

**Advertise 1 time
Friday, January 21, 2011**

**City of Lincoln/Lancaster County
Purchasing Division
NOTICE TO BIDDERS**

Sealed bids will be received by the Purchasing Agent of the City of Lincoln/Lancaster County, Nebraska **BY ELECTRONIC BID PROCESS** until: **12:00 pm, Wednesday, February 9, 2011** for providing the following:

**Residential Rehabilitation 2011,
Project 540618
Bid No. 11-032**

Bidders must be registered on the City/County's E-Bid site in order to respond to the above Bid. To Register go to: lincoln.ne.gov (type: e-bid - in search box, then click "Supplier Registration")

Upon e-mail notification of registration approval, you may go to the E-Bid site to respond to this bid. Questions concerning this bid process may be directed to City/County Purchasing at (402) 441-8314 or (402) 441-7410 or vmejer@lincoln.ne.gov

PAVERS, INC

11-032

Line No.	Pay Item No.	Description	Quantity	Unit	Unit Price	Amount
01	00.4000	Mobilization	1.0000	LS	\$112,000.00	\$112,000.00
02	01.0100	Pavt & Sidewalk Rem	2.0000	CY	\$75.00	\$150.00
03	01.0151	AC Surface Course, For Non-Art	8,786.0000	TON	\$50.10	\$440,178.60
04	01.0170	Adj MH to Grade, Cmpl	5.0000	EA	\$275.00	\$1,375.00
05	01.0180	Adj Water Valve Box To Grade, Cmpl	9.0000	EA	\$155.00	\$1,395.00
06	01.0220	Sawing, Type "B"	300.0000	LF	\$3.25	\$975.00
07	01.0230	Sawing, Type "C"	4,890.0000	LF	\$3.20	\$15,648.00
08	07.0100	Detectable Warning Panels	1,296.0000	SF	\$20.00	\$25,920.00
09	10.0010	Crushed Rock Surfacing (In Place)	3.0000	TON	\$60.00	\$180.00
10	15.0001	Traffic Ctrl for Const	1.0000	LS	\$16,750.00	\$16,750.00
11	99.0400	Rem & Repl 6" Conc Base, (L3500)	608.0000	SY	\$32.50	\$19,760.00
12	99.0401	Rem & Repl 6" Conc Base, (L5500)	300.0000	SY	\$35.20	\$10,560.00
13	99.0501	Power Grinder, 72"	96.0000	HRS	\$620.00	\$59,520.00
14	99.0502	Power Grinder, 16"	41.0000	HRS	\$75.00	\$3,075.00
15	99.0504	Power Broom	235.0000	HRS	\$61.00	\$14,335.00
16	99.0505	Power Flusher	24.0000	HRS	\$50.00	\$1,200.00
17	99.0507	Dump Truck, 10 Cubic Yard	400.0000	HRS	\$65.00	\$26,000.00
18	99.0508	Front-End Loader, 1/2 Cubic Yard	197.0000	HRS	\$58.00	\$11,426.00
19	99.0509	Front-End Loader, 3 Cubic Yard	41.0000	HRS	\$65.00	\$2,665.00
20	99.0510	Air Compressor	41.0000	HRS	\$60.00	\$2,460.00
21	99.0601	Rem & Repl 24" Comb Curb/Gutter	28,950.0000	LF	\$10.82	\$313,239.00
22	99.0700	Rem & Repl 6" Conc Dr, Wk & Mdn (L3500)	9,974.0000	SF	\$4.00	\$39,896.00
23	99.0702	Rem & Repl 5" Conc Dr, Wk & Mdn (L3500)	44,720.0000	SF	\$3.70	\$165,464.00
24	99.0704	Rem & Repl 4" Conc Walk (L3500)	10,754.0000	SF	\$3.50	\$37,639.00
25	99.2103	Roof Drain Pipe, 4"	35.0000	LF	\$20.00	\$700.00
26	21.0095	RCP Storm Sewer, CI III, 21"	248.0000	LF	\$42.60	\$10,564.80
27	21.0100	RCP Storm Sewer, CI III, 18"	355.0000	LF	\$38.20	\$13,561.00
28	21.0110	RCP Storm Sewer, CI III, 15"	385.0000	LF	\$36.20	\$13,937.00

29	21.0780	Canted Storm Sewer Inlet (Cmpl), 72"	4.0000	EA	\$2,200.00	\$8,800.00
30	21.1060	Tap Ex Storm Sewer Inlet & Replace	1.0000	EA	\$435.00	\$435.00
31	50.0005	Grooved Thermo (Molten) Mrking 4" Y	392.0000	LF	\$1.65	\$646.80
32	50.0005	Grooved Thermo (Molten) Mrking 12" W	28.0000	LF	\$12.00	\$336.00
33	50.0005	Grooved Thermo (Molten) Mrking 24" W	150.0000	LF	\$21.00	\$3,150.00
						\$1,373,941.20

City of Lincoln/Lancaster County (Lincoln Purchasing) Supplier Response

Bid Information		Contact Information		Ship to Information
Bid Creator	Deb Winkler Systems Administrator	Address	Purchasing\City & County 440 S. 8th St. Lincoln, NE 68508	Address
Email	dwinkler@lincoln.ne.gov	Contact	Vince M. Mejer	Contact
Phone	1 (402) 441-7410	Department		Department
Fax	1 (402) 441-6513	Building		Building
Bid Number	11-032	Floor/Room		Floor/Room
Title	Residential Rehabilitation 2011, Project 540618 (PW/U - Eng. Services)	Telephone	(402) 441-8314	Telephone
Bid Type	Bid	Fax	(402) 441-6513	Fax
Issue Date	01/21/2011	Email	vmejer@lincoln.ne.gov	Email
Close Date	2/9/2011 12:00:00 PM CST			
Need by Date				

Supplier Information

Company PAVERS, INC
 Address 12303 HWY 6
 WAVERLY, NE 68462

Contact
 Department
 Building
 Floor/Room
 Telephone 1 (402) 786 5900
 Fax 1 (402) 786 5920
 Email
 Submitted 2/9/2011 10:22:37 AM CST
 Total \$1,373,941.20

Signature _____

Supplier Notes

Bid Notes

If you need assistance in preparing your bid, there are several options.

- 1) Click the "Help" button in the upper right hand corner of any screen;
- 2) Contact our office for a training session in Purchasing or assistance over the phone;
- 3) View the PowerPoint presentation at <http://www.lincoln.ne.gov/city/finance/purch/spec/bidinst.ppt>

Bid Messages

Please review the following and respond where necessary

#	Name	Note	Response
1	Standard Specifications for Municipal Construction	I acknowledge reading and understanding the current City of Lincoln Standard Specifications for Municipal Construction and Lincoln Standard Plans (including General Provisions and Requirements, and Material and Construction Specifications) View at: http://www.lincoln.ne.gov/city/pworks/engine/dconst/standard/stndspec/index.htm	Yes
2	NDOR Standard Specs for Hwy Construction	I acknowledge reading and understanding the current Nebraska Department of Road's Standard Specifications for Highway Construction Supplemental Specifications to the Standard Specifications for Highway Construction, view at: http://www.dor.state.ne.us/ref-man/	Yes
3	Form of Contract Agreement	I acknowledge reading and understanding the Contract Agreement Forms.	Yes
4	Form of Bonds	I acknowledge that the Performance Bond and Payment Bond in the amount of 100% of the Contract amount will be required with the signed contract upon award of this job.	Yes
5	Special Provisions/Traffic Control Provisions	I acknowledge reading and understanding the Special Provisions and/or Traffic Control Provisions.	Yes
6	Instructions to Bidders	I acknowledge reading and understanding the Instructions to Bidders.	Yes
7	Insurance Requirements	I acknowledge reading and understanding the Insurance Requirements.	Yes
8	Specifications	I acknowledge reading and understanding the Specifications.	Yes
9	Plan, Profile & Detail Sheets	I acknowledge reading and understanding the Plan, Profile & Detail Sheets included with this bid.	Yes
10	Tax Exempt Certificate Forms	Materials being purchased in this bid are tax exempt and unit prices are reflected as such. A Purchasing Agent Appointment form and a Exempt Sales Certificate form shall be issued with contract documents. (Note: State Tax Law does not provide for sales tax exemption for proprietary functions for government, thereby Water projects are taxable.)	Yes
11	Bid Bond Submission - City	I acknowledge and understand that my bid will not be considered unless a bid bond or certified check in the sum of five percent (5%) of the total amount of the bid is made payable to the order of the City Treasurer as a guarantee of good faith prior to the bid opening. The bid security may be scanned and attached to the 'Response Attachments' section of your response or faxed to the Purchasing Office (402)441-6513. The original bond/check must then be received in the Purchasing Office, 440 S. 8th Street, Ste. 200, Lincoln, NE 68508 within three (3) days of bid closing. YOU MUST INDICATE YOUR METHOD OF BID BOND SUBMISSION IN BOX TO RIGHT!	I have scanned and attached my bid bond.
12	Electronic Signature	Please check here for your electronic signature.	Yes
13	Contact	Name of person submitting this bid:	Mike Tidball

- | | | | |
|----|------------------------------|---|-----|
| 14 | Unit Pricing Rules | I acknowledge the Excel spreadsheet is attached to this bid in the Response Attachment Section. The unit price of the Excel Spreadsheet takes precedence over the total submitted in Line Items. | Yes |
| 15 | Project Dates | The Contractor agrees that the Work in this Contract shall begin as soon after the Notice to Proceed as is necessary for the Contractor to complete the Work within the number of calendar days allowed and prior to the stated completion date. The completion date shall be no later than October 14, 2011. | YES |
| 16 | Employee Class Act EO | I acknowledge reading and understanding the Employee Classification Act, Executive Order 83319. | Yes |
| 17 | Employee Class Act Affidavit | I acknowledge if awarded the contract I will abide by the law, notarize and attach the Employee Classification Act Affidavit to my contract. | Yes |

Line Items

#	Qty	UOM	Description	Response
1	1	Lump Sum	Residential Rehabilitation 2011, Project 540618 - Total Lump Sum of Bid	\$1,373,941.20

Item Notes: Fill out the itemized Excel spreadsheet attached below. Attach completed spreadsheet on the 'Response Attachments' of your response.

Supplier Notes:

Response Total: \$1,373,941.20

RESIDENTIAL REHABILITATION 2011

PROJECT 540618

BID NO. 11-032

FOR

CITY OF LINCOLN

CONTRACT AGREEMENT

THIS CONTRACT, made and entered into this 17TH day of FEBRUARY, 2011

by and between PAVERS, INC, hereinafter called the Contractor and the City of Lincoln

WITNESS, that:

WHEREAS, the City of Lincoln has caused to be prepared, in accordance with law, Specifications, Plans, and other Contract Documents for the Work herein described, and has approved and adopted said documents and has caused to be published an advertisement for and in connection with said Work, to wit:

RESIDENTIAL REHABILITATION 2011; and

WHEREAS, the Contractor, in response to such advertisement, has submitted to the City of Lincoln, in the manner and at the time specified, a sealed Proposal in accordance with the terms of said advertisement; and,

WHEREAS, the City of Lincoln, in the manner prescribed by law, has publicly opened, read aloud, examined, and canvassed the Proposals submitted in response to such advertisement, and as a result of such canvass has determined and declared the Contractor to be the lowest and best bidder for the said Work for the sum or sums named in the Contractor's Proposal, a copy thereof being attached to and made a part of this Contract.

NOW, THEREFORE, in consideration of the sums to be paid to the Contractor and the agreements herein contained, the Contractor and the City of Lincoln have agreed and hereby agree as follows:

CONTRACT AGREEMENT

The Contractor agrees to (a) furnish all tools, equipment, supplies, superintendence, transportation, and other construction accessories, services, and facilities; (b) furnish all materials, supplies, and equipment specified to be incorporated into and form a permanent part of the complete Work; (c) provide and perform all necessary labor in a substantial and workmanlike manner and in accordance with the provisions of the Contract Documents; and (d) execute, construct, and complete all Work included in and covered by the City of Lincoln's official award of this Contract to the Contractor, such award being based on the acceptance by the City of Lincoln of the Contractor's Proposal, or part thereto, as follows:

ALL OF THE PROPOSAL SUBMITTED BY PAVERS, INC IN CONNECTION WITH THE CITY OF LINCOLN RESIDENTIAL REHABILITATION PROJECT 540618. DATED FEBRUARY 9, 2011.

The City of Lincoln agrees to pay to the Contractor for the performance of the work embraced in this Contract, and the Contractor agrees to accept as full compensation therefore, the sums and prices for all Work covered by and included in the Contract award and designated above, payment thereof to be made in the manner provided in the General Provisions and Requirements.

COMPLETION DATE – The Contractor agrees that the Work in this Contract shall begin as soon after the Notice to Proceed as is necessary for the Contractor to complete the Work within the number of calendar days allowed and prior to the stated completion date. The completion date shall be N/A calendar days after the beginning or construction shall be no later than OCTOBER 14 2011

GUARANTEE – The guarantee periods as stated in Section VIII, Paragraph A of the City of Lincoln Standard Specifications for Municipal Construction shall be applicable to this project.

