

WILLIAM RAINEY HARPER COLLEGE
Algonquin & Roselle Roads
Palatine, Illinois 60067

ADJOURNED BOARD OF TRUSTEES MEETING, SEPTEMBER 30, 1970
AGENDA

Adjourned Meeting from September 24, 1970

- I. Call to Order
- II. Roll Call
- III. New Business
 - A. Consideration of Bids
- IV. Other
- V. Adjournment

WILLIAM RAINEY HARPER COLLEGE
BOARD OF TRUSTEES OF JUNIOR COLLEGE DISTRICT 512
COUNTIES OF COOK, KANE, LAKE, AND McHENRY, STATE OF ILLINOIS

Minutes of the Adjourned Board Meeting of Wednesday, September 30, 1970

CALL TO ORDER: Chairman Hamill called to order the adjourned meeting of the Board of Trustees of Junior College District No. 512 at 8:20 p.m., on September 30, 1970 in the Board Room of the Administration Building, Algonquin and Roselle Roads, Palatine.

ROLL CALL: Present: Members Hamill, Hansen, Moats and Morton
Absent: Members Haas, Johnson and Nicklas

Also present: Robert E. Lahti, Donald Andries, Ron Bessemer, Ray DePalma, Guerin Fischer, John Gelch, James Harvey, Robert Hughes, Fred Inden, Roy Kearns, Henry Kurowski, W. J. Mann, Donald Mistic, Robert Nolan, C. H. Schauer, W. E. VonMayr, and Lloyd Wilkes - Harper College.

APPROVAL OF BIDS: Don Mistic explained the difficulty in obtaining bids and firm completion date on Bid Request Q-1230 which involved construction of the track and tennis courts. H. B. Barnard Company had submitted a bid which was approximately \$38,000 higher than the bid of Monarch Asphalt Company. After considerable discussion regarding the relationship between the shortage of fuel oils and asphalt, the inability to obtain additional bids from contractors who would attempt completion this fall, the possibility of increased costs in the spring, it was considered advisable to have all the basic construction done this fall. If the weather permits asphalt surfacing could be in place this fall; otherwise, it would be a relatively simple job to complete the asphalt work in the spring. It was concluded that if other asphalt contractors had wanted to bid they would have done so, with completion contingent on weather conditions.

After various persons confirmed that Monarch Asphalt Company had done excellent work at Barrington Tennis Club and other locations it was the consensus they would not undertake to lay asphalt unless necessary weather conditions prevailed. It would be preferable to delay application of the asphalt rather than sacrifice quality and durability of the final product.

APPROVAL OF BIDS: Member Hansen moved that the Board award the bid for construction and paving with asphalt the track and ten tennis courts to Monarch Asphalt Company in the amount of \$128,775. Motion seconded by Member Moats and carried.

Upon roll call, the vote was as follows:

Ayes: Hamill, Hansen, Moats and Morton
Nays: None

Chairman Hamill further stated it was the understanding of the Board that the administration would negotiate with the contractor to develop a firm contract. If this cannot be done the Board will rescind its action. Mr. Mann interjected the comment that all details will be worked out before the contractor receives the purchase order.

MISCELLANEOUS: In response to a question from Chairman Hamill concerning other business, Dr. Lahti referred briefly to the subject previously considered as campus unrest and indicated additional packets had been ordered.

Dr. Lahti further stated: "We probably have one item we can refer to in executive session". Member Morton moved that the Board go into executive session. Motion was seconded by Member Moats and carried. All ayes.

At 8:48 p.m. Mr. Hamill announced that the Board would continue with the public session after completion of the executive session.

The Board met in executive session in an adjoining room.

RESOLUTION ON
UNION REPRESENTA-
TION:

At 10:14 p.m. the Board returned to the Board Room and Member Hamill announced, "We are back in session".

Member Morton moved and Member Hansen seconded the approval of the following resolution:

"BE IT RESOLVED, That in view of the interest expressed by some of our Buildings and Grounds employees in having an election to resolve the question of union representation and in view of the Board's strong belief that an election conducted by some neutral agency is the fairest and most democratic way to resolve this question,

"NOW, THEREFORE, The Board directs the administration

RESOLUTION ON
UNION REPRESENT-
ATION:
(Cont.)

to contact the appropriate representative from
Local 11, Service Employees International Union, to
arrange for an election to be conducted by the American
Arbitration Association."

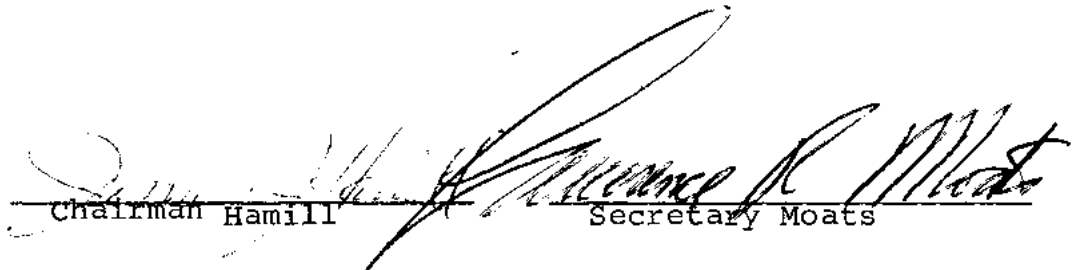
Upon roll call, the vote was as follows:

Ayes: Hamill, Hansen, Moats and Morton

Nays: None

ADJOURNMENT:

Member Moats moved and member Morton seconded the
motion that the meeting be adjourned at 10:16 p.m.
Motion unanimously carried.



Chairman Hamill Secretary Moats

MEMORANDUM

SEP 29 1970

V. P. BUSINESS

TO: Mr. William Mann, Vice President Business Affairs

FROM: Mr. Don Mistic, Director Business Services

DATE: September 29, 1970

SUBJECT: Track and Tennis Court Bids Q-1230

The subject bid opening was at 2:00 p.m., yesterday. Two complete bids and one partial bid, for fencing, were received. These are tabulated below.

H. B. Barnard Company	*I \$166,253.00	*II \$139,921.00
Monarch Asphalt Company	128,775.00	100,275.00
R & R Custom Fence	7,757.70 (Fence only)	4,799.70 (fence only)

*I Covers Track and Ten Tennis Courts

*II Covers Track and Five Tennis Courts

The following tabulation is a comparison of these bids with June 1969 bids and the architects' estimate reflecting the specification changes.

	<u>1969 Bid</u>	<u>Low Current Bid</u>	<u>Estimate</u>
Tennis Courts	\$110,340	\$ 72,125	\$ 80,000
Track	<u>46,291</u>	<u>56,650</u>	<u>40,000</u>
TOTAL	\$156,631	\$128,775	\$120,000

Although eighteen bid requests were issued, only ten could be considered as going to organizations that would have handled the project as a general contractor. The poor response is attributed to the fact that it is near the end of the season and the asphalt paving companies are pretty well booked up.

RECEIVED

SEP 30 1970

OFFICE OF THE PRESIDENT

MEMORANDUM

September 29, 1970

The second point is that the demand for the low sulphur content heavy oil, used in asphalt, exceeds the available supply because of its greater use for fuel. In the spring when the demand for fuel is down, the supply should ease, somewhat, and possibly it would be more practical to obtain bids at that time. There would be no guarantee that lower bids would be received, since costs for material and labor are continually increasing. If an award is made now, or if the project is rebid, the completion of the track and tennis courts would not be possible until approximately next June.

In my opinion there is little to be gained in rebidding the entire project and I would recommend that we award the track, the tennis courts, or both, to the low bidder - Monarch Asphalt Company

DM:np

DM

September 18, 1970

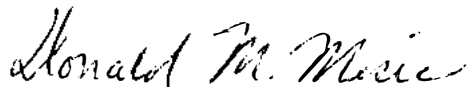
RE: Addendum #2 to Track and Tennis Courts Bid Request Q-1230

GENTLEMEN:

The chain link fence mesh should be as follows:

Gage 11 - 1-3/4" Mesh Chain Link as indicated on
drawing not 9 gauge - 2" as indicated in specification
section 0231, page 231.1-line 11.

Very truly yours,



Donald M. Mistic
Director of Business Services



September 10, 1970

RE: Addendum #1 to Track and Tennis Courts Bid
Request Q-1230

GENTLEMEN:

Change bid due date from 2:00 p.m., DST, Friday
September 18, 1970 to:

2:00 p.m., DST, Monday
September 28, 1970

Very truly yours,

Donald M. Mistic

Donald M. Mistic
Director of Business Services

WILLIAM RAINEY HARPER COLLEGE

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William Rainey Harper College
Algonquin and Roselle Roads
Palatine, Illinois 60067

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-	Set of 13 Prints	-

LEGAL NOTICE

Harper College is accepting sealed bids at the College Business Office, Algonquin and Roselle Roads, Palatine, Illinois for the installation of Tennis Courts and Track.

Drawings and Specifications are available at the Business Office. Each bidder shall visit the site to familiarize himself with the conditions as they exist and the character of the project to be carried out.

Bids will be received in the Business Office up to the hour of 2:00 p.m., DST, Friday, September 18, 1970 at which time they will be publicly opened. Each bidder must deposit with his bid bond, in the amount of 5 per cent (5%) of the bid and in the form subject to the conditions provided in the document.

Harper College reserves the right to reject any or all bids or any part thereof, to waive any informalties in the bidding and to accept the bid deemed most favorable to the interest of Harper College after all bids have been examined and evaluated.

Harper College, Junior College District 512, Using Agency (herein called the "Owner"), furnishes the following instructions to prospective bidders desiring to submit proposals for completion of Track and Tennis Court Project.

1. LOCATION

The site of the work is William Rainey Harper College, District 512, Algonquin and Roselle Roads, Palatine, Illinois 60067.

2. PROJECT

The Project is the completion of Track and Tennis Courts for Harper College at the above mentioned site.

3. THE PROPOSAL

Proposal must be submitted on the enclosed Proposal Form enclosed in sealed opaque envelopes, and marked and addressed as follows:

PROPOSAL FOR: William Rainey Harper College
Director of Business Services
Algonquin and Roselle Roads
Palatine, Illinois 60067

Show the name and address of the bidding firm in the upper left-hand corner of the envelope.

Each bid must be submitted on the prescribed form with all blank spaces for bid prices filled in, in ink or typewritten.

Proposal must be signed in the firm or corporate name and must bear the longhand signature of a principal duly authorized to make contracts for the bidding party. The bidder's name must be fully stated. Where Proposals are signed by an agent of the bidder, evidence of his authority to act as the bidder's agent shall accompany the Proposal. The name of each person signing the Proposal shall be typed or printed below his signature.

Proposal shall not contain any qualifications or recapitulations of the work to be done.

All erasures or corrections in Proposals must be initialed by the person signing the Proposal.

No bidder may withdraw a bid within sixty (60) days after the actual date of the opening thereof.

The bidder must include with his Proposal a bid deposit in an amount not less than five per cent (5%) of the Base Bid. Failure of the Contractor to submit the full amount of the required bid deposit will be sufficient cause to reject his Proposal. Bid deposits, in the form of certified check, cash, bank drafts, or bid bonds (on the form of bid bond bound herewith duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner) are to be made payable to the William Rainey Harper College.

If a Bid Bond is submitted, it shall be in the form bound herein, and the Surety thereon must be corporate surety having a policy holders' rating not lower than "A" and a financial rating not lower than "AA" in Best's Insurance Guide with key rating 1969. If no award has been made within sixty (60) days after the date of the opening of bids, and upon demand of the bidder, so long as he has not been notified of the acceptance of his bid, such Bid Bonds will be returned to the bidder.

The bid deposits of the successful bidder will be returned to him after he has signed the Agreement and has furnished an acceptable Performance and Payment Bond, in triplicate, as stipulated in the Proposal, unless previously forfeited to the Owner as provided in said Proposal.

The bidder who has submitted cash, certified check or bank draft as a bid deposit may, at any time after ten (10) days after the date of the opening of bids, if his bid is still being held as provided above and has not been forfeited to Owner as provided above and has not been forfeited to Owner as provided in the Proposal, substitute for his bid deposit a bid bond prepared on the form of bid bond bound herewith, duly executed by a bidder as principal and having as surety thereon a surety company approved by the Owner, in the same amount as the bid deposit, and upon approval thereof by the Owner, said bid deposit will immediately be returned to the bidder.

If bidder fails or refuses to execute and deliver the Contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, he shall forfeit his bid deposit to the Owner, as liquidated damages for such failure or refusal.

4. SUBMISSION OF BID

Sealed bids, to be submitted in single copy, must be delivered, in order to be considered in the bidding, as follows:

TO: William Rainey Harper College, Director of Business
Services, Algonquin and Roselle Roads, Palatine, Illinois
60007

ANY BID TIME STAMPED AFTER 2:00 P.M. ON SEPTEMBER 18, 1970
WILL BE RETURNED TO THE BIDDER UNOPENED.

Proposals will be publicly opened by the Owner at 2:00 p.m. on the date specified for the receipt of bids in the College Business Office, Algonquin and Roselle Roads, Palatine, Illinois.

Any bidder may withdraw his bid by letter or with proper identification by personally securing his bid proposal at any time prior to the time stated for the receipt of bids. No telephone request for withdrawal of bids will be honored.

5. TELEGRAPHIC MODIFICATION

Any bidder may modify his bid by telegraphic communication at any time prior to the scheduled closing time for receipt of bids, provided such telegraphic communication is received by the Owner prior to the closing time and, provided further, telegraphic modification over the signature of the bidder was mailed prior to the closing time. The telegraphic communication should not reveal the bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened. If written confirmation is not received within five (5) days from the closing time, no consideration will be given to the telegraphic modification.

6. QUALIFICATIONS OF BIDDER

The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner may reserve the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein. Conditional bids will not be accepted.

7. ALTERNATES

All Alternates listed are intended to be deductive Alternates, however, if a bidder's own figures indicated that, for him, it should be additive, he may strike the word "deduct" and insert in its place the word "add". All blanks on the Proposal form, including those for Alternates, must be filled. If the bidder intends no change in price for performance of an Alternate, he should fill the blank with the words "no change". Failure to fill in the blanks, or filling it with words "no bid", or lining through an Alternate or the blank for its price, will result in disqualification of the bid, if that Alternate is reached in the procedure specified under "METHOD OF AWARD - LOWEST QUALIFIED BIDDER".

Alternates, if considered, will be accepted in the order in which they are listed. In preparing a price for a particular Alternate, the bidder must assume that all Alternates of lower identifying number have been previously accepted and are included in the base work from which the changes of the Alternates are to be made. Alternates which are accepted will be included in the Contracts.

8. LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable Federal and State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

9. METHOD OF AWARD - LOWEST QUALIFIED BIDDER

If at the time this Contract is to be awarded, the lowest Base Bid submitted by a responsible bidder does not exceed the amount of funds then estimated by the Owner as available to finance the Contract, the Contract will be awarded on the Base Bid only. If such bid exceeds such amount, the Owner may reject all bids or may award the Contract on the Base Bid combined with such deductible Alternates applied in the numerical order in which they are listed in the Proposal Form, as produces a net amount which is within the available funds. Owner reserves the right not to accept an Alternate which in the lowest bidder's figures is additive so long as the Alternate was used in determining the lowest bidder.

10. POWER OF ATTORNEY

Attorneys-in-fact who sign bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney. These dates should either be the same as or after the date of the bond. The bond date should be the same as or after the date of the Contract.

11. BID DOCUMENTS

Drawings and Specifications shall not be returned with Proposal, but shall be returned under separate cover to William Rainey Harper College.

The Owner will furnish to the successful Bidder copies of Drawings and Specifications for execution of the work as deemed necessary by Owner. The Contractor may obtain additional copies by paying the printing costs thereof.

All Drawings, Specifications and copies thereof, furnished by the Architect are the property of the Owner. They are not to be used in any other work, and are to be returned to the Owner on request at the completion of the work.

All Drawings and Specifications issued for bidding purposes shall remain the property of the Owner and shall be returned to the Owner under separate cover within ten (10) days after the opening of the bids.

12. ADDENDA

No interpretation of the meaning of the Drawings, Specifications or other Bid Documents will be made to any bidder except by Addendum.

Should a bidder find discrepancies or ambiguities in, or omissions from the Drawings or Specifications, or should he be in doubt as to their meaning, he shall at once notify William Rainey Harper College, in writing, at least five (5) days prior to the date fixed for the opening of bids, otherwise, the Owner shall decide which of the conflicting requirements will govern, and the Contractor shall perform the work at no additional cost to the Owner in accordance with the decision.

Interpretation or clarification of the Contract Documents, prior to the bid opening date, will be made only by an Addendum duly issued by the Owner not later than three (3) days prior to the date fixed for the opening of bids, properly numbered and dated, to all bidders, and no interpretations

12. ADDENDA (continued)

or clarifications made other than by such an Addendum will be binding upon either Architect or Owner. The Proposal Form contains blanks for the bidders to inscribe the number and date of each Addendum that may be issued and the bidder shall acknowledge receipt of Addenda by properly filling in said blanks. If no Addenda are issued, these blanks are to be filled with the word "NONE".

13. OBLIGATION OF BIDDER

Each bidder, before preparing his Proposal, shall visit the site of the proposed work, fully acquaint and familiarize himself with the conditions as they exist and the character of the operation to be carried on under the proposed Contract, and make such investigation as may be reasonably necessary so that he shall fully understand the facilities, difficulties, physical conditions and restrictions attending the work under the Contract. Each bidder shall also thoroughly examine and become familiar with the Drawings (including the site information contained therein), Specifications and the other Contract Documents, including the labor conditions and Executive Order No. 11246 described in Article 46 of the General Conditions. By submitting a Proposal, the bidder agrees that he has carefully examined the Drawings, Specifications and the other Contract Documents and the Addenda, if any, and the site, and that from his own investigation he has satisfied himself as to the nature and location of the work, the general and local conditions, and all matters which may in any way affect the work or its performance, and that as a result of such examination and investigation he fully understands the intent and purpose of the Documents and conditions of bidding.

No additional compensation or extension of time will be allowed for site, Contract or work conditions increasing the Contractor's costs or affecting the completion date which were not known to or appreciated by him when he submitted his Proposal if such could have been discovered by him by following the foregoing procedure and thoroughly informing himself of all conditions which might affect the work before submitting his Proposal.

14. OWNER - USER RELATIONSHIP

The Owner is constructing this project for the use and benefit of William Rainey Harper College identified in and referred to throughout the Contract Documents ("Owner"). It is intended, therefore, that the rights of and benefits to the Owner under the General Conditions, including, but not limited to, the obligations of the Contractor to protect Owner's property and to indemnify Owner against certain losses shall and do extend as well to User and User's property, and User, with the approval of the Owner, shall have the right to enforce any such obligation of the Contractor under the General Conditions in its own right and behalf and for its own benefit and protection.

15. TIME OF COMPLETION

Bidder must agree to commence work on or before a date to be specified in a written "Notice To Proceed" of the Owner and to fully complete the project within 45 days from "Notice to Proceed" (Purchase Order).

Bid Form for lump sum contracts for Track and Tennis Courts for William Rainey Harper College, Palatine, Illinois, District 512.

Proposal of _____
(hereinafter called "Bidder")

*a corporation organized and existing under the laws of the state of _____.

*a partnership consisting _____

*a individual trading as _____

*(strike out inapplicable provision)

TO: William Rainey Harper College (hereinafter called "College" or "Owner")

Gentlemen:

Bidder, in compliance with your invitation for bids for installation of Track and Tennis Courts. Having examined specifications with related documents and site of proposed work, and being familiar with all conditions surrounding construction of proposed project including availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to complete project in accordance with Contract Documents, within time set forth therein, and at prices stated below. These prices are to cover all expenses, including taxes, incurred in performing work required under Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on a date to be specified by the College in written "Notice to Proceed" and to fully complete project within 45 days. All proposals shall be submitted without modification or reservation on the following form with each space properly filled. Proposals not on this form will be rejected.

All proposals shall be accompanied by a Bid Bond, certified check or cashier's check made payable to William Rainey Harper College in the amount of five (5) per cent of proposal bid upon.

The bidder agrees that the proceeds of such Bond, check or draft shall become the property of William Rainey Harper College, if, for any reason, the bidder, within ninety (90) days after official opening of bids, withdraws his bid, or if on notification of award, refuses or is unable to execute tendered contract and provide an acceptable indemnity bond within twenty (20) days after such tender.

In the event the bid security is a Bid Bond such bond must be on the form recommended by William Rainey Harper College and a copy thereof is included in these specifications.

The Bid Security submitted by the successful bidder will be refunded after the receipt of an acceptable indemnity bond and execution of the formal contract. Bid Securities of all other bidders will be refunded as soon as it is determined that the bids represented by the securities will receive no further consideration by William Rainey Harper College. Bid Bonds will be accepted in lieu of certified checks, cashier's checks, or bank drafts.

BIDS

The following sheets are proposal forms and the Bidder shall use them or copies for submitting his bid. He shall fill in the item cost and the total cost only.

ITEM

1. Complete Track per specifications \$ _____
2. Ten Complete Tennis Courts per specifications \$ _____

ALTERNATE I

Delete Five Tennis Courts including Fencing for these Five Courts Less \$ _____

TOTAL COST OF ITEMS 1 & 2 \$ _____

TOTAL COST OF ITEMS 1 & 2 Less Alternate I \$ _____

In the event it is necessary to issue Addenda, receipt should be indicated below by **officer** of company signing bid.

Addendum #1 Received _____

Addendum #2 Received _____

Addendum #3 Received _____

THIS BID FORM MUST BE SIGNED BY AN OFFICER OF THE COMPANY

COMPANY _____

SIGNATURE _____

TITLE _____

Know all men by these presents, that we the undersigned, _____

as Principal, and _____

as Surety, are hereby held firmly into WILLIAM RAINEY HARPER
COLLEGE as Owner in the penal sum of _____

for the payment of which, well and truly to be made, we hereby
jointly and severally bind ourselves, our heirs, executors, ad-
ministrators, successors and assigns. Signed this _____
day of _____, 197__.

