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TO BE EXECUTED IN DUPLICATE

BOOK 1:

PROJECT INFORMATION, INSTRUCTIONS TO BIDDERS, AND EXECUTION DOCUMENTS

CONTRACT NO. 1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL
3456 W. 38th Street
NEW CONSTRUCTION
PROJECT #05230

PUBLIC BUILDING COMMISSION OF CHICAGO



Mayor Richard M. Daley
 Chairman

Erin Lavin Cabonargi
 Executive Director

Room 200
 Richard J. Daley Center
 50 West Washington Street
 Chicago, Illinois 60602
 312-744-3090
www.pbcchicago.com

Any Contract entered into as a result of this bid process is governed by: Book 1 "Project Information, Instructions To Bidders, and Execution Documents;" Book 2 "Standard Terms and Conditions for Construction Contracts with Community Hiring Requirement" Book 2A "Standard Terms and Conditions Procedures Manual;" and Book 3 "Technical Specifications" and the Drawings.

JUNE 2008 (Rev.1)

TABLE OF CONTENTS

I. INTRODUCTION	3
II. PROJECT INFORMATION.....	3
A. General Information.....	3
B. Time of Completion.....	4
C. Commission's Contingency Fund	4
D. Copies of Drawings and Specifications Furnished	4
E. Liquidated Damages.....	5
F. Prevailing Wage Rates	5
III. INSTRUCTIONS FOR BIDDERS	6
A. Examination of Documents By Bidder	6
B. Interpretations of Addenda	6
C. Inspection of Site	6
D. Pre-Qualification of Bidders	6
E. Evidence of Continuing Qualifications of Bidder	6
F. Preparation of Bid	7
G. Bid Deposit:	8
H. Bidder's Execution of Bid.....	8
I. Affidavit of Non-Collusion	8
J. MBE and WBE Commitments	8
K. Affidavit of Uncompleted Work	9
L. Bidder's Financial Statement.....	9
M. Disclosure Affidavit	9
N. Statement of Bidder's Qualifications.....	9
O. Disclosure of Retained Parties	9
P. Submission of Bid	9
Q. Withdrawal of Bids before Bid Opening.....	10
R. Opening of Bids	10
S. Evaluation of Bids	10
T. Basis of Award	10
U. Performance and Payment Bond and Insurance	11
V. Protests.....	12
W. Licensing.....	12
X. Award Of Contract; Rejection Of Bids.....	12
IV. PROPOSAL AND EXECUTION DOCUMENTS.....	14
A. Contractor's Bid	14

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No.1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

B. Acceptance of the Bid..... 19

C. Corporate Resolution (if a Corporation)..... 20

V. PROPOSAL SUPPORT DOCUMENTS 21

 A. Basis of Award (Award Criteria) 21

VI. ADDITIONAL DOCUMENTS TO BE EXECUTED 26

 Affidavit Of Non-collusion 26

 SCHEDULE B - Joint Venture Affidavit (1 of 3)..... 27

 SCHEDULE C - Letter of Intent from MBE/WBE..... 30

 SCHEDULE D - Affidavit of General Contractor Regarding MBE/WBE Participation..... 32

 SCHEDULE E - Request for Waiver from MBE/WBE Participation 34

 Affidavit Of Uncompleted Work 35

 A. Work Under Contract 35

 B. Uncompleted Work to be Completed with the Bidder's own Forces..... 35

 C. Work Subcontracted to Others..... 37

 Statement Of Bidder's Qualifications..... 39

 Disclosure Of Retained Parties 41

 Performance and Payment Bond 44

 Bond Approval 47

DOCUMENT SUBMITTAL CHECKLIST..... 48

EXHIBITS

1. Illinois Department of Labor Prevailing Rates of Hourly Wages For Cook County
2. Insurance Requirements
3. Community Area Map

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

I. INTRODUCTION

Thank you for your interest in bidding on this project, which is being undertaken by the Public Building Commission of Chicago. The Public Building Commission of Chicago (hereafter, the PBC, or Commission) is a municipal corporation with a statutory mandate to procure and award contracts for the construction of public buildings in the City of Chicago, and to oversee the construction of those public buildings until they are turned over to the user agency that will own and operate each new facility.

This is the first page of text of Book 1, which along with Book 2, Book 2A, Book 3, and the project drawings, comprise the PBC's construction contract. The balance of this Book 1 provides a brief description of the project, instructions for completing and submitting your bid, the bid pages, and the forms which must accompany your bid. Book 2 is the Standard Terms and Conditions of the contract. Book 2A is the Standard Terms and Conditions Procedures Manual. Book 3 is the Technical Specifications for the work to be performed on this project. The PBC's architect or engineer for the project will provide the drawings and other documents that may be necessary for you to bid on and/or perform the work. Each of the Books, along with the drawings and any other documents prepared by the PBC, its architect or engineer, are Contract Documents. Collectively, the Contract Documents comprise the Contract. The Contract Documents are defined in Section 1 of Book 2, Standard Terms and Conditions.

II. PROJECT INFORMATION

A. General Information

1. Bids will be received by the Public Building Commission of Chicago for the following Project in accordance with the Contract Documents set forth below:

BRIGHTON PARK I AREA ELEMENTARY SCHOOL
3456 W. 38th Street
NEW CONSTRUCTION
PROJECT #05230

Bidders must be pre-qualified by the PBC to bid on this Project.

2. General Description of Scope of Work:
 - a. As further described in the detailed specifications and drawings, a 105,177 square foot, three story masonry and steel frame building, serving students from pre-K to 8th grade. Work includes, but is not limited to site work, concrete foundations, envelope consisting of unit masonry, aluminum window walls and storefront, roofing (including green roof area); interior consists of gypsum and masonry walls and partitions, resilient, terrazzo and tile floors. Construction to include, but not limited to classrooms, library, gym with stage, warming kitchen and dining facilities, administrative and support areas, landscaping, mechanical, electrical, plumbing, and standard elementary school finishes and amenities.
 - b. This description of Work is intended to be general in nature and is neither a complete description nor a limitation of the Work to be performed.
3. Construction Budget: \$28,000,000.00 (excluding Allowances and Commission's Contingency Funds).
4. User Agency: Chicago Public Schools

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No.1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

5. Project is located in Ward: 12th Ward, Alderman, George A. Cardenas
6. For purposes of the project community hiring requirement and the community hiring bonus "Residents of the project community" shall mean persons domiciled within the Brighton Park and South Lawndale community areas as designated on Exhibit# 3 Community Area Map.
7. Requests for Information: send to Public Building Commission of Chicago, Attn: Janice Meeks, Senior Contract Officer by (email) janicemeeks@cityofchicago.org or (fax) 312-744-3572
8. Documents Available at: Best Imaging Solutions, 20 E. Randolph, Chicago, IL. Tel: 312-357-9050
9. Online Construction Documents Available at: drawingdepot.com
10. Pre-Bid Meeting Date, Time, and Location: **Tuesday, February 3, 2009 at 10:00AM** in the 2nd Floor Board Room, Richard J. Daley Center, 50 West Washington Street, Chicago, IL 60602
11. *Mandatory Technical Review Meeting for invited Pre-qualified Bidders: **Wednesday, February 11, 2009 at 11:00AM, in room CL115**
***NOTE:** Only Pre-qualified Bidders who attend the Technical Review will be eligible to bid.
12. Bid Opening Date and Time: **Tuesday, February 24, 2009 at 2:00PM**
13. Amount of Bid Deposit: **5% amount of bid**
14. Amount of Commission's Contingency Fund: **\$500,000.00**
15. Document Deposit: **N/A**
16. Cost for Additional Documents (per set): **At the Contractor's own expense.**
17. MBE/WBE Contract Goals: **24% MBE and 4% WBE**

B. Time of Completion

Substantial Completion of the Work must be achieved no later than **(457)** Days after the Notice to Proceed.

C. Commission's Contingency Fund

1. The Commission's Contingency Fund for this project is: **\$500,000.00**
2. The Commission has established this Contingency Fund for the exclusive use of the Commission, at the Commission's sole discretion. The Commission's Contingency Fund sum shall be included as an allowance in the Base Bid. In the event that any or all of the Contingency Fund remains unused at the completion of the Work, the Commission will issue a deductive Change Order so that any such unused portion of the Contingency Fund shall remain with the PBC.

D. Copies of Drawings and Specifications Furnished

The Commission will furnish to the Contractor one (1) hard copy set of Drawings and Specifications for the execution of the Work. The Contractor is responsible for obtaining additional copies at its own cost.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

E. Liquidated Damages

1. The Contractor agrees that the Work must be executed regularly and diligently to ensure completion within the time specified in Paragraph B above. The Contractor and the Commission understand and agree that the time for the completion of the Work described herein is reasonable time. If the Contractor neglects, fails or refuses to complete the Work within the time specified, or any proper extension granted by the Commission, then the Contractor and its surety do hereby agree to pay to the Commission the amount of:

Substantial Completion of Phase (s), Milestones, or Project	\$5,000 per Day
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not as a penalty but as liquidated damages for the breach of contract occurring each and every Day that the Contractor after the time stipulated in the Contract for completing the Work.

2. The Commission may recover liquidated damages by deducting the amount out of any monies due or that may become due the Contractor. Liquidated damages, if any, will be calculated on completion of the Work and submission of the Contractor's final pay request.
3. Substantial Completion of the Work is defined in Book 2, Section 1.01.30.

F. Prevailing Wage Rates

1. Not less than the prevailing rate of wages as determined by the Illinois Department of Labor shall be paid to all laborers, workers and mechanics performing work under this contract. Prevailing wage rates in effect at the time of issuance of these Contract Documents are attached to Book 1 as Exhibit 1. One resource for determining the current prevailing wage rate is the Internet site www.state.il.us/agency/idol/CM/countym.htm maintained by the State of Illinois Department of labor.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

the Commission, or any of the User Agencies on whose behalf the PBC constructs public buildings.

2. The Bidder, if requested, must present within a reasonable time, as determined by the Commission, evidence satisfactory to the Commission of performance ability and possession of necessary facilities, pecuniary resources, and adequate insurance to comply with the terms of these specifications and Contract Documents.

F. Preparation of Bid

1. Two (2) copies of Project Information, Instructions, and Execution Documents (Book 1) shall be prepared with original signatures and notarizations wherever required.
2. All bids must be prepared on forms supplied by the Commission and shall be subject to all requirements of the Contract Documents. Unless otherwise stated, all blank spaces on the bid page or pages, applicable to the subject specification, should be correctly filled in. All bids must be regular in every respect and no interlineations, excisions or special conditions shall be made by the Bidder.
3. The Bidder's name, address, telephone and fax number should be clearly written on the front cover of each of the copies of Book 1 submitted.
4. When required by the Contract Documents, the Bidder may attach supporting documentation or additional information to the back of the form to which it refers.
5. The Commission may consider as irregular, and at its option reject, any bid on which there is an alteration of or departure from the bid form hereto attached.
6. The Bid Documents shall include the following:
 - a. Contractor's Bid Form
 - b. Bid Guarantee
 - c. Basis of Award (Award Criteria)
 - d. Unit Prices
 - e. Affidavit of Non-collusion
 - f. Schedule B - Joint Venture Affidavit with supporting documentation (if applicable)
 - g. Schedule D - Affidavit of General Contractor Regarding MBE/WBE Participation
 - h. Schedule E - Request for Waiver from MBE/WBE Participation (if applicable)
 - i. Affidavit of Uncompleted Work
7. Current versions of the following documents shall be on file at the Commission at the time of bid opening:
 - a. Financial Statement
 - b. Disclosure Affidavit
 - c. Statement of Bidder's Qualifications
8. The apparent low Bidder is required to submit a fully executed Disclosure of Retained Parties within five (5) days after bid opening.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

G. Bid Deposit:

1. The Bid must be accompanied by a "Bid Deposit" in the amount set forth in Part II.A. "General Project Information" to ensure:
 - a. Non-withdrawal of the bid after date and time of opening.
 - b. The furnishing of the Performance and Payment Bond and evidence of the required insurance coverage by the successful Bidder as required by the Contract Documents.
2. The guarantee shall be made by bid bond, certified check or cashier's check payable to the order of the Public Building Commission of Chicago. No bid will be considered unless it is accompanied by the required guarantee. Cash deposits will not be accepted.
3. The bid bonds, certified checks, or cashier's checks of unsuccessful Bidders will be returned as soon as practicable after the opening of the bids; however, the deposits of the three (3) lowest Bidders shall be retained until the Commission awards the Contract to one of them, or for any reason rejects all bids.

H. Bidder's Execution of Bid

1. The Bidder must execute the Bid in two (2) original counterparts.
2. Bids must be submitted with original signatures in the space provided on the appropriate Part II.B. "Acceptance of the Bid." Bids not properly signed shall be rejected.
3. If Bidder is a corporation, the President and Secretary must execute the bid. In the event that this bid is executed by other than the President, attach hereto a certified copy of that section of the Corporate By-Laws or other authorization by the Corporation that permits the person to execute the offer for said corporation.
4. If Bidder is a partnership, all partners must execute the bid, unless one partner has been authorized to sign for the partnership, in which case, evidence of such authority satisfactory to the Commission must be submitted.
5. If Bidder is a sole proprietorship, the sole proprietor must execute the bid.
6. A "Partnership," "Joint Venture," or "Sole Proprietorship" operating under an Assumed Name must be registered with the Illinois county in which it is located, as provided in 805 ILCS 405 (1992).

I. Affidavit of Non-Collusion

Each Bidder shall fully execute an affidavit, in the form provided, to the effect that the Bidder has not colluded with any other person, firm, or corporation in regard to any bid submitted. Such affidavit shall be attached to the bid.

J. MBE and WBE Commitments

Each Bidder shall submit with its Bid a completed Schedule D-Affidavit of General Contractor regarding M/WBE Participation and **Schedule B- Affidavit of Joint Venture** (if applicable) as found in Book 2 Section 23.05a (2, 3, 4) describing the extent to which Minority Business Enterprise (MBE) and Women Business Enterprise (WBE) firms will participate in the Contract:

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

The apparent low bidder must provide complete **Schedule C-** Letter of Intent from MWBE to Perform as a Subcontractor, Subconsultant, or Material Supplier, including current certification letter for each MBE and WBE firm included in its bid within 5 Days of the date set for bid opening.

K. Affidavit of Uncompleted Work

The Bidder is required to submit a fully executed Affidavit of Uncompleted Work, which declares, among other things, the value and estimated completion date of all uncompleted contracts to be completed with Bidder's own forces and to be subcontracted to others. Such affidavit shall be attached to the bid on the form provided.

L. Bidder's Financial Statement

Each Bidder shall have on file in the office of the Commission at the time of bid opening a financial statement dated not earlier than the end of said Bidder's last fiscal year period. This will be kept on file by the Commission as a representative statement for a period of one year only. If a Bidder does not have such statement on file, it must submit a copy with its bid. Failure to have a current financial statement on file at the Commission at time of bid opening may be cause for the rejection of the Contractor's Bid.

M. Disclosure Affidavit

Each Bidder shall have on file in the office of the Commission at the time of bid opening a fully executed Disclosure Affidavit.

N. Statement of Bidder's Qualifications

Each Bidder shall have on file in the office of the Commission at the time of bid opening a fully executed Statement of Bidder's Qualifications or a Qualification Submittal in response to a Request for Qualifications (RFQ). The Commission reserves the right to request additional information regarding the capability of the Bidder to perform the Contract.

O. Disclosure of Retained Parties

The apparent low Bidder and the apparent 2nd low bidder shall submit a fully-executed Disclosure of Retained Parties pursuant to the instructions on the document within five (5) days of receipt of notice to provide such Disclosure.

P. Submission of Bid

1. Two (2) copies of all bid documents with original signatures shall be enclosed in two (2) envelopes each (outer and inner), both of which shall be sealed and clearly labeled with "BID DOCUMENTS," the Contract number, name of Bidder, and date and time of opening.
2. Bids received prior to the advertised hour of opening will be securely kept by the Commission.
3. Written modifications of bids will be considered only if received prior to the time stated for receipt of Proposals. Such modifications must be submitted in a

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No.1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

sealed envelope and marked in the same manner as a bid. IN ADDITION, the envelope must state "BID MODIFICATIONS TO SEALED PROPOSAL" on the lower left-hand corner of the envelope in which the bid modification is enclosed, so that the modification will be recognized to prevent its being opened prior to scheduled public opening of bids. Telephonic or oral modifications will not be considered. Bidders are cautioned that modifications which are not explicit and which are in any sense subject to misinterpretation shall make the bid so modified or amended subject to rejection.

Q. Withdrawal of Bids before Bid Opening

Any Bidder may withdraw its bid by letter, facsimile, e-mail request, or by personally securing, with proper identification, the submitted bid proposal at any time prior to the time fixed for opening of bids. A telephonic request to withdraw a bid will not be considered.

R. Opening of Bids

At the time and place fixed for the opening of bids, the Commission will cause to be opened and publicly read aloud every bid received within the time set for receiving bids irrespective of any irregularities therein. Bidders and other persons properly interested may be present in person or by representative.

S. Evaluation of Bids

1. The Commission reserves the right to check all calculations and to correct all extensions in case of error in order to determine the correct amount of the Total Base Bid and/or the total amount of any other schedule required.
2. Along with reviewing the calculations of each bid, the Commission will evaluate each Bidder's responsiveness to all Bid requirements and responsibility.
3. The Commission may require that the apparent low bidder and any other bidder submit a breakdown of their bids by CSI Division or other appropriate basis. The Commission may also require the apparent low bidder or any other bidder to attend a pre-award meeting to review their bids in detail.

T. Canvassing of Bids

The PBC will canvass the Total Base Bids offered by all Bidders. If one or more of the Total Base Bids offered is less than the Construction Budget, award will be made to the responsible Bidder with the lowest Award Criteria Figure.

If none of the Total Base Bids is less than the Construction Budget, the Commission will deduct the Alternate #1 amount offered by each Bidder from each of the respective "Total Base Bids" and canvass the results. If one or more of the resulting "Total Base Bids minus Alternate #1" amounts is less than the Construction Budget, award will be made to the responsible Bidder with the lowest "Alternate #1 Award Criteria Figure".

U. Basis of Award

Award will be made to the responsive responsible Bidder submitting the lowest Award Criteria Figure as determined in accordance with the "Canvassing of Bids" provisions

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

above (Section T. of this Article III.) and otherwise responsive to all the requirements of the Contract Documents.

V. Alternates-Commission Discretion

Responsive Bidders will indicate the deductive price offered for Alternate #1 as indicated in the Bid Forms.

Acceptance of any Alternates will be in the sole discretion of the Commission. The Scope or Work for the Contract awarded pursuant to the Bid shall include all of the Work included in the Total Base Bid and as described in the Contract Documents less, as determined in the sole judgment of the Commission, the Scope of Work as described in Alternate #1.

The determination of the Commission to accept any Alternate offered shall be made after the bids are canvassed in accordance with the "Canvassing of Bids" provision above and before the Scope of Work to be included in the Contract is established and Contract award is made. The Commission may, after first determining which is the lowest responsive Bid by a responsible Bidder, determine that it is in the best interest of the PBC and the User Agency to increase the Construction Budget rather than accept any or all of the Alternates offered in the low bid.

W. Performance and Payment Bond and Insurance

1. Each Bidder shall furnish proof of its ability to provide the bonds and insurance required by the Contract with its bid. With respect to the payment and performance bonds, a letter from the Bidder's surety affirming the surety's willingness to provide the Bidder's bonds is sufficient. With respect to the insurance, either a letter from the Bidder's insurer, or a certificate showing that the Bidder currently possesses the required coverage, is sufficient.
2. The insurance requirements for this project are as follows: The Contractor must provide and maintain at Contractor's own expense, the minimum insurance coverage and requirements specified below, insuring all operations related to the Contract. The insurance must remain in effect from: the date of the notice to proceed until Substantial Completion of the project, during completion of Punch List, as well as any time Contractor returns to perform additional work regarding warranties or for any other purpose
 - a) Insurance To Be Provided By the Contractor
The insurance requirements are attached as Exhibit 2.
3. Upon approval by the Commission to award, and within five (5) days after being given notice, the successful Bidder must execute and deliver to the Commission the Performance and Payment Bond in the form included in the Contract Documents, and evidence of the required insurance coverage.
4. The Performance and Payment Bond shall be in the form provided herein, in the full amount of the Base Contract Price and shall be security for the faithful performance of the Contract and payment of all persons, firms, or corporations to whom the Contractor may become legally indebted for labor, material, facilities or services of any nature, employed or used by it in performing the Work. The current power of attorney for the persons who sign for any surety company shall be attached to such bond. Such power of attorney shall be sealed and certified with a "first hand signature" by an officer of the surety. A facsimile signature will

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

not be accepted by the Commission. The Commission reserves the right to approve the surety company.

5. The failure of the successful Bidder to supply the required Performance and Payment Bond or evidence of the required insurance coverage within five (5) days of notice, or within such extended period as the Commission may grant based upon reasons determined sufficient by the Commission, shall constitute a default and the Commission may either award the Contract to the next lowest responsible bidder or re-advertise for bids. The difference between the amount of its bid and the amount for which a contract for the work is subsequently executed may be charged against the Bidder, irrespective of whether the amount thus due exceeds the amount of the bid security. If a more favorable bid is received by re-advertising, the defaulting Bidder shall have no claim against the Commission for a refund. Because of the difficulty of ascertaining the damage caused to the Commission, such sum shall be considered liquidated damages and shall not constitute a penalty. The election by the Commission to grant an extension to the period allowed for the bidder to provide an acceptable performance and payment bond and/or evidence of insurance coverage shall not entitle the bidder to an extension of time required to complete the Work.

X. Protests

1. The bidder shall submit any protests or claims regarding this solicitation to the office of the Commission's Executive Director. A pre-bid protest must be filed five (5) days before the bid opening date, a pre-award protest must be filed no later than ten (10) days after the bid opening date, and a post-award protest must be filed no later than ten (10) days after the award of the Contract.
2. All protests or claims must set forth the name and address of the protester, the Contract number, the grounds for the protest or claim, and the course of action that the protesting party desires that the Executive Director take.

Y. Licensing

In addition to all other applicable licenses and certifications, the general contractor is required to submit a copy of its (Class A) General Contractor License issued by the Department of Buildings of the City of Chicago.

Z. Award Of Contract; Rejection Of Bids

1. The Contract will be awarded to the responsive, responsible Bidder submitting the lowest Award Criteria Figure, as defined herein, complying with all conditions set forth in the Contract Documents.
2. **The Bidder agrees that its bid shall be in effect until midnight, Tuesday, March 17, 2009 and that the bid may not be withdrawn until that time.**
3. The Bidder to whom the award is made will be notified as soon as practicable after the Commission approves award of the Contract. This written notification constitutes the Notice of Award and acceptance of the bid submitted.
4. If written notice of the acceptance of this Bid is mailed, faxed, e-mailed or otherwise delivered to the undersigned within the time noted herein, or at any time thereafter before this Bid is withdrawn, the undersigned agrees to enter into a Contract with the Public Building Commission of Chicago with the Bid as accepted. The undersigned agrees to give a Performance and Payment Bond as specified in the Contract Documents, with good and sufficient surety or sureties,

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

and to furnish the required insurance, all within five (5) days after given Notice of Award.

5. Upon award of Contract, the Commission will process the Contract for final execution.
6. The Commission reserves the right to reject any and all bids and to waive any informality in bids received whenever it determines such rejection or waiver is in its interest.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No.1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

IV. PROPOSAL AND EXECUTION DOCUMENTS

A. Contractor's Bid

The Contractor hereby acknowledges receipt of the Contract Documents for Contract No. 1480, including, but not limited to, a) Project Information, Instructions to Bidders, and Execution Documents (Book 1), b) Standard Terms and Conditions (Book 2), and Standard Terms and Conditions Procedures Manual (Book 2A) c), Technical Specifications (Book 3) , d), Plans and Drawings, and e). Addenda Nos. (None unless indicated here)

1, 2, 3

Further, the Contractor, having inspected the Site and become familiar with the conditions affecting the cost of the Work and with the requirements of the Contract, hereby proposes to furnish all labor, necessary tools, materials and other work necessary to perform and complete in a workmanlike manner the TYPE OF WORK for PROJECT located at the Site designated as required by and in strict accordance with the Contract Documents for the Base Contract Price listed on the next page.

The agreement between the parties includes not only this instrument, but also the remaining Contract Documents as described in the Standard Terms and Conditions, and all of which shall be binding on the parties hereto.

Time is of the essence of this Contract. The Contractor agrees that it will commence the performance of the Work on the date set forth in the Notice to Proceed issued by the Commission and that it will complete the Work within the time set forth in Part II "Project Information."

The Base Contract Price listed below, as adjusted from time to time pursuant to the Contract Documents, shall be full compensation to the Contractor for having well and faithfully completed the Work, free and clear of all claims, liens, and charges whatsoever, of any kind or nature, and in full compliance with the Contract.

Payment for the Work will be made in the manner set forth in Book 2 the Standard Terms and Conditions.

The Contractor warrants that it has not employed any person to solicit or secure this Contract upon any agreement for a commission, percentage, brokerage, or contingent fee. Breach of this warranty shall give the Commission the right to terminate the Contract, or, at its discretion, to deduct from the Contract Price or consideration the amount of such commission, percentage, brokerage, or contingent fees. This warranty shall not apply to any commission payable by the Contractor upon contracts or sales secured or made through bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business.

The Contractor, being duly sworn, deposes and says on oath that no disclosures of ownership interests have been withheld; the information provided therein to the best of its knowledge is current; and the undersigned proposes to furnish the insurance and the Performance and Payment Bond required by the Contract Documents.

**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

BID FORM

AMOUNT	
Work	\$ 22,014,000.-
Site Work Allowance	\$100,000.00
Commission's Contingency Fund	\$500,000.00
CCTV	\$200,000.00
DATA SWITCH	\$175,000.00
TOTAL BASE BID	\$ 22,989,000.-

AWARD CRITERIA FIGURE

\$ 21,988,979.-

(See Section V. Proposal Support Document; insert above the Award Criteria figures from line 15, columns).

BASE CONTRACT PRICE: \$ 22,989,000.-

SURETY: Please specify full legal name and address of Surety:

Continental Casualty Company

333 S. Wabash Avenue

Chicago, Illinois 60604

Addendum no. 3, Revised Bid Form, dated February 20, 2009

Mayor Richard M. Daley, Chairman
ADDENDUM NO. 3

8 of 11

Erin Lavin Cabonargi, Executive Director
DATE: 02/20/2009

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

ALTERNATES:

<u>Accepted by</u> <u>the</u> <u>Commission</u>		<u>Alternate Description</u>	<u>Proposed Alternate</u> <u>Price</u>
<u>Yes</u>	<u>No</u>		
<input type="checkbox"/>	<input type="checkbox"/>	Alternate #1 - (DEDUCT), Reduce the square footage of green roof area from 50% to 25% of total roof area.	-\$(_____)

<p>SURETY: Please specify full legal name and address of Surety:</p> <p>Continental Casualty Company</p> <hr/> <p>333 S. Wabash</p> <hr/> <p>Chicago, Illinois 60603</p> <hr/>

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SITE WORK ALLOWANCE

Item No.	Description of Work	Unit(s)	Unit Price
1	Loading, transportation and disposal of stockpiled contaminated soil	Tons	\$35.00
2	Excavation, loading, transportation and disposal of contaminated soil	Tons	\$45.00
3	Loading, transportation and disposal of stockpiled un-suitable soil	Tons	\$35.00
4	Excavation, loading, transportation and disposal of in-place un-suitable soil	Tons	\$45.00
5	Load, place and compact on-site fill material from stockpile	Cubic Yards	\$7.00
6	Excavate, load, place and compact on-site fill material	Cubic Yards	\$11.00
7	Demolition, removal, transportation and disposal of underground concrete footings and remnants.	Cubic Yards	\$30.00
8	UST Removal (Tank < 2000 gal capacity)	Each	\$3,000.00
9	UST Removal (Tank 3,000-5,500 gal capacity)	Each	\$5,000.00
10	UST Removal (Tank 6,000-10,000 gal capacity)	Each	\$8,000.00
11	UST Removal (Tank > 10,000-15,000 gal capacity)	Each	\$9,000.00
12	UST Removal (Tank > 15,000 gal capacity)	Each	\$12,000.00
13	UST tank sludge removal and disposal (55-gallon drum)	Drums	\$300.00
14	Bulk UST pump out (Liquids), including transportation	Gallons	\$0.60
15	Waste characterization sample analysis for disposal authorization for soils removed under Allowance Schedule	Sample	\$1,500.00
16	Water analysis for full MWRDGC contaminants List	Each	\$750.00
17	Obtain MWRDGC discharge permit for Bulk disposal of contaminated liquid	Each	\$1,200.00
18	Contaminated water-hauling and disposal of drums	Drums	\$200.00
19	Pumping, transportation and disposal of contaminated water - bulk disposal	Gallons	\$0.60
20	Pumping, storage and disposal of contaminated water - bulk disposal by MWRDGC Permit	Gallons	\$0.10
21	Furnish, place and compact base material CA-1 Stone	Ton	\$16.00
22	Load on-site base materials, place and compact CA-1 Stone	Cubic Yards	\$8.00
23	Furnish, place and compact aggregate material CA-6	Ton	\$16.00
24	Excavate, place and compact on-site aggregate material CA-6	Cubic Yards	\$12.00
25	Furnish, place and compact drainage material CA-7	Tons	\$16.00

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

26	Excavate, place and compact on-site drainage material CA-7	Cubic Yards	\$12.00
27	Furnish and place geotextile filter fabric	Square Yard	\$7.00
28	Site Survey - Survey crew for verification of excavation and backfill quantities	Each	\$1,500.00
29	Street restoration per CDOT - 1-1/2 inch Asphalt Binder Coarse and 1-1/2 inch Asphalt Surface Coarse. Less than 100 Square Yards	Square Yard	\$165.00
30	Street restoration per CDOT - 9-inch PCC Base Course, 1-1/2 inch Asphalt Binder Coarse and 1-1/2 inch Asphalt Surface Coarse. Less than 100 Square Yards.	Square Yard	\$220.00

Total Allowance Fund = \$100,000.00

NOTES:

1. All Work associated with the above allowance schedule shall be approved in writing by the Commission Representative prior to proceeding.
2. Authorized additional excavation and replacement material will be paid for in accordance with the above allowance schedule.
3. Authorized additional excavation means excavation below subgrade elevations as shown in the Plans and Specifications due to the presence of unsuitable soil materials as determined by the Commission Representative.
4. The unit prices in this allowance schedule include all overhead and profit.
5. All unused portions of the allowance funds must be returned to the Commission in the form of a deductive change order prior to Final Completion and Acceptance of the Work.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

B. Acceptance of the Bid

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in two (2) original counterparts the day and year first above written.

PUBLIC BUILDING COMMISSION OF CHICAGO

Edward Johnson
Secretary

Richard M. Daley
Chairman

CONTRACTING PARTY
(Print or type names underneath all signatures)

F.H. Paschen, S.N. Nielsen & Assoc., LLC
Contractor Name

8725 W. Higgins Rd., Suite 200
Chicago, Illinois 60631
Address

If a Corporation:

By Robert F. Zitek

~~President~~ Robert F. Zitek, Agent
Title of Signatory

ATTEST:
By Carol M. Einfalt

Secretary Carol M. Einfalt
Title

CORPORATE SEAL

If a Partnership:

Partner _____

Address _____

Partner _____

Address _____

Partner _____

Address _____

If a Sole Proprietorship:

Signature _____

NOTARY PUBLIC

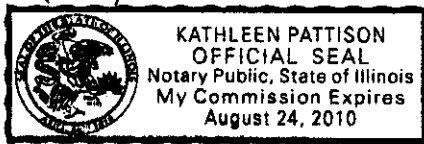
County of Cook State of IL

Subscribed and sworn to before me on this 24th day of February, 2009.

Kathleen Pattison
Notary Public Signature

Commission Expires: August 24, 2010

(SEAL)



**City of Chicago
Department of Buildings
General Contractor's Licenses**

BY THE AUTHORITY OF THE CITY OF CHICAGO, THE FOLLOWING LICENSE IS HEREBY GRANTED TO:

F.H. PASCHEN
S.N. NIELSEN & ASSOCIATES, LLC
O'HARE PLAZA
CHICAGO IL 60631

LICENSE CLASS: (A) ALL PROJECTS - NO RESTRICTIONS



LICENSE NUMBER: TGC04257

CERTIFICATE NUMBER: GC04257-5

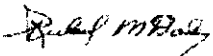
FEE: \$ 2000

DATE ISSUED: 03/27/2008

DATE EXPIRES: 04/16/2009

THIS LICENSE IS NON-TRANSFERABLE

THIS LICENSE IS ISSUED AND ACCEPTED SUBJECT TO THE REPRESENTATIONS MADE ON THE APPLICATION FOR SAID LICENSE. THIS LICENSE MAY BE SUSPENDED OR REVOKED FOR CAUSE AS PROVIDED BY LAW. THE ABOVE LICENSEE SHALL OBSERVE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE UNITED STATES, STATE OF ILLINOIS, COUNTY OF COOK AND CITY OF CHICAGO AND ALL AGENCIES THEREOF.



Richard M. Daley
Mayor



R. L. Rodriguez
Commissioner

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No 1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

C. Corporate Resolution (If a Corporation)

I, the undersigned, DO HEREBY CERTIFY that the following is a complete, true and correct copy of certain preambles and resolutions of the board of directors of

FHP Management Inc., Manager of F.H. Paschen, S.N. Nielsen & Assoc., LLC

a corporation duly organized and existing under the laws of the State of

Illinois

and authorized to do business in the State of Illinois, which resolutions were duly adopted at a duly called meeting of said board held on

June 11

20 08

, a quorum being present, and are set forth in the minutes of said meeting; that I am the keeper of the corporate seal and of the minutes and records of said corporation; and that the said resolutions have not been rescinded or modified:

WHEREAS, this corporation submitted a bid, dated February 24, 20 09 to the Public Building Commission of Chicago, for Contract No. 1480 of said Commission;

NOW, THEREFORE, BE IT RESOLVED: That the president or vice president and the secretary or assistant secretary of this corporation be, and they are hereby, authorized and directed to execute contracts for and on behalf of and under the name and seal of this corporation; and

BE IT FURTHER RESOLVED: That the aforesaid officers of this corporation be, and they are hereby, authorized and directed to execute and deliver to the Commission, for and on behalf of this corporation, such other and all documents as may be necessary or pertinent to a contract, and to do and perform any and all other acts relative thereto.

I FURTHER CERTIFY that the following-named persons are the officers of this corporation duly qualified and now acting as such:

President:

See Attached Directive

Vice President:

Secretary:

Treasurer:

Assistant Secretary:

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed the seal of said corporation, this 24th day of February, 20 09.

Carol M. Zinfalt
Secretary - Carol M. Zinfalt

CERTIFICATE

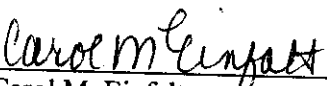
I do hereby certify that the following is a true, complete and correct copy of a Directive issued by FHP Management, Inc. on June 11, 2008, the Manager of F.H. Paschen, S.N. Nielsen & Associates, LLC.

"RESOLVED, that the following are hereby authorized to execute and deliver for and on behalf of F. H. Paschen, S.N. Nielsen & Associates, LLC contracts of all kinds, including but not limited to, construction proposals, construction contracts, change orders, bid bonds, payment and performance bonds, and any and all documents, instruments and papers which in their discretion may be necessary, expedient, or proper for execution of the construction of the various projects bid by F. H. Paschen, S.N. Nielsen & Associates, LLC.

Frank H. Paschen	Agent
James V. Blair	Agent
Carol M. Einfalt	Agent
Joseph V. Scarpelli	Agent
W. Mark Barkowski	Agent
Robert F. Zitek	Agent
Leo Wright	Agent
Timothy B. Stone	Agent

I do hereby further certify that said directive has not been amended or repealed and is in full force and effect.

IN WITNESS WHEREOF I have hereunto set my hand as Secretary of FHP Management, Inc., Manager of F. H. Paschen, S.N. Nielsen & Associates, LLC., this 11th day of February, 2009.



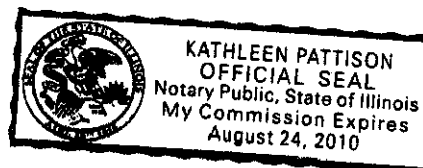
Carol M. Einfalt
Secretary

State of Illinois
County of Cook

Subscribed and sworn to before me this 11th day of February, 2009.



Notary Public



**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

V. PROPOSAL SUPPORT DOCUMENTS

A. Basis of Award (Award Criteria)

To promote the intended goal of economic opportunity and maximize the use of minority personnel on this project, the Public Building Commission of Chicago has established the Award Criteria formula for the purpose of evaluating proposals and awarding the contract. A contract in the amount of the total Base Bid or Base Contract Price will be awarded to the responsible bidder with the lowest Award Criteria Figure. The Public Building Commission of Chicago reserves the right to check all calculations for accuracy. The fulfillment of the Award Criteria does not abrogate the responsibilities of the Contractor to comply with federal and state requirements under the *Equal Employment Act* and the *Illinois Human Rights Act*.

1. Instructions

The Bidder shall complete the Award Criteria Formula and transfer the final Award Criteria Figure - Line 15 to the space provided on the itemized proposal sheet. Failure to complete the formula may be cause for rejection of the Bidder's proposal. The successful bidder will be held responsible for adhering to the figures submitted in Lines 1, 2, 4, 6, 8, 10 and 12 during construction of the project.

Lines 2, 4 and 6 in the formula shall not be greater than fifty percent (50%) in each category for the sole purpose of determining award of the contract. Similarly, lines 8, 10 and 12 shall not be greater than ten (10%) percent in each category for the purpose of award criteria only. The fifty percent (50%) and ten percent (10%) goals are not intended to restrict the total number of minority and female employees to be used on the project, but only to establish limiting figures for use in the formula. Journeyworker includes journeyworkers from the major trades listed herein, and the teamsters. Watchmen and custodial workers are not creditable in the formula.

2. Award Criteria Formula

		Total Base Bid
Line 1.	Base Bid, in figures	\$ 22,989,000 -
Line 2.	Percentage of the Journeyworkers hours that the Contractor proposes to be worked by minority Journeyworkers during construction of the project. (Maximum figure 0.50)	.50 %
Line 3.	Multiply Line 2 by Line 1 by 0.04	\$ 459,780 -
Line 4.	Percentage of total Apprentice hours that the Contractor proposes to be worked by minority Apprentices during construction of the project. (Maximum figure 0.50)	.50 %
Line 5.	Multiply Line 4 by Line 1 by 0.03	\$ 344,835 -
Line 6.	Percentage of the total Laborer hours that the Contractor proposes to be worked by minority Laborers during construction of the project. (Maximum figure 0.50)	.50 %
Line 7.	Multiply Line 6 by Line 1 by 0.01	\$ 114,945
Line 8.	Percentage of total Journeyworker hours that the	0.00 %

**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

	Contractor proposes to be worked by female Journeyworkers during the construction of the project. (Maximum figure 0.10)	
Line 9.	Multiply Line 8 by Line 1 by 0.04	\$ 0
Line 10.	Percentage of total Apprentice hours that the Contractor proposes to be worked by female Apprentices during construction of the project. (Maximum figure 0.10)	.10 %
Line 11.	Multiply Line 10 by Line 1 by 0.03	\$ 68,967 -
Line 12.	Percentage of the total Laborer hours that the Contractor proposes to be worked by female Laborers during construction of the project. (Maximum figure 0.10)	0.05%
Line 13.	Multiply Line 12 by Line 1 by 0.01	\$ 11,495 -
Line 14.	Summation of Lines 3, 5, 7, 9, 11, and 13	\$ 1,000,022 -
Line 15.	Subtract Line 14 from Line 1 (= "Award Criteria Figure")	\$ 2,988,979 -

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

V. PROPOSAL SUPPORT DOCUMENTS

A. Basis of Award (Award Criteria)

To promote the intended goal of economic opportunity and maximize the use of minority personnel on this project, the Public Building Commission of Chicago has established the Award Criteria formula for the purpose of evaluating proposals and awarding the contract. A contract in the amount of the total Base Bid or Base Contract Price will be awarded to the responsible bidder with the lowest Award Criteria Figure. The Public Building Commission of Chicago reserves the right to check all calculations for accuracy. The fulfillment of the Award Criteria does not abrogate the responsibilities of the Contractor to comply with federal and state requirements under the *Equal Employment Act* and the *Illinois Human Rights Act*.

1. Instructions

The Bidder shall complete the Award Criteria Formula and transfer the final Award Criteria Figure - Line 15 to the space provided on the itemized proposal sheet. Failure to complete the formula may be cause for rejection of the Bidder's proposal. The successful bidder will be held responsible for adhering to the figures submitted in Lines 1, 2, 4, 6, 8, 10 and 12 during construction of the project.

Lines 2, 4 and 6 in the formula shall not be greater than fifty percent (50%) in each category for the sole purpose of determining award of the contract. Similarly, lines 8, 10 and 12 shall not be greater than ten (10%) percent in each category for the purpose of award criteria only. The fifty percent (50%) and ten percent (10%) goals are not intended to restrict the total number of minority and female employees to be used on the project, but only to establish limiting figures for use in the formula. Journeyworker includes journeyworkers from the major trades listed herein, and the teamsters. Watchmen and custodial workers are not creditable in the formula.

2. Award Criteria Formula

	("A") Total Base Bid	("B") Total Base Bid Minus Alternate #1
Line 1. Base Bid, in figures	\$ _____	\$ _____
Line 2. Percentage of the Journeyworkers hours that the Contractor proposes to be worked by minority Journeyworkers during construction of the project. (Maximum figure 0.50)	_____ %	_____ %
Line 3. Multiply Line 2 by Line 1 by 0.04	\$ _____	\$ _____
Line 4. Percentage of total Apprentice hours that the Contractor proposes to be worked by minority Apprentices during construction of the project. (Maximum figure 0.50)	_____ %	_____ %
Line 5. Multiply Line 4 by Line 1 by 0.03	\$ _____	\$ _____
Line 6. Percentage of the total Laborer hours that the Contractor proposes to be worked by minority Laborers during construction of the project. (Maximum figure 0.50)	_____ %	_____ %
Line 7. Multiply Line 6 by Line 1 by 0.01	\$ _____	\$ _____

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

Line 8.	Percentage of total Journeyworker hours that the Contractor proposes to be worked by female Journeyworkers during the construction of the project. (Maximum figure 0.10)	_____ %	_____ %
Line 9.	Multiply Line 8 by Line 1 by 0.04	\$ _____	\$ _____
Line 10.	Percentage of total Apprentice hours that the Contractor proposes to be worked by female Apprentices during construction of the project. (Maximum figure 0.10)	_____ %	_____ %
Line 11.	Multiply Line 10 by Line 1 by 0.03	\$ _____	\$ _____
Line 12.	Percentage of the total Laborer hours that the Contractor proposes to be worked by female Laborers during construction of the project. (Maximum figure 0.10)	_____ %	_____ %
Line 13.	Multiply Line 12 by Line 1 by 0.01	\$ _____	\$ _____
Line 14.	Summation of Lines 3, 5, 7, 9, 11, and 13	\$ _____	\$ _____
Line 15.	Subtract Line 14 from Line 1 (= "Award Criteria Figure")	\$ _____ "A"	\$ _____ "B"

Award Criteria Figures (Insert Line 15, columns ("A" and "B") of Award Criteria Formula on Bid Form pg.15).

3. Community Hiring Bonuses

In order to encourage maximum employment of interested and available residents of the project community on this project, the following bonus calculations shall apply:

- a. In calculating the hours worked by minority and women journeyworkers, apprentices, and laborers under the Award Criteria set out in Part V.A. "Basis of Award (Award Criteria)," all hours worked by minority and women journeyworkers, existing apprentices, and laborers who are residents of the project community shall be multiplied by 1.5.
- b. In calculating the hours worked by minority and women apprentices under the Award Criteria set out in Part V "Proposal Support Documents," all hours worked in new apprenticeships by minority and women apprentices who are residents of the project community shall be multiplied by 2.0.

Definitions

"Actual residents of the City of Chicago" shall mean persons domiciled within the City of Chicago. The domicile is an individual's one and only true, fixed, and permanent home and principal establishment.

"Residents of the project community" shall mean persons domiciled within the project area as stated in Section II.A.G., above..

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

"New Apprenticeship" shall mean an apprenticeship begun for a person who has not held an apprenticeship card within ninety (90) days prior to beginning the project.

4. Liquidated Damages

The Contractor hereby consents and agrees that, in the event that it fails to comply with each of the minimum commitments submitted with this Proposal on Lines 2, 4, 6, 8, 10, and 12 of the Award Criteria Formula, covering minority and female Journeyworkers, apprentices, and laborers respectively, the following shall apply.

If the total hours in any category for which a percentage is assigned in Lines 2, 4, 6, 8, 10, or 12 of the Award Criteria equals zero at the completion of the work, then a net deficiency of the entire percentage assigned will be deemed to exist. For any net deficiency in each category, the following amounts shall be deducted as liquidated damages from monies due the Contractor and the Contract Sum modified accordingly:

- a. For each full one (1%) percent deficiency of minority Journeyworkers not utilized – four cents per each hundred dollars of the base bid calculated as follows:

$$\frac{\text{Line 1} \times 04}{100}$$

Each one (1%) percent deficiency toward the goal for female Journeyworkers (Line 8) shall be calculated in the same way.

- b. For each full one (1%) percent deficiency of minority apprentices not utilized – three cents per hundred dollars of the base bid calculated as follows:

$$\frac{\text{Line 1} \times 03}{100}$$

Each one (1%) percent deficiency toward the goal for female apprentices (Line 10) shall be calculated in the same way.

- c. For each one (1%) percent deficiency of minority laborers not utilized – one cent per each hundred dollars of the base bid calculated as follows:

$$\frac{\text{Line 1} \times 01}{100}$$

Each one (1%) percent deficiency toward the goal for female laborers (Line 12) shall be calculated in the same way.

- d. Liquidated damages, if any, will be calculated for the first pay requests reflecting fifty percent (50%) completion, seventy-five percent (75%) completion, and ninety percent (90%) completion, respectively, based upon the Contractor's pay request together with all attendant certified payrolls and other required documentation of minority and women employment. The accrued liquidated damages and interest will be added to the retention provided elsewhere in this contract. The amount of liquidated damages due to the Commission under this provision will bear compound interest at the rate of 5% per annum, compounded monthly from the date of the Notice to Proceed to the date of approval of a deductive change order for liquidated damages. Should the total amount of liquidated damages due under all provisions of this contract exceed the amount of the Commission's retainage, compound interest on the amount over and above the retainage will continue

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

to accrue until the entire amount of liquidated damages and compound interest is paid to the Commission.

- e. The Commission is aware that certain subcontract agreements under this contract may require subcontractors to contribute to payment of liquidated damages assessed under this provision. Should enforcement of subcontract liquidated damages provisions result in an aggregate total of subcontractor liquidated damages greater than the liquidated damages assessed hereunder against Contractor, then Contractor must pay the excess pro rata as a bonus to each subcontractor exceeding its subcontract commitments for minority or women employment, or both.

5. Reporting

In accordance with this commitment, the Contractor must submit both the Contractor's Payroll Record Form and the Contractor's Recapitulation of Minority and Female Worker Hours and Percentages Form on a monthly basis. All Subcontractors shall be listed on the Contractor's Recapitulation Form whether active or not. For the purpose of this report, the following group categories will be used:

- a. The classification "White" includes person of Indo-European descent.
- b. The classification "Black" or "African-American" includes persons having origins in any of the black racial groups of Africa.
- c. The classification "Hispanic" includes persons whose origins are from Mexico, Puerto Rico, Cuba, Central or South America, the Caribbean Islands or other Spanish culture or origin, regardless of race.
- d. The classification "Native American" includes persons who are Native Americans by virtue of tribal association.
- e. The classification "Asian-Pacific" includes persons whose origins are from East Asia, Southeast Asia, the Pacific Islands or the Indian sub-continent.
- f. The classification "Other" includes qualified individuals with disabilities who meet legitimate skill, experience, education or other requirements of employment positions held or sought and who perform the essential function with or without reasonable accommodation and other groups or other individuals found by the Public Building Commission of Chicago to be socially and economically disadvantaged and to have suffered actual racial or ethnic discrimination and decreased opportunities to compete in Chicago area markets.

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

6. Major Trades

Asbestos Workers
 Boiler Makers
 Bricklayers
 Carpenters
 Cement Masons
 Electricians
 Elevator Construction
 Glaziers
 Mechanists
 Machinery Movers
 Ornamental Iron Workers
 Lathers

Operating Engineers
 Painters
 Pile Driver Mechanics
 Pipe Fitters/Steam Fitters
 Plasterers
 Plumbers
 Roofers
 Sheet Metal Workers
 Sprinkler Fitters
 Technical Engineers
 Tuck Pointers

For approval of other trades for consideration in the Award Criteria Formula, written approval should be requested from the Commission.

7. Trade Participation - For Information Only

The following information must be supplied by the Contractor for the purposes of evaluating figures supplied in the Award Criteria Formula. It is understood that these figures are estimates only and are not to be considered as limiting in any manner actual participation on the project.

Anticipated levels of minority participation, to be expressed as percentages, must be supplied for each trade, whether attributable to the Contractor's work force or any Subcontractor which will be active on this project.

TRADE PARTICIPATION	PERCENT OF MINORITY
Bricklayers	30%
Carpenters	35%
Cement Masons	25%
Electricians	25%
Glaziers	25%
Ornamental Iron Workers	15%
Lathers	25%
Operating Engineers	25%
Painters	40%
Plasterers	40%
Plumbers	35%
Roofers	35%
Sheet Metal Workers	40%
Sprinkler Fitters	35%

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

VI. ADDITIONAL DOCUMENTS TO BE EXECUTED

Affidavit Of Non-collusion

STATE OF ILLINOIS }
COUNTY OF COOK } SS

Robert F. Zitek, Agent, being first duly sworn, deposes and says that:

(1) He/She is Agent (Owner, Partner, Officer, Representative or Agent) of F.H. Paschen, S.N. Nielsen & Assoc., LLC the Bidder that has submitted the attached Bid;

(2) That Bidder is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive or sham bid;

(4) Neither Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, connived, conspired, or agreed, directly or indirectly, with any other Bidder, firm, or person to submit a collusive or sham bid in connection with the Contract for which the attached bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm, or person to fix the price or prices in the attached bid or in that of any other Bidder, or to fix any overhead, profit, or cost element of the bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Public Building Commission of Chicago or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(6) The Bidder is not barred from bidding as a result of having violated Illinois Criminal Code, 720 ILCS 5/33E-3 (Bid-rigging), 720 ILCS 5/33E-4 (Bid rotating) or the Prevailing Wage Act, 30 ILCS 570/0.01 through 570/7.

(Signed) Robert F. Zitek

Robert F. Zitek, Agent (Title)

Subscribed and sworn to before me this 24th day of February 20 09

Kathleen Pattison

Notary Public (Title) My Commission expires: 8-24-10



PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

SCHEDULE B - Joint Venture Affidavit (1 of 3)

N/A

This form need not be filled in if all joint venturers are MBE/WBE firms. In such case, however, a written joint venture agreement among the MBE/WBE firms should be submitted. Each MBE/WBE joint venturer must also attach a copy of their current certification letter.

1. Name of joint venture _____
2. Address of joint venture _____

3. Phone number of joint venture _____
4. Identify the firms that comprise the joint venture

- A. Describe the role(s) of the MBE/WBE firm(s) in the joint venture. (Note that a "clearly defined portion of work" must here be shown as under the responsibility of the MBE/WBE firm.)

- B. Describe very briefly the experience and business qualifications of each non-MBE/WBE joint venturer.

5. Nature of joint venture's business

6. Provide a copy of the joint venture agreement.
7. Ownership: What percentage of the joint venture is claimed to be owned by MBE/WBE?
_____ %
8. Specify as to:
 - A. Profit and loss sharing _____ %
 - B. Capital contributions, including equipment _____ %
 - C. Other applicable ownership interests, including ownership options or other agreements which restrict ownership or control.

 - D. Describe any loan agreements between joint venturers, and identify the terms thereof.

SCHEDULE B - Joint Venture Affidavit (2 of 3)

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

9. Control of and participation in this Contract: Identify by name, race, sex, and "firm" those individuals (and their titles) who are responsible for day-to-day management and policy decision making, including, but not limited to, those with prime responsibility for:

A. Financial decisions

B. Management decisions such as:

1) Estimating

2) Marketing and Sales

3) Hiring and firing of management personnel

4) Other

C. Purchasing of major items or supplies

D. Supervision of field operations

E. Supervision of office personnel

F. Describe the financial controls of the joint venture, e.g., will a separate cost center be established; which venturer will be responsible for keeping the books; how will the expense therefor be reimbursed; the authority of each joint venturer to commit or obligate the other. Describe the estimated contract cash flow for each joint venturer.

G. State approximate number of operational personnel, their craft and positions, and whether they will be employees of the majority firm or the joint venture.

10. Please state any material facts of additional information pertinent to the control and structure of this joint venture.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As
Subcontractor, Subconsultant, and/or Material Supplier (1 of 2)

Name of Project: Brighton Park I Area Elementary School

Project Number: 1480

FROM:

(Name of MBE or WBE) _____ MBE _____ WBE _____

TO:

F.H. Paschen, S.N. Nielsen & Assoc., LLC and Public Building Commission of Chicago
(Name of General Bidder)

The undersigned intends to perform work in connection with the above-referenced project as (check one):

_____ a Sole Proprietor

_____ a Corporation

_____ a Partnership

_____ a Joint Venture

The MBE/WBE status of the undersigned is confirmed by the attached Letter of Certification, dated _____. In addition, in the case where the undersigned is a Joint Venture with a non-MBE/WBE firm, a Schedule B, Joint Venture Affidavit, is provided.

The undersigned is prepared to provide the following described services or supply the following described goods in connection with the above-named project.

The above-described services or goods are offered for the following price, with terms of payment as stipulated in the Contract Documents.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As

Subcontractor, Subconsultant, and/or Material Supplier (2 of 2)

PARTIAL PAY ITEMS

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount:

If more space is needed to fully describe the MBE/WBE firm's proposed scope of work and/or payment schedule, attach additional sheet(s).

SUB-SUBCONTRACTING LEVELS

 0 % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.

 0 % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above. If more than 10% percent of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the General Bidder, conditioned upon its execution of a contract with the Public Building Commission of Chicago, and will do so within five (5) working days of receipt of a notice of Contract award from the Commission.

By:

Name of MBE/WBE Firm (Print)

Signature

Date

Name (Print)

Phone

IF APPLICABLE:

By:

Joint Venture Partner (Print)

Signature

Date

Name (Print)

Phone

MBE ___ WBE ___ Non-MBE/WBE ___

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As
Subcontractor, Subconsultant, and/or Material Supplier (1 of 2)

Name of Project: Brighton Park I Area Elementary School

Project Number: 1480

FROM:

F&B CONSTRUCTION SERVICES, INC. MBE X WBE _____
 (Name of MBE or WBE)

TO:

F.H. Paschen, S.N. Nielsen and Public Building Commission of Chicago
 (Name of General Bidder)

The undersigned intends to perform work in connection with the above-referenced project as (check one):

- _____ a Sole Proprietor
- _____ a Partnership
- X a Corporation
- _____ a Joint Venture

The MBE/WBE status of the undersigned is confirmed by the attached Letter of Certification, dated 08/20/08. In addition, in the case where the undersigned is a Joint Venture with a non-MBE/WBE firm, a Schedule B, Joint Venture Affidavit, is provided.

The undersigned is prepared to provide the following described services or supply the following described goods in connection with the above-named project.

MASONRY

The above-described services or goods are offered for the following price, with terms of payment as stipulated in the Contract Documents. \$3,400,000.00

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As

Subcontractor, Subconsultant, and/or Material Supplier (2 of 2)

PARTIAL PAY ITEMS

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount:

If more space is needed to fully describe the MBE/WBE firm's proposed scope of work and/or payment schedule, attach additional sheet(s).

SUB-SUBCONTRACTING LEVELS

0 % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.


0 % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above. If more than 10% percent of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the General Bidder, conditioned upon its execution of a contract with the Public Building Commission of Chicago, and will do so within five (5) working days of receipt of a notice of Contract award from the Commission.

By:

F&B CONSTRUCTION SERVICES, INC.
 Name of MBE/WBE Firm (Print)
02/24/2009
 Date
773-224-1819
 Phone


 Signature
PAUL FULLER
 Name (Print)

IF APPLICABLE:
 By:

Joint Venture Partner (Print)
 Date
 Phone

Signature
 Name (Print)
 MBE ___ WBE ___ Non-MBE/WBE ___



City of Chicago
Richard M. Daley, Mayor

Department of
Procurement Services

Montel M. Gayles
Chief Procurement Officer

City Hall, Room 403
121 North LaSalle Street
Chicago, Illinois 60602
(312) 744-4900
(312) 744-2949 (TTY)

<http://www.cityofchicago.org>

August 20, 2008

Lloyd Fuller
F&B Construction Services, Inc.
7953 South King Drive
Chicago, Illinois 60619

Annual Certificate Expires: June 1, 2009
Vendor Number: 1055745

Dear Mr. Fuller:

We are pleased to inform you that **F&B Construction Services, Inc.** has been certified as a **Minority Owned Business Enterprise (MBE)** by the City of Chicago. This **MBE** certification is valid until **June 1, 2012**; however your firm must be re-validated annually. Your firm's next annual validation is required by **June 1, 2009**.

As a condition of continued certification during this five year period, you must file a No-Change Affidavit **within 60 days prior** to the annual expiration. Failure to file this Affidavit will result in the termination of your certification. **Please note that you must include a copy of your most current Federal Corporate Tax Return.** You must also notify the City of Chicago of any changes in ownership or control of your firm or any other matters or facts affecting your firm's eligibility for certification whenever the changes occur.

The City may commence action to remove your firm's eligibility if you fail to notify us of any changes of facts affecting your firm's certification or if your firm otherwise fails to cooperate with the City in any inquiry or investigation. Removal of eligibility procedures may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

Concrete Mixers, Concrete and Masonry Maintenance and Repair, Masonry, General Construction, Architectural Construction and Construction Management

Your firm's participation on City contracts will be credited only toward **MBE** goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward **MBE** goals will be given only for work done in the specialty category.

Thank you for your continued interest in the City's Minority and Women Business Enterprise Programs.

Sincerely,

Mark J. Hands
Managing Deputy Procurement Officer

IL UCP Host: City of Chicago



PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As

Subcontractor, Subconsultant, and/or Material Supplier (2 of 2)

PARTIAL PAY ITEMS

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount:

If more space is needed to fully describe the MBE/WBE firm's proposed scope of work and/or payment schedule, attach additional sheet(s).

SUB-SUBCONTRACTING LEVELS

0 % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.

0 % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above. If more than 10% percent of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the General Bidder, conditioned upon its execution of a contract with the Public Building Commission of Chicago, and will do so within five (5) working days of receipt of a notice of Contract award from the Commission.

By:

C. Szabo Contracting, Inc
Name of MBE/WBE Firm (Print)

2/24/09
Date

630-424-8888
Phone


Signature

Peter S. Szabo Jr
Name (Print)

IF APPLICABLE:

By:

Joint Venture Partner (Print)

Date

Phone

Signature

Name (Print)

MBE ___ WBE ___ Non-MBE/WBE ___



City of Chicago
Richard M. Daley, Mayor

Department of
Procurement Services

City Hall, Room 403
121 North LaSalle Street
Chicago, Illinois 60602
(312) 744-4800
(312) 744-2949 (TTY)
<http://www.cityofchicago.org>

November 30, 2007

Peter Szabo, President
C. Szabo Contracting, Inc.
777 S. Rohlwing Road
Addison, Illinois, 60101

Annual Certificate Expires:
Vendor Number:

April 1, 2009
51191021

Dear Mr. Szabo:

We are pleased to inform you that **C. Szabo Contracting, Inc.** has been certified as a **Minority Owned Business Enterprise (MBE)** by the City of Chicago. This MBE certification is valid until **April 1, 2013**; however your firm must be re-validated annually. Your firm's next annual validation is required by **April 1, 2009**.

As a condition of continued certification during this five year period, you must file a No-Change Affidavit **within 60 days** prior to the annual expiration. Failure to file this Affidavit will result in the termination of your certification. **Please note that you must include a copy of your most current Federal Corporate Tax Return.** You must also notify the City of Chicago of any changes in ownership or control of your firm or any other matters or facts affecting your firm's eligibility for certification whenever the changes occur.

The City may commence action to remove your firm's eligibility if you fail to notify us of any changes or facts affecting your firm's certification or if your firm otherwise fails to cooperate with the City in any inquiry or investigation. Removal of eligibility procedures may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

Underground Utility Installation: Excavation: and Concrete Installation

Your firm's participation on City contracts will be credited only toward MBE goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward MBE goals will be given only for work done in the specialty category.

Thank you for your continued interest in the City's Minority and Women Business Enterprise Programs.

Sincerely,

Douglas W. Yerkes, P.E.
Acting Chief Procurement Officer



PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As
Subcontractor, Subconsultant, and/or Material Supplier (1 of 2)

Name of Project: Brighton Park I Area Elementary School

Project Number: 1480

FROM:
FULLERTON INDUSTRIAL SUPPLY MBE WBE
 (Name of MBE or WBE)

TO:
F.H. Paschen, S.N. Nielsen & Assoc., LLC and Public Building Commission of Chicago
 (Name of General Bidder)

The undersigned intends to perform work in connection with the above-referenced project as (check one):

a Sole Proprietor a Corporation
 a Partnership a Joint Venture

The MBE/WBE status of the undersigned is confirmed by the attached Letter of Certification, dated 6-19-08. In addition, in the case where the undersigned is a Joint Venture with a non-MBE/WBE firm, a Schedule B, Joint Venture Affidavit, is provided.

The undersigned is prepared to provide the following described services or supply the following described goods in connection with the above-named project.
Plumbing & HVAC Supply

The above-described services or goods are offered for the following price, with terms of payment as stipulated in the Contract Documents. \$900,000.00

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As

Subcontractor, Subconsultant, and/or Material Supplier (2 of 2)

PARTIAL PAY ITEMS

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount:

If more space is needed to fully describe the MBE/WBE firm's proposed scope of work and/or payment schedule, attach additional sheet(s).

SUB-SUBCONTRACTING LEVELS

0 % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.

0 % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above. If more than 10% percent of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the General Bidder, conditioned upon its execution of a contract with the Public Building Commission of Chicago, and will do so within five (5) working days of receipt of a notice of Contract award from the Commission.

By:

FULLERTON INDUSTRIAL SUPPLY

Name of MBE/WBE Firm (Print)

2-24-09

Date

773-525-3003

Phone

Signature

LAUREN BELLAGAMBA

Name (Print)

IF APPLICABLE:

By:

Joint Venture Partner (Print)

Date

Phone

Signature

Name (Print)

MBE ___ WBE ___ Non-MBE/WBE ___



City of Chicago
Richard M. Daley, Mayor

Department of
Procurement Services

Montel M. Gayles
Chief Procurement Officer

City Hall, Room 403
121 North LaSalle Street
Chicago, Illinois 60602
(312) 744-4900
(312) 744-2949 (TTY)

<http://www.cityofchicago.org>

June 19, 2008

Lauren Bellagamba, President
Fullerton Industrial Supply, Inc.
1456 West Fullerton
Chicago, Illinois 60614

Annual Certificate Expires:
Vendor Number:

June 1, 2009
308470

Dear Ms. Bellagamba:

We are pleased to inform you that Fullerton Industrial Supply, Inc. has been certified as a **Minority Owned Business Enterprise (MBE)** and **Women Owned Business Enterprise (WBE)** by the City of Chicago. This MBE/WBE certification is valid until **June 1, 2013**; however your firm must be re-validated annually. Your firm's next annual validation is required by **June 1, 2009**.

As a condition of continued certification during this five year period, you must file a No-Change Affidavit **within 60 days** prior to the date of expiration. Failure to file this Affidavit will result in the termination of your certification. **Please note that you must include a copy of your most current Federal Corporate Tax Return.** You must also notify the City of Chicago of any changes in ownership or control of your firm or any other matters or facts affecting your firm's eligibility for certification.

The City may commence action to remove your firm's eligibility if you fail to notify us of any changes of facts affecting your firm's certification or if your firm otherwise fails to cooperate with the City in any inquiry or investigation. Removal of eligibility procedures may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

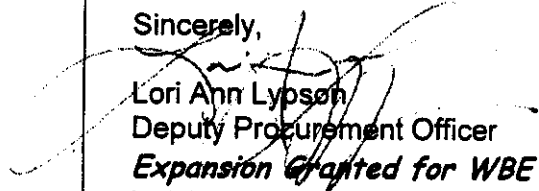
Distributor of Industrial Supplies and Equipment

(Including Janitorial Supplies, Plumbing Supplies, Electrical Supplies, Fasteners, Welding Supplies, Safety Supplies, Abrasives, Hand Tools, Power Tools, Pressing Tools, Utility Locating Equipment, Drain Cleaning & Diagnostic Equipment Measuring Tools, Paint, Wire Rope Clips, Hooks, Shackles, Hardware Supplies, Filters, Poly Bags, Heating Ventilation and Air-Conditioning (HVAC) Supplies

Your firm's participation on City contracts will be credited only toward **MBE/WBE** goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward **MBE/WBE** goals will be given only for work done in the specialty category.

Thank you for your continued interest in the City's Minority and Women Business Enterprise Programs.

Sincerely,


Lori Ann Lyopson
Deputy Procurement Officer
Expansion Granted for WBE
LAL/cc

IL UCP HOST: City of Chicago



PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As
Subcontractor, Subconsultant, and/or Material Supplier (1 of 2)

Name of Project: Brighton Park I Area Elementary School

Project Number: 1480

FROM:
GARTH BUILDING PRODUCTS MBE WBE
 (Name of MBE or WBE)

TO:
F.H. Paschen, S.N. Nielsen & Assoc., LLC and Public Building Commission of Chicago
 (Name of General Bidder)

The undersigned intends to perform work in connection with the above-referenced project as (check one):

_____ a Sole Proprietor a Corporation
 _____ a Partnership _____ a Joint Venture

The MBE/WBE status of the undersigned is confirmed by the attached Letter of Certification, dated April 1, 2009. In addition, in the case where the undersigned is a Joint Venture with a non-MBE/WBE firm, a Schedule B, Joint Venture Affidavit, is provided.

The undersigned is prepared to provide the following described services or supply the following described goods in connection with the above-named project.
Construction Supply

The above-described services or goods are offered for the following price, with terms of payment as stipulated in the Contract Documents.

\$580,000.00

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As
Subcontractor, Subconsultant, and/or Material Supplier (2 of 2)

PARTIAL PAY ITEMS

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount:

If more space is needed to fully describe the MBE/WBE firm's proposed scope of work and/or payment schedule, attach additional sheet(s).

SUB-SUBCONTRACTING LEVELS

0 % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.

0 % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above. If more than 10% percent of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the General Bidder, conditioned upon its execution of a contract with the Public Building Commission of Chicago, and will do so within five (5) working days of receipt of a notice of Contract award from the Commission.

By:

Garth Building Products X Carol Garth
 Name of MBE/WBE Firm (Print) Signature
2-25-09 CAROL GARTH
 Date Name (Print)
708-757-6733

Phone

IF APPLICABLE:

By:

 Joint Venture Partner (Print) Signature

 Date Name (Print)

 Phone MBE ___ WBE ___ Non-MBE/WBE ___



City of Chicago
Richard M. Daley, Mayor

Department of
Procurement Services

Montel M. Gayles
Chief Procurement Officer

City Hall, Room 403
121 North LaSalle Street
Chicago, Illinois 60602
(312) 744-4900
(312) 744-2949 (TTY)
<http://www.cityofchicago.org>

February 2, 2009

Carol Garth, President
Garth Building Products & Services Corporation
2741 East 223rd Street
Chicago Heights, Illinois 60411

Dear Ms. Garth:

The City of Chicago Department of Procurement Services ("Department") has undertaken an evaluation of procurement policies and procedures including those utilized within the M/WBE and DBE certification unit. In light of this evaluation and in anticipation of streamlining our procedures, the Department extends your MBE/WBE certification until **April 1, 2009.**

The Department may request additional information from you prior to the expiration of the courtesy period. This information will assist us in making a determination on the recertification of your company. You will receive additional information from the Department in the coming days.

As you know, your firm's participation on contracts will be credited only toward MBE/WBE in the following specialty area(s):

**Distributor of Construction Materials; Weather Proofing Services;
Roofing Contractor**

If you have any questions, please contact our office at 312-742-0766.

Sincerely,

A handwritten signature in black ink that reads "Mark Hands".

for Mark Hands
Managing Deputy Procurement Officer

MH/cc



PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As

Subcontractor, Subconsultant, and/or Material Supplier (2 of 2)

PARTIAL PAY ITEMS

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount:

If more space is needed to fully describe the MBE/WBE firm's proposed scope of work and/or payment schedule, attach additional sheet(s).

SUB-SUBCONTRACTING LEVELS

0 % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.

0 % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above. If more than 10% percent of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the General Bidder, conditioned upon its execution of a contract with the Public Building Commission of Chicago, and will do so within five (5) working days of receipt of a notice of Contract award from the Commission.

By:

Evergreen Supply Co.


Name of MBE/WBE Firm (Print)

2/24/09

Date

773-375-4750

Phone



Signature

Colleen Kramer

Name (Print)

IF APPLICABLE:

By:

Joint Venture Partner (Print)

Date

Phone

Signature

Name (Print)

MBE ___ WBE ___ Non-MBE/WBE ___



City of Chicago
Richard M. Daley, Mayor

Department of
Procurement Services

Montel M. Gayles
Chief Procurement Officer

City Hall, Room 403
121 North LaSalle Street
Chicago, Illinois 60602
(312) 744-4900
(312) 744-2949 (TTY)
<http://www.cityofchicago.org>

February 19, 2009

Colleen Kramer
Evergreen Supply Company
9901 S. Torrence Avenue
Chicago, IL 60617

Annual Certificate Expires: October 1, 2009
Vendor Number: 1008119

Dear Ms. Kramer:

Congratulations on your continued eligibility for certification as a **WBE** by the City of Chicago. This **WBE** certification is valid until **October 2012**; however your firm must be re-validated annually. Your firm's next annual validation is required by **October 1, 2009**.

As a condition of continued certification during this five year period, you must file a No-Change Affidavit within **60 days** prior to the date of expiration. Failure to file this Affidavit will result in the termination of your certification. **Please note that you must include a copy of your most current Federal Corporate Tax Return.** You must also notify the City of Chicago of any changes in ownership or control of your firm or any other matters or facts affecting your firm's eligibility for certification.

The City may commence action to remove your firm's eligibility if you fail to notify us of any changes of facts affecting your firm's certification or if your firm otherwise fails to cooperate with the City in any inquiry or investigation. Removal of eligibility procedures may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

Distributor of Electrical Material

Your firm's participation on City contracts will be credited only toward **WBE** goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward **WBE** goals will be given only for work done in the specialty category.

Thank you for your continued interest in the City's Minority and Women Business Enterprise Programs.

Sincerely,

Mark Hands
Managing Deputy Procurement Officer

MH/bc

IL UCP HOST: IDOT



PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As
Subcontractor, Subconsultant, and/or Material Supplier (1 of 2)

Name of Project: BRIGHTON PARK AREA ELEMENTARY SCHOOL

Project Number: _____

FROM:

E.E. BAILEY BUILDING MATERIAL & SUPPLIES, INC. MBE _____ WBE
 (Name of MBE or WBE)

TO:

F.H. PASCHEN and Public Building Commission of Chicago
 (Name of General Bidder)

The undersigned intends to perform work in connection with the above-referenced project as (check one):

a Sole Proprietor a Corporation
 a Partnership a Joint Venture

The MBE/WBE status of the undersigned is confirmed by the attached Letter of Certification, dated MARCH, 8, 2008. In addition, in the case where the undersigned is a Joint Venture with a non-MBE/WBE firm, a Schedule B, Joint Venture Affidavit, is provided.

