AGENDA FOR THE WEST HAYMARKET
JOINT PUBLIC AGENCY (JPA)
TO BE HELD WEDNESDAY, OCTOBER 26, 2011 AT 3:30 P.M.

CITY-COUNTY BUILDING
555 S. 10TH STREET
CITY COUNCIL CHAMBERS ROOM 112
LINCOLN, NE 68508

1. Introductions and Notice of Open Meetings Law Posted by Door (Chair Beutler)

2. Public Comment and Time Limit Notification Announcement (Chair Beutler)

   Individuals from the audience will be given a total of 5 minutes to speak on specific items listed on today’s agenda. Those testifying should identify themselves for the official record.

3. Approval of the minutes from the JPA meeting held October 6, 2011 (Chair Beutler)
   ➢ (Staff recommendation is for the JPA Board to approve the minutes as presented)

4. West Haymarket Progress Report (Paula Yancey)
   ➢ Public Comment

5. Approval of Payment Registers (Steve Hubka)
   ➢ Public Comment
   ➢ (Staff recommendation is for the JPA Board to approve the payment registers)

6. Review of the September 2011 Expenditure Reports (Steve Hubka)
   ➢ Public Comment

7. Title 200 Reimbursement and Environmental Status (Miki Esposito)
   ➢ Public Comment

8. Bill No. WH 11-83 Resolution approving the Site Lease between the West Haymarket Joint Public Agency and District Energy Corporation to provide thermal services to the Arena and other buildings and facilities in the vicinity of the Arena. (Dan Marvin/Chris Connolly)
   ➢ Public Comment
   ➢ (Staff recommendation is for the JPA Board to approve the resolution)

9. Bill No. WH 11-84 Resolution to approve the PC Sports Consultant Agreement between PC Sports, LLC and the West Haymarket Joint Public Agency for extended Program Management Services and extended Project Management Services (collectively “Arena Project Services”) in connection with the design and construction of multiple facilities, including the Arena, near downtown Lincoln. (Dan Marvin)
   ➢ Public Comment
   ➢ (Staff recommendation is for the JPA Board to approve the resolution)
10. Bill No. WH 11-85 Resolution to approve Amendment No. 4 to the Agreement for Environmental Remediation Consulting Services between Alfred Benesch & Company and the West Haymarket Joint Public Agency, West Haymarket Environmental Remediation Project, to include expanded scope of consulting services for existing Tasks 5 and 6; new Task 19 for preparation of an EPA Brownfields Cleanup Grant Application; and new Task 20 for preparation of a remedial action plan and contractual plans and specifications to support the City/JPA’s procurement of remedial construction services for the BNSF Transition Property for an additional amount of $73,648.00. (Miki Esposito)
   ➢ Public Comment
   ➢ (Staff recommendation is for the JPA Board to approve the resolution)

11. Bill No. WH 11-86 Resolution to approve the Contract Agreement between Terracon Consultants Inc. and the West Haymarket Joint Public Agency for West Haymarket Arena and Garage Special Inspections. (Paula Yancey)
   ➢ Public Comment
   ➢ (Staff recommendation is for the JPA Board to approve the resolution)

12. Set Next Meeting Date: Wednesday November 16th at 3:30 in the City-County Building Room 303

13. Motion to Adjourn
WEST HAYMARKET JOINT PUBLIC AGENCY (JPA) 
Board Meeting 
October 6, 2011

Meeting Began At: 3:30 P.M. 
Meeting Ended At: 4:20 P.M. 
Members Present: Tim Clare, Chris Beutler

Item 1 - Introductions and Notice of Open Meetings Law

Chair Beutler opened the meeting with introductions and noted that by the next meeting there will be a third Board member. He advised that the open meetings law is in effect and is posted in the back of the room.

Item 2 – Public Comment and Time Limit Notification

Beutler stated that individuals from the audience will be given a total of five minutes to speak on specific items listed on today’s agenda. Those testifying should identify themselves for the official record and sign in.

Beutler acknowledged the loss off Jayne Snyder, former Board Chair, who passed away early this morning. Clare stated that what Snyder brought to the Board and to the community went beyond these meetings. She was a nationally respected physical therapist and was a true pioneer in her professional life. As a City Council person she brought that same compassion in representing her constituents and the City of Lincoln. She took issues head on by doing research and talking to the appropriate parties. She was never unprepared for a meeting and her decision making was well thought out. She did what she thought was right for the City. This project is where it is today in large part because of Jayne Synder. The City lost a great physical therapist, Councilwoman and friend.

Beutler called on those present to observe a moment of silence in honor of Snyder.

Item 3 – Approval of the minutes from the JPA meeting held September 16, 2011

Beutler asked for any corrections or changes to the minutes from September 16, 2011. Hearing none, Clare motioned for approval of the minutes. Beutler seconded the motion. Motion carried 2-0.

Item 4 – West Haymarket Progress Report

Paula Yancey, PC Sports, came forward to give an update on the West Haymarket project. The surcharge has been placed on the District Energy site and will remain in place for the next couple of weeks per the geotechnical engineer’s recommendations. Mortenson is mobilized on the arena site. Their trailer is in place and the crane is on site to drill pilings to support the foundation. Test piles have been drilled and in 14 days when they have cured, they will be tested to make sure the
recommendations of the geotechnical and structural engineers have been met.

At the last JPA meeting, the purchase of the USPS property was approved and a lot has happened since that approval. The contractor has mobilized on site and began work on the remaining portion of R Street and the parking lot south of the post office. As of today, the brick wall that went across R Street is completely down. Clare asked if the property purchased from the Post Office is primarily for ingress/egress purposes to the arena site. Yancey answered that Mortenson will use the north side of the site for ingress/egress, but the “R” Street access will provide egress for the rest of the Haymarket contractors.

New concrete and curbs have been poured as part of the work on M, N and 10th Streets. The traffic signal poles have arrived on site and are being prepped for install. A temporary road has been constructed to provide access for the upcoming Amtrak construction. The station is currently in the design process and will be ready for bidding at the end of October.

There was a kickoff meeting today for the continued design of the festival space and pedestrian bridge. The cleaning of the Phase I canopy is currently in progress. Work continues on the design of the core area roadway projects as well as the Amtrak station and Parking Garage 1, which will go out for bid later this fall.

Clare asked if these activities conform to the schedule that was initially proposed. Yancey stated that they are on schedule. The test piles got off to a late start due to some equipment issues, but those have been resolved. There will be a 14 day window as the piles cure, so there won’t be quite as much activity on site during that time.

Clare then asked if everything is in line from a performance audit standpoint. Yancey indicated that her office has been working to ensure invoices are backed up against the budget and cross referenced with a payment voucher number from the City. They are also going through all of the contracts and making sure all of the documentation has been received.

Beutler asked for any comments from the public. Judy Smith came forward and asked what is in place to guarantee that the drilling is up to standards and who will be doing that. Yancey advised that Benesch was authorized to proceed with the inspections and testing of pile installation. They are on site every day that there are drilling operations occurring overseeing the work.

**Item 5 – Bill No. WH 11-73 Resolution approving the Annual Financial Interlocal Agreement between the West Haymarket Join Public Agency (“JPA”) and the City of Lincoln Lancaster County Railroad Transportation Safety District (“District”) providing for the District to aid the JPA in funding the cost of removal of existing railroad tracks, related restoration activities and related Project Improvements in the West Haymarket Redevelopment Area up to a total of $300,000.**

Roger Figard, Public Works, came forward to represent the Railroad Transportation Safety District (RTSD). Beutler asked Figard to give a brief explanation of the RTSD for those that may not be familiar with it. Figard explained that the RTSD was founded in the early 1970’s and is a political subdivision allowed by State Statute. Its primary mission is to improve safety and reduce conflict between pedestrians, cars, bicycles and trains in Lincoln and Lancaster County. It levies a property tax county-wide and those funds are collected and administered by a Board consisting of three City Council members and three County Commissioners.
The West Haymarket project has created an opportunity for the RTSD to complete work on a series of tracks in 7th and 8th Streets. Over the years these tracks have been not been used which has created a desire to remove them. The West Haymarket project created an opportunity to discuss this with BNSF in order to get them to agree that the tracks could be relinquished. It has also created an opportunity for the RTSD to pay for the removal of the tracks at a reduced cost. The resolution before the Board today will allow the RTSD to reimburse the West Haymarket JPA for removal of the tracks.

Beutler asked if the tracks on 8th Street are the ones that bicycle riders were catching their tires on and flipping over. Figard stated that it was but the tracks have been temporarily covered up. The West Haymarket project will allow for complete removal of the tracks and replacement of the street.

Beutler asked for any comments from the public. Hearing none, Clare made a motion to approve the resolution. Beutler seconded the motion. Motion carried 2-0.

**Item 6 – Bill No. WH 11-77 Resolution to approve a Real Estate Purchase Agreement, a related Lease Agreement, and related Relocation Assistance Memorandum by and between the West Haymarket Joint Public Agency, N Street, LLC, and Alter Trading Corporation relating to property generally located at 525 and 601 N Street.**

Beutler observed that the JPA has been working closely with Alter Trading, who is unfortunately in the wrong place at the wrong time. Dan Marvin advised that Alter Trading is going to relocate, keeping their jobs and activities which are essential to the community, within the City. The JPA will acquire the property and lease it back to Alter so they can transition to their new location over the next several months.

Beutler asked if the agreement is within the budget and schedule. Marvin stated that it is within the budget and there is a lot of flexibility in the schedule for the area south of O Street. One key piece is to meet the connection of Arena Drive and N Street however; Alter will be out of the area when the tracks are removed so there should be no issues. Beutler expressed his appreciation for the congenial atmosphere in working with Alter.

Beutler asked for any comments from the public. Jane Kinsey came forward and stated that as a taxpayer and citizen she appreciated Jayne Snyder’s participation in the government. Snyder was a strong and courageous lady and she will be missed. Kinsey then asked how much the purchase price is and also noted that she went to the Haymarketnow website and was unable to find the budget. Marvin explained that under statute the JPA is required to provide relocation assistance to Alter and also pay them fair market value for their property. Midwest Relocation was hired to quantify the relocation costs which are roughly $2.9 million. The cost for the land is approximately $1.6 million bringing the combined total to $4.5 million. If this had been a strict condemnation there would have been a very similar process. It took about a year to go this route, but the outcome is much better. Beutler thanked Kinsey for her kind words about Snyder and asked Dan Marvin to check on the budget link as soon as he could.

With no further public comment, Clare made a motion to approve the resolution. Beutler seconded the motion. Motion carried 2-0.
Item 7 – Bill No. WH 11-78  Resolution approving Amendment No. 7 to the Agreement for Engineering Services between Olsson Associates dba Lincoln Haymarket Infrastructure Team and the West Haymarket Joint Public Agency, Haymarket Infrastructure Design Project No. 870000 to add to or amend the existing Agreement to include supplemental design and bidding for the M & N Street Roadway Improvement project; redesign of the Amtrak Station; and deducts for Parking Garage No. 2 and 10th and Salt Creek Roadway for a total decrease in the Agreement amount of $155,271.

Chad Blahak advised that Amendment No. 7 constitutes changes to the design contract with the design team. The net result of the changes is a reduction to the total contract of just over $155,000. That figure is made up of a couple of larger deducts and a couple of additions to some aspects of the project. Blahak offered to answer any questions the Board had.

Beutler asked for any comments from the public. Hearing none, Clare made a motion to approve the resolution. Beutler seconded the motion. Motion carried 2-0.

Item 8 – Bill No. WH 11-79  Resolution approving Close Out/Demobilization Agreement between the West Haymarket Joint Public Agency (“JPA”) and SAIC Energy, Environment & Infrastructure LLC (“SAIC”) providing for the JPA to pay SAIC $75,117.27 for demobilization expenses and $539,754.77 as compensation for work performed prior to cancellation of the JPA’s contract with SAIC, of which $465,103.13 will be paid to SAIC and $74,651.64 will be paid directly to PC Sports for work performed by PC Sports as SAIC’s subcontractor.

Rick Peo pointed out that the contract for SAIC was terminated at a previous meeting. At the time of the termination, SAIC had outstanding invoices for work performed that total $539,754. Approximately $74,000 of that amount is for PC Sports who was their subcontractor. The $74,000 will be paid directly to PC Sports and the remaining will be paid to SAIC.

As the original contract was anticipated to last as long as five years, SAIC came to Lincoln and were required to set up an office, rent a facility, set up telephone and computer systems and hire additional employees. It was agreed that the JPA would pay half of the demobilization costs which amount to approximately $75,000. In the negations certain claims such as the cost of acquiring a vehicle and office furniture were disallowed. If SAIC should be able to re-rent the leased space in the next three years, the JPA will share in the cost savings on a 50/50 basis.

Clare asked for more information regarding the payment going to PC Sports. Peo explained that PC Sports was a subcontractor and billed SAIC directly. They had $74,000 in outstanding invoices that had not been paid at the time of the termination. It was decided that it would be better to pay PC Sports directly to get them paid a little earlier than they might have been waiting for this compensation package to finalize.

Clare noted that the contract with PC Sports increased from what was originally contracted due to an expansion of duties and the amount paid to SAIC was going to be less. He asked what the overall savings to the JPA would be for that. Dan Marvin indicated that they plan to bring forward a permanent contract for PC Sports at the next meeting. They have estimated that over the duration of the contract, the overall savings will range between $500,000 and $1 million over what was projected prior to the termination of SAIC.
Beutler asked for any comments from the public. Hearing none, Clare made a motion to approve the resolution. Beutler seconded the motion. Motion carried 2-0.

**Item 9 – Bill No. WH 11-80 Resolution to approve Energy Services Agreement between the West Haymarket Joint Public Agency and District Energy Corporation to provide energy services to the West Haymarket Arena and related facilities**

Dan Marvin stated that as part of this project it was envisioned that a District Energy plant would provide heating and cooling for the arena. District Energy heats and cools the County City building and also provides heat for the State office building, so it is a governmental entity of its own. This is a unique project because District Energy has never typically provided services for commercial buildings. Enough critical mass will be built so that the arena can be heated and cooled and the surplus capacity can be offloaded to the commercial buildings. In the built environment many buildings already have existing heating and cooling plants in their buildings so for them to tap into a District Energy they have to be of a certain age and contemplating replacement. Here there will be a Greenfield environment and over the years have the ability to offload some of the surplus capacity to the commercial enterprises.

The agreement before the Board is for District Energy to provide heating and cooling and will give them the ability to issue debt to build their plant and equipment. There is an amendment to the agreement because when it was originally put online it had not been decided when the JPA would begin to pay the bill. It was decided that payment would begin on some of the operating, maintenance and administrative costs on September 1, 2013, when the arena opens. At some point in the future there will be discussions about the actual date debt service will begin, but it will start no earlier than September 1, 2013 and no later than September 1, 2014.

Beutler asked for any comments from the public. Hearing none, Beutler made a motion to approve Bill No. WH 11-80. Clare seconded the motion. Beutler then made a motion to approve Amendment No. 1. Clare seconded the motion. Motion carried 2-0. The main motion was then voted on and carried 2-0.

**Item 10 - Bill No. WH 11-81 Resolution to approve Amendment No. 1 to Letter Agreement between the West Haymarket Joint Public Agency and District Energy Corporation (DEC) providing for the DEC to reimburse the JPA for all funds provided by the JPA in an amount not to exceed $2 Million to fund DEC’s preliminary cost to develop plans and specifications and cost estimates for facilities to heat and cool the Arena and other related facilities.**

Rick Peo explained that the purpose of this amendment is to ensure that the JPA gets back the money that was advanced to the DEC. This money was for the preliminary engineering and design work for the heating and cooling system back in November 2010. The JPA agreed to advance up to a maximum of $2 million. At that time there was some uncertainty as to who would own the heating and cooling facility. The DEC will be the owner and operator of the facility and this agreement allows the JPA get its money back.

Beutler asked for any comments from the public. Hearing none, Clare made a motion to approve the resolution. Beutler seconded the motion. Motion carried 2-0.
Item 11 - Bill No. WH 11-82  Resolution to approve Change Order No. 2 to the JPA’s contract with Judd’s Brothers. This Change Order includes seven Work Change Directives that all modify the contract quantities for various site prep construction line items. These include increases to quantities for demolition and petroleum soils removal and decreases to quantities of granulated fill, dewatering, settlement plates and wells. The total cost for this change order results in a decrease of total contract amount by $79,140.00.

Randy Swanson, PC Sports, informed the Board that this is a deduct change order. There are a number of individual line items that make up this change order through reconciling quantities that were estimated when the contract was initially let. Now that the contract is about 30 days from completion, some of the quantities that weren’t used can be called back and some of the overruns on the soils can be balanced out. Most of the overruns are for underground contaminated soils and foundations that no one was aware of.

Clare asked what this does in terms of the budget for this particular project. Swanson answered that this particular package is right on budget and with 30 days left he feels there is still some cushion in case some additional things are found that they weren’t aware of.

Beutler asked for any comments from the public. Jane Kinsey came forward and asked how these decreases and increases were arrived at and if it was just by Judd’s Brothers or from some outside input. Swanson stated that when a significant contract like this is awarded, there are engineers estimates done based on drawings and based on as much information they know on site. Those estimates assume quantities and prices that are contracted. In a soil contamination situation, it isn’t always known what you are going to get into. Some costs are established upfront and since there is some uncertainty as to what the quantities are, the engineering team that works for the JPA has someone onsite every day actually tracking quantities. The real quantities are then reconciled back to the engineers estimate.

Hearing no other comments, Clare made a motion to approve the resolution. Beutler seconded the motion. Motion carried 2-0.

Item 12 -- Set Next Meeting Date

The next meeting will be held on Wednesday October 26, 2011 in City Council Chambers Room 112.

Item 13 – Motion to Adjourn

Clare made a motion to adjourn the meeting. Beutler seconded the motion. Motion carried 2-0. Meeting adjourned at 4:20 P.M.

Prepared by: Melissa Ramos-Lammli, Public Works and Utilities
West Haymarket JPA Payment Register
9/1/2011 through 9/30/2011

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General Coordination

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As of September 30, 2011

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City of Lincoln, NE  
West Haymarket JPA  
Operating Expenditure Report  
As of September 30, 2011

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City of Lincoln, NE
West Haymarket JPA
Operating Expenditure Report
As of September 30, 2011
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West Haymarket JPA  
Operating Expenditure Report  
As of September 30, 2011

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CERTIFIED - RETURN RECEIPT

Daniel Marvin
JPA – City of Lincoln
555 South 10th Street
Lincoln, NE 68508

RE: BNSFR Depot Site, Lincoln
NDEQ ID: 62076
Program ID: PRR 07116-MBS-1100 11875
Title 200 Application #11875

Dear Mr. Marvin:

Enclosed you will find an "Expense Payable Report." This report details the amount of your reimbursement from the Petroleum Release Remedial Action Cash Fund. The Department of Administrative Services should issue a reimbursement check or make electronic payment within three weeks. If this payment will be received by financial staff other than yourself, please let them know about this payment. If you have any questions after reviewing the Expense Payable Report, please feel free to contact me at (402) 471-0289.

In the event that you disagree with the Department's reimbursement of a particular cost or work effort, you have the right to formally petition the Department for a review of any disallowed portion of an application. However, according to regulation, you have only thirty days from receipt of this letter to file your petition with the Department in the format specified in Chapter 7 of Title 115 of the Nebraska Administrative Code. The petition will then be heard as a contested case pursuant to Title 115. If you do not already have a copy of Title 115, you may request a copy from the Department. Regulations and other program information can also be found on our web page at http://www.deq.state.ne.us. While your own attorney may best answer questions about the petition process, general questions about Title 115 may be addressed to the Department.

Sincerely,

Mona Wunder, Coordinator
Title 200 Program
Petroleum Remediation Section
Water Quality Division

Enclosure

Cc: Greg Jeffries, Burlington Northern Santa Fe Railway
Expense Payable Report

Payee: JPA – City of Lincoln
Facility: BNSFR, Depot Building, Lincoln
NDEQ PRR #07116-MBS-1100, IIS #62076
Supplemental Application #11875
Complete Application Received: September 13, 2011

<table>
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<tr>
<th>Invoice</th>
<th>Date</th>
<th>Eligible Expense</th>
<th>Ineligible Expense</th>
<th>Comments</th>
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<td>28,606.20</td>
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Totals | $809,449.40 | $671,320.78

Total Eligible Expenses $809,449.40
25% Co-Payment $0.00 (b)
Subtotal $809,449.40

Less 10% retained 10% $80,944.94 (c)

Reimbursement $728,504.46

(a) The Title 200 Program reimburses reasonable and actual costs to investigate and cleanup petroleum contamination from a tank. NDEQ approval for these remedial activities is required. This application contains costs for excavation and investigation activities done in conjunction with a redevelopment project in the area. The General Excavating invoices contain costs for excavation activities that were competitively bid. As they were the low bidder, the bid rates become the reasonable rate for this project’s approved remedial actions. Some items on the General Excavating invoices were not part of the bid and cannot be reimbursed without additional documentation such as a subcontractor invoice, description of the work, unit and unit break out, etc. However, the maximum that can be reimbursed for this release is $809,449.40 due to statutory limits less previous reimbursements made to Burlington Northern Santa Fe Railway. Therefore, eligible costs up to the maximum limit were identified and reimbursed. As the remaining costs cannot be reimbursed, a detailed eligibility review was not done. Ineligible amount by invoice number: General Excavating PR #1 $8,500.00, General Excavating PR #2 $20,337.53, General Excavating PR #3 $351,355.64, General Excavating PR #4 $132,459.91, General Excavating PR #4A $3,041.75, General Excavating PR #5 $77,106.70, Benesch #42007 $8,752.01, Benesch #42417 $3,715.00, Benesch #42983 $3,473.75, Benesch #44126 $4,627.50, Benesch #44614 $12,408.75, Benesch #45060 $16,936.04, Benesch #45567 $28,606.20
(b) The $25,000 deductible/co-payment requirement has been met for this release. The maximum reimbursement ceiling has been reached for this release pursuant to Neb. Rev. Stat. §66-1523. No further reimbursement may be made for this release from the Title 200 Fund.

(c) Title 200, Chapter 2, 005.03 states, “If any approved stage of remedial action is projected to take more than ninety days to complete, partial payments may be requested every sixty days. When reimbursement is requested prior to completion of an approved stage, the Department may withhold 10% of such payment until the approved stage is completed.” The Excavation Report due March 31, 2011 has not been submitted to the Department at this time. After the report is received completing the phase, a letter signed by the JPA-City of Lincoln requesting a refund of the 10% retained must be submitted to receive the refund.
RESOLUTION NO. WH- __________

BE IT RESOLVED by the Board of Representatives of the West Haymarket Joint Public Agency:

That the attached Site Lease between the West Haymarket Joint Public Agency and District Energy Corporation to provide thermal services to the Arena and other buildings and facilities in the vicinity of the Arena is hereby approved and the Chairperson of the West Haymarket Joint Public Agency Board of Representatives is hereby authorized to execute said Consultant Agreement on behalf of the JPA.

The City Clerk is directed to return a fully executed copy of the Site Lease to Project Manager, District Energy Corporation, c/o Lincoln Electric System, 1040 O Street, Lincoln, NE 68508.

Adopted this _____ day of October, 2011.

Introduced by:

________________________________________________________________________

Approved as to Form & Legality: West Haymarket Joint Public Agency
Board of Representatives

________________________________________________________________________

Legal Counsel for
West Haymarket Joint Public Agency

Tim Clare

________________________________________________________________________

Chris Beutler

________________________________________________________________________

Eugene Carroll
SITE LEASE

This SITE LEASE, dated __________, 20__ (the "Site Lease"), is between West Haymarket Joint Public Agency (the "Lessor"), and District Energy Corporation (the "Lessee").

WITNESSETH:

WHEREAS, the Lessor is the owner of the property described in Exhibit A attached hereto (the "Site"), and generally located at P Street and Arena Drive, Lincoln, Nebraska; and

WHEREAS, the Lessee is a nonprofit Nebraska corporation organized pursuant to the Nebraska Interlocal Cooperation Act (Chapter 13, Article 8, Reissue Revised Statutes of Nebraska, as amended, the "Interlocal Act") and the Nebraska Nonprofit Corporation Act (Chapter 21, Article 19, Reissue Revised Statutes of Nebraska, as amended, the "Nonprofit Act") for the purpose of providing for purchasing, leasing, constructing and financing facilities and acquiring services in order to furnish energy requirements and related services to The County of Lancaster, Nebraska (the "County") and The City of Lincoln, Nebraska (the "City") and to such other persons and entities as the County and the City may be authorized by law to serve; and

WHEREAS, the City and the Board of Regents of the University of Nebraska (the "Regents") have entered into the Joint Public Agency Agreement Creating the West Haymarket Joint Public Agency, dated as of April 1, 2010 (the "JPA Agreement") for the purpose of creating the West Haymarket Joint Public Agency (the "Agency") to (a) construct, equip, furnish and finance public facilities in the West Haymarket area of the City including but not limited to a sports/entertainment arena (the "Arena"), roads, streets, sidewalks, pedestrian overpass, public plaza space, sanitary sewer mains, water mains, electric transmission lines, drainage systems, flood control, parking garages and surface parking lots (the "West Haymarket Facilities"), and (b) to acquire land and to relocate existing businesses, to undertake environmental remediation and site preparation as necessary and appropriate for the construction, equipping, furnishing and financing of the West Haymarket Facilities (together, the "Project"); and

WHEREAS, the Lessor and the Lessee have agreed that the Lessee will provide thermal services to the Arena and other buildings and facilities in the vicinity of the Arena (collectively, the "A& R Facilities") and for such purpose it is necessary, desirable, advisable and in the best interests of the Lessor and the Lessee that the Lessor lease to Lessee that portion of the Site described on Exhibit A attached hereto and made a part hereof by reference (the "DEC Site");

NOW THEREFORE, in consideration of the premises and covenants contained herein, the Lessor and the Lessee agree as follows:

1. Property and Facilities Leased. The Lessor hereby leases to the Lessee the DEC Site described on Exhibit A hereto for the purpose of constructing, equipping and furnishing facilities (the "DEC Facilities") to provide thermal services (the "Services") to the A&R Facilities and such other buildings or facilities as the Lessor may determine to serve.

2. Additional Leased Property and Facilities. The Lessor and the Lessee agree that in order to provide the Services as contemplated, it may be necessary in the future for the Lessor to lease to the Lessee property or facilities in addition to the DEC Site and it is agreed that such property and facilities may be added to and be subject to the provisions of this Site Lease by addendum to be signed by the parties hereto.

3. Lease Consideration. As consideration for this Site Lease, the Lessee agrees to pay to the Lessor the sum of One Dollar ($1.00) during the term hereof and to construct, equip and furnish
facilities necessary to provide the Services to the A&R Facilities upon the terms specified in one or more service contracts between Lessor and Lessee as may be mutually agreed (collectively, the “Service Contract”).

4. Maintenance of Leased Property and Facilities. The Lessee agrees to maintain and keep the DEC Site in good condition and to make such improvements thereof from time to time as may be required to provide Service with the costs thereof to be paid as determined by the Lessee and the Lessor from time to time.

5. Operation of System. It is agreed and understood that the Lessee will enter into a management agreement with Lincoln Electric System to manage the DEC Facilities.

6. Right of Access. In order to operate and maintain the DEC Facilities, the Lessor hereby grants right of access to the DEC Site over and into such property of the Lessor as may be necessary for such operation and maintenance, as more particularly identified in either the Service Contract or the Lease Agreement.

7. System Financing. It is understood that the Lessee will finance the costs of constructing, equipping and furnishing the DEC Facilities (a) by the issuance of obligations (the “Obligations”) of the Lessee and (b) entering into a Lease-Purchase Agreement with the Lessor (the “Lease Agreement”) under which (i) the Lessor be will unconditionally obligated to make the lease payments specified therein and (ii) title to the DEC Facilities will be transferred to the Lessor upon satisfaction of all payments and other obligations of the Lessor under the Lease Agreement.

8. Insurance. The Lessor will carry and maintain, throughout the duration of this Site Lease, insurance against personal injury, property damage and such other liability in such amounts, subject to availability of such insurance, as the Lessor shall determine; provided, however, such insurance shall include general liability insurance, including coverage for bodily injury, wrongful death, personal injury and property damage. The minimum limits of liability to be provided by such insurance shall be as follows:

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Limit</th>
</tr>
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<tbody>
<tr>
<td>Bodily Injury/Property Damage</td>
<td>$1,000,000 Each Occurrence</td>
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<tr>
<td></td>
<td>$2,000,000 Aggregate</td>
</tr>
<tr>
<td>Personal Injury Damage</td>
<td>$1,000,000 Each Occurrence</td>
</tr>
</tbody>
</table>

The Lessor shall provide the Lessee with a Certificate of Insurance (a) showing the specific limits of insurance required by this section and showing the Lessee as an additional insured and (b) stating that such insurance policies require the insurer to provide the Lessee thirty (30) days notice of cancellation, non-renewal, or any material reduction of insurance coverage.

The costs of any insurance provided hereunder shall be payable as provided in the Lease Agreement.

9. Term and Possession. The term of this Site Lease will commence on December 15, 2011, and continue until all Obligations have been paid in full, by the Lessee as set out in paragraph 7 above. Lessee shall acquire possession of the DEC Site on the 15th day of December, 2011.

10. Taxes and Assessments. If the DEC Site, the DEC Facilities or any portion thereof is determined to be taxable or subject to assessment for any reason, the Lessor shall be obligated to pay such taxes prior to delinquency and provide the Lessee documentation that such payment has been timely
made. Any and all taxes, assessments, interest, or penalty assessed against the DEC Site or the DEC Facilities shall be the sole responsibility of the Lessor.

11. Quiet Enjoyment. At all times during the term of this Site Lease, the Lessor will peaceably and quietly have, hold and enjoy all of the DEC Site, and the Lessor will provide to the Lessee the ability to quietly have, hold and enjoy all of the DEC Site.

12. Warranties, Covenants and Indemnities Regarding Environmental Matters.

(a) As used in this Section, the following terms have the following meanings:

“Environmental Laws” means any now existing or hereafter enacted or promulgated federal, state, local, or other law, statute, ordinance, rule, regulation or court order pertaining to (i) environmental protection, regulation, contamination or clean up, (ii) toxic waste, (iii) underground storage tanks, (iv) asbestos or asbestos containing materials, or (v) the handling, treatment, storage, use or disposal of Hazardous Substances, including without limitation the Comprehensive Environmental Response, Compensation and Liability Act and The Resource Conservation and Recovery Act, all as exist from time to time.

“Hazardous Substances” means all (i) “hazardous substances” (as defined in 42 U.S.C. §9601(14)), (ii) “chemicals” subject to regulation under Title III of the Superfund Amendments and Reauthorization Act of 1986, as amended from time to time (iii) natural gas liquids, liquefied natural gas or synthetic gas, (iv) any petroleum, petroleum based products or crude oil or any fraction, or (v) any other hazardous or toxic substances, wastes or materials, pollutants, contaminants or any other substances or materials that are included under or regulated by any Environmental Law.

(b) The Lessor agrees to indemnify and hold Lessee harmless in respect of any claim relating to, arising out of, resulting from or in any way connected with Environmental Contamination present on site prior to this Site Lease Agreement, including, without limitation, contaminated site clean-up required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or any other environmental laws rules, regulations, ordinances, standards, by-laws, orders, certificates, permits, approvals, consent decrees or directions connected therewith for environmental site conditions present at the time of signing this Site Lease. By indemnifying the Lessee, the Lessor includes, without limitation, the costs and expense of cleanup and restoration of the property or any loss, expense, liability, payment and/or damage which the Lessee may suffer as a result of business disruption or damage to the site as a result of any such clean-up.

(c) The Lessor will provide the Lessee with copies of any notifications of releases of Hazardous Substances or of any environmental hazards or potential hazards that are given by or on behalf of the Lessor to any federal, state or local or other agencies or authorities or that are received by the Lessor from any federal, state or local or other agencies or authorities with respect to the DEC Site. Such copies will be sent to the Lessee concurrently with their being mailed or delivered to the governmental agencies or authorities or within ten days after they are received by the Lessor.

(d) The Lessor warrants and represents that the Lessor has provided the Lessee with copies of all emergency and hazardous chemical inventory forms (hereinafter “Environmental Notices”) that relate to the DEC Site previously given, as of the date hereof, by the Lessor to any federal, state or local governmental authority or agency as required pursuant to the Emergency Planning and Community Right to Know Act of 1986, 42 U.S.C.A. §11001 et seq., or any other Environmental Laws. The Lessor will provide the Lessee with copies of all Environmental Notices, including but not limited to the No Further Action letter from the Nebraska Department of Environmental Quality for the Haymarket Redevelopment Project.
Area, which relate to the DEC Site subsequently sent to any such governmental authority or agency as required pursuant to the Emergency Planning and Community Right to Know Act of 1986 or any other Environmental Laws. Such copies of subsequent Environmental Notices will be sent to the Lessee concurrently with their being mailed to any such governmental authority or agency.

(e) After taking possession of the "DEC Site", the Lessee will provide the Lessor with copies of any notifications of releases of Hazardous Substances or of any environmental hazards or potential hazards that are given by or on behalf of the Lessee to any federal, state or local or other agencies or authorities or that are received by the Lessee from any federal, state or local or other agencies or authorities with respect to the DEC Site. Such copies will be sent to the Lessor concurrently with their being mailed or delivered to the governmental agencies or authorities or within ten days after they are received by the Lessee.

(f) The Lessee will comply with and operate and at all times use, keep and maintain the DEC Facilities and every part thereof (whether or not such property constitutes a facility, as defined in 42 U.S.C. § 9601 et. seq.) in conformance with all Environmental Laws. Without limiting the generality of the foregoing, the Lessee will not use, generate, treat, store, dispose of or otherwise introduce any Hazardous Substance into or on the DEC Site or any part thereof nor cause, suffer, allow or permit anyone else to do so except in the ordinary course of the operation of the Lessee's business and in compliance with all Environmental Laws.

(g) From and after the commencement of this Site Lease, the Lessee agrees to indemnify, protect and hold harmless the Lessor from and against any and all claims, demands, costs, liabilities, damages or expenses, including, without limitation, attorneys' fees and expenses, arising from (i) any release (as defined above) or threat of a release, of any Hazardous Substances, upon or about the DEC Site or respecting any products or materials previously, now or thereafter located upon, delivered to or in transit to or from the DEC Site, (ii) (A) any violation now existing of, or any other liability under or in connection with, any Environmental Laws relating to or affecting the DEC Site, or (B) any hereafter arising violation, or any other liability, under or in connection with, any Environmental Laws relating to any products or materials previously, now or hereafter located upon, delivered to or in transit to or from the DEC Site, (iii) any assertion by any third party of any claims or demands for any loss or injury arising out of, relating to or in connection with any Hazardous Substances on or about the DEC Site, or (iv) any breach, falsity or failure of any of the representations, warranties, covenants and agreements contained in this Section.

13. Indemnity. Each party agrees to indemnify and hold harmless, to the fullest extent allowed by law, the other party and its officers, employees and agents from and against all claims, demands, suits, actions, payments, liabilities, judgments and expenses (including court-ordered attorneys' fees) arising out of or resulting from its acts or omissions of their officers, employees or agents in the performance of this Site Lease. Further, each party shall maintain a policy or policies of insurance (or a self-insurance program), sufficient in coverage and amount to pay any judgments or related expenses from or in conjunction with any such claims. Nothing in this Agreement shall require either party to indemnify or hold harmless the other party from liability for the negligent or wrongful acts or omissions of such other party or its principals, officers, or employees.


(a) In the event the whole or any part of the DEC Site is taken by eminent domain proceedings, the interests of the Lessor and the Lessee will be recognized. The proceeds of such condemnation will be applied as the respective interest of the Lessor and the Lessee are set forth herein. The Lessor further acknowledges that condemnation of the DEC Site would adversely affect the Lessee.
and that without the Lessee’s interest in the DEC Site, the Lessee would not construct, equip and furnish the DEC Facilities to provide Thermal Services to the A&R Facilities pursuant to the Service Contract.

(b) In the event that title to all or a portion of the DEC Site is challenged or threatened by means of competent legal or equitable action, the Lessor covenants that it will cooperate with the Lessee and will take all reasonable actions, including where appropriate the lawful exercise of the Lessor’s power of eminent domain, in order to quiet title to the DEC Site in the Lessor and the Lessee, as their respective interests are set forth herein.

15. Default. Time is agreed to be of the essence. In the event either party fails to comply with any of the material terms hereof, then the other party may declare a default fifteen (15) days after the defaulting party receives written notice specifying the nature thereof; provided, however, in the case of a default which cannot, in the exercise of reasonable diligence, reasonably be cured within such fifteen (15) day period, the continuation thereof beyond such period shall continue with the required exercise of reasonable diligence. If any default under this Site Lease shall occur and the defaulting party fails to cure the same within the express curative time period herein provided, the other party may seek any remedy at law or in equity without notice or demand, including specific performance. No delay or omission of any party in exercising any remedies or power accruing upon any event of default shall impair any remedies or power or shall be construed to be a waiver of any event of default or any acquiescence therein.

16. Surrender. In the event that either party terminates this Site Lease pursuant to Paragraph 9, the Lessee agrees to surrender to the Lessor the peaceable possession of the DEC Site. It shall be further agreed that upon surrender or termination of the Lessee’s occupancy of the premises, whether by the Lessee or the Lessor giving proper notice under the terms of this Agreement, the Lessee shall have no claim or right to receive compensation by virtue of the Eminent Domain Statutes of the State of Nebraska (Chapter 76, Article 7, Reissue Revised Statutes of Nebraska, as amended).

17. Assignment. The Lessee shall not assign this Site Lease or underlet, sublet, or relinquish the DEC Site without first obtaining written approval from the Lessor.

18. Partial Invalidity. If any one or more of the terms, provisions, covenants or conditions of this Site Lease will to any extent be declared invalid, unenforceable, void or voidable for any reason whatsoever by a court of competent jurisdiction, the finding or order or decree of which becomes final, none of the remaining terms, provisions, covenants and conditions of this Lease will be affected thereby, and each provision of this Site Lease will be valid and enforceable to the fullest extent permitted by law.

19. Notices. All written notices to be given under this Site Lease will be given by mail to the party entitled thereto at the addresses set forth below:

To the Lessor:

555 South 10th Street
Lincoln, Nebraska 68508
Attention:
Telephone: (402)
Facsimile: (402)
To the Lessee: District Energy Corporation
c/o Lincoln Electric System
1040 "O" Street
Lincoln, Nebraska 68508
Attention: Project Manager
Telephone: (402) 473-3396
Facsimile: (402) 473-1716

20. **Section Headings.** All section headings contained herein are for convenience of reference only and are not intended to define or limit the scope of any provision of this Site Lease.

21. **Amendments, Changes and Modifications.** This Site Lease may not be effectively amended, changed, modified, altered or supplemented except with the written consent of the Lessor and the Lessee.

22. **Applicable Law.** This Site Lease will be governed by and construed in accordance with the laws of the State of Nebraska.

23. **Execution.** This Site Lease may be executed in any number of counterparts, each of which will be deemed to be an original but all together will constitute but one and the same Site Lease. It is also agreed that separate counterparts of this Site Lease may be executed by the Lessor and the Lessee all with the same force and effect as though the same counterpart had been executed by both the Lessor and the Lessee.

24. **Successors.** This Site Lease will be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

25. **Complete Agreement.** This written agreement is a final expression of the agreement between the parties hereto and such agreement may not be contradicted by evidence of any prior oral agreement or of a contemporaneous oral agreement between the parties hereto. No unwritten oral agreement between the parties exists.

26. **Electronic Transactions.** The parties agree that the transaction described herein may be conducted and related documents may be stored by electronic means. Copies, telecopies, facsimiles, electronic files and other reproductions of original executed documents will be deemed to be authentic and valid counterparts of such original documents for all purposes, including the filing of any claim, action or suit in the appropriate court of law.

[The remainder of this page intentionally left blank.]
IN WITNESS WHEREOF, this Site Lease has been executed as of the date first above written.

WEST HAYMARKET JOINT PUBLIC AGENCY

ATTEST:

By: ________________________________ Chair

By: ________________________________ Secretary

DISTRICT ENERGY CORPORATION

ATTEST:

By: ________________________________ President

By: ________________________________ Secretary

ACKNOWLEDGMENTS

STATE OF NEBRASKA )
) ss.
COUNTY OF LANCASTER )

I, the undersigned, Notary Public in and for said County in said State, do hereby certify that and Dan Marvin, whose names as Chair and Secretary, respectively, of the West Haymarket Joint Public Agency are signed to the foregoing Site Lease and who are known to me to be such officers, acknowledged before me on this day that the execution of said Site Lease was their voluntary act and deed as such officers.

WITNESS my hand and seal this ______ day of ____________, 201__.

______________________________
Notary Public

(SEAL)
STATE OF NEBRASKA )
COUNTY OF LANCASTER )

I, the undersigned, Notary Public in and for said County in said State, do hereby certify that ___________ and ______________, whose names as President and Secretary, respectively, of District Energy Corporation are signed to the foregoing Lease and who are known to me to be such officers, acknowledged before me on this day that the execution of said Lease was their voluntary act and deed as such officers.

WITNESS my hand and seal this _______ day of ______________, 20__.

(Seal)

Notary Public
LEGAL DESCRIPTION

DISTRICT ENERGY CORPORATION

A TRACT OF LAND COMPOSED OF A PART OF THE DEPOT LOT, ORIGINAL TOWN OF LINCOLN, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 23, TOWNSHIP 10 NORTH, RANGE 6 EAST OF THE 6TH PM LANCASTER COUNTY, CITY OF LINCOLN, NEBRASKA, AND IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING FROM THE SOUTHWEST CORNER OF LOT 2 LINCOLN STATION ADMINISTRATIVE FINAL PLAT, AS ORIGINALLY PLATTED; THENCE ON AN ASSUMED BEARING OF NORTH 00 DEGREES 16 MINUTES 43 SECONDS EAST, ALONG THE WEST LINE OF SAID LOT 2, A DISTANCE OF 93.25 FEET TO A POINT; THENCE NORTH 89 DEGREES 41 MINUTES 38 SECONDS WEST, A DISTANCE OF 321.35 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 89 DEGREES 41 MINUTES 38 SECONDS WEST, A DISTANCE OF 29.25 FEET TO A POINT; THENCE NORTH 00 DEGREES 19 MINUTES 51 SECONDS EAST, A DISTANCE OF 32.42 FEET TO A POINT; THENCE NORTH 89 DEGREES 40 MINUTES 09 SECONDS WEST, A DISTANCE OF 30.75 FEET TO A POINT; THENCE NORTH 00 DEGREES 19 MINUTES 51 SECONDS EAST, A DISTANCE OF 29.00 FEET TO A POINT; THENCE NORTH 89 DEGREES 40 MINUTES 09 SECONDS WEST, A DISTANCE OF 0.83 FEET TO A POINT; THENCE NORTH 00 DEGREES 19 MINUTES 51 SECONDS EAST, A DISTANCE OF 311.50 FEET TO THE POINT OF BEGINNING. SAID TRACT CONTAINS A CALCULATED AREA OF 16898.67 SQUARE FEET (0.39 ACRES) MORE OR LESS.
RESOLUTION NO. WH- __________

BE IT RESOLVED by the Board of Representatives of the West Haymarket Joint Public Agency:

That the attached PC Sports Consultant Agreement between PC Sports, LLC and the West Haymarket Joint Public Agency for extended Program Management Services and extended Project Management Services (collectively “Arena Project Services”) in connection with the design and construction of multiple facilities, including the Arena, near downtown Lincoln is hereby approved and the Chairperson of the West Haymarket Joint Public Agency Board of Representatives is hereby authorized to execute said Consultant Agreement on behalf of the JPA.

The City Clerk is directed to return a fully executed original of the Agreement to Paula Yancey, PC Sports, 17300 Henderson Pass, Suite 110, San Antonio, TX 78232.

Adopted this _____ day of October, 2011.

Introduced by:

______________________________

Approved as to Form & Legality:

______________________________

West Haymarket Joint Public Agency
Board of Representatives

______________________________

Legal Counsel for
West Haymarket Joint Public Agency

______________________________

Tim Clare

______________________________

Chris Beutler

______________________________

Eugene Carroll
PC SPORTS
CONSULTANT AGREEMENT

This PC Sports Consultant Agreement ("Agreement") is entered into this 1st day of November, 2011, by and between the West Haymarket Joint Public Agency, hereinafter referred to as "JPA" and PC Sports, LLC, a Texas limited liability company, hereinafter referred to as "Consultant."

RECITALS

A.

The JPA and Consultant have previously entered into an agreement dated July 15, 2011 wherein the Consultant agreed to provide Interim Program Management Services and Interim Arena Project Services (collectively "Interim Services") in connection with the design and construction of multiple facilities including the arena near downtown Lincoln, Nebraska.

B.

The JPA desires to terminate the Interim Services and engage the Consultant in accordance with the terms and conditions set forth herein to provide West Haymarket Redevelopment extended Program Management Services ("Program Management Services") and extended Project Management Services for the New Arena ("Arena Project Services") in connection with the design and construction of multiple facilities including the Arena near downtown Lincoln, Nebraska as more fully set forth in the Scopes of Services attached hereto as Exhibit A ("Scope of Services"). The use of the term "Owner" in the Scope of Services is deemed to refer to the JPA. The use of the term "PCS" is deemed to refer to Consultant.

C.

Consultant hereby represents that Consultant is willing and able to perform the Program Management Services and the Arena Project Services (collectively the "Services") in accordance with the Scope of Services.
D.
Since a portion of the Services will in part be carried out on BNSF Railway Company ("BNSF") property pursuant to various temporary licenses ("Licenses") granted or to be granted by BNSF to the JPA as set forth in the Master Development Agreement ("Master Agreement") between the JPA and BNSF, such work is subject to the terms and conditions of the Master Agreement, the Licenses and the Construction and Maintenance Agreement ("C&M Agreement") between BNSF and the JPA.

E.
Consultant hereby acknowledges that Consultant is deemed to be the JPA’s agent under the Licenses and, as such, is required to comply with the restrictions imposed on the JPA as licensee in the Licenses.

F.
The use of the term "City of Lincoln" in the Master Agreement, the Licenses, the C&M Agreement are deemed to refer to the JPA as the Assignee of the City of Lincoln.

G.
The Master Agreement, the C&M Agreement and the form of the various Licenses to be granted to the JPA are on file in the office of the City Clerk for the City of Lincoln, Nebraska.

NOW, THEREFORE, IN CONSIDERATION of the above Recitals and the mutual obligations of the parties hereto, the parties do agree as follows:

SECTION I.
ADMINISTRATOR OF AGREEMENT

Dan Marvin shall be the JPA’s representative for the purposes of administering this Agreement and shall have authority on behalf of the JPA to give approvals under this Agreement. Paula L. Yancey shall be the Consultant’s representative and will supervise the Services and be in charge of performance of the Services on behalf of the Consultant as set forth in this Agreement.
SECTION II.
SCOPE OF SERVICES

Consultant agrees to undertake, perform and complete in an expeditious, satisfactory and professional manner the Services as set forth in Exhibit A. In the event there is a conflict between the terms of Exhibit A and this Agreement, the terms of this Agreement shall control.

SECTION III.
TERM OF AGREEMENT

JPA and Consultant hereby agree that the Agreement for Interim Services shall terminate effective October 31, 2011. The term of this Agreement shall commence on November 1, 2011, and said term shall continue until December 31, 2013 or until otherwise terminated or modified as provided in this Agreement.

SECTION IV.
COMPENSATION

The Services shall be provided on a fixed monthly fee. The total and only amount of compensation for each month of Services shall be per the Schedule of Fees attached hereto as Exhibit B. Consultant acknowledges and agrees that Consultant is responsible, at Consultant’s own cost and expense, to pay for all expenses incurred by Consultant to perform the Services.

Unless otherwise agreed, the monthly payment for Services is due and payable thirty (30) days from the date of receipt of the Consultant’s invoice. Any amounts unpaid forty-five (45) days after receipt of the invoice date shall bear interest at the rate of nine percent (9%) per annum.

Failure of the JPA to accept the recommendations or work of the Consultant on the basis of differences of professional opinion shall not be the basis for rejection of the work performed by the Consultant or for nonpayment of the Consultant.
SECTION V.
SERVICES TO BE CONFIDENTIAL

All services, including reports, opinions and information to be furnished under this Agreement shall be considered confidential and shall not be divulged, in whole or in part, to any person other than to duly authorized representatives of the JPA, without the prior written approval of the JPA or by order of a court of competent jurisdiction. The provisions in this section shall survive any termination of this Agreement.

SECTION VI.
NON-RAIDING CLAUSE

Consultant shall not engage the services of any person or persons presently in the employ of the JPA or the City of Lincoln for work covered by this Agreement without the written consent of the JPA.

SECTION VII.
TERMINATION OF AGREEMENT

A. This Agreement may be terminated by the Consultant if the JPA fails to adequately perform any material obligation required by this Agreement ("Default"). Termination rights under this paragraph may be exercised only if the JPA fails to cure a Default within ten (10) calendar days after receiving written notice from the Consultant specifying the nature of the Default.

B. The JPA may terminate this Agreement, in whole or part, for any reason for the JPA’s own convenience upon at least ten days written notice to the Consultant.

If the Agreement is terminated by either the JPA or Consultant as provided in VII. A or B above, Consultant shall be paid the monthly fee for all Services performed up until the date of termination. The monthly fee will be prorated for the month of termination if termination occurs prior to the end of the billable month.

Consultant hereby expressly waives any and all claims for damages or compensation, including out-of-pocket reimbursable expenses, expenses for demobilization and all other costs...
incurred by Consultant by reason of such termination arising under this Agreement except as set forth in this paragraph in the event of termination.

Further, Consultant agrees that, upon termination as provided in this paragraph, it shall not be employed by any developer or other party who is or may be interested in the work effort as defined in Article II, or interested in the decisional process relating to the application of such findings as may result from the tasks performed as defined in Article II for a period of one (1) year after such termination, without prior approval of the JPA.

SECTION VIII.
FAIR EMPLOYMENT

In connection with the performance of work under this Agreement, Consultant agrees that it shall not discriminate against any employee or applicant for employment with respect to compensation, terms, advancement potential, conditions, or privileges of employment, because of such person’s race, color, religion, sex, disability, national origin, ancestry, age, or marital status in accordance with the requirements of Lincoln Municipal Code Chapter 11.08 and Neb. Rev. Stat. § 48-1122, as amended.

SECTION IX.
FAIR LABOR STANDARDS

The Consultant shall maintain Fair Labor Standards in the performance of this Agreement as required by Chapter 73, Nebraska Revised Statutes, as amended.

SECTION X.
ASSIGNABILITY

The Consultant shall not assign or subcontract any interest in this Agreement, delegate any duties or work required under this Agreement, or transfer any interest in the same (whether by assignment or novation), without the prior written consent of the JPA thereto; provided, however, that claims for money due or to become due to the Consultant from JPA under this Agreement may
be assigned without such approval, but notice of any such assignment shall be furnished promptly to the JPA.

SECTION XI.
INTEREST OF CONSULTANT

Consultant covenants that Consultant presently has no interest, including but not limited to, other projects or independent contracts, and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. Consultant further covenants that in the performance of this Agreement, no person having any such interest shall be employed or retained by Consultant under this Agreement.

SECTION XII.
OWNERSHIP, PUBLICATION, REPRODUCTION AND USE OF MATERIAL

Consultant agrees to and hereby transfers all rights, including those of a property or copyright nature, in any reports, studies, information, data, digital files, imagery, metadata, maps, statistics, forms and any other works or materials produced under the terms of this Agreement. No such work or materials produced, in whole or in part, under this Agreement, shall be subject to private use or copyright by Consultant without the express written consent of JPA.

JPA shall have the unrestricted rights of ownership of such works or materials and may freely copy, reproduce, broadcast, or otherwise utilize such works or materials as the City deems appropriate. The JPA shall also retain all such rights for any derivative works based on such works or materials.

SECTION XIII.
COPYRIGHTS, ROYALTIES & PATENTS

Without exception, Consultant represents the consideration for this Agreement includes Consultant’s payment for any and all royalties or costs arising from patents, trademarks, copyrights, and other similar intangible rights in any way involved with or related to this Agreement. Further,
Consultant shall pay all related royalties, license fees, or other similar fees for any such intangible rights. Consultant shall defend suits or claims for infringement of any patent, copyright, trademark, or other intangible rights that Consultant has used in the course of performing this Agreement.

SECTION XIV.
COPYRIGHT; CONSULTANT'S WARRANTY

A. Consultant represents that all materials, processes, or other protected rights to be used in the Services have been duly licensed or authorized by the appropriate parties for such use.

B. Consultant agrees to furnish the JPA upon demand written documentation of such license or authorization. If unable to do so, Consultant agrees that the JPA may withhold a reasonable amount from Consultant's compensation herein to defray any associated costs to secure such license or authorization or defend any infringement claim.