The condition of the above obligation is such that whereas the
Principal has submitted to _____ a certain
Bid, attached hereto and hereby made a part hereof to enter into
a Contract in writing, for the _____

NOW, THEREFORE,

- (a) If said Bid shall be rejected, for reason other than Principal's withdrawal or attempted withdrawal of his bid after bid opening and prior to award of Contract, or in the alternate,

- (b) If said Bid shall be accepted and the Principal shall execute and deliver a Contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials

in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

ATTEST:

Principal

(Principal) Secretary
(SEAL)

BY _____ (S)

(Address)

Witness as to Principal

(Address)

Surety

ATTEST:

By _____
Attorney-in-Fact

(Surety) Secretary

(Address)

SEAL

Witness as to Surety

Address

William Rainey Harper College
Algonquin and Roselle Roads
Palatine, Illinois 60067
Contract No. _____

CONTRACT FORM

THIS AGREEMENT made on _____, 19____

by and between _____

hereinafter called the "Contractor" and William Rainey Harper College hereinafter called the "College".

WITNISSETH, that the Contractor and the College for the consideration stated herein, agree as follows:

ARTICLE 1. Scope. The Contractor shall do all things necessary to fully perform and satisfy all terms, conditions and requirements of the Specifications dated _____ for:

which are incorporated herein by reference and made a part hereof.

ARTICLE 2. Time of Completion. The Contractor shall commence work under this Contract on a date specified in the written Notice to Proceed to be issued by the College and shall fully complete all work thereunder within 45 days.

ARTICLE 3. The Contract Price. William Rainey Harper College shall pay to the Contractor for the performance of the Contract, in current funds, subject to additions and deductions as provided in the Specifications, _____ Dollars (\$ _____)

ARTICLE 4. Payment. Payment shall be made as set forth in the Specifications referred to above.

ARTICLE 5. Contract Documents. Contract documents shall consist of the following component parts.

1. This instrument
2. Specifications
 - (a) Conditions
 - (1) Addenda
 - (2) General Conditions
 - (3) Special Conditions
 - (b) Technical Specifications
 - (c) Drawings
3. Performance - Payment Bond
4. Contractor's Proposal
5. Information for Bidders
6. Advertisement for Bids

This instrument together with the documents enumerated in this Article form the contract, and they are as fully a part of the contract as if hereto attached or herein repeated. In the event that any provision in one of the component parts of this contract conflicts with any provision of any other component part, the provision in the component part first enumerated in the Article entitled "Contract Documents" shall govern, except as otherwise specifically stated.

IN WITNESS WHEREOF, the parties hereto have caused this Instrument to be executed in _____ counterparts the day and year first above written.

Contractor's Name (Affix Corporation Seal)

Address _____ By _____

City & State _____ Title _____

Telephone No. _____ (If a Corporation, President or Vice-President should sign. If some other officer signs, evidence of authority must be submitted.)

WILLIAM RAINEY HARPER COLLEGE

By _____

Title _____

PERFORMANCE - PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we (1) _____
_____ (2) _____
hereinafter called "Principal" and (3) _____
of _____, State of _____, hereinafter
called the "Surety", are held and firmly bound unto (4) _____
_____, hereinafter called
"Owner" in the penal sum of _____ Dollars
(\$ _____) in lawful money of the United States, for the
payment of which sum will and truly be made, we bind ourselves, our
heirs, executors, administrators, and successors, jointly and sever-
ally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION is such Whereas, the Principal
entered into a certain contract with the Owner, dated the ____ day of
_____, 197__, a copy of which is hereto attached and made a
part; hereof for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully
perform its duties, all the undertakings, covenants, terms, conditions,
agreements of said contract during the original term thereof, and any
extensions thereof which may be granted by the Owner, with or without
notice to the Surety, and if he shall satisfy all claims and demands
incurred under such contract, and shall fully indemnify and save
harmless the Owner from all costs and damages which it may suffer by
reason of failure to do so, and shall reimburse and repay the Owner

all outlay and expense which the Owner may incur in making good any default, and shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation of this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the ____ day of _____ 197__.

ATTEST:

Principal

By _____ (S)

(Principal) Secretary
(SEAL)

(Address)

Witness as to Principal

Address

Surety

ATTEST:

By _____
Attorney-in-fact

(Surety) Secretary

(SEAL)

(Address)

(Witness as to Surety)

NOTE: Date of Bond must not be prior to date of Contract.

- (1) Correct name of Contractor.
- (2) A Corporation, a Partnership or an Individual, as case may be.
- (3) Correct name of Surety
- (4) Correct name of Owner
- (5) If Contractor is Partnership, all partners should execute bond.

This is to certify to William Rainey Harper College, Palatine, Illinois, that the following described policies and insurance coverages in force at this date have been issued by:

(Name of Insuring Company)

To: _____
(Name of Insured)

Covering work to be performed for William Rainey Harper College, as follows:

Date of contract _____ Description of work and location where work is to be performed:

Type of Insurance	Policy No.	Expiration Date	
A - Workmen's Compensation Occupational Disease & Employer's Liability	_____	_____	Statutory Limits Pro- vided by Law, State of Illinois Employer's Liability Limit \$ _____
B - Comprehensive General Liability, including	_____	_____	
(1) Contractors' Liability (Premisis & Operations)	Each person \$ _____ Each Accident \$ _____	Each Accident \$ _____	Each Accident \$ _____ Aggregate \$ _____
(2) XCU Hazards (Explosion, Blasting, Collapse & underground)	Each person \$ _____ Each Accident \$ _____	Each Accident \$ _____	Each Accident \$ _____ Aggregate \$ _____
(3) Contractual Liability (assumed under above)	Each person \$ _____ Each Accident \$ _____	Each Accident \$ _____	Each Accident \$ _____ Aggregate \$ _____
(4) Contractor's Protective Liability (Independent)	Each person \$ _____ Each Accident \$ _____	Each Accident \$ _____	Each Accident \$ _____ Aggregate \$ _____

C - Comprehensive Automobile
Liability including _____

- (1) Owner Vehicles Each person \$ _____ Each Accident \$ _____
 Each Accident \$ _____
- (2) Hired Vehicles Each person \$ _____ Each Accident \$ _____
 Each Accident \$ _____
- (3) Each person \$ _____ Each Accident \$ _____
 Each Accident \$ _____

It is agreed by the Insurance Company that if the above policies be cancelled or changed during the periods of coverage as stated herein ten (10) days written notice prior to such cancellation or changes will be given to William Rainey Harper College, Palatine, Illinois.

Name of Insurance Company

Date

Address

Signature (in ink) of Authorized
Representative)

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

ARTICLE 1

CONTRACT DOCUMENTS

1.1 DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Agreement, the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, all Addenda issued prior to execution of the Agreement, and all Modifications thereto. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a written interpretation issued by the Architect pursuant to Subparagraph 1.2.5, or (4) a written order for a minor change in the Work issued by the Architect pursuant to Paragraph 12.3. A Modification may be made only after execution of the Contract.

1.1.2 THE CONTRACT

The Contract Documents form the Contract. The Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral, including the bidding documents. The Contract may be amended or modified only by a Modification as defined in Subparagraph 1.1.1.

1.1.3 THE WORK

The term Work includes all labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in such construction.

1.1.4 THE PROJECT

The Project is the total construction designed by the Architect of which the Work performed under the Contract Documents may be the whole or a part.

1.2 EXECUTION, CORRELATION, INTENT AND INTERPRETATIONS

1.2.1 The Contract Documents shall be signed in not less than triplicate by the Owner and Contractor. If either the Owner or the Contractor or both do not sign the Conditions of the Contract, Drawings, Specifications, or any of the other Contract Documents, the Architect shall identify them.

1.2.2 By executing the Contract, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents.

1.2.3 The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. The intention of the Documents is to include all labor, materials, equipment and other items

as provided in Subparagraph 4.4.1 necessary for the proper execution and completion of the Work, and also to include those things which may be reasonably inferable from the Contract Documents as being necessary to produce the intended results. Words which have well-known technical or trade meanings are used herein in accordance with such recognized meanings.

1.2.4 The organization of the Specifications into divisions, sections and articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.5 Written interpretations necessary for the proper execution or progress of the Work, in the form of drawings or otherwise, will be issued with reasonable promptness by the Architect and in accordance with any schedule agreed upon. Such interpretations shall be consistent with and reasonably inferable from the Contract Documents, and may be effected by Field Order.

1.3 COPIES FURNISHED AND OWNERSHIP

1.3.1 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, all copies of Drawings and Specifications reasonably necessary for the execution of the Work.

1.3.2 All Drawings, Specifications and copies thereof furnished by the Architect are and shall remain his property. They are not to be used on any other project, and with the exception of one contract set for each party to the Contract, are to be returned to the Architect on request at the completion of the Work.

ARTICLE 2

ARCHITECT

2.1 DEFINITION

2.1.1 The Architect is the person or organization identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Architect means the Architect or his authorized representative.

2.1.2 Nothing contained in the Contract Documents shall create any contractual relationship between the Architect and the Contractor.

2.2 ADMINISTRATION OF THE CONTRACT

2.2.1 The Architect will provide general administration of the Contract, including performance of the functions hereinafter described.

2.2.2 The Architect will be the Owner's representative during construction and until final payment. The Architect will have authority to act on behalf of the Owner to the

extent provided in the Contract Documents, unless otherwise modified by written instrument which will be shown to the Contractor. The Architect will advise and consult with the Owner, and all of the Owner's instructions to the Contractor shall be issued through the Architect.

2.2.3 The Architect shall at all times have access to the Work wherever it is in preparation and progress. The Contractor shall provide facilities for such access so the Architect may perform his functions under the Contract Documents.

2.2.4 The Architect will make periodic visits to the site to familiarize himself generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. On the basis of his on-site observations as an architect, he will keep the Owner informed of the progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work of the Contractor. The Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and he will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

2.2.5 Based on such observations and the Contractor's Applications for Payment, the Architect will determine the amounts owing to the Contractor and will issue Certificates for Payment in such amounts, as provided in Paragraph 9.4.

2.2.6 The Architect will be, in the first instance, the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder by both the Owner and Contractor. The Architect will, within a reasonable time, render such interpretations as he may deem necessary for the proper execution or progress of the Work.

2.2.7 Claims, disputes and other matters in question between the Contractor and the Owner relating to the execution or progress of the Work or the interpretation of the Contract Documents shall be referred initially to the Architect for decision which he will render in writing within a reasonable time.

2.2.8 All interpretations and decisions of the Architect shall be consistent with the intent of the Contract Documents. In his capacity as interpreter and judge, he will exercise his best efforts to insure faithful performance by both the Owner and the Contractor and will not show partiality to either.

2.2.9 The Architect's decisions in matters relating to artistic effect will be final if consistent with the intent of the Contract Documents.

2.2.10 Any claim, dispute or other matter that has been referred to the Architect, except those relating to artistic effect as provided in Subparagraph 2.2.9 and except any which have been waived by the making or acceptance of final payment as provided in Subparagraphs 9.7.5, and 9.7.6, shall be subject to arbitration upon the written demand of either party. However, no demand for arbitra-

tion of any such claim, dispute or other matter may be made until the earlier of:

- .1 the date on which the Architect has rendered his decision, or
- .2 the tenth day after the parties have presented their evidence to the Architect if he has not rendered his written decision by that date

2.2.11 If a decision of the Architect is made in writing and states that it is final but subject to appeal, no demand for arbitration of a claim, dispute or other matter covered by such decision may be made later than thirty days after the date on which the party making the demand received the decision. The failure to demand arbitration within said thirty days' period will result in the Architect's decision becoming final and binding upon the Owner and the Contractor. If the Architect renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but will not supersede any arbitration proceedings except where the decision is acceptable to the parties concerned.

2.2.12 The Architect will have authority to reject Work which does not conform to the Contract Documents. Whenever, in his reasonable opinion, he considers it necessary or advisable to insure the proper implementation of the intent of the Contract Documents, he will have authority to require the Contractor to stop the Work or any portion thereof, or to require special inspection or testing of the Work as provided in Subparagraph 7.8.2 whether or not such Work be then fabricated, installed or completed. However, neither the Architect's authority to act under this Subparagraph 2.2.12, nor any decision made by him in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the Architect to the Contractor, any Subcontractor, any of their agents or employees, or any other person performing any of the Work.

2.2.13 The Architect will review Shop Drawings and Samples as provided in Subparagraphs 4.13.1 through 4.13.8 inclusive.

2.2.14 The Architect will prepare Change Orders in accordance with Article 12, and will have authority to order minor changes in the Work as provided in Subparagraph 12.3.1.

2.2.15 The Architect will conduct inspections to determine the dates of Substantial Completion and final completion, will receive written guarantees and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment.

2.2.16 If the Owner and Architect agree, the Architect will provide one or more full-time Project Representatives to assist the Architect in carrying out his responsibilities at the site. The duties, responsibilities and limitations of authority of any such Project Representative shall be as set forth in an exhibit to be incorporated in the Contract Documents.

2.2.17 The duties, responsibilities and limitations of authority of the Architect as the Owner's representative during construction as set forth in Articles 1 through 14 inclusive of these General Conditions, will not be modified or extended without written consent of the Owner and the Architect which will be shown to the Contractor.

2.2.18 The Architect will not be responsible for the acts or omissions of the Contractor, or any Subcontractors, or any of his or their agents or employees, or any other persons performing any of the Work.

2.2.19 In case of the termination of the employment of the Architect, the Owner shall appoint an architect against whom the Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former architect. Any dispute in connection with such appointment shall be subject to arbitration.

ARTICLE 3

OWNER

3.1 DEFINITION

3.1.1 The Owner is the person or organization identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Owner means the Owner or his authorized representative.

3.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

3.2.1 The Owner shall furnish all surveys describing the physical characteristics, legal limits and utility locations for the site of the Project.

3.2.2 The Owner shall secure and pay for easements for permanent structures or permanent changes in existing facilities.

3.2.3 Information or services under the Owner's control shall be furnished by the Owner with reasonable promptness to avoid delay in the orderly progress of the Work.

3.2.4 The Owner shall issue all instructions to the Contractor through the Architect.

3.2.5 The foregoing are in addition to other duties and responsibilities of the Owner enumerated herein and especially those in respect to Payment and Insurance in Articles 9 and 11 respectively.

ARTICLE 4

CONTRACTOR

4.1 DEFINITION

4.1.1 The Contractor is the person or organization identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.

4.2 REVIEW OF CONTRACT DOCUMENTS

4.2.1 The Contractor shall carefully study and compare the Agreement, Conditions of the Contract, Drawings, Specifications, Addenda and Modifications and shall at once report to the Architect any error, inconsistency or omission he may discover; but the Contractor shall not be liable to the Owner or the Architect for any damage resulting from any such errors, inconsistencies or omissions. The Contractor shall do no Work without proper Drawings and Specifications.

4.3 SUPERVISION AND CONSTRUCTION PROCEDURES

4.3.1 The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract.

4.4 LABOR AND MATERIALS

4.4.1 Unless otherwise specifically noted, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.

4.4.2 The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him.

4.5 WARRANTY AND GUARANTEE

4.5.1 The Contractor warrants and guarantees to the Owner and the Architect that all materials and equipment incorporated in the Project will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not so conforming to these standards may be considered defective by the Owner or the Architect. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

4.5.2 The warranties and guarantees provided in this Paragraph 4.5 and elsewhere in the Contract Documents shall be in addition to and not in limitation of any other warranty or guarantee or remedy required by law or by the Contract Documents.

4.6 TAXES

4.6.1 The Contractor shall pay all sales, consumer, use and other similar taxes required by law.

4.7 PERMITS, FEES AND NOTICES

4.7.1 The Contractor shall secure and pay for all permits, fees and licenses necessary for the proper execution and completion of the Work.

4.7.2 The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the Work. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Architect in writing, and any necessary changes shall be adjusted by appropriate Modification. If the Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Architect, he shall assume full responsibility therefor and shall bear all costs attributable thereto.

4.8 CASH ALLOWANCES

4.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. These allowances shall cover the net cost of the materials and

equipment delivered and unloaded at the site, and all applicable taxes. The Contractor's handling costs on the site, labor, installation costs, overhead, profit and other expenses shall be included in the Contract Sum and not in the allowance. The Contractor shall cause the Work covered by these allowances to be performed for such amounts and by such persons as the Architect may direct, but he will not be required to employ persons against whom he makes a reasonable objection. If the cost, when determined, is more than or less than the allowance, the Contract Sum shall be adjusted accordingly by Change Order.

4.9 SUPERINTENDENT

4.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during the progress of the Work. The superintendent and assistants shall be satisfactory to the Architect, and shall not be changed except with the consent of the Architect, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor and shall have full authority to act on his behalf. All communications given to the superintendent shall be as binding as if given to the Contractor. Important communications will be confirmed in writing. Other communications will be so confirmed on written request in each case.

4.10 RESPONSIBILITY FOR THOSE PERFORMING THE WORK

4.10.1 The Contractor shall be responsible for the acts and omissions of all his employees and all Subcontractors, their agents and employees, and all other persons performing any of the Work under a contract with the Contractor.

4.11 PROGRESS SCHEDULE

4.11.1 The Contractor, immediately after being awarded the Contract, shall prepare and submit for the Architect's approval an estimated progress schedule for the Work in relation to the entire Project. This schedule shall indicate the dates for the starting and completion of the various stages of construction and, with the Architect's consent, may be revised as required.

4.12 DRAWINGS AND SPECIFICATIONS AT THE SITE

4.12.1 The Contractor shall maintain at the site for the Owner one copy of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders and other Modifications, in good order and marked to record all changes made during construction. These shall be available to the Architect and shall be delivered to him for the Owner upon completion of the Work.

4.13 SHOP DRAWINGS AND SAMPLES

4.13.1 Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by the Contractor or any Subcontractor, manufacturer, supplier or distributor, and which illustrate some portion of the Work.

4.13.2 Samples are physical examples furnished by the Contractor to illustrate materials, equipment or work-

manship, and to establish standards by which the Work will be judged.

4.13.3 The Contractor shall review, stamp with his approval and submit, with reasonable promptness and in orderly sequence so as to cause no delay in the Work or in the work of any other contractor, all Shop Drawings and Samples required by the Contract Documents or subsequently by the Architect as covered by Modifications. Shop Drawings and Samples shall be properly identified as specified, or as the Architect may require. At the time of submission the Contractor shall inform the Architect in writing of any deviation in the Shop Drawings or Samples from the requirements of the Contract Documents.

4.13.4 By approving and submitting Shop Drawings and Samples, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and of the Contract Documents.

4.13.5 The Architect will review and approve Shop Drawings and Samples with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The Architect's approval of a separate item shall not indicate approval of an assembly in which the item functions.

4.13.6 The Contractor shall make any corrections required by the Architect and shall resubmit the required number of corrected copies of Shop Drawings or new Samples until approved. The Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Architect on previous submissions.

4.13.7 The Architect's approval of Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's approval relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

4.13.8 No Work requiring a Shop Drawing or Sample submission shall be commenced until the submission has been approved by the Architect. All such Work shall be in accordance with approved Shop Drawings and Samples.

4.14 USE OF SITE

4.14.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with any materials or equipment.

4.15 CUTTING AND PATCHING OF WORK

4.15.1 The Contractor shall do all cutting, fitting or patching of his Work that may be required to make several parts fit together properly, and shall not endanger any Work by cutting, excavating or otherwise altering the Work or any part of it.

4.16 CLEANING UP

4.16.1 The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of the Work he shall remove all his waste materials and rubbish from and about the Project as well as all his tools, construction equipment, machinery and surplus materials, and shall clean all glass surfaces and leave the Work "broom-clean" or its equivalent, except as otherwise specified.

4.16.2 If the Contractor fails to clean up, the Owner may do so and the cost thereof shall be charged to the Contractor as provided in Paragraph 7.6.

4.17 COMMUNICATIONS

4.17.1 The Contractor shall forward all communications to the Owner through the Architect.

4.18 INDEMNIFICATION

4.18.1 The Contractor shall indemnify and hold harmless the Owner and the Architect and their agents and employees from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and (b) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

4.18.2 In any and all claims against the Owner or the Architect or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph 4.18 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

4.18.3 The obligations of the Contractor under this Paragraph 4.18 shall not extend to any claim, damage, loss or expense which is attributable in whole or in substantial part to a defect in drawings or specifications prepared by the Architect.

ARTICLE 5

SUBCONTRACTORS

5.1 DEFINITION

5.1.1 A Subcontractor is a person or organization who has a direct contract with the Contractor to perform any of the Work at the site. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative.

5.1.2 A Sub-subcontractor is a person or organization who has a direct or indirect contract with a Subcontractor to perform any of the Work at the site. The term Sub-

subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Sub-subcontractor or an authorized representative thereof.

5.1.3 Nothing contained in the Contract Documents shall create any contractual relation between the Owner or the Architect and any Subcontractor or Sub-subcontractor.

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 As soon as practicable after bids are received and prior to the award of the Contract, the successful bidder shall furnish to the Architect in writing for acceptance by the Owner and the Architect a list of the names of the subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for such portions of the Work as may be designated in the bidding requirements, or, if none is so designated, the names of the Subcontractors proposed for the principal portions of the Work. Prior to the award of the Contract, the Architect shall notify the successful bidder in writing if either the Owner or the Architect, after due investigation, has reasonable objection to any person or organization on such list. Failure of the Owner or Architect to make an objection to any person or organization on the list prior to the award shall constitute acceptance of such person or organization.

5.2.2 If, prior to the award of the Contract, the Owner or Architect has reasonable objection to and refuses to accept any person or organization on such list, the successful bidder may, prior to the award, withdraw his bid without forfeiture of bid security. If the successful bidder submits an acceptable substitute with an increase in his bid price to cover the difference in cost occasioned by such substitution, the Owner may, at his discretion, accept the increased bid price or he may disqualify the bid. If, after the award, the Owner or Architect refuses to accept any person or organization on such list, the Contractor shall submit an acceptable substitute and the Contract Sum shall be increased or decreased by the difference in cost occasioned by such substitution and an appropriate Change Order shall be issued; however, no increase in the Contract Sum shall be allowed for any such substitution unless the Contractor has acted promptly and responsively in submitting a name with respect thereto prior to the award.