The undersigned is prepared to provide the following described services or supply the following described goods in connection with the above-named project.

SUPPLY MATERIAL

The above-described services or goods are offered for the following price, with terms of payment as stipulated in the Contract Documents.

\$100,000.00

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As

Subcontractor, Subconsultant, and/or Material Supplier (2 of 2)

PARTIAL PAY ITEMS

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount:

N/A

If more space is needed to fully describe the MBE/WBE firm's proposed scope of work and/or payment schedule, attach additional sheet(s).

SUB-SUBCONTRACTING LEVELS

0 % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.

0 % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above. If more than 10% percent of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the General Bidder, conditioned upon its execution of a contract with the Public Building Commission of Chicago, and will do so within five (5) working days of receipt of a notice of Contract award from the Commission.

By:

E.E. RAILY BUILDING MATERIAL & SUPPLIES, INC. INC.

Name of MBE/WBE Firm (Print)

FEBRUARY 24, 2009

Date

773-264-9625

Phone


Signature

EDNA E. RAILY

Name (Print)

IF APPLICABLE:

By:

Joint Venture Partner (Print)

Signature

Date

Name (Print)

Phone

MBE ___ WBE ___ Non-MBE/WBE ___



City of Chicago
Richard M. Daley, Mayor

Department of
Procurement Services

Montal M. Gayles
Chief Procurement Officer

City Hall, Room 403
121 North LaSalle Street
Chicago, Illinois 60602
(312) 744-4900
(312) 744-2949 (TTY)

<http://www.cityofchicago.org>

March 8, 2008

Edna E. Bailey, President
E. E. Bailey Building Material & Supplies, Inc.
741 West 115th Street
Chicago, Illinois 60628

Annual Certificate Expires:

July 1, 2009

Vendor Number:

1030552

Dear Mrs. Bailey:

We are pleased to inform you that E. E. Bailey Building Material & Supplies, Inc. has been certified as a Minority Owned Business Enterprise (MBE) and Women Owned Business Enterprise (WBE) by the City of Chicago. This MBE/WBE certification is valid until July 1, 2013; however your firm must be re-validate annually. Your firm's next annual validation is required by July 1, 2009.

As a condition of continued certification during this five year period, you must file a Net Change Affidavit within 60 days prior to the date of expiration. Failure to file the Affidavit will result in the termination of your certification. Please note that you must include a copy of your most current Federal Corporate Tax Return. You must also notify the City of Chicago of any changes in ownership or control of your firm, any other matters or facts affecting your firm's eligibility for certification.

The City may commence action to remove your firm's eligibility if you fail to notify us of any changes of facts affecting your firm's certification or if your firm otherwise fails to cooperate with the City in any inquiry or investigation. Removal of eligibility procedures may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

Supplier of Cement Mix, Ready Mix, Mortar, Crushed Stones, Bricks, Paint, Environmental Materials, Plumbing Equipment, General Hardware

Your firm's participation on City contracts will be credited only toward MBE/WBE goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward MBE/WBE goals will be given only for work done in the specialty category.

Thank you for your continued interest in the City's Minority and Women Business Enterprise Programs.

Sincerely,

Lori Ann Lyson
Deputy Procurement Officer

LAL/ds



IL UCP Host: METRA



PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As
Subcontractor, Subconsultant, and/or Material Supplier (1 of 2)

Name of Project: Brighton Park I Area Elementary School

Project Number: 1480

FROM:

ROMERO STEEL CO., INC MBE WBE
 (Name of MBE or WBE)

TO:

F.H. Paschen, S.N. Nielsen and Public Building Commission of Chicago
 (Name of General Bidder)

The undersigned intends to perform work in connection with the above-referenced project as (check one):

a Sole Proprietor a Corporation
 a Partnership a Joint Venture

The MBE/WBE status of the undersigned is confirmed by the attached Letter of Certification, dated 4-1-08. In addition, in the case where the undersigned is a Joint Venture with a non-MBE/WBE firm, a Schedule B, Joint Venture Affidavit, is provided.

The undersigned is prepared to provide the following described services or supply the following described goods in connection with the above-named project.

Misc. Metal

The above-described services or goods are offered for the following price, with terms of payment as stipulated in the Contract Documents.

\$275,000.00

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE C - Letter of Intent from MBE/WBE
To Perform As

Subcontractor, Subconsultant, and/or Material Supplier (2 of 2)

PARTIAL PAY ITEMS

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount:

If more space is needed to fully describe the MBE/WBE firm's proposed scope of work and/or payment schedule, attach additional sheet(s).

SUB-SUBCONTRACTING LEVELS

_____ % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.

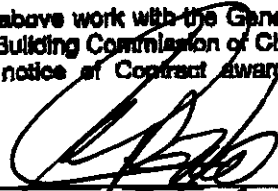
_____ % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above. If more than 10% percent of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the General Bidder, conditioned upon its execution of a contract with the Public Building Commission of Chicago, and will do so within five (5) working days of receipt of a notice of Contract award from the Commission.

By:

ROMERO STEEL CO., INC.
 Name of MBE/WBE Firm (Print)
2-24-09
 Date
(708) 216-0001
 Phone


 Signature
JOSE G. ROMERO
 Name (Print)

IF APPLICABLE:

By:

 Joint Venture Partner (Print)

 Date

 Phone

 Signature

 Name (Print)
 MBE ___ WBE ___ Non-MBE/WBE ___



City of Chicago
Richard M. Daley, Mayor

Department of
Procurement Services

Montel M. Gayles
Chief Procurement Officer

City Hall, Room 403
121 North LaSalle Street
Chicago, Illinois 60602
(312) 744-4900
(312) 744-2949 (TTY)

<http://www.cityofchicago.org>

April 1, 2008

Jose G. Romero, President
Romero Steel Company, Inc.
1300 West Main Street
Melrose Park, Illinois 60160

Annual Certificate Expires:
Vendor Number:

June 1, 2009
1051172

Dear Mr. Romero:

We are pleased to inform you that **Romero Steel Company, Inc.** has been certified as a **Minority Owned Business Enterprise (MBE)** by the City of Chicago. This MBE certification is valid until **June 1, 2013**; however your firm must be re-validated annually. Your firm's next annual validation is required by June 1, 2009.

As a condition of continued certification during this five year period, you must file a No-Change Affidavit **within 60 days** prior to the annual expiration. Failure to file this Affidavit will result in the termination of your certification. **Please note that you must include a copy of your most current Federal Corporate Tax Return.** You must also notify the City of Chicago of any changes in ownership or control of your firm or any other matters or facts affecting your firm's eligibility for certification whenever the changes occur.

The City may commence action to remove your firm's eligibility if you fail to notify us of any changes of facts affecting your firm's certification or if your firm otherwise fails to cooperate with the City in any inquiry or investigation. Removal of eligibility procedures may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

**Structural Steel; Miscellaneous Iron Fabrication; Welding;
Ornamental Iron Work**

Your firm's participation on City contracts will be credited only toward MBE goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward MBE goals will be given only for work done in the specialty category.

Thank you for your continued interest in the City's Minority and Women Business Enterprise Programs.

Sincerely,


Lori Ann Lypson
Deputy Procurement Officer

LAL/emc

ROMERO STEEL CO., INC.

APR 07 2008

IL UCP HOST: PACE

RECEIVED



PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE D - Affidavit of General Contractor Regarding MBE/WBE Participation
(1 of 2)

Name of Project: Brighton Park I Area Elementary School

STATE OF ILLINOIS }
 } SS
 COUNTY OF COOK }

In connection with the above-captioned contract, I HEREBY DECLARE AND AFFIRM that I am the

Agent, Robert F. Zitek
 Title and duly authorized representative of

F.H. Paschen, S.N. Nielsen & Assoc., LLC
 Name of General Contractor whose address is
8725 W. Higgins Rd., Suite 200

in the City of Chicago, State of Illinois
 and that I have personally reviewed the material and facts submitted with the attached Schedules of MBE/WBE participation in the above-referenced Contract, including Schedule C and Schedule B (if applicable), and the following is a statement of the extent to which MBE/WBE firms will participate in this Contract if awarded to this firm as the Contractor for the Project.

Name of MBE/WBE Contractor	Type of Work to be Done in Accordance with Schedule C	Dollar Credit Toward MBE/WBE Goals	
		MBE	WBE
F&B Construction Services	Masonry	\$ 3,400,000	\$
C. Szabo Contracting	Excavation & Sewer	\$ 375,000	\$
Fullerton Indust. Supply	Plumbing & HVAC Supply	\$ 900,000	\$
Garth Building Products	Construction Supply	\$ 580,000	\$
Evergreen Supply	Electrical Supply	\$	\$ 825,000
E.E. Bailey Building Material	Construction Supply	\$	\$ 100,000
Romero Steel	Misc. Metal	\$ 275,000	\$
Total Net MBE/WBE Credit		\$ 5,530,000	\$ 925,000
Percent of Total Base Bid		24 %	4 %

The General Contractor may count toward its MBE/WBE goal a portion of the total dollar value of a contract with a joint venture equal to the percentage of the ownership and control of the MBE/WBE partner.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE D - Affidavit of General Contractor Regarding MBE/WBE Participation
(2 of 2)

SUB-SUBCONTRACTING LEVELS

 0 % of the dollar value of the MBE/WBE subcontract will be sublet to non-MBE/WBE contractors.

 0 % of the dollar value of the MBE/WBE subcontract will be sublet to MBE/WBE contractors.

If MBE/WBE subcontractor will not be sub-subcontracting any of the work described in this Schedule, a zero (0) must be filled in each blank above.

If more than 10% of the value of the MBE/WBE subcontractor's scope of work will be sublet, a brief explanation and description of the work to be sublet must be provided.

The undersigned will enter into a formal agreement for the above work with the above-referenced MBE/WBE firms, conditioned upon performance as Contractor of a Contract with the Commission, and will do so within five (5) business days of receipt of a notice of Contract award from the Commission.

By:

F.H. Paschen, S.N. Nielsen & Assoc., LLC

Name of Contractor (Print)

February 26, 2009

Date

773-444-3474

Phone



Signature

Robert F. Zitek, Agent

Name (Print)

IF APPLICABLE:

By:

Joint Venture Partner (Print)

Date

Phone/FAX

Signature

Name (Print)

MBE WBE Non-MBE/WBE

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
SCHEDULE E - Request for Waiver from MBE/WBE Participation

N/A

Date: _____

Erin Lavin Cabonargi, Executive Director
Public Building Commission of Chicago
Richard J. Daley Center
50 W. Washington Street, Room 200
Chicago, IL 60602

Dear Mrs. Cabonargi:

RE: Contract No. _____

Project Title: _____

In accordance with Section 23.01.7, the undersigned hereby requests a waiver/partial waiver from the MBE/WBE provisions. The undersigned certifies that it/we has/have been diligent in our attempt to identify potential subcontractors certified as MBE/WBE to perform work in this project, that such efforts have not been successful, and that it/we cannot meet the Minority/Women Business Enterprise contract goal. These efforts are described below and are consistent with the "Request for Waiver" provisions of the MBE/WBE Program as detailed in Section 23.01.7 as follows:

Documentation attached: yes _____ no _____

Based on the information provided above, we request consideration of this waiver request.

Sincerely,

Signature

Print Name

Title

Name of Firm

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

Affidavit Of Uncompleted Work

See Attached Affidavit

A. Work Under Contract

List below all work Bidder has under contract as either a general contractor or a subcontractor, including all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work that is the responsibility of the Bidder. The uncompleted dollar value is to be based upon the most recent estimate of the owner or engineer, and must include work subcontracted to others. If no work is contracted, indicate NONE.

	1	2	3	4	Awards Pending	TOTALS
Project						
Contract With						
Estimated Completion Date						
Total Contract Price						
Uncompleted Dollar Value if Firm is the GC						
Uncompleted Dollar Value if Firm is a Subcontractor						
TOTAL VALUE OF ALL WORK						

B. Uncompleted Work to be Completed with the Bidder's own Forces

List below the uncompleted dollar value of work for each contract to be completed with the Bidder's own forces, including all work indicated as awards pending. All work subcontracted to others will be listed on C. of this form. In a joint venture, list only that portion of the work to be done by the Bidder. If no work is contracted, indicate NONE.

	1	2	3	4	Awards Pending	TOTALS
Earthwork						
Demolition						
Sewer and Drain						
Foundation						
Painting						
Struct. Steel (Bldg Const.)						
Ornamental Steel (Bldg Construction)						
Miscellaneous Concrete						
Fireproofing						
Masonry						



Illinois Department of Transportation

Bureau of Construction
2000 South Dirksen Parkway, Room 522
Springfield, Illinois 62764

Affidavit of Availability
For the Letting of December 5, 2008

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	1	2	3	4	
County and Section Number	Terminal 1 & 2 Reh Juarez H.S.		Red/Blue Line - Es		Route 41 Relocate
Contract With	CDOA	CPS	CTA	CDOT	
Estimated Completion Date	February 8, 2008	Dec 2009	October 2011	Dec 01, 2008	
Total Contract Price	\$93,554,967	\$22,561,000	\$16,581,000	\$17,108,819	Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$2,095,827	\$19,494,102	\$12,033,031	\$3,491,722	\$507,723,215
Uncompleted Dollar Value if Firm is the Subcontractor					\$4,259,079
			Total Value of All Work		\$511,982,294

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work subcontracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

					Accumulated Totals
Earthwork				\$713,000	\$2,000,000
Portland Cement Concrete Paving					\$24,391,006
Bituminous Plant Mix					\$0
Bituminous Aggregate Mixture					\$0
Miscellaneous Bituminous Paving					\$0
Clean & Seal Cracks/Joints					\$0
Aggregate Bases & Surfaces				\$295,000	\$295,000
Hwy, R.R. & Wtrwy Strctrs					\$11,969,795
Drainage				\$50,000	\$100,000
Electrical					\$0
Cover and Seal Coats					\$0
Misc. Concrete Construction				\$572,000	\$12,339,000
Landscaping					\$0
Fencing					\$0
Guardrail					\$0
Painting					\$0
Signing					\$0
Fabrication					\$0
Building Construction		\$4,417,000	\$2,815,242		\$73,632,641
Other Construction (List) Demo				\$136,000	\$631,000
Other Construction (List) Misc.					\$3,900,000
Other Construction (List)					\$0
Owner's Facilities					\$0
Totals	\$0	\$4,417,000	\$2,815,242	\$1,766,000	\$129,258,442

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	1	2	3	4
Subcontractor	Garth Masonry	Acorn Fence	DLZ	Benchmark
Type of Work	Masonry, Concrete Fence		Survey	Sewer
Subcontract Price	\$6,983,774	\$7,800	\$50,000	\$6,415,846
Amount Uncompleted	\$0	\$7,800	\$45,298	\$90,938
Subcontractor	Midwest Wrecking	BSB Development	MJC	Brandenburg
Type of Work	Demolition	Excavation	Demolition	Demolition
Subcontract Price	\$385,000	\$1,022,650	\$75,225	\$1,907,584
Amount Uncompleted	\$0	\$906,410	\$32,145	\$8,500
Subcontractor	C.L. Bec	LPS Pavement	Garth	Sanchez
Type of Work	Carpentry	Brick pavement	Demolition	Paving
Subcontract Price	\$920,886	\$108,000	\$471,342	\$15,960
Amount Uncompleted	\$0	\$108,000	\$86,169	\$15,960
Subcontractor	Thatcher Engineer	Revcon	U S Architectual	Midwest Fence
Type of Work	Bracing/Rentention	Caisson	Steel	Fence
Subcontract Price	\$1,392,068	\$480,265	\$1,435,445	\$38,101
Amount Uncompleted	\$0	\$0	\$832,330	\$5,136
Subcontractor	Dynamic Wrecking	Harrington Exc	Q C Enterprize	Mega Steel
Type of Work	Excavation	Site util	Terrazzo	Reinforcing Steel
Subcontract Price	\$850,000	\$115,000	\$40,000	\$68,801
Amount Uncompleted	\$28,374	\$115,000	\$40,000	\$23,598
Subcontractor	Enviroplus, Inc	Degrat	EVC	Midwest Forestree
Type of Work	Abatement	Concrete	Paint	Clearing
Subcontract Price	\$105,355	\$685,000	\$58,000	\$4,800
Amount Uncompleted		\$380,300	\$32,000	\$0
Subcontractor	Era Valdiva Contra	Carol Steel	Commonwealth	Air Preessure Damp
Type of Work	Paint	Steel	Downspouts	Damproofing
Subcontract Price	\$391,179	\$3,600,000	\$17,915	\$6,000
Amount Uncompleted	\$0	\$2,354,806	\$16,879	\$1,748
Subcontractor	Edward Gillen	Pederson	Admiral Heating	Ludwig
Type of Work	Piling	Landscape	HVAC	Explosives
Subcontract Price	\$1,414,015	\$115,000	\$19,000	\$5,850
Amount Uncompleted	\$0	\$115,000	\$0	\$0
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &
Type of work	Miscellaneous	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs
Subcontract Price	\$44,535,200	\$11,677,285	\$10,271,415	\$1,857,713
Amount Uncompleted	\$2,067,453	\$11,089,786	\$8,132,968	\$1,579,842
Total Uncompleted	\$2,095,827	\$15,077,102	\$9,217,789	\$1,725,722

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.



**Illinois Department
of Transportation**

Bureau of Construction
2000 South Dirksen Parkway, Room 422
Springfield, Illinois 62704

**Affidavit of Availability
For the Letting**

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	5	6	7	8	9
County and Section Number	Peterson Elm Sch	Tri-State Tollway	Recon. 75th & 79th	Tri-State Toll way	SB Tri State I-294
Contract With	Chicago Pub Sch	Illinois Tollway	Metra	Illinois Tollway	Illinois Tollway
Estimated Completion Date	December, 2008	Nov. 15, 2009	Feb. 2010	October 31, 2006	Dec. 13, 2009
Total Contract Price	\$15,152,199	\$51,961,176	\$5,698,000	\$73,902,426	\$38,692,729
Uncompleted Dollar Value if Firm is the Prime Contractor	\$2,604,141	\$49,661,176	\$5,698,000	\$825,706	\$30,248,574
Uncompleted Dollar Value if Firm is the Subcontractor					

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work sub-contracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork		\$354,000	\$200,000		\$184,000
Portland Cement Concrete Paving		\$11,756,000		\$0	\$3,009,000
Bituminous Plant Mix					
Bituminous Aggregate Mixture					
Miscellaneous Bituminous Paving					
Clean & Seal Cracks/Joints					
Aggregate Bases & Surfaces				\$0	
Hwy, R.R. & Wtrwy Strctrs		\$5,028,813	\$846,000	\$0	\$4,846,933
Drainage			\$50,000		
Electrical					
Cover and Seal Coats					
Misc. Concrete Construction		\$5,601,000	\$216,000		\$3,225,000
Landscaping					
Fencing					
Guardrail					
Painting					
Signing					
Fabrication					
Building Construction	\$582,595				
Other Construction (List) Demo		\$150,000	\$345,000		
Other Construction (List) Misc.			\$400,000		
Other Construction (List)					
Owner's Facilities					
Totals	\$582,595	\$22,889,813	\$2,057,000	\$0	\$11,264,933

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	5	6	7	8	9
Subcontractor	Eason		Highway Tech	Midwest Fence Co. Kapur	
Type of Work	Abatement		Traffic Con	Fence	Survey
Subcontract Price	\$200,000		\$38,000	\$645,500	\$256,200
Amount Uncompleted	\$34,873		\$38,000	\$0	\$213,500
Subcontractor	Technica		Araiza	S & J Construction	Arrow Road
Type of Work	Demolition		Concrete	Steel Work	Asphalt
Subcontract Price	\$219,369		\$33,240	\$1,777,000	\$3,762,667
Amount Uncompleted	\$23,801		\$33,240	\$0	\$3,097,927
Subcontractor	Abiltiy Rockroad		Mega Steel	United Rentals	Amerian Restoratio
Type of Work	Asphalt		Reinforcing	Traffic Control	Restoration
Subcontract Price	\$45,963		\$68,625	\$775,781	\$33,492
Amount Uncompleted	\$37,963		\$68,625	\$5,400	\$33,492
Subcontractor	Arc		Amerian Restorato	American Demolitid	Omega Demo
Type of Work	Underground		Restoration	Demolition	Demolition
Subcontract Price	\$389,991		\$1,958,312	\$845,939	\$698,110
Amount Uncompleted	\$8,834		\$1,958,312	\$0	\$652,186
Subcontractor	Atrium		Crown	Laredo System	Diamond Coring
Type of Work	Landscape		Paint	Landscaping	Concrete Cutting
Subcontract Price	\$94,598		\$92,600	\$314,871	\$96,885
Amount Uncompleted	\$94,598		\$92,600	\$34,196	\$96,885
Subcontractor	Fiberwrap		Hecker	Ricci/Welch, Inc.	Vixen
Type of Work	Concrete		Electrical	Sewer Work	Curb and Gutter
Subcontract Price	\$251,448		\$141,700	\$4,240,268	\$198,808
Amount Uncompleted	\$9,000		\$141,700	\$0	\$198,808
Subcontractor	Metal Erectors			Edward Gillen	Aldridge
Type of Work	Metal			Piling	Electrical
Subcontract Price	\$58,500			\$2,654,256	\$541,061
Amount Uncompleted	\$0			\$0	\$479,124
Subcontractor	A-1			S & R Masonry, Inc	Illini Fence
Type of Work	Roofing			Masonry	Fence
Subcontract Price	\$390,728			\$435,624	\$120,139
Amount Uncompleted	\$44,778			\$0	\$78,540
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &
Type of work	Miscellaneous	Uncommitted Subs	Miscellaneous	Uncommitted Subs	Uncommitted Subs
Subcontract Price	\$11,231,766	\$26,771,363	\$1,308,523	\$43,384,641	\$16,950,434
Amount Uncompleted	\$1,767,699	\$26,771,363	\$1,308,523	\$786,110	\$14,133,179
Total Uncompleted	\$2,021,546	\$26,771,363	\$3,641,000	\$825,706	\$18,983,641

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.



Illinois Department of Transportation

Bureau of Construction
 2300 South Dirksen Parkway, Room 322
 Springfield, Illinois 62784

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	10	11	12	13	14
County and Section Number	Collins	Willow Road	Midway - Concourse	South Water Purific	Washington St.
Contract With	CPS	ISTHA	CDOA	CDOT	Lake Cty Gr.
Estimated Completion Date	August 15, 2007	June 30, 2008	Feb. 2010	November 2006	Oct. 31, 2009
Total Contract Price	\$7,585,686	\$24,374,460	\$26,169,000	\$4,638,973	\$4,859,549
Uncompleted Dollar Value if Firm is the Prime Contractor	\$296,341	\$70,955	\$26,169,000	\$26,564	
Uncompleted Dollar Value if Firm is the Subcontractor					\$4,259,079

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work sub-contracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork					
Portland Cement Concrete Paving					\$2,880,030
Bituminous Plant Mix					
Bituminous Aggregate Mixture					
Miscellaneous Bituminous Paving					
Clean & Seal Cracks/Joints					
Aggregate Bases & Surfaces					
Hwy, R.R. & Wtrwy Strctrs					\$898,049
Drainage					
Electrical					
Cover and Seal Coats					
Misc. Concrete Construction					
Landscaping					
Fencing					
Guardrail					
Painting					
Signing					
Fabrication					
Building Construction			\$6,674,000		
Other Construction (List) Demo					
Other Construction (List) Misc.					
Other Construction (List)					
Owner's Facilities					
Totals	\$0	\$0	\$6,674,000	\$0	\$3,778,079

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	10	11	12	13	14
Subcontractor	F & B	Peter Baker	Universal Security	Speedy Gonzales	Area
Type of Work	Masonry	Asphalt	Security	Landscape	Steel Erection
Subcontract Price	\$176,691	\$1,298,487	\$50,000	\$215,900	\$90,400
Amount Uncompleted	\$0	\$68,567	\$50,000	\$10,900	\$90,400
Subcontractor	K Bailey	Jabco	Quality Exc.	Arc Underground	Rampart Hydro
Type of Work	Carpentry		Excavation	Utilities	Hydro Demo
Subcontract Price	\$18,666	\$327,536	\$420,000	\$435,047	\$29,400
Amount Uncompleted		\$0	\$420,000	\$6,727	\$29,400
Subcontractor	Jade	Araiza Corp	Foundation Drilling	Precision	
Type of Work	Carpentry	Concrete work	Cassions	Surveyors	
Subcontract Price	\$161,217	\$529,841	\$18,000	\$25,400	
Amount Uncompleted	\$10,384	\$48,323	\$18,000	\$0	
Subcontractor	Lake Shore Glass	Hecker and Co.	Chakra	L & M Welding	
Type of Work	Glass	Electrical	Misc Carpentry	Steel	
Subcontract Price	\$68,850	\$1,928,487	\$20,000	\$113,371	
Amount Uncompleted	\$0	\$474,787	\$20,000	\$0	
Subcontractor	Market	GFS	Performance Plumb	Powell	
Type of Work	Drywall	Fence & Guardrail	\$850,000	Roofing	
Subcontract Price	\$533,954	\$375,447	\$850,000	\$33,555	
Amount Uncompleted	\$0	\$2,480		\$0	
Subcontractor	Titan Commercial	Natural Creations		Plumbing Sys.	
Type of Work	Floor	Landscape		Plumbing	
Subcontract Price	\$88,705	\$207,153		\$44,822	
Amount Uncompleted	\$2,705	\$10,709		\$0	
Subcontractor	Just Rite	Lucky Charm		QuBar	
Type of Work	Acoustic	Clearing		HVAC	
Subcontract Price	\$185,648	\$52,626		\$137,119	
Amount Uncompleted	\$23,348	\$3,770		\$7,737	
Subcontractor	Mr Davids	Area Equipment		Sager	
Type of Work	Flooring	Steel erection		Sealant	
Subcontract Price	\$192,611	\$325,718		\$10,175	
Amount Uncompleted	\$0	\$0		\$1,200	
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &
Type of work	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs
Subcontract Price	\$4,730,159	\$9,138,564	\$18,987,000	\$2,243,840	\$361,200
Amount Uncompleted	\$259,904	(\$537,681)	\$18,987,000		\$361,200
Total Uncompleted	\$296,341	\$70,955	\$19,495,000	\$26,564	\$481,000

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.



Illinois Department of Transportation

Bureau of Construction
 1000 South Dirksen Parkway, Room 322
 Springfield, Illinois 62764

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	15	16	17	18	19
County and Section Number	River Rd Plaza 19	Belmont/Fullerton	9th District Police	Upper DesPlaines	Southwest Middle
Contract With	Illinois Tollway	CTA	PBC	MWRDofGC	PBC
Estimated Completion Date	June 2007	February 2010	December 2009	May 2009	Oct 1, 2009
Total Contract Price	\$26,463,264	\$104,626,424	\$28,977,000	\$11,756,000	\$29,390,000
Uncompleted Dollar Value if Firm is the Prime Contractor	\$423,327	\$23,092,572	\$1,071,789	\$10,616,212	\$24,963,616
Uncompleted Dollar Value if Firm is the Subcontractor					

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work sub-contracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork					
Portland Cement Concrete Paving					
Bituminous Plant Mix					
Bituminous Aggregate Mixture					
Miscellaneous Bituminous Paving					
Clean & Seal Cracks/Joints					
Aggregate Bases & Surfaces					
Hwy, R.R. & Wtrwy Strctrs					
Drainage					
Electrical					
Cover and Seal Coats					
Misc. Concrete Construction					
Landscaping					
Fencing					
Guardrail					
Painting					
Signing					
Fabrication					
Building Construction		\$2,286,135	\$100,000	\$2,113,938	\$2,376,919
Other Construction (List) Demo					
Other Construction (List) Misc.					
Other Construction (List)					
Owner's Facilities					
Totals	\$0	\$2,286,135	\$100,000	\$2,113,938	\$2,376,919

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	15	16	17	18	19
Subcontractor	Civil	Dynamic Wrecking	Superior FI	Falk	M T Transit
Type of Work	Sewer	Demolition	Flooring	Survey	Excavation
Subcontract Price	\$940,884	\$3,736,394	\$62,430	\$65,596	\$304,789
Amount Uncompleted	\$76,089	\$37,857	\$0	\$0	\$87,895
Subcontractor	Specialty	Case Foundation	T & D	Harrington	Fik Engineer
Type of Work	Pavement Demo.	Cassions	Excavating	Excavation	Survey
Subcontract Price	\$24,328	\$4,337,441	\$2,558,000	\$170,415	\$30,000
Amount Uncompleted	\$0	\$86,676	\$0	\$0	\$9,926
Subcontractor	NES	Civil Contr.	Cabo	Accu Paving	Pederson
Type of Work	Traffic Control	Utilities	Sewer	Asphalt	Landscape
Subcontract Price	\$615,354	\$795,000	\$275,688	\$15,500	\$475,000
Amount Uncompleted	\$234,291	\$262,701	\$3,500	\$15,500	\$475,000
Subcontractor	Arrow	A & H	MG Electric	Atrium Landscape	Degrat
Type of Work	Asphalt	Plumbing	Electrical	Landscape	Concrete
Subcontract Price	\$1,245,818	\$411,094	\$4,052,500	\$71,946	\$1,595,000
Amount Uncompleted	\$0	\$298,331	\$54,000	\$71,946	\$553,300
Subcontractor	GFS	R W Collins	Nikolas	M A Steel	All Masonry
Type of Work	Guard Rail	Tank removal	Paint	Rebar	Masonry
Subcontract Price	\$354,233	\$56,000	\$90,760	\$215,000	\$3,960,000
Amount Uncompleted	\$0	\$3,554	\$4,775	\$215,000	\$3,542,719
Subcontractor	Omega	Chappel West, Inc.	Weis	Acura	Metropolitan Steel
Type of Work	Selective Demo	Metal Bldg	Stone	Misc Conc.	Steel
Subcontract Price	\$630,803	\$247,947	\$6,995	\$191,000	\$2,800,000
Amount Uncompleted	\$0	\$0	\$0	\$191,000	\$1,588,266
Subcontractor	Market Contracting	Brand	Kone	F & B	WEB
Type of Work	Drywall	Scaffolding	Elevator	Masonry	Misc Metal
Subcontract Price	\$36,807	\$4,772	\$90,792	\$23,900	\$350,000
Amount Uncompleted	\$0	\$0	\$6,903	\$23,900	\$350,000
Subcontractor	A-1 Roofing	Break thru	Mid America	Atlantic Painting	L B Hall
Type of Work	Roofing	Demolition	Elevator	Paint	Spray Fireproffing
Subcontract Price	\$88,445	\$353,400	\$128,650	\$260,000	\$98,000
Amount Uncompleted	\$0	\$0	\$5,000	\$260,000	\$63,200
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &
Type of work	Uncommitted Subs	Uncommitted Subs	Miscellaneous	Uncommitted Subs	Uncommitted Subs
Subcontract Price	\$11,750,530	\$56,377,990	\$14,057,537	\$7,929,024	\$16,267,211
Amount Uncompleted	\$112,947	\$20,117,318	\$897,611	\$7,724,928	\$15,916,391
Total Uncompleted	\$423,327	\$20,806,437	\$971,789	\$8,502,274	\$22,586,697

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.



Illinois Department of Transportation

Bureau of Construction
2100 South Dirksen Parkway, Room 322
Springfield, Illinois 62764

Affidavit of Availability For the Letting of December 5, 2008

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	20	21	22	23	24
County and Section Number	3 Station - Brown L	5 Station - Brown L	N B - I-94	O'Hare MP-JOC	SB I-94, I-07-5221
Contract With	CTA	CTA	ISTHA	CDOT	ISTHA
Estimated Completion Date	Sept 2008	August 2007	Dec. 19, 2009	January 2008	Nov. 21, 2008
Total Contract Price	\$47,453,328	\$20,676,519	\$29,268,849	\$10,000,000	\$25,174,444
Uncompleted Dollar Value if Firm is the Prime Contractor	\$1,619,515	\$175,490	\$29,268,849	\$10,000,000	\$3,911,016
Uncompleted Dollar Value if Firm is the Subcontractor					

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work sub-contracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork			\$250,000		\$50,000
Portland Cement Concrete Paving			\$5,400,000		
Bituminous Plant Mix					
Bituminous Aggregate Mixture					
Miscellaneous Bituminous Paving					
Clean & Seal Cracks/Joints					
Aggregate Bases & Surfaces					
Hwy, R.R. & Wtrwy Strctrs					\$100,000
Drainage					
Electrical					
Cover and Seal Coats					
Misc. Concrete Construction			\$2,600,000		
Landscaping					
Fencing					
Guardrail					
Painting					
Signing					
Fabrication					
Building Construction	\$324,557				
Other Construction (List) Demo					
Other Construction (List) Misc.			\$3,500,000		
Other Construction (List)					
Owner's Facilities					
Totals	\$324,557	\$0	\$11,750,000	\$0	\$150,000

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	20	21	22	23	24
Subcontractor	Gillen	Alpine Demol			Kapur
Type of Work	Foundation	Demolition			Survey
Subcontract Price	\$1,229,714	\$60,269			\$190,000
Amount Uncompleted	\$158,761	\$0			\$99,750
Subcontractor	Dynamic Wrecking	Dynamic Wrecking			Aldridge
Type of Work	Demolition	Demolition			Electrical
Subcontract Price	\$1,725,733	\$728,557			\$829,765
Amount Uncompleted	\$22,316	\$8,282			\$307,333
Subcontractor	Swanson	Divane Elec			Industrial Fence
Type of Work	Track	Electrical			Fence
Subcontract Price	\$734,182	\$4,633,617			\$430,811
Amount Uncompleted	\$0	\$32,208			\$184,393
Subcontractor	EVC	EVC			Laredo
Type of Work	Painting	Painting			Landscape
Subcontract Price	\$2,169,290	\$750,000			\$538,354
Amount Uncompleted	\$205,533	\$0			\$310,206
Subcontractor	Roberts	Lakeshore Glass			Western Remac
Type of Work	HVAC	Glazing			Signage
Subcontract Price	\$249,136	\$655,592			\$453,223
Amount Uncompleted	\$11,616	\$0			\$90,416
Subcontractor	A & H	A & H			Roadsafe Traffic
Type of Work	Plumbing	Plumbing			Traffic Control
Subcontract Price	\$242,138	\$14,867			\$834,384
Amount Uncompleted	\$1,929	\$0			\$329,443
Subcontractor	Justrite	Ellsion Bronze			Curran
Type of Work	Accoutical Clg	Doors			Apshalt
Subcontract Price	\$78,930	\$77,750			\$2,240,335
Amount Uncompleted	\$0	\$0			\$471,232
Subcontractor	Western Remac	Industrial Door			Acura
Type of Work	Signage	Doors			Curb & Gutter
Subcontract Price	\$431,989	\$28,400			\$880,837
Amount Uncompleted	\$25,440	\$0			\$8,269
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &
Type of work	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs
Subcontract Price	\$30,175,720	\$8,482,657	\$17,518,849	\$10,000,000	\$9,439,272
Amount Uncompleted	\$869,363	\$135,000	\$17,518,849	\$10,000,000	\$1,959,974
Total Uncompleted	\$1,294,958	\$175,490	\$17,518,849	\$10,000,000	\$3,761,016

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.



Illinois Department of Transportation

Public Construction
 1700 South DuSable Parkway, Room 302
 Springfield, Illinois 62764

Affidavit of Availability For the Letting of December 5, 2008

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	25	26	27	28	29
County and Section Number	Wentworth II	I 80/94 - 62114	Archer Ave.	Jackson VanBuren	SB I-94, I-06-5220
Contract With	CHA	IDOT	CDOT	CDOT	ISTHA
Estimated Completion Date	May 2007	June 26, 2007	May 26, 2006	January 2007	Dec. 19, 2008
Total Contract Price	\$36,150,373	\$70,640,358	\$10,756,392	\$20,064,029	\$40,080,418
Uncompleted Dollar Value if Firm is the Prime Contractor	\$282,232	\$77,688	\$465,135	\$145,875	\$7,182,853
Uncompleted Dollar Value if Firm is the Subcontractor					
			Total Value of All Work		

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work sub-contracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork					\$75,000
Portland Cement Concrete Paving					
Bituminous Plant Mix					
Bituminous Aggregate Mixture					
Miscellaneous Bituminous Paving					
Clean & Seal Cracks/Joints					
Aggregate Bases & Surfaces					
Hwy, R.R. & Wtrwy Strctrs					
Drainage					
Electrical					
Cover and Seal Coats					
Misc. Concrete Construction					\$125,000
Landscaping					
Fencing					
Guardrail					
Painting					
Signing					
Fabrication					
Building Construction				\$25,000	
Other Construction (List) Demo					
Other Construction (List) Misc.					
Other Construction (List)					
Owner's Facilities					
Totals	\$0	\$0	\$0	\$25,000	\$200,000

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Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	25	26	27	28	29
Subcontractor	JVI Industries	S & J Construction	Highway Safety	Dynamic Wrecking	Kapur
Type of Work	Abatement	Signage	Traffic Control	Demolition	Survey
Subcontract Price	\$487,106	\$689,514	\$137,675	\$367,882	\$316,941
Amount Uncompleted	\$0	\$4,965	\$0	\$0	\$104,603
Subcontractor	Universal Iron	Cabo	Mega Steel	F & B Masonry	Arrow
Type of Work	Fence	Sewer	Reinforcing	Masonry	Asphalt
Subcontract Price	\$325,250	\$6,342,912	\$365,203	\$543,335	\$2,560,030
Amount Uncompleted	\$19,882	\$0	\$12,271	\$0	\$1,035,869
Subcontractor	Knickerbocker	Aldridge Elec	Civil	EVC	Acura
Type of Work	Roofing	Electrical	Sewer	Paint	Curb & Gutter
Subcontract Price	\$1,401,140	\$722,198	\$792,853	\$150,000	\$430,315
Amount Uncompleted	\$0	\$49,436	\$145,959	\$0	\$103,824
Subcontractor	Homeland	Brandenburg	Acura	Metropolitan	John Burns
Type of Work	Windows	Demolition	Paving	Fire Protection	Electrical
Subcontract Price	\$1,663,085	\$839,266	\$1,200,364	\$18,000	\$1,188,994
Amount Uncompleted	\$11,850	\$0	\$0	\$0	\$233,268
Subcontractor	Aquamist	G F Structures	Marking Spec.	A Green Plus	Industrial Fence
Type of Work	Plumbing	Fence & Guard Rai	Striping	Plumbing	Fence
Subcontract Price	\$2,717,785	\$457,934	\$23,739	\$110,000	\$487,473
Amount Uncompleted	\$0	\$0	\$0	\$0	\$203,695
Subcontractor	Sager	Lucky Charm	Era Valdivia	Roberts Env	Laredo Sys
Type of Work	Sealant	Clearing	Painting	HVAC	Landscape
Subcontract Price	\$34,500	\$37,727	\$53,858	\$94,945	\$59,327
Amount Uncompleted	\$3,500	\$0	\$0	\$0	\$800
Subcontractor	Schindler	Hawk Enterprise	Commonwealth	Break Thru	Crown
Type of Work	Elevator	Layout	Down Spouts	Demolition	Painting
Subcontract Price	\$57,000	\$570,521	\$21,800	\$26,450	\$270,173
Amount Uncompleted	\$0	\$0	\$0	\$0	\$209,893
Subcontractor	Landscape Forms	NES	Western Remac	Kone	Western
Type of Work	Site Furniture	Traffic Control	Signage	Elevator	Signage
Subcontract Price	\$23,940	\$868,139	\$24,340	\$921,145	\$134,390
Amount Uncompleted	\$0	\$23,287	\$0	\$1,145	\$17,190
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &
Type of work	Miscellaneous	Uncommitted Subs	Uncommitted Subs	Miscellaneous	Uncommitted Subs
Subcontract Price	\$26,297,384	\$26,204,383	\$2,272,934	\$8,829,870	\$11,662,310
Amount Uncompleted	\$247,000		\$306,905	\$119,730	\$5,073,711
Total Uncompleted	\$282,232	\$77,688	\$465,135	\$120,875	\$6,982,853

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.



Illinois Department of Transportation

Bureau of Construction
2001 South Dirksen Parkway, Room 320
Springfield, Illinois 62764

**Affidavit of Availability
For the Letting of December 5, 2008**

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	30	Pending	32	33	34
County and Section Number	CDOA	CDOW	CDOT	Midway Airport Pkg	
Contract With	Fed Ex Veh Maint	Jardine Water Pl	Monroe Bridge Hou	CDOA	
Estimated Completion Date	Sept. 30, 2009	July 2009	January 31, 2008	October 30, 2005	
Total Contract Price	\$9,619,000	\$545,000	\$4,300,240	\$72,321,083	
Uncompleted Dollar Value if Firm is the Prime Contractor	\$9,619,000	\$545,000	\$157,224	\$590,713	\$0
Uncompleted Dollar Value if Firm is the Subcontractor					
Total Value of All Work					

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work sub-contracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork					
Portland Cement Concrete Paving					
Bituminous Plant Mix					
Bituminous Aggregate Mixture					
Miscellaneous Bituminous Paving					
Clean & Seal Cracks/Joints					
Aggregate Bases & Surfaces					
Hwy, R.R. & Wtrwy Strctrs					
Drainage					
Electrical					
Cover and Seal Coats					
Misc. Concrete Construction					
Landscaping					
Fencing					
Guardrail					
Painting					
Signing					
Fabrication					
Building Construction	\$2,500,000	\$150,000			
Other Construction (List) Demo					
Other Construction (List) Misc.					
Other Construction (List)					
Owner's Facilities					
Totals	\$2,500,000	\$150,000	\$0	\$0	\$0

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	30	Pending	32	33	34
Subcontractor			United Rental	Garco Enterprize	
Type of Work			Traffic Control	HVAC	
Subcontract Price			\$27,176	\$549,129	
Amount Uncompleted			\$0	\$0	
Subcontractor			Holly Marine	Mota Construction	
Type of Work			Barge Work	Carpentry	
Subcontract Price			\$46,000	\$417,291	
Amount Uncompleted			\$0	\$0	
Subcontractor			Brandenburg	Dynamic Wrecking	
Type of Work			Demolition	Excavation	
Subcontract Price			\$280,000	\$1,553,004	
Amount Uncompleted			\$0	\$0	
Subcontractor			F & B masonry	Kone Inc.	
Type of Work			Masonry	Elevator	
Subcontract Price			\$900,076	\$987,802	
Amount Uncompleted			\$9,280	\$0	
Subcontractor			K & K Iron	Powel	
Type of Work			Structural Steel	Roofing	
Subcontract Price			\$284,489	\$103,389	
Amount Uncompleted			\$0	\$0	
Subcontractor			Auburn Corp	Aldridge Electric	
Type of Work			Windows	Electric	
Subcontract Price			\$49,620	\$2,925,331	
Amount Uncompleted			\$0	\$0	
Subcontractor			Mr Davids	Gurtz Electric	
Type of Work			Flooring	Electric	
Subcontract Price			\$1,000	\$5,815,000	
Amount Uncompleted			\$0	\$0	
Subcontractor			Legacy Paint	Revcon	
Type of Work			Paint	Caissons	
Subcontract Price			\$16,950	\$1,949,753	
Amount Uncompleted			\$2,750	\$0	
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &	
Type of work	Uncommitted Subs	Miscellaneous	Uncommitted Subs	Miscellaneous	
Subcontract Price	\$7,119,000	\$395,000	\$2,296,838	\$41,452,000	
Amount Uncompleted	\$7,119,000	\$395,000	\$145,194	\$590,713	
Total Uncompleted	\$7,119,000	\$395,000	\$157,224	\$590,713	

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.



Illinois Department of Transportation

Bureau of Construction
 2300 South Dirksen Parkway, Room 222
 Springfield, Illinois 62764

Affidavit of Availability
 For the Letting of December 5, 2008

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	35	36	37	38	39
County and Section Number	Improvements to Ba	Ravenswood North	Reconstruct I-88	Jardine Water Purf.	
Contract With	MWRDof GC	CTA	ISTHA	CDOW	
Estimated Completion Date	March 2012	December 2009	Dec. 15, 2009	January 2008	
Total Contract Price	\$20,391,000	\$22,852,000	\$56,587,761	\$16,176,605	
Uncompleted Dollar value if Firm is the Prime Contractor	\$16,794,514	\$6,939,245	\$11,937,046	\$971,005	\$0
Uncompleted Dollar value if Firm is the Subcontractor					
	Total Value of All Work				

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work sub-contracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork			\$174,000		
Portland Cement Concrete Paving			\$1,345,976		
Bituminous Plant Mix					
Bituminous Aggregate Mixture					
Miscellaneous Bituminous Paving					
Clean & Seal Cracks/Joints					
Aggregate Bases & Surfaces					
Hwy, R.R. & Wtrwy Strctrs			\$250,000		
Drainage					
Electrical					
Cover and Seal Coats					
Misc. Concrete Construction			\$0		
Landscaping					
Fencing					
Guardrail					
Painting					
Signing					
Fabrication					
Building Construction	\$3,243,469	\$1,186,560		\$803,581	
Other Construction (List) Demo					
Other Construction (List) Misc.					
Other Construction (List)					
Owner's Facilities					
Totals	\$3,243,469	\$1,186,560	\$1,769,976	\$803,581	\$0

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	35	36	37	38	39
Subcontractor	Il in One	Garth Const.	Natural Creations	Technica	
Type of Work	Process Plates	Demolition	Landscape	Abatement	
Subcontract Price	\$3,553,968	\$950,000	\$454,881	\$48,060	
Amount Uncompleted	\$2,791,500	\$35,444	\$241,235	\$8,680	
Subcontractor	Composite St	Swanson	Aldridge	Naturescape	
Type of Work	Steel	Track Work	Electrical	Landscape	
Subcontract Price	\$324,674	\$7,681,556	\$2,779,551	\$66,700	
Amount Uncompleted	\$324,674	\$1,982,566	\$836,440	\$0	
Subcontractor	Wolf	Diaz	Industrial Fence	Cabo Const	
Type of Work	Mechanical	Landscape	Fence	Sewer	
Subcontract Price	\$316,285	\$4,500	\$612,862	\$1,567,730	
Amount Uncompleted	\$316,285	\$4,500	\$346,757	\$0	
Subcontractor	Crown	Metropolitan Steel	Certified Painting	National Restoration	
Type of Work	Paint	Erect Steel	Painting	Conc Restoration	
Subcontract Price	\$50,000	\$90,000	\$120,000	\$712,771	
Amount Uncompleted	\$50,000	\$0	\$11,086	\$0	
Subcontractor	Gammie	Mader	Mega Steel	Weis	
Type of Work	Plumbing	Roof	Reinforcing Steel	Masonry	
Subcontract Price	\$17,370	\$480	\$1,124,960	\$715,000	
Amount Uncompleted	\$0	\$480	\$114,543	\$0	
Subcontractor	Just Rite	Divane	Central	Midwest Fence	
Type of Work	Ceiling	Electrical	Asphalt	Fence	
Subcontract Price	\$5,200	\$1,715,000	\$2,997,538	\$156,731	
Amount Uncompleted	\$5,200	\$701,483	\$1,510,800	\$3,600	
Subcontractor	MTH		United Rental	A Green	
Type of Work	Steel		Traffic Control	Plumbing	
Subcontract Price	\$81,851		\$1,632,032	\$21,000	
Amount Uncompleted	\$81,851		\$467,386	\$0	
Subcontractor	Spectrum		Kujo	Divane	
Type of Work	Masonry		Signage	Electrical	
Subcontract Price	\$42,500		\$743,393	\$3,547,869	
Amount Uncompleted	\$42,500		\$296,686	\$155,144	
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &	
Type of work	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs	Uncommitted Subs	
Subcontract Price	\$12,128,227	\$4,994,464	\$25,126,008	\$3,782,266	
Amount Uncompleted	\$9,939,035	\$3,028,212	\$6,342,137		
Total Uncompleted	\$13,551,045	\$5,752,685	\$10,167,070	\$167,424	

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.



Illinois Department of Transportation

Bureau of Construction
2000 South DuSable Parkway, Room 302
Springfield, Illinois 62764

Affidavit of Availability
For the Letting of December 5, 2008

INSTRUCTIONS: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate and must include work subcontracted to others. If no work is contracted, show NONE.

	40	41	42	43	44
County and Section Number	Hydraulic Improven	Jardine Water Pl	SB I-94,I-07-5226	Brown Line - 4 Stat	Primary Stl Tanks
Contract With	MWRD of GC	CDOW	ISTHA	CTA	MWRD of GC
Estimated Completion Date	March 2010	Nov. 2008	Nov. 21, 2008	November 2009	November 2012
Total Contract Price	\$61,480,428	\$9,004,527	\$32,932,708	\$65,943,383	\$137,084,400
Uncompleted Dollar Value if Firm is the Prime Contractor	\$32,142,895	\$3,977,166	\$6,947,938	\$14,005,761	\$137,084,400
Uncompleted Dollar Value if Firm is the Subcontractor					

Joint Venture Portion

Joint Venture Portion

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work sub-contracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork					
Portland Cement Concrete Paving					
Bituminous Plant Mix					
Bituminous Aggregate Mixture					
Miscellaneous Bituminous Paving					
Clean & Seal Cracks/Joints					
Aggregate Bases & Surfaces					
Hwy, R.R. & Wtrwy Strctrs					
Drainage					
Electrical					
Cover and Seal Coats					
Misc. Concrete Construction					
Landscaping					
Fencing					
Guardrail					
Painting					
Signing					
Fabrication					
Building Construction	\$1,314,750	\$1,321,615		\$2,397,280	\$39,000,000
Other Construction (List) Demo					
Other Construction (List) Misc.					
Other Construction (List)					
Owner's Facilities					
Totals	\$1,314,750	\$1,321,615	\$0	\$2,397,280	\$39,000,000

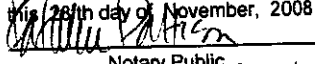
Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

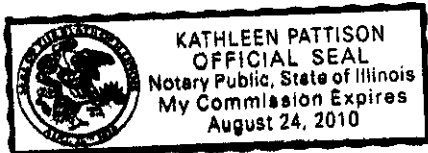
For each contract described in Part I, list all the work you have subcontracted to others.

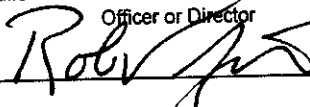
	40	41	42	43	44
Subcontractor	Hayward Baker	Anderson & Shaw	Kapur	All American Sol.	
Type of Work	Retention	Roof	Survey	Exterior	
Subcontract Price	\$1,558,407	\$2,213,675	\$220,000	\$1,225,958	
Amount Uncompleted	\$5,100	\$581,450	\$91,000	\$340,567	
Subcontractor	Chidester	National	Hecker	Mid Amerian El	
Type of Work	Excavation	Demolition	Electrical	Elevator	
Subcontract Price	\$492,346	\$128,714	\$717,967	\$1,873,100	
Amount Uncompleted	\$22,784	\$0	\$183,205	\$737,023	
Subcontractor	Keefe	Lake Shore Glass	Illini Fence	Robert Env.	
Type of Work	Pipe Jacking	Glazing	Fence	HVAC	
Subcontract Price	\$105,188	\$13,400	\$57,335	\$368,240	
Amount Uncompleted	\$105,188	\$0	\$49,580	\$129,402	
Subcontractor	Civil	J P Phillips	GF Structures	Commonwealth	
Type of Work	Underground	Plaster	Guard Rail	DownSpouts	
Subcontract Price	\$2,527,870	\$65,000	\$299,289	\$454,606	
Amount Uncompleted	\$1,328,025	\$65,000	\$151,539	\$106,181	
Subcontractor	M A Steel	Crown	Laredo Systems	Arc	
Type of Work	Rebar	Paint	Landscaping	Sewer	
Subcontract Price	\$2,401,846	\$5,500	\$586,707	\$395,760	
Amount Uncompleted	\$450,241	\$5,500	\$333,067	\$14,138	
Subcontractor	Sanchez	Gilco	Western Remac,	Lake Shore Glas	
Type of Work	Paving	Scaffolding	Signage	Glass	
Subcontract Price	\$168,324	\$67,077	\$146,369	\$537,828	
Amount Uncompleted	\$168,324	\$19,226	\$100,793	\$270,199	
Subcontractor	Knickerbocker	Azaiza	Roadsafe Traffic	Just Rite	
Type of Work	Roofing	Concrete	Traffic Control	Ceiling	
Subcontract Price	\$363,630	\$80,000	\$642,246	\$100,000	
Amount Uncompleted	\$363,630	\$62,000	\$332,503	\$34,100	
Subcontractor	Sager	Allied	Area	Onscape	
Type of Work	Caulk	Waterproofing	Erection	Landscape	
Subcontract Price	\$7,574	\$590,500	\$194,496	\$292,253	
Amount Uncompleted	\$7,574	\$540,510	\$56,751	\$66,188	
Subcontractor	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &	Miscellaneous &
Type of work	Miscellaneous	Uncommitted Subs	Uncommitted Subs	Miscellaneous	Miscellaneous
Subcontract Price	\$44,087,290	\$3,535,873	\$15,853,807	\$45,266,520	\$98,084,400
Amount Uncompleted	\$28,377,280	\$1,381,865	\$5,649,500	\$9,910,683	\$98,084,400
Total Uncompleted	\$30,828,145	\$2,655,551	\$6,947,938	\$11,608,481	\$98,084,400

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.

Subscribed and sworn to before me
 this 26th day of November, 2008

 Notary Public
 My commission expires: 8-24-10

(Notary Seal)



Type or Print Name Robert F. Zitek - Agent
 Officer or Director
 Signed 
 Company E.H. Paschen/S N Nielsen & Associates, LLC
 Address 8725 W. Higgins Road, Suite 200
 Chicago, IL. 60631

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

C. Work Subcontracted to Others

List below all work, according to each contract on the preceding page, that the Bidder has subcontracted to others. Do NOT include work to be performed by another general contractor in a joint venture. No work may be indicated as subcontracted to others on awards pending. If no work is subcontracted, indicate NONE.

	1	2	3	4	Awards Pending
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
TOTAL Uncompleted					

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
Affidavit of Uncompleted Work (continued)

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City, and private work including ALL subcontract work, ALL pending low bids not yet awarded or rejected, and ALL estimated completion dates.

Robert F. Zitek
Signature

February 24, 2009
Date

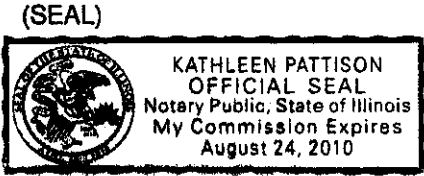
Robert F. Zitek
Name (Type or Print)

Agent
Title

F.H. Paschen, S.N. Nielsen & Assoc., LLC
Bidder Name
8725 W. Higgins Rd., Suite 200
Address
Chicago IL 60631
City State Zip

Subscribed and sworn to before me
this 24th day of February, 20 09

Kathleen Pattison
Notary Public



Commission expires: August 24, 2010

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

Statement Of Bidder's Qualifications

At the request of the Commission, the Bidder shall also submit additional information regarding the capability of the Bidder to perform the Contract.

Bidder F.H. Paschen, S.N. Nielsen & Assoc., LLC

Submitted By Robert F. Zitek

Title Agent

Permanent Main Office Address 8725 W. Higgins Rd., Suite 200

Local Address Chicago, Illinois 60631

Local Telephone No. and FAX No. 773-444-3474 / 773-693-0064

How many years operating as contractor for work of this nature? 32

List of recently completed contracts of similar dollar value and scope of work.

	Name/Address	Dollar Amount	Year of Contract	Nature of Project
1.	See Attached			
2.				
3.				
4.				
5.				
6.				
7.				
8.				

**F.H. Paschen, S.N. Nielsen
PROJECTS COMPLETED – SIMILAR SCOPE**

Name of Project	Owner	Architect	Contract Amount	Start Date / Completion Date
9 th District Police Station and Parking Structure	Public Building Commission 50 S. Washington St. Chicago, IL 60602 312-744-9430	Wight & Co. 2500 N. Frontage Rd. Darien, IL 60561 630-969-7000	\$28,77,000	May 2007, December 2008
Gale Community Center Chicago, Illinois Job No. 2011	Public Building Commission 50 S. Washington St. Chicago, IL 60602 312-744-9430	Perkins & Will 330 N. Wabash Chicago, IL 60611 312-755-0770	\$5,964,000	March, 2006 March, 2008
Terminal 1 – Canopy / Terminal 2 – Interiors & Baggage Claim Escalators Chicago, Illinois Job No. 2017	Chicago Department of Aviation 11601 W. Touhy Ave. Chicago, IL 60666 Robert Dawson 773-686-3060	Murphy / Jahn (T1) 35 E. Wacker Dr. Chicago, IL 60601 Thomas Chambers 312-427-7300	\$75,900,000	September, 2005 February, 2008
Midway Airport Elevated Parking Structure Chicago, Illinois Job No. 2003	Chicago Department of Aviation P. O. Box 66147 Chicago, IL 60666 Larry Pianto 773-894-5404	Teng & Associates (T2) 205 N. Michigan Ave. Chicago, IL 60601 Joe Hoerner 312-616-0000	\$67,140,000	April, 2004 November 13, 2005
New Branch Bank – 47 th & Ashland Ave. Chicago, Illinois Job No. 2018	Cole Taylor Bank 9550 W. Higgins Rd. Rosemont, IL 60018 Thomas Paar 847-653-7400	HNTB Architects Engineers Planners 111 N. Canal St. Chicago, IL 60606 Richard Vaiculis 312-930-9119	\$2,250,608	April 1, 2005 October 31, 2005

**F.H. Paschen, S.N. Nielsen
PROJECTS COMPLETED – SIMILAR SCOPE**

Name of Project	Owner	Architect	Contract Amount	Start Date / Completion Date
<p>Heige Hagan Middle School Chicago, Illinois Job No. 2011</p>	<p>Public Building Commission 50 S. Washington St. Chicago, IL 60602 312-744-9430</p>	<p>STL 808 N. Dearborn Chicago, IL 60610 J. James Mo 312-644-9850 Parkman & Weston Associates 53 W. Jackson St. Chicago, IL 60604 Larry Parkman 312-939-7870</p>	<p>\$16,000,000</p>	<p>March, 2004 August, 2005</p>
<p>West Pullman Library Chicago, Illinois Job No. 2007</p>	<p>Public Building Commission 50 W. Washington, Suite 200 Chicago, IL 60602 David Lai 312-744-9268</p>	<p>Parkman & Weston Associates 53 W. Jackson St. Chicago, IL 60604 Larry Parkman 312-939-7870</p>	<p>\$4,237,000</p>	<p>September, 2003 January, 2005</p>
<p>New Church Hoffman Estates, Illinois Job No. 2900</p>	<p>Life Changers International Church 180 N. Hawthorn Rd. Barrington Hills, IL 60010 Pastor Greg Dickow 847-842-6000</p>	<p>Legat Architects 1900 E. Golf Rd., Suite 130 Schaumburg, IL 60173 Wayne Machnich 847-605-0234</p>	<p>\$20,700,000</p>	<p>April, 2003 October, 2004</p>
<p>10th District Police Station Chicago, Illinois Job No. 2001</p>	<p>Public Building Commission of Chicago 300 S. Wacker Dr., Suite 200 Chicago, IL 60606 Clarence Passons 312-922-6400</p>	<p>OWP & P 111 W. Washington Chicago, IL 60606 Rand Ekman 312-332-9600</p>	<p>\$13,194,000</p>	<p>February, 2003 October, 2004</p>
<p>New Neal F. Simson Career Academy 8147 S. Vincennes Avenue Chicago, IL 60620 PBC Contract No. 1264 Project No. CPS-10 Job No. 435</p>	<p>Public Bldg. Comm. of Chicago for Chicago Public Schools 50 W. Washington St., Rm. 200 Chicago, IL 60602 Yoav Yaakoby, Project Mgr. 312-744-3090</p>	<p>Alfred Benesch & Company 205 N. Michigan, Suite 200 Chicago, IL 60601 Eric Borgman, Owners Rep.</p>	<p>\$35,270,000</p>	<p>December, 2001 April, 2004</p>

**F.H. Paschen, S.N. Nielsen
PROJECTS COMPLETED -- SIMILAR SCOPE**

Name of Project	Owner	Architect	Contract Amount	Start Date / Completion Date
New Ronald E. McNair Elem. School 4829 W. Walton Avenue Chicago, IL 60651	Public Building Comm. of Chicago For Chicago Public Schools 125 S. Clark St., 16 th Floor Chicago, IL 60603	Parkman & Weston, Ltd. 53 W. Jackson Blvd, Ste. 1456 Chicago, IL 60604	\$13,604.00	March 2002 May 2003
CPS Contract No. 328360 PBC Contract No. 1262, CPS-08 Job No. 415	Gary Jung 773-553-3216	Larry Parkman 312-939-7870 and Vistara Construction Services 728 W. Jackson, Suite 402 Chicago, IL 60661 Joe Maziere		

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
Statement Of Bidder's Qualifications (continued)

The undersigned hereby authorizes any person, firm, or corporation to furnish any information requested by the Public Building Commission of Chicago in verification of this Statement of Bidder's Qualifications.

If submitted by a ~~corporation~~: Limited Liability Company
Company

- (a) ~~Corporation~~ Name
F.H. Paschen, S.N. Nielsen & Assoc., LLC
- (b) State and City in which ~~incorporated~~ organized.
Illinois, Chicago
- (c) If incorporated in another state, is firm authorized to do business in the State of Illinois?
Yes _____ No _____
- (d) Name and address of registered agent in Illinois
Burke, Burns & Pinelli, Ltd., Three First Nat'l Plaza, #3900, Chicago, IL 60602

(e) Names and titles of officers authorized to sign contracts

See Attached Directive

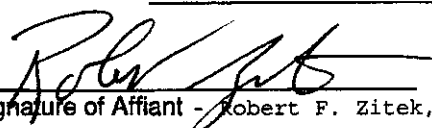
Name	Title
Name	Title

If submitted by a partnership:

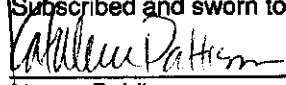
- (a) Firm Name _____
- (b) Official Address _____
- (c) Names of all Partners: _____

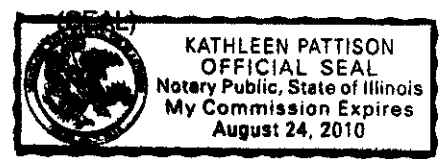
If submitted by an individual:

- (a) Firm Name _____
- (b) The Owner _____
- (c) Official Address _____


Signature of Affiant - Robert F. Zitek, Agent

Subscribed and sworn to before me this 24th day of February 2009


Notary Public
My Commission expires: August 24, 2010



CERTIFICATE

I do hereby certify that the following is a true, complete and correct copy of a Directive issued by FHP Management, Inc. on June 11, 2008, the Manager of F.H. Paschen, S.N. Nielsen & Associates, LLC.

"RESOLVED, that the following are hereby authorized to execute and deliver for and on behalf of F. H. Paschen, S.N. Nielsen & Associates, LLC contracts of all kinds, including but not limited to, construction proposals, construction contracts, change orders, bid bonds, payment and performance bonds, and any and all documents, instruments and papers which in their discretion may be necessary, expedient, or proper for execution of the construction of the various projects bid by F. H. Paschen, S.N. Nielsen & Associates, LLC.

Frank H. Paschen	Agent
James V. Blair	Agent
Carol M. Einfalt	Agent
Joseph V. Scarpelli	Agent
W. Mark Barkowski	Agent
Robert F. Zitek	Agent
Leo Wright	Agent
Timothy B. Stone	Agent

I do hereby further certify that said directive has not been amended or repealed and is in full force and effect.


IN WITNESS WHEREOF I have hereunto set my hand as Secretary of FHP Management, Inc., Manager of F. H. Paschen, S.N. Nielsen & Associates, LLC., this 11th day of February, 2009.



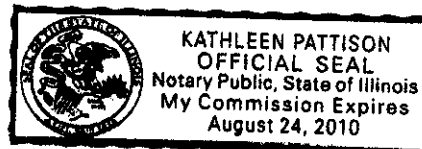
Carol M. Einfalt
Secretary

State of Illinois
County of Cook

Subscribed and sworn to before me this 11th day of February, 2009.



Notary Public



PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

Disclosure Of Retained Parties

Pursuant to Resolution No. 5339, as amended by Resolution No. 5371, of the Board of the Public Building Commission of Chicago, the apparent 1st low and the apparent 2nd low Bidder are required to submit a fully executed Disclosure of Retained Parties within five (5) days of their respective receipt of notice that they are the apparent 1st and 2nd low bidders.

A. Definitions and Disclosure Requirements

1. As used herein, "Contractor" means a person or entity that has any contract or lease with the Public Building Commission of Chicago ("Commission").
2. Commission contracts and/or qualification submittals must be accompanied by a disclosure statement providing certain information about any lobbyists whom the Contractor has retained or expects to retain with respect to the contract or lease. In particular, the Contractor must disclose the name of each such person, his or her business address, the name of the relationship, and the amount of fees paid or estimated to be paid. The Contractor is not required to disclose employees who are paid solely through the Contractor's regular payroll.
3. "Lobbyists" means any person a) who for compensation or on behalf of any person other than himself undertakes to influence any legislative or administrative action, or b) any part of whose duties as an employee of another includes undertaking to influence any legislative or administrative action.

B. Certification

Contractor hereby certifies as follows:

1. This Disclosure relates to the following transaction

: _____

Description of goods or services to be provided under Contract

2. Name of Contractor: _____
3. EACH AND EVERY lobbyist retained or anticipated to be retained by the Contractor with respect to or in connection with the contract or lease is listed below. Attach additional pages if necessary.

Check here if no such persons have been retained or are anticipated to be retained:

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No 1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
Disclosure Of Retained Parties

Pursuant to Resolution No. 5339, as amended by Resolution No. 5371, of the Board of the Public Building Commission of Chicago, the apparent 1st low and the apparent 2nd low Bidder are required to submit a fully executed Disclosure of Retained Parties within five (5) days of their respective receipt of notice that they are the apparent 1st and 2nd low bidders.

A. Definitions and Disclosure Requirements

1. As used herein, "Contractor" means a person or entity that has any contract or lease with the Public Building Commission of Chicago ("Commission").
2. Commission contracts and/or qualification submittals must be accompanied by a disclosure statement providing certain information about any lobbyists whom the Contractor has retained or expects to retain with respect to the contract or lease. In particular, the Contractor must disclose the name of each such person, his or her business address, the name of the relationship, and the amount of fees paid or estimated to be paid. The Contractor is not required to disclose employees who are paid solely through the Contractor's regular payroll.
3. "Lobbyists" means any person a) who for compensation or on behalf of any person other than himself undertakes to influence any legislative or administrative action, or b) any part of whose duties as an employee of another includes undertaking to influence any legislative or administrative action.

B. Certification

Contractor hereby certifies as follows:

1. This Disclosure relates to the following transaction:
 : Contract 1480

Description of goods or services to be provided under Contract
General Construction

2. Name of Contractor: F.H. Paschen, S.N. Nielsen & Assoc., LLC
3. EACH AND EVERY lobbyist retained or anticipated to be retained by the Contractor with respect to or in connection with the contract or lease is listed below. Attach additional pages if necessary.

Check here if no such persons have been retained or are anticipated to be retained:

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

Retained Parties:

Name	Business Address	Relationship (Lobbyists, etc.)	Fees (Indicate whether paid or estimated)
F&B Construction Services	7953 S. King Dr., Chicago	Sub-Contractor (MBE)	\$3,400,000 EST
C. Szabo Contracting	777 S. Rohlwing Rd, Addison	Sub-Contractor (MBE)	\$ 375,000 EST
Fullerton Industrial Supply	1456 W. Fullerton, Chicago	Supplier (MBE)	\$ 900,000 EST
Garth Building Products	2741 E. 223rd, Chicago Hgts.	Supplier (MBE)	\$ 580,000 EST
Evergreen Supply	9901 S. Torrence, Chicago	Supplier (WBE)	\$ 825,000 EST
E.E. Bailey Bldg. Mat. Supply	741 W. 115th, Chicago	Supplier (WBE)	\$ 100,000 EST
Romero Steel	1300 W. Main, Melrose Park	Sub-Contractor (MBE)	\$ 275,000 EST

4. The Contractor understands and agrees as follows:
- a. The information provided herein is a material inducement to the Commission execution of the contract or other action with respect to which this Disclosure of Retained Parties form is being executed, and the Commission may rely on the information provided herein. Furthermore, if the Commission determines that any information provided herein is false, incomplete, or inaccurate, the Commission may terminate the contract or other transaction, terminate the Contractor's participation in the contract or other transactions with the Commission.
 - b. If the Contractor is uncertain whether a disclosure is required, the Contractor must either ask the Commission whether disclosure is required or make the disclosure.
 - c. This Disclosure of Retained Parties form, some or all of the information provided herein, and any attachments may be made available to the public on the Internet, in response to a Freedom of Information Act request, or otherwise. The Contractor waives and releases any possible rights or claims it may have against the Commission in connection with the public release of information contained in the completed Disclosure of Retained Parties form and any attachments.

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

Under penalty of perjury, I certify that I am authorized to execute this Disclosure of Retained Parties on behalf of the Contractor and that the information disclosed herein is true and complete.

Robert F. Zitek
Signature

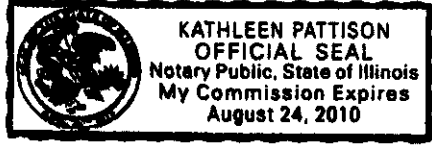
February 26, 2009
Date

Robert F. Zitek
Name (Type or Print)

Agent
Title

Subscribed and sworn to before me
this 26th day of April, 2009 (SEAL)

Kathleen Pattison
Notary Public



Commission expires: August 24, 2010

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No. 1480

PERFORMANCE AND PAYMENT BOND

Contract No. 1480

Bond No. 929472581/6617544

KNOW ALL MEN BY THESE PRESENTS, that we, F.H. Paschen, S N Nielsen & Associates, LLC,
 a corporation organized and existing under the laws of the State of Illinois, with offices in the City of
Chicago, State of Illinois, as Corporate Principal, and
Continental Casualty Company &
Safeco Insurance Company of America as co-sureties

a corporation organized and existing under the laws of the State of *, with offices in the State of
* Illinois *, as Surety, are held and firmly bound unto the Public Building Commission of Chicago,
 hereinafter called "Commission", in the penal sum of Twenty-Two Million Nine Hundred Eighty- Nine
Thousand Dollars and No Cents (\$22,989,000.00) for the payment of which sum well and truly to be made,
 we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by
 these presents.

The condition of this obligation is such, that whereas the Principal entered into a certain Contract, hereto
 attached, with the Commission, dated March 10, 2009, for the fabrication, delivery, performance and
 installation of

Brighton Park I Area Elementary School
 3456 W. 38th Street, Chicago, IL

in the referenced project area and other miscellaneous work collateral thereto.

NOW, THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings,
 covenants, terms, conditions, and agreements of said Contract during the original term of said Contract and
 any extension thereof that may be granted by the Commission, with or without notice to the Surety, and
 during the life of any guarantee required under the Contract, and shall also well and truly perform and
 fulfill all the undertakings, covenants, terms, conditions and agreements of any and all authorized
 modifications of said Contract that may be made; and also if the Principal shall promptly pay all persons,
 firms, and corporations supplying labor, materials, facilities, or services in the prosecution of the work
 provided for in the Contract, and any and all duly authorized modifications of said Contract that may be
 made, notice of which modifications being hereby waived; and also, if the Principal shall fully secure and
 protect the said Commission, its legal successor and representative, from all liability in the premises and
 from all loss or expense of any kind, including all costs of court and attorney's fees, made necessary or
 arising from the failure, refusal, or neglect of the aforesaid Principal to comply with all the obligations
 * Illinois & Washington respectively

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No. 1480

assumed by said Principal or any subcontractors in connection with the performance of said Contract and all such modifications thereof; and also, if the Principal shall deliver all Work called for by said Contract of the Principal with the Commission, free and clear of any and all claims, liens and expenses of any kind or nature whatsoever, and in accordance with the terms and provisions of said Contract, and any and all modifications of said Contract; then, this said Bond shall become null and void; otherwise it shall remain in full force and effect.