SECTION XV.
INDEMNIFICATION

A. General Indemnification of JPA.

To the fullest extent permitted by law, Consultant shall release, indemnify, defend and hold harmless JPA and JPA's members, successors, assigns, legal representatives, officers, employees and agents for, from and against any and all claims, liabilities, fines, penalties, costs, damages, losses, liens, causes of action, suits, demands, judgments and expenses (including, without limitation, court costs and attorneys' fees) of any nature, kind or description of any person (including, without limitation, the employees of the parties hereto) or entity directly or indirectly (collectively, "Liabilities") arising out of, resulting from or causally related to (in whole or in part):

(i) Any rights or interests granted to Consultant pursuant to this Agreement;

(ii) The use, occupancy or presence of Consultant and Consultant Parties (defined below) and/or any work performed by Consultant and Consultant Parties in, on, or about BNSF's property or right-of-way and/or the work area;
(iii) Except as provided in subsection B below, any environmental matters arising from Consultant and/or Consultant Parties’ use and occupancy of BNSF’s right-of-way or other BNSF property, including without limitation use and occupancy of BNSF’s right-of-way or other BNSF property in connection with performance of the work;

(iv) Any damage to or destruction of any telecommunication lines in connection with the work by Consultant and/or Consultant parties, including but not limited to (a) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractors, agents and/or employees as a result of such damage or destruction, and/or (b) any claim or cause of action for alleged loss of profits or revenue by, or loss of service by a customer or user of such telecommunication company(ies) as a result of such damage or destruction;

(v) Consultant’s breach of the terms and conditions of this Agreement; or

(vi) Any act or omission of Consultant or its officers, agents, invitees, employees or subcontractors (such officers, agents, invitees, employees and subcontractors being referred to herein individually as a "Consultant Party" and collectively, "Consultant Parties"), or anyone directly or indirectly employed by any of them, or anyone they control or exercise control over.

The liability assumed by Consultant will not be affected by the fact, if it is a fact, that any damage, destruction, injury or death was occasioned by or contributed to by the negligence of JPA, its agents, servants, employees or otherwise, but excluding claims wholly caused by JPA’s sole negligence and excluding claims to the extent that such claims are caused by the willful misconduct or gross negligence of JPA.

B. HAZARDOUS SUBSTANCE INDEMNIFICATION OF CONSULTANT. The Consultant's work under this Agreement does not include a duty to identify, examine for, remediate or otherwise deal with materials containing any Hazardous Substance encountered at the Site except that the Consultant shall immediately notify the JPA and its Contractor of any known release, spill, unlawful disposal or handling of a Hazardous Substance. The JPA shall thereafter promptly determine the necessity for the JPA or its Contractor to retain a qualified expert to evaluate such Hazardous Substance or take corrective action, if any. Notwithstanding the above, the Consultant shall be responsible for any Hazardous Substance brought to the site by the Consultant and any of
its Subcontractors, or any sub-subcontractors or suppliers unless such Hazardous Substance was required by the Contract Documents.

To the fullest extent permitted by law, the JPA shall indemnify and hold harmless the Consultant and its Subcontractors, sub-subcontractors, and agents, officers, and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to judgments, fines, penalties, civil sanctions, the cost of remediation, and attorneys' fees, arising out of or resulting from any release, spill, disposal or other handling of any Hazardous Substance in the performance of the Work if in fact the material is a Hazardous Substance, except to the extent that such damages, loss or expense is due to the negligence or willful misconduct of a party seeking indemnity.

For the purposes of this subsection B, "hazardous substances" shall mean all substances, materials, and waste that are or become regulated or classified in the handling, storage, remediation, or disposal as hazardous or toxic under any Environmental Law, including but not limited to any hazardous, ignitable, corrosive, caustic, reactive, toxic, or polluting waste or substance; a "hazardous waste" (as defined in the regulations adopted under the Resource Conservation and Recovery Act of 1976); oil or petroleum products; asbestos; polychlorinated biphenyls; formaldehyde compounds, explosives, and radioactive materials. "Environmental Laws" shall mean any federal, state, or local statute, ordinance, rule, regulation, order, decree or guideline (or that of any quasi-governmental entity having jurisdiction over the Project or the Project site) pertaining to health, industrial hygiene or the environment, including without limitation the Federal Comprehensive Environmental Response, Compensation, and Liability Act.

C. INDEMNIFICATION OF BNSF. Consultant understands and acknowledges that the Indemnification requirements of BNSF found in the Master Agreement, C&M Agreement and Licenses are in addition to, and not in lieu of, the above obligations of Consultant to indemnify and hold harmless the JPA.

D. CONSEQUENTIAL DAMAGES. Consultant shall not be liable for any indirect, incidental or consequential loss, injury or damage or liability, including but not limited to loss of profit, business, production, income of revenue, reputation, or any other consequential damages
occurred from any cause of action whatsoever arising under, in connection with or out of this Agreement.

SECTION XVI.
INSURANCE

Insurance Coverage. At all times during the term of this Agreement, Consultant shall maintain insurance coverage as follows:

A. Commercial General Liability Insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of $5,000,000.00 per occurrence, and $10,000,000.00 in the aggregate, but in no event less than the amount otherwise carried by Consultant. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limited to, the following:

• Bodily Injury and Property Damage
• Personal Injury and Advertising Injury
• Fire legal liability
• Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

• The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
• Waiver of subrogation in favor of and acceptable to JPA.
• Additional insured endorsement in favor of and acceptable to JPA.
• Separation of insureds.
• The policy shall be primary and non-contributing with respect to any insurance carried by JPA.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to JPA employees.
No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this Agreement.

B. **Business Automobile Insurance.** This insurance shall contain a combined single limit of at least $1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage
- Any and all vehicles owned, used or hired

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to JPA.
- Additional insured endorsement in favor or and acceptable to JPA.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by JPA.

C. **Workers Compensation and Employers Liability Insurance.** This insurance shall include coverage for, but not limited to:

- Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to JPA.

D. **Professional Liability Insurance.** Professional Liability Insurance, naming and protecting Consultant against claims for damages resulting from the Consultant's errors, omissions,
or negligent acts. Such policy shall contain a limit of liability not less than Two Million Dollars ($2,000,000.00) per claims and aggregate.

E. Memorandum of Insurance. Memoranda of Insurance shall be filed with the JPA showing the specific limits of insurance coverage required by the preceding sections, and showing the JPA, BNSF, the City of Lincoln, and University of Nebraska as additional insureds for General Liability Insurance and Excess or Umbrella Insurance if used to supplement the General Liability Insurance. Such memorandum shall specifically state that insurance policies have been endorsed to require the Consultant to provide the JPA thirty (30) days notice of reduction in amount, increase in deductibles, or non-renewal of insurance coverage and ten (10) days notice for cancellation for non-payment of premium.

SECTION XVII.
NOTICE

Any notice or notices required or permitted to be given pursuant to this Agreement may be personally served on the other party by the party giving such notice, or may be served by fax, commercial carrier or certified mail, postage prepaid, return receipt requested to the following addresses:

Joint Public Agency  
Attention: Dan Marvin  
555 South 10th St., Ste 301  
Lincoln NE 68508  
(402) 441-7511

PC Sports  
Attention: Paula L. Yancey  
17300 Henderson Pass, Suite 110  
San Antonio, TX 78232  
FAX: (210) 545-5450

SECTION XVIII.
INDEPENDENT CONTRACTOR

The JPA is interested only in the results produced by this Agreement. Consultant has sole and exclusive charge and control of the manner and means of performance. Consultant shall perform as an independent contractor and it is expressly understood and agreed that Consultant is not an employee of the JPA and is not entitled to any benefits to which JPA employees are entitled,
including, but not limited to, overtime, retirement benefits, workmen’s compensation benefits, sick leave or and injury leave.

SECTION XIX.
NEBRASKA LAW

This Agreement shall be construed and interpreted according to the laws of the State of Nebraska.

SECTION XX.
INTEGRATION

This Agreement represents the entire agreement between the parties and all prior negotiations and representations are hereby expressly excluded from this Agreement.

SECTION XXI.
AMENDMENT

This Agreement may be amended or modified only in writing signed by both the JPA and Consultant.

SECTION XXII.
SEVERABILITY

If any provision of this Agreement shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of this Agreement is invalid or unenforceable, but that by limiting such provision it would become valid and enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

SECTION XXIII.
WAIVER OF CONTRACTUAL RIGHT

The failure of either party to enforce any provision of this Agreement shall not be construed as a waiver or limitation of that party’s right to subsequently enforce and compel strict compliance with every provision of this Agreement.
 SECTION XXIV.
AUDIT AND REVIEW

The Consultant shall be subject to audit pursuant to Chapter 4.66 of the Lincoln Municipal Code and shall make available to a contract auditor, as defined therein, copies of all financial and performance related records and materials germane to this Agreement, as allowed by law.

 SECTION XXV.
FEDERAL IMMIGRATION VERIFICATION

A. If the Consultant is a business entity or corporation, then in accordance with Neb. Rev. Stat. §§ 4-108 through 4-114, the Consultant agrees to register with and use a federal immigration verification system, to determine the work eligibility status of new employees performing services within the State of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 USC 1324 a, otherwise known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of a newly hired employee pursuant to the Immigration Reform and Control Act of 1986. The Consultant shall not discriminate against any employee or applicant for employment to be employed in the performance of this section pursuant to the requirements of state law and 8 U.S.C.A. 1324b. The Consultant shall require any subcontractor to comply with the provisions of this section. For information on the E-Verify Program, go to www.uscis.gov/everify.

B. If the Consultant is an individual or sole proprietor, the Consultant agrees to complete the United States Citizenship Attestation Form attached hereto as Exhibit C.

C. Public Benefits Eligibility Status Check. If the Consultant is agreeing to determine eligibility for and provide a public benefit as public benefit is defined under Neb. Rev. Stat. §§ 4-108 through 4-114, the Consultant agrees to have each applicant for public benefits attest that he or she is a U.S. citizen or qualified alien using the form attached hereto as Exhibit D. The Consultant
agrees to register and use the SAVE Program as required under Neb. Rev. Stat. §§4-108 through 4-114. If the applicant indicates he or she is an alien, the Consultant shall verify the applicant’s lawful presence in the United States as provided under the SAVE Program and retain all documentation and provide copies of such documentation at the JPA’s request. For information on the SAVE program, go to www.uscis.gov/SAVE.

SECTION XXVI. REPRESENTATIONS

Each party hereby certifies, represents and warrants to the other party that the execution of this Agreement is duly authorized and constitutes a legal, valid and binding obligation of said party.

IN WITNESS WHEREOF, Consultant and the City do hereby execute this Agreement as of the Execution Date set forth above.

WEST HAYMARKET JOINT PUBLIC AGENCY

By: ____________________________
    Chair

PC SPORTS, LLC

By: ____________________________
    Title: __________________________
GENERAL SERVICES

1. Review and evaluate Owner's expectations, needs and objectives. Based on this review and evaluation, assist the Owner in developing criteria for the program. Confirm that the Owner's needs and objectives are fully documented and determine who is responsible for updating the criteria and program.

2. Develop an overall Program Plan, including organizational charts, lines of authority and control, descriptions of decision-making procedures, identify responsibilities among the Owner and other Project Participants.

3. Assist the Owner in determining government and agency requirements applicable to the Project and assist the Owner in obtaining necessary approvals.

4. Develop and update an overall Program and Arena Project Budget. Advise and assist the Owner with Project cash flow and financial management.

5. Develop and implement Program and Arena Project communications and reporting procedures and formats.

6. Develop and implement Program and Arena Project document control and technology systems.

7. Assist with development and implementation of Program and Arena Project public and community relations procedures and controls. Be accessible to the Owner's public relations representatives; participate in briefings and public events.

8. Oversee implementation of quality assurance and control systems and procedures. Monitor compliance with systems and procedures and act on the Owner's behalf in correcting noncompliance as requested by Owner.

9. Assist with development of claims avoidance and claims resolution procedures. Investigate claims and make recommendations. Monitor claims resolution and advise the Owner, as required or requested by Owner.

10. Oversee development and implementation of Owner's Insurance/Bonding Program. Review insurance and bonding submissions by Project Participants for contract compliance.

11. Implement the overall Procurement Plan for the Program and the Arena Project which shall include the predetermined procedures for prequalification, selection, procurement, management and payment of designers, contractors, suppliers and consultants and other Project Participants in coordination with the City of Lincoln Purchasing Department.

12. Organize service, construction and vendor packages when required; act as the Owner's representative in soliciting interest and bids for such packages and in bidding and negotiations in coordination with and direction by the City of Lincoln Purchasing Department.

13. Act as the Owner's representative in managing contracts with designers, engineers, contractors, suppliers, consultants and other Participants.

14. Review applications for payment and recommend adjustments and payment.
15. Provide updates and monthly reports to the West Haymarket Joint Public Agency.

16. Develop a risk register for the program.

17. Provide observation of Program and Arena Project Construction.

**Design Phase Services**

1. Develop the procedures to be followed by Project Participants for establishing design standards and criteria based on the overall Program and Arena Project Plan.

2. Develop the procedures to be followed by Project Participants for establishing Program design schedules based on the overall Project Milestone Schedule.

3. Advise the Owner concerning prequalification and selection of professional consultants.

4. Advise the Owner concerning deviation by any Project Participant from applicable governmental codes, requirements and approvals for Project to the extent PCS becomes aware of such noncompliance, it being understood PCS has no responsibility for making any such investigation or determining compliance.

5. Coordinate the activities of designers, consultants and other Project Participants; organize and lead regular progress and design development meetings.

6. Coordinate the insurance professionals advising the Owner concerning implementation of adequate professional insurance coverage, including coverage for professional errors and omissions.

7. Develop and implement a design procurement and payment plan; negotiate any future design contracts; assist in preparation of those contracts.

8. Oversee implementation and management by Project Participants of reviews for constructability and sustainability enhancements.

9. Implement, manage and advise the Owner, designers and others concerning value engineering and cost savings.

10. Assist the Owner in identifying, in consultation with Project Participants long lead procurements.

11. Advise the Owner in the development of health, safety, environmental and technology criteria established by Project Participants consistent with the overall Project Plan.

**Construction Phase Services**

1. Oversee development of construction standards and criteria established by Lead Design/Construction Professional based on the overall Project Plan and monitor implementation.

2. Evaluate Program and Arena Project construction schedules and updates; monitor implementation, compliance with overall Program Milestone Schedule, construction schedules and long lead items. Advise the Owner concerning scheduling changes and questions.

3. Cause to be developed and updated the Program and Arena Project construction budgets.

4. Monitor procurement of all required construction phase governmental permits and approvals.
5. Oversee development and implementation of Project inspection and testing plans; monitor Project quality assurance and control; advise the Owner as to quality compliance and corrective action.

6. Oversee implementation of insurance coverages for liability, contractual indemnification, builder's risk and other necessary insurance as recommended by Owner's insurance professionals.

7. Except with respect to subcontractors of Lead Design/Construction Professionals, implement Project procurement and payment plans including prequalification and selection; manage the bidding and Contract negotiation processes; negotiate construction contracts on the Owner's behalf; assist in preparation of construction contracts; examine contracts for compliance with Project Insurance, bonding and other Owner requirements.

8. Develop, implement and monitor Program and Arena Project closeout procedures.

9. Monitor coordination of design, construction and procurement and advise the Owner concerning coordination questions. All procurement activities will be coordinated with City of Lincoln Purchasing Department.

10. Oversee the processing and evaluation of requests for information, change requests, submittals, notices, claims and other communications between designers, contractors, suppliers and consultants. Act as the Owner's representative for responses to same and managing change orders.

11. Implement and manage document control and retention practices for Project communications to be coordinated with Owner.

Post-Construction Phase Services

1. Participate in, and advise Owner concerning, Substantial Completion and Final Completion.

2. Monitor and follow-up on punch list and warranty obligations; advise the Owner concerning compliance and assure that documentation is in proper order.

3. Monitor and assist with Program and Arena Project acceptance, start-up, and commissioning.

4. Assist in obtaining and evaluating record drawings.

5. Assist in developing and implementing a maintenance program prepared by others.

6. Assist in obtaining operating and maintenance manuals. Advise Owner on compliance by construction participants in the delivery of such manuals. It is understood and agreed that PCS has no obligation to review or evaluate the contents of such manuals for substantive compliance as to their terms and provisions, but if PCS becomes aware of any material non-compliance, PCS will so advise the Owner.

7. Monitor and advise the Owner concerning facilities orientation, training and turnover.

8. Monitor the procedures necessary to obtain, and advise the Owner concerning, certificates of temporary and final occupancy.
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| 03/31/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 04/30/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 05/31/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 06/30/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 07/31/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 08/31/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 09/30/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 10/31/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 11/30/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 12/31/2012   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 01/31/2013   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 02/28/2013   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 03/31/2013   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 04/30/2013   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 05/31/2013   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 06/30/2013   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 07/31/2013   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |
| 08/31/2013   |               |         | $30,450.00   | $68,050.00             | $98,500.00          |

Future Billings $730,800.00 $1,633,200.00 $2,364,000.00

|                |               |         | $913,500.00   | $1,735,275.00          | $2,648,775.00       |

Total Revised PC Sports Contract Amount $975,225.00 $1,838,275.00 $2,813,500.00

DEC Peer Review Amendment $11,400.00 $11,400.00

Total Contract with DEC Peer Review $975,225.00 $1,849,675.00 $2,824,900.00
UNITED STATES CITIZENSHIP ATTESTATION FORM
FOR INDIVIDUAL CONSULTANT
(to be used pursuant to Section XXVI.B)

For the purposes of complying with Neb. Rev. Stat. §§ 4-108 through 4-114, I attest as follows:

☐ I am a citizen of the United States.

OR

☐ I am a qualified alien under the Federal Immigration and Nationality Act. My immigration status and alien number are as follows:

________________________________________, and I agree to provide a copy of the USCIS (United States Citizenship and Immigration Services) documentation upon request required to verify the Consultant’s lawful presence in the United States using the Systematic Alien Verification for Entitlements (SAVE) Program.

I hereby attest that my response and the information provided on this form and any related application for public benefits are true, complete and accurate and I understand that this information may be used to verify my lawful presence in the United States. I understand and agree that lawful presence in the United States is required and the consultant may be disqualified or the contract terminated if such lawful presence cannot be verified as required by Neb. Rev. Stat. § 4-108.

PRINT NAME: ________________________________
(First, Middle, Last)

SIGNATURE: ________________________________

DATE: ________________________________
UNITED STATES CITIZENSHIP ATTESTATION FORM FOR PUBLIC BENEFIT
(to be used pursuant to Section XXVI.C)

For the purposes of complying with Neb. Rev. Stat. §§ 4-108 through 4-114, I attest as follows:

☐ I am a citizen of the United States.

OR

☐ I am a qualified alien under the Federal Immigration and Nationality Act. My immigration status and alien number are as follows:

__________________________________________, and I agree to provide a copy of my USCIS (United States Citizenship and Immigration Services) documentation upon request.

I hereby attest that my response and the information provided on this form and any related application for public benefits are true, complete and accurate and I understand that this information may be used to verify my lawful presence in the United States.

PRINT NAME: ________________________________
(First, Middle, Last)

SIGNATURE: ________________________________

DATE: ________________________________
RESOLUTION NO. WH- __________

BE IT RESOLVED by the Board of Representatives of the West Haymarket Joint Public Agency:

That the attached Amendment No. 4 to the Agreement for Environmental Remediation Consulting Services between Alfred Benesch & Company and the West Haymarket Joint Public Agency to include expanded scope of consulting services for existing Tasks 5 and 6; new Task 19 for preparation of an EPA Brownfields Cleanup Grant Application; and new Task 20 for preparation of a remedial action plan and contractual plans and specifications to support the City/JPA’s procurement of remedial construction services for the BNSF Transition Property for an additional amount of $73,648.00 is hereby approved and the Chairperson of the West Haymarket Joint Public Agency Board of Representatives is hereby authorized to execute said Amendment No. 4 on behalf of the JPA.

The City Clerk is directed to return a fully executed original of Amendment No. 4 to Alfred Benesch & Company, Attn: Gary Proskovec, 825 J Street, Lincoln, NE 68508.

Adopted this _____ day of October, 2011.

Introduced by:

___________________________________

Approved as to Form & Legality:

West Haymarket Joint Public Agency Board of Representatives

___________________________________

Tim Clare

___________________________________

Chris Beutler

___________________________________

Eugene Carroll
AMENDMENT NO. 4

to the AGREEMENT for

ENVIRONMENTAL REMEDIATION CONSULTING SERVICES

between ALFRED BENESCH & COMPANY

and the

WEST HAYMARKET JOINT PUBLIC AGENCY

WEST HAYMARKET ENVIRONMENTAL REMEDIATION PROJECT

Specification No. 10-083

This Contract Amendment is made by and between Alfred Benesch & Company (Consultant), and the West Haymarket Joint Public Agency, hereinafter called JPA, this ______________ day of ___________ 2011 and approved by Resolution No. ____________.

WHEREAS, it is the mutual desire of the parties hereto to amend the Agreement to provide professional services associated with the West Haymarket Environmental Remediation Contract which was entered into with the City of Lincoln on July 15, 2010 by Executive Order No. 083296 to provide environmental remediation consulting services. Such agreement was approved by the JPA under Resolution WH-JPA Resolution for Assignment and Assumption Agreements on July 22, 2010.

The general description of work to be added to the existing Agreement and covered by this Amendment shall include an expanded scope of environmental remediation consulting services for existing Tasks 5 and 6. New tasks 19 and 20 are proposed including preparation of an EPA Brownfields Cleanup Grant Application (Task 19) and preparation of a remedial action plan and contractual plans and specifications to support the City/JPA’s procurement of remedial construction services for the BNSF Transition Property (Task 20). A detailed breakdown of the scope and fee for this amendment is included in the attached “Amendment No. 4 to Scope of Services.”

The total estimated fee for completion of the work associated with this Amendment is $73,648.00, which increases the total not-to-exceed contract amount from $1,016,543.00 to $1,090,191.00.

NOW THEREFORE, it is hereby agreed that the existing Agreement be amended to include the services as described in the attached “Amendment No. 4 to Scope of Services.”

This AMENDMENT shall be deemed a part of, and shall be subject to all terms and conditions of the existing Agreement. Except as modified above, the existing Agreement shall remain in full force and effect.
West Haymarket Joint Public Agency

Title: ____________________________

Environmental Consultant – Alfred Benesch & Company

By: ____________________________
Title: ____________________________
Amendment No. 4 to Scope of Services

Qualified Environmental Consultants

Haymarket Environmental Remediation Services - Specification no. 10-083

On July 15, 2010, Alfred Benesch & Company (Consultant) entered into an agreement with the City of Lincoln under EO 083296 to provide environmental remediation consulting services. The agreement allows for adjustments in the scope of services and corresponding adjustments in compensation for such changes in the scope of services.

This Amendment No. 4 provides for expanded scope of services and fee for Task 5 – Supplemental Phase III ESA Services and Task 6 – Environmental Contingency Plan; and new scope and fee for Task 19 – EPA Brownfields Grant Application Support and Task 20 – Remedial Action Planning – BNSF Transition Property.

Task 5 – Supplemental Phase III ESA Services

Current Contract Estimated Fee: Time and Materials – Cost not to Exceed $38,715.00

Supplemental Request: The JPA has requested Consultant to prepare a Phase I ESA for a tract of land identified for development of the Breslow Ice Center. The Phase I ESA will be conducted in accordance with ASTM Standard E 1527-05 and will be performed on a time and materials basis for a total cost not to exceed $2,988.00 bringing the total authorization for Task 5 to $41,703.00.

The following is a breakdown of the cost estimate:

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<thead>
<tr>
<th>FEE ESTIMATE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>PROJECT LOCATION</td>
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<tr>
<td>CLIENT:</td>
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<tr>
<td>Project Manager Uhlarik</td>
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<td>1</td>
<td>$150</td>
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<tr>
<td>Staff Scientist/Geologist II</td>
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<td>Drafting/GIS/Sr. Technologist</td>
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<th>TOTAL</th>
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<td>$150</td>
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<tr>
<td>Task 5 Supplemental Fee</td>
<td></td>
<td></td>
<td></td>
<td>$2,988</td>
<td></td>
</tr>
</tbody>
</table>

Task 6 – Environmental Contingency Plan

Current Contract Estimated Fee: Time and Materials – Cost not to Exceed $237,690.00
Supplemental Request: The JPA has requested Consultant provide continuous environmental oversight of auger-cast pile construction activities for the Arena site in the West Haymarket Redevelopment area. Consultant will provide a qualified environmental technician to observe piling construction activities and to assist in characterizing, sampling and determining appropriate handling for auger-cast piling spoils. Consultant proposes to perform the requested oversight functions on a time and material basis for an estimated cost not to exceed $52,780.00 bringing the total authorization for Task 6 to $290,470.00. This cost estimate assumes providing continuous oversight and consultation including up to fifty hours/week over a twelve week period for Phase I piling production for technician support, project manager and project scientist coordination and quality control and any required laboratory fees and miscellaneous expenses.

The following is a breakdown of the cost estimate:

<table>
<thead>
<tr>
<th>FEE ESTIMATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT NAME: West Haymarket Redevelopment</td>
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<tr>
<td>PROJECT LOCATION: Lincoln, NE</td>
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<tr>
<td>CLIENT: City of Lincoln/JPA</td>
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<table>
<thead>
<tr>
<th>ITEM/DESCRIPTION</th>
<th>RATE</th>
<th>HRS</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager Uhlarik</td>
<td>$150.00</td>
<td>8</td>
<td>$1,200</td>
</tr>
<tr>
<td>Staff Scientist II/Geologist II</td>
<td>$89.00</td>
<td>60</td>
<td>$5,340</td>
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<tr>
<td>Technician</td>
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<td><strong>TOTAL LABOR (HRS/$)</strong></td>
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<td>Vehicle Expenses</td>
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<td>On-site Lab Supplies</td>
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<td><strong>Total Expenses:</strong></td>
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<td>$9,640</td>
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</table>

| Task 6 Supplemental Fee | $52,780 |

Task 19 – EPA Brownfields Cleanup Grant Application Support

The JPA has requested Consultant to prepare an FY 2012 EPA Brownfields Cleanup Grant Application for submittal to EPA by November 28, 2011. Consultant will prepare the application with support from JPA/City in accumulating current/updated demographic and related project data to support submittal of the application. JPA/City will be responsible for coordinating any community notifications required under the grant application. Consultant proposes to perform the requested grant application support on a time and material basis for an estimated cost not to exceed $3,000.00.

The following is a breakdown of the cost estimate:
## FEE ESTIMATE

**PROJECT NAME:** West Haymarket Redevelopment  
**PROJECT LOCATION:** Lincoln, NE  
**CLIENT:** City of Lincoln/JPA

<table>
<thead>
<tr>
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<td>Project Engineer/Lim</td>
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<td>$0</td>
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<tr>
<td>Geochemist/Data Specialist/Lippoldt</td>
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<td>$0</td>
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<tr>
<td>Staff Scientist I/Geologist</td>
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<td>Staff Scientist II/Geologist II</td>
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<td>Drafting/GIS/Sr. Technologist</td>
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**TOTAL LABOR (HRS/$)**  

**PROJECT NAME:** West Haymarket Redevelopment  
**PROJECT LOCATION:** Lincoln, NE  
**CLIENT:** City of Lincoln/JPA

<table>
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<th>ITEM/DESCRIPTION</th>
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<td><strong>Task 19 Fee</strong></td>
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### Task 20 – Prepare Remedial Action Plan and Contractual Specifications - BNSF Transition Property

The JPA has requested Consultant to prepare a Remedial Action Plan (RAP) and contractual plans and specifications for the tract of land referred to as the BNSF Transition Property. City/JPA will procure remedial services based on RAP and plans/specifications prepared by Consultant.

Consultant proposes to perform the requested services on a time and material basis for an estimated cost not to exceed $14,880.00.

The following is a breakdown of the cost estimate:
<table>
<thead>
<tr>
<th>ITEM/DESCRIPTION</th>
<th>RATE</th>
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<tr>
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<td>Project Engineer/Lim</td>
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<td>Geochemist/Data Specialist/Lippoldt</td>
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**TOTAL LABOR (HRS/$)**

|            | 132 | $14,880 |

**EXPENSES**

| Total Expenses: | $0 |

**Task 20 Fee**

|                      | $14,880 |
RESOLUTION NO. WH- __________

BE IT RESOLVED by the Board of Representatives of the West Haymarket Joint Public Agency:

That the attached Contract Agreement between Terracon Consultants Inc. and the West Haymarket Joint Public Agency for West Haymarket Arena and Garage Special Inspections is hereby approved and the Chairperson of the West Haymarket Joint Public Agency Board of Representatives is hereby authorized to execute said Contract Agreement on behalf of the JPA.

The City Clerk is directed to return a fully executed copy of the Contract Agreement to Brad Levich, Terracon Consultants Inc., 3220 North 20th Street, Suite 3, Lincoln, NE 68521.

Adopted this _____ day of October, 2011.

Introduced by:

______________________________

Approved as to Form & Legality:

West Haymarket Joint Public Agency
Board of Representatives

______________________________

Legal Counsel for
West Haymarket Joint Public Agency

Tim Clare

______________________________

Chris Beutler

______________________________

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

Bid Information

<table>
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<tr>
<th>Bid Creator</th>
<th>Vince Mejer Purchasing Agent</th>
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<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:vmejer@lincoln.ne.gov">vmejer@lincoln.ne.gov</a></td>
</tr>
<tr>
<td>Phone</td>
<td>1 (402) 441-8314</td>
</tr>
<tr>
<td>Fax</td>
<td>1 (402) 441-6513</td>
</tr>
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Supplier Information

<table>
<thead>
<tr>
<th>Company</th>
<th>Terracon</th>
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</thead>
<tbody>
<tr>
<td>Address</td>
<td>3220 N. 20th Street, Ste. 3</td>
</tr>
<tr>
<td>Contact</td>
<td>Brad Levich, PE, Principal</td>
</tr>
<tr>
<td>Department</td>
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</tr>
<tr>
<td>Building</td>
<td></td>
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<tr>
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<tr>
<td>Telephone</td>
<td>402 (466) 3911</td>
</tr>
<tr>
<td>Fax</td>
<td>402 (466) 0811</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:balevich@terracon.com">balevich@terracon.com</a></td>
</tr>
<tr>
<td>Submitted</td>
<td>9/7/2011 6:59:23 AM CST</td>
</tr>
<tr>
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Please review the following and respond where necessary
Sealed proposals will be received by the Purchasing Agent of the City of Lincoln/Lancaster County, Nebraska BY ELECTRONIC BID PROCESS until: 12:00 pm, Friday, August 26, 2011 for providing the following:

WEST HAYMARKET ARENA AND GARAGE
SPECIAL INSPECTIONS
REQUEST FOR PROPOSAL BID NO. 11-203

Submitters must be registered on the City/County's E-Bid site in order to respond to the above Bid. To Register go to: lincoln.ne.gov (type: e-bid - in search box, then click “Supplier Registration”). Upon e-mail notification of registration approval, you may go to the E-Bid site to respond to this bid. Questions concerning this submittal process may be directed to City/County Purchasing at (402) 441-8314 or (402) 441-7410 or vmejer@lincoln.ne.gov
INSTRUCTIONS TO BIDDERS
WEST HAYMARKET JOINT PUBLIC AGENCY
E-Bid

1. BIDDING PROCEDURE

1.1 Sealed bid, formal and informal, subject to Instructions and General Conditions and any special conditions set forth herein, will be received in the office of the Purchasing Division, 440 So. 8th St., Lincoln, NE 68508, until the bid closing date and time indicated for furnishing the West Haymarket Joint Public Agency, hereinafter referred to as “JPA”, the materials, supplies, equipment or services shown in the electronic bid request.

1.2 Bidders shall use the electronic bid system for submitting bids and must complete all required fields.

1.3 Identify the item you will furnish by brand or manufacturer’s name and catalog numbers. Also furnish specifications and descriptive literature if not bidding the specific manufacturer or model as listed in the specifications.

1.4 Any person submitting a bid for a firm, corporation, or other organization must show evidence of his authority so to bind such firm, corporation, or organization.

1.5 Bids received after the time and date established for receiving bids will be rejected.

1.6 The Bidders and public are invited, but not required, to attend the formal opening of bids. At the opening, prices will be displayed electronically and/or read aloud to the public. The pricing is also available for immediate viewing on-line. No decisions related to an award of a contract or purchase order will be made at the opening.

1.7 If bidding on a construction contract, the City’s Standard Specifications for Municipal Construction 2006 shall apply.

1.7.1 Bidders may obtain this document from the City's Design Engineering Division of the Public Works & Utilities Department for a small fee.

1.7.2 Said document can be reviewed at Design Engineering or at the office of the Purchasing Division.

1.7.3 Said document is available on the web site.

2. BID SECURITY

2.1 Bid security, as a guarantee of good faith, in the form of a certified check, cashier’s check, or bid bond, may be required to be submitted with this bidding document, as indicated on the bid.

2.1.1 Bid security, if required, shall be in the amount specified on the bid. The bid security must be scanned and attached to the “Response Attachments” section of your response or it can be faxed to the Purchasing Division at 402-441-6513. The original bid security should then be sent or delivered to the office of the Purchasing Division, 440 S. 8th St., Ste. 200, Lincoln, NE 68508 within three (3) days of bid closing.

2.1.2 If bid security is not received in the office of the Purchasing Division as stated above, the vendor may be determined to be non-responsive.

2.2 If alternates are submitted, only one bid security will be required, provided the bid security is based on the amount of the highest gross bid.

2.3 Such bid security will be returned to the unsuccessful Bidders when the award of bid is made.

2.4 Bid security will be returned to the successful Bidder(s) as follows:

2.4.1 For single order bids with specified quantities: upon the delivery of all equipment or merchandise, and upon final acceptance by JPA.

2.4.2 For all other contracts: upon approval by JPA of the executed contract and bonds.

2.5 JPA shall have the right to retain the bid security of Bidders to whom an award is being considered until either:

2.5.1 A contract has been executed and bonds have been furnished.

2.5.2 The specified time has elapsed so that the bids may be withdrawn.

2.5.3 All bids have been rejected.

2.6 Bid security will be forfeited to JPA as full liquidated damages, but not as a penalty, for any of the following reasons, as pertains to this bidding document:

2.6.1 If the Bidder fails or refuses to enter into a contract on forms provided JPA, and/or if the Bidder fails to provide sufficient bonds or insurance within the time period as established in this bidding document.

3. BIDDER’S REPRESENTATION

3.1 Each Bidder by electronic signature and submitting a bid, represents that the Bidder has read and understands the bidding documents, and the bid has been made in accordance therewith.

3.2 Each Bidder for services further represents that the Bidder has examined and is familiar with the local conditions under which the work is to be done and has correlated the observations with the requirements of the bidding documents.
4. CLARIFICATION OF BIDDING DOCUMENTS
   4.1 Bidders shall promptly notify the Purchasing Agent of any ambiguity, inconsistency or error which they may discover upon examination of the bidding documents.
   4.2 Bidders desiring clarification or interpretation of the bidding documents for formal bids shall make a written request which must reach the Purchasing Agent at least five (5) calendar days prior to the date and time for receipt of formal bids.
   4.3 Changes made to the bidding documents will be issued electronically. All vendors registered for that bid will be notified of the addendum. Subsequent Bidders will only receive the bid with the addendum included.
   4.4 Oral interpretations or changes to the bidding documents made in any manner other than written form will not be binding on JPA; and Bidders shall not rely upon such interpretations or changes.

5. ADDENDA
   5.1 Addenda are instruments issued by JPA prior to the date for receipt of bids which modify or interpret the bidding document by addition, deletion, clarification or correction.
   5.2 Addenda notification will be made available to all registered vendors immediately via e-mail for inspection on-line.
   5.3 No formal addendums will be issued later than forty-eight (48) hours prior to the date and time for receipt of formal bids, except an addendum withdrawing the invitation to bid, or an addendum which includes postponement of the bid.

6. INDEPENDENT PRICE DETERMINATION
   6.1 By signing and submitting this bid, the Bidder certifies that the prices in this bid have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or with any competitor, unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the Bidder prior to bid opening directly or indirectly to any other Bidder or to any competitor; no attempt has been made, or will be made, by the Bidder to induce any person or firm to submit, or not to submit, a bid for the purpose of restricting competition.

7. ANTI-LOBBING PROVISION
   7.1 During the period between the bid advertisement date and the contract award, Bidders, including their agents and representatives, shall not lobby or promote their bid with the Mayor, any member of the City Council, or JPA Board and staff except in the course of JPA sponsored inquiries, briefings, interviews, or presentations, unless requested by JPA.

8. BRAND NAMES
   8.1 Wherever in the specifications or bid that brand names, manufacturer, trade name, or catalog numbers are specified, it is for the purpose of establishing a grade or quality of material only, and the term "or equal" is deemed to follow.
   8.2 It is the Bidder's responsibility to identify any alternate items offered in the bid, and prove to the satisfaction of JPA that said item is equal to, or better than, the product specified.
   8.3 Bids for alternate items shall be stated in the appropriate space on the e-bid form, or if the proposal form does not contain blanks for alternates, Bidder MUST attach to its bid document on Company letterhead a statement identifying the manufacturer and brand name of each proposed alternate, plus a complete description of the alternate items including illustrations, performance test data and any other information necessary for an evaluation.
   8.4 The Bidder must indicate any variances by item number from the bidding document no matter how slight.
   8.5 If variations are not stated in the bid, it will be assumed that the item being bid fully complies with JPA's bidding documents.

9. DEMONSTRATIONS/SAMPLES
   9.1 Bidders shall demonstrate the exact item(s) proposed within seven (7) calendar days from receipt of such request from JPA.
   9.2 Such demonstration can be at the JPA delivery location or a surrounding community.
   9.3 If items are small and malleable, the Bidder is proposing an alternate product, the Bidder shall supply a sample of the exact item. Samples will be returned at Bidder's expense after receipt by JPA of acceptable goods. The Bidder must indicate how samples are to be returned.

10. DELIVERY (Non-Construction)
    10.1 Each Bidder shall state on the bid the date upon which it can make delivery of all equipment or merchandise.
    10.2 JPA reserves the right to cancel orders, or any part thereof, without obligation, if delivery is not made within the time(s) specified on the bid.
    10.3 All bids shall be based upon inside delivery of the equipment/merchandise F.O.B. to JPA at the location specified by JPA, with all transportation charges paid.
    10.4 At the time of delivery, a designated JPA employee will sign the invoice/packing slip. The signature will only indicate that the order has been received and the items actually delivered agree with the delivery invoice. This signature does not indicate all items met specifications, were received in good condition and/or that there is not possible hidden damage or shortages.
11. WARRANTIES, GUARANTEES AND MAINTENANCE
11.1 Copies of the following documents, if requested, shall accompany the bid proposal for all items being bid:
11.1.1 Manufacturer's warranties and/or guarantees.
11.1.2 Bidder's maintenance policies and associated costs.
11.2 As a minimum requirement of JPA, the Bidder will guarantee in writing that any defective components discovered within a one (1) year period after the date of acceptance shall be replaced at no expense to JPA. Replacement parts of defective components shall be shipped at no cost to JPA. Shipping costs for defective parts required to be returned to the Bidder shall be paid by the Bidder.

12. ACCEPTANCE OF MATERIAL
12.1 All components used in the manufacture or construction of materials, supplies and equipment, and all finished materials, shall be new, the latest make/model, of the best quality, and the highest grade workmanship.
12.2 Material delivered under this proposal shall remain the property of the Bidder until:
12.2.1 A physical inspection and actual usage of the material is made and found to be acceptable to JPA; and
12.2.2 Material is determined to be in full compliance with the bidding documents and accepted bid.
12.3 In the event the delivered material is found to be defective or does not conform to the bidding documents and accepted bid, JPA reserves the right to cancel the order upon written notice to the Bidder and return materials to the Bidder at Bidder's expense.
12.4 Awarded Bidder shall be required to furnish title to the material, free and clear of all liens and encumbrances, issued in the name of JPA, as required by the bidding documents or purchase orders.
12.5 Awarded Bidder's advertising decals, stickers or other signs shall not be affixed to equipment. Vehicle mud flaps shall be installed blank side out with no advertisements. Manufacturer's standard production forgings, stampings, nameplates and logos are acceptable.

13. BID EVALUATION AND AWARD
13.1 The electronic signature shall be considered an offer on the part of the Bidder. Such offer shall be deemed accepted upon issuance by JPA of purchase orders, contract award notifications, or other contract documents appropriate to the work.
13.2 No bid shall be modified or withdrawn for a period of ninety (90) calendar days after the time and date established for receiving bids, and each Bidder so agrees in submitting the bid.
13.3 In case of a discrepancy between the unit prices and their extensions, the unit prices shall govern.
13.4 The bid will be awarded to the lowest responsible, responsive Bidder whose bid will be most advantageous to JPA, and as JPA deems will best serve the requirements and interests of JPA.
13.5 JPA reserves the right to accept or reject any or all bids; to request rebids; to award bids item-by-item, with or without alternates, by groups, or "lump sum"; to waive minor irregularities in bids; such as shall best serve the requirements and interests of JPA.
13.6 In order to determine if the Bidder has the experience, qualifications, resources and necessary attributes to provide the quality workmanship, materials and management required by the plans and specifications, the Bidder may be required to complete and submit additional information as deemed necessary by JPA. Failure to provide the information requested to make this determination may be grounds for a declaration of non-responsive with respect to the Bidder.
13.7 JPA reserves the right to reject irregular bids that contain unauthorized additions, conditions, alternate bids, or irregularities that make the bid incomplete, indefinite or ambiguous.
13.8 Any governmental agency may piggyback on any contract entered into from this bid.

14. INDEMNIFICATION
14.1 The Bidder shall indemnify and hold harmless JPA from and against all losses, claims, damages, and expenses, including, attorney's fees arising out of or resulting from the performance of the contract that results in bodily injury, sickness, disease, death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom and is caused in whole or in part by the Bidder, any subcontractor, any directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. This section will not require the Bidder to indemnify or hold harmless JPA for any losses, claims damages, and expenses arising out of or resulting from the sole negligence of JPA.
14.2 In any and all claims against JPA or any of its members, officers or employees by an employee of the Bidder, any subcontractor, anyone directly or indirectly employed by any of them or by anyone for whose acts made by any of them may be liable, the indemnification obligation under paragraph 14.1 shall not be limited in any way by any limitation of the amount or type of damages, compensation or benefits payable by or for the Bidder or any subcontractor under workers compensation acts, disability benefit acts or other employee benefit acts.

15. TERMS OF PAYMENT
15.1 Unless stated otherwise, JPA will begin processing payment within thirty (30) calendar days after all labor has been performed and all equipment or other merchandise has been delivered, and all such labor and equipment and other materials have met all contract specifications.
16. LAWS
16.1 The laws of the State of Nebraska shall govern the rights, obligations, and remedies of the parties under this bid and any contract reached as a result of this process.
16.2 Bidder agrees to abide by all applicable local, state and federal laws and regulations concerning the handling and disclosure of private and confidential information concerning individuals and corporations as to inventions, copyrights, patents and patent rights.

17. EQUIPMENT TAX ASSESSMENT
17.1 Any bid for public improvement shall comply with Nebraska Revised Statute Sections 77-1323 and 77·1324. Indicating; every person, partnership, limited liability company, association or corporation furnishing labor or material in the repair, alteration, improvement, erection, or construction of any public improvement shall sign a certified statement which will accompany the contract. The certified statement shall state that all equipment to be used on the project, except that acquired since the assessment date, has been assessed for taxation for the current year, giving the county where assessed.

18. AFFIRMATIVE ACTION
18.1 The City of Lincoln provides equal opportunity for all Bidders and encourages minority businesses, women's businesses and locally owned business enterprises to participate in our bidding process.

19. LIVING WAGE
19.1 The Bidders agree to pay all employees employed in the performance of this contract, a base wage of not less than the City Living Wage per section 2.81 of the Lincoln Municipal Code. This wage is subject to change every July.

20. INSURANCE
20.1 All Bidders shall take special notice of the insurance provisions required for all JPA contracts (see Insurance Requirements for All JPA Contracts).

21. EXECUTION OF AGREEMENT
21.1 Depending on the type of service provided, one of the following methods will be employed. The method applicable to this contract will be checked below:

   a. PURCHASE ORDER, unless otherwise noted.
      1. A copy of the Bidder's bid response (or referenced bid number) attached and that the same, in all particulars, becomes the contract between the parties hereto: that both parties thereby accept and agree to the terms and conditions of said bid documents.

   b. CONTRACT, unless otherwise noted.
      1. JPA will furnish copies of the Contract to the successful Bidder who shall prepare attachments as required. Insurance as evidenced by a Certificate of Insurance (as required), surety bonds properly executed (as required), and Contract signed and dated.
      2. The prepared documents shall be returned to the Purchasing Office within 10 days (unless otherwise noted).
      3. JPA will sign and date the Contract.
      4. Upon approval and signature, the JPA will return one copy to the successful Bidder.

22. TAXES AND TAX EXEMPTION CERTIFICATE
22.1 JPA is generally exempt from any taxes imposed by the state or federal government. A Tax Exemption Certificate will be provided as applicable.

23. AUDIT ADVISORY BOARD
23.1 All parties of any JPA agreement shall be subject to audit pursuant to Chapter 4.66 of the Lincoln Municipal Code and shall make available to a contract auditor, as defined therein, copies of all financial and performance related records and materials germane to the contract/order, as allowed by law.

24. E-VERIFY
24.1 In accordance with Neb. Rev. Stat. 4-108 through 4-114, the contractor agrees to register with and use a federal immigration verification system, to determine the work eligibility status of new employees performing services within the state of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324a, otherwise known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of a newly hired employee pursuant to the Immigration Reform and Control Act of 1986. The Contractor shall not discriminate against any employee or applicant for employment to be employed in the performance of this section pursuant to the requirements of state law and 8 U.S.C.A 1324b. The contractor shall require any subcontractor to comply with the provisions of this section. For information on the E-Verify Program, go to www.uscis.gov/everify.
1. **SUPPLEMENTAL INSTRUCTIONS TO PROPOSERS**

1.1 Proposal pricing shall include the cost of Testing and Special Inspection Services at the New Haymarket Arena and Parking Garage to include labor, testing supplies and any other expenses required to complete the project according to Local Building Codes, the Plans and Specifications and any other State or Federal guidelines.

1.2 All inquiries regarding these specifications shall be directed via e-mail or faxed request to Vince Mejer, Purchasing Agent (vmejer@lincoln.ne.gov) or Fax: (402)441-6513.

1.2.1 All responses to questions and inquiries shall be distributed to prospective bidders electronically as an addenda.

1.3 Proposals are due on August 26, 2011.

1.4 At this time, short listed firms will be interviewed on September 1, 2011.

1.5 Drawings can be reviewed at the offices of PC Sports at 311 N. 8th Street, Suite 102, Lincoln, NE. Phone (402)477-0487 to schedule an appointment.

1.5.1 Drawings can also be ordered from A&D at the cost of the proposer.

1.6 Submit five (5) copies of your proposal to the Office of the Purchasing Agent, located at Suite 200, K Street Complex, 440 South 8th Street, Lincoln, NE, 68508 no later than the date and time stated in the Notice for Request for Proposal.

1.7 **Proposers must also complete and submit the electronic portion** (Attributes and Line Item sections) of this proposal on the E-bid system.

1.7.1 Electronic submittal must be submitted before the closing date and time of this RFP.

2. **PROJECT DESCRIPTION**

2.1 Project Description and Construction Team

2.1.1 Architect: DLR Group

2.1.2 MEP Engineer (Building): ME Engineers

2.1.3 Arena Structural Engineer: Buro Happold

2.1.4 Garage Structural Engineer: AGA

2.1.5 Civil Engineer: Olsson Associates

2.1.6 Contractor: Mortenson Construction

2.2 Project Location: The West Haymarket Arena is located in the new development of the West Haymarket area, north of the proposed extension of "R" Street and bounded by the US Post Office on the east.

2.3 Type of Construction: (Total Budget - $150.0 million)

2.3.1 New Construction: The project consists of a 16,000 seat arena of approximately five levels to include Event Level, Main Concourse, Premium Suite Level, Upper Concourse and the catwalk level.

2.3.1.1 The attached garage is approximately 280 spaces and is a three-level precast structure.
3. **SCOPE OF SERVICES**

3.1 Qualifications

3.1.1 Testing Laboratory shall meet applicable industry standards including, but not limited to City of Lincoln Special Inspection Requirements and IBC 2009.

3.1.2 Testing Laboratory must be accredited by an independent agency per ASTM C 1077 and ASTM E-329 and provide proof thereof.

3.2 Observation, Testing and Inspection Services

3.2.1 All testing equipment shall be calibrated at intervals not to exceed 12 months by devices traceable to National Bureau of Standards or accepted values of natural physical constants.

3.2.2 Observations, testing and Inspections shall be in accordance with project drawings and specifications.

3.3 Notify the appropriate members of the project team immediately upon discovery of deficiencies.

3.4 Promptly submit written reports of observations, test and inspections to the Owner, Architect, Contractor, Structural Engineer, Civil Engineer and Project Manager. Reports shall include as a minimum:

3.4.1 Date issued.
3.4.2 Project title and description.
3.4.3 Testing laboratory, name, address and telephone number.
3.4.4 Name of inspector.
3.4.5 Location of observation.
3.4.6 Date and time of observation, test inspection or sampling.
3.4.7 Weather conditions at the time of observation, test, inspection or sampling.
3.4.8 Results, and statement of compliance or non-compliance with plans and specification, of observation, test, inspection, or sampling.
3.4.9 Interpretation of test results when requested by Owner.

3.5 Testing Laboratory is not authorized to:

3.5.1 Release, revoke, alter, diminish or increase the requirements of the plans and specifications.
3.5.2 Approve, accept, disapprove or reject any portion of the work.
3.5.3 Perform any duties of the contractor.

3.6 Work specifically excluded:

3.6.1 Roofing testing and inspection.
3.6.2 Window testing and inspection.
3.6.3 Arena, Garage and Ramp piles.

4. **INSURANCE REQUIREMENTS**

4.1 Awarded vendor must provide an insurance Certificate of Accord meeting with City of Lincoln requirements as outlined in the document attached to the Bid Document section titled Insurance Clause City.

4.1.1 The Contractor must place the following information in the Description of Terms box on the Insurance Accord Certificate or as a rider: The City of Lincoln and PC Sports are listed as Additional Insured.
5. **PROPOSAL REQUIRED INFORMATION**

5.1 State firm's qualifications for this project.
   5.1.1 Services may include observation, testing and inspections related to soils, aggregates, asphaltic concrete, concrete, reinforcing steel and structure steel.
   5.1.2 Provide relevant project experience with projects of similar size and scope highlighted.

5.2 Provide resumes of those individuals including inspectors who will be assigned to this project.
   5.2.1 Provide a brief description of their duties.
   5.2.2 Please so indicate if your inspectors are cross-trained to allow them to perform inspections and tests on multiple construction materials.

5.3 Provide unit cost rates for Construction Materials Observation, Testing and Inspection using the attached form.

5.4 Provide an estimate of the total cost for the proposed services.
   5.4.1 Note: All rates, costs and prices provided will be fixed for the duration of the project.
   5.4.1.1 Reimbursable expenses to be at cost.
   5.4.2 Assume roof trusses will be fabricated in Minneapolis, MN and Rice Lake, WI.
   5.4.2.1 Other fabrication facility will be located in Lincoln, NE. Please include applicable travel costs.
## Professional Services

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<th>Unit Per</th>
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## Soils, Flexible Base and Aggregates

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### West Haymarket Arena and Garage
Materials Testing and Inspection RFP

**Concrete**

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<td></td>
</tr>
<tr>
<td>07</td>
<td>Batch Plant Observation</td>
<td>hour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>Site Observation</td>
<td>hour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>Length of Change of Hardened Concrete (ASTM C 157)</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Floor Flatness Testing</td>
<td>sf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Floor Flatness Testing - Minimum Charge</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Periodic Structural Precast Concrete Plant Observations</td>
<td>hour</td>
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<tr>
<td>13</td>
<td>Transportation Costs</td>
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**Post-Tensioned Concrete**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>01</td>
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**Reinforcing Steel**

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<th>Amount ($)</th>
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<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Field Placement Inspection Prior to Concrete Placement</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>02</td>
<td>Technician Time</td>
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</tr>
<tr>
<td>03</td>
<td>Transportation Costs to Site</td>
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**Masonry**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>01</td>
<td>Mortar Cubes</td>
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<tr>
<td>02</td>
<td>Grout Cylinders</td>
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</tr>
<tr>
<td>03</td>
<td>Grout Prisms</td>
<td>each</td>
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<tr>
<td>04</td>
<td>Masonry Prisms</td>
<td>each</td>
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<tr>
<td>05</td>
<td>Technician Time</td>
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</tr>
<tr>
<td>06</td>
<td>Transportation Costs to Site</td>
<td>trip</td>
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**Structural Steel / Miscellaneous Steel**

<table>
<thead>
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<td>Welding Inspector</td>
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</tr>
<tr>
<td>02</td>
<td>Certified Welding Inspector</td>
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</tr>
<tr>
<td>03</td>
<td>Radiography (X-Ray)</td>
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<tr>
<td>04</td>
<td>Ultrasonic Testing</td>
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<tr>
<td>05</td>
<td>Bolt Torque Testing</td>
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<td>06</td>
<td>Transportation Costs to Site</td>
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**General**

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<tr>
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<tr>
<td>02</td>
<td>Reproduction Costs</td>
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**Overtime - Technicians**

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</thead>
<tbody>
<tr>
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<td>Weekdays</td>
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</tr>
<tr>
<td>02</td>
<td>Saturdays and Sundays</td>
<td>hour</td>
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WEST HAYMARKET ARENA, LINCOLN NEBRASKA

INSPECTIONS REQUIRED

5 August 2011

SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC 2009, LOCAL AMENDMENTS AND THE REQUIREMENTS BELOW SHALL BE PERFORMED BY APPROVED TESTING AGENCIES RETAINED BY THE OWNER AT NO COST TO THE CONTRACTOR. SCOPE AND FREQUENCY AS PER BELOW OR AS MINIMUM PER REFERENCED CODES AND STANDARDS.

GENERAL REQUIREMENTS

A. Testing and Inspecting: Owner will engage a special inspector qualified testing and inspecting agency to perform shop and field inspections, tests and prepare test reports.

1. Work may require re-evaluation as directed by Architect/Engineer of Record anytime during progress of the work. Re-evaluation of rejected work and evaluation of replacement work shall be performed at expense of Contractor, at no addition to Contract Sum.