5.2.3 The Contractor shall not contract with any Subcontractor or any person or organization proposed for portions of the Work designated in the bidding requirements or, if none is so designated, with any Subcontractor proposed for the principal portions of the Work who has not been accepted by the Owner and the Architect. The Contractor will not be required to contract with any subcontractor or person or organization against whom he has a reasonable objection.

5.2.4 If the Owner or the Architect requires a change of any proposed Subcontractor or person or organization previously accepted by them, the Contract Sum shall be increased or decreased by the difference in cost occasioned by such change and an appropriate Change Order shall be issued.

5.2.5 The Contractor shall not make any substitution for any Subcontractor or person or organization who has been accepted by the Owner and the Architect, unless the substitution is acceptable to the Owner and the Architect.

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 All work performed for the Contractor by a Subcontractor shall be pursuant to an appropriate agreement between the Contractor and the Subcontractor (and where appropriate between Subcontractors and Sub-subcontractors) which shall contain provisions that:

- .1 preserve and protect the rights of the Owner and the Architect under the Contract with respect to the Work to be performed under the subcontract so that the subcontracting thereof will not prejudice such rights;
- .2 require that such Work be performed in accordance with the requirements of the Contract Documents;
- .3 require submission to the Contractor of applications for payment under each subcontract to which the Contractor is a party, in reasonable time to enable the Contractor to apply for payment in accordance with Article 9;
- .4 require that all claims for additional costs, extensions of time, damages for delays or otherwise with respect to subcontracted portions of the Work shall be submitted to the Contractor (via any Subcontractor or Sub-subcontractor where appropriate) in the manner provided in the Contract Documents for like claims by the Contractor upon the Owner;
- .5 waive all right the contracting parties may have against one another for damages caused by fire or other perils covered by the property insurance described in Paragraph 11.3, except such rights as they may have to the proceeds of such insurance help by the Owner as trustee under Paragraph 11.3; and
- .6 obligate each Subcontractor specifically to consent to the provisions of this Paragraph 5.3.

5.4 PAYMENTS TO SUBCONTRACTORS

5.4.1 The Contractor shall pay each Subcontractor, upon receipt of payment from the Owner, an amount equal to the percentage of completion allowed to the Contractor on account of such Subcontractor's Work. The Contractor shall also require each Subcontractor to make similar payments to his subcontractors.

5.4.2 If the Architect fails to issue a Certificate for Payment for any cause not the fault of a particular Subcontractor, the Contractor shall pay that Subcontractor on demand, made at any time after the Certificate for Payment should otherwise have been issued, for his Work to the extent completed, less the retained percentage.

5.4.3 The Contractor shall pay each Subcontractor a just share of any insurance moneys received by the Contractor under Article 11, and he shall require each Subcontractor to make similar payments to his subcontractors.

5.4.4 The Architect may, on request and at his discretion, furnish to any Subcontractor, if practicable, information

regarding percentages of completion certified to the Contractor on account of Work done by such Subcontractors.

5.4.5 Neither the Owner nor the Architect shall have any obligation to pay or to see to the payment of any moneys to any Subcontractor except as may otherwise be required by law.

ARTICLE 6

SEPARATE CONTRACTS

6.1 OWNER'S RIGHT TO AWARD SEPARATE CONTRACTS

6.1.1 The Owner reserves the right to award other contracts in connection with other portions of the Project under these or similar Conditions of the Contract.

6.1.2 When separate contracts are awarded for different portions of the Project, "the Contractor" in the contract documents in each case shall be the contractor who signs each separate contract.

6.2 MUTUAL RESPONSIBILITY OF CONTRACTORS

6.2.1 The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and shall properly connect and coordinate his Work with theirs.

6.2.2 If any part of the Contractor's Work depends for proper execution or results upon the work of any other separate contractor, the Contractor shall inspect and promptly report to the Architect any discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of the Contractor so to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper to receive his Work, except as to defects which may develop in the other separate contractor's work after the execution of the Contractor's Work.

6.2.3. Should the Contractor cause damage to the work or property of any separate contractor on the Project, the Contractor shall, upon due notice, settle with such other contractor by agreement or arbitration, if he will so settle. If such separate contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor who shall defend such proceedings and pay all costs in connection therewith, and if any judgment against the Owner arises therefrom the Contractor shall pay or satisfy it.

6.3 CUTTING AND PATCHING UNDER SEPARATE CONTRACTS

6.3.1. The Contractor shall do all cutting, fitting or patching of his Work that may be required to fit it to receive or be received by the work of other contractors shown upon, or reasonably implied by, the Contract Documents. The Contractor shall not endanger any work of any other contractors by cutting, excavating or otherwise altering any work and shall not cut or alter the work of any other contractor except with the written consent of the Architect.

6.3.2 Any costs caused by defective or ill-timed work shall be borne by the party responsible therefor.

6.4 OWNER'S RIGHT TO CLEAN UP

6.4.1 If a dispute arises between the separate contractors as to their responsibility for cleaning up as required by Paragraph 4.16, the Owner may clean up and charge the cost thereof to the several contractors as the Architect shall determine to be just.

ARTICLE 7**MISCELLANEOUS PROVISIONS****7.1 LAW OF THE PLACE**

7.1.1 The Contract shall be governed by the law of the place where the Project is located.

7.2 SUCCESSORS AND ASSIGNS

7.2.1 The Owner and the Contractor each binds himself, his partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to him hereunder, without the previous written consent of the Owner.

7.3 WRITTEN NOTICE

7.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known to him who gives the notice.

7.4 CLAIMS FOR DAMAGES

7.4.1 Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the other party or of any of his employees, agents or others for whose acts he is legally liable, claim shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

7.5 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

7.5.1 The Owner shall have the right, prior to signing the Contract, to require the Contractor to furnish bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder in such form and amount as the Owner may prescribe and with such sureties as may be agreeable to the parties. If such bonds are stipulated in the bidding requirements, the premiums shall be paid by the Contractor; if required subsequent to the submission of quotations or bids, the cost shall be reimbursed by the Owner. The Contractor shall deliver the required bonds to the Owner not later than the date of execution of the Contract, or if the Work is commenced prior thereto in response to a notice to proceed, the Contractor shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be issued.

7.6 OWNER'S RIGHT TO CARRY OUT THE WORK

7.6.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision of the Contract the Owner may, after seven days' written notice to the Contractor and without prejudice to any other remedy he may have, make good such deficiencies. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including the cost of the Architect's additional services made necessary by such default, neglect or failure. The Architect must approve both such action and the amount charged to the Contractor. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

7.7 ROYALTIES AND PATENTS

7.7.1 The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified, but if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Architect.

7.8 TESTS

7.8.1 If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to be inspected, tested or approved, the Contractor shall give the Architect timely notice of its readiness and of the date arranged so the Architect may observe such inspection, testing or approval. The Contractor shall bear all costs of such inspections, tests and approvals unless otherwise provided.

7.8.2 If after the commencement of the Work the Architect determines that any Work requires special inspection, testing or approval which Subparagraph 7.8.1 does not include, he will, upon written authorization from the Owner, instruct the Contractor to order such special inspection, testing or approval, and the Contractor shall give notice as in Subparagraph 7.8.1. If such special inspection or testing reveals a failure of the Work to comply with the requirements of the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, the Contractor shall bear all costs thereof, including the Architect's additional services made necessary by such failure; otherwise the Owner shall bear such costs, and an appropriate Change Order shall be issued.

7.8.3. Required certificates of inspection, testing or approval shall be secured by the Contractor and promptly delivered by him to the Architect.

7.8.4 If the Architect wishes to observe the inspections, tests or approvals required by this Paragraph 7.8, he will do so promptly and, where practicable, at the source of supply.

7.8.5 Neither the observations of the Architect in his administration of the Contract, nor inspections, tests or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Work in accordance with the Contract Documents.

7.9 INTEREST

7.9.1 Any moneys not paid when due under this Contract shall bear interest at the legal rate in force at the place of the Project.

7.10 ARBITRATION

7.10.1 All claims, disputes and other matters in question arising out of, or relating to, this Contract or the breach thereof, except as set forth in Subparagraph 2.2.9 with respect to the Architect's decisions on matters relating to artistic effect, and except for claims which have been waived by the making or acceptance of final payment as provided by Subparagraphs 9.7.5 and 9.7.6, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining. This agreement so to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

7.10.2 Notice of the demand for arbitration shall be filed in writing with the other party to the Contract and with the American Arbitration Association, and a copy shall be filed with the Architect. The demand for arbitration shall be made within the time limits specified in Subparagraphs 2.2.10 and 2.2.11 where applicable, and in all other cases within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall it be made after institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

7.10.3 The Contractor shall carry on the Work and maintain the progress schedule during any arbitration proceedings, unless otherwise agreed by him and the Owner in writing.

ARTICLE 8

TIME

8.1 DEFINITIONS

8.1.1 The Contract Time is the period of time allotted in the Contract Documents for completion of the Work.

8.1.2 The date of commencement of the Work is the date established in a notice to proceed. If there is no notice to proceed, it shall be the date of the Agreement or such other date as may be established therein.

8.1.3 The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Architect when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy the Work or designated portion thereof for the use for which it is intended.

8.2 PROGRESS AND COMPLETION

8.2.1 All time limits stated in the Contract Documents are of the essence of the Contract.

8.2.2 The Contractor shall begin the Work on the date of commencement as defined in Subparagraph 8.1.2. He shall carry the Work forward expeditiously with adequate forces and shall complete it within the Contract Time.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner or the Architect, or by any employee of either, or by any separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by delay authorized by the Owner pending arbitration or by any cause which the Architect determines may justify the delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

8.3.2 All claims for extension of time shall be made in writing to the Architect no more than fifteen days after the occurrence of the delay, otherwise they shall be waived.

8.3.3 If no schedule or agreement is made stating the dates upon which written interpretations as set forth in Subparagraph 1.2.5 shall be furnished, then no claim for delay shall be allowed on account of failure to furnish such interpretations until fifteen days after demand is made for them, and not then unless such claim is reasonable.

8.3.4 This Paragraph 8.3 does not exclude the recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9

PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the Agreement and is the total amount payable by the Owner to the Contractor for the performance of the Work under the Contract Documents.

9.2 SCHEDULE OF VALUES

9.2.1 Before the first Application for Payment, the Contractor shall submit to the Architect a schedule of values of the various portions of the Work, including quantities if required by the Architect, aggregating the total Contract Sum, divided so as to facilitate payments to Subcontractors in accordance with Paragraph 5.4, prepared in such form as specified or as the Architect and the Contractor may agree upon, and supported by such data to substantiate its correctness as the Architect may require. Each item in the schedule of values shall include its proper share of overhead, profit, and other general charges. This schedule, when approved by the Architect, shall be used as a basis for the Contractor's Applications for Payment.

9.3 PROGRESS PAYMENTS

9.3.1 At least ten days before each progress payment falls due, the Contractor shall submit to the Architect an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Owner or the Architect may require.

9.3.2 If payments are to be made on account of materials or equipment not incorporated in the Work but delivered and suitably stored at the site, or at some other location agreed upon in writing, such payments shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials or equipment or otherwise protect the Owner's interest including applicable insurance and transportation to the site.

9.3.3 The Contractor warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will have passed to the Owner prior to the making of the Application for Payment, free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to in this Article 9 as "liens"; and that no Work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing the Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 If the Contractor has made Application for Payment as above, the Architect will, with reasonable promptness but not more than seven days after the receipt of the Application, issue a Certificate for Payment to the Owner for such amount as he determines to be properly due, or state in writing his reasons for withholding a Certificate as provided in Subparagraph 9.5.1.

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on his observations at the site as provided in Subparagraph 2.2.4 and the data comprising the Application for Payment, that the Work has progressed to the point indicated; that, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole upon Substantial Completion, to the results of any subsequent tests required by the Contract Documents, to minor deviations from the Contract Documents correctable prior to completion, and to any specific qualifications stated in his Certificate); and that the Contractor is entitled to payment in the amount certified. In addition, the Architect's final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Subparagraph 9.7.2 have been fulfilled. However, by issuing a Certificate for Payment, the Architect shall not thereby be deemed to represent that he has made exhaustive or continuous on-site inspections to check the

quality or quantity of the Work or that he has reviewed the construction means, methods, techniques, sequences or procedures, or that he has made any examination to ascertain how or for what purpose the Contractor has used the moneys previously paid on account of the Contract Sum.

9.4.3 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner provided in the Agreement.

9.4.4 No Certificate for a progress payment, nor any progress payment, nor any partial or entire use or occupancy of the Project by the Owner, shall constitute an acceptance of any Work not in accordance with the Contract Documents.

9.5 PAYMENTS WITHHELD

9.5.1 The Architect may decline to approve an Application for Payment and may withhold his Certificate in whole or in part if in his opinion he is unable to make representations to the Owner as provided in Subparagraph 9.4.2. The Architect may also decline to approve any Applications for Payment or, because of subsequently discovered evidence or subsequent inspections, he may nullify the whole or any part of any Certificate for Payment previously issued to such extent as may be necessary in his opinion to protect the Owner from loss because of:

- .1 defective work not remedied,
- .2 claims filed or reasonable evidence indicating probable filing of claims,
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment,
- .4 reasonable doubt that the Work can be completed for the unpaid balance of the Contract Sum,
- .5 damage to another contractor,
- .6 reasonable indication that the Work will not be completed within the Contract Time, or
- .7 unsatisfactory prosecution of the Work by the Contractor.

9.5.2 When the above grounds in Subparagraph 9.5.1 are removed, payment shall be made for amounts withheld because of them.

9.6 FAILURE OF PAYMENT

9.6.1 If the Architect should fail to issue any Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner should fail to pay the Contractor within seven days after the date of payment established in the Agreement any amount certified by the Architect or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner and the Architect, stop the Work until payment of the amount owing has been received.

9.7 SUBSTANTIAL COMPLETION AND FINAL PAYMENT

9.7.1 When the Contractor determines that the Work or a designated portion thereof acceptable to the Owner is substantially complete, the Contractor shall prepare for submission to the Architect a list of items to be completed or corrected. The failure to include any items on

such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When the Architect on the basis of an inspection determines that the Work is substantially complete, he will then prepare a Certificate of Substantial Completion, which shall establish the Date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for maintenance, heat, utilities, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein, said time to be within the Contract Time. The Certificate of Substantial Completion shall be submitted to the Owner and the Contractor for their written acceptance of the responsibilities assigned to them in such Certificate.

9.7.2. Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when he finds the Work acceptable under the Contract Documents and the Contract fully performed, he will promptly issue a final Certificate for Payment stating that to the best of his knowledge, information and belief, and on the basis of his observations and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said final Certificate, is due and payable.

9.7.3 Neither the final payment nor any part of the retained percentage shall become due until the Contractor submits to the Architect: releases or waivers of all liens arising out of the Contract; an Affidavit that the releases and waivers include all the labor, materials and equipment for which a lien could be filed and that all payrolls, bills for material and equipment, and other indebtedness connected with the Work for which the Owner or his property might in any way be responsible have been paid or otherwise satisfied; consent of surety, if any, to final payment; and such other data establishing payment or satisfaction of all such obligations as the Owner may require. If any Subcontractor refuses to furnish a release or waiver, the Contractor may furnish a bond satisfactory to the Owner to indemnify him against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

9.7.4 If after Substantial Completion of the Work final completion thereof is materially delayed through no fault of the Contractor, and the Architect so confirms, the Owner shall, upon certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Subparagraph 7.5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be

made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.7.5 The making of final payment shall constitute a waiver of all claims by the Owner except those arising from:

- .1 unsettled liens,
- .2 faulty or defective Work appearing after Substantial Completion,
- .3 failure of the Work to comply with the requirements of the Contract Documents.
- .4 terms of any special guarantees required by the Contract Documents.

9.7.6 The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and still unsettled.

ARTICLE 10

PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 The Contractor shall take all necessary precautions for the safety of, and shall provide all necessary protection to prevent damage, injury or loss to:

- .1 all employees on the Work and all other persons who may be affected thereby.
- .2 all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, and
- .3 other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by existing conditions and progress of the Work, all necessary safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

10.2.3 When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

10.2.4 All damage or loss to any property referred to in Clauses 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, any Subcontractor, any Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, shall be remedied by the Contractor, except

damage or loss attributable to faulty Drawings or Specifications or to the acts or omissions of the Owner or Architect or anyone employed by either of them or for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor.

10.2.5 The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated in writing by the Contractor to the Owner and the Architect.

10.2.6 The Contractor shall not load or permit any part of the Work to be loaded so as to endanger its safety.

10.3 EMERGENCIES

10.3.1 In any emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in Article 12 for Changes in the Work.

ARTICLE 11

INSURANCE

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 The Contractor shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 claims under workmen's compensation, disability benefit and other similar employee benefit acts;
- .2 claims for damages because of bodily injury, occupational sickness or disease, or death of his employees, and claims insured by usual personal injury liability coverage;
- .3 claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees, and claims insured by usual personal injury liability coverage; and
- .4 claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

11.1.2. The insurance required by Subparagraph 11.1.1 shall be written for not less than any limits of liability specified in the Contract Documents, or required by law, whichever is greater, and shall include contractual liability insurance as applicable to the Contractor's obligations under Paragraph 4.18.

11.1.3 Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled until at least fifteen days' prior written notice has been given to the Owner.

11.2 OWNER'S LIABILITY INSURANCE

11.2.1 The Owner shall be responsible for purchasing and maintaining his own liability insurance and, at his option, may purchase and maintain such insurance as will protect him against claims which may arise from operations under the Contract.

11.3 PROPERTY INSURANCE

11.3.1 Unless otherwise provided, the Owner shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. This insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work and shall insure against the perils of Fire, Extended Coverage, Vandalism and Malicious Mischief.

11.3.2 The Owner shall purchase and maintain such steam boiler and machinery insurance as may be required by the Contract Documents or by law. This insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work.

11.3.3 Any insured loss is to be adjusted with the Owner and made payable to the Owner as trustee for the insureds, as their interests may appear, subject to the requirements of any applicable mortgagee clause and of Subparagraph 11.3.8.

11.3.4 The Owner shall file a copy of all policies with the Contractor before an exposure to loss may occur. If the Owner does not intend to purchase such insurance, he shall inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance which will protect the interests of himself, his Subcontractors and the Sub-subcontractors in the Work and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by failure of the Owner to purchase or maintain such insurance and so to notify the Contractor then the Owner shall bear all reasonable costs properly attributable thereto.

11.3.5 If the Contractor requests in writing that other special insurance be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

11.3.6 The Owner and Contractor waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance provided under this Paragraph 11.3, except such rights as they may have to the proceeds of such insurance held by the Owner as trustee. The Contractor shall require similar waivers by Subcontractors and Sub-subcontractors in accordance with Clause 5.3.1.5.

11.3.7 If required in writing by any party in interest, the Owner as trustee shall, upon the occurrence of an insured loss, give bond for the proper performance of his duties. He shall deposit in a separate account any money so received, and he shall distribute it in accordance with such agreement as the parties in interest may reach, or in accordance with an award by arbitration in which case the procedure shall be as provided in Paragraph 7.10. If after such loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate Change Order.

11.3.8. The Owner as trustee shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within five days after the occurrence of loss to the Owner's exercise of this power, and if such objection be made, arbitrators shall be chosen as provided in Paragraph 7.10. The Owner as trustee shall, in that case, make settlement with the insurers in accordance with the directions of such arbitrators. If distribution of the insurance proceeds by arbitration is required, the arbitrators will direct such distribution.

11.4 LOSS OF USE INSURANCE

11.4.1 The Owner, at his option, may purchase and maintain such insurance as will insure him against loss of use of his property due to fire or other hazards, however caused.

ARTICLE 12

CHANGES IN THE WORK

12.1 CHANGE ORDERS

12.1.1 The Owner, without invalidating the Contract, may order Changes in the Work consisting of additions, deletions or other revisions, the Contract Sum and the Contract Time being adjusted accordingly. All such Changes in the Work shall be authorized by Change Order, and shall be executed under the applicable conditions of the Contract Documents.

12.1.2 A Change Order is a written order to the Contractor signed by the Owner and the Architect, issued after the execution of the Contract, authorizing a Change in the Work or an adjustment in the Contract Sum or the Contract Time. Alternatively, the Change Order may be signed by the Architect alone, provided he has written authority from the Owner for such procedure. The Contract Sum and the Contract Time may be changed only by Change Order.

12.1.3 The cost or credit to the Owner resulting from a Change in the Work shall be determined in one or more of the following ways:

- .1 by mutual acceptance of a lump sum properly itemized;
- .2 by unit prices stated in the Contract Documents or subsequently agreed upon; or
- .3 by cost and a mutually acceptable fixed or percentage fee.

12.1.4 If none of the methods set forth in Subparagraph 12.1.3 is agreed upon, the Contractor, provided he receives a Change Order, shall promptly proceed with the Work involved. The cost of such Work shall then be determined by the Architect on the basis of the Contractor's reasonable expenditures and savings, including, in the case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clause 12.1.3.3 above, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Pending final determination of cost to the Owner, payments on account shall be made on the Architect's Certificate for Payment. The amount of credit

to be allowed by the Contractor to the Owner for any deletion or change which results in a net decrease in cost will be the amount of the actual net decrease as confirmed by the Architect. When both additions and credits are involved in any one change, the allowance for overhead and profit shall be figured on the basis of net increase, if any.

12.1.5. If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed in a proposed Change Order that application of the agreed unit prices to the quantities of Work proposed will create a hardship on the Owner or the Contractor, the applicable unit prices shall be equitably adjusted to prevent such hardship.

12.1.6 Should conditions encountered below the surface of the ground be at variance with the conditions indicated by the Contract Documents, the Contract Sum shall be equitably adjusted by Change Order upon claim by either party made within a reasonable time after the first observance of the conditions.

12.1.7 If the Contractor claims that additional cost or time is involved because of (1) any written interpretation issued pursuant to Subparagraph 1.2.5, (2) any order by the Architect to stop the Work pursuant to Subparagraph 2.2.12 where the Contractor was not at fault, or (3) any written order for a minor change in the Work issued pursuant to Paragraph 12.3, the Contractor shall make such claim as provided in Paragraph 12.2.