CONTRACT DOCUMENTS – The Contract Documents comprise the Contract, and consist of the following:

1. City of Lincoln Standard Specifications for Municipal Construction (2006 Edition)
2. Proposal Forms
3. Contract Agreement Forms
4. Commentary to Accompany Construction Bonds
5. Construction Performance Bond
6. Construction Payment Bond
7. Special Provisions
8. Lincoln Standard Plans (2010 Edition)
9. Standard Specifications for Highway Construction Nebraska Department of Roads (2007 Edition)
10. Plan and Profile Detail Sheets
11. Any executed Addenda or Change Orders
12. Any portion of this project used for **providing water service**, such as pipe for water mains, **are not tax exempt and are subject to sales and use tax.**
13. The **remainder** of this project, including items exclusively used for providing fire protection, such as fire hydrants, **are exempt from sales and use taxes.**
14. Sales tax exempt forms will be provided upon award of bid.

CONTRACT AGREEMENT

These Contract Agreements, together with the other Contract Documents herein above mentioned, form this Contract, and they are as fully a part of the Contract as if hereto attached or herein repeated.

The Contractor and City of Lincoln hereby agree that all the terms and conditions of this Contract shall, by these presents, be binding upon themselves, and their heirs, administrators, executors, legal and personal representatives, successors, and assigns.

IN WITNESS WHEREOF, the Contractor and City of Lincoln do hereby execute this Contract.

EXECUTION BY THE CITY

ATTEST:

CITY OF LINCOLN, NEBRASKA

(Seal)
CITY CLERK

BY: _____
MAYOR

APPROVED BY EXECUTIVE ORDER NO.

Dated: _____

EXECUTION BY CONTRACTOR

IF A CORPORATION

Pavers Inc.

(Name of Corporation)

ATTEST:

17308 Hwy 60 Waverly NE 68462

(Address)

(Seal)

By: James M. Buel

(Duly Authorized Official)

President

(Legal Title of Official)

IF OTHER TYPE ORGANIZATION

(Name and Type of Organization)

(Address)

(Member)

(Member)

(Member)

IF AN INDIVIDUAL

By: _____
(Name)

Commentary to Accompany Construction Bonds

A. GENERAL INFORMATION

There are two types of construction bonds that are required by statutes for public work in many jurisdictions and are widely used for other projects as well.

- Construction Performance Bond
- Construction Payment Bond

The Construction Performance Bond is an instrument that is used to assure the availability of funds to complete the construction.

The Construction Payment Bond is an instrument that is used to assure the availability of sufficient funds to pay for labor, materials and equipment used in the construction. For public work the Construction Payment Bond provides rights of recovery for workers and suppliers similar to their rights under the mechanics lien laws applying to private work.

The objective underlying the rewriting of construction bond forms was to make them more understandable and to provide guidance to users. The intention was to define the rights and responsibilities of the parties, without changing the traditional rights and responsibilities that have been decided by the courts. The new bond forms provide helpful guidance regarding time periods for various notices and actions and clarify the extent of available remedies.

The concept of a pre-default meeting has been incorporated into the Construction Performance Bond. All of the participants favored early and informal resolution of the problems that may precipitate a default, but some Surety companies were reluctant to participate in pre-default meetings absent specific authorization in the bond form.

The responsibilities of the Owner and the options available to the Surety when a default occurs are set forth in the Construction Performance Bond. Procedures for making a claim under the Construction Payment Bond are set forth in the form.

EJCDC recommends the use of two separate bonds rather than a combined form. Normally the amount of each bond is 100 percent of the contract amount. The bonds have different purposes and are separate and distinct obligations of the Surety. The Surety Association reports that the usual practice is to charge a single premium for both bonds, and there is no reduction in premium for using a combined form or for issuing one bond without the other.

B. COMPLETING THE FORMS

Bonds have important legal consequences; consultation with an attorney and a bond specialist is encouraged with respect to federal, state, and local laws applicable to bonds and with respect to completing or modifying the bond forms.

Both bond forms have a similar format and the information to be filled in is ordinarily the same on both bonds. If modification is necessary, the modifications may be different.

The bond forms are prepared for execution by the Contractor and the Surety. Evidence of authority to bind the Surety is usually provided in the form of a power of attorney designating the agent who is authorized to sign on behalf of the Surety. The power of attorney should be filed with the signed bonds.

Each bond must be executed separately since they cover separate and distinct obligations.

Preferably the bond date should be the same date as the contract, but in no case should the bond date precede the date of contract.

To accompany the Construction Performance Bond (EJCDC No. 1910-28A) and the Construction Payment Bond (EJCDC No. 1910-28B)

Prepared by the Engineers' Joint Contract Documents Committee

Project Name: Residential Rehabilitation 2011

Project No.: 540618

Bond No.: S386632

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, The City of Lincoln, Nebraska ("The City") has awarded to _____
Pavers, Inc. as Principal a contract dated the 17 day of February,
11
20____, (the "Contract"), which Contract is by this reference made a part hereof, for the work described as follows:

Residential Rehabilitation 2011 Project # 540618

AND WHEREAS, Principal is required to furnish a bond in connection with the Contract, guaranteeing the faithful performance thereof;

NOW, THEREFORE, we, the undersigned Principal and Employers Mutual Casualty Company
as Surety, are held and firmly bound unto The City in the sum of One million three hundred seventy three thousand nine hundred forty one and 20/100
dollars (\$ 1,373,941.20), to be paid to The City or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by The City, shall promptly and faithfully perform the covenants, conditions, and agreements of the Contract during the original term and any extensions thereof as may be granted by The City, with or without notice to Surety, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Contract made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless The City as stipulated in the Contract, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.

No extension of time, change, alteration, modification, or addition to the Contract, or of the work required thereunder, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.

Whenever Principal shall be and declared by The City to be in default under the Contract, Surety shall promptly remedy the default, or shall promptly:

1. Undertake through its agents or independent contractors, reasonably acceptable to The City, to complete the Contract in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages, or, at Surety's election, or, if required by The City,

Project Name: Residential Rehabilitation 2011

Project No.: 540618

2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and, upon determination by The City of the lowest responsible bidder, arrange for a contract between such bidder and The City and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages; but, in any event, Surety's total obligations hereunder shall not exceed the amount set forth in the third paragraph hereof. The term "balance of the Contract Sum," as used in this paragraph, shall mean the total amount payable by The City to the Principal under the Contract and any amendments thereto, less the amount paid by The City to Principal.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing The City's rights against the others.

No right of action shall accrue on this bond to or for the use of any person or corporation other than The City or its successors or assigns.

Surety may join in any arbitration proceedings brought under the Contract and shall be bound by any arbitration award.

In the event suit is brought upon this bond by The City, Surety shall pay reasonable attorney's fees and costs incurred by The City in such suit.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this 17 day of February, 20 11

Principal: Pavers, Inc.
(Name of Firm)
By: James M. Buel
(Signature)
James M Buel
(Printed Name)
Title: President

Surety: Employers Mutual Casualty Company
(Name of Firm)
By: Deanne K Kabourek
(Signature)
Deanne K Kabourek
(Printed Name)
Title: Attorney-in-fact
Address for Notices:
INSPRO
PO Box 336
Wahoo NE 68066

NOTE: Notary acknowledgment for Surety and Surety's Power of Attorney must be attached.

Project Name: Residential Rehabilitation 2011

Project No.: 540618

Bond No.: S386632

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, The City of Lincoln, Nebraska ("The City") has awarded to _____
Pavers, Inc. as Principal a contract dated the 17 day of February,
2011, (the "Contract") for the work described as follows:

Residential Rehabilitation 2011 Project # 540618

AND WHEREAS, Principal is required to furnish a bond in connection with the Contract to secure the payment of claims of laborers, mechanics, material suppliers, and other persons as provided by law;

NOW, THEREFORE, we, the undersigned Principal and Employers Mutual Casualty Company
as Surety, are held and firmly bound unto The City in the sum of One million three hundred seventy three thousand nine hundred forty one and 20/100
dollars (\$ 1,373,941.20), for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by The City, or its subcontractors shall fail to pay any of the persons named in the City Charter or state statutes, or amounts due with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the State of Nebraska from the wages of employees of Principal and subcontractors with respect to such work and labor, that Surety will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall become and be null and void.

Surety, for value received, hereby expressly agrees that no extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder, shall in any way affect the obligation of this bond; and it does hereby waive notice of any such extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder.

Surety's obligations hereunder are independent of the obligations of any other surety for the payment of claims of laborers, mechanics, material suppliers, and other persons in connection with the Contract; and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing The City's rights against the other.

Project Name: Residential Rehabilitation 2011

Project No.: 540618

In the event suit is brought upon this bond, the parties not prevailing in such suit shall pay reasonable attorneys' fees and costs incurred by the prevailing parties in such suit.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this 17 day of February,
2011.

Principal: Pavers Inc.
(Name of Firm)

By: James M. Buel
(Signature)

James M Buel
(Printed Name)

Title: President

Surety: Employers Mutual Casualty Company
(Name of Firm)

By: Deanne K Kabourek
(Signature)

Deanne K Kabourek
(Printed Name)

Title: Attorney-in-fact

Address for Notices:

INSPRO

PO Box 336

Wahoo NE 68066

NOTE: Notary acknowledgment for Surety and Surety's Power of Attorney must be attached.

EMC Insurance Companies

P.O. Box 712 • Des Moines, IA 50306-0712

No. 920092

CERTIFICATE OF AUTHORITY INDIVIDUAL ATTORNEY-IN-FACT

NOW ALL MEN BY THESE PRESENTS, that:

- Employers Mutual Casualty Company, an Iowa Corporation
- EMCASC0 Insurance Company, an Iowa Corporation
- Union Insurance Company of Providence, an Iowa Corporation
- Illinois EMCASC0 Insurance Company, an Iowa Corporation
- Dakota Fire Insurance Company, a North Dakota Corporation
- EMC Property & Casualty Company, an Iowa Corporation
- Hamilton Mutual Insurance Company, an Iowa Corporation

hereinafter referred to severally as "Company" and collectively as "Companies", each does, by these presents, make, constitute and appoint:

MICHAEL J. CHVATAL, DEBRA K. PLYBON, DEANNE K. KABOUREK, INDIVIDUALLY, WAHOO, NEBRASKA.....

its true and lawful attorney-in-fact, with full power and authority conferred to sign, seal, and execute its lawful bonds, undertakings, and other obligatory instruments of a similar nature as follows:

IN AN AMOUNT NOT EXCEEDING TEN MILLION DOLLARS (\$10,000,000.00)

and to bind each Company thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of each such Company, and all of the acts of said attorney pursuant to the authority hereby given are hereby ratified and confirmed.

The authority hereby granted shall expire APRIL 1, 2011 unless sooner revoked.

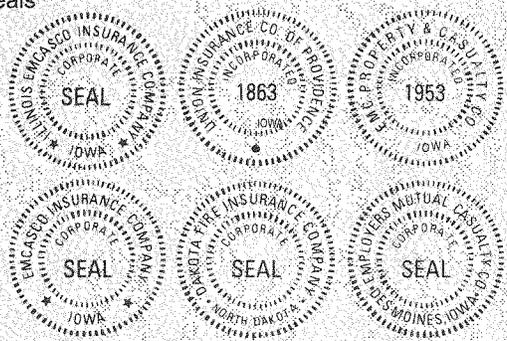
AUTHORITY FOR POWER OF ATTORNEY

This Power-of-Arrowney is made and executed pursuant to and by the authority of the following resolution of the Boards of Directors of each of the Companies at a regularly scheduled meeting of each company duly called and held in 1999:

RESOLVED: The President and Chief Executive Officer, any Vice President, the Treasurer and the Secretary of Employers Mutual Casualty Company shall have power and authority to (1) appoint attorneys-in-fact and authorize them to execute on behalf of each Company and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and (2) to remove any such attorney-in-fact at any time and revoke the power and authority given to him or her. Attorneys-in-fact shall have power and authority, subject to the terms and limitations of the power-of-attorney issued to them, to execute and deliver on behalf of the Company, and to attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and any such instrument executed by any such attorney-in-fact shall be fully and in all respects binding upon the Company. Certification as to the validity of any power-of-attorney authorized herein made by an officer of Employers Mutual Casualty Company shall be fully and in all respects binding upon this Company. The facsimile or mechanically reproduced signature of such officer, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power-of-attorney of the Company, shall be valid and binding upon the Company with the same force and affect as though manually affixed.

IN WITNESS WHEREOF, the Companies have caused these presents to be signed for each by their officers as shown, and the Corporate seals to be hereto affixed this 3RD day of JANUARY, 2008

Seals



Bruce G. Kelley

Bruce G. Kelley, Chairman of Companies 2, 3, 4, 5 & 6; President of Company 1; Vice Chairman and CEO of Company 7.

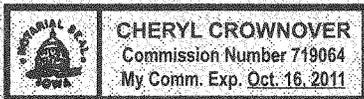
Michael Freel

Michael Freel Assistant Secretary

On this 3RD day of JANUARY AD 2008 before me a Notary Public in and for the State of Iowa, personally appeared Bruce G. Kelley and Michael Freel, who, being by me duly sworn, did say that they are, and are known to me to be the Chairman, President, Vice Chairman and CEO, and/or Assistant Secretary, respectively, of each of The Companies above; that the seals affixed to this instrument are the seals of said corporations; that said instrument was signed and sealed on behalf of each of the Companies by authority of their respective Boards of Directors; and that the said Bruce G. Kelley and Michael Freel, as such officers, acknowledge the execution of said instrument to be the voluntary act and deed of each of the Companies. My Commission Expires October 16, 2011.