2. Rejection: The right is reserved to reject any material, at any time, when it is determined that the material or workmanship does not conform to the contract requirements. Inspection shall be done on a timely basis.

3. Reports: The testing agency shall prepare daily Reports of the Structural Work including progress and description of the area of work with photographs, tests made and results, including deficiencies noted and corrections made, confirmation/rejection of conformance to the structural documents and other items pertinent to acceptance or rejection of the work. The daily reports shall be submitted to the Architect and Engineer of Record and Owner.

4. Daily reports for arena related work are required to be submitted to the Architect/Engineer of Record in PDF digital format at the end of each day with non-conformance items clearly highlighted. Final typed weekly reports in PDF digital format are due within 2 business days. Reports related to the parking garage can be submitted weekly.

5. Non-conformance Log: The inspector shall be responsible to maintain a list of structural non-conformance items updated daily.

B. The Contractor shall have responsibility for coordinating their work with the testing agency to assure that all test and inspection procedures required by the Contract Documents and Public Agencies are properly provided. The Contractor shall cooperate fully with the testing and inspection agencies in the performance of their work and shall provide the following:

1. Information as to time and place of starting shop fabrication and a field construction and erection schedule, one week prior to the beginning of the work.

2. Site File: At least one copy of each approved shop drawing shall be kept available in the contractor's field office.

3. Provide cutting lists, order sheets, material bills and shipping bills.

4. Provide representative sample pieces requested by the inspection agency for testing, if necessary.

5. Full and ample means of assistance for testing and inspection of material.
6. Proper facilities, including scaffolding, temporary work platforms, etc., for inspection of the work in shop and field.

CONCRETE

C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

D. Inspections: 100 percent of the following work items shall be inspected for conformance with the contract documents.

1. Steel reinforcement placement and supporting devices. Testing Agency shall communicate discrepancies to Contractor in a timely manner for correction. The Testing Agency shall verify that discrepancies are brought into conformance prior to concrete placement. Discrepancies not brought into conformance shall be reported per Code requirements.
2. Steel reinforcement welding.
3. Headed bolts and studs
4. Embed plates
5. Verification of use of required design mixture
6. Concrete placement, including conveying and depositing.
7. Curing procedures and maintenance of curing temperature.
8. Verification of concrete strength before removal of shores and forms from beams and slabs.
9. Post-Installed concrete Anchors Detailed on Structural Drawings or Approved Precast Erection Drawings.

E. Concrete Tests for Arena Construction: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. For 28 day mixes mold FIVE (5) cylinders. Test two cylinder at 7 days and two cylinders at 28 days. The 7 day and 28 day strength shall be the average of the two representative cylinders. One cylinder shall be retained in reserve for later testing if required. For arena foundations, mold FOUR (4) cylinders. Test one cylinder at 7 days and two cylinders at 28 days. One cylinder shall be retained in reserve for later testing if required.

2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
   a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
   b. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
6. Record total water quantity added to concrete batches.
7. Obtaining certified mill test results for each load of cement delivered to the concrete producer for use of this project.
8. Record types and amounts of admixtures added to concrete batches, including that added after departure of concrete trucks from batch plant.
9. Record amounts of and monitor dosing of high-range water-reducing admixtures added at site for project site added admixtures and redosing for plant-added admixtures.

10. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day’s pour of each concrete mixture.

11. Compression Test Specimens: ASTM C 31/C 31M.
   a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
   b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.

12. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
   a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
   b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

13. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

14. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

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

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

17. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect or Engineer of Record. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.

18. Additional testing and inspecting, at Contractor’s expense, will be performed to determine compliance of replaced or additional work with specified requirements.

19. Rejection of concrete not meeting specification requirements and immediate reporting to the Architect and Engineer of Record.

F. Concrete Tests for Garage Construction: See garage specification section 033000 for concrete testing requirements.

G. Measure floor and slab flatness $F_f$ and levelness $F_l$ according to ASTM E 1155 within 48 hours of finishing.

H. Attendance at the Pre-Concrete Conference
   1. At least 20 Business days prior to start of the concrete construction schedule, the Contractor shall conduct a meeting to review the proposed mix designs and to discuss the required methods and procedures to achieve the required concrete properties.
   2. The Contractor shall require responsible representative of every party who is concerned with the concrete work to attend the conference, including but not limited to the following:
EXHIBIT A (f)

a. Contractor's superintendent.

b. Laboratory responsible for the concrete design mix.

c. Laboratory responsible for field quality control.

d. Concrete subcontractor - ready mix concrete producer.

e. Admixture manufacturer(s).

f. Concrete pumping contractor.

g. Engineer [and Engineer responsible for controlled concrete].

h. Owner's representative.

i. Architect

3. Minutes of the meeting shall be recorded, typed and printed by the Contractor and distributed to all parties in attendance within 5 days of the meeting.

STEEL AND STEEL DECK

A. Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.

1. The Contractor will provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections both in the field and in any shops.

2. The Contractor may fabricate steel at more than one facility, this will be coordinated once the fabricator is selected.

B. Bolted Connections: Shop-bolted and field-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

1. Where direct tension indicators are used the inspector need not be present during the entire installation and tightening operation provided that at all bolts the inspector:
   1) Has inspected the surface and bolt type for conformance to plans and specifications prior to start of bolting and
   2) At completion of all bolting, verify the minimum specified bolt tension visually by sighting across the bolt heads and by using the feeler gauge as a "no-go" tool on a few bolt in each line, whichever is greater, at the load indicating washers under bolt heads.
   3) Where bolting is by turn-of-nut or calibrated wrench, the inspector shall be present to observe procedures and/or check wrench calibration each day that bolting is being performed. They will also observe that bolt size, type and condition of thread and lubricant for bolts being installed is consistent with the bolts used for calibrating the wrenches that day.

C. Welded Connections: The testing agency shall certify that all welded connections meet or exceed applicable AWS and ASTM standards. The following minimum testing requirements may be increased at the testing agency’s option to meet this requirement.

1. 100% visual inspection of all welds.

2. In addition to visual inspection, the following welded connections require non-destructive testing (NDT):
   a. Full penetration welds: 100% of full penetration welds shall be tested for soundness by means of either radiographic or ultrasonic testing in accordance with AWS D1.1 procedures. All shop and field welds of tension flanges of members shall be tested by the same method.
   b. Partial penetration welds: 100% of partial penetration welds shall be tested for soundness by means of magnetic particle inspection.
   c. Filet welds: Filet welds shall initially be tested at the rate of 100 percent for two weeks (or 40 samples minimum) in order to establish the qualifications of each individual welder. If the rejection rate is demonstrated to be less than 5 percent of the welds tested for each welder, then the frequency of testing for that welder may...
be reduced to 25 percent. If the reject rate increases to 5 percent or more, 100 percent testing shall be reestablished until the rate is reduced to less than 5 percent. The percentage of rejects shall be calculated for each welder independently. A sampling of at least 40 completed welds shall be made for such reduction evaluation.

1) Multi-pass fillet welds are to be tested per the requirements for partial penetration welds.

D. Welds shall be tested and inspected according to AWS D1.1 and the following inspection procedures, at testing agency's option:

1) Liquid Penetrant Inspection: ASTM E 165.
2) Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
3) Ultrasonic Inspection: ASTM E 164.
4) Radiographic Inspection: ASTM E 94.

D. Shear Studs: All shear shop-welded and field welded shear connectors will be visually inspected and tested and inspected according to requirements in AWS D1.1 for stud welding and as follows:

1. Bend tests will be performed if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.

E. Review of Welder Certification: Review certification that the welders have passed qualification tests using AWS procedures. All certifications shall be submitted in standard AWS format.

F. Review Welding Procedure Specifications: Contractor shall submit welding procedure specifications (WPS) for each shop and field welding joint type, for review by the Engineer and the Testing Agency. Any single deviation from AWS D1.1 prequalified weld requirements shall necessitate qualification by test per AWS D1.1, Section 4, Part B.

G. Shop inspection of steel alignment and straightness of members, camber, preparation for connections, dimensional checks, testing of shop bolts, witnessing of welding procedures, testing of cuts, weld access holes and copes of heavy sections with thicknesses greater than 2", examination and testing of completed welds, milling of column ends, cleaning prior to painting, painting and storage of material. All shop fabrication shall be inspected in the shop.

H. Field inspection of steel shall include connections, proper tensioning of bolts, levelness, plumbness and alignment of the frame, conformance to AWS welding methods, examination of surface before welding, examination and testing of completed welds, and field painting.

I. Review Mill Test Reports: Certificates shall be obtained from the mills producing the steel and shall certify in a cover letter submitted with the certificates, that the steel meets the minimum requirements as to physical properties, inspection, marking and tests for structural steel as defined by the current edition of the relevant ASTM Standard Specifications. Any steel that does not meet the ASTM requirements must be clearly identified in a cover letter submitted with the certificates.

1. The contractor shall submit certified and signed copies of all mill reports by manufacturers certifying that the following products comply with requirements:
   a. Structural steel including chemical and physical properties.
   b. Bolts, nuts, and washers including mechanical properties and chemical analysis.
   c. Direct-tension indicators.
   d. Tension-control, high-strength bolt-nut-washer assemblies.
   e. Shear stud connectors.
   f. Shop primers.
   g. Nonshrink grout.
J. Attendance at the Pre-Steel Erection Conference: Conduct conference at Project site at least twenty (20) working days prior to the commencing of steel erection the Contractor shall hold a meeting to review the detailed requirements of the steel erection.

1. The Contractor shall prepare an agenda and require responsible representatives of every party who is concerned with the steel erection to attend the conference, including but not limited to the following:
   a. General Contractor/Construction Manager
   b. Steel Erector / Steel Fabricator
   c. Erector’s Surveyor
   d. Roof Deck Contractor
   e. All Testing and Inspection Agencies
   f. Design Professionals
   g. Owner
   h. Precast or Cladding Contractor as appropriate.

2. Minutes of the meeting shall be recorded, typed and distributed by the Contractor to all parties listed above within 5 working days of the meeting.

3. The minutes shall include a detailed outline of the erection procedure including a schedule of milestone dates for surveys and sign-offs on erection stages which represents an agreement reached by all parties involved. It shall also include the surveying program and submission schedule for approval.

4. To determine compliance of corrected work with specified requirements

MASONRY CONSTRUCTION (per IBC 1704.5)

A. PREPARATION OF MORTAR AND MORTAR JOINTS
B. REINFORCEMENT AND CONNECTORS
C. ANCHORAGE
D. PROTECTION FROM COLD AND HOT WEATHER
E. GROUTING
F. PRESTRESSING

--END--
INSURANCE REQUIREMENTS
FOR ALL WEST HAYMARKET JOINT
PUBLIC AGENCY CONTRACTS

1. GENERAL PROVISIONS

A. Indemnification. The Contractor shall indemnify and save harmless the West Haymarket Joint Public Agency, hereinafter referred to as "JPA" from and against all losses, claims, damages, and expenses, including attorney's fees, arising out of or resulting from the performance of the contract that results in bodily injury, sickness, disease, death, or to injury or destruction of tangible property, including the loss of use resulting therefrom and is caused in whole or in part by the Contractor, any subcontractor, any directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. This section will not require the Contractor to indemnify or hold harmless JPA for any losses, claims, damages, and expenses arising out of or resulting from the sole negligence of the West Haymarket Joint Public Agency.

B. Approved Coverage Prior to Commencing Work/Subcontractors Included. Contractor shall purchase and maintain in place insurance to protect Contractor and JPA against all liabilities and hazards as provided in this article throughout the duration of the Contract. Contractor shall not commence work under this contract until the Contractor has obtained all insurance required under this Section and such insurance has been approved by the City Attorney for JPA, nor shall the Contractor allow any subcontractor to commence work on any subcontract until all similar insurance required of the subcontractor has been so obtained and approved.

C. Occurrence Basis Coverage. All insurance shall be provided on an occurrence basis and not on a claims made basis, except for hazardous materials, errors and omissions, or other coverage not reasonably available on an occurrence basis; provided that all such claims made coverage is subject to the prior written approval of the City Attorney and must be clearly indicated as such in any certificate showing coverage.

D. Authorized and Rated Insurers Required. All insurance coverage are to be placed with insurers authorized to do business in the State of Nebraska and must be placed with an insurer that has an A.M. Best's Rating of no less than A: VII unless specific approval has been granted by the City Attorney.

E. Certificates Showing Coverage. All certificates of insurance shall be filed with the City Attorney, and may utilize an appropriate standard ACORD Certificate of Insurance form showing the specific limits of insurance coverage required by this Article; provided that restrictions, qualifications or declarations inconsistent with the requirements of this Article shall not relieve the Contractor from providing insurance as required herein. Such certificates shall show JPA as additional insured, including by specific endorsement where necessary, as indicated in the following requirements. Such certificate shall specifically state that the related insurance policies are to be endorsed to require the insurer to provide JPA thirty days, notice of cancellation, non-renewal or any material reduction in the stated amounts or limits of insurance coverage.

F. Terminology. The terms "insurance," "insurance policy," or "coverage" as used in this article are used interchangeably and shall have the same meaning as "insurance" unless the context clearly requires otherwise. References to "ISO®" forms are merely for convenience and ease of reference, and an equivalent or better form as determined acceptable by the City Attorney may be used. (Note: ISO® is a registered trademark of ISO Properties, Inc.)
2. INSURANCE REQUIREMENTS

A. Scope of Required Coverage. The Contractor shall take out and maintain during the life of Contract such insurance in the forms and minimum amounts as specified in this Article and as will protect Contractor and JPA from the following claims arising out of or resulting from or in connection with the Contractor's operations, undertakings or omissions directly or indirectly related to the Contract, whether by the Contractor or any Subcontractor or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

(1) Claims under workers' compensation, disability benefit, or other employee benefit acts;

(2) Claims arising out of bodily injury, occupational sickness or disease, or death of an employee or any other person;

(3) Claims customarily covered under personal injury liability coverage;

(4) Claims other than to the work itself arising out of an injury to or destruction of tangible property, including the loss of use resulting therefrom;

(5) Claims arising out of ownership, maintenance or use of any motor vehicle;

(6) Railroad protective liability coverage in the event the contract involves work to be performed within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road beds, tunnel, underpass or crossing.

B. Worker's Compensation Insurance and Employer's Liability Insurance. The Contractor shall provide applicable statutory Worker's Compensation Insurance with minimum limits as provided below covering all Contractor's employees, and in the case of any subcontracted work, the Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for Subcontractor's employees.

The Contractor shall provide Employer's Liability Insurance with minimum limits as provided below placed with an insurance company authorized to write such insurance in all states where the Contractor will have employees located in the performance of this contract, and the Contractor shall require each Subcontractor similarly to maintain Employer's Liability Insurance on the Subcontractor's employees.

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Listing</th>
<th>Min Amt</th>
<th>Notes</th>
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<tr>
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<td>Applicable Federal Statutory</td>
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<td></td>
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<td>each employee</td>
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<tr>
<td></td>
<td>Bodily Injury $500,000</td>
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</table>
C. Commercial General Liability Insurance.

(1) The Contractor shall provide Commercial General Liability Insurance in a policy form providing no less comprehensive and no more restrictive coverage than provided under the ISO® form CG00010798 or newer with standard exclusions "a" through "o" and with minimum limits as provided below. Any other exclusions that operate to contradict or materially alter the standard exclusions shall be specifically listed on the certificate of insurance and shall be subject to the prior written approval of the City Attorney.

<table>
<thead>
<tr>
<th>Coverage</th>
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<td>Medical Damage Limit</td>
<td>$10,000</td>
<td>any one person</td>
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(2) The required Commercial General Liability Insurance shall also include the following:

- Coverage for all premises and operations
- Endorsement to provide the general aggregate per project endorsement
- Personal and advertising injury included
- Operations by independent contractors included
- Contractual liability coverage included
- X.C.U. Coverage including coverage for demolition of any building or structure, collapse, explosion, blasting, excavation and damage to property below the surface of ground.
- Any fellow employee exclusions shall be deleted
- Coverage shall not contain an absolute pollution exclusion, and applicable remaining coverage shall apply for pollution exposures arising from products and completed operations.
- Coverage for products and completed operations maintained for duration of work and shall be maintained for a minimum of three years after final acceptance under the Contract or the warranty period for the same whichever is longer, unless modified in any Special Provisions.
- Contractual Liability coverage shall include contractually assumed defense costs in addition to any policy limits.

(3) If work is to be performed within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road beds, tunnel, underpass or crossing, Railroad Contractual Liability Endorsement (ISO® form CG24170196 or newer).

(4) JPA may at its sole option, and in lieu of being additional insured on the Contractor's policy, by written requirement in the Special Provisions or by written change order, require Contractor to provide a separate Owner's Protective liability policy. The premium cost to obtain such insurance shall be as paid as provided in the Special Provision or change order, with any related cost savings as reasonably determined by JPA being reimbursed or paid to JPA.
D. Vehicle liability insurance coverage.

- The Contractor shall provide reasonable insurance coverage for all owned, non-owned, hired and leased vehicles with specific endorsements to include contractual liability coverage and delete any fellow employee exclusion.

- If specifically required in the Special Provisions, the required coverage shall also include an endorsement for auto cargo pollution (ISO® form CA 99 48).

E. Railroad Protective Liability. If work is to be performed within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road beds, tunnel, underpass or crossing or otherwise required by the Special Provisions or applicable requirements of an affected railroad, the Contractor shall provide Railroad Protective Liability Insurance naming the affected railroad/s as insured with minimum limits for bodily injury and property damage of $2,000,000 per occurrence, $6,000,000 aggregate, or such other limits as required in the Special Provisions or by the affected railroad. The original of the policy shall be furnished to the railroad and a certified copy of the same furnished to the City Attorney’s office prior to any related construction or entry upon railroad premises by the Contractor or for work related to the Contract.

F. Umbrella or Excess Insurance. The Contractor shall provide Umbrella or Excess insurance coverage with minimum coverage limits of $3,000,000 each occurrence and aggregate.

G. JPA included as Insured on Contractor’s Policy – Endorsements required.
The Contractor shall provide adequate written documentation, including applicable ACORD certificates, declarations pages or other acceptable policy information demonstrating that JPA is included as an additional insured along with the Contractor with respect to all of the coverages required in this “Section 2A Insurance Requirements,” except for applicable Worker’s Compensation coverage, to include all work performed for JPA and specifically including, but not limited to, any liability caused or contributed to by the act, error, or omission of the Contractor, including any related subcontractors, third parties, agents, employees, officers or assigns of any of them. The documentation or endorsement shall specifically include JPA as an additional insured for purposes of Products and Completed Operations. The inclusion of JPA as additional insured shall be for coverage only on a primary basis for liability coverage, and no coverage shall contain a policy or other restriction or attempt to provide restricted coverage for JPA, whether on an excess, contributory or other basis regardless of any other insurance coverage available to JPA.

3. CONTRACTOR’S INDEMNITY – CONTRACTUAL LIABILITY INSURANCE

A. To the same extent as specified for minimum coverage requirements in Section 2 above, the required insurance shall include contractual liability coverage to include indemnification and hold harmless agreements and provisions in the related Contract Documents, specifically including the following provision:

(1) To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless JPA, its officers, agents, employees, volunteers and consultants from and against any and all claims, damages, losses, costs, and expenses, including but not limited to attorney’s fees and costs arising out of or related to the Contract or the Contractor’s activities, errors, or omissions related to the Contract including liabilities or penalties imposed by applicable, law, rule or regulation in connection therewith; provided that such claims, damages, losses, costs, and expenses, including but not limited to attorney’s fees and costs:

- is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use therefrom, and
- is caused in whole or in part by any act or omission of the Contractor, any subcontractor, agent, officer, employee, or assigns of the same or by anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in whole or in part by a party indemnified hereunder.
(2) Such indemnification shall not be construed to negate, abridge, limit or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this section.

B. In any and all claims by any employee (whether an employee of the Contractor or subcontractor, or their respective agents or assigns by anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable as an employer) in whole or in part against JPA, its officers, agents, employees, volunteers or consultants, the above indemnification shall not be limited in any way by the amount of damages, compensation, benefits or other contributions payable by or on behalf of a the employer under Worker’s Compensation statutes, disability benefit acts, or any other employee benefit or payment acts as the case may be.

C. The obligations of indemnification herein shall not include or extend to:

(1) Any outside engineer’s or architect’s professional errors and omissions involving the approval or furnishing of maps, drawings, opinions, reports, surveys, change orders, designs or specifications within the scope of professional services provided to JPA and related to the Contract; and

(2) Any claims arising out of the negligence of the JPA to the extent the same is the sole and proximate cause of the injury or damage so claimed.

D. In the event of any litigation of any such claims shall be commenced against JPA, Contractor shall defend the same at Contractor’s sole expense upon notice thereof from JPA. Contractor shall notify the insuring company that JPA reserves and does not waive any statutory or governmental immunity and neither Contractor, nor Contractor’s counsel whether employed by Contractor or by an insurer on behalf of the Contractor shall waive such defenses or enter into any settlement or other disposition requiring waiver of any defenses or immunity of JPA without the express written consent of the JPA.

4. CONTRACTOR’S INSURANCE FOR OTHER LOSSES

A. Contractor shall assume full responsibility for all loss or damage from any cause whatsoever to any tools owned, rented or used in connection with the Contract including any tools, machinery, equipment, storage devices, containers, sheds, temporary structures, staging structures, scaffolding, fences, forms, braces, jigs, screens, brackets, vehicles and the like owned or rented by Contractor, or Contractor’s agents, subcontractors, suppliers, or employees.

B. In connection with the above, Contractor shall cause or require any applicable insurance related to physical damage of the same to provide a waiver of a right of subrogation against JPA.

5. NOTIFICATION IN EVENT OF LIABILITY OR DAMAGE.

A. The Contractor shall promptly notify JPA in writing and provide a copy of all claims and information presented to any of Contractor’s insurance carrier/s upon any loss or claim or upon any occurrence giving rise to any liability or potential liability related to the Contract or related work. The notice to JPA shall include pertinent details of the claim or liability and an estimate of damages, names of witnesses, and other pertinent information including the amount of the claim, if any.

B. In the event JPA receives a claim or otherwise has actual knowledge of any loss or claim arising out of the Contract or related work and not otherwise known to or made against the Contractor, JPA shall promptly notify the Contractor of the same in writing, including pertinent details of the claim or liability; Provided, however JPA shall have no duty to inspect the project to obtain such knowledge, and provided further that JPA’s obligations, if any, shall not relieve the Contractor of any liability or obligation hereunder.
6. PROPERTY INSURANCE/BUILDER’S RISK.

A. The Contractor shall provide property insurance (a/k/a Builder’s Risk or installation Floater) on all Projects involving construction or installation of buildings or structures and other projects where provided in the Special Provisions. Such insurance shall be provided in the minimum amount of the total contract sum and in addition applicable modifications thereto for the entire work on a replacement cost basis. Such insurance shall be maintained until JPA completes final acceptance of the work as provided in the Contract. Such insurance shall be written and endorsed, where applicable, to include the interests of JPA, Contractor, Subcontractors, Sub-subcontractors in the related work. The maximum deductible for such insurance shall be $5,000 for each occurrence, which deductible shall be the responsibility of the Contractor. Such insurance shall contain a “permission to occupy” endorsement.

B. All related Property Insurance shall be provided on a “Special Perils” or similar policy form and shall at a minimum insure against perils of fire including extended coverage and physical loss or damage including without limitation or duplication of coverage: flood, earthquake, theft, vandalism, malicious mischief, collapse, and debris removal, including demolition whether occasioned by the loss or by enforcement of applicable legal or safety requirements including compensation or costs for JPA’s related costs and expenses (as owner) including labor required as a result of such loss.

C. All related Property Insurance shall include coverage for falsework, temporary buildings, work stored off-site or in-transit to the site, whether in whole or in part. Coverage for work off-site or in-transit shall be a minimum of 10% of the amount of the policy.

D. The Contractor’s Property Insurance shall be primary coverage for any insured loss related to or arising out of the Contract and shall not be reduced by or coordinated with separate property insurance maintained by JPA.
### Arena

**Construction**

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<td><strong>External Considerations</strong></td>
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**Site Preparation and Excavation**

- **Demolish Existing Facilities**
- **Salvage**
  - A1W0-8M1B Track Removal & Salvage - Arena West (Phase 2)
  - A1ED-8M1B Track Removal & Salvage - Arena East (Phase 2)

**Excavation**

- Contaminated Soils Abatement
  - A1ED-8M1B Site Prep & Soil Correction - Arena East (Phase 2)
  - A1W0-8M1B Site Prep & Soil Correction - Arena West (Phase 2)

**Rough Grade**

- A1W0-8M1F Fill to Top of Pla Caps - Arena West (Phase 2)
  - A1ED-8M1F Fill to Top of Pla Caps - Arena East (Phase 2)

**Foundations**

- A15-8N18 Test Piles - Service Lvl
  - A15-8N18 Drill & Place Piling - Arena Event Lvl Area D Pour #1 Rig 1

### Deep Foundations

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**Piling**

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**Run Date:** 03-Aug-11 07:41  
West Haymarket Arena - Lincoln, NE  
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**Pile Caps**

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*Run Date: 03-Aug-1107:41*
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**West Haymarket Arena - Lincoln, NE**

Current Schedule

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Current Schedule

West Haymarket Arena - Lincoln, NE

Data Date: 24-Jul-11
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West Haymarket Arena - Lincoln, NE

Mortenson construction
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<td>29-Jan-12</td>
<td>10</td>
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<tr>
<td>A3A1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Premium Lvl Area B Pour #1</td>
<td>23-Jan-12</td>
<td>26-Jan-12</td>
<td>14</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>A3A2-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Premium Lvl Area C Pour #1</td>
<td>27-Jan-12</td>
<td>30-Jan-12</td>
<td>13</td>
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<tr>
<td>A2T1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Main Cone Area C Pour #2</td>
<td>01-Feb-12</td>
<td>06-Feb-12</td>
<td>6</td>
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<tr>
<td>A2D2-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area D Pour #2</td>
<td>07-Feb-12</td>
<td>09-Feb-12</td>
<td>6</td>
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<tr>
<td>A2C1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Main Cone Area C Pour #3</td>
<td>10-Feb-12</td>
<td>14-Feb-12</td>
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<td>A2G1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area B Pour #2</td>
<td>15-Feb-12</td>
<td>17-Feb-12</td>
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<tr>
<td>A4A1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area B Pour #1</td>
<td>16-Feb-12</td>
<td>20-Feb-12</td>
<td>18</td>
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<tr>
<td>A3A1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area A Pour #3</td>
<td>24-Feb-12</td>
<td>26-Feb-12</td>
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<td>A2C2-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area C Pour #2</td>
<td>27-Feb-12</td>
<td>28-Feb-12</td>
<td>28</td>
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<tr>
<td>A3J1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Premium Lvl Area C Pour #1</td>
<td>07-Mar-12</td>
<td>12-Mar-12</td>
<td>6</td>
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<tr>
<td>A4A2-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area A Pour #2</td>
<td>15-Mar-12</td>
<td>19-Mar-12</td>
<td>26</td>
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<tr>
<td>A3C2-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area C Pour #3</td>
<td>20-Mar-12</td>
<td>23-Mar-12</td>
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<td>A4A3-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area A Pour #3</td>
<td>21-Mar-12</td>
<td>23-Mar-12</td>
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<tr>
<td>A4D1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area D Pour #1</td>
<td>28-Mar-12</td>
<td>02-Apr-12</td>
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<td>A4D2-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area D Pour #2</td>
<td>03-Apr-12</td>
<td>10-Apr-12</td>
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<td>A4C1-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area C Pour #1</td>
<td>13-Apr-12</td>
<td>17-Apr-12</td>
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<td>A4C2-1P2GC</td>
<td>Install Girder Rebar P&amp;J Deck / Raker Beams - Arena Upper Cone Area C Pour #2</td>
<td>16-Apr-12</td>
<td>20-Apr-12</td>
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<td>A2B1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Main Cone Area B Pour #1</td>
<td>12-Dec-11</td>
<td>14-Dec-11</td>
<td>12</td>
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<tr>
<td>A2B2-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Main Cone Area B Pour #2</td>
<td>20-Dec-11</td>
<td>21-Dec-11</td>
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<tr>
<td>A2B3-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Main Cone Area B Pour #3</td>
<td>05-Jan-12</td>
<td>09-Jan-12</td>
<td>11</td>
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<tr>
<td>A2A1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Main Cone Area A Pour #1</td>
<td>06-Jan-12</td>
<td>09-Jan-12</td>
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<tr>
<td>A1S1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Mezz. 1.5 Area E Pour #1</td>
<td>09-Jan-12</td>
<td>11-Jan-12</td>
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<td>A2A2-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Main Cone Area A Pour #2</td>
<td>12-Jan-12</td>
<td>13-Jan-12</td>
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<tr>
<td>A2D1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Main Cone Area A Pour #1</td>
<td>15-Jan-12</td>
<td>27-Jan-12</td>
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<tr>
<td>A3B1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Premium Lvl Area A Pour #1</td>
<td>26-Jan-12</td>
<td>30-Jan-12</td>
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<td>A3A1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Premium Lvl Area A Pour #2</td>
<td>31-Jan-12</td>
<td>01-Feb-12</td>
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<td>A3A2-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Premium Lvl Area A Pour #3</td>
<td>02-Feb-12</td>
<td>03-Feb-12</td>
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<td>A2T1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Premium Lvl Area E Pour #1</td>
<td>06-Feb-12</td>
<td>08-Feb-12</td>
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<td>09-Feb-12</td>
<td>10-Feb-12</td>
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<td>A2C2-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Main Cone Area C Pour #2</td>
<td>14-Feb-12</td>
<td>15-Feb-12</td>
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<td>A2C2-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Main Cone Area C Pour #2</td>
<td>17-Feb-12</td>
<td>20-Feb-12</td>
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<tr>
<td>A4B1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Upper Cone Area B Pour #1</td>
<td>20-Feb-12</td>
<td>21-Feb-12</td>
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<td>A4A1-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Upper Cone Area C Pour #1</td>
<td>23-Feb-12</td>
<td>24-Feb-12</td>
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<td>A4A3-1P2GC</td>
<td>Install Beams/Bottom Mid Rebar P&amp;J Deck - Arena Premium Lvl Area A Pour #3</td>
<td>28-Feb-12</td>
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<td>A2C3-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Main Conc Area C Pour #3</td>
<td>2 29-Feb-12</td>
<td>01-Mar-12</td>
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<tr>
<td>A3D1-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Premium Lvt Area D Pour #1</td>
<td>3 05-Mar-12</td>
<td>07-Mar-12</td>
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<tr>
<td>A3D2-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Premium Lvt Area D Pour #2</td>
<td>3 12-Mar-12</td>
<td>14-Mar-12</td>
<td>5</td>
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<tr>
<td>A4A2-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Upper Conc Area A Pour #2</td>
<td>2 19-Mar-12</td>
<td>20-Mar-12</td>
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<tr>
<td>A3C2-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Premium Lvt Area C Pour #2</td>
<td>2 22-Mar-12</td>
<td>23-Mar-12</td>
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<tr>
<td>A4A3-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Upper Conc Area A Pour #3</td>
<td>2 23-Mar-12</td>
<td>26-Mar-12</td>
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<td>A4D1-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Upper Conc Area D Pour #1</td>
<td>3 02-Apr-12</td>
<td>04-Apr-12</td>
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<td>A4D2-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Upper Conc Area D Pour #2</td>
<td>2 11-Apr-12</td>
<td>13-Apr-12</td>
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<tr>
<td>A4C1-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Upper Conc Area C Pour #1</td>
<td>2 17-Apr-12</td>
<td>18-Apr-12</td>
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<tr>
<td>A4C2-BP2G3</td>
<td>Install Beams/Bottom Mat Rebar P&amp;J Deck - Arena Upper Conc Area C Pour #2</td>
<td>2 24-Apr-12</td>
<td>25-Apr-12</td>
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<tr>
<td>A2B1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area B Pour #1</td>
<td>2 16-Dec-11</td>
<td>18-Dec-11</td>
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<tr>
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<td>2 09-Jan-12</td>
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<tr>
<td>A2A1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area A Pour #1</td>
<td>2 12-Jan-12</td>
<td>13-Jan-12</td>
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<tr>
<td>A1ST1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Mtzz. 1.5 Area E Pour #1</td>
<td>2 13-Jan-12</td>
<td>16-Jan-12</td>
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<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area A Pour #2</td>
<td>2 18-Jan-12</td>
<td>19-Jan-12</td>
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<tr>
<td>A3D1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area D Pour #1</td>
<td>2 23-Jan-12</td>
<td>24-Jan-12</td>
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<tr>
<td>A3B1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Premium Lvt Area B Pour #1</td>
<td>2 01-Feb-12</td>
<td>02-Feb-12</td>
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<tr>
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<td>Install Top Mat Rebar P&amp;J Deck - Arena Premium Lvt Area A Pour #1</td>
<td>1 07-Feb-12</td>
<td>07-Feb-12</td>
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<tr>
<td>A3C1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Premium Lvt Area C Pour #2</td>
<td>2 08-Feb-12</td>
<td>09-Feb-12</td>
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<tr>
<td>A2T1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area B Pour #1</td>
<td>2 10-Feb-12</td>
<td>13-Feb-12</td>
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<tr>
<td>A2D2-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area A Pour #2</td>
<td>2 15-Feb-12</td>
<td>16-Feb-12</td>
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<tr>
<td>A2C1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area C Pour #1</td>
<td>2 20-Feb-12</td>
<td>21-Feb-12</td>
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<tr>
<td>A2C2-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area C Pour #2</td>
<td>2 23-Feb-12</td>
<td>24-Feb-12</td>
<td>31</td>
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<tr>
<td>A4B1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Upper Conc Area B Pour #1</td>
<td>2 24-Feb-12</td>
<td>27-Feb-12</td>
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<tr>
<td>A4A1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Upper Conc Area A Pour #1</td>
<td>1 28-Feb-12</td>
<td>29-Feb-12</td>
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<tr>
<td>A3A3-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Premium Lvt Area C Pour #3</td>
<td>2 05-Mar-12</td>
<td>06-Mar-12</td>
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<tr>
<td>A2C3-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Main Conc Area C Pour #3</td>
<td>2 05-Mar-12</td>
<td>06-Mar-12</td>
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<tr>
<td>A4A3-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Upper Conc Area A Pour #3</td>
<td>2 29-Mar-12</td>
<td>30-Mar-12</td>
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<tr>
<td>A4D1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Upper Conc Area D Pour #1</td>
<td>2 05-Apr-12</td>
<td>06-Apr-12</td>
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<tr>
<td>A4D2-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Upper Conc Area D Pour #2</td>
<td>2 17-Apr-12</td>
<td>18-Apr-12</td>
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<tr>
<td>A4C1-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Upper Conc Area C Pour #1</td>
<td>2 23-Apr-12</td>
<td>24-Apr-12</td>
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<tr>
<td>A4C2-BP2G4</td>
<td>Install Top Mat Rebar P&amp;J Deck - Arena Upper Conc Area C Pour #2</td>
<td>2 26-Apr-12</td>
<td>27-Apr-12</td>
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<tr>
<td>A2B3-BP2GL</td>
<td>Mech Embeds in P&amp;J Deck - Arena Main Conc Area B Pour #3</td>
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<td>06-Jan-12</td>
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<tr>
<td>A2B4-BP2GL</td>
<td>Mech Embeds in P&amp;J Deck - Arena Main Conc Area B Pour #4</td>
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<td>11-Jan-12</td>
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<tr>
<td>A1ST1-BP2GL</td>
<td>Mech Embeds in P&amp;J Deck - Arena Mtzz. 1.5 Area E Pour #1</td>
<td>2 11-Jan-12</td>
<td>12-Jan-12</td>
<td>41</td>
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<tr>
<td>A2A2-BP2GL</td>
<td>Mech Embeds in P&amp;J Deck - Arena Main Conc Area A Pour #2</td>
<td>2 16-Jan-12</td>
<td>17-Jan-12</td>
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<td>A2D1-BP2GL</td>
<td>Mech Embeds in P&amp;J Deck - Arena Main Conc Area D Pour #1</td>
<td>2 27-Jan-12</td>
<td>28-Jan-12</td>
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**Run Date:** 03-Aug-1107:41  
**West Haymarket Arena - Lincoln, NE**  
**Current Schedule**
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**FRP Beams**

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**Run Date:** 03-Aug-20107-41  
**West Haymarket Arena - Lincoln, NE  
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<td>A11B-8U</td>
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<td>16-Nov-12</td>
<td>06-Feb-13</td>
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<td>A2T8-8U</td>
<td>Drywall and Interior Finishes - Arena Main Conc Ticket Bldg</td>
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<td>A15S-8U</td>
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<td>20-Dec-12</td>
<td>25-Mar-13</td>
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<td>A1W8-8U</td>
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<td>A3G8-8U</td>
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<td>07-Feb-13</td>
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<td>A1N8-8U</td>
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<td>A2W8-8U</td>
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<td>A2ND-8U</td>
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<td>Landscape</td>
<td>30-Jul-13</td>
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**Data Date:** 24-Jul-11  
**Run Date:** 03-Aug-1107-41  
**Current Schedule**  

West Haymarket Arena - Lincoln, NE  
Mortenson construction  
HAMPTON construction
Addendum #1
for
West Haymarket Arena and Garage Special Inspections
RFP No. 11-203

Addenda are instruments issued by the City prior to the date for receipt of offers which will modify or interpret the specification document by addition, deletion, clarification, or correction.

Please acknowledge receipt of this addendum in the space provided in the Attribute Section.

Be advised of the following changes and clarifications to the City’s specification and bidding documents:

1. The closing date has been changed to September 2, 2011.

All other terms and conditions shall remain unchanged.

Dated this 24th of August, 2011.

Vince M. Mejer
Purchasing Agent
Addendum #2  
for  
West Haymarket Arena and Garage Special Inspections  
Bid No. 11-203

Addenda are instruments issued by the City prior to the date for receipt of offers which will modify or interpret the specification document by addition, deletion, clarification, or correction.

Please acknowledge receipt of this addendum in the space provided in the Attribute Section.

Be advised of the following changes and clarifications to the City’s specification and bidding documents:

Q1. Is Bid Security required, if so, for what amount?
   A1. No bid security is required.

Q2. Who is on the selection committee?
   A2. We do not give out that information.

Q3. What are the criteria to be used for award of this portion of the project?
   A3. Qualifications, previous experience and pricing.

Q4. What is the area of concrete pavement? Asphalt pavement?
   A4. Please review site drawing. An appt can be made at PC Sports or plans can be ordered from printer, A&D. Please request the PGMP set of drawings.

Q5. What is considered "Hardscape" shown in the site improvement section on page 22 of the Mortenson schedule? And what is the approximate area that will require testing, soils, concrete, and/or asphalt?
   A5. This item includes all exterior concrete, asphalt, ped ramp. These items will be scheduled to more detail as the drawings progress

Q6. Are TxDOT items 11-17 under the Soils, Flexible Base, and Aggregates section of the unit rate worksheet necessary as they appear to be redundant of items 6-10?
   A6. Please void Item 11-17.

Q7. Can you clarify how many concrete test cylinders per set should be assumed for the Arena and Parking Garage and when compression tests should be completed?
   A7. Reference specifications and guidelines submitted with proposal. All of this was spelled out.

Q9. Concrete Section Item 7 refers to Batch Plant Observation, will a concrete batch plant be utilized on the project and for all concrete placement or which elements?
   A9. No on site batch plant will be utilized.
Q10. Are there any post-tensioned concrete slabs planned in the Arena structure?
   A10. No.

Q11. The Mortenson schedule refers to backfill of pile caps/grade beams and strip footings, will some of these foundations structures be formed and thus require backfilling, and if so approximately what percentage will be formed?
   A11. All will be formed

Q12. On the Section 033000 specifications, there are AF, R, and G designations, can you clarify which project each of these refers to?

Q13. Will there be structural lightweight concrete on the arena and/or the parking garage project?
   A13. No.

Q14. What does "FRP" stand for as referenced on the Mortenson schedule beginning on bottom of page 2?
   A14. FRP stands for: Form, Reinforce, Place

Q15. Will on-site office space be provided by the owner for meeting space and plan holding for special inspection staff?
   A15. No. Special Inspector needs to provide for own space.

Q19. Will inspectors be required to carry any certifications?
   A16. See specification requirements.

Q20. Without the completed plans, to be more accurate in our proposal can your general contractor supply quantities for the following:
   Concrete (Quantities in yards)
   1. Arena Foundations
      A. 8500 cy.
   2. Arena Building
      A. 15000 cy
   3. Parking Structure Foundations
      A. 1200 cy
   4. Parking Structure Building
      A. 1000 cy

   Masonry (Wall area of)
   1. Structural – Foundations
      A. 0 – Arena
      0 - Garage
   2. Non-Structural
      A. 50,000 sf – Arena
      6500 – Garage
      5,500 s.f. - Face Brick
§ Structural Steel
1. Moment Connections
   A. Bolted
      a. What type of bolts will be used?
         A. TC Bolts for the lower areas and Hex heads at the long span for arena superstructure
      b. What type of installation is required?
         i. DTI – periodic inspection if surface and bolt type verified prior to installation.
            A. Continuous
         ii. Turn of the Nut – spec calls out continuous. What about match marking? Periodic?
            A. Match marking acceptable
   B. Welded
      a. Spec calls out 100% test on Fillets for 2 weeks on each welder then reduce to 25% if there are less than 5% rejects – what kind of tests-MT? PT? just VT?
         A. MT
   C. Field Inspections:
      a. Spec calls out to inspect levelness, plumbness and alignment of the frame?
         A. Yes
      b. Spec calls out to inspect field paint?
         A. Yes

Q21. Testing for floor flatness and levelness is required in the specifications, how many times would this be needed, or what areas is this actually required?

A21. Reference specifications 033000 AF for Bid Package #2 for requirements and locations. This only applies to slabs-on-grade and structured slab locations at the event level.
1. Finish surfaces to the following tolerances, according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface:

   A. Specified overall values of flatness, $F(F)$ 25; and of levelness, $F(L)$ 20; with minimum local values of flatness, $F(F)$ 17; and of levelness, $F(L)$ 15 for mechanical, electrical, tele/data and elevator equipment room floors

   B. Specified overall values of flatness, $F(F)$ 35; and of levelness, $F(L)$ 25; with minimum local values of flatness, $F(F)$ 24; and of levelness, $F(L)$ 17; for slabs-on-grade for all floors not to be polished and not indicated to have a different tolerance.

   C. Specified overall values of flatness, $F(F)$ 50; and of levelness, $F(L)$ 40; with minimum local values of flatness, $F(F)$ 40; and of levelness, $F(L)$ 35; for event level floor located inside the precast walls where the retractable seating sections are located.

   D. Specified overall values of flatness, $F(F)$ 40; and of levelness, $F(L)$ 40; with minimum local values of flatness, $F(F)$ 35; and of levelness, $F(L)$ 35 for all floors indicated to be polished.
Q22. Clarification of Concrete Specifications:

§ Area AF (We assume this is Arena Foundations?)
1. Section C (1) Testing frequency provides 3 sets of concrete sampled in the first 100 yds of concrete placement
2. Section C (2) Testing frequency provides only 1 set of concrete to be sampled in the first 100 yds of concrete placed.
3. 1 set of 3 cylinders are to be cast for 6 x 12 cylinders/set
   A. Use 1 set of 4 (one- 7 day, two-28 day, one -hold) for each 100 yds (specs have been edited for Bid Pack #2)

§ Section G (Which area does this section reflect?)
1. This Section requires 1 set of 6 (6x12) cylinders to be cast for each 100yds
   A. Garage

§ Section R (We assume this is the parking garage)
   A. This is the pedestrian ramp
      1. This Section requires 1 set of 6 (6x12) cylinders to be cast for each 100yds

§ Buro Happold (We assume this is the building structure for the Arena)
   A. This Section requires 1 set of 5 (6x12) cylinders to be cast for each 100yds

§ Section 7 Batch Plant Observation
1. Will a concrete batch plant be utilized on the project and for all concrete placement or which elements?
   A. BATCH PLANT OBSERVATION IS NOT REQUIRED FOR THE ARENA SUPERSTRUCTURE-

§ Section 8 Length of Change of Hardened Concrete (ASTM C 157)
1. What frequency should this test be assumed to be completed for proposal?
   A. NOT REQUIRED FOR ARENA SUPERSTRUCTURE

Q23. Are we correct in our assumptions and is there a clarification on a preference for amount of cylinder cast and how often or is this what will be required? When compression tests should be completed?
A23. See above for clarification

Q24. Are there any post-tensioned concrete slabs planned in the Arena structure?
A24. No.
Q25. The Mortenson schedule refers to backfill of pile caps/grade beams and strip footings, will some of these foundations structures be formed and thus require backfilling, and if so approximately what percentage will be formed?

\[ A25. \text{ There are small areas of lightweight in fill slabs and ramps on the ARENA STUPESTRUCTURE} \]

Q26. Will there be structural lightweight concrete on the arena and/or the parking garage project?

A. No.

Q27. Do we need to provide NDT services at the shop?

A27. Yes

Q28. Is X-Ray required at the shop?

A28. Yes

Q29. Spec calls out to inspect steel alignment and straightness of members, dimensional checks, testing of cuts, painting?

A29. Yes

All other terms and conditions shall remain unchanged.

Dated this 29th day of August, 2011.

Vince M. Mejer
Purchasing Agent
Addendum #3
for
West Haymarket Arena and Garage Special Inspections
Bid No. 11-203

Addenda are instruments issued by the City prior to the date for receipt of offers which will modify or interpret the specification document by addition, deletion, clarification, or correction.

Please acknowledge receipt of this addendum in the space provided in the Attribute Section.

Be advised of the following changes and clarifications to the City’s specification and bidding documents:

The Closing date of this RFP has been changed to September 7, 2011.

Delete Addendum No. 2 and replace with the this Addendum No. 3.

Additional question:

1. **Are we to visit the various fabrication plants and include such costs?**
   A. See front end specifications for the RFP under Section 5, listed below:
   5.4.2 Assume roof trusses will be fabricated in Minneapolis, MN and Rice Lake, WI. Other fabrication facility will be located in Lincoln, NE Please include applicable travel costs.

All other terms and conditions shall remain unchanged.

Dated this 1st day of September, 2011

Vince M. Mejer
Purchasing Agent
Updated 09/01/11

Question List #1

1. Is Bid Security required, if so, for what amount?
   A. No bid security is required.

2. Who is on the selection committee?
   A. We do not give out that information.

3. What are the criteria to be used for award of this portion of the project?
   A. Qualifications, previous experience and pricing.

4. Can you provide an estimated quantity and/or frequency of testing required for each area of testing (i.e. Soils, Flexible Base, Aggregates, Asphaltic Concrete, Concrete, Post-tensioned concrete, masonry, structural steel, and miscellaneous steel)? For quantities listed above, see quantities provided in Question #3 to the second set of questions herein. For items not provided, plans are available at A&D print shop. For concrete, these items have been answered in questions. There is not post tensioned concrete on this project. Reference specifications for all test types and frequency of testing specified.

5. Is there a requirement for fireproofing inspection for the project?
   A. Yes. A copy of the specifications and inclusion of unit prices are included in this response package.

6. What is the area of concrete pavement? Asphalt pavement?
   A. Please review site drawing. An appt can be made at PC Sports or plans can be ordered from printer, A&D. Please request the PGMP set of drawings. Assume no asphalt pavement at this time.

7. What is considered "Hardscape" shown in the site improvement section on page 22 of 22 of the Mortenson schedule? And what is the approximate area that will require testing, soils, concrete, and/or asphalt?
   A. This item includes all exterior concrete, asphalt, ped ramp. These items will be scheduled to more detail as the drawings progress.

8. Are TxDOT items 11-17 under the Soils, Flexible Base, and Aggregates section of the unit rate worksheet necessary as they appear to be redundant of items 6-10?
   A. Please void Item 11-17.

9. Can you clarify how many concrete test cylinders per set should be assumed for the Arena and Parking Garage and when compression tests should be completed?
A. Reference specifications and guidelines submitted with proposal. All of this was spelled out. See response to question 6 for clarification.

10. Concrete Section Item 7 refers to Batch Plant Observation, will a concrete batch plant be utilized on the project and for all concrete placement or which elements?
   A. No on site batch plant will be utilized.

11. Concrete Section Item 8 refers to Length of Change of Hardened Concrete (ASTM C 157) at what frequency should this test be assumed to be completed for proposal?
   This test is not required to be performed by the special inspector.

12. Are there any post-tensioned concrete slabs planned in the Arena structure?
   A. No.

13. Is there a specific unit to reference for Reinforcing Steel Item 1-Field Placement Inspection Prior to Concrete Placement and Structural Steel/Miscellaneous Steel Item 1-Welding Inspector? Unit will be per "Hour"

14. The Mortenson schedule refers to backfill of pile caps/grade beams and strip footings, will some of these foundations structures be formed and thus require backfilling, and if so approximately what percentage will be formed?
   A. All will be formed

15. On the Section 033000 specifications, there are AF, R, and G designations, can you clarify which project each of these refers to?
   A. Arena Foundations, Ramp and Garage.

16. Will there be structural lightweight concrete on the arena and/or the parking garage project?
   A. No.

17. What does "FRP" stand for as referenced on the Mortenson schedule beginning on bottom of page 2?
   A. FRP stands for: Form, Reinforce, Place

18. On line 4 under Asphaltic Concrete you are requesting an Extraction/gradation and on line 16 you want aggregate gradation excludes 200 sieve and below it 200 sieve. The extraction gradation includes a gradation, is the gradation for a per mix design gradation or gradation at plant? I just want to clarify you want both or just need extraction/gradation on supplied asphaltic cement concrete. No aggregate gradation at the plant is required. This is only if asphalt for the parking lots is accepted. Mortenson's latest VA estimate took the Asphalt out and replaced it with Concrete.

20. Under concrete – length of hardened concrete (ASTM C157) – is this for the mix design – mortar bar tests? This is normally done before construction starts. **Not required per any specifications.** If required, this test would be the concrete supplier’s responsibility and not the special inspector or testing agency for the project. Same question as Question #11.

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Question List #2

1. Will on-site office space be provided by the owner for meeting space and plan holding for special inspection staff?

   A. **No. Special Inspector needs to provide for own space.**

2. Will inspectors be required to carry any certifications?

   A. **See specification requirements.**

3. Without the completed plans, to be more accurate in our proposal can your general contractor supply quantities for the following:

   - **Concrete (Quantities in yards)**
     - 1. Arena Foundations
       - A. 8500 cy.
     - 2. Arena Building
       - A. 15000 cy
     - 3. Parking Structure Foundations
       - A. 1200 cy
     - 4. Parking Structure Building
       - A. 1000 cy

   - **Masonry (Wall area of)**
     - 1. Structural – Foundations
       - A. 0 – Arena
       - 0 - Garage
     - 2. Non-Structural (change to non-load bearing)
       - A. 50,000 sf – Arena
       - 6500 – Garage
       - 5,500 s.f. - Face Brick

   - **Precast**
     - 1. Structural – 73,300 sf
     - 2. Architectural – 54,500 sf

   - **Sprayed-Applied Fireproofing**
     - 1. Is Fireproofing Testing required on this project **Yes**
2. How often for Adhesion and Cohesion Testing  
   Reference 2009 IBC 1704.12/per
   2,500 sq. ft at fireproofing with a minimum 12 inch square area to be tested.

- Structural Steel
  1. Moment Connections
     A. Bolted
        a. Arena – Assume sixty (60) connections
        b. Parking Structure – No moment connections
        c. What type of bolts will be used?
           A. TC Bolts for the lower areas and Hex heads at the long span for
              arena superstructure
        d. What type of installation is required?
           i. DTI – periodic inspection if surface and bolt type verified
              prior to installation.
              A. Continuous
           ii. Turn of the Nut – spec calls out continuous. What about
               match marking? Periodic?
              A. Match marking acceptable
     B. Welded
        a. Arena
        b. Parking Garage No moment connections
        c. Spec calls out UT on full pens welds – How many full pens?
        d. Spec calls out MT on PJP welds - How many PJP welds?
        e. Spec calls out 100% test on Fillets for 2 weeks on each welder then
           reduce to 25% if there are less than 5% rejects – what kind of
           tests-MT? PT? just VT?
           A. MT
        f. Spec calls out Multi pass fillet are to be MT tested – How many
           Multi pass fillets?
     C. Field Inspections:
        a. Spec calls out to inspect levelness, plumbness and alignment of
           the frame?
           A. Yes
        b. Spec calls out to inspect field paint?
           A. Yes

4. Testing for floor flatness and levelness is required in the specifications, how many times would
   this be needed, or what areas is this actually required?

   A. Reference specifications 033000 AF for Bid Package #2 for requirements and locations. This
      only applies to slabs-on-grade and structured slab locations at the event level. Testing for
      ASTM E1155 is not required for the parking garage.

   1. Finish surfaces to the following tolerances, according to ASTM E 1155 (ASTM E 1155M),
      for a randomly trafficked floor surface:

      a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with
         minimum local values of flatness, F(F) 17; and of levelness, F(L) 15 for mechanical,
         electrical, tele/data and elevator equipment room floors
b. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade for all floors not to be polished and not indicated to have a different tolerance.

c. Specified overall values of flatness, F(F) 50; and of levelness, F(L) 40; with minimum local values of flatness, F(F) 40; and of levelness, F(L) 35; for event level floor located inside the precast walls where the retractable seating sections are located.

d. Specified overall values of flatness, F(F) 40; and of levelness, F(L) 40; with minimum local values of flatness, F(F) 35; and of levelness, F(L) 35 for all floors indicated to be polished.