12.2 CLAIMS FOR ADDITIONAL COST OR TIME

12.2.1 If the Contractor wishes to make a claim for an increase in the Contract Sum or an extension in the Contract Time, he shall give the Architect written notice thereof within a reasonable time after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property in which case the Contractor shall proceed in accordance with Subparagraph 10.3.1. No such claim shall be valid unless so made. If the Owner and the Contractor cannot agree on the amount of the adjustment in the Contract Sum or the Contract Time, it shall be determined by the Architect. Any change in the Contract Sum or Contract Time resulting from such claim shall be authorized by Change Order.

12.3 MINOR CHANGES IN THE WORK

12.3.1 The Architect shall have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes may be effected by Field Order or by other written order. Such changes shall be binding on the Owner and the Contractor.

12.4 FIELD ORDERS

12.4.1 The Architect may issue written Field Orders which interpret the Contract Documents in accordance with Subparagraph 1.2.5 or which order minor changes in the Work in accordance with Paragraph 12.3 without change in Contract Sum or Contract Time. The Contractor shall carry out such Field Orders promptly.

ARTICLE 13**UNCOVERING AND CORRECTION OF WORK****13.1 UNCOVERING OF WORK**

13.1.1 If any Work should be covered contrary to the request of the Architect, it must, if required by the Architect, be uncovered for his observation and replaced, at the Contractor's expense.

13.1.2 If any other Work has been covered which the Architect has not specifically requested to observe prior to being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work be found in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work be found not in accordance with the Contract Documents, the Contractor shall pay such costs unless it be found that this condition was caused by a separate contractor employed as provided in Article 6, and in that event the Owner shall be responsible for the payment of such costs.

13.2 CORRECTION OF WORK

13.2.1 The Contractor shall promptly correct all Work rejected by the Architect as defective or as failing to conform to the Contract Documents whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected Work, including the cost of the Architect's additional services thereby made necessary.

13.2.2 If, within one year after the Date of Substantial Completion or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition.

13.2.3 All such defective or non-conforming Work under Subparagraphs 13.2.1 and 13.2.2 shall be removed from the site where necessary, and the Work shall be corrected to comply with the Contract Documents without cost to the Owner.

13.2.4 The Contractor shall bear the cost of making good all work of separate contractors destroyed or damaged by such removal or correction.

13.2.5 If the Contractor does not remove such defective or non-conforming Work within a reasonable time fixed by written notice from the Architect, the Owner may remove it and may store the materials or equipment at the expense of the Contractor. If the Contractor does not pay the cost of such removal and storage within ten days thereafter, the Owner may upon ten additional days' written notice sell such Work at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs that should have been borne by the Contractor including compensation for additional

architectural services. If such proceeds of sale do not cover all costs which the Contractor should have borne, the difference shall be charged to the Contractor and an appropriate Change Order shall be issued. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

13.2.6 If the Contractor fails to correct such defective or non-conforming Work, the Owner may correct it in accordance with Paragraph 7.6.

13.2.7 The obligations of the Contractor under this Paragraph 13.2 shall be in addition to and not in limitation of any obligations imposed upon him by special guarantees required by the Contract Documents or otherwise prescribed by law.

13.3 ACCEPTANCE OF DEFECTIVE OR NON-CONFORMING WORK

13.3.1 If the Owner prefers to accept defective or non-conforming Work, he may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect an appropriate reduction in the Contract Sum, or, if the amount is determined after final payment, it shall be paid by the Contractor.

ARTICLE 14**TERMINATION OF THE CONTRACT****14.1 TERMINATION BY THE CONTRACTOR**

14.1.1 If the Work is stopped for a period of thirty days under an order of any court or other public authority having jurisdiction, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, or if the Work should be stopped for a period of thirty days by the Contractor for the Architect's failure to issue a Certificate for Payment as provided in Paragraph 9.6 or for the Owner's failure to make payment thereon as provided in Paragraph 9.6, then the Contractor may, upon seven days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for all Work executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit and damages.

14.2 TERMINATION BY THE OWNER

14.2.1 If the Contractor is adjudged a bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency, or if he persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he fails to make prompt payment to Subcontractors or for materials or labor, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a provision of the Contract Documents, then the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may, without prejudice to any right or remedy

and after giving the Contractor and his surety, if any, seven days' written notice, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished.

14.2.2 If the unpaid balance of the Contract Sum exceeds the costs of finishing the Work, including compensation for the Architect's additional services, such excess shall be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The costs incurred by the Owner as herein provided shall be certified by the Architect.

1 GENERAL REQUIREMENTS

2 -----

3

4 THE WORK TO BE PERFORMED UNDER THIS SECTION OF SPECIFICATIONS
5 SHALL CONSIST OF CLEARING, OR CLEARING AND GRUBBING TO INCLUDE THE
6 DISPOSAL OF MATERIALS, OF ALL AREAS OF CONSTRUCTION AND/OR AREAS
7 DESIGNATED ON THE DRAWINGS.

8

9 CONSTRUCTION METHODS

10 -----

11

12 ALL AREAS OF CONSTRUCTION AND/OR AREAS DESIGNATED ON THE DRAWINGS
13 SHALL BE CLEARED OF ALL TREES, STUMPS, BRUSH, VEGETATION AND
14 RUBBISH, EXCEPT SUCH TREES AS MAY BE DESIGNATED ON THE DRAWINGS
15 FOR PRESERVATION.

16

17 TREES DESIGNATED TO BE LEFT IN PLACE SHALL BE CAREFULLY TRIMMED AS
18 DIRECTED AND SHALL BE PROTECTED FROM SCARRING, BARKING, OR OTHER
19 DAMAGE DURING CONSTRUCTION OPERATIONS.

20

21 ON AREAS REQUIRED FOR RUNNING TRACK OR TENNIS COURT CONSTRUCTION,
22 ALL STUMPS, ROOTS, ETC., SHALL BE REMOVED TO A DEPTH OF AT LEAST
23 TWO (2) FEET BELOW THE LOWEST ELEVATION OF THE EXCAVATION.

24

25 ON AREAS REQUIRED FOR FILL CONSTRUCTION, AND AREAS USED AS BORROW
26 SITES, ALL STUMPS, ROOTS, VEGETATION, ETC., SHALL BE REMOVED TO A
27 DEPTH OF AT LEAST TWO (2) FEET BELOW THE EXISTING GROUND SURFACE.

28

29 ALL HOLES REMAINING AFTER CLEARING AND GRUBBING SHALL BE BACK-
30 FILLED AND COMPACTED TO A DENSITY EQUAL TO THE SURROUNDING UN-
31 DISTURBED SOIL.

32

33 THE ENTIRE AREA SHALL BE RE-GRADED AS NECESSARY TO PREVENT
34 PONDING OF WATER AND TO PROVIDE NATURAL DRAINAGE.

35

36 ALL MATERIALS SHALL BE REMOVED FROM THE PROJECT SITE.

37

38 DISPOSAL OF SUCH MATERIALS SHALL BE DONE IN SUCH A MANNER THAT
39 PUBLIC OR PRIVATE PROPERTY WILL NOT BE DAMAGED OR ENDANGERED.

40

41

1 GENERAL REQUIREMENTS

2 -----

3
4 THE WORK TO BE PERFORMED UNDER THIS SECTION OF THE SPECIFICATION
5 SHALL INCLUDE ALL EXCAVATION AND CONSTRUCTION OF FILL NECESSARY
6 FOR RE-GRADING THE SITE TO THE LINES, GRADES, AND CROSS-SECTIONS
7 AS REQUIRED TO MATCH THE EXISTING FINISH GRADES, WHERE DAMAGED
8 OR DISTURBED BY CONSTRUCTION OF THIS PROJECT.

9

10 CONSTRUCTION METHOD

11 -----

12
13 ALL EXCAVATION AND FILL SHALL BE CONSTRUCTED IN ACCORDANCE WITH
14 SECTION 0204, 'EXCAVATION, FILL, AND BACKFILL' OF THE SPECIFICA-
15 TIONS.

16
17 THE FINISHED SURFACES SHALL BE REASONABLY SMOOTH, COMPACT AND FREE
18 FROM IRREGULAR SURFACE CHANGES.

19
20 THE DEGREE OF FINISH SHALL BE THAT ORDINARILY OBTAINED FROM BLADE
21 GRADER OR SCRAPER OPERATIONS, EXCEPT AS OTHERWISE SPECIFIED.

22
23 ALL FINISH GRADES SHALL VARY UNIFORMLY BETWEEN EXISTING CONTOURS
24 AND/OR EXISTING ELEVATIONS, AND SHALL BE FINISHED TO A TOLERANCE
25 OF 2 INCHES IN 10 FEET.

26
27 AFTER COMPLETION OF THE GRADING OPERATION, ALL CONSTRUCTION DEBRIS,
28 WASTE, CONCRETE, WEEDS, BRUSH AND OTHER UNSIGHTLY MATERIALS SHALL
29 BE REMOVED FROM THE SITE AND THE ENTIRE AREA SHALL HAVE A NEAT AND
30 FINISHED APPEARANCE.

31

32 TOP SOIL

33 -----

34
35 AREAS TO BE RE-SEEDED SHALL RECEIVE TOPSOIL.

36
37 ALL AREAS TO RECEIVE TOPSOIL SHALL BE ROUGH GRADED TO WITHIN SIX
38 (6) INCHES OF THE FINISH GRADE.

39
40 THE SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 4 INCHES FOR
41 BINDING OF THE TOPSOIL WITH THE SUBSOIL, AND THE TOPSOIL SHALL BE
42 EVENLY PLACED AND SPREAD OVER THE SCARIFIED SUBGRADE.

43
44 THE TOPSOIL SHALL BE PLACED SO AS TO OBTAIN A MINIMUM COMPACTED
45 DEPTH OF SIX (6) INCHES.

46
47 GRADING AND HANDRAKING WILL BE REQUIRED, FOLLOWED BY ROLLING WITH
48 ONE PAIR OF A LIGHT ROLLER (WEIGHING NOT MORE THAN 100 POUNDS PER
49 LINEAR FOOT AND NOT LESS THAN 25 POUNDS PER LINEAR FOOT).

50
51 ON SLOPE STEEPER THAN 4 TO 1, THE TOPSOIL SHALL BE TAMPED IN PLACE.

52
53 TOPSOIL SHALL NOT BE PLACED WHEN THE SUBGRADE IS FROZEN OR IN A
54 CONDITION DETRIMENTAL TO PROPER CONSTRUCTION METHODS.

55

56

1 GENERAL

2 -----

3

4 THE WORK TO BE PERFORMED UNDER THIS SECTION OF THE SPECIFICATIONS
5 SHALL INCLUDE ALL EXCAVATION, FILL AND BACKFILL NECESSARY FOR THE
6 CONSTRUCTION OF SITE GRADING, DRAINAGE FACILITIES, AND ALL UTILITY
7 LINES, ETC. THE WORK TO BE DONE SHALL INCLUDE ALL NECESSARY
8 PUMPING OR BAILING, SHEETING AND SHORING, AND OTHER WORK NECESSARY
9 FOR COMPLETION OF THE REQUIRED EARTHWORK.

10

11 BIDS SHALL BE SUBMITTED ON THE ASSUMPTION THAT ALL EXCAVATIONS TO
12 THE CONTRACT LEVELS AND DIMENSIONS REQUIRED BY THE DRAWINGS AND
13 SPECIFICATIONS SHALL BE EARTH EXCAVATIONS. EARTH EXCAVATIONS
14 SHALL INCLUDE THE EXCAVATION OF ALL MATERIALS OF WHATSOEVER NATURE
15 EXCEPT ROCK AS DEFINED BELOW. THE CONTRACTOR SHALL BE PAID THE
16 UNIT PRICE FOR THE DIFFERENCE IN COST OF ROCK AND EARTH EXCAVATION.
17 THE CONTRACTOR SHALL INCLUDE IN HIS UNIT PRICE BIDS THE SUM OF
18 MONEY TO BE USED IN PAYMENT FOR THE DIFFERENCE IN COST BETWEEN
19 CONTRACT EARTH AND ROCK EXCAVATION. ROCK EXCAVATION IS DEFINED AS
20 FOLLOWS=

21

*EXCAVATED MATERIAL SHALL ONLY BE CONSIDERED AS ROCK WHEN THE
22 ARCHITECT AGREES THAT BECAUSE OF ITS DENSITY, IT CAN NOT
23 READILY BE LOOSENED BY POWER SHOVELS OR MANUALLY BY TOOLS
24 NOT REQUIRING FUEL OR POWER. BOULDERS LESS THAN ONE CUBIC
25 YARD IN VOLUME SHALL BE REGARDED AS EARTH EXCAVATION.

26

27 CONSTRUCTION METHODS

28 -----

29

30 GENERAL EXCAVATION=

31

*AREAS OF EXCAVATION SHALL BE CLEARED AND THE TOPSOIL STOCK-
32 PILED IN ACCORDANCE WITH SECTION 0202 'SITE CLEARING' OF THE
33 SPECIFICATIONS.

34

*EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES
35 ENCOUNTERED WITHIN THE GRADING LIMITS OF THE PROJECT SHALL BE
36 PERFORMED TO THE LINES AND GRADES INDICATED ON THE DRAWINGS.

37

*ALL EXCAVATED MATERIALS WHICH ARE CONSIDERED UNSUITABLE FOR
38 FILL BY THE ARCHITECT-ENGINEER AND ANY SURPLUS OF EXCAVATED
39 MATERIAL WHICH IS NOT REQUIRED FOR FILL OR SITE GRADING SHALL
40 BE KNOWN AS 'WASTE', AND SHALL BE REMOVED FROM THE PROJECT
41 SITE.

42

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1
2
3 **FILL=**

4 *FILL SHALL BE CLASSIFIED AS THE FILL REQUIRED TO GRADE THE
5 SITE FROM NATURAL GROUND ELEVATIONS TO FINISH GRADE AS INDI-
6 CATED ON THE DRAWINGS, OR THAT FILL REQUIRED TO RE-CONSTRUCT
7 THE SUBGRADE TO THE EXISTING LINES AND GRADES OR AS SHOWN ON
8 THE DRAWINGS.

9 *FILL OF APPROVED MATERIALS SHALL BE PLACED IN SUCCESSIVE
10 HORIZONTAL LAYERS OF NOT MORE THAN TWELVE (12) INCHES, LOOSE
11 MEASURE, AND SHALL BE COMPACTED AS SPECIFIED HEREIN. FILL
12 SHALL BE FORMED OF SUITABLE MATERIALS, FREE OF MUCK, TREES,
13 LOGS, STUMPS, STANDING OR MATTED BRUSH, MATTED ROOTS, RUBBISH,
14 AND FROZEN MATERIALS. IF FILL IS BEING CONSTRUCTED DURING
15 THE WINTER, SNOW AND ICE SHALL BE REMOVED FROM THOSE AREAS
16 TO BE COVERED BY THE FILL. TOP SOIL SHALL BE USED FOR THE
17 FINAL FOUR (4) INCHES OF ALL FILL.

18 *MAINTAINERS OR OTHER SUITABLE EQUIPMENT MAY BE USED FOR THE
19 PURPOSE OF SPREADING THE FILL MATERIALS, PROVIDING THAT NO
20 EQUIPMENT IS OPERATED WITHIN TWO (2) FEET OF THE COMPLETED
21 TRACK OR TENNIS COURT AREAS. IN THE CASE OF SMALLER AREAS, THE
22 MATERIAL SHALL BE SPREAD BY HAND METHODS IN ORDER TO PREVENT
23 DAMAGE TO FINISHED WORK. THE METHODS EMPLOYED BY THE CON-
24 TRACTOR FOR SPREADING THE MATERIAL SHALL BE SUBJECT TO THE
25 APPROVAL OF THE ARCHITECT-ENGINEER.

26 *EACH LAYER OF FILL SHALL BE THOROUGHLY SPRINKLED AND THE
27 MOISTURE UNIFORMLY MIXED WITHIN THE FILL LAYER. WHERE IT IS
28 IMPRACTICABLE TO EMPLOY BLADING ADJACENT TO THE STRUCTURES,
29 THE MATERIAL SHALL BE HAND SPREAD AND THEN CONSOLIDATED BY
30 HAND METHODS USING POWER DRIVEN HAND OPERATED TAMPERS.

31 *SHEEPSFOOT OR PNEUMATIC ROLLERS MAY BE EMPLOYED TO COMPACT
32 OTHER FILL MATERIALS. FILL SHALL BE COMPACTED TO NOT LESS
33 THAN 90 PERCENT MAXIMUM DENSITY AT OPTIMUM MOISTURE. FILL
34 CONSTRUCTED FOR TRACK OR TENNIS COURTS SHALL BE COMPACTED TO
35 NOT LESS THAN 95 PERCENT MAXIMUM DENSITY AT OPTIMUM MOISTURE.
36 DENSITY DETERMINATIONS SHALL BE MADE IN ACCORDANCE WITH
37 ASTM D-698.

38
39 **BACKFILL=**

40 *AS SOON AS PERMISSIBLE, ALL EXCAVATION UNDER THIS SPECIFICA-
41 TION SHALL BE BACKFILLED. IT IS THE INTENT OF BACKFILL
42 SPECIFICATIONS TO SECURE BACKFILL COMPACTED AS NEAR AS POSSIBLE
43 TO THE ORIGINAL STATE OF THE GROUND IN WHICH THE EXCAVATION
44 HAS BEEN MADE.

45 *BACKFILL SHALL BE PLACED IN LAYERS OF NOT MORE THAN TWELVE
46 (12) INCHES LOOSE MEASURE, AND SHALL BE COMPACTED BY SPRINKLING
47 AND MECHANICAL TAMPING TO 90 PCT. MAXIMUM DENSITY AT OPTIMUM
48 MOISTURE AS DETERMINED BY ASTM SPECIFICATION, DESIGNATION
49 D-1557. MATERIAL USED FOR BACKFILLING SHALL BE APPROVED
50 ORIGINALLY EXCAVATED MATERIAL OR OTHER SUITABLE MATERIALS,
51 FREE FROM LARGE LUMPS, WOOD, LARGE ROCKS, CONCRETE, OR OTHER
52 EXTRANEIOUS MATERIAL. NO BACKFILLING SHALL BE DONE DURING THE
53 ABSENCE OF THE ARCHITECT-ENGINEER OR HIS AUTHORIZED REPRESENTA-
54 TIVE, WITHOUT PRIOR APPROVAL OF THE ARCHITECT-ENGINEER TO DO
55 SO. WHERE THE WALLS OF THE EXCAVATION ARE SLOPED, SUCH SLOPES
56 SHALL BE STEPPED OR SERRATED AS DIRECTED BY THE ARCHITECT-
57 ENGINEER BEFORE BACKFILLING OPERATIONS.

58
59 **UNKNOWN UTILITIES AND OBSTACLES=**

***UNKNOWN UTILITIES=**

-IF ANY UNKNOWN AND UNCHARTED UTILITIES ARE ENCOUNTERED DURING EXCAVATION, PROMPTLY NOTIFY ARCHITECT AND WAIT FOR HIS INSTRUCTIONS BEFORE PROCEEDING.

-IF IT IS ASCERTAINED BY ARCHITECT THAT SUCH UTILITY LINE HAS BEEN ABANDONED, THE CONTRACTOR SHALL PROPERLY CAP THE LINE AT A DEPTH OF 12 INCHES OR MORE BELOW FINISH GRADE.

-IF SUCH UNKNOWN UTILITIES ARE ENCOUNTERED AND WORK IS CONTINUED WITHOUT CONTACTING THE ARCHITECT FOR INSTRUCTIONS, AND DAMAGE IS CAUSED TO SAID UTILITIES, THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, SUCH DAMAGE TO THE SATISFACTION OF THE UTILITY COMPANY CONCERNED.

***UNKNOWN OBSTACLES=**

-IF ANY UNKNOWN OBSTACLES SUCH AS HOUSE OR SMALL BUILDING FOUNDATIONS, CISTERNS, ETC. ARE ENCOUNTERED, THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL REMOVE THE FOUNDATIONS, FILL CISTERNS OR PERFORM ANY WORK NECESSARY TO COMPLETE THE WORK OF THIS CONTRACT.

-SHOULD THE CONTRACTOR ENCOUNTER ANY UNFORESEEN MAJOR OBSTACLE IN EXCAVATION SUCH AS AN ABANDONED WATER-WELL, SUB-SURFACE STREAMS OR CAVE-INS, ETC., WHICH PROVE TO BE UNDULY EXPENSIVE TO OVERCOME, IT IS THE INTENTION OF THE OWNER TO CAUSE A SURVEY TO BE MADE TO DETERMINE A COURSE OF ACTION THAT WILL RELIEVE THE CONTRACTOR OF UNDUE EXPENSE.

LINES AND GRADES=

*WORK SHALL CONFORM TO LINES AND GRADES SHOWN ON PLANS. RUTS, HOLES AND DEPRESSIONS SHALL BE FILLED WITH APPROVED MATERIAL. SLOPES BETWEEN CONTOURS OR BETWEEN SPOT ELEVATIONS SHALL BE SMOOTH, UNIFORM SLOPES AND THE SURFACE SHALL BE FINISHED TO A TOLERANCE OF 2 INCHES IN 10 FEET UNDER A STRAIGHT EDGE.

EXCAVATING AND BACKFILLING FOR UTILITY LINES

GENERAL= PERFORM EXCAVATING AND BACKFILLING OF TRENCHES REQUIRED FOR THE INSTALLATION OF ALL UTILITY SERVICES AND STORM DRAINAGE BETWEEN POINTS AS SHOWN ON THE DRAWINGS.

TRENCHING= EXCAVATE TO THE REQUIRED DEPTHS AND GRADE THE BOTTOMS OF TRENCHES TO SECURE THE REQUIRED SLOPE FOR PIPE LINES. WHERE MUD OR OTHERWISE UNSTABLE SOIL IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH WHICH IS INCAPABLE OF SUPPORTING THE PIPE OR UTILITY LINES, SUCH SOIL SHALL BE REMOVED TO FIRM BEARING AND THE TRENCH SHALL BE BACKFILLED WITH SAND TO THE PROPER GRADE AND TAMPED TO PROVIDE UNIFORM FIRM SUPPORT. PIPE SHALL NOT BE LAID ON FROZEN SUBGRADE.