Cheryl Crownover

Notary Public in and for the State of Iowa



CERTIFICATE

I, David L. Hixenbaugh, Vice President of the Companies, do hereby certify that the foregoing resolution of the Boards of Directors by each of the Companies, and this Power of Attorney issued pursuant thereto on JANUARY 3, 2008

behalf of Michael J. Chvatal, Debra K. Plybon, Deanne K. Kabourek

are true and correct and are still in full force and effect.

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 17 day of February, 2011

David L. Hixenbaugh

Vice-President

Purchasing Agent Appointment and Delegation of Authority for Sales and Use Tax

PURCHASING AGENT APPOINTMENT

Name and Address of Prime Contractor			Name and Address of Governmental Unit or Exempt Organization		
Name Pavers, Inc.			Name City of Lincoln.		
Street or Other Mailing Address 12303 Hwy 6			Street or Other Mailing Address 555 South 10th Street		
City Waverly NE 68462	State	Zip Code	City Lincoln	State NE	Zip Code 68508
Name and Location of Project			Appointment Information		
Name Residential Rehabilitation Project 540618			Effective Date (see Instructions) February 17, 2011		
Street or Other Mailing Address			Expiration Date November 14, 2011		
City	State	Zip Code	Nebraska Exemption Number (Exempt Organizations Only) N/A		

Identify Project **NOTE: This form cannot be used to purchase materials used for WATER SERVICES. Materials used for WATER SERVICES are taxable per Reg 066.14A**

The undersigned governmental unit or exempt organization appoints the above-named contractor and the contractor's delegated subcontractors as its agent to purchase and pay for building materials that will be annexed to real estate by them into the tax exempt construction project stated above.

sign here

Authorized Signature of Governmental Unit or Exempt Organization _____ Purchasing Agent _____ Title _____ Date _____

DELEGATION OF PRIME CONTRACTOR'S AUTHORITY

Name and Address of Subcontractor			Delegation Information		
Name			Effective Date		
Street or Other Mailing Address			Expiration Date		
City	State	Zip Code	Portion of Project		

The undersigned prime contractor hereby delegates authority to act as the purchasing agent of the named governmental unit or exempt organization to the above-named subcontractor.

sign here

Signature of Prime Contractor or Authorized Representative _____ Title _____ Date _____

INSTRUCTIONS

WHO MUST FILE. Any governmental unit or organization that is **exempt** from sales and use tax may appoint as its agent a prime contractor to purchase building materials and/or fixtures that will be annexed to property that belongs to or will belong to the governmental entity or exempt organization pursuant to a construction contract with the governmental unit or exempt organization. The appointment of the prime contractor as its agent is completed by issuing a Purchasing Agent Appointment and Delegation of Authority for Sales and Use Tax, Form 17, to the prime contractor. The Form 17 is required to be given to the contractor **BEFORE** he or she annexes building materials. The exempt organization or governmental unit must identify the project (e.g., east wing, chapel construction, or new school auditorium).

The exemption from the payment of the Nebraska and local option sales and use taxes only applies if the governmental unit or exempt organization directly or through its contractor pays for the building materials.

WHEN TO FILE. A prime contractor engaging in a construction project with a governmental unit or exempt organization must receive a properly completed and signed Form 17 **BEFORE** any building materials are annexed. If Form 17 is not issued, the contractor must pay the sales and use taxes and the governmental unit or exempt organization may obtain a refund of the taxes paid by the contractor.

WHERE TO FILE. A copy of the completed form should be retained by the governmental unit or exempt organization

Visit our Web site: www.revenue.ne.gov or call 1-800-742-7474 (toll free in NE and IA) or 1-402-471-5729.

issuing the Form 17. The original is to be retained by the prime contractor. Copies of this form must be made by the prime contractor for delegation purposes to any subcontractors working on the project identified on this form.

APPOINTMENT INFORMATION. Enter the dates the purchasing agent appointment will become effective and when it will expire. This appointment will not allow any purchases without payment of the tax by the prime contractor or subcontractor before the effective date or after the expiration date. The dates the delegation becomes effective and the expiration dates must be completed. The phrase "upon completion" or similar phrase is not acceptable as an expiration date. The governmental unit or exempt organization may need to issue another Form 17 if the project is not completed within the prior "effective" and "expiration" dates. Exempt organizations must enter their Nebraska Sales and Use Tax Exemption number.

DELEGATION OF PRIME CONTRACTOR'S AUTHORITY. The prime contractor may delegate his or her authority to act as the purchasing agent of the governmental unit or exempt organization to a subcontractor. The prime contractor must complete his or her copy of Form 17 for each subcontractor who is delegated authority to act as a purchasing agent. Reproductions of this delegation must be provided to the subcontractor, who must retain a copy for his or her records, and to the governmental unit or exempt organization.

Enter the dates the delegation of the subcontractor will become effective, when it will expire, and the portion of the project delegated. This delegation will not allow any purchases without payment of the tax by the subcontractor before the delegation date or after the expiration date. Any further delegation from a subcontractor to additional subcontractors must be delegated by providing a copy of the Form 17 that they received from the prime contractor and attaching it to a separate Form 17 with any further delegation to other subcontractors. The purchasing agent appointment is limited to the contractor's purchase of building materials and/or fixtures for the specific project and is only valid during the appointment dates shown on the Form 17.

EXEMPT SALE CERTIFICATE. A prime contractor who has been appointed to act as a purchasing agent by a governmental unit or exempt organization, and who hires a subcontractor operating as an Option 1 contractor, must provide to that subcontractor a completed copy of Form 17 and a Nebraska Resale or Exempt Sale Certificate, Form 13, with Section C, Part 2, completed. The subcontractor will retain these forms in his or her records, and will not charge the contractor sales tax on any portion of the invoice involving the annexation of materials to the specific project identified on the Form 17. If these forms are not provided to the subcontractor operating under Option 1, the subcontractor must collect and remit sales tax on the charge for the separately stated building materials portion of the invoice. If the Option 1 subcontractor does not separately state the charge

for the building materials from contractor labor, then the entire charge is taxable to the prime contractor.

Contractors operating under Option 2 (maintaining a tax-paid inventory) who have been issued a Form 17 from a governmental unit or an exempt organization, must furnish each vendor a copy of the Form 17 and a Form 13, completing Section C, Part 2, when purchasing building materials that will be annexed to real estate. Forms 13 and 17 must be retained with the vendor's and contractor's records for audit purposes. A contractor or subcontractor may reproduce copies of these documents which will be furnished to the vendors for each invoice or order made by them.

Invoices from vendors for the purchase of building materials by the contractor as purchasing agent, or the authorized subcontractor, must clearly identify that such purchase is for the specific Form 17 project.

CREDIT/REFUND OF SALES AND USE TAX. A contractor or subcontractor who has been appointed as a purchasing agent before any materials are annexed, may withdraw sales or use tax-paid materials from inventory that will be annexed to real estate or used to repair property annexed to real estate and receive a credit for the sales or use tax amount previously paid on those materials.

The contractor or subcontractor may take a credit either against his or her current tax liability, or file a Claim for Overpayment of Sales and Use Tax, Form 7, and receive a refund of the sales or use tax paid on those materials.

TOOLS, EQUIPMENT, AND SUPPLIES. The purchase, rental, or lease of tools, supplies, or equipment (i.e., scaffolding, barricades, machinery, etc.) by a contractor for use in the completion of an exempt project CANNOT be purchased tax free, even if the contractor has been issued a Form 17. These items do not become annexed to the real estate.

OPTION 1 CONTRACTOR ONLY. If an Option 1 contractor is the **only** contractor involved in performing work for a governmental unit or exempt organization, a Form 17 is NOT required. The Option 1 contractor must only obtain a Form 13, Section B, from the exempt project owner.

PENALTY. Any person who signs this document with the intent to evade payment of tax is liable for the sales and use tax, interest, and penalty, and may be found guilty of a misdemeanor. A contractor can confirm the exempt status of a governmental unit or organization by contacting the Nebraska Department of Revenue.

AUTHORIZED SIGNATURE. The Purchasing Agent Appointment must be signed by an officer of the exempt organization or proper government official. The Delegation of Prime Contractor's Authority must be signed by the owner, partner, corporate officer, or other individual authorized to sign by a power of attorney on file with the Nebraska Department of Revenue.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
02/21/2011

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

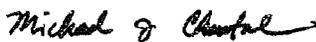
PRODUCER INSPRO Insurance P.O. Box 336 Wahoo, NE 68066 402 443-3742	CONTACT NAME: Dee Kabourek PHONE (A/C, No, Ext): 4024433742 FAX (A/C, No): 4024433571 E-MAIL ADDRESS: dkabourek@insproins.com PRODUCER CUSTOMER ID #:														
	<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A : Employers Mutual Insurance</td> <td>21415</td> </tr> <tr> <td>INSURER B : Acuity</td> <td>14184</td> </tr> <tr> <td>INSURER C :</td> <td></td> </tr> <tr> <td>INSURER D :</td> <td></td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </tbody> </table>		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : Employers Mutual Insurance	21415	INSURER B : Acuity	14184	INSURER C :		INSURER D :		INSURER E :		INSURER F :
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INSURED Pavers, Inc. 12303 Hwy 6 Waverly, NE 68462															

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	GENERAL LIABILITY			2X7949211	12/01/2010	12/01/2011	EACH OCCURRENCE		
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	\$1,000,000	
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						MED EXP (Any one person)	\$100,000	
							PERSONAL & ADV INJURY	\$5,000	
							GENERAL AGGREGATE	\$1,000,000	
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	\$2,000,000	
	<input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC							\$	
A	AUTOMOBILE LIABILITY			2X7949211	12/01/2010	12/01/2011	COMBINED SINGLE LIMIT (Ea accident)		
	<input checked="" type="checkbox"/> ANY AUTO							\$1,000,000	
	<input type="checkbox"/> ALL OWNED AUTOS						BODILY INJURY (Per person)	\$	
	<input type="checkbox"/> SCHEDULED AUTOS						BODILY INJURY (Per accident)	\$	
	<input checked="" type="checkbox"/> HIRED AUTOS						PROPERTY DAMAGE (Per accident)	\$	
<input checked="" type="checkbox"/> NON-OWNED AUTOS				\$					
							\$		
							\$		
A	UMBRELLA LIAB		<input checked="" type="checkbox"/> OCCUR	2X7949211	12/01/2010	12/01/2011	EACH OCCURRENCE		
	EXCESS LIAB		<input type="checkbox"/> CLAIMS-MADE				AGGREGATE	\$2,000,000	
	DEDUCTIBLE							\$	
	<input checked="" type="checkbox"/> RETENTION \$ 10000						\$		
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			L00626	12/01/2010	12/01/2011	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS		
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N						E.L. EACH ACCIDENT	\$1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below	<input checked="" type="checkbox"/> Y	N/A					E.L. DISEASE - EA EMPLOYEE	\$1,000,000
								E.L. DISEASE - POLICY LIMIT	\$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
Project: Residential Rehabilitation 2011 Project # 540618 City of Lincoln is a named an additional insured.

CERTIFICATE HOLDER City of Lincoln Building & Safety Dept 555 S 10th ST Room 203 Lincoln, NE 68508-3995	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
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**SPECIAL PROVISIONS
FOR
RESIDENTIAL REHABILITATION 2011
PROJECT NO. 540618**

These Special Provisions amend or supplement the City of Lincoln Standard Specifications for Municipal Construction, 2006 Edition, and other provisions of the Contract Document as indicated herein. All provisions that are not so amended or supplemented remain in full force and effect.

I. The following are modifications or additions to parts of the General Provisions and Requirements, of the City of Lincoln Standard Specifications for Municipal Construction:

Contract Time and Liquidated Damages

→The Contractor shall have until October 14, 2011 to complete all items of work on Project No. 540617. The Completion Date is based upon the Contractor receiving a Notice-to-Proceed with the project on or before March 15, 2010.

→The Contractor's failure to complete all work necessary to provide for safe and unrestricted public vehicular and pedestrian traffic on the full width of the listed locations by October 14, 2011 shall result in liquidated damages of \$1,500 per calendar day.

Subletting or Assigning the Contract

The following Special Provisions shall be considered in addition to Section VI, Part L, of the General Conditions of the 2006 City Standard Specifications.

The Contractor shall perform with his own organization contract work amounting to not less than 50 percent of the total contract amount.

No portion of the contract shall be subcontracted, assigned, or otherwise disposed of except with the written consent of the City Engineer. Requests for permission to sublet, assign or otherwise dispose of any portion of the contract shall be in writing and accompanied by a showing that the organization which will perform the work is particularly experienced and equipped for such work. The Contractor shall give assurance that the minimum wage for labor as stated in his proposal shall apply to labor performed on all work subcontracted, assigned or otherwise disposed of in any way. Consent to subcontract, assign or otherwise dispose of any portion of the contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract.

In the event the Contractor permits work under this contract to be performed by forces other than by his own organization without obtaining prior written consent of the Engineer, such work shall be considered unauthorized and will not be paid for under the provisions of the contract.