5. What is the frequency of the grout mortar and block prism testing as it is identified in the Schedule of Inspection and Testing Services? Refer to special inspection description for the arena provided in proposal request.

Below pertains to Arena:

**MASONRY CONSTRUCTION (per IBC 1704.5)**

A. PREPARATION OF MORTAR AND MORTAR JOINTS
B. REINFORCEMENT AND CONNECTORS
C. ANCHORAGE
D. PROTECTION FROM COLD AND HOT WEATHER
E. GROUTING

Below pertains to Parking garage:

Masonry special inspections are governed by IBC 2009 Table 1704.5.1 (Level 1) (See General Notes on SG0.0). Prior to masonry construction test CMU per ASTM C140, Grout mix design per ASTM C1019, and Mortar Type for consistency per ASTM C780 for verification of f'm. During masonry construction the proportions of mortar and grout are verified at a frequency consistent with Code Table 1704.5.1.

6. Clarification of Concrete Specifications:

- **Area AF** (We assume this is Arena Foundations?)
  1. Section C (1) Testing frequency provides 3 sets of concrete sampled in the first 100 yds of concrete placement
  2. Section C (2) Testing frequency provides only 1 set of concrete to be sampled in the first 100 yds of concrete placed.
  3. 1 set of 3 cylinders are to be cast for 6 x 12 cylinders/set

  A. Use 1 set of 4 (one-7 day, two-28 day, one-hold) for each 100 yds (specs have been edited for Bid Pack #2)

- **Section G** (Which area does this section reflect?)
  1. This Section requires 1 set of 6 (6x12) cylinders to be cast for each 100yds
A. Garage

B. The noted frequency is correct except at the CIP Concrete Topping over precast construction. See Section 035300-G of Bid Package 2: One cylinder set for each day’s pour exceeding 5 CY but less than 25 CY plus one cylinder set for each add’l 50 CY or fraction thereof. At the 2" thick southwest stair lobby topping, testing frequency as described by Section 5.6.2.2 of ACI 318 may apply depending on the contractor’s pour sequence.

- Section R (We assume this is the parking garage)
  A. This is the pedestrian ramp
    1. This Section requires 1 set of 6 (6x12) cylinders to be cast for each 100yds

- Buro Happold (We assume this is the building structure for the Arena)
  1. This Section requires 1 set of 5 (6x12) cylinders to be cast for each 100yds

- Section 7 Batch Plant Observation
  1. Will a concrete batch plant be utilized on the project and for all concrete placement or which elements?
    A. BATCH PLANT OBSERVATION IS NOT REQUIRED FOR THE ARENA SUPERSTRUCTURE or foundations

- Section 8 Length of Change of Hardened Concrete (ASTM C 157)
  1. What frequency should this test be assumed to be completed for proposal?
    A. NOT REQUIRED FOR ARENA SUPERSTRUCTURE AND FOUNDATIONS

Are we correct in our assumptions and is there a clarification on a preference for amount of cylinder cast and how often or is this what will be required? When compression tests should be completed?

A. See above for clarification

7. Are there any post-tensioned concrete slabs planned in the Arena structure?
   A. No.

8. Is there a specific unit to reference for Reinforcing Steel Item 1-Field Placement Inspection Prior to Concrete Placement and Structural Steel/Miscellaneous Steel Item 1-Welding Inspector? Unit is per “Hour”

9. The Mortenson schedule refers to backfill of pile caps/grade beams and strip footings, will some of these foundations structures be formed and thus require backfilling, and if so approximately what percentage will be formed?
   A. There are small areas of lightweight in fill slabs and ramps on the ARENA SUPERSTRUCTURE

10. Will there be structural lightweight concrete on the arena and/or the parking garage project?
    A. No.

11. Will there be Maturity or Temperature testing (Thermo Couplers) for Cold weather concreting?
Per arena specifications: Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.

Per garage specifications: Cast expendable thermistors or thermocouples in concrete at rate of at least one per 100 cubic yards of concrete placed for supported structure. Monitor internal temperature of concrete at twelve hour (maximum) intervals throughout curing period. See Specification Section 033900-G, Bid Package 1 for remainder of cold weather concrete curing requirements.

12. What is the total floor area of the enclosed building area which needs fireproofing?

A. Approximately 157,100 SF

13. Steel shop inspection

- Is this full-time?
- Is shop inspection 2 shifts or 3 shifts?
- Is the shop AISC?
- Do we need to provide NDT services at the shop?
  A. Yes
    1. Is X-Ray required at the shop?
      A. Yes

- Spec calls out to inspect steel alignment and straightness of members, dimensional checks, testing of cuts, painting?
  A. Yes
### Professional Services

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### Soils, Flexible Base and Aggregates

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<td>Atterberg Limits (ASTM D 423 &amp; 424)</td>
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<td>Sieve Analysis (ASTM D 422 &amp; 1140)</td>
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## Concrete

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<td>02</td>
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<td>03</td>
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## Masonry

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<td>Grout Cylinders</td>
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<td>Grout Prisms</td>
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<td>Masonry Prisms</td>
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## Structural Steel / Miscellaneous Steel

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## General

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CONTRACT AGREEMENT

THIS CONTRACT, made and entered into this _____ day of __________, 2010 by and between

__________________________
hereinafter called the Contractor and the WEST HAYMARKET JOINT PUBLIC AGENCY, a
municipal corporation, hereinafter called JPA.

WITNESS, that:

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

(JPA PROJECT)

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

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

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

CONTRACT AGREEMENT
CONTRACT AGREEMENT

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

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

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

GUARANTEE – The guarantee periods as stated in Section IX, Paragraph A of the City of Lincoln Standard Specifications for Municipal Construction shall not be applicable to this project.

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

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

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

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

IN WITNESS WHEREOF, the Contractor and JPA do hereby execute this Contract.

EXECUTION BY JPA

ATTEST:

JPA

(Seal)

JPA CHAIR

Dated:

JOINT PUBLIC AGENCY

EXECUTION BY CONTRACTOR

IF A CORPORATION

ATTEST:

(Name of Corporation)

(Address)

(By:)

(Duly Authorized Official)

(Legal Title of Official)

IF OTHER TYPE ORGANIZATION

(Name and Type of Organization)

(Address)

(Member)

(Member)

IF AN INDIVIDUAL

ByName:

(Name)
Proposal
to Provide Construction Materials
Testing and IBC Special Inspection Services
for the
West Haymarket Arena and Garage

Presented to
City of Lincoln
September 7, 2011
September 7, 2011

West Haymarket Joint Public Agency (JPA)
K Street Complex
440 South 8th Street, Suite 200
Lincoln, NE  68508

Attn:  Mr. Vince Mejer, Purchasing Agent
      P:  402.441.8314
      F:  402.441.6513
      E:  vmejer@lincoln.ne.gov

Re:  Proposal for Quality Assurance Material Testing and IBC Special Inspection Services
     West Haymarket Arena and Garage
     Lincoln, Nebraska
     Request for Proposal Bid No. 11-203
     Terracon Proposal No. PA3110182

Dear Mr. Mejer:

As requested in your Request for Proposal (RFP) dated August 12, 2011, and subsequently issued Addendums 1, 2, and 3, Terracon Consultants, Inc. (Terracon) is pleased to submit this proposal for completion of quality assurance material testing and IBC Special Inspection services for the West Haymarket Arena and Garage project. This submittal provides information on our project team’s qualifications, experience, approach, staffing, and unit rates for performance of the requested services.

Terracon has provided engineering consulting and construction-phase quality assurance services on many high-profile projects in the Lincoln and Omaha metropolitan areas. We believe our experience with large-scale construction projects and our commitment to providing responsive, cost-effective construction services will benefit the project.

We appreciate the opportunity to submit our proposal and look forward to working with you. Please contact Mr. Brad Levich at the following numbers if you have any questions or need additional information: office (402) 466-3911 or cellular (402) 430-5572.

Sincerely,

Terracon Consultants, Inc.

Bradley A. Levich, P.E.  Scott G. Miller, P.E.
Principal  Senior Principal

BAL/SGM:bal

Copies to:  Addressee (5 hard copies, 1 via e-mail)
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<td>Example Certificate of Insurance and Railroad Endorsement</td>
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INTRODUCTION

Since our founding in 1965, Terracon has been a leading provider of construction materials, geotechnical engineering, and environmental engineering services. Terracon’s Lincoln office began operations in 1992 and our Omaha office began operations in 1984. Terracon is considered by many to be the preeminent provider of our services in the area.

Terracon is a national firm and our success can only be measured by the clients who hire us. Currently we rank 38th on the 2011 Engineering News-Record (ENR) Top 500 Engineering Firms annual ranking, rising from 391st in 1986.

Terracon recognizes the importance of communication with our clients. Our ability to communicate with our clients and their design team allows us to develop practical, cost-effective solutions creating an added value to our clients.

Terracon provides the highest level of service possible to our clients by utilizing our personnel, experience, technology, and technical know-how. Terracon is a staff of over 2,700 professional and technical personnel located in more than 120 offices in 39 states. Our size allows us the opportunity to maintain diverse, yet highly specialized, staff available at strategic and local offices when needed. The growth and strength of Terracon rests on our mission to provide high-quality service based on individual efforts to maintain high professional standards.

We maintain a commitment to client satisfaction in the technical, schedule and budget aspects of services. We believe you will find Terracon’s experience and qualifications are unsurpassed on large-scale construction projects completed in the Lincoln and Omaha metropolitan areas.

We are committed at all levels of our organization to provide the necessary resources for quality service for the West Haymarket Arena and Garage project.
PROJECT EXPERIENCE

The Terracon team has worked on many large projects which are similar in size and scope to the West Haymarket Arena and Garage project. We have attached Project Capsules which provide information on several of the more notable projects. On each of the referenced projects, Terracon was selected based on qualifications, project approach, experience, and cost effectiveness.

Terracon provided the quality assurance material testing and Special Inspection services for the CenturyLink Center (formerly Qwest Center Omaha) project in Omaha and the Mid-America Center in Council Bluffs simultaneously. These projects were of similar construction to the West Haymarket Arena and Garage project.

In addition to local arena/convention center projects, Terracon provided the quality assurance material testing and Special Inspection services for the $320 million Midtown Crossing project in Omaha. This project consists of seven buildings and three parking structures. For the structural concrete shear cores and decks, the Concrete Maturity Method was utilized to help accelerate the construction schedule. Terracon worked with the concrete supplier and general contractor to develop maturity curves for several mixes used on the project. Terracon won awards from the American Concrete Institute–Nebraska Chapter and the American Council of Engineering Companies–Nebraska Chapter for the implementation of the concrete maturity method on the project.

For your review, we have attached recommendation letters from several recent clients. We encourage you to contact any of our client references to obtain additional information regarding Terracon’s performance and capabilities.

PROJECT TEAM

Terracon’s team is comprised of individuals who have worked on many projects similar in size and scope to the West Haymarket Arena and Garage project. Our team of professionals is experienced, seasoned, and qualified to meet the needs and time schedule of this project. Additionally, our team has experience with many of the large Lincoln projects including the University of Nebraska Lincoln East Stadium Expansion, Block 38 Mixed Use Facility, University of Nebraska Lincoln North Stadium Expansion, Haymarket Park, Donald F. Othmer Hall, Jorgensen Hall, Morrison Center, St. Elizabeth Medical Center Expansion, and the Assurity Life Insurance Headquarters.

Since the opening of the Lincoln office in 1992, Terracon has maintained long-standing relationships with established, reputable subcontractors. We value our relationships and work with subcontractors who uphold our standards of practice, policies, and procedures. We select our subcontractors based on qualifications, experience, and team-oriented values.

For this project, we will utilize DBI, Inc (DBI) with which we have had a working relationship since 1998. DBI is a fully equipped supplier of nondestructive testing and steel inspection services and is dedicated to providing clients with timely and quality services. DBI has been servicing the Midwest region for nearly 15 years, specifically teaming with Terracon for the past 10 years. Their inspection personnel have a combined experience base of over 60 years encompassing the steel fabrication and erection industry.
Mr. Scott Miller will serve as Terracon’s Project Quality Assurance Manager, providing as-needed review and consultation. Scott has over 15 years of engineering and construction materials testing experience in the Omaha metropolitan area and is intimately familiar with construction quality assurance practices and procedures on large cast-in-place concrete and steel structures. Scott has served as Principal-in-Charge or project manager for many high-profile projects completed in the Omaha metropolitan area including: The Tower at First National Center, CenturyLink Center (formerly Qwest Center Omaha), TD Ameritrade Headquarters, Midtown Crossing, Holland Performing Arts Center, Mid-American Convention Center/Arena, Gallup Headquarters, and Blue Cross Centre.

Mr. Bradley Levich will serve as the Principal-in-Charge responsible for the overall performance and quality of our team’s services on the project. Brad has 17 years of engineering and construction materials testing experience in the Lincoln and Omaha metropolitan areas and is intimately familiar with construction quality assurance practices and procedures. Brad has served as Principal-in-Charge or project manager for many high-profile projects completed in the Lincoln area including: Block 38 Mixed
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Use Facility, UNL North Stadium Improvements, Donald F. Othmer Hall, Jorgensen Hall, Othmer Hall, Morrison Center, St. Elizabeth Medical Expansion Project and Assurity Life Insurance Headquarters.

**Mr. Russ Wilson** will serve as the Project Manager supervising the project services and staff. Russ has over 20 years of construction materials testing and Special Inspection experience. As a Department Manager, Russ has been involved with many large projects including UNL’s Memorial Stadium North Expansion, UNL’s Memorial Stadium East Expansion, Haymarket Park, Donald F. Othmer Hall, Jorgensen Hall, Othmer Hall, Morrison Center, St. Elizabeth Medical Expansion Project and Assurity Life Insurance Headquarters.

Brad, Russ and Scott have worked together at Terracon for over 15 years. Russ will develop project reports and invoices and regularly monitor the status of the project scope of services and budget. Mr. Levich and Mr. Wilson will provide technical oversight of our field personnel and all members of our team will be available to provide technical consultation.

**Mr. Mathew Vickinovac** will act as one of our primary ICC Certified Inspectors for Terracon with prime responsibility of coordination and performance of field services and submittal of our daily on-site project reports. Mr. Vickinovac recently completed Quality Assurance services for various campuses in Alegent Health’s $350 million “Generation Patient” expansion, the 7-story Embassy Suites Hotel in La Vista, and JLofts Condominiums in downtown Omaha. Mr. Vickinovac is certified by the International Code Council (ICC) for completion of Special Inspection of reinforced concrete, structural masonry, and fireproofing. In addition, Matt has both a Level I and II certification from the Post-Tensioning Institute.

**Mr. Shawn Miller** will act as one of our primary ICC Certified Inspectors for Terracon. Mr. Miller has over 10 years of materials testing experience and recently performed Special Inspection services for Terracon on the $3.9 billion Cosmopolitan hotel, casino, and condominium project in Las Vegas, NV. The project consists of two high-rise towers (50 stories and 53 stories) with an adjacent 9-story tower, totaling more than 4 million square feet of floor area. The project also included a below-grade parking level with a capacity of about 3,000 automobiles. Mr. Miller is certified by the International Code Council (ICC) for completion of Special Inspection of reinforced concrete, pre-stressed concrete, structural masonry, spray-applied fireproofing, and structural steel.

**Mr. Doug Stutzman** is an employee of DBI, Inc. and will act as the primary structural steel inspector, observing the steel erection and field fabrication aspects for the project. Doug has over 20 years of experience and is an American Welding Society (AWS) Certified Welding Inspector (CWI) and is a certified NDT Level II inspector in Ultrasonics, Magnetic Particle, and Liquid Penetrant per ASNT TC-1A. Doug has provided structural steel Special Inspection on major projects such as the Denver International Airport, Union Pacific Railroad Headquarters, and the CenturyLink Center.

**Due to the size and scope of the project, we believe having representatives on-site who are experienced, detail oriented, and ICC certified is imperative to the successful completion of the project. Matt, Shawn, and Doug have these qualities and qualifications.**

Based on our current work load and staffing, Terracon can readily accommodate the West Haymarket Arena and Garage project in our operation. The Terracon team has adequate additional qualified staff...
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available to provide the assistance and back-up necessary for a project of this magnitude. We have included the resumes of our key project staff for review.

Staffing Coverage

Our Team will provide experienced and appropriately certified employees equipped to respond to the testing and Special Inspection needs of this project on an as-needed basis. Our Primary Technicians will have this project established as their first priority. We understand the importance of this project and are fully prepared to provide a high level of service to the construction team. **We are prepared to provide our additional field services with an advance notification of four hours.**

Terracon’s services will be performed on an as-requested basis with scheduling by the Client or the client’s designated representative. All requests for services should be submitted to Mr. Russ Wilson in the Lincoln, NE office at the following phone number: (402) 466-3911.

We recommend the scope of work described in this proposal be provided to the person(s) who will be responsible for scheduling our services so they are aware of the services that are proposed.

On-Site Laboratory

**Terracon proposes to utilize an on-site construction trailer during completion of our full-time services.** The on-site project field office would contain offices, a computer, and communication equipment, along with a laboratory equipped with a properly calibrated concrete compressive strength test machine and ASTM-compliant cylinder curing facilities. The benefits of an on-site laboratory for a project of this magnitude include:

- Reducing the potential for disturbance of the test cylinders/prisms during transportation
- Providing a secure area for storage of any field-cured test samples
- Reducing the amount/number of required trips between our main office and the job site
- Having immediate access to the field test/inspection information for Mortenson
- On-site communication equipment (computer, phones, internet) for easy data transfer
- Having on-site Terracon representatives available to answer questions that arise on a daily basis

**During our full-time coverage with the on-site laboratory, no mobilization costs will be incurred for the project. Our technicians will report to the project site as their place of work.**

PROJECT QUALITY

The management and technical functions of this project will operate under Terracon’s quality assurance/quality control (QA/QC) policy and procedures. The program within Terracon assigns the responsibility of quality control to the Terracon-appointed authorized project reviewer (APR) and the Project Manager, with support and oversight by the Level III Project Professional. The following elements of quality control are addressed during the project:

- Operational procedures
- Qualifications of personnel
Condition and accuracy of instruments and equipment
Standard materials
Statistical evaluations
Supervisory review of technical procedures and documents
Use of control standards for evaluation of activities
Sample identification, protection, chain-of-custody, storage and disposition
Data recording, identification, security, checking, routing, filing and disposition

This project will be continuously audited by the Senior Project Manager to ensure that the project specifications and requirements are being addressed by our personnel.

Quality Program at the Project Level

Terracon has specific lines of responsibility at all employee levels to ensure quality service. Specific lines of responsibility exist for all phases of each project, and projects are subject to multiple levels of review depending on their size and complexity. These lines of responsibility help to ensure the quality of our service at the project level.

Our primary mechanism for achieving quality on every project lies with the individual performing the work. Each employee of Terracon has responsibilities for professional, technical, or administrative quality, whether on client projects or internal service assignments. Those responsibilities include:

- adhering to the requirements of the Quality Program;
- clearly understanding the needs of the client;
- conducting the assignment in accordance with quality control requirements and documenting quality control where applicable;
- participating in appropriate technical training; and
- supporting and maintaining quality control procedures and initiating system improvements when deficiencies are noted.

Terracon’s Project Managers are accountable for the overall quality of projects they manage. Each project is assigned to a technical professional with the necessary skills to manage the project. The assigned professional serves as Project Manager and is responsible for verifying that the applicable quality control criteria, project quality review, and company policies have been followed for all phases of the project. This Project Manager also is responsible for knowing licensing and certification requirements and ensuring that they are met. Checks and reviews are conducted by the Project Manager, as required, as the work progresses.

Laboratory Accreditations and Qualification

Terracon has over 100 offices with construction materials testing laboratories, over 60 of which are AASHTO accredited. Our Lincoln, NE laboratory, as with all of our laboratories, will operate under our Corporate Construction Materials Laboratory Quality Management System (QMS) Manual. Our quality system was established using ASTM E329 - Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction and AASHTO R18 - Establishing and Implementing a Quality System for Construction Materials Testing Laboratories as the primary guides. Other guides include:
ASTM D3740 – Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM C1077 – Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation


Our QMS and laboratory procedures have been audited by independent outside agencies. Terracon’s Lincoln, Nebraska office will perform and manage our services for this project. The laboratory equipment in this office is calibrated in accordance with our internal quality system and is accredited by the Nebraska Department of Roads (NDOR) for soil, aggregate and concrete testing.

The staff in our Lincoln office works closely with our Omaha, Nebraska office. For specialized laboratory materials testing, samples would be forwarded to our Omaha office at no cost to the client. Our Omaha office is an accredited laboratory which actively participates in both AASHTO Materials Reference Laboratory (AMRL) and Cement and Concrete Reference Laboratory (CCRL) annual laboratory inspection and calibration audits. The testing equipment, both field and laboratory, is calibrated as required by ASTM and AASHTO. In addition to AASHTO, our Omaha laboratory is accredited by the US Army Corps of Engineers and NDOR for completion of soil, aggregate, hot-mix asphalt, concrete, and masonry testing.

Quality Management System (QMS)
Terracon is committed to providing quality services and well-trained personnel to our clients through a comprehensive quality system. We have reached this level through the development of our internal Quality Management System (QMS) Manual and internal procedures manual, both of which have been audited by AASHTO and A2LA in many of our offices and resulted in successful accreditation for these offices. The QMS also outlines the template and procedures that all of our offices follow for setting-up, organizing and maintaining a construction material testing laboratory. In addition, procedures for training and auditing of our field and lab personnel for particular fields of testing are also detailed. A copy of the Table of Contents from the QMS is attached for your reference.

Inventory Control and Calibration System
Our Lincoln and Omaha laboratories maintain an equipment list in an electronic database known as the Terracon Inventory Control and Calibration System (TICCS) for laboratory and field testing instruments and equipment requiring calibration, verification and checking. The equipment list includes information on the type of equipment, manufacturer, model or serial number, calibration interval, date placed in service, date out of service, general comments, and if the equipment is on loan to another office. The system also assigns a unique identification number for each piece of equipment entered in the system and alternate identification number if the equipment had a previous identification number prior to being entered in the system.

When the laboratory receives new equipment and materials, the required calibration and verification steps will be performed prior to placing the equipment and materials into service.
**Calibration:** Each piece of equipment to be calibrated will have a unique identification number and a data sheet identifying the piece of equipment, the standard calibration procedure or internal procedure used for calibration, the standards and equipment used for the calibration, and the results of the calibration. Reference standards for outside agency calibrations are traceable to the National Institute of Standards and Technology (NIST) and the NIST traceability number is included on the calibration data form. If equipment is calibrated by an outside agency, the NIST traceability number must be provided by the calibrating agency.

**Frequency Schedule:** At any time, individuals can log into the system and the system will automatically identify items that are due for calibration in the next 30 days or that are past due and require immediate calibration or removal from service. Upon calibration, TICCS can be utilized to produce labels, identifying the equipment ID number, date of calibration, date of next required calibration, and the internal individual or external agency that performed the calibration. The labels are affixed to calibrated test equipment except in the case of equipment too small or otherwise inconvenient to label.

**Calibration Procedures:** Each piece of equipment that requires calibration has an individual documentation sheet completed at the time of the calibration, both when the calibration procedure is in-house and from an outside agency. The documentation sheet is filed with the appropriate equipment file and calibration information is update in the electronic database.

**NIST Traceability:** Records of NIST traceability are required for reference equipment used in the calibration and verification of test equipment. Calibration and verification devices requiring NIST traceability documentation include:

- Reference thermometers
- Load cells and proving rings
- Gauge blocks
- Standard weights

Copies of NIST traceability documentation devices used in the calibration, verification, and checking of testing equipment are identified as such and maintained in the same location with the equipment calibration and verification records. An inventory of any in-house devices with NIST traceability documentation is included with the files as well. Copies of outside agency calibration records that include NIST traceability numbers are also included in these files.

**Records:** Red tag labels will be affixed to equipment that does not meet calibration criteria, which has not been calibrated, or which has exceeded the required calibration/verification frequency interval. This equipment will not be used until repair and/or calibration is performed and the Laboratory Supervisor has removed the red tag. Equipment calibration and laboratory materials records are maintained in the quality system file in the Laboratory Supervisor's office. Responses to audit findings and deficiency corrections for equipment and materials are placed in this file.

**Terracon’s Commitment to Safety**

Terracon is very much a safety-oriented company. We strive to build health and safety into all aspects of our business and into the thinking of our employees. Terracon’s commitment to safety is demonstrated daily by project managers discussing and addressing site specific safety topics with our field personnel.
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representatives. Safety is a primary focus of our monthly department meetings where each meeting includes discussion of a safety topic.

Safety is one of Terracon’s core values and our commitment to an “Injury and Incident Free (IIF)” philosophy is one of the pillars of our current Strategic Plan. As a supplement to Terracon’s safety culture, each employee receives safety training specific to the job function and/or project assigned through one-on-one instruction, continuing education classes or web-based training seminars.

TRAINING STANDARDS

Terracon is committed to providing quality services and experienced, well-trained personnel through a comprehensive quality system. As evidence of our commitment to evaluating and improving our quality, we consistently audit our quality service procedures with both internal and external reviews. An officer of the company is responsible for the program and is devoted to improving the quality of our services. As outlined in this Corporate Quality Management System Manual, fundamental aspects of the Quality Management System include training and experience requirements for various technical and professional positions, senior level report review requirements, and Office Peer Review. Through these programs, our technical and professional staff receives training in technical issues as well as communication and reporting. Quality audits of each office are conducted on a regular basis as part of the Quality Management System. With the help of these procedures, we are able to deliver our services on a timely basis with consistently high value and attention to clients needs.

In addition to Terracon’s quality program, we encourage both internal and external self-development for all employees who desire to enhance their current performance and prepare for future opportunities. We fully support employees’ desires to gain the skills needed to develop their careers. Terracon routinely prepares and presents internal multimedia Web Casts to provide training to personnel across the country.

Terracon also has a training program for our field and laboratory personnel. This program includes a videotape self-paced tutorial training program; hands-on, in-house practical training; outside training seminars and courses; and periodic field audits by supervisory personnel. All training and field audits are documented and kept in each individual’s training file. Licenses and certifications are required in order to provide some of the services offered by Terracon. Therefore we encourage and support our employees’ interest in becoming licensed and certified.

Personnel Training and Certification

Our team has provided testing and inspection services on most of the recent large construction projects completed in the Lincoln area. Our field personnel are experienced in working on large-scale construction projects and are familiar with maintaining open lines of communication with the owner, the structural engineer, and the general contractor. Our team’s personnel receive continuing training and education to maintain proficiency and have a reputation of being mature, intelligent individuals who have a strong knowledge of construction practices and procedures.

Terracon’s field technicians are certified by the American Concrete Institute (ACI) for field and laboratory concrete testing. In addition, Terracon encourages our staff to become certified by the International Code
The goals of our Project Communication Plan

1. Make all parties of the project team fully aware of our scope and role on the project so that none of the required services are overlooked or ignored.
2. Establish an effective process for the rapid transfer of inspection and testing results to the project and design team.
3. Incorporate and maintain a tracking system for personnel scheduling, material performance, report status and distribution, and identification and clearance of non-conformance items.
4. Communicate regularly with the Project Team on engineering, testing, and inspection results, as well as budget and cost issues in order for the project to be both technically and financially successful.

Council (ICC) for Special Inspection of reinforced concrete, structural masonry, spray-applied fireproofing, pre-stressed/post-tensioned concrete, and structural steel.

DBI, Inc. is a highly qualified and experienced steel inspection firm which employs predominantly Certified Welding Inspectors (CWI) competent in inspection of all types of structural steel fabrication and erection. DBI will provide only CWI and American Society for Nondestructive Testing (ASNT) Level II personnel for visual weld inspection and non-destructive testing of structural steel on the project. An in-house ASNT NDT Level III inspector provides supervision and oversight of all Level II inspectors.

PROJECT COMMUNICATION PLAN

As evidenced by the project experience presented herein, Terracon is experienced in and capable of providing quality assurance construction materials testing and inspection services for the West Haymarket Arena and Garage project. Our vast experience and internal information technology innovative applications have allowed us to develop a proven project communications plan tailored to address the personnel scheduling, report tracking, and distribution needs of a contract of this magnitude.

A project of this size can quickly get out of hand from a coordination, budget, and paper trail standpoint, if proper implementation procedures are not followed. We will meet with your project team prior to the start of the project to discuss the initial project schedule and develop a system of controls and communication. Developing such a plan assures that all parties are aware of the lines of communication and highlights the overall engineering, inspection, and testing expectations for the project. It is critical that everyone on the project team clearly and fully understand the project schedule, needs, and requirements as they relate to the field testing schedule and reporting of results. The project team should clearly understand the processes and procedures that Terracon will follow for scheduling and reporting each testing and inspection type.

The particular steps we intend to take in realizing the scheduling and reporting of the materials testing and inspections program for the project can be summarized by the objectives of management. The management for the scheduling and reporting of the testing and inspection program should be executed and controlled in six phases.

1) Project Schedule, Expectations, and Communication
2) Field Personnel Scheduling
3) Engineering, Inspection, and Test Data Collection and Reporting
4) Report Status and Tracking
5) Budget Controls
6) Tracking and Close-out of Nonconforming Items
Presented below is a brief overview of the procedures and processes that we propose to utilize in order to execute and manage the scheduling and reporting of our testing and inspection program on the project. The use of these management systems and processes allows our Management Team to effectively communicate our results, findings, and project status.

Project Schedule, Expectations, and Communication
Communication is the key to all successful projects, especially this project. This project is unique in that there are many interested parties in our testing and inspection results and reports, including the JPA, Mortenson/Hampton, DLR Group, Buro Happold, AGA Consulting, and any other entities as directed by the JPA. With so many interested parties, communication is vital for this project to succeed.

The management of the testing and inspection program for the project will begin with the set-up of the relationships and communications with the project team members. This element is as unique to this project as is the design of the new facilities. Upon notification of award, our Project Principal, Mr. Brad Levich, P.E. and our Project Manager, Mr. Russ Wilson, will meet with members of the project team having an active interest in acquiring and processing our engineering reports and test data. We consider this a critical phase in order to eliminate potential conflicts, and to develop the necessary cooperative relationship between testing and inspections and production.

Review of Construction Schedule
We propose reviewing the most up-to-date construction schedule by task at a project initiation meeting with selected representatives of the project team. The testing and inspection program can best support production and control final costs if we understand exactly the project testing requirements, phasing of the project, and initiation of construction activities, including when structural systems contractors either begin on-site or begin fabricating off-site. The review of the construction schedule by task will also allow us to evaluate the manpower and anticipated workload needs for the field inspectors. Understanding and estimating the inspector workload throughout the project will allow us to provide more accurate budget estimates of our costs and provide the JPA with detailed scope of works and cost estimates, separated by construction or phasing task.

Regular Review Meetings-Terracon’s 360° Evaluation Process
From the initiation of the project until the completion, we propose at least bi-weekly management meetings with the project team to review the testing and inspection data and project progress, to review the project schedule of construction activities, status of the testing and inspection program, obtain performance feedback, and anticipate adjustments necessary to support scheduling accordingly and will initiate the 360° Evaluation Process with addressing reports, contract, manpower, and budget status to focus control on achieving
all the project goals for this contract. This is an integral on-going activity, designed to modify the approach as work progresses, support the project team in maintaining schedule and cost, and react to actual site and field conditions versus those designed.

**Daily Communication**

On a daily basis, the first line of communication will be our on-site Primary Inspectors, Mr. Matt Vickinovac, Mr. Shawn Miller, and Mr. Doug Stutzman. Our inspectors will maintain daily communication with our Project Manager, Mr. Wilson, and will communicate at a minimum, daily with the contractor's superintendent in order to schedule the required services and communicate inspection and test results. Our Project Manager will communicate the results of critical off-site observation and inspection work to the designated project team representatives the same day the observations, inspection or testing is performed. Our Project Managers, Primary Inspectors, and appropriate inspectors/technicians will all be readily available for QA/QC meetings, owner/construction manager/architect/contractor's meetings, weekly Subcontractor meetings, and all pre-installation/construction meetings.

**Communication Between Terracon and Project Team**

During construction, our Project Managers will communicate with the designated project representative(s) to discuss details of the project and non-conformance items, either new or outstanding. Our Project Manager will ensure the Terracon field personnel have the most up-to-date specifications, approved shop drawings, request for deviation (RFD) responses, request for information (RFI) responses, and contract change directives (CCD). Terracon will designate an administrative staff person to organize and maintain the receipt of sketches, RFDs, RFIs and CCDs in electronic and hard copy files so our field staff will have easy access to the approved documents. This is an important task, particularly on larger projects where multiple requests and responses are submitted, sometimes daily.

Our Primary Inspectors will also contact the designated representative of the Structural Engineer in the field as necessary, during our inspections and observations, to clarify design drawings, shop drawings or specifications, or to verbally report non-conformance items.

**Construction Materials Engineering Laboratory Management System (CMELMS™)**

In order to provide our clients with real-time field and laboratory data management and reporting, Terracon’s information technology staff developed and maintains an automated application that we call CMELMS. The acronym stands for Construction Materials Engineering Laboratory Management System and is utilized by construction materials engineering and testing operations in our offices. With more than 100 operations utilizing CMELMS every working day, we are fortunate to receive continuous feedback from our offices and staff on the application. With that feedback, we continuously evolve the application with updates and enhancements via our intranet, so when an update is available to our operations, we are able to immediately implement the newest version.
Most companies that are in our business have purchased third-party software applications to manage their testing data. These third-party applications are also mostly limited to the management of test data only. Terracon feels strongly that our clients deserve more, so we decided to develop our own application that meets our need, and the needs of our clients. This internal development control allows us to customize the application so that we are not at the mercy of others for changes, modifications, updates, or service.

**CMELMS** is a complete and comprehensive field and laboratory testing data and results management system. The application can manage an unlimited number of reports and data for ease of reporting and documentation purposes. Features in the application include accessing and distributing test results and field observation reports by a push of a button.

**CMELMS** automates the delivery of our testing and inspection information and can be used anywhere with an internet connection or through a wireless device, like a smart phone. Data (test results and inspections) are entered into the application on the project site so that office management, project management, and engineering staff has real-time access to the field data. Final Client Reports are produced in the application which allows us to achieve better communication, more consistency, and faster turnaround of reports on the project.

**Project Scheduling**

It will be our Project Manager’s responsibility to provide support to our field staff and to ensure all levels of communication and cooperation are maintained throughout the duration of the project. The scheduling of our field staff by contractors or sub-contractors can occur by direct communication or through electronic communication where Terracon will have a unique group e-mail address (i.e., westhaymarketarena@terracon.com) that can be used by contractors who require our testing and inspection services. Once we receive the request for services, we will dispatch the service order in **CMELMS**. The dispatch report will contain all pertinent information required for the tasked service, including the testing requirements and specifications, type of tests or inspections required, a standard field report template and the location, date and time of the requested service. The dispatch is then recorded and saved in **CMELMS** for tracking of report status and for completion once the field report is returned by the field technician for typing and submittal.

Our staff will then send the dispatch report to the field technician. Our field staff for this project will be using smart phones capable of receiving e-mail and maintaining personal calendars. The schedule request will include the **CMELMS** dispatch report and will include the required and necessary information for the technician to attend and complete the task.
Engineering, Inspection and Test Data Collection and Reporting

Once construction is underway, all field technicians and inspectors are responsible to provide a daily report identifying what work was found to be in compliance with the project specifications and drawings and report any non-conformances. The field technicians are required to immediately communicate any non-conformances to our Project Manager and, when necessary, directly to the project team members identified in the initiation meeting. Effective and timely communication is of the essence for non-conforming items. Our Project Manager will be responsible to review each inspector’s daily reports and to keep non-conformance lists up to date on a daily basis and communicate all inspection and test results daily to the designated Project Team and/or contractor representatives. Terracon will keep and maintain a list of discrepancies to the plans and specification through to project completion.

To ensure that our project and field managers meet the goals we have set for report turnaround, we have developed a report tracking system for our CMEMLS software to evaluate where a test result or report is in our system. This allows us to achieve better communication, more consistency, and faster turnaround of reporting on the project. Data, observations, and other testing and inspection information are easily entered into the system and reports are auto-generated allowing for immediate availability of test results.

Terracon will maintain non-conformance logs and lists for all testing and inspection types performed by us. The list will be maintained electronically in our CMEMLS application and can be updated and e-mailed or printed at any time. We will include the non-conformance log in our distribution and will provide them to the Project Team at any other time as requested.

Terracon maintains our own web access to our distributed documents. Terracon’s Client Document Website (CDW) is available for use on this project, if requested, at no charge to the JPA and other designated team members. With access, any approved member party of the project team can view, download, or print our inspection and testing reports as they are uploaded. One feature of the CDW is that access to reports can be limited by the report type. For example, the project civil engineer will not have access (and is not notified to the uploading) of structural steel reports. The Client Document Website also allows for the electronic storage of our reports and can be accessed by approved users with an internet connection from anywhere at anytime.

Results and Data Management
As previously stated, our CMEMLS™ application is a complete and comprehensive field and laboratory testing data and results management system that can manage an unlimited number of reports and data for ease of reporting and documentation purposes. Some of the features of CMEMLS include maintaining concrete test data by mix design and can provide statistical analyses and test results for a project or a concrete mix by a push of a button. This allows our managers to access detailed result summaries with ease and promptness. The program has the same capabilities for nearly all standard
testing tasks and procedures for both field and laboratory testing, including soil-density relationships, soil and aggregate characteristics and properties/classification testing, grout and mortar testing, and fireproofing.

**Response Time**

Depending on the projected activities for each day, our Project Manager and/or Primary Inspectors will coordinate our staff to schedule the appropriate level of personnel for the each project's requirements on a daily basis through our scheduling application presented above. If unscheduled events arise during the day, our field personnel are connected via the email schedule application, two-way radios, and/or cell phones. Additional field or professional staff can easily be accessed on short notice from our Lincoln and Omaha offices to provide any necessary support.

For long-term staffing needs, our Project Manager will review the project requirements with Mortenson/Hampton to forecast manpower needs on a weekly basis. This will allow us to dedicate specific support personnel to the project as required.

**Report Turnaround Time**

Our Project Managers and Primary Inspectors will report failing tests or non-conformance items immediately to the designated parties and will have digitally-signed reports distributed within 24 hours of service. As stated, using our CMELMS software and our field reporting and communication services and capabilities, the test results and inspection information is quickly entered into the system and a report produced. Non-deviation reports will be digitally signed and distributed, also within 24 hours of service. Our reports can be printed and personally delivered, sent digitally via email or posted to a designated ftp website. The digital options provide real-time access to the reports.

One of the capabilities of our CMELMS software is that we can track the status of our reports from the date of dispatch, when the report was returned from the field, when it was reviewed, and the date of finalization and submittal to the client. Using this system, we can evaluate where a test result or report is in our system and can evaluate the turnaround time of our reporting system through detailed report summaries. These summaries are very valuable to our management process so that we can respond in a timely fashion to report requests and for internal evaluation.

**Cost Control and Savings**

Our Project Principal and Project Manager will track and compile the progress of our testing and inspection activities and submit a monthly report and budget update during the monthly 360° Evaluation meeting. The report will highlight any non-conformance items not yet cleared, document upcoming critical testing activities, give a budget-to-date status report, and document re-inspection requirements. Our project budget and invoice tracking system allows each testing task to be summarized individually and compared to the task budget. As such, we have the ability to track “re-tests” and additional testing services in detail so that those charges can be evaluated for potential “back charging” to contractors.
CMELMS will also track the budget on a daily basis and produce real-time budget reports that can be accessed and printed with the ease of a keystroke.

Tracking and Close-Out of Non-Conforming Items

As previously discussed, we will maintain a log of non-conforming items that will be reported on a regular basis. Our proprietary software, CMELMS, maintains the non-conformance log electronically based on the test results and observations included in our daily observation and test reports, and can easily be emailed or uploaded daily, or printed and maintained in the contractor’s site office, or sent electronically to the structural design engineer and designated members of the project team. The non-conformance log will contain an approval column for the responsible professional to accept field conditions outside the plan. In some instances, non-conformance to the design may perform satisfactorily in the structural system. Examples would include a welded steel joint wherein alignment precludes completing a bolted connection. Field welds may be appropriate to continue production, but as-builts would be necessary to obtain final approval. Our personnel maintaining these lists, and communicating and reporting them directly and professionally, will allow the contractors to address field conditions inherent in the process quickly. This process promotes both schedule and cost savings, and final problem resolution.

When all items on our non-conformance log have been resolved, our Project Manager will prepare and issue documentation of compliance for the items covered in our inspection and testing program. An added benefit of utilizing the management elements of CMELMS and remedial action tracking is that the structural conformance issues are complete prior to completion of the finishes. Our focus and cooperation allows us to generate the support documents the local building official or the structural engineer will require to approve final use of the new facility.

PROJECT DESCRIPTION

We understand the project will consist of the construction of an arena with an estimated fixed-seat capacity of 16,500, with possible future expansion expanding capacity to 18,000. The structure will have a total floor area of approximately 450,000 square feet on four concourse levels. Based on review of the
construction schedule provided with the RFP, we understand the arena structure will consist of cast-in-place concrete footings, grade-supported floor slabs, foundation walls, elevated structural decks, and seating raker beams. Structural steel framing will be used for the Upper Concourse and Premium Seating levels, upper level exterior framing, and the truss roof system. Pre-cast concrete will be used for columns and beams on the Lower Bowl Seating section and the stadia seating rows.

The adjacent parking structure will reported consist of cast-in-place concrete and grade-supported floor slabs with pre-cast concrete columns and decks.

We understand that site grading and deep foundation installation are being completed under a separate contract and, as such, are not part of this proposal.

SCOPE OF SERVICES

Terracon will provide employees appropriately trained and equipped to respond to the testing and Special Inspection needs of this project as scheduled by the Client or their designated representative. Based on our review of the RFP, we understand the requested scope of the on-call services includes the following items:

Cast-in-place concrete reinforcing steel Special Inspection
- Reinforcing steel will be checked before each concrete pour
- Reinforcement will be checked for:
  - Bar size, placement, lap length, cleanliness, and cover
- Drilled and epoxied anchor installation observation
- Column anchor bolt placement

Portland cement concrete field observations
- Verification of delivered concrete mix (from truck ticket)
- Placement/conveying observation
- Observation of curing procedures
- Cold/hot weather protection observation
- Monitoring of water added on-site to concrete trucks

Portland cement concrete testing - Arena
- Concrete temperature measured hourly during placement (plastic concrete)
- Sampling and testing of concrete every 100yd³
  - Slump, air content, casting of up to 6 cylinders
    - Four cylinders would be field cured
- Compressive strength of concrete cylinders (ASTM C-39)

Portland cement concrete testing - Garage
- Slump testing completed on each batch of concrete
- Air content testing completed on each batch of concrete at point of final placement
  - Two additional tests performed following placement and screeding for slab-on-grade pours
- Casting of 6 test cylinders every 100yd³
  - Additional cylinders cast during cold-weather conditions
  - Cylinders will be cured according to section 33000-G, 3.3.B.4
- Compressive strength of concrete cylinders (ASTM C-39)
Floor flatness/levelness testing – **Arena SOG and Event Level only**
- Floor slabs will be tested within 72 hours of final concrete finishing

Structural steel Special Inspection (at project site)
- Review jobsite welder certifications, welding materials (weld filler), and mill certifications
- Visual inspection of all welds
- Visual inspection prior to welding of full-penetration welds
  - Joint fit-up observation of moment connections
- Ultrasonic testing of full-penetration welds and partial-penetration column splice welds
- Magnetic particle testing of fillet welds larger than 5/16-inch
- Full-time observation of bolted connections using Turn-of-Nut method
- Bolted connection observation (joints in “intimate” contact following bolting)
- Visual observation and testing of shear studs
- Paint thickness testing
- Visual observation of decking welds, screws, and deck lap length

Structural steel fabrication shop inspection
- Review welder certifications
- Review fabrication shop QC reports
- Ultrasonic testing of full-penetration welds
- Visual inspection and magnetic particle testing of partial-penetration welds
- Visual inspection of fillet welds

Pre-cast Concrete Special Inspection (at project site)
- Review jobsite welder certifications and welding materials (weld filler)
- Visual inspection of all welds

Structural masonry Special Inspection
- Inspection of structural masonry construction per IBC Level 1

Fireproofing testing and Special Inspection
- Substrate inspection prior to fireproofing application
- Spray-applied material tested for thickness density, and bond strength
  - Thickness testing completed on a min. of 25% of the structural members per floor
  - Density testing every 2,500sf of floor area
  - Bond strength testing every 2,500sf of floor area
- Testing completed in accordance with ASTM standards and AWCI Technical Manual 12-A
- Intumescent material tested for thickness every 2,500sf of floor area
  - Testing completed in accordance with ASTM standards and AWCI Technical Manual 12-B

Project Management
- Mix design review
- Attend pre-construction meetings and periodic project meetings at Client’s request
- Reporting and supervision of laboratory and field services
- Preparation and review of project reports and monthly invoices

Rates for services other than those presented in the “Inspections Required” document issued with the RFP were requested on the attached Unit Rate Schedule.

If we have misunderstood any aspect of the proposed project, please advise us at once so we can evaluate the scope of services and make any necessary adjustments. If modifications are required during
the project, we can issue a short Supplement form that states the additional services, making them part of
the original agreement.

**COMPENSATION**

Often firms in the materials testing industry will provide lower hourly and or equipment rates and then
“add on” per test field charges or other hidden costs. Terracon believes in taking an up-front approach
with our clients. The hourly and equipment rates established for the project are inclusive of the related
field testing services; the only per-test charges which apply are for laboratory testing.

We understand the field work will be completed using our hourly rates and laboratory services will be
completed using per-test rates. Fees for services will be based on the attached Unit Rate Schedule. **Our
rates will apply for the duration of the project.**

A two-hour minimum charge is applicable to all trips made for the performance of testing or consulting
services. The client will be billed for our representative’s time on site only; travel time, vehicle, and
mileage are combined into a Trip Charge. The project will be invoiced on a periodic basis for services
actually performed and/or as authorized or requested by you or your designated representative.

For the on-site laboratory, which will have overall dimensions of about 10 feet by 50 feet, we propose a
monthly fee of $300, plus a mobilization/demobilization fee of $300. This fee includes all internal
equipment, HVAC systems, and ASTM-compliant concrete curing facilities. For operation of our
equipment, we will need electricity supplied to the trailer.

For completion of the structural steel shop fabrication inspection services, our regional offices in Minnesota
and Wisconsin have an agreement with a subcontractor, Bureau Veritas. These services would be
invoiced at a rate of $75/hour and a mileage charge of $0.64/mile.

For issuance of the Performance Bond, we quote a price of $0.025 per dollar of our contract price.

Based on our understanding of the requested scope of services, reported construction cost of
approximately $180M, and our extensive experience with similar large-scale construction projects, we
recommend a budget of $350,000 be utilized for our services. This amount is based on a factor of 0.25
percent of the total construction cost which was generated based on review of historical project cost
information.

**CITY OF LINCOLN AGREEMENT FOR SERVICES**

Terracon has reviewed the Contract Agreement provided with the RFP. Terracon requests a limited
number of edits to this contract. These edits are limited to the indemnification portion of the contract and
are included so our insurance coverage for the project is not adversely affected. A copy of this contract
with our proposed edits is attached for your review.
Project Capsules
Terracon was selected to provide the construction materials testing and inspection services during construction of the $200 million convention center and arena and the associated parking garage. Following an interview process, the Metropolitan Entertainment & Convention Authority (MECA) selected Terracon based on several key factors. These factors included reputation, large project experience, staff qualifications, engineering support and our automated internal software system for dispatching, report tracking and generating, and project management known as CMELMS (Construction Materials Engineering and Laboratory Management System), as well as our commitment to the team.

The project consists of the construction of a 17,000-seat arena with an attached convention center with a total floor area over 500,000 square feet. The arena is designed to handle basketball, hockey, arena football and concerts. The convention center is approximately five stories tall and blends in with the arena building. Adjacent to the arena is a four-story, pre-cast concrete parking garage with a capacity for 500 vehicles. The construction was completed over a two-year period.

Terracon had various levels of personnel on-site and off-site to handle all of the material testing and inspection services for the project. These services included reinforcing steel, cast-in-place concrete, fireproofing, masonry, pre-cast concrete fabrication and erection, and structural steel fabrication and erection inspection and testing. The inspection requirements were in accordance with the Uniform Building Code. The structural steel was fabricated at several facilities in Kansas, Nebraska and Wisconsin. Utilizing our team members and network of Terracon offices, we were able to cost-effectively handle these out of town assignments.
In 2011, the University of Nebraska at Lincoln (UNL) began a $55.5 million expansion to the East Stadium at Memorial Stadium. The project will consist of adding about 5000 new seats to expand the stadium’s capacity to more than 90,000. It will include expanding the east concourse, developing a new grand lobby that celebrates the original Gate 20 entrance and the east façade. The proposed height of the new construction will be similar to the west end of the stadium and will include about 40,000 square feet within the planned six new levels.

Terracon was retained by the UNL to perform IBC Special Inspection services for the project. These services include reinforced concrete, structural steel, structural masonry, and fireproofing inspections. These services were provided on an as requested basis with a very short construction schedule due to football season.
North Stadium Renovations
Lincoln, Nebraska

In 2003, the University of Nebraska at Lincoln (UNL) began a $40 million renovation of the north end at Memorial Stadium. The project consisted of the construction of an addition to and renovation of the existing stadium and Schulte Fieldhouse, and the construction of a new indoor practice pavilion. Terracon was retained by the UNL to perform geotechnical, construction materials testing, and IBC Special Inspection services for the project.

The existing Schulte Fieldhouse was razed and replaced with a new Performance Center. The Performance Center provides space for a strength training, conditioning and rehabilitation, nutrition center, athletic medicine center, spacious locker room, football equipment room, administrative office and office for the football coaches. The center was connected to the indoor practice facility with an enclosed elevated skywalk.

The stadium addition is a steel-frame structure supported on auger-cast-piles extending to bedrock. Numerous piles were located below the existing stadium seating which required them to be installed using “low headroom” drilling techniques. Site preparation work included the removal and replacement of extensive unsuitable existing fill beneath portions of the proposed buildings.

In addition to the Performance Center, the stadium addition project included the expansion of the North Stadium seating by 41 rows; this expansion extended over the new Performance Center. A new Husker Vision video display, with an area of nearly 3,000 square feet, was placed over the end of the expanded seating area. The structure improvements also included the construction of two new stair towers and two new Skybridge links, one from the new 2nd Level to the Concourse Level and one from the lower level to the indoor practice pavilion.

Terracon’s services included extensive subsurface investigations using both conventional soil borings and advanced in-situ cone penetrometer soundings, analysis and evaluation of test data, and geotechnical engineering recommendations regarding the design and construction of foundations and related site development. Terracon also provided construction-phase testing and Special Inspection services for the new stadium expansion.
Terracon was retained by The Clark Enersen Partners to perform geotechnical and construction materials testing services for the new Assurity Life Insurance campus in Lincoln, Nebraska.

The new campus included a 5-story office building and 4-story parking garage. A central surface parking area, walkway and entrance drive area are also located between the two structures.

Prior to construction, the site consisted of a repair shop, a non-profit organization facility, old houses, vacant lots, various trees and overhead power lines, and an apartment complex with an alley.

The geotechnical exploration included general subsurface conditions encountered in the borings, the analysis and evaluation of test data, and recommendations regarding the design and construction of foundations and related site development.

Construction phase quality assurance services included earthwork observation and testing, concrete testing, deep foundation installation observation and non-destructive evaluation, structural steel erection Special Inspection, reinforced concrete Special Inspection, and spray-applied fireproofing Special Inspection.
Ken Morrison Life Sciences Research Center
Lincoln, Nebraska

Client
University of Nebraska at
Lincoln
1901 'Y' Street
Lincoln, Nebraska 68588
(402) 472-4883

Date:
2006

Fees:
$10,400

Highlights:
Geotechnical Engineering

Terracon was retained by the University of Nebraska at Lincoln to perform geotechnical engineering services for the $21 million, 74,000 square-foot Ken Morrison Life Sciences Research Center on East Campus in Lincoln, Nebraska.

The new center features full labs for 12 scientists with separate areas for cell culture and polymerase chain reaction spaces, cold and dark rooms, shared microscopy and cell-flow cytometry facilities, a Biological Safety Level 3 laboratory suite, offices and meeting rooms.

The geotechnical exploration included general subsurface conditions encountered in the borings, the analysis and evaluation of test data, and recommendations regarding the design and construction of foundations and related site development.

The geotechnical investigation indicated varying depths of existing fill underlain by lean to fat clay and glacial till soils. The building is supported on deep foundation.
Midtown Crossing at Turner Park
Omaha, Nebraska

Client:
ECI Development Services, LLC
33 South 13th Street
Second Floor
Richmond, VA 23219

Fee:
$1,000,000

Date:
Ongoing

Highlights:
Asbestos Pre-Demolition Survey
Environmental Hazards Assessment
Soil Management Plan
Phase I Environmental Site Assessments
Geotechnical Engineering
Construction Materials Testing

Terracon was selected to perform Geotechnical, Environmental, and Construction Materials Testing services for a $300 million, 30-acre redevelopment project in the heart of Omaha, Nebraska. This project will change the landscape of midtown Omaha with new places to dine, shop, work, and live. The urban renewal is being spearheaded by Mutual of Omaha Insurance Company and managed by ECI Development Services of Richmond, Virginia. The project location is contiguous with Mutual of Omaha’s insurance headquarters in Midtown Omaha.

Twelve buildings and associated parking lots were razed to make way for the new developments. The redevelopment project consists of seven new buildings, a new parking ramp, an addition to an existing parking ramp, associated surface parking areas, access drives, and decorative plazas, and reconstruction of some of the existing adjoining streets. The buildings are a mixed use of retail, restaurant, parking, and residential space and vary in size up to 10 stories. One of the buildings is a multi-screen movie theater with some retail space on the first level.