WHERE MACHINES ARE USED TO EXCAVATE PIPE TRENCHES, SUCH MACHINE EXCAVATION SHALL TERMINATE 3 INCHES ABOVE THE INVERT OF THE PIPE. FINAL EXCAVATING AND SHAPING OF THE TRENCH SHALL BE PERFORMED ONLY A FEW FEET IN ADVANCE OF THE PIPE LAYING.

THE BOTTOM OF THE TRENCH SHALL BE ACCURATELY EXCAVATED BY HAND TO PROVIDE FIRM, UNIFORM BEARING FOR THE BOTTOM QUARTER OF THE PIPE. PIPE HAVING BELLS, SLEEVES OR OTHER ENLARGEMENTS AT THE JOINT SHALL HAVE RECESSED EXCAVATION TO ACCOMMODATE THESE JOINTS.

1 BACKFILLING= THE TRENCHES SHALL NOT BE BACKFILLED UNTIL THE
2 PIPING HAS BEEN TESTED BY THE CONTRACTOR AS REQUIRED AND APPROVED
3 BY THE ARCHITECT AND/OR ANY LOCAL AUTHORITIES HAVING JURISDICTION
4 THEREOF.

5
6 BACKFILL CONSISTING OF SAND OR SELECTED EXCAVATED MATERIAL SHALL
7 BE PLACED TO A DEPTH OF ONE (1) FOOT ABOVE THE TOP OF THE CONDUIT
8 OR PIPE AND COMPACTED BY HANDTAMPING. BACKFILL FOR THE REMAINDER
9 OF THE TRENCH SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS
10 HEREINBEFORE SPECIFIED AND COMPACTED AS REQUIRED TO ACHIEVE DENSITY
11 OF SOIL OF THE SURROUNDING AREA.

12
13 HANDTAMPING NOT REQUIRED AT CONDUIT OR OTHER METAL PIPE.

14
15

1 GENERAL REQUIREMENTS

2 -----

3

4 THE WORK INCLUDED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL
5 INCLUDE ALL THE PIPING, INLETS, AND APPURTENANT STRUCTURES PURSUANT
6 TO SITE DRAINAGE. THE CONSTRUCTION SHALL BE PERFORMED TO THE
7 LINES, GRADES, AND DETAILS AS SHOWN ON THE DRAWINGS AND AS
8 SPECIFIED.

9

10 MATERIALS

11 -----

12

13 CONCRETE PIPE=

14 *CONCRETE PIPE SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO
15 ASTM SPECIFICATIONS C-76, CLASS III.

16 *PIPE LESS THAN EIGHTEEN (18) INCHES IN DIAMETER MAY HAVE BELL
17 AND SPIGOT JOINTS.

18 *PIPE SHALL BE MANUFACTURED IN STANDARD LENGTHS OF NOT LESS THAN
19 FOUR (4) FEET.

20 *THE PIPE SHALL BE OF SUCH DESIGN THAT WHEN LAID IT SHALL FORM
21 A CONTINUOUS CONDUIT WITH A SMOOTH AND UNIFORM INTERIOR SURFACE.

22 *CURING AND TESTING SHALL BE IN CONFORMITY WITH ASTM SPECIFICA-
23 TION C-76.

24 *THE MANUFACTURER SHALL FURNISH THE OWNER, WITHOUT CHARGE, THE
25 RESULTS OF THE TESTS REQUIRED BY ASTM C-76.

26 *PERMISSIBLE VARIATIONS IN DIMENSION SHALL BE AS SPECIFIED IN
27 ASTM SPECIFICATION C-76.

28 *PIPE MANUFACTURED WITH ELLIPTICAL REINFORCEMENT SHALL BE
29 PLAINLY MARKED WITH THE LETTER 'T' AT THE TOP AND BOTTOM.

30 *PIPE SHALL BE STAMPED OR MARKED WITH THE DATE OF MANUFACTURE.

31 *SPECIALS FOR MAKING CURVES OR BENDS IN CONCRETE PIPE SHALL BE
32 OF DESIGN AND MANUFACTURE SO THAT A UNIFORM CHANGE IN DIRECTION
33 OF THE PIPE LINE AND A SMOOTH CONTINUOUS GRADE LINE CAN BE
34 OBTAINED.

35

36 CASTINGS=

37 *FRAMES AND GRATES FOR DRAINAGE INLETS SHALL BE NEENAH FOUNDRY
38 OR APPROVED EQUAL, TYPE AS INDICATED ON THE DRAWINGS.

39

40 CONCRETE=

41 *ALL CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 0301 'CAST-
42 IN-PLACE-CONCRETE' OF THE SPECIFICATIONS, AND SHALL HAVE A
43 MINIMUM COMPRESSIVE STRENGTH OF 3,000 POUNDS/SQUARE INCH AT
44 28 DAYS.

45 *GROUT FILL SHALL BE MADE BY A MIXTURE OF ONE PART CEMENT WITH
46 THREE PARTS SAND.

47 *MATERIALS FOR THE GROUT SHALL BE IN ACCORDANCE WITH SECTION
48 0301 'CAST-IN-PLACE CONCRETE' OF THESE SPECIFICATIONS.

49

50 REINFORCING STEEL=

51 *ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH SECTION 0301
52 'CAST-IN-PLACE CONCRETE' OF THE SPECIFICATIONS AND SHALL BE
53 BILLET STEEL.

54 *IT IS FURTHER SPECIFIED THAT THE SUPPLIER FURNISH THE OWNER,
55 WITHOUT CHARGE, THE RESULTS OF TESTING, A MINIMUM OF ONE TEST
56 FOR EACH FIVE TONS OF MATERIAL IN ACCORDANCE WITH ASTM SPECI-
57 FICATIONS, DESIGNATION A-16-54T.

58

59 EXPANSION JOINT MATERIAL=

- 1 *PREMOLDED EXPANSION JOINT MATERIAL SHALL BE A PREMOLDED MIXTURE
2 CORK AND ASPHALT OF THE SAME THICKNESS AS THE JOINT OPENING
3 SHOWN ON THE DRAWINGS.
4 *THE CORK JOINT EXPANSION MATERIAL SHALL CONFORM TO FEDERAL
5 SPECIFICATION HH-F 341A, TYPE 1, CLASS A.
6 *EXPANSION JOINTS SHALL BE SEALED TO HOT POURED BITUMINOUS
7 MATERIAL CONFORMING TO FEDERAL SPECIFICATION SS-S-164.
8 *THE SEALING COMPOUND SHALL BE POURED HOT AND APPLIED IN STRICT
9 ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS,
10 PARTICULARLY WITH RESPECT TO TEMPERATURE CONTROL AND APPLI-
11 CATION METHODS.
12 *JOINTS SHALL BE CLEAN, DRY, AND FREE OF DUST IMMEDIATELY BEFORE
13 POURING THE JOINTS.

14
15 JOINT MATERIAL FOR PIPE WITH BELL AND SPIGOT JOINTS=

- 16 *JOINT MATERIAL FOR BELL AND SPIGOT CONCRETE PIPE SHALL BE HOT
17 POURED, MINERAL FILLED BITUMINOUS SEALING COMPOUND CONFORMING
18 TO FEDERAL SPECIFICATION SS-S-169, TYPE 1, CLASS 1.
19 *THE BELL AND SPIGOT SHALL BE PRIMED WITH A PRIMER RECOMMENDED
20 BY THE MANUFACTURER OF THE JOINTING COMPOUND.
21

22 CONSTRUCTION

23 -----

24

- 25 TRENCHING= ALL TRENCHING SHALL BE COMPLETED IN ACCORDANCE WITH
26 SECTION 0204 'EXCAVATION, FILL AND BACKFILL' OF THESE SPECIFICA-
27 TIONS.
28

29 PIPE LAYING=

30 *GENERAL=

- 31 -IN LAYING PIPE, EACH PIECE MUST BE SET EXACTLY TO GRADE
32 AND THE JOINTS FITTED SO AS TO GIVE PROPER ALIGNMENT AND
33 A TRUE SMOOTH FLOW LINE.
34 -PIPE SHALL NOT BE LAID UNLESS THE SUBGRADE IS IN A CONDITION
35 SATISFACTORY TO THE ARCHITECT-ENGINEER.
36 -EACH PIPE SHALL HAVE A UNIFORM BEARING ON THE SUBGRADE OR
37 OTHER FOUNDATION SUPPORT WHICH MAY BE REQUIRED BY THE PLANS
38 OR SPECIFIED HEREIN.
39 -WHERE CURVES IN ALIGNMENT ARE INDICATED ON THE DRAWINGS THE
40 SPECIAL BEND, OR SECTIONS OF PIPE WHICH MAY BE REQUIRED,
41 SHALL BE SET SO THAT A CURVE OF THE PRESCRIBED RADIUS WILL
42 BE PRODUCED.
43 -ADJUSTMENT TO LINE AND GRADE SHALL BE MADE BY HAND EXCA-
44 VATION OR FILLING IN WITH APPROVED MATERIALS, WEDGING IN
45 OR BLOCKING UP THE END OF THE PIPE WILL NOT BE PERMITTED.
46 -WHEN THE ENTERING PIPE HAS BEEN CHECKED FOR LINE AND GRADE,
47 THE BODY OF THE PIPE SHALL BE BACKFILLED WITH EARTH, HAND
48 TAMPED ON BOTH SIDES, SUFFICIENT TO HOLD THE PIPE FIRMLY
49 IN POSITION.
50 -PIPES SHALL BE JOINTED OR PULLED HOME BY MEANS OF A SUITABLE
51 WINCH OR COME-ALONG.
52 -A BAR MAY BE USED TO PUSH HOME THE JOINTS FOR PIPE 10 INCHES
53 AND SMALLER IN DIAMETER.
54 -PIPE SHALL BE PULLED HOME IN A STRAIGHT LINE WITH ALL
55 PARTS OF THE PIPE ON LINE AND GRADE AT ALL TIMES.
56 -NO SIDE OR VERTICAL MOVEMENT OF THE PIPE SHALL BE PERMITTED
57 DURING OR AFTER THE PULLING OPERATION.

58 *BELL AND SPIGOT PIPE=

- 59 -WHEN THE PIPE HAS BEEN INSTALLED IN THE TRENCH TO LINE AND

- 1 GRADE, JUTE OF SUFFICIENT DIAMETER AND THICKNESS TO CENTER
2 THE PIPE SPIGOT SHALL BE PLACED IN THE ANNULAR SPACE AND
3 SOLIDLY CAULKED INTO PLACE IN SUCH MANNER THAT IT WILL FIT
4 TIGHTLY AGAINST THE SHOULDER AT THE BASE OF THE SOCKET.
5 -THE DEPTH OF THE JOINT OCCUPIED BY THIS JOINT PACKING SHALL
6 NOT EXCEED 25 PERCENT OF THE SOCKET OR BELL DEPTH.
7 -THE JOINT SHALL BE COMPLETED BY FILLING THE REMAINING
8 ANNULAR SPACE WITH HOT POURED BITUMINOUS JOINT COMPOUND.
9 -PIPE BELLS AND SPIGOTS SHALL BE CLEAN AND DRY BEFORE THE
10 JOINT IS MADE. THE JOINT MATERIAL SHALL BE HEATED TO
11 TEMPERATURES NOT EXCEEDING THAT RECOMMENDED BY THE MANU-
12 FACTURER.
13 -THE HEATING POT SHALL BE MAINTAINED CLOSE TO THE SITE OF THE
14 JOINT POURING OPERATION SO THAT THE MATERIAL IS AT THE
15 RECOMMENDED TEMPERATURE WHEN POURED.
16 -POURING POTS SHALL BE OF SUFFICIENT SIZE TO COMPLETELY
17 POUR THE JOINT FOR THE DIAMETER OF THE PIPE BEING JOINTED.
18 -ONE UNIFORM AND CONTINUOUS BRUSH COAT OF RECOMMENDED
19 PRIMER SHALL BE APPLIED TO THE INTERIOR OF THE BELL AND
20 THE EXTERIOR OF THE SPIGOT SURFACES AT LEAST 24 HOURS
21 PRIOR TO PIPE LAYING.
22 -AFTER THE JOINT PACKING HAS BEEN PLACED IN THE PIPE, A
23 SUITABLE DIAMETER MUDDERED RUNNER OR DISPOSABLE 'DIAPER'
24 SHALL BE PLACED AROUND THE BELL AND CLAMPED TO LEAVE A V-
25 SHAPED GATE IN WHICH TO POUR THE JOINT MATERIAL.
26 -IN PIPE 10 INCHES AND LARGER, AN INITIAL POURING OF
27 APPROXIMATELY ONE-HALF OF THE TOTAL MATERIAL REQUIRED TO
28 COMPLETELY FILL THE ANNULAR SPACE OF THE JOINT SHALL BE
29 MADE AND ALLOWED TO COOL, PERMITTING THE INTERIOR GASES
30 AND AIR BUBBLES TO BE EXPELLED BEFORE MAKING THE SECOND
31 AND FINAL POUR, COMPLETELY FILLING THE JOINT.

32 *DRAINAGE STRUCTURES=

- 33 -ALL DRAINAGE STRUCTURES SHALL BE CONSTRUCTED IN
34 ACCORDANCE WITH THE DETAILS AS SHOWN ON THE DRAWINGS
35 AND AS SPECIFIED IN SECTION 0301, 'CAST-IN-PLACE CONCRETE'.
36 -THE INVERT CHANNELS SHALL BE SMOOTH AND SEMICIRCULAR IN
37 SHAPE CONFORMING TO THE INSIDE DIAMETER OF THE CONNECTING
38 PIPES.
39 -CHANGES IN FLOW DIRECTION SHALL BE MADE WITH A SMOOTH CURVE
40 HAVING A MINIMUM RADIUS OF 1 FOOT, 6 INCHES.
41 -CHANGES IN SIZE AND GRADE OF THE CHANNELS SHALL BE MADE
42 UNIFORM BETWEEN CONNECTING PIPES.
43 -THE INVERT CHANNELS SHALL BE FORMED DIRECTLY IN THE
44 CONCRETE OF THE MANHOLE BASE.
45 -THE FLOOR OF THE INLETS OUTSIDE THE CHANNELS SHALL BE
46 SMOOTH AND SHALL SLOPE TOWARD THE CHANNELS AS SHOWN ON
47 THE DRAWINGS.

48 *TESTING=

- 49 -PRIOR TO BACKFILLING, THE PIPE SHALL BE TEMPORARILY BLOCKED
50 AT EACH END AND ALLOWED TO STAND FULL OF WATER FOR A PERIOD
51 OF FOUR (4) HOURS WITH A MINIMUM HYDROSTATIC HEAD OF
52 FOUR (4) FEET ABOVE MAXIMUM INVERT ELEVATION.
53 -ALLOWABLE LEAKAGE OR EXFILTRATION IN ANY INDIVIDUAL SECTION
54 OR ENTIRE SEWER LINE UNDER CONSTRUCTION SHALL NOT EXCEED
55 1000 GALLONS PER INCH OF INSIDE DIAMETER PER MILE OF PIPE
56 PER TWENTY-FOUR HOURS.
57 -REMOVE AND REPLACE OR MAKE APPROVED CORRECTIVE REPAIRS TO
58 ANY SECTION OR LINE WHICH HAS LEAKAGE OR EXFILTRATION THAT
59 EXCEEDS ABOVE AMOUNT.

- 1 -REPAIR ANY INDIVIDUAL LEAKS THAT MAY APPEAR WHETHER OR NOT
- 2 OVERALL SECTION MEETS LEAKAGE REQUIREMENTS.
- 3 -FOR THIS PURPOSE, ANY STEADY STREAM WILL BE CONSIDERED A
- 4 LEAK, WHILE A DRIP WILL NOT.
- 5 -MEASURE LEAKAGE OR EXFILTRATION DURING TEST PERIOD BY
- 6 ADDING MEASURED QUANTITIES OF WATER TO MAINTAIN WATER LEVEL
- 7 IN TEST STRUCTURE.
- 8 -QUANTITY OF WATER ADDED TO MAINTAIN WATER LEVEL IS AMOUNT
- 9 OF LEAKAGE OR EXFILTRATION.
- 10 -SEWERS FAILING TO MEET REQUIREMENTS OF LEAKAGE TEST SHALL,
- 11 AFTER REPAIR BY CONTRACTOR, BE TESTED AGAIN FOR LEAKAGE.
- 12 *INSPECTION=
- 13 -DRAINAGE PIPING SHALL BE INSPECTED AND APPROVED BEFORE
- 14 BEING BACKFILLED AND THOROUGHLY FLUSHED OUT BEFORE
- 15 INSPECTION.
- 16 -PIPING SHALL BE LAMPED BETWEEN INLET AND OUTLET AND SHALL
- 17 SHOW FULL BORE INDICATING PIPING IS TRUE TO LINE AND
- 18 GRADE.
- 19 -LIPS AT JOINTS ON INSIDE OF PIPING NOT PERMITTED.
- 20 *BACKFILL= ALL BACKFILL SHALL BE CONSTRUCTED IN ACCORDANCE
- 21 WITH SECTION 0204, 'EXCAVATION, FILL AND BACKFILL' OF THESE
- 22 SPECIFICATIONS.
- 23
- 24

1 SEEDING

2 -----

3 -PREPARATION= PRIOR TO OR DURING GRADING AND TILLAGE OPERATIONS,
4 THE GROUND SURFACE SHALL BE CLEARED OF ALL STONES, ROOTS, CABLE,
5 WIRE GRADE STAKES, AND ANY OTHER MATERIALS WHICH MIGHT HINDER PRO-
6 PER GRADING AND TILLAGE, AND HARMFUL TO PLANT GROWTH, OR A HIN-
7 DRANCE TO MOWING AND OTHER SUBSEQUENT MAINTENANCE OPERATIONS. THE
8 AREAS TO RECEIVE SEED, AS INDICATED ON THE PLAN, SHALL BE THOR-
9 UGHLY TILLED BY DISCING, HARROWING, OR OTHER APPROVED METHODS
10 UNTIL THE CONDITION OF THE SOIL IS SUITABLE FOR SEEDING AS APPROVED
11 BY THE ARCHITECT.

12 -FERTILIZING= FERTILIZING SHALL BE COMMERCIAL TYPE '10-20-10' FER-
13 TILIZER. IT SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND
14 SUITABLE FOR APPLICATION WITH APPROVED EQUIPMENT, DELIVERED TO THE
15 SITE IN BAGS OR OTHER CONVENIENT CONTAINERS, EACH FULLY LABELED BAG
16 CONFORMING TO THE APPLICABLE STATE FERTILIZER LAWS, AND BEARING THE
17 NAME, TRADE NAME OR TRADE MARK AND WARRANTY OF THE PRODUCER. PRIOR
18 TO PLANTING, FERTILIZER SHALL BE DISTRIBUTED UNIFORMLY AT THE RATE
19 OF 20 POUNDS PER 1,000 SQ. FEET. AT COMPLETION, THE ENTIRE AREA OVER
20 WHICH FERTILIZER HAS BEEN DISTRIBUTED SHALL BE HARROWED OR RAKED
21 SMOOTH IN SUCH A MANNER THAT THE FERTILIZER WILL BE WELL WORKED IN.

22 -SEED=

23 *SEED SHALL BE WINDSOR KENTUCKY BLUEGRASS, FURNISHED IN STANDARD
24 CONTAINERS. SEED WHICH HAS BECOME WET, MOLDY OR OTHERWISE DAMAGED
25 IN TRANSIT OR STORAGE WILL NOT BE ACCEPTABLE.

26 *SEED SHALL BE SOWN WITHIN THE AREAS REQUIRING REPAIR OR RESEEDING AT
27 THE RATE OF 1 POUND PER 1,000 SQ. FEET. IMMEDIATELY AFTER THE
28 SEEDING HAS BEEN COMPLETED, THE ENTIRE AREA SHALL BE COMPACTED BY
29 MEANS OF A ROLLER, WEIGHING 60 TO 90 POUNDS PER LINEAR FOOT OF
30 ROLLER.

31

32 MAINTENANCE

33 -----

34 -CONTRACTOR SHALL WATER AND MAINTAIN ALL RE-SEEDED AREAS UNTIL SUB-
35 STANTIAL COMPLETION OF THE ENTIRE PROJECT. AS REQUIRED, REFERTILIZ-
36 ING AND RESEEDING SHALL BE DONE AT THE CONTRACTORS OWN EXPENSE PRIOR
37 TO OWNERS ACCEPTANCE OF PROJECT. AFTER THE GRASS IS STARTED, ANY
38 PART OR AREAS WHICH FAIL TO SHOW A UNIFORM STAND, FOR ANY REASON
39 WHATSOEVER, SHALL BE RESEDED WITH THE SAME MIXTURES AS ORIGINALLY
40 SPECIFIED HEREIN, AND SUCH WORK SHALL BE REPEATED UNTIL ALL RE-
41 QUIRED AREAS ARE COVERED WITH GRASS.

42 -CONTRACTOR SHALL MOW ALL RESEDED GRASS AREAS, WHICH SHALL BE
43 MAINTAINED AT A MAXIMUM HEIGHT OF 3-1/2 INCHES.

44 -RESEDED GRASS AREAS SHALL BE WATERED AT SUCH INTERVALS AS NECESSARY
45 TO PREVENT DROUGHT INJURY, USING WATERING EQUIPMENT APPROVED BY THE
46 ARCHITECT. WATER SHALL BE PAID FOR BY THE CONTRACTOR.