**SPECIAL PROVISIONS
FOR
RESIDENTIAL REHABILITATION 2011
PROJECT NO. 540618**

Tree Protection

The Contractor is to protect all trees that are not required to be removed in this project. Any form of protection chosen by the Contractor, such as fences, ropes, etc., shall be furnished, erected, and maintained by the Contractor. Any trees that appear to have significant root damage caused by the excavation necessary to widen the street or any tree that needs trimmed in or from the public right-of-way, shall be coordinated with the Project Manager or his representative who shall contact the City Arborist to verify any necessary actions in saving, trimming, or removing the damaged tree.

- II. The following are modifications or additions to parts of Chapter 15, Traffic Control, of the City of Lincoln Standard Specifications for Municipal Construction. They are intended to allow the Contractor to complete the work on this project while minimizing disruption to the motoring public and maximizing access to affected properties.*

Special Traffic Control Provisions

→The Contractor shall ensure that rehabilitation of any residential street adjacent to any public or private school does not take place while that school is in session.

→The Contractor will perform his construction activities so that residents will have as much access as possible. Pavement and driveway removals within the project limits shall be scheduled so that individual residential driveways are not out of service for more than seven (7) days. If the Engineer determines that the Contractor is unable to meet this requirement, additional pavement removals may be suspended until this requirement can be met. No calendar day extensions will be approved based on delays caused by this requirement.

→No more than two locations may be closed per concrete crew and asphalt must be in place before a third location may be closed.

**SPECIAL PROVISIONS
FOR
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IV Street Rehabilitation Provisions - The following are modifications or additions to parts of the City of Lincoln Standard Specification for Municipal Construction:

Preparation of Existing Surface

Street Preparation

The power grinding of the street shall be take place until all of the concrete work is complete on that section. Material generated by power grinding shall be disposed of at the City Maintenance yard at 23rd & Baldwin Avenue, 901 North 6th Street or 56th & London Road, as directed by the Engineer. The power grinder shall have a self-loader with a minimum cutting width of six feet (6).

The interface between the surfaced planed area and the concrete gutter pan shall be cleaned of all old asphalt and maintained to provide a smooth , straight, and vertical surface.

Cleaning

Prior to the application of asphaltic materials, the surface on which the asphalt is to be placed shall be thoroughly cleaned as necessary to remove all mud, matted earth, dust and other foreign materials as approved by the Engineer. Power brooming shall be conducted in such a manner as to keep dust and debris under control and cause a minimum of disturbance to surrounding areas. Material cleaned from the surface shall be removed and disposed of by the Contractor.

Equipment and Payment

The Engineer shall approve all the equipment to be used. Bid prices called for in the proposal for such equipment to be fully operations shall include the operator, fuel, oil, tools, and all parts necessary for complete operation. The use of this equipment shall be paid for per hour as bid.

Removal and Replacement Items

Removal items are not necessarily of the same size and shape as the new construction. Removal shall include whatever materials occupy the space which the new construction is intended to occupy. All removal and replacement items shall be paid for under the units identified in the bidding schedule and paid for at the unit price bid for each appropriate item. Such payment shall compensate for removal of the existing items and their disposal; preparation of the new subgrades; constructing the replacement items; materials, equipment, tools, labor and incidentals

**SPECIAL PROVISIONS
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necessary to complete the removal and replacement of each item called for in the bidding schedule.

Concrete Base Repair

Description - This work shall consist of removing and replacing pavement in accordance with the details shown in the plans and at locations designated by the Engineer.

Concrete Base Repair - All areas of concrete base failure shall be replaced with L3500 Concrete, as directed by the Engineer. When pouring back the new concrete base, the Contractor shall be required to use a vibrating screed that shall operate over the entire width of the base and shall achieve uniform consolidation. All small or irregular areas shall be vibrated by methods approved by the Engineer.

Concrete base repair shall be measured for payment in square yards, complete, in place and accepted by the Engineer. The quantity of completed and accepted work shall be paid for at the contract unit price per square yard for the item "REM & REPL 6" CONC BASE, (L3500)" or "REM & REPL 6" CONC BASE, (I5500)". This price shall be full compensation for furnishing, preparing, transporting, delivering and placing all materials; all curing, removing and disposing of old pavement and steel as specified herein; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Curb Removal and Replacement

The replacement of curb shall be accomplished with a slip-form curb machine side mount only, using string line as grade, unless permission is obtained from the Engineer to hand form the curb.

Removals shall be disposed of at a site approved by the Project Manager. The curb removal and replacement shall be done prior to laying the asphalt. The clean-up of the streets to their original condition and the park spacing shall be subsidiary to the price for removal and replacement. All earth fill shall be select material and furnished by the Contractor as subsidiary to the items for which direct payment is made. Any area disturbed beyond three feet behind the existing curb and gutter or widen curb area shall be sodded at the Contractor's expense.

Concrete curb shall be measured for payment by the lineal foot, complete, in place and accepted by the Engineer. The quantity of

**SPECIAL PROVISIONS
FOR
RESIDENTIAL REHABILITATION 2011
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completed and accepted work shall be paid for at the contract unit price per linear foot for the item "REM & REPL 24" COMB CURB/GUTTER". This price shall be full compensation for furnishing, preparing, transporting, delivering and placing all materials; all curing, removing and disposing of old curb as specified herein; and for all labor, equipment, tools and incidentals necessary to complete the work.

Concrete Driveway, Walk, and Median Surfacing Removal & Replacement

Removals shall be disposed of at a site approved by the Project Manager. One-inch expansion joints shall be placed at all locations where the walk or driveway or curb abut.

Concrete driveway, walk and median repair shall be measured for payment in square foot complete, in place and accepted by the Engineer.

The quantity of completed and accepted work shall be paid for at the contract unit price per square foot for the item "REM & REPL ___ "CONC DR, WK & MDN (L3500)" AND "REM & REPL ___ " CONC DR, WK & MEDN (L5500)" and "REM & REPL 4" CONC WALK (I3500)". This price shall be full compensation for furnishing, preparing, transporting, delivering, and placing all materials; all curing, removing, and disposing of old walk, driveway and median surfacing as specified herein; and for all labor, equipment, tools, and incidentals necessary to complete the work.

The Contractor shall make all connections of new storm sewers to existing storm sewers as shown on the plans.

The Lincoln Standard Plans are hereby amended to reflect only a nine (9) lineal feet deduction for curb through the area of the inlets (Straight, Canted, or Radius).

Inlets shall be paid for at the contract unit prices per each for "72" STORM SEWER INLET, STRAIGHT, CANTED, OR RADIUS". This payment shall be full compensation for excavation, backfill, materials, equipment, tools, labor and incidentals necessary to complete the work.

At various locations shown on the plans, the existing inlet tops shall be replaced with new inlet tops, including ring and cover. All new tops shall be paid at the unit price bid for "PRE-CAST" INLET TOP, IN PLACE". Such payments shall be for full compensation for removal of the existing items and their disposal.

Manhole and Valve Box Adjustment

**SPECIAL PROVISIONS
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When adjusting manhole or valve boxes in streets the ring and cover shall be no lower than 3/8" below finish street elevations. If it is determined a manhole or valve box does not meet this requirement, the Contractor, at his own expense, will be required to use the cities Typical Utility Adjustment Detail (See plan booklet for details).

Standard Monument Box Extension

The Contractor shall install PVC extensions, supplied by the City, over Survey Monument Boxes, during the Asphaltic Concrete placement to ensure access after the lay down operation is complete. No direct payment will be made for the above described work. It shall be considered subsidiary to the items for which direct payment is made.

Sprinkler System

The Contractor shall locate, protect and repair at his expense any portion of a sprinkler system that is damaged by his work operations. No direct payment will be made for the above described work, as it shall be considered subsidiary to the items for which direct payment is made.

When sprinklers need to be relocated as a result of the work, it shall be approved by the Project Manager and paid as an 'extra work item'.

Mailboxes

Remove and replacing mailboxes shall be considered subsidiary to items for which payments are made. Ornamental mailboxes shall remain in place and the curb shall be hand formed in the area of the ornamental mailbox.

Public Information Signs

The Contractor shall pick up at the Department of Public Works & Utilities, Engineering Services Office and shall erect and maintain public information signs. The signs shall be erected and in place only during the time of construction. At the completion of construction, the signs shall be moved to the next construction site. The signs shall be picked up at the beginning of the contract and returned at the completed of the contract to a location designated by the Engineer. All necessary precautions shall be taken in the transportation and erection of the signs to protect them from damage other than normal wear. No direct payment will be made for the above work, it being considered subsidiary to the items for which direct payment is made.

**SPECIAL PROVISIONS
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The Contractor shall erect and maintain temporary "No Parking" signs, supplied by the City. No direct payment will be made for the above work, it is considered subsidiary to the items for which direct payment is made.

CHAPTER 5

ASPHALTIC CONCRETE CONSTRUCTION

5.00 GENERAL

Asphaltic concrete mixtures required for surface courses, base courses, overlays, wedge courses, and patching shall be placed as hereinafter specified. Asphaltic concrete shall be bid and paid for by the ton as defined in these specifications. The factor of 141 pounds per cubic foot shall be used to compute asphaltic concrete quantities for design purposes.

Patching shall be defined as pavement replacement of areas requiring small quantities of asphaltic concrete per placement such as utility crossings and repair, returns to existing streets, or larger quantity placements such as longitudinal cuts for utility work not requiring curb to curb asphalt replacement, temporary pavement, and for other similar situations as directed by the Engineer.

5.01 RELATED ITEMS SPECIFIED ELSEWHERE

Chapter 1 - Pavement Construction and Reconstruction
Chapter 2 - Earthwork
Chapter 4 - Portland Cement Concrete (PCC) Base
Chapter 12 - Asphaltic Concrete

5.02 MATERIALS

A. ASPHALTIC CONCRETE MIXTURES

Asphaltic Concrete shall be an approved mix as shown on the Plans or in the Contract Special Provisions and as defined in Chapter 12 of these Specifications.

B. NON-WOVEN PAVEMENT OVERLAY FABRIC

When specified, non-woven overlay fabric shall be needle punched, polypropylene fabric conforming to the following requirements:

PROPERTY	TYPICAL	MINIMUM
Mass, g/m ²	145	129
Tensile Strength, newton (N)	512	400
Elongation at Break, %	60	55
Mullen Burst Strength, kPa	1515	1375
Asphalt Retention, L/m ²	---	0.90

Acceptance shall be based upon manufacturer's certification of conformity.

5.03 EQUIPMENT

All equipment, tools and machinery shall be adequate for the purpose for which it is to be used, and shall be maintained in satisfactory working condition at all times. The equipment shall be at the Work site sufficiently in advance of construction operations to be thoroughly examined and approved by the Engineer. The Contractor shall furnish the necessary accessories, equipment data, and assistance required by the Engineer for making tests and calibrations on equipment.

A. DISTRIBUTORS

Whenever the use of a distributor is required, that piece of equipment shall be manufactured expressly for the purpose of applying heated asphaltic materials by pressure spray applications. Improvised equipment, such as converted road oilers, will not be acceptable. The distributor shall be so designed as to permit the application of heated asphaltic material in a uniform spray without atomization at the rate, temperature, and pressure required. The distributor shall be equipped with a tachometer registering revolutions per minute and so located as to be visible to the driver in order that the driver may maintain the constant speed required for the specified rate of application. The distributor shall be mounted on a motor truck or trailer, equipped with pneumatic tires. The pump shall be equipped with a meter registering the number of gallons (liters) per minute passing through the nozzle and this meter must be visible to the operator. The distributor shall be equipped with an accurate thermometer which indicates the temperature of the asphaltic materials at all times. The distributor shall be equipped with a full-circulating spray bar and shall be provided with hand-nozzles to permit application to areas not accessible to the spray bar. The distributor shall be equipped with a drip tray or other suitable means of preventing the dripping of material after the flow has been shut off.

B. ASPHALT SPREADER AND FINISHER

The mechanical asphalt spreader and finisher shall be self-propelled and shall be designed and equipped to spread upon the prepared surface without segregation of the mixture, a tamped and finished wearing surface of asphaltic concrete free from hollows and humps.

The machine shall be equipped with a hopper to receive the asphaltic concrete as it is dumped from the trucks and shall be designed so as to prevent the mixture from being deposited directly on the base or previously laid courses. The hopper shall have a suitable device to distribute the mix evenly across the full width of the screed. The machine shall be equipped with means of adjusting the thickness of the mat, and the transverse and longitudinal grade. It shall be equipped with a tamping or vibrating screed which shall be operated during the lay-down process to compact the applied material to a uniform density. No part of the machine shall travel on the freshly laid material. There shall be auxiliary attachments for the machine so it shall be operated to lay widths as approved by the Engineer.

C. ROLLERS

The number of rollers furnished shall be not less than two independent units, one being a steel wheeled roller and the other a pneumatic tire roller. In lieu of two rollers, one may be used if it is a vibratory roller with one set of pneumatic tires and with separate controls for energy and propulsion, which produces the specified density and a satisfactory surface.