Terracon conducted an asbestos pre-demolition survey and an environmental hazards assessment (i.e. mercury and PCB-containing equipment) of 13 multi-story buildings comprising the project site; assisted with development of a specification plan for abating the asbestos-containing materials and environmental hazards; provided pre-abatement support services; and conducted visual clearances of the buildings subsequent to asbestos abatement and removal/recycling of environmental hazards.

Terracon also provided additional environmental services which included reviews of prior environmental reports, reviews of historic fire insurance maps, and development of a soil management plan for dealing with chemically impacted soils. The soil management plan primarily included provisions for removing and disposing of impacted soils during construction excavation.

Terracon provided field support for implementing the soil management plan.

Geotechnical engineering services included twenty-four soil borings, seven piezocone penetration test (CPTU) soundings, eleven pressuremeter tests, and laboratory testing of soil samples. Terracon recommended foundations for the various structures including drilled shafts and augered cast-in-place (ACIP) concrete piles bearing in the glacial deposits that underlie the site at varying depths.
The Tower at First National Center
Omaha, NE

The Tower at First National Center is the dominant new focal point of the Omaha skyline. The stately, 40-story, 633-foot tall office building is one of the key elements of a nine-square block redevelopment of downtown Omaha.

When the First National Bank, the Omaha World Herald and the City of Omaha teamed to spearhead this aggressive redevelopment plan, they hired Terracon to provide a Phase I environmental site assessment of the entire nine-block area. Terracon also performed Phase II work, where contamination was found. Terracon also supervised excavation and disposal of the contaminated soil.

Terracon provided full-service geotechnical exploration and demolition and construction phase geotechnical services for First National Bank’s new Tower and its sister facility, the Technology Center. The First National Technology Center is a 195,000 square-foot, three-story, reinforced concrete building. Terracon provided geotechnical and environmental monitoring during demolition of the 50- to 100-year-old buildings, foundation installation observation, materials testing and UBC special inspection services during fast-track construction of the project. The building is supported on large diameter slurry drilled shafts and over 300 driven steel piles.

Terracon’s geotechnical exploration of both sites employed soil borings, rock coring, compressive strength tests of bedrock cores, pressuremeter testing of the bedrock, electronic cone soundings, in-situ vane shear tests and field resistivity testing. Tomographic analysis of downhole-crosshole seismic geophysical data was also used to evaluate bedrock continuity below the existing building that occupied the Tower site.

Terracon consulted during the Tower design and on demolition and shoring issues involved in preparing the site for construction. This included design of mechanically stabilized earth walls, sheet piling and a “flowable fill” wall placed to protect a main, fiber optic trunk line from damage during implosion of a 60-year-old, 20-story building. Terracon then provided full-time observation for the installation of 30, 90-inch diameter uncased, slurry-drilled shafts that support the central concrete shear core of the Tower. Rock cores were taken to determine shaft tip depths, which were socketed two to six feet into the limestone bedrock at depths of 65 to 70 feet.

Terracon performed crosshole sonic logging of six, full-length PVC pipes in each shaft to confirm the concrete uniformity and integrity. Terracon also monitored 148 additional, three- to five-foot diameter, slurry-drilled shafts and 50 driven steel pipe piles for support of the structural steel frame and granite-clad curtain wall of the Tower and the attached five-story, reinforced concrete parking ramp and “Winter Garden” glass atrium.

Terracon and its subconsultant provided materials testing, UBC special inspection and structural steel testing for the Tower over an 18-month span. Seven Terracon employees worked all night testing concrete on a 4,300-cubic-yard mass concrete pour of the 120 by 75 by 12.5-foot shaft cap for the shear core. The cap contained 143 cubic yards of reinforcing steel, and was Omaha’s largest concrete pour in history. Terracon monitored concrete thermistor strings to determine when insulation could be removed without risking thermal stress cracking of the cap due to differential core and surface temperatures.
UNMC Durham Research Center  
Omaha, Nebraska

**Client:**
UNMC  
Nebraska Medical Center  
Omaha, NE 68198-7100

**Date:**
2001-2008

**Highlights:**
- Two 10-Story Cast-In-Place Buildings  
- Drilled and Under-Reamed Shaft Foundation System  
- Pressure-Meter, Vane Shear, & Sonic Cone In-Situ Testing  
- MSE Retaining Walls  
- Full-time Construction Testing/Inspection Services with on-site laboratory:  
  - Concrete testing  
  - Reinforcing steel Inspection  
  - Structural steel Inspection  
  - Spray-Applied Fireproofing

Terracon provided geotechnical engineering services and construction-phase testing and Special Inspection services for the project. Terracon's testing services included full-time drilled shaft installation observation, concrete testing, reinforcing steel inspection, floor flatness/levelness testing, soils observation, and ultrasonic testing of full-penetration welds.

The project consisted of the construction of two ten-story medical research buildings, each with a total floor area of about 284,000 square feet. Eight of these floors are above ground, while the remaining two floors are below-grade. Lower Level 2 has a total area of about 11,160 square feet, while each of the remaining nine floors has approximately 30,000 square feet of floor area. A slab-on-grade auditorium with an area of about 6,000 square feet projects from the east side of the main structure and matches the floor elevation of the Main Level.

The loading dock area on the southwest side of the buildings is recessed into the structures with the floor of Lower Level 1 cantilevered over the dock area. A retaining wall was constructed along the west edge of the loading dock area and extends up to the Main Level. Buried “pressure-relief” retaining walls, designed by Terracon, were constructed to reduce unbalanced lateral earth pressure on the exposed basement walls.

Site development included the construction of a Portland cement concrete loading dock entrance drive off the south end of the building. The drive required the use of tall tiered retaining walls due to the existing 18 to 20-foot grade change between the street and the upper site level.
Embassy Suites Hotel and Convention Center
La Vista, Nebraska

Client:
Pellham Phillips Architects
1111 South Glenstone Avenue
Springfield, MO 65804

Date:
2005-2009

Highlights:
Geotechnical Analyses and Recommendations
Augered Cast-In-Place Pile Foundations
8-Story Concrete-Frame Building
Post-Tensioned Concrete

John Q. Hammons Hotels & Resorts, built an eight-story hotel with an adjoining single-story, 60,000 square-feet convention center in LaVista, Nebraska.

Terracon provided geotechnical engineering, construction materials testing, and IBC Special Inspection services for the project.

The building is a post-tensioned, cast-in-place construction. A shallow-depth pool will be constructed in the southeast corner of the building. A single-story, high eave convention center is constructed off the northwest end of the hotel. The building has overall plan dimensions of about 280 feet by 350 feet (plan area of about 84,600 square feet).
TD Ameritrade Corporate Headquarters
Omaha, Nebraska

Client:
TD Ameritrade
10825 Farnam Avenue
Omaha, NE 68154

Date:
Ongoing

Fee:
~$500,000

Highlights:
Subsurface Exploration
Geotechnical Engineering
Construction Materials Testing
Surcharge Loading
Osterberg Cell Load Test
Drilled Shafts Bearing in Bedrock
Full-time IBC Special Inspections

Terracon was selected to provide geotechnical engineering and construction-phase quality assurance and Special Inspection services for the $130 million office building. The building contains three distinct portions, with an 11-story tower flanked by a 2-story pavilion and a dining area adjacent to the pavilion. A below-grade parking level below the pavilion is partially open, overlooking the adjacent creek.

The development is located in the Old Mill area of Omaha. The site is located adjacent to Papillion Creek, and the subsurface stratigraphy includes soft alluvial clays underlain by a layer of sand and then bedrock at a depth of about 60 feet. The steel-frame structure is supported on approximately 204 drilled shafts bearing in the limestone bedrock.

The field investigation included dozens of soil borings extending into bedrock and several cone penetrometer soundings to provide detailed stratigraphy and in situ information on soil parameters. Surcharge loading was used to reduce post-construction settlements due to the placement of site grading fill for the dining area and alongside the below-grade basement.

During construction of the facility, Terracon was retained to provide full-time earthwork testing and monitoring services, full-time drilled shaft installation observation, and full-time construction quality assurance testing and Special Inspection services. These services included concrete testing, reinforcing steel, spray-applied fireproofing, structural steel erection, pre-cast concrete erection, and structural masonry.
Michael F. Sorrell Center for Health/Science Education  
Omaha, Nebraska

Client:  
University of Nebraska Medical Center  
987100 Nebraska Medical Center  
Omaha, NE  68198-7100

Date:  
2007

Highlights:  
4-Story, Concrete-frame Building  
30' Excavation into Slope  
Extensive Geotechnical Investigation  
Auger-Cast Piles  
Below-grade Pressure Relief Wall  
IBC-Special Inspections Services

The University of Nebraska Medical Center (UNMC) undertook a private fundraising campaign to fund the construction of an approximately $53 million medical education facility. The Center for Health Science Education replaces obsolete and dated facilities with technologically equipped classrooms and class laboratories, including clinical simulation rooms, small-group instruction rooms, amphitheaters and a campus events center. State-of-the-art classrooms, wireless Internet access and a virtual laboratory are just a few of the features of the Center for Health Science Education at UNMC.

Terracon provided geotechnical engineering and construction-phase testing and IBC Special Inspection services for the project. The project consists of a four-story building with a total floor area of about 134,000 square feet. Two of these floors are entirely above ground, while the remaining two floors transition from a full-height basement at the northeast corner to a walk-out level at the center of the north side.

The primarily cast-in-place concrete-frame building utilized about 10,800 cubic yards of concrete. Structural steel was used for the roof framing in the southern portion of the building which contains the main lecture halls and for the skywalk over 42nd Street. Site work included the construction of twenty-four concrete retaining walls and an elegant plaza area.
Methodist Women’s Hospital
and Medical Office Building
Omaha, Nebraska

Client: Methodist Health System
8501 West Dodge Road
Omaha, Nebraska 68114

Fee: $200,000

Date: 2007-2010

Highlights:
Drilled shaft foundations
Below-grade Pressure-relief
MSE Wall
Construction Testing Services
IBC Special Inspection Services

Terracon was retained to provide geotechnical engineering and IBC Special Inspection services for the Methodist Women’s Hospital and Medical Office Building (MOB) in Omaha, Nebraska. Upon completion, it will be the first hospital dedicated to women’s health services in the region. Some of the amenities include all private rooms, family space, green space, hotel-style room service, decentralized patient check-in and decentralized nursing stations. The 28 neonatal intensive care unit (NICU) beds planned for the hospital should help alleviate the area’s shortage of such beds. The estimated cost to build the 116-bed, 289,000 square-foot hospital is $120 million. The hospital and MOB are part of a 38-acre development by Methodist.

Included in the development plan is a $32 million, 150,000-square-foot MOB to house a variety of specialists, and a full service emergency department and urgent care.

Both the hospital and MOB are steel-frame structures supported on drilled shaft foundations. The hospital has five levels while the MOB has three levels. The buildings are joined by a single-story connector containing an urgent care facility. The lower two levels of the hospital and the lower level of the MOB are partially below-grade, with the basement of the MOB consisting of doctor parking.

Geotechnical engineering services included the completion of thirty-nine soil borings and one cone penetrometer sounding. The soils at the site consist of wind-blown silt underlain by glacial till. Due to perched water conditions on the glacial till, the deeper drilled shafts required slurry-drilling techniques for installation.

During construction, Terracon was retained by the client to provide construction materials testing and IBC Special Inspection services. These services included: earthwork observation, soil compaction testing, field and laboratory concrete testing, drilled shaft installation observation and testing, floor flatness/levelness testing, reinforcing steel inspection, structural steel inspection, and spry-applied fireproofing testing and inspection.
Blue Cross Centre
Omaha, Nebraska

Client: Tetrad Development
11422 Miracle Hills Drive, Suite 400
Omaha, NE 68154

Date: Ongoing

Fee: $250,000+

Highlights:
Phase I Environmental Site Assessments
Geotechnical Engineering
Construction Materials Testing
1,000 auger-cast-piles and two load tests
Extensive site grading
Surcharge Loading
Concrete Testing
Reinforcing Steel Inspection
Fireproofing
Floor Flatness/Levelness
Full-time Structural Steel testing and inspection

Terracon was selected to provide Geotechnical engineering, environmental site assessment, and construction-phase quality assurance and Special Inspection services for the $100 million, 10-story office building and adjacent 4-story parking structure.

The building and parking structure are part of the 75-acre redevelopment of the former Aksarben horse racing facility. The building will be a steel-frame structure supported on approximately 300 18-inch diameter auger-cast-piles. The adjacent 130,000 square-foot, four-level parking structure will be of pre-cast concrete construction, supported by approximately 700 18-inch diameter auger-cast piles.

The site is located in the alluvial plain of Papillion Creek and the soils consisted of soft clays underlain by dense sand at depths of about 60 feet. The geotechnical investigation consisted of the completion of numerous deep soil borings and several cone penetrometer soundings and extensive laboratory soil testing. In order to reduce post-construction settlements due to the placement of up to about 6 feet of fill across the site, the building and garage footprints required surcharge-loading for two months prior to construction.

For construction of the facility, Terracon was retained to provide full-time earthwork testing and monitoring services, full-time auger-cast-pile installation observation, and as-needed construction quality assurance testing and Special Inspection services. These services included concrete testing, reinforcing steel, spray-applied fireproofing, structural steel erection, pre-cast concrete erection, floor flatness testing, and structural masonry.
The Gallup Organization (Gallup) entered into a contract with the City of Omaha to redevelop a portion of Omaha’s downtown industrial area into a new Gallup training and technology campus along Omaha’s riverfront corridor. The urban renewal project included the decommissioning of a major scrap yard, river barge docking and storage facility, municipal recycling facility, fire training facility, and landfill used for construction and demolition waste disposal.

Terracon provided subsurface exploration, geotechnical analyses, foundation and site preparation recommendations for the office complex, as well as, the review and monitoring of environmental services conducted by the city of Omaha.

Phase I of the Gallup Headquarters development consists of a campus-style, five-building office complex with two to five-story structures and associated parking and drive areas. Entry drives flank a water feature that extends to the northwest to the city access road from a decorative entry plaza area in front of the buildings.

The Phase I project site fronts the Missouri River on the site of a previous scrap metals recycling facility, a fertilizer and asphalt storage/dock facility and the previous alignment of Abbott Drive.

Environmental concerns related to this project included subsurface contaminants from metals, ammonia fertilizer, and petroleum attributed to past site use and hazardous waste activities. Terracon’s services to Gallup included:

- Subsurface assessment
- Confirmation sampling
- Risk-based evaluation of potential vapor intrusion into future structures
- Review of documents (assessment results, remedial action plans, restrictive covenants)
- Collaboration with state regulatory personnel

Terracon also provided construction-phase testing and Special Inspection services for the office complex which included over-excavation and replacement of unsuitable materials, deep foundation installation (driven steel pipe piles and augered), pressure-grouted displacement piles, earthwork testing, hot-mix asphalt paving, concrete testing, reinforcing steel inspection, spray-applied fireproofing, and structural steel (shop and field).
The Holland Performing Arts Center
Omaha, Nebraska

Client:
Omaha Performing Arts Society c/o Heritage Services
8805 Indian Hills Dr
Omaha, NE 68114

Highlights:
- Full-time construction testing for multiple technicians
- Complete 2000 IBC special inspections
- Concrete testing
- Reinforcing steel
- Structural steel
- Masonry
- Fireproofing
- Floor flatness
- Soil compaction

Terracon was selected to provide the construction materials testing and inspection services during construction of the $90 million Omaha Performing Arts Center. Following an interview process, Heritage Services selected Terracon based on several key factors. These factors included reputation, large project experience, staff qualifications, and our commitment to the team.

The new center includes a 10,000-square-foot courtyard for outdoor concerts and gatherings, a 450-seat hall for chamber music performances and other events, and a 2,000-seat concert hall designed in a shoebox shape for the best acoustical quality.
Letters of Recommendation
8-25-2011
Re: Terracon’s work

To whom it may concern

I have worked with Brad Levich and Terracon for several projects at UNL over the past several years. The projects include work for the North Stadium Improvements project, the Physical Sciences building and they are currently working on the East Stadium Improvements project. I have found Terracon’s site analysis to be accurate and complete. I have found their inspections and testing services to be competent, complete, timely and professional. I especially appreciate their assistance in resolving problems that may arise. I am comfortable knowing Terracon is working on my projects. I recommend you consider using Terracon inspection and testing services for your project.

Brad Muehling, AIA
Lead Project Manager
May 10, 2010

Mr. Scott Miller  
Terracon Consultants, Inc  
15080 A Circle  
Omaha, NE 68144

Re:  Midtown Crossing Project  
Omaha, Nebraska

Dear Scott:

On behalf of Ownership and the Development Management team, I would like to acknowledge Terracon’s significant contribution to the successful design and construction of the Midtown Crossing project.

Prior to the start of the project design phase we interviewed several local and regional firms for environmental remediation consultation, geotechnical exploration and engineering, and well as materials testing and inspection. We selected Terracon based on relevant experience, references, and the credentials of proposed staff. We remain extremely pleased with that decision and must say that Terracon met and exceeded all of our expectations.

As Executive Vice President of ECI (the Development Manager of the project) I was responsible for consultant selection and oversight of the design and construction phases. Given the complexity of the project, as well as the tight schedule constraints, it was critical to us that Terracon be able to coordinate directly with the Architect, Structural Engineer and Contractor to provide all necessary technical support with minimal supervision from ECI. Terracon performed this service in a timely, professional, and technically competent manner at all times. I am unaware of any construction problems or schedule delays associated with Terracon’s work.

We would not hesitate to use Terracon on future projects. Please feel free to use our $300,000,000 + Midtown Project in your portfolio as Terracon was involved with all environmental, geotechnical and materials testing aspects of this project, and do not hesitate to use me as a reference.

Please direct any interested parties to my e-mail address at adrianhogg@ecidev.com or my cell phone at 804.305.6485.

Best regards,

Adrian A. Hogg  
Executive Vice President  
ECI Development Services, LLC

Chicago, IL  Richmond, VA  Omaha, NE
April 30, 2010

Mr. Scott Miller
Terracon Consultants, Inc.
15080 A Circle
Omaha, NE 68144

Dear Scott:

I wanted to express my appreciation and satisfaction for the work provided by Terracon on the BlueCross Centre project located here in Omaha (within the revitalized Aksarben Village area). Terracon has provided support services for this project from its early conception, to include preliminary soils investigations, environmental considerations, and structural design considerations. Terracon has also provided special inspections during the construction phase. This complete menu of services has provided continuity throughout our development process.

As the developer for this new 10-story (315,000 GSF) corporate office building, we have been very pleased with the services provided by Terracon, not only for code compliance issues, but also for the Owner's "independent" checks and balances for various project objectives. We have also found Terracon to be a very helpful resource that is willing to share their extensive knowledge and experience for other geographic locations throughout the City.

Terracon's project management team has maintained their professionalism, technical expertise and diverse capabilities as a substantial contribution to the success of this project.

I would recommend Terracon to perform geotechnical, environmental and construction materials testing services on future projects.

Sincerely,

Don Mohlman
President, Tetrad Development
Team Resumes
SCOTT G. MILLER, P.E.
SENIOR PRINCIPAL

PROFESSIONAL EXPERIENCE
Mr. Miller is responsible for operations administration, planning and directing and management of field investigations, laboratory testing, and quality assurance material testing and Special Inspection services in the Omaha, Nebraska office. He performs construction observation and testing in both shallow and deep foundations; special laboratory testing, review and reporting of construction quality control testing services and geotechnical engineering reports; stratification and construction of computer generated boring logs; and review of laboratory and field data. Mr. Miller prepares engineering and construction observation proposals and is involved with client development and marketing.

Mr. Miller has provided geotechnical recommendations and supervised construction testing services on a wide variety of projects ranging from multi-story office buildings, multi-family housing complexes, residential subdivisions, low-rise commercial buildings, and street/roadway construction. In addition, Mr. Miller has been involved in forensic studies including building pavement failure, settlement, soil expansion, and pavement deterioration.

While completing his Master of Science thesis at Iowa State University, Mr. Miller studied stream channel degradation and widening in the deep loess region of western Iowa. His research produced a simple vertical degradation model for estimating the stable profile of a degrading stream. Mr. Miller worked in cooperation with the US Army Corps of Engineers, Golden Hills Resource Conservation and Development, and the Iowa Highway Research Board.

PROJECT EXPERIENCE
TD Ameritrade Headquarters, Omaha, Nebraska
Project manager for the 14-story office tower currently under construction in west Omaha. The project includes nearly 300 slurry-drilled shafts founded in bedrock, approximately 20,000sf of pressure-relief MSE walls, and approximately 450,000 square feet of building area. Services consisted of full-time drilled shaft installation observation, concrete testing, reinforcing steel inspection, bolted connection inspection, structural steel inspection/testing, spray-applied fireproofing testing, earthwork observation, and MSE wall construction observation.

The Tower at First National Center, Omaha, Nebraska
Project manager for the 44-story office tower located in downtown Omaha. Services consisted of full-time concrete testing, reinforcing steel inspection, bolted connection inspection, structural steel inspection/testing, spray-applied fireproofing testing, earthwork observation, and structural steel shop fabrication inspection.

Education
Master of Science, Geotechnical Engineering, 1996, Iowa State University
Bachelor of Science, Civil Engineering, 1994, Iowa State University

Registrations
Professional Engineer: Nebraska, Iowa, South Dakota

Certifications
FACE Floor Profiler
Nuclear Density Gauge Safety Training
OSHA 10-hour Jobsite Safety

Affiliations
American Society of Civil Engineers
American Concrete Institute

Work History
Terracon Consultants, Inc., Omaha, Nebraska, Operations Manager, 1998-Current
Terracon Consultants, Inc., Omaha, Nebraska, Geotechnical Engineer, 1996-1998
Iowa State University, Ames, Iowa, Civil Engineering Geotechnical Department, Teaching and Research Asst. 1994-1996
Terracon Consultants, Inc., Field Technician/Drill Rig Assistant, Summer 1993 & 1994
CenturyLink Center, Omaha, Nebraska
Managed construction testing/inspection services for the 18,000 seat arena and associated 1,000,000 square-foot convention center. Services included full-time earthwork observation and testing, Portland cement concrete field and laboratory testing, reinforcing steel inspection, structural masonry testing, full-time structural steel shop fabrication and field erection testing, and floor flatness/levelness testing. The building consists of a combination cast-in-place concrete and large steel-frame truss system.

Blue Cross Centre, Omaha, Nebraska
Principal-in-charge for construction-phase quality assurance testing and IBC Special Inspection services for the $100 million, 10-story office building and adjacent 4-story parking structure. For construction of the facility, Terracon was retained to provide full-time earthwork testing and monitoring services, full-time auger-cast-pile installation observation, and as-needed construction quality assurance testing and Special Inspection services. These services included concrete testing, reinforcing steel, spray-applied fireproofing, structural steel erection, pre-cast concrete erection, floor flatness testing, and structural masonry.

Midtown Crossing, Omaha, Nebraska
Principal-in-charge for the $300 million multi-building development. Terracon’s services included initial geotechnical and environmental engineering and consulting services followed by full-time construction testing and IBC Special Inspections. The buildings are all of cast-in-place, post-tensioned concrete construction with heights of up to about 10 stories.

Aksarben Village, Omaha, Nebraska
Principal-in-charge for construction testing and IBC Special Inspection services on various portions of the 70-acre Aksarben Village, an urban mixed-use community aimed at creating new opportunities for business, residential, retail and public space development. Terracon was retained to provide construction testing and Services included soil compaction testing, shallow and deep foundations, reinforcing steel inspection, structural steel inspection, and concrete testing.

UNMC Center for Health Science and Education, Omaha, Nebraska
Principal-in-charge for construction-phase testing and IBC Special inspection services for the construction of an approximately $53 million medical education facility. The project consisted of a four-story building with a total floor area of about 134,000 square feet. The primarily cast-in-place concrete-frame building utilized about 10,800 cubic yards of concrete. Structural steel was used for the roof framing in the southern portion of the building which contains the main lecture halls and for the skywalk over 42nd Street. Site work included the construction of twenty-four concrete retaining walls and an elegant plaza area.

UNMC Home Instead Center for Successful Aging, Omaha, Nebraska
Principal-in-charge of IBC Special Inspection services for the UNMC Home Instead Center for Successful Aging in Omaha, Nebraska. The three-story, steel-frame building includes a geriatric medicine clinic, geriatric psychiatry clinic, as well as access to clinical trials involving geriatric-specific disorders. Construction materials testing services included earthwork observation, soil compaction testing, Portland cement concrete field and laboratory testing, IBC Special Inspections (reinforcing steel, structural steel, floor flatness/levelness testing, and NPDES SWPPP site inspection and reporting.

Embassy Suites Hotel and Convention Center, LaVista, Nebraska
Principal-in-charge of construction materials testing services for the John Q. Hammons Embassy Suites Hotel and Convention Center in LaVista, Nebraska. The facility is an eight-story hotel with an adjoining single-story, 60,000 square-feet convention center.
Metropolitan Institute for Culinary Arts, Omaha, Nebraska  
Principal-in-charge of construction materials testing services for a new 40,000 square-foot building for the Metropolitan Community College’s Institute for Culinary Arts and Conference Center in Omaha, Nebraska. Terracon was retained by the owner to complete material testing and IBC Special Inspection services which included earthwork observation and testing, field and laboratory concrete testing, floor flatness/levelness testing, foundation waterproofing membrane adhesion testing, and Special Inspections (shallow footings, reinforcing steel, structural masonry, and structural steel).

First National Bank Technologies Center - Omaha, Nebraska  
Supervised construction testing services for the 3-story, cast-in-place concrete and pre-cast exterior panel building. Services included driven pile foundation installation excavation observation and testing, earthwork testing, and Portland and asphaltic cement concrete field and laboratory testing. Special Inspections included reinforcing steel, structural steel, and fireproofing.

Holland Performing Arts Center, Omaha, Nebraska  
Project manager for the $92 million project. The 2,000-seat major concert hall is modeled off halls in Europe and consists of a concrete “shoebox” detailed with fine-grained woodwork. Terracon’s services consisted of full-time IBC Special Inspections and the use of an on-site office and laboratory.

UNMC Research Center of Excellence - Omaha, Nebraska  
Prepared the geotechnical proposal for the $100 million 10-story cast-in-place concrete building and associated 6-story post-tensioned concrete parking structure. Following completion of the geotechnical work, Mr. Miller managed all phases of the building construction. Field construction services included installation of several hundred auger-cast-piles designed during installation based on soil stratigraphy, approximately 100 drilled belled shafts, full-time earthwork observation and testing, Portland cement concrete field and laboratory testing, reinforcing steel inspection, and post-tension tendon elongation measurement.

West Teleservices Headquarters - Omaha, Nebraska  
Prepared the geotechnical proposal for the $35 million 5-story headquarters and adjacent 3-story parking garage. Following completion of the geotechnical work, Mr. Miller managed all phases of the building construction. Field construction services included installation of several hundred auger-cast-piles designed during installation based on soil stratigraphy, full-time earthwork observation and testing, Portland cement concrete field and laboratory testing, reinforcing steel inspection, and structural steel field erection testing.

Mid-American Recreation and Convention Complex - Council Bluffs, Iowa  
Managed geotechnical and construction testing/inspection services for the 8,000 seat arena and associated meeting hall. Services included installation of nearly 700 augered displacement piles, full-time earthwork observation and testing, Portland and asphaltic cement concrete field and laboratory testing, reinforcing steel inspection, structural masonry testing, structural steel field erection testing, and floor flatness/levelness testing. The primary arena is of cast-in-place concrete construction with a steel truss roof system and pre-cast concrete exterior walls.

ShopKo Distribution Center, Omaha, Nebraska  
Managed construction testing services for the 50-foot tall, 400,000 square feet steel-frame warehouse building. Services included driven 1,000,000 yd³ of earthwork observation and testing, 20-foot surcharge, Portland and asphaltic cement concrete field and laboratory testing for 1,000,000 square feet of exterior paving, reinforcing steel inspection, structural masonry testing, full-time structural steel shop fabrication and field erection testing, and floor flatness/levelness testing.
Vintage on Center Apartments, Omaha, Nebraska
Supervised completion of full-time construction testing services for the 13-building and 8-garage complex. Services included foundation excavation observation and testing, earthwork testing, and Portland and hot-mix asphalt field and laboratory testing. Each of the buildings consisted of post-tension cable floor slabs which required pre and post-tensioning inspections.

SAC Aviation Museum - Ashland, Nebraska
Managed the installation of both auger-cast and driven steel pipe pile foundations for the 300,000 square feet steel-frame and pre-cast panel aircraft hangars and individual aircraft foundations. Soils present on the site consisted of Peorian and Loveland loess underlain by Dakota Sandstone.

GSA Build-to-Suit Office Complex, Omaha, Nebraska
Principal-in-charge for construction-phase material testing and IBC Special Inspection services for a $45 million office building, annex and parking structure in Omaha, Nebraska. Services included a full-time on-site presence during site excavation, grading, pile installation, and segmental retaining wall construction. Additional material testing services included floor flatness/levelness, hot-mix asphalt, and exterior joint sealant observation. Special Inspection services included reinforced concrete, structural masonry, fireproofing, and structural steel.

Edward Zorinsky Federal Building, Omaha, Nebraska
Mr. Miller was the project manager for non-destructive evaluation services for the reinforcement present within approximately 400 cast-in-place concrete columns of the 10-story federal building in downtown Omaha, Nebraska. Renovation work consisted of stripping the building down to the underlying concrete frame and placement of new structural steel framing between the existing columns. In the long term, this process will help prevent progressive building collapse in the case of an event that would take out one of exterior building columns.

Department of Homeland Security, Omaha, Nebraska
Principal-in-charge for IBC Special Inspection services for a two building development for the Immigration and Naturalization Service. The main 87,000 square-foot office building is a single-story, slab-on-grade building with structural masonry perimeter bearing walls and structural steel internal frame. The second 12,000 square-foot building includes a covered automobile parking and processing areas. Construction-phase services included full-time earthwork observation and testing, concrete testing, structural masonry and steel inspection, and NPDES site inspection and reporting.

MAE CBEC Unit #4, Council Bluffs, Iowa
Project manager for the $1.2 billion coal-fired power plant expansion project. Terracon’s full-time services consisted of soil and concrete testing, IBC Special Inspections of masonry, fireproofing, and structural steel. Terracon utilized an on-site office and laboratory for over 3 years.

PUBLICATIONS
BRADLEY A. LEVICH, P.E.
PRINCIPAL, OFFICE MANAGER

PROFESSIONAL EXPERIENCE
Mr. Levich is the manager of Terracon’s Lincoln, Neb., office. He plans and directs field investigations, laboratory testing and materials testing services. He performs construction observation and testing in both shallow and deep foundation and slope stability and reviews of construction quality assurance testing services. He also performs engineering analyses based on information from the interpretations and laboratory soil/rock test data and mechanical analyses and incorporates the results into final geotechnical engineering project reports.

Mr. Levich has been involved with many types of projects, ranging from light commercial buildings to reconstruction of West Dodge Road in Omaha, Neb. He is experienced in performing pressuremeter tests, pile load tests, crosshole sonic logging testing and inclinometer and pressuremeter monitoring. Mr. Levich performed the drilled shaft inspection on many projects, including a 40-story structure in downtown Omaha. He is also experienced in performing slope stability analyses on large embankments and designing mechanical stabilized earth walls.

While completing his master’s thesis at Iowa State University, Mr. Levich studied stream channel degradation and widening in the deep loess region of western Iowa. His research analyzed different prediction methods for determining the extent of stream channel degradation.

PROJECT EXPERIENCE
Block 38 Mixed Use Facility, Lincoln, Nebraska
Principal Engineer for the special inspection services for a new building between 13th and 14th Street on the south side of Q Street in Lincoln, Nebraska. The building will have retail on the first floor, seven stories of cast-in-place, post-tensioned concrete parking garage, and three levels of apartment structure above the parking garage. Terracon is currently providing IBC special inspection services, including concrete testing, post tensioned concrete observation, structural steel testing and masonry testing.

St. Elizabeth Hospital Additions, Lincoln, Nebraska
Principal Engineer for the geotechnical engineering report, construction testing and IBC special inspections services for the 5-story parking garage, 5-story medical office building and 7-story bed tower addition. Services consisted of auger cast piles and drilled pier installation, earthwork observation and testing, reinforcing steel inspection, structural steel inspection, masonry inspection and testing and spray-applied fireproofing testing.

Education
Master of Science, Geotechnical Engineering, 1994, Iowa State University
Bachelor of Science, Civil Engineering, 1992, Iowa State University

Registrations
Professional Engineer: Nebraska and Iowa

Affiliations
American Society of Civil Engineers

Work History
Terracon Consultants, Inc., Office Manager, 2000 – Present;
Geotechnical Field and Project Engineer, 1994-2000
Iowa State University, Graduate Research Assistant, 1992-1994
Iowa State University, Undergraduate Research Assistant, 1991-1992
National Science Foundation, Northwestern University undergraduate Fellowship, 1991
Brower Asphalt and Paving, Laborer, 1989-1990
Assurity Life Insurance Headquarters, Lincoln, Nebraska
Principal Engineer for the geotechnical engineering report, construction testing and IBC special inspections services for the five story office building and five story parking garage. The buildings were supported on auger cast in place piles. Services consisted of full time auger cast in place pile inspection and part time testing for Portland cement concrete, reinforcing steel and structural steel and masonry.

Ross Film Theater, Lincoln, Nebraska
Project manager for the two and three-story new film theater and visitor center. Services consisted of shallow foundation inspection, earthwork testing, Portland cement concrete testing, reinforcing steel inspection, structural steel inspection, masonry inspection and testing and spray-applied fireproofing testing.

Saline County Law Enforcement Center, Wilber, Nebraska
Project manager for the geotechnical engineering report, construction testing and UBC special inspection services for the 22,000-square-foot law enforcement center. The project was supported on conventional spread footings. Construction services consisted of full-time earthwork observation and testing and part-time testing of Portland cement concrete, reinforcing steel, structural steel and masonry.

Memorial Stadium Addition University of Nebraska Lincoln, Lincoln, Nebraska
Project manager for the geotechnical engineering services for the 40 million-dollar renovation to the existing stadium. The project included performing five (5) cone penetrometer soundings and thirteen (13) soil borings to bedrock. Recommendations for deep foundations and floor slabs were provided in the report.

First National Bank Tower, Omaha, Nebraska
Provided project management and observed installation of a 90-inch diameter drilled shaft that supported the 40-story tower core. In addition, performed crosshole sonic logging (CSL) on each of the tower core drilled shafts and representative smaller diameter drilled shaft.

First National Bank Business Park, Omaha, Nebraska
Performed pressuremeter testing and analysis and mechanical stabilized earth wall design. The mechanical stabilized earth wall was used to reduce the pressure on the basement walls to allow for a more economical design. This project consisted of a seven-story office building and a five-story parking structure.

Sac Aviation Museum, Ashland, Nebraska
Mechanical earth wall design and shop drawings to allow placement of below grade steel walls that move due to winds at the top of the wall.

ProGold Wet Corn Milling Plant, Wahpeton, North Dakota
Pressuremeter testing and analysis for design of foundations. Managed four engineering technicians on-site. The project involved drilling more than one thousand drilled piers for support of a wet corn milling plant with diameters of 30, 36 and 48 inches. The pier lengths were designed in the field based on loads and the soil strata at the pier location. The project lasted approximately six weeks and totaled over two miles of drilling.

Missouri River Bridge, Niobrara, Nebraska
Pressuremeter testing and data reduction and inclinometer and piezometer monitoring and project management.

PUBLICATIONS
RUSSELL A. WILSON  
CONSTRUCTION SERVICES  
DEPARTMENT MANAGER

PROFESSIONAL EXPERIENCE
Mr. Wilson is the construction services manager in Terracon’s Lincoln, Nebraska office. Mr. Wilson’s responsibilities involve review and reporting of quality control construction testing services, supervision of engineering technicians, and review of laboratory and field data.

Mr. Wilson is also responsible for completion of construction observation and testing services for the southeast and south-central Nebraska region.

PROJECT EXPERIENCE
East Stadium Expansion, Lincoln, Nebraska
Provided supervision during special inspection services for the construction of a six-story, slab-on-grade steel frame structure along the east side of Memorial Stadium at the city campus of the University of Nebraska Lincoln.

Block 38, Lincoln, Nebraska
Provided supervision during construction testing and special inspection services for the construction of a ten-story, post-tension and steel frame parking garage and residential suites.

Assurity Life Insurance Office Building and Parking Garage, Lincoln, Nebraska
Provided supervision during construction testing and special inspection services for the construction of a five-story, slab-on-grade steel frame office building and five-story precast concrete parking garage.

St. Elizabeth Hospital Addition, Lincoln, Nebraska
Supervised construction testing activities associated with site development and building and pavement construction for the 5-story parking garage, 7-story bed tower addition, and 5-story medical office building.

Security Mutual Life Insurance Headquarters, Lincoln, Nebraska
Supervised, coordinated the construction testing activities associated with on-site testing of soils, concrete, reinforcing steel and structural masonry inspection for the 5-story building. The structure is supported on over 200 auger-cast piles into glacial till and outwash soils.

Education
Associate of Applied Science, 1992, Southeast Community College, Milford, Nebraska.

Certifications
- ACI Certified Technician, level I
- ACI Certified Strength Technician
- Nuclear Density Gauge Safety Training
- FACE Technologies, 2000
- Spray-Applied Fireproofing Special Inspector

Affiliations
American Concrete Institute

Work History
Terracon, Construction Services  
Department Manager, 1995-present  
Terracon, Engineering Technician, 1992-1995
Haymarket Baseball Stadium, Lincoln, Nebraska
Supervised construction testing activities associated with site development and building and pavement construction for the baseball and softball stadium.

Chemical Engineering Building, Lincoln, Nebraska
Supervised construction testing activities associated with on-site testing of soils, concrete, and inspection of reinforcing steel and masonry inspection for the five-story building on the UNL campus. The structure is supported on auger cast piles extending into sandstone.

Husker Ag Ethanol Plant Expansion, Plainview, Nebraska
Supervised and coordinated construction testing activities for the expansion of the existing Husker Ag Ethanol Plant. The project consisted of the addition of a tank farm, process building, energy center, wet cake storage slab, beer well tank, four fermentation tanks, cooling tower, and chiller.

Robert E. Knoll Residential Center, Lincoln, Nebraska
Supervised, coordinated construction testing activities, and performed testing services associated with site development and building and pavement construction for the 565 suite style student housing building. The project consisted of two 5-story masonry and structural steel structure supported on auger cast piles.

Ken Morrison Life Sciences Research Center, Lincoln, Nebraska
Supervised construction testing and special inspection services associated with site development and building for the $21 million, 74,000 square foot research facility. The building is cast in-place concrete design with limited structural steel for the penthouse area.

Downtown Skywalk, Lincoln, Nebraska
Performed installation observation of belled drilled shafts for support of the skywalk system. The piers extended through the surficial loess soils into high-capacity Dakota Sandstone. Services included visual inspection and testing of the soils exposed in the bottom of the shaft excavations, and field testing of concrete placed for the piers.

Jorgensen Hall / Physical Sciences Building, Lincoln, Nebraska
Supervised and coordinated construction testing and special inspection services for the construction of a new 3-story building. The project consisted of a slab on grade steel and masonry structure supported on auger cast piles.

Gateway Mall Additions / Improvements, Lincoln, Nebraska
Performed on-site project management for the mall during construction of various additions. Also completed soil and concrete field and laboratory testing and observation services.

Operations Center, State Farm Insurance, Lincoln, Nebraska
Performed construction testing services consisting of earthwork observation, soil compaction testing, shallow foundation excavation observation, structural masonry inspection, and reinforced concrete inspection for the 200,000 square feet building additions. The additions consisted of one 2-story steel-frame and masonry buildings constructed on glacial soils.
MATTHEW B. VICKINOVAC
SENIOR ENGINEERING TECHNICIAN

PROFESSIONAL EXPERIENCE

Mr. Vickinovac is a senior engineering technician in Terracon’s Omaha, Nebraska office. His responsibilities include earthwork observation, soil compaction testing, foundation bearing soil evaluation, deep foundation installation observation, Portland cement and hot-mix asphalt field testing, reinforcing steel, and structural masonry and special inspection.

PROJECT EXPERIENCE

Block 38 Mixed Use Facility, Lincoln, NE
Provided full-time on-site testing and Special Inspection services for the eight-story building parking garage and mixed-use building. The structure consisted of eight levels of parking with two levels of residential living space above. The parking garage is a cast-in-place, post-tensioned structure, while the residential levels are a combination of cold-formed steel and wood-frame construction. Mr. Vickinovac provided a variety of construction testing services including reinforcing steel Special Inspection, concrete testing, and post-tensioned concrete Special Inspection.

JLofts Condominiums, Omaha, NE
Provided on-site testing and Special Inspection services for the six-story, post-tensioned concrete building. The building consisted of two levels of enclosed parking with four levels of residential living space above. Mr. Vickinovac also provided a variety of construction testing services including earthwork observation, soil compaction testing, reinforced steel inspection, concrete testing, and post-tensioning Special Inspection.

Embassy Suites and Courtyard Marriott Hotel, Omaha, NE
Engineering technician for the seven-story hotel and adjacent 80,000sf convention center. The hotel is a cast-in-place, post-tensioned construction structure supported on a deep foundation system consisting of about 650 auger-cast piles. In addition to providing installation observation for the piles, Mr. Vickinovac also provided a variety of construction testing services including earthwork observation, soil compaction testing, reinforced steel inspection, concrete testing, and post-tensioning Special Inspection.

Mid-America Energy Unit #4, Council Bluffs, IA
Engineering technician for the $1.4 billion coal-fired power plant expansion project. Terracon’s services consisted of full-time material testing services for all deep foundation, soils and concrete-related construction. In addition, Terracon provided IBC Special Inspections for all structural steel, masonry, and fireproofing. Our services were streamlined by utilizing an on-site office and concrete-testing laboratory. Project quantities included over 4,000 displacement piles, 90,000 cy of concrete, and 25,000 tons of steel.
SHAWN E. MILLER
SENIOR ENGINEERING TECHNICIAN

PROFESSIONAL EXPERIENCE
Mr. Miller is a Senior Engineering Technician in Omaha, Nebraska. He has more than ten years of experience working as a field technician and Special Inspector. His responsibilities include earthwork observation, soil compaction testing, foundation bearing soil evaluation, and Portland and hot-mix asphalt concrete field testing. In addition, Mr. Miller provides IBC Special Inspection services for cast-in-place concrete reinforcing steel, structural masonry, spray-applied fireproofing, and post-tensioned concrete. Mr. Miller has worked as lead technician on numerous construction projects such as commercial developments and high-rise commercial buildings.

Prior to joining Terracon, Mr. Miller was employed by a pre-cast concrete manufacturer where he functioned as an in-house quality control inspector. His duties included reinforcing steel inspection, pre-tensioning operations, concrete and aggregate sampling, admixture dosage monitoring and concrete curing.

PROJECT EXPERIENCE
TD Ameritrade Headquarters, Omaha, Nebraska
Performed full-time materials testing and Special Inspection services for a 450,000 square-foot, steel-frame building consisting of a 2-story and 12-story tower. Special Inspections included: soil compaction testing, foundation bearing soils, reinforcing steel, Portland cement concrete, and spray-applied fireproofing.

Aliante Station Casino, Las Vegas, Nevada, (10 months)
Performed full-time Special Inspection services for a 10-story post-tensioned tower and a 5-story post tensioned parking garage. Coordinated with contractor and City of North Las Vegas building department for inspections, and directed one other inspector and two concrete testing technicians. Special Inspections included: foundation bearing soils, reinforcing steel, structural masonry, concrete, and post-tensioned decks.

Cosmopolitan Resort and Casino, Grand Hyatt Las Vegas, Nevada (7 months)
Performed full-time Special Inspection services for a 53-story and a 50-story tower, with a connected low-rise structure totaling 9 stories. Coordinated with contractor and Clark County Building Department for inspections, and directed two other inspectors and two concrete testing technicians. Special Inspections included: foundation bearing soils, reinforcing steel, structural masonry, concrete, and post-tensioned decks.

Certifications
- ACI Concrete Field Testing, Grade I
- NDOR Concrete Field Technician Level I
- ICC, Reinforced Concrete Special Inspector
- ICC Prestressed Concrete Special Inspector
- ICC Structural Masonry Special Inspector
- ICC Spray Applied Fireproofing Special Inspector
- Nuclear Density Gauge Safety Training
- ICC Soils Special Inspector
- ICC Structural Welding Special Inspector
- ICC Structural Steel and Bolting Special Inspector
- ICC Master of Special Inspection

Work History
- Terracon Consultants, Inc., Omaha, Nebraska, Senior Engineering Technician, 2010-Present
- Terracon Consultants, Inc., Las Vegas, Nevada, Engineering Technician, 2006-2010
- Terracon Consultants, Inc., Omaha, Nebraska, Engineering Technician, 2002-2006
- Wilson Concrete, Bellevue, Nebraska, 1999-2002
Qwest Convention Center/Arena, Omaha, Nebraska (4 months)
Performed full-time on-site observation and testing services for the $200 million 17,000 seat arena and attached convention center. Field services included soil compaction testing, concrete testing, and Special Inspections for reinforcing steel and fireproofing.

MidAmerican Energy CBEC Unit 4, Council Bluffs, Iowa (12 months)
Provided the special inspection and quality assurance for the cast-in-place and post tension concrete, reinforcing steel, PT cable placement and stressing, structural masonry, and non-shrink grout placement. The Unit 4 project consists of a $1.4 billion coal-fired power plant with approximately 90,000 cubic yards of concrete and over 25,000 tons of structural steel. Mr. Miller’s full-time duration on the project site was approximately 12 months.

National Park Service Midwest Region Headquarters, Omaha, Nebraska (12 months)
Provided field testing of concrete, reinforcing steel special inspection, and post-tensioning special inspection for the building. The structure consisted of a 3-story, cast-in-place concrete frame building with a plan area of about 60,000 square feet.

Research Center of Excellence, University of Nebraska Medical Center, Omaha, Nebraska (14 months)
Performed full-time on-site testing of concrete and reinforcing steel inspection for the $75 million, 10-story, cast-in-place concrete frame building. His duties included field and laboratory concrete testing, reinforcing steel special inspection, and soil observation and testing.

Emile Street Parking Structure, Omaha, Nebraska (14 months)
Performed full-time materials testing and Special Inspection services for a 4-story reinforced concrete-frame parking structure. Services included: reinforcing steel inspection, Portland cement concrete testing, soil compaction testing, on-site compressive strength testing, concrete maturity testing, and post-tensioned concrete deck inspection.

Wal-Mart (168th & Maple), Omaha, Nebraska (4 months)
Performed full-time, on-site testing and special inspection for construction of the 220,000 square foot building. Mr. Miller’s duties included full-time structural masonry and concrete reinforcing steel inspection, and concrete and asphalt field testing.

Westroads Mall Parking Garage, Omaha, Nebraska (5 months)
Mr. Miller performed auger-cast pile installation observation for approximately 250 piles. The length of each pile was determined on-site at the time of the drilling based on the geologic conditions at each pile cap location.

Millard West High School, Omaha, Nebraska (5 months)
Reinforcing steel, concrete testing, masonry, and soils density testing.

Harrah’s Hotel and Casino, Council Bluffs, Iowa (2 months)
Geopier Installation, Reinforcing Steel and Concrete Testing.

Dodge & 168th St. Bridge, Omaha, Nebraska (9 months)
Reinforcing steel, concrete testing, cylinder breaking, and pre-tensioning operations.

Misc. Union Pacific and Burlington Northern Bridge Decks, Midwestern Region (12 months)
Reinforcing steel inspection, pre-tensioning, concrete testing, and cylinder breaking.
STEVEN J. O’DONIEL
SENIOR ENGINEERING TECHNICIAN

PROFESSIONAL EXPERIENCE
Mr. O’Doniel is a senior engineering technician in Terracon’s Lincoln, Nebraska office. He provides full-phase field observation, testing, and inspection services for construction projects. Typical projects he works on range from multi-story office buildings, large commercial warehouses and infrastructures, developments, roadway, and various other types of projects.

Mr. O’Doniel’s duties range from testing of soil and granular subgrades, both shallow and deep foundations installation inspections, and UBC-special inspections for structural masonry, reinforcing steel, and fireproofing.

PROJECT EXPERIENCE
St. Elizabeth Hospital Addition, Lincoln, Nebraska
Performed full and part-time construction testing and UBC inspection services for the 5-story parking garage, 7-story bed tower addition, and 5-story medical office building. Mr. O’Doniel completed testing and inspection of auger cast piles, drilled shafts, reinforcing steel, compacted fill soils and Portland cement concrete.

960-Bed Correction Center, Tecumseh, Nebraska
Performed full and part-time construction testing and UBC inspection services for the 906 bed multi-custody correctional facility. This facility consists of 13 buildings, several of which are 2 stories tall. The building area consisted of approximately 360,000 square feet of finished floor space. Mr. O’Doniel worked directly for the owner but coordinated his actives with the general contractor and subcontractors. The testing included earthwork, reinforcing steel inspection, reinforced concrete and masonry inspection.

Lancaster County Juvenile Detention Center, Lincoln, Nebraska
Performed construction testing services for the construction of a single-story, slab-on-grade steel frame and masonry unit building. The building was generally 240 feet by 240 feet in plan dimension. Mr. O’Doniel completed testing and inspections of shallow footings, reinforcing steel, cohesive and granular soils and Portland cement concrete.

Haymarket Baseball Stadium, Lincoln, Nebraska
Performed construction testing services for the construction of a new baseball and softball complex. Mr. O’Doniel completed testing and inspection of shallow footings, slurry drilled shafts, reinforcing steel, cohesive and granular soils, Portland cement concrete and asphaltic cement concrete.

Chemical Engineering Building, Lincoln, Nebraska
Performed construction testing services for on-site testing of soils, concrete, and inspection of reinforcing steel and masonry inspection for the five-story building on the UNL campus. The structure is supported on auger cast piles extending into sandstone.

EDUCATION
Associates of Science
Degree/Nondestructive Testing
1993, Southeast Community College, Milford, NE

CERTIFICATIONS
ICC Masonry Certified
ICC Reinforced Concrete
NDOR Batch Plant Certified
ACI Certified Technician, level I
Nuclear Density Gauge Safety Training
NDOR Certified Technician
(Concrete, asphalt)
NDOR Concrete Plant Testing Technician – Level II
NICET – Concrete Level II and Soils Level I

AFFILIATIONS
American Concrete Institute

WORK HISTORY
Terracon, Senior Engineering Technician, 2000 – present
Geotechnical Services, Inc., Engineering Technician, 1994-2000
Butler County Jail/Courthouse Addition, David City, Nebraska
Performed construction testing services for the construction of a single-story, slab-on-grade steel frame and masonry unit building addition. Mr. O’Doniel completed testing and inspections of shallow footings, reinforcing steel, cohesive soils and Portland cement concrete.

Kawasaki Warehouse Expansion, Lincoln, Nebraska
Performed construction testing services for a warehouse expansion. Mr. O’Doniel completed testing and inspection of auger cast piles, reinforcing steel, compacted fill soils, and Portland cement concrete.

Gallup Building Expansion, Lincoln, Nebraska
Performed construction testing services for a multi-story expansion to the Gallup facility. Mr. O’Doniel completed testing and inspection of auger cast piles, reinforcing steel, compacted fill soils and Portland cement concrete.

Ross Film Theatre, Lincoln, Nebraska
Performed on-site construction testing and UBC Inspection services for the 30,000 square foot two and three-story new film theater and visitor center. The structure was of steel frame construction with masonry and poured exterior walls with brick fascia. Mr. O’Doniel performed testing and inspection of earthwork, shallow footings, reinforcing steel, Portland cement concrete testing, and masonry inspection.
BEVAN FLYNN
CONSTRUCTION MATERIALS TECHNICIAN

PROFESSIONAL EXPERIENCE
Mr. Flynn is a construction materials technician in Terracon’s Lincoln office. He is experienced at providing construction quality assurance/quality control services for projects in central Texas, South Dakota, and Nebraska. His experience includes testing and inspection of soil, concrete, and asphalt on construction projects and in the laboratory.

PROJECT EXPERIENCE
- ABIA Airfield Lighting Improvements – Austin, TX
- City of San Antonio Various Road Projects – TX
- 1890 Ranch Development – Cedar Park, TX
- AT&T Bee Caves Central Office – Bee Caves, TX
- Amli Riverside Residential Development – Austin, TX
- Buda Fire Station 2 – Buda, TX
- Clovis Barker Business Park – San Marcos, TX
- Commuter Rail Platforms – Austin, TX
- St. Edwards University Doyle Hall – Austin, TX
- East Crystal Falls Parkway Improvements – Leander, TX
- Dripping Springs High School – Dripping Springs, TX
- Four Seasons Residences – Austin, TX
- Glazer’s Warehouse Additions – Austin, TX
- Howard Station Rail & Bus Stop – Austin, TX
- Mueller TC-3 Apartments – Austin, TX
- Park at Aspen Lake Office Buildings – Austin, TX
- Riojas Elementary School – Austin, TX
- Tower of the Hills Parking Garage – Austin, TX
- Travis County Correctional Complex – Travis County, TX
- University Oaks Shopping Center – Austin, TX
- University of Texas Experimental Science Building – Austin, TX
- Zachary Scott Theater Repairs – Austin, TX
- San Clemente Office Building C – Austin, TX
- State Highway 130 Segments 5 and 6 - Lockhart, TX
- Appleton Apartments – Lincoln, NE
- Assurity Office Building – Lincoln, NE
- Joint Forces Head Quarters – Lincoln, NE
- Minden West Estates – Minden, NE
- Sam’s Club – Rapid City, SD
- Custer County Airport – Custer, SD
- Nemaha County Hospital – Auburn, NE
- Hawthorne Elementary School – Lincoln, NE
- Lincoln High School Addition – Lincoln, NE
- Anderson Ford South – Lincoln, NE

Certifications
- ACI Field Testing Technician, Grade I
- NICET Level I Asphalt
- NICET Level II Concrete
- NICET Level II Soils
- Nuclear Gauge Operation and Radiation Safety
- Firestone Specialty Products – Installation Training
- TxDOT Soils SB 102 – Soil & Flexible Base Field Specialist - #251

Work History
Terracon Consultants, Inc.; Construction Materials Technician, 2007 - Present
CSF Wood Framing Company; 2005 – 2007
Ashoff Construction Company; 2004 - 2005
SHAWN M. ERICKSON
OPERATIONS MANAGER, DBI, INC.