47

1 MATERIALS

2 -----

3

4 CHAIN LINK FENCE=

5 *POSTS=

6 -LINE POSTS= 2.25 INCH STEEL H-COLUMN SECTION (WEIGHT
7 4.1 LBS. PER LINEAL FOOT, CARBON CONTENT .35 PCT.) OR
8 OTHER AS APPROVED BY ARCHITECT.9 -END, CORNER AND GATE POSTS= 2-1/2 INCH SQUARE TUBING,
10 WEIGHING 5.70 LBS. PER LINEAL FOOT.11 *FABRIC= CHAIN LINK MOVEN WIRE, 2 INCH MESH, 9 GAUGE WIRE.
12 SINGLE WIDTH FABRIC SHALL BE 12 FEET UNLESS OTHERWISE NOTED.
13 NO HORIZONTAL SPLICING PERMITTED.14 *GATE= GATE FRAMES SHALL BE MADE OF 2 INCH SQUARE STEEL
15 TUBING, JOINED AT THE CORNERS BY ARC WELDING, TO FORM A RIGID
16 PANEL. FRAME SHALL BE FILLED WITH CHAIN LINK FABRIC OF THE
17 SAME GAUGE AS USED ON THE FENCE. THE FABRIC SHALL BE FASTENED
18 IN THE FRAME ON ALL FOUR SIDES, BY MEANS OF ADJUSTABLE HOOK
19 BOLTS AND TENSION RODS.20 *VERTICAL LINE POST TOP= A ONE-PIECE STEEL BALL, ZINC
21 COATED AFTER FABRICATION, SHALL BE CLAMPED TO THE TOP OF EACH
22 LINE POST.

23 *GALVANIZING=

24 -ALL FRAMES, POSTS, BRACES, FITTINGS AND OTHER METAL COM-
25 PONENTS SHALL BE HOT-DIP GALVANIZED.26 -COATING ON WIRE FABRIC SHALL BE HEAVILY ZINC COATED BY THE
27 HOT-DIP SPELTER PROCESS.28 *TENSION WIRE= SHALL BE 7 GA. COIL SPRING STEEL AT TOP AND
29 BOTTOM OF FABRIC.30 *TRUSS BRACES= A TRUSS BRACE OF STANDARD GALVANIZED PIPE,
31 1-5/8 INCH O.D., WITH A 5/16 INCH TRUSS ROD AND TURNBUCKLE
32 ATTACHMENT SHALL BE INSTALLED BETWEEN EACH END OR GATE POST
33 AND THE ADJACENT LINE POST. TWO TRUSS BRACES SHALL BE
34 FURNISHED ON CORNER OR PULL POSTS. PULL POSTS SHALL BE SPACED
35 A MAXIMUM OF 350 FEET.

36 *SHOP DRAWINGS= REQUIRED.

37 *MANUFACTURERS=

38 -ANCHOR FENCE DIVISION, ANCHOR POST PRODUCTS, INC.

39 -CYCLONE FENCE DEPARTMENT, AMERICAN STEEL AND WIRE DIVISION,
40 UNITED STATES STEEL CORP.

41

42 APPLICATION

43 -----

44

45 CHAIN LINK FENCE=

46 *REFERENCE SPECIFICATION=

47 -PERFORM ALL WORK IN ACCORDANCE WITH CURRENT PUBLISHED
48 STANDARDS OF THE 'CHAIN LINK FENCE MANUFACTURERS' INSTITUTE'
49 WHICH ARE HEREBY MADE A PART OF THESE SPECIFICATIONS AS IF
50 FULLY SET FORTH HEREIN.51 -IF CONFLICT OCCURS BETWEEN THE REQUIREMENTS OF THIS SECTION
52 (0231) AND THE REFERENCE STANDARDS, THE REQUIREMENTS OF
53 THIS SECTION (0231) SHALL GOVERN.

54 *LINE POSTS SHALL BE SPACED NOT MORE THAN 10 FEET ON CENTERS.

55 *POST HOLES SHALL BE BELL-SHAPED, LINE POST HOLES, 36 INCHES
56 DEEP BELOW FINISHED GRADE WITH A MINIMUM DIAMETER OF 8 INCHES
57 AT TOP, TERMINAL, CORNER AND PULL POST HOLES SHALL BE 40 INCHES
58 DEEP BELOW FINISHED GRADE WITH A MINIMUM DIAMETER OF 12 INCHES
59 AT TOP. LINE POSTS SHALL BE SET A FULL 32 INCHES IN THE HOLE

- 1 AND ALL OTHER POSTS 36 INCHES. THE TOP EXPOSED SURFACE OF
2 THE CONCRETE FOOTING SHALL BE SLOPED TO PROVIDE A NEAT
3 APPEARANCE AND TO SHED WATER. PROVIDE 3,000 PSI CONCRETE AS
4 SPECIFIED IN CONCRETE SECTION.
- 5 *FABRIC SHALL BE TIGHTLY STRETCHED APPROXIMATELY 1 INCH ABOVE
6 GRADE LEVEL AND ATTACHED TO TERMINAL POSTS WITH NO. 6 GAUGE
7 ZINC COATED CLIPS SPACED APPROXIMATELY 12 INCHES APART ON THE
8 LINE POSTS. WHERE ROLLS OF FABRIC ARE JOINED THEY SHALL BE
9 PROPERLY TENSIONED BY DOUBLE BLOCK PULLERS, ENDS OF FABRIC
10 MATCHED AND JOINED BY A SPIRAL CONNECTING LINK.
- 11 *TENSION WIRE SHALL BE ATTACHED BY MEANS OF HOG RINGS SPACED
12 24 INCHES ON CENTER AND TO THE TERMINAL POSTS BY MEANS OF BRACE
13 BANDS.
- 14 *INSTALL GATES WHERE INDICATED ON THE DRAWINGS.
- 15 *ACCESSORIES= PROVIDE GALVANIZED TENSION RODS, BOLTS, HINGES,
16 LATCH WITH PADLOCK HASP, AND ALL OTHER ITEMS TO PROVIDE COM-
17 PLETE INSTALLATION.
- 18

* * *

1 GENERAL REQUIREMENTS

2 -----

3

4 THE ITEMS LISTED BY TYPE AND MANUFACTURER ARE STANDARD OF DESIGN
5 AND QUALITY REQUIRED. ITEMS OF THE FOLLOWING MANUFACTURERS,
6 CONFORMING TO THE DESIGN AND QUALITY SPECIFIED, ARE ACCEPTABLE.

7 *JAMISON, INC., LOS ANGELES, CALIFORNIA.

8 *R.E. AUSTIN AND SON, BELLMORE, NEW YORK.

9 *PREMIER PRODUCTS, RIVER VALE, NEW JERSEY.

10 *MEDART PRODUCTS, INC., ST. LOUIS, MISSOURI.

11 *BRUNSWICK CORPORATION, KALAMAZOO, MICHIGAN.

12

13 LOCATION, SIZE AND QUANTITY AS INDICATED ON THE DRAWINGS.

14

15 SHOP DRAWINGS= REQUIRED.

16

17 INSTALLATION= SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANU-
18 FACTURER'S RECOMMENDATIONS, AND APPROVED SHOP DRAWING, COMPLETE
19 WITH ALL INCIDENTALS NECESSARY.

20

21 ITEMS

22 -----

23

24 FOOTBALL GOALS=

25 *JAMISON, NUMBER 343-328.

26 -PIPE= STANDARD WEIGHT GALVANIZED STEEL. UPRIGHTS SHALL
27 BE 3-1/2 INCH O.D. WITH ENDS SMOOTHLY CAPPED. CROSSARMS
28 SHALL BE 2-3/8 INCH O.D. WITH SMOOTHLY CAPPED ENDS.

29 -FITTINGS= CLAMPS AND CAPS SHALL BE HOT DIPPED GALVANIZED
30 AFTER FABRICATION.

31

32 NET POSTS=

33 *JAMISON, NUMBER 354-433, TENNIS, 4-1/2 INCH DIAMETER X 3 FEET -
34 6 INCHES HIGH TO CENTER OF TOP EYEBOLT FROM FINISH GRADE.

35 *POSTS= STANDARD WEIGHT GALVANIZED STEEL PIPE.

36 *MOVABLE FITTINGS SHALL BE SECURED TO POSTS WITH A 5/8 INCH
37 KNURLED CUP POINT SET SCREW TO PERMIT HEIGHT ADJUSTMENT WITH
38 WRENCH FURNISHED BY MANUFACTURER TO PREVENT UNAUTHORIZED
39 MOVING. POSTS SHALL HAVE WATERPROOF CAP.

40 *ALL ITEMS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION,
41 EXCEPTIONS AS SPECIFIED OTHERWISE.

42 *FASTENER= SHALL BE CADMIUM PLATED.

43

44 TENNIS NET=

45 *JAMISON, NUMBER 359-891, 'DURO-NET', 14 GAUGE SPRING STEEL
46 GALVANIZED WIRE.

47 *CONSTRUCTION SHALL BE DOUBLE WEAVE LOCKED MESH, NO SHARP EDGES
48 OR SAGGING ALLOWED, AND SHALL HANG UNIFORMLY. NET SHALL HAVE
49 DRAW-BOLTS, 45 FOOT CABLE TOP AND BOTTOM, AND REPLACEABLE
50 CANVAS VISION STRIP.

51

52 INSERT SLEEVES=

53 *JAMISON, SERIES 'H', NUMBER 358--BY DIAMETER AND LENGTH RE-
54 QUIRED FOR EQUIPMENT. SLEEVE SHALL HAVE 3/16 INCH THICK WALLS
55 AND A HINGED SLEEVE COVER TO FIT NEATLY OVER SLEEVE WHEN
56 EQUIPMENT IS REMOVED.

57 *FINISH= HOT-DIPPED GALVANIZED AFTER FABRICATION.

58

59

1 GENERAL

2 -----

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4
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9

THE ASPHALTIC PAVEMENT FOR RUNNING TRACK SHALL BE A BITUMINOUS MIXTURE COMPOSED OF A COMBINATION OF RESILIENT AND PLIABLE AGGREGATE, FINE MINERAL AGGREGATE, AND BITUMINOUS BINDER, MIXED IN A MODERN BITUMINOUS PLANT AND LAID HOT TO PROVIDE A MONOLITHIC SURFACE OVER A BASE AND LEVELING COURSE.

10 THE RESILIENT PAVEMENT SHALL BE CONSTRUCTED AS DESCRIBED BELOW ON
11 THE PREPARED BASE IN ACCORDANCE WITH THESE SPECIFICATIONS AND
12 IN CONFORMITY WITH THE LINES, GRADES, AND TYPICAL CROSS SECTIONS
13 SHOWN ON THE PLANS.

14

15 AFTER APPLYING A SUITABLE WEED-KILLER, THE BASE SHALL BE LAID
16 OVER A STABLE, HARD AND FROST FREE SUB-GRADE. THE BASE COURSE
17 SHALL CONSIST OF BASE-COURSE BITUMINOUS CONCRETE, THICKNESS AS
18 INDICATED ON DRAWINGS. A 1 INCH FINISH-MIX LEVELING COURSE
19 SHALL THEN BE APPLIED. AFTER THE BASE HAS BEEN PREPARED TO
20 UNIFORM AND PROPER LINES AND GRADES, THE RESILIENT PAVEMENT
21 SHALL BE APPLIED.

22

23 RESILIENT ASPHALTIC PAVEMENT SHALL BE APPLIED OVER THE LEVELING
24 COURSE TO A UNIFORM SURFACE, WITH NO DEVIATIONS FROM THE TRUE
25 SURFACE IN EXCESS OF ONE FOURTH (1/4TH) INCH WHEN A TEN FOOT
26 STRAIGHT EDGE IS APPLIED ALONG ANY PORTION OF THE SURFACE COURSE.
27 MINIMUM THICKNESS INDICATED ON THE DRAWINGS IS ABSOLUTE AND ALL
28 MEASUREMENTS ARE AFTER COMPACTION.

29

30 MATERIALS

31 -----

32

33 AGGREGATES= THE AGGREGATES SHALL CONSIST OF CLEAN, RESILIENT,
34 PLIABLE AND DURABLE PARTICLES FREE FROM ANY DIRT OR OTHER
35 OBJECTIONABLE MATERIALS SUPPLIED BY THE MANUFACTURER IN PROPERLY
36 WEIGHED AND LABELLED BAGS OR CONTAINERS.

37

38 BITUMINOUS MATERIAL= THE BITUMINOUS MATERIAL SHALL CONSIST OF
39 AN ASPHALTIC CEMENT OF 150 TO 200 PENETRATION OBTAINED FROM
40 ASPHALT PRODUCER OR BY USING STANDARD PAVING ASPHALTIC CEMENT
41 OF 85-100 PENETRATION WITH SUITABLE MODIFIERS.

42

43 GENERAL COMPOSITION OF MIXTURE= THE MIXTURE SHALL BE PREPARED
44 IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS 'PROCEDURE
45 FOR PRODUCING RESLITE BITUMINOUS PAVEMENT' (R-3). THE MIXTURE
46 SHALL CONFORM TO THE FOLLOWING PROPORTIONS, WHEN TESTED IN AN
47 APPROVED LABORATORY IN ACCORDANCE WITH ASTM PROCEDURES AND
48 METHODS=

49

50

51

52

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MATERIALS	PERCENT RESLITE MIX BY WEIGHT		PERCENT WEIGHT OF TOTAL AGG.	
	MIN.	MAX.	MIN.	MAX.
RESLITE AGGREGATE (75 PCT. RUBBER GRANULES)	12	14	14	16
MINERAL AGGREGATE (CLEAN, FREE OF CLAY, LOAM)	70	77	86	84
ASPHALT CEMENT	12	15		
APPLICATION TEMPERATURE				

1 2 3 4 5 6 7 8 9 10 11 12	(DEGREES F.) SIEVE ANALYSIS	290		340		RESLITE AGG. BY WEIGHT	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
6	3/8	100		100		100	---
7	4	98	100	98	100	98	100
8	8	90	100	90	100	90	95
9	16	70	100	54	100	54	65
10	40	35	60	18	60	18	28
11	80	15	40	3	40	3	12
12	200	2	10	0	10	0	2
13	BITUMINOUS MATERIAL						
14	(SOL. IN CARBON						
15	TETRACHLORIDE)						
15		12	15				

17 FORMULA FOR JOB MIX= THE GENERAL COMPOSITION LIMITS PRESCRIBED
18 ABOVE ARE MASTER RANGES OF TOLERANCE TO GOVERN MIXTURES MADE
19 FROM ANY RAW MATERIALS MEETING SPECIFICATIONS, AND THEY ARE
20 MAXIMUM AND MINIMUM FOR ALL CASES. A CLOSER CONTROL APPROPRIATE
21 FOR THE JOB MATERIALS IS REQUIRED FOR THE SPECIFIC PROJECT IN
22 ACCORDANCE WITH THE JOB MIX FORMULA AS FOLLOWS=

23 *NO WORK SHALL BE STARTED ON THE SPECIFIC PROJECT NOR ANY
24 MIXTURE ACCEPTED THEREFORE UNTIL THE CONTRACTOR HAS SUBMITTED
25 AND RECEIVED APPROVAL OF HIS INTENDED JOB-MIX FORMULA.
26 THIS FORMULA SHALL SHOW IN WRITING A SINGLE DEFINITE PERCENT-
27 AGE FOR ASPHALT AND EACH SIEVE FRACTION OF THE AGGREGATE
28 WHICH THE CONTRACTOR CHOOSES AS THE FIXED MEAN IN EACH
29 INSTANCE, AND THE TEMPERATURE AT WHICH HE PROPOSES TO APPLY
30 THE MIXTURE ON THE JOB. THE SUBMISSION OF THE JOB-MIX
31 FORMULA SHALL, UPON APPROVAL, BIND THE CONTRACTOR TO FURNISH
32 THE PAVING MIXTURE NOT ONLY WITHIN THE ABOVE MASTER RANGES,
33 BUT AS A FURTHER REQUIREMENT, HE WILL MEET THE EXACT FORMULA
34 THUS SET UP FOR THE SPECIFIC PROJECT, WITHIN THE FOLLOWING
35 ALLOWABLE JOB-TOLERANCES.

37	JOB TOLERANCES	PLUS OR MINUS LIMITS
38	ASPHALT	1.0 PCT.
39	AGGREGATE (NO. 10 SIEVE AND LARGER)	4.0 PCT.
40	AGGREGATE (NO. 10 SIEVE AND SMALLER)	4.0 PCT.
41	DELIVERY TEMPERATURE	20 DEG. F.

42
43 *SAMPLES OF THE ACTUAL MIXTURE IN USE WILL BE TAKEN AS MANY
44 TIMES DAILY AS NECESSARY FOR ADEQUATE CONTROL, AND THE MIXTURE
45 MUST BE MAINTAINED UNIFORM THROUGHOUT THE PROJECT CONSTRUCTION
46 WITHIN THE ABOVE TOLERANCES. IF AN ADDITIONAL SOURCE OF
47 SUPPLY FOR MATERIALS IS NECESSARY AND APPROVED, THE JOB-MIX
48 FOR THE FORMULA WILL BE READJUSTED AS REQUIRED. ANY JOB-MIX
49 FORMULA SUBMITTED BY THE CONTRACTOR BUT FOUND UNACCEPTABLE,
50 SHALL BE READJUSTED TO THE SATISFACTION OF THE OWNER'S
51 ENGINEER.

52 *JOB MATERIALS TO PRODUCE A BALANCED MIX, FOUND TO HAVE VOIDS
53 OR OTHER CHARACTERISTICS REQUIRING A BITUMEN CONTENT GREATER
54 OR LESS THAN THE BITUMEN CONTENT RANGE ABOVE TABULATED, WILL
55 BE REJECTED.

56
57 DENSITY= A SPECIMEN OF THE MIXTURE, WHEN COMPRESSED TO ONE (1)
58 INCH IN THICKNESS UNDER A PRESSURE OF 200 POUNDS PER SQUARE
59 INCH FOR (3) THREE MINUTES AT A TEMPERATURE OF 170 DEGREES PLUS

1 OR MINUS 10 DEGREES F. SHALL HAVE AN APPARENT SPECIFIC GRAVITY
2 OF NOT GREATER THAN 1.70 AND A COMPUTED WEIGHT PER CUBIC FOOT OF
3 NOT GREATER THAN 105 POUNDS.

4
5 MANUFACTURER= ZEMCO CORPORATION, 6320 FALLS ROAD, BALTIMORE,
6 MARYLAND 21209.

7
8 CONSTRUCTION METHODS
9 -----

10
11 PLANT= THE BITUMINOUS CONCRETE PLANT USED BY THE CONTRACTOR IN
12 THE PREPARATION OF THE BITUMINOUS PAVEMENT MIXTURE SHALL BE AN
13 APPROVED MECHANICAL POWER-DRIVEN ASPHALT PLANT, SUITABLE TO
14 PRODUCE MIXTURES UNIFORMLY, COMPLYING WITH THE COMPOSITION LIMITS
15 SET FORTH ABOVE.

16
17 TRANSPORTATION OF MIXTURE=

18 *THE PAVING MIXTURE MUST BE KEPT CLEAN DURING HAULING AND
19 HANDLING, AND COVERED IF NECESSARY, DURING TRANSIT WITH
20 CANVAS OR OTHER MATERIALS WHICH WILL PROTECT IT FROM RAIN
21 AND RETAIN THE DESIRED PAVEMENT TEMPERATURE. THESE MIXTURES
22 MUST NOT BE HAULED SUCH A DISTANCE THAT SEGREGATION OF THE
23 INGREDIENTS WILL TAKE PLACE OR THAT A CRUST WILL BE FORMED
24 ON THE SURFACE, BOTTOMS OR SIDES IN THE TRUCK PREVENTING
25 EASY WORKABILITY WHEN DUMPED.

26 *THE DISPATCHING OF TRUCKS FROM THE PLANT OR DISTRIBUTION
27 POINT SHALL BE SO ARRANGED THAT ALL MATERIAL WHICH IS TO BE
28 DELIVERED AT THE SITE DURING ANY DAY MAY BE PLACED AND SHALL
29 HAVE RECEIVED FINAL COMPRESSION BEFORE NIGHTFALL OF THE SAME
30 DAY.

31
32 SPREADING OF MIXTURE=

33 *THE PAVING MIXTURE SHALL BE DUMPED AND SPREAD IN A WORKMANLIKE
34 AND APPROVED MANNER. THE MIXTURE SHALL BE SPREAD EITHER BY HAND
35 OR AN APPROVED MECHANICAL SPREADER.

36 *WHEN THE EXISTING BASE CONTAINS IRREGULARITIES OF MORE THAN
37 ONE-HALF (1/2) INCH, SUCH IRREGULARITIES SHALL BE ELIMINATED
38 BY THE USE OF AN EXTRA LEVELING COARSE MATERIAL BRINGING THE
39 BASE TO UNIFORM SECTION AND GRADE. THE MIXTURE SHALL BE
40 SPREAD AND STRUCK-OFF IN A UNIFORMLY LOOSE LAYER AND OF SUCH
41 DEPTH THAT, WHEN COMPACTED, THE DEPTH SHALL HAVE THE RE-
42 QUIRED THICKNESS AND SHALL CONFORM TO THE GRADE AND CROSS-
43 SECTION CONTOUR INDICATED.

44 *WHEN UNUSUAL CONTOURS OR JOINTINGS ARE INVOLVED OR ANY LAPS
45 OR IRREGULARITIES OCCUR, A HEATED ROLLER OR HEATED SMOOTHING
46 IRON SHALL BE USED TO BOND AND SMOOTH OUT THE SURFACE.

47 *CONTACT SURFACES SHALL BE PAINTED WITH A THIN UNIFORM COAT
48 OF HOT ASPHALT CEMENT, ASPHALT CEMENT CUTBACK WITH NAPHTHA,
49 OR ASPHALT EMULSION, JUST BEFORE THE MIXTURE IS PLACED
50 AGAINST THEM.

51 *THE EDGES OF THE ASPHALT MIXTURE SHALL BE HAND TAMPED BEFORE
52 BEING ROLLED.

53
54 METHODS OF COMPACTING=

55 *AFTER THE MIXTURE HAS BEEN PROPERLY SPREAD, IT SHALL BE
56 THOROUGHLY AND UNIFORMLY COMPRESSED BY ROLLING WITH A POWER
57 ROLLER NOT TO EXCEED 3-TON GROSS WEIGHT. ROLLING SHALL
58 START AS SOON AS MIXTURE HAS COOLED SUFFICIENTLY NOT TO PICK
59 UP ON THE ROLLER.