The Surety does further hereby consent and yield to the jurisdiction of the State Civil Courts of the County of Cook, City of Chicago, and State of Illinois, and does hereby formally waive any plea of jurisdiction on account of the residence elsewhere of the Surety. The Principal and Surety severally and jointly agree that this Bond, and the undertakings contained herein, are also for the benefit of any and all subcontractors and other persons furnishing materials, labor, facilities, or services to the Principal or for the performance by the Principal of said Contract with the Commission as originally executed by said Principal and the Commission or as thereafter modified, and that any such subcontractor or persons furnishing labor, materials, facilities, or services may bring suit on this Bond, or any undertaking herein contained, in the name of the Commission against the said Principal and Surety or either of them.

It is expressly understood and agreed that this Bond, in the penal sum of Twenty-Two Million Nine Hundred Eighty- Nine Thousand Dollars and No Cents (\$22,989,000.00), shall secure the payment of all sums due of and by the Principal under the Contract, and guarantee the faithful performance of the Contract.

No modifications, omissions, or additions, in or to the terms of said Contract, the plans or specifications, or in the manner and mode of payment shall in any manner affect the obligations of the Surety in connection with aforesaid Contract. Notice to the Surety of any and all modifications in said Contract of the Principal with the Commission and of any additions or omissions to or from said Contract are hereby expressly waived by the Surety.

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No. 1480

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals this March 13, 2009, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

WITNESS:

Name

BY _____ (Seal)
Individual Principal

Business Address

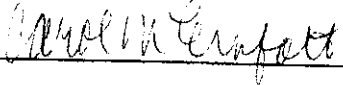
Individual Principal (Seal)

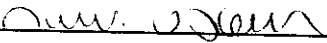
City State

CORPORATE SEAL

ATTEST:

F.H. Paschen, S N Nielsen & Associates, LLC
Corporate Principal

BY 

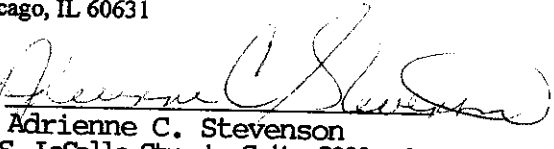
BY 

Secretary Carol M. Einfalt
Title

President James V. Blair
Title

8725 W. Higgins, Suite 200
Chicago, IL 60631

Continental Casualty Company & Safeco Insurance Company of America
Corporate Surety

BY: 
Adrienne C. Stevenson
10 S. LaSalle Street; Suite 3000; Chgo., IL
Business Address & Telephone 60603
312-621-4702

Attorney-in-Fact
Title
CORPORATE SEAL

FOR CLAIMS (Please Print):

Contact Name: Andrea Warning / Kirklin Welch
333 E. Butterfield Road / 2800 W. Higgins Road
Business Address: Lombard, Illinois 60148 / Hoffman Estates, IL 60169
Telephone: 630-719-3016 / 847-490-2251 Fax: 630-719-3305 / 847-490-2231

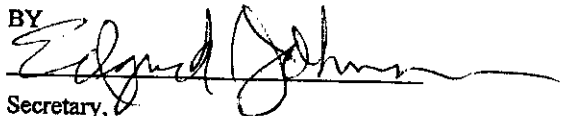
The rate of premium of this Bond is \$ Scale per thousand. **
Total amount of premium charged is \$ 112,550.00 **

* The current power of attorney for the persons who sign for any surety company shall be attached to this Bond. Such power of attorney shall be sealed and certified with a "first-hand signature" by an officer of the surety. The Commission will not accept a facsimile signature.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No. 1480

** Must be filled in by the Corporate Surety.

BOND APPROVAL

BY

Secretary,

Public Building Commission of Chicago

CERTIFICATE AS TO CORPORATE SEAL

I, Carol M. Einfalt, certify that I am the _____ Secretary of F.H. Paschen, S N Nielsen & Associates, LLC, corporation named as Principal in the foregoing performance and payment bond, that James V. Blair who signed on behalf of the Principal was then President of said corporation; that I know this person's signature, and the signature is genuine; and that the Bond was duly signed, sealed, and attested, for and in behalf of said corporation by authority of its governing body.

Dated this 13 day of Mar2009.

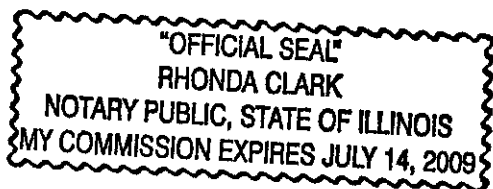
CORPORATE SEAL

STATE OF ILLINOIS
COUNTY OF COOK

On this 13th day of March, 2009, before me personally came Adrienne C. Stevenson to me known, who being by so duly sworn, did depose and say: that he/she is

Continental Casualty Company &
Attorney-In-Fact of Safeco Insurance Company of America

the Corporation described in and which executed the foregoing instrument; that he/she knows the seal of said Corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority granted to him/her in accordance with the By-Laws of the said Corporation, and that he/she signed his/her name thereto by like authority.



Rhonda Clark

NOTARY PUBLIC

My Commission Expires

July 14, 2009

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois corporation, National Fire Insurance Company of Hartford, a Connecticut corporation, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania corporation (herein called "the CNA Companies"), are duly organized and existing corporations having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Adrienne C Stevenson, Patricia M Stein, John K Johnson, Candace T Stevenson, Duane C Trombetta, Individually

of Chicago, IL, their true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their corporations and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the corporations.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Senior Vice President and their corporate seals to be hereto affixed on this 24th day of January, 2006.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Michael Gengler
Michael Gengler Senior Vice President

State of Illinois, County of Cook, ss:

On this 24th day of January, 2006, before me personally came Michael Gengler to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Chicago, State of Illinois; that he is a Senior Vice President of Continental Casualty Company, an Illinois corporation, National Fire Insurance Company of Hartford, a Connecticut corporation, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania corporation described in and which executed the above instrument; that he knows the seals of said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said corporations and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporations.



My Commission Expires March 15, 2009

Maria M. Medina
Maria M. Medina Notary Public

CERTIFICATE

I, Mary A. Ribikawskis, Assistant Secretary of Continental Casualty Company, an Illinois corporation, National Fire Insurance Company of Hartford, a Connecticut corporation, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania corporation do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the corporations printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporations this 13th day of March, 2009.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Mary A. Ribikawskis
Mary A. Ribikawskis Assistant Secretary

Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article IX—Execution of Documents

Section 3. Appointment of Attorney-in-fact. The Chairman of the Board of Directors, the President or any Executive, Senior or Group Vice President may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Company in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority, shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The Chairman of the Board of Directors, the President or any Executive, Senior or Group Vice President or the Board of Directors, may, at any time, revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"Resolved, that the signature of the President or any Executive, Senior or Group Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted pursuant to Section 3 of Article IX of the By-Laws, and the signature of the Secretary or an Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article VI—Execution of Obligations and Appointment of Attorney-In-Fact

Section 2. Appointment of Attorney-in-fact. The Chairman of the Board of Directors, the President or any Executive, Senior or Group Vice President may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Company in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority, shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The President or any Executive, Senior or Group Vice President may at any time revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"Resolved, that the signature of the President or any Executive, Senior or Group Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted pursuant to Section 2 of Article VI of the By-Laws, and the signature of the Secretary or an Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following Resolution duly adopted on February 17, 1993 by the Board of Directors of the Company.

"RESOLVED: That the President, an Executive Vice President, or any Senior or Group Vice President of the Corporation may, from time to time, appoint, by written certificates, Attorneys-in-Fact to act in behalf of the Corporation in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such Attorney-in-Fact, subject to the limitations set forth in their respective certificates of authority, shall have full power to bind the Corporation by their signature and execution of any such instrument and to attach the seal of the Corporation thereto. The President, an Executive Vice President, any Senior or Group Vice President or the Board of Directors may at any time revoke all power and authority previously given to any Attorney-in-Fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"RESOLVED: That the signature of the President, an Executive Vice President or any Senior or Group Vice President and the seal of the Corporation may be affixed by facsimile on any power of attorney granted pursuant to the Resolution adopted by this Board of Directors on February 17, 1993 and the signature of a Secretary or an Assistant Secretary and the seal of the Corporation may be affixed by facsimile to any certificate of any such power, and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Corporation. Any such power so executed and sealed and certified by certificate so executed and sealed, shall with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Corporation."



POWER OF ATTORNEY

Safeco Insurance Company of America
General Insurance Company of America
1001 4th Avenue
Suite 1700
Seattle, WA 98154

No. 2161

KNOW ALL BY THESE PRESENTS:

That SAFECO INSURANCE COMPANY OF AMERICA and GENERAL INSURANCE COMPANY OF AMERICA, each a Washington corporation, does each hereby appoint

*****JOHN K. JOHNSON; PATRICIA M. STEIN; ADRIENNE C. STEVENSON; CANDACE T. STEVENSON; DUANE C. TROMBETTA; Chicago, Illinois*****

its true and lawful attorney(s)-in-fact, with full authority to execute on its behalf fidelity and surety bonds or undertakings and other documents of a similar character issued in the course of its business, and to bind the respective company thereby.

IN WITNESS WHEREOF, SAFECO INSURANCE COMPANY OF AMERICA and GENERAL INSURANCE COMPANY OF AMERICA have each executed and attested these presents

this 16th day of January, 2009

[Handwritten signature of Dexter R. Legg]

Dexter R. Legg, Secretary

[Handwritten signature of Timothy A. Mikolajewski]

Timothy A. Mikolajewski, Vice President

CERTIFICATE

Extract from the By-Laws of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA:

"Article V, Section 13. - FIDELITY AND SURETY BONDS ... the President, any Vice President, the Secretary, and any Assistant Vice President appointed for that purpose by the officer in charge of surety operations, shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the company in the course of its business...

Extract from a Resolution of the Board of Directors of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA adopted July 28, 1970.

"On any certificate executed by the Secretary or an assistant secretary of the Company setting out,

- (i) The provisions of Article V, Section 13 of the By-Laws, and
(ii) A copy of the power-of-attorney appointment, executed pursuant thereto, and
(iii) Certifying that said power-of-attorney appointment is in full force and effect,

the signature of the certifying officer may be by facsimile, and the seal of the Company may be a facsimile thereof."

I, Dexter R. Legg, Secretary of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA, do hereby certify that the foregoing extracts of the By-Laws and of a Resolution of the Board of Directors of these corporations, and of a Power of Attorney issued pursuant thereto, are true and correct, and that both the By-Laws, the Resolution and the Power of Attorney are still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the facsimile seal of said corporation

this 13th day of March, 2009



[Handwritten signature of Dexter R. Legg]

Dexter R. Legg, Secretary

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PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL
Document Submittal Checklist

Two originals of the following documents are required at the time of bid opening. Please ensure that you have completed the forms and indicate such by placing an "X" next to each completed item:

1. Contractor's Bid
2. Bid Guarantee
3. Acceptance of the Bid
4. Basis of Award (Award Criteria)
5. Unit Prices (If applicable)
6. Affidavit of Non-Collusion
7. n/a Schedule B – Affidavit of Joint Venture (if applicable)
8. Schedule D – Affidavit of General Contractor Regarding MBE/WBE Participation
9. n/a Schedule E – Request for Waiver from MBE/WBE Participation (if applicable)
10. Affidavit of Uncompleted Work
11. Proof of Ability to Provide Bond
12. Proof of Ability to Provide Insurance
13. General Contractor's License

Current versions of the following documents must be on file with the Commission at the time of bid opening:

1. Financial Statement
2. Disclosure Affidavit
3. Statement of Bidder's Qualifications

If the Contractor is the first or second low bidder, then the Contractor is required to submit the following within five (5) days after bid opening.

Disclosure of Retained Parties (The apparent low and the apparent 2nd low bidder must submit a fully executed Disclosure of Retained Parties within 5 days after bid opening).

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

EXHIBIT #1

Illinois Department of Labor Prevailing Rates of Hourly Wages For Cook County

Cook County Prevailing Wage for February 2009

Trade Name	RG	TYP	C	Base	FRMAN	*M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
ASBESTOS ABT-GEN	ALL			34.750	35.250	1.5	1.5	2.0	8.830	6.170	0.000	0.270
ASBESTOS ABT-MEC	BLD			29.930	0.000	1.5	1.5	2.0	9.170	9.260	0.000	0.320
BOILERMAKER	BLD			41.230	44.940	2.0	2.0	2.0	6.720	8.940	0.000	0.350
BRICK MASON	BLD			38.030	41.830	1.5	1.5	2.0	8.000	9.970	0.000	0.550
CARPENTER	ALL			39.770	41.770	1.5	1.5	2.0	9.460	7.790	0.000	0.490
CEMENT MASON	ALL			41.850	43.850	2.0	1.5	2.0	7.850	7.410	0.000	0.170
CERAMIC TILE FNSHER	BLD			32.150	0.000	2.0	1.5	2.0	6.150	7.370	0.000	0.380
COMM. ELECT.	BLD			35.440	37.940	1.5	1.5	2.0	7.400	7.660	0.000	0.700
ELECTRIC PWR EQMT OP	ALL			38.600	44.970	1.5	1.5	2.0	9.110	11.34	0.000	0.290
ELECTRIC PWR GRNDMAN	ALL			30.110	44.970	1.5	1.5	2.0	7.120	8.850	0.000	0.230
ELECTRIC PWR LINEMAN	ALL			38.600	44.970	1.5	1.5	2.0	9.110	11.34	0.000	0.290
ELECTRICIAN	ALL			39.400	42.000	1.5	1.5	2.0	10.83	8.740	0.000	0.750
ELEVATOR CONSTRUCTOR	BLD			44.930	50.550	2.0	2.0	2.0	9.525	8.210	2.700	0.000
FENCE ERECTOR	ALL			28.640	30.140	1.5	1.5	2.0	7.750	5.970	0.000	0.350
GLAZIER	BLD			37.000	38.500	1.5	1.5	2.0	7.340	12.05	0.000	0.740
HT/FROST INSULATOR	BLD			39.900	42.400	1.5	1.5	2.0	9.170	10.46	0.000	0.320
IRON WORKER	ALL			40.250	42.250	2.0	2.0	2.0	9.950	14.74	0.000	0.300
LABORER	ALL			34.750	35.500	1.5	1.5	2.0	8.830	6.170	0.000	0.270
LATHER	ALL			39.770	41.770	1.5	1.5	2.0	9.460	7.790	0.000	0.490
MACHINIST	BLD			40.530	42.530	1.5	1.5	2.0	7.000	7.670	0.650	0.000
MARBLE FINISHERS	ALL			28.650	0.000	1.5	1.5	2.0	7.920	9.970	0.000	0.550
MARBLE MASON	BLD			38.030	41.830	1.5	1.5	2.0	8.000	9.970	0.000	0.550
MATERIAL TESTER I	ALL			24.750	0.000	1.5	1.5	2.0	8.830	6.170	0.000	0.270
MATERIALS TESTER II	ALL			29.750	0.000	1.5	1.5	2.0	8.830	6.170	0.000	0.270
MILLWRIGHT	ALL			39.770	41.770	1.5	1.5	2.0	9.460	7.790	0.000	0.490
OPERATING ENGINEER	BLD 1			43.800	47.800	2.0	2.0	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	BLD 2			42.500	47.800	2.0	2.0	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	BLD 3			39.950	47.800	2.0	2.0	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	BLD 4			38.200	47.800	2.0	2.0	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	FLT 1			47.250	47.250	1.5	1.5	2.0	6.850	5.600	1.900	0.000
OPERATING ENGINEER	FLT 2			45.750	47.250	1.5	1.5	2.0	6.850	5.600	1.900	0.000
OPERATING ENGINEER	FLT 3			40.700	47.250	1.5	1.5	2.0	6.850	5.600	1.900	0.000
OPERATING ENGINEER	FLT 4			33.850	47.250	1.5	1.5	2.0	6.850	5.600	1.900	0.000
OPERATING ENGINEER	HWY 1			42.000	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 2			41.450	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 3			39.400	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 4			38.000	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 5			36.800	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
ORNAMNTL IRON WORKER	ALL			39.050	41.300	2.0	2.0	2.0	7.950	13.19	0.000	0.500
PAINTER	ALL			36.900	41.510	1.5	1.5	1.5	7.350	8.400	0.000	0.470
PAINTER SIGNS	BLD			29.920	33.590	1.5	1.5	1.5	2.600	2.390	0.000	0.000
PILEDRIIVER	ALL			39.770	41.770	1.5	1.5	2.0	9.460	7.790	0.000	0.490
PIPEFITTER	BLD			42.050	45.050	1.5	1.5	2.0	7.660	8.550	0.000	1.370
PLASTERER	BLD			38.100	40.390	1.5	1.5	2.0	7.500	8.440	0.000	0.400
PLUMBER	BLD			43.000	45.000	1.5	1.5	2.0	9.110	5.960	0.000	1.030
ROOFER	BLD			36.400	39.400	1.5	1.5	2.0	6.950	4.670	0.000	0.330
SHEETMETAL WORKER	BLD			33.400	36.070	1.5	1.5	2.0	6.460	7.850	0.000	0.590

PUBLIC BUILDING COMMISSION OF CHICAGO
 Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

SIGN HANGER		BLD	26.510	27.360	1.5	1.5	2.0	4.200	2.280	0.000	0.000
SPRINKLER FITTER		BLD	40.500	42.500	1.5	1.5	2.0	8.500	6.850	0.000	0.500
STEEL ERECTOR		ALL	40.250	42.250	2.0	2.0	2.0	9.950	14.74	0.000	0.300
STONE MASON		BLD	38.030	41.830	1.5	1.5	2.0	8.000	9.970	0.000	0.550
TERRAZZO FINISHER		BLD	33.810	0.000	1.5	1.5	2.0	6.150	9.850	0.000	0.310
TERRAZZO MASON		BLD	37.390	40.390	1.5	1.5	2.0	6.150	11.11	0.000	0.350
TILE MASON		BLD	38.630	42.630	2.0	1.5	2.0	6.150	9.010	0.000	0.500
TRAFFIC SAFETY WRKR		HWY	24.300	25.900	1.5	1.5	2.0	3.780	1.875	0.000	0.000
TRUCK DRIVER	E	ALL 1	30.700	31.350	1.5	1.5	2.0	6.750	5.450	0.000	0.150
TRUCK DRIVER	E	ALL 2	30.950	31.350	1.5	1.5	2.0	6.750	5.450	0.000	0.150
TRUCK DRIVER	E	ALL 3	31.150	31.350	1.5	1.5	2.0	6.750	5.450	0.000	0.150
TRUCK DRIVER	E	ALL 4	31.350	31.350	1.5	1.5	2.0	6.750	5.450	0.000	0.150
TRUCK DRIVER	W	ALL 1	32.550	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.000
TRUCK DRIVER	W	ALL 2	32.700	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.000
TRUCK DRIVER	W	ALL 3	32.900	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.000
TRUCK DRIVER	W	ALL 4	33.100	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.000
TUCK POINTER		BLD	38.200	39.200	1.5	1.5	2.0	6.580	9.550	0.000	0.280

Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.)

OSA (Overtime is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

HW (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

Explanations

COOK COUNTY

TRUCK DRIVERS (WEST) - That part of the county West of Barrington Road.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial/Decoration Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration such as the day after Thanksgiving for Veterans Day. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS ELECTRICIAN - Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound vision production and reproduction, telephone and telephone interconnect, facsimile, data apparatus, coaxial, fibre optic and wireless equipment, appliances and systems used for the transmission and reception of signals of any nature, business, domestic, commercial, education, entertainment, and residential purposes, including but not limited to, communication and telephone, electronic and sound equipment, fibre optic and data communication systems, and the performance of any task directly related to such installation or service whether at new or existing sites, such tasks to include the placing of wire and cable and electrical power conduit or other raceway work within the equipment room and pulling wire and/or cable through conduit and the installation of any incidental conduit, such that the employees covered hereby can complete any job in full.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

OPERATING ENGINEERS - BUILDING

Class 1. Mechanic; Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson attachment; Batch Plant; Benoto; Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader,

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes; Squeeze Cretes-screw Type Pumps; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, inside Freight Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill self-propelled); Rock Drill (truck mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

OPERATING ENGINEERS - FLOATING

Class 1. Craft foreman (Master Mechanic), diver/wet tender, engineer (hydraulic dredge).

Class 2. Crane/backhoe operator, mechanic/welder, assistant engineer (hydraulic dredge), leverman (hydraulic dredge), and diver tender.

Class 3. Deck equipment operator (machineryman), maintenance of crane (over 50 ton capacity) or backhoe (96,000 pounds or more), tug/launch operator, loader, dozer and like equipment on barge, breakwater wall, slip/dock or scow, deck machinery, etc.

Class 4. Deck equipment operator machineryman/fireman), (4 equipment units or more) and crane maintenance 50 ton capacity and under or backhoe weighing 96,000 pounds or less, assistant tug operator.

OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Craft Foreman; Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson attachment; Ballast Regulator; Belt Loader; Caisson

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco & Machines of a like nature; Crete Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell machine with Air Compressor; Dredges; Field Mechanic-Welder; Formless Curb and Gutter Machine; Gradall and Machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole; Drills (Tunnel Shaft); Underground Boring and/or Mining Machines; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Greaser Engineer; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All Locomotives, Dinky; Pump Cretes; Squeeze Cretes-Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper - Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Hydro-Blaster; Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

to exceed a total of 300 ft.); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. Bobcats (all); Brick Forklifts, Oilers.

TRAFFIC SAFETY

Work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION - EAST & WEST

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; TEAMsters Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 618/993-7271 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

PUBLIC BUILDING COMMISSION OF CHICAGO
Contract No1480
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

EXHIBIT #2 INSURANCE REQUIREMENTS

The Contractor must provide and maintain at Contractor's own expense, the minimum insurance coverage and requirements specified below, insuring all operations related to the Contract.

The insurance must remain in effect from: the date of the notice to proceed until Substantial Completion of the project, during completion of Punch List, as well as any time Contractor returns to perform additional work regarding warranties or for any other purpose.

INSURANCE TO BE PROVIDED

1) **Workers' Compensation and Employers Liability**

Workers' Compensation Insurance, as prescribed by applicable law covering all employees who are to provide a service under this Contract and Employers Liability coverage with limits of not less than \$500,000 each accident, illness or disease.

2) **Commercial General Liability (Primary and Umbrella)**

Commercial General Liability Insurance or equivalent with limits of not less than \$5,000,000 per occurrence for bodily injury, personal injury, and property damage liability. Coverage must include the following: All premises and operations, products/completed operations (for minimum of two (2) years following project completion), explosion, collapse, underground, separation of insureds, defense, and contractual liability with no limitation endorsement. The Public Building Commission, Board of Education of the City of Chicago and City of Chicago are to be named as additional insureds on a primary, non-contributory basis for any liability arising directly or indirectly from the work.

Subcontractors performing work for Contractor must maintain limits of not less than \$1,000,000 per occurrence with the same terms herein.

3) **Automobile Liability (Primary and Umbrella)**

When any motor vehicles (owned, non-owned and hired) are used in connection with work to be performed, the Contractor must provide Automobile Liability Insurance, with limits of not less than \$2,000,000 per occurrence for bodily injury and property damage. The Public Building Commission, Board of Education of the City of Chicago and City of Chicago are to be named as additional insureds on a primary, non-contributory basis.

Subcontractors performing work for Contractor must maintain limits of not less than \$1,000,000 per occurrence with the same terms herein.

4) **Contractors Pollution Liability**

When any work is performed which may cause a pollution exposure, Contractors Pollution Liability must be provided covering bodily injury, property damage and other losses caused by pollution conditions that arise from the Contract scope of services with limits of not less than \$1,000,000 per occurrence. When policies are renewed or replaced, the policy retroactive date must coincide with or precede, start of work on the Contract. A claims-made policy, which is not renewed or replaced,

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

Page 1 of 3

DATE
09/29/2008

PRODUCER 877-945-7378

Willis North America, Inc.
26 Century Blvd.
P. O. Box 305191
Nashville, TN 372305191

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

NAIC#

INSURED
F.H. Paschen, S.N. Nielsen & Associates LLC
8725 W. Higgins Road
Suite 200
Chicago, IL 60631

INSURER A: Zurich American Insurance Company of Illi	27855-102
INSURER B: Zurich American Insurance Company	16535-107
INSURER C: Westchester Fire Insurance Co. (THRU INT)	21121-000
INSURER D: RSUI Indemnity Company	22314-000
INSURER E:	

COVERAGES

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

NSR ADD'L LTR INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	<input checked="" type="checkbox"/> GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC	GL913942002	10/1/2008	10/1/2009	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> GARAGE LIABILITY <input type="checkbox"/> ANY AUTO	BAP913941902	10/1/2008	10/1/2009	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
C	<input checked="" type="checkbox"/> EXCESS/UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$	G21986094004	10/1/2008	10/1/2009	EACH OCCURRENCE \$ 25,000,000 AGGREGATE \$ 25,000,000 \$ \$ \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	WC913942102	10/1/2008	10/1/2009	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D	OTHER Excess Liability Excess over \$25M Umbrella Policy Limits	NHA046062	10/1/2008	10/1/2009	\$25,000,000. Each Occurrence \$25,000,000. Aggregate

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Workers Compensation Coverage:
The Proprietor Partners, Executives are Included.

CERTIFICATE HOLDER

CANCELLATION

Evidence of Coverage

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 60 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Theresa J. Chambers

PRODUCER 877-945-7378 Willis North America, Inc. 26 Century Blvd. P. O. Box 305191 Nashville, TN 372305191	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
INSURED F.H. Paschen, S.N. Nielsen & Associates LLC 8725 W. Higgins Road Suite 200 Chicago, IL 60631	INSURERS AFFORDING COVERAGE	NAIC#
	INSURER A: Zurich American Insurance Company of Illi	27855-102
	INSURER B: Zurich American Insurance Company	16535-107
	INSURER C: Westchester Fire Insurance Co. (THRU INT)	21121-000
	INSURER D: RSUI Indemnity Company	22314-000
	INSURER E:	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Excess Liability - Excess over \$50M Umbrella Policy Limits
Insurance Company: Endurance American Specialty Insurance Company
Policy number: EXC1000106790
Policy Effective date: 10/01/2008
Policy Expiration date: 10/01/2009
Limits: \$25,000,000. Each Occurrence
\$25,000,000. Aggregate

Excess Liability Policy Number: EXC10000755900; Carrier: Endurance American Specialty Insurance Company; Effective Date: 11/09/2007 Expiration Date: 10/01/2008
Limits: \$25,000,000. Each Occurrence; \$25,000,000. Aggregate Excess of \$50,000,000.

Excess Liability Policy Number: AEC926346100; Carrier: American Zurich Insurance Company; Effective Date: 11/09/2007 Expiration Date: 10/01/2008
Limits: \$25,000,000. Each Occurrence; \$25,000,000. Aggregate Excess of \$75,000,000.

Pollution Liability
Policy Number: CEOG22086194004
Carrier: Illinois Union Insurance Company
Effective Date: 10/01/2007 Expiration Date: 10/01/2008
Limits: \$5,000,000 - Each Occurrence
\$5,000,000 - Aggregate

Professional Liability
Policy Number: CEOG22086194004
Issuing Carrier: Illinois Union Insurance Company
Effective Date: 10/01/2007 Expiration Date: 10/01/2008
Limits: \$5,000,000 - Each Occurrence
\$5,000,000 - Aggregate

Worker's Compensation Coverage: The Proprietor Partners, Executives are Included.

If required by contract or written agreement, it is agreed that Certificate Holder is included as an Additional Insured with respect to General Liability coverage.

If required by written contract or agreement, it is understood and agreed that the insurance carrier waives its rights of subrogation against Certificate Holder.

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

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

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

must have an extended reporting period of two (2) years. The Public Building Commission, Board of Education of the City of Chicago and City of Chicago are to be named as additional insureds on a primary, non-contributory basis.

5) **Professional Liability**

When any architects, engineers, construction managers or other professional consultants perform work in connection with this Contract, Professional Liability Insurance covering acts, errors, or omissions must be maintained with limits of not less than \$1,000,000. When policies are renewed or replaced, the policy retroactive date must coincide with, or precede, start of work on the Contract. A claims-made policy, which is not renewed or replaced, must have an extended reporting period of two (2) years.

6) **Builders Risk**

When Contractor undertakes any construction, including improvements, betterments, and/or repairs, the Contractor must provide All Risk Builders Risk Insurance at replacement cost for materials, supplies, equipment, machinery and fixtures that are or will be part of the permanent facility. Coverage must include but are not limited to the following: right to partial occupancy, collapse, water including overflow, leakage, sewer backup, or seepage, damage to adjoining or existing property, debris removal, scaffolding, false work, fences, and temporary structures, faulty workmanship or materials, and equipment stored off site or in transit. The Public Building Commission, Board of Education of the City of Chicago, and the City of Chicago are to be named as additional insureds and loss payees

The Contractor is responsible for all loss or damage to Public Building Commission, City of Chicago and/or Board property at full replacement cost. The Contractor is responsible for all loss or damage to personal property including but not limited to materials, equipment, tools, and supplies owned, rented, or used by Contractor.

7) **Railroad Protective Liability**

When any work is to be done adjacent to or on railroad or transit property, Contractor must provide, with respect to the operations that Contractor or subcontractors perform, Railroad Protective Liability Insurance in the name of railroad or transit entity. The policy must have limits of not less than the requirement of the operating railroad/transit entity for losses arising out of injuries to or death of all persons, and for damage to or destruction of property, including the loss of use thereof.

B. ADDITIONAL REQUIREMENTS

Contractor must furnish the Public Building Commission Procurement Department, Richard J. Daley Center, Room 200, Chicago, IL 60602, original Certificates of Insurance, or such similar evidence, to be in force on the date of this Contract, and Renewal Certificates of Insurance, or such similar evidence, if any insurance policy has an expiration or renewal date occurring during the term of this Contract. The Contractor must submit evidence of insurance to the Public Building Commission prior to Contract award. The receipt of any certificate does not constitute agreement by the Commission that the insurance requirements in the Contract have been fully met or that the insurance policies indicated on the certificate are in compliance with all Contract requirements. The failure of the Commission to obtain certificates or other insurance evidence from Contractor is not a waiver by the Commission of any requirements for the Contractor to obtain and maintain the specified insurance. The Contractor will advise all insurers of the Contract provisions regarding insurance. Non-conforming insurance does not relieve Contractor of the obligation to provide insurance as

PUBLIC BUILDING COMMISSION OF CHICAGO

Contract No1480

BRIGHTON PARK I AREA ELEMENTARY SCHOOL

specified in this contract. Nonfulfillment of the insurance conditions may constitute a breach of the Contract, and the Commission retains the right to stop work until proper evidence of insurance is provided, or the Contract may be terminated.

The Commission reserves the right to obtain copies of insurance policies and records from the Contractor and/or its subcontractors at any time upon written request.

The insurance must provide for 60 days prior written notice to be given to the Commission in the event coverage is substantially changed, canceled, or non-renewed.

Any deductibles or self-insured retentions on referenced insurance must be borne by Contractor.

The Contractor agrees that insurers waive their rights of subrogation against the Public Building Commission, Board of Education of the City of Chicago, and the City of Chicago, their respective Board members, employees, elected officials, officers, or representatives.

The insurance coverage and limits furnished by Contractor in no way limit the Contractor's liabilities and responsibilities specified within the Contract or by law.

Any insurance or self-insurance programs maintained by the Public Building Commission and the Board of Education of the City of Chicago and the City of Chicago do not contribute with insurance provided by the Contractor under the Contract.

The required insurance to be carried is not limited by any limitations expressed in the indemnification language in this Contract or any limitation placed on the indemnity in this Contract given as a matter of law.

If contractor is a joint venture or limited liability company, the insurance policies must name the joint venture or limited liability company as a named insured.

The Contractor must require all subcontractors to provide the insurance required herein, or Contractor may provide the insurance for subcontractors. All subcontractors are subject to the same insurance requirements of Contractor unless otherwise specified in this Contract.

If Contractor or subcontractor desires additional coverage, the party desiring the additional coverage is responsible for the acquisition and cost

The Public Building Commission maintains the rights to modify, delete, alter or change these requirements.

PUBLIC BUILDING COMMISSION OF CHICAGO
Brighton Park I Area Elementary School
ADDENDUM NO. 01 TO CONTRACT NO. 1480
FOR

BRIGHTON PARK I AREA ELEMENTARY SCHOOL
3456 W. 38th Street
NEW CONSTRUCTION
PROJECT #05230

DATE: February 11, 2009

NOTICE OF CHANGES IN CONTRACT DOCUMENTS

The following changes are hereby made in the Contract Documents.

CHANGES TO BOOK 2- Standard Terms and Conditions for Construction Contracts:

Change 1: In Book 2, Article 16, Payments, section 16.08.2 Release of Retainage. Change 3rd paragraph to read as the **bold** text indicates below;

At Substantial Completion. When the Project is Substantially Complete, the Contractor must notify the Commission Representative, in writing, that the Project will be ready for inspection and/or testing on a definite date. Such notice must be given at least **seven (7)** calendar days in advance of said date.

CHANGES TO BOOK 3 - TECHNICAL SPECIFICATIONS:

- Change 2:** **ADD** Section 01510 temporary offices per attached specification section.
- Change 3:** **ADD** Section 01524 Construction Waste Management per attached specification section.
- Change 4:** **ADD** Section 01783 Cx Commissioning Project Record Documents per attached specification section.
- Change 5:** **ADD** Section 01784 Cx Commissioning Operation and Maintenance Data per attached specification section.
- Change 6:** **ADD** Section 01810 Cx Commissioning Process per attached specification section.
- Change 7:** **ADD** Section 01811 Cx Pre-Functional Checklists per attached specification section.
- Change 8:** **ADD** Section 01812 Cx Functional Performance Testing per attached specification section.
- Change 9:** **ADD** Section 01820 Demonstration & Training per attached specification section.
- Change 10:** **ADD** Section 01821 Commissioning Demonstration & Training per attached specification section.

Mayor Richard M. Daley, Chairman

Erin Lavin Cabonargi, Executive Director

PUBLIC BUILDING COMMISSION OF CHICAGO
Brighton Park I Area Elementary School

- Change 11:** **ADD** Section 02050 Demolition per attached specification section.
- Change 12:** **ADD** Section 02116 Underground Storage Tank Removal per attached specification section.
- Change 13:** **ADD** Section 02222 Excavating, Backfilling and Compacting for Utilities per attached specification section.
- Change 14:** **ADD** Section 02231 Tree Protection and Trimming per attached specification section.
- Change 15:** **ADD** Section 02300 Earthwork per attached specification section.
- Change 16:** **ADD** Section 02316 Soil, Backfill, Cu Structural Soil Construction & Demolition Debris Removal per attached specification section.
- Change 17:** **DELETE** Section 02811 – Water Distribution System, and **REPLACE** with Section 02811 – Water Distribution System per attached specification section.
- Change 18:** **DELETE** Section 02870 – Site Furnishings, and **REPLACE** with Section 02870 – Site Furnishings per attached specification section.

LIST OF ATTACHMENTS:

Book 3, V1	Section 02811 – Water Distribution System (14 pages)
Book 3, V1	Section 02870 – Site Furnishings (5 pages)
Book 3, V1	Section 01510 temporary offices (2 pages)
Book 3, V1	Section 01524 Construction Waste Management (6 pages)
Book 3, V1	Section 01783 Cx Commissioning Project Record Documents (5 pages)
Book 3, V1	Section 01784 Cx Commissioning Operation and Maintenance Data (7 pages)
Book 3, V1	Section 01810 Cx Commissioning Process (17 pages)
Book 3, V1	Section 01811 Cx Pre-Functional Checklists (11 pages)
Book 3, V1	Section 01812 Cx Functional Performance Testing (11 pages)
Book 3, V1	Section 01820 Demonstration & Training (5 pages)
Book 3, V1	Section 02116 Underground Storage Tank Removal (14 pages)
Book 3, V1	Section 01821 Commissioning Demonstration & Training (4 pages)
Book 3, V1	Section 01820 Demonstration & Training (5 pages)
Book 3, V1	Section 02222 Excavating, Backfilling and Compacting for Utilities (4 pages)
Book 3, V1	Section 02231 Tree Protection and Trimming (7 pages)
Book 3, V1	Section 02300 Earthwork (11 pages)
Book 3, V1	Section 02316 Soil, Backfill, Cu Structural Soil Const. & Demo. Debris Removal (10 pages)

Mayor Richard M. Daley, Chairman

Erin Lavin Cabonargi, Executive Director

SECTION 01510
TEMPORARY OFFICES

PART 1 - GENERAL

1.1 COMMISSION'S FIELD OFFICE

- A. Furnish, erect and maintain a clean, weather-tight office at the site of the Work for the duration of the Contract, through final completion, for the sole and exclusive use of the Commission. No on-site Work may commence until the Commission's Field Office required by this Subsection is in place, fully functional and approved by the Commission.
- B. Provide the Commission's Field Office entirely separate from, unconnected to, and not to be shared with the Contractor's Field Office.
- C. Provide the Commission's Field Office not less than 500 square feet in area and with a ceiling not less than 7 feet high with a minimum of two private offices and one common area with sufficient space to conduct project meetings. The private office shall be equipped with a minimum of (4) duplex receptacles equally distributed across (2) power circuits. The trailer shall be equipped with a minimum of 100 amp electrical service. The Commission's Field Office must be painted, heated, air-conditioned, lighted, provided with lockable windows with vandalism protection and blinds or shades that operate, and doors with cylinder locks and deadbolt locks. Enclose the air space beneath the trailer with exterior grade plywood panel siding painted to match office exterior. Provide hinged access doors at utility connection area. Provide stair access with handrails as required.
- D. Provide weekly janitorial service for the Commission's Field Office.
- E. Pay all expenses in connection with the Commission's Field Office, including but not limited to, the installation and use of telephone / data service, heat, air-conditioning, light, water, sewerage, janitorial services, and equipment. CONTRACTOR will provide all paper, toner, etc. for printers and copiers. HVAC filters must be replaced every other month.
- F. Furnish the following equipment and furniture.
 - 1. 4- 60" x 30" desks with two 2 drawer (one file and one miscellaneous) pedestal file cabinets and 4 nonfolding chairs with upholstered seat and back.
 - 2. 5- 3 drawer legal size lateral file cabinets.
 - 3. 1-layout table with minimum top size of 37-1/2" x 48". An adjustable height drafting stool with upholstered seat and back must be provided.
 - 4. Two 8' x 3' conference tables and 20 folding chairs.
 - 5. 1-equipment cabinet with lock of minimum inside dimensions of 44" high x 24" wide x 30" deep. The walls must be of steel with a 3/32" minimum thickness with concealed hinges and enclosed lock constructed to prevent entry by force.
 - 6. 4-two line telephones, each consisting of a base unit with answering machine and 2 cordless units.
 - 7. 1-fax / machine (installed on separate line).
 - 8. 1-electric desk type tape printing calculator.
 - 9. 4- wall mounted mail holders

10. 1-floor standing office copier with sorter capable of printing 11"x17" and producing a minimum of 20 pages per minute. Provide copier stand that provides for storage of copier supplies. Provide initial spare toner/ink cartridge. Include maintenance and operating supplies.
 11. 1-first aid cabinet fully equipped and maintained on monthly basis.
 12. 1-5 gallon hot and cold water dispenser with cup dispenser, cups and bottled water supply.
 13. Central heating and air conditioning appropriate to trailer size and construction.
 14. 1-6 cubic feet refrigerator with freezer compartment.
 15. 1-plan rack with (12) 42" capacity hanging clamps.
 16. 1-fire extinguisher.
 17. 1-digital camera (minimum 6.0 mega-pixel capability, minimum 2GB memory card) with software and cables. Include rechargeable batteries and battery charger compatible with the type used in camera.
 18. Printer: Provide a multifunction color printer (fax, copy, scan and print) the latest version with toner cartridges, paper, and a maintenance service contract for the duration of project.
 - a. Canon ImageCLASS 2300N (Dual Tray – 8-1/2" x 11" and 11" x 17" format) with scanning capability (PDF format).
 - b. Spare toner cartridge
 19. Modem: 3 Com Model 3C888 and DSL modem, as a minimum, or as required by the Internet Service Provider (ISP).
 20. Network: Network the owner's computers together with the modem to provide peer-to-peer communication and Internet access from any computer. Network the printer to the workstations to enable printing and scanning directly from any workstation.
 21. Provide separate full service telephone lines with local and long distance access for each of the following:
 - a. 4 Telephones
 - b. 1 FAX machine
 - c. 1 Computer DSL modem
 22. Internet Access: Provide an unlimited DSL Internet access account with an Internet Service Provider for the duration of the Project with at least one active e-mail account.
 23. 1-microwave oven.
 24. 1-coffee pot.
 25. 10-shelves (12" x 5'-0") located per the Project Manager's request.
- G. The Commission's field office and all furnishing and equipment will remain the property of the Contractor at the completion of the Project.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01524

CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for Construction Waste Management.
- B. Related Section 01352: LEED Requirements

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Disposal: Removal off-site of waste and subsequent sale, recycling, reuse, or deposit in a Subtitle D landfill or incinerator acceptable to authorities having jurisdiction.
- C. Recycle: Recovery of waste for subsequent processing in preparation for reuse.
- D. Salvage: Recovery of waste and subsequent sale or reuse in another facility.
- E. Salvage and Reuse: Recovery of waste and subsequent incorporation into the Work.

1.3 PERFORMANCE REQUIREMENTS

- A. General LEED Credit MR 2.1, 2.2: Develop waste management plan that results in end-of-Project rates for salvage/recycling of minimum 75 percent by weight of total waste generated by the Work. Owner's goal is to salvage and recycle as much nonhazardous waste as possible including the following materials:
 - 1. Construction Waste:
 - a. Site-clearing waste.
 - b. Masonry and CMU.
 - c. Lumber.
 - d. Wood sheet materials.
 - e. Wood trim.
 - f. Metals.
 - g. Roofing.
 - h. Insulation.
 - i. Carpet and pad.
 - j. Gypsum board.
 - k. Piping.
 - l. Electrical conduit.
 - m. Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100 percent of the following uncontaminated packaging materials:

- 1) Paper.
- 2) Cardboard.
- 3) Boxes.
- 4) Plastic sheet and film.
- 5) Polystyrene packaging.
- 6) Wood crates.
- 7) Plastic pails.

1.4 SUBMITTALS

- A. Waste Management Plan: Submit five [5] copies of plan within 7 days of the Notice to Proceed.
- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include separate reports for demolition and construction waste. Include the following information:
 1. Material category.
 2. Generation point of waste.
 3. Name and location of company recycling or salvaging each type of material.
 4. Total quantity of waste in tons (tonnes).
 5. Quantity of waste salvaged, both estimated and actual in tons (tonnes).
 6. Quantity of waste recycled, both estimated and actual in tons (tonnes).
 7. Total quantity of waste recovered (salvaged plus recycled) in tons (tonnes).
 8. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- C. Waste Reduction Calculations: Before request for Substantial Completion, submit five (5) copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- D. Records of Donations: Submit indicating receipt and acceptance of salvageable waste donated to individuals and organizations if and when donations occur. Indicate whether organization is tax exempt.
- E. Records of Sales: Submit indicating receipt and acceptance of salvageable waste sold to individuals and organizations if and when sales occur. Indicate whether organization is tax exempt.
- F. Recycling and Processing Facility Records: Submit record indicating receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices. Submit concurrently with waste reduction progress reports.
- G. Subtitle D Landfill and Incinerator Disposal Records: Submit record indicating receipt and acceptance of waste by the permitted Subtitle D landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices. Submit concurrently with waste reduction progress reports.
- H. LEED Submittal: Submit LEED letter template for Credit MR 2.1 and 2.2, signed by Contractor, tabulating total waste material, quantities diverted for each type of waste and means by which it is diverted, and statement that requirements for the credit have been met.
- I. Qualification Data: For Waste Management Coordinator.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - 2. Review requirements for documenting quantities of each type of waste and its disposition.
 - 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - 5. Review waste management requirements for each trade.

1.6 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Include separate sections in plan for building demolition (if any) and construction waste. Indicate quantities by weight and volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in Subtitle D landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each Subtitle D landfill and incinerator facility.
 - 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

- D. **Cost/Revenue Analysis:** Indicate total cost of waste disposal at a Subtitle D landfill as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:
1. Total quantity of waste.
 2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
 3. Total cost of disposal (with no waste management).
 4. Revenue from salvaged materials.
 5. Revenue from recycled materials.
 6. Savings in hauling and tipping fees by donating materials.
 7. Savings in hauling and tipping fees that are avoided.
 8. Handling and transportation costs. Include cost of collection containers for each type of waste.
 9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. **General:** Implement waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. **Waste Management Coordinator:** Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.
- C. **Training:** Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. **Site Access and Temporary Controls:** Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

3.2 RECYCLING, GENERAL

- A. **General:** Recycle paper and beverage containers used by on-site workers in addition to construction waste.
- B. **Recycling Incentives:** Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor

- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical. Waste may be co-mingled at the site and separated at a recycling facility.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.
 - 5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.3 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - 2. Polystyrene Packaging: Separate and bag materials.
 - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 - 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:
 - 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- C. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
 - 1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.4 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a permitted Subtitle D landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials that cannot be recycled and used on site to a permitted Subtitle D Landfill site.

CPS Control Rev: 2_01/21/08
Project Rev: D_01/27/09

END OF SECTION

SECTION 01783

Cx COMMISSIONING PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents (As-Builts).

1.2 SUBMITTALS

- A. Record Drawings: Submit copies of Record Drawings as follows:
 - 1. Initial Submittal: Submit to the AOR one (1) set of plots from corrected CAD Drawings and one copy of the original marked-up Record Prints. Architect will provide comment as to whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return plots and prints to the Contractor for use in organizing the final submittal.
 - 2. Final Submittal: Submit one set of original marked-up Record Prints, two sets of reproductions of the marked up Record Prints, one set of CD-ROM(s) containing Record CAD Drawing files, and one set of Record CAD Drawing plots. Plot and print each Drawing, whether or not changes and additional information were recorded.
 - a. Submit all copies to the Boards Authorized Representative with a transmittal indicating compliance with requirements for Project Record Documents. Boards Authorized Representative will be responsible for distribution to the appropriate parties, including the end user.
- B. Record Specifications: Submit one (1) copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one (1) copy of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

1.3 DEFINITIONS

- A. Record Documents: Documents submitted by a contractor or subcontractor to show the construction of a particular structure or work as actually completed. Record documents are also referred to as "as-builts".

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Prints: Immediately before inspection for Preliminary Acceptance, review marked-up Record Prints with Architect and Boards Authorized Representative. When authorized, prepare a full set of corrected prints of the Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
 2. Refer instances of uncertainty to Architect through Construction Manager for resolution.
 3. The Board will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
 4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.
- C. Record CAD Drawings: Immediately before inspection for Preliminary Acceptance, review marked-up Record Prints with Architect and Construction Manager. When authorized, prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:
1. Format: Same CAD program, version, and operating system as the original Contract Drawings.
 2. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
 3. Refer instances of uncertainty to Architect through Construction Manager for resolution.
 4. Architect will furnish Contractor one electronic set of CAD Drawings of the Contract Drawings for use in recording information.
 - a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
 5. Drawings shall include all referenced files, (font files, menus, shape files, x-refs, etc.) and strictly adhere to the current published CPS guidelines for layering standards.
 6. In addition to editable drawing files (dwg, dxf) Provide a complete set of plotfiles (PLT-FILES) in Hewlett Packard Graphics Language [HPGL] format.
- D. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
 2. Consult with Architect and Construction Manager for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- E. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
 3. Identification: As follows:

- a. Project name.
- b. Date.
- c. Designation "PROJECT RECORD DRAWINGS."
- d. Name of Architect and Construction Manager.
- e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of the manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 5. Note related Change Orders, Record Drawings, [and] [Product Data] where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Drawings, [and] [Product Data] where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and

CPS Control Rev: 1_08/17/08
Project Rev: A_01/27/09

in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and Construction Manager's reference during normal working hours.

END OF SECTION

SECTION 01784

Cx COMMISSIONING OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals.

1.2 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.3 SUBMITTALS

- A. Initial Submittal: Submit to the AOR three (3) copies of each manual in final form, including labeled 3-ring binders, indexes etc. no later than 6 weeks prior to commencement of owner's training. Include a complete operation and maintenance directory. Architect will return all copies and note whether scope, content, and format of manual are acceptable.
 - 1. AOR will provide one (1) copy of manuals applicable to commissioned systems to the Commissioning Authority for review and comment.
 - 2. General Contractor will make any corrections required and resubmit all copies until Architect finds them acceptable.
- B. Final Submittal: Submit three (3) copies of each manual in final form evidencing acceptance by the Architect and Commissioning Authority. Operation and Maintenance manuals must be delivered to the Owner (end user) a minimum of one week prior to commencement of any owner's training on all systems or equipment.
 - 1. Submit all copies to the Boards Authorized Representative with a transmittal indicating compliance with requirements for submittal of Operation and Maintenance Data. Boards Authorized Representative will be responsible for distribution to the appropriate parties, including the end user.

1.4 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Organization: Include a section in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with the same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of the Board.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Contractor.
 - 6. Name and address of Architect.
 - 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
 4. Supplementary Text: Prepared on 8-1/2-by-11-inch, 20-lb/sq. ft. white bond paper.
 5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
 2. Flood.

3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of the Board's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions.
 2. Performance and design criteria if Contractor is delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.

2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in the manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard printed maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components. (exploded parts breakdown)
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training videotape, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 - 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by the Board's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by the Board's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
 - 2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."
- G. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 01810

Cx COMMISSIONING PROCESS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes specifications for the implementation, tracking and verification of the commissioning process.

1.2 DEFINITIONS

- A. A/E Architect / Engineer
- B. Cx: Commissioning
- C. CxA: Commissioning Authority
- D. P/T: Pressure / Temperature
- E. OPR: Owner's Project Requirements
- F. BAS: Building Automation System
- G. PFC: Pre-functional Checklist
- H. FPT: Functional Performance Tests
- I. TAB: Test, Adjusting, Balancing

1.3 SUBMITTALS

- A. The following table contains deliverables and/or submittals required under this section, the party(s) responsible for each, the frequency and or timeline these items shall be provided, the format and quantity to be provided, and the party(s) to be provided to.

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
Draft commissioning plan	CxA	2 days prior to commencement of work	Electronic	Cx Team
Commissioning plan updates	CxA	Monthly	Electronic	Cx Team
Draft construction schedule	Contractor	1 week prior to commencement of work	Electronic	CxA
Commissioning milestones for construction schedule	CxA	Within 5 business days of receipt of schedule	Electronic	Contractor
Updated construction schedule	Contractor	Weekly	Electronic	CxA
Submittal register	Contractor	1 week prior to commencement of work	Electronic	CxA
Submittal log	Contractor	Weekly	Electronic	CxA
Submittals (Commissioned Systems)	Contractor	Concurrent with submissions to A/E	Paper (1 copy)	CxA
Submittal review comments	CxA	Within 5 business days of receipt of submittal	Electronic	A/E
A/E submittal review comments/approval	A/E	Within 10 business days of receipt of submittal	Paper (as specified under GENERAL CONDITIONS)	CxA and Contractor
Notification of equipment and/or system start-up	Contractor	Within 5 business days prior to scheduled start-up	Electronic	CxA and A/E
Equipment and/or system start-up reports	Contractor	Within 5 business days of start-up	Electronic	CxA and A/E
Notification of specified testing for commissioned systems and procedures (FPT excluded)	Contractor	Within 5 business days prior to scheduled test	Electronic	CxA and A/E
Specified testing reports for commissioned systems	Contractor	Within 5 business days of testing	Electronic	CxA and A/E

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
Draft as-builts	Contractor	Within 14 days prior to scheduled training	Paper (2 copies)	A/E and Owner
Final as-builts	A/E	Within 60 days of substantial completion	As specified in Division-01 Closeout Docs.	Owner
Notification of commissioning site visit	CxA	5 business days prior to site visit	Electronic	Contractor
Site visit report	CxA	Within 5 business days of site visit	Electronic	Contractor, A/E and Owner
Resolution report for site visit issues	Contractor	Within 10 business days of receipt of site visit report	Electronic	A/E, CxA and Owner
Notification of commissioning meeting and agenda	CxA	5 business days prior to meeting	Electronic	Contractor
Commissioning meeting minutes	CxA	Within 5 business days of meeting	Electronic	Contractor, A/E and Owner
TAB plan	Contractor	90 days prior to scheduled start date	Paper (as specified under GENERAL CONDITIONS)	CxA and A/E
TAB plan review comments	CxA	Within 5 business days of receipt of plan	Electronic	A/E
A/E TAB plan review comments/approval	A/E	Within 10 business days of receipt of plan	Paper (as specified under GENERAL CONDITIONS)	CxA and Contractor
TAB report	Contractor	Within 5 business days of TAB completion	Paper (as specified under GENERAL CONDITIONS)	CxA and A/E
TAB report review comments	CxA	Within 5 business days of receipt of report	Electronic	A/E
A/E TAB report review comments/approval	A/E	Within 10 business days of receipt of report	Paper (as specified under GENERAL CONDITIONS)	CxA and Contractor

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
TAB verification report	CxA	Within 5 business days of TAB verification	Electronic	Contractor, A/E and Owner
Operation and maintenance data draft submittal	Contractor	60 days preceding submittal approval	Paper (as specified under OPERATION AND MAINTENANCE DATA)	CxA, A/E and Owner
O&M data review comments	CxA	Within 5 business days of receipt of submittal	Electronic	A/E
A/E O&M data review comments/approval	A/E	Within 10 business days of receipt of submittal	Paper (as specified under GENERAL CONDITIONS)	CxA and Contractor
Operation and maintenance data final submittal	Contractor	60 days prior to scheduled training	Paper (as specified under OPERATION AND MAINTENANCE DATA)	CxA, A/E and Owner
Draft training program	Contractor	120 days prior to substantial completion	Electronic	CxA, A/E, and Owner
Draft training program review comments	CxA	Within 5 business days of receipt of program	Electronic	A/E
A/E draft training program review comments/approval	A/E	Within 10 business days of receipt of program	Paper (as specified under GENERAL CONDITIONS)	CxA and Contractor
Training session evaluation forms	CxP	90 days prior to scheduled training	Electronic	Contractor
Training materials	Contractor	60 days prior to scheduled training	Electronic	CxA and A/E
Training materials review comments	CxA	Within 5 business days of receipt of program	Electronic	A/E
A/E training materials review comments/approval	A/E	Within 10 business days of receipt of program	Paper (as specified under GENERAL CONDITIONS)	CxA and Contractor

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
Training session notifications	Contractor	5 days prior to scheduled session	Electronic	CxA and Owner
Completed training sessions record and evaluation forms	Contractor	Within 2 business days of sessions	Paper (1 copy)	CxA and A/E
Training session review comments and recommended action	CxA	Within 5 business days of sessions	Electronic	CxA
A/E training session review comments/approval	A/E	Within 10 business days of session	Paper (as specified under GENERAL CONDITIONS)	CxA and Contractor
Training session videos	Contractor	Within 30 days of completion of training	Electronic	CxA, A/E and Owner
Warranty coverage and requirements per equipment and/or system	Contractor	Within 60 days of scheduled training	Paper (as specified under GENERAL CONDITIONS)	CxA, A/E and Owner
Warranty review report	CxA	Within 5 business days of site visit	Electronic	Contractor, A/E and Owner
Warranty review A/E action statement	A/E	Within 5 business days of receipt of report	Paper (as specified under GENERAL CONDITIONS)	Contractor
Warranty resolution report	Contractor	Within 5 business days of completion of work	Paper (as specified under GENERAL CONDITIONS)	CxA, A/E and Owner
Draft commissioning record	CxA	Within 10 business days of completing Functional Testing	Electronic	A/E and Owner
Final commissioning record	CxA	Within 10 business days after final acceptance	Electronic	A/E and Owner
Commissioning issues report	CxA	Monthly	Electronic	Contractor, A/E and Owner
Resolution report for commissioning issues	Contractor	Within 10 business days of receipt of issues report	Electronic	CxA

1.4 COMMUNICATION

- A. Communication resulting from or in relation to commissioning activities will be relayed directly to the responsible party whenever possible, with copies to the Owner, A/E and Contractor.

1.5 COMMISSIONED SYSTEMS

- A. Commissioned systems are defined as the equipment and/or systems pertaining to the systems or equipment listed below:
 1. Chillers and Associated Pumps
 2. Air-handling units
 3. Energy Recovery Units
 4. Toilet and General Exhaust
 5. Dual Duct Terminal Boxes
 6. Domestic Hot Water Systems
 7. Energy Management & Control Systems (BAS)
 8. Indoor Lighting and Control Systems
 9. Outdoor Lighting and Control Systems
 10. Energy Metering

1.6 RESPONSIBILITIES

- A. The responsibilities of various parties in the commissioning process are provided in this section. The responsibilities listed for Contractor apply to all contractors related scope as well as any sub-contractors, consultants and/or personnel under the employment of the Contractor.
- B. All Parties
 1. Follow the Commissioning Plan
 2. Attend commissioning pre-construction meeting and additional meetings, as necessary.
- C. A/E
 1. Review and approve submittals, O&M data, training program and as-builts in accordance with contracted services
 2. Provide design narrative documentation as requested by the CxA. This includes clarifying the operation and control of commissioned equipment in areas where the specifications, control drawings or equipment documentation is not sufficient for writing detailed testing procedures.
 3. Attend the commissioning pre-construction meeting and selected additional commissioning meetings.
 4. Review TAB plan and report
 5. Coordinate resolution of system deficiencies and discrepancies identified during commissioning, according to the contract documents.
 6. Prepare and submit final as-built basis of design and owner project requirements documentation for inclusion in the O&M data
 7. Prepare and submit final as-built one line system diagrams and narratives for inclusion in the O&M data.
 8. Coordinate resolution of design non-conformance and deficiencies identified during warranty-period commissioning

D. CxA

1. The primary role of the CxA is to develop and coordinate the execution of a testing plan, observe and document performance—that systems are functioning in accordance with the documented intention of design and in accordance with the Contract Documents. Contractor shall provide all tools or the use of tools to start, check-out and functionally test equipment and systems, except for specified testing with portable data-loggers, which, if determined by the CxA to be required, shall be supplied and installed by the CxA.
2. Coordinates and directs the commissioning activities in a logical, sequential and efficient manner using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties, frequently updated timelines and schedules and technical expertise.
3. Prepare and maintain commissioning plan.
4. Prepare and update commissioning milestones and schedule.
5. Coordinate the commissioning work and, with Contractor, verify that commissioned activities are being scheduled into the master schedule
6. Coordinate and facilitate pre-construction commissioning meeting and commissioning meetings as required.
7. Request and review additional information required to perform commissioning tasks, including O&M data, contractor start-up and checkout procedures.
8. Review normal Contractor submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the A/E reviews.
9. Plan and conduct a commissioning pre-construction meeting and other commissioning meetings
10. Develop construction checklists and provide Contractor with final checklists in approved format with accompanying tracking system.
11. Provide equipment identification tags specified under this section.
12. Provide Contractor with training in relation to use of checklists and tracking system.
13. Provide Contractor with itemized list detailing checklist items requiring action.
14. Before startup, review the current control sequences and interlocks and work with contractors and design engineers until sufficient clarity has been obtained, in writing, to be able to write detailed testing procedures.
15. Perform site visits, as contracted, to observe equipment and system installations. Attend selected planning and job-site meetings to obtain information on construction progress
16. Witness part of the additional testing specified for the commissioned systems, in sufficient detail to be confident that proper procedures were followed. Review the reports prepared by the Contractors to document the testing procedures. Notify A/E and Owner of any deficiencies in results or procedures.
17. Review construction checklist completion by reviewing construction checklist completion reports and by selected site observation and spot checking. Advise Contractor of status of construction checklist completion and discrepancies identified
18. Review and witness a sampling of equipment start-up and reports, in sufficient detail to be confident of results and procedures followed
19. Review a sampling of as-built drawings, in sufficient detail to be confident of validity and accuracy of the documentation.
20. Review TAB plan and report.
21. Verify air and water systems balancing by spot testing, by reviewing completed reports and by selected site observation.
22. Prepare and provide contractor readiness criteria to Contractor.
23. Analyze any functional performance trend logs and monitoring data to verify performance.

24. Witness and document manual functional and seasonal tests performed by installing contractors. Coordinate retesting as necessary until satisfactory performance is achieved.
 25. Maintain a master deficiency and resolution log and a separate testing record. Provide Contractor with written progress reports and test results with recommended actions
 26. Review equipment warranties to verify that the Owner's responsibilities are clearly defined.
 27. Review the training of the Owner's operating personnel per contract.
 28. Compile and maintain a commissioning record.
 29. Review the preparation of the O&M data.
 30. Coordinate and facilitate warranty review with Owner staff and provide formal report of findings to A/E and Contractor.
 31. Develop and maintain commissioning record.
- E. Contractor
1. Facilitate the coordination of the commissioning work by the CxA, and with other contractors.
 2. Include the cost of commissioning in the total contract price.
 3. Verify that commissioning activities are being scheduled into the master schedule.
 4. Attend a commissioning pre-construction meeting and other commissioning meetings as requested.
 5. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to commissioned equipment to the CxA.
 6. In each purchase order or subcontract written, include requirements for submittal data, O&M data, commissioning tasks and training.
 7. Ensure that all sub-contractors and personnel execute their commissioning responsibilities according to the Contract Documents and schedule.
 8. Review construction verification checklists provided in specifications, prior to commencement of work.
 9. Complete checklists for sections responsible for, according to procedures specified under this section
 10. Distribute required checklist tracking reports to parties and at durations specified under this section
 11. Distribute required checklist tracking reports to parties and at durations specified under this section
 12. Resolve and provide resolution reports for all checklist deficiencies noted by CxA.
 13. Resolve and provide resolution reports for all checklist discrepancies noted by CxA.
 14. Review and approve the functional performance test procedures submitted by CxA.
 15. Provide CxA functional and seasonal testing plan in accordance with procedures supplied under this section.
 16. Provide CxA with contractor readiness notification.
 17. Facilitate and assist CxA as necessary in the functional and seasonal testing of selected equipment and systems.
 18. Ensure sub-contractors and personnel facilitate and assist CxA as necessary in the functional and seasonal testing of selected equipment and systems.
 19. Review commissioning progress and deficiency reports.
 20. Coordinate and facilitate the resolution of non-compliance, deficiencies and discrepancies identified in all phases of commissioning.
 21. Ensure sub-contractors and personnel coordinate and facilitate the resolution of non-compliance, deficiencies and discrepancies identified in all phases of commissioning.
 22. Coordinate and facilitate the training of Owner personnel.

23. Prepare O&M data, according to the Contract Documents, including clarifying and updating Contract Documents to as-built conditions.

F. Equipment and Material Suppliers

1. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner to keep warranties in force.
2. Assist in equipment testing per agreements with Contractor.
3. Include all special tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment according to these Contract Documents in the base bid price to the Contractor, except for stand-alone datalogging equipment that may be used by CxA.
4. Through the Contractor they supply products to, analyze specified products and verify that the designer has specified the newest most updated equipment reasonable for this project's scope and budget.
5. Provide information requested by CxA regarding equipment sequence of operation and testing procedures.
6. Review and approve test procedures for equipment installed by factory representatives.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

- A. All standard testing equipment required to perform startup, initial checkout, additional testing and required functional performance testing shall be provided by Contractor for the equipment being tested.
- B. Special equipment, tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment, according to these Contract Documents shall be included in the base bid price to the Contractor and left on site, except for stand-alone datalogging equipment that may be used by the CxA.
- C. Datalogging equipment and software required to test equipment, if used, will be provided by the CxA, but shall not become the property of the Owner.
- D. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications. If not otherwise noted, the following minimum requirements apply:
 1. Temperature sensors and digital thermometers shall have a certified calibration within the past year to an accuracy of 0.5°F and a resolution of + or - 0.1°F.
 2. Pressure sensors shall have an accuracy of + or - 2.0% of the value range being measured (not full range of meter) and have been calibrated within the last year.
 3. All equipment shall be calibrated according to the manufacturer's recommended intervals and when dropped or damaged. Calibration tags shall be affixed or certificates readily available.
- E. Protect plastic insulation as follows:
 1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.

2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 3 - EXECUTION

3.1 PURPOSE

- A. Commissioning is a systematic process of assess whether all commissioned systems perform interactively according to the owner's project requirements and the intention of the design, and to track the process by which any deviations from this performance are addressed. This is achieved by beginning in the design phase and documenting design intent and continuing through construction, acceptance and the warranty period with actual verification of performance.
- B. The commissioning process does not take away from or reduce the responsibility of the system designers or installing contractors to provide a finished and fully functioning facility.

3.2 COMMISSIONING PLAN

- A. CxA shall develop a complete commissioning plan detailing the following information at a minimum:
 1. Contact information for key members of commissioning team.
 2. Description of procedures to be utilized for each commissioning task.
 3. List of commissioned systems and associated equipment.
 4. Sampling approach to be utilized for each equipment and system type by commissioning task.
 5. List of responsibilities for each party involved in the commissioning process.
 6. Commissioning milestones and schedule.
 7. Record of results for commissioning tasks to date.
- B. CxA shall provide an initial copy of the commissioning plan to Contractor 2 days prior to commencement of work, and shall provide updates to this plan at the intervals and format defined under SUBMITTALS for this section.

3.3 SCHEDULING

- A. Contractor to provide CxA with a draft construction schedule 1 week prior to commencement of work
- B. Contractor to provide CxA with updates to construction schedule based upon activities to date in regular intervals, where regular interval is defined at a minimum of monthly
- C. CxA shall provide Contractor detailed list of commissioning milestones and task schedule within 5 business days of receipt of initial and subsequent construction schedules.
- D. Contractor to provide a minimum of 5 business days notice to CxA with regards to the following activities unless specifically stated otherwise within another section of the specifications:
 1. Equipment or system start-up

2. Specified testing other than FPT
 3. Cancellation of activity requiring CxA attendance
- 3.4 PRE-CONSTRUCTION COMMISSIONING MEETING
- A. Contractor and affiliated sub-contractors and personnel associated with work with the commissioned systems of this project shall attend pre-construction commissioning meeting facilitated by CxA. Meeting shall occur within 2 weeks of selection of Contractor.
- 3.5 SUBMITTAL REVIEWS
- A. Contractor shall supply one complete copy of the submittal register in electronic format to CxA 1 week prior to commencement of work. Register shall include at a minimum the following:
1. Specification section number
 2. List of equipment, system, materials, certifications and/or reports requiring submittals for each specification section
 3. Number of submittals anticipated for each specification section
- B. Contractor to supply one copy, in electronic format of each submittal required for the system or equipment of this section to CxA concurrently with A/E submission. This shall include but is not limited to:
1. Equipment and system shop drawings
 2. Coordination drawings
 3. RFI's
 4. CO's
 5. RFC's
- C. All submittals supplied by Contractor shall comply with requirements specified under section titled Cx Commissioning Process and those listed within the technical specifications sections, but not less than the following:
1. Submittals shall show evidence of review and approval by Contractor to ensure compliance to contract documents.
 2. Submittals shall be marked to show exact items, sizes, components, characteristics, quantities and details required for project.
 3. Submittals shall be properly annotated to match drawing schedules.
 4. Catalog information provided shall be clearly marked to indicate intended item and options.
 5. Submittals shall contain a complete and edited copy of the manufacturer's installation and O&M manuals for the proposed equipment and/or system, including wiring diagrams, troubleshooting procedures, parts list and preventative maintenance instructions.
 6. Submittals shall include manufacturer's typical start-up checklist, report, and/or procedures for the proposed equipment and/or system.
- D. Upon receipt CxA shall review submittal in parallel with A/E review and provide comments to the A/E for inclusion in their final comments to Contractor within 5 business days
- E. A/E shall provide Contractor and CxA with single collated comments and action for submittal within 10 business days of receipt of submittal and in the format and quantity specified under section titled Cx Commissioning Process
- F. CxA shall review only one re-submittal per submittal provided by Contractor. If additional re-submittals are required due to Contractor negligence in resolution of issues provided by CxA or

A/E, then Contractor shall be back charged by Owner for each subsequent re-submittal review by A/E and CxA.

3.6 CONSTRUCTION VERIFICATION

- A. See section titled Cx Pre-Functional Checklists

3.7 START-UP VERIFICATION

- A. Contractor shall notify CxA and A/E within 5 business days prior to equipment or system start-up for a commissioned system
- B. CxA and A/E shall witness equipment or system start-up as deemed necessary.
- C. Contractor to supply one copy of the start-up report to CxA and A/E within 5 business days of start-up.

3.8 TESTING VERIFICATION

- A. For all commissioned systems, Contractor shall notify CxA and A/E within 5 business days prior to any testing specified under technical section for a given equipment or system within the commissioned system. Notification shall include a copy of the proposed procedures to be utilized in electronic format.
- B. CxA and A/E shall witness additional testing as deemed necessary.
- C. Contractor to supply one copy of the test report to CxA and A/E within 5 business days of testing.

3.9 AS-BUILT VERIFICATION

- A. Contractor shall maintain on site and up to date one copy of project as-builts per the requirements of GENERAL CONDITIONS.
- B. As-built drawings shall be of sufficient detail to clearly indicate any and all deviations from design, including items modified per RFC, RFI or CO.
- C. As-built drawings maintained by Contractor will be periodically reviewed and verified during construction by CxA. Discrepancies in the drawings will be documented in site visit reports and the Contractor shall be responsible to verify and correct the as-built drawings against the installed system for specified and all similar problems noted.
- D. Contractor shall supply draft copy of complete as-builts to A/E and Owner within 14 days prior to initial training session.

3.10 SITE VISITS

- A. Within 5 business days of receipt of construction schedule CxA shall provide Contractor with site visit log detailing the number, dates and scope of commissioning site visits anticipated for the duration of the project. This log shall be maintained by CxA and shall be updated and provided to Contractor at each construction schedule update.

- B. CxA shall notify Contractor 5 business days prior to a scheduled site visit for confirmation of schedule and scope of site visit. Notification shall include the following items at a minimum:
 - 1. Date of site visit
 - 2. Activities to be performed for site visit
 - 3. Areas and system to reviewed during site visit
 - 4. CxA personnel to be in attendance
- C. Site visits by CxA shall consist of at least one of the following activities, with the actual scope of activities to be clearly defined within the site visit log and notification of site visit to Contractor:
 - 1. Pre-Functional Checklists
 - 2. Start-up verification
 - 3. Testing verification
 - 4. As-built verification
 - 5. General review of progress and quality
 - 6. Meeting attendance
 - 7. Commissioning meeting
 - 8. Attendance of Owner training session
 - 9. TAB verification
 - 10. Witness of functional performance testing
- D. Contractor shall ensure that personnel related to activities, areas and systems scheduled for a given site visit by CxA are readily available for questions and/or assistance to CxA.
- E. Within 5 business days of site visit CxA shall provide Contractor and Owner with a clear record of the activities performed for the site visit and any deficiencies, discrepancies or issues identified. Report shall clearly detail the scope and location of the issues identified, including provision of photographs as possible.
- F. Within 10 business days of receipt of site visit report Contractor shall supply CxA with a detailed resolution report detailing the following information for issues identified in the site visit report:
 - 1. Issue number and description
 - 2. Method of resolution
 - 3. Date of resolution
 - 4. Party(s) responsible for resolution
 - 5. List of similar installations and areas reviewed and resolved

3.11 COMMISSIONING MEETINGS

- A. Periodically CxA shall call a meeting of Contractor, A/E and Owner to review progress of the project, review issues, and discuss scheduling for future commissioning tasks.
- B. To the fullest extent possible CxA shall schedule meetings to occur at times that coincide with existing meetings scheduled for Contractor to minimize downtime of Contractor, sub-contractors and personnel.
- C. CxA shall provide notification to all parties requested to attend a specific meeting within 5 business days prior to meeting. Notification shall include a formal agenda of the meeting, including the anticipated duration and attendees required.