PROFESSIONAL EXPERIENCE

Mr. Erickson is the Operations Manager at DBI, Incorporated’s Lincoln office. His responsibilities include, but are not limited to, project management, scheduling daily operations, as well as performing field inspections of structural steel fabrication/erection, pressure vessels, above ground storage facilities, and pressure piping evaluations for DBI, Inc.

Mr. Erickson has worked as lead technician on major non-destructive inspection projects such as power plants, major steel structures, and process piping projects. He has functioned as the primary technician on numerous general structural steel building projects.

Mr. Erickson has vast experience providing quality non-destructive testing in accordance with industry codes and standards. He has extensive knowledge in the utilization and interpretation of AWS, ASME, and API codes for fabrication and manufacturing applications.

Prior to joining DBI, Mr. Erickson was a Quality Control Inspector for Capital Steel Company in Lincoln, Nebraska. He supervised the welding quality and fabrication of State and Federal bridges for the States of Colorado, Iowa, Kansas, Missouri, Nebraska, New Mexico, North Dakota, and Wyoming.

Education
AAS Degree, Non-Destructive Testing, Southeast Community College, Milford, Nebraska, 1994.

Certifications
ASNT SNT-TC-1A Level II UT
ASNT SNT-TC-1A Level II RT
ASNT SNT-TC-1A Level II MT
ASNT SNT-TC-1A Level II PT
AWS CWI #95080013
OSHA 40-Hour Safety Training Certified

Affiliations
American Welding Society, Member
American Society for Non-Destructive Testing
American Institute for Steel Construction

Work History
DBI, Inc., Lincoln Operations Manager, 2000-Present
DBI, Inc., Field Technician, 1996-2000
Capital Bridge Company, 1994-1996
DOUG STUTZMAN
NDT FIELD TECHNICIAN, DBI, INC.

PROFESSIONAL EXPERIENCE

Mr. Stutzman currently holds the position of NDEQ Field Technician for DBI, Incorporated’s Lincoln, Nebraska office. He is responsible for performing inspections on weldments and base materials including; structural steel, pressure vessels, piping, power piping, machined and cast components.

Mr. Stutzman has extensive experience in the utilization and interpretation of AWS, ASME, MIL-SPECS, and API codes for fabrication and manufacturing applications.

Prior to joining DBI, Mr. Stutzman was an NDT Field Technician for Professional Services, Inc. While there, he inspected the fabrication of a variety of structural steel projects, both in fabrication shops and at the erection sites.

PROJECT EXPERIENCE

Non-Destructive Inspection Services:
- Denver International Airport, Denver, Colorado
- GM Truck Facility, Shreveport, Louisiana
- Union Pacific Headquarters in Omaha, Nebraska

Inspection Services:
- Qwest Center, Omaha, Nebraska
- First National Bank Tower in Omaha, Nebraska
- Chemical Plants

Power Plant Outages:
- Nebraska Public Power District
- Omaha Public Power District

Department of Transportation Bridges:
- Union Pacific Railroad
- State of Kansas
- State of Missouri
- State of Nebraska

Pipeline Projects:
- Kinder Morgan Magellan
- Northern Natural Gas

Education
AAS Degree, Non-Destructive Testing, Southeast Community College, Milford, Nebraska, 1990.

Certifications
ASNT SNT-TC-1A Level II RT
ASNT SNT-TC-1A Level II RT
ASNT SNT-TC-1A Level II MT
ASNT SNT-TC-1A Level II PT
AWS CWI #91120103

Affiliations
American Welding Society, Member

Work History
DBI, Inc., NDT Field Technician, 2005-Present
Professional Services, Inc., NDT Field Technician, 1996-2005
PKM Steel Services, Quality Control Manager, 1991-1995
Ultrasonic Specialists, Inc., NDT Field Technician
DALLAS WYMAN  
ASSISTANT RSO / NDT FIELD TECHNICIAN, DBI, INC.

PROFESSIONAL EXPERIENCE
Mr. Wyman currently holds the position of Assistant RSO for DBI, Incorporated's Lincoln, Nebraska office. He is responsible for performing Field Audits of Radiographic personnel, amongst multiple other duties in the Corporate RSO's absence. As an NDT Technician, he also is responsible for performing inspections on weldments an base materials including: structural steel, pressure vessels, piping, power piping, machined and cast components.

Mr. Wyman has extensive experience in the utilization and interpretation of AWS, ASME, MIL-SPECS, and API codes for fabrication and manufacturing applications.

Prior to joining DBI, Mr. Wyman was an NDT Field Technician for Inland Engineering and Consulting, Inc. in Phoenix, Arizona. While there, he inspected the fabrication of a variety of structural steel projects, both in fabrication shops and at the erection sites.

PROJECT EXPERIENCE
Non-Destructive Inspection Services:  
- Del E. Webb Memorial Hospital, Sun City West, Arizona  
- Cosmopolitan Hotel and Casino, Las Vegas, Nevada  
- Casino Arizona at Talking Stick, Scottsdale, Arizona

Inspection Services:  
- Ontario Airport Towers expansion project, Ontario, Canada

Power Plant Outages:  
- Nebraska Public Power District

Hanger Pin Inspections:  
- Brownville Missouri River Bridge

Renovation Inspections:  
- Kona Sushi Grill, Scottsdale, Arizona

Ultra Sonic Inspections:  
- Phoenix Valley Interstate System for the State of Arizona

Education
- AAS Degree, Non-Destructive Testing, Southeast Community College, Milford, Nebraska, 2007.

Certifications
- ASNT SNT-TC-1A Level II UT  
- ASNT SNT-TC-1A Level II RT  
- ASNT SNT-TC-1A Level II MT  
- ASNT SNT-TC-1A Level II PT  
- AWS CWI #09030531  
- Iowa Industrial Radiographer Cardholder  
- Illinois Industrial Radiographer Trainee  
- 50-Hour Radiation Safety Training Certified  
- OSHA 40-Hour Safety Training Certified  
- ISNET ID #01587391  
- Veriforce MT Certified  
- Veriforce RT Certified  
- LAMCO and Associates RSO 24-Hour Training Course

Affiliations
- American Welding Society, Member

Work History
- DBI, Inc., NDT Field Technician, 2008-Present  
- Inland Engineering and Consulting, Inc., NDT Field Technician, 2007-2008  
Quality Management System
- Table of Contents -
Quality Management System

Manual

CM-001-08-10

Construction Materials Engineering and Testing Operations

Date Created: August 10, 2010
Revision 1
PREFACE

Each Terracon office that provides Construction Materials Engineering and Testing (CMET) services is required to establish, implement, and maintain a quality system in its operation. In May 1994, Terracon issued the *Quality System Manual - Construction Materials Laboratory*. The manual was updated on multiple occasions, with revisions issued through 2009. The purpose of the manual was to provide procedures and processes to assist in ensuring the quality of Terracon’s CMET services and to maintain a quality system that meets the requirements of the standards typically used in our CMET operations, most notably those of the American Society for Testing and Materials (ASTM) and the American Association of State Highway and Transportation Officials (AASHTO).

This Quality Management System (QMS) Manual for CMET operations replaces Terracon’s *Quality System Manual – Construction Materials Laboratory*. The purpose of this manual remains the same as the original manual. However, the manual and associated items referenced within it provide more in-depth and standard procedures, forms, and documentation, as well as filing guidance and processes. This information will assist Terracon’s operations in more easily implementing and maintaining their quality system and creating more consistency in our CMET quality management system across the company.
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Soils, Flexible Base and Aggregates

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Asphaltic Concrete

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<td>Drilling of Asphalt Cores</td>
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Spray-on-Fireproofing

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## West Haymarket Arena and Garage
### Materials Testing and Inspection RFP

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<tr>
<td>03</td>
<td>Slump, Air Content, Temperature and Cast Specimen (ASTM C 31,143,172,173,231)</td>
<td>0</td>
<td>cylinder</td>
<td>included with hourly rate</td>
</tr>
<tr>
<td>04</td>
<td>Cylinder Compressive Strength Test (ASTM C 39)</td>
<td>38.00</td>
<td>set of 4 cylinders</td>
<td>equals 9.50 per cylinder</td>
</tr>
<tr>
<td>05</td>
<td>Strip Cylinder</td>
<td>0</td>
<td>cylinder</td>
<td>included with the cylinder break cost</td>
</tr>
<tr>
<td>06</td>
<td>Hold Cylinder</td>
<td>9.50</td>
<td>cylinder</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>Batch Plant Observation</td>
<td>void</td>
<td>hour</td>
<td>not required per Addendum 2</td>
</tr>
<tr>
<td>08</td>
<td>Site Observation</td>
<td>45.00</td>
<td>hour</td>
<td>ICC Certified Technician</td>
</tr>
<tr>
<td>09</td>
<td>Length of Change of Hardened Concrete (ASTM C 157)</td>
<td>Void</td>
<td>each</td>
<td>not required</td>
</tr>
<tr>
<td>10</td>
<td>Floor Flatness Testing</td>
<td>0.05</td>
<td>sf</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Floor Flatness Testing - Minimum Charge</td>
<td>150.00</td>
<td>each</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Periodic Structural Precast Concrete Plant Observations</td>
<td>85.00</td>
<td>hour</td>
<td>NPCA Certified Auditor and PCI Level III</td>
</tr>
<tr>
<td>13</td>
<td>Transportation Costs</td>
<td>0.64</td>
<td>mile</td>
<td>Plant Inspection travel costs, other travel costs in line 2</td>
</tr>
</tbody>
</table>

### Post-Tensioned Concrete

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount ($)</th>
<th>Unit Per</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Post-Tension Observation</td>
<td>void</td>
<td>hour</td>
<td>not required per addendum 2</td>
</tr>
</tbody>
</table>

### Reinforcing Steel

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount ($)</th>
<th>Unit Per</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Field Placement Inspection Prior to Concrete Placement</td>
<td>45.00</td>
<td>hour</td>
<td>ICC Certified Technician</td>
</tr>
<tr>
<td>02</td>
<td>Technician Time</td>
<td>45.00</td>
<td>hour</td>
<td>ICC Certified Technician</td>
</tr>
<tr>
<td>03</td>
<td>Transportation Costs to Site</td>
<td>20.00</td>
<td>trip</td>
<td></td>
</tr>
</tbody>
</table>

### Masonry

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount ($)</th>
<th>Unit Per</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Mortar Cubes</td>
<td>9.50</td>
<td>each</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Grout Cylinders</td>
<td>9.50</td>
<td>each</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Grout Prisms</td>
<td>14.00</td>
<td>each</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Masonry Prisms</td>
<td>45.00</td>
<td>each</td>
<td>ASTM C140 Testing</td>
</tr>
<tr>
<td>05</td>
<td>Technician Time</td>
<td>45.00</td>
<td>hour</td>
<td>ICC Certified Technician</td>
</tr>
<tr>
<td>06</td>
<td>Transportation Costs to Site</td>
<td>20.00</td>
<td>trip</td>
<td></td>
</tr>
</tbody>
</table>

### Structural Steel / Miscellaneous Steel

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount ($)</th>
<th>Unit Per</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Welding Inspector</td>
<td>69.00</td>
<td>hour</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Certified Welding Inspector</td>
<td>69.00</td>
<td>hour</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Radiography (X-Ray)</td>
<td>153.00</td>
<td>hour</td>
<td>2-man crew, includes equipment, excludes film</td>
</tr>
<tr>
<td>04</td>
<td>Ultrasonic Testing</td>
<td>69.00</td>
<td>hour</td>
<td>additional NDE equipment charge of $85.00/day</td>
</tr>
<tr>
<td>05</td>
<td>Bolt Torque Testing</td>
<td>64.00</td>
<td>hour</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>Transportation Costs to Site</td>
<td>20.00</td>
<td>trip</td>
<td></td>
</tr>
</tbody>
</table>

### General

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount ($)</th>
<th>Unit Per</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Facsimile Cost including long distance carrier and toll charges</td>
<td>0</td>
<td>page</td>
<td>no charge</td>
</tr>
<tr>
<td>02</td>
<td>Reproduction Costs</td>
<td>0</td>
<td>page</td>
<td>no charge</td>
</tr>
</tbody>
</table>

### Overtime - Technicians

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount ($)</th>
<th>Unit Per</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Weekdays</td>
<td>1.3 x hourly rate</td>
<td>hour</td>
<td>Overtime is defined as all hours in excess of eight (8) per day, outside of the normal hours of 7:00AM to 5:00PM Monday through Friday.</td>
</tr>
<tr>
<td>02</td>
<td>Saturdays and Sundays</td>
<td>1.8 x hourly rate</td>
<td>hour</td>
<td>Overtime rates will be 1.3 times the hourly rate quoted for Saturdays (1.8 times the hourly rate for Sundays and Holidays; 2.0 for night work for radiography).</td>
</tr>
</tbody>
</table>
City of Lincoln
- Agreement for Services –
WEST HAYMARKET JOINT PUBLIC AGENCY (JPA)

PROJECT
BID NO
(project)

CONTRACT AGREEMENT

THIS CONTRACT, made and entered into this ______ day of __________, 2010 by and between

hereinafter called the Contractor and the WEST HAYMARKET JOINT PUBLIC AGENCY, a
municipal corporation, hereinafter called JPA.

WITNESS, that:

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

(JPA PROJECT)  ; and

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

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

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

CONTRACT AGREEMENT
CONTRACT AGREEMENT

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

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

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

GUARANTEE – The guarantee periods as stated in Section IX, Paragraph A of the City of Lincoln Standard Specifications for Municipal Construction shall not be applicable to this project.

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

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

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

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

IN WITNESS WHEREOF, the Contractor and JPA do hereby execute this Contract.

EXECUTION BY JPA

ATTEST:

(Seal)  JPA CHAIR

Dated:  

JOINT PUBLIC AGENCY

EXECUTION BY CONTRACTOR

IF A CORPORATION

(Name of Corporation)

ATTEST:

(Seal)  By:

(Address)  (Duly Authorized Official)

(Legal Title of Official)

IF OTHER TYPE ORGANIZATION

(Name and Type of Organization)

(Address)

(Member)

(Member)

IF AN INDIVIDUAL

By:

(Member)

(Name)
1. GENERAL PROVISIONS

A. **Indemnification.** The Contractor shall indemnify and save harmless the West Haymarket Joint Public Agency, hereinafter referred to as “JPA” from and against all losses, claims, damages, and expenses, including attorney’s fees, arising out of or resulting from the performance of the contract that results in bodily injury, sickness, disease, death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom and is caused in whole or in part by the Contractor, any subcontractor, any directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. This section will not require the Contractor to indemnify or hold harmless JPA for any losses, claims, damages, and expenses arising out of or resulting from the sole negligence of the West Haymarket Joint Public Agency.

B. **Approved Coverage Prior to Commencing Work/Subcontractors Included.** Contractor shall purchase and maintain in place insurance to Protect Contractor and JPA against all liabilities and hazards as provided in this article throughout the duration of the Contract. Contractor shall not commence work under this contract until the Contractor has obtained all insurance required under this Section and such insurance has been approved by the City Attorney for JPA, nor shall the Contractor allow any subcontractor to commence work on any subcontract until all similar insurance required of the subcontractor has been so obtained and approved.

C. **Occurrence Basis Coverage.** All insurance shall be provided on an occurrence basis and not on a claims made basis, except for hazardous materials, errors and omissions, or other coverage not reasonably available on an occurrence basis; provided that all such claims made coverage is subject to the prior written approval of the City Attorney and must be clearly indicated as such in any certificate showing coverage.

D. **Authorized and Rated Insurers Required.** All insurance coverage are to be placed with insurers authorized to do business in the State of Nebraska and must be placed with an insurer that has an A.M. Best's Rating of no less than A:VII unless specific approval has been granted by the City Attorney.

E. **Certificates Showing Coverage.** All certificates of insurance shall be filed with the City Attorney, and may utilize an appropriate standard ACORD Certificate of Insurance form showing the specific limits of insurance coverage required by this Article; provided that restrictions, qualifications or declarations inconsistent with the requirements of this Article shall not relieve the Contractor from providing insurance as required herein. Such certificates shall show JPA as additional insured, including by specific endorsement where necessary, as indicated in the following requirements. Such certificate shall specifically state that the related insurance policies are to be endorsed to require the insurer to provide JPA thirty days notice of cancellation, non-renewal or any material reduction in the stated amounts or limits of insurance coverage.

F. **Terminology.** The terms “insurance,” “insurance policy,” or “coverage” as used in this article are used interchangeably and shall have the same meaning as “insurance” unless the context clearly requires otherwise. References to “ISO®” forms are merely for convenience and ease of reference, and an equivalent or better form as determined acceptable by the City Attorney may be used. (Note: ISO® is a registered trademark of ISO Properties, Inc.)
2. **INSURANCE REQUIREMENTS**

A. **Scope of Required Coverage.** The Contractor shall take out and maintain during the life of Contract such insurance in the forms and minimum amounts as specified in this Article and as will protect Contractor and JPA from the following claims arising out of or resulting from or in connection with the Contractor’s operations, undertakings or omissions directly or indirectly related to the Contract, whether by the Contractor or any Subcontractor or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

1. Claims under workers’ compensation, disability benefit, or other employee benefit acts;
2. Claims arising out of bodily injury, occupational sickness or disease, or death of an employee or any other person;
3. Claims customarily covered under personal injury liability coverage;
4. Claims other than to the work itself arising out of an injury to or destruction of tangible property, including the loss of use resulting therefrom;
5. Claims arising out of ownership, maintenance or use of any motor vehicle;
6. Railroad protective liability coverage in the event the contract involves work to be performed within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road beds, tunnel, underpass or crossing.

B. **Worker’s Compensation Insurance and Employer’s Liability Insurance.** The Contractor shall provide applicable statutory Worker’s Compensation Insurance with minimum limits as provided below covering all Contractor’s employees, and in the case of any subcontracted work, the Contractor shall require the subcontractor similarly to provide Worker’s Compensation Insurance for Subcontractor’s employees.

The Contractor shall provide Employer’s Liability Insurance with minimum limits as provided below placed with an insurance company authorized to write such insurance in all states where the Contractor will have employees located in the performance of this contract, and the Contractor shall require each Subcontractor similarly to maintain Employer’s Liability Insurance on the Subcontractor’s employees.

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Listing</th>
<th>Min Amt</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Worker’s Comp.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>State</td>
<td>Statutory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applicable Federal</td>
<td>Statutory</td>
<td></td>
</tr>
<tr>
<td><strong>Employer’s Liability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bodily Injury by accident</td>
<td>$500,000</td>
<td>each accident</td>
<td></td>
</tr>
<tr>
<td>Bodily Injury by disease</td>
<td>$500,000</td>
<td>each employee</td>
<td></td>
</tr>
<tr>
<td>Bodily Injury</td>
<td>$500,000</td>
<td>policy limit</td>
<td></td>
</tr>
</tbody>
</table>
C. Commercial General Liability Insurance.

(1) The Contractor shall provide Commercial General Liability Insurance in a policy form providing no less comprehensive and no more restrictive coverage than provided under the ISO® form CG00010798 or newer with standard exclusions “a” through “o” and with minimum limits as provided below. Any other exclusions that operate to contradict or materially alter the standard exclusions shall be specifically listed on the certificate of insurance and shall be subject to the prior written approval of the City Attorney.

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Min Amt</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>$2,000,000</td>
<td>Aggregate</td>
</tr>
<tr>
<td>Products and Completed Operations</td>
<td>$2,000,000</td>
<td>Aggregate</td>
</tr>
<tr>
<td>Personal and Advertising Injury</td>
<td>$1,000,000</td>
<td></td>
</tr>
<tr>
<td>Each Occurrence</td>
<td>$1,000,000</td>
<td></td>
</tr>
<tr>
<td>Fire Damage Limit</td>
<td>$100,000</td>
<td>any one fire</td>
</tr>
<tr>
<td>Medical Damage Limit</td>
<td>$10,000</td>
<td>any one person</td>
</tr>
</tbody>
</table>

(2) The required Commercial General Liability Insurance shall also include the following:

- Coverage for all premises and operations
- Endorsement to provide the general aggregate per project endorsement
- Personal and advertising injury included
- Operations by independent contractors included
- Contractual liability coverage included
- X.C.U. Coverage including coverage for demolition of any building or structure, collapse, explosion, blasting, excavation and damage to property below the surface of ground.
- Any fellow employee exclusions shall be deleted
- Coverage shall not contain an absolute pollution exclusion, and applicable remaining coverage shall apply for pollution exposures arising from products and completed operations.
- Coverage for products and completed operations maintained for duration of work and shall be maintained for a minimum of three years after final acceptance under the Contract or the warranty period for the same whichever is longer, unless modified in any Special Provisions.
- Contractual Liability coverage shall include contractually assumed defense costs in addition to any policy limits.

(3) If work is to be performed within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road beds, tunnel, underpass or crossing, Railroad Contractual Liability Endorsement (ISO® form CG24170196 or newer).

(4) JPA may at its sole option, and in lieu of being additional insured on the Contractor’s policy, by written requirement in the Special Provisions or by written change order, require Contractor to provide a separate Owner’s Protective liability policy. The premium cost to obtain such insurance shall be as paid as provided in the Special Provision or change order, with any related cost savings as reasonably determined by JPA being reimbursed or paid to JPA.
D. Vehicle liability insurance coverage.

- The Contractor shall provide reasonable insurance coverage for all owned, non-owned, hired and leased vehicles with specific endorsements to include contractual liability coverage and delete any fellow employee exclusion.
- If specifically required in the Special Provisions, the required coverage shall also include an endorsement for auto cargo pollution (ISO® form CA 99 48).

E. Railroad Protective Liability. If work is to be performed within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road beds, tunnel, underpass or crossing or otherwise required by the Special Provisions or applicable requirements of an affected railroad, the Contractor shall provide Railroad Protective Liability Insurance naming the affected railroad/s as insured with minimum limits for bodily injury and property damage of $2,000,000 per occurrence, $6,000,000 aggregate, or such other limits as required in the Special Provisions or by the affected railroad. The original of the policy shall be furnished to the railroad and a certified copy of the same furnished to the City Attorney’s office prior to any related construction or entry upon railroad premises by the Contractor or for work related to the Contract.

F. Umbrella or Excess Insurance. The Contractor shall provide Umbrella or Excess insurance coverage with minimum coverage limits of $3,000,000 each occurrence and aggregate.

G. JPA included as Insured on Contractor’s Policy – Endorsements required. The Contractor shall provide adequate written documentation, including applicable ACORD certificates, declarations pages or other acceptable policy information demonstrating that JPA is included as an additional insured along with the Contractor with respect to all of the coverages required in this “Section 2A Insurance Requirements,” except for applicable Worker’s Compensation coverage, to include all work performed for JPA and specifically including, but not limited to, any liability caused or contributed to by the act, error, or omission of the Contractor, including any related subcontractors, third parties, agents, employees, officers or assigns of any of them. The documentation or endorsement shall specifically include JPA as an additional insured for purposes of Products and Completed Operations. The inclusion of JPA as additional insured shall be for coverage only on a primary basis for liability coverage, and no coverage shall contain a policy or other restriction or attempt to provide restricted coverage for JPA, whether on an excess, contributory or other basis regardless of any other insurance coverage available to JPA.

3. CONTRACTOR’S INDEMNITY – CONTRACTUAL LIABILITY INSURANCE

A. To the same extent as specified for minimum coverage requirements in Section 2 above, the required insurance shall include contractual liability coverage to include indemnification and hold harmless agreements and provisions in the related Contract Documents, specifically including the following provision:

(1) To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless JPA, its officers, agents, employees, volunteers and consultants from and against any and all claims, damages, losses, costs, and expenses, including but not limited to attorney’s fees and costs arising out of or related to the Contract or the Contractor’s activities, errors, or omissions related to the Contract including liabilities or penalties imposed by applicable, law, rule or regulation in connection therewith; provided that such claims, damages, losses, costs, and expenses, including but not limited to attorney’s fees and costs:

- is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use therefrom, and
- is caused in whole or in part by any act or omission of the Contractor, any subcontractor, agent, officer, employee, or assigns of the same or by anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in whole or in part by a party indemnified hereunder.
Such indemnification shall not be construed to negate, abridge, limit or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this section.

B. In any and all claims by any employee (whether an employee of the Contractor or subcontractor, or their respective agents or assigns by anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable as an employer) in whole or in part against JPA, its officers, agents, employees, volunteers or consultants, the above indemnification shall not be limited in any way by the amount of damages, compensation, benefits or other contributions payable by or on behalf of a the employer under Worker’s Compensation statutes, disability benefit acts, or any other employee benefit or payment acts as the case may be.

C. The obligations of indemnification herein shall not include or extend to:

1. Any outside engineer’s or architect’s professional errors and omissions involving the approval or furnishing of maps, drawings, opinions, reports, surveys, change orders, designs or specifications within the scope of professional services provided to JPA and related to the Contract; and

2. Any claims arising out of the negligence of the JPA to the extent the same is the sole and proximate cause of the injury or damage so claimed.

D. In the event of any litigation of any such claims shall be commenced against JPA, Contractor shall defend the same at Contractor's sole expense upon notice thereof from JPA. Contractor shall notify the insuring company that JPA reserves and does not waive any statutory or governmental immunity and neither Contractor, nor Contractor’s counsel whether employed by Contractor or by an insurer on behalf of the Contractor shall waive such defenses or enter into any settlement or other disposition requiring waiver of any defenses or immunity of JPA without the express written consent of the JPA.

4. CONTRACTOR’S INSURANCE FOR OTHER LOSSES.

A. Contractor shall assume full responsibility for all loss or damage from any cause whatsoever to any tools owned, rented or used in connection with the Contract including any tools, machinery, equipment, storage devices, containers, sheds, temporary structures, staging structures, scaffolding, fences, forms, braces, jigs, screens, brackets, vehicles and the like owned or rented by Contractor, or Contractor’s agents, subcontractors, suppliers, or employees.

B. In connection with the above, Contractor shall cause or require any applicable insurance related to physical damage of the same to provide a waiver of a right of subrogation against JPA.

5. NOTIFICATION IN EVENT OF LIABILITY OR DAMAGE.

A. The Contractor shall promptly notify JPA in writing and provide a copy of all claims and information presented to any of Contractor’s insurance carrier/s upon any loss or claim or upon any occurrence giving rise to any liability or potential liability related to the Contract or related work. The notice to JPA shall include pertinent details of the claim or liability and an estimate of damages, names of witnesses, and other pertinent information including the amount of the claim, if any.

B. In the event JPA receives a claim or otherwise has actual knowledge of any loss or claim arising out of the Contract or related work and not otherwise known to or made against the Contractor, JPA shall promptly notify the Contractor of the same in writing, including pertinent details of the claim or liability; Provided, however JPA shall have no duty to inspect the project to obtain such knowledge, and provided further that JPA’s obligations, if any, shall not relieve the Contractor of any liability or obligation hereunder.
6. PROPERTY INSURANCE/ BUILDER’S RISK.

A. The Contractor shall provide property insurance (a/k/a Builder’s Risk or installation Floater) on all Projects involving construction or installation of buildings or structures and other projects where provided in the Special Provisions. Such insurance shall be provided in the minimum amount of the total contract sum and in addition applicable modifications thereto for the entire work on a replacement cost basis. Such insurance shall be maintained until JPA completes final acceptance of the work as provided in the Contract. Such insurance shall be written and endorsed, where applicable, to include the interests of JPA, Contractor, Subcontractors, Sub-subcontractors in the related work. The maximum deductible for such insurance shall be $5,000 for each occurrence, which deductible shall be the responsibility of the Contractor. Such insurance shall contain a “permission to occupy” endorsement.

B. All related Property Insurance shall be provided on a “Special Perils” or similar policy form and shall at a minimum insure against perils of fire including extended coverage and physical loss or damage including without limitation or duplication of coverage: flood, earthquake, theft, vandalism, malicious mischief, collapse, and debris removal, including demolition whether occasioned by the loss or by enforcement of applicable legal or safety requirements including compensation or costs for JPA’s related costs and expenses (as owner) including labor required as a result of such loss.

C. All related Property Insurance shall include coverage for falsework, temporary buildings, work stored off-site or in-transit to the site, whether in whole or in part. Coverage for work off-site or in-transit shall be a minimum of 10% of the amount of the policy.

D. The Contractor’s Property Insurance shall be primary coverage for any insured loss related to or arising out of the Contract and shall not be reduced by or coordinated with separate property insurance maintained by JPA.
INSTRUCTIONS TO BIDDERS
WEST HAYMARKET JOINT PUBLIC AGENCY

1. BIDDING PROCEDURE
1.1 Sealed bid, formal and informal, subject to Instructions and General Conditions and any special conditions set forth herein, will be received in the office of the Purchasing Division, 440 So. 8th St., Lincoln, NE 68508, until the bid closing date and time indicated for furnishing the West Haymarket Joint Public Agency, hereinafter referred to as “JPA”, the materials, supplies, equipment or services shown in the electronic bid request.

1.2 Bidders shall use the electronic bid system for submitting bids and must complete all required fields.

1.3 Identify the item you will furnish by brand or manufacturer’s name and catalog numbers. Also furnish specifications and descriptive literature if not bidding the specific manufacturer or model as listed in the specifications.

1.4 Any person submitting a bid for a firm, corporation, or other organization must show evidence of his authority so to bind such firm, corporation, or organization.

1.5 Bids received after the time and date established for receiving bids will be rejected.

1.6 The Bidders and public are invited, but not required, to attend the formal opening of bids. At the opening, prices will be displayed electronically and/or read aloud to the public. The pricing is also available for immediate viewing on-line. No decisions related to an award of a contract or purchase order will be made at the opening.

1.7 If bidding on a construction contract, the City’s Standard Specifications for Municipal Construction 2006 shall apply.

1.7.1 Bidders may obtain this document from the City’s Design Engineering Division of the Public Works & Utilities Department for a small fee.

1.7.2 Said document can be reviewed at Design Engineering or at the office of the Purchasing Division.

1.7.3 Said document is available on the web site.


2. BID SECURITY
2.1 Bid security, as a guarantee of good faith, in the form of a certified check, cashier’s check, or bid bond, may be required to be submitted with this bidding document, as indicated on the bid.

2.1.1 Bid security, if required, shall be in the amount specified on the bid. The bid security must be scanned and attached to the “Response Attachments” section of your response or it can be faxed to the Purchasing Division at 402-441-6513. The original bid security should then be sent or delivered to the office of the Purchasing Division, 440 S. 8th St., Ste. 200, Lincoln, NE 68508 within three (3) days of bid closing.

2.1.2 If bid security is not received in the office of the Purchasing Division as stated above, the vendor may be determined to be non-responsive.

2.2 If alternates are submitted, only one bid security will be required, provided the bid security is based on the amount of the highest gross bid.

2.3 Such bid security will be returned to the unsuccessful Bidders when the award of bid is made.

2.4 Bid security will be returned to the successful Bidder(s) as follows:

2.4.1 For single order bids with specified quantities: upon the delivery of all equipment or merchandise, and upon final acceptance by JPA.

2.4.2 For all other contracts: upon approval by JPA of the executed contract and bonds.

2.5 JPA shall have the right to retain the bid security of Bidders to whom an award is being considered until either:

2.5.1 A contract has been executed and bonds have been furnished.

2.5.2 The specified time has elapsed so that the bids may be withdrawn.

2.5.3 All bids have been rejected.

2.6 Bid security will be forfeited to JPA as full liquidated damages, but not as a penalty, for any of the following reasons, as pertains to this bidding document:

2.6.1 If the Bidder fails or refuses to enter into a contract on forms provided JPA, and/or if the Bidder fails to provide sufficient bonds or insurance within the time period as established in this bidding document.

3. BIDDER’S REPRESENTATION
3.1 Each Bidder by electronic signature and submitting a bid, represents that the Bidder has read and understands the bidding documents, and the bid has been made in accordance therewith.

3.2 Each Bidder for services further represents that the Bidder has examined and is familiar with the local conditions under which the work is to be done and has correlated the observations with the requirements of the bidding documents.
4. **CLARIFICATION OF BIDDING DOCUMENTS**

4.1 Bidders shall promptly notify the Purchasing Agent of any ambiguity, inconsistency or error which they may discover upon examination of the bidding documents.

4.2 Bidders desiring clarification or interpretation of the bidding documents for formal bids shall make a written request which must reach the Purchasing Agent at least five (5) calendar days prior to the date and time for receipt of formal bids.

4.3 Changes made to the bidding documents will be issued electronically. All vendors registered for that bid will be notified of the addendum. Subsequent Bidders will only receive the bid with the addendum included.

4.4 Oral interpretations or changes to the bidding documents made in any manner other than written form will not be binding on JPA; and Bidders shall not rely upon such interpretations or changes.

5. **ADDITIONA**

5.1 Addenda are instruments issued by JPA prior to the date for receipt of bids which modify or interpret the bidding document by addition, deletion, clarification or correction.

5.2 Addenda notification will be made available to all registered vendors immediately via e-mail for inspection on-line.

5.3 No formal addendums will be issued later than forty-eight (48) hours prior to the date and time for receipt of formal bids, except an addendum withdrawing the invitation to bid, or an addendum which includes postponement of the bid.

6. **INDEPENDENT PRICE DETERMINATION**

6.1 By signing and submitting this bid, the Bidder certifies that the prices in this bid have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or with any competitor; unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the Bidder prior to bid opening directly or indirectly to any other Bidder or to any competitor; no attempt has been made, or will be made, by the Bidder to induce any person or firm to submit, or not to submit, a bid for the purpose of restricting competition.

7. **ANTI-LOBBYING PROVISION**

7.1 During the period between the bid advertisement date and the contract award, Bidders, including their agents and representatives, shall not lobby or promote their bid with the Mayor, any member of the City Council, or JPA Board and staff except in the course of JPA sponsored inquiries, briefings, interviews, or presentations, unless requested by JPA.

8. **BRAND NAMES**

8.1 Wherever in the specifications or bid that brand names, manufacturer, trade name, or catalog numbers are specified, it is for the purpose of establishing a grade or quality of material only; and the term “or equal” is deemed to follow.

8.2 It is the Bidder’s responsibility to identify any alternate items offered in the bid, and prove to the satisfaction of JPA that said item is equal to, or better than, the product specified.

8.3 Bids for alternate items shall be stated in the appropriate space on the e-bid form, or if the proposal form does not contain blanks for alternates, Bidder MUST attach to its bid document on Company letterhead a statement identifying the manufacturer and brand name of each proposed alternate, plus a complete description of the alternate items including illustrations, performance test data and any other information necessary for an evaluation.

8.4 The Bidder must indicate any variances by item number from the bidding document no matter how slight.

8.5 If variations are not stated in the bid, it will be assumed that the item being bid fully complies with JPA's bidding documents.

9. **DEMONSTRATIONS/SAMPLES**

9.1 Bidders shall demonstrate the exact item(s) proposed within seven (7) calendar days from receipt of such request from JPA.

9.2 Such demonstration can be at the JPA delivery location or a surrounding community.

9.3 If items are small and malleable, the Bidder is proposing an alternate product, the Bidder shall supply a sample of the exact item. Samples will be returned at Bidder’s expense after receipt by JPA of acceptable goods. The Bidder must indicate how samples are to be returned.

10. **DELIVERY** (Non-Construction)

10.1 Each Bidder shall state on the bid the date upon which it can make delivery of all equipment or merchandise.

10.2 JPA reserves the right to cancel orders, or any part thereof, without obligation, if delivery is not made within the time(s) specified on the bid.

10.3 All bids shall be based upon inside delivery of the equipment/merchandise F.O.B. to JPA at the location specified by JPA, with all transportation charges paid.

10.4 At the time of delivery, a designated JPA employee will sign the invoice/packing slip. The signature will only indicate that the order has been received and the items actually delivered agree with the delivery invoice. This signature does not indicate all items met specifications, were received in good condition and/or that there is not possible hidden damage or shortages.
11. WARRANTIES, GUARANTEES AND MAINTENANCE

11.1 Copies of the following documents, if requested, shall accompany the bid proposal for all items being bid:

11.1.1 Manufacturer's warranties and/or guarantees.

11.1.2 Bidder's maintenance policies and associated costs.

11.2 As a minimum requirement of JPA, the Bidder will guarantee in writing that any defective components discovered within a one (1) year period after the date of acceptance shall be replaced at no expense to JPA. Replacement parts of defective components shall be shipped at no cost to JPA. Shipping costs for defective parts required to be returned to the Bidder shall be paid by the Bidder.

12. ACCEPTANCE OF MATERIAL

12.1 All components used in the manufacture or construction of materials, supplies and equipment, and all finished materials, shall be new, the latest make/model, of the best quality, and the highest grade workmanship.

12.2 Material delivered under this proposal shall remain the property of the Bidder until:

12.2.1 A physical inspection and actual usage of the material is made and found to be acceptable to JPA; and

12.2.2 Material is determined to be in full compliance with the bidding documents and accepted bid.

12.3 In the event the delivered material is found to be defective or does not conform to the bidding documents and accepted bid, JPA reserves the right to cancel the order upon written notice to the Bidder and return materials to the Bidder at Bidder's expense.

12.4 Awarded Bidder shall be required to furnish title to the material, free and clear of all liens and encumbrances, issued in the name of JPA, as required by the bidding documents or purchase orders.

12.5 Awarded Bidder's advertising decals, stickers or other signs shall not be affixed to equipment. Vehicle mud flaps shall be installed blank side out with no advertisements. Manufacturer's standard production forgings, stampings, nameplates and logos are acceptable.

13. BID EVALUATION AND AWARD

13.1 The electronic signature shall be considered an offer on the part of the Bidder. Such offer shall be deemed accepted upon issuance by JPA of purchase orders, contract award notifications, or other contract documents appropriate to the work.

13.2 No bid shall be modified or withdrawn for a period of ninety (90) calendar days after the time and date established for receiving bids, and each Bidder so agrees in submitting the bid.

13.3 In case of a discrepancy between the unit prices and their extensions, the unit prices shall govern.

13.4 The bid will be awarded to the lowest responsible, responsive Bidder whose bid will be most advantageous to JPA, and as JPA deems will best serve the requirements and interests of JPA.

13.5 JPA reserves the right to accept or reject any or all bids; to request rebids; to award bids item-by-item, with or without alternates, by groups, or “lump sum”; to waive minor irregularities in bids; such as shall best serve the requirements and interests of JPA.

13.6 In order to determine if the Bidder has the experience, qualifications, resources and necessary attributes to provide the quality workmanship, materials and management required by the plans and specifications, the Bidder may be required to complete and submit additional information as deemed necessary by JPA. Failure to provide the information requested to make this determination may be grounds for a declaration of non-responsive with respect to the Bidder.

13.7 JPA reserves the right to reject irregular bids that contain unauthorized additions, conditions, alternate bids, or irregularities that make the bid incomplete, indefinite or ambiguous.

13.8 Any governmental agency may piggyback on any contract entered into from this bid.

14. INDEMNIFICATION

14.1 The Bidder shall indemnify and hold harmless JPA from and against all losses, claims, damages, and expenses, including, attorney's fees arising out of or resulting from the performance of the contract that results in bodily injury, sickness, disease, death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom and is caused in whole or in part by the Bidder, any subcontractor, any directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. This section will not require the Bidder to indemnify or hold harmless JPA for any losses, claims damages, and expenses arising out of or resulting from the sole negligence of JPA.

14.2 In any and all claims against JPA or any of its members, officers or employees by an employee of the Bidder, any subcontractor, anyone directly or indirectly employed by any of them or by anyone for whose acts made by any of them may be liable, the indemnification obligation under paragraph 14.1 shall not be limited in any way by any limitation of the amount or type of damages, compensation or benefits payable by or for the Bidder or any subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

15. TERMS OF PAYMENT

15.1 Unless stated otherwise, JPA will begin processing payment within thirty (30) calendar days after all labor has been performed and all equipment or other merchandise has been delivered, and all such labor and equipment and other materials have met all contract specifications.
16. LAWS
16.1 The laws of the State of Nebraska shall govern the rights, obligations, and remedies of the parties under this bid and any contract reached as a result of this process.
16.2 Bidder agrees to abide by all applicable local, state and federal laws and regulations concerning the handling and disclosure of private and confidential information concerning individuals and corporations as to inventions, copyrights, patents and patent rights.

17. EQUIPMENT TAX ASSESSMENT
17.1 Any bid for public improvement shall comply with Nebraska Revised Statute Sections 77-1323 and 77-1324. Indicating; every person, partnership, limited liability company, association or corporation furnishing labor or material in the repair, alteration, improvement, erection, or construction of any public improvement shall sign a certified statement which will accompany the contract. The certified statement shall state that all equipment to be used on the project, except that acquired since the assessment date, has been assessed for taxation for the current year, giving the county where assessed.

18. AFFIRMATIVE ACTION
18.1 The City of Lincoln provides equal opportunity for all Bidders and encourages minority businesses, women’s businesses and locally owned business enterprises to participate in our bidding process.

19. LIVING WAGE
19.1 The Bidders agree to pay all employees employed in the performance of this contract, a base wage of not less than the City Living Wage per section 2.81 of the Lincoln Municipal Code. This wage is subject to change every July.

20. INSURANCE
20.1 All Bidders shall take special notice of the insurance provisions required for all JPA contracts (see Insurance Requirements for All JPA Contracts).

21. EXECUTION OF AGREEMENT
21.1 Depending on the type of service provided, one of the following methods will be employed. The method applicable to this contract will be checked below:
   ___ a. PURCHASE ORDER, unless otherwise noted.
       1. A copy of the Bidder’s bid response (or referenced bid number) attached and that the same, in all particulars, becomes the contract between the parties hereto: that both parties thereby accept and agree to the terms and conditions of said bid documents.
   X  b. CONTRACT, unless otherwise noted.
       1. JPA will furnish copies of the Contract to the successful Bidder who shall prepare attachments as required. Insurance as evidenced by a Certificate of Insurance (as required), surety bonds properly executed (as required), and Contract signed and dated.
       2. The prepared documents shall be returned to the Purchasing Office within 10 days (unless otherwise noted).
       3. JPA will sign and date the Contract.
       4. Upon approval and signature, the JPA will return one copy to the successful Bidder.

22. TAXES AND TAX EXEMPTION CERTIFICATE
22.1 JPA is generally exempt from any taxes imposed by the state or federal government. A Tax Exemption Certificate will be provided as applicable.

23. AUDIT ADVISORY BOARD
23.1 All parties of any JPA agreement shall be subject to audit pursuant to Chapter 4.66 of the Lincoln Municipal Code and shall make Available to a contract auditor, as defined therein, copies of all financial and performance related records and materials germane to the contract/order, as allowed by law.

24. E-VERIFY
24.1 In accordance with Neb. Rev. Stat. 4-108 through 4-114, the contractor agrees to register with and use a federal immigration verification system, to determine the work eligibility status of new employees performing services within the state of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324 a, otherwise known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of a newly hired employee pursuant to the Immigration Reform and Control Act of 1986. The Contractor shall not discriminate against any employee or applicant for employment to be employed in the performance of this section pursuant to the requirements of state law and 8 U.S.C.A 1324b. The contractor shall require any subcontractor to comply with the provisions of this section. For information on the E-Verify Program, go to www.uscis.gov/everify.
1. **SUPPLEMENTAL INSTRUCTIONS TO PROPOSERS**

1.1 Proposal pricing shall include the cost of Testing and Special Inspection Services at the New Haymarket Arena and Parking Garage to include labor, testing supplies and any other expenses required to complete the project according to Local Building Codes, the Plans and Specifications and any other State or Federal guidelines.

1.2 All inquiries regarding these specifications shall be directed via e-mail or faxed request to Vince Mejer, Purchasing Agent (vmejer@lincoln.ne.gov) or Fax: (402)441-6513.

1.2.1 All responses to questions and inquiries shall be distributed to prospective bidders electronically as an addenda.

1.3 Proposals are due on August 26, 2011.

1.4 At this time, short listed firms will be interviewed on September 1, 2011

1.5 Drawings can be reviewed at the offices of PC Sports at 311 N. 8th Street, Suite 102, Lincoln, NE. Phone (402)477-0487 to schedule an appointment.

1.5.1 Drawings can also be ordered from A&D at the cost of the proposer.

1.6 Submit five (5) copies of your proposal to the Office of the Purchasing Agent, located at Suite 200, K Street Complex, 440 South 8th Street, Lincoln, NE, 68508 no later than the date and time stated in the Notice for Request for Proposal.

1.7 **Proposers must also complete and submit the electronic portion** (Attributes and Line Item sections) of this proposal on the E-bid system.

1.7.1 Electronic submittal must be submitted before the closing date and time of this RFP.

2. **PROJECT DESCRIPTION**

2.1 Project Description and Construction Team

2.1.1 Architect: DLR Group

2.1.2 MEP Engineer (Building): ME Engineers

2.1.3 Arena Structural Engineer: Buro Happold

2.1.4 Garage Structural Engineer: AGA

2.1.5 Civil Engineer: Olsson Associates

2.1.6 Contractor: Mortenson Construction

2.2 Project Location: The West Haymarket Arena is located in the new development of the West Haymarket area, north of the proposed extension of "R" Street and bounded by the US Post Office on the east.

2.3 Type of Construction: (Total Budget - $150.0 million)

2.3.1 New Construction: The project consists of a 16,000 seat arena of approximately five levels to include Event Level, Main Concourse, Premium Suite Level, Upper Concourse and the catwalk level.

2.3.1.1 The attached garage is approximately 280 spaces and is a three-level precast structure.
3. **SCOPE OF SERVICES**

3.1 **Qualifications**

3.1.1 Testing Laboratory shall meet applicable industry standards including, but not limited to City of Lincoln Special Inspection Requirements and IBC 2009.

3.1.2 Testing Laboratory must be accredited by an independent agency per ASTM C 1077 and ASTM E-329 and provide proof thereof.

3.2 **Observation, Testing and Inspection Services**

3.2.1 All testing equipment shall be calibrated at intervals not to exceed 12 months by devices traceable to National Bureau of Standards or accepted values of natural physical constants.

3.2.2 Observations, testing and Inspections shall be in accordance with project drawings and specifications.

3.3 Notify the appropriate members of the project team immediately upon discovery of deficiencies.

3.4 Promptly submit written reports of observations, test and inspections to the Owner, Architect, Contractor, Structural Engineer, Civil Engineer and Project Manager. Reports shall include as a minimum:

3.4.1 Date issued.
3.4.2 Project title and description.
3.4.3 Testing laboratory, name, address and telephone number.
3.4.4 Name of inspector.
3.4.5 Location of observation.
3.4.6 Date and time of observation, test inspection or sampling.
3.4.7 Weather conditions at the time of observation, test, inspection or sampling.
3.4.8 Results, and statement of compliance or non-compliance with plans and specification, of observation, test, inspection, or sampling.
3.4.9 Interpretation of test results when requested by Owner.

3.5 Testing Laboratory is not authorized to:

3.5.1 Release, revoke, alter, diminish or increase the requirements of the plans and specifications.
3.5.2 Approve, accept, disapprove or reject any portion of the work.
3.5.3 Perform any duties of the contractor.

3.6 Work specifically excluded:

3.6.1 Roofing testing and inspection.
3.6.2 Window testing and inspection.
3.6.3 Arena, Garage and Ramp piles.

4. **INSURANCE REQUIREMENTS**

4.1 Awarded vendor must provide an insurance Certificate of Accord meeting with City of Lincoln requirements as outlined in the document attached to the Bid Document section titled Insurance Clause City.

4.1.1 The Contractor must place the following information in the Description of Terms box on the Insurance Accord Certificate or as a rider: The City of Lincoln and PC Sports are listed as Additional Insured.
5. **PROPOSAL REQUIRED INFORMATION**

5.1 State firm’s qualifications for this project.
   5.1.1 Services may include observation, testing and inspections related to soils, aggregates, asphaltic concrete, concrete, reinforcing steel and structure steel.
   5.1.2 Provide relevant project experience with projects of similar size and scope highlighted.

5.2 Provide resumes of those individuals including inspectors who will be assigned to this project.
   5.2.1 Provide a brief description of their duties.
   5.2.2 Please so indicate if your inspectors are cross-trained to allow them to perform inspections and tests on multiple construction materials.

5.3 Provide unit cost rates for Construction Materials Observation, Testing and Inspection using the attached form.

5.4 Provide an estimate of the total cost for the proposed services.
   5.4.1 Note: All rates, costs and prices provided will be fixed for the duration of the project.
   5.4.1.1 Reimbursable expenses to be at cost.
   5.4.2 Assume roof trusses will be fabricated in Minneapolis, MN and Rice Lake, WI.
   5.4.2.1 Other fabrication facility will be located in Lincoln, NE. Please include applicable travel costs.
Example Certificate of Insurance
**CERTIFICATE OF LIABILITY INSURANCE**

**PRODUCER:**
Lockton Companies, LLC-1 Kansas City
444 W. 47th Street, Suite 900
Kansas City MO 64112-1906
(816) 960-9000

**INSURED:**
Terracon Consultants, Inc.
Ms. Sana Riaz
18001 W. 106th Street, Suite 300
Olathe KS 66061

**INSCRIBERS AFFORDING COVERAGE**

<table>
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**COVERAGES**

### A
- **GENERAL LIABILITY**
  - COMMERCIAL GENERAL LIABILITY: PROPP779274
  - EXCEPTED CLAIMS MADE OCCUR:
  - CONTROL LIABILITY

### C
- **AUTOMOBILE LIABILITY**
  - ANY AUTO: TC2J-CAP-131J3858
  - ALL OWNED AUTOS: TJBAP131J3895
  - SCHEDULED AUTOS
  - HIRED AUTOS
  - NON-OWNED AUTOS

### A
- **EXCESS / UMBRELLA LIABILITY**
  - EXCEPTED OCCUR CLAIMS MADE:
  - EXCLUDING PROF. LIABILITY

### D
- **WORKERS COMPENSATION AND EMPLOYERS’ LIABILITY**
  - ANY PROPRIETOR/EXECUTIVE OFFICER/MEMBER EXCLUDED:
  - (Mandatory in NH) SPECIAL PROVISIONS below

### E
- **OTHER PROFESSIONAL LIABILITY**
  - 026030216

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

For Informational Purposes Only. Excess liability sits on top of general and auto liability.

**CERTIFICATE HOLDER**

11029736
Specimen

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 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.

**ACORD 25 (2009/01)**

© 1988-2009 ACORD CORPORATION. All rights reserved.
This endorsement, effective 12:01 AM, January 1, 2011
Forms a part of Policy No: PROP 3779274
Issued to: Terracon Consultants, Inc
By: Chartis Specialty Insurance Company

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

CONTRACTUAL LIABILITY - RAILROADS ENDORSEMENT

This endorsement modifies insurance provided under the following:
COMMERCIAL GENERAL LIABILITY AND PROFESSIONAL LIABILITY POLICY

SCHEDULE

Scheduled Railroad: Where required by written contract or agreement

Designated Job site: Where required by written contract or agreement

It is hereby agreed that solely with respect to operations performed for, or affection, a scheduled railroad at a designated job site referenced above, section VI. DEFINITIONS, paragraph 11. Insured contract is deleted in its entirety and replaced by the following:

Insured contract means:
 a. A contract for lease or premises. However, the portion of the contract of a lease of premises that indemnifies any person or organization for damage by fire to premises while rented to you or temporarily occupied by you with permission of the owner is not an insured contract;
 b. A sidetrack agreement;
 c. Any easement or license agreement;
 d. An obligation, as required by ordinance, to indemnify a municipality, except in connection with work for a municipality;
 e. An elevator maintenance agreement
 f. That party of any other contract or agreement pertaining to your business (including an indemnification of a municipality in connection with work performed for a municipality) under which you assume the tort liability of another party to pay for bodily injury or property damage to their person or organization. Tort liability means a liability that would be imposed by law in the absence of any contract or agreement.

Paragraph f. does not include the party of any contract or agreement:
(1.) That indemnifies an architect, engineer or surveyor for injury or damage arising out of:
   (a.) Preparing, approving, or failing to prepare or approve maps, show drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
   (b.) Giving director or instruction, or failing to give them, if that is the primary cause of the injury or damage;
(2.) Under which the insured, if an architect, engineer or surveyor, assumes liability for an injury or damage arising out of the insured's rendering or failure to render professional services, including those listed in paragraph (1) above and supervisory, inspection, architectural or engineering activities.
September 26, 2011

West Haymarket Joint Public Agency (JPA)
K Street Complex
440 South 8th Street, Suite 200
Lincoln, NE  68508

Attn:  Mr. Vince Mejer, Purchasing Agent
P:  402.441.8314
F:  402.441.6513
E:  vmejer@lincoln.ne.gov

Re:  Proposal for Quality Assurance Material Testing and IBC Special Inspection Services
West Haymarket Arena and Garage
Lincoln, Nebraska
Request for Proposal Bid No. 11-203
Terracon Proposal No. PA3110182A

Dear Mr. Mejer:

As requested by Ms. Paula Yancey of PC Sports in an e-mail dated September 22, 2011, Terracon is submitting this supplemental proposal information for completion of quality assurance material testing and IBC Special Inspection services for the West Haymarket Arena and Garage project. Copies of our laboratory accreditations were submitted directly to Ms. Yancey on September 21, 2011.

