If needed, cut straight and true (vertical) construction or transverse joints prior to the placement of the next pass to ensure the best performing joint possible.
- It is recommended to off-set joints a minimum of 6 inches between lifts of asphalt, with transverse joints a minimum of a 24-inch offset.

Allow positive drainage off of the athletic sport court facility and towards drainage outlets. Any ponding of water is not advisable. Please reference the ASBA Tennis Construction & Maintenance Manual or ASBA Running Tracks Construction & Maintenance Manual for ponding tolerances.

Protect the HMA layers until such time that the playing/wearing surface coating can be placed, particularly during other construction activities between asphalt installation and playing/wearing surface installation. It is recommended that the timeframe for the pavement to "cure" is a minimum of 45 days prior to the surface coating application.

10 References and Links

Asphalt Resources

Asphalt Institute:
www.asphaltinstitute.org/

MS-2 Asphalt Mix Design Methods:
bookstore.asphaltinstitute.org/catalog/book/ms-2-asphalt-mix-design-methods

MS-22 Construction of Quality Asphalt Pavements:
bookstore.asphaltinstitute.org/catalog/book/ms-22-construction-quality-asphalt-pavements

Minnesota Asphalt Paving Design Guide:
cdn.ymaws.com/www.asphaltisbest.com/resource/resmgr/MAPA-Asphalt-Paving-Design-G.pdf

National Asphalt Pavement Association (NAPA):
www.asphaltpavement.org/

National Center for Asphalt Technology (NCAT):
www.ncat.us/

Hot Mix Asphalt Materials, Mixture Design, and Construction:
www.eng.auburn.edu/research/centers/ncat/research/ncat-textbook.html

Virginia Asphalt Association Pavement Design by Use:
vaasphalt.org/pavement-guide/pavement-design-by-use/

WAPA Asphalt Pavement Design Guide:
www.wispave.org/wp-content/uploads/dlm_uploads/WAPA-Design-Guide-2021-1.pdf

WisDOT Roadway Standards:
wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/default.aspx

WisDOT Standard Specifications:
wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/stndspec.aspx

Court Construction

American Sports Builders Association (ASBA):
sportsbuilders.org/

Asphalt Guidelines:
cdn.ymaws.com/sportsbuilders.org/resource/resmgr/guidelines/asphalt/ASBA_Guidelines_on_Asphalt_f.pdf

Asphalt Guidelines - Executive Summary:
cdn.ymaws.com/sportsbuilders.org/resource/resmgr/guidelines/asphalt/ASBA_Executive_Summary_for_A.pdf

Pickleball Courts: A Construction & Maintenance Manual:
sportsbuilders.org/store/viewproduct.aspx?id=14327595

Tennis Courts: A Construction and Maintenance Manual:
sportsbuilders.org/store/ViewProduct.aspx?id=14327322

Additional Industry Resources

Ace Surfaces:
ace-surfaces.com/tennis-court-repair-maintenance-tips/

Asphalt Applications for Sports Courts and Facilities:
www.forconstructionpros.com/pavement-maintenance/article/21319240/asphalt-applications-for-sports-courts-and-facilities

Laykold:
www.laykold.com/

My Tennis HQ:
mytennishq.com/

Perfect Tennis:
www.perfect-tennis.com/

SportMaster:
www.sportmaster.net/maintenance/

Sport Surfaces:
sportsurfaces.com/

USA Pickleball:
usapickleball.org/