- D. Contractor, A/E and Owner shall be responsible to have personnel requested in attendance at meeting for duration specified by CxA. If people requested are not available then Contractor, A/E or Owner shall provide notice to CxA and provide a substitute
- E. Within 5 business days of meeting CxA shall supply all attending parties with a formal copy of the minutes for the meeting.
- F. Attending parties shall have 5 business days from receipt of minutes to formally comment to CxA on changes to minutes.

3.12 TESTING ADJUSTING AND BALANCING (TAB) VERIFICATION

A. TAB Plan

- 1. 90 days prior to TAB, Contractor is to provide A/E and CxA with a complete copy of the TAB plan for the project. TAB plan shall include at a minimum the following information:
 - a. Review contract documentation, submittals and installations for each system requiring TAB. Provide comments on any conditions of design and installation that will preclude proper TAB of facility.
 - b. Copy of qualifications and certifications for technicians to be utilized for TAB work
 - c. Step by step procedures detailing the methods to be utilized for balancing of each system and equipment type present. Procedures shall be of sufficient detail to ensure repeatable measurement, as well as include procedures to be utilized for examination and preparation prior to TAB.
 - d. Pre-populated TAB report in format specified under Div 15 section titled Testing Adjusting and Balancing. TAB report shall include design and submitted performance data for facility equipment and systems.
- 2. Within 5 business days of receipt of TAB plan CxA shall provide comments to A/E for review and incorporation into the A/E response to the submittal.
- 3. Within 10 business days of receipt of TAB plan A/E shall provide Contractor with formal response and action for TAB plan.
- 4. Contractor shall utilize approved TAB plan as basis for all TAB work to be performed on site. CxA shall in turn utilize the TAB plan as the basis for establishment of the TAB verification plan and the body of record for reviewing the procedures utilized by Contractor in the verification of TAB.

B. TAB Report

- 1. Within 5 business days of completion of TAB, Contractor shall supply A/E and CxA with a complete copy of the TAB report for the facility. Report is to meet the requirements stated under Div 15 section titled Testing Adjusting and Balancing and shall be provided in electronic format.
- 2. Within 5 business days of receipt of TAB report CxA shall provide comments to A/E for review and incorporation into the A/E response to the submittal.
- 3. Within 10 business days of receipt of TAB report A/E shall provide Contractor with formal response and action for TAB report.
- 4. If any deficiencies are noted in TAB report comments from the A/E that are related to the methods utilized or results of TAB, Contractor shall remedy said issues and inform A/E and CxA of completion

C. TAB Verification

1. A minimum verification sample of 10% of total the points defined under the work of TAB shall be included for TAB verification. CxA shall define the overall sampling approach and rate to be utilized for TAB verification.
 2. Contractor shall supply all personnel and equipment necessary to fully implement TAB verification as requested by CxA.
 3. Within 10 business days of TAB verification CxA shall provide A/E, Owner and Contractor with formal TAB verification report. Report shall include at a minimum the following:
 - a. Names of personnel in attendance
 - b. Date and duration of verification
 - c. Lists of areas and equipment sampled
 - d. TAB report and verification values for each point sampled, including tolerances
 - e. List of deficiencies and discrepancies noted during verification with recommendations for resolution
 - f. Discrepancy rate by system, whereas discrepancy rate is defined as the number of points with measured values outside of the tolerances defined divided by the total number of points for a given system
 - g. Overall recommendation for approval of TAB by system
- 3.13 FUNCTIONAL PERFORMANCE AND SEASONAL TESTING
- A. See Section sections titled Cx Functional Performance Testing
- 3.14 OPERATION AND MAINTENANCE DATA
- A. Submittal
 1. Contractor shall supply one copy of O&M data in format defined to the CxA 60 days preceding submittal approval.
 2. Within 5 business days of receipt of O&M data CxA shall provide A/E with comments or review and incorporation into A/E comments and action for submittal.
 3. Contractor shall make revisions noted in A/E formal response and provide one copy of the final O&M data to the CxA 60 days prior to scheduled training:
 4. Any revisions or changes to the systems and/or equipment post delivery of the final O&M data submittal must be submitted to CxA as an addendum item. Any such submittal must adhere to specifications and be delivered within 30 days of the revision or change.
- 3.15 TRAINING AND DEMONSTRATION
- A. Contractor shall be responsible to submit a formal training program per 01820 to be utilized for each respective system under their responsibility 120 days prior to substantial completion to CxA.
 - B. Within 5 business days of receipt of training program CxA shall supply A/E with comments or review and incorporation into A/E comments and action for submittal.
 - C. 90 days prior to initial scheduled training session CxA shall supply Contractor with formal evaluation forms to be provided to attendees for evaluation of each session.
 - D. 60 days prior to initial scheduled training session Contractor shall submit training materials per section titled Cx Demonstration and Training to be utilized for all sessions under there responsibility to CxA. These materials shall include at a minimum the following:

- E. Within 5 business days of receipt of training materials CxA shall supply A/E with comments or review and incorporation into A/E comments and action for submittal.
- F. 2 days prior to scheduled training session Contractor shall notify CxA of confirmation for training session.
- G. CxA shall attend and review portions of the training sessions to verify that the training program was followed. CxA shall provide comments and recommendation for action for each session attended to A/E within 5 business days of session. Any sessions deemed as unacceptable or rejected shall be re-done and taped at the convenience of the Owner and CxA. Contractor shall be back charged in these instances for the cost of attendance by CxA.
- H. Training videos shall be supplied to CxA within 30 days of completion of training.

3.16 WARRANTY REVIEW

- A. 60 days prior to scheduled training Contractor shall supply a complete copy of all warranties applicable to the facility, the terms of maintenance for each warranty, and the inception and expiration dates for each within the O&M data
- B. Within 10 months of substantial completion CxA shall conduct a review of the operations and condition of the facility with respect to warranty related issues. Within 5 business days of this review CxA shall supply Contractor, A/E and Owner with a detailed report listing the issues identified. This report shall include at a minimum the following:
 - 1. Description of issue identified, including photographs as applicable
 - 2. Recommended course of action
 - 3. Supplementary information relative to previous maintenance or repairs attempted for resolution of issue
- C. Within 5 business days of receipt of report A/E shall issue a formal course of action to Contractor for resolution of issues identified.
- D. Contractor shall employ services and materials necessary for compliance to action statement from A/E within 14 days of receipt of statement. All repairs and actions taken by Contractor shall be coordinated with Owner, with a formal log of work completed provided to Owner, A/E and CxA within 5 business days of completion of all warranty work.

3.17 COMMISSIONING RECORD

- A. CxA shall provide Contractor, A/E and Owner a draft copy of the commissioning record for the project within 10 business days of completion of Functional Testing. This report shall include at a minimum the following:
 - 1. Table of Contents
 - 2. Executive Summary
 - 3. Contact information for key members of commissioning team.
 - 4. Description of procedures utilized for each commissioning task.
 - 5. List of commissioned systems and associated equipment.
 - 6. Sampling approach utilized for each equipment and system type by commissioning task.
 - 7. List of responsibilities for each party involved in the commissioning process.
 - 8. Record of results for commissioning tasks to date.
 - 9. List of outstanding issues to date.

10. Summarized estimate of cost and savings for commissioning to date, with breakdown of cost and savings by entity. Summary can be a sample of the overall issues resolved to date and does not need a comprehensive estimate of all issues identified.
 11. Recommendations for improvement of commissioning process
- B. CxA shall provide Contractor, A/E and Owner a final copy of the commissioning record for the project within 10 business days of substantial completion. This report shall include at a minimum the following:
1. Table of Contents
 2. Executive Summary
 3. Contact information for key members of commissioning team.
 4. Description of procedures utilized for each commissioning task.
 5. List of commissioned systems and associated equipment.
 6. Sampling approach utilized for each equipment and system type by commissioning task.
 7. List of responsibilities for each party involved in the commissioning process.
 8. Record of results for commissioning tasks.
 9. List of outstanding issues.
 10. Summarized estimate of cost and savings for commissioning, with breakdown of cost and savings by entity. Summary can be a sample of the overall issues resolved to date and does not need a comprehensive estimate of all issues identified.
 11. Recommendations for improvement of commissioning process.

3.18 COMMISSIONING ISSUES

- A. Throughout the course of the project and commissioning process the CxA shall identify various issues relative to deficiencies or discrepancies with the installations, submissions, or instructions provided by Contractor. These issues shall be clearly identified to Contractor, A/E and other parties of interest in multiple forms depending upon the commissioning task the issue was identified during. However, CxA shall provide on a monthly basis a formalized Cx issues report detailing all issues identified to date and the current status of each issue to Contractor, A/E and Owner.
- B. Contractor and A/E are ultimately responsible for resolution of all issues identified during course of project and the commissioning process. Contractor shall supply CxA a formal resolution report for outstanding issues listed in the Cx issues report within 10 business days of receipt of issues report.

END OF SECTION

SECTION 01811

Cx PRE-FUNCTIONAL CHECKLISTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes specifications for the implementation, tracking and verification of the commissioning process during construction.

1.2 DEFINITIONS

- A. A/E: Architect / Engineer
- B. Cx: Commissioning
- C. CxA: Commissioning Authority
- D. BAS: Building Automation System
- E. TAB: Testing, Adjusting, and Balancing
- F. RFC: Request for Clarification

1.3 SUBMITTALS

- A. The following table contains deliverables and/or submittals required under this section, the party(s) responsible for each, the frequency and or timeline these items should be provided, the format and quantity to be provided, and the party(s) to be provided to.

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
Completion of draft checklists	CxA	120 days following contract award and approved equipment submittals	Electronic	Contractor, Owner and A/E
Review comments on checklists provided	Contractor	1 week proceeding receipt of checklists	Electronic	CxA
Final Checklists	CxA	2 weeks proceeding receipt of comments	Paper	Contractor

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
Instructions for completion and utilization of checklists and tracking system	CxA	2 weeks proceeding receipt of checklist comments	Paper (3 copies)	Contractor
Equipment identification tags	CxA	2 weeks proceeding receipt of checklist comments	Laminated Paper (1 copy per unit)	Contractor
Checklist Tracking System	CxA	2 weeks proceeding receipt of checklist comments	Electronic	Contractor
PC and related software defined under the HARDWARE/SOFTWARE REQUIREMENTS for Checklist Tracking System	Contractor	2 weeks proceeding receipt of checklist comments	N/A	N/A
Completion and deficiency reports as defined by CxA	Contractor	Weekly	Electronic	A/E, CxA and Owner
List of deficiencies requiring action	CxA	Weekly, within 3 business days of receipt of deficiency report	Electronic	Contractor
Resolution report for deficiencies	Contractor	Weekly	Electronic	A/E, CxA and Owner
Construction Checklist Completion Summary and Construction Checklist Deficiency Reports	CxA	Monthly	Electronic	Contractor, A/E and Owner
Completed and finalized checklists	Contractor	Substantial completion	Paper	CxA
Checklist verification sampling approach	CxA	1 week prior to commencement of work	Electronic	Contractor
Discrepancy report for periodic checklist verification	CxA	Within 3 business days of checklist verification	Electronic	Contractor
Resolution report for discrepancies	Contractor	Weekly	Electronic	A/E, CxA and Owner

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
Construction Checklist Verification Completion Summary and Construction Checklist Verification Discrepancy Reports	CxA	Monthly	Electronic	Contractor, A/E and Owner

PART 2 - PRODUCTS N/A

PART 3 - EXECUTION

3.1 PURPOSE

- A. The intent of the pre-functional checklists is to provide a formalized means to provide individual workers the key criteria for a successful installation and to easily track construction progress.

3.2 DEVELOPMENT PROCEDURE

- A. Pre-functional checklists shall be developed for each system or equipment to be commissioned.
- B. CxA shall be responsible to provide Contractor with draft copies of each checklist to be utilized for this project for each equipment/system type within 120 days of contract award and after receipt of approved submittals for commissioned equipment. An example for checklists is provided in Annex A showing the format to be used.
- C. Checklists shall be provided in the following formats:
 - 1. EQUIPMENT: Checklists related to a specific piece of equipment or portion of an overall system that is completed in a linear progression similar to the standard installation practices of the equipment.
 - 2. SYSTEM: Checklists related to the overall distribution system or repetitive equipment found universally throughout a given system (i.e. valves, diffusers, outlets, etc.).
- D. Contractor is responsible to review the checklists provided by the CxA and provide any comments or issues related to the specified checklist within 2 weeks preceding receipt of checklist comments. Failure to provide comments on the checklists shall constitute full acceptance as written.
- E. Contractor and A/E are responsible to provide notice to CxA for any project modifications related to the addition or deletion of equipment and/or systems to be commissioned.
- F. CxA shall incorporate any comments from the Contractor for the final checklists that are not deemed in contradiction to the scope of the project, applicable codes and standards, and the OPR of the project.
- G. CxA shall provide contractor with the following items to the Contractor upon incorporation of all applicable comments:
 - 1. Instructions for completion and utilization of checklists and tracking system.

2. Checklists for all equipment and systems in the following format:
 - a. **SHORT FORM:** Paper checklists divided into individual groups as noted within the PRE-FUNCTIONAL CHECKLISTS provided under this section. Checklist shall be divided by trade and step of installation with each trade Contractor responsible for the completion of each checklist group. Each group to be provided and tracked as an individual checklist. Checklists to include tracking ID that uniquely identifies the singular piece of equipment or area of the system, and the checklist group the given checklist relates to. Checklist shall include area to mark checklist as complete, as well as an area to note the initials of the individual responsible for completion and the date of completion. Checklists to include space for notation of any deficiencies identified during verification of installation.
 3. Unique identification tags for each piece of equipment related to the systems. Identifier for tags shall be directly tied to checklists regardless of format utilized.
- H. CxA shall provide contractor with the training on the utilization of the checklists and tracking system prior to delivery or commencement of any work related to the checklists.

3.3 HARDWARE/SOFTWARE REQUIREMENTS

- A. Contractor shall provide a dedicated PC at the site trailer for utilization in the implementation and tracking of construction verification items. This PC shall meet and/or contain the following:
 1. Microsoft Windows XP operating system
 2. Microsoft Office Professional XP
 3. Minimum of 1 GB RAM
 4. Minimum of 60 GB of free hard drive space
 5. LAN or wireless network card interface
- B. PC and related software shall be maintained and full access provided to CxA, Owner and Contractors during typical hours of operation on site.

3.4 COMPLETION PROCEDURE

- A. The following is the permitted method the Contractor is to utilize for completion of all construction verification checklists related to project. Any deviations from this procedure must be authorized by the CxA.
- B. **EQUIPMENT CHECKLISTS**
 1. The checklists shall be distributed by the Contractor to individuals, sub-contractors, or other trade Contractors at the start of each day for the equipment to be installed or worked on that day.
 2. The checklist shall be completed by the individual completing the work who is responsible for the given delivery or installation step of the equipment.
 3. Checklists shall be completed fully with all information or responses noted in the spaces provided for each item. Any items that cannot be answered due to lack of information with equipment or not being applicable to a given installation shall be noted negatively, with an explanation provided in the deficiency section.
 4. Any negative responses on the checklist shall be explained and documented at the end of the checklist. Explanation shall be detailed to a degree to define the reasoning for non-compliance without further observation.

5. Once all items on a checklist have been completed, individual shall initial and date checklist in provided space for given group/checklist and mark that group/checklist as complete.
6. At end of day Contractor to collect all checklists distributed and file any checklists marked as complete for processing.
7. At end of work week Contractor to record all completed checklists into provided tracking system and distribute pertinent reports to A/E, CxA and Owner as defined by CxA.
8. Contractor to file all completed and processed checklists separately from in progress checklists and provide to CxA at completion of project.
9. CxA shall review deficiency reports provided by Contractor within 3 business days of receipt of report and provide a list of deficiencies requiring action by Contractor.
10. Contractor to record method and date of resolution upon completion of corrective action for deficiency.
11. If any deficiencies or non-compliance are noted Contractor shall remedy said issues and inform A/E and CxA of completion

C. SYSTEM CHECKLISTS

1. The checklists shall be distributed by the Contractor to individuals, sub-contractors, or other trade Contractors at the start of each work week for the system to be installed or worked on that week.
2. The checklist shall be completed by the individual completing the work who is responsible for the given installation of the system.
3. Individual to periodically record the work completed throughout the week for the given system by recording the percentage of completion, the description of work performed, and response to the items identified. Periodicity of this record shall be defined as follows:
 - a. For checklists pertaining to areas of systems with an overall installation timeframe <3 weeks, checklist to be completed on a daily basis.
 - b. For checklists pertaining to areas of systems with an overall installation timeframe <8 weeks, but >3 weeks, checklist to be completed twice per week.
 - c. For checklists pertaining to areas of systems with an overall installation timeframe >8 weeks, checklist to be completed on a weekly basis.
4. Checklists shall be completed fully with all information or responses noted in the spaces provided for each item. Any items that cannot be answered due to lack of information with equipment or not being applicable to a given installation shall be noted negatively, with an explanation provided in the deficiency section.
5. Any negative responses on the checklist shall be explained and documented at the end of the checklist. Explanation shall be detailed to a degree to define the reasoning for non-compliance without further observation.
6. Once the percentage of completion for a given system checklists is noted as 100%, individual shall initial and date checklist in provided space for given group/checklist and mark that group/checklist as complete.
7. At end of work week Contractor to collect all checklists distributed.
8. At end of work week Contractor to record all checklists into provided tracking system and distribute pertinent reports to A/E, CxA and Owner as defined by A/E or CxA and tracking system requirements.
9. Contractor to file all completed and processed checklists separately from in progress checklists and provide to A/E or CxA at completion of project.
10. A/E or CxA shall review deficiency reports provided by Contractor within 3 business days of receipt of report and provide a list of deficiencies requiring action by Contractor.

11. Contractor to record method and date of resolution upon completion of corrective action for deficiency.
12. If any deficiencies or non-compliance are noted Contractor shall remedy said issues and inform A/E and CxA of completion
13. The completion of the checklists does not eliminate the Contractor's responsibility for meeting other requirements in the specifications and drawings.

3.5 VERIFICATION PROCEDURE

- A. There are no sampling strategies allowed when implementing the Pre-functional Checklists. Every piece of equipment requiring a Pre-functional Checklist will be verified.
- B. At the commencement of work related to the checklists the CxA will periodically verify the accuracy, completeness and tracking of the checklists. This verification shall consist of reviewing the as installed conditions of the equipment and/or system versus the statements recorded on the checklists and the progress of the checklists in general.
- C. CxA shall record any discrepancies noted between the as installed conditions and/or progress of installation versus the checklists in a formal report to the Contractor within 3 business days of verification.
- D. Contractor shall provide CxA method and date of resolution upon completion of corrective action for discrepancy.
- E. Any discrepancies noted for action that are disputed by Contractor and cannot be resolved between the Contractor and the CxA, shall be presented to Owner and A/E for resolution in the form of a RFC
- F. If during verification the CxA identifies more than a 10% discrepancy rate for items identified on an individual checklist, or for the overall item count for the checklists for a given equipment or system, the Contractor shall re-validate 100% of the checklists, equipment and/or system.
- G. If during verification the CxA identifies more than a 10% discrepancy rate between the current installation completion percentage for a given equipment or system and that reflected in the current checklists, the Contractor will be given a verbal warning regarding this issue and shall be responsible to bring the checklist completion in line with the installation progress by a date defined by the CxA. If this issue is not resolved by the date specified and/or occurs again during the course of the project, the Contractor will be given a written warning regarding this issue and shall be responsible to bring the checklist completion in line with the installation progress by a date defined by the CxA. If this issue is again not resolved by the date specified and/or occurs again during the course of the project, the Contractor will be back charged by the Owner to have the CxA review 100% of all un-completed checklists required to bring the checklist completion in line with the installation progress.
- H. Sample Checklist indicated in ANNEX-A

ANNEX A – SAMPLE CONSTRUCTION VERIFICATION CHECKLIST

The following checklist is provided as an example only. The content and format does not necessarily reflect the final scope, format or system to be utilized for this project.

Equipment Type: Modular Boilers
Tag #:
Location:
Spec #: 15600
System:
Checklist Tracking ID:

- Instructions:**
1. Checklists are organized in groups by installation phase. Each phase is assigned a given responsible contractor which is solely responsible for the construction verification items defined within that group.
 2. Checklists are to be completed in accordance with the stage of delivery, installation or start-up by the individuals responsible for installation.
 3. Circle Yes or No, or provide the requested information for each checklist item.
 4. If the information requested for a checklist item is not listed or the item does not apply to the given unit or system, list it as "N/A" and provide the reasoning under the negative responses section.
 5. Explain all discrepancies or negative responses in the negative responses section of the checklist. All discrepancies, negative and "N/A" responses must be defined.
 6. At the completion of each checklist group the party responsible for completion of the checklist group is to mark that group as complete in the provided checkbox, and initial and date in the spaces provided. *Note completion of the checklist group is defined as the complete response to each checklist item within the group including negative responses and the completion of all delivery, installation or start-up tasks related to the equipment for that group.*
 7. Provide checklist to lead contractor at completion of each work day.

Group/Item	Group/Task Description	Submitted	Delivered
1. MODEL VERIFICATION			
1	Manufacturer		
2	Model		
3	Serial Number		
4	Total Input / Output Capacity (MBH)	/	/
5	Gas inlet pressure (psi)		
6	Burner motor HP		
7	Voltage / Phase / Frequency (V / - / Hz)	/ /	/ /
<input type="checkbox"/> CHECKLIST COMPLETE		INITIALS: _____	DATE: _____

Group/Item	Group/Task Description	Response	
2. PHYSICAL CHECKS			
1	Unit is free from physical damage.	YES	NO
2	The water and gas openings are sealed with plastic plugs.	YES	NO

Group/Item	Group/Task Description	Response	
3	All components present.	YES	NO
4	Installation and startup manual provided.	YES	NO
5	Unit tags affixed.	YES	NO
<input type="checkbox"/>	CHECKLIST	GROUP	INITIALS: _____
COMPLETE			DATE: _____
C INSTALLATION			
1	Unit located indoors and protected from freezing temperatures.	YES	NO
2	Unit not located near an air-moving device.	YES	NO
3	Proper clearances from combustible surfaces maintained per manufacturer's instructions and applicable codes.	YES	NO
4	Installation area free of corrosive elements and flammable materials.	YES	NO
5	Unit is set on concrete housekeeping pad and is level.	YES	NO
6	Unit secured as required by manufacturer and specifications.	YES	NO
7	Equipment location coordinated with piping, ductwork, conduit and equipment of other trades to allow sufficient clearances.	YES	NO
8	Adequate clearance around unit for service.	YES	NO
9	All components accessible for maintenance.	YES	NO
10	Unit labeled and is easy to see.	YES	NO
<input type="checkbox"/>	CHECKLIST	GROUP	INITIALS: _____
COMPLETE			DATE: _____
D VENTILATION AND COMBUSTION AIR SUPPLY			
1	Fresh air not taken from areas that contain negative pressure producing devices.	YES	NO
2	Fresh air supply free of corrosive elements and flammable vapors.	YES	NO
3	Fresh air openings located correctly with consideration given to the blocking effect of louvers and grilles.	YES	NO
4	Overall ductwork length and restrictions comply with manufacturer requirements.	YES	NO
5	Ductwork is the same cross-sectional area as openings.	YES	NO
6	All ductwork is properly sealed and sloped per manufacturer specifications.	YES	NO
<input type="checkbox"/>	CHECKLIST	GROUP	INITIALS: _____
COMPLETE			DATE: _____
E VENT/EXHAUST			
1	Draft hood for atmospheric burners properly installed.	YES	NO
2	Vent connectors securely fastened with screws and supported properly to maintain 6-inch clearance.	YES	NO
3	Vent connector made of approved material and sloped correctly.	YES	NO
4	Vent pipe system in accordance with "National Fuel Gas Code", NFPA 54, ANSI Z223.1-Latest Edition or prevailing provisions of local codes.	YES	NO
5	Overall ductwork length and restrictions comply with manufacturer requirements.	YES	NO
6	Flue baffle engaged in slots provided in the flue tube.	YES	NO
7	Flue way, draft hood or vent pipe system not obstructed in any way.	YES	NO

Group/Item	Group/Task Description	Response	
<input type="checkbox"/> COMPLETE	CHECKLIST GROUP INITIALS: _____	DATE: _____	_____
F WATER PIPING			
1	All piping components have been installed (in the correct order) as required by contract document or manufacturer.	YES	NO
2	Piping arranged for ease of unit removal.	YES	NO
3	Piping supported as required by specifications.	YES	NO
4	Piping is clean.	YES	NO
5	Unit connected to water supply, return, and drain piping using unions or flanges and isolation valves.	YES	NO
6	Dielectric fittings installed to isolate dis-similar pipe materials.	YES	NO
7	Piping and valves properly checked and free of leaks.	YES	NO
8	Thermometers and pressure gauges supplied on supply and return lines.	YES	NO
9	Balancing valve supplied for each boiler branch (multiple boiler arrangements ONLY).	YES	NO
10	Piping insulation is complete and installed as per specifications.	YES	NO
11	All valves and test ports are easily accessible.	YES	NO
12	Valve tags attached.	YES	NO
13	Pressure and temperature relief valve(s) for correct pressure and temperature installed.	YES	NO
14	Pressure and temperature relief valve(s) piped with sufficient pipe diameter to drain designed for boiling water.	YES	NO
15	Drain valve provided.	YES	NO
<input type="checkbox"/> COMPLETE	CHECKLIST GROUP INITIALS: _____	DATE: _____	_____
G STEAM PIPING (IF APPLICABLE)			
1	All piping components have been installed (in the correct order) as required by contract document or manufacturer.	YES	NO
2	Strainer and isolation valve installed.	YES	NO
3	Proper condensate trap installed.	YES	NO
4	Pressure relief valve installed prior to heat exchanger for steam supply pressures above maximum recommended pressure ratings for unit.	YES	NO
5	Safety and pressure relief devices installed in manner to minimize personnel and property damage.	YES	NO
6	Piping pitched for proper condensate flow.	YES	NO
7	Piping arranged for ease of unit removal.	YES	NO
8	Piping supported as required by specifications.	YES	NO
9	Piping is clean.	YES	NO
10	Piping and valves properly checked and free of leaks.	YES	NO
11	Pressure gauges supplied on supply lines.	YES	NO
12	Piping insulation is complete and installed as per specifications.	YES	NO
13	All valves and test ports are easily accessible.	YES	NO
14	Valve tags attached.	YES	NO
<input type="checkbox"/> COMPLETE	CHECKLIST GROUP INITIALS: _____	DATE: _____	_____
H GAS PIPING			

Group/Item	Group/Task Description	Response	
1	Gas supply is the same type as listed on the unit data plate.	YES	NO
2	Pressure reducing valves provide correct pressure to unit.	YES	NO
3	Gas cock / valve and union provided on gas supply.	YES	NO
4	Drip / dirt leg and cap provided on gas supply.	YES	NO
5	Pressure relief valves are piped to outdoors.	YES	NO
6	Piping and valves properly checked and free of leaks.	YES	NO
7	Proper gas train provided (FM/IRI arrangements).	YES	NO
8	Gas utility company inspected installation (if required).	YES	NO
<input type="checkbox"/> CHECKLIST COMPLETE		GROUP	INITIALS: _____
		DATE: _____	
4 ELECTRICAL			
1	Local disconnect installed in accessible and visible location.	YES	NO
2	All electrical connections are tight.	YES	NO
3	All electrical components are grounded.	YES	NO
<input type="checkbox"/> CHECKLIST COMPLETE		GROUP	INITIALS: _____
		DATE: _____	
5 CONTROLS INSTALLATION			
1	Control panel accessible and labeled properly.	YES	NO
2	Remote start and stop wiring installed and communication verified.	YES	NO
3	Remote status wiring installed and communication verified.	YES	NO
4	Remote alarm wiring installed and communication verified.	YES	NO
5	Hot water temperature reset signal verified and programmed.	YES	NO
6	Actuators installed and calibration verified.	YES	NO
7	Low water cutoff switch installed and operational.	YES	NO
8	High temperature limit sensor installed and programmed per contract documents.	YES	NO
9	High pressure limit sensor installed and programmed per contract documents (steam boilers ONLY).	YES	NO
10	Hot water supply and return temperature sensors installed and communication verified.	YES	NO
11	Steam supply pressure sensor installed and communication verified (steam boilers ONLY).	YES	NO
12	Circulation pump wired and operational (if applicable).	YES	NO
13	Test ports installed near all control sensors.	YES	NO
<input type="checkbox"/> CHECKLIST COMPLETE		GROUP	INITIALS: _____
		DATE: _____	
6 MECHANICAL STARTUP			
1	System flushed, filled, and air purged.	YES	NO
2	Burner adjusted to proper settings and CO ₂ , CO, and combustion efficiencies are acceptable.	YES	NO
3	System starts and runs without any unusual noise or vibration.	YES	NO
4	Pressure and temperature relief valve(s) set to proper pressure and temperature and manually checked for functionality.	YES	NO
5	Manufacturer's startup checklist completed and attached.	YES	NO

Group/Item	Group/Task Description	Response	
<input type="checkbox"/> CHECKLIST COMPLETE	GROUP INITIALS: _____	DATE: _____	_____
L CONTROLS STARTUP			
1	Low water cut off sequence verified and acceptable.	YES	NO
2	High temperature limit sequence verified and acceptable.	YES	NO
3	High pressure limit sequence verified and acceptable (steam boilers ONLY).	YES	NO
4	Flame safety sequences verified and acceptable.	YES	NO
5	Heating sequence verified and acceptable.	YES	NO
6	Temperature reset schedule verified and acceptable.	YES	NO
7	Lead/lag sequence verified and acceptable.	YES	NO
<input type="checkbox"/> CHECKLIST COMPLETE	GROUP INITIALS: _____	DATE: _____	_____
M FIB			
1	Minimum flow conditions for boiler verified and acceptable (primary pumping systems ONLY).	YES	NO
<input type="checkbox"/> CHECKLIST COMPLETE	GROUP INITIALS: _____	DATE: _____	_____

Negative Responses

Group/Item	Date Found	Found By	Reason for Negative Response	Resolved	Date Resolved	Resolution
				YES / NO		
				YES / NO		
				YES / NO		
				YES / NO		
				YES / NO		

END OF SECTION

SECTION 01812

Cx FUNCTIONAL PERFORMANCE TESTING

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes specifications for the implementation, tracking and verification of the commissioning process.

1.2 DEFINITIONS

- A. A/E: Architect / Engineer
- B. Cx: Commissioning
- C. CxA: Commissioning Authority
- D. BAS: Building Automation System
- E. TAB: Testing, Adjusting, and Balancing
- F. RFC: Request for Clarification
- G. FPT: Functional Performance Test

1.3 SUBMITTALS

- A. Contractor to supply formal review and comment to CxA on procedures supplied by CxA for application to project, adherence to warranty requirements and general safety.
- B. CxA shall provide contractor with list of criteria required for contractor readiness notification. Whereas contractor readiness notification is deemed as the formal notification by Contractor for initiation of functional testing. These criteria shall be provided for each commissioned system to be tested and shall consist of the following items at a minimum:
 - 1. Completed copies of all construction verification checklists for equipment and systems pertaining to commissioned system.
 - 2. Written and approved notification of the resolution of all deficiencies, discrepancies and issues noted for equipment and systems pertaining to commissioned system.
 - 3. Completed and approved copies of all start-up, testing and balancing reports specified for equipment and systems pertaining to commissioned system.
- C. Contractor to supply construction schedule providing a minimum of 28 days prior to substantial completion for the functional and seasonal testing of all commissioned systems. Schedule is to comply with general scheduling requirements specified under 01810 and shall provide sufficient time prior to specified testing period to meet contractor readiness notification requirements.

- D. Prior to commencement of testing period Contractor to provide CxA with a proposed plan to implement the tests specified by CxA for approval. Plan to include the following on an hour/day schedule.
1. Personnel to be in attendance
 2. Tools to be provided
 3. Duration provided for each test
 4. Arrangement of tests to maximize personnel utilization and minimize down time required for test preparation.
- E. Fourteen (14) days prior to commencement of testing period Contractor to provide A/E, Owner and CxA with a copy of the contractor readiness notification for each commissioned system.
- F. Seven (7) days prior to commencement of testing period Contractor to provide CxA with conformation that FPT testing period and schedule are finalized and approved.
- G. The following table contains deliverables and/or submittals required under this section, the party(s) responsible for each, the frequency and or timeline these items should be provided, the format and quantity to be provided, and the party(s) to be provided to.

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
Draft FPT procedures	CxA	120 days following contract award	Electronic	Contractor, Owner and A/E
Review comments on draft FPT procedures	Contractor	1 week preceding receipt of checklists	Paper (2 copies)	A/E and CxA
Final FPT procedures	CxA	2 weeks preceding receipt of comments	Electronic	Contractor
Contractor readiness criteria	CxA	120 days following contract award	Electronic	Contractor
Construction schedule with FPT provisions	Contractor	1 week prior to commencement of work	Electronic	A/E, Owner and CxA
FPT plan	Contractor	4 weeks prior to commencement of testing	Electronic	A/E, Owner and CxA
Contractor readiness notification	Contractor	14 days prior to commencement of testing	Paper (3 copies)	A/E, Owner and CxA
FPT readiness conformation	Contractor	7 days prior to commencement of testing	Electronic	CxA
Preliminary FPT report and list of deficiencies requiring action	CxA	Within 5 business days of completion of testing	Electronic	Contractor

Submittal	Party(s) Responsible	Frequency or Timeline	Format & Quantity	Party(s) Provided To
Resolution report for FPT deficiencies	Contractor	Within 10 business days of receipt of report	Electronic	A/E, Owner and CxA
FPT re-test plan (if applicable)	Contractor	14 days prior to commencement of testing	Electronic	A/E, Owner and CxA
Final FPT report	CxA	Within 5 business days of completion of testing	Electronic	Contractor and Owner
Seasonal testing plan	CxA	Within 5 business days of completion of substantial completion	Electronic	Contractor and Owner
Seasonal testing readiness conformation	Contractor	7 days prior to commencement of testing	Electronic	CxA
Preliminary seasonal testing report and list of deficiencies requiring action	CxA	Within 5 business days of completion of testing	Electronic	Contractor
Resolution report for seasonal test deficiencies	Contractor	Within 5 business days of receipt of report	Electronic	A/E, Owner and CxA
Final seasonal testing report	CxA	Within 5 business days of receipt of resolution report	Electronic	Contractor and Owner

1.4 TEST METHODS

- A. FPT is achieved in accordance with the procedures outlined by the CxA with the example provided under Annex A. For the purpose of clarity CxA may require Contractor to employ one of the following methods below:
1. Simulated Conditions. Simulating conditions (not by an overwritten value) shall be allowed, though timing the testing to experience actual conditions is encouraged wherever practical.
 2. Overwritten Values. Overwriting sensor values to simulate a condition, such as overwriting shall be allowed, but shall be used with caution and avoided when possible.
 3. Simulated Signals. Using a signal generator which creates a simulated signal to test and calibrate transducers and DDC constants is generally recommended over using the sensor to act as the signal generator via simulated conditions or overwritten values.
 4. Altering Setpoints. Rather than overwriting sensor values, and when simulating conditions is difficult, altering setpoints to test a sequence is acceptable.
 5. Indirect Indicators. Relying on indirect indicators for responses or performance shall be allowed only after visually and directly verifying and documenting, over the range of the tested parameters, that the indirect readings through the control system represent actual conditions and responses.

- B. Sampling. Multiple identical pieces of non-life-safety or otherwise non-critical equipment may be functionally tested using a sampling strategy as defined by CxA. Provided a minimum sampling rate of 20% of the similar units is provided and that units with significant application differences and significant sequence of operation differences are not included in the overall sample.

PART 2 - PRODUCTS – N/A

PART 3 - EXECUTION

3.1 PURPOSE

- A. The intent of the functional performance tests is to provide a formalized means to verify the completion and functional preparedness of the commissioned systems for operation and occupancy.

3.2 DEVELOPMENT PROCEDURE

- A. FPT shall be developed for each system and equipment to be commissioned.
- B. CxA shall be responsible to provide Contractor with draft copies of each FPT to be utilized for this project for each commissioned system within 120 days of contract award. An example showing the rigor and detail that is to be utilized for FPT procedures is provided in Annex A.
- C. Contractor is responsible to review the FPT provided under by CxA and provide any comments or issues related to the specified FPT within two weeks of receipt of procedures. Failure to provide comments on the FPT shall constitute full acceptance as written and obligation of Contractor to full warrant the application, safety and warranty terms of the equipment and system under the conditions presented by the tests specified.
- D. Contractor and A/E are responsible to provide notice to CxA for any project modifications related to the addition or deletion of equipment and/or systems to be commissioned.
- E. CxA shall incorporate any comments from the Contractor that are not deemed in contradiction to the scope of the project, applicable codes and standards, and the OPR of the project.

3.3 PRE-IMPLEMENTATION PROCEDURE

- A. The following is the permitted method the Contractor is to utilize prior to implementation of all FPT related to project. Any deviations from this procedure must be authorized by the A/E and CxA.
 1. Contractor supplies CxA with FPT plan four (4) weeks prior to scheduled testing period.
 2. CxA reviews FPT plan and provide comments to Contractor.
 3. Contractor provides contractor readiness notification for commissioned systems within fourteen (14) days prior to scheduled testing period.
 4. CxA with confirmation of FPT readiness seven (7) days prior to testing period commencement.

3.4 IMPLEMENTATION PROCEDURE

- A. CxA is NOT responsible for the operation of equipment/systems and/or conducting the testing on the equipment/systems. CxA is only responsible for witnessing, reporting and approving the tests conducted by the Contractor. Contractor is fully responsible for operation of equipment/systems and conducting the testing on the equipment/system specified under the FPT procedures to the satisfaction of CxA.
- B. The following is the permitted method the Contractor is to utilize for implementation of all FPT related to project. Any deviations from this procedure must be authorized by the CxA prior to testing.
 - 1. On day of scheduled test Contractor shall have personnel and tools present to accomplish test. If required personnel and/or tools are not present Contractor shall be responsible for re-testing in accordance with the requirements specified under RE-TESTING PROCEDURE.
 - 2. Contractor shall ensure BAS and/or data logging equipment is set-up for trending specified for each test prior to initiation of test.
 - 3. Contractor shall implement testing according to approved FPT plan unless directed by CxA.
 - 4. If minor issues are identified during the test CxA and Contractor shall review issue and formulate resolution to continue test. Contractor shall repair or remedy issues identified and test shall be continued once completed. CxA shall clearly identify the issue and method of resolution in the FPT report.
 - 5. If major issues are identified during the test Contractor shall terminate test immediately and work with A/E and CxA to determine the method of resolution. CxA shall clearly identify the issue in the FPT report. Upon resolution of these issues Contractor shall supply CxA with report detailing method of resolution and proposed schedule for re-testing according to the requirements specified under RE-TESTING PROCEDURE.
 - 6. If at any point, frequent failures are occurring and testing is requiring excessive troubleshooting, CxA may stop the testing and require the responsible Contractor to perform and document a checkout of the remaining units and systems, prior to continuing with functional testing. Failures of this nature shall constitute a re-test and handled in accordance with the guidelines specified for re-testing under this section.
- C. CxA is solely responsible for defining what constitutes a minor or major issue during a test. Minor issues are defined as issues related to deficiencies in the installation of equipment or system that can be resolved without interpretation by the A/E and/or not requiring significant time for resolution that would cause delay to the completion of the test. Major issues are defined as issues related to deficiencies in the installation of equipment or system that cannot be resolved without interpretation by the A/E and/or requiring significant time for resolution that would cause significant delay to the completion of the test.
- D. At the completion and approval of all tests CxA shall provide A/E, Owner and Contractor with final copy of FPT report.
- E. The completion of the FPT does not eliminate the Contractor's responsibility for meeting other testing requirements in the specifications and drawings.

3.5 SEASONAL TESTING PROCEDURE

- A. Portions of or tests in whole are required to be run under near peak load conditions. For these instances the Contractor will be required to attend and implement seasonal tests under the direction of CxA.
- B. Within five (5) business days from substantial completion Contractor and CxA shall develop and agree upon a seasonal testing plan, which shall have the same format and detail required for the FPT plan defined in this section.
- C. Contractor to provide CxA with confirmation of seasonal testing readiness seven (7) days prior to testing period commencement.
- D. Contractor and CxA shall follow identical procedure defined for FPT under this section for all seasonal tests, including methods for issue resolution and re-testing.
- E. At the completion and approval of all tests CxA shall provide A/E, Owner and Contractor with final copy of seasonal test report.
- F. The completion of the seasonal tests does not eliminate the Contractor's responsibility for meeting other testing requirements in the specifications and drawings.

3.6 NON-CONFORMANCE AND APPROVAL OF TESTING

- A. Non-Conformance
 - 1) If any deficiencies or non-conformance are noted the Contractor shall remedy said issues until satisfactory performance is achieved in accordance with re-testing guidelines provided under this section and inform A/E and CxA of completion for reinspection.
- B. Failure Due to Manufacturer Defect
 - 1. If 10%, or three, whichever is greater, of identical pieces of equipment fail to perform to the Contract Documents (mechanically or substantively) due to manufacturing defect, not allowing it to meet its submitted performance spec, all identical units may be considered unacceptable by the A/E or Owner. In such case, the Contractor shall provide the Owner with the following:
 - a. Within one week of notification from the A/E, Owner and CxA, the Contractor or manufacturer's representative shall examine all other identical units making a record of the findings. The findings shall be provided to the A/E within two weeks of the original notice.
 - b. Within two weeks of the original notification, the Contractor or manufacturer shall provide a signed and dated, written explanation of the problem, cause of failures, etc. and all proposed solutions which shall include full equipment submittals. The proposed solutions shall not significantly exceed the specification requirements of the original installation.
 - c. A/E, Owner and CxA will determine whether a replacement of all identical units or a repair is acceptable.
 - d. Two examples of the proposed solution will be installed by the Contractor and the A/E, Owner and CxA will be allowed to test the installations for up to one week, upon which the A/E and Owner will decide whether to accept the solution. Cost of this re-testing for

A/E, Owner and CxA shall fall under the guidelines for re-testing presented in this section.

- e. Upon acceptance, the Contractor and/or manufacturer shall replace or repair all identical items, at their expense and extend the warranty accordingly, if the original equipment warranty had begun. The replacement/repair work shall proceed with reasonable speed beginning within one week from when parts can be obtained.

C. Approval.

- 1. CxA shall have the sole responsibility of determining the satisfactory completion and approval of any and all functional and seasonal tests. CxA shall provide A/E, Contractor and Owner with formal approval of each functional and seasonal test as part of the final FPT report.

3.7 RE-TESTING PROCEDURE

- A. CxA is responsible for attendance at one attempt per test, where an attempt is defined as the participation and attendance at a test at the time approved under the FPT readiness conformation.
- B. Any requirement for a re-test for a given test shall constitute the back charge to the responsible Contractor by the Owner for the attendance of CxA. CxA shall be solely responsible for determining the responsible party, and a re-test shall be defined in this context as any time where a test defined under this section for the project cannot be fully executed due to any of the following conditions:
 - 1. Date and time of test changed without a minimum of seven (7) days notice to CxA.
 - 2. Improper or insufficient personnel and/or tools on site at time of test.
 - 3. Deficiencies or discrepancies present at time of test that have been previously noted by CxA and remain unresolved.
 - 4. Any issues that require a re-test or stoppage of tests in progress.
 - 5. Failure of test for reason under responsibility of Contractor and/or Contractor responsible for sub or feed system (i.e. controls, electrical, etc.).
 - 6. Failure due to manufacturer defect.
- C. The Contractor is responsible for all costs associated with re-testing.
- D. Re-testing by Contractor shall not be considered a reason for a claim of delay or for a time extension by the Contractor.

3.8 PROJECT FUNCTIONAL PERFORMANCE TEST PROCEDURES

- A. Refer to Annex A following this section for copies of the FPT to be utilized for this project.

END OF SECTION

ANNEX A –SAMPLE FUNCTIONAL PERFORMANCE TEST PROCEDURE

The following FPT is provided as an example only. The content and format does not necessarily reflect the final scope, format or systems to be utilized for this project.

Boiler Functional Performance Test

Date: _____ Start Time: _____ End Time _____

Estimated Duration: _____
 Cx Provider(s): _____

Applicable Equipment:

A Objectives

This test is performed to investigate the ability of the boiler to provide heating water or steam for the facility.

B Instrumentation

Instrument	Accuracy	Measurement
N/A	N/A	N/A

C Stated Sequence

TBD

D Procedure

1. Hot Water Temperature Reset
 - a. Verify boilers are in occupied mode. If not override system into occupied mode.
 - b. Record outside air temperature and hot water supply temperature.
 - c. Override outside air temperature to be 10° above current outside air temperature.
 - d. Verify hot water temperature decreases with override proportionally.
 - e. Override outside air temperature to be 10° below current outside air temperature.
 - f. Verify hot water temperature increases with override proportionally.
 - g. Return outside air temperature to normal operation.
2. Staging Up
 - a. Override hot water temperature set point to be 15° above current reading.
 - b. Verify lead boiler circulation pump energizes and lead boiler fires at low fire.
 - c. Record the hot water supply and return temperatures, as well as the time lead boiler started.
 - d. Lower the delay time between all stages to a maximum of 3 minutes.
 - e. Verify lead boiler modulates to high fire after three minutes at low fire setting.
 - f. Record the hot water supply and return temperatures.
 - g. Verify lag boiler circulation pump energizes and lag boiler fires at low fire after lead boiler has been under operation at high fire for 3 minutes.
 - h. Record the hot water supply and return temperatures.
 - i. Verify lag boiler modulates to high fire after three minutes at low fire setting.
 - j. Record the hot water supply and return temperatures.
 - k. Repeat steps g to j for each additional lag boiler present.
 - l. Verify lead and lag boilers continue to operate until hot water temperature set point is achieved and record time.
3. Staging Down
 - a. With all boilers firing, lower hot water temperature set point to be 15° below current reading.
 - b. Record the hot water supply and return temperatures, as well as the time test started.
 - c. Verify lag boiler(s) modulates to low fire after 3 minutes at new setpoint.
 - d. Record the hot water supply and return temperatures.
 - e. Verify lag boiler(s) shuts down after operation at low fire for 3 minutes.
 - f. Verify lag boiler(s) circulation pump de-energizes thirty seconds after lag boiler(s) has shut down.

- g. Record the hot water supply and return temperatures.
 - h. Verify lead boiler modulates to low fire after 3 minutes has passed since last lag boiler(s) shut down.
 - i. Record the hot water supply and return temperatures.
 - j. Verify lead boiler shuts down after operation at low fire for 3 minutes.
 - k. Verify lead boiler circulation pump de-energizes thirty seconds after lead boiler has shut down.
 - l. Record time of lead boiler shut down.
 - m. Return system and settings to normal mode and original set points.
4. Minimum Boiler Flow (primary pumping systems ONLY)
- a. Override hot water temperature set point to be 5° above current reading.
 - b. Verify one boiler pump energizes and boiler fires at low fire.
 - c. Override all control valves to close in hot water system. For 3-way valves ensure valves are set to bypass coil.
 - d. Verify boiler has minimum flow per manufacturer requirements.
 - e. Override all 3-way valves to coil.
 - f. Verify boiler has minimum flow per manufacturer requirements.
 - g. Override all control valves to close in hot water system. For 3-way valves ensure valves are set to bypass coil.
 - h. Shut down ON boiler via local disconnect.
 - i. Verify lag boiler pump energizes and lag boiler fires at low fire.
 - j. Verify boiler has minimum flow per manufacturer requirements.
 - k. Override all 3-way valves to coil.
 - l. Verify boiler has minimum flow per manufacturer requirements.
 - m. Override all control valves to close in hot water system. For 3-way valves ensure valves are set to bypass coil.
 - n. Shut down ON boiler via local disconnect.
 - o. Repeat steps ix through xiv for each lag boiler.
 - p. Return system to normal operation and conditions.
5. Unoccupied Mode
- a. Change the current time to be in unoccupied mode.
 - b. Verify all connected loads to hot water system are also in unoccupied mode and not operational.
 - c. Override boilers and pump to normal.
 - d. Verify boilers and pumps do not come ON.
 - e. Manually start one load served by the hot water system.
 - f. Verify boilers and pumps are energized.
 - g. Manually shut down the energized air handling unit from step e.
 - h. Verify boilers and pumps shut down in accordance with proper cool down and minimum run times for boilers.
 - i. Return system to and equipment to normal operations and occupied mode.
6. Alarms and Safeties
- a. With lead boiler ON in occupied mode (adjust hot water temperature set point if necessary), manually shut OFF boiler via disconnect.
 - b. Verify lag boiler energizes and alarm is generated at local control panel and/or BAS head end.
 - c. Repeat steps a and b for each lag boiler.
 - d. Return all boilers to normal operating conditions.
 - e. With lead boiler ON in occupied mode (adjust hot water temperature set point if necessary), shut down circulation pump for boiler via disconnect.
 - f. Verify low flow alarm is initiated at local control panel and/or BAS head end and boiler shuts down.
 - g. Repeat steps e and f for each lag boiler.
 - h. Return all boilers to normal operating conditions.
 - i. With lead boiler ON in occupied mode (adjust hot water temperature set point if necessary), lower high temperature limit set point to be below current hot water temperature reading.
 - j. Verify boiler shuts down and alarm is initiated at local control panel and/or BAS head end and boiler shuts down.
 - k. Repeat steps i and j for each lag boiler.
 - l. Return all boilers to normal operating conditions.
 - m. With lead boiler ON in occupied mode (adjust hot water temperature set point if necessary), jump or remove wires or close gas valve, as appropriate, to simulate an unsafe gas condition.

- n. Verify boiler shuts down and alarm is initiated at local control panel and/or BAS head end and boiler shuts down.
 - o. Repeat steps m and n for each lag boiler.
 - p. Return all boilers to normal operating conditions.
 - q. With lead boiler ON in occupied mode (adjust hot water temperature set point if necessary), locate and trip EPO (Emergency Power Off) switch.
 - r. Verify boiler goes into emergency shutdown operations, an audible alarm is sounded in room, and an alarm is initiated at local control panel and/or BAS head end.
 - s. Return all boilers to normal operating conditions.
7. STEAM
- a. Repeat all procedures listed for hot water boiler applications. Modify tests to accommodate regulation and monitoring of steam pressure in lieu of hot water temperature and ensure a high pressure limit alarm sequence is included within the Alarms and Safeties tests.
8. FULLY MODULATING BURNERS
- a. Repeat all procedures listed for hot water boiler applications. Modify tests to accommodate fully modulating burners by adapting stage steps to coincide with boiler management system capacity percentages provided by manufacturer.

E Results

Hot Water Temperature Reset:

Outside Air Temperature #1: _____
 Heating Water Setpoint #1: _____
 Outside Air Temperature #2: _____
 Heating Water Setpoint #2: _____

Hot water temperature setpoint adjusts proportionally with increases/decreases with outside air temperature?

YES NO

Staging Up:

Starting HWS Temperature: _____
 Starting HWR Temperature: _____

Boiler Tag						
Time Boiler Started:						
HWR Temperature at Low Fire Start:						
HWS Temperature at High Fire Start:						

Time Setpoint Reached: _____

Staging Down:

Starting HWS Temperature: _____
 Starting HWR Temperature: _____

Boiler Tag:						
HWR Temperature at Low Fire Start:						
HWS Temperature at Boiler Shut Down:						
Time Boiler Shut Down:						

Time All Boilers Shut Down: _____

Boiler circulation pumps do not de-energize until 30 seconds after associated boiler has shut down?

YES NO

Minimum Boiler Flow (primary pumping systems ONLY):

Boiler Tag:						
Boiler maintains minimum flow with all loads bypassed or isolated?	YES	YES	YES	YES	YES	YES
	NO	NO	NO	NO	NO	NO
Boiler maintains minimum flow with all 2-way valved	YES	YES	YES	YES	YES	YES

loads isolated and all 3-way valved loads open to load?	NO	NO	NO	NO	NO	NO
---	----	----	----	----	----	----

Unoccupied Mode:

Boilers do not fire when placed into unoccupied mode?

YES NO

Boilers fire when load is sensed on hot water system during unoccupied mode?

YES NO

Alarms and Safeties:

Boiler Tag:						
Lead/lag operation for boiler is operational and acceptable?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
Low flow alarm sequence is operational and acceptable?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
High temperature limit sequence is operational and acceptable?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
Flame failure sequence is operational and acceptable?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
EPO switch sequence is operational and acceptable?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

F Conclusion

Acceptable Criteria: Hot water temperature reset schedule adjusts hot water temperature setpoint in proportion to outside air temperature per contract documents. Boiler staging and firing corresponds to designated heating sequence for facility with minimal hunting. Whereas minimal hunting corresponds to hot water temperature readings differ from hot water temperature set point by no more than $\pm 2^\circ$. All alarm and safeties operate per specified sequence and initiate appropriate alarm conditions at local control panel and/or BAS head end.

Comments:

Observations:

Final Status: Accepted Not Accepted

G Relevant Trend Data

Boiler status, HWS temperature, HWR temperature, HWS setpoint, pump status, outside air temperature.

H Witnesses

Name	Signature
_____	_____
_____	_____
_____	_____
_____	_____

SECTION 01820

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

1. This Section includes administrative and procedural requirements for instructing the Board's personnel in the operation and maintenance of systems, subsystems, and equipment.

1.2 SUBMITTALS

- A. Training Session Matrix: One month prior to Preliminary Acceptance submit to the AOR and OR a training session matrix that indicates all required training sessions and proposed dates and blocks of time for each. This matrix will be used to confirm scheduling of all required training sessions with the end user.
- B. Sign-off sheets: Submit copies of proposed sign-off sheets for each training session a minimum of 10 days prior to the scheduled training. Sign-off sheets are to include the following information:
 1. Name of training session
 2. Date of training
 3. Beginning/Ending time
 4. Detailed, itemized summary listing all areas of training for that session.
 5. Listing of hand-out materials distributed at the session.
 6. Signature lines for Trainer, Contractor, and CPS personnel being trained.
 - a. Signature by CPS personnel evidences training received only to the extent listed on the sign-off sheet summary.
- C. Demonstration and Training Videotape: Submit three (3) copies at end of each training module.

1.3 QUALITY ASSURANCE

- A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Book 2A Section "Quality Control Procedures and Product Standards."

1.4 COORDINATION

- A. Coordinate instruction schedule with the Board's operations and schedule through the Owner's Representative. Adjust schedule as required to minimize disrupting the Board's operations and to ensure attendance by designated CPS representatives.
- B. Coordinate content of training modules with content of emergency, operation, and maintenance manuals. Provide copies of this coordinated material at each training session.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows: **<EDIT FOR PROJECT-SPECIFIC ITEMS NOT SPECIFIED ELSEWHERE>**
1. Motorized doors, including [overhead coiling doors] [overhead coiling grilles] [and] [automatic entrance doors].
 2. Equipment, including [stage equipment] [projection screens] [loading dock equipment] [waste compactors] [food-service equipment] [residential appliances] [and] [laboratory fume hoods] <Insert type of equipment>.
 3. Fire-protection systems, including [fire alarm] [fire pumps] [and] [fire-extinguishing systems].
 4. Intrusion detection systems.
 5. Conveying systems, including [elevators] [wheelchair lifts] [escalators] [and] [cranes].
 6. Medical equipment, including medical gas equipment and piping.
 7. Laboratory equipment, including laboratory [air] [and] [vacuum] equipment and piping.
 8. Heat generation, including [boilers] [feedwater equipment] [pumps] [steam distribution piping] [and] [water distribution piping].
 9. Refrigeration systems, including [chillers] [cooling towers] [condensers] [pumps] [and] [distribution piping].
 10. HVAC systems, including [air-handling equipment] [air distribution systems] [and] [terminal equipment and devices].
 11. HVAC instrumentation and controls.
 12. Electrical service and distribution, including [transformers] [switchboards] [panelboards] [uninterruptible power supplies] [and] [motor controls].
 13. Packaged engine generators, including transfer switches.
 14. Lighting equipment and controls.
 15. Communication systems, including [intercommunication] [surveillance] [clocks and programming] [voice and data] [and] [television] equipment.
 16. <Insert other systems and equipment.>
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.

2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.

- c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
8. Repairs: Include the following:
- a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Engage qualified instructors to instruct the Board's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. The Owner's Representative will furnish Contractor with names and positions of participants.
- B. Scheduling: Provide instruction at mutually agreed on times as approved in the training schedule matrix. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. The training schedule will be coordinated through the Owner's Representative.
- C. Signoff Sheets: At the conclusion of each training module obtain sign-offs using the approved sign-off sheets. Executed sign-off sheets are to be submitted as part of the closeout documentation evidencing compliance with training requirements.
- D. Demonstration and Training Videotape: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.

- E. Cleanup: Collect used and leftover educational materials and give to the Board. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION

SECTION 01821

COMMISSIONING DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

1. This Section includes administrative and procedural requirements for instructing the Board's personnel in the operation and maintenance of systems, subsystems, and equipment.

1.2 SUBMITTALS

- A. Training Session Matrix: One month prior to Preliminary Acceptance submit to the AOR and OR a training session matrix that indicates all required training sessions and proposed dates and blocks of time for each. This matrix will be used to confirm scheduling of all required training sessions with the end user.
- B. Sign-off sheets: Submit copies of proposed sign-off sheets for each training session a minimum of 10 days prior to the scheduled training. Sign-off sheets are to include the following information:
 1. Name of training session
 2. Date of training
 3. Beginning/Ending time
 4. Detailed, itemized summary listing all areas of training for that session.
 5. Listing of hand-out materials distributed at the session.
 6. Signature lines for Trainer, Contractor, and CPS personnel being trained.
 - a. Signature by CPS personnel evidences training received only to the extent listed on the sign-off sheet summary.
- C. Demonstration and Training Videotape: Submit three (3) copies at end of each training module.

1.3 QUALITY ASSURANCE

- A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Book 2A Section "Quality Control Procedures and Product Standards," experienced in operation and maintenance procedures and training.

1.4 COORDINATION

- A. Coordinate instruction schedule with the Board's operations and schedule through the Board's Authorized Representative. Adjust schedule as required to minimize disrupting the Board's operations and to ensure attendance by designated CPS representatives.
- B. Coordinate content of training modules with content of emergency, operation, and maintenance manuals. Provide copies of this coordinated material at each training session.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
1. Refrigeration systems, including chillers, pumps and distribution piping.
 2. HVAC systems, including air-handling equipment, air distribution systems and terminal equipment and devices.
 3. HVAC instrumentation and controls.
 4. Lighting equipment and controls.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 4. Operations: Include the following, as applicable:

- a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
- a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
- a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
- a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
8. Repairs: Include the following:
- a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.

- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Engage qualified instructors to instruct the Board's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. The Board's Authorized Representative will furnish Contractor with names and positions of participants.
- B. Scheduling: Provide instruction at mutually agreed on times as approved in the training schedule matrix. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. The training schedule will be coordinated through the Board's Authorized Representative.
- C. Signoff Sheets: At the conclusion of each training module obtain sign-offs using the approved sign-off sheets. Executed sign-off sheets are to be submitted as part of the closeout documentation evidencing compliance with training requirements.
- D. Demonstration and Training Videotape: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- E. Cleanup: Collect used and leftover educational materials and give to the Board. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION

SECTION 02050

DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition indicated and as specified and the removal and legal disposal of demolished materials.

B. Related Work:

1. Removal of asbestos containing materials and chemicals Do not start demolition until environmental hazards have been remedied in accordance with Section 02131,02132,02119 and 02317 as applicable..
2. Backfilling of voids left by demolition: refer to Section "Earthwork" and Section 02318.
3. Disposal of demolished materials: Refer to Section "Construction Waste Management".

- ###### C. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for Project to obtain LEED Silver Certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this section for more information.

1.2 SUBMITTALS

- ###### A. Predemolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by building demolition operations. Submit before Work begins.

- ###### B. Landfill Records: Indicate receipt and acceptance of hazardous wastes if any.

C. LEED Submittals:

1. Product Data as required to show compliance with the following credits:
 - a. LEED MR Credit 4.1 and 4.2 – Submit product data and certification letter indicating percentages by weight of postconsumer and preconsumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
 - b. LEED MR Credit 5.1 and 5.2 – Submit product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

- D. See Section 01352 LEED Requirements and this Section for more information. Submit the Materials Credit Documentation Sheet attached to Section 01352 for products in this section, including back-up documentation.

1.3 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Regulatory Requirements: Conform to the requirements of authorities having jurisdiction and the City of Chicago, including lead, asbestos, PCB's environmental and health hazards, air, water, and ground quality and legal disposal of waste.
- C. Standards: Comply with ANSI A10.6 and NFPA 241.

1.4 PROJECT CONDITIONS

- A. Occupancy: Verify that area to be demolished is vacated and use discontinued prior to the start of the Work.
- B. Condition of Structures: The Owner and Architect assume no responsibility for the actual condition of structures to be demolished.
 - 1. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner insofar as practicable. However, variations within the structure may occur by Owner's removal and salvage operations prior to the start of the demolition work.
- C. Salvage for recycling: Refer to section "Construction Waste Management".
- D. Explosives: The use of explosives will not be permitted.
- E. Traffic:
 - 1. Conduct demolition operation and the removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
 - 2. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.
 - 3. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- I. Protections:
 - 1. Ensure the safe passage of persons around the area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities and persons.
 - 2. Erect temporary covered passageways as required by authorities having jurisdiction and the City of Chicago.
 - 3. Provide shoring, bracing, or support to prevent movement or settlement or collapse of Work to be demolished and adjacent construction to remain.
- J. Damages: Promptly repair damages to adjacent construction on or off the site caused by demolition operations at no cost to the Owner.
- K. Utility Services:

1. Maintain existing utilities required to remain, keep in service, and protect against damage during demolition operations.
 2. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction and Owner. Provide temporary services during interruptions to existing utilities, as acceptable to the governing authorities and Owner.
 3. Disconnect, seal and remove utilities before starting demolition operations.
- L. Employ an exterminator and treat entire building in accordance with governing health regulations for rodent and insect control.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 INSPECTION

- A. Make a thorough inspection and report suspicion of asbestos containing materials, or chemicals. Start of operations will be evidence of acceptance that environmental conditions have been remedied in accordance with Sections 02131, 02132, 02119 and 02317 as applicable.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of demolition required.
- C. Engage a demolition engineer to perform an engineering survey of existing conditions of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.
- D. Verify that environmental conditions have been remedied in accordance with Sections 02131, 02132, 02119, and 02317 as applicable .have been remedied before proceeding with building demolition operations.

3.2 PREPARATION

- A. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
 1. Arrange to shut off indicated utilities with utility companies.
 2. If utility services are required to be removed, relocated, or abandoned, before proceeding with building demolition provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
 3. Cut off pipe or conduit a minimum of 24 inches (620 mm) below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
- B. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished. Strengthen or add new supports when required during progress of demolition.

3.3 DEMOLITION

- A. Pollution Controls:

1. Use temporary enclosures and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing state and local emissions standards/regulations.
2. Do not use water when it may create hazardous or objectionable conditions such as ice, or flooding.
3. Clean adjacent construction of dust, dirt, and debris caused by demolition operations, to the satisfaction of the Architect or governing authorities. Return adjacent areas to condition existing prior to the start of the Work.
4. Prior to commencing work, the Contractor shall provide a liquid materials handling plan. The plan shall stipulate provisions for dewatering, pumping, collection, temporary storage, and discharge or disposal of storm water, perched water and other liquids, contained and /or uncontained, at the site so as to facilitate removal of materials from the site and minimize disposal costs for contained materials.

B. Operations:

1. Use such methods as required to complete the Work within the limitations of governing regulations.
2. Proceed with demolition in a systematic manner, from the top of the structure to the ground.
3. Complete demolition work above each floor or tier before disturbing supporting members on lower levels.
4. Demolish concrete and masonry in small sections.
5. Remove structural framing members and lower to ground by methods suitable to avoid free fall and to prevent ground impact or dust generation.
6. Break up and remove concrete slabs-on-grade.
7. Locate demolition equipment throughout the structure and remove materials so as to not impose excessive loads to supporting walls, floors or framing.

C. Below-Grade Construction: Demolish and remove completely all construction below grade.

3.4 DISPOSAL OF DEMOLISHED MATERIALS

- A. Separate recyclable demolished materials from other demolished materials to the maximum extent possible. Separate recyclable materials by type.
1. Provide containers or other storage method for controlling recyclable materials until they are removed from Project site.
 2. Stockpile processed material on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 3. Stockpile materials away from demolition area. Do not store within drip line of remaining trees.
 4. Store components off the ground and protect from the weather.
 5. Transport materials off Owner's property and legally dispose of all materials at a state permitted/licensed facility. Comply with the requirements of Section 02316 as applicable.
- B. Remove from the site and legally dispose of debris, rubbish, and other materials resulting from demolition operations at a state permitted/licensed facility in accordance with Section 02316 as applicable..
- C. Comply with the requirements of Section "Construction Waste Management".
- D. Burning of removed materials will not be permitted on the site.

3.5 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

END OF SECTION

SECTION 02116

UNDERGROUND STORAGE TANK REMOVAL

PART 1 - GENERAL

1.1 Summary

- A. **Work Summary:** The work under this section consists of the removal, decommissioning, and destruction of underground storage tanks (USTs) discovered on Public Building Commission (PBC) property including but not limited to the areas beneath the Warehouse building and associated properties, Tri-Angle property, and associated parking lot areas. The Contractor shall perform the work under this section in accordance with all Federal, State, County, and Local Rules and Regulations including but not limited to Illinois EPA, United States Environmental Protection Agency (USEPA), Illinois Office of the State Fire Marshal (OSFM), and Occupational Safety and Health Agency (OSHA) regulations. If an underground storage tank is discovered during demolition/construction activities, the Contractor shall perform the following:
1. Submit the UST removal application to the City of Chicago Department of Environment within 48-hours of discovering the UST. The PBC Project Manager will provide the Contractor with all required information to secure the UST removal permit.
 2. Coordinate the UST removal schedule with the City of Chicago Department of Environment and the Chicago Fire Department.
 3. Pump-out and dispose of product and sludge prior to removal of the UST from the site. Pump-out contaminated water and other miscellaneous liquids that may be present in the UST basin.
 4. Remove and dispose of all of the UST piping, equipment, electric conduit, and accessories related to the UST.
 5. Clean tank interior and dispose of tank washwater from the assumed petroleum UST(s) as special waste.
 6. Excavate and stockpile materials that may be present around the UST. The Contractor may temporarily store excavated materials at the site. Such material may not be stored on site for more than 30 days unless directed otherwise by the PBC Project Manager. Regardless of the duration excavated materials are stockpiled, excavated materials shall be placed on and covered by 6-mil polyethylene visqueen. The Contractor shall also provide a 12" to 18" berm around the stockpile.
 7. Backfill the UST excavation using approved backfill material in accordance with project specifications. Copies of environmental analytical results of all backfill material verifying that these materials were analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters, and do not exceed the parameter values as listed in APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742. For samples from virgin sources, one representative sample must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. For samples from recycled sources, one sample per 1,000 tons of material must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. A copy of the analytical results shall be

submitted to the PBC Project Manager and the Managing Environmental Consultant's (MEC) at least one week prior to depositing backfill or top soil on site. Written authorization from the MEC verifying the analytical results is required by the PBC Project Manager prior to backfilling. The date of the analysis shall be within 60 days of importing such material to a school property. Excavated materials determined to be suitable for backfill could be used as backfill in the vicinity of the UST basin excavation. The Contractor shall refer to the Architect/Engineer specifications for definition of suitable backfill materials.

8. If excavated material or soil requires off-site disposal, the Contractor shall collect and analyze representative soil sample for waste stream authorization. The sample shall be analyzed for the parameters required by the disposal facility. The Contractor shall secure all required permits for excavated material and soil disposal at a permitted Subtitle D Landfill site within 10 calendar days of the UST removal if necessary.
9. The Contractor shall prepare waste manifests for the MEC signature prior to loading excavated materials and soils into hauling trucks. The Contractor shall provide copies of all daily reports, weight tickets, receipts, and waste manifests for the contaminated soil removal to the PBC Project Manager and the MEC within 7 days of removing excavated materials and soils from the site.
10. Backfill and compact excavation areas using approved backfill materials that were analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters and do not exceed the parameter values as listed in Appendix B, Section 742. The Contractor shall provide documentation for each source of backfill materials certifying that backfill was analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters and that the backfill does not exceed parameter values as listed in Appendix B, Section 742, Table A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742. Written authorization from the MEC verifying the analytical results is required by the PBC Project Manager prior to backfilling.

1.2 Definitions

- A. IEPA: Illinois Environmental Protection Agency.
- B. Backfill: Granular or cohesive material that is utilized to backfill the UST excavation to grade prior to the replacement of the paved surface, and which were analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters and do not exceed the parameter values as listed in Appendix B, Section 742, Table A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742
- C. PBC Project Manager: The person or entity designated as the official representative of the owner in connection with a project.
- D. CPS: Chicago Public Schools
- E. Connected Piping: All underground piping including valves, elbows, joints, flanges, and flexible connectors attached to the UST system through which regulated substances flow.
- F. Excavation Zone: The volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches from which the UST system is removed.

- G. Hazardous Substance UST System: An underground storage tank system that contains a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (but not including any such substance regulated as a hazardous waste under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system.
- H. Hazardous Waste: as defined by:
 - 1. 40 CFR Part 261;
 - 2. Illinois Environmental Protection Act 415 ILCS 5/3.220; and Section 809.103 of Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board.
 - 3. Section 3001 of the Resource Conservation and Recovery Act of 1976, P.L. 94-580,
- I. Heating Oil: Petroleum that is No. 1, No. 2, No. 4-light, No. 4-heavy, No. 5-light, No. 5-heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
- J. IDOT: Illinois Department of Transportation.
- K. Liquid Trap: Sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids or subsequent disposition or re-injection into a production or pipeline stream, or may collect and separate liquids from a gas stream.
- L. Managing Environmental Consultant (MEC): The entity that will perform environmental oversight on the behalf of the PBC. Terracon Consultants, Inc. is the MEC for this project.
- M. Manifest: Manifest means the form provided or prescribed by IEPA and used for identifying name, quality, routing, and destination of special waste during its transportation from point of generation to the point of disposal, treatment, or storage.
- N. Motor Fuel: Petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and is typically used in the operation of a motor engine.
- O. Noncommercial Purposes: With respect to motor fuel means not for resale.
- P. Non-hazardous Special Waste: as defined in Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board; Subchapter i: Solid Waste and Special Waste Hauling; Part 809: Non Hazardous Special Waste Classifications; Subpart A: General Provisions; Section 809.103.
- Q. OSHA: Occupational Safety and Health Administration.
- R. Operator: Any person in control of, or having responsibility for, the daily operation of the UST system.