As detailed in the attached Cost Estimate, we have reviewed the project construction schedules provided to us for the Arena and the Garage. In addition to the construction schedule provided in the RFP, the Cost Estimate is based on the following information provided to Terracon after our interview on September 14, 2011:

- 4.5 months of full-time structural steel shop inspection at the Lejeune Steel facility located at 2950 Highway 63 North, Barronett, WI.
  - The shop manager reported to us they will work 10-hour shifts during weekdays and half-days on Saturdays – our cost estimate is based on this information
- 4 months of as-needed structural steel shop inspection at the Lincoln Midwest Steel facility located in Lincoln, NE.
  - Our estimate assumes two 8-hour days per week for 16 weeks
- 4 as-needed visits for pre-cast plant inspection at a facility in Lincoln, NE
  - Our estimate assumes each site visit to the plant will last 6 hours
Proposal for Quality Control Testing and Special Inspection Services
West Haymarket Arena and Garage = Lincoln, Nebraska
September 26, 2011 = Terracon Proposal No. PA3110182A

In addition to these items, it is our understanding that on-site Special Inspection of structural masonry is not required. We also understand the soils testing and foundation installation are being handled under a separate contract and as such, are not included in our cost.

Regarding the construction schedule for the Arena Garage, the schedule provided to us does not provide information on pre-cast erection duration or the pre-cast topping pours. For our estimate, we assumed 15 four-hour site visits for inspection of the erection process. We also assumed 10 pours for the pre-cast topping placement with three technicians on-site for the more stringent concrete testing requirements.

Our Cost Estimate assumes general concrete construction will occur on Saturdays (up to 8 hours per day), but erection of structural steel will not. During weekdays, we have assumed our Special Inspectors will be on-site for 10 hours per day during full-time site coverage. More detailed information regarding our site coverage can be found on the attached Cost Estimate.

We appreciate the opportunity to submit our proposal and look forward to working with you. Please contact Mr. Brad Levich at the following numbers if you have any questions or need additional information: office (402) 466-3911 or cellular (402) 430-5572.

Sincerely,

Terracon Consultants, Inc.

Brad A. Levich, P.E.
Principal

Scott G. Miller, P.E.
Senior Principal

Copies to: Addresssee (1 via e-mail)
Ms. Paula Yancey, PC Sports (1 via e-mail)

Enclosure: Cost Estimate
### COST ESTIMATE

#### Heymarket Arena and Parking Garage
Lincoln, Nebraska

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Scheduled Start/Stop Dates</th>
<th>Coverage Duration</th>
<th>Days per week</th>
<th>Hours per</th>
<th>Weekday</th>
<th>Saturday</th>
<th>Unit Rates</th>
<th>Total Cost</th>
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<td>Total</td>
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<td>Concrete work - Arena</td>
<td>FT/PT</td>
<td>Start</td>
<td>Stop</td>
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<td>days</td>
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<td>3/18/2012</td>
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<td>17.0</td>
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<td>60</td>
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<td>3/18/2012</td>
<td>7/15/2012</td>
<td>17.0</td>
<td>119.0</td>
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<td>2/2/2013</td>
<td>9.0</td>
<td>63.0</td>
<td>45</td>
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<td>Pre-Cast Plant QA Inspection (Lincoln, NE facility)</td>
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<td>Performance Bond</td>
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<td>Note: FT = full time; PT = part time</td>
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</table>
WEST HAYMARKET JOINT PUBLIC AGENCY (JPA)

PROJECT
BID NO
(project)

CONTRACT AGREEMENT

THIS CONTRACT, made and entered into this _____ day of ________, 2010 by and between

hereinafter called the Contractor and the WEST HAYMARKET JOINT PUBLIC AGENCY, a municipal corporation, hereinafter called JPA.

WITNESS, that:

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

(JPA PROJECT) ; and

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

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

NOW, THEREFORE, in consideration of the sums to be paid to the Contractor and the agreements herein contained, the Contractor and JPA have agreed and hereby agree as follows:
THIS CONTRACT AGREEMENT is made and entered into this ____ day of ____________, 2011, by and between TERRACON CONSULTANTS, INC., hereinafter called the Contractor and the WEST HAYMARKET JOINT PUBLIC AGENCY, hereinafter called JPA.

WITNESS, that:

WHEREAS, JPA has caused to be prepared, in accordance with law, Specifications, Plans, and other Contract Documents for the Work herein described, and has approved and adopted said documents and has caused to be published a Notice to Proposers requesting proposals for and in connection with said Work, to wit: quality assurance material testing and IBC Special Inspection Services for the West Haymarket Arena and Garage (RFP No. 11-203); and

WHEREAS, the Contractor, in response to such Notice to Proposers, has submitted to the JPA, in the manner and at the time specified, a sealed Proposal/Supplier Response in accordance with the terms of said Notice to Proposers; and,

WHEREAS, JPA, in the manner prescribed by law, has publicly advertised, opened, examined, and canvassed the Proposals/Supplier Responses submitted in response to such Notice to Proposers, and as a result of such canvass has determined and declared the Contractor to be the lowest responsible, responsive bidder for the said Work for the sum or sums named in the Contractor’s Proposal, a copy thereof being attached hereto as Exhibit A.

WHEREAS, a portion of the Project will be carried out on BNSF Railway Company (“BNSF”) property pursuant to a Temporary Access License for Arena Shoring and Initial Construction of Footings and Columns between BNSF Railway Company (BNSF) and the JPA, a copy of which is attached hereto as Exhibit B. The Project work performed under the License is subject to the terms and conditions of the Construction and Maintenance Agreement (“C&M Agreement”) between BNSF and the City of Lincoln as assigned to the JPA, a copy of which is attached hereto as Exhibit C.

WHEREAS, Contractor possesses certain skills, experience, education and competency to perform the Work on behalf of the JPA and the JPA desires to engage Contractor for such services on the terms and conditions provided herein.

WHEREAS, Contractor is willing and able to perform the Work in accordance with this Agreement. Contractor hereby understands and acknowledges that Contractor will be required to comply with restrictions on the Work imposed on the JPA as Licensee in the License, subject to the provisions of this Agreement. Contractor hereby further understands and acknowledges that Contractor is deemed to be the JPA’s Contractor under the C&M Agreement and in such capacity is
required to comply with the Contractor Requirements in the C&M Agreement, subject to the terms of this Agreement

WHEREAS, the use of the term “City of Lincoln” in the License and the C&M Agreement shall be deemed to refer to the JPA.

NOW, THEREFORE, in consideration of the above Recitals which are made a part of this Contract, sums to be paid to the Contractor, and the agreements herein contained, the Contractor and JPA have agreed and hereby agree as follows:

COMPENSATION – The JPA agrees to pay Contractor for performance of the Work embraced in this Contract and Contractor agrees to accept as full compensation therefor a total fee not to exceed $699,475, as more particularly set forth in the Cost Estimate attached to the September 26, 2011 Supplemental Proposal Information Letter. Fixed payments in accordance with the schedule attached hereto as Exhibit D shall be payable monthly upon receipt of supporting documentation for the Work completed.

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

- Terracon Proposal No. PA3110182A, and
- Supplemental Proposal Information in letter to Vince Mejer dated September 26, 2011.

Contractor understands and agrees that the License and the C&M Agreement, including, but not limited to, Exhibits C and C-1(A) attached to the C&M Agreement by reference are part of this Agreement. As part of said Work, Contractor agrees to enter into the Contractor’s Right of Entry with BNSF (Exhibit C-1(A) to the C&M Agreement) and to abide by the terms and conditions of the Contractor’s Right of Entry. Contractor further agrees to abide by the terms and conditions imposed upon the JPA as Licensee in the License and to abide by the terms and conditions imposed upon the Contractor in the Contractor Requirements attached to the C&M Agreement.

COMPLETION DATE – The Contractor agrees that the Work in this Contract shall begin as soon after the Notice to Proceed as is necessary for the Contractor to complete the Work within the number of calendar days allowed and prior to the stated completion date. The completion date shall be no later than September 1, 2013.

GUARANTEE – The guarantee periods as stated in Section IX, Paragraph A of the City of Lincoln Standard Specifications for Municipal Construction shall not be applicable to this project.
INDEMNIFICATION – The following Indemnification provisions supersede and replace the
Assumption of Liability and Indemnification provisions in the City of Lincoln Standard Specifications

A. INDEMNIFICATION OF JPA.

TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR SHALL RELEASE,
INDEMNIFY, DEFEND AND HOLD HARMLESS JPA AND JPA’S MEMBERS, SUCCESSORS,
ASSIGNS, LEGAL REPRESENTATIVES, OFFICERS, EMPLOYEES AND AGENTS FOR, FROM
AND AGAINST ANY AND ALL CLAIMS, LIABILITIES, FINES, PENALTIES, COSTS,
DAMAGES, LOSSES, LIENS, CAUSES OF ACTION, SUITS, DEMANDS, JUDGMENTS AND
EXPENSES (INCLUDING, WITHOUT LIMITATION, COURT COSTS AND ATTORNEYS’
FEES) OF ANY NATURE, KIND OR DESCRIPTION OF ANY PERSON (INCLUDING,
WITHOUT LIMITATION, THE EMPLOYEES OF THE PARTIES HERETO) OR ENTITY
DIRECTLY OR INDIRECTLY (COLLECTIVELY, “LIABILITIES”) ARISING OUT OF,
RESULTING FROM OR CAUSALLY RELATED TO (IN WHOLE OR IN PART):

(i) ANY RIGHTS OR INTERESTS GRANTED TO CONTRACTOR PURSUANT TO
THIS AGREEMENT;

(ii) THE USE, OCCUPANCY OR PRESENCE OF CONTRACTOR AND
CONTRACTOR PARTIES (DEFINED BELOW) AND/OR ANY WORK PERFORMED BY
CONTRACTOR AND CONTRACTOR’S CONTRACTOR PARTIES IN, ON, OR ABOUT BNSF’S
PROPERTY OR RIGHT-OF-WAY AND/OR THE WORK AREA;

(iii) ANY ENVIRONMENTAL MATTERS ARISING FROM CONTRACTOR
AND/OR CONTRACTOR PARTIES’ USE AND OCCUPANCY OF BNSF’S RIGHT-OF-WAY OR
OTHER BNSF PROPERTY, INCLUDING WITHOUT LIMITATION USE AND OCCUPANCY OF
BNSF’S RIGHT-OF-WAY OR OTHER BNSF PROPERTY IN CONNECTION WITH
PERFORMANCE OF THE WORK;

(iv) ANY DAMAGE TO OR DESTRUCTION OF ANY TELECOMMUNICATION
LINES IN CONNECTION WITH THE WORK BY CONTRACTOR AND/OR CONTRACTOR
PARTIES, INCLUDING BUT NOT LIMITED TO (A) ANY INJURY TO OR DEATH OF ANY
PERSON Employed BY OR ON BEHALF OF ANY TELECOMMUNICATIONS COMPANY,
AND/OR ITS CONTRACTORS, AGENTS AND/OR EMPLOYEES AS A RESULT OF SUCH
DAMAGE OR DESTRUCTION, AND/OR (B) ANY CLAIM OR CAUSE OF ACTION FOR
ALLEGED LOSS OF PROFITS OR REVENUE BY, OR LOSS OF SERVICE BY A CUSTOMER
OR USER OF SUCH TELECOMMUNICATION COMPANY(IES) AS A RESULT OF SUCH
DAMAGE OR DESTRUCTION;

(v) CONTRACTOR’S BREACH OF THE TERMS AND CONDITIONS OF THIS
AGREEMENT; OR

(vi) ANY ACT OR OMISSION OF CONTRACTOR OR ITS OFFICERS, AGENTS,
INVITEES, EMPLOYEES OR SUBCONTRACTORS (SUCH OFFICERS, AGENTS, INVITEES,
EMPLOYEES AND SUBCONTRACTORS BEING REFERRED TO HEREIN INDIVIDUALLY AS
A “CONTRACTOR PARTY” AND COLLECTIVELY, “CONTRACTOR PARTIES”), OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM, OR ANYONE THEY CONTROL OR EXERCISE CONTROL OVER.

THE LIABILITY ASSUMED BY CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT ANY DAMAGE, DESTRUCTION, INJURY OR DEATH WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF JPA, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, BUT EXCLUDING CLAIMS WHOLLY CAUSED BY JPA’S SOLE NEGLIGENCE AND EXCLUDING CLAIMS TO THE EXTENT THAT SUCH CLAIMS ARE CAUSED BY THE WILLFUL MISCONDUCT OR GROSS NEGLIGENCE OF JPA.

B. INDENMNIFICATION OF BNSF. Contractor understands and acknowledges that the Indemnification requirements of BNSF found in the C&M Agreement and the Contractor’s Right of Entry are in addition to, and not in lieu of, the above obligations of Contractor to indemnify and hold harmless the JPA.


Insurance Coverage. Contractor shall at all times during the term of this Agreement maintain insurance coverage as follows:

A. Commercial General Liability Insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of $5,000,000.00 per occurrence, and $10,000,000.00 in the aggregate, but in no event less than the amount otherwise carried by Contractor. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limited to, the following:

• Bodily Injury and Property Damage
• Personal Injury and Advertising Injury
• Fire legal liability
• Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

• The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
• Waiver of subrogation in favor of and acceptable to JPA.
• Additional insured endorsement in favor of and acceptable to JPA.
• Separation of insureds.
• The policy shall be primary and non-contributing with respect to any insurance carried by JPA.
It is agreed that the workers’ compensation and employers’ liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to JPA employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this Agreement.

B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least $1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage
- Any and all vehicles owned, used or hired

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to JPA.
- Additional insured endorsement in favor or and acceptable to JPA.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by JPA.

C. Workers Compensation and Employers Liability Insurance. This insurance shall include coverage for, but not limited to:

- Contractor’s statutory liability under the worker’s compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- Employers’ Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to JPA.

Memorandum of Insurance. Memoranda of Insurance shall be filed with the JPA showing the specific limits of insurance coverage required by the preceding sections, and showing the JPA, BNSF, the City of Lincoln, and University of Nebraska as additional insureds for General Liability Insurance and Excess or Umbrella Insurance if used to supplement the General Liability Insurance. Such memorandum shall specifically state that insurance policies have been endorsed to require the Contractor to provide the JPA thirty (30) days notice of reduction in amount, increase in deductibles, or non-renewal of insurance coverage and ten (10) days notice for cancellation for non-payment of premium.
Other Requirements:

All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

Contractor agrees to waive its right of recovery against JPA for all claims and suits against JPA, except for claims and suits arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of JPA. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against JPA for all claims and suits, except for claims and suits arising wholly out of the sole negligence, or to the extent caused by the gross negligence of willful misconduct, of JPA. The certificate of insurance must reflect the waiver of subrogation endorsement. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against JPA for loss of its owned or leased property or property under Contractor’s care, custody or control, except for the right of recovery or right of subrogation arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of JPA.

Contractor is not allowed to self-insure without the prior written consent of JPA. If granted by JPA, any deductible, self-insured retention or other financial responsibility for claims must be covered directly by Contractor in lieu of insurance. Any and all JPA liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by Contractor’s insurance will be covered as if Contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing the Work, Contractor must furnish to JPA acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments. The policy(ies) must contain a provision that obligates the insurance company(ies) issuing such policy(ies) to notify JPA in writing at least 30 days prior to any cancellation, non-renewal, except that only ten (10) days prior notice is required for cancellation due to nonpayment of premium. This cancellation provision must be indicated on the certificate of insurance. Upon request from JPA, a certified duplicate original of any required policy must be furnished. Certificate(s) should be sent to the following address:

City of Lincoln  
c/o Bill Kostner, Risk Manager  
555 South 10th Street  
Lincoln, NE 68508

Any insurance policy must be written by a reputable insurance company reasonably acceptable to JPA or with a current Best’s Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.

Contractor represents that this Agreement has been thoroughly reviewed by Contractor’s insurance agent(s)/broker(s), who have been instructed by Contractor to procure the insurance coverage required by this Agreement. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above.
If any portion of the operation is to be subcontracted by Contractor, Contractor must require that its subcontractors provide and maintain the insurance coverages set forth herein, naming JPA as an additional insured, and requiring that the subcontractors release, defend and indemnify JPA to the same extent and under the same terms and conditions as Contractor is required to release, defend and indemnify JPA herein.

Failure to provide evidence as required by this section will entitle, but not require, JPA to immediately suspend work under this Agreement until such evidence is provided. Acceptance of a certificate that does not comply with this section will not operate as a waiver of Contractor’s obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by Contractor will not be deemed to release or diminish the liability of Contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by JPA will not be limited by the amount of the required insurance coverage.

BNSF Requirements:

Contractor understands and acknowledges that the Insurance requirements of BNSF found in the C&M Agreement and the Contractor’s Right of Entry are in addition to the above obligations of Contractor. Contractor agrees to provide all types of insurance required by either the JPA or BNSF. Contractor will furnish coverages against any and all perils required by either the JPA or BNSF. In the event Contractor discovers a discrepancy in coverage limits, Contractor will provide the larger amount satisfying both JPA and BNSF requirements.

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


2. Exhibit A
   (a) Lincoln Purchasing Supplier Response
   (b) Notice to Proposers
   (c) Instructions to Bidders
   (d) West Haymarket Arena and Garage Special Inspections Request for Proposal
   (e) West Haymarket Arena and Garage Materials Testing and Inspection RFP
   (f) Inspections Required (5 August 2011)
   (g) Insurance Requirements for all West Haymarket Joint Public Agency Contracts
   (h) West Haymarket Arena – Current Schedule (24 July 2011)
   (i) Addendums #1, #2, and #3
   (j) Question List #1 (Updated 09/01/11)
   (k) West Haymarket Arena and Garage Materials Testing and Inspection RFP (Revised 8-31-11)
   (l) Contract Document
This Contract Agreement, together with the other Contract Documents herein above mentioned (whether or not attached), form this Contract, and they are as fully a part of the Contract as if hereto attached or herein repeated.

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

IN WITNESS WHEREOF, the Contractor and JPA do hereby execute this Contract Agreement.

CONTRACTOR: TERRACON CONSULTANTS, INC.

By: ________________________________
Title: ______________________________

- 8 -
By: ____________________________

____________________, Chairperson of the
West Haymarket Joint Public Agency Board
of Representatives
TEMPORARY LICENSE FOR ARENA SHORING AND INITIAL CONSTRUCTION OF FOOTINGS AND COLUMNS

THIS TEMPORARY LICENSE FOR ARENA SHORING AND INITIAL CONSTRUCTION OF FOOTINGS AND COLUMNS ("License") is made to be effective as of the 24th day of June, 2011 ("Effective Date") by and between BNSF RAILWAY COMPANY, a Delaware corporation ("Licensor") and the WEST HAYMARKET JOINT PUBLIC AGENCY, a political subdivision of the State of Nebraska created by the Nebraska Joint Public Agency Act, Neb. Rev. Stat. § 13-2501 et seq. ("Licensee").

NOW THEREFORE, in consideration of the mutual covenants contained herein, the parties agree to the following:

1. GENERAL.

1.1 Licensor hereby grants Licensee a temporary non-exclusive license, subject to all rights, interests, and estates of third parties, including, without limitation, any leases, licenses, easements, liens or other encumbrances, and upon the terms and conditions set forth below, to use those two (2) areas of Licensor's property shown in red and described as "Right of Entry for Arena Shoring and Initial Construction for Footings and Columns" on the print prepared by Olsson Associates, dated 5/4/2011, labeled "Right of Entry for Initial Arena Construction and Electrical Service", which print is attached hereto and incorporated herein by reference as Exhibit A, situated at or near Lincoln, County of Lancaster, State of Nebraska, Line Segment 2, Mile Post 59.17 to 60.0 (collectively, the "Premises") for the purposes specified in Section 1.3 below (the "Permitted Uses").

1.2 In the event the Permitted Uses will affect any improvements or facilities of Licensor or Licensor's existing lessees, licensees, easement beneficiaries, or lien holders (collectively "Other Improvements"), if any, or interfere with the use of the Other Improvements, Licensee will be responsible at Licensee's sole risk to locate and make any adjustments necessary to such Other Improvements. Licensee must contact the owner(s) of the Other Improvements notifying them of any work that may damage and/or interfere with the Other Improvements and obtain the owner's written approval prior to initiating any of the Permitted Uses.

1.3 Licensee shall use the Premises exclusively as a site for: (i) ingress and egress, (ii) site preparation approved by Licensor in writing in advance, and (iii) initial construction of certain sub-grade, at-grade and above-grade footings and columns, including but not limited to related shoring and other falsework, approved by Licensor in writing in advance (collectively, the "Advance Construction"). Licensee shall not use the Premises for any other purpose whatsoever. Licensee shall not use or store hazardous substances, as defined by the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA") or petroleum or oil as defined by applicable Environmental Laws on the Premises.

1.4 Licensor and Licensee mutually agree that no construction activities for the Permitted Uses, nor future maintenance of any improvements which have a reasonable likelihood to delay train traffic on Licensor's main lines, will be permitted during the fourth quarter of each calendar year. Emergency work will be permitted only upon prior notification to Licensor's Network Operations Center (telephone number: 800 832-5452). Licensor and Licensee mutually understand and agree that trains cannot be subjected to delay during this time period.
1.5 In case of the eviction of Licensee by anyone owning or claiming title to or any interest in the Premises, Licensor shall not be liable to refund Licensee any compensation paid hereunder or for any damage Licensee sustains in connection therewith.

1.6 Any contractors or subcontractors performing work on the Premises, or entering the Premises on behalf of Licensee shall be deemed servants and agents of Licensee for purposes of this License.

2. TERM. This License shall commence on the Effective Date and, subject to prior termination as hereinafter described, shall continue until completion of the Permitted Uses, but in no event later than the date that is the earliest to occur of: (i) the end of the Development Period (as defined in the Master Agreement), or (ii) December 31, 2014.

3. COMPENSATION.

3.1 Licensee shall pay Licensor, prior to the Effective Date, the sum of No Dollars ($0) as compensation for the use of the Premises.

3.2 Subject to the provisions of the C&M Agreement (as defined below) concerning Licensee's reimbursement of costs and expenses, including without limitation flagging costs, incurred by Licensor in connection with Licensee's use of the Premises, Licensee agrees to reimburse Licensor (within thirty (30) days after receipt of bills therefor) for all other costs and expenses incurred by Licensor in connection with Licensee's use of the Premises. All invoices are due thirty (30) days after the date of invoice. In the event that Licensee shall fail to pay any monies due to Licensor within thirty (30) days after the invoice date, then Licensee shall pay interest on such unpaid sum from thirty (30) days after its invoice date to the date of payment by Licensee at an annual rate equal to (i) the greater of (a) for the period January 1 through June 30, the prime rate last published in *The Wall Street Journal* in the preceding December plus two and one-half percent (2 1/2%), and for the period July 1 through December 31, the prime rate last published in *The Wall Street Journal* in the preceding June plus two and one-half percent (2 1/2%), or (b) twelve percent (12%), or (ii) the maximum rate permitted by law, whichever is less.

4. COMPLIANCE WITH LEGAL REQUIREMENTS AND LICENSOR REQUIREMENTS.

4.1 Licensee shall observe and comply with any and all laws, statutes, regulations, ordinances, orders, covenants, restrictions, or decisions of any court of competent jurisdiction ("Legal Requirements") relating to the use of the Premises.

4.2 Prior to entering the Premises, Licensee shall and shall cause its contractor to comply with all of Licensor's applicable safety rules and regulations. Prior to commencing any work on the Premises, Licensee shall complete and shall require its contractor to complete the safety training program at the Website "http://contractororientation.com". This program must be completed no more than one year in advance of Licensee's entry on the Premises.

4.3 Licensee shall, at all times, comply with all provisions contained in that certain Construction and Maintenance Agreement between Licensor and Licensee dated October 18, 2010 (the "C&M Agreement"). In the event of conflicts between the terms of this License and the C&M Agreement, the most restrictive provisions shall apply to Licensee.

5. DEFINITION OF COST AND EXPENSE. For the purpose of this License, "cost" or "costs" "expense" or "expenses" includes, but is not limited to, actual labor and material costs including all assignable additives, and material and supply costs at current value where used.
6. **RIGHT OF LICENSOR TO USE.** Licensor excepts and reserves the right, to be exercised by Licensor and any other parties who may obtain written permission or authority from Licensor:

6.1 to maintain, renew, use, operate, change, modify and relocate any existing pipe, power, communication lines and appurtenances and other facilities or structures of like character upon, over, under or across the Premises;

6.2 to construct, maintain, renew, use, operate, change, modify and relocate any tracks or additional facilities or structures upon, over, under or across the Premises; or

6.3 to use the Premises in any manner as Licensor in its sole discretion deems appropriate, provided Licensor uses all commercially reasonable efforts to avoid material interference with the use of the Premises by Licensee for the Permitted Uses.

7. **LICENSEE'S OPERATIONS.**

7.1 Licensee shall notify Licensor's Project Engineer, Gerald Maczuga, at 201 N. 7th Street, Lincoln, NE 68508, telephone (402) 458-7537, at least ten (10) business days prior to initially entering the Premises and prior to entering the Premises for any subsequent maintenance thereon (if applicable). After completion of use of the Premises for the Permitted Uses, Licensee shall notify Licensor in writing that such use has been completed.

7.2 In performing the Permitted Uses, Licensee shall use only public roadways to cross from one side of Licensor's tracks to the other. In the event Licensee must cross from one side of Licensor's tracks to the other at a location or locations other than a public roadway, and such location or locations are approved by Licensor in advance, then Licensee shall enter into Licensor's Agreement for Private Crossing for each such private crossing location, each such Agreement for Private Crossing to be in the form attached to the Master Agreement (defined below) as Exhibit UU.

7.3 Under no conditions shall Licensee be permitted to conduct any tests, investigations or any other activity using mechanized equipment and/or machinery, or place or store any mechanized equipment, tools or other materials, within twenty-five (25) feet of the centerline of any railroad track on the Premises unless Licensee has obtained prior written approval from Licensor. Licensee shall, at its sole cost and expense, perform all activities on and about the Premises in such a manner as not at any time to be a source of danger to or interference with the existence or use of present or future tracks, roadbed or property of Licensor, or the safe operation and activities of Licensor. If ordered to stop using the Premises at any time by Licensor's personnel due to any hazardous condition, Licensee shall immediately do so. Notwithstanding the foregoing right of Licensor, the parties agree that Licensor has no duty or obligation to monitor Licensee's use of the Premises to determine the safe nature thereof, it being solely Licensee's responsibility to ensure that Licensee's use of the Premises is safe. Neither the exercise nor the failure by Licensor to exercise any rights granted in this Section will alter the liability allocation provided by this License.

7.4 Licensee shall, at its sole cost and expense and subject to the supervision of Licensor's Roadmaster, complete the Advance Construction in such a manner that it will not at any time be a source of danger to or interference with the present or future tracks, roadbed and property of Licensor, or the safe operation of Licensor's railroad. If at any time Licensee shall, in the judgment of Licensor, fail to perform properly its obligations under this Section 7.4, Licensor may, at its option, itself perform such work as it deems necessary for the safe operation of its railroad, and in such event Licensee agrees to pay, within fifteen (15) days after bill shall have been rendered therefor, the cost so incurred by Licensor, but failure on the part of Licensor to
perform the obligations of Licensee shall not release Licensee from liability hereunder for loss or
damage occasioned thereby.

7.5 During the completion of the Advance Construction, Licensee shall perform such
work in a manner to preclude damage to the property of Licensor, and preclude interference with
the operation of its railroad. The Advance Construction shall be completed within one (1) year of
the Effective Date.

7.6 If at any time during the term of this License, Licensor shall desire the use of its rail
corridor in such a manner as would, in Licensor's reasonable opinion, be interfered with by the
Advance Construction, Licensee shall, at its sole expense, within thirty (30) days after receiving
written notice from Licensor to such effect, make such changes in the Advance Construction as in
the sole discretion of Licensor may be necessary to avoid interference with the proposed use of
Licensor's rail corridor.

7.7 Prior to Licensee conducting any excavating or boring work on or about any portion
of the Premises, Licensee shall explore the proposed location for such work with hand tools to a
depth of at least three (3) feet below the surface of the ground to determine whether pipelines or
other structures exist below the surface, provided, however, that in lieu of the foregoing, Licensee
shall have the right to use suitable detection equipment or other generally accepted industry
practice (e.g., consulting with the Underground Services Association) to determine the existence or
location of pipelines and other subsurface structures prior to drilling or excavating with mechanized
equipment. Upon Licensee's written request, which shall be made thirty (30) business days in
advance of Licensee's requested entry on the Premises, Licensor will provide Licensee any
information that Licensor's Engineering Department has in its possession concerning the existence
and approximate location of Licensor's underground utilities and pipelines on the Premises. Prior
to conducting any such boring work, Licensee will review all such material. Licensor does not
warrant the accuracy or completeness of information relating to subsurface conditions and
Licensee's operations will be subject at all times to the liability provisions herein.

7.8 For all bores greater than 26-inch diameter and at a depth less than 10.0 feet below
bottom of rail, a soil investigation will need to be performed by Licensee and reviewed by Licensor
prior to construction. This study is to determine if granular material is present, and to prevent
subsidence during the installation process. If the investigation determines in Licensor's reasonable opinion that granular material is present, Licensor may select a new location for Licensee's use, or may require Licensee to furnish for Licensor's review and approval, in its sole
discretion a remedial plan to deal with the granular material. Once Licensor has approved any
such remedial plan in writing, Licensee shall, at its sole cost and expense, carry out the approved
plan in accordance with all terms thereof and hereof.

7.9 Any open hole, boring or well constructed upon Premises by Licensee shall be
safely covered and secured at all times when Licensee is not working in the actual vicinity thereof.
Following completion of that portion of the work, all holes or borings constructed on the Premises
by Licensee shall be:

7.9.1 filled in to surrounding ground level with compacted bentonite grout; or

7.9.2 otherwise secured or retired in accordance with any applicable Legal Requirement.
No excavated materials may remain on the Premises for more than ten (10) days,
but must be properly disposed of by Licensee in accordance with applicable Legal
Requirements.
7.10 Upon completion of Licensee's work on the Premises or upon termination of this License, whichever shall occur first, Licensee shall, at its sole cost and expense:

7.10.1 remove all of its equipment from the Premises;

7.10.2 report and restore any damage to the Premises arising from, growing out of, or connected with Licensee's use of the Premises;

7.10.3 remedy any unsafe conditions on the Premises created or aggravated by Licensee; and

7.10.4 leave the Premises in the condition which existed as of the Effective Date.

7.11 Licensee's on-site supervisors shall retain/maintain a fully-executed copy of this License at all times while on the Premises.

8. LIABILITY. During the term of this License, Licensee shall comply with all provisions contained in Sections 3.6 and 3.7 of the C&M Agreement, and all such provisions contained in Sections 3.6 and 3.7 of the C&M Agreement are hereby incorporated herein by reference.

9. PERSONAL PROPERTY WAIVER. ALL PERSONAL PROPERTY, INCLUDING, BUT NOT LIMITED TO, FIXTURES, EQUIPMENT, OR RELATED MATERIALS UPON THE PREMISES WILL BE AT THE RISK OF LICENSEE ONLY, AND LICENSOR WILL NOT BE LIABLE FOR ANY DAMAGE THERETO OR THEFT THEREOF, WHETHER OR NOT DUE IN WHOLE OR IN PART TO THE NEGLIGENCE OF LICENSOR.

10. INSURANCE. During the term of this License, Licensee shall comply with all provisions contained in Section 3.8 of the C&M Agreement, and all such provisions contained in Section 3.8 of the C&M Agreement are hereby incorporated herein by reference; provided, however, if any portion of the operation is to be subcontracted by Licensee, Licensee must require that Licensee's contractors provide and maintain the insurance coverages set forth in the C&M Agreement, naming Licensor as an additional insured; provided further, however, that policy limits for Commercial General Liability Insurance may be reduced to $2,000,000 per occurrence and an aggregate limit of $4,000,000, but in no event less than the amount otherwise carried by Licensee's contractors. In addition, Licensee must require that Licensee's contractors release, defend and indemnify Licensor to the same extent and under the same terms and conditions as Licensee is required to release, defend and indemnify Licensor in the C&M Agreement.

11. ENVIRONMENTAL.

11.1 Licensee shall strictly comply with all federal, state and local environmental laws and regulations in its use of the Premises, including, but not limited to, the Resource Conservation and Recovery Act, as amended (RCRA), the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA (collectively, the "Environmental Laws"). Licensee shall not maintain a treatment, storage, transfer or disposal facility, or underground storage tank, as defined by Environmental Laws on the Premises. Licensee shall not release or suffer the release of oil or hazardous substances, as defined by Environmental Laws on or about the Premises.

11.2 Licensee shall give Licensor immediate notice to Licensor's Resource Operations Center at (800) 832-5452 of any release of hazardous substances on or from the Premises, violation of Environmental Laws, or inspection or inquiry by governmental authorities charged with enforcing Environmental Laws with respect to Licensee's use of the Premises. Licensee shall use the best efforts to promptly respond to any release on or from the Premises. Licensee also shall
give Licensor immediate notice of all measures undertaken on behalf of Licensee to investigate, remediate, respond to or otherwise cure such release or violation.

11.3 In the event that Licensor has notice from Licensee or otherwise of a release or violation of Environmental Laws arising in any way with respect to the Advance Construction which occurred or may occur during the term of this License, Licensor may require Licensee, at Licensee's sole risk and expense, to take timely measures to investigate, remediate, respond to or otherwise cure such release or violation affecting the Premises or Licensor's right-of-way.

11.4 Licensee shall promptly report to Licensor in writing any conditions or activities upon the Premises known to Licensee which create a risk of harm to persons, property or the environment and shall take whatever action is necessary to prevent injury to persons or property arising out of such conditions or activities; provided, however, that Licensee's reporting to Licensor shall not relieve Licensee of any obligation whatsoever imposed on it by this License. Licensee shall promptly respond to Licensor's request for information regarding said conditions or activities.

12. **ALTERATIONS.** Licensee may not make any alterations of the Premises or permanently affix anything to the Premises or any buildings or other structures adjacent to the Premises without Licensor's prior written consent.

13. **NO WARRANTIES.** LICENSOR'S DUTIES AND WARRANTIES ARE LIMITED TO THOSE EXPRESSLY STATED IN THIS LICENSE AND SHALL NOT INCLUDE ANY IMPLIED DUTIES OR IMPLIED WARRANTIES, NOW OR IN THE FUTURE. NO REPRESENTATIONS OR WARRANTIES HAVE BEEN MADE BY LICENSOR OTHER THAN THOSE CONTAINED IN THIS LICENSE. LICENSEE HEREBY WAIVES ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE PREMISES OR WHICH MAY EXIST BY OPERATION OF LAW OR IN EQUITY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, HABITABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

14. **QUIET ENJOYMENT.** LICENSOR DOES NOT WARRANT ITS TITLE TO THE PROPERTY NOR UNDERTAKE TO DEFEND LICENSEE IN THE PEACEABLE POSSESSION OR USE THEREOF. NO COVENANT OF QUIET ENJOYMENT IS MADE.

15. **DEFAULT.** If default shall be made in any of the covenants or agreements of Licensee contained in this License, Licensor may pursue any and all remedies set forth in Section 24 of the Master Agreement. The remedy set forth in this Section 15 shall be in addition to, and not in limitation of, any other remedies that Licensor may have at law or in equity.

16. **LIENS.** Licensee shall promptly pay and discharge any and all liens arising out of any construction, alterations or repairs done, suffered or permitted to be done by Licensee on the Premises. Licensor is hereby authorized to post any notices or take any other action upon or with respect to the Premises that is or may be permitted by law to prevent the attachment of any such liens to the Premises; provided, however, that failure of Licensor to take any such action shall not relieve Licensee of any obligation or liability under this Section 16 or any other Section of this License.

17. **TERMINATION.** If Licensee fails to surrender to Licensor the Premises, upon any termination of this License, all liabilities and obligations of Licensee hereunder shall continue in effect until the Premises are surrendered. Termination shall not release Licensee from any liability or obligation, whether of indemnity or otherwise, resulting from any events happening prior to the date of termination.
18. **ASSIGNMENT.** Neither Licensee, nor the heirs, legal representatives, successors or assigns of Licensee, nor any subsequent assignee, shall assign, transfer, sell, or hypothecate this License or any interest herein (either voluntarily or by operation of law), without the prior written consent and approval of Licensor, which may be withheld in Licensor's sole discretion.

19. **NOTICES.** Any notice required or permitted to be given hereunder by one party to the other shall be in writing and the same shall be given and shall be deemed to have been served and given if (i) placed in the United States mail, certified, return receipt requested, or (ii) deposited into the custody of a nationally recognized overnight delivery service, addressed to the party to be notified at the address for such party specified below, or to such other address as the party to be notified may designate by giving the other party no less than thirty (30) days' advance written notice of such change in address.

If to Licensor:  
Jones Lang LaSalle Global Services - RR, Inc.  
3017 Lou Menk Drive, Suite 100  
Fort Worth, TX 76131  
Attn: Licenses/Permits

with a copy to:  
BNSF Railway Company  
2500 Lou Menk Dr. – AOB3  
Fort Worth, TX 76131  
Attn: Senior Manager Real Estate

If to Licensee:  
West Haymarket Joint Public Agency  
c/o City of Lincoln, Nebraska  
555 South 10th Street  
Lincoln, NE 68508  
Attn: City Attorney

20. **SURVIVAL.** Neither termination nor expiration will release either party from any liability or obligation under this License, whether of indemnity or otherwise, resulting from any acts, omissions or events happening prior to the date of termination or expiration, or, if later, the date when the Premises are restored to its condition as of the Effective Date.

21. **RECORDATION.** It is understood and agreed that this License shall not be filed of record with the Lancaster County, Nebraska Register of Deeds Office or otherwise recorded in the official records of Lancaster County, Nebraska.

22. **APPLICABLE LAW.** All questions concerning the interpretation or application of provisions of this License shall be decided according to the substantive laws of the State of Nebraska without regard to conflicts of law provisions.

23. **VENUE.** To the fullest extent permitted by law any dispute arising under or in connection with this License or related to any subject matter which is the subject of this License shall be subject to the sole and exclusive jurisdiction of the United States District Court for the District of Nebraska. The aforementioned choice of venue is intended by Licensor and Licensee to be mandatory and not permissive. Licensor and Licensee each hereby irrevocably consents to the jurisdiction of the United States District Court for the District of Nebraska in any such dispute and irrevocably waives, to the fullest extent permitted by law, any objection that it may now have or hereafter have to the laying of venue in such court and that any such dispute which is brought in such court has been brought in an inconvenient forum.
24. **SEVERABILITY.** To the maximum extent possible, each provision of this License shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this License shall be prohibited by, or held to be invalid under, applicable law, such provision shall be ineffective solely to the extent of such prohibition or invalidity, and this shall not invalidate the remainder of such provision or any other provision of this License.

25. **INTEGRATION.** This License is the full and complete agreement between Licensor and Licensee with respect to all matters relating to Licensee's use of the Premises, and supersedes any and all other agreements between the parties hereto relating to Licensee's use of the Premises as described herein. However, nothing herein is intended to terminate any surviving obligation of Licensee or Licensee's obligation to defend and hold Licensor harmless in any prior written agreement between the parties.

26. **MISCELLANEOUS.**

   26.1 In the event that Licensee consists of two or more parties, all the covenants and agreements of Licensee herein contained shall be the joint and several covenants and agreements of such parties.

   26.2 The waiver by Licensor of the breach of any provision herein by Licensee shall in no way impair the right of Licensor to enforce that provision for any subsequent breach thereof.

   26.3 All provisions contained in this License shall be binding upon, inure to the benefit of, and be enforceable by the respective successors and assigns of Licensor and Licensee to the same extent as if each such successor and assign was named a party to this License.

[Signature page follows]
IN WITNESS WHEREOF, this License has been duly executed by the parties as of the date below each party's signature; to be effective, however, as of the Effective Date above.

**LICENSOR:**

BNSF Railway Company, a Delaware corporation

By: ____________________________
Name: David P. Schneider
Title: General Director - Land Revenue Management
Date: ____________________________

**LICENSEE:**

West Haymarket Joint Public Agency, a political subdivision of the State of Nebraska

By: ____________________________
Name: Jayne Snyder
Title: Chairperson
Date: ____________________________
Mr. Rick Peo  
City of Lincoln  
555 South 10th Street, Suite 100  
Lincoln, NE 68508

Dear Rick:

RE: Executed originals for the Temporary License for Partial Removal of Platform & Canopy and Temporary License for Arena Shoring & Initial Construction of Footings & Columns

Attached for your records are one original of each of the 2 temporary licenses listed above. I received your originals July 6.

Please call me if you have any questions. Jones Lang LaSalle Americas, Inc. is acting as property manager for the BNSF Railway Company.

Sincerely,

Don J. Bratton  
Senior Transaction Manager – BNSF Account
IN WITNESS WHEREOF, this License has been duly executed by the parties as of the date below each party's signature; to be effective, however, as of the Effective Date above.

LICENSOR:

BNSF Railway Company, a Delaware corporation

By: ____________________________
Name: ____________________________
Title: ____________________________
Date: ____________________________

LICENSEE:

West Haymarket Joint Public Agency, a political subdivision of the State of Nebraska

By: ____________________________
Name: Jayne Snyder
Title: Chairperson
Date: June 24, 2011
IN WITNESS WHEREOF, this License has been duly executed by the parties as of the date below each party's signature; to be effective, however, as of the Effective Date above.

LICENSOR:

BNSF Railway Company, a Delaware corporation

By: ____________________________
Name: ____________________________
Title: ____________________________
Date: ____________________________

LICENSEE:

West Haymarket Joint Public Agency, a political subdivision of the State of Nebraska

By: ____________________________
Name: Jayne Snyder
Title: Chairperson
Date: June 24, 2014
CONSTRUCTION AND MAINTENANCE AGREEMENT

THIS CONSTRUCTION AND MAINTENANCE AGREEMENT ("C&M Agreement") is made to be effective the _____ day of October, 2010 ("Effective Date"), by and between BNSF RAILWAY COMPANY, a Delaware corporation ("BNSF"), and the CITY OF LINCOLN, NEBRASKA, a Nebraska municipal corporation ("City"). City and BNSF, respectively, are sometimes referred to in this C&M Agreement each as a "Party" and collectively, as the "Parties".

RECITALS

A. BNSF owns and operates a line of railroad in and through the City of Lincoln, State of Nebraska.

B. In an effort to strengthen the long-term economic and physical viability of the West Haymarket District and Downtown Lincoln, City plans to construct entertainment, recreation, lodging, offices, retail and/or other complementary and/or supporting facilities (collectively, the "West Haymarket Project") in the area shown on the map attached hereto as Exhibit A and incorporated herein by reference ("Project Area"). The West Haymarket Project will include, among other things, an approximately 16,000-seat arena (the "Arena"), an ice center facility (the "Ice Center"), a district energy facility, and upgrades to parking, utilities, and surface transportation access to the area.

C. City and BNSF have entered into that certain Master Development Agreement of even date herewith (the "Master Agreement"). In connection with certain economic development objectives of City as set forth in the Master Agreement, City desires that BNSF grant certain permanent or temporary license and/or easement rights to City and certain third parties (each a "Right of Entry" and, in multiples, "Rights of Entry") for certain activities on BNSF's Property (defined below) (each a "Right of Entry Work" and collectively, "Rights of Entry Work"). For the purposes of this C&M Agreement, the term "BNSF's Property" shall mean the applicable Existing BNSF Property, Retained BNSF Property, and/or Replacement BNSF Property which is under BNSF ownership at the time work is done under the Right of Entry. All capitalized terms not defined herein shall have the same meaning as in the Master Agreement.

AGREEMENTS

NOW, THEREFORE, in consideration of the mutual covenants and agreements of the Parties contained herein, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

ARTICLE I – CITY C&M WORK.

The provisions of this C&M Agreement, in addition to and not in limitation of the provisions contained in the applicable Rights of Entry, shall apply with respect to the Rights of Entry Work and any other construction, maintenance, Operation (as defined in the Master Agreement), or other work being performed on or adjacent to BNSF property by or for City (collectively, the "City C&M Work"). In the event of conflicts between the terms of this C&M Agreement and any applicable Right of Entry agreement, the most restrictive provisions shall apply to City.

ARTICLE II – BNSF OBLIGATIONS.

In consideration of the covenants of City set forth herein and the faithful performance thereof, BNSF agrees to do the following:

2.1 Grant to City the following temporary Rights of Entry in accordance with and as described in Section 3.2 of the Master Agreement:

2.1.1 The Temporary Access License for Initial Construction as defined and described in Section 3.2.1 of the Master Agreement and attached thereto as Exhibit EE:
2.1.2 The Temporary Grading License for Storm Water Mitigation as defined and described in Section 3.2.2(a) of the Master Agreement and attached thereto as Exhibit FF-1;

2.1.3 The Temporary Access License for Soil Staging as defined and described in Section 3.2.3 of the Master Agreement and attached thereto as Exhibit GG;

2.1.4 The Temporary Access License for Construction Staging - Pedestrian Bridge as defined and described in Section 3.2.4(a) of the Master Agreement and attached thereto as Exhibit HH-1;

2.1.5 The Temporary Access License for Amtrak Work as defined and described in Section 3.2.5 of the Master Agreement and attached thereto as Exhibit II;

2.1.6 The Temporary Grading License for Arena Drive and Parking Lot Construction as defined and described in Section 3.2.9 of the Master Agreement and attached thereto as Exhibit KK;

2.1.7 The Temporary Access License for Survey / Geotech / Environmental Activities as defined and described in Section 3.2.11(a) of the Master Agreement and attached thereto as Exhibit BB;

2.1.8 The Crossing Agreements as defined and described in Section 3.2.12 of the Master Agreement and attached thereto as Exhibit UU.

2.1.9 The Temporary Construction and Access License for Sanitary Sewer Work as defined and described in Section 3.2.11(b) of the Master Agreement and attached thereto as Exhibit BB-1.

2.2 Grant to City the following permanent Rights of Entry in accordance with and as described in Section 3.2 of the Master Agreement:

2.2.1 The Storm Water Mitigation Easement as defined and described in Section 3.2.2(b) of the Master Agreement and attached thereto as Exhibit FF;

2.2.2 The Pedestrian Bridge Easement as defined and described in Section 3.2.4(b) of the Master Agreement and attached thereto as Exhibit HH; and

2.2.3 The City Utility Easements as defined and described in Section 3.2.7 of the Master Agreement and attached thereto as Exhibit TT and Exhibit TT-1.

2.2.4 The 2nd & J Utility Easement as defined and described in Section 3.2.10 of the Master Agreement and attached thereto as Exhibit TT.

2.3 Grant to City the Security Fencing License in accordance with and as defined and described in Section 3.2.8 of the Master Agreement and attached thereto as Exhibit JJ.

ARTICLE III – CITY OBLIGATIONS

3.1 Plans.

3.1.1 If any City C&M Work is not included in the City Work Final Design (as defined in the Master Agreement), City must furnish to BNSF four sets of plans and specifications for such City C&M Work (reduced size 11” x 17”), together with two copies of calculations, and two copies of specifications in English Units, for approval prior to commencement of any construction. For each set of such plans and specifications submitted by City to BNSF, BNSF shall approve or reject such plans and specifications within thirty (30) days after BNSF’s receipt thereof and, if rejected, the reasons for such rejection shall be set forth in reasonable detail. Corrected plans and specifications shall be approved or rejected in the manner hereinbefore provided. BNSF will give City final written approval of the plans and specifications substantially in the form of Exhibit B, attached hereto and incorporated herein by reference. Upon BNSF’s final written approval of the plans and specifications (the “Approved Plans”), the Approved Plans will
become part of this C&M Agreement and incorporated herein. Any approval of the Approved Plans by BNSF shall in no way obligate BNSF in any manner with respect to the finished product design and/or construction. Any approval by BNSF shall mean only that the Approved Plans meet the subjective standards of BNSF, and such approval by BNSF shall not be deemed to mean that the Approved Plans or construction is structurally sound and appropriate or that the Approved Plans meet applicable regulations, laws, statutes or local ordinances and/or building codes.

3.1.2 City must provide for and maintain minimum vertical and horizontal clearances, as required in the Contractor Requirements in Exhibit C, attached hereto and incorporated herein by reference, and as approved by BNSF as part of the City Work Final Design or any other Approved Plans.

3.1.3 Prior to the start of any segment of City C&M Work on or affecting BNSF’s property, City must provide to BNSF, and BNSF must approve, exact minimum vertical and horizontal clearances for such segment of City C&M Work being constructed pursuant to the City Work Final Design. Upon BNSF’s approval of each segment of City C&M Work, BNSF and City agree to execute an amendment to this C&M Agreement incorporating the approved clearances into this C&M Agreement as Exhibit D (“Final Clearances”). City shall not deviate from the Final Clearances for the applicable segment of City C&M Work without the prior written approval of BNSF.

3.1.4 City or its contractor(s) must submit four (4) copies of any plans (including two sets of calculations in English Units) for proposed shoring, falsework or cribbing to be used over, under, or adjacent to BNSF’s tracks to BNSF’s Project Engineer (defined below) for approval. The shoring, falsework or cribbing used by City Contractors (defined below) shall comply with all applicable requirements promulgated by state and federal agencies, departments, commissions and other legislative bodies.

3.1.5 (a) For purposes of notices required under this C&M to be made to BNSF’s Project Engineer, Division Engineer, Manager Signal, and Director Engineering Services, the following contact information is in effect at the Effective Date:

(i) BNSF’s "Project Engineer" is:

Gerald Maczuga
Gerald.Maczuga@BNSF.com
402-458-7537 (office)
206-265-2427 (cell)
402-458-4376 (fax)

(ii) BNSF’s "Division Engineer" is:

Andrew Shearer
Andrew.Shearer@BNSF.com
402-458-7724 (office)

(iii) BNSF’s "Manager Signal" is:

Mike Koetter
Michael.Koetter@BNSF.com
402-458-7504 (office)
402-458-7590 (fax)

(iv) BNSF’s "Director Engineering Services" is:

Tom Schmidt
Thomas.Schmidt@BNSF.com
913-551-4330 (office)
(b) The contact information in Section 3.1.5(a) may be changed from time to time in accordance with the notice provisions of Section 4.6 below.

3.2 Additional City Requirements.

3.2.1 City must supervise and inspect the operations of all City Contractors to assure compliance with the City Work Final Design and all other Approved Plans, the terms of this C&M Agreement and all communicated and applicable safety requirements of BNSF.

3.2.2 City must make any required applications and obtain all required permits and approvals for the City C&M Work.

3.2.3 City must acquire all rights of way necessary for the City C&M Work.

3.2.4 City must furnish all labor, materials, tools and equipment for the performance of the City C&M Work.

3.2.5 City must advise BNSF’s Project Engineer in writing of: (i) the completion date of each Right of Entry Work within thirty (30) days after each such completion date and (ii) the date on which City and/or City Contractor will meet with BNSF for the purpose of making final inspection of each Right of Entry Work.

3.2.6 City must notify and obtain prior authorization from BNSF’s Project Engineer before entering BNSF’s right-of-way for inspection, construction, maintenance, or any other purposes. Prior to performing any inspection, construction or maintenance with its own personnel, City shall: comply with all of BNSF’s communicated and applicable safety rules and regulations; require any City employee performing maintenance to complete the safety training program at the Website "contractororientation.com"; notify BNSF when, pursuant to the requirements of Exhibit C or Section 3.3.6 below, flaggers are required to be present; and procure, and have approved by BNSF’s Risk Management Department, Railroad Protective Liability insurance.

3.2.7 City agrees to reimburse BNSF for work of an emergency nature caused by City or City Contractors in connection with the City C&M Work which BNSF deems is reasonably necessary for the immediate restoration of railroad operations, or for the protection of persons or BNSF property. Such emergency work may be performed by BNSF without prior approval of City and City agrees to fully reimburse BNSF for all such work.

3.2.8 The City C&M Work must be performed by City or City Contractors in a manner that will not endanger or interfere with the safe and timely operations of BNSF and its facilities.

3.2.9 City must include the following provisions in any contract with City Contractors:

3.2.9.1 City Contractor is placed on notice that fiber optic, communication and other cable lines and systems (collectively, the “Lines”) owned by various telecommunications companies may be buried on BNSF’s property or right-of-way. The locations of these Lines have been included on the plans based on information from the telecommunications companies. City Contractor will be responsible for contacting BNSF’s Project Engineer, BNSF’s Manager Signal, and the telecommunications companies and notifying them of any work that may damage these Lines or facilities and/or interfere with their service. City Contractor must also mark all Lines shown on the plans or marked in the field in order to verify their locations. City Contractor must also use all reasonable methods when working in the BNSF right-of-way or on BNSF property to determine if any other Lines (fiber optic, cable, communication or otherwise) may exist.
3.2.9.2 City Contractor will be responsible for the rearrangement of any facilities or Lines determined to interfere with the City C&M Work. City Contractor must cooperate fully with any telecommunications company(ies) in performing such rearrangements.

3.2.9.3 Failure to mark or identify these Lines will be sufficient cause for BNSF's Project Engineer to stop all or any part of the City C&M Work at no cost to City or BNSF until these items are completed.

3.2.9.4 All City C&M Work performed within the limits of BNSF's right-of-way must be performed in a good and workmanlike manner in accordance with plans and specifications approved by BNSF.