- 1 *THE COMPACTION SHALL BE DONE BY A COMPETENT AND EXPERIENCED
2 ROLLER OPERATOR AND THE ROLLERS SHALL BE KEPT IN AS NEARLY
3 CONTINUOUS OPERATION AS PRACTICAL, WHILE THE WORK IS UNDER
4 WAY.
5 *THE PAVEMENT SHALL BE ROLLED LONGITUDINALLY OR TRANSVERSELY,
6 AS DIRECTED. ROLLER SHALL NOT BE ALLOWED TO REST ON THE
7 SURFACE.
8 *USE OF WATER WILL BE PERMITTED TO KEEP ROLLER FROM PICKING
9 UP MATERIAL.
10 *ALONG FORMS, CURBS, HEADERS AND SIMILAR STRUCTURES AND ALL
11 PLACES NOT ACCESSIBLE WITH A ROLLER, THE MIXTURE SHALL BE
12 COMPACTED WITH TAMPERS. SUCH TAMPERS SHALL WEIGHT NOT LESS
13 THAN TWENTY-FIVE (25) POUNDS AND SHALL HAVE A TAMPING FACE
14 AREA OF NOT MORE THAN FIFTY (50) SQUARE INCHES.
15 *THE SURFACE OF THE MIXTURE AFTER COMPRESSION SHALL BE SMOOTH
16 AND TRUE TO THE ESTABLISHED CROWN AND GRADE.
17 *ANY MIXTURE WHICH BECOMES LOOSE AND BROKEN, MIXED WITH DIRT,
18 OR IN ANY WAY DEFECTIVE SHALL BE REMOVED AND REPLACED WITH
19 FRESH MIXTURE, WHICH SHALL BE IMMEDIATELY COMPACTED TO CON-
20 FORM WITH THE SURROUNDING AREA.
21 *AREAS OF ONE (1) SQUARE FOOT OR MORE SHOWING AN EXCESS OF
22 BITUMEN SHALL BE REMOVED AND REPLACED.

JOINTS=

- 25 *PLACING OF THE MIXTURE SHALL BE NEARLY AS CONTINUOUS AS
26 POSSIBLE, AND THE ROLLER SHALL PASS OVER THE UNPROTECTED END
27 OF THE FRESHLY LAID MIXTURE ONLY WHEN THE LAYING OF THE
28 COURSE IS TO BE DISCONTINUED FOR SUCH LENGTH OF TIME AS WOULD
29 PERMIT THE MIXTURE TO ATTAIN INITIAL STABILITY.
30 *IN ALL SUCH CASES, INCLUDING THE FORMATION OF JOINTS AS HERE-
31 AFTER SPECIFIED, PROVISIONS SHALL BE MADE FOR PROPER BOND
32 WITH NEW SURFACE FOR THE FULL SPECIFIED DEPTH OF THE COURSES.
33 *TRANSVERSE JOINTS SHALL BE FORMED BY CUTTING BACK ON THE
34 PREVIOUS DAY'S RUN SO AS TO EXPOSE THE FULL DEPTH OF THE
35 COURSE.
36 *WHEN THE LAYING OF THE COURSE IS RESUMED, THE EXPOSED EDGE
37 OF THE JOINT SHALL BE PAINTED WITH A THIN COAT OF HOT ASPHALT
38 CEMENT OR ASPHALT CEMENT THINNED WITH NAPHTHA AND THE FRESH
39 MIXTURE SHALL BE RAKED AGAINST THE JOINT, COMPACTED
40 THOROUGHLY WITH TAMPERS AND ROLLED.

FINISHED SURFACE=

- 43 *IF, AT ANY TIME BEFORE THE ACCEPTANCE OF THE WORK, ANY SOFT
44 OR IMPERFECT AREAS OR SPOTS SHALL DEVELOP IN THE SURFACE,
45 ALL SUCH AREAS SHALL BE REMOVED AND REPLACED WITH NEW MATERIAL
46 AND THEN ROLLED UNTIL THE EDGES AT WHICH THE NEW WORK CONNECTS
47 WITH THE OLD BECOME INVISIBLE.
48 *SUCH REMOVAL AND REPLACEMENT OF UNSATISFACTORY SURFACING SHALL
49 BE DONE BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION.

INSPECTION AND CONTROL OF RESLITE APPLICATION=

- 52 *FOR TECHNICAL SUPERVISION AND CONTROL OF PLANT MIXING AND JOB
53 APPLICATION OF BITUMINOUS MIX, THE OWNER WILL PROVIDE THE
54 SERVICES OF A TECHNICAL CONSULTING LABORATORY.
55 *REFER TO SECTION 0103.

57 LINE MARKING= PLEXICOLOR (ACRYLIC LATEX) LINE MARKING PAINT
58 SHALL BE USED FOR ALL LINES. UNDER NO CONDITION WILL TRAFFIC
59 PAINTS (OIL OR ALKYD) BASE BE SUBSTITUTED.

1 MATERIALS

2 -----

3
4 BINDER= SHALL CONFORM TO SPECIFICATION LT-1 OF AMERICAN BITUMULS
5 & ASPHALT COMPANY, USED AS BINDER IN LEVELING AND SURFACE COURSE
6 MIXTURES.

7
8 • WEARCOAT (BLACK, RED OR GREEN)= SHALL CONFORM TO SPECIFICATION
9 LFT-1 OF AMERICAN BITUMULS & ASPHALT COMPANY.
10 *COLOR TO BE CHOSEN BY THE ARCHITECT.

11
12 LINE PAINT (WHITE)= SHALL CONFORM TO MANUFACTURER'S STANDARDS.
13 MANUFACTURER= AMERICAN BITUMULS AND ASPHALT COMPANY - 'LAYKOLD'
14 SPECIFICATION G-5, STANDARD OF QUALITY.

15
16 WATER= THE WATER USED IN ALL MIXTURES SHALL BE FRESH, CLEAN AND
17 POTABLE, AND SHALL CONTAIN NO MORE THAN 0.5 PERCENT COMMON SALT.

18
19 STONE DUST FILLER= SHALL CONSIST OF POWDERED LIMESTONE OR OTHER
20 SOUND STONE. AT LEAST 70 PERCENT OF THE FILLER SHALL PASS A
21 200-MESH SIEVE.

22
23 AGGREGATE FOR LEVELING AND SURFACE COURSE MIXTURES= SHALL BE
24 CLEAN, SOUND CRUSHED STONE OR CRUSHED GRAVEL.

25
26 SAND= SHALL BE CLEAN, FREE FROM SILT, SALT, OR CLAY CONFORMING TO
27 ASTM C 33.

28	29	30	31	32
AGGREGATE	COARSE STONE	FINE STONE	SAND (LEV.	
GRADINGS	(LEV.COURSE ONLY)	(LEV.&SURFACE)	& SURFACE)	
-----	-----	-----	-----	
33	PASSING 1 IN. SIEVE(SQ)	100 PCT.	-	-
34	1/2 IN. SIEVE	80-100	-	-
35	3/8 IN. SIEVE	10- 60	100 PCT.	-
36	NO. 4 SIEVE	0- 5	30- 70	100 PCT.
37	NO. 10 SIEVE	-	0- 2	60- 90
38	NO. 40 SIEVE	-	-	20- 50
39	NO. 80 SIEVE	-	-	5- 25
40	NO. 200 SIEVE	-	-	0- 2

41
42 CURBING

43 -----

44
45 ALL BORDERS SHALL BE PROTECTED BY CONCRETE CURBING.
46 CURB ELEVATION SHALL BE 1/2 INCH BELOW FINISHED GRADE LEVEL TO
47 PREVENT HOLDING WATER ALONG LOWER SIDES OF THE COURT. TAPER THE
48 SURFACE COURSE FROM 6 INCHES OUT TO MEET THE CURB.

49
50 FOUNDATION

51 -----

52
53 SUB-BASE=
54 *THE AREA SHALL BE THOROUGHLY COMPACTED AND FREE FROM ALL
55 ROOTS, SOD, MULCH AND DELETERIOUS MATERIALS.
56 *WEED KILLER SHALL BE APPLIED TO THE COMPACTED BASE AS
57 RECOMMENDED BY MANUFACTURER OF TENNIS COURT MATERIALS.

58
59 BASE=

1 *THE BASE SHALL BE BITUMULS PENETRATION MACADAM OR AS APPROVED
2 BY THE ARCHITECT, 4 INCH THICKNESS.

3 *THE BASE SHALL BE SOUND THROUGHOUT ITS AREA AND SHALL HAVE
4 ADEQUATE DRAINAGE PROVISIONS. THICKNESS SHALL BE 4 INCHES TO
5 6 INCHES OR GREATER IF REQUIRED BY NATURE OF THE SUB-BASE AND
6 DRAINAGE CONDITIONS.

7
8 SLOPE
9 -----

10
11 MINIMUM 1 INCH IN 15 FEET, PREFERABLY ALL IN ONE PLANE.

12
13 CONSTRUCTION
14 -----

15
16 SCREED STRIPS=

17 *SET RIGID SCREED STRIPS IN PARALLEL LINES LENGTHWISE OF THE
18 COURT, 10 FEET APART, TO TRUE ELEVATION. BLOCK UP UNDERNEATH
19 OVER ANY SLIGHT DEPRESSIONS TO SUPPORT FIRMLY AGAINST SAG
20 UNDER STRIKE-OFF AND TAMPING TOOLS.

21 *SCREED STRIPS FOR LEVELING COURSE SHALL BE 1-1/2 INCHES IN
22 HEIGHT, AND FOR SURFACE COURSE SHALL BE 1/2 INCH IN HEIGHT.
23 SCREED STRIPS FOR SURFACE COURSE SHALL NOT BE PLACED OVER JOINTS
24 IN THE LEVELING COURSE. STEEL BOX CHANNEL IS PREFERRED TO
25 SCREED STRIPS.

26 *WEDGES OR BLOCKING USED SHALL BE INORGANIC AND REMOVED AFTER
27 USE.

28
29 ALL WORK SHOULD BE DONE UNDER FAVORABLE DRYING CONDITIONS - IN NO
30 CASE AT TEMPERATURES BELOW 50 DEGREES F.

31
32 MIXING=

33 *IN MIXING THE LEVELING COURSE AND SURFACE COURSE, PLACE BINDER
34 PLUS WATER REQUIRED TO OBTAIN A MORTAR-FILLED COMPOSITION OF
35 PLASTIC CONSISTENCY, IN A MECHANICAL MIXER. THEN ADD THE
36 AGGREGATES. ALL PROPORTIONING SHALL BE ACCURATE, IN
37 MEASURED OR WEIGHED CONTAINERS. APPROXIMATE METHODS SUCH AS
38 COUNTING SHOVELFULS WILL NOT BE PERMITTED. MIX TO UNIFORM
39 COLOR, WITH ABSENCE OF STREAKS OR LUMPS.

40 *WEARCOAT MIXTURE SHALL BE MIXED IN A PLASTER MIXER.
41 A CONCRETE MIXER OR MORTAR BOX MAY BE USED IF SUFFI-
42 CIENT MIXING IS DONE TO OBTAIN AN INTIMATE MIXTURE. ADD
43 SUFFICIENT WATER TO OBTAIN A SMOOTH, CREAMY, SEMIFLOWING
44 CONSISTENCY.

45
46 PLACING LEVELING AND SURFACE COURSE MIXTURES=

47 *PLACE THE MIXTURE ON THE BASE BETWEEN SCREED STRIPS IN SUCH A
48 MANNER AS TO AVOID SEGREGATION.

49 *STRIKE OFF WITH A RIGID STEEL-FACED STRAIGHTEDGE, FIRST BY A
50 SAWING MOTION, THEN FOR A FINAL STRIKE-OFF USE A SMOOTH
51 FORWARD MOTION, SLIGHTLY TIPPING THE STRAIGHTEDGE SO THAT THE
52 FRONT EDGE DOES NOT TOUCH THE SURFACE.

53 *USE LONG-HANDLED FLOATS WHERE REQUIRED TO IRON OUT COARSE
54 TEXTURE MARRING UNIFORMITY. FINISH ALL JOINTS TRUE TO GRADE
55 WITH A STEEL TROWEL.

56 *CONTINUOUS PANELS= REMOVE THE MIX-ENCASED SCREED STRIPS AS
57 SOON AS EACH LENGTH HAS BEEN TRAVERSED BY THE STRIKE-OFF.
58 FILL THE SPACE IMMEDIATELY WITH MIXTURE, SPADE TO INSURE AGAINST
59 VOIDS AND LATER SETTLEMENT, AND FLOAT TO A FINISHED LEVEL

1 TRUE TO THE SURFACES OF ADJOINING PANELS.
 2 *ALTERNATE PANELS= ALTERNATE PANEL CONSTRUCTION PERMITTED
 3 ONLY ON APPROVAL OF THE ARCHITECT. REMOVE ALL SCREED STRIPS
 4 AS SOON AS EACH LENGTH HAS BEEN TRAVERSED BY THE STRIKE-OFF,
 5 BREAK DOWN THE EDGES AND FORCEFULLY TROWEL ON A 45-DEGREE
 6 SLOPE TO MAKE A FUTURE LAP JOINT. STRIKE OFF THE FILL-IN
 7 PANELS ON THIN METAL STRIPS LAID UPON THE FINISHED PANELS
 8 ONLY WHEN THESE PANELS HAVE SET SUFFICIENTLY TO WITHSTAND
 9 DISPLACEMENT UNDER FEET OF THE WORKMEN.
 10 *MECHANICAL SPREADERS= MAY BE USED ON LARGE AREAS. SPREADER
 11 BOXES OR MECHANICAL SPREADERS ACCEPTABLE FOR THIS TYPE OF
 12 WORK SHALL GIVE A SURFACE COURSE FINISH AT LEAST EQUIVALENT TO
 13 THAT OBTAINED WITH HAND-SCREED DEVICES.

14
 15 COMPACTING= THE LEVELING COURSE, AND SURFACE COURSE SHALL
 16 EACH BE THOROUGHLY ROLLED WHEN THEY HAVE DRIED SUFFICIENTLY
 17 SO AS NOT TO DISPLACE OR PICK UP UNDER ROLLING. COMMENCE
 18 ROLLING AT THE OUTER EDGE OF THE COURT AND PROGRESS TOWARD
 19 THE CENTER. USE POWER-DRIVEN ROLLERS, WEIGHING FROM 2 TO
 20 3 TONS. DO NOT LEAVE ROLLER STANDING IDLE ON THE AREA AT ANY TIME.

21
 22 DRYING= BEFORE MAKING SUBSEQUENT APPLICATIONS, LEVELING COURSE
 23 AND SURFACE COURSE SHALL BE DRY AND/OR THOROUGHLY SET.

24
 25 CONSTRUCTION OF LEVELING COURSE (1-1/2 INCHES BEFORE COMPACTION)
 26 -----

27
 28 SLOPE= MINIMUM ONE INCH TO FIFTEEN FEET, PREFERABLY ALL ON ONE
 29 PLANE.

30
 31 PROPORTIONING= SAND AND ROCK SHALL BE COMBINED WITH STONE DUST
 32 FILLER IN SUCH PROPORTIONS THAT THE COMBINED GRADING IS AS FOLLOWS=

SIEVE SIZE (SQUARE)	PERCENT PASSING		
	MIN. ----	IDEAL -----	MAX. ----
37 1 INCH	100	100	100
38 1/2 INCH	90	95	100
39 3/8 INCH	75	80	90
40 NO. 4	60	70	80
41 NO. 10	40	50	60
42 NO. 40	15	25	35
43 NO. 80	5	10	15
44 NO. 200 (PLUS WASH)	2	4	6

45
 46 *GRADING TESTS FOR BOTH LEVELING AND SURFACE COURSE MIXTURES
 47 SHALL BE MADE PRIOR TO MIXING AND THEREAFTER AS OFTEN AS
 48 NECESSARY TO MAINTAIN UNIFORM GRADING WITHIN THE SAID LIMITS.
 49 BEFORE SIEVING, DRY THE AGGREGATE AND QUARTER TO A ONE-POUND
 50 OR A 500-GRAM SAMPLE. PLACE THE SAMPLE IN A PAN AT LEAST 3
 51 INCHES IN DEPTH AND 10 INCHES IN DIAMETER. ARRANGE A 200-MESH
 52 SIEVE BENEATH ONE EDGE OF THE PAN IN SUCH A WAY THAT WATER
 53 RUNNING CONTINUALLY INTO THE PAN OVERFLOWS ONTO THE SCREEN.
 54 WHILE RUNNING WATER THROUGH THE PAN, THE SAMPLE SHALL BE
 55 STIRRED SO THAT ANY CLAY OR SILT IS PUT IN SUSPENSION IN THE
 56 WATER. WHEN THE OVERFLOW FROM THE PAN BECOMES CLEAR,
 57 WASHING MAY BE DISCONTINUED. THEN, WATER SHALL BE RUN THROUGH
 58 THE MATERIAL DEPOSITED ON THE 200-MESH SIEVE UNTIL THE WASH
 59 WATER RUNS CLEAR. THE MATERIAL ON THE SIEVE SHALL THEN BE

1 RETURNED TO THE SAMPLE IN THE PAN, DRIED AND WEIGHED FOR
2 LOSS. THE PERCENTAGE LOST IN THE WASHING TEST SHALL BE CLASSIFIED
3 AS MATERIAL PASSING A NO. 200 SIEVE IN THE SCREEN ANALYSIS.
4 THE MATERIAL REMAINING IN THE PAN AND ON THE SIEVE SHALL BE
5 TESTED FOR PARTICLE SIZE BY THE USUAL TEST METHODS.

6 *AGGREGATE FOR THE LEVELING COURSE GRADED AS ABOVE, AND THE
7 SURFACE COURSE GRADED AS DESCRIBED BELOW SHALL BE MIXED WITH
8 BINDER IN PROPORTIONS BY WEIGHT AS DETERMINED BY THE
9 FOLLOWING FORMULA=

10 $-P = .05A \text{ PLUS } .4C \text{ PLUS } 5$ IN WHICH

11 *P = POUNDS OF BINDER PER CUBIC FOOT OF LOOSE, DRY AGGREGATE,

12 *A = THE PERCENT OF AGGREGATE PASSING A NUMBER 10 SIEVE,

13 *C = THE PERCENT OF AGGREGATE PASSING A NUMBER 200 SIEVE,
14 PLUS FINES LOST IN WASH TEST.

15 *WHERE MATERIALS ARE TO BE PROPORTIONED BY VOLUME INSTEAD OF BY
16 WEIGHT, THE POUNDS OF BINDER CALCULATED AS ABOVE SHALL BE
17 CONVERTED TO GALLONS, ASSUMING THE BINDER TO WEIGH 8.5 POUNDS
18 PER GALLON. THE AGGREGATE SHALL BE MEASURED IN A CUBIC
19 FOOT BOX AND WEIGHED UNTIL THE AVERAGE WEIGHT PER CUBIC FOOT
20 IS DETERMINED, AFTER WHICH THE AGGREGATE MAY BE MEASURED BY
21 VOLUME. STOCKPILES OF AGGREGATE SHALL BE PROTECTED FROM RAIN
22 BY COVERING UNTIL USED.

23
24 LEVELING COURSE BATCH PROPORTIONS SHALL BE AS FOLLOWS=

25 *MIX FOR 4 CU. FT. BATCH OF TOTAL AGGREGATE**

26 -1 CU. FT. (7-1/2 GALS.) CRUSHED STONE 3/4 IN. TO 3/8 IN.

27 -1 CU. FT. (7-1/2 GALS.) CRUSHED STONE 3/8 IN. TO 1/8 IN.

28 -2 CU. FT. (15 GALS.) COARSE SAND

29 -1/8 CU. FT. (1 GALLON) LIMESTONE DUST

30 -4 GALLONS BINDER

31 ** (EXACT PROPORTIONS SHOULD BE DETERMINED FROM THE
32 SIEVE ANALYSIS AND THE FORMULA.)

33
34 FINISH= THE FINISHED LEVELING COURSE SHALL NOT VARY MORE THAN
35 1/4 INCH FROM A 10-FOOT STRAIGHTEDGE.

36
37 CONSTRUCTION OF SURFACE COURSE (1/2 INCH BEFORE COMPACTION)

38 -----
39
40 PROPORTIONING= SAND AND ROCK CHIPS SHALL BE COMBINED WITH STONE
41 DUST FILLER IN SUCH PROPORTIONS THAT THE COMBINED GRADING IS AS
42 FOLLOWS=

SIEVE SIZE (SQUARE)	PERCENT PASSING		
	MIN.	IDEAL	MAX.
3/8 INCH	100	100	100
NO. 4	80	85	90
NO. 10	55	65	75
NO. 40	22	32	42
NO. 80	8	14	20
NO. 200 (PLUS WASH)	3	5	7

53
54 *NOT LESS THAN 3 PERCENT OF THE MIX SHALL BE STONE DUST PASSING
55 A NO. 200 SIEVE OBTAINED BY ADDING STONE DUST FILLER TO THE MIX.

56
57 SURFACE COURSE BATCH PROPORTIONS SHALL BE AS FOLLOWS=

58 *MIX FOR 4 CU. FT. BATCH OF TOTAL AGGREGATE**

59 -1.6 CU. FT. (12 GALS.) - STONE SCREENINGS 3/8 IN. - 1/8 IN.