Wheels of all rollers shall be smooth and free from openings or projections which would mar the surface of the Work. They shall be equipped with suitable devices necessary to prevent adhesion of bituminous material to the tires and wheels. The rollers shall be equipped with water tanks for wheel sprinkling devices that extend the full width of each roller, and drip pans designed so as to prevent oil, grease, gas or diesel oil from spilling or dripping onto the asphaltic concrete surface.

5.03 EQUIPMENT (Continued)

D. SURFACE PLANER

The planing machine shall be self-propelled, of sufficient weight, size, power and traction to remove surface irregularities without tearing or displacing of the remaining asphaltic surface or concrete pavement. The cutting edge or drum shall be designed and constructed to permit adjustment to match the existing roadway crown. The machine shall be so designed to permit operation against all curbs, catch basins, inlets and other appurtenances within the Work area. The minimum grinding or planing width of the machines shall be 30 inches. Alternate equipment will not be acceptable without prior written approval of the Engineer.

E. TRUCKS

Numbered trucks having tight, clean, smooth beds shall be used for transporting the freshly prepared asphaltic concrete to the site of the Work. The beds shall be sprayed, when necessary, to prevent the asphaltic concrete mixture from adhering to the bed, with a minimum quantity of approved lubricant. The equipment used and the frequency of spraying shall be determined by the Engineer.

All trucks shall be equipped with a suitable waterproof canvas cover to protect the material as required by the Engineer. Any truck that causes excessive segregation of materials by the action of its spring suspension or other contributing factors, or that causes undue delays, shall not be used for transporting the asphaltic concrete mixtures. All truck beds shall be so constructed that they may be insulated, when necessary. All truck boxes shall be equipped with box vibrators.

5.04 PREPARATION OF EXISTING SURFACE

A. CLEANING

Prior to the application of asphaltic materials on existing base, the surface on which the asphalt is to be placed shall be thoroughly cleaned by means of mechanical sweepers, street flushers, shovels, scrapers, and hand brooms as is necessary to remove all mud, matted earth, dust and other foreign materials. Power brooming shall be conducted in such a manner as to keep dust and debris under control and cause a minimum of disturbance to surrounding areas. Material cleaned from the surface shall be removed and disposed of by the Contractor.

The cost of cleaning the existing surfaces to which asphalt is to be applied shall be considered subsidiary to other items for which payment is made.

B. SURFACE PLANING

Surface planing shall consist of grinding or planing of existing asphaltic or concrete pavements to remove any surface irregularities to within a predetermined specified limit, in accordance with the requirements of these Specifications, at locations shown in the plans, or as directed by the Engineer.

Unless the total street width is to be planed, prior to beginning the operation the Engineer shall indicate all individual areas to be planed. These areas shall be rectilinear, except where existing obstructions prohibit this shape.

Surface planing shall be accomplished without gouging or tearing of the remaining pavement surface. The Contractor shall make as many passes with the planing machine as necessary to remove the surface. Surface planing shall include the grinding of all dissimilar material.

5.04 PREPARATION OF EXISTING SURFACE (Continued)

B. SURFACE PLANING (Continued)

The interface between the surface planed area and the concrete gutter pan shall be cleaned of all old asphalt and maintained to provide a smooth, straight, and vertical surface.

Following the final pass, the planed surface shall be within a tolerance of 1/4 inch when checked with a 10 foot straightedge.

The Contractor shall be responsible for location and protection of all manholes, valve boxes, and all other appurtenances, some of which may be below the surface of the street, and to protect equipment from the danger of striking same. Claims for any and all damages arising from hitting these appurtenances shall be the Contractor's responsibility. The Contractor shall have access to applicable records; however, the Contractor shall not rely upon these records to reveal all such hidden appurtenances.

The Contractor shall be held responsible for all appurtenances in the pavement surface which have been damaged or disturbed by the Contractor. The cost of repairing or replacing these damaged appurtenances shall be made at the Contractor's expense.

The Contractor shall remove all pavement cuttings which result from the performance of this Work and deliver them to locations approved by the Engineer.

BASIS OF PAYMENT

When called for in the proposal, the cost of operating the surface planer and the cost of collecting and hauling the pavement cuttings shall be paid for at the contract unit price per hour for each piece of equipment during the time that it is in use. Cleaning required subsequent to the initial removal of the cuttings shall be as provided in Paragraph A above.

When called for in the proposal, SURFACE PLANING, completed in conformance with the plans and Specifications and accepted by the Engineer, shall be measured and paid for at the contract unit price bid per square yard. Such payment shall be full compensation for all surface preparation, planing, removal of materials, labor, tools, equipment, clean up and incidentals necessary to complete the Work.

C. CORRECTION OF PAVEMENT FAILURES

After the surface planing and cleaning have been accomplished, the Engineer shall examine the pavement structure to which the asphaltic concrete is to be applied. Any pavement failures shall be repaired as designated by the Engineer.

BASIS OF PAYMENT

The cost of repairing pavement failures shall be measured and paid for at the appropriate unit prices or shall be accomplished as an Extra Work Item.

5.04 PREPARATION OF EXISTING SURFACE (Continued)

D. TACKING

This Work shall consist of the application of asphaltic materials to previously prepared bases or existing surfaces.

After the surface is completely cleaned and dry it shall have a tack coat of rapid curing cut-back asphalt or emulsified asphalt applied sufficiently in advance of the laying operation to break or cure prior to the application of the surface coat.

Traffic shall not be permitted on the tack coat without the permission of the Engineer, and the asphalt surface course shall be applied as soon as the tack breaks and the water has evaporated. The rate of application generally should be from 0.05 to 0.2 gallons per square yard, with the rate of application to be approved by the Engineer. Tack or asphaltic cement shall be applied by hand to all vertical edges.

The cost of supplying and applying tack coat will not be measured for payment. It shall be considered subsidiary for other items to which direct payment is made.

E. NON-WOVEN PAVEMENT OVERLAY FABRIC

Non-woven pavement overlay fabric and asphaltic cement sealant shall be placed at locations called for on the plans. This Work shall consist of the application of an asphalt sealant and the placement of a non-woven pavement overlay fabric over the entire prepared surface of the pavement to be surfaced or resurfaced with asphalt. Sealants are applied both to seal the existing surface and to provide a cement to adhere to the fabric. Emulsified asphalts are not acceptable for sealant.

Sealant and fabric shall be placed only when the ambient air temperature is 50°F or above. The pavement surface on which the sealant fabric is to be placed shall be dry and free of dirt, debris and other foreign matter. Joint and crack openings of 1/8 inch and larger shall be filled with a suitable material as directed by the Engineer. The asphalt sealant shall be applied with distributor equipment at a rate of 0.25 to 0.30 gallons per square yard. The width of the asphalt sealant application shall be the fabric width plus 2 to 6 inches or the entire width of the pavement to be surfaced. Temperature of the sealant shall be not less than 280°F at the time of application to ensure a uniform spray pattern.

No drilling or skipping shall be permitted. Asphalt drools or spills shall be cleaned from the pavement surface to avoid flushing and possible fabric movement at these asphalt rich areas. Fabric lay-down equipment shall be used for placement of the fabric. Overlap of fabric joints shall be 1 to 3 inches.

Immediately after the placement, the fabric shall be embedded into the asphalt cement sealant with a pneumatic roller, unless otherwise directed by the Engineer. The construction of the asphaltic concrete overlay shall follow closely the placement of the fabric. In the event the sealant bleeds through the fabric before the overlay is placed, the Contractor shall be required to spread a thin layer of sand or asphaltic concrete over the affected areas in order to prevent the fabric from being picked up by the construction equipment. The application of tack coat will not be required on the fabric prior to the placement of the asphaltic concrete unless a delay in the placement of the overlay results in the fabric becoming dry or dirty.

5.05 HAULING AND SPREADING ASPHALTIC CONCRETE MIXTURES

A. HAULING

Clean trucks fully fueled shall be weighed in the morning when starting up and then again in the early afternoon to obtain accurate tare weights. The Engineer may also require re-weighing at any time to obtain new tare weights.

B. SPREADING

Asphaltic concrete used in the construction of sections having a uniform width as shown in the typical cross section of the plans, shall be spread and finished with an approved mechanical spreading and finishing machine. The operation of placing mixtures shall be continuous, as nearly as possible.

The asphaltic concrete mixture shall be dumped in the center of the hopper of the spreading machine. Care shall be exercised to avoid overloading and slopping over of the mixture on the base, pavement, or previously laid asphaltic concrete. The operating speed and depth of strike-off of the spreading and finishing machine shall be regulated so as to produce a well knit, uniform layer of the required compacted thickness.

The asphaltic concrete mixture shall be laid only upon a surface which is dry and free from frost.

When the asphaltic concrete mixture is placed in irregular or narrow sections, intersections, or other areas where it is impractical to spread and finish the mixture by methods previously specified, the Contractor may use other equipment or acceptable hand methods for spreading the mixtures, as approved by the Engineer.

The cost of hauling and spreading the asphaltic concrete mixture shall be considered subsidiary to other items for which payment is made.

5.06 COMPACTING AND FINISHING ASPHALTIC CONCRETE MIXTURES

A. ROLLING

Immediately after spreading, the mixture shall be compacted thoroughly by rolling. The number, weight, types of rollers, sequence of rolling operations and compaction procedures shall be such that the required density and a satisfactory surface are attained consistently while the mixture is in a workable condition.

The initial rolling shall begin as soon as the mat will bear the weight of the roller without displacing the material. The final compaction and finishing shall be performed by rollers while the material is still warm and responds to the action of the roller. Rolling shall not be carried on in such a manner or at such a time as will cause shoving or cracking. No additional rolling or compaction will be allowed after the asphalt has cooled beyond 250° F (121° C).

The asphaltic concrete shall be compacted such that the completed surface is slightly above the surface of the concrete at the gutter pan joint and shall be smooth, true and conform to the grade, cross section and contour required without any irregularities that exceed 1/8 inch when tested with a 10 foot straightedge.

5.06 COMPACTING AND FINISHING ASPHALTIC CONCRETE MIXTURES (Continued)

A. ROLLING (Continued)

All areas not accessible to the equipment specified shall be compacted and finished by other equipment and methods that will provide a satisfactory surface and the specified density. Any areas determined by the Engineer to be defective, shall be immediately reworked to the satisfaction of the Engineer.

B. JOINTING

Longitudinal and transverse joints shall be made in such a manner that well bonded and sealed joints are achieved. Joints between old and new pavement shall be made in such a manner as to insure a thorough and continuous bond between the old and new surface

Cold joints shall be painted with a light application of asphalt cement before the adjacent material is placed. When placing surface course, a hot joint between lane placement shall be maintained as directed by the Engineer.

Joints in the surface course shall be formed by any approved method that will produce a dense vertical joint; otherwise the previously laid surface course shall be cut back to its full depth so as to expose a fresh surface, after which the hot mixture shall be placed in contact with it and raked to proper depth and grade.

No measurement or direct payment shall be made for the operations of rolling and jointing asphaltic concrete pavement. The cost thereof shall be considered subsidiary to other items for which direct payment is made.

C. DENSITY AND DENSITY SAMPLES

1. General

During the construction of asphaltic concrete pavement, the Contractor shall obtain core samples from each pavement lift for the determination of density. These samples shall be taken not later than seven (7) days after the date of placement of the asphaltic concrete at locations designated by the Engineer and shall be delivered to the City Testing Lab or given to the Project Observer immediately after removal from the pavement. The samples shall be taken by drilling with a minimum 4 inch diameter core drill. After removal from the pavement, the cores shall not be sawed, trimmed, or modified by the Contractor in any way so that the actual lift thickness may be determined by the Engineer. The surfaces from which the samples have been taken shall be restored by the Contractor with hot asphaltic concrete mixture on the next succeeding date of plant operation but not later than seven (7) days after placement. Density samples shall be tested in accordance with the Nebraska Standard Method of Tests for specific gravity of compressed bituminous mixtures, NDR T 166. The void-less density for each lot sample shall be tested in accordance with the Nebraska Standard method of test for Maximum Specific Gravity of Bituminous Paving Mixtures, NDR T 209.

A minimum of one sample shall be required for each lot of asphaltic concrete. A lot is defined as each 500 tons or fraction thereof of each day's production. The location of each of the required samples shall be determined by the Engineer. The % of Payment for each lot of asphaltic concrete shall be in accordance with Table "A" of this Section. The % of Payment in Table "A" shall be reduced by 5% for any lot represented by initial density samples received by the City Testing Lab more than (7) days from date of placement.

5.06 COMPACTING AND FINISHING ASPHALTIC CONCRETE MIXTURES (Continued)

C. DENSITY AND DENSITY SAMPLES (Continued)

2. Arterial Streets

The asphaltic concrete for arterial streets shall be compacted to a density of not less than ninety-two and one half percent (92.5%) of the void-less density for that mixture. If any density test result indicates a compaction value of less than ninety-two and one half percent (92.5%) of the void-less density, two additional check cores will be obtained from that lot by the Contractor at points designated by the Engineer not later than 14 days after date of placement and delivered to the City Testing Lab or given to the Project Observer immediately after removal from the pavement as described above. The % of Payment in Table "A" shall be reduced by 5% for any lot represented by check cores received more than (14) days from date of placement. The average density of the three samples shall be considered the density of the lot. In the event a sample is obviously damaged, an alternate sample will be obtained within 3 feet of the location of the damaged sample.