- S. Petroleum UST System: An underground storage tank system that contains petroleum or a mixture of petroleum with *de minimis* quantities of other regulated substances. Such systems include those containing heating oils, motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.
- T. Pipe or Piping: A hollow cylinder or tubular conduit that is constructed of non-earthen materials.
- U. Pipeline Facilities (including Gathering Lines): New and existing pipe rights-of-way and any associated equipment, facilities, or buildings.
- V. Regulated Substance: includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils. This includes:
 - 1. Any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under subtitle C), and
 - 2. Petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).
- W. Remediation Area: Remediation Area means any area on site where underground storage tanks, or special waste and/or non-hazardous special waste or soils that were analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) and exceed the parameters listed in Appendix B, Section 742, Table A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742, are present.
- X. Release: Any spilling, leaking, emitting, discharging, escaping, leaching or disposing from an UST into surface/subsurface soils, groundwater or the environment.
- Y. Residential Tank: A heating oil tank located on residential property used primarily for consumptive use.

1.3 Submittals

- A. The Contractor shall submit copies of the following to the PBC Project Manager and the MEC a minimum seven (7) calendar days prior to scheduling a UST removal:
 - 1. Equipment and methods for adjacent structure protection and UST removal procedures prior to start of any Work.
 - 2. Proof of OSHA training in compliance with the Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120) for workers who will be involved in the UST and contaminated soil removal.
 - 3. Name and address of the Illinois Environmental Protection Agency certified laboratory which will be used by the Contractor to perform the analytical testing prior to starting work.

4. Contractor's Site-Specific Health and Safety Plan. The plan shall comply with all OSHA requirements. The plan must be submitted to the PBC Project Manager within 10 calendar days of issuance of the Notice-to-Proceed (NTP). The work shall be performed under the direct supervision of a trained experienced site supervisor. The plan should at a minimum include the following:
 - a. Name key personnel and alternates responsible for site safety.
 - b. Describe the risks associated with each operation conducted.
 - c. Type of personnel training and responsibilities and to handle the specific hazardous situations they may encounter.
 - d. Describe the protective clothing and equipment to be worn by personnel during various site operations.
 - e. Describe any site specific medical surveillance requirements.
 - f. Describe the program for the periodic air monitoring, personnel monitoring, and environmental sampling if needed.
 - g. Describe the actions to be taken to mitigate existing hazards to make the work environment less hazardous.
 - h. Define site control measures including a site map.
 - i. Establish procedures for personnel and equipment and transporting trucks to ensure that impacted soils are not tracked off site on to non-impacted areas of the site.
 - j. Set forth the site Standard Operating Procedures (SOPs). SOPs are those activities that can be standardized (i.e., decontamination procedures and respirator fit testing).
 - k. Set forth a Contingency Plan for the safe and effective response to emergencies.
5. Operating licenses and permits for each special waste hauler and details of hauling routes from the site to the disposal facilities.
6. Copies of all daily reports, transport manifests, disposal receipts and treatment records. Copies will be required on a weekly basis.
7. Any air sampling data collected during the course of the Work, including OSHA compliance air monitoring.
8. Disposal information for any soil, product, sludge, tank washwater, and liquid removed from the site. This information should include, at a minimum, the following:
 - a. Facility name, address, and telephone Number.
 - b. Site Contact.
 - c. Permit Number.
9. Copies of UST(s) removal permit.
10. Copies of waste characterization analytical results for disposal of contaminated soil, product, sludge, tank washwater, and contaminated groundwater within one calendar day.
11. Certificate of Destruction from a steel reclamation facility within seven (7) calendar days after the tank removal.
12. Prior to backfilling, provide copies of analytical results of backfill materials verifying that the backfill was analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters and that the backfill does not contain contaminant values that exceed the parameters listed in APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35

ILL. ADM. CODE 742. Written authorization from the MEC verifying the analytical results is required by the PBC Project Manager prior to backfilling.

1.4 Project Conditions

- A. Conditions of USTs: Chicago Public Schools assumes no responsibility for actual condition of the storage tank to be removed. Location and conditions of existing USTs are unknown at this time.
- B. Condition of Piping and Conduit: Chicago Public Schools assumes no responsibility for actual condition of piping and conduit to be removed. Length and conditions of existing piping are unknown at this time.
- C. Contractor is totally responsible for handling and removal of all materials associated with UST(s) removal as required by Federal, State and local regulations.
- D. Salvage Items: Reuse of items is not allowed unless specified otherwise. Storage tanks are to be rendered unusable before removing from job site.
- E. Traffic: Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from the applicable governing agency and the PBC Project Manager. Provide alternate routes around closed or obstructed traffic ways if required by the governing agency.
- F. Damages: Promptly replace or repair any damage caused to adjacent pavement, utilities or facilities by removal operations at no additional cost. Work shall be performed to the satisfaction of PBC Project Manager and the MEC.
- G. Utility Services: Maintain existing utilities and protect against damage during removal operations. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the PBC Project Manager. Provide temporary services during interruptions to existing utilities, as acceptable to the Chicago Public Schools, and the PBC Project Manager.

1.5 Quality Control

- A. The removal of UST system(s) is governed by local, state and federal regulations and/or guidelines, which include, but are not necessarily limited to, the following:
 - 1. City of Chicago Code and Regulations.
 - 2. USEPA, 40 CFR Part 280, Vol.53 No. 185, dated September 23, 1988 or latest version.
 - 3. Title 41: Fire Protection Chapter I: State Fire Marshal, Parts 160, 170 and 180, Subpart A, dated April 1990 or latest version
 - 4. National Fire Protection Association Code.
 - 5. All other USEPA, IEPA, City of Chicago, Illinois Department of Transportation (IDOT), and OSHA regulations.

1.6 Recordkeeping

- A. The Contractor shall provide documentation of labor, equipment, materials, and laboratory analysis used for the removal and disposal of soils and liquids to the PBC Project Manager and MEC on a weekly basis.

1.7 Coordination of Work

- A. The Contractor shall coordinate and schedule the performance of work with the least disruption as possible to the daily site activities.
- B. The Contractor shall obtain a permit to remove the tank from the site from the City of Chicago Department of Environment (CDOE) and Chicago Fire Department (CFD) within 48-hours of the discovery of any UST(s). The Contractor shall also schedule and coordinate the presence of the CFD and CDOE's representative on site the scheduled day of tank removal. The tank must not be removed from the ground without the CDOE and CFD representatives being present on site.
- C. The Contractor shall provide the PBC Project Manager and the MEC advance written notice (minimum 72-hours) of the anticipated removal date. The Contractor must coordinate all UST removal activities with the PBC Project Manager, and the MEC.
- D. The Contractor shall cooperate with and coordinate work progress with the PBC Project Manager, and the MEC. Soils excavated from the UST basin shall be stockpiled near the excavation or at an area deemed suitable by the PBC Project Manager and/or MEC. The PBC Project Manager and MEC will inspect the stockpile soil and determine if the soil will be removed from the site or used as backfill. The Contractor shall assist the MEC with the use of its machinery and operator to inspect and obtain soil samples from the open excavation beneath or adjacent to the former location of the underground tank. The Contractor shall also visually inspect the underground storage tank for their own records. The Contractor shall record or otherwise document the closure activities. The cavity will be backfilled with excavated soil and/or gravel (CA 6) the same day after removal and sampling activities unless directed by the PBC Project Manager or MEC to do otherwise. If gravel backfill is required it may be necessary to cover any returned soils with 6-mil polyethylene visqueen prior to backfilling with gravel. All backfill must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters and can not exceed the parameters values listed in APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742. Written authorization from the MEC verifying the analytical results is required by the PBC Project Manager prior to backfilling.

1.8 Special Requirements

A. Qualifications

- 1. The UST Contractor(s) shall be fully experienced and knowledgeable in the safe work procedures and regulatory requirements for removing, cleaning and disposal of underground storage tanks in accordance with all applicable Federal, State, and Local regulations.

2. The UST Contractor(s) shall be capable of performing all work including providing necessary services, equipment, tools, labor and material for the removal, cleansing and disposal of underground storage tank and piping containing heating oil, and or petroleum, including the restoration of the site work area. The Contractor shall be capable of providing contingency services upon encountering soils or liquids that exceed APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters when so directed by the PBC Project Manager and/or the MEC.
3. The UST Contractor(s), Subcontractor(s) and their employees shall be thoroughly trained in the safe work practices, procedures and regulatory requirements applicable to the removal, cleaning and disposal of underground storage tank systems containing heating oil and/or petroleum. The UST Contractor(s), Subcontractor(s) and their employees will be responsible for removal, cleaning and disposal of tanks and associated soils, liquids and piping shall be properly trained and hold current certifications. The UST Contractor(s), Subcontractor(s) and their employees on site shall have received a minimum of 40 hours of health and safety instruction in accordance with OSHA 29 CFR part 1910.120(e).
4. The UST Contractor(s) must be currently registered with the Office of the Illinois State Fire Marshal as a Remover of Underground Storage Tanks (Decommissioning) in accordance with Illinois Administrative Code, Title 41: Fire Protection, Chapter 1: Office of the State Fire Marshal, Part 170: Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances, as amended.

1.9 Protection of Facilities

1. The Contractor shall protect existing structures, services and utilities against damage. Exercise care to protect any and all of the Owner's, Property Owner's and adjacent property including equipment, buildings, landscaping and fencing. Any damage shall be repaired to the satisfaction of the Owner, Property Owner or the Owner of the adjacent property at the Contractor's expense.
2. The Contractor shall, in writing, bring to the attention of the PBC Project Manager and the MEC any obstacles, impairments or other items that may prohibit the performance of work at least 72-hours prior to the start of work,
3. The Contractor shall take all necessary precautions to protect structures, equipment, pavement, walks, utilities, etc. against movement or settlement during the course of work.

PART 2 - PRODUCTS

2.1 Removal of Tank Contents

- A. The Contractor shall furnish all necessary materials and equipment complying with Federal, State County, and Local Rules and Regulations to fulfill the scope of work described herein.

2.2 Tank Removal

- A. The Contractor shall furnish all necessary materials and equipment complying with Federal, State County, and Local Rules and Regulations to fulfill the scope of work described herein.

2.3 Removal and Disposal of Contaminated Soils at a permitted Subtitle D Landfill Site

- B. The Contractor shall furnish all necessary means, products, tools, and equipment required to fulfill the scope of work described. Soils associated with the UST removal will be returned to the excavation. If required by the PBC Project Manager and/or MEC the returned soils will be underlain and covered with 6-mil polyethylene visqueen.

2.4 Backfill Materials

- A. The backfill material shall be consistent with the requirements of the Architect/Engineer specifications. The backfill material shall not exceed the parameter values as listed in Appendix B, Section 742, Table A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742 values for any 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. Written authorization from the MEC verifying the analytical results is required by the PBC Project Manager prior to backfilling.

PART 3 - EXECUTION

3.1 UST Contents Removal Procedures

- A. Pump out tank contents:
 1. Drain product from piping back into the tank, taking care to avoid spilling product. Using only explosion proof pumps or hand pumps.
 2. Pump any existing fuel into temporary aboveground storage tanks. Do not pump sludge or water into temporary aboveground storage tanks.
 3. Remove petroleum products, sludge, water, and liquid wastes from the tank. The suction hose shall be maneuvered along the tank bottom so that the maximum possible quantity of liquid is stripped from the interior.
 4. Liquids shall be temporarily stored in above ground IDOT-approved containers or may be pumped directly into a tank truck for immediate disposal if the determination is made in advance. Waste removal from the site shall be performed only by properly licensed waste haulers in strict accordance with IEPA guidelines, including requirements for testing, laboratory analysis and manifesting. Coordinate location of temporary storage with the PBC Project Manager and the MEC.
 5. Residue from tanks, which may have contained leaded gasoline, shall be treated with caution. Tank residues shall be disposed of in accordance with all applicable state and federal laws and regulations. Provide documentation of the proper disposal of all tank product and wastes to the PBC Project Manager and the MEC.

3.2 UST Removal Procedures

- A. Purge storage tanks of flammable and combustible gases:
1. Observing all required safety precautions, disconnect all piping and compounds, except for the vent pipe, which is to remain connected until purging is completed. Temporarily plug all other openings so that all vapors will be forced through the vent opening. Vapors shall be purged by one of the several methods listed in API/1604-87.
 2. Instrument for detecting and measuring Low Explosion Limits (LEL) and oxygen levels shall be maintained and operate continuously at the job site at all times when work is being performed in areas which are or may become hazardous. Instrument shall be properly calibrated according to the manufacturer's specifications and checked and maintained accordingly.
 3. OSHA standards for confined space entry and hazardous material regulations shall be strictly followed.
 4. Disconnect and remove existing electrical lines to USTs pumps.
- B. Excavate above and around the UST(s):
1. Remove and dispose of all pavement, concrete and debris associated with the UST.
 2. The Contractor shall be responsible for locating all existing utilities, which will be encountered during removal operations. The Contractor shall protect the utilities as required to complete the work.
 3. Excavate soil above and around tanks. Excavating area shall be large enough to uncover the profile of the tank and piping to complete removal.
 4. Soils that exceed Appendix B, Section 742, Table A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters shall be returned to the excavation. If required by the PBC Project Manager and/or MEC, the returned soils will be underlain and covered with 6-mil polyethylene visqueen. Any contaminated soil associated UST will be removed during a separate phase of the project unless site conditions dictate otherwise.
- C. Storage tank removal:
1. Check tanks for combustible gases. Purge tanks again as necessary.
 2. Remove all associated tank piping, and tank hold down components including straps and concrete dead-man.
 3. Remove tank in accordance with API recommended practice 1604.
 4. After tanks have been removed from the ground, place the tank on a stable level surface for inspection.
- D. Storage tank cleaning:
1. Cut holes in tanks using non-sparking tools to facilitate tank cleaning. Only cold cut equipment shall be used. The total surface area of all the holes shall be a minimum of 2% of the total surface area of the tank, or minimum of 9 square feet each opposite side or end. The Contractor shall have fire extinguishers on-site during cutting of tanks.
 2. Clean tanks in accordance with API recommended practice 2015.

3. UST(s) removed from the excavation zone shall be cleaned on-site the day of removal. The tank will then be temporarily stored on-site until proper disposal arrangements are made.

E. Disposal of tank cleaning washwater:

1. The Contractor shall submit samples of tank cleaning washwater and sludge to an independent laboratory for analysis as required by disposal facility. Submit copies of the analytical report and chain-of-custody form to the PBC Project Manager and the MEC.
2. Transporter of tank cleaning washwater and sludge shall be an Illinois licensed special waste hauler. The disposal facility shall be approved by the IEPA.
3. The Contractor shall prepare manifests required for transportation and disposal of washwaters and sludge. Submit copies of manifests to the PBC Project Manager and the MEC.

F. Disposal of storage tanks:

1. All tanks will be taken to an appropriate disposal facility (e.g. scrap steel reclaimed or landfill). Tanks will not be retained by the Contractor or reused in any manner.
2. Tanks shall be labeled with legible letters at least two inches high, as follow: TANK HAS CONTAINED (name of product)

NOT VAPOR FREE
NOT SUITABLE FOR STORAGE OF FOOD
OR LIQUIDS INTENDED FOR HUMAN
OR ANIMAL CONSUMPTION
DATE OF REMOVAL:(month/day/year)

In addition, tanks which have or may have contained leaded fuels shall be labeled as:

TANK HAS CONTAINED LEADED GASOLINE
LEAD VAPORS MAY BE RELEASED IF
HEAT IS APPLIED TO TANK SHELL

3. Tanks, piping and components shall be removed from the site on the same day the site is excavated. If transportation on the day of removal is not possible, materials shall be secured on-site until disposal agreements are made.
4. Provide a certificate of destruction signed by the Contractor and a representative of the disposal/recycling facility to the PBC Project Manager and the MEC.
5. The excavation must be securely fenced to prevent access by unauthorized personnel until backfilled.

G. Storm Water Run-on/Run-off and Dewatering

1. The Contractor shall implement surface grading, pumping and/or combination of silt fence, sandbags, tarpaulins, plastic sheeting, and movable straw bales, as approved by the PBC Project Manager and the MEC, to prevent storm water runoff from entering the Tank Remediation Area.

2. Storm water that has come in contact with any portion of the contaminated soil as a result of the Contractor's failure to prevent contact with excavated soils or the excavation will be collected and disposed of at the Contractor's own expense or as determined by the PBC Project Manager and the MEC.

H. Soil Removal and Disposal

1. All excavation shall be performed in accordance with OSHA requirements and guidelines.
2. The Contractor shall excavate a maximum 2 feet around the USTs basin for the UST removal. The MEC will determine the extent of soils present that exceed Appendix B, Section 742, Table A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 ILL. ADM. CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters, if present, at each UST basin.
3. The Contractor shall collect a sufficient amount of representative soil samples for laboratory analysis to obtain a waste stream authorization from the disposal facility.
4. The Contractor shall submit the soil samples to the laboratory and pay for the cost of analyzing the constituents required by the disposal facility.
5. The MEC may collect soil samples for laboratory analysis or field Photo- ionization Detector (PID) screening. The Contractor shall provide the necessary equipment and manpower to assist the MEC in collecting soil samples at no additional cost to the Owner.

3.3 Disposal of Materials

- A. General: Remove daily from site accumulated debris, rubbish, and other materials resulting from piping and dispenser removal activities.
- B. Removal: Dispose of materials removed from site in accordance with the 35 IAC regulations. Transport and legally dispose of all materials and equipment. Comply with manifest regulations of all removed and disposed equipment and materials. Materials that shall be removed include, but are not limited to, the following:
 1. Underground Storage Tanks.
 2. Piping.
 3. Soils and sludges.
 4. Paving materials, including but not limited to concrete and asphalt.
 5. Product from storage tank and piping, and tank cleaning washwater.
 6. Free product and liquids if encountered during the USTs removal process.
 7. Liquids /water from excavation and dewatering operations.

3.4 Site Assessment

- A. Upon removal of the UST(s), the MEC may conduct a site assessment and collect soil samples as needed. A representative of the City of Chicago Department of Environment (CDOE) will also render an opinion as to whether a release has occurred.

- B. In the event that no release is confirmed, the Contractor shall complete removal of the tank, disposal of the tank, and backfill the excavation.
- C. In the event that a release is confirmed, the Contractor shall complete removal of the tank, dispose of the tank and excavate contaminated soil as determined by the PBC Project Manager or MEC. Soils associated with the UST removal will be returned to the excavation. If required by the PBC Project Manager and/or MEC the returned soils will be underlain and covered with 6-mil polyethylene visqueen.
- D. The excavation shall remain open until the sampling is completed. The Contractor is responsible for providing fencing and access control to prevent unauthorized access to the excavation by unauthorized personnel in accordance with applicable rules and regulations.

3.5 Backfilling of the Excavation

- A. The Contractor shall not backfill excavation areas without approval of the PBC Project Manager and the MEC. If the Contractor backfills the excavation area without obtaining approval from the PBC Project Manager and the MEC, the backfill materials shall be excavated, transported and disposed of at a permitted Subtitle D Landfill, if required, at the Contractor's own expense.
- B. The UST basin shall be backfilled in accordance with the project specifications or as directed by the PBC Project Manager. The Contractor shall utilize on-site suitable materials or imported granular CA-6 stone consistent with Illinois DOT gradation that does not exceed APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. Compact backfill materials in accordance with the project specification.
- C. For each off-site source of backfill materials, the Contractor shall provide to the PBC Project Manager and the MEC laboratory analyses and certification that the imported materials do not contain contaminant values above APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742 for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. For samples from virgin sources, one representative sample must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. For samples from recycled sources, one sample per 1,000 tons of material must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. The date of the analytical results shall be within 60 day of importing such material to the site. Written authorization from the MEC verifying the analytical results is required by the PBC Project Manager prior to backfilling
- D. Site Restoration: Restore the site according to the Architect/Engineer design plan, or as directed by the PBC Project Manager.

3.6 Dust Control

PBC Control Rev: 3_06/30/08
Project Rev: B_2/4/09

- A. The Contractor shall control dust by all necessary means, including but not limited to covering trucks, stockpiles and open materials, watering haul roads, sweeping paved roads, and limiting the speed of all on-site vehicles.

PART 4 - PAYMENT

4.1 Contract Pricing

- A. Pricing shall be in accordance with the contract documents.

END SECTION

SECTION 02222
EXCAVATING, BACKFILLING AND COMPACTING FOR UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

A. Work Under this Sections Includes:

1. Excavation for - trenches for water, sanitary sewer, site drainage, and storm sewer lines to public utility.
2. Compacted bed and compacted fill over utilities to subgrade elevations.
3. Compaction.

1.2 SUBMITTALS

- A. Submit samples in accordance with General Conditions of contract and Division 1 specification sections.
- B. Submit 10 lb. sample of each type of fill to testing agency, in separate airtight containers.

1.3 TESTS

- A. Tests and analysis of fill materials will be performed in accord with ASTM D1557, and with General Conditions.

1.4 REFERENCES

- A. ASTM C136, - Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D1556, - Density of Soil in place by Sand-Cone Method.
- C. ASTM D1557, - Tests for Moisture-Density Relationship of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18 inch Drop.
- D. Appendix B., Section 742, Table A.; Tiered Approach To Corrective Action Objectives (Taco): 35 Ill .Adm. Code 742.
- E. Illinois Department of Transportation (IDOT):
 1. IDOT 2007 Specifications for Road and Bridge Construction including all addenda.

1.5 PROTECTION

- A. Protect excavations by shoring, bracing, sheet piling, underpinning or other methods or prevent cave-in or loose soil from falling into excavation.
- B. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.

- C. Notify Architect immediately of unexpected subsurface conditions. Confirm notification in writing. Discontinue work until Architect issues written notification to resume work.
- D. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.
- E. Grade excavation tip perimeter to prevent surface water runoff into excavation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. In accordance with the soil report the Owner's testing agency representative shall determine if the excavated material is suitable for backfill. The suitable trench excavated material shall be used for trench backfill.
- B. Granular Fill Type A:
 - 1. Material for granular fill shall be FA-6 in compliance with IDOT 2007, Article 703.1 and 703.5 and with appendix B. Section 742, Table A; Tiered Approach To corrective Action Objectives (Taco); 35 Ill Adm. Code 742.. The material shall be graded from coarse to fine and shall conform to the following gradations:

a. Sieve Size	Percent Passing
No. 4	84-100
No. 100	0-40
No. 200	0-12
 - 2. Bedding Material: Material for bedding shall be CA-11 in compliance with IDOT 2007, Article 704.01 and shall conform to the following gradations:

a. Sieve Size	Percent Passing
1 inch	100
3/4 inch	84-100
1/2 inch	30-60
- C. Fill Material Type D: Fill material shall be cohesive soil obtained from on-site required excavations and approved by the Owner testing agency representative as suitable backfill material in accordance with ASTM D 2487, Uniform Soils Classification System. It shall be used to backfill excavations where the excavated material is unsuitable for backfill.
- D. Fill Material Type E: Fill under landscaped areas shall be free from alkali, salt shall not exceed the parameter values as listed in Appendix B, Section 742, Table A; Tiered Approach to Corrective Action objectives (Taco); Ill Adm .Code 742 and shall be obtained from on-site required excavations when conforming to the specifications. This fill shall be approved by the Owner's testing agency representative as suitable material.
- E. Fill Material Type X: Off-site borrow material shall comply to soil types GP, GW, SC and CL in accordance with ASTM D 2487, Uniform Soils Classification System and with Appendix B., Section 742, Table A; Tiered Approach to corrective Action Objectives (Taco); 35 Ill. Adm. Code 742.. It shall be used where needed under structural slabs, roads, pavement and landscaped areas.
- F. Backfill material from off site shall be in accordance with Section 02318.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify stockpiled fill to be reused as approved in writing by Architect.
- B. Verify foundation perimeter drainage installation has been inspected and approved in writing by Architect.
- C. Verify and confirm in writing that areas to be backfilled are free of debris, snow, ice or water, and surfaces are not frozen.

3.2 PREPARATION

- A. Identify specified lines, levels, contours and data..
- B. Compact subgrade surfaces to density specified for backfill materials.

3.3 EXCAVATION

- A. Cut trenches wide enough to enable utility installation and allow inspection.
- B. Hand trim excavation and leave free of loose matter. Hand trim for bell and spigot pipe joints.
- C. Excavation shall not interfere with normal 45 degree bearing splay of foundations.
- D. Sides, walls or faces of all trenches shall be sloped and maintained in a safe manner and in the required condition until completion of backfilling. Excavations shall be braced or sloped in compliance to the latest Occupational Safety and Health Administration (OSHA) requirements or as instructed by the testing agency on-site representative.

3.4 BACKFILLING

- A. Support pipes, and conduits during placement and compaction of bedding fill.
- B. Backfill trenches to contours and elevations shown. Backfill systematically, as early as possible to allow maximum time for natural settlement. Do not backfill over porous, wet or spongy subgrade surfaces.
- C. Place compact fill materials in continuous layers as specified in Section 02300.
- D. Use a placement method that will not disturb or damage utilities in trenches, perimeter drainage.
- E. Maintain optimum moisture content of backfill materials, determined by laboratory analysis, to obtain specified compaction density.
- F. Remove surplus backfill materials and materials unsuitable for backfill from the site to state and local permitted/licensed facilities as per Section 02316

3.5 FILL TYPES AND COMPACTION

- A. Compact all fill and backfill to specified values based on Modified Proctor Test in accordance with section 02300.

3.6 COLD WEATHER PROTECTION

- A. Quality Control Testing During Construction: An independent inspection and testing agency employed by the Owner shall inspect and approve each subgrade and fill layer before further backfill and fill work is performed.
 - 1. The inspection and testing agency shall perform field and laboratory density tests in accordance with either ASTM D 1556 (sand cone method) and ASTM D 1557 as applicable.
 - 2. Field density tests may also be performed by the nuclear method in accordance with ASTM D 2922. The calibration curves shall be periodically checked and adjusted to correlate to tests performed using ASTM D 1556. In conjunction with each density calibration check, the calibration curves furnished with the moisture gauges shall be checked in accordance with ASTM D 3017.
 - 3. If field tests are performed using nuclear methods, the inspection and testing agency shall make calibration checks on both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as specified by the equipment manufacturer.
 - 4. If, in the opinion of the Owner testing agency representative, based on the inspection and testing agency reports and inspections, subgrade or fills have been placed by specified density, the Contractor shall perform additional compaction and retesting until specified density contractor to pay for all retesting work.
 - 5. The Contractor shall assist the inspection and testing agency by providing access to the excavation and fill areas, and by removing loose materials from compacted soil layers prior to testing.

3.7 STORAGE AND REMOVAL OF EXCAVATION MATERIALS

- A. Locate and retain reusable excavated materials away from the edge of excavation.
- B. Remove excess and deleterious materials. The hauling of materials to designated areas shall be at the Contractor's expense.

END OF SECTION

SECTION 02231

TREE PROTECTION AND TRIMMING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. CDOT Standards & Specifications for Openings in the Public Way.

1.2 SUMMARY

- A. This Section includes the protection of trees from damage by the Contractor's equipment and operations during construction at locations shown on the plans. It also includes the pruning of trees that interfere with, or are affected by, execution of the Work, whether temporary or new construction.
- B. Related Sections include the following:
 - 1. Division 1 Section 01100 "Summary of Work" for limits placed on Contractor's use of the site.
 - 2. Division 1 Section 01014 "Erosion and Sedimentation Control" for preventive loss of soil during construction by storm water runoff and/or wind erosion.
 - 3. Division 1 Section 01352 "LEED Requirements."
 - 4. Division 1 Section 01500 "Temporary Facilities and Controls" for temporary tree protection.
 - 5. Division 2 Section 02300 "Earthwork" for building and utility trench excavation, backfilling, compacting and grading requirements, and soil materials.
 - 6. Division 2 Section 02900 "Landscaping" for tree and shrub planting and transplanting, tree support systems, mulch and soil materials.
- C. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for the Project to obtain LEED Silver Certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this Section for more information.

1.3 SUBMITTALS

- A. LEED Submittals:
 - 1. Product Data as required to show compliance with the following credits:
 - a. LEED MR Credit 4.1 and 4.2: Submit product data and certification letter indicating percentages by weight of post-consumer and pre-consumer content for products having recycled content. Include statement indicating costs for each product having recycled content.

- b. LEED MR Credit 5.1 and 5.2: Submit product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest or recovery for each raw material and the fraction by weight that is considered regional.
- B. See Section 01352 LEED Requirements and this Section for more information. Submit the Materials Credit Documentation Sheet attached to Section 01352 for products in the Section, including back-up documentation.
- C. Product Data: For each type of product indicated.
- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Certification: From a qualified arborist that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- F. Maintenance Recommendations: From a qualified arborist for care and protection of trees affected by construction during and after completing the Work.

1.4 QUALITY ASSURANCE

- A. Tree Service Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site on a full-time basis during execution of the Work.
- B. Arborist Qualifications: An arborist certified by the International Society of Arboriculture or licensed in the jurisdiction where Project is located.
- C. Tree Pruning Standards: Comply with ANSI A300, "Tree, Shrub, and Other Woody Plant Management--Standard Practices (Pruning)" unless more stringent requirements are indicated.
- D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."
 - 1. Before starting tree protection and trimming, meet with representatives of authorities having jurisdiction, Owner, Architect, consultants, and other concerned entities. Review tree protection and trimming procedures and responsibilities. Notify participants at least three working days before convening conference. Record discussions and agreements and furnish a copy to each participant.

1.5 JOB CONDITIONS

- A. Site Information: The existing conditions of areas where tree removal is required, as shown on the Drawings, were prepared from survey information provided by the Owner and visual inspection of the site by the Landscape

Architect. The existing conditions shown on the Drawings are not intended to be an exact representation of the conditions that the Contractor may encounter. It is expressly understood that the Owner and Landscape Architect will not be responsible for the interpretations and conclusions drawn therefrom. Data are made available solely for the convenience of the contractor.

- B. Confirm Existing Conditions: Confirm existing conditions and report discrepancies to Architect prior to start of work.
- C. Coordination of Work: Coordinate work with Owner's General Contractor and Excavation Contractor.
- D. Protection of Work: Provide temporary fences, barricades, coverings or other protection devices to preserve existing vegetation and improvements to remain. All trees designated for protection as shown on the plans or as directed by the Owner's Representative shall be identified with surveyor's flagging tape placed around the trunks at eye level.
- E. Protection of Adjacent Property and Dust Control: Prevent any substances from blowing, spilling, dropping, or depositing on adjacent property. Keep the construction area sufficiently dampened to control dust caused by operations.
- F. Permits: Obtain all necessary permits for the performance of work including but not limited to Chicago Bureau of Forestry.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Drainage Fill: Selected crushed stone, or crushed or uncrushed gravel, washed, ASTM D 448, Size 24, with 90 to 100 percent passing a 2-1/2-inch (63-mm) sieve and not more than 10 percent passing a 3/4-inch (19-mm) sieve.
- B. Topsoil: Fertile, friable, surface soil, containing natural loam and complying with ASTM D 5268. Provide topsoil that is free of stones larger than 1 inch (25 mm) in any dimension and free of other extraneous or toxic matter harmful to plant growth. Obtain topsoil only from well-drained sites where soil occurs in depth of 4 inches (100 mm) or more; do not obtain from bogs or marshes.
- C. Filter Fabric: Manufacturer's standard, nonwoven, pervious, geotextile fabric of polypropylene, nylon, or polyester fibers.
- D. Chain Link Fence: Metallic-coated steel chain link fence fabric, 0.120-inch- (3-mm-) diameter wire size; 48 inches (1200 mm) high, minimum; line posts, 1.9 inches (48 mm) in diameter; terminal and corner posts, 2-3/8 inches (60 mm) in diameter; top rail, 1-5/8 inches (41 mm) in diameter; bottom tension wire, 0.177 inch (4.5 mm) in diameter; with tie wires, hog ring ties, and other accessories for a complete fence system.
- E. Mulch: Refer to Section 02900, Landscaping.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Temporary Fencing: Install temporary fencing located as indicated or at least one foot outside the drip line of trees to protect remaining vegetation from construction damage.
 - 1. Install chain link fence according to ASTM F 567 and manufacturer's written instructions.
 - 2. The drip line shall act as the boundary for the fencing and shall be established on plans as the outer edge of the tree canopy. Multiple trees may be enclosed by a single fence line provided the fence is located at drip lines of all trees.
- B. Protect tree root systems from damage due to noxious materials caused by runoff or spillage while mixing, placing, or storing construction materials. Protect root systems from flooding, eroding, or excessive wetting caused by dewatering operations.
 - 1. Mulch trees to full limit of tree protection fences. See Drawings.
- C. Do not store construction materials, debris, or excavated material within the drip line of remaining trees. Do not permit vehicles or foot traffic within the drip line; prevent soil compaction over root systems.
- D. Do not allow fires under or adjacent to remaining trees or other plants.

3.2 EXCAVATION

- A. Install shoring or other protective support systems to minimize sloping or benching of excavations.
- B. Do not excavate within drip line of trees, unless otherwise indicated.
- C. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots.
 - 1. Relocate roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and relocate them without breaking. If encountered immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3 inches (75 mm) back from new construction.
 - 2. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
- D. Where utility trenches are required within drip line of trees, tunnel under or around roots by drilling, auger boring, pipe jacking, or digging by hand.

1. Root Pruning: Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots with sharp pruning instruments; do not break or chop.

3.3 REGRADING

- A. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade beyond drip line of trees. Maintain existing grades within drip line of trees.
- B. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by qualified arborist, unless otherwise indicated. Follow natural contours, where feasible to maintain the natural drainage patterns of the site so as not to cause the tree to get reduced moisture.
 1. Root Pruning: Prune tree roots exposed during grade lowering. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots with sharp pruning instruments; do not break or chop.
- C. Minor Fill: Where existing grade is 6 inches (150 mm) or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.
- D. Moderate Fill: Where existing grade is more than 6 inches (150 mm), but less than 12 inches (300 mm), below elevation of finish grade, place drainage fill, filter fabric, and topsoil on existing grade as follows:
 1. Carefully place drainage fill against tree trunk approximately 2 inches (50 mm) above elevation of finish grade and extend not less than 18 inches (450 mm) from tree trunk on all sides. For balance of area within drip-line perimeter, place drainage fill up to 6 inches (150 mm) below elevation of grade.
 2. Place filter fabric with edges overlapping 6 inches (150 mm) minimum.
 3. Place fill layer of topsoil to finish grade. Do not compact drainage fill or topsoil. Hand grade to required finish elevations.
- E. Move Fence to Install Walkways: Where walkways are shown through tree protection fence areas, do not remove fence. Move fence the minimum distance necessary to install walkways.

3.4 TREE PRUNING

- A. Prune remaining trees affected by temporary and new construction.
- B. Prune remaining trees to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by qualified arborist.
- C. Pruning Standards: Prune trees according to ANSI A300 as follows:
 1. Type of Pruning: Crown cleaning.
 2. Type of Pruning: Crown thinning.
 3. Type of Pruning: Crown raising.

4. Type of Pruning: Crown reduction.
 5. Type of Pruning: Vista pruning.
 6. Type of Pruning: Crown restoration.
- D. Cut branches with sharp pruning instruments; do not break or chop.
- E. Chip branches removed from trees. Spread chips where indicated or as directed by Architect.
1. Do not chip diseased branches, such as those with fireblight, and disinfect pruning shears between cuts when encountered. Remove and legally dispose of branches from site.

3.5 TREE REPAIR AND REPLACEMENT

- A. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to written instructions of the qualified arborist. On active construction sites, it is recommended that trees be inspected every 7 days for compliance. Inspection should include a listing of trees with:
1. Damage to trunks.
 2. Mounding of soil around the trunk.
 3. Evidence of root damage.
 4. Evidence of improper pruning.
- B. In the event that a tree is damaged by the Contractor's operation or personnel, the Contractor shall be responsible for repairs or remediation of the damage as determined by the Owner's Representative, and/or Department of Streets and Sanitation Bureau of Forestry. In the event that the damage to the tree is beyond repair and requires removal determined by a certified arborist or the Contractor mistakenly removed the tree, the tree must be replaced at the Contractor's expense.
1. Any damaged tree smaller than 4-inches caliper measured 6-inches above ground shall be replaced in kind, inch for inch; plant and maintain as specified in Division 2 Section 02900 "Landscaping".
 2. Provide new trees of 6-inch (150-mm) caliper size and of a species selected by Landscape Architect when trees more than 6 inches (150 mm) in caliper size, measured 12 inches (300 mm) above grade, are required to be replaced.
- C. Violations resulting in soil compaction or grade changes in the tree protection area will subject the Contractor to perform vertical mulching and/or radial aeration as directed by the Owner's Representative. Aerate surface soil, compacted during construction, 10 feet (3 m) beyond drip line and no closer than 36 inches (900 mm) to tree trunk. Drill 2-inch- (50-mm-) diameter holes a minimum of 12 inches (300 mm) deep at 24 inches (600 mm) o.c. Backfill holes with an equal mix of augered soil and sand.

3.6 MAINTENANCE AND REMOVAL OF PROTECTION FENCE

- A. **Maintain Fences and Other Protections:** Maintain protection fences and other protection devices throughout the construction period. Make repairs and replacements if fence or other devices become damaged or missing.

- B. **Tree Protection Deficiencies:** The protection of trees is extremely important. Tree Protection deficiencies are determined by the Owner's Representative and may include but are not limited to:
 - 1. Tree Protection not in place at the start of construction.
 - 2. Tree Protection fencing is damaged or down.
 - 3. Unauthorized removal of Tree Protection fencing.
 - 4. Contractor vehicles or equipment or personal vehicles driving or parking under trees.
 - 5. Any encroachment in Tree Protection fencing.
 - 6. Placement of any materials within the Tree Protection fencing or tree drip lines.
 - 7. Damage to any tree.
 - 8. Unauthorized removal of trees.
 - 9. Unauthorized changes in grade.

- C. **Remove Fences and Other Protections:** Remove protection fences and other protection devices after construction in the area is complete, and just prior to substantial completion of the landscape work. Refer to Section 02900.

3.7 DISPOSAL OF WASTE MATERIALS

- A. **Burning is not permitted.**

- B. **Disposal:** Remove excess excavated material, displaced trees, and excess chips from Owner's property.

END OF SECTION 02231

SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Earthwork required to complete the Project except as specified in related work.
- B. Related Work:
 - 1. Erosion and Sediment Control: Refer to Section 01014 "Erosion and Sediment Control"
 - 2. Excavation, Backfilling and Compaction for Utilities: Refer to Section "Excavating, Backfilling, and Compaction for Utilities".
- C. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for Project to obtain LEED Silver Certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this section for more information.

1.2 SUBMITTALS

- A. LEED Submittals:
 - 1. Product Data as required to show compliance with the following credits:
 - a. LEED MR Credit 4.1 and 4.2 – Submit product data and certification letter indicating percentages by weight of postconsumer and preconsumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
 - b. LEED MR Credit 5.1 and 5.2 – Submit product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
 - B. See Section 01352 LEED Requirements and this Section for more information. Submit the Materials Credit Documentation Sheet attached to Section 01352 for products in this section, including back-up documentation.
 - C. Submit sediment and erosion plan, specific to the site, that complies with the 2003 EPA Construction General Permit, including the Phase I and Phase II National Pollutant Discharge Elimination System (NPDES) program or City of Chicago requirement where more restrictive.

1.3 SUBMITTALS

- A. Samples

1. Submit 10 lb samples of each material to be used. Identify source, type (use) of each material and gradation. Forward to Owner's testing agency packed tightly in containers to prevent contamination. Submit copy of transmittal to Architect.
 2. The Contractor shall also collect sufficient amounts of representative (no composite samples) backfill samples for analytical testing sufficient to verify that these materials do not exceed APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters per Specification 02318. For samples from virgin sources, one representative sample must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. For samples from recycled sources, one sample per 1,000 tons of material must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. The contractor is responsible for payment of all backfill samples and analytical fees.
- B. Submit directly to General Contractor invoices and delivery tickets indicating the amount and type of off-site materials delivered.
- C. Submit sediment and erosion plan, specific to the site, that complies with EPA 832/R-92-005 "Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices" or City of Chicago requirement where more restrictive.

1.4 QUALITY ASSURANCE

- A. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction including the City of Chicago.
- B. Soil Testing and Inspection Service:
1. The Owner will engage a soil testing and inspection service, to include testing soil materials proposed for use in the Work and initial quality control testing during earthwork operations.
 2. Furnish soil survey for satisfactory soil materials and samples of soil materials to the testing service.
 3. The Contractor shall supply only backfill the does not exceed the APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 ILL. ADM.CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. The date of the environmental analysis of the backfill shall be within 60 days of importing such materials to the site.

1.5 PROJECT CONDITIONS

- A. Site Information
1. The Owner has had a subsurface investigation performed, the results of which are contained in a report. The report presents conclusions on the subsurface conditions based on there interpretation of the data obtained in the investigation.
 2. The Contractor acknowledges that they have reviewed the report and any addenda thereto.
 3. It is recognized that a subsurface investigation may not disclose all conditions as they actually exist and other conditions may change, particularly groundwater conditions, between the time of a subsurface investigation and the time of earthwork operations.
 4. The data on indicated subsurface conditions are not intended as representations or warranties of the continuity of such conditions. It is expressly understood that the Owner and Architect

will not be responsible for interpretations or conclusions drawn therefrom by the Contractor. The data are made available for the convenience of the Contractor.

5. Additional test borings and other exploratory operations may be made by the Contractor at no cost to the Owner.
- B. Traffic: Conduct operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.
- C. Protection of Existing Improvements:
1. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing improvements to remain in place.
 2. Restore damaged improvements to their original condition, as acceptable to the Owners and other parties or authorities having jurisdiction.
- D. Protection of Existing Vegetation:
1. Protect existing vegetation to remain in place against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary fences, barricades or guards as required to protect vegetation to be left standing.
 2. Water as required to maintain health during the course of construction operations.
 3. Protect root systems from damage due to noxious materials in solution caused by runoff or spillage during mixing and placement of construction materials, or drainage from stored materials. Protect root systems from flooding, erosion or excessive wetting resulting from dewatering operations.
 4. Do not allow fires under or adjacent to plantings which are to remain.
 5. Provide protection for roots over 1½" diameter that are cut during construction operations. Coat the cut faces with an emulsified asphalt or other acceptable coating especially formulated for horticultural use on cut or damaged plant tissues. Temporarily cover all exposed roots with wet burlap to prevent roots from drying out; provide earth cover as soon as possible.
 6. Repair or replace vegetation damaged by construction operations, in a manner acceptable to the Architect.
 7. Please refer to Section 02231 for Protection of Existing Vegetation.
- E. Improvements on Public Property: Obtain authority for performing removal and alteration Work on public property.
- F. Existing Utilities:
1. Locate existing underground utilities in the areas of Work before starting earthwork operations. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
 2. Contact D.I.G.G.E.R (312-744-7000) to verify locations of existing underground utilities before starting excavation.
 3. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Architect immediately for directions as to procedure.

4. Cooperate with the Owner and public and private utility companies in keeping their respective services and facilities in operation.
 5. Demolish and completely remove from the site underground utilities indicated to be removed. Coordinate with local utility companies for shutoff of services if lines are active.
- G. Use of Explosives: The use of explosives will not be permitted.
- H. Protection:
1. Protect existing improvements on and off the site from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. All Materials: Comply with Section 02318.
- B. General Fill: Provide soil materials conforming to ASTM D2487 soil groups GW, GR, GM, SW, SP or SM or a combination that are free of debris, waste, frozen materials, vegetable, organic and other deleterious matter and having maximum particle size of 2" in all dimensions. In addition to ASTM requirements, general fill shall not exceed the APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 ILL ADM CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters
- C. Select Fill: Clean natural or crushed stone or gravel conforming to State of Illinois, Department of Transportation Gradation CA 6. In addition to State of Illinois Department of Transportation Gradation requirements, select fill shall Not exceed APPENDIX B; SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 ILL ADM CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters.
- D. Underbed Material: Naturally or artificially graded mixture of natural or crushed stone or gravel conforming to State of Illinois, Department of Transportation Specifications for Gradation CA 8, or CA 7. In addition to State of Illinois Department of Transportation Specifications, Underbed material shall not exceed APPENDIX B; SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 IL ADM CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters.
- E. Use Contractor supplied off-site material except that general fill may be from excavation if found acceptable by the Owner's testing service provided that all off-site and general fill material does not exceed APPENDIX B; SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 ILL ADM CODE 7D42 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. Provide all materials required to complete the Work in the Contract.

PART 3 - EXECUTION

3.1 TEMPORARY EROSION CONTROL

- A. Before mobilizing and starting Work on the site, institute, expand as necessary, and maintain throughout the project a sediment and erosion control system that complies with EPA 832/R-92-005 and as required by authorities having jurisdiction, City of Chicago.
- B. Control erosion and sediment damage to roadways, adjacent properties and water resources through the use of basins, ditch checks, temporary ditches, mulch barriers, mulches, grasses, silt filter fences, hay or straw bales, aggregate barriers, inlet and pipe protection and other appropriate means.
- C. Remove and legally dispose of debris resulting from the project when no longer required in accordance with Section 02316.

3.2 CLEARING

- A. Environmental Hazards:
 - 1. Before starting Work and thereafter as appropriate, report conditions indicative of environmental hazards to the Owner's Managing Environmental Consultant and the CPS Environmental Services Manager and proceed as directed.
- B. General:
 - 1. Comply with the requirements of Section 02316
 - 2. Remove vegetation, improvements, or obstructions that interfere with installation of new construction. Removal includes new and old stumps and their roots.
 - 3. Carefully and cleanly cut roots and branches of vegetation to be left standing, where such roots and branches obstruct new construction.
 - 4. Comply with the environmental protection and safety requirements of all authorities having jurisdiction. Keep dust to a minimum. Maintain streets free of mud, dirt and debris.
- C. Topsoil Removal:
 - 1. Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4". Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects, and without weeds, roots, and other objectionable material.
 - 2. Strip topsoil to whatever depths encountered, and in such manner so as to prevent intermingling with the underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping.
 - 3. Where vegetation is to be left standing, stop topsoil stripping a sufficient distance from such vegetation to prevent damage to the main root system.
 - 4. Stockpile top soil in storage piles for removal from the site as per Section 02316 and furnish acceptable topsoil that does not exceed APPENDIX B; SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 ILL. ADM CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters at no cost to Owner. Construct storage piles to freely drain surface water. Cover storage piles if required to prevent windblown dust.
- D. Removal of Improvements:

1. Remove improvements that interfere with construction.
2. Cap and remove abandoned underground piping or conduit.
3. Where uncharted or incorrectly charted below grade improvements are discovered, obtain approval of Architect before removal.

3.3 EXCAVATION

A. General:

1. Comply with the requirements of section 02316.
2. Excavation consists of the removal and disposal of materials encountered when establishing the required grade elevations. Such excavation is unclassified regardless of the materials encountered and all materials to be disposed of in accordance with Section 02316.
3. Unauthorized excavation consists of removal of materials beyond indicated or required elevations. Replace unauthorized excavation by backfilling and compacting as specified for select fill at no cost to Owner.
4. Excavate under Building to the extent required to establish subgrades.
5. Excavate under pavements as required to comply with cross sections, elevations and grades.
6. Excavate elsewhere as required to establish new finish grades, allowing not less than 4" for topsoiling.

B. Dewatering:

1. Prior to commencing work, the Contractor shall provide a storm water management plan. This plan shall stipulate provisions for dewatering, pumping, collection, temporary storage, and discharge or disposal of storm water, perched water and other liquids, contaminated and/or uncontaminated, at the site so as to facilitate soil removal and minimize disposal costs for contaminated fluids.
2. Do not allow water to accumulate in excavations. Remove water from excavations to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of subgrades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey the water away from the site.
3. Convey water removed from excavations and rainwater to collecting or run-off areas acceptable to authorities having jurisdiction. Do not use trench excavations for site utilities as temporary drainage ditches.
4. Comply with requirements of authorities having jurisdiction, including but not limited to, the City of Chicago and the water Reclamation District of Greater Chicago.

C. Stability of Excavations:

1. Slope the side of excavations to comply with local codes, authorities having jurisdiction, and the City of Chicago, and maintain same. Secure, shore, and brace where sloping is not possible either because of space restrictions or stability of material excavated.
2. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

D. Shoring and Bracing:

1. Provide shoring and bracing to comply with local codes, authorities having jurisdiction and the City of Chicago.

2. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross braces, in good serviceable conditions.
 3. Maintain shoring and bracing in excavations regardless of the time period excavations will be open. Carry down shoring and bracing as the excavation progresses.
- E. Material Storage: Stockpile excavated materials classified as satisfactory soil material in accordance with Section 02316 until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.
- F. Excavation for Structures:
1. Excavate to the subgrade elevations required within a tolerance of plus or minus 0.10' to balance, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction required, and for inspection.
 2. Take care not to disturb the bottom of the excavation. Excavate by hand to final grade just before concrete is placed. Trim bottoms to the required lines and grades to leave a solid base to receive concrete.
- G. Excavation for Pavements: Cut the surface under pavements to comply with cross sections, elevations and grades.
- H. Removal of Unsatisfactory Soil Materials:
1. Excavate unsatisfactory soil materials encountered that extend below the required elevations, to the additional depth established by the Owner's testing service and approved by Owner.
 2. If excavated unsatisfactory materials are to be removed from the property, all such materials shall be disposed of in accordance with section 02316.
 3. Such additional excavation, provided it is not due to the fault or neglect of the Contractor, will be measured and paid for as a change in the Work if approved by Owner.
- I. Closing Abandoned Underground Utilities: Close open ends of abandoned underground utilities, which are to remain permanently, and with sufficiently strong closures to withstand pressures which may result after closing.
- J. Cold Weather Protection: Protect excavation bottoms against freezing when the atmospheric temperature is less than 35 degrees F. Maintain excavation free of water, ice and snow.

3.4 PROOF ROLLING

- A. Proof Roll entire area under building and pavements with a pneumatic roller or heavily loaded dump truck (minimum 25 tons).
- B. Make at least two (2) passes (second at right angle to first) in the presence of a representative of the Owner's testing service.
- C. Excavate unsatisfactory soil materials encountered to the additional depth established by the Owner's testing service and approved by Owner.
- D. Perform no further Work until slab subgrades are acceptable to the representative of the Owner's testing service.

3.5 COMPACTION

- A. General: Control soil compaction during construction, providing the minimum percentage of density specified.
- B. Percentage of Maximum Density Requirements: Provide not less than the following percentages of density of soil material compacted at $\pm 2\%$ optimum moisture content, for the actual density of each layer of soil material-in-place:
 - 1. Compact top 12" of subgrade and each layer of backfill or fill material to 85% relative density for cohesionless soils (ASTM D 4253 & D 4254) and 95% maximum density for cohesive soil (ASTM D 1557) in paved areas and 85% maximum for cohesive soil (ASTM D 1557) in non-paved areas.
- C. Moisture Control:
 - 1. Where the subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to the surface of subgrade, or layer of soil material, to prevent free water appearing on the surface during or subsequent to compaction operations.
 - 2. Remove and replace, to scarify and air dry, soil material that is too wet to permit compaction to specified density.

3.6 BACKFILL AND FILL

- A. Prior to Backfill Placement: Backfill excavations as promptly as the Work permits, but not until completion of the following:
 - 1. Review of construction below finish grade.
 - 2. Code required inspection, testing, approval, and recording locations of underground utilities.
 - 3. Removal of concrete formwork.
 - 4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
 - 5. Removal of trash and debris.
 - 6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
- B. Ground Surface Preparation:
 - 1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
 - 2. When the existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break up the ground surface, pulverize, bring moisture condition to the optimum moisture content, and compact to the required depth and percentage of maximum density.
- C. Placement and Compaction:
 - 1. Place backfill and fill materials to required grades in layers not more than 8" in loose depth for materials compacted by heavy compaction equipment and not more than 4" in loose depth for materials compacted by hand operated tampers. Before compaction, moisten or

- aerate each layer as necessary to provide the optimum moisture content of the soil material. Compact each layer to the required percentage of density.
2. Place backfill and fill materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.
 3. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 4. Backfill and fill under Building slabs to an elevation required to allow for thickness of underbed shown or a minimum of 6" if not shown.
 - a. Use select fill material.
 5. Backfill and fill under pavements as required to comply with cross sections, elevations and grades shown.
 - a. Use select fill material, except below 3-foot, general fill may be used.
 6. Fill and backfill under footings where not on undisturbed ground using select fill material.
 7. Backfill and fill elsewhere as required to establish new finished grades, allowing not less than 4" for top soiling using select fill except below 3-foot, general fill may be used.

D. Under Bed: Place and compact underbed material under all slabs-on-grade.

3.7 GRADING

- A. General: Uniformly grade the area, including adjacent transition areas. Smooth finished surfaces within specified tolerances, compact with uniform levels or slopes between elevation points, or between such points and existing grades.
- B. Grassed Areas: Finish areas to receive topsoil to within not more than 0.10' above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.
- C. Walks: Shape the surface of areas under walks to line, grade and cross section, with the finish surface not more than 0.00' above or 0.10' below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains.
- D. Pavements: Shape the surface of the areas under pavement to line, grade and cross section, with the finish surface not more than 1/4" above or below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains.

3.8 FIELD QUALITY CONTROL

- A. Quality Control Testing During Construction:
 1. The Owner's testing service must inspect and approve sub-grades and fill layers before further construction work is performed thereon.
 2. If, in the opinion of the Owner's testing service, based on reports of the testing service and inspection, the subgrade or fills which have been placed are below the specified density, additional compaction and testing will be required until satisfactory results are obtained at no additional cost to Owner. In such event, retesting will be paid by the Contractor.
- B. Owner will engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during earthwork operations.
- C. Contractor's Responsibilities

1. Notify Agency sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests.
 2. Coordinate with Agencies' personnel; provide access to Work, to manufacturer's operations.
 3. Provide preliminary representative samples of materials to be tested, in required quantities.
 4. Furnish casual labor and facilities to provide access to Work to be tested to obtain and handle samples at the site to facilitate inspections and tests, and storage and curing of tests.
 5. Arrange with laboratory, pay for, additional samples and tests required when initial tests indicate Work does not comply with Contract Documents.
- D. Tests for Proposed Soil Materials:
1. Test soil materials proposed for use in the Work and promptly submit test result reports. Soil samples will be provided by Contractor.
 2. Provide one optimum moisture-maximum density curve for each type of cohesive soil. Determine maximum densities in accordance with ASTM D 1557.
 3. Determine the suitability of materials to be used as fill and backfill.
 4. Perform a mechanical analysis (AASHTO T88), plasticity index (AASHTO T91), and frost susceptibility analysis.
 5. Supply only soil materials that do not exceed APPENDIX B; SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES(TACO);35 ILL ADM CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. For samples from virgin sources, one representative sample must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. For samples from recycled sources, one sample per 1,000 tons of material must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. The date of the environmental analysis of any soil proposed for use shall be within 60 days of importing such material to the site.
- E. Verification of Footing Subgrades:
1. Provide one optimum moisture-maximum density curve for each type of soil encountered.
 2. For each strata of soil on which footings will be placed, conduct at least one test to verify the required design bearing capacities. Subsequent verification and approval of each footing subgrade may be based on a visual comparison of each subgrade with the related tested strata.
- F. Compaction Testing:
1. Inspect, test, and approve each lift of fill and backfill before next lift is placed. Test in accordance with ASTM D1556 or D2167 as appropriate.
 2. Take a field density test for each 2,000 sq. ft. of backfill and fill under slabs and pavements.
 3. Take a field density test at 100 foot intervals along the inside of continuous footings, but not less than one (1) test per 20 foot run.
 4. Take a field density test for each four (4) isolated footings.
 5. Take a field density test at 50 foot intervals along utility trench backfill under slabs and pavements.
- G. Proofrolling Observation:
1. Provide continuous observation of proofrolling of entire building area. Four passes will be made.

2. Approve subgrade or make recommendations for removal.

H. Submittals: Submit copies of the following reports:

1. Report and certification of granular fill and drainage fill.
2. Test reports on fill and backfill material.
3. Verification of each footing subgrade.
4. Field density test reports.
5. One optimum moisture-maximum density curve for each type of soil encountered.
6. Report of actual unconfined compressive strength and/or results of plate bearing tests of each strata tested.
7. Other tests' and materials' certificates, as required.

3.9 MAINTENANCE AND RESTORATION

A. Protection of Graded Areas:

1. Protect newly graded areas from traffic and erosion, and keep free of trash and debris and growth of weeds.
2. Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.

B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather scarifies the surface, reshape, and compact to the required density prior to further construction.

C. Restoration: Restore all areas affected by construction both on and off Owner's property to original condition.

3.10 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Burning is not permitted on the Owner's property.

B. Remove waste materials, excess excavated materials, excavated materials classified as unsatisfactory soil material from the Owners property and legally dispose of all materials Subtitle D landfill facility.

C. Provided the excess soil materials do not exceed APPENDIX B; SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 ILL. ADM. CODE 742 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters, remove excess soil materials to spoil area, spread and compact to provide drainage. Strip top soil before spoiling and respread after.

D. If the excess soil materials exceed APPENDIX B; SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO); 35 ILL. ADM. CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters, dispose of all materials at a permitted Subtitle D landfill per section 02316.

END OF SECTION

SECTION 02316

SOIL, FILL, BACKFILL, CU STRUCTURAL SOIL & CONSTRUCTION & DEMOLITION DEBRIS REMOVAL

PART 1 - GENERAL

1.1 Applicability:

- A. These environmental requirements apply to all Public Building Commission (PBC) properties, including but not limited to Warehouse building and associated properties, Tri-Angle property, and associated parking lot areas.

1.2 Introduction

- A. Related Documents: All terms and conditions of the Contract apply to this Section. Attached please find Section 02317 which refers to specifications for Special, Non-hazardous Special, and Hazardous waste soil removal and disposal.
- B. Work included: This specification is for the excavation, stockpiling, loading, hauling, removal, and disposal of any soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, top soil, CU Structural Soil, and general construction and demolition debris from PBC properties. The Contractor shall perform the work under this section in accordance with all applicable local, county, IEPA, USEPA, and OSHA regulations. The Work shall include the following:

1. Removal and disposal

- a. Excavation of soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, top soil, CU Structural Soil, and general construction and demolition debris materials to the depth required to complete the proposed site preparation/construction work activities as specified in the Architect/Engineer drawings and specifications.
- b. Obtain authorization from a Permitted Subtitle D landfill indicating acceptance of materials at the facility. The Authorization must be signed by the owner of the Permitted Subtitle D landfill and state that the facility complies with all local zoning codes and all local, State, and Federal rules and regulations, that all required laboratory analyses has been received by the facility, and that the facility has agreed to accept the soils (including non-special waste soils, and non-hazardous special waste soils), fill, backfill, top soil, CU Structural Soil, and general construction and demolition debris materials. The Authorization shall further state that the soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, top soil, CU Structural Soil, general construction and demolition debris materials are being accepted for permanent placement on site, and that the material will not be removed from the site unless required by a local, State or Federal Authority.

- c. Perform analytical testing for waste stream authorizations as necessary to secure all required disposal permits for all materials.
- d. Load and transport all materials to the approved Permitted Subtitle D landfill
- e. Prepare daily reports, transport manifests, weight tickets and receipts (as applicable) prior to starting any soil removal activities.
- f. Provide copies of all daily reports, transport/waste manifest, weight tickets, and disposal receipts (as applicable) to the PBC Project Manager and MEC on a daily basis documenting proper disposal of soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, top soil, CU Structural Soil, and general construction and demolition debris materials.

2. Placement of backfill, top soil, CU structural soil

- a. The contractor shall supply only backfill, top soil and CU Structural Soil per project specifications and which does not exceed APPENDIX B, SECTION 742, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO): 35 ILL. ADM. CODE 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. For samples from virgin sources, one representative sample must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. For samples from recycled sources, one sample per 1,000 tons of material must be analyzed for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. The date of the laboratory analysis of any backfill, top soil or CU structural soil shall be within 60 days of importing such material to a school property.

1.3 DEFINITIONS

- A. Agency means Illinois Environmental Protection Agency (IEPA).
- B. Backfill means granular or cohesive material used to fill the excavation to design grade as referenced in design plans and specifications, and which does not exceed Title 35: Environmental Protection Subtitle G: Waste Disposal Chapter I: Pollution Control Board Subchapter F: Risk Based Cleanup Objectives, Part 742, Tiered Approach To Corrective Action Objectives, Appendix B values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters.
- C. PBC Project Manager means the person or entity designated as the official representative of the owner in connection with a project.
- D. CU Structural Soil means a uniformly blended mixture of crushed stone, clay, loam and hydrogel as referenced in Specification 02901.
- E. Fill means any earthen or non-earthen materials including but not limited to any sediment, granular or cohesive non-native earthen materials, cinders, ash, wood, and brick, concrete, and asphalt fragments, glass, and building debris encountered above naturally occurring undisturbed soils or bedrock in built-up areas.

- F. General Construction and Demolition (C&D) Debris means non-hazardous, uncontaminated materials resulting from construction, remodeling, repair, and demolition of utilities, structures, and roads as defined in Public Act 92-0574, The Environmental Protection Act, 415 ILCS 5 Section 3.160. and regulated under Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board; Subchapter i: Solid Waste and Special Waste Hauling. General Construction and demolition (C&D) debris may include soil, wall coverings, reclaimed asphalt pavement, rock, plaster, glass, non-hazardous painted wood, drywall, plastics, non-hazardous coated wood, non-asbestos insulation, bricks, wood products, roofing shingles, concrete, and general roof coverings.
- G. Permitted Subtitle D landfill means any solid waste landfill facility in any state licensed and/or permitted to accept non-hazardous waste.
- H. IEPA means Illinois Environmental Protection Agency.
- I. IDOT means Illinois Department of Transportation.
- J. Manifest means the form provided or prescribed by IEPA and used for identifying name, quality, routing, and destination of special waste during its transportation from point of generation to the point of disposal, treatment, or storage.
- K. Hazardous Waste means a waste, or combination of wastes, which has been identified by characteristics or listing as hazardous pursuant to Section 3001 of the Resource Conservation and Recovery Act of 1976, P.L. 94-580, 40 CFR part 261, Illinois Environmental protection Act 415 ILCS 5/3.220, and Section 809.103 of Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board. A waste is classified as hazardous if it exhibits any of the following characteristics: 1) ignitability, 2) corrosivity, 3) reactivity, or 4) toxicity, and as defined in Illinois Administrative Code Title 35, Section 721.103 (35 IAC 721.103).
- L. Managing Environmental Consultant (MEC): The entity that will perform environmental oversight on the behalf of the PBC. Terracon Consultants, Inc. is the MEC for this project.
- M. MSDS means Material Safety Data Sheet, required by OSHA for any substances that are toxic, caustic, or otherwise potentially hazardous to workers.
- N. OSHA means Occupational Safety and Health Administration.
- O. Remediation Area means any area on site where underground storage tanks, non-special waste and/or non-hazardous special waste, or soil that does not meet Tier 1 SROs for residential properties is present.
- P. Soil means any granular or cohesive materials designated for removal as specified in the Architect/Engineer drawings and specifications and includes soils that are determined to be non-special and special waste.
- Q. Special Waste means any wastes as defined in Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board; Subchapter i: Solid

Waste and Special Waste Hauling; Part 808: Special Waste Classifications; Subpart A: General Provisions; Section 808.110,

AND

Any wastes as defined in Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board; Subchapter i: Solid Waste and Special Waste Hauling; Part 809: Non Hazardous Special Waste Classifications; Subpart A: General Provisions; Section 809.103.

- R. SROs mean Soil Remediation Objectives for various exposure routes identified in 35 Illinois Administrative Code 742: Tiered Approach to Corrective Action Objectives (TACO).
- S. Storm water means water deposited at the site in the form of rain, snow or other natural weather event.
- T. TACO means TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO) per 35 Illinois Administrative Code 742.
- U. Top Soil means soils placed to design grade and used to promote vegetative growth, and which does not exceed Title 35: Environmental Protection Subtitle G: Waste Disposal Chapter I: Pollution Control Board Subchapter F: Risk Based Cleanup Objectives, Part 742, Tiered Approach To Corrective Action Objectives, Appendix B values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters.
- V. USEPA means United States Environmental Protection Agency.

1.4 Submittals

- A. Copies of the following submittals shall be prepared and submitted to the PBC Project Manager and MEC at Contractor's own cost:
 - 1. Soil, Fill, Backfill, CU Structural Soil, Construction and Demolition Debris Removal
 - a. Contractor's Site Specific Health and Safety Plan for all workers engaged in excavation, stockpiling, loading, hauling, removal, and disposal of any soils (including non-special waste soils and non-hazardous special waste soils), fill, general construction and demolition debris from the property. The plan shall comply with all OSHA requirements. The work shall be performed under the direct supervision of a trained experienced site supervisor. The plan should at a minimum include the following:
 - 1) Name key personnel and alternates responsible for site safety.
 - 2) Describe the risks associated with each operation conducted.
 - 3) Type of personnel training and responsibilities and to handle the specific hazardous situations they may encounter.
 - 4) Describe the protective clothing and equipment to be worn by personnel during various site operations.
 - 5) Describe any site-specific medical surveillance requirements.

- 6) Describe the program for the periodic air monitoring, personnel monitoring, and environmental sampling if needed.
 - 7) Describe the actions to be taken to mitigate existing hazards to make the work environment less hazardous.
 - 8) Define site control measures including a site map.
 - 9) Establish procedures for personnel and equipment and transporting trucks to ensure that impacted soils are not tracked off site on to non-impacted areas of the site.
 - 10) Set forth the site Standard Operating Procedures (SOPs). SOPs are those activities that can be standardized (i.e., decon procedures and respirator fit testing).
 - 11) Set forth a Contingency Plan for the safe and effective response to emergencies.
- b. Soil Management Plan outlining proposed excavation work sequences and procedures to separate each type of material to be removed from the site from clean materials. The Soil Management Plan shall show the locations of each type of material to be stored on site, location of clean materials to be stored at the site for reuse, and location of material to be stored on site for future disposal. The Plan shall also include information regarding concrete and brick recycling procedures and name and address of the concrete and brick recycling sites that will be used as part of this project.
- c. Name, address and telephone number of the Permitted Subtitle D Landfill facility where soils (including non-special waste soils and non-hazardous special waste soils), fill, general construction and demolition debris are to be deposited. This submittal must be made prior to removal of any materials from the site. This information should include, at a minimum, the following:
- 1) Facility Name and Address and Telephone Number.
 - 2) Site Contact.
 - 3) Facility Identification Number issued by Illinois, U.S. EPA, or other state licensing agencies for Special Waste Disposal facility.
 - 4) USEPA Disposal Site ID numbers (for Hazardous Waste Sites only).
 - 5) State and/or Local Operational Permit Number(s) for the impacted Construction and Demolition Debris Disposal sites.
- d. Letter of authorization from the facility where soils (including non-special waste soils and non-hazardous special waste soils), fill, general construction and demolition debris are to be deposited prior to removal from the site. The authorization must be signed by the Permitted Subtitle D landfill facility representative and state that the facility complies with all local zoning codes and all local, State, and Federal rules and regulations, that all required laboratory analyses has been received by the facility, and that the facility has agreed to accept the soils (including non-special waste soils, and non-hazardous special waste soils), fill, and general construction and demolition debris materials. The Authorization shall further state that the soils (including non-special waste soils and non-hazardous special waste soils),

fill, general construction and demolition debris fill materials are being accepted for permanent placement on site, and that the material will not be removed from the site unless required by a local, State or Federal Authority.

- e. Copies of analytical results for each waste stream to be removed from the site as applicable. The name and address and telephone number of the laboratory that will be used by the Contractor to perform analytical testing for waste stream authorization.
- f. Storm Water Management Plan - prior to commencing work, the contractor shall provide a liquid materials handling plan. This plan shall stipulate provisions for dewatering, pumping, collection, temporary storage, and discharge or disposal of storm water, perched water and other liquids, contaminated and/or uncontaminated, at the site so as to facilitate soil removal and minimize disposal costs for contaminated fluids.
- g. Copies of all daily reports, transport/waste manifests, weight tickets and receipts (as applicable) to the PBC Project Manager and/or MEC on a daily basis.
- h. Any sampling data collected during the course of the Work.

1.5 Submittal Review

- A. Review of submittals or any comments made does not relieve the Contractor from compliance with the requirements of the drawings and specifications. The purpose of this check is to review for general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; electing techniques of construction; coordinating the Work; and performing the Work in a safe and satisfactory manner.

1.6 Notifications

- A. The Contractor shall notify the PBC Project Manager and MEC no less than two (2) business days prior to loading and transporting any materials from the site.

1.7 Recordkeeping

- A. The Contractor shall provide documentation of labor, equipment, materials and disposal laboratory analysis used for soil removal, when requested by the PBC Project Manager and MEC.

PART 2 - PRODUCTS

- 2.1 Removal of Soil, Fill, Backfill, CU Structural Soil, and Construction and Demolition Debris
- A. The Contractor shall furnish all necessary means, products, tools, and equipment required to remove soil (including non-special waste soils and non-hazardous special waste soils), fill, backfill, CU Structural Soil and construction and demolition debris from the site as directed by the PBC Project Manager and MEC.

PART 3 - EXECUTION

3.1 Authorizations

- A. Obtain authorization from the Permitted Subtitle D landfill owner where soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, CU Structural Soil and construction and demolition debris are to be deposited. The Authorization must be signed by the property owner and shall state that the property owner has received a copy of one or more laboratory analyses of representative sample(s) collected from the site by the contractor and/or MEC and has agreed to accept the material. The Authorization shall further state that the site owner agrees to accept the material for permanent placement on their site and that the material will not be removed from their site unless required by a local, State or Federal Authority. The Authorization further shall state that the site complies with all local zoning codes, State, Federal and Local laws, rules, and regulations.
- B. Obtain prior authorization from PBC Project Manager and MEC to backfill excavations and utility lines, and apply top soil. All backfill, CU Structural Soil, and top soil shall comply with site specific project specifications.
- C. Haulers for transportation of soils, backfill and top soil shall hold, and present upon request, a current valid Commercial Driver's License (CDL).

3.2 Material Sampling

- A. Soil, Fill, Backfill, CU Structural Soil, Construction and Demolition debris
1. The Contractor shall collect sufficient amount of representative sample(s) from each type of material being removed from the site for analytical testing to obtain authorization for the ultimate disposition of the materials. The contractor is responsible for acquisition of any required permits and payment of all fees.
 2. The Contractor shall be responsible for obtaining liquid samples as needed for characterization for liquid disposal offsite or disposition onsite as applicable. The Contractor is responsible for the acquisition of any required disposal permits and the payment of any fees associated with liquid disposal.

3. The Contractor shall submit the soil and liquid samples (as applicable) to the laboratory and pay for the cost of analyzing the constituents required for the ultimate disposition of soils and liquids.
4. The MEC may collect samples for laboratory analysis or field Photo-ionization Detector (PID) screening, or liquid samples for laboratory analysis. The Contractor shall provide the necessary equipment and manpower to assist the MEC to collect materials to be sampled at no additional cost to the project.
5. The Contractor shall immediately notify the PBC Project Manager and the MEC if any materials, (solid or liquid) requiring special handling (i.e., stained soil, soil with odors, or liquids) are encountered.
6. All excavated soils, liquids, and other material shall be removed from the site in accordance with applicable federal, state and local regulations.

3.3 Excavation

- A. The Contractor shall perform excavation of soils (including non-special waste soils and non-hazardous special waste soils), fill, backfill, CU Structural Soil and construction and demolition debris as directed by the PBC Project Manager and/or MEC.
- B. All excavation shall be performed in accordance with OSHA requirements and guidelines.

3.4 Hauling

- A. The Contractor shall remove soils, dust, rocks, etc. from the exterior of trucks, trailers, or other heavy equipment leaving the site before they leave the site.
- B. The Contractor shall clean the tractor-trailers or trucks that are loaded with materials for off site placement/salvage by removing clinging soils, or rocks from the exterior of the equipment.
- C. The Contractor shall implement adequate control measure to mitigate the generation of dust during excavation, loading or soil removal and shall maintain adequate dust suppression equipment on site if conditions warrant.
- D. The Contractor shall maintain streets clean and free of mud and dirt.
- E. The Contractor shall conduct soil (including non-special waste soils and non-hazardous special waste soils), fill, backfill, CU Structural Soil and construction and demolition debris removal in a manner that ensures minimum interference with roads; streets, walks and other adjacent occupied and used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from the applicable governing agency and PBC Project Manager. Provide alternate routes around closed or obstructed traffic ways if required by the governing agency.