1 -2.1 CU. FT. (16 GALS.) - SAND
2 -1/4 CU. FT. (2 GALS.) - LIMESTONE DUST
3 -5 GALLONS BINDER
4 *(EXACT PROPORTIONS SHOULD BE DETERMINED FROM THE
5 SIEVE ANALYSIS AND THE FORMULA).
6

7 **FINISH=**

8 *THE FINISHED SURFACE COURSE SHALL NOT VARY MORE THAN 1/8 INCH
9 FROM A 10-FOOT STRAIGHTEDGE.
10 *IF REQUIRED TO ELIMINATE POSSIBLE MINOR DEPRESSIONS OR TO
11 REPAIR DAMAGED AREAS (SUCH AS FOOTPRINTS OR ANIMAL TRACKS) THE
12 FOLLOWING MIXTURE SHALL BE USED, PRIOR TO ANY SQUEEGEE OR
13 BRUSH APPLICATIONS OF WEARCOAT.
14 *IF NECESSARY, FLOOD THE SURFACE WITH WATER AND CHALKMARK THE
15 OUTLINES OF THE LOW AREAS. PRIME THE SURFACE UNDER REQUIRED
16 PATCHES, USING 1 PART BINDER AND 4 PARTS WATER, AND ALLOW THE
17 MIX TO DRY, BEFORE PROCEEDING WITH THE NEXT APPLICATION.
18 *PATCHING MIXTURE=
19 -2 GALS. PLASTER SAND
20 -2 GALS. RESURFACER
21 -1/2 GAL. BINDER
22

23 **SQUEEGEE OR BROOM COATS**
24 -----
2526 **APPLICATION=**

27 *APPLY WEARCOAT TO THE TENNIS COURT SURFACE BY POURING
28 FROM A CAN OR A WHEELED CONTAINER IN CONTINUOUS PARALLEL
29 LINES AND SPREADING IMMEDIATELY WITH RUBBER-FACED
30 SQUEEGEES OR WITH LONG-HANDLED HAIR BROOMS. PULL THE
31 SQUEEGEES OR BROOMS AT AN ANGLE FROM THE LINE OF SPREAD SO AS
32 TO CONTINUALLY ROLL THE MATERIAL TOWARD THE OPERATOR AND NOT
33 OVERFLOW OR SPILL ON ITS FORWARD EDGE AWAY FROM THE OPERATOR.
34 AFTER EACH COAT HAS DRIED, REMOVE ANY RIDGES WITH SCRAPERS.
35

36 **WEARCOAT FINISH**
37 -----
38

39 **MIXING=** CAREFULLY ADD WATER DURING MIXING OF THE WEARCOAT IN A
40 PLASTER MIXER (CONCRETE MIXER, WHEELBARROW OR MORTAR BOX MAY BE
41 USED UPON APPROVAL OF THE ARCHITECT). STOP THE WATER ADDITION
42 WHEN A SMOOTH, CREAMY CONSISTENCY IS OBTAINED.
43
44
45
46

47 **METHOD OF APPLICATION=** APPLY THE WEARCOAT AT A CREAMY CON-
48 SISTENCY. USE A RUBBER-FACED SQUEEGEE OR SOFT HAIR PUSH BROOM
49 FOR WEARCOAT.
50

51 **APPLICATION RATE=** MULTIPLE APPLICATIONS SHALL BE MADE TO GIVE A
52 TOTAL OF=

53 *15 GALLONS UNDILUTED WEARCOAT PER 1,000 SQ. FT.
54

55 **PLAYING LINES**
56 -----
57

58 ALLOW THE WEARCOAT TO CURE BEFORE PAINTING LINES. TIME
59 MAY VARY FROM TWO TO FOUR DAYS UNDER GOOD CURING CONDITIONS.

1 TWO INCH WIDTH PLAYING LINES SHALL BE ACCURATELY LOCATED AND MARKED
2 BY SNAPPING CHALKED LINE. LINE PAINT (WHITE) SHALL BE APPLIED
3 ONLY TO CLEAN SURFACES. (USE OF OIL-BASE PAINT OR LACQUER NOT
4 ACCEPTABLE). PAINTERS SHALL USE SOLFT-SOLED SHOES AND KNEE-
5 PADS, OR KNEEL ON BOARDS TO PREVENT SURFACE INDENTATION. RAGGED
6 OR UNEVEN LINES WILL NOT BE ACCEPTABLE.

7
8 PROTECTION

9 -----

10
11 PROTECT FROM TRAFFIC DURING ALL OPERATIONS AND UNTIL READY FOR
12 USE. ALLOW THE PLAYING SURFACE TO CURE AT LEAST 24 HOURS BEFORE
13 ALLOWING LIGHT FOOT TRAFFIC. FOLLOWING PAINTING OF THE LINES, THE
14 COURT SHALL BE ALLOWED TO CURE FOR A MINIMUM OF FOUR DAYS BEFORE
15 BEING OPENED TO PLAY.

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17

1 MATERIALS

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PORTLAND CEMENT=

*ASTM C-150, TYPE 1. HIGH EARLY STRENGTH CEMENT, TYPE 3 IS
OPTIONAL.

AGGREGATES=

*GENERAL=

-IF LOCAL AGGREGATES FAIL TO MEET THESE SPECIFICATIONS BUT
HAVE BEEN SHOWN BY SPECIAL TEST OR ACTUAL SERVICE TO PRO-
DUCE THE REQUIRED QUALITY CONCRETE, SUCH AGGREGATES MAY BE
SUBMITTED TO THE ARCHITECT FOR APPROVAL.

*AGGREGATES FOR NORMAL WEIGHT CONCRETE=

-FINE=

*NATURAL SAND, ASTM C-33.

-COARSE=

*CRUSHED STONE OR GRAVEL, ASTM C-33.

*SIZE SHALL NOT EXCEED=

- JOIST AND BEAM SYSTEM 3/4 INCH
- WALLS UP TO 8 INCH 3/4 INCH
- BEAMS AND SLAB SYSTEMS 1 INCH
- COLUMNS 1 INCH
- ALL OTHER CONCRETE 1-1/2 INCH

WATER=

- *FRESH, CLEAN, AND POTABLE.
- *WATER CONTAINING 0.5 PCT. OR MORE OF COMMON SALT SHALL NOT BE
USED.
- *WATER USED WITH EXPANSIVE CEMENT SHALL NOT CONTAIN ANY
CALCIUM CHLORIDE.

METAL REINFORCEMENT=

- *REINFORCING BARS, WHERE INDICATED ON DRAWINGS, SHALL CONFORM
TO ASTM A-15, INTERMEDIATE GRADE NEW BILLET STEEL, OPEN
HEARTH STOCK, DEFORMED IN ACCORDANCE WITH ASTM A-305.
- *SHOP DRAWINGS SHOWING ALL DIMENSIONS NECESSARY FOR FABRICATION
AND PLACING OF REINFORCING STEEL AND ACCESSORIES, WITHOUT
CROSS-REFERENCE TO THE PROJECT DRAWINGS, SHALL BE SUBMITTED
FOR APPROVAL BEFORE FABRICATION.

EXPANSION JOINT MATERIAL=

*PRE-MOULDED FILLER, BITUMINOUS FIBER TYPE, ASTM D-1751,
POLYURETHANE BASE COMPOUND, WIDTH OF JOINT BY 1/2 INCH DEEP, OVER
PREMOULDED FILLER.

STORAGE OF MATERIALS=

*CEMENT, AGGREGATE AND ADMIXTURE SHALL BE STORED IN A MANNER TO
PREVENT DETERIORATION OR INTRUSION OF FOREIGN MATTER. FROZEN,
DAMAGED OR DETERIORATED MATERIALS SHALL NOT BE USED.

50 FORMS AND DETAILS OF CONSTRUCTION

51 -----

FORMS - GENERAL=

- *FORMS SHALL BE SUBSTANTIAL AND SUFFICIENTLY TIGHT TO PREVENT
LEAKAGE OF MORTAR.
- *VERTICAL FACES SHALL BE FORMED. EARTH FORMING SHALL NOT BE
PERMITTED, UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.
- *ALIGNMENT AND ELEVATION OF FORMS SHALL BE CHECKED AT START OF
CONCRETE PLACEMENT AND MAINTAINED DURING PLACEMENT BY READJUST-

52
53
54
55
56
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59

1 ING SHORES AND BRACING IF MOVEMENT OR SETTLEMENT
2 HAS OCCURRED.

3
4 **REINFORCEMENT=**

- 5 *FABRICATION AND APPLICATION SHALL BE DONE IN COMPLIANCE WITH
6 A.C.I. 318-63, CHAPTER 8 - 'DETAILS OF REINFORCEMENT'.
7 *REINFORCEMENT SHALL BE PROTECTED BY CONCRETE AS FOLLOWS=
8 -WHERE CONCRETE IS DEPOSITED AGAINST GROUND NOT LESS THAN
9 3 INCHES.
10 -WHERE CONCRETE IS EXPOSED TO THE WEATHER, OR EXPOSED TO THE
11 GROUND, BUT PLACED IN FORMS, NOT LESS THAN 2 INCHES FOR
12 BARS MORE THAN 5/8 INCH IN DIAMETER AND 1-1/2 INCHES FOR
13 BARS 5/8 INCH OR LESS IN DIAMETER.

14
15 **JOINTS IN CONCRETE=**

- 16 *CONSTRUCTION JOINTS SHALL BE LOCATED AS INDICATED ON THE DRAW-
17 INGS, OR AS APPROVED BY THE ARCHITECT.
18
19
20 -ALL REINFORCING STEEL SHALL BE CONTINUED ACROSS JOINTS.
21 *EXPANSION JOINTS=
22 -REFER TO DRAWINGS FOR LOCATION AND TYPES.
23 -CONTRACTION JOINTS SHALL BE TONGUE AND GROOVE, FORMED ONE
24 INCH DEEP OR CUT ONE INCH DEEP WITH CIRCULAR SAW NOT LATER
25 THAN 48 HOURS AFTER PLACING CONCRETE.
26 -MAXIMUM SPACING OF CONTRACTION JOINTS SHALL BE 15 FEET
27 O.C.
28 *TOOLED JOINTS WILL NOT BE CONSIDERED AS CONTROL OR CONTRACTION
29 JOINTS UNLESS FINISHED TO A DEPTH OF ONE INCH.

30
31 **APPLICATION**

32 -----
33
34 **QUALITY AND STRENGTH OF CONCRETE=**

- 35 *CEMENT CONTENT SHALL BE NOT LESS THAN 5 SACKS PER CUBIC YARD,
36 AND AS REQUIRED TO PRODUCE 3,000 PSI COMPRESSIVE STRENGTHS.
37 *WATER CONTENT=
38 -THE RECOMMENDATIONS OF THE ACI FOR THE DESIGN MIX
39 SPECIFIED SHALL BE FOLLOWED.
40 -SURFACE WATER CONTAINED IN AGGREGATE SHALL BE INCLUDED AS
41 PART OF THE MIXING WATER IN COMPUTING WATER CONTENT.

42
43 **PROPORTIONS AND CONSISTENCY=**

- 44 *THE PROPORTION OF INGREDIENTS WILL BE SELECTED TO PRODUCE
45 PROPER PLACEABILITY, DURABILITY, STRENGTH, AND TO PRODUCE A
46 MIXTURE WHICH WILL WORK READILY INTO THE CORNERS AND ANGLES OF
47 FORMS AND AROUND REINFORCEMENT BY METHODS OF PLACEMENT AND
48 CONSOLIDATION EMPLOYED ON THE WORK, BUT WITHOUT PERMITTING
49 MATERIALS TO SEGREGATE OR PERMITTING EXCESSIVE FREE WATER TO
50 COLLECT ON SURFACE.
51 *PROPORTIONS TO ATTAIN THE REQUIRED STRENGTH SHALL BE IN ACCORD-
52 ANCE WITH ACI 318-63, CHAPTER 5, 'CONCRETE QUALITY', WITH
53 MINIMUM CEMENT CONTENT SPECIFIED ABOVE.

54
55 **PREPARATION=**

- 56 *ALL MIXING AND TRANSPORTATION EQUIPMENT SHALL BE CLEAN.
57 *BOARD FORMS SHALL BE THOROUGHLY WET. JOINTS OPENED BY SHRINK-
58 AGE SHALL BE WET DOWN SUFFICIENTLY TO SWELL SHUT.
59 *ALL ICE, EXCESS WATER, MUD, AND OTHER DEBRIS SHALL BE REMOVED

1 FROM WITHIN FORMS.

2 *ICE, MUD, SCALE OR OTHER COATINGS THAT MIGHT HINDER BOND SHALL
3 BE REMOVED FROM REINFORCEMENT.

4 *ARCHITECT SHALL BE NOTIFIED PRIOR TO PLACING IN AMPLE TIME FOR
5 INSPECTION OF FORMS AND REINFORCING.

6 *ALL FORM SURFACES SHALL BE CLEANED BEFORE REUSE.

7
8 MIXING=

9 *NORMAL WEIGHT CONCRETE=

10 -CONCRETE SHALL BE MIXED UNTIL THERE IS A UNIFORM DISTRIBU-
11 TION OF MATERIALS, OR AT LEAST TWO MINUTES AFTER ALL
12 MATERIALS ARE IN THE MIXER. CONCRETE SHALL BE COMPLETELY
13 DISCHARGED BEFORE MIXER IS RECHARGED.

14 -STRICT ADHERENCE SHALL BE GIVEN TO ASTM C-94, IF READY-
15 MIXED CONCRETE IS USED.

16 -CONCRETE MIXER SHALL NOT BE LOADED BEYOND RATED CAPACITY
17 OF MANUFACTURER OF MIXING EQUIPMENT. SPEED OF ROTATION
18 OF DRUM SHALL BE AS RECOMMENDED BY MANUFACTURER OF EQUIP-
19 MENT.
20

21 PLACING CONCRETE=

22 *CONCRETE SHALL BE CONVEYED FROM MIXER TO FORMS AS RAPIDLY AS
23 PRACTICABLE AND BY METHODS WHICH WILL PREVENT SEGREGATION OR
24 LOSS OF INGREDIENTS.

25 *IT SHALL BE DEPOSITED AS NEARLY AS PRACTICABLE IN ITS FINAL
26 POSITION.

27 *CHUTES SHALL BE SUCH THAT THE CONCRETE SLIDES IN THE CHUTE AND
28 DOES NOT FLOW.

29 *CHUTES SHALL HAVE A SLOPE OF LESS THAN 1 IN 2.

30 *CONCRETE SHALL BE PLACED BEFORE INITIAL SET HAS OCCURRED, AND
31 IN NO EVENT AFTER IT HAS CONTAINED ITS WATER CONTENT FOR MORE
32 THAN ONE AND ONE-HALF HOURS.

33 *ALL CONCRETE SHALL BE PLACED UPON CLEAN, DAMP SURFACES, FREE
34 FROM WATER, OR UPON PROPERLY CONSOLIDATED FILLS, BUT NEVER
35 UPON SOFT MUD, DRY POROUS EARTH, OR FROZEN GROUND.

36 *THE CONCRETE SHALL BE COMPACTED AND WORKED IN AN APPROVED
37 MANNER INTO ALL CORNERS AND ANGLES OF THE FORMS AND AROUND RE-
38 INFORCEMENT IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE
39 COARSE AGGREGATE.

40 *CONCRETE SHALL BE DEPOSITED IN THE FORMS AS NEARLY AS PRACTI-
41 CABLE IN ITS FINAL POSITION TO AVOID RE-HANDLING. IT SHALL BE
42 SO DEPOSITED AS TO MAINTAIN, UNTIL THE COMPLETION OF THE UNIT,
43 A PLASTIC SURFACE APPROXIMATELY HORIZONTAL. UNDER NO CIRCUM-
44 STANCES SHALL CONCRETE THAT IS PARTIALLY HARDENED BE DEPOSITED
45 IN THE WORK. CONCRETE SHALL BE DEPOSITED CONTINUOUSLY AND AS
46 RAPIDLY AS PRACTICABLE UNTIL THE UNIT OF OPERATION IS COMPLETED.

47 *ALL CONCRETE SHALL BE CONSOLIDATED SO THAT THE CONCRETE
48 IS THOROUGHLY WORKED AROUND THE REINFORCEMENT, AROUND
49 EMBEDDED ITEMS, AND INTO CORNERS OF FORMS, ELIMINATING ALL AIR
50 OR STONE POCKETS WHICH MAY CAUSE HONEYCOMBING, PITTING, OR
51 PLANES OR WEAKNESS.

52 *ALL TOP SURFACES SHALL BE CARRIED SLIGHTLY ABOVE THE FORMS AND
53 STRUCK OFF BY BOARD FINISH WHEN SETTLEMENT HAS TAKEN PLACE,
54 FORCING OUT ALL EXCESS WATER.

55 *AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET, IMPACT OR LOADS
56 ON FORMS OR ON THE ENDS OF PROJECTING REINFORCEMENT SHALL BE
57 PREVENTED.

58 *IN JOINING FRESH CONCRETE TO SET CONCRETE, REMOVE ALL LOOSE AND
59 FOREIGN MATERIALS FROM WORK ALREADY IN PLACE. THIS SURFACE

1 SHALL THEN BE WASHED AND SCRUBBED WITH WIRE BROOMS AND IT SHALL
2 REMAIN MOIST WHEN THE NEW CONCRETE IS PLACED.
3 *THE OPERATION OF PLACING CONCRETE SHALL BE CONTINUOUS BETWEEN
4 CONSTRUCTION JOINTS.
5

6 WEATHER CONDITIONS=

7 *PROTECTION=

8 -ADEQUATE PROTECTION AGAINST RAIN, SLEET AND SNOW SHALL BE
9 PROVIDED BEFORE CONCRETE IS PLACED OR FINISHED.

10 *COLD WEATHER CONCRETING=

11 -EXCEPT ON SPECIFIC AUTHORIZATION OF THE ARCHITECT, CONCRETE
12 SHALL NOT BE PLACED WHEN THE ATMOSPHERIC TEMPERATURE IS
13 BELOW 40 DEG. F., OR WHEN THE CONCRETE IS LIKELY TO BE
14 SUBJECTED TO FREEZING TEMPERATURES WITHIN 24 HOURS AFTER
15 IT HAS BEEN DEPOSITED.

16 -IN NO CASE SHALL CONCRETE BE EXPOSED TO FREEZING TEMPERA-
17 TURES FOR 72 HOURS AFTER PLACING.

18 -CONCRETE TEMPERATURE SHALL BE NOT LESS THAN 50 DEG. F. FOR
19 THE FIRST THREE DAYS AFTER PLACING AND PROTECTED FROM
20 FREEZING FOR THE NEXT FIVE DAYS.

21 -NO FROZEN MATERIALS OR MATERIALS CONTAINING ICE SHALL BE
22 USED IN CONCRETE.

23 -TEMPERATURE OF SEPARATE MATERIALS SHALL NOT EXCEED 140 DEG.
24 F. WHEN PLACED IN THE MIXER.

25 -SALT SHALL NOT BE USED IN THE CONCRETE.

26 -ACI 306-66 - 'RECOMMENDED PRACTICE FOR WINTER CONCRETING'
27 PUBLISHED BY AMERICAN CONCRETE INSTITUTE, P. O. BOX 4854,
28 REDFORD STATION, DETROIT, MICHIGAN 48219, SHALL BE USED AS A
29 GUIDE FOR COLD WEATHER CONCRETING.

30 *HOT WEATHER PROTECTION=

31 -EXCEPT ON SPECIFIC AUTHORIZATION OF THE ARCHITECT, CONCRETE
32 SHALL NOT BE PLACED WHEN THE ATMOSPHERIC TEMPERATURE IS
33 ABOVE 100 DEG. F.

34 -FRESH CONCRETE TEMPERATURE SHALL BE NOT LESS THAN 50 DEG.
35 F. NOR MORE THAN 90 DEG. F. FOR THE FIRST THREE DAYS AFTER
36 PLACING, AND SHALL BE PROTECTED FROM TEMPERATURES OVER
37 100 DEG. F. FOR THE NEXT FIVE DAYS.

38 -DRY SURFACES SHALL BE THOROUGHLY WETTED DOWN BEFORE CON-
39 CRETING.

40 -ACI - 605 - 'RECOMMENDED PRACTICE FOR HOT WEATHER CON-
41 CRETING', PUBLISHED BY AMERICAN CONCRETE INSTITUTE,
42 P.O. BOX 4854, REDFORD STATION, DETROIT, MICHIGAN 48219,
43 SHALL BE USED AS A GUIDE FOR HOT WEATHER CONCRETING.
44

45 REPAIRING AND PATCHING

46 -----
47
48 ANY CONCRETE NOT FORMED AS SHOWN ON DRAWINGS, CONCRETE OUT OF
49 ALIGNMENT, OR DEFECTIVE SURFACES WHICH CANNOT BE PROPERLY
50 REPAIRED, OR PATCHED, SHALL BE REMOVED AND REPLACED AT
51 CONTRACTOR'S EXPENSE, INCLUDING ANY CONCRETE FAILING TO MEET
52 THE SPECIFIED STRENGTH.
53

54 BULGES, PROJECTIONS, HONEYCOMB AND ALL OTHER DEFECTS IN EXPOSED
55 CONCRETE SHALL BE PATCHED.
56

57 A BOND COAT OF STIFF NEAT PORTLAND CEMENT AND WATER SHALL BE BRUSHED
58 INTO THE PRE-DAMPENED PATCHING AREA AND ALLOWED TO PARTIALLY SET.
59 FILL AREA WITH SPECIFIED PATCHING MIX IN 1/2 INCH LAYERS, COMPACTED

1 AND SURFACE-SCRATCHED TO RECEIVE SUCCESSIVE LAYERS. PATCHING MIX
2 SHALL BE STRUCK OFF LEAVING A SLIGHT BULGE TO ALLOW FOR SHRINKAGE.
3 LARGE PATCHES SHALL BE HELD IN PLACE WITH FORMS MATCHING ORIGINAL
4 FORMS. THE PATCHED AREA SHALL BE LEFT UNDISTURBED FOR 1 HOUR BE-
5 FORE FINAL FINISHING. PATCHED AREAS SHALL BE KEPT DAMP FOR 7 DAYS.
6 METAL TOOLS SHALL NOT BE USED IN FINISHING PATCHES ON EXPOSED SUR-
7 FACES.

8
9 CURING

10 -----

11

12 CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING.

13

14 CURING SHALL FOLLOW FINISHING OPERATIONS WITHIN TWO HOURS.

15

16 RAPID DRYING AT THE END OF THE CURING PERIOD SHALL BE PREVENTED.

17

18 CURING SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING METHODS=

19

*ABSORPTIVE MATS OR FABRICS KEPT CONTINUOUSLY WET.

20

*NON-STAINING WATERPROOF PAPER OR POLYETHYLENE FILM

21

ALL JOINTS SHALL BE LAPPED 12 INCHES AND WEIGHTED IN

22

PLACE.

23

24