Reduction in payment for each lot of asphaltic concrete will be made according to the following table:

TABLE 'A'

Average Density	Min. # Samples	% of Payment
92.5 and above	1	100
92.0 to 92.4	3	95
91.5 to 91.9	3	90
91.0 to 91.4	3	85
90.5 to 90.9	3	80
90.0 to 90.4	3	70
89.9 or less	3	40 or reject

Where removal is required, no payment will be made for the asphalt concrete surfacing ordered removed or the cost associated with the removal thereof.

The thickness of the samples shall be the average of four measurements made at four equally spaced locations on the perimeter of the sample. When the nominal layer thickness is either less than 1 inch or less than one and a half times the nominal maximum size of the aggregate contained in the asphaltic concrete mixture, the sampling and testing of density for this layer shall be waived. When the nominal thickness of a layer is greater than 1 inch and also equal to or greater than one and a half times the nominal maximum size of aggregate contained in the asphaltic concrete mixture, the thickness of the density sample or samples shall also equal or exceed these thickness requirements. Density determinations shall be waived for any lot when the maximum thickness requirements are not met by any of three samples taken at random.

5.06 COMPACTING AND FINISHING ASPHALTIC CONCRETE MIXTURES (Continued)

C. DENSITY AND DENSITY SAMPLES (Continued)

3. Non Arterial Streets and Parking Areas

The general requirement for Density and Density Samples shall be the same as that for Arterial Streets.

Where removal is required, no payment will be made for the asphalt concrete surfacing ordered removed or the cost associated with the removal thereof.

No measurement or direct payment shall be made for obtaining core samples for the determination of the density pay factor and layer thickness and restoring the surface. Obtaining core samples and restoring the surface shall be considered subsidiary to the items for which direct payment is provided.

D. ASPHALTIC CONCRETE CURB

When called for on the plans, asphaltic concrete curb shall be constructed of a mix approved by the Engineer, or as shown on the plans. The asphaltic concrete shall conform to the shape and dimensions that are shown on the plans.

Whenever possible the asphaltic concrete curb shall be shaped and compacted with a curb machine capable of constructing the curb true to line, grade, and cross section and to a density and with a surface texture which is satisfactory to the Engineer.

Special precautions shall be taken to provide a proper bond between the surface course and the curb. The surface shall be thoroughly cleaned and tacked with hot asphalt cement. If performed during cool weather, surface course shall be heated so that it is sufficiently plastic to form a bond with the hot asphaltic concrete curb.

E. COLD WEATHER PLACEMENT

When weather conditions are expected to adversely affect the temperature of the Asphaltic Concrete during placement and compaction, all haul trucks shall be covered and insulated as directed by the Engineer.

The temperature of the Asphaltic Concrete during placement shall be such that compaction is accomplished within the temperature range as specified by the Asphalt Binder supplier for the grade of binder being used.

Asphaltic Concrete shall not be placed when the ambient temperature during placement is expected to fall below 35°F, without permission from the Engineer.

Asphaltic concrete shall not be placed on frozen or frost covered subgrade or base. Table 'B' shall be used by the Engineer to restrict the routine placement of asphaltic concrete as a result of cold temperatures. Wind velocity, cloud cover, and other project specific conditions will be considered by the Engineer if deviating from Table 'B'.

5.06 COMPACTING AND FINISHING ASPHALTIC CONCRETE MIXTURES (Continued)

E. COLD WEATHER PLACEMENT (Continued)

TABLE 'B'

Lift Thickness	Minimum Surface Temperature
Less than 2 inches	45°F
2 to 3 inches	37°F
Greater than 3 inches	35°F

5.07 BASIS OF PAYMENT

A. NON-WOVEN PAVEMENT OVERLAY FABRIC

Placement of the non-woven pavement overlay fabric shall be measured and paid for at the contract unit price bid per square yard for the item NON-WOVEN PAVEMENT OVERLAY FABRIC. Such payment shall be full compensation for cleaning and preparing the pavement surface, filling joint and crack openings; for furnishing, heating, and applying the asphalt sealant; for placement and rolling of the fabric; for furnishing and applying material for blotting the surface of the fabric as required; and for all equipment, labor, tools, and incidentals required to complete the Work.

B. RESURFACING

ASPHALTIC CONCRETE used as a surface course, wedge course, or overlay, constructed in conformance to these Specifications and accepted by the Engineer, shall be measured and paid for on a lot basis at the appropriate contract unit price bid per ton and subject to the requirements of Section 5.06.C of these Specifications. Such payment shall be full compensation for all material, labor, equipment, tools, and incidentals necessary for the manufacture and placement, complete.

CHAPTER 11

PORTLAND CEMENT CONCRETE

11.00 GENERAL

Portland Cement Concrete (PCC) shall consist of an intimate mixture of Portland Cement, aggregate, water and an air-entraining admixture. Portland Cement used in all concrete mixtures except L-5500 and PR shall be modified with Class F Fly Ash as described below and as indicated in Table 11.02. Depending on the application, other constituents or admixtures may be used with permission from the Engineer. Materials not on the latest edition of the Nebraska Department of Roads (NDOR) "Approved Products List" shall not be used without permission from the Engineer. The constituents of Portland Cement Concrete and their mixing, handling, and proportioning shall conform to ASTM Designation C 94 except as modified herein.

11.01 MATERIALS

A. CEMENT

Portland Cement shall be a recognized standard hydraulic cement composed primarily of hydraulic calcium silicates conforming to the requirements of ASTM Designation C 150 for Type I, II, or III cement and shall contain no more than 0.60 percent equivalent alkali. Equivalent alkali is defined as the sum of the sodium oxide (Na_2O) and the potassium oxide (K_2O) calculated as sodium oxide (equivalent alkali as $\text{Na}_2\text{O} = \text{Na}_2\text{O} + 0.658(\text{K}_2\text{O})$). Certified mill tests shall be furnished to the Engineer. Different brands of cement, or the same brand from different mills, shall not be mixed during storage. Neither shall they be used alternately in any one concrete placement without permission from the Engineer. Contractors or Subcontractors supplying concrete shall notify the Engineer when changing to different cement.

The cement shall be protected from damage due to moisture. Cement so damaged will be rejected. Cement shall not be in storage at the concrete plant longer than ninety (90) days without retesting. The temperature of the cement when used shall be less than 180°F.

B. FLY ASH MODIFIED PORTLAND CEMENT CONCRETE (PCC)

Portland Cement Concrete (PCC) mixes for pavement, driveways, curb, median, and sidewalk shall be modified by the use of Type IPF cement, as specified below. Type IPF cement shall be Portland cement which is pre-blended or inter-ground by the cement manufacturer with 25 +/- 2 percent Class F fly ash and shall conform to the requirements of ASTM C 595. No additional fly ash may be added at the concrete plant.

11.01 MATERIALS (Continued)

B. FLY ASH MODIFIED PORTLAND CEMENT CONCRETE (PCC) (Continued)

An NDOR approved water-reducing admixture shall be used in all fly ash modified concrete mixes at the dosage rate recommended by the manufacturer. The water-cement ratio of all fly ash modified concrete shall not exceed the maximum limit for the various classes of concrete as shown in Table 11.02.

Fly ash shall conform to the requirements of Class F pozzolan of ASTM Designation C 618, except that the maximum loss on ignition for Class F pozzolan shall be six percent (6.0%). Additionally, Class F pozzolans shall have a maximum allowable free carbon content not to exceed three percent (3.0%). Class F fly ash shall not contain more than one and five-tenths percent (1.50%) of available alkalis as Na_2O . Fly ash such as is produced in furnace operations utilizing liming materials or soda ash (sodium carbonate) as an additive will not be acceptable. Certified mill tests shall be provided to the Engineer.

Only brands of Type IPF Cement which are on the latest edition of the Nebraska Department of Roads Approved Products List shall be approved for use in concrete in City of Lincoln projects.

Type IPF cement shall not be used in mix designations LB-2750, LB-3500, L-5500 and PR without permission from the Engineer.

TABLE 11.02 - PORTLAND CEMENT CONCRETE MIXTURES (CUBIC YARD BATCH)

CLASS OF CONCRETE (1)	GENERAL USE	CEMENT (lb/cy)	CEMENT TYPE (2)	WATER CEMENT RATIO (MAX.)	SLUMP (MAX.) (inches) (3)	AGGREGATES (% BY WEIGHT)		AIR CONTENT RANGE (% BY VOLUME)	28 DAY STRENGTH MIN. PSI
						FINE	COARSE		
SG-3000	Where Specified	564	1PF	0.50	4.0	100	0	6.0 - 8.5	3000
L-3500	Pavement, Sidewalk, Structures	564	1PF	0.50	4.0	70 +/- 3	30 +/- 3	6.0 - 8.5	3500
L-3500S	Slip-form Pavement	564	1PF	0.48	2.5	70 +/- 3	30 +/- 3	7.0 - 10.0	3500
LC-3500	Machine Curb	564	1PF	0.48	2.5	70 +/- 3	30 +/- 3	6.0 - 8.5	3500
L-4500	Structures	658	1PF	0.42	4.0	70 +/- 3	30 +/- 3	6.0 - 8.5	4000
LB-2750	Pavement Base (New Construction Residential)	423	I/II	0.60	4.0	60 +/- 2	40 +/- 2	5.5 - 7.5	2750
LB-3500	Pavement Base (Reconstruction)	564	I/II	0.50	4.0	70 +/- 3	30 +/- 3	5.5 - 7.5	3500
L-5500	Pavement (High/Early Strength)	752	I/II	0.40	4.0	70 +/- 3	30 +/- 3	6.0 - 8.5	4000
PR (4)	Pavement Repair (High/Early Strength)	799	III	0.45	4.0	70 +/- 3	30 +/- 3	6.0 - 8.5	4000

NOTES:

- (1) All mixtures shall contain a NDOR approved water reducer at the manufacturer's recommended dosage rate.
 - (2) For Temporary Pavement, Type I/II cement is allowed.
 - (3) The maximum slump may be exceeded by use of water reducer, high range water reducer, or both.
 - (4) Calcium Chloride may be added as per NDOR Standard Specifications for Highway Construction.
- This table is for proportion ranges only. Actual mix design weights for specific applications will be provided by the City of Lincoln Materials Testing Laboratory.

CITY OF LINCOLN, NEBRASKA, STANDARD SPECIFICATIONS

CHAPTER 12

ASPHALTIC CONCRETE

ARTICLE	TITLE
12.00	General
12.01	Related Items Specified Elsewhere
12.02	Materials A. Asphalt Binder B. Tack Coats C. Mineral Aggregates
12.03	Asphaltic Concrete Mixtures A. General B. Volumetric Mix Design C. Materials Sampling and Testing D. Mix Design Criteria E. Aggregate Criteria
12.04	Equipment A. General B. Mixing Plant C. Truck Scales

TABLES	TITLE
12.00	Asphaltic Concrete Mix Requirements Summary
12.01	Gyratory Compaction Effort
12.02	Compaction Criteria
12.03	Voids in Mineral Aggregate
12.04	Voids Filled With Asphalt
12.05	Aggregate Adjustment Tolerance
12.06	Coarse Aggregate Angularity
12.07	Fine Aggregate Angularity
12.08	Flat and Elongated Particles
12.09	Clay Content
12.10	Gradation Control Points for 0.375 Nominal Size
12.11	Gradation Control Points for 0.500 Nominal Size
12.12	Gradation Control Points for 0.750 Nominal Size
12.13	Gradation Control Points for SPR

CHAPTER 12

ASPHALTIC CONCRETE

12.00 GENERAL

Asphaltic Concrete mixtures shall be designed for use as Arterial Surface Course (Type 1), Arterial Base and Non-Arterial all lifts (Type 2) or Patching (Types 1P and 2P) and shall consist of an intimate mixture of naturally occurring mineral aggregates of required gradations and asphalt binder content as hereinafter specified. A summary of the general requirements and uses for the various mix types is shown in Table 12.00 of these specifications. Unless otherwise specified, neither industrial nor manufacturing byproducts will be allowed in the mixture. Reclaimed Asphalt Pavement (RAP) shall be allowed as described later in these specifications. Asphaltic concrete shall be measured and paid for as provided in Chapters 1 and 5 of these Specifications.

12.01 RELATED ITEMS SPECIFIED ELSEWHERE

Chapter 1 - Pavement Construction & Reconstruction
Chapter 2 - Earthwork
Chapter 4 - Portland Cement Concrete (PCC) Base
Chapter 5 - Asphaltic Concrete Construction

12.02 MATERIALS

A. ASPHALT BINDER

The suppliers for asphalt binder used in City of Lincoln projects shall be certified by the Nebraska Department of Roads (NDOR) to supply Performance Graded Binder in Nebraska.

The asphalt binder for all mixes shall conform to the requirements of AASHTO M 320 for Performance Graded Asphalt Binder and must meet all requirements for use on NDOR projects. The PG Binder shall meet or exceed both the upper and lower temperature targets of the PG Binder grades as shown in Table 12.00 of these specifications unless directed otherwise by the Engineer.

In addition, unless for Patching or otherwise specified or directed by the Engineer, the PG Binder shall be a binder which incorporates a blend of base asphalt and elastomer modifiers of styrene-butadiene (SB), styrene-butadiene-styrene (SBS) or styrene-butadiene-ruber (SBR).