3.5 Transportation

- A. The Contractor shall remove soils, dusts, rocks, etc. from the exterior of trucks, trailers, or other heavy equipment leaving the site before they leave the site. The Contractor shall provide and complete copies of all daily reports, weight tickets and receipts (as applicable) for transportation and ultimate off site placement of materials removed from the property to the PBC Project Manager, review and signature as required.

3.6 Dust Control

- A. The Contractor shall control dust by all necessary means, including but not limited to covering trucks, stockpiles and open materials, watering haul roads, sweeping paved roads, and limiting the speed of all on-site vehicles. If such controls are not effective, the contractor shall apply dust suppression agents to exposed sources of dust at no additional cost.

3.7 Liquid (Water) Management

- A. The Contractor shall subscribe to a weather notification system and manage the work so as to minimize the accumulation of storm water on the site during excavation.
- B. Prior to commencing work, the contractor shall provide a storm water management plan. This plan shall stipulate provisions for dewatering, pumping, collection, temporary storage, and discharge or disposal of storm water, perched water and other liquids, contaminated and/or uncontaminated, at the site so as to facilitate soil removal and minimize disposal costs for contaminated fluids.
- C. The Contractor shall ensure that contamination of water, perched water and previously uncontaminated water or perched water does not occur by preventing the contact of such liquid with materials that exceed Title 35: Environmental Protection Subtitle G: Waste Disposal Chapter I: Pollution Control Board Subchapter F: Risk Based Cleanup Objectives, Part 742, Tiered Approach To Corrective Action Objectives, Appendix B, Table A values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. Earthen berms, plastic (polyethylene) sheeting, pumping, and other such means, as specified in the approved Storm water Management Plan, may be used.
- D. If the Contractor, through negligence, allows storm water to contact materials that exceed Title 35: Environmental Protection Subtitle G: Waste Disposal Chapter I: Pollution Control Board Subchapter F: Risk Based Cleanup Objectives, Part 742, Tiered Approach To Corrective Action Objectives, Appendix B, Table A values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters, the water must be disposed of as water that exceeds Title 35: Environmental Protection Subtitle G: Waste Disposal Chapter I: Pollution Control Board Subchapter F: Risk Based Cleanup Objectives, Part 742, Tiered Approach To Corrective Action Objectives, Appendix B, Table A values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters. The

Contractor will be responsible for the additional costs incurred for any disposal analysis and disposal costs.

3.10 Quality Control

- A. Visual inspections and damage repairs shall be made daily by the Contractor and/or as directed by the PBC Project Manager to assure that erosion, drainage and containment control measures are functioning properly.
- B. The Contractor shall take all necessary precautions to protect structures, equipment, pavement, walks and utilities against movement or settlement during the course of work.
- C. Damages: Promptly replace or repair any damage caused to adjacent pavement, utilities or facilities by removal operations at no additional cost. Work shall be performed to the satisfaction of the PBC Project Manager.
- D. Utility Services: Maintain existing utilities and protect against damage during removal operations.

PART 4 - MEASUREMENT AND PAYMENT

4.1 CONTRACT UNIT PRICING

- A. Volume determination and pricing shall in accordance with the contract documents.

END OF SECTION

SECTION 02811

WATER DISTRIBUTION SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Design and installation of water distribution system to provide quick couples for all lawn and planted areas, for the purpose of plant and lawn establishment, as shown on the Drawings and specified herein.
- B. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for the Project to obtain LEED Silver Certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this Section for more information.

1.2 RELATED DOCUMENTS:

- A. The site plan, drainage plan, grading plan, utility plan, plumbing plan and landscaping plan will affect the installation of the water distribution system. Coordinate to avoid conflicts.
- B. Related Sections include the following:
 - 1. Division 2 Section 02900 "Landscaping" and Section 02910 "Native Landscaping."
 - 2. Division 2 Section 02985 "Lawn"
 - 3. Division 15, for hose bibs on green roofs.

1.3 INSPECTION OF SITE

- A. Visit the project site and to examine existing conditions and make note of any conditions which may pertain to his class of work. Failure to do so will not relieve bidder of responsibility in connection with his work.

1.4 SYSTEM PERFORMANCE REQUIREMENTS

- A. System Design: The system designer/installer shall design the system utilizing the following general guidelines:
 - 1. The extent of the base landscape water distribution system as shown on the Drawings.
 - 2. Unless otherwise specified, the plans and specifications are intended to include everything obviously requisite and necessary for the proper installation and completion of the work, whether or not each necessary item is mentioned herein. The plans and specifications are intended to be cooperative and any item called for in one and not the other shall be binding as if called for in both.
 - 3. Coordinate all water distribution work with all new plumbing and civil work.
 - 4. Provide booster pump assembly if needed to maintain pressure and provide proper operation.
 - 5. All inside piping shall be copper as specified.
 - 6. Raised pendants may be used only where absolutely necessary and hidden from view near building walls. Piping shall be copper inside PVC pipe sleeve to present PVC appearance.
 - 7. System shall comply with City of Chicago codes and requirements, including meter (if required) and RP backflow preventer and must be inspected and approved by the City.
 - 8. Two extra wires shall be provided to all valves.

9. Provide gate valves as required to isolate parts of the total system for the purpose of leak detection.

- B. Minimum Working Pressure Requirements:
 1. Pressure Piping: 200 psig (1380 kPa).
 2. Circuit Piping: 150 psig (1035 kPa).
 3. Drain Piping: 100 psig (690 kPa).

- C. The water distribution system shall provide for a point of connection into the water supply for manual water distribution of all planted areas and perform as required by these plans and specifications:
 1. Provide an underground manual water distribution system as shown on the drawings and specifications and as required by these plans and specifications.
 - a. Manual water distribution systems including the piping, fittings, quick coupler valves and accessories as required.
 - b. Excavating and backfilling water distribution system work.
 - c. Testing and adjusting of system.
 - d. "As-Built" drawings.
 - e. Winterization shutdown - spring start-up.

 2. All work required by the plans and specifications shall be accomplished by the Irrigation Contractor even though minor items required may not be specifically mentioned in the above listing.

- D. Drawings: The system layout is diagrammatic. Exact locations of piping, quick coupler valves, and other components may need to be modified by the Contractor in the field at time of installation to allow for actual on site conditions. Minor adjustments in the system layout will be permitted to clear fixed obstructions. Any major revisions to the water distribution system shall be submitted in writing to the owner for approval. The final system layout must be acceptable to the Owner.

- D. Verification of Plans and Specifications: It shall be the responsibility of the Irrigation Contractor to carefully examine the plans and specifications relating to this work for completeness, accuracy, and clarity. Any conflict, errors or clarifications request shall be immediately brought to the attention of the Landscape Architect for written interpretation or instructions. No claim for increased compensation for additions, changes, or alterations will be considered unless written authorization is granted by Owner's representative. Otherwise any additional materials and/or labor due to existing conditions shall be furnished under this contract.

- E. The Irrigation Contractor is responsible for obtaining all permits required for installation of this work.

1.5 SUBMITTALS

A. LEED Submittals:

1. Product Data as required to show compliance with the following credits:
 - a. LEED MR Credit 4.1 and 4.2: Submit product data and certification letter indicating percentages by weight of post-consumer and pre-consumer content for products having recycled content. Include statement indicating costs for each product having recycled content.
 - b. LEED MR Credit 5.1 and 5.2: Submit product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction,

harvest or recovery for each raw material and the fraction by weight that is considered regional.

- B. See Section 01352 LEED Requirements and this Section for more information. Submit the Materials Credit Documentation Sheet attached to Section 01352 for products in the Section, including back-up documentation.
- C. Manufacturer's and Product Data: Include pressure rating, rated capacity, settings and electrical data of selected models for the following, as applicable to the design:
 - 1. Water regulators.
 - 2. Water hammer arresters.
 - 3. Valves. Include aboveground and underground; general duty, manual and automatic control and quick coupler types.
 - 4. Valve boxes.
- D. Shop Drawings: Submit shop drawings showing layout of quick couple valve water distribution system, including locations, types and characteristics of piping and system components. Include water meters, backflow preventers, valves, piping, devices, accessories, controls and wiring.
- E. Coordination Drawings: Show piping and major system components. Indicate interface and spatial relationship between piping, system components, adjacent utilities, and proximate structures.
- F. Test Reports: As specified in "Filed Quality Control Article in Part 3 of this Section.
- G. Record Drawings: After completion of the work and before final acceptance, a set of scaled, reproducible record drawings, and two sets of prints showing the location of the complete work shall be submitted to the Owner. Final payment and any retainage will not be released until these drawings are submitted and accepted by the Owner.
- H. Maintenance Data: Submit three (3) bound copies of Maintenance Data Operating Instructions and Parts Lists. Include data for the following, as applicable to design:
 - 1. Booster Pump.
 - 2. Backflow Preventers
 - 3. Water regulators.
 - 4. Automatic control valves.
 - 5. Quick couple valves.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A minimum of ten (10) years experience in the layout and installation of quick couple water distribution systems of similar size and complexity, as a primary business.
 - 1. Provide a list of five equivalent irrigation system installations, performed in the last five years, incorporating the following information:
 - a. Name and address of product.
 - b. Name and address of Owner.
 - 1) Contact person
 - c. Name and address with whom contract was with.
 - 1) Contact person
- B. Manufacturing Qualifications:
 - 1. Provide the manual water distribution system as a complete unit produced by acceptable

manufacturers for all portions of the working equipment which includes quick coupler valves and accessories. All irrigation products shall be purchased from a local authorized irrigation supply company.

- C. Work and materials shall be in accordance with the latest rules, and other applicable state or local laws. Nothing in the Contract Documents is to be construed to permit work not conforming to these codes.
- D. Requirements of regulatory agencies and utilities:
 - 1. Comply with the latest requirements of all state and local codes and ordinances.
 - 2. Comply with the latest rules and requirements by all utility companies involved, including requirements of utility supplying water and authorities having jurisdiction for backflow and back siphonage.
 - 3. Nothing in the contract documents is to be constructed to permit work not conforming to these rules, codes and ordinances.
- E. Required pressure testing shall be the responsibility of the Contractor.
- F. Materials, equipment, and methods of installation shall comply with the following codes and standards:
 - 1. National Fire Protection Association (NFPA)
 - 2. American Society for Testing and Materials (ASTM)
 - 3. The Water distribution Association (IA)
 - 4. American Water Works Association (AWWA)
- G. Electrical Components, Devices and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- H. Comply with ASTM F 645, "Guide for Selection, Design and Installation of Thermoplastic Water Pressure Piping System."
- I. Comply with NFPA 70, "National Electrical Code," for electrical connections between wiring and electrically operated devices.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Preparation for Transport: Prepare valves according to the following:
 - 1. Ensure that valves are dry and internally protected against rust and corrosion.
 - 2. Protect valves against damage to threaded ends and flange faces.
 - 3. Set valves in best position for handling. Set valves closed to prevent rattling.
- B. During Storage: Use precautions for valves according to the following:
 - 1. Do not remove end protectors unless necessary for inspection; then, reinstall for storage.
 - 2. Protect from weather. Store indoors and maintain temperature higher than ambient dew-point temperature. Support off ground or pavement in watertight enclosures when outdoor storage is necessary.
- C. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.

- D. Protect stored piping from moisture and dirt. Elevate above grade. Do not exceed structural capacity of floor when storing inside.
- E. Protect flanges, fittings, and specialties from moisture and dirt.
- F. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.8 PROJECT CONDITIONS

- A. Perform site survey, research public utility records, and verify existing utility locations.
- B. Investigate and determine available water supply water pressure and flow characteristics.

1.9 SEQUENCING AND SCHEDULING

- A. Maintain uninterrupted water service to building during normal working hours. Arrange for temporary water shutoff with Owner.
- B. Coordinate sleeve installations with paving operations.
- C. Coordinate piping installation with landscaping.
- D. Coordinate piping installation with utility work.

1.10 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage, with identification labels describing contents. Deliver extra materials to Owner.
 - 1. Quick Couples: Furnish quantity of units equal to 10 percent of amount of each size installed.
 - 2. Valve Keys: Furnish quantity of tee-handle units equal to 25 percent of each type of key-operated valve installed.
 - 3. Quick Couple Hose Swivels: Furnish quantity of units equal to 25 percent of amount of each type of quick couple installed.
 - 4. Quick Couple Operating Keys: Furnish quantity of units equal to 25 percent of amount of each type of quick couple installed.

1.11 WARRANTY

- A. The contractor shall furnish a manufacturer's written warranty to the effect that all quick coupler valves will be warranted for a period of no less than two years to be free from defects and faulty workmanship, and that any defective heads, valves, or controllers shall be promptly repaired or replaced without additional cost to the Owner in accordance with that warranty.
- B. All materials other than those referred to in Paragraph A above shall be warranted for a period of one full year from the date of final acceptance by the Owner.
- C. All installation labor used on this project will be warranted for one full year from date of final acceptance by the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS FOR WATER DISTRIBUTION

- A. General: The materials chosen for the design of the water distribution system have been specifically referred to by manufacturer so as to enable the Owner to establish the level of quality and performance required by the system design. After award of contract and prior to beginning work, the Contractor shall submit for approval (3) copies of the complete list of materials which he proposes to install. No deviations from the specifications will be allowed.
- B. Acceptable Manufacturers:
1. Bronze Corporation Stops and Valves for Underground Installation:
 - a. Ford Meter Box Co., Inc.
 - b. Grinnell Corp.; Mueller Co.; Water Products Div.
 - c. Jones: James Jones Co.
 - d. Kitz Corp. of America.
 - e. Lee Brass Co.
 - f. Master Meter, Inc.
 - g. McDonald: A.Y. McDonald Mfg. Co.
 - h. Red Hed Manufacturing Co.
 2. Quick Couplers: Quick coupling valves (QCV) shall be Rain Bird Model #5RC, or approved equivalent. All brass construction with rubber cover. All quick coupling valves are to be enclosed in a 10" round fiberglass valve box with locking cover such Rain Bird or Carson Specification Grade. Secure quick coupler by mounting on a 1" Lasco brass insert Snap-Lok Swing Joint with stabilizer elbow Model # G1-S-212. The quick couplers are to be set at such height that the valve box will not interfere with the operation of the valve key. Other manufacturers will be considered if equivalent quality is provided, to be determined by Architect.
 - a. Buckner, Inc.
 - b. Ceres Products Corp.
 - c. Champion Irrigation Products.
 - d. Nelson: L.R. Nelson Corp.
 - e. Rain Bird Sprinkler Mfg. Corp.
 - f. Telsco Industries; Weather-Matic Sprinkler Div.
 - g. Toro Co.; Irrigation Div.
 - h. Western Brass Works.
- B. Main Line Piping:
1. All main line piping shall be CI 200 PVC SDR 21 standard weight as manufactured by Cresline, or approved equivalent. All mainline shall be solvent weld. Pipe shall carry the N.S.F. seal of approval and meet the following specifications: ASTM 1120/1220, C.S. 256-63, or latest revisions.
 2. Hard Copper Tubing: ASTM B 88, Types L and M (ASTM B 88M, Types B and C), drawn-temper, water tube.
 3. PVC Pipe: ASTM D 1785, PVC 1120 compound, Schedules 40 and 80 as further specified.
 4. PVC Pressure-Rated Pipe: ASTM D 2241; PVC 1120 compound; SDRs 21, 26, and 32.5.
 5. PE Controlled OD Pipe: ASTM F 771 and ASTM D 3035, PE 3408 compound, DRs 9 and 11.

6. PE Controlled ID Pipe: ASTM F 771 and ASTM D 2239; PE 3408 compound; SIDRs 7, 9, 11.5, and 15.
- C. Pipe Fittings:
1. Cast-Copper Fittings: ASME B16.18, solder-joint, pressure fittings.
 2. Copper Unions: ASME B16.18, cast-copper-alloy body, hexagonal stock, with ball-and-socket joint, metal-to-metal seating surfaces, and solders joint, and threaded or solder-joint ends. Include threads complying with ASME B1.20.1.
 3. Wrought-Copper Fittings: ASME B16.22, solder-joint, pressure fittings.
 4. Cast-Bronze Flanges: ASME B16.24, Class 150, raised ground face, bolt holes spot faced.
 5. PVC Socket Fittings, Schedule 80: ASTM D 2467.
 6. PVC Threaded Fittings: ASTM D 2464.
 7. Transition Fittings: Manufactured assembly or fitting, with pressure rating at least equal to that of system and with ends compatible to piping where fitting is to be installed.
- D. Valves and Valve Specialties:
1. Cast-Iron Gate Valves: AWWA C500, cast-iron double disc, bronze disc, and seat rings or AWWA C509, resilient seated; bronze stem, cast-iron, or ductile-iron body and bonnet, stem nut, 200-psig (1380-kPa) working pressure; and ends that fit PVC pipe. Include elastomeric gaskets.
 2. Cast-Iron, Nonrising-Stem Gate Valves: MSS SP-70, Type I, solid wedge; nonrising stem and flanged ends. Include all bronze trim; Class 125, ASTM A 126, cast-iron body; and hand wheel.
 3. Cast-Iron, Rising-Stem Gate Valves: MSS SP-70, Type I, solid wedge; rising stem and flanged ends. Include all bronze trim; Class 125, ASTM A 126, cast-iron body; and hand wheel.
 4. Bronze, Nonrising-Stem Gate Valves: MSS SP-80, Type 1, solid wedge; nonrising, copper-silicon-alloy stem; Class 125, body and screw bonnet of ASTM B 62 cast bronze, with threaded or solder-joint ends. Include PTFE-impregnated packing, brass packing gland, and malleable-iron hand wheel.
 5. Bronze, Rising-Stem Gate Valves: MSS SP-80, Type 2, solid wedge; rising, copper-silicon-alloy stem; Class 125, body and screw bonnet of ASTM B 62 cast bronze, with threaded or solder-joint ends. Include PTFE-impregnated packing, brass packing gland, and malleable-iron hand wheel.
 6. Plastic Valves: PVC with 150-psig (1035-kPa) minimum pressure rating, ends compatible with piping, and tee handle.
 7. Bronze Diaphragm Valves: Cast-bronze body, normally closed, with manual flow adjustment, and operated by 24-V, ac solenoid.
 8. Plastic Diaphragm Valves: Molded-plastic body, normally closed, with manual flow adjustment, and operated by 24-V, ac solenoid.
 9. Automatic Drain Valves: Spring-loaded, ball valve of corrosion-resistant construction and designed to open for drainage if line pressure drops below 2-1/2 to 3 psig (17 to 20 kPa).
 10. Quick-Couplers: Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key. Include vandal-resistant, locking feature with two matching keys.
 11. Valve Boxes: Cast iron with top section and cover with lettering "WATER," bottom section with base to fit over valve, 5-inch- (127-mm-) diameter barrel, and adjustable cast-iron extension of length required for depth of bury of valve. Include steel tee-handle,

- shutoff rod with one pointed end, stem of length to operate valve, and end fitting valve operating nut.
12. Manual Control-Valve Service Boxes: Cast iron with telescoping top section of length required for depth of bury of valve. Include cover with lettering "WATER," bottom section with base of size to fit over valve, and 3-inch- (75-mm-) diameter barrel. Include valve key, 36 inches (915 mm) long with tee handle and key end to fit valve.
 13. Control-Valve Boxes: PE, ABS, fiberglass, polymer concrete, or precast concrete box and cover, with open bottom, openings for piping, and designed for installing flush with grade. Include size as required for valves and service.
 14. Drainage Backfill: Cleaned gravel or crushed stone, graded from 3 inches (75 mm) maximum to 3/4 inch (19 mm) minimum.
- E. Pump: Rated for the capacity required, voltage and phasing required by available power, overload protections, controller and disconnect switch.
- F. Identification: Solid blue film with metallic core and continuously printed black letter caption, "CAUTION – WATER LINE BURIED BELOW."

2.2 MATERIALS FOR GREEN ROOF WATER MANAGEMENT SYSTEM

- A. Refer to Division 15.

PART 3 - EXECUTION

3.1 SYSTEM DESIGN

- A. Lay out work as accurately as possible according to the Drawings. The Drawings, though carefully drawn, are generally diagrammatic to the extent that all offsets, fittings, and finished site conditions may not be shown.
- B. The water supply shall be a minimum of 40 psi at the point of connection. Verify said pressure before beginning the installation. Report any deviation between the said pressure and the specified pressure to the Owners authorized representative.
- C. Any major revisions to the water distribution system must be submitted to the Owner and answered in written form, along with any change in the contract price.

3.2 PREPARATION

- A. Water Supply: The water supply shall be from an existing service line. Install per local code and in accordance with the water purveyors requirements. Approximate locations shown on plan, verify in the field with Owners authorized representative.
- B. Layout: Set stakes to identify proposed quick couple locations.
- C. Confirm that pipe installation will not interfere with tree locations. See Drawings.
- D. Underground Utilities: It shall be the responsibility of the contractor to locate or have located all existing underground utilities, whether public or private, on that portion of the site which is affected by his work. Contractor will be responsible for the repair of any cuts which are made by him in these utilities.

3.3 TRENCHING AND BACKFILLING

A. General:

1. All excavation is considered unclassified excavation and includes all materials encountered. Comply with Section 02318.
2. Pulling, Excavating, and Trenching:
 - a. Perform all excavations as required for the installation of the work included under this section, including shoring of earth banks to prevent cave-ins. Excavate trenches of sufficient depth and width to permit proper handling and installation of pipe and fittings.
 - b. All pipe (2" and smaller) shall be pulled with a vibratory plow.
 - c. If trenching, trenches shall be wide enough to allow a minimum of 6" between parallel pipe lines. If pulling, the same lateral distance shall be observed.
 - d. Excavate to depths required to provide 2" depth of earth fill or sand bedding for pipe when rock or other unsuitable bearing material is encountered.
3. Underground Obstructions:
 - a. Any unforeseen underground obstructions which might be encountered during the installation shall be brought to the attention of the owner immediately and work on that portion of the installation shall be suspended.
 - b. Any additional expense involved in removing those obstructions or the re-routing of lines shall be submitted to the Owner in writing and approved prior to continuing the installation.
4. Excavate trenches and install piping and fill during the same working day. Do not leave open trenches or partially filled trenches open overnight.

B. Minimum Cover:

1. A minimum of 18" cover shall be held over all pipe s 1-1/2" and smaller and 30" cover for larger piping.

C. Backfill: Fill to match adjacent grade elevations with approved earth fill material. Place and compact backfill.

1. All mainline piping trenches in turf/bed areas shall be back-filled and compacted by mechanical means in 6" lifts to a minimum of 90% of the original density.
2. Provide approved earth fill or sand to appoint 4" above top of pipe.
3. Fill to within 6" of finish grade with approved excavated or borrow materials free of lumps or rocks larger than 3" in any dimension.
4. Provide clean topsoil fill free of any rocks or debris larger than 3/4" in diameter for top 6" of fill.
5. Remove all larger debris from the premises and to furnish any additional soil that may be necessary to level the trenches.
6. All disturbed areas are to be re-seeded / re-planted as specified by Owner's authorized representative.
7. Contractor shall be responsible for repair of any pipe trench settling which occurs during the first year after final acceptance by the Owner.
8. Where pipe is pulled into the ground, all domes will be compacted to original grade after pulling.

D. Pavements, Walks, and Other Paved Areas:

1. All mainline piping under any pavement (walks, roads etc.) and structures shall be installed in separate sleeves (min. Schedule 80 PVC) unless noted otherwise. Sleeves to be a minimum of 6" diameter, unless otherwise noted.
 2. Install piping and wiring in sleeves by boring or jacking under existing paving if possible. All piping under existing pavement and walkways will be bored or cut (as noted on plans and details) with appropriate equipment unless otherwise noted. Where roadway cuts are required, the asphalt is to be saw cut, the sleeve installed, and surface restored.
 3. All sleeving called for in the drawings shall be sized according to the drawings and/or general notes. If sleeving is necessary in areas other than shown on the drawings, than size two sizes larger than the pipe being sleeved. Sleeving shall be a minimum of Schedule 80 PVC material.
 4. All road/pavement cuts shall be backfilled according to the specified Section for that paving.
- E. Install warning tape directly above pressure piping, 12 inches (300 mm) below finish grades, except 6 inches (150mm) below subgrade under pavements and slabs.

3.4 PIPING APPLICATIONS

- A. General: Unless otherwise indicated, comply with requirements of the Local Plumbing Code.
1. Install components having pressure rating equal to or greater than system operating pressure.
 2. Piping in control valve boxes and aboveground may be joined with flanges instead of joints indicated.
- B. Aboveground and Interior Pressure Piping: Use the following:
1. 4-Inch NPS (DN100) and Smaller: Type M (Type C) hard copper tube, wrought- or cast-copper fittings, and soldered joints.
 2. 4-Inch NPS (DN100) and Smaller: Type L (Type B) hard copper tube, wrought- or cast-copper fittings, and soldered joints.
- C. Underground, Pressure Piping: Use the following:
1. 4-Inch NPS (DN100) and Smaller: Schedule 80 PVC pipe, Schedule 80 PVC socket fittings, and solvent-cemented joints.
 2. 4-Inch NPS (DN100) and Smaller: Schedule 80 PVC pipe, PVC threaded fittings, and threaded joints.
 3. 4-Inch NPS (DN100) and Smaller: SDR 21 PVC pressure-rated pipe, Schedule 80 PVC socket fittings, and solvent-cemented joints.
 4. 5-Inch NPS (DN125) and Larger: Schedule 80 PVC pipe, Schedule 80 PVC socket fittings, and solvent-cemented joints.
 5. 5-Inch NPS (DN125) and Larger: SDR 21 PVC pressure-rated pipe, Schedule 80 PVC socket fittings, and solvent-cemented joints.
- D. Circuit Piping: Use the following:
1. 2-Inch NPS (DN50) and Smaller: Schedule 40 PVC pipe, Schedule 40 PVC socket fittings, and solvent-cemented joints.
 2. 2-1/2- to 4-Inch NPS (DN65 to DN100): Schedule 40 PVC pipe, Schedule 40 PVC socket fittings, and solvent-cemented joints.
- E. Underground Branches and Offsets at Sprinklers and Devices: Schedule 80 PVC pipe, PVC threaded fittings, and threaded joints.

- F. Risers to Aboveground Sprinklers and Specialties: Type L (Type B) hard copper tube, wrought-copper fittings, and soldered joints.
- G. Risers to Aboveground Sprinklers and Specialties: Type M (Type C) hard copper tube, wrought-copper fittings, and soldered joints.
- H. Drain Piping: Schedule 40 PVC pipe, Schedule 40 PVC socket fittings, and solvent-cemented joints.
- I. Sleeves: Schedule 80 PVC pipe, Schedule 80 PVC socket fittings, and solvent-cemented joints.

3.5 VALVE APPLICATIONS

- A. Underground, Shutoff-Duty Valves: Use the following:
 - 1. 2-Inch NPS (DN50) and Smaller: Curb stop, with tee head, curb-stop service box, and shutoff rod.
 - 2. 3-Inch NPS (DN80) and Larger: Gate valve, with elastomeric gaskets and stem nut, valve box, and shutoff rod.
- B. Control Valves: Use the following:
 - 1. 2-Inch NPS (DN50) and Smaller: Bronze, nonrising-stem gate valve.
 - 2. 2-1/2- and 3-Inch NPS (DN65 and DN80): Cast-iron, nonrising-stem gate valve.
- C. Drain Valves: Use the following:
 - 1. 1/2- and 3/4-Inch NPS (DN15 and DN20): Plastic drain valve.
 - 2. 1- to 2-Inch NPS (DN25 to DN50): Bronze, nonrising-stem gate valve.

3.6 JOINT CONSTRUCTION

- A. PVC Piping Gasketed Joints: Construct underground joints between cast-iron valves and PVC pipe with elastomeric seals that fit pipe and valve ends. Use lubricant according to ASTM D 3139.
- B. Dissimilar Piping Material Joints: Construct joints using adapters or couplings that are compatible with both piping materials, outside diameters, and system working pressure.

3.7 PIPING INSTALLATION

- A. Locations and Arrangements: Drawings indicate location and arrangement of piping systems, which were used to size pipe and calculate friction loss, and other design considerations. Install piping as indicated, unless deviations are approved on Coordination Drawings.
- B. Install piping at uniform slope of 0.5 percent minimum, down toward drain valves.
- C. Install piping free of sags and bends. All trenches shall be snaked, or the pipe snaked within the trench to allow for expansion and contraction.
- D. Install groups of pipes parallel to each other, spaced to permit valve servicing.
- E. Install fittings for changes in direction and branch connections.

- F. Install unions adjacent to valves and final connections to other components with 2-inch NPS (DN50) or smaller pipe connection.
- G. Install flanges adjacent to valves and final connections to other components with 2-1/2-inch NPS (DN65) or larger pipe connection.
- H. Dielectric Protection: Install dielectric fittings to connect piping of dissimilar metals.
- I. Install underground thermoplastic piping according to ASTM D 2774 and ASTM F 690.
- J. Lay piping on solid subbase, uniformly sloped without humps or depressions.
- K. Install PVC piping in dry weather when temperature is above 40 deg F (4.4 deg C). Allow joints to cure at least 24 hours at temperature above 40 deg F (4.4 deg C) before testing, unless otherwise recommended by manufacturer.
- L. When pipe is pulled into the ground, all PVC pipe shall be solvent welded at least 24 hours before pulling.
- M. Install water regulators with shutoff valve and strainer on inlet and pressure gage on outlet. Install shutoff valve on outlet.
- N. Water Hammer Arresters: Install between connection to building main and circuit valves in valve box.
- O. A single strand of 14-1 wire, yellow in color, shall be run with all main line from the point of connection to the end of the main line. This single strand of wire shall be available for main line tracking.

3.8 VALVE INSTALLATION

- A. Underground Gate Valves: Install in valve box with top flush with grade.
- B. Install valves and PVC pipe with restrained, gasketed joints.
- C. Underground Curb Stops: Install in service box with top flush with grade.
- D. Underground, Manual Control Valves: Install in manual, control-valve service box.
- E. Control Valves: Install in control-valve service box.
- F. Drain Valves: Install in control-valve box.

3.9 COUPLER INSTALLATION

- A. Closing of Pipe and Flushing Lines:
 - 1. Cap or plug all openings as soon as lines have been installed to prevent the entrance of materials that would obstruct the pipe. Leave in place until removal is necessary for completion of the installation.
 - 2. Thoroughly flush out all main water lines before installing valves with full head of water.
- B. Install quick couple valves at manufacturer's recommended heights.

- C. Locate quick couple valves to maintain a minimum distance of 4 inches (100 mm) from walls and 2 inches (50 mm) from other boundaries, unless otherwise indicated.
- D. Carefully adjust valves to final position at proper height in relation to grade, so that housing will be flush with, or not more than 1/2 inch (13 mm) above, finish grade.

3.10 CONNECTIONS

- A. Connect piping to valves.
- B. Connect water supplies to piping with backflow preventers at connections to potable-water supplies.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- D. Ground electric-powered controllers, valves, and devices.
- E. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- F. Arrange for electric-power connections to components that require power. Electric power, wiring, and disconnect switches are specified in Division 16 Sections.

3.11 FIELD QUALITY CONTROL

- A. Testing: Hydrostatically test piping and valves before backfilling trenches. Piping may be tested in sections.
 - 1. Cap and test piping with static water pressure of 50 psig (345 kPa) above system operating pressure and without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for four hours.
 - 2. Repair leaks and defects with new materials and retest system or portion thereof until satisfactory results are obtained.

3.12 COMMISSIONING

- A. Starting Procedures: Follow manufacturer's written procedures. If no procedures are prescribed by manufacturers, proceed as follows:
 - 1. Verify that all components are installed and operate correctly.
 - 2. Verify that specified tests of piping are complete.
 - 3. Verify that components are correct type.
 - 4. Verify that damaged components are replaced with new materials.
 - 5. Verify that potable-water supply connections have backflow preventers.
 - 6. Energize circuits to electrical equipment and devices.
 - 7. Adjust operating controls.
- B. Operational Tests: Measure and record water flow rate and area coverage at each sprinkler. Adjust to achieve indicated values.

3.13 DEMONSTRATION

- A. Demonstrate to Owner's maintenance personnel operation of equipment, sprinklers, specialties, and accessories. Review maintenance information. Demonstrate that the system meets coverage requirements and that manual controls function properly.
- B. Provide seven days' advance written notice of demonstration.
- C. Personnel Training: Contractor shall be responsible for the training of as many personnel as the Owner shall deem necessary.
- D. Contractor shall furnish a complete operation and maintenance manual to the Owner's personnel.

3.14 ADJUSTMENT

- A. After completion of grading, seeding or sodding, if applicable, Contractor shall return to the job site to perform any final adjustments to the system which might be deemed necessary.
- B. The contractor will be responsible for any pressure testing and start up of the system when construction is complete. The contractor will also be responsible for the winterization of the system after the first season of operation, during the appropriate times of the year after final acceptance by the Owner as part of the training of the Owner's personnel.

END OF SECTION 02811

SECTION 02870

SITE FURNISHINGS

PART 1-GENERAL

1.1 SUMMARY:

- A. The work in this section includes fabrication and installation of the following items as shown on the Drawings and specified herein:
 - 1. Trash Receptacle
 - 2. Recycling Receptacle
 - 3. Bicycle Rack
 - 4. Plaza Bench
 - 5. Playground Bench
 - 6. Tree Grate and Frame
- B. Related Sections include the following:
 - 1. Division 2 Section 02300 "Earthwork"
 - 2. Division 2 Section 02513 "Portland Cement Concrete Paving"
 - 3. Division 2 Section 02520 "Precast Permeable Unit Pavers"
- C. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for the Project to obtain LEED Silver Certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this Section for more information.

1.2 QUALITY ASSURANCE:

- A. Shop Assembly: Preassemble in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinate installation.

1.3 SUBMITTALS:

- A. LEED Submittals:
 - 1. Product Data as required to show compliance with the following credits:
 - a. LEED MR Credit 4.1 and 4.2: Submit product data and certification letter indicating percentages by weight of post-consumer and pre-consumer content for products having recycled content. Include statement indicating costs for each product having recycled content.
 - b. LEED MR Credit 5.1 and 5.2: Submit product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest or recovery for each raw material and the fraction by weight that is considered regional.
 - c. LEED MR Credit 5.7: Submit product data for indicating that wood materials are FSC certified.
- B. See Section 01352 LEED Requirements and this Section for more information. Submit the Materials Credit Documentation Sheet attached to Section 01352 for products in the Section, including back-up documentation.
- C. General: Submit in compliance with Standard Terms and Conditions, "Submittals."

- D. Product Data: Submit manufacturers specifications and installation instructions for all products specified herein.
- E. Samples: Submit three samples for each type of finish indicated. Prepare samples on materials to be used in work. Where normal color and texture variations are to be expected, provide "range" samples showing limits of such variations.
 - 1. If requested, submit template for installation of fixtures to Architect.

1.4 QUALITY ASSURANCE:

- A. Installer: A single, pre-approved Contractor with a minimum of five years experience on comparable projects.
- B. Codes and Standards: Comply with local governing regulations to assure legal placement of furnishings. Notify Architect immediately, and prior to installation, should a discrepancy exist.
- C. Performance Requirements: Design and install the benches, brackets and attachments to sustain minimum 120 pound uniformly distributed load and 500 pound impact load applied in all directions at any location.

PART 2-PRODUCTS

2.1 MATERIALS:

- A. TRASH RECEPTACLE
 - 1. Forms + Surfaces Dispatch Litter Receptacle with a lid. Other manufacturer's products will be considered subject to meeting the performance criteria specified herein and as indicated on drawings.
 - 2. Receptacle shall be surface mounted as shown on the drawings.
 - 3. Receptacle shall have an Aluminum Texture body, Slate Texture powdercoat lid, and a brushed aluminum sign plate with black graphics.
 - 4. Two lid openings approximately 11.5" x 7" on each side of the lid.
 - 5. Liner: Independent, replaceable internal liner, by same manufacturer, designed to be used with or without plastic litter bag; made of durable black polyethylene with UL94HB fire rating. Provide one liner per each trash receptacle.
- B. RECYCLING RECEPTACLE
 - 1. Forms + Surfaces Dispatch Recycling Receptacle with a lid. Other manufacturer's products will be considered subject to meeting the performance criteria specified herein and as indicated on drawings.
 - 2. Receptacle shall be surface mounted as shown on the drawings.
 - 3. Receptacle shall have an Aluminum Texture body, Slate Texture powdercoat lid, and a brushed aluminum sign plate with black graphics.
 - 4. Beverage recycle insert has a 4.5" diameter round hole. 4 inserts total in the lid, one on each side.
 - 5. Liner: Independent, replaceable internal liner, by same manufacturer, designed to be used with or without plastic litter bag; made of durable black polyethylene with UL94HB fire rating. Provide one liner per each trash receptacle.
- C. BICYCLE RACK
 - 1. Landscape Forms Ring bike rack, standing 27 1/4" high (with 6" imbedded into concrete) and 25" wide. They shall be fabricated from 1.5" o.d. x .120" wall type 304 stainless

steel. Other manufacturer's products will be considered subject to meeting the performance criteria specified herein and as indicated on drawings.

2. Bike Rack shall be embedded as shown on the drawings
3. Bike Rack shall have electropolish finish on stainless steel in accordance with manufacturer's recommendations.

D. PLAZA BENCH

1. Forms + Surfaces Pacifica Bench, backless bench, 144" in length, with welded steel "D" armrest in 3 locations, seat is made from nominal 1.5" x 2.38" solid FSC certified Ipe wood slats and cross-members fitted together with tenoned joinery and Stainless Steel spacers. Frame and base plates are fabricated from Carbon Steel. Other manufacturer's products will be considered subject to meeting the performance criteria specified herein and as indicated on drawings.
2. Bench shall be surface mounted as shown on the drawings. 12 foot long bench uses 10" diameter round base plate and has three legs. Metal finish for base plates and legs will be standard powdercoat and black in color.
3. Wood surfaces have a natural oiled finish that enhances the Ipe wood's rich brown color. Ipe wood's appearance can be maintained by re-oiling approximately once a year with Penofin exterior oil finish; slats can also be left alone to weather to an attractive silver-gray patina.

E. PLAYGROUND BENCH

1. Forms + Surfaces Leda Bench, backless 4 seat curved bench with no arms, 96" in length. Legs and structure are all rustproof cast Aluminum with a durable powdercoat finish of Aluminum Texture. Wood slats are made from FSC certified Ipe wood; designed for heavy use in exterior public spaces. Other manufacturer's products will be considered subject to meeting the performance criteria specified herein and as indicated on drawings.
2. Bench shall be surface mounted as shown on the drawings. Four sections of the bench will be installed tightly together to create the circular bench.
3. Wood surfaces have a natural oiled finish that enhances the Ipe wood's rich brown color. Ipe wood's appearance can be maintained by re-oiling approximately once a year with Penofin exterior oil finish; slats can also be left alone to weather to an attractive silver-gray patina.
4. Legs and structure are Aluminum Texture color.

F. TREE GRATE ANED FRAME

1. Neenah Foundry Company R-8716 Boulevard Collection, cast gray iron ASTM A-48, class 35B, square 6' x 6' (72" x 72") tree grate and frame, 16" diameter expandable tree opening, 3/8" slot openings. Other manufacturer's products will be considered subject to meeting the performance criteria specified herein and as indicated on drawings.
2. Tree grate and frame finish shall not be painted.
3. Size: 6' x 6' square.

PART 3-EXECUTION

3.1 EXAMINATION:

- A. Contractor must examine the areas and the conditions under which all items are to be installed and notify the Owner's Representative in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the contractor.

3.2 PREPARATION:

- A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages such as sleeves, concrete inserts, anchor bolts and miscellaneous items having integral anchor which are to be embedded in concrete or masonry. Coordinate delivery of such items to project site.
- B. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay progress. Allow for adjustments during installation where taking field measurements before fabrication might delay work.
- C. Layout: Prior to installation of furnishing of footings and other anchoring devices, accurately layout the site furnishings by marking locations with chalk, stakes or appropriate marking devices for the Architect's review. The Architect may, at his option, require the Contractor to layout the actual assembled furnishing on the site prior to installation.
- D. Shop Assembly and Finish Work: To the extent possible, preassemble any items requiring assembly, and pre-finish any items requiring finishing, to minimize the work performed in the field.

3.3 INSTALLATION:

- A. Fit exposed connections accurately together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installation of site furnishings. Set work accurately in location, alignment and elevation plumb, level, true, non-rocking and free of rack, measured from established lines and levels. Do not weld, cut, or abrade surfaces of components which have been coated or finished after fabrication, and are intended for field connection by mechanical means without further cutting or fitting.
- C. Field Welding (if necessary): Comply with applicable AWS Specification for procedures of manual shielded metal-arc welding, for appearance and quality of welds made, and for methods used in correcting welding work. Weld connections which are not to be left as exposed joints but can not be shop welded because of shipping size limitations. Grind exposed joints smooth and touch up shop paint coat.

3.4 ADJUST AND CLEAN

- A. Protect finishes of all items from damage during construction period by use of temporary protective coverings approved by manufacturers. Remove protective covering at project completion or when directed by Owner's Representative. Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items which can not be refinished in the field to the shop; make required alterations and refinish entire unit or provide new units as required.
- B. Replacement: Remove from site and replace any furnishings which are nicked, broken, chipped, stained or otherwise damaged.
- C. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint; and paint exposed areas with same material. Surface preparation, prime coat, and finish coat to be in accordance with manufacturer's instructions.

Cps Control Rev: _____
Project Rev: B_01/27/09

- D. Protection: Protect furnishings from damage after installation until project is complete and accepted by owner.

END OF SECTION 02870

PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL

ADDENDUM NO. 02 TO CONTRACT NO. 1480
FOR

BRIGHTON PARK I AREA ELEMENTARY SCHOOL
3456 W. 38th Street
NEW CONSTRUCTION
PROJECT #05230

DATE: Thursday, February 19, 2009

NOTICE OF CHANGES IN CONTRACT DOCUMENTS

The following changes are hereby made in the Contract Documents.

CHANGES TO BOOK 3 - TECHNICAL SPECIFICATIONS:

- Change 1:** Section 02513 Portland Cement Concrete Paving, Page 02513-1, Part 1, Article 1.2 Submittals, Paragraph D, Sub-Paragraph 1, **ADD** a line item "b, Leed SS Credit 7.1 – Submit product data indicating compliance with solar reflectance index (SRI) of at least 29.
- Change 2:** Section 02515 Architectural Precast Concrete Pavers, Page 02515-1, Part 1, Article 1.2 Submittals, Paragraph A, Sub-Paragraph 1, **ADD** a line item "c. Leed SS Credit 7.1 – Submit product data indicating compliance with solar reflectance index (SRI) of at least 29.
- Change 3:** Section 02520 Precast Permeable Unit Pavers, Page 02520-1, Part 1, Article 1.2 Submittals, Paragraph A, Sub-Paragraph 1, **ADD** a line item "c. Leed SS Credit 7.1 – Submit product data indicating compliance with solar reflectance index (SRI) of at least 29.
- Change 4:** Section 02910 – Native Landscaping
- a. Page 02910-1, Part 1 General, 1.1 Summary, A. **DELETE** #3. Fescue Seeding.
 - b. Page 02910-2, Part 1 General, 1.3 Quality Assurance, A. **DELETE** "fescue". **REVISE** "and wildflowers".
 - c. Page 02910-3, Part 2 Products, 2.1 Plant Materials, B. **DELETE** #2 Plant List: Fescue Mix and chart with seed percentages.
 - d. Page 02910-3, Part 2 Products, 2.1 Plant Materials, C. Seeding Rates **DELETE** #2 Fescue Mix: Seed fescue mix at a rate of 250 pounds per acre.
 - e. Page 02910-3, Part 2 Products, **ADD** 2.2 Other Materials, A. Straw: Clean, weed-free, threshed straw of wheat, rye, oats, or barley.
- Change 5:** Section 02985 – Lawn
- a. Page 02985-4, Part 2 Products, 2.1 Materials, E. **ADD** #3. Seeding Rate: Seed fescue mix at a rate of 250 pounds per acre.
 - b. Page 02985-4, Part 2 Products, 2.1 Materials, E. **ADD** #4. Plant List: Fescue Mix – Provide certified seed mix of Fescuta varieties, proportioned by weight, with

**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

minimum percentages of purity, germination, and maximum percentages of weed seed, comparable to the following: **ADD** chart with seed percentages.

- Change 6:** Section 08710 – Door Hardware
- a. Page 08710-13, Hardware Set #1, **DELETE** "Auto Door Bottom" from the hardware set except for the following doors: A324 & A324a (in Music Room A-324)
 - b. Add "Automatic Door Bottom" to the hardware set for the following doors: B209a, B209b, B305a and B305b. (in Fan Room A-209 & B305).
 - c. Add "Astragal" for the following doors: B209a and B305a (in Fan Room A-209 & B305).

CHANGES TO DRAWINGS:

- Change 1:** **DELETE** Site Preparation Drawings SP2.0, SP3.0, SP4.0, SP4.1 and SP5.0 in their entirety and **REPLACE** with attached Drawings SP2.0, SP3.0, SP4.0, SP4.1 and SP5.0.
- Change 2:** **DELETE** Civil Drawings C0.1, C1.0, C2.0, C3.0, and C5.1 in their entirety and **REPLACE** with attached Drawings C1.0, C2.0, C3.0 and C5.1.
- Change 3:** Drawing L6.2, titled, "Green Roof Plan and Details and Plant Schedule"
- a. At "Green Roof Plant Schedule/L6.2 – Green Roof Plan and Details and Plant Schedule" **REVISE** schedule with 2 plant species change in Tray "C" section.
 - b. At "3/L6.2 – Bio Tray Planting Layout" **REVISE** Tray "C" plant layout.
- Change 4:** Drawing L7.1, titled, "Tree Planting Details"
- a. At "3/L7.1 – Shade Tree Planting with Low Profile Package" **ADD** note to read "See Notes 1 and 2 on Sheet L7.2".
 - b. At "3/L7.1 – Shade Tree Planting with Low Profile Package" **DELETE** note to read "Compact excavated soil around base of root ball to stabilize".
 - c. At "3/L7.1 – Shade Tree Planting with Low Profile Package" **REVISE** Uncompacted backfill soil hatch.
- Change 5:** Drawing L7.1, titled, "Tree Planting Details"
- a. At "6/L7.1 – Tree Planting on Slope" **REVISE** detail title.
 - b. At "6/L7.1 – Tree Planting on Slope" **REVISE** planting soil area on detail.
 - c. At "6/L7.1 – Tree Planting on Slope" **REVISE** mulch ring note to read, "6'-0" diam. Mulch ring with min. layer of shredded hardwood bark mulch
 - d. At "6/L7.1 – Tree Planting on Slope" **REVISE** dimension for mulch ring to read, 6'-0".
 - e. At "6/L7.1 – Tree Planting on Slope" **REVISE** detail by moving the underdrainage enlargement detail location
 - f. At "6/L7.1 – Tree Planting on Slope" **REVISE** planting soil note to read, "Planting soil, see note 1 and 2 on sheet L7.2".
- Change 6:** Drawing L7.1, titled, "Tree Planting Details"
- a. **ADD** "7/L7.1 – Grow Bag and Container Tree Planting Detail".
- Change 7:** Drawing L7.2, titled, "Tree Planting Details and Sections"

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BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

- a. **ADD** a note section containing additional planting soil information.
- b. **ADD** "4/L7.2 – Ornamental Tree Planting Detail".
- c. At "1/L7.2 – Evergreen Tree Planting Detail" **REVISE** planting soil and subgrade area on detail.
- d. At "1/L7.2 – Evergreen Tree Planting Detail" **ADD** note to read, "See note 1 and 2 on Sheet L7.2".
- e. At "1/L7.2 – Evergreen Tree Planting Detail" **REVISE** note to read, "Ground Anchor into Compacted Subgrade".
- f. At "2/L7.2 – Planting Section" **REVISE** planting soil area on detail.

- Change 8:** Drawing L7.3, titled, "Planting Details and Schedule"
- a. **ADD** notes to read, "6. All trees grown in "Grow Bags" must have all shipping materials including "Grow Bag" removed before planting". "7. Remove container from plant material and plant Wafer Ash as shown in detail 7 on sheet L7.1 in a 12'-0" diameter planting pit."
 - b. At "Planting Schedule/L7.3 – **REVISE** Wafer Ash from "Grow Bag" to container and 2'Ht.
 - c. At "Planting Schedule/L7.3 – **REVISE** Notes section in plant list for the "Grow Bag" plants to refer to the new notes added to the sheet.

- Change 9:** **DELETE** AS.1, titled "Site Plan" in their entirety and **REPLACE** with Drawing AS.1 attached.

- Change 10:** Drawing AS.2, titled "Enclosure Plans and Details" on plan drawing 1 "Trash Enclosure Plans". **DELETE** a note "Continuous 4"x 4"x 1/4" galv. angle to support metal grate". **REPLACE** with a note "W12x22 galv. steel beam on bearing plates, embed in wall and seal at penetration at wall face. See structural drawing 8/S5.1 for typical beam bearing detail".

- Change 11:** Drawing A12.1, titled "Door & Opening Schedules, Lite Schedule" on Door & Opening "Schedule First Floor Zone B". **REVISE** Hardware Set (HS) of Door B151a from HS 49 to HS 48. **REVISE** HS of Door B151c from HS 48 to HS 49.

- Change 12:** Drawing A14.2, titled "Enlarged Plans/Elevations Toilet Rooms" **ADD** "Bathroom Accessory Schedule" indicated in attachment ASK1.

- Change 13:** Drawing S.01, titled, "General Structural Notes" at "FOUNDATIONS", Note #2, **DELETE** "OR CA-7"

- Change 14:** Sheet S1.1.A, titled "FIRST FLOOR/FOUNDATION PLAN - ZONE A" **REVISE** Pier 15 to Pier 1 at Grid 2A. The size and reinforcement at this location remains unaffected.

- Change 15:** Sheet 1.1A, titled "FIRST FLOOR/FOUNDATION PLAN - ZONE A" **REVISE** Pier Schedule, Pier 15 to 44"x44" pier and reinforcement to 16-#9.

- Change 16:** Sheet 1.1B, titled "FIRST FLOOR/FOUNDATION PLAN - ZONE B" **ADD** Pier 15 to Grid Line 12B, call top of pier elevation,

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BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

ADD Section mark 6A/S3.3 at door opening.

- Change 17:** Sheet S3.3, titled, "TYPICAL FOUNDATION DETAILS"
ADD Note to section 3/S3.3.
- Change 18:** Sheet S3.3, titled, "TYPICAL FOUNDATION DETAILS"
ADD Note to section 6/S3.3,
REVISE Section title to read 6A, 6/S3.3
- Change 19:** Sheet M5.1, Title "Mechanical Equipment Schedules"
DELETE one of the two same Air Condensing Unit Schedule,
REPLACE with "Condensing Boiler Schedule" as shown in the attached M5.1 sheet.

QUESTIONS & ANSWERS:

- Q1.** Please provide Condensing Boiler Schedule.
A1. Condensing Boiler Schedule has been added to M5.1 sheet. Refer to Change 17 of addendum #2.
- Q2.** Detail 1 on sheet S4.4 shows an L5 x 3 ½ x 5/16" stiffeners welded to the beam. What is the spacing of these stiffeners? The same detail shows 2L's 3 x 3 x ¼" kickers. What is the spacing of these kickers?
A2. The 2L 3x3 kickers are located in the framing plans as K2. L5x3 ½ stiffeners are at all locations where there are kickers.
- Q3.** On the enlarged floor plans (i.e. A1.1A) under the General Notes, General Note A indicated that a "two wythe" wall is needed in order to provide the same "surface texture" within the classrooms. The un-ground face of the Ground Face Units (i.e. the back side) has a similar texture to regular masonry units, and once painted no difference in "surface texture" can be noted. Please let us know if we can use a single wythe wall in lieu of what General Note A indicates.
A3. Provide a two wythe wall as indicated in General Note A within classrooms.
- Q4.** On the Door schedule, based on the HS and notes, doors B151a and B151b both call for automatic operators. It appears only door B151C should be automated. NOTE: Ns calls for automation and hardware site (HS) 49 calls for automation. SH48 doesn't. Which is correct?
A4. Only door B151c to have automatic door openers. Door B151a and B151b to be operated manually. Refer to Change 11.
- Q5.** Can you tell us who the owner of the adjacent railroad tracks would be? An Address would also be helpful to be sure to get the Railroad Protective Policy.
A5. The name of the railroad is Canadian National contact information:
Linda Armbruster
Canadian National
Phone: 708 332-3959

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- Q6.** Request for Substitution for Section 16555 Stage Lighting.
A6. No substitutions will be accepted.
- Q7.** Product Substitution Request for Section 12660 Telescoping Bleachers
(Already approved mfr for 11490)
A7. No substitutions will be accepted.
- Q8.** Will you be accepting alternates on the site furnishings? I can let you know that we do curved benches but not in wood, so they would be steel.
A8. No substitutions will be accepted.

ATTACHMENTS:

- Book 3, V1 Section 02910 – Native Landscape (5 pages)
Book 3, V1 Section 02985 – Lawn (7 pages)
Book 3, V1 Section 08710 – Door Hardware (22 pages)
Drawings SP2.0, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings SP3.0, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings SP4.0, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings SP4.1, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings SP5.0, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings C1.0, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings C0.1, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings C2.0, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings C3.0, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings C5.1, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings L6.2, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings L7.1, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings L7.2, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings L7.3, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings AS.1, dated, 02.09.09 (1 page, 30" x 42" format)
Drawings ASK 1 Bathroom Accessory Schedule, dated, 02.09.09 (1 page, 8.5" x 11"format)
Drawings SSK-01, dated, 02.09.09 (1 page, 8.5" x 11"format)
Drawings SSK-02, dated, 02.09.09 (1 page, 8.5" x 11"format)
Drawings SSK-03, dated, 02.09.09 (1 page, 8.5" x 11"format)
Drawings SSK-04, dated, 02.09.09 (1 page, 8.5" x 11"format)
Drawings SSK-05, dated, 02.09.09 (1 page, 8.5" x 11"format)
Drawings M5.1 Mechanical Equipment Schedules (1 page, 30" x 42" format)

END OF ADDENDUM NO.2

SECTION 02910
NATIVE LANDSCAPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section covers: All native landscaping work indicated on drawings or otherwise required for completion of project. Work includes, but is not limited to, the following:
 - 1. Soil preparation prior to seeding native vegetation.
 - 2. Low - Profile prairie seeding.
- B. Related Section: The following contains requirements related to this Section:
 - 1. Division 2 Section 02900 "Landscaping" for topsoil, ornamental plants, landscape underdrainage, and miscellaneous landscaping work.
 - 2. Section 02318: Backfill, Topsoil, Environmental Requirements.
- C. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for the Project to obtain LEED Silver Certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this Section for more information.

1.2 SUBMITTALS

- A. LEED Submittals:
 - 1. Product Data as required to show compliance with the following credits:
 - a. LEED MR Credit 4.1 and 4.2: Submit product data and certification letter indicating percentages by weight of post-consumer and pre-consumer content for products having recycled content. Include statement indicating costs for each product having recycled content.
 - b. LEED MR Credit 5.1 and 5.2: Submit product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest or recovery for each raw material and the fraction by weight that is considered regional.
- B. See Section 01352 LEED Requirements and this Section for more information. Submit the Materials Credit Documentation Sheet attached to Section 01352 for products in the Section, including back-up documentation.
- C. Qualifications Statements: Indicating background and capabilities of firm and relevant educational and professional experience of key personnel. Installer shall list at least five references for native landscaping projects completed by the firm in the past five years similar in type and size as this Project. Each reference will include the name of the firm for which the installation was performed, address of project site, and name and current telephone number of contact person.

- D. **Planting Schedule:** Indicating anticipated low-profile prairie seeding dates for each area of site, fully coordinated with all landscape, construction and earthwork activities.
- E. **Materials:** Prior to delivery of any materials to the site, submit to the Owner's Representative and Landscape Architect a complete list of all seed to be used during this portion of the work. Include complete data on source, quantity and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Owner's Representative.
- F. **Equipment:** Prior to commencement of any work, submit to Owner's Representative and Landscape Architect a written description of all mechanical equipment and intended uses during execution of the work.
- G. **"As-built" Plans:** After the work is complete submit to the Owner's Representative "as-built" plans including a listing of all species installed, and quantities installed. Mark in red ink on original planting plan any field changes or deviations from original plans.
- H. **Prairie Establishment and Management Program:** Describing maintenance and management practices to be performed during first four years following installation to ensure proper establishment.

1.3 QUALITY ASSURANCE

- A. **Installer Qualifications:** The work shall be performed by a single firm specializing in native mesic prairie work, with a minimum of five years of experience in seeding native grasses, and wildflowers. Firm shall have a verifiable record of successful installations similar in type and size to that indicated for this Project.
- B. **Installer's Field Supervisor:** Installer shall assign one full-time supervisor, thoroughly familiar with the types and operation of equipment being used, who shall be present at all times during execution of this portion of the work. Said supervisor shall direct all work performed under this section.
- C. **Standards:** All materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. All seed shall be free from insects and disease. Species shall be true to their scientific name as specified.
- D. **Observations:** Owner will retain qualified Prairie Specialist to observe the prairie areas at end of first, second and fourth growing seasons after provisional acceptance to determine if seeding and planting work meets or exceeds stated performance criteria. Installer shall pay for Prairie Specialist fee and expenses.
- E. **Establishment of Prairie Areas:** Maintain prairie areas as required until final acceptance. Water plantings as required to maintain an adequate supply of moisture within root zone without over-watering. During the first growing season, mow weeds on a regular basis to keep weeds in check. Use flail-type mowers that deposit mowed material uniformly over mowed area. Sickle bar and rotary-type

mowers are unacceptable. All stubble from first-year mowings shall be left in place at end of season as an insulating blanket during the winter; do no mow prairie level to the ground at end of first season. Perform other maintenance as required.

PART 2 - PRODUCTS

2.1 PLANT MATERIALS

- A. Sources: All low-profile prairie seed shall have a biologic origin within 300 miles of the Project site.
- B. Seed Mixes: Shall be provided according to the seed mix Plant List on the Drawings, proportioned by weight and planted at the per-acre rates indicated. All grass species shall be supplied as pure live seed. Submit to Owner's Representative lab germination test results. Species shall be true to their scientific name as specified.
 - 1. Plant List: Low-Profile Prairie Seed Mix
- C. Seeding Rates:
 - 1. Low-Profile Prairie Seed Mix: Seed prairie mix at rate recommended by seed supplier.

2.2 OTHER MATERIALS

- A. Straw: Clean, weed-free, threshed straw of wheat, rye, oats, or barley.

PART 3 - EXECUTION

3.1 SOIL PREPARATION

- A. Topsoil: Refer to Section 02900, Paragraph 2.2 B, for information about on-site topsoil test results and to specification Section 02318 for environmental requirements. Coordinate with Landscape Contractor any amendment applications indicated by tests and topsoil placement for native vegetation areas.
 - 1. Topsoil shall be placed in lifts uniformly over all native vegetation areas to provide a minimum topsoil thickness of 18 inches.
- B. Soil Preparation: Following topsoil placement, till or perform other operations necessary to ensure a proper growing medium for specified native mix. Prior to seeding and planting, check compaction of topsoil (0-12" depth) and subsoil (12-18" depth).
 - 1. Soils shall not have a measured compaction greater than five pounds per square inch, as measured by Lang or Cone penetrometer, at time of seeding or planting unless otherwise stated on plans or in specifications. If penetrometer readings are greater than five pounds per square inch, disc, rotovate, and/or chisel plow said areas as necessary to reduce compaction.
 - 2. Re-check soil compaction as described above after tillage. Repeat treatment until penetrometer readings are less than five pounds per square inch.

3. The Contractor shall submit a written report including test locations and penetrometer readings at Owner's Representative's request.
 4. Remove all foreign matter larger than one inch in any dimension from areas to be seeded and/or planted.
 5. After soil preparation is complete, clean up any remaining materials, debris, trash, etc. Repair any damages caused during soil preparation work. Avoid driving over prepared areas to minimize additional compaction.
- C. Observation: After completion of soil preparation work, Installer shall schedule with the Owner's Representative an observation of soil preparation for final acceptance.
- D. Final Acceptance: Soil preparation work shall be considered 100% complete after Owner's Representative has observed the work and Installer has performed all remedial clean-up and repair work as may be required as a result of observation.

3.2 NATIVE SEEDING

- A. Seeds shall have proper stratification and/or scarification to break seed dormancy for spring planting. All legumes shall be inoculated with proper rhizobia at appropriate time prior to planting.
- B. Seeding shall be conducted in early spring as soon as the soil is free of frost and in a workable condition, but no later than June 15. Fall dormant seeding will not be permitted without prior written approval of Owner's Representative.
- C. All seed shall be preferentially installed with a rangeland-type grain drill or no-till planter, such as by Truax, or equivalent approved in writing by Owner's Representative. If soil is too wet or other conditions prohibit use of preferred planters, a mechanical broadcast seeder, such as by Cyclone, shall be used. Hand broadcasting of seed may also be employed. Immediately following broadcast seeding, said areas shall be rolled or dragged perpendicular to the slope.
- D. Within 24 hours of seeding, spread and crimp straw for erosion control onto all seeded areas at a rate of 2,000 pounds per acre. Straw shall be clean, weed-free, threshed straw of wheat, rye, oats, or barley.
- E. If area to be seeded was treated with herbicide, seeding shall occur no less than 14 days after herbicide application.
- F. Keep site free of debris. After seed installation is complete, clean up any remaining materials, debris, trash, etc.; remove any tools, equipment, and all debris generated by Installer; and repair any damages caused during completion of seeding work. Avoid driving over seeded areas to minimize disturbance.

3.3 ACCEPTANCE AND GUARANTEE

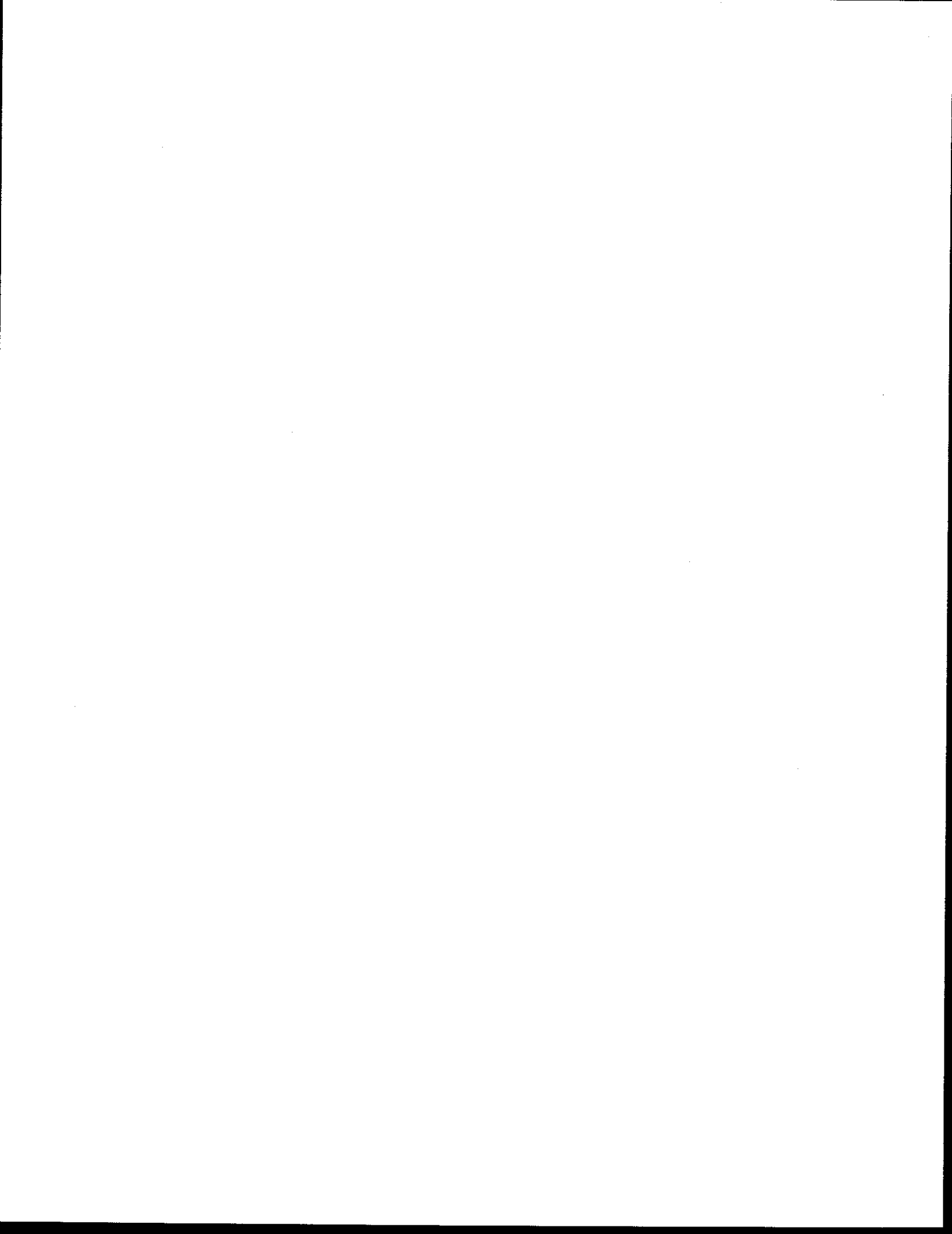
- A. Observation: After completion of seeding, Installer shall schedule with Owner's Representative an observation of seeding work for provisional acceptance.

- B. Provisional Acceptance: Seeding work shall be considered 90% complete after all seed and mulch has been installed, Owner's Representative has observed the work, and Installer has performed all remedial clean-up, removal and repair work as may be required as a result of observation.

- C. Final Acceptance and Guarantee: Seeding work shall be considered 100% complete after Installer has met or exceeded performance criteria below, and completed all clean-up, removal, and repair work as may be required.
 - 1. Seeded areas will meet or exceed the following performance criteria, as determined by Prairie Specialist, by end of first growing season after provisional acceptance:
 - a. Seventy-five percent (75%) overall plant cover,
 - b. No area of 10 square feet or larger with less than 50% plant cover,
 - 2. Installer shall guarantee seeded areas will meet or exceed the following performance criteria, as determined by Prairie Specialist, by end of second growing season after provisional acceptance:
 - a. Eighty percent (80%) overall plant cover,
 - b. No area of 10 square feet or larger with less than 50% plant cover,
 - c. Five percent (5%) cover by planted native grass/sedge species,
 - d. Ten percent (10%) cover by planted forb species, and
 - e. Representative individual live plants of 25% of species observed.
 - 3. Installer shall guarantee seeded areas will meet or exceed the following performance criteria, as determined by Prairie Specialist, by end of fourth growing season after provisional acceptance:
 - a. Ninety-five (95%) overall plant cover,
 - b. No area of 10 square feet or larger with less than 50% plant cover,
 - c. Twenty percent (20%) cover by planted native grass/sedge species,
 - d. Forty percent (40%) cover by planted forb species, and
 - e. Representative individual live plants of 50% of species observed.

- D. Replacements: All defective areas which do not conform to the above standards for guarantee shall be immediately re-seeded, re-planted and re-mulched with specified materials.

END OF SECTION 02910



SECTION 02985

LAWN

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: Lawn work as indicated and as specified.
- B. Related sections:
 - 1. Division 2 Section 02300 “Earthwork”
 - 2. Division 2 Section 02811 “Water Distribution System”
 - 3. Division 2 Section 02900 “Landscaping”
 - 4. Division 2 Section 02910 “Native Landscaping”
- C. The materials in this Section are part of the overall USGBC “Leadership in Energy and Environmental Design” LEED prerequisites and credits needed for the Project to obtain LEED Silver Certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this Section for more information.

1.2 QUALITY ASSURANCE

- A. LEED Submittals:
 - 1. Product Data as required to show compliance with the following credits:
 - a. LEED MR Credit 4.1 and 4.2: Submit product data and certification letter indicating percentages by weight of post-consumer and pre-consumer content for products having recycled content. Include statement indicating costs for each product having recycled content.
 - b. LEED MR Credit 5.1 and 5.2: Submit product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest or recovery for each raw material and the fraction by weight that is considered regional.
- B. See Section 01352 LEED Requirements and this Section for more information. Submit the Materials Credit Documentation Sheet attached to Section 01352 for products in the Section, including back-up documentation.
- C. Sod:
 - 1. For sod, comply with State and Federal laws with respect to inspection for plant diseases and insect infestation.
 - 2. Sod installation shall be performed by personnel experienced in lawn installation procedures.
 - 3. Provide on-site, full-time qualified foreman representing Contractor during sod installations.
- D. Ability to Deliver:
 - 1. Investigate sources of supply and confirm they can supply materials in quantity, variety, and quality noted and specified before submitting bid.

2. Failure to take this precaution will not relieve responsibility for furnishing and installing these materials in accordance with Contract documents without additional expense to Owner.
- E. Inspection:
1. Architect may inspect sod at source before cutting. Such inspection shall be in addition to inspection at job site.
- F. Seed: Obtain from seed supplier a statement which certifies that all seed is pure live seed, guaranteed to be true to name and varieties specified.

1.3 SUBMITTALS

- A. Samples and Analyses:
1. Submit samples, certificates for fescue sod and fescue seed, and certified analyses by approved laboratory for fertilizer, and limestone before delivery to project.
 2. Manufacturer's analysis for standard products will be acceptable.
 3. Approval of samples will not be construed as final acceptance. Architect may have samples taken of materials delivered to site of work and analyzed for compliance with specifications.
- B. Prior to end of maintenance period, furnish two copies of written maintenance instructions and care of installed lawn areas.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect materials against weather-related damage or other injuries occurring during transit and job storage in such manner that their effectiveness will not be impaired.
- B. Deliver fertilizer to site in unopened, original containers, each bearing name and address of manufacturer, name brand, or trademark, and manufacturer's guaranteed analysis. Do not use fertilizer which becomes caked or otherwise damaged. Do not expose fertilizer to weather prior to delivery on site and after delivery until used. Protect fertilizer and do not store in direct contact with ground.
- C. Sod:
1. Protect and maintain during transit or storage onsite as necessary to ensure vigorous growth after placement.
 2. Inform Architect 24 hours in advance of delivery of sod. Each shipment shall be accompanied by an invoice from vendor giving quantity and certifying that sod received meets requirements as contained in these specifications, together with analysis of seed from which sod was grown. Provide copy of invoice to Architect upon delivery of sod.
 3. Remove from site and dispose of, in legal manner, sod remaining on site unplaced after 48 hours, without extra cost to Owner. Remove from site and dispose of in legal manner any yellowing or otherwise discolored sod without extra cost to Owner.

- D. Seed: Seed shall be delivered in the original sacks received from the producer, and each sack shall be tagged in accordance with the Agricultural Seed Laws of the United States and local state ordinances. Store per supplier's or manufacturer's recommendation.

1.5 PROTECTION

- A. Protect existing property and improvements within this site and adjacent property.
- B. Repair damage created by operations or those of subcontractors.

1.6 JOB CONDITIONS

- A. Wherever landscape work is executed in conjunction with construction of other work, coordinate schedule that will permit execution of landscape work.
- B. Weather: Do not sow seed or hydroseed during high winds.

PART 2 -- PRODUCTS

2.1 MATERIALS

- A. Topsoil: Refer to Section 02900.
- B. Fertilizer:
 - 1. Commercial fertilizer uniform in composition, free flowing, and suitable for application with distribution equipment.
 - 2. Contain minimum basis percentage by weight of:
 - a. Prior to Sodding (6-24-24):

Nitrogen	6%
Phosphorous	24%
Potash	24%
 - b. After Sodding (18-5-9):

Nitrogen	18%
Phosphorous	5%
Potash	9%
 - c. One-quarter of nitrogen shall be in form of nitrates, one-quarter in form of ammonia salts, and one-half in form of organic nitrogen.
 - d. Available phosphoric acid shall be derived from super-phosphate having minimum guaranteed analysis of 20% available phosphate or bone meal.
 - e. Potash shall be in form of sulphate of potash.
 - f. Make up balance of fertilizer of nonharmful materials normally present in such product and free from dust, sticks, sand, stone or other harmful debris.
- C. pH Adjustment: Refer to Section 02900 for required pH adjustment to soil.
- D. Fescue Sod:
 - 1. Fresh cut, live, nursery grown sod having well matted roots.

2. Root zone shall be of good, fertile, natural mineral soil free from stones and debris.
3. Peat sod will not be acceptable.
4. Rhizomatous turf fescue mixture and containing no bent or quack grass or other noxious weed growth.
5. Sod Sections: Standard in size (18 in. wide by 6 ft in length) not less than 1-1/2 in. thick, strong enough to support its own weight and retain its size and shape when suspended vertically from firm grasp on upper 10% of section.
6. Mowed at least twice with final mowing not more than 7 days before being cut and lifted.
7. Obtain sod from nurseries having growing conditions similar to job site.
8. Schedule sod cutting and delivery so that sod may be placed within 48 hours of cutting.

E. Fescue Seed:

1. All grass seed shall be pure live seed shall be guaranteed by the vendor in writing to be true to name and variety.
2. All grass seed shall be obtained from local sources which occur in USDA Zone 5A or Zone 4, USDA Plant Hardiness Zone Map, January 1990 edition.
3. Seeding Rate: Seed fescue mix at a rate of 250 pounds per acre.
4. Plant List: Fescue Mix – Provide certified seed mix of Festuca varieties, proportioned by weight, with minimum percentages of purity, germination, and maximum percentages of weed seed, comparable to the following:

<u>Proportion</u>	<u>Name</u>	<u>Min. Pct. Germ.</u>	<u>Min. Pct. Pure Sd.</u>	<u>Max. Pct. Weed Sd.</u>
25 pct.	Hard Fescue	85	98	0.50
25 pct.	Chewings Fescue	85	98	0.50
25 pct.	Sheep Fescue	85	98	0.50
15 pct.	Dawson Red Fescue	85	98	0.50
10 pct.	Creeping Red Fescue	85	98	0.50

F. Water:

1. Existing water supply from hose bibs at the project building may be used for all planting operations.
2. Provide hose and equipment necessary for proper watering of plant material.

G. Wood Stakes:

1. Wood lath or similar material, minimum of 10-1/2 in. long, pointed at one end.

H. Hydroseed Slurry: A slurry shall be prepared consisting of seed, fertilizer and Wood Cellulose Fiber, tinted light green in color with nontoxic dye. Paper fibers are not acceptable.

I. Straw: Clean, weed-free, threshed straw of wheat, rye, oats, or barley.

PART 3 -- EXECUTION

3.1 INSPECTION

- A. Examine areas and conditions under which lawn work is to be performed and notify Architect in writing of conditions detrimental to proper and timely completion of work.
- B. Do not begin site preparation until boulders, debris, and similar materials have been removed; depressions and ruts filled; and entire area has been shaped, trimmed and finished uniformly to lines, grades, and cross-sections shown on drawings.
- C. Do not proceed with work until unsatisfactory conditions have been corrected.
- D. Verify location of underground utilities with appropriate sources. Contact D.I.G.G.E.R. (312)744-7000, at least 48 hours before commencing with construction. Repair damaged utilities.

3.2 SITE PREPARATION

- A. Place topsoil to a depth of 12 inches beneath lawn areas. Place topsoil in 6 inch lifts. Compact each lift to the extent necessary to prevent settlement.
- B. Finish Grading:
 - 1. Provide smooth continual grades without dips and pockets where water may stand.
 - 2. Correct surface irregularities produced by preceding operations or by any other cause.
 - 3. Finish grades and earth mounds shall be approved by Architect prior to lawn construction.
- C. Tilling:
 - 1. Prepare areas to depth of approximately 3 in. by disking, harrowing or other approved means.
 - 2. Areas shown on drawings which are too small to make these operations practicable shall receive special scarification prior to final tilling.
 - 3. Continue tilling until soil condition is suitable for lawn construction.
- D. Cleanup:
 - 1. After completion of tilling operations, clear surface of stones, stumps, roots, brush, wire, grade stakes, construction materials, and other objects which hinder planting, installation, and maintenance operations.
 - 2. Keep adjacent paved areas clean.
 - 3. Remove and dispose of soil or other materials that have been brought to surface off-site in legal manner.
- E. Fertilizer Spreading:
 - 1. Use mechanical spreader wherever practicable.
 - 2. 20 lbs of active ingredients per 1,000 sq. ft.
 - 3. Spread uniformly in two passes at right angles to each other.
 - 4. Incorporate fertilizer into soil to depth of 2 in. by disking, harrowing or other methods which produce similar results.

3.3 SODDING

- A. Planting Season for Sod Installation:
 - 1. March 15 to June 15.
 - 2. August 15 to November 15.
 - 3. Weather conditions within season shall govern actual planting periods.
 - 4. Seasons may be extended upon approval by Architect, however, such time extensions shall not change Contractor's responsibility for establishing healthy appearing and vigorous growing turf.

- B. Site Conditions:
 - 1. Scarify and cultivate ground until surface is smooth, friable and of uniformly fine texture immediately before laying of sod.
 - 2. Surface on which sod is to be laid shall be firm and free from depressions, to allow for positive drainage.
 - 3. During periods of high temperature, lightly moisten soil immediately prior to laying sod.

- C. Laying Sod:
 - 1. Handle and lay sod by hand.
 - 2. Lay first row of sod in straight line. Place subsequent rows parallel to and tightly against each other.
 - 3. Stagger lateral joints.
 - 4. Do not stretch or pull to distort length as cut in field.
 - 5. Butt joints together tightly in order to prevent voids which would cause air drying of sod roots, and weed growth.
 - 6. On sloping areas (3:1 or greater), lay sod parallel to slope contours, stagger lateral joints, and secure sod with wood stakes at minimum of four stakes per sq yd and at least one per piece of sod.
 - a. Drive stakes with flat side against slope and 10 in. into ground leaving approximately 1/2 in. above grade.
 - b. Begin sod laying on sloping areas at toe of slope.
 - 7. Water sod immediately after installation to prevent excessive drying during progress of work.
 - 8. Rework disturbed joints or depressions to conform to proper grade.
 - 9. Roll sod to achieve a uniform smooth surface.

- D. Edging: All edges of sodded areas shall have blended smooth lines with no notches, bumps, or blips in line of edge.

3.4 SEEDING

- A. The seasons for seeding or hydroseeding turf shall be from workable ground conditions, from approximately April 15 through May 15; and from September 1 through October 1.

- B. Site Conditions:
 - 1. Scarify and cultivate ground until surface is smooth, friable and of uniformly fine texture immediately before hydroseeding.
 - 2. Surface shall be firm and free from depressions, to allow for positive drainage.
 - 3. During periods of high temperature, lightly moisten soil immediately prior to hydroseeding.

C. Hydroseeding:

1. Use hydraulic equipment equivalent to that of Hydro-Turf Model 900.
2. Calibrate seeders to apply seed at supplier's recommended rates.
3. Spray a uniform coat of homogenous slurry over area to be hydroseeded, including all areas of natural vegetation which have been disturbed by the construction process.
4. Apply in multiple operations if required and operate equipment so as to accomplish complete coverage.
5. Do not over-spray.
6. After hydroseeding, and within 24 hours of seeding, spread and crimp straw for erosion control onto all seeded areas at a rate of 2,000 pounds per acre.
7. Immediately water seeded areas.

3.5 MAINTENANCE AND ACCEPTANCE

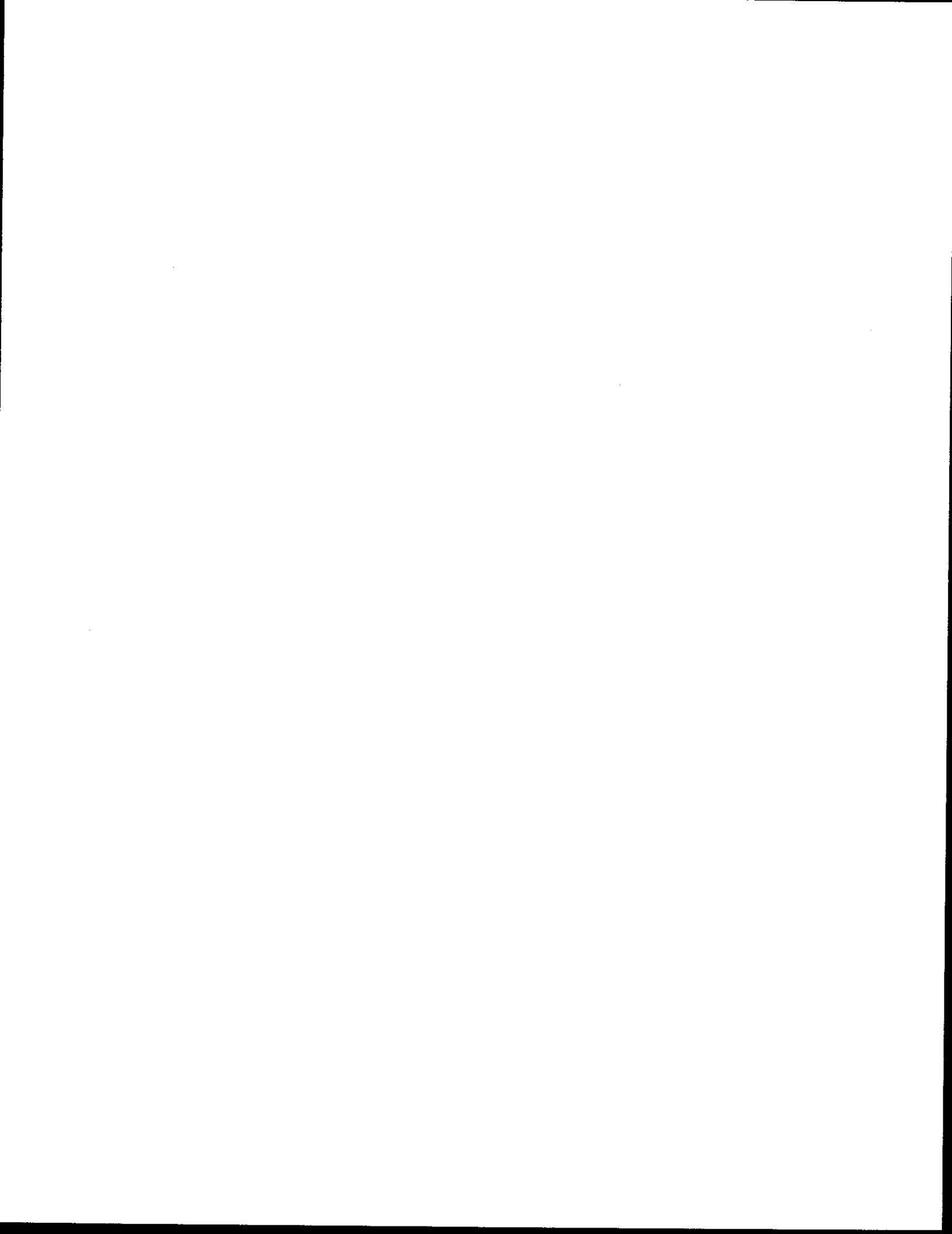
A. Required Maintenance:

1. Maintain sodded and seeded areas, including watering, until substantial completion of the project.
2. Mowing:
 - a. Mow after grass has reached an average height of 3 in.
 - b. Mow to maintain grass at height of 2 to 2-1/2 in.
 - c. Do not remove more than 1/3 of leaf blade by mowing.
3. Fertilizer Spreading:
 - a. Fertilize after completion of second mowing.
 - b. 15 lbs of active ingredients per 1,000 sq ft (650 lbs/acre).
 - c. Use mechanical spreader where practicable.
 - d. Spread uniformly in two passes at right angles to each other.
4. Reworking:
 - a. Re-sod grass areas which are dead, or in unhealthy, unsightly or badly impaired condition using same type and source of sod, and installed in accordance with procedures herein specified without extra cost to Owner.
 - b. Repeat as necessary until areas display acceptable stand of grass.

B. Acceptance: Final acceptance will be granted upon conformance with following:

1. Turf shall be reasonably free from weeds, diseases, or other visible imperfections.
2. Turf shall display uniform color, quality, and coverage.
3. Performed two mowings.
4. Performed fertilizing operation after mowing.

END OF SECTION



SECTION 08710
DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Finish hardware as required and as specified.
- B. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for Project to obtain LEED Silver certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this section for more information.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturers' technical product data for each item of hardware. Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.
- B. LEED Submittals:
 - 1. Product Data as required to show compliance with the following credits:
 - a. LEED Credit MR 4.1 and Credit MR 4.2: Submit product data for products having recycled content indicating percentages by weight of post-consumer and pre-consumer recycled content.
 - 1) Include statement indicating cost for each product having recycled content.
 - b. LEED Credit MR 5.1 and Credit 5.2: Submit product data for products that have been extracted, harvested, or recovered, as well as manufactured within 500 miles of the Project site.
 - 1) Include a statement indicating the percentage by weight which is extracted, harvested, or recovered within 500 miles of the Project site.
 - 2. See Section 01352 LEED Requirements and this Section for more information. Submit Materials Credit Documentation Sheet attached to Section 01352 for products in this section, including back-up documentation.
- C. Hardware Schedule: Submit finish hardware schedule in a vertical format separate from door and frame schedule, conforming to "Sequence and Format for the Hardware Schedule" published by the Door and Hardware Institute (DHI). Horizontal and coded schedules are not acceptable.
 - 1. Finish Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Schedules not having the following information will be rejected:
Type, style, function, size and finish of each hardware item.

- a. Name and manufacturer of each item.
 - b. Fastenings and other pertinent information.
 - c. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
 - d. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
 - e. Mounting locations for hardware.
 - f. Door and frame sizes and materials.
2. All hardware for Aluminum doors shall be grouped and segregated from other hardware in the schedule, and may be processed separately. Only the portion of hardware schedule pertaining to Aluminum doors and frames should be forwarded to the aluminum door contractor.
 3. Submit schedule at earliest possible date, particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) that is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule. Review and acceptance by the Owner or Architect does not relieve Contractor of responsibility to fulfill requirements of Contract Documents.
- D. Samples: Prior to submittal of the final hardware schedule and prior to final ordering of finish hardware, submit one sample of each type of exposed hardware unit, finished as required, and tagged with full description for coordination with schedule.
1. Samples may be retrieved by the supplier. Units that are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of operation, be used in the work, within limitations of keying coordination requirements.
- E. Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check shop drawings of such other work, to confirm that adequate provisions are made for proper location and installation of hardware.
- F. Keying Schedule: Submit keying schedule after meeting with Owner's agent for keying instructions.
- G. Electrified Hardware Coordination: Where electric strikes, magnetic locks, low energy door operators are listed, provide power supplies by the device manufacturer and wiring diagrams for all items, whether listed in the sets or not. Provide elevations of each system showing locations for each item and description of system operation. Coordinate with electric contractor.
- 1.3 QUALITY ASSURANCE
- A. Manufacturer: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from only one manufacturer, although several may be indicated as offering products complying with requirements.
- B. Supplier: A recognized architectural finish hardware supplier, with warehousing facilities, who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or employs an experienced architectural hardware consultant who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor.

- C. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80 and local building code requirements. Provide only hardware that has been tested and listed by UL or FM or WHI for types and sizes of doors required and complies with requirements of door and door frame labels.
 - 1. Exit Devices: Where required on fire-rated doors (with supplementary marking on doors' UL, FM, or WHI labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL, FM, or WHI label on exit devices indicating "Fire Exit Hardware".
 - 2. Fire exit devices and door closers shall be certified to be in compliance with UBC7.2 and UL 10C.

1.4 PREINSTALLATION CONFERENCE:

- A. Conduct preconstruction conference at the project site in compliance with requirements of Division 1 Section "Project Management and Coordination.
- B. Contractor shall notify hardware supplier two weeks prior to beginning of hardware installation to set up pre-installation meeting with installation carpenters. Hardware supplier shall provide a qualified Architectural Hardware Consultant to personally meet with, and instruct installers on job site in proper techniques for installation and adjustment of locks, closers and exit devices, and advise on required wire types and gauges for access control/electrical locking hardware.
 - 1. Lock, Door Closer and Exit Device Manufacturer's representative shall be available for a post installation walk and punch list assistance on behalf of the General Contractor, Architect and Owner.
 - 2. Review electrical roughing-in and preparatory work.
 - 3. Review construction keying and final keying.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Tag each item or package separately, with identification related to final hardware schedule, and include basic installation instructions with each item or package.
- B. Inventory hardware jointly with representatives of the hardware supplier and the hardware installer until each is satisfied that the count is correct.
- C. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.
- D. Provide secure lock-up for hardware delivered to the project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after installation.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. LEED Requirements: Provide at least 90% recycled steel content steel sections produced within 500 miles of the site.

2.2 SCHEDULED HARDWARE

- A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of door hardware item is indicated in the Schedule of Hardware sets.
- B. **Manufacturer's Product Designations:** A manufacturer's symbol in the hardware sets indicates whose product designation is used in the Schedule of *Hardware Sets* for purposes of establishing minimum requirements. Provide either the product designated, or, where more than one manufacturer is listed, the comparable product of one of the other manufacturers that comply with requirements including those specified elsewhere in this section.
- C. ANSI/BHMA designations used elsewhere in this section or in schedules to describe hardware items or to define quality or function are derived from the following standards. Provide products complying with these standards and requirements specified elsewhere in this section.
 - 1. Butts and Hinges: ANSI/BHMA A156.1
 - 2. Locks & Lock Trim: ANSI/BHMA A156.13
 - 3. Exit Devices: ANSI/BHMA A156.3
 - 4. Door Controls - Closers: ANSI/BHMA A156.4
 - 5. Auxiliary Locks: ANSI/BHMA A 156.5
 - 6. Architectural Door Trim: ANSI/BHMA A156.6
 - 7. Template Hinge Dimensions: ANSI/BHMA A156.7.
 - 8. Door Controls - Overhead Holders: ANSI/BHMA A156.8
 - 9. Closer Holder Release Devices: ANSI/BHMA A156.15
 - 10. Auxiliary Hardware: ANSI//BHMA A156.16
 - 11. Materials & Finishes: ANSI/BHMA A156.18
 - 12. Power Assist and Low Energy Operated Door: ANSI/BHMA 156.19
 - 13. Thresholds: ANSI/BHMA A156.21
 - 14. Door Gasketing Systems: ANSI/BHMA A156.22
 - 15. Continuous Hinges: ANS/BHMA 156.26

2.3 MATERIALS AND FABRICATION, GENERAL

- A. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement shown.
- B. **Manufacturer's Name Plate:** Do not use manufacturer's products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates), except in conjunction with required UL labels and as otherwise acceptable to Architect.
- C. Manufacturer's identification will be permitted on rim of lock cylinders, and armor front.
- D. **Base Metals:** Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser quality than specified for the applicable hardware units by applicable ANSI A156 series standard for each type hardware and with ANSI A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.
- E. **Fasteners:** Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

- F. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.
- G. Provide concealed fasteners for hardware units that are exposed when door is closed, except to extent no standard units of the type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on the opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work. In such cases, provide sleeves for each thru-bolt or use sex screw fasteners.

2.4 HARDWARE FINISHES

- A. Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if no latch- lock sets) for color and texture.
- B. Provide finishes that match those established by BHMA as indicated in the hardware schedule or, if none indicated, match the finish to which the item is applied.
- C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for the applicable units of hardware by referenced standards.
- D. Finish Designations: Scheduled designations refer to ANSI A156.18 "Materials & Finishes Standard", including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

2.5 HINGES, BUTTS

- A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template- produced units.
- B. Screws: Furnish Phillips flat-head or machine screws for installation of units, except furnish Phillips flat-head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.
- C. Hinge Pins: Except as otherwise indicated in the hardware schedule, provide hinge pins as follows:
 - 1. Material: Stainless steel pins.
 - 2. Exterior Doors: Non-removable pins (NRP).
 - 3. Interior Doors: Non-removable pins (NRP).
 - 4. Tips: Flat button and matching plug, finished to match leaves.
 - 5. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.
 - 6. All hinges shall be ball bearing type.

7. Provide safety stud and locking hole for hinges where scheduled.
- D. Manufacturer, (Butts): Subject to compliance with requirements, provide products of one of the following:
 1. Butts and Hinges:
 - a. Bommer Industries.
 - b. Hager Hinge Co.
 - c. Ives; Ingersoll-Rand Co.
 - d. McKinney Mfg. Co.; Assa Abloy Co.
 - e. PBB, Inc.
 - f. Stanley Hardware
- E. Manufacturer, (Geared Continuous Hinges): Provide products having UL listed units equal to or better than the rating of the opening of one of the following manufacturers:
 1. ABH, Inc. 4240HD series
 2. Hager/Roton 780-224-HD series
 3. Ives 224HD series
 4. Pemko FMHD series
 5. Select Products SL-24-HD series
 6. Stanley 520 series
 7. Zero 914DB series

2.6 LOCK CYLINDERS AND KEYING

- A. General: Supplier shall meet with Owner to finalize keying requirements and obtain final instructions in writing. Comply with Owner's instructions for master keying and except as otherwise indicated, provide individual change key for each lock which is not designed to be keyed alike with a group of related locks.
- B. Standard System: Except as otherwise indicated, provide new master key system for project. The following is standard system for keying hierarchy per CPS MASTER KEY ORGANIZATION.
 1. Great grand master
 2. Grand master: Principal and Building Engineer.
 3. Sub Master for the following areas and conditions:
 - a. Exterior doors
 - b. Special Rooms: Including rooms such auditorium, gymnasium and special use classrooms.
 - c. Single User Keys: Teacher's classroom key
- C. All cylinder cores shall be keyed at the factory by the cylinder manufacturer where records will be established and maintained.
- D. Provide construction cores and keys during the construction period. Construction control and operating keys and cores shall not be part of the Owner's permanent key system or be furnished on the same key way as the Owner's permanent key system. Permanent core and keys shall be furnished by the hardware supplier direct to the Contractor as specified in part 3 All cylinders shall be not less than six (6) pin interchangeable core and keyed into a new factory registered Grand Master Key System with a restricted key way.

- E. Permanent keys shall be stamped with the key system symbol (VKC). Do not mark the keys with the cylinder biting. Permanent cores shall be marked with the key system symbol in such a manner that the mark is not visible when the core is installed in the cylinder (CVKC).
- F. Except where otherwise specified, locksets, cylinders and cores shall be by the same manufacturer, to assure proper operations.
- G. During construction, all cylinder cores shall be keyed alike. The Contractor shall receive three (3) copies of this key. Under no circumstances shall the Contractor receive any of the permanent building master keys or changes keys. The construction master key shall operate on no less than six (6) pins.
 - 1. Quantity of Keys:
 - a. 3 Great Grand Master
 - b. 3 Grand Master Keys
 - c. 3 Master Keys
 - d. 3 Keys per lock or cylinder
 - e. 50 key blanks
 - f. 3 Control keys
- H. Provide two key control systems, including envelopes, labels, tags with self locking key clips, receipt forms, 3-way visible card index, temporary markers and standard metal cabinet, all as recommended by system manufacturer with capacity for 150% of the number of locks required for the project.
 - 1. The hardware supplier shall set up complete cross index system and place keys on markers and hooks in the cabinet as determined by the final key schedule.
- I. Provide two hinges type wall mounted key cabinets for the above system to be installed as directed by the Owner.

2.7 LOCKS, LATCHES AND BOLTS

- A. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set.
 - 1. Foot Bolts: Provide dust-proof strikes, except where special threshold construction provides non-recessed strike for bolt.
 - 2. Roller Strikes: Provide where recommended by manufacturer of the latch and lock units.
- B. Mortise Locks:
 - 1. Locks shall have all functions available in one size case, manufactured from heavy gauge steel, minimum thickness 3/32", completely chrome plated for corrosion resistance and lubricity of parts. Cases shall be closed on all sides to protect internal parts. Locks shall have adjustable, beveled and armored fronts, secured with spanner head security screws. Standard 2-3/4" backset convertible from one function to another, with a full 3/4" throw two-piece, or approved one-piece anti-friction latch bolt and 1" throw dead bolt with hardened steel insert and available for a minimum door thickness of 1-3/4". Internal parts shall be heavy gauge steel, zinc dichromate-plated and nickel steel hubs.
 - 2. All locksets with latch bolts, regardless of trim, shall be listed by UL for A and lesser labeled doors, single or pairs.
 - 3. Lock trim shall be solid stainless steel levers with wrought rose, through bolted through the lock case to assure correct alignment.

4. Lockset shall conform to, and be certified as meeting, ANSI A156.13 Grade 1 requirements.
 5. Subject to compliance with specifications, provide one of the following:
 - a. Best Lock; Stanley Works, Inc. 35H-14H series
 - b. Corbin Russwin; Assa Abloy Co. ML2200 LSA series
 - c. Falcon Lock Co. M series, KG series
 - d. Sargent; Assa Abloy Co. 8200 LNJ series
 - e. Schlage; Ingersoll-Rand Co. L9000-93 series
 - f. Yale Security; Assa Abloy Co. CRR 8700FL series
- C. Exit Devices:
1. Surface applied rim, mortise and vertical rod exit devices shall be available as a complete series, listed in UL "Accident Equipment List-Panic Hardware" and "Fire Exit Hardware". All devices shall be the modern push type. These devices shall have met Performance Test Requirements in accordance with ANSI Standard A156.3 for Grade 1 exit devices. All exit devices shall be furnished with thru-bolts and sex nuts. Provide cylinder dogging for all devices except "Fire Exit Devices"
 2. Rim exit device for single doors and pairs of doors with fixed or removable mullions shall be equipped with one of the following type of latch bolts, deadlocking, guarded or square bolt with a minimum 3/4" throw.
 3. All rim exit devices for pairs of doors with fixed or removable mullion shall have two-piece interlocking stabilizer blocks installed above and below the latch case.
 4. Exit devices shall be the type, function, and design as listed in the schedule of finish hardware sets and shall have a manufacturer's warranty of five (5) years.
 5. Removable Mullions:
 - a. Constructed of 2 inch by 3 inch steel tubing prepared to receive the required strike plates.
 - b. The top mounting shall be self-locking key removable type.
 - c. Provide a wall mounted storage mount for each mullion by the same manufacturer.
 - d. Provide stainless steel bottom floor fitting.
 - e. Provide stabilizers above and below each exit device latch case.
 - f. Provide factory applied paint finish conforming to ANSI/BHMA 689.
 6. Subject to compliance with specifications, provide one of the following:
 - a. Dorma; Dorma Co. 9000 Series
 - b. Monarch Mfg Co. 18 series
 - c. Precision; Prevision Co. Apex Series
 - d. Sargent; Assa Abloy Co. 80 Series
 - e. Yale Security; Assa Abloy Co. 7000 Series
 - f. Von Duprin; Ingersoll-Rand Co. 98 Series
- D. Multi-Point Lock: Three point lock.
1. Description: Three 1/2" x 1" solid steel bolts with 3/4" throw; 16 gauge galvanized steel case; 12 gauge plated steel strikes; 3" backset.
 2. Function: Levers on both sides of lock. Turning lever retracts bolts in unison. Bolts are held retracted and are released when door closes.
 3. Acceptable Product/Manufacturer: Lock 301C; Wm. J. Perkinson Co., Inc.

2.8 PUSH/PULL UNITS

- A. Concealed Fasteners: Provide manufacturer's special concealed fastener system for installation; through-bolted for matched pairs, but not for single units. Pulls to have 2-½" clearance from face of the door to the underside of the pull.
- B. Acceptable Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Rockwood
 - 2. Hager
 - 3. H B Ives
 - 4. Trimco
 - 5. Hiawatha

2.9 CLOSERS AND DOOR CONTROL DEVICES

- A. Closers shall be rack and pinion construction with both rack and pinion of heat treated steel and with a cast iron or cast aluminum case. Closing the door will be controlled by 2 valves, one to control closing speed and one to control latching speed. Closers shall be regularly furnished with fully adjustable backcheck allowing approximate 70 degrees backcheck on both regular and parallel arm closers. Delayed action shall be available. Valves shall be concealed against unauthorized adjustment and non-critical needle valve type. Spring power adjustment shall be standard with an adjustment size 1 to size 6. Closers shall be surface applied with rectangular metal covers, void of manufacturers' trademarks. All door closers intended to be mounted to the door shall be furnished with thru-bolts and sex nuts.
- B. Closers shall be certified as meeting the ANSI A156.4 Grade 1 requirements, be listed by UL for all classes of labeled doors and shall have a manufacturer's warranty of ten (10) years.
- C. Size of units: Except as otherwise specifically indicated, comply with the manufacturers recommendations for size of door control unit depending upon size of door, exposure to weather and anticipated frequency of use.
 - 1. Provide heavy duty arms.
 - 2. Provide spring cushion stops on parallel arm closers.
 - 3. Provide heavy duty dead stop parallel arms on doors equipped with electric hold open/release devices.
 - 4. Provide all necessary plates, brackets, arms and shoes required for proper installation of closer.
- D. Acceptable Manufacturers:
 - 1. Dorma 8900 Series
 - 2. Dor-O-Matic, SC70 series
 - 3. LCN 4040 Series
 - 4. Norton 7500 Series
 - 5. Sargent 281 Series
- E. Door Holder/Release: Provide electric holder/release meeting the requirements of ANSI Standard A156.15.
 - 1. Holder/release: Surface, wall-mounted
 - 2. Door Armature: Cast aluminum furnished with Through-bolted and sex nuts with the projection required for wall and door conditions. Armatures requiring rod or tube

extensions are not acceptable. Where required to make contact, provide shims of the same material and shape as the armature base.

3. Electric boxes, conduit and wiring to be provided under Division 16.
4. Voltage to be as required under Division 16.
5. Acceptable manufacturers:
 - a. LCN SEM7800 Series and SHE Series
 - b. Sargent 1500 Series
 - c. Rixson 900 Series

2.10 DOOR TRIM UNITS

- A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, viewers, knockers, mail drops and similar units); either machine screws or self-tapping screw.
- B. Door protection plates will be stainless steel 18-8 type 302, 0.050" thick, beveled three sides with vertical finish grain.

2.11 STOP AND HOLDERS

- A. Provide wall mounted door stops and wall mounted door stop and holders as required to protect the wall and door lever.
 1. Wall door stops: BHMA Type L52261
 2. Door Holders, Interior Doors: BHMA Type L1191
 3. Door Holders, Exterior doors: BHMA Type L11271
- B. Acceptable Manufacturers:
 1. Rockwood Mfg. Co.
 2. Lock Manufacturer
 3. Hager
 4. Architectural Builders Hardware (ABH)
 5. Trimco

2.12 THRESHOLDS, WEATHER SEALS AND RAIN DRIPS

- A. Provide thresholds and weather seals on all exterior doors as scheduled.
- B. Acceptable Manufacturers:
 1. National Guard Products
 2. Pemko
 3. Hager
 4. Zero
 5. Reese

2.13 SOUND GASKETING

- A. Head and Jamb Seals: Provide screw adjustable units surface applied with resilient seal in extruded aluminum enclosure with natural anodized finish, 0.062-inch minimum thickness of walls and flanges. Provide solid neoprene conforming to MIL R 6855, Class II, Grade 40; flexible, hollow bulb.

- B. Provide surface-mounted automatic door bottom with extruded aluminum enclosure and solid neoprene double seal hollow bulb.
 - C. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. National Guard Products
 - 2. Pemko
 - 3. Reese Enterprises
 - 4. Zero International, Inc.
- 2.14 ASTRAGALS
- A. Overlapping Astragal: Surface-mounted steel astragal 1/2 " x 2" with flat head screws.
 - B. Overlapping Astragal: Provide overlapping astragal consisting of contacttype neoprene insert and aluminum housing.
 - 1. Extruded aluminum with natural anodized finish; 0.062" minimum thickness of main walls and flanges.
 - 2. Solid neoprene wiper or sweep seal strip, MIL R 6055, Class II, Grade 40.
 - C. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. National Guard Products
 - 2. Pemko
 - 3. Reese Enterprises
 - 4. Zero International, Inc.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mounting Locations: As indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, and "ADA Accessibility Guidelines for Buildings and Facilities", except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect.
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division-9 sections. Do not install surface-mounted items until finishes have been completed on the substrate.
- C. Install door hardware units using fasteners provided by the manufacturer as specified.
 - 1. Hinges: Phillips flat head wood screws into wood Phillips flat head machine screws into metal.
 - 2. Exit devices: Through bolts and sex nuts.
 - 3. Closers Through bolts and sex nuts.
 - 4. Door holder/release; armature mounted with through bolts and sex nuts.

- D. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- E. Drill and countersink units that are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- F. Set thresholds for exterior doors in full bed of butyl- rubber or polyisobutylene mastic sealant. Thresholds shall be notched or coped to fit around removable mullions.
- G. Removable mullion sill brackets shall be secured to the concrete floor with approved fasteners and anchors.
- H. Hardware shall be installed with the fasteners and anchors provided by the manufacturer of that hardware item.

3.2 ADJUSTMENT, CLEANING AND KEYING

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Permanent cores and keys shall be delivered by the hardware supplier directly to the contractor at the keying meeting. The contractor and representative of the hardware supplier shall jointly install the permanent cores in the presence of the Owner's agent who shall receive the keys. Hardware supplier shall return the construction cores and construction keys to the manufacturer.
- D. Tools and instructions: At the time of keying the hardware supplier shall provide a complete set of specialized tools and maintenance instructions and shall instruct the Owner's agent in the proper maintenance.
- E. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
 - 1. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.
- F. Continued Maintenance Service: Approximately three months after the acceptance of hardware in each area, the Installer, accompanied by the representative of the latch and lock manufacturer, shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures. Replace hardware items that have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware.

3.3 SCHEDULE OF FINISH HARDWARE SETS

A. Provide finish hardware for each door to comply with requirements of this Section, hardware set numbers indicated on Door Schedule and the schedule of hardware sets on drawings.

B. Manufacturer's function and catalog numbers used in the hardware sets are identified by the following symbols.

- | | |
|---|----|
| 1. Hager Hinge Co. | H |
| 2. Yale Security | Y |
| 3. LCN Closers | L |
| 4. Glynn Johnson | G |
| 5. Rockwood Mfg. Co | R |
| 6. Architectural Builders Hardware Products | A |
| 7. Von Duprin | V |
| 8. Pemko | P |
| 9. Larco | LA |
| 10. Wm J. Perkinson | WP |
| 11. Du Seung | D |

FINISH HARDWARE SETS.

HARDWARE SET # 1

HINGES	BB1279 4 ½ X 4 ½	HA	652
CLASSROOM LOCK	8808-2FL (F32)	Y	630
CLOSER	4041 EDA	L	689
KICK PLATE	15" X 2" LDW	R	630
WALL DOOR STOP	WS406/407CCV	I	630
DOOR SEAL	322SN	P	628
AUTO DOOR BOTTOM	430RL	P	628

NOTE: PROVIDE AUTOMATIC DOOR BOTTOM (PEMKO 430RL) AT DOORS A324 AND A324a.

HARDWARE SET # 2

HINGES	BB1279 4 ½ X 4 ½	HA	652
PASSAGE LATCH	8801FL (FO1)	Y	630
OVERHEAD STOP	410S	GLY	630

HARDWARE SET # 3

HINGES	BB1279 4 ½ X 4 ½	HA	652
STOREROOM LOCK	8805 FL (FO7)	Y	630
DOOR CLOSER	4041	L	630
WALL DOOR STOP	WS406/407CCV	G	630

NOTE: KNURL OUTSIDE LEVER ON ELECTRICAL/ELEVATOR ROOMS.

NOTE: PROVIDE AUTOMATIC DOOR BOTTOM (PEMKO 430RL) AT DOORS B209b.

HARDWARE SET # 4

HINGES	BB1279 4 ½ X 4 ½	HA	652
CLASSROOM LOCK	8808FL (F05)	Y	630
DOOR CLOSER	4041-EDA H	L	689
KICK PLATE	15" X 2" LDW	R	630
WALL DOOR STOP	WS406/407CCV	I	630

HARDWARE SET # 5

HINGES	BB1279 4 ½ X 4 ½	HA	652
STORE ROOM LOCK	8805FL (FO7)	Y	630
DOOR CLOSER	4041 SPRING-CUSH	L	689
KICK PLATE	15" X 2" LDW	R	630

NOTE: KNURL OUTSIDE LEVER ON ELECTRICAL/ELEVATOR ROOMS

HARDWARE SET # 6

HINGES	BB1279 4 ½ X 4 ½	HA	652
STOREROOM LOCK	8805FL (FO7)	Y	630
FLUSH BOLTS	555	R	626
DOOR CLOSERS	4041 EDA	L	689
KICKPLATES	15" X 1" LDW	R	630
DUST PROOF STRIKE	570	R	626
WALL DOOR STOP	WS406/407CCV	I	630

NOTE: PROVIDE AUTOMATIC DOOR BOTTOM (PEMKO 430RL) AND ASTRAGAL AT DOORS B209a.

HARDWARE SET # 7

HINGES	BB1279 4 ½ X 4 ½	HA	652
CLASSROOM LOCK	8808FL (FO5)	Y	630
DOOR CLOSER	4041	L	689
KICKPLATE	15" X 2" LDW	R	630
WALL DOOR STOP	WS406/407CCV	I	630

HARDWARE SET # 8

GEARED HINGES	780-224-HD-UL-STUD	HA	TBS
EXIT DEVICES	9827L-F-LBR-994L (NL FUNCTION)	V	630
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSERS	4041 CUSH	L	689
KICKPLATES	15" X 1" LDW	R	630
WALL DOOR STOPS	WS406/407CCV	I	630

THRESHOLD	626S 5"	HA	---
WEATHERSTRIP	2891-S HEAD	P	TBS
WEATHERSTRIP	303-S JAMBS	P	TBS
SWEEP	345-P	P	TBS
DRIP CAP	346	P	TBS

HARDWARE SET # 9

HINGES	BB1279 4 ½ X 4 ½	HA	652
CLASSROOM LOCK	8808FL (FO5)	Y	630
DOOR CLOSER	4041 EDA	L	689
KICK PLATE	15" X 2" LDW	R	630
WALL DOOR STOP	WS406/407CCV	I	630

HARDWARE SET #10

HINGES	BB1279 4 ½ X 4 ½	HA	652
STOREROOM LOCK	8805FL (FO7)	Y	630
SEMI AUTO FLUSH BOLTS	1845 OR 1945	R	626
DUSTPROOF STRIKE	570	R	626
COORDINATOR	1600 SERIES W/CLOSER BRACKET	R	600
DOOR CLOSER	4041	L	689
ELEC.HOLDER/RELEASE	SEM 7800 SERIES	L	689
KICK PLATE	15" X 1" LDW	R	630

HARDWARE SET # 11

HINGES	BB1279 4 ½ X 4 ½	HA	652
CLASSROOM LOCK	8808FL (FO5)	Y	630
DOOR CLOSER	4041 SPRING-CUSH	L	689
KICK PLATE	15" X 2" LDW	R	630

HARDWARE SET # 12

HINGES	BB1279 4 ½ X 4 ½	HA	652
CLASSROOM LOCK	8808FL (FO5)	L	630
WALL DOOR STOP	WS406/407CCV	I	630

HARDWARE SET # 13

HINGES	BB1279 4 ½ X 4 ½	HA	652
CLASSROOM LOCK	8808FL (FO5)	Y	630
SEMI AUTO FLUSH BOLTS	1845 OR 1945	R	626
DUSTPROOF STRIKE	570	R	626
COORDINATOR	1600 SERIES W/CLOSER BRACKET	R	600
DOOR CLOSER	4041 EDA	L	689

ELEC.HOLDER/RELEASE	SEM 7800 SERIES	L	689
KICK PLATE	15" X 1" LDW	R	630

HARDWARE SET # 14

HINGES	BB1168 4 ½ X 4 ½	HA	652
INDICATOR DEADBOLT	D871	F	626
INTRUDER LOCK	8812-2FL (F34)	Y	630
DOOR CLOSER	4041	L	689
WALL DOOR STOP	WS406/407CCV	I	630
KICK PLATES	15" X 2" LDW	R	630
MOP PLATE	15" X 1" LDW	R	630

HARDWARE SET # 15

HINGES	BB1279 4 ½ X 4 ½	HA	652
PASSAGE LATCH	8801 FL (F01)	Y	630
KICK PLATE	15" X 2" LDW	R	630
WALL DOOR STOP	WS406/407CCV	I	630

HARDWARE SET # 16

HINGES	BB1279 4 ½ X 4 ½	HA	652
STOREROOM LOCK	8805FL (F07)	Y	630
KICK PLATE	15" X 2" LDW	R	630
OVERHEAD STOP	410S	GLY	630

HARDWARE SET # 17

GEARED HINGES	780-224-HD-UL-STUD	HA	652
EXIT DEVICES	9827L-F-LBR-994L	V	630
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSERS	4041 EDA	L	689
KICKPLATES	15" X 1" LDW	R	630
ELEC.HOLDER/RELEASE	SEM 7800 SERIES	L	689

HARDWARE SET # 18

HINGES	BB1279 4 1/2 X 4 1/2	HA	652
PRIVACY LOCK	8802FL (F19 OR F22)	Y	630
WALL DOOR STOP	WS 406/407 CCV	I	630

NOTE: KINDERGARDEN ROOMS, PROVIDE PASSAGE LATCH 8701FL (F01)

HARDWARE SET # 19

HINGES	BB1279 4 ½ X 4 ½	HA	652
STOREROOM LOCK	8805FL (FO7)	Y	630
FLUSH BOLTS	555	R	626
DOOR CLOSERS	4041 SPRING-CUSH	L	689
KICKPLATES	15" X 1" LDW	R	630
DUST PROOF STRIKE	570	R	626
OVERHEAD STOPS	410S	GLY	630

HARDWARE SET # 20

HINGES	BB1168 4 ½ X 4 ½	HA	652
INTRUDER LOCK	8812-2FL (F34)	Y	630
DOOR CLOSER	4041 EDA	L	689
WALL DOOR STOP	WS406/407CCV	I	630
KICK PLATES	15" X 2" LDW	R	630

HARDWARE SET # 21

CYLINDER/CYLINDERS OR PAD LOCK AS REQUIRED
BALANCE OF HARDWARE BY THE DOOR MANUFACTURER.

HARDWARE SET # 22

GEARED HINGES	780-224-HD-UL-STUD	HA	TBS
EXIT DEVICES	98L-F-994L	V	630
DOOR CLOSERS	4041	L	689
CYLINDERS	AS REQUIRED	Y	626
KICKPLATES	15" X 1" LDW	R	630
WALL DOOR STOP	WS406/407CCV	I	630
SOUND SEAL	322SN	P	628
AUTO DOOR BOTTOM	430RL	P	628

HARDWARE SET # 23

GEARED HINGES	780-224-HD-UL-STUD	HA	TBS
EXIT DEVICES	9827L-F-LBR-994L	V	630
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSERS	4041 EDA	L	689

ELEC.HOLDER/RELEASE	SEM 7800 SERIES	L	689
KICK PLATES	15" X 1" LDW	R	630

HARDWARE SET # 24

GEARED HINGE	780-224-UL-STUD	HA	TBS
EXIT DEVICE	98L-2-F-994L	V	630
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSER	4041 EDA	L	689
WALL DOOR STOP	WS406/407CCV	I	630
KICK PLATES	15" X 2" LDW	R	630

HARDWARE SET # 25

GEARED HINGE	780-224-UL-STUD	HA	TBS
EXIT DEVICE	98L-2-F-994L	V	630
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSER	4041 EDA	L	689
WALL DOOR STOP	WS406/407CCV	I	630
KICK PLATES	15" X 2" LDW	R	630

NOTE: PROVIDE DOOR SEALS AND AUTOMATIC DOOR BOTTOMS (322SN/430RL) AT DOORS B212 AND B214. PROVIDE ELEC.HOLDER/RELEASE (SEM 7800 SERIES) AT DOORS B121b AND B304c.

HARDWARE SET # 26

GEARED HINGE	780-224-UL-STUD	HA	TBS
EXIT DEVICE	98L-F-2 994L	V	630
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSER	4041 CUSH	L	689
KICKPLATE	15" X 2" LDW	R	630
SOUND SEAL	322SN	P	628
AUTO DOOR BOTTOM	430RL	P	628

HARDWARE SET # 27

GEARED HINGES	780-224-UL-STUD	HA	TBS
EXIT DEVICES	98L-F-994L LBR	B	630
DOOR CLOSER	4041 -CUSH	L	689
REMOVABLE MULLION	KR9954	V	689
STORAGE MOUNT	MT54	V	689
STABILIZERS	154	V	---

KICKPLATES	15" X 1" LDW	R	630
CYLINDERS	AS REQUIRED	Y	626
MTG STILE ASTRAGAL	322SN	P	628
SOUND SEAL	322SN	P	628
AUTO DOOR BOTTOM	430RL	P	628

HARDWARE SET #28

HINGES	BB1279 4 ½ X 4 ½	HA	652
CLASSROOM LOCK	8808FL (FO5)	L	630
OVERHEAD STOP	410S	GLY	630

HARDWARE SET #29

HINGES	BB1279 4 ½ X 4 ½	HA	652
STOREROOM LOCK	8805FL (FO7)	Y	630
DOOR CLOSERS	4041	L	689
KICKPLATES	15" X 1" LDW	R	630
OVERHEAD STOP	410S	GLY	630

NOTE: PROVIDE AUTOMATIC DOOR BOTTOM (PEMKO 430RL) AT DOORS B305b

HARDWARE SET #30

HINGES	BB1279 4 ½ X 4 ½	HA	652
STOREROOM LOCK	8805FL (FO7)	Y	630
FLUSH BOLTS	555	R	626
DOOR CLOSERS	4041 SPRING-CUSH	L	689
KICKPLATES	15" X 1" LDW	R	630
DUST PROOF STRIKE	570	R	626
OVERHEAD STOPS	410S	GLY	630
WALL DOOR STOP	WS406/407CCV	I	630

NOTE: PROVIDE AUTOMATIC DOOR BOTTOM (PEMKO 430RL) AND ASTRAGAL AT DOORS B305a.

HARDWARE SET #31 – NOT USED

HARDWARE SET #32 – NOT USED

HARDWARE SET #33 – NOT USED

HARDWARE SET # 34 – NOT USED

HARDWARE SET #35 – NOT USED

HARDWARE SET #36

GEARED HINGES	780-224-HD-UL-STUD	HA	TBS
EXIT DEVICES	9827EO-F	V	630
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSER	4041 EDA	L	689
DOOR HOLDER/RELEASE	SEM 7800 SERIES	L	689
KICKPLATES	15" X 1" LDW	R	630

HARDWARE SET #37

GEARED HINGES	780-224-HD SERIES	HA	TBS	
HOTEL LOCK	8820FL (F15)	Y	630	
DOOR CLOSER	4041	L	689	
OVERHEAD STOP	100S	GLY	630	
THRESHOLD	253X226AFGT	P	---	
WEATHERSTRIP	2891-S HEAD	P	TBS	
WEATHERSTRIP	303-S	JAMBS	P	TBS
SWEEP	345-P	P	TBS	
DRIP CAP	345	P	TBS	

HARDWARE SET #38

GEARED HINGES	780-224-HD SERIES	HA	TBS
FLUSH BOLTS	555	R	626
STORE LOCK	8860-2FL 7/8" LTC (F14)	Y	630
DOOR CLOSER	4040 SPRING-CUSH	L	689
THRESHOLD	253X226AFGT	P	---
ASTRAGAL	355	P	628
WEATHERSTRIP	2891-S HEAD	P	TBS
WEATHERSTRIP	303-S JAMBS	P	TBS
SWEEPS	345-B	P	TBS
DRIP CAP	346	P	TBS

HARDWARE SET #39

GEARED HINGES	780-224-HD SERIES	HA	TBS
STORE LOCK	8860-2FL 7/8" LTC (F14)	Y	630
DOOR CLOSER	4040 SPRING-CUSH	L	689

NOTE: THRESHOLDS, WEATHERSTRIPPING AND SWEEPS TO BE FURNISHED BY THE ALUMINUM DOOR AND FRAME MANUFACTURER.

HARDWARE SET #40 - NOT USED

HARDWARE SET # 41 - NOT USED

HARDWARE SET # 42 – NOT USED

HARDWARE SET #43

GEARED HINGES	780-224-HD SERIES	HA	TBS
EXIT DEVICE	CD98NL-697NL	V	630
EXIT DEVICE	CD98EO	V	630
REMOVABLE MULLION	KR4954	V	689
STORAGE MOUNT	164	V	689
STABILIZER SETS	154	V	---
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSERS	4041 SPRING-CUSH	L	689

NOTE: THRESHOLDS, WEATHERSTRIPPING AND SWEEPS TO BE FURNISHED BY THE ALUMINUM DOOR AND FRAME MANUFACTURER.

HARDWARE SET #44

GEARED HINGES	780-224-HD SERIES	HA	TBS
EXIT DEVICE	CD98NL-697NL	V	630
EXIT DEVICE	CD98EO	V	630
REMOVABLE MULLION	KR4954	V	689
STORAGE MOUNT	164	V	689
STABILIZER SETS	154	V	---
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSERS	4041 SPRING-CUSH	L	689
KICKPLATES	15" X 2" LDW	R	630
THRESHOLD	627S 5"	HA	---
WEATHERSTRIP	2891-S HEAD	P	TBS
WEATHERSTRIP	303-S JAMB	P	TBS
SWEEPS	345-P	P	TBS
DRIP CAP	346	P	TBS

HARDWARE SET #45

GEARED HINGES	780-224-HD SERIES	HA	TBS
EXIT DEVICE	CD98NL-697NL	V	630
CYLINDERS	AS REQUIRED	Y	626
STABILIZER SETS	154	V	---

ELECTRIC STRIKE	6111DS-LC FAIL SECURE	V	630
LOW ENERGY OPERATOR	FURNISHED IN SECTION 08716	--	---
DOOR CLOSERS	4041 SPRING-CUSH	L	689

NOTE: THRESHOLDS, WEATHERSTRIPING, AND SWEEPS TO BE FURNISHED BY THE ALUMINUM DOOR AND FRAME MANUFACTURER.

HARDWARE SET # 46

GEARED HINGES	780-224-HD SERIES	HA	TBS
EXIT DEVICE	CD98NL-697NL	V	630
ELECTRIC STRIKE	6111	V	630
ACCESS CONTROL	BY OTHERS		
CYLINDERS	AS REQUIRED	Y	626
STABILIZER SETS	154	V	---
LOW ENERGY OPERATOR	FURNISHED IN SECTION 08716	--	---

NOTE: THRESHOLDS, WEATHERSTRIPPING AND SWEEPS TO BE FURNISHED BY THE ALUMINUM DOOR AND FRAME MANUFACTURER. **PROVIDE POWER SUPPLY FOR ELECTRIC STRIKE.**

HARDWARE SET #47

GEARED HINGES	780-224-HD SERIES	HA	TBS
EXIT DEVICE	CD98DT-697DT	V	630
STABILIZER SETS	154	V	---
CYLINDERS	AS REQUIRED	Y	626
DOOR CLOSERS	4041 SPRING-CUSH	L	689

NOTE: THRESHOLDS, WEATHERSTRIPPING AND SWEEPS TO BE FURNISHED BY THE ALUMINUM DOOR AND FRAME MANUFACTURER.

HARDWARE SET #48

GEARED HINGES	780-224-HD SERIES	HA	TBS
DOOR CLOSERS	4041 SPRING-CUSH	L	689
DUMMY PUSH BARS	350	V	630
PULLS	697DT	V	630

HARDWARE SET # 49

GEARED HINGES	780-224-HD SERIES	HA	TBS
LOW ENERGY OPERATOR	FURNISHED IN SECTION 08716	--	---
DUMMY PUSH BAR	350	V	630
PULL	697DT	V	630
CYLINDERS	AS REQUIRED	S	TBS

CPS Control Rev: 3_08/22/07
Project Rev: D_2/9/09


End of Section

Bathroom Accessory Schedule

LIST OF SYSTEMS, EQUIPMENT AND SPECIALTY ITEMS

No.	Building Area / Room Name	System/Equipment	Rough-in By G.C.	Equipment by G.C.	Comments	Model # if applicable	Work to be Completed by:	Responsibility:
1	Building Throughout	ALL Paper Towel Dispensers	blocking as necessary	included	To be located at all sink locations, except where hand dryers are installed.	ASI 0210 or 0215 (or approved equal)	GC to furnish and install per Contract Documents	General Contractor
2	Building Throughout	ALL Soap Dispensers	no rough-in required	included	To be located at all sink locations, except in student toilet rooms (which have integral lavatory soap dispensers)	ASI 2000 (or approved equal)	GC to furnish and install per Contract Documents	General Contractor
3	All Toilet Rooms	ALL Toilet Tissue Dispensers	no rough-in required	NOT included	All toilet locations to receive same Jumbo Roll Toilet Tissue Dispenser.	Kimberly-Clark, Model 09646 (or approved equal)	CPS to furnish and install	CPS - Roving Crew (Bill Stokes)
4	Student Toilet Rooms	ALL Hand Dryers	included	included	Recessed unit with sensor and fixed nozzle. GC to provide per Contract Documents.	World Hand Dryers Model XRA5 (or approved equal)	GC to furnish and install per Contract Documents	General Contractor
5	All Staff and Girls' Toilet Rooms	ALL Feminine Hygiene Dispenser	blocking as necessary	included	GC to furnish and install per Contract Documents		GC to furnish and install per Contract Documents	General Contractor

Notes: Any model number and manufacturer listed can be substituted for "approved equals," however, they must comply with specifications and be approved by CPS Managing Architect.



**BRIGHTON PARK I
ELEMENTARY SCHOOL**
3456 W. 38th STREET
CHICAGO, IL 60632

CHICAGO PUBLIC SCHOOLS
CAPITAL PROGRAM NEW CONSTRUCTION
CITY OF CHICAGO, MAYOR RICHARD M. DALEY
Chicago Public Schools

Subj: Bathroom Accessory Schedule
Date: 2/17/08
Ref: A14.2 Sheet
Scale: n/a
Issue for: Addendum #2

Sketch Title:
**BATHROOM ACCESSORY
SCHEDULE**

Sketch No:
ASK-01



STIR
256 WEST ONTARIO STREET, SUITE 200
CHICAGO, ILLINOIS 60654
TEL: 312.592.0202

CONCRETE PIER SCHEDULE

PIER MARK	TYPE	SIZE	REINFORCEMENT		REMARKS
			VERTICAL	TIES	
P1	A	24"x24"	8 #6	#4@12"	
P1A	B	29"x24"	10 #6	#4@12"	
P1B	A	32"x32"	12 #7	#4@12"	
P1C	A	30"x32"	12 #7	#4@12"	
P2	B	24"x32"	10 #6	#4@12"	
P3	C	24"x40"	12 #9	#4@12"	
P4	C	27"x32"	8 #6	#4@12"	
P5	B	24"x36"	10 #6	#4@12"	
P6	C	24"x44"	12 #9	#4@12"	
P7	B	24"x30"	10 #6	#4@12"	
P8	C	32"x44"	12 #9	#4@12"	
P9	D	28"x48"	14 #9	#4@12"	
P10	A	24"x28"	8 #6	#4@12"	
P11	C	32"x40"	12 #9	#4@12"	
P12	D	32"x56"	14 #9	#4@12"	
P13	C	28"x38"	10 #6	#4@12"	
P14	A	28"x28"	8 #6	#4@12"	
P15	A	44"x44"	16 #6	#4@12"	

NOTES:

1. FIRST DIMENSION OF PIER INDICATES E-W DIMENSION AND SECOND DIMENSION IS N-S DIMENSION ON PLANS
2. SEE DETAIL 9/S3.1 FOR UNMARKED PIERS
3. ALL PIERS WITH BRACING SHALL HAVE VERTICAL BARS WITH TOP HOOK. SEE DETAIL 9/S3.2



Sketch Title:

PIER SCHEDULE

Subj: Structural Detail

Date: 2/17/08

Ref: S1.1A

Scale: As Noted

Issue for: Addendum #2

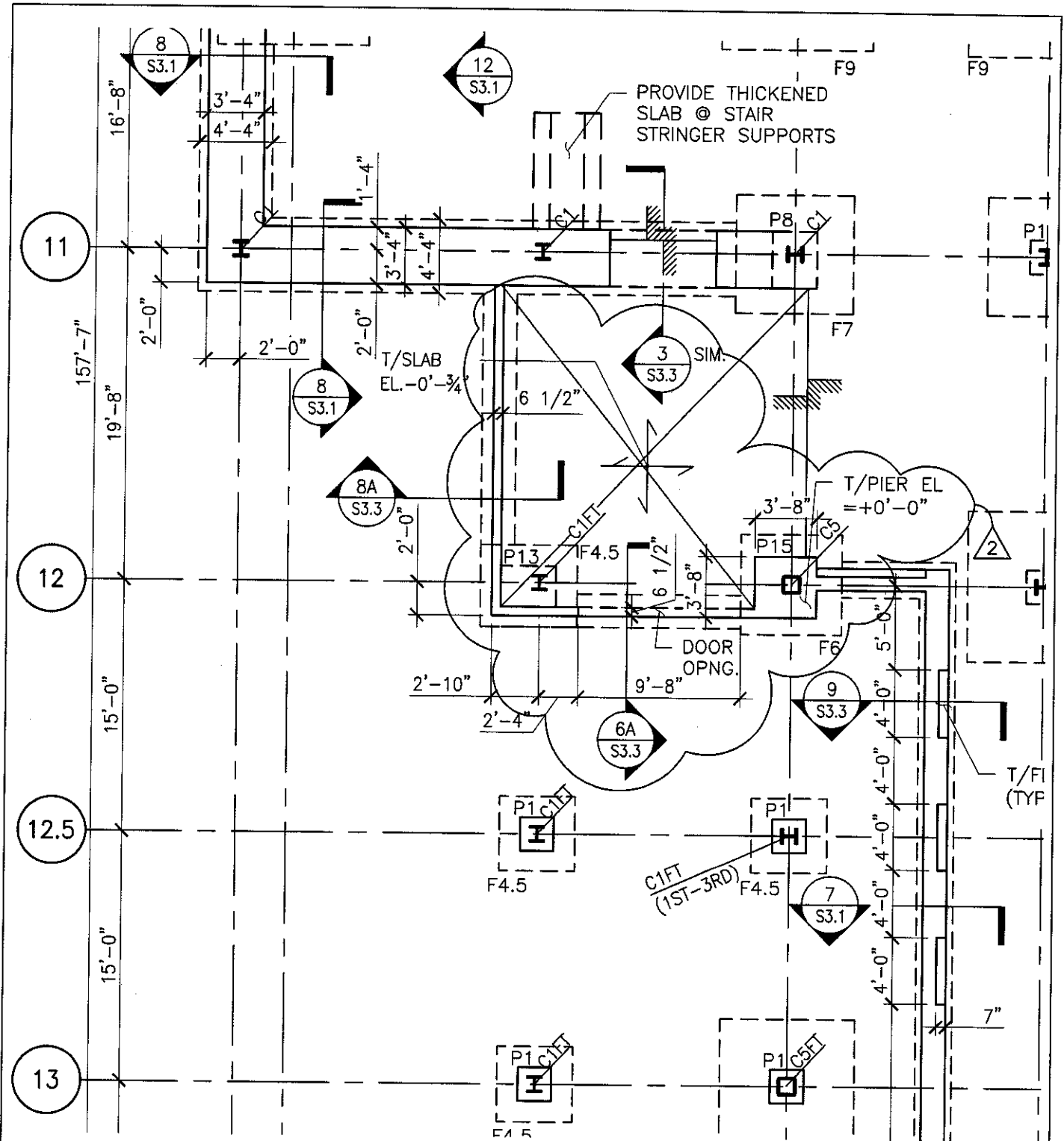
Sketch No:

SSK-02



**BRIGHTON PARK I
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3456 W. 38th STREET
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CHICAGO PUBLIC SCHOOLS
CAPITAL PROGRAM NEW CONSTRUCTION
CITY OF CHICAGO, MAYOR RICHARD M. DALEY





Sketch Title:

PARTIAL FOUNDATION PLAN

Subj: Structural Plan

Date: 2/17/08

Ref: S1.1B Sheet

Scale: As Noted

Issue for: Addendum #2

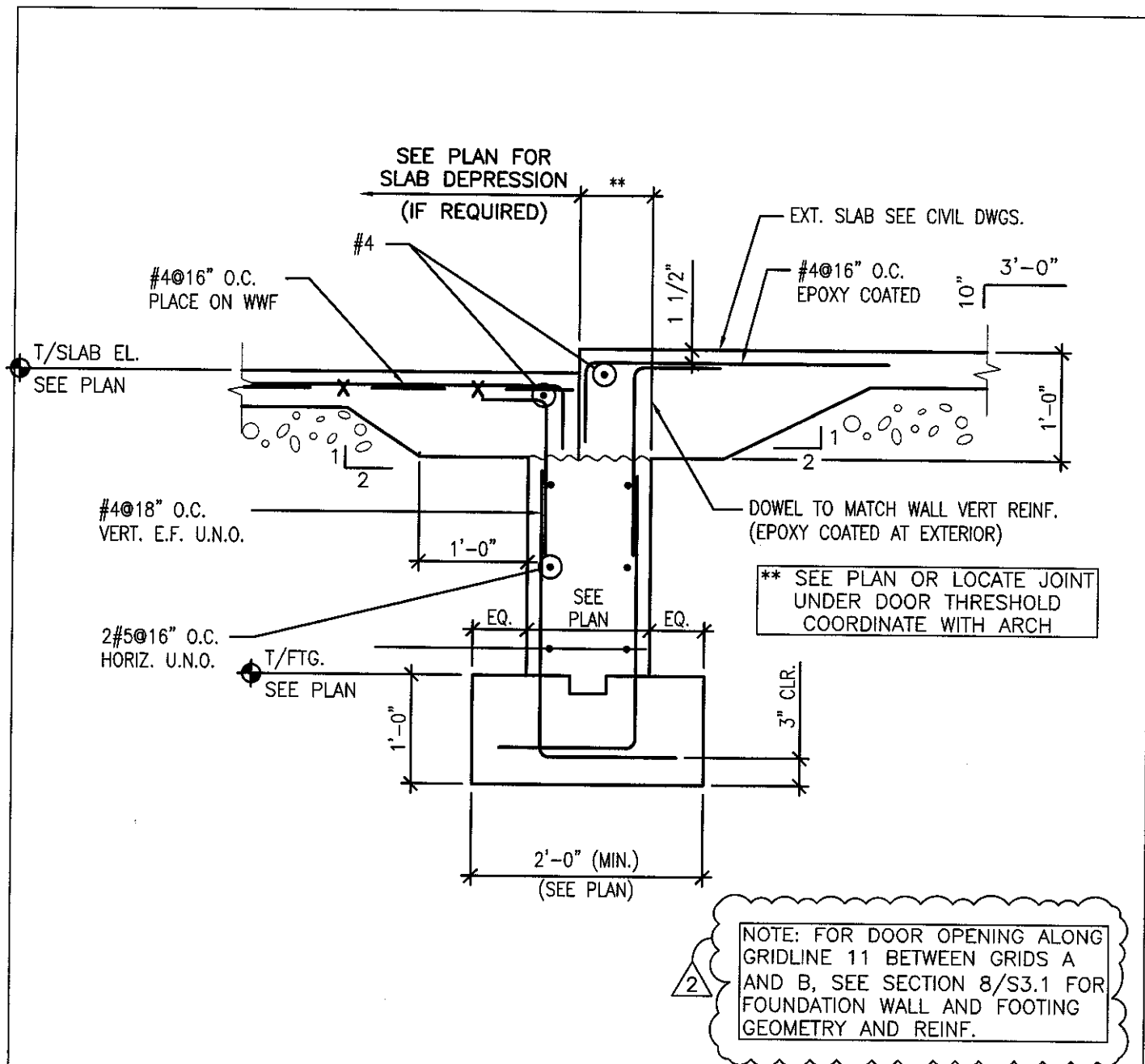
Sketch No:

SSK-03





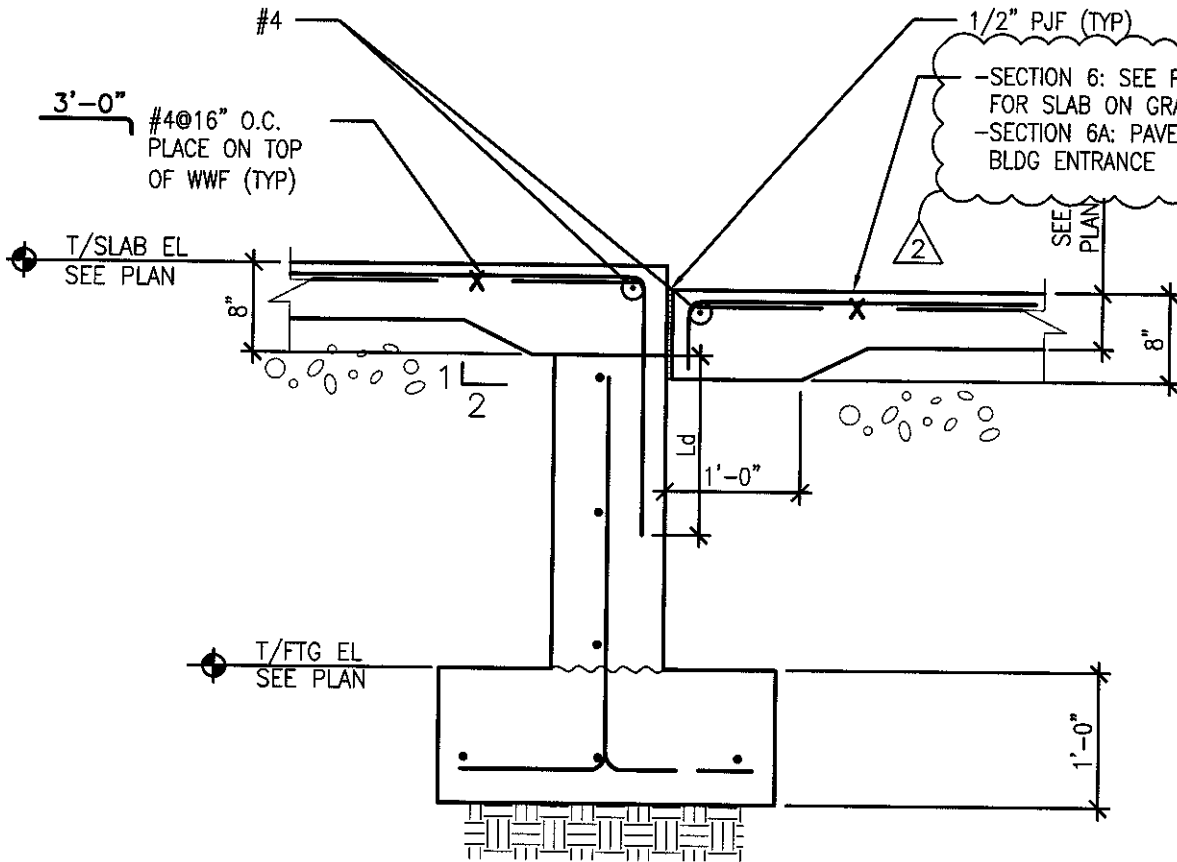
**BRIGHTON PARK I
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CITY OF CHICAGO, MAYOR RICHARD M. DALEY





3 TYPICAL SECTION AT EXTERIOR DOOR
 S3.3 SCALE: 3/4"=1'-0"

Sketch Title: SECTION AT EXTERIOR DOOR		Subj: Structural Detail
		Date: 2/17/08
		Ref: As Noted
		Scale: As Noted
		Issue for: Addendum #2
OF CHICAGO BRIGHTON PARK I ELEMENTARY SCHOOL 3456 W. 38th STREET CHICAGO, IL 60632 CHICAGO PUBLIC SCHOOLS CAPITAL PROGRAM, NEW CONSTRUCTION CITY OF CHICAGO, MAYOR RICHARD M. DALEY 		Sketch No: SSK-04 



REFER TO SECTION 11/S3.1
FOR ITEMS NOT SHOWN

6A SECTION AT INT. DOORS @ GYM
S3.3 6 S3.3 SCALE: 3/4"=1'-0"

Sketch Title:

SECTION AT INT. DOORS AND
BLDG ENTRANCE

Subj: Structural Detail

Date: 2/17/08

Ref:

Scale: As Noted

Issue for: Addendum #2

Sketch No:

SSK-05



BRIGHTON PARK I
ELEMENTARY SCHOOL
3456 W. 38th STREET
CHICAGO, IL 60632
CHICAGO PUBLIC SCHOOLS
CAPITAL PROGRAM NEW CONSTRUCTION
CITY OF CHICAGO, MAYOR RICHARD M. DALEY



**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

**ADDENDUM NO. 03 TO CONTRACT NO. 1480
FOR**

**BRIGHTON PARK I AREA ELEMENTARY SCHOOL
3456 W. 38th Street
NEW CONSTRUCTION
PROJECT #05230**

DATE: Friday, February 20, 2009

NOTICE OF CHANGES IN CONTRACT DOCUMENTS

The following changes are hereby made in the Contract Documents.

CHANGES TO BOOK 1- Project Information, Instructions To Bidders, And Execution Documents:

- Change 1: In Book 1, page 15, section IV, delete in its entirety BID FORM and replace with the revised attachment, **BID FORM**, dated February 20, 2009.
- Change 2: In Book 1, page 16, delete in its entirety "ALTERNATES" proposed alternate price.
- Change 3: In Book 1, pages, 21-22 section V.A.2 Proposal Support Documents, delete in its entirety the Award Criteria Formula and replace with the revised attachment AWARD CRITERIA FORMULA, dated February 20, 2009.
- Change 4: In Book 1, section III.INSTRUCTIONS TO BIDDERS; delete in its entirety subsection **T. Canvassing of Bids.**
- Change 5: In Book 1, section III.INSTRUCTIONS TO BIDDERS; delete in its entirety **U. Basis of Award** and replace to read as:
- U. Basis of Award**
Award will be made to the responsible Bidder submitting the lowest Award Criteria and otherwise responsive to all the requirements of the Contract Documents.
- Change 6: In Book 1, section III.INSTRUCTIONS TO BIDDERS; delete in its entirety subsection **V. Alternates-Commission Discretion.**

CHANGES TO BOOK 3 - TECHNICAL SPECIFICATIONS:

- Change 7: **DELETE** Section 15785 Air-to-Air Energy Recovery Equipment in its entirety

CHANGES TO DRAWINGS:

- Change 8: Drawing C-0.2, titled "Erosion and Sediment Control Plan"
a. **DELETE** note referring to Temporary Stockpile Location; there are no stock piling locations used at this site due to the environmental soil remediation.
- Change 9: Drawing C-1.0, titled "Site Plan"

**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

- Change 10:** Drawing C-3.0, titled "Drainage and Utility Plan"
- a. **REVISE** fencing along north property line to be chainlink for the entire length on this north boundary. Coordinate with Sheet AS.1.
- Change 11:** Drawing C-5.0, titled "Details"
- a. **ADD** the CDOT Standard Street Section for asphalt paving – see attached sketch CSK-03
- Change 12:** Drawing C-5.2, titled "Details"
- a. **ADD** the Typical Sidewalk Detail shown in attached sketch CSK-04
- Change 13:** Drawing A1.1B, titled "First Floor Enlarged Plan – Zone B"
- a. **REVISE** location of door B119 8" north of current location; provide control joint at intersection of new 8" CMU jamb and wall running east-west.
 - b. **REVISE** location of door B120 8" south of current location; provide control joint at intersection of new 8" CMU jamb and wall running east-west.
 - c. **REVISE** partition type at east wall of Seryery B-133a to SGM-8A (where partition type is SG2-8 o SG1-6 there is no change); provide lintel at kitchen equipment openings per detail HC on Sheet A12.2.
- Change 14:** Drawing A1.3A, titled "Third Floor Enlarged Plan – Zone A"
- a. **REVISE** partition type at south door alcove to SGM-14R in lieu of SGM-14AR.
 - b. **CLARIFY** note in Music Classroom A-324 pointing to partition SGM-14R referenced above. Provide horizontal masonry reinforcing @ 16" o.c. for each the CMU and SGT wythe of this partition wall. Additionally tie the two wythes together with horizontal masonry reinforcing @ 16" o.c. in the alternate courses. The gap between the wythes at the top course shall be mortared solid.
- Change 15:** Drawing A9.1, titled "Partition Types – Masonry"
- a. **CLARIFY** That Partition type SG2 shall be composite wall construction.
 - b. **ADD** General Note #14 as follows: "Refer also to details on the A12 series drawings for additional information at heads, lintels, and jambs."
- Change 16:** Drawing A9.3, titled "Typical Partition Details"
- a. **ADD** Detail #8 Top of Wall Detail - Partition SG2 – see attached Sketch ASK-02
 - b. **ADD** Detail #9 Top of Wall Detail - Partition SG1 – see attached Sketch ASK-03
 - c. **ADD** Detail #10 Pier Detail at Openings <7'-0" – see attached Sketch ASK-04
 - d. **ADD** Detail #11 Structural Reinforcement at SGT Walls – see attached Sketch ASK-05
- Change 17:** Drawing A12.2, titled "Door Types, Frame Types & Details"
- a. At Detail HC, **ADD** the following, "Provide (2) #5 Continuous in bond beam with solid fine grout with 4" minimum bearing each end."
 - b. At Detail HF, **ADD** the following, " Provide for each the 8" CMU Bond Beam and the 6" SGT Bond Beam (2) #5 continuous in solid grout with 8" minimum bearing."