The composite material shall be thoroughly blended at the asphalt refinery or terminal prior to being loaded into the transport vehicle. The polymer modified binder shall be heat and storage stable and shall not separate when handled and stored per the suppliers storage and handling recommendations.

12.02 MATERIALS (Continued)

A. ASPHALT BINDER (Continued)

A Material Certification from the PG Binder Supplier shall be submitted prior to construction, stating the recommended mixing and compaction temperatures for the Hot Mix Asphalt. The Material Certification must state that acid has not been used. The Material Certification must also state that the material has not been air blown or oxidized.

When moisture susceptibility testing indicates the need for an anti-stripping additive, it shall be added by the PG Binder Supplier. The Contractor shall be compensated for the cost of the anti-stripping additive at the invoice price of the additive. The bill of lading or delivery ticket shall state the binder grade, specific gravity, and the percentage of anti-strip additive.

B. TACK COATS

1. Rapid-Curing Cut-Back Asphalts

The rapid-curing cut-back asphalts to be used as tack coats shall conform to the requirements of AASHTO M 81, Cut-Back Asphalt (Rapid-Curing Type).

This Specification covers liquid petroleum products, produced by fluxing an asphaltic base with suitable petroleum distillates.

2. Emulsified Asphalts

Emulsified asphalts shall conform to the following Specifications:

- ASTM Designation D 977 - Standard Spec. for Emulsified Asphalts
- ASTM Designation D 2397 - Standard Spec. for Cationic Emulsified Asphalts
- ASTM Designation D 140 - Standard Practice for Sampling Bituminous Materials
- ASTM Designation D 244 - Standard Testing Emulsified Asphalts

Emulsified asphalts covered by these Specifications shall be diluted in the distributor with sufficient potable water to reduce the asphalt residue in the mixture to approximately thirty percent (30%). Emulsified asphalt shall be homogeneous within the thirty (30) days after delivery. If separation of the emulsified asphalt has not been caused by freezing, thorough mixing shall be used to achieve a homogeneous mixture.

C. MINERAL AGGREGATES

1. General

Mineral aggregates for asphaltic concrete shall conform to the following requirements except where modified herein:

- ASTM Designation D 692 - Standard Specification for Coarse Aggregate for Bituminous Paving Mixture
- ASTM Designation D 1073 - Standard Specification for Fine Aggregate for Bituminous Paving Mixture
- ASTM Designation D 242 - Standard Specification for Mineral Filler for Bituminous Paving Mixture

12.02 MATERIALS (Continued)

C. MINERAL AGGREGATES (Continued)

1. General (Continued)

Mineral aggregates shall be crushed rock, broken stone, gravel, sand-gravel, coarse sand, fine sand or a mixture of these materials composed of clean, hard, durable, and non-coated particles, free from injurious quantities of clay, dust, soft or flaky particles, loams, shale, alkali, organic matter, or other deleterious material. Crushed rock shall be crushed limestone, granite, quartzite, or other ledge rock approved for the intended purpose by the City and shall not contain deleterious substances in a quantity exceeding three and one-half percent (3.5%) of any combination of shale, clay lumps, coal, or soft particles with shale and clay lumps not to exceed one and one-half percent (1.5%).

The absorption of water by crushed rock for use in asphaltic concrete shall not exceed three and two-tenths percent (3.2%) by weight. The gradations from any one source shall be reasonably uniform.

The mineral aggregate from different sources of supply shall not be mixed or stored in the same pile, nor used alternately in the same class of construction or mixed without permission from the Engineer. All fractions of a crushed rock gradation shall be produced from the same type of material.

The chemical and physical characteristics of the fraction passing the # 4 sieve shall be substantially the same as those of the material which may be produced in the laboratory from the fraction which is retained on the # 4 sieve.

Mineral aggregates shall have a soundness loss of not more than 12 percent by weight at the end of 5 cycles using sodium sulfate solution.

The mineral aggregate may be tested prior to its use. Generally only mineral aggregates that have been used for similar Work and have satisfactory service records will be approved. If, in the opinion of the Engineer, the mineral aggregate warrants further testing, the sampling and testing will conform to the following requirements:

- ASTM C 127 - Specific Gravity & Absorption of Coarse Aggregates
- ASTM D 75 - Standard Practice for Sampling Aggregates
- ASTM C 136 - Standard Test Method for Sieve Analysis of Fine & Coarse Aggregates
- ASTM D 546 - Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
- ASTM C 128 - Specific Gravity & Absorption of Fine Aggregates
- ASTM C 131 - Standard Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion Impact in the Los Angeles Machine
- ASTM C 88 - Standard Test Method for Soundness of Aggregate
- ASTM D 693 - Standard Spec. for Crushed Aggregate for Macadam Pavements

12.02 MATERIALS (Continued)

C. MINERAL AGGREGATES (Continued)

2. Mineral Fillers

Mineral filler shall consist of pulverized soil, pulverized crushed rock, broken stone, gravel, sand-gravel, sand, or a mixture of these materials that conforms to the following requirements:

Total Percent Passing:	Minimum	Maximum
# 50 (300 μm) Sieve	95	100
# 200 (75 μm) Sieve	80	100
Plasticity Index [material passing #200 (75 μm)]	0	3
Plasticity Index for Soil	0	6

12.03 ASPHALTIC CONCRETE MIXTURES

A. GENERAL

Asphaltic concrete for Type 1 and Type 2 mixtures shall be designed by the Contractor, according to the Asphalt Institute Superpave Mix Design Series No. 2 (SP-2), to meet the Mix Design Criteria for the appropriate mix types as shown in these specifications.

The Contractor will be required to define properties using a gyratory compactor that has met the Superpave evaluation test procedures, according to the gyration levels indicated in Table 12.01 for the mix type specified.

Unless otherwise specified or approved by the Engineer, Asphaltic Concrete for Type 1 Mix shall meet or exceed all of the requirements for Asphaltic Concrete type "SP4" as described in these specifications.

Unless otherwise specified or approved by the Engineer, Asphaltic Concrete for Type 2 Mix shall meet or exceed all of the requirements for Asphaltic Concrete type SPR as described in these specifications.

Unless otherwise specified or approved by the Engineer, the Blended Aggregate for Type 1 Mix shall contain no more than 80 percent limestone and shall meet the requirements of Table 12.11, Gradation Control Points For 0.500 (½) Inch Nominal Size.

Unless otherwise specified or approved by the Engineer, the Blended Aggregate for Type 2 Mix shall contain no more than 80 percent limestone and shall meet the requirements of Table 12.13, Gradation Control Points For SPR.

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

A. GENERAL (Continued)

Table 12.00
 ASPHALTIC CONCRETE MIX REQUIREMENTS SUMMARY

TYPE (USE)	AC GRADE	AGGREGATE BLEND		MIX REQUIREMENTS
		% RAP (MAX.)	GRADATION REQUIREMENTS	
1 (ARTERIAL SURFACE)	* PG 70-28	25%	½" BAND SUPERPAVE	SP4 (SUPERPAVE)
2 (ARTERIAL - BASE LIFTS, NON-ARTERIAL AND PARKING LOT - ALL LIFTS)	* PG 58-34	35%	SPR BAND SUPERPAVE	SPR (SUPERPAVE)
1P (PATCHING ARTERIAL)	PG 64-22	25%	NOM. MAX. SIZE ½"	5% TO 6% AC BY WEIGHT OF MIX
2P (PATCHING NON-ARTERIAL)	PG 58-28	35%	- #200 SIEVE 10% MAX. LIMESTONE 30% MIN. 80% MAX. ** CRUSHED 85% MIN.	

* Indicates polymer modification as specified in 12.02 MATERIALS, A. ASPHALT BINDER.

** Indicates aggregates crushed by mechanical methods.

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

B. VOLUMETRIC MIX DESIGN

The mix formula shall be determined by the Contractor from a mix design for each mixture. A volumetric mixture design in accordance with the latest edition of the Asphalt Institute Publication, SP-2 will be required. However, the mixture for the Superpave specimens and maximum specific gravity mixture shall be short-term aged for two hours. The following test procedures shall apply:

- AASHTO R 30 - Practice for Short and Long-Term aging of Hot Mix Asphalt
- AASHTO T 84 - Specific Gravity and Absorption of Fine Aggregate
- AASHTO T 85 - Specific Gravity and Absorption of Coarse Aggregate
- AASHTO PP 19 - Practice for Volumetric Analysis of Compacted Hot Mix Asphalt
- AASHTO T 312 - Method for Preparing and Determining the Density of Hot Mix Asphalt Specimens by Means of the Superpave Gyrotory Compactor
- AASHTO T 209 - Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
- AASHTO T 283 - Resistance of Compacted Bituminous Mixture to Moisture induced Damage

The optimum binder content shall be the binder content that produces required air voids, at Ndes, in the plant produced mix. The design shall have at least four points, including a minimum of two points above and one point below the optimum. The amount of un-compacted mixture shall be determined in accordance with AASHTO T 209.

Each Superpave mixture shall be tested by the Contractor for moisture susceptibility in accordance with AASHTO T 283. The loose mixture shall be short-term aged for two hours in accordance with AASHTO R30. The 6-inch specimens shall be compacted in accordance with AASHTO T 312 to 7 percent air voids at 95-mm in height and evaluated to determine if the minimum Tensile Strength Ratio (TSR) of 80 percent has been met. If the mixture has not met the minimum TSR value, the Contractor shall have the option of modifying the mixture, as approved by the Engineer, and retesting to verify that the minimum TSR of 80 percent has been achieved or by having a NDOR approved liquid anti-stripping additive added to the PG Binder, by the PG Binder Supplier, at a dosage rate, such that the mix will meet the minimum TSR of 80 percent.

All data shall be submitted with the mix design for approval. During production, the Contractor may be required by the Engineer, to provide and test additional specimens of the plant produced asphaltic concrete for moisture susceptibility. A TSR test result of less than 80 percent will require mixture modification(s) and a sample from subsequent lots will be tested by the Contractor until a TSR value of at least 80 percent is achieved.

Changes in the types or sources of aggregates or binder shall require a new job mix formula, mix design, and moisture susceptibility test. The new proposed job mix formula shall be in accordance with the requirements as stated above and submitted 5 working days prior to use for approval.

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

C. MATERIALS SAMPLING AND TESTING

At the beginning of each year and at least 14 days before production of asphaltic concrete, the Contractor shall submit, in writing, a tentative job mix formula and material samples as described below, for approval, to the City of Lincoln Materials Testing Laboratory. The job mix formula shall identify the mineral aggregates and mineral filler, if needed, with the value of the percent passing each specified sieve for the individual and blended materials.

A 65 pound bag of each of the individual mineral aggregates and RAP, if used, shall also be submitted to the City at this time. Each sample shall be marked to clearly indicate the type of material, name of the producer, and the pit location.

The Contractor shall submit, to the City Testing Lab, three proportioned 10,000-gram samples of the blended aggregates and a 1 gallon sample of the asphalt binder to be used in the mixture. Whenever RAP is used, it shall be processed through an ignition oven and then combined proportionally with the virgin aggregate in one of the 10,000-gram samples. The remaining two 10,000-gram samples shall be made up of the unprocessed RAP combined proportionally with the virgin aggregate. Submitted with these samples shall be a copy of the mix design values obtained from tests performed by the Contractor. This mix design shall include at a minimum, the following information:

- The bulk specific gravity (Gsb) of the blended aggregate (The specific gravity shall be determined for the combined blend from the unwashed portion of the - #4 and the + #4 material in accordance with AASHTO T 84 & T 85 respectively)
- The target asphalt binder content by total mix
- The supplier, grade, and specific gravity of the PG Binder
- The maximum specific gravity of the combined mixture (Rice)
- The average bulk specific gravity and air voids at N initial (Nini), N design (Ndes), and N maximum (Nmax) of the compacted gyratory specimens
- Voids in the Mineral Aggregate (VMA) and Voids filled with Asphalt (VFA) at Ndes
- Fine Aggregate Angularity (FAA), Coarse Aggregate Angularity (CAA), Flat and Elongated Particles and Clay Content of the aggregate blend

During production, asphaltic concrete shall be sampled and tested for quality by the City on a lot basis as defined in Chapter 5.06 paragraph C of these specifications. Tests shall include the following:

- | | | |
|--------------|---|---|
| AASHTO T 209 | - | Maximum specific gravity of the mix (Rice) |
| ASTM C 136 | - | Standard Test Method for Sieve analysis of Fine and Coarse Aggregate |
| AASHTO T312 | - | Method for Preparing and Determining the Density of Hot Mix (HMA) Asphalt Specimens by Means of the Superpave Gyratory Compactor |
| AASHTO T 166 | - | Bulk Specific Gravity of compacted Bituminous Mixtures using saturated surface-dry specimens
Asphalt binder content of total mix by ignition
National Center for Asphalt Technology |

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

D. MIX DESIGN CRITERIA

The design criteria for each mixture shall be determined from Tables 12.01, 12.02, 12.03, and 12.04.

The optimum binder content shall be the binder content that produces 4.0% +/- 1% air voids at Ndes for SP4 mixes and 3.0% +/- 1% at Ndes for SPR mixes.