**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

- Change 18:** Drawing S1.1A, titled "FIRST FLOOR/FOUNDATION PLAN - ZONE A",
- a. **REVISE** underground pipe location and note, and **DELETE** step footings near column B1. See SSK-06.
- Change 19:** Sheet S1.1.B, titled "FIRST FLOOR/FOUNDATION PLAN - ZONE B"
- a. **REVISE** Column G/9.5 from C4A to "C4" (Shear lug at column base is **DELETED**).
 - b. **ADD** Section mark at foundation wall, line H near 8.5. This is to clarify that the typical door detail at the exterior wall applies at this location. See attached Sketch SSK-07.
- Change 20:** Sheet 1.1B, titled "FIRST FLOOR/FOUNDATION PLAN - ZONE B",
- a. **REVISE** underground pipe location and note, and **DELETE** step footings near column 13.5/F and 13.5/G. See attached Sketch SSK-08.
- Change 21:** Sheet 1.1B, titled "FIRST FLOOR/FOUNDATION PLAN - ZONE B",
- a. **ADD** Note #8. See attached Sketch SSK-09.
- Change 22:** Sheet S4.4, titled, "SECTIONS AND DETAILS",
- a. **ADD** Note to Section 1 to clarify kicker and stiffener locations. See attached Sketch SSK-10.
- Change 23:** Sheet S5.1, titled, "MASONRY DETAILS",
- a. **ADD** notes to masonry list. See attached Sketch SSK-11.
- Change 24:** Detail 18 on Sheet S5.2 and Detail 11& 12 on S5.3,
- a. **REVISE** top of wall to solid CMU at the top course and move bond beam below, **ADD** #4 dowels @16" O.C. between bond beam and solid CMU. Drill solid CMU 4" deep and set dowels with Hilti-HIT HY 150 Adhesive.
- Change 25:** Sheet E1.1B, First Floor Lighting Plan 'B':
- a. Room B-117, Gym Storage: **REVISE**: Occupancy Sensor/Switch relocated to be next to door, on north side.
 - b. Room B-132, Kitchen Office: **REVISE**: Occupancy Sensor/Switch to be a 2-switch combination device, with one switch for circuit 7b, and one for 7c.
- Change 26:** Sheet E1.2B, Second Floor Lighting Plan 'B':
- a. **ADD** Photocell added to 2nd story dining area ceiling, at column line 9/E.
 - b. Rooms B-202 and B-203: **ADD** additional Master Teacher (MT) switch to teacher wall, just north of the blackboards, at column line 13/C.5.
- Change 27:** Sheet E1.3A, Third Floor Lighting Plan 'A':
- a. Room A-324, Music Room: **ADD** wall-mounted, dual technology occupancy sensors to both the north and south walls along column line A.4, a total of 2 occupancy sensors.
- Change 28:** Sheet E2.1B, First Floor Power & Systems Plan 'B':
- a. Room B151, Vestibule: **REVISE**: automated door opener at door B-151A (north door from corridor) moved to door B-151C (south door from corridor).
 - b. **REVISE** room number "A-100" at Main Entry Vestibule to "B-100"
 - c. Room B-100, Vestibule: **DELETE** door hold open devices from door B-100G (doors

**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

at north wall from stairwell).

- Change 29:** Sheet E5.3, Electrical Schedules-3:
- a. **REVISE:** Tag for "LRSP-Computer Lab B-308" satellite relay panel changed to read "LRSPD-Computer Lab B-308."

CLARIFICATION:

- C1.** For site phasing and coordination information refer to SK0.0, dated 2/20/09 (attached to this addendum)

QUESTIONS & ANSWERS:

- Q1.** Will there be new curb and gutter installed along 38th Street and St. Louis Avenue?
A1. Yes. See sheet C4.1 of the bidding documents.
- Q2.** The plumbing drawings indicate numerous access panels. What type of access panels are required? Please provide the material size, fire rating, etc. for these panels.
A2. Access panels have been shown where known requirements for access exist based on the layout shown in the drawing. Additional access panels will be required based on the installed conditions of the work and will be reviewed in coordination drawing submittals. See architectural specifications for ratings, materials and additional general access requirements.
- Q3.** We would appreciate your clarification of the following item at your earliest convenience.
 - Can schedule 10 black pipe be used for the fire protection mains? The drawings state all schedule 40 pipe, but the specifications state schedule 10 pipe is acceptable.
 - Can extended coverage sprinkler heads be used per NPFA requirements? On the Boone Clinton project extended coverage heads were not allowed, however, on the Lee Pasture project, extended coverage heads were allowed. It is out understanding that extended coverage heads will not meet code.**A3.** Comply with the materials required on the drawings, schedule 40 pipe. Extended coverage sprinkler heads are not allowed.
- Q4.** Details 7, 9, and 10 on sheet S5.1 show structural lintel assemblies. The structural and architectural plan views refer to details 1 through 3 on sheet S4.4 which indicated continuous tubes and bent plate lintel assemblies at three elevations. Are details 7, 9, and 10 relevant for this project? If so, where?
A4. All details shown on sheet S5.1 are typical conditions. Some may not be relevant for this project but those details are shown to cover all typical conditions.
- Q5.** Air-to-Air Energy Recovery Equipment (15785) and Self-Contained AC Units (15736) are specified but not apparent on the drawings. Is this equipment to be included in this project?
A5. 15785 will be removed from the specs – see Addendum #3. There is no energy recovery equipment for this project. However, there is a split type AC unit for the MDF room with

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BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

a roof-mounted condensing unit.

- Q6.** Drawings C1.0 Site Plan identifies a combination (approx. 50/50) of Ornamental Fence and Chain Link Fence along the North side of the property.
Drawing AS.1 Site Plan identifies the entire length of that fence along the north side to be chain link.
- A6.** Please follow drawing AS.1 and provide chainlink fence along north property line.
- Q7.** Please clarify what elevation the site will be left after completion of the site prep contract.
Grading note on SP-2.0 indicates that grades shown on the sheet are within 1foot of final grades. Is this meant to indicate that the entire site will be rough graded by the site prep contractor to 1foot below final grade?
- A7.** This has been clarified in Addendum #2.
- Q8.** Will the site prep contractor be installing any aggregate base course?
Detail 6/SP-4.1 shows 3.12" paver and 1.5" CA-16 both (by building contractor). 18" CA-1, 8" perforated collection pipe to detention system, and geotextile filter does not state (by building contractor). Please clarify if the site prep contractor will be furnishing and installing the geotextile filter, 8" perforated collection pipe and 18" CA-1.
- A8.** The Geotextile fabric, 8" Perforated collection Pipe and 18" of CA-1 will be furnished and installed by the Site Prep Contractor.
- Q9.** Temporary stockpile location is shown at different locations on drawing SP-0.2b and C-0.2. Which location is correct?
How much material will be stockpiled?
What type of material will be stockpiled?
- A9.** No stock piling locations will be used at this site due to the environmental soil remediation.
- Q10.** What are the thicknesses of the concrete sidewalk and associated aggregate base course?
- A10.** 5" concrete/4" Agg Base. This is clarified in Addendum #3.
- Q11.** What are the thicknesses of the concrete pavement and associated aggregate base course?
- A11.** See detail 4/C5.1 trash enclosure concrete detail for information.
- Q12.** What are the thicknesses of the asphalt pavement and associated aggregate base course?
- A12.** Asphalt will be Per CDOT Standards. This is clarified in Addendum #3.
- Q13.** On sheet A1.1A, is the partition indicator FR1-1AS on the south wall of classroom A-164 a mistake? It appears to be marking the markerboard?
- A13.** The partition type marker is not a mistake. Provide FR1-1AS over CMU wall at the south wall of classroom A-164.
- Q14.** On sheet A1.1B, the column in room B106 assistant principle is drawn as masonry, but

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BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

the detail 13/A6/2 shows drywall. It is also shown as masonry on the enlarged plan on a/A8/5.

- A14.** Provide masonry wrap (4" Nominal) around column C.4 – 14 in lieu of GWB shown on plan detail 13/A6.2.
- Q15.** What does the window head detail look like for the windows in room B-102?
- A15.** Please refer to Section 1 on Sheet A5.3
- Q16.** It is unclear what the acoustic ceiling system is in room A-324. There are three different types of shading and none of them correspond to the finish legend. Are there three different types of tile or does the shading represent different elevations? If so, what is the tile and what is the perimeter molding? Are the ceilings rectangular or irregular?
- A16.** Three different shadings are used to indicate areas of different heights. They are all 2x2 Type "A" ceiling. See Spec Section 09510. The shapes of the ceiling clouds are rectangular and L-shaped as shaded.
- Q17.** The specifications call for slope tops, but the elevation drawings in Series A8 note a wood trim and reveal. Do the lockers require slope tops, or are they recessed/flush with frameless tackboards mounted above?
- A17.** Corridor locker does not have a slope top. Only those lockers in Kitchen B-131 receive a slope top. See Sheet A8.17.
- Q18.** Drawing A8.12 shows the outline of a score board and notes, "electronic scoreboard that is 72" c 48"" see elec. drawings and spec.
The electrical drawings show a junction box, but a drawing or specification for the actual scoreboard cannot be found in the signage spec nor the electrical spec. Should we assume this is to be an Owner Furnished and Installed item?
- A18.** Scoreboard is provided and installed by the Owner.
- Q19.** No model indicated in Projection Screens Section 11123 for the Manual Screen. Please provide the desired model.
- A19.** The accepted manufacturers' standard product meeting the performance requirements of this specification to be provided for the manual screens.

ATTACHMENTS:

BID FORM	Book 1, page 15
Award Criteria	Book 1, pages 21-22
Formula	
Drawings	CSK-01, dated, 02.19.09 (1 page, 8.5" x 11"format)
Drawings	CSK-02, dated, 02.19.09 (1 page, 8.5" x 11"format)
Drawings	CSK-03, dated, 02.19.09 (1 page, 8.5" x 11"format)
Drawings	CSK-04, dated, 02.19.09 (1 page, 8.5" x 11"format)
Drawings	ASK-02, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings	ASK-03, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings	ASK-04, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings	ASK-05, dated, 02.18.09 (1 page, 8.5" x 11"format)

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Drawings SSK-06, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings SSK-07, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings SSK-08, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings SSK-09, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings SSK-10, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings SSK-11, dated, 02.18.09 (1 page, 8.5" x 11"format)
Drawings SK0.0, dated, 02.20.09 (1 page, 11" x 17"format)

END OF ADDENDUM NO.3

**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

BID FORM

AMOUNT	
Work	\$
Site Work Allowance	\$100,000.00
Commission's Contingency Fund	\$500,000.00
CCTV	\$200,000.00
DATA SWITCH	\$175,000.00
TOTAL BASE BID	\$

AWARD CRITERIA FIGURE

\$ _____

(See Section V. Proposal Support Document; insert above the Award Criteria figures from line 15, columns).

BASE CONTRACT PRICE: \$ _____

<p>SURETY: Please specify full legal name and address of Surety:</p> <p>_____</p> <p>_____</p> <p>_____</p>
--

Addendum no. 3, Revised Bid Form, dated February 20, 2009

**PUBLIC BUILDING COMMISSION OF CHICAGO
BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

V. PROPOSAL SUPPORT DOCUMENTS

A. Basis of Award (Award Criteria)

To promote the intended goal of economic opportunity and maximize the use of minority personnel on this project, the Public Building Commission of Chicago has established the Award Criteria formula for the purpose of evaluating proposals and awarding the contract. A contract in the amount of the total Base Bid or Base Contract Price will be awarded to the responsible bidder with the lowest Award Criteria Figure. The Public Building Commission of Chicago reserves the right to check all calculations for accuracy. The fulfillment of the Award Criteria does not abrogate the responsibilities of the Contractor to comply with federal and state requirements under the *Equal Employment Act* and the *Illinois Human Rights Act*.

1. Instructions

The Bidder shall complete the Award Criteria Formula and transfer the final Award Criteria Figure - Line 15 to the space provided on the itemized proposal sheet. Failure to complete the formula may be cause for rejection of the Bidder's proposal. The successful bidder will be held responsible for adhering to the figures submitted in Lines 1, 2, 4, 6, 8, 10 and 12 during construction of the project.

Lines 2, 4 and 6 in the formula shall not be greater than fifty percent (50%) in each category for the sole purpose of determining award of the contract. Similarly, lines 8, 10 and 12 shall not be greater than ten (10%) percent in each category for the purpose of award criteria only. The fifty percent (50%) and ten percent (10%) goals are not intended to restrict the total number of minority and female employees to be used on the project, but only to establish limiting figures for use in the formula. Journeyworker includes journeyworkers from the major trades listed herein, and the teamsters. Watchmen and custodial workers are not creditable in the formula.

2. Award Criteria Formula

		Total Base Bid
Line 1.	Base Bid, in figures	\$ _____
Line 2.	Percentage of the Journeyworkers hours that the Contractor proposes to be worked by minority Journeyworkers during construction of the project. (Maximum figure 0.50)	_____ %
Line 3.	Multiply Line 2 by Line 1 by 0.04	\$ _____
Line 4.	Percentage of total Apprentice hours that the Contractor proposes to be worked by minority Apprentices during construction of the project. (Maximum figure 0.50)	_____ %
Line 5.	Multiply Line 4 by Line 1 by 0.03	\$ _____
Line 6.	Percentage of the total Laborer hours that the Contractor proposes to be worked by minority Laborers during construction of the project. (Maximum figure 0.50)	_____ %
Line 7.	Multiply Line 6 by Line 1 by 0.01	\$ _____
Line 8.	Percentage of total Journeyworker hours that the	_____ %

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BRIGHTON PARK I AREA ELEMENTARY SCHOOL**

	Contractor proposes to be worked by female Journeyworkers during the construction of the project. (Maximum figure 0.10)	
Line 9.	Multiply Line 8 by Line 1 by 0.04	\$ _____
Line 10.	Percentage of total Apprentice hours that the Contractor proposes to be worked by female Apprentices during construction of the project. (Maximum figure 0.10)	_____ %
Line 11.	Multiply Line 10 by Line 1 by 0.03	\$ _____
Line 12.	Percentage of the total Laborer hours that the Contractor proposes to be worked by female Laborers during construction of the project. (Maximum figure 0.10)	_____ %
Line 13.	Multiply Line 12 by Line 1 by 0.01	\$ _____
Line 14.	Summation of Lines 3, 5, 7, 9, 11, and 13	\$ _____
Line 15.	Subtract Line 14 from Line 1 (= "Award Criteria Figure")	\$ _____

Award Criteria Figures (Insert Line 15, of Award Criteria Formula on Bid Form pg.15).

3. Community Hiring Bonuses

In order to encourage maximum employment of interested and available residents of the project community on this project, the following bonus calculations shall apply:

- a. a. In calculating the hours worked by minority and women journeyworkers, apprentices, and laborers under the Award Criteria set out in Part V.A. "Basis of Award (Award Criteria)," all hours worked by minority and women journeyworkers, existing apprentices, and laborers who are residents of the project community shall be multiplied by 1.5.
- b. b. In calculating the hours worked by minority and women apprentices under the Award Criteria set out in Part V "Proposal Support Documents," all hours worked in new apprenticeships by minority and women apprentices who are residents of the project community shall be multiplied by 2.0.

Definitions

"Actual residents of the City of Chicago" shall mean persons domiciled within the City of Chicago. The domicile is an individual's one and only true, fixed, and permanent home and principal establishment.

"Residents of the project community" shall mean persons domiciled within the project area as stated in Section II.A.G., above..

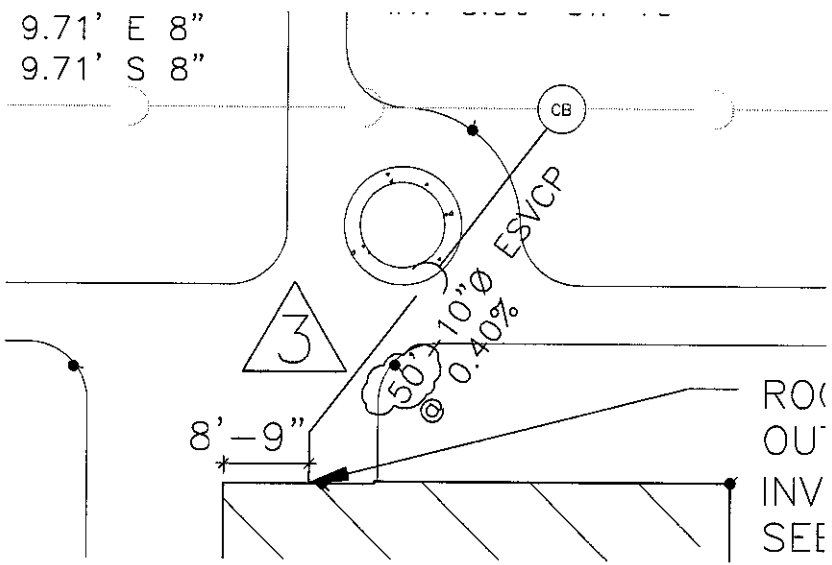
"New Apprenticeship" shall mean an apprenticeship begun for a person who has not held an apprenticeship card within ninety (90) days prior to beginning the project.

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4. Liquidated Damages

The Contractor hereby consents and agrees that, in the event that it fails to comply with each of the minimum commitments submitted with this Proposal on Lines 2, 4, 6, 8, 10, and 12 of the Award Criteria Formula, covering minority and female Journeyworkers, apprentices, and laborers respectively, the following shall apply.

Addendum no. 3, Revised **Basis of Award (Award Criteria) Form**, dated February 20, 2009



Sketch Title:

**ESVPC DIMENTION @
NORTH OF BUILDING**

Subj: ESVCP DIM.

Date: 2/19/09

Ref: C-3.0

Scale: not in scale

Issue for: Addendum #3

Sketch No:

CSK-01

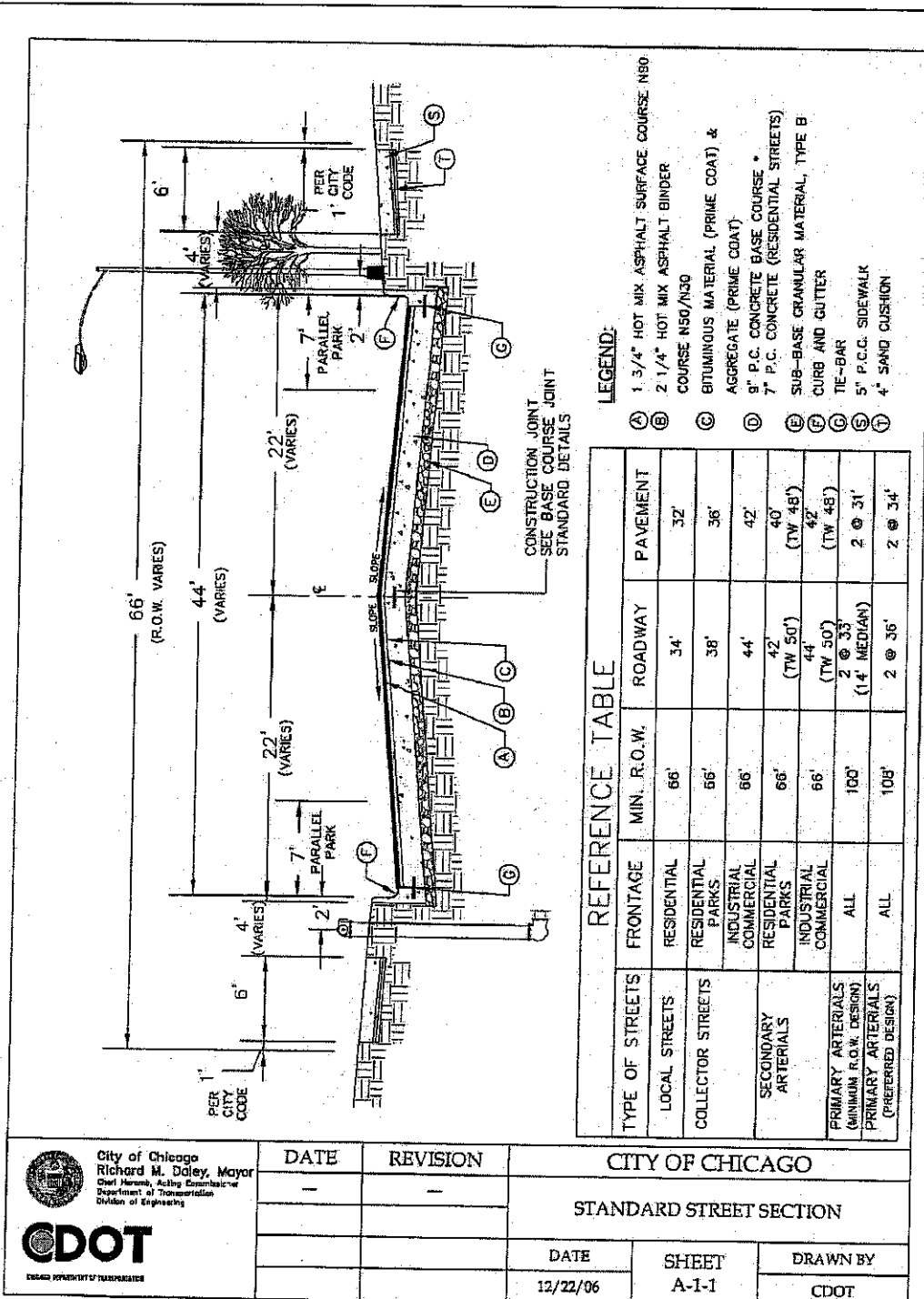


**BRIGHTON PARK I
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CHICAGO PUBLIC SCHOOLS
CAPITAL PROGRAM NEW CONSTRUCTION
CITY OF CHICAGO, MAYOR RICHARD M. DALEY

Chicago Public Schools

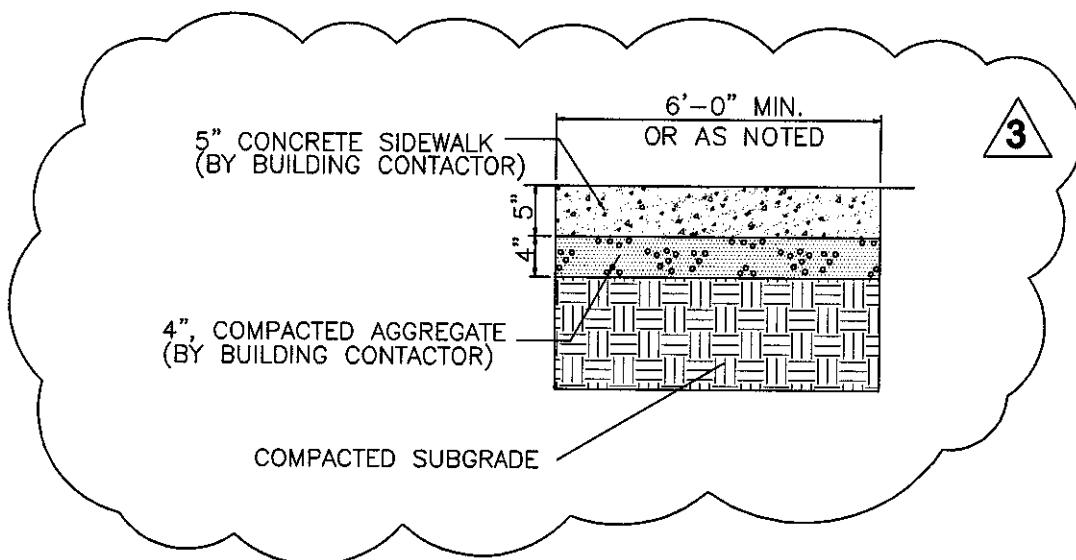


REFERENCE TABLE

TYPE OF STREETS	FRONTAGE	MIN. R.O.W.	ROADWAY	PAVEMENT
LOCAL STREETS	RESIDENTIAL	66'	34'	32'
COLLECTOR STREETS	RESIDENTIAL PARKS	66'	38'	36'
	INDUSTRIAL COMMERCIAL	66'	44'	42'
SECONDARY ARTERIALS	RESIDENTIAL PARKS	66'	42' (TW 50')	40' (TW 48')
	INDUSTRIAL COMMERCIAL	66'	44' (TW 50')	42' (TW 48')
PRIMARY ARTERIALS (MINIMUM R.O.W. DESIGN)	ALL	100'	2 @ 33' (14' MEDIAN)	2 @ 31'
	ALL	108'	2 @ 36'	2 @ 34'


 City of Chicago Richard M. Daley, Mayor Chief Executive, Acting Commissioner Department of Transportation Division of Engineering	DATE	REVISION	CITY OF CHICAGO		
			STANDARD STREET SECTION		
 ILLINOIS DEPARTMENT OF TRANSPORTATION	DATE	SHEET	DRAWN BY		
	12/22/06	A-1-1	CDOT		


Sketch Title: <h2 style="text-align: center;">STANDARD STREET SECTION DETAIL</h2>	Subj: STREET SECTION Date: 2/19/09 Ref: C-5.0 Scale: N/A Issue for: Addendum #3 Sketch No: <h1 style="text-align: center;">CSK-03</h1>
 BRIGHTON PARK I ELEMENTARY SCHOOL 3456 W. 38th STREET CHICAGO, IL 60632 CHICAGO PUBLIC SCHOOLS CAPITAL PROGRAM NEW CONSTRUCTION CITY OF CHICAGO, MAYOR RICHARD M. DALEY	 STR PARTNERS <small>330 WEST CHICAGO STREET SUITE 200 CHICAGO ILLINOIS 60644 TEL 312 464 1444 FAX 312 464 0785</small>



7 TYPICAL SIDEWALK DETAIL
 C5.2 SCALE: N.T.S.


Sketch Title: <p style="text-align: center;">TYPICAL SIDEWALK DETAIL</p>	Subj: Sidewalk Detail Date: 2/19/09 Ref: C-5.2 Scale: not in scale Issue for: Addendum #3
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 CITY OF CHICAGO, MAYOR RICHARD M. DALEY

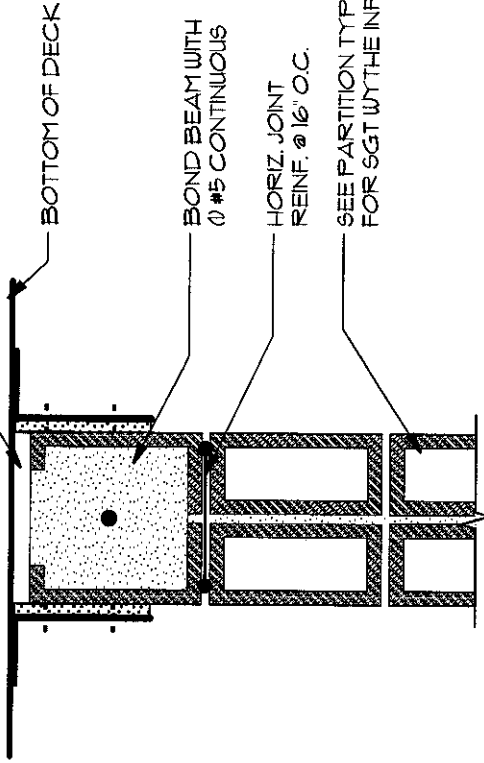

 Chicago Public Schools

Sketch No:

CSK-04



SEE OTHER DETAILS ON SHEET A9.3
FOR RATING AND RESTRAINING
ANGLE INFORMATION



BOTTOM OF DECK

BOND BEAM WITH
(1) #5 CONTINUOUS

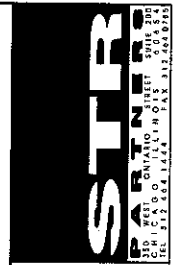
HORIZ. JOINT
REINF. @ 16" O.C.

SEE PARTITION TYPES
FOR SGT W/ THE INFORMATION

TOP OF WALL DETAIL - PARTITION SG2

SCALE 1 1/2" = 1'-0"

8



Sketch No:

ASK-02

Sketch Title:

TOP OF WALL DETAIL -
PARTITION SG2

Subj: Partition Type Detail

Date: 2/18/09

Ref: A9.1 Sheet

Scale: As Noted

Issue for: Addendum #3



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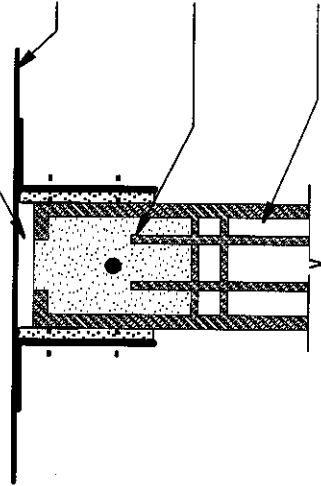


SEE OTHER DETAILS ON SHEET A9.3
FOR RATING AND RESTRAINING
ANGLE INFORMATION

BOTTOM OF DECK

BOND BEAM WITH
Ø #5 CONTINUOUS

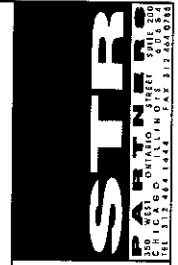
SEE PARTITION TYPES
FOR SGT WY THE INFORMATION



TOP OF WALL DETAIL - PARTITION SG1

9

SCALE 1-1/2" = 1'-0"



Sketch No:

ASK-03

Sketch Title:

TOP OF WALL DETAIL -
PARTITION SG1

Subj: Partition Type Detail

Date: 2/18/09

Ref: A9.1 Sheet

Scale: As Noted

Issue for: Addendum #3

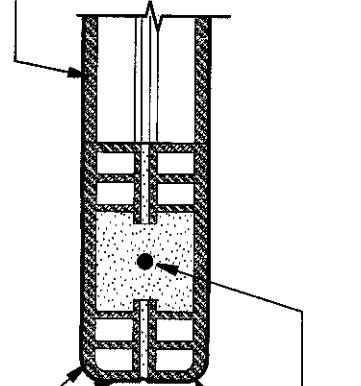


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SGT - SEE PARTITION
TYPES FOR MORE
INFORMATION



SGT FINISHED
FACE

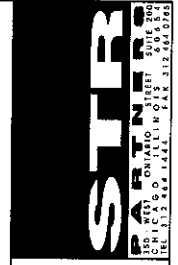
BULLNOSE @ EXPOSED EDGE
SQUARE EDGE @ DOOR/WINDOW FRAME

① #5 FULL HEIGHT OF WALL -
PROVIDE ① #5 DOWEL
AT SLAB

PIER DETAIL AT SGT OPENINGS (< 7'-0") & END OF WALL

10

SCALE 1 1/2" = 1'-0"



Sketch No: **ASK-04**

Sketch Title: **PIER DETAIL AT SGT OPENINGS (<7'-0") & END OF WALL**

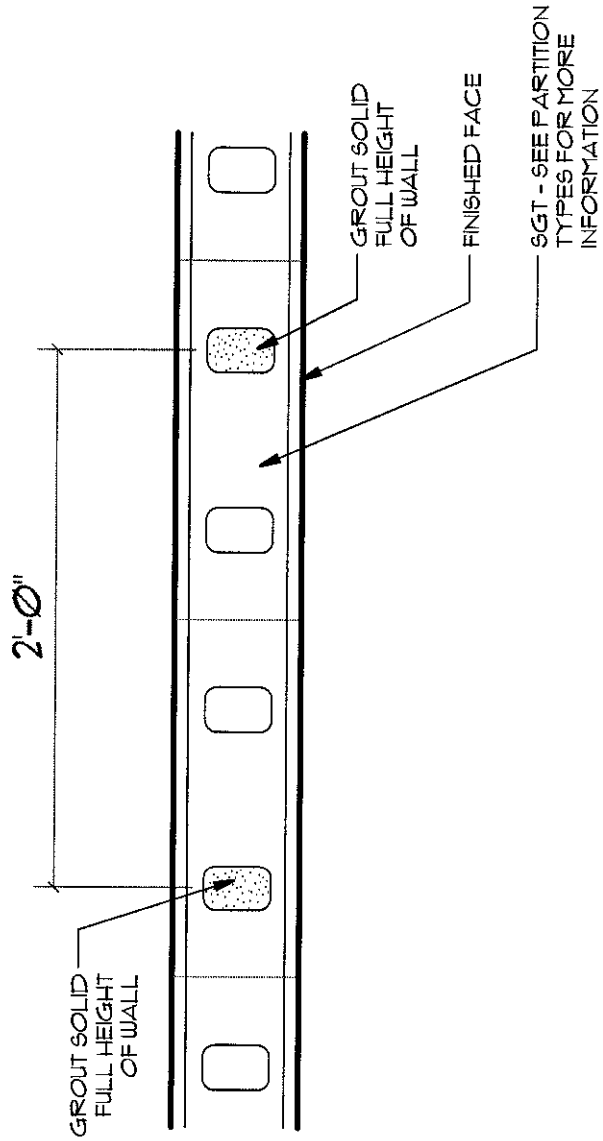
Subj: Partition Type Detail
Date: 2/18/09
Ref: A9.1 Sheet
Scale: As Noted
Issue for: Addendum #3

CPS Chicago Public Schools

**BRIGHTON PARK I
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3456 W. 36th STREET
CHICAGO, IL 60652

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CAPITAL PROGRAM NEW CONSTRUCTION
CITY OF CHICAGO, MAYOR RICHARD M. DALEY

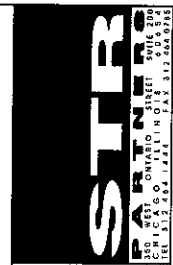




STRUCTURAL REINFORCEMENT AT SGT WALLS

11

SCALE 1 1/2" = 1'-0"



Sketch No:
ASK-05

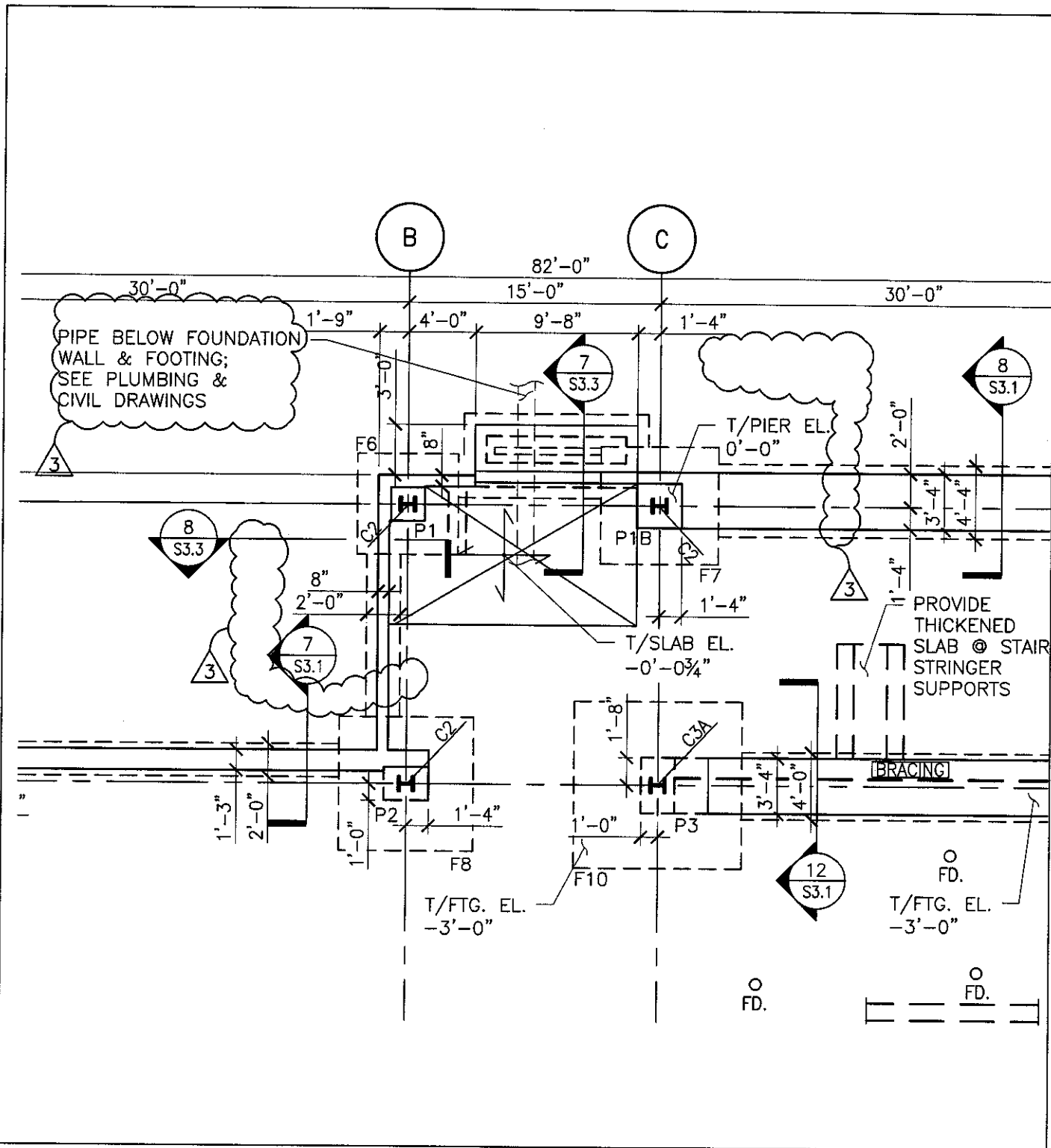
Sketch Title:
**STRUCTURAL REINFORCEMENT
AT SGT WALLS**

Subj: Partition Type Detail
 Date: 2/18/09
 Ref: A9.1 Sheet
 Scale: As Noted
 Issue for: Addendum #3



**BRIGHTON PARK I
ELEMENTARY SCHOOL**
 3456 W. 38th STREET
 CHICAGO, IL 60632
 CHICAGO PUBLIC SCHOOLS
 CAPITAL PROGRAM NEW CONSTRUCTION
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY





Sketch Title:

PARTIAL FOUNDATION PLAN

Subj: Foundation Plan
 Date: 2/18/09
 Ref: S3.1A
 Scale: As Noted
 Issue for: Addendum #3

Sketch No:

SSK-06

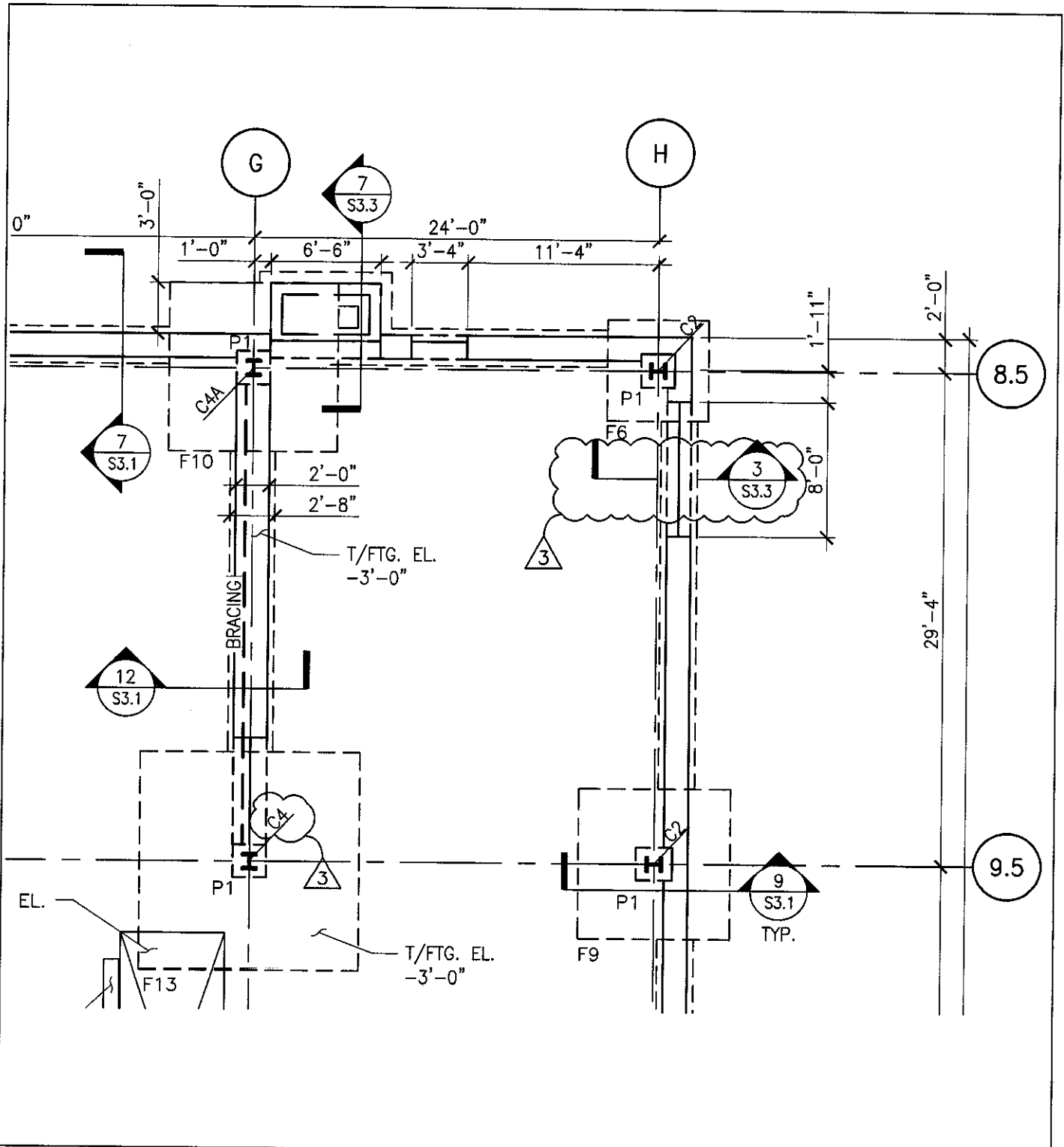
STR
 PARTNER
 200 WEST ONTARIO STREET SUITE 200
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**BRIGHTON PARK I
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CHICAGO PUBLIC SCHOOLS
 CAPITAL PROGRAM, NEW CONSTRUCTION
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY





Sketch Title:

PARTIAL FOUNDATION PLAN

Subj: Foundation Plan

Date: 2/18/09

Ref: S1.1B

Scale: As Noted

Issue for: Addendum #3

Sketch No:

SSK-07

STR

PARTNERS
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**BRIGHTON PARK I
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 CHICAGO, IL 60632

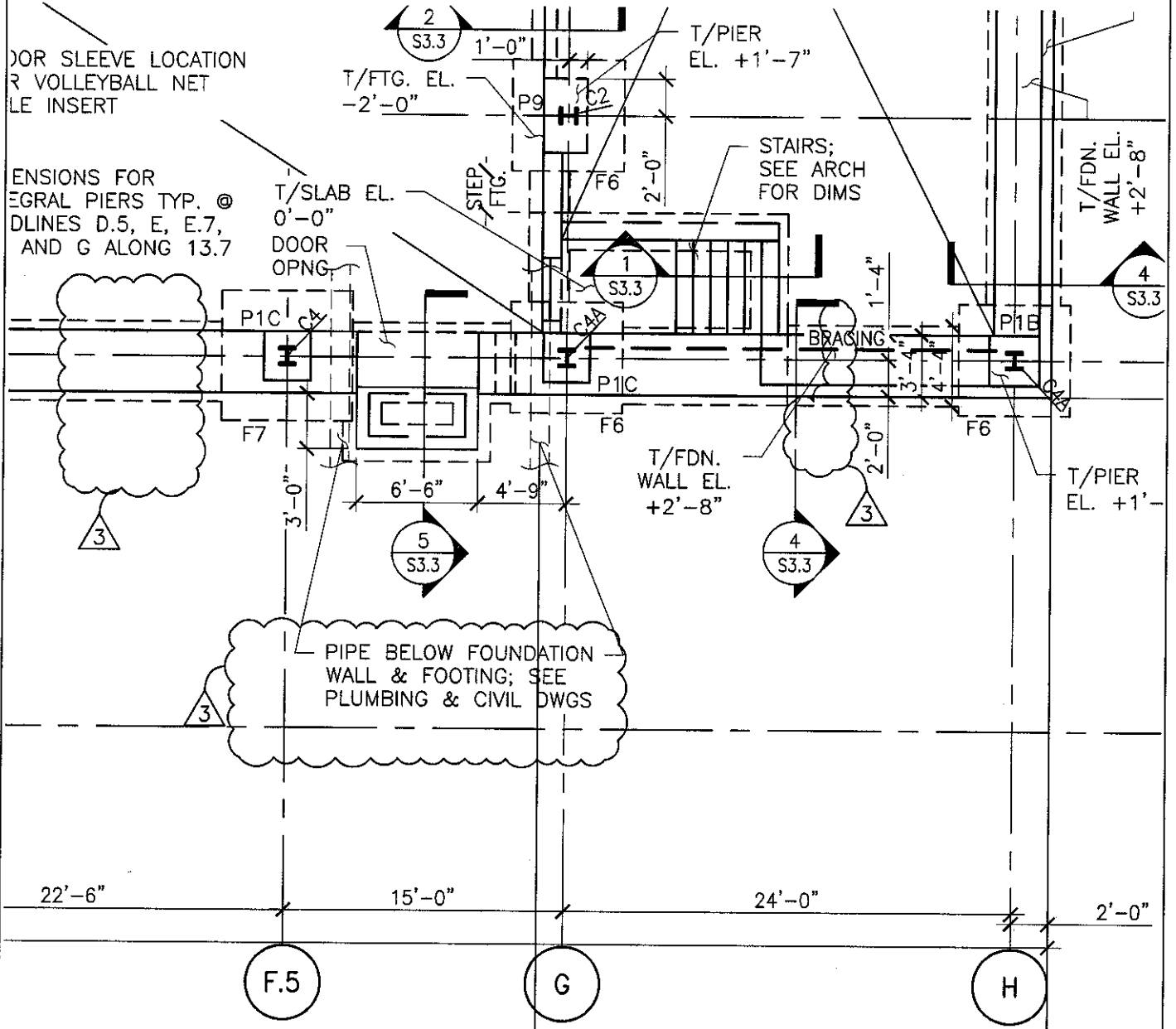
CHICAGO PUBLIC SCHOOLS
 CAPITAL PROGRAM NEW CONSTRUCTION
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY



Chicago Public Schools

DOOR SLEEVE LOCATION
FOR VOLLEYBALL NET
WALL INSERT

DIMENSIONS FOR
EQUIDISTANT PIER TYP. @
DIMENSIONS D.5, E, E.7,
AND G ALONG 13.7



Sketch Title:

PARTIAL FOUNDATION PLAN

Subj: Foundation Plan

Date: 2/18/09

Ref: S1.1B Sheet

Scale: As Noted

Issue for: Addendum #3

Sketch No:

SSK-08



**BRIGHTON PARK I
ELEMENTARY SCHOOL**
3456 W. 38th STREET
CHICAGO, IL 60632
CHICAGO PUBLIC SCHOOLS
CAPITAL PROGRAM NEW CONSTRUCTION
CITY OF CHICAGO, MAYOR RICHARD M. DALEY



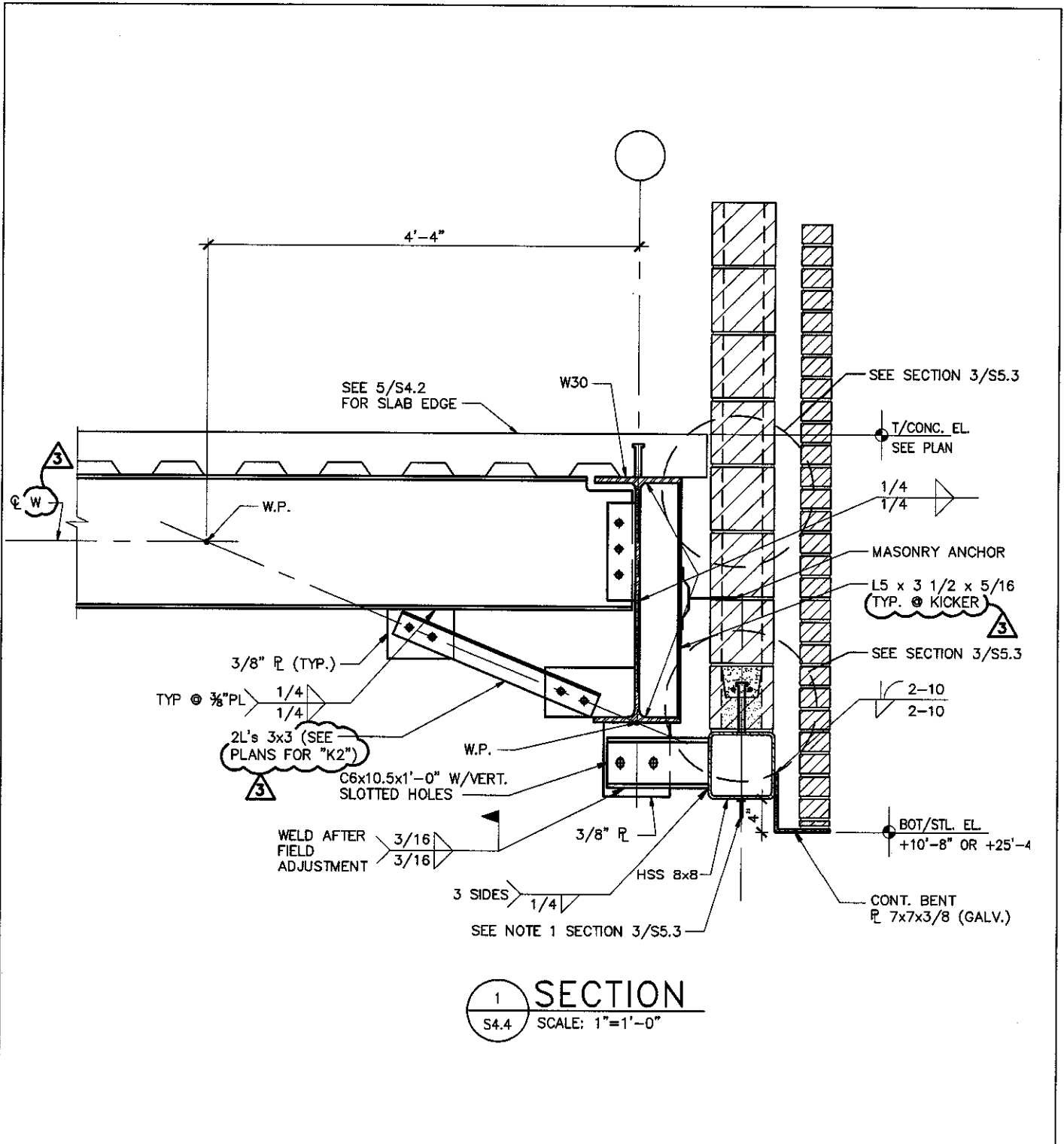
NOTES:

1. 5" CONCRETE SLAB ON GRADE WITH WWF 6x6-W2.9xW2.9 ON MINIMUM 6" COMPACTED GRANULAR SUBGRADE. T/SLAB ELEVATION = +0'-0" = +14.50 CCD UNLESS NOTED OTHERWISE.
2. PROVIDE CONTROL JOINTS IN SLAB ON GRADE @ MAX. 15'-0" O.C. SEE SHEET S3.1.
3. TOP OF EXTERIOR FOOTING ELEVATION = -3'-0" (MAX.) UNLESS NOTED. TOP OF INTERIOR FOOTING ELEVATION = -2'-0" (MAX.) UNLESS NOTED.
4. "PX" INDICATES CONCRETE PIER. SEE SCHEDULE ON SHEET 1.1A. TOP OF PIER ELEVATION = -1'-0". (TYP. U.N.O.)
5. TOP OF FOUNDATION WALL ELEVATION = +0'-0" UNLESS NOTED OTHERWISE.
6. PROVIDE THICKENED SLAB BELOW ALL NON-LOAD BEARING MASONRY WALLS AS INDICATED IN DETAILS 10/S3.2 & 11/S3.2. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
7. COORDINATE LOCATIONS AND ELEVATIONS OF ALL FOUNDATION WALL OPENINGS THAT MAY BE REQUIRED FOR UTILITIES WITH CIVIL, PLUMBING, OR ELECTRICAL DRAWINGS. SEE DETAIL 10/S3.1.

8. PROVIDE 4-#6 BARS x {OPENING WIDTH + 8" EA. SIDE + 12" HOOK (ALT. T & B)}, TOP AND BOTTOM AT DUCT BANK PENETRATIONS. SEE 10/S3.1 FOR SIMILAR OPENING DETAIL, ADD'L REQUIREMENTS & NOTES.

3

<p>Sketch Title:</p> <h2 style="text-align: center; margin: 10px 0;">FOUNDATION NOTES</h2>	<p>Subj: Foundation Notes</p> <hr/> <p>Date: 2/18/09</p> <hr/> <p>Ref: S1.1A & S1.1B</p> <hr/> <p>Scale: As Noted</p> <hr/> <p>Issue for: Addendum #3</p>
<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p style="font-size: 8px; margin: 0;">CITY OF CHICAGO</p> <p style="margin: 5px 0;">BRIGHTON PARK I ELEMENTARY SCHOOL</p> <p style="font-size: 8px; margin: 0;">3456 W. 38th STREET CHICAGO, IL 60632</p> <p style="font-size: 8px; margin: 0;">CHICAGO PUBLIC SCHOOLS CAPITAL PROGRAM NEW CONSTRUCTION CITY OF CHICAGO, MAYOR RICHARD M. DALEY</p> </div> <div style="flex: 1; text-align: center;"> <p style="font-size: 8px; margin: 0;">Chicago Public Schools</p> </div> </div>	<p>Sketch No:</p> <h1 style="text-align: center; margin: 10px 0;">SSK-09</h1> <div style="text-align: right;"> <p style="font-size: 8px; margin: 0;">PARTNERS 350 WEST ONTARIO STREET SUITE 200 CHICAGO ILLINOIS 60654 TEL 312.664.1444 FAX 312.664.0755</p> </div>



1 SECTION
S4.4 SCALE: 1"=1'-0"

Sketch Title:	Subj: Structural Detail
SECTION 1/S4.4	Date: 2/18/09
	Ref: 1/S4.4
	Scale: As Noted
	Issue for: Addendum #3


**BRIGHTON PARK I
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 CHICAGO PUBLIC SCHOOLS
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 CITY OF CHICAGO, MAYOR RICHARD M. DALEY


 Chicago Public Schools

Sketch No:
SSK-10

STR PARTNERS
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MASONRY NOTES:

1. EXTERIOR 10" CMU WALLS SHALL BE REINFORCED WITH #6@32" O.C. AND EXTERIOR 8" CMU WALLS SHALL BE REINFORCED WITH #5 @ 24" O.C. BARS SHALL RUN FULL HEIGHT OF WALL AND BE GROUTED SOLID. PROVIDE DOWELS AT FOUNDATION OR SLABS TO MATCH SIZE AND SPACING OF WALL REINFORCING. THE 8" AND 10" CMU WALL ON COLUMN LINE 14 SHALL BE REINFORCED WITH #5@24" FROM THE FOUNDATION TO MATCH LOCATION OF VERTICAL REINFORCING. THE 14" SHORE CMU WALL ON COLUMN LINE G AT GYM CONSISTS OF ONE 8" CMU AND ONE 6" CMU WALLS BACK TO BACK. THE WALL SHALL BE REINFORCED WITH 2#5@24" (1#5 IN EACH CMU WALL) BARS SHALL RUN FULL HEIGHT OF WALL AND BE GROUTED SOLID. PROVIDE DOWELS AT FOUNDATION TO MATCH LOCATION OF VERTICAL REINFORCING. THE WALL SHALL BE CONSTRUCTED AS A COMPOSITE WALL - THE GAP BETWEEN THE TWO CMU WALLS SHALL BE COMPLETELY FILLED WITH MORTAR. PROVIDE JOINT REINFORCING BETWEEN THE WALLS AT 8" O.C. AT COLUMN LOCATIONS THE 6" AND 8" CMU WALLS SHALL BE ANCHORED TO COLUMN WITH TRIANGULAR ANCHORS @ 16" O.C.
2. FOR EXTERIOR PIER REINFORCING SEE DETAILS ON DRAWINGS S5.2 AND S5.3. FOR INTERIOR PIER REINFORCING DETAILS SEE ARCH. DRAWINGS. ALL PIER REINFORCING SHALL BE CONTINUOUS THROUGH LINTELS. PROVIDE SINGLE DOWELS AT FOUNDATION TO MATCH SIZE AND LOCATION OF WALL REINFORCING.
3. CONTRACTOR TO SUBMIT TO ARCHITECT COMPLETE SHOP DRAWINGS SHOWING ALL OPENINGS W/LINTEL TYPE INCLUDING REINFORCED CMU LINTELS AND WALL REINFORCING.
4. EXTEND REINFORCING TO END OF LINTEL AT EACH SIDE OF OPENING (FOR CMU LINTEL). DRILL HOLES IN STEEL BEAM FLANGES ON SUPPORT TO PROVIDE CONTINUITY OF VERTICAL MASONRY REINFORCEMENT AT EDGES OF OPENINGS. CONTRACTOR MAY SHIFT PIER REINFORCING 8" TO AVOID CUTTING STEEL LINTEL BEAM FLANGES IF SPACE PERMITS. GROUT FIRST CELL NEXT TO OPENING SOLID FULL HEIGHT.
5. GROUT CELLS IN JAMBS FULL HEIGHT.
6. CONTROL AND EXPANSION JOINTS SHALL NOT BE PLACED AT BEARING POINTS OR IN THE LINTEL SPAN.
7. AT INTERIOR CMU WALLS WHERE THERE IS NO CONTROL JOINT AT EITHER SIDE OF OPENING, PROVIDE HORIZONTAL JOINT REINFORCING AT TOP OF LINTEL, 8" ABOVE TOP OF LINTEL AND 8" BELOW OPENING. JOINT REINFORCING SHALL BE CONTINUOUS FROM CONTROL JOINT TO CONTROL JOINT.
8. FOR LINTEL LOCATION, SEE ARCH. DRAWINGS.
9. ALL EXTERIOR STEEL LINTELS AND ATTACHED STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED & PROPERLY FLASHED. SEE ARCHITECTURAL DRAWINGS.
10. ALL VOIDS IN RUNNING BOND BLOCKS SHALL STACK SO AS TO HAVE REINFORCING CONTINUE IN WALL WITHOUT INTERRUPTION.
11. LAY ALL MASONRY WITH FULL BED & HEAD JOINTS OF MORTAR.
12. ALL BRICK VENEER SHALL RETURN TO FILL THE CAVITY & PROVIDE BEARING FOR STEEL LINTELS. PROVIDE BRICK VENEER RETURN AT EDGES OF OPENING:
4" - FOR OPENINGS 7'-0"
8" - FOR OPENINGS ≤ 7'-0"
13. FOR ANCHORAGE OF VENEER TO CMU BACKUP OR STRUCTURAL STEEL MEMBERS, SEE ARCH. DRAWINGS. HORIZONTAL JOINT REINFORCEMENT TO ANCHOR VENEER NOT TO EXCEED 16" O.C.
14. FOR EXTERIOR CMU WALLS PROVIDE ONE BOND BEAM W/ 2-#5 (CONT.) JUST BELOW AND ABOVE ALL OPENINGS. ALL BOND BEAMS SHALL BE GROUTED SOLID AND BE CONTINUOUS FROM CONTROL JOINT TO CONTROL JOINT.
15. SHORE CMU WALLS UNTIL LATERAL SUPPORT IS PROVIDED AT FLOORS AND ROOF LEVELS.
16. FOR TYPICAL DETAILS OF INTERSECTING MASONRY WALLS SEE DETAIL 2/S5.2
17. FOR ANCHORAGE OF MASONRY WALLS TO STEEL COLUMNS SEE ARCH. DWG. PENICIL RODS SHALL BE SHOP WELDED TO COLUMNS BY STEEL FABRICATOR AS REQUIRED.
18. WALL TIES, SHEET-METAL ANCHORS, STEEL PLATES AND BARS LOCATED AT EXTERIOR WALLS OR EXPOSED TO MEAN RELATIVE HUMIDITY EXCEEDING 75% (POOL, KITCHEN, SHOWERS AND OTHER ROOMS INDICATED BY ARCH. DG) SHALL BE MILL GALVANIZED.
19. INTERIOR 6" CMU AND SGT WALLS SHALL BE GROUTED 24" O.C. (SEE ARCH. DEWS.)
20. FOR CONTROL JOINT LOCATIONS IN INTERIOR AND EXTERIOR CU WALLS SEE ARCH. DEWS.
21. MASONRY SUPPORTED BY THE FOUNDATION MUST BE SEPARATED BY MASONRY SUPPORTED BY STEEL FRAMING BY A 1/2" MINIMUM HORIZONTAL SOFT JOINT BELOW STEEL FRAMING AND A VERTICAL CONTROL JOINT AT FRAMING SUPPORT SEE ARCHITECTURAL DRAWINGS.
22. WHERE CROSS WALLS ARE NOT THICK ENOUGH TO PROVIDE FULL LINTEL BEARING, PROVIDE ADDITIONAL CMU TO ATTAIN REQUIRED LINTEL BEARING. GROUT ALL CU SOLID AND ATTACH TO STEEL COLUMNS IF LOCATED NEAR LINTEL BEARING.
23. THE CANTILEVER 8" CMU WALLS IN THE PRE K ROOMS (MP-8) SHALL BE REINFORCED WITH 2-#5 REBAR @ 24". PROVIDE DOWELS TO MATCH VERTICAL REINFORCING. DOWELS SHALL HAVE STANDARD HOOK AND BE FULLY DEVELOPED INTO THICKENED SLAB ON GRADE.
24. 4" CMU + 4" SGT SHALL BE COMPOSITE WALLS. 6" CMU + 2" SGT SHALL BE COMPOSITE WALLS. 8" SGT + 2" SGT SHALL BE COMPOSITE WALLS. PROVIDE JOINT REINFORCING BETWEEN THE WALLS @ 8" O.C. THE JOINT BETWEEN THE WALLS SHALL BE COMPLETELY FILLED WITH MORTAR.
25. INTERIOR 8" CMU WALL ON LINE 8.5 BETWEEN LINES D AND F. TOP WALL EL.=24'-0". BOTTOM OF WALL EL.=17'-0". REFERENCE DRAWING A1.19 AND A5.6 (SECTION 1). THIS WALL SPANS HORIZONTALLY BETWEEN PIERS. PROVIDE WALL ANCHORS BETWEEN WALL AND WALL RETURNS. PROVIDE WALL ANCHORS BETWEEN WALL RETURNS AND EXTERIOR 10" CMU. TOP OF WALL RETURN EL.=24'-0". SEE DETAILS 8 AND 9 ON A8.2 FOR FURTHER INFORMATION.
26. THE 8" CMU WALLS FOR STORAGE ROOMS B-119 AND B-120 SHALL BE REINFORCED WITH #5@24". PROVIDE #5@24" DOWELS AT SLAB TO MATCH LOCATION OF VERTICAL REINFORCING.
27. THE 6" CMU WALL NORTH OF STAIR S-4 SHALL BE REINFORCED WITH #5@24". PROVIDE #5@24" DOWELS TO MATCH LOCATION OF VERTICAL REINFORCING. DOWELS SHALL HAVE STANDARD HOOK AND BE FULLY DEVELOPED INTO THICKENED SLAB ON GRADE.
28. THE INTERIOR 8" CMU WALL ON LINE D.1 AT STAIR S-2 AND THE INTERIOR 8" CMU WALL ON LINE Z AT STAIR S-1 SHALL BE REINFORCED WITH #5@24" FROM ELEVATION 21'-7" UP TO ROOF DECK.
29. TYPICAL SECTIONS 1 AND 2 S5.4. THE DESIGN INTENT OF THESE SECTIONS IS TO HAVE THE TOP OF ALL INTERIOR CMU WALLS SUPPORTED ON BOTH SIDES AT TWO FEET FROM THE END OF THE WALL AND 4'-0" O.C. THE CONTRACTOR SHALL IGNORE SUPPORT FROM INTERSECTING WALLS. THESE SECTIONS DO NOT ADDRESS ALL POSSIBLE SUPPORT CONDITIONS. CONTRACTOR SHALL MODIFY THESE SECTIONS AS REQUIRED TO SATISFY THE DESIGN INTENT.

Sketch Title:

MASONRY NOTES

Subj: Masonry Notes

Date: 2/18/09

Ref: S5.1

Scale: As Noted

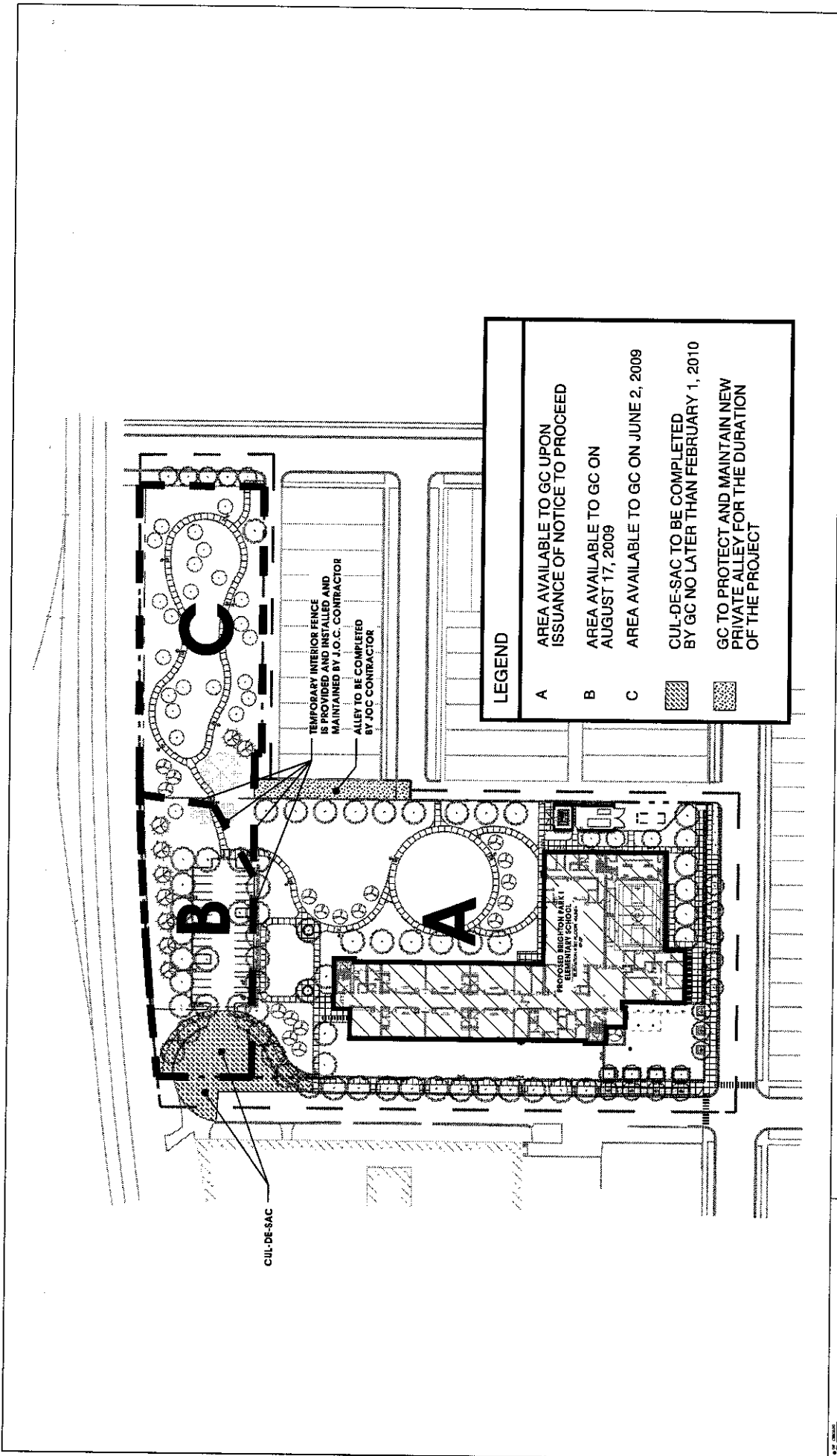
Issue for: Addendum #3

Sketch No:

SSK-11

STR
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LEGEND

A AREA AVAILABLE TO GC UPON
ISSUANCE OF NOTICE TO PROCEED

B AREA AVAILABLE TO GC ON
AUGUST 17, 2009

C AREA AVAILABLE TO GC ON JUNE 2, 2009




█ CUL-DE-SAC TO BE COMPLETED
BY GC NO LATER THAN FEBRUARY 1, 2010

█ GC TO PROTECT AND MAINTAIN NEW
PRIVATE ALLEY FOR THE DURATION
OF THE PROJECT

TEMPORARY INTERIOR FENCE
IS PROVIDED AND INSTALLED AND
MAINTAINED BY J.O.C. CONTRACTOR
ALLEY TO BE COMPLETED
BY JOC CONTRACTOR

PROPOSED BRIGHTON PARK I
ELEMENTARY SCHOOL
1000 W. 39TH STREET
CHICAGO, IL 60608

CUL-DE-SAC

 <p>BRIGHTON PARK I ELEMENTARY SCHOOL 1000 W. 39TH STREET CHICAGO, IL 60608 CAPITAL PROGRAM NEW CONSTRUCTION CITY OF CHICAGO, NANCY ROBERTS & DALEY</p>	 <p>CHICAGO PUBLIC SCHOOLS</p>	Subj: Construction Phasing Date: 2/20/09 Ref: N/A Scale: As Noted Issue for: Addendum #3	Sketch Title: SITE PHASING AND COORDINATION PLAN	Sketch No: SKO.0	 <p>STER S.A. INTERNATIONAL, INC. 1111 N. LAKE STREET, SUITE 100 CHICAGO, IL 60610</p>
		<p>www.cityofchicago.org</p>			