Table 12.01
GYRATORY COMPACTION EFFORT
 Average Design High Air Temperature = < 39 degrees C (102° F)

Asphaltic Concrete Type	Nini	Ndes	Nmax
SPR	7	65	100
SP4	8	96	152

Table 12.02
COMPACTION CRITERIA

Mix Criteria	SPR	SP4
%Gmm at Nini		89.0
%Gmm at Ndes	96.0 -98.0	
%Gmm at Nmax		98.0

Table 12.03
VOIDS IN MINERAL AGGREGATE
 Criteria at Ndes

Nominal Maximum Aggregate Size	Minimum VMA, Percent
SPR	12.0
½ (0.500) inch	14.0

Table 12.04
VOIDS FILLED WITH ASPHALT
 Criteria at Ndes

Asphaltic Concrete Type	Design VFA, Percent
SPR	70 - 80
SP4	65 - 75

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

D. MIX DESIGN CRITERIA (Continued)

If at the end of the day's production, either of the two following conditions occurs, the Contractor will not be allowed to resume production until corrective adjustments are made to the mix design:

1. Air Voids, VMA, VFA, FAA, CAA or Binder content do not meet the currently approved criteria.
2. Rutting occurs.

Mix adjustments at the plant are authorized within the limits shown in Table 12.05 without redesigning the initially approved mix.

The adjustment must produce a mix with the percent air voids and all other properties as stated in these specifications.

All adjustments must be reported to the Engineer.

The adjustment values in Table 12.05 will be the tolerances allowed for changes indicated by production or mix design test results, but cannot deviate from Superpave gradation criteria.

Table 12.05
AGGREGATE ADJUSTMENT TOLERANCE

Aggregate Adjustments	
Sieve Size	Adjustment Range
1 inch, 3/4 inch, 1/2 inch, 3/8 inch	± 6%
No. 8, No. 16, No. 30, No. 50	± 4%
No. 200	± 2%

E. AGGREGATE CRITERIA

1. Coarse Aggregate Angularity (CAA)

The coarse aggregate angularity value of the blended aggregate material shall meet or exceed the minimum values for the appropriate asphaltic concrete type shown in Table 12.06.

Table 12.06
COARSE AGGREGATE ANGULARITY
(ASTM D 5821)

Asphaltic Concrete Type	CAA (minimum)
SPR	83
SP4	85/80*

* Denotes two faced crushed requirements

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

E. AGGREGATE CRITERIA (Continued)

1. Coarse Aggregate Angularity (CAA) (Continued)

Aggregate obtained from the residue of the ignition process shall not be used for the determination of CAA for mix design approval except when RAP material is specified and must be combined with the proportioned amount of virgin aggregate as defined by the mix design.

2. Fine Aggregate Angularity (FAA)

The fine aggregate angularity value of the blended aggregate material shall meet or exceed the minimum values for the appropriate asphaltic concrete type shown in Table 12.07.

The specific gravity for calculation of the FAA shall be based on a combined aggregate sample of material passing the No. 8 sieve and retained on the No. 100 sieve.

Table 12.07
FINE AGGREGATE ANGULARITY
(AASHTO T 304 Method A)

Asphaltic Concrete Type	FAA (minimum)
SPR	43.0
SP4	45.0

Aggregate obtained from the residue of the ignition process shall not be used for the determination of FAA for mix design approval except when RAP material is specified and must be combined with the proportioned amount of virgin aggregate as defined by the mix design.

3. Flat and elongated particles

The coarse aggregate shall not contain flat and elongated particles exceeding the maximum value for the appropriate asphaltic concrete type shown in Table 12.08.

Table 12.08
FLAT AND ELONGATED PARTICLES*
(ASTM D 4791)

Asphaltic Concrete Type	Percent, Maximum
SPR	10
SP4	10

* Criterion based on a 5:1 maximum to minimum ratio

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

E. AGGREGATE CRITERIA (Continued)

4. Clay Content

The Clay Content of the blended aggregate material shall be such that the Sand Equivalent Minimum value for the appropriate asphaltic concrete type as shown in Table 12.09 shall be met or exceeded.

Table 12.09
CLAY CONTENT
(AASHTO T 176)

Asphaltic Concrete Type	Sand Equivalent, Minimum
SPR	45
SP4	45

5. Gradation

The blended aggregate shall conform to the gradation requirements specified below for the appropriate nominal size.

The dust to binder ratio is the ratio of the percentage by weight of aggregate finer than the No. 200 sieve to the asphalt content expressed as a percent by weight of total mix. The dust to binder ratio shall be between 0.7 and 1.7. This shall be verified during mix design approval and production sample testing.

Table 12.10
GRADATION CONTROL POINTS FOR 0.375 (3/8) INCH NOMINAL SIZE

Sieve	Control Points		Restricted Zone Boundary	
	(percent passing)		(percent passing)	
	Minimum	Maximum	Minimum	Maximum
½ inch	100.0			
3/8 inch	90.0	100.0		
No. 4		90.0		
No. 8	32.0	67.0	47.2	47.2
No. 16			31.6	37.6
No. 30			23.5	27.5
No. 50			18.7	18.7
No. 200	2.0	10.0		

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

E. AGGREGATE CRITERIA (Continued)

5. Gradation (Continued)

Table 12.11
GRADATION CONTROL POINTS FOR 0.500 (1/2) INCH NOMINAL SIZE

	Control Points		Restricted Zone Boundary	
	(percent passing)		(percent passing)	
Sieve	Minimum	Maximum	Minimum	Maximum
3/4 inch	100.0			
1/2 inch	90.0	100.0		
3/8 inch		90.0		
No. 8	28.0	58.0	39.1	39.1
No. 16			25.6	31.6
No. 30			19.1	23.1
No. 50			15.5	15.5
No. 200	2.0	10.0		

Table 12.12
GRADATION CONTROL POINTS FOR 0.750 (3/4) INCH NOMINAL SIZE

	Control Points		Restricted Zone Boundary	
	(percent passing)		(percent passing)	
Sieve	Minimum	Maximum	Minimum	Maximum
1 inch	100.0			
3/4 inch	90.0	100.0		
1/2 inch		90.0		
No. 8	23.0	49.0	34.6	34.6
No. 16			22.3	28.3
No. 30			16.7	20.7
No. 50			13.7	13.7
No. 200	2.0	8.0		

12.03 ASPHALTIC CONCRETE MIXTURES (Continued)

E. AGGREGATE CRITERIA (Continued)

5. Gradation (Continued)

Table 12.13
GRADATION CONTROL POINTS FOR SPR

	Control Points	
	(percent passing)	
Sieve	Minimum	Maximum
3/4 inch	100.0	
3/8 inch	81.0	96.0
No. 8	50.0	60.0
No. 50	12.0	21.0
No. 200	4.0	8.0

12.04 EQUIPMENT

A. GENERAL

All equipment, tools and machinery shall be adequate for the purpose for which it is to be used and shall be maintained in satisfactory working condition at all times. The following listed units of equipment shall conform to the requirements specified herein.

The Contractor shall furnish the necessary accessories and personnel and shall perform calibrations on the equipment. Copies of the calibration data shall be provided to the Engineer before production of Asphaltic Concrete. In the event problems are encountered during the calibrations, the Contractor shall arrange for a trained technician or company representative of the company from which the equipment was obtained to make the necessary repairs and/or adjustments to the equipment. Calibrations shall be made as often as is deemed necessary by the Engineer to ensure accuracy of the equipment.

In the event that a Contractor elects to obtain asphaltic concrete from a commercial plant not under his direct control, he shall reach agreement with the commercial producer to perform the above functions in the same manner as though the plant was under his direct control. The Contractor shall also reach agreement with the producer to furnish or shall arrange to have furnished an approved building for the use of an observer if deemed necessary by the Engineer.

12.04 EQUIPMENT (Continued)

B. MIXING PLANT

1. General

The equipment that is used for heating, proportioning, and mixing the aggregates and asphalt cement shall be able to produce a uniform mixture.

The dryers shall be able to dry and heat all aggregates to the required temperatures with positive control. Aggregates shall be agitated continuously during the process of heating. Damage to the asphalt cement in dryer-drum type mixing plants shall be avoided.

Salvaged bituminous material shall not be exposed to open flame.

Continuous temperature and time readings of the asphaltic materials shall be electronically recorded whenever the plant is operated. A copy of the temperature reading shall be made available to the Engineer. Temperature and time displays shall be easily accessible. Temperature and time sensors will be provided at the following locations:

- a. Inside the asphaltic concrete mixture discharge chute.
- b. Inside the surge bin.
- c. Inside the asphalt cement storage tank.

During storage, the asphalt cement temperature shall be maintained between 250F and 350F or at the storage temperature range recommended by the binder supplier. All plants shall be equipped with a circulating system for asphalt cement which is designed to assure proper and continuous circulation during the operating period. Storage tanks shall have sufficient capacity to provide for continuous operation. The tanks shall be situated and constructed to allow the volume of the asphalt cement to be safely and accurately determined at any time.

If the plant is equipped with a surge bin for the temporary storage of asphaltic concrete, the asphaltic concrete taken from the surge bin will not differ significantly from the material taken directly from the plant. The first material entering the bin will be the first material removed. The surge bin shall be completely emptied at the end of each operating day unless insulated or heated.

All plants shall be equipped with a continuously operated dust collector. The collected material may be wasted or returned to the mix.

Mineral filler bins shall be protected from moisture.

2. Pugmill Plants

a. General

Pugmill plants shall include cold aggregate feeders, oversize screens, storage bins for dried aggregate, ingredient proportioning devices, and all other equipment necessary to produce the specified mixture. The pugmill blades shall have a minimum clearance of 3/4 inch from all fixed and moving parts. The mixer shall be equipped with a discharge hopper holding approximately 1 ton of hot mixture and capable of intermittent discharge.

12.04 EQUIPMENT (Continued)

B. MIXING PLANT (Continued)

2. Pugmill Plants (Continued)

b. Batch Plants

Batch plants shall have an accurate time lock to control the operations during a complete mixing cycle. They shall lock the scale box gate after the charging of the mixer until the closing of the mixer gate at the completion of the cycle. They shall lock the bituminous material bucket throughout the dry mixing period and shall lock the mixer gate throughout the dry and wet mixing periods.

The dry mixing period is defined as the time between the opening of the scale box gate and the addition of bituminous material. The wet mixing period is the interval of time between the addition of bituminous material and the opening of the mixer gate.

The control of the timing shall be flexible and capable of being set at 5-second intervals or less throughout a total cycle of not less than 3 minutes. A mechanical batch counter shall be installed as a part of the timing device and shall be designed and constructed to register only upon the release of the bituminous material. It shall not register any dry batches or any material wasted through the bins. The timing device shall have a suitable case with a locking door that shall always be kept closed and locked except when adjustments or repairs are required.

All batch plants shall be equipped with an asphalt cement volume meter or a heated or insulated asphalt bucket with scales.

Scale hoppers and scales for proportioning aggregates and asphalt to the batch plant's mixer shall be accurate within 0.5 percent; and they shall be sensitive within 0.2 percent or 2 pounds, whichever is greater, throughout the range of use.

c. Continuous Type

Plants shall be equipped with a pump synchronized to the feeding mechanism so that the required percentage of asphalt cement is applied continuously and uniformly. The feeding system shall be synchronized to the rest of the plant.

3. Dryer-Drum Plants

These plants shall include cold aggregate feeders, vibratory screening units for removing oversize material from both virgin and reclaimed material, proportioning devices for controlling the quantity of each ingredient in the mixture, and any other equipment necessary to produce the mixture as specified.

Plants shall be equipped with a pump synchronized to the feeding mechanism so that the required percentage of asphalt cement is applied continuously and uniformly. The feeding system shall be synchronized to the rest of the plant.

12.04 EQUIPMENT (Continued)

C. Truck Scales

Truck scales shall be furnished by the Contractor for weighing loaded trucks at the plant site, and shall be installed on adequate foundations and in accordance with the manufacturer's recommendations. The scales shall have sufficient capacity to weigh the maximum axle, combination of axles or gross load used and shall be accurate to one-half percent (0.5%) of the total axle load or total load.

Scales shall be properly calibrated by the Contractor in the presence of the Engineer unless the scales have current Nebraska Department of Agriculture inspection approval or unless calibration and adjustment by a recognized scale company service crew has been performed during the current season, and attested to by a City of Lincoln representative. The scales shall be periodically cross-checked for accuracy during the course of the Work by checking the net weight of loads of the material being produced on commercial scales in the vicinity of the project which have current agriculture inspection approval. The Contractor shall furnish at least ten (10) 50 pound weights for checking the accuracy of the scales. If the scale is not capable of weighing all axles at one time, the approaches shall be extended so the entire hauling unit will be level during weighing. Chuck holes, ruts or high spots in the approaches which develop during hauling operations shall be immediately repaired as directed by the Engineer.

All weighing shall be done with the hauling unit stationary, level, and out of gear. Suitable protection shall be provided against wind currents that may affect the accuracy of the scales. The platform of the scale shall be kept clean and free from accumulations of materials, as directed by the Engineer.

Serially numbered duplicated scale tickets shall be furnished to accompany each truck load of material to the unloading point. Scale tickets shall reflect the date, time, load number, total weight, tare weight, project number, mix type, destination, and net weight.