3.2.9.5 Changes or modifications during the City C&M Work that affect safety or BNSF operations must be subject to BNSF's approval.

3.2.9.6 No work will be commenced within BNSF's right-of-way until each of the prime contractors employed in connection with the City C&M Work have (i) executed and delivered to BNSF a letter agreement in the form of Exhibit C-1(A) attached hereto and incorporated herein by reference, and (ii) delivered to and secured BNSF's approval of the required insurance.

3.2.9.7 Notwithstanding the provisions of Section 3.2.9.6 above, solely for the temporary Rights of Entry described in Sections 2.1.1, 2.1.3, 2.1.4, and 2.1.5 above, no work will be commenced within BNSF's right-of-way until each of the prime contractors employed in connection with the City C&M Work under the referenced temporary Rights of Entry have (i) executed and delivered to BNSF a letter agreement in the form of Exhibit C-1(B) attached hereto and incorporated herein by reference, and (ii) delivered to and secured BNSF's approval of the required insurance.

3.2.9.8 To facilitate scheduling for the City C&M Work, City Contractors shall give BNSF's Project Engineer eight (8) weeks' advance notice of the proposed times and dates for work windows, except in case of emergency, in which event City Contractors must notify BNSF's Project Engineer by telephone at (402) 458-7537 as soon as practicable and shall promptly thereafter follow up with written notice to BNSF's Project Engineer at City Contractor's earliest opportunity. Notwithstanding the foregoing, in no event shall City or any City Contractors enter onto BNSF's property prior to receiving written approval for such entry from BNSF's Project Engineer. BNSF and the City Contractors will establish mutually agreeable work windows for the City C&M Work. BNSF has the right at any time to revise or change the work windows, due to train operations or service obligations. BNSF will not be responsible for any additional costs and expenses resulting from a change in work windows. Additional costs and expenses resulting from a change in work windows shall be accounted for in the contractor's expenses for the City C&M Work.

3.3 Construction and Contractor Requirements.

3.3.1 Contractor Requirements. For the City C&M Work, City must comply, and cause all of its contractors (each a "City Contractor", and collectively the "City Contractors") to comply, with the obligations set forth in Exhibit C attached hereto and incorporated herein by reference, and cause all City Contractor(s) for such work to execute and deliver a Contractor Right of Entry ("CROE") in the form of Exhibit C-1(A) or Exhibit C-1(B), as applicable. In addition, all City C&M Work must comply with all of the following requirements:

3.3.2 Standards. All City C&M Work must performed (i) in a good and workmanlike manner, (ii) in accordance with the applicable City Work Final Design or other Approved Plans, (iii) in conformance with applicable building codes and all applicable engineering, safety and any and all laws, statutes, regulations, ordinances, orders, covenants, restrictions, or decisions of any court of competent jurisdiction ("Legal Requirements"), (iv) in accordance with the accepted industry standards of care, skill and diligence, and (v) in such a manner as shall not adversely affect the structural integrity or maintenance of any BNSF improvements or other improvements on or near BNSF property, or any lateral support of any structures adjacent to or in the proximity of any BNSF improvements or BNSF property. In addition, each
portion of the City C&M Work must be promptly commenced by the Party obligated hereunder to perform the same and thereafter diligently prosecuted to conclusion in its logical order and sequence. Furthermore, any changes or modifications of the City C&M Work which affect BNSF will be subject to BNSF’s written approval prior to the commencement of any such changes or modifications from BNSF’s Project Engineer.

3.3.3 Site Cleanup and Restoration. City shall be responsible for all job site cleanup and restoration, including removal of all construction materials, concrete debris, surplus soil, refuse, contaminated soils, asphalt debris, litter and other waste materials resulting from the City C&M Work to the reasonable satisfaction of BNSF’s Division Engineer.

3.3.4 Safety/Security.

3.3.4.1 During the City C&M Work, City, at City's sole cost, shall perform all activities and work in such a manner as to preclude personal injury or property damage to BNSF or any other party, and shall ensure that there is no interference with the railroad operations or other activities of BNSF, or anyone present on BNSF’s property with the authority or permission of BNSF. City shall not disturb any improvements of BNSF or BNSF’s existing lessees, licensees, license beneficiaries or lien holders, if any, or interfere with the use of such improvements, except as permitted by Section 3.3.5 below.

3.3.4.2 Prior to entering BNSF’s property to perform the City C&M Work, City shall cause all City Contractor(s) to comply with all of BNSF’s communicated and applicable safety and security rules and regulations and complete the safety training program at the Website "www.contractororientation.com" or then-current program designated by BNSF (the “Safety Orientation”) and eRAILSAFE or then-current security program designated by BNSF (the “Security Orientation”) within one year prior to entering upon BNSF’s property. Additionally, City must ensure that each and every employee of all City Contractors possess a card certifying completion of the Safety Orientation and the Security Orientation prior to entering upon BNSF’s property. City must renew the Safety Orientation and Security Orientation annually.

3.3.4.3 City must supervise and inspect the activities of all City Contractors entering onto BNSF’s property to perform the City C&M Work, and assure compliance with the applicable Approved Plans, the terms of this C&M Agreement, and all communicated and applicable safety requirements of BNSF. BNSF will have the right to stop work if any of the following events take place: (i) If BNSF determines that proper supervision and inspection are not being performed by City at any time during the City C&M Work, (ii) any City Contractor performs any work in a manner contrary to the applicable Approved Plans; (iii) any City Contractor, in BNSF’s opinion, prosecutes its work in a manner which is hazardous to BNSF property, facilities, personnel, or the safe and expeditious movement of railroad traffic; or (iv) the insurance described herein or in Exhibit C-1(A) or Exhibit C-1(B), as applicable, is canceled or expires. The work stoppage will continue until all necessary actions are taken by City to rectify the situation to the satisfaction of BNSF’s Division Engineer or until additional insurance has been delivered to and accepted by BNSF. Any such work stoppage under this provision will not give rise to any liability on the part of BNSF. BNSF’s right to stop the work is in addition to any other rights BNSF may have under this C&M Agreement or an applicable Right of Entry. In the event that BNSF desires to stop work, BNSF agrees to immediately notify City. Notwithstanding the foregoing, BNSF has no duty or obligation to observe or inspect, or to halt work by any City Contractor on BNSF’s property, it being solely City’s responsibility to ensure that work performed by any City Contractor is conducted in compliance with the terms of this C&M Agreement, all Legal Requirements and the applicable Approved Plans.

3.3.5 Disturbance of Improvements. City will be responsible at no cost to BNSF to locate and make any adjustments necessary to any wire lines, pipe lines, or other utilities, fences, buildings, improvements or other facilities located within BNSF’s property (collectively, “Other Improvements”). City must contact the owner(s) of the Other Improvements notifying them of any work that may damage these Other Improvements and/or interfere with their service and, if required, obtain the owner’s written approval prior to so affecting the Other Improvements. City must mark all BNSF improvements and Other Improvements on the applicable Approved Plans and mark all BNSF improvements and Other Improvements in the field in order to verify their locations. City must also use all reasonable methods when working on or near BNSF’s property to determine if any BNSF improvements or
Other Improvements (fiber optic, cable, communication or otherwise) may exist. Failure to mark or identify any BNSF improvements or Other Improvements will be sufficient cause for BNSF to stop construction at no cost to BNSF until such items are completed. City must make all adjustments and other work described in this Section 3.3.5, including without limitation adjustments to Other Improvements and work on and affecting BNSF property, in a manner that does not adversely impact utility service to BNSF. City shall use commercially reasonable efforts to cause, at its expense, any utilities for its operations to be separately metered from utilities serving BNSF's operations by the date set forth on the Timeline (as defined in the Master Agreement).

3.3.6 Flagging. Subject to modification in writing by BNSF's Division Engineer, no City Contractor shall conduct any activities on, or be present on, any portion of BNSF's property that is within twenty-five (25) feet of any active railroad track or where any such activities have the potential to foul any active railroad track, except in the presence of a flagger. In addition to and not in limitation of the foregoing, City shall, and shall cause its City Contractors to, comply with all BNSF requirements concerning flagging, including without limitation the provisions of Section 1.05 of Exhibit C. BNSF shall arrange for the presence of flaggers as soon as practicable after receipt of notice from City in accordance with Section 1.05.01 of Exhibit C; provided, however, BNSF shall not be held responsible for City delays when flaggers are not available.

3.3.7 Flagging Costs. Flagging costs of the Included BNSF Work (as defined in the Master Agreement) are the responsibility of BNSF to the extent described in Section 2.2(i) of the Master Agreement. All other flagging costs, including without limitation flagging costs for City C&M Work, BNSF Additional Cost Work and any other work that is or becomes a part of the West Haymarket Project, shall be at City's cost and expense; provided, however, to the extent BNSF is performing work requiring flagging that is the responsibility of BNSF (under the first sentence of this Section 3.3.7) at the same time and in the same location as the City C&M Work, BNSF Additional Cost Work and/or any other work that is or becomes a part of the West Haymarket Project, such flagging costs and expenses shall be deemed to be part of the Included BNSF Work. Notwithstanding the foregoing, however, if the City C&M Work, BNSF Additional Cost Work or any other work that is or becomes part of the West Haymarket Project is of such magnitude that additional flaggers or additional flagging time is required, then City shall be responsible for all flagging costs and expenses for such incremental flaggers and additional flagging time as BNSF Additional City Cost Work. As further described in Section 1.05.03c of Exhibit C, the governmental flagging rate in effect at the time of performance by the flaggers will be used to calculate flagging costs. As more particularly described in Section 2.7.2 of the Master Agreement and also in the Escrow Agreement (as defined in the Master Agreement), City shall deposit additional amounts, including amounts for estimated flagging costs, into escrow for BNSF Additional City Cost Work.

3.3.8 No Unauthorized Tests or Digging. No City Contractor shall conduct any tests, investigations or any other activity using mechanized equipment and/or machinery, or place or store any mechanized equipment, tools or other materials, within twenty-five (25) feet of the centerline of any railroad track on BNSF's property, except after City has obtained written approval from BNSF Director Engineering Services, and then only in strict accordance with the terms and any conditions of such approval.

3.3.9 Drainage. Any and all cuts and fills, excavations or embankments as part of the City C&M Work shall be deemed to be a part of the City C&M Work and shall be made by City in such manner, form and to the extent as will provide adequate drainage of and from BNSF's property and any adjoining BNSF right of way. Wherever any such fill or embankment shall or may obstruct the natural and pre-existing drainage from either or both BNSF's property and BNSF's adjoining right of way, City shall construct such culverts or drains to preserve such natural and pre-existing drainage, and such culverts or drains shall also be deemed to be a part of the City C&M Work. City shall wherever necessary with respect to the City C&M Work, construct extensions of existing drains, culverts or ditches through or along BNSF's property (which extensions will also be deemed to be a part of the City C&M Work), such extensions to be of adequate sectional dimensions to preserve flowage of drainage or other waters, and/or material and workmanship equally as good as those now existing.

3.3.10 Liens. City shall promptly pay and discharge any and all liens arising out of any construction done, suffered or permitted to be done by City. BNSF is hereby authorized to post any notices
3.4 Environmental Compliance and Notification.

3.4.1 Compliance with Environmental Laws. City shall cause its contractors and employees to strictly comply with all federal, state and local environmental laws and regulations in its use of BNSF's property, including, but not limited to, the Resource Conservation and Recovery Act, as amended (RCRA), the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA (collectively, the "Environmental Laws") with respect to the BNSF property. City and its contractors, if any, shall not maintain a "treatment," "storage," "transfer" or "disposal" facility, or "underground storage tank," as those terms are defined by Environmental Laws, on BNSF's property. City and its contractors, if any, shall not handle, transport, release or suffer the release of "hazardous waste" or "hazardous substances", as "hazardous waste" and "hazardous substances" may now or in the future be defined by any Environmental Laws, except as may be pre-existing in BNSF's property and as encountered in the City C&M Work and then only in compliance with Environmental Laws and the SMP (defined below), and shall not use any soils or other materials containing hazardous waste or hazardous substances in connection with the City C&M Work, or otherwise bring any hazardous waste or hazardous substances onto any BNSF property.

3.4.2 Notice of Release. City shall give BNSF immediate notice to BNSF's Resource Operations Center at (800) 832-5452 in the event of any release of hazardous substances on or from BNSF's property, violation of Environmental Laws, or inspection or inquiry by governmental authorities charged with enforcing Environmental Laws with respect to City's use of BNSF's property. City shall use best efforts to promptly respond to any release arising from or related to its activities contemplated in this C&M Agreement only in compliance with Environmental Laws and the SMP. City shall also give BNSF notice of all measures undertaken on City's behalf to investigate, remediate, respond to or otherwise cure such release or violation.

3.4.3 Remediation of Release. In the event City has notice of a release or violation of Environmental Laws which occurred or may occur as a result of City's activities contemplated in this C&M Agreement, City shall take timely measures to investigate, remediate, respond to or otherwise cure as required by applicable law such release or violation affecting BNSF's property or improvements. If during the City C&M Work, soils or other materials considered to be environmentally contaminated are exposed, City will remove and safely dispose of said contaminated soils only in compliance with Environmental Laws and the SMP. Determination of soils contamination and applicable disposal procedures thereof will be made only by an agency having the capacity and authority to make such a determination.

3.4.4 Evidence of Compliance. City agrees to periodically to furnish BNSF upon written request with reasonable proof that it is in compliance with this Article III, Section 3.4.

3.4.5 Soil Management Plan. In addition to the other obligations of City and City Contractors as set forth herein, including but not limited to the provisions of Exhibit C and, as applicable, Exhibit C-1(A) or Exhibit C-1(B), the Soil Management Plan attached hereto as Exhibit E ("SMP") sets forth additional obligations of City and BNSF with respect to the proper management of impacted environmental media during the Development Period (as defined in the Master Agreement).

3.5 Timing.

3.5.1 City will use commercially reasonable efforts to perform all City C&M Work in accordance with the Timeline.
3.5.2 BNSF and City mutually agree that no construction activities for the City C&M Work, nor future maintenance of any improvements which have a reasonable likelihood to delay train traffic on BNSF’s main lines, will be permitted during the fourth quarter of each calendar year. Emergency work will be permitted only upon prior notification to BNSF’s Network Operations Center (telephone number: 800 832-5452). BNSF and City mutually understand and agree that trains cannot be subjected to delay during this time period.

3.6 Indemnifications.

3.6.1 TO THE FULLEST EXTENT PERMITTED BY LAW, CITY SHALL, AND SHALL CAUSE CITY’S CONTRACTORS TO, RELEASE, INDEMNIFY, DEFEND AND HOLD HARMLESS BNSF AND BNSF’S AFFILIATED COMPANIES, PARTNERS, SUCCESSORS, ASSIGNS, LEGAL REPRESENTATIVES, OFFICERS, DIRECTORS, SHAREHOLDERS, EMPLOYEES AND AGENTS FOR, FROM AND AGAINST ANY AND ALL CLAIMS, LIABILITIES, FINES, PENALTIES, COSTS, DAMAGES, LOSSES, LIENS, CAUSES OF ACTION, SUITS, DEMANDS, JUDGMENTS AND EXPENSES (INCLUDING, WITHOUT LIMITATION, COURT COSTS AND ATTORNEYS’ FEES) OF ANY NATURE, KIND OR DESCRIPTION OF ANY PERSON (INCLUDING, WITHOUT LIMITATION, THE EMPLOYEES OF THE PARTIES HERETO) OR ENTITY DIRECTLY OR INDIRECTLY (COLLECTIVELY, "LIABILITIES") ARISING OUT OF, RESULTING FROM OR CAUSALLY RELATED TO (IN WHOLE OR IN PART):

(i) ANY RIGHTS OR INTERESTS GRANTED TO CITY OR ANY CITY PARTY (DEFINED BELOW) PURSUANT TO THIS C&M AGREEMENT, THE RIGHTS OF ENTRY, OR THE LICENSES AND/OR EASEMENTS GRANTED TO CITY PURSUANT TO THIS C&M AGREEMENT;

(ii) THE USE, OCCUPANCY OR PRESENCE OF CITY AND/OR CITY CONTRACTORS AND THEIR RESPECTIVE SUBCONTRACTORS, EMPLOYEES OR AGENTS (SUCH CITY CONTRACTORS, SUBCONTRACTORS, EMPLOYEES AND AGENTS BEING REFERRED TO INDIVIDUALLY AS A "CITY PARTY" AND COLLECTIVELY, THE "CITY PARTIES") AND/OR ANY WORK PERFORMED BY CITY OR ANY CITY PARTY IN, ON, OR ABOUT BNSF'S PROPERTY OR RIGHT-OF-WAY AND/OR THE WEST HAYMARKET PROJECT, INCLUDING, WITHOUT LIMITATION, OPERATION OF THE PEDESTRIAN BRIDGE, SECURITY FENCING (AS DEFINED IN THE MASTER AGREEMENT), OR STORM WATER MITIGATION (AS DEFINED IN THE MASTER AGREEMENT) BY CITY;

(iii) ANY ENVIRONMENTAL MATTERS ARISING FROM THE WEST HAYMARKET PROJECT AND/OR AFFECTING THE PROJECT AREA OR ANY PROPERTY ADJACENT THERETO;

(iv) ANY AND ALL CLAIMS BROUGHT BY ANY PARTY RELATED TO OR ARISING FROM THE ACQUISITION AND/OR DEVELOPMENT OF ANY AND ALL PROPERTY AS PART OF THE WEST HAYMARKET PROJECT, INCLUDING WITHOUT LIMITATION PROPERTY DESCRIBED IN THIS C&M AGREEMENT, THE MASTER AGREEMENT, THE EXCHANGE AGREEMENT, AND/OR THE RIGHTS OF ENTRY AGREEMENTS;

(v) THE CONDITION OF THE REPLACEMENT BNSF PROPERTY, INCLUDING WITHOUT LIMITATION ANY AND ALL CLAIMS RELATED TO OR ARISING FROM THE EXISTENCE OF ANY THIRD PARTY RESERVED RIGHTS AND/OR ANY THIRD PARTY’S EXERCISE OF ITS RESERVED RIGHTS;

(vi) ANY DAMAGE TO OR DESTRUCTION OF ANY TELECOMMUNICATION LINES IN CONNECTION WITH THE WEST HAYMARKET PROJECT BY CITY OR ANY CITY PARTY, INCLUDING BUT NOT LIMITED TO (A) ANY INJURY TO OR DEATH OF ANY PERSON EMPLOYED BY OR ON BEHALF OF ANY TELECOMMUNICATIONS COMPANY, AND/OR ITS CONTRACTORS, AGENTS AND/OR EMPLOYEES AS A RESULT OF SUCH DAMAGE OR DESTRUCTION, AND/OR (B) ANY CLAIM OR CAUSE OF ACTION FOR ALLEGED LOSS OF PROFITS
OR REVENUE BY, OR LOSS OF SERVICE BY A CUSTOMER OR USER OF SUCH TELECOMMUNICATION COMPANY(IES) AS A RESULT OF SUCH DAMAGE OR DESTRUCTION;

(vii) CITY'S OR ANY CITY PARTY'S BREACH OF THE TERMS AND CONDITIONS OF THIS C&M AGREEMENT, THE RIGHTS OF ENTRY, OR THE LICENSES AND/OR EASEMENTS GRANTED TO CITY PURSUANT TO THE MASTER AGREEMENT;

(viii) ANY ACT OR OMISSION OF CITY OR ITS OFFICERS, AGENTS, INVITEES, EMPLOYEES OR CONTRACTORS, OR A CITY PARTY, OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM, OR ANYONE THEY CONTROL OR EXERCISE CONTROL OVER.

THE LIABILITY ASSUMED BY CITY AND THE CITY CONTRACTORS WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT ANY DAMAGE, DESTRUCTION, INJURY OR DEATH WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF BNSF, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, BUT EXCLUDING CLAIMS WHOLLY CAUSED BY BNSF'S SOLE NEGLIGENCE AND EXCLUDING CLAIMS TO THE EXTENT THAT SUCH CLAIMS ARE CAUSED BY THE WILLFUL MISCONDUCT OR GROSS NEGLIGENCE OF BNSF.

3.6.2 FURTHER, TO THE FULLEST EXTENT PERMITTED BY LAW, CITY SHALL, AND SHALL CAUSE CITY'S CONTRACTORS TO, NOW AND FOREVER WAIVE ANY AND ALL CLAIMS, REGARDLESS OF WHETHER SUCH CLAIMS ARE BASED ON STRICT LIABILITY, NEGLIGENCE OR OTHERWISE, THAT BNSF IS AN "OWNER", "OPERATOR", "ARRANGER", OR "TRANSPORTER" WITH RESPECT TO THE EXCHANGE PROPERTIES (AS DEFINED IN THE EXCHANGE AGREEMENT), OR THE WEST HAYMARKET PROJECT AND/OR THE PROJECT AREA OR ANY PROPERTY ADJACENT THERETO, FOR THE PURPOSES OF CERCLA OR OTHER ENVIRONMENTAL LAWS. CITY WILL, AND WILL CAUSE CITY'S CONTRACTORS TO, INDEMNIFY, DEFEND AND HOLD BNSF HARMLESS FROM ANY AND ALL SUCH CLAIMS REGARDLESS OF THE NEGLIGENCE OF BNSF. CITY FURTHER AGREES THAT THE USE OF THE EXCHANGE PROPERTIES, OR THE WEST HAYMARKET PROJECT AND/OR THE PROJECT AREA OR ANY PROPERTY ADJACENT THERETO, AS CONTEMPLATED BY THIS C&M AGREEMENT SHALL NOT IN ANY WAY SUBJECT BNSF TO CLAIMS THAT BNSF IS OTHER THAN A COMMON CARRIER FOR PURPOSES OF ENVIRONMENTAL LAWS AND EXPRESSLY AGREES TO INDEMNIFY, DEFEND, AND HOLD BNSF HARMLESS FOR ANY AND ALL SUCH CLAIMS. IN NO EVENT SHALL BNSF BE RESPONSIBLE FOR THE ENVIRONMENTAL CONDITION OF THE EXCHANGE PROPERTIES, OR THE WEST HAYMARKET PROJECT AND/OR THE PROJECT AREA, OR ANY PROPERTY ADJACENT THERETO.

3.6.3 FURTHER, TO THE FULLEST EXTENT PERMITTED BY LAW, CITY AGREES, AND SHALL CAUSE CITY'S CONTRACTORS TO AGREE, REGARDLESS OF ANY NEGLIGENCE OR ALLEGED NEGLIGENCE OF BNSF, TO INDEMNIFY, DEFEND AND HOLD HARMLESS BNSF AGAINST AND ASSUME THE DEFENSE OF ANY LIABILITIES ASSERTED AGAINST OR SUFFERED BY BNSF UNDER OR RELATED TO THE FEDERAL EMPLOYERS' LIABILITY ACT ("FELA") WHENEVER EMPLOYEES OF CITY OR ANY OF ITS AGENTS, INVITEES, OR CONTRACTORS CLAIM OR ALLEGED THAT THEY ARE EMPLOYEES OF BNSF OR OTHERWISE. THIS INDEMNITY SHALL ALSO EXTEND, ON THE SAME BASIS, TO FELA CLAIMS BASED ON ACTUAL OR ALLEGED VIOLATIONS OF ANY FEDERAL, STATE OR LOCAL LAWS OR REGULATIONS, INCLUDING BUT NOT LIMITED TO THE SAFETY APPLIANCE ACT, THE LOCOMOTIVE INSPECTION ACT, THE OCCUPATIONAL SAFETY AND HEALTH ACT, THE RESOURCE CONSERVATION AND RECOVERY ACT, AND ANY SIMILAR STATE OR FEDERAL STATUTE.

3.6.4 City agrees that its obligations under the provisions of this Section 3.6 expressly includes claims related to property related to the West Haymarket Project that was formerly, but not currently, owned by BNSF and BNSF's predecessors-in-interest. City's indemnification obligations herein shall be in addition to, and not in limitation of, City's indemnification obligations pursuant to the terms and provisions of the Master Agreement, the Exchange Agreement and the Rights of Entry agreements.
3.7 Waiver of Municipal and Sovereign Immunity. To the fullest extent permitted by law, City waives its municipal immunity and its sovereign immunity with respect to BNSF for matters arising out of the West Haymarket Project, the Master Agreement, the Exchange Agreement, the Rights of Entry agreements, and this C&M Agreement, including, without limitation, (i) for environmental and other conditions of the Replacement BNSF Property that City is conveying to BNSF pursuant to the Master Agreement and the Exchange Agreement; (ii) for environmental and other conditions of the real property that BNSF is quitclaiming to City pursuant to the Master Agreement and the Exchange Agreement and of property related to the West Haymarket Project that was formerly, but not currently, owned by BNSF and BNSF's predecessors-in-interest, including remediation costs beyond Nebraska Department of Environmental Quality Title 200 funds ("Title 200 Funding"); (iii) for claims arising out of work performed by City or its contractors pursuant to the provisions of this C&M Agreement, the Master Agreement, the Exchange Agreement, the Rights of Entry agreements, and the Exchange Agreement; and (iv) for claims arising out of continuing rights of City to enter onto property of BNSF, including work performed by City and City Contractors on such property of BNSF. Any lawful waiver of City's sovereign immunity herein shall be in addition to, and not in limitation of, any lawful waiver of City's sovereign immunity pursuant to the terms and provisions of the Master Agreement, the Exchange Agreement, and the Rights of Entry agreements.

3.8 Insurance Obligations.

3.8.1 During the Development Period, City shall, at its sole cost and expense, procure and maintain the following insurance:

3.8.1.1 Commercial General Liability Insurance. This insurance shall contain broad form contractual liability in an amount of at least $25,000,000 per occurrence and an aggregate limit of $50,000,000, but in no event less than the amount otherwise carried by City. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limited to, the following:

- Bodily Injury and Property Damage
- Personal Injury and Advertising Injury
- Fire legal liability
- Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor of and acceptable to Railroad
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to Railroad employees.

3.8.1.2 Business Automobile Insurance. This insurance shall contain a combined single limit of at least $1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage
- Any and all vehicles owned, used or hired

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:
Waiver of subrogation in favor of and acceptable to Railroad.
Additional insured endorsement in favor or and acceptable to Railroad.
Separation of insureds.
The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

3.8.1.3 Workers' Compensation and Employers' Liability Insurance. This insurance shall include coverage for, but not limited to:

- City's statutory liability under the workers' compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.

3.8.1.4 Railroad Protective Liability Insurance. This insurance shall name only the Railroad as the Insured with coverage of at least $5,000,000.00 per occurrence and $10,000,000.00 in the aggregate. The policy shall be issued on a standard ISO form CG 00 35 10 93 and include the following:

- Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
- Endorsed to include the Limited Seepage and Pollution Endorsement.
- Endorsed to remove any exclusion for punitive damages.
- No other endorsements restricting coverage may be added.
- The original policy must be provided to Railroad prior to performing any work or services under this C&M Agreement.

In lieu of providing a Railroad Protective Liability Policy, City may participate in BNSF's Blanket Railroad Protective Liability Insurance Policy available to City and City Contractors.

3.8.1.5 Other Requirements:

All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

City agrees to waive its right of recovery against Railroad for all claims and suits against Railroad, except for claims and suits arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of Railroad. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railroad for all claims and suits, except for claims and suits arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of Railroad. The certificate of insurance must reflect the waiver of subrogation endorsement. City further waives its right of recovery, and its insurers also waive their right of subrogation against Railroad for loss of its owned or leased property or property under City's care, custody or control, except for rights of recovery and rights of subrogation arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of Railroad.

City is allowed to self-insure up to $250,000 per occurrence and $250,000 aggregate on General Liability and Automotive Liability and up to $500,000 per occurrence and $500,000 aggregate on Worker's Compensation Liability without the prior written consent of Railroad. Any deductible, self-insured retention or other financial responsibility for claims must be covered directly by City in lieu of insurance. Any and all Railroad Liabilities that would otherwise, in accordance with the provisions
of this C&M Agreement, be covered by insurance will be covered as if City elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing the City C&M Work, City must furnish to Railroad acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments. The policy(ies) must contain a provision that obligates the insurance company(ies) issuing such policy(ies) to notify Railroad in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration. This cancellation provision must be indicated on the certificate of insurance. Upon request from Railroad, a certified duplicate original of any required policy must be furnished. Certificate(s) should be sent to the following address:

Ebix BPO
PO Box 12010-BN
Hemet, CA 92546-8010
Fax number: 951-652-2882
Email: bnsf@ebix.com

Upon notification to BNSF of cancellation, non-renewal, substitution or material alteration of any such policy(ies), BNSF shall have the option to (i) if feasible, pay, on behalf of the City, any and all such premiums, penalties, fees or expenses necessary to keep such policy(ies) in full force and effect; or (ii) in the event that such policy(ies) cannot be kept in full force and effect, enter into the open market and procure such policy(ies) of insurance on behalf of City as required by this C&M Agreement at the then-current market rate. Upon any of the above occurrences, BNSF shall invoice the City for reimbursement of all such premiums, penalties, fees or expenses advanced on City’s behalf plus an additional fifteen (15%) of such advanced amounts as remuneration for BNSF’s overhead. Such amounts advanced by BNSF shall be paid by City within thirty (30) days after delivery of a statement for such expense. Any insurance policy must be written by a reputable insurance company reasonably acceptable to Railroad or with a current Best’s Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.

City represents that this C&M Agreement has been thoroughly reviewed by its insurance agent(s)/broker(s), who have been instructed by City to procure the insurance coverage required by this C&M Agreement. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above. City represents that it understands and its insurance agent(s)/broker(s) have been informed that the City’s insurance coverage being procured by City herein is to protect, defend, indemnify and hold harmless BNSF from any and all Liabilities, as such term is defined herein, that may arise in connection with this C&M Agreement and City, to the fullest extent allowed by law, waives its sovereign and municipal immunity and any caps or limitations on legal liability that may result therefrom.

Not more frequently than once every five years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by City, City must require that City Contractors provide and maintain the insurance coverages set forth herein, naming Railroad as an additional insured; provided, however, that policy limits for Commercial General Liability Insurance may be reduced to $5,000,000 per occurrence and an aggregate limit of $10,000,000, but in no event less than the amount otherwise carried by the City Contractor. In addition, City must require that City Contractor release, defend and indemnify Railroad to the same extent and under the same terms and conditions as City is required to release, defend and indemnify Railroad herein.

Failure to provide evidence as required by this Section 3.8 will entitle, but not require, Railroad to immediately suspend, until such default is cured, any and/or all work under this C&M Agreement, including without limitation: (i) BNSF Work, (ii) City C&M Work, and (iii) any other work on or affecting any BNSF property, subject to termination as provided in the Master Agreement. Acceptance of a certificate that does not comply with this section will not operate as a waiver of City’s obligations hereunder.
The fact that insurance (including, without limitation, self-insurance) is obtained by City will not be deemed to release or diminish the liability of City including, without limitation, liability under the indemnity provisions of this C&M Agreement. Damages recoverable by Railroad will not be limited by the amount of the required insurance coverage.

For purposes of this **Section 3.8**, Railroad means "Burlington Northern Santa Fe, LLC", "BNSF Railway Company" and the subsidiaries, successors, assigns and affiliates of each.

3.8.2 During the Post-Development Period (as defined in the Master Agreement), City shall, and shall require City Contractors to, at City's sole cost and expense, procure and maintain the insurance coverages listed in the applicable Rights of Entry, continuing thereafter so long as the C&M Agreement and/or any Right of Entry agreement is in effect.

3.9 **Adherence to Timeline.** City must require City Contractors to reasonably adhere to the Timeline. The Parties mutually agree that BNSF's failure to complete the BNSF Work in accordance with the Timeline due to inclement weather or unforeseen railroad emergencies will not constitute a breach of this C&M Agreement by BNSF and will not subject BNSF to any liability. Regardless of the requirements of the Timeline, BNSF reserves the right to reallocate the labor forces assigned to complete the BNSF Work in the event of an emergency to provide for the immediate restoration of railroad operations (BNSF or its related railroads) or to protect persons or property on or near any BNSF owned property. BNSF will not be liable for any additional costs or expenses resulting from any such reallocation of its labor forces. The Parties mutually agree that any reallocation of labor forces by BNSF pursuant to this provision and any direct or indirect consequences or costs resulting from any such reallocation will not constitute a breach of this C&M Agreement by BNSF.

**ARTICLE IV – MISCELLANEOUS**

4.1 Any books, papers, receipts, and accounts of the Parties relating to the City C&M Work and the BNSF Additional City Cost Work will at all reasonable times and upon reasonable prior written notice be open to inspection and audit by the agents and authorized representatives of the Parties for a period of one (1) year after the date of the final disbursement from the Escrow Account.

4.2 The terms and conditions of indemnification and liability provisions of **Sections 3.6** and **3.7** shall survive expiration or termination of this C&M Agreement, the Master Agreement and the Exchange Agreement, and all Closings under the Exchange Agreement.

4.3 The covenants and provisions of this C&M Agreement are binding upon and inure to the benefit of the successors and assigns of the Parties. Notwithstanding the preceding sentence, neither Party may assign its rights and obligations hereunder without the prior written consent of the other Party. Any permitted assignment shall not terminate the liability of the assigning Party, unless a specific release of such liability in writing is given and signed by the other Party. Notwithstanding any contrary provision herein; City shall have the right to assign this C&M Agreement to the West Haymarket Joint Public Agency, a Nebraska joint public agency ("JPA") without further consent of BNSF provided (i) City delivers prior written notification to BNSF of the assignment, (ii) City and JPA enters into BNSF's then-standard Consent to Assignment form, pursuant to which City will remain jointly and severally liable for all of City's obligations hereunder, including without limitation City's liability and indemnification obligations; provided that BNSF agrees it will first send any claim or notice of default to JPA and will not pursue any action against City until thirty (30) days after the date of such claim or notice to JPA, unless failure to pursue action against City during such time would otherwise prejudice BNSF's rights, and (iii) City's entire interest under the Master Agreement, the Exchange Agreement, and all Rights of Entry agreements are assigned at the same time to JPA.

4.4 This C&M Agreement shall be in effect for so long as the Master Agreement and/or any Right of Entry is in effect; provided, however, that if the Master Agreement and all Rights of Entry have expired or been terminated, BNSF has the right to terminate this C&M Agreement upon written notice to City.
4.5 Neither termination nor expiration of this C&M Agreement will release either Party from any liability or obligation under this C&M Agreement, whether of indemnity or otherwise, resulting from any acts, omissions or events happening prior to the date of termination or expiration.

4.6 Any notice required or permitted to be given hereunder by one Party to the other shall be in writing and the same shall be given and shall be deemed to have been served and given if: (i) placed in the United States mail, certified, return receipt requested, or (ii) deposited into the custody of a nationally recognized overnight delivery service, addressed to the Party to be notified at the address for such Party specified below, or to such other address as the Party to be notified may designate by giving the other Party no less than thirty (30) days’ advance written notice of such change in address.

If to BNSF:
BNSF Railway Company
P.O. Box 961034
Fort Worth, TX  76161-0034.
Attn:  Robert J. Boileau, P.E., Assistant Vice President, Engineering Services

If to City:
City of Lincoln, Nebraska
555 South 10th Street
Lincoln, NE  68508
Attn:  City Attorney

4.7 Time is of the essence of this C&M Agreement.

4.8 In any action (declaratory or otherwise) brought by either Party in connection with or arising out of the terms of this C&M Agreement, the prevailing Party in such action will be entitled to recover from the non-prevailing Party all actual costs, actual damages, and actual expenses, including, without limitation, reasonable attorneys’ fees and charges to the fullest extent permitted by law.

4.9 Each Party and its counsel have reviewed and revised this C&M Agreement. The Parties agree that the rule of construction that any ambiguities are to be resolved against the drafting Party must not be employed to interpret this C&M Agreement or its amendments or exhibits.

4.10 If any clause or provision of this C&M Agreement is illegal, invalid or unenforceable under present or future laws effective during the term of this C&M Agreement, then and in that event, it is the intention of the Parties that the remainder of this C&M Agreement shall not be affected thereby, and it is also the intention of the Parties that in lieu of each clause or provision of this C&M Agreement that is illegal, invalid or unenforceable, there be added, as a part of this C&M Agreement, a clause or provision as similar in terms to such illegal, invalid or unenforceable clause or provision as may be possible and be legal, valid and enforceable.

4.11 This C&M Agreement, the Master Agreement, the Exchange Agreement, and, to the extent executed, the Right of Entry licenses and/or easements described herein, contain the entire agreement between BNSF and City with respect to the West Haymarket Project. Oral statements or prior written matters not specifically incorporated into this C&M Agreement are superseded hereby. No variation, modification, or change to this C&M Agreement, the Exchange Agreement or the Rights of Entry agreements shall bind either Party unless set forth in a document signed by both Parties. No failure or delay of either Party in exercising any right, power or privilege hereunder shall operate as a waiver of such Party's right to require strict compliance with any term of this C&M Agreement. The captions next to the section numbers of this C&M Agreement are for reference only and do not modify or affect this C&M Agreement.

4.12 No director, officer, elected or appointed official, or employee of either of the Parties shall be personally liable in the event of any default.

4.13 This C&M Agreement may be executed in more than one counterpart, including facsimile transmissions, each of which shall be deemed an original.
4.14 As of this same Effective Date, City and BNSF have also entered into the Master Agreement, the Exchange Agreement and to the extent executed, certain Right of Entry licenses and/or easements. After the Effective Date and upon completion of additional design work, City and BNSF expect to execute other Right of Entry licenses and/or easements. City and BNSF agree that, except as otherwise stated in Article 1 of this C&M Agreement: (i) in the event the terms of the Master Agreement and the terms of the C&M Agreement, the Exchange Agreement and the various licenses and/or easements are inconsistent, then the Master Agreement shall prevail; (ii) in the event the terms of the Exchange Agreement and the terms of the C&M Agreement and the various licenses and/or easements are inconsistent, then the Exchange Agreement shall prevail, and (iii) in the event the terms of the C&M Agreement and the various licenses and/or easements are inconsistent, then the C&M Agreement shall prevail.

4.15 All aspects of this C&M Agreement shall be governed by the laws of the State of Nebraska.

4.16 To the fullest extent permitted by law any dispute arising under or in connection with this C&M Agreement or related to any subject matter which is the subject of this C&M Agreement shall be subject to the sole and exclusive jurisdiction of the United States District Court for the District of Nebraska. The aforementioned choice of venue is intended by the Parties to be mandatory and not permissive. Each Party hereby irrevocably consents to the jurisdiction of the United States District Court for the District of Nebraska in any such dispute and irrevocably waives, to the fullest extent permitted by law, any objection that it may now have or hereafter have to the laying of venue in such court and that any such dispute which is brought in such court has been brought in an inconvenient forum.

4.17 By signing below, the Parties affirm they have the legal authority to enter into this C&M Agreement.

4.18 Each Party will, whenever it shall be reasonably requested to do so by the other, promptly execute, acknowledge, and deliver, or cause to be executed, acknowledged, or delivered, any and all such reasonable further confirmations, instruments, or further assurances and consents as may be reasonably necessary or proper in order to effectuate the covenants and agreements herein provided. Each Party shall reasonably cooperate in good faith with the other and shall do any and all other acts and execute, acknowledge and deliver any and all documents so reasonably requested in order to satisfy the conditions set forth herein and carry out the intent and purposes of this C&M Agreement.

[Signature page follows]
IN WITNESS WHEREOF, the Parties have caused this C&M Agreement to be executed as of the date below each Party's signature; to be effective, however, as of the Effective Date above.

CITY OF LINCOLN, NEBRASKA, a Nebraska municipal corporation

By: ______________________________________
    Chris Beutler, Mayor of Lincoln

Date: ________________________________

BNSF RAILWAY COMPANY, a Delaware corporation

By: ______________________________________
    David L. Freeman, Vice President – Engineering

Date: ________________________________
EXHIBIT A

Project Area

[See attached]
Date: ______________________

Ernest R. Peo, III
City of Lincoln, Nebraska
555 South 10th Street
Lincoln, NE 68508
Attn: Chief Assistant City Attorney

Re: Review of Plans and Specifications dated September 2, 2010, drafted by Olsson Associates (hereinafter called the "Plans and Specifications")

Dear Mr. Peo:

This letter serves as BNSF Railway Company's ("BNSF") response to its review of the Plans and Specifications covering the construction of the West Haymarket Utility Relocation - Project Number 870501. BNSF has reviewed these plans and no exceptions are taken. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design of the project. These comments are given to the City of Lincoln, Nebraska ("City") pursuant to Section 3.1.1 of that certain Construction and Maintenance Agreement between BNSF and City, dated __________, 2010. If the Plans and Specifications are revised by City subsequent to the date set forth above, this letter shall no longer serve as BNSF’s written comments and City must resubmit said Plans and Specifications to BNSF for review.

Regards,

Gerald Maczuga
Project Engineer
EXHIBIT C

Contractor Requirements
EXHIBIT C

Contractor Requirements

1.01 General

- **1.01.01** The Contractor must cooperate with **BNSF RAILWAY COMPANY**, hereinafter referred to as "Railway" during the performance of the C&M Work (as defined in Exhibit C-1) and any other work over, under, on or adjacent to Railway Property.

- **1.01.02** The Contractor must execute and deliver to the Railway duplicate copies of the Exhibit C-1 Contractor Right of Entry for C&M Work, in the form attached hereto, obligating the Contractor to provide and maintain in full force and effect the insurance called for under Section 3 of said Exhibit C-1. Questions regarding procurement of the Railroad Protective Liability Insurance should be directed to Rosa Martinez at Marsh, USA, 214-303-8519.

- **1.01.03** The Contractor must plan, schedule and conduct all C&M Work activities so as not to interfere with the movement of any trains on Railway Property.

- **1.01.04** The Contractor's right to enter Railway Property is subject to the absolute right of Railway to cause the Contractor's work on Railway Property to cease if, in the opinion of Railway, Contractor's activities create a hazard to Railway Property, employees, and/or operations. Railway will have the right to stop construction work on the C&M Work if any of the following events take place: (i) Contractor (or any of its subcontractors) performs the C&M Work in a manner contrary to the plans and specifications approved by Railway; (ii) Contractor (or any of its subcontractors), in Railway's opinion, prosecutes the C&M Work in a manner which is hazardous to Railway Property, facilities or the safe and expeditious movement of railroad traffic; or (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the C&M Work. The work stoppage will continue until all necessary actions are taken by Contractor or its subcontractor to rectify the situation to the satisfaction of Railway's Division Engineer or until additional insurance has been delivered to and accepted by Railway. Any such work stoppage under this provision will not give rise to any liability on the part of Railway. Railway's right to stop the C&M Work is in addition to any other rights Railway may have including, but not limited to, actions or suits for damages or lost profits. In the event that Railway desires to stop the C&M Work, Railway agrees to immediately notify the following individual in writing:

  Roger Figard, City Engineer  
  Department of Public Works and Utilities  
  City of Lincoln, Nebraska  
  555 South 10th Street  
  Lincoln, NE 68508

- **1.01.05** Contractor shall, and shall cause all Contractor parties to, strictly comply with all federal, state and local environmental laws and regulations in its use of Railway's Property, including, but not limited to, the Resource Conservation and Recovery Act, as amended (RCRA), the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA (collectively, the "Environmental Laws") with respect to Railway's Property. Contractor shall not maintain a "treatment," "storage," "transfer" or "disposal" facility, or "underground storage tank," as those terms are defined by Environmental Laws, on Railway's Property. Contractor shall not handle, transport, release or suffer the release of "hazardous
waste" or "hazardous substances", as "hazardous waste" and "hazardous substances" may now or in the future be defined by any Environmental Laws, except as may be pre-existing in Railway Property and as encountered in the C&M Work and then only in compliance with Environmental Laws, and shall not use any soils or other materials containing hazardous waste or hazardous substances in connection with the C&M Work, or otherwise bring any hazardous waste or hazardous substances onto any Railway Property.

Contractor shall give Railway immediate notice to Railway's Resource Operations Center at (800) 832-5452 in the event of any release of hazardous substances on or from Railway Property, violation of Environmental Laws, or inspection or inquiry by governmental authorities charged with enforcing Environmental Laws with respect to Contractor's use of Railway Property. Contractor shall use best efforts to promptly respond to any release arising from or related to its activities contemplated in the C&M Work. Contractor shall also give Railway notice of all measures undertaken on Contractor's behalf to investigate, remediate, respond to or otherwise cure such release or violation.

In the event Contractor has notice of a release or violation of Environmental Laws which occurred or may occur as a result of Contractor's activities contemplated in the C&M Work, Contractor shall take timely measures to investigate, remediate, respond to or otherwise cure as required by applicable law such release or violation affecting Railway Property or improvements. If during the C&M Work, soils or other materials considered to be environmentally contaminated are exposed, Contractor will remove and safely dispose of said contaminated soils. Determination of soils contamination and applicable disposal procedures thereof will be made only by an agency having the capacity and authority to make such a determination.

Contractor agrees to periodically to furnish Railway upon written request with reasonable proof that it is in compliance with this Section 1.01.05.

- **1.01.06** All C&M Work must performed (i) in a good and workmanlike manner, (ii) in accordance with plans and specifications approved in advance by Railway (the "Approved Plans"), (iii) in conformance with applicable building codes and all applicable engineering, safety and any and all laws, statutes, regulations, ordinances, orders, covenants, restrictions, or decisions of any court of competent jurisdiction ("Legal Requirements"), (iv) in accordance with the accepted industry standards of care, skill and diligence, and (v) in such a manner as shall not adversely affect the structural integrity or maintenance of any Railway improvements or other improvements on or near Railway Property, or any lateral support of any structures adjacent to or in the proximity of any Railway improvements or Railway Property. In addition, the C&M Work must be promptly commenced by the Contractor and thereafter diligently prosecuted to conclusion in its logical order and sequence. Furthermore, any changes or modifications of the C&M Work which affect Railway will be subject to Railway's written approval prior to the commencement of any such changes or modifications from the Railway's Project Engineer.

- **1.01.07** Contractor shall be responsible for all job site cleanup and restoration, including removal of all construction materials, concrete debris, surplus soil, refuse, contaminated soils, asphalt debris, litter and other waste materials resulting from the C&M Work to the reasonable satisfaction of Railway's Division Engineer.

- **1.01.08** The Contractor must notify the City at City's City Engineer, telephone number (402) 441-7567 and Railway's Project Engineer, telephone number (402) 458-7537 at least ten (10) calendar days before commencing any C&M Work on Railway Property.
1.01.09  For any bridge demolition and/or falsework above any tracks or any excavations located with any part of the excavations located within, whichever is greater, twenty-five (25) feet of the nearest track or intersecting a slope from the plane of the top of rail on a 2 horizontal to 1 vertical slope beginning at eleven (11) feet from centerline of the nearest track, both measured perpendicular to center line of track, the Contractor must furnish the Railway five sets of working drawings showing details of construction affecting Railway Property and tracks. The working drawing must include the proposed method of installation and removal of falsework, shoring or cribbing, not included in the contract plans and two sets of structural calculations of any falsework, shoring or cribbing. For all excavation and shoring submittal plans, the current "BNSF-UPRR Guidelines for Temporary Shoring" must be used for determining the design loading conditions to be used in shoring design, and all calculations and submittal plans must be in accordance with the current "BNSF-UPRR Guidelines for Temporary Shoring". All submittal drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. All drawings and calculations must take into consideration railway surcharge loading and must be designed to meet American Railway Engineering and Maintenance-of-Way Association (previously known as American Railway Engineering Association) Coopers E-80 live loading standard. All drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. The Contractor must not begin C&M Work until notified by the Railway that plans have been approved, which approved plans shall become part of the Approved Plans. The Contractor will be required to use lifting devices such as, cranes and/or winches to place or to remove any falsework over Railway's tracks. In no case will the Contractor be relieved of responsibility for results obtained by the implementation of the Approved Plans.

1.01.10  Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the C&M Work may be handled and performed in an efficient manner. The Contractor will have no claim whatsoever for any type of damages or for extra or additional compensation in the event his work is delayed by the Railway.

1.02 Contractor Safety Orientation

1.02.01  No employee of the Contractor, its subcontractors, agents or invitees may enter Railway Property without first having completed Railway's Engineering Contractor Safety Orientation, found on the web site www.contractororientation.com. The Contractor must ensure that each of its employees, subcontractors, agents or invitees completes Railway’s Engineering Contractor Safety Orientation through internet sessions before any C&M Work is performed. Additionally, the Contractor must ensure that each and every one of its employees, subcontractors, agents or invitees possesses a card certifying completion of the Railway's Engineering Contractor Safety Orientation before entering Railway Property. The Contractor is responsible for the cost of the Railway's Engineering Contractor Safety Orientation. The Contractor must renew the Railway’s Engineering Contractor Safety Orientation annually. Further clarification can be found on the web site or from the Railway’s Project Engineer.

1.03 Railway Requirements

1.03.01  The Contractor must take protective measures as are necessary to keep railway facilities, including track ballast, free of sand, debris, and other foreign objects and materials resulting from his operations. Any damage to railway facilities resulting from Contractor's
operations will be repaired or replaced by Railway and the cost of such repairs or replacement must be paid for by the Contractor.

- **1.03.02** The Contractor must notify Railway's Project Engineer, telephone number (402) 458-7537, and provide blasting plans to the Railway for review seven (7) calendar days prior to conducting any blasting operations adjacent to or on Railway Property.

- **1.03.03** The Contractor must abide by the following temporary clearances during construction:
  - 15' Horizontally from centerline of nearest track
  - 21'-6" Vertically above top of rail
  - 27'-0" Vertically above top of rail for electric wires carrying less than 750 volts
  - 28'-0" Vertically above top of rail for electric wires carrying 750 volts to 15,000 volts
  - 30'-0" Vertically above top of rail for electric wires carrying 15,000 volts to 20,000 volts
  - 34'-0" Vertically above top of rail for electric wires carrying more than 20,000 volts

- **1.03.04** Upon completion of construction, the following clearances shall be maintained:
  - 25' Horizontally from centerline of nearest existing or future track to the face of the pier or abutment structure
  - 31' Vertically above top of rail to the bottom of the Pedestrian Bridge

- **1.03.05** Any infringement within State statutory clearances due to the Contractor's operations must be submitted to the Railway and to the City and must not be undertaken until approved in writing by the Railway, and until the City has obtained any necessary authorization from the State Regulatory Authority for the infringement. No extra compensation will be allowed in the event the Contractor's C&M Work is delayed pending Railway approval, and/or the State Regulatory Authority's approval.

- **1.03.06** In the case of impaired vertical clearance above top of rail, Railway will have the option of installing tell-tales or other protective devices Railway deems necessary for protection of Railway operations. The cost of tell-tales or protective devices will be borne by the Contractor.

- **1.03.07** The details of construction affecting the Railway Property and tracks not included in the City Work Final Design or Approved Plans for the C&M Work must be submitted to the Railway by the City for approval before work is undertaken and this work must not be undertaken until approved by the Railway.

- **1.03.08** At other than public road crossings, the Contractor must not move any equipment or materials across Railway's tracks until permission has been obtained from the Railway. The Contractor must obtain a "Temporary Construction Crossing Agreement" from the Railway prior to moving his equipment or materials across Railway's tracks. The temporary crossing must be gated and locked at all times when not required for use by the Contractor. The temporary crossing for use of the Contractor will be constructed and, at the completion of the project, removed at the expense of the Contractor.

- **1.03.09** Discharge, release or spill on the Railway Property of any hazardous substances, oil, petroleum, constituents, pollutants, contaminants, or any hazardous waste is prohibited
and Contractor must immediately notify the Railway's Resource Operations Center at 1(800) 832-5452, of any discharge, release or spills in excess of a reportable quantity. Contractor must not allow Railway Property to become a treatment, storage or transfer facility as those terms are defined in the Resource Conservation and Recovery Act or any state analogue.

1.03.10 The Contractor, upon completion of the C&M Work, must promptly remove from the Railway Property all of Contractor's tools, equipment, implements and other materials, whether brought upon said Railway Property by Contractor or any subcontractor, employee or agent of Contractor or of any subcontractor, and must cause Railway Property to be left in a condition acceptable to Railway's Project Engineer.

1.04 Contractor Roadway Worker on Track Safety Program and Safety Action Plan

1.04.01 Each Contractor that will perform C&M Work within 25 feet of the centerline of a track must develop and implement a Roadway Worker Protection/On Track Safety Program and work with Railway's Project Engineer to develop an on track safety strategy as described in the guidelines listed in the on track safety portion of the Safety Orientation. This Program must provide Roadway Worker protection/on track training for all employees of the Contractor, its subcontractors, agents or invitees. This training is reinforced at the job site through job safety briefings. Additionally, each Contractor must develop and implement the Safety Action Plan, as provided for on the web site www.contractororientation.com, which will be made available to Railway prior to commencement of any work on Railway Property. During the performance of C&M Work, the Contractor must audit its C&M Work activities. The Contractor must designate an on-site Project Supervisor who will serve as the contact person for the Railway and who will maintain a copy of the Safety Action Plan, safety audits, and Material Safety Datasheets (MSDS), at the job site.

Contractors shall ensure its employees, subcontractors and agents are United States citizens or legally working in this country under a work VISA.

1.05 Railway Flagger Services:

1.05.01 The Contractor must give Railway's Project Engineer, telephone number (402) 458-7537, a minimum of thirty (30) calendar days advance notice when flagging services will be required so that the Roadmaster can make appropriate arrangements (i.e., bulletin the flagger's position). If flagging services are scheduled in advance by the Contractor and it is subsequently determined by the parties hereto that such services are no longer necessary, the Contractor must give the Roadmaster five (5) working days advance notice so that appropriate arrangements can be made to abolish the position pursuant to union requirements.

1.05.02 Unless determined otherwise by Railway's Project Engineer, Railway flagger will be required and furnished when Contractor's C&M Work activities are located over, under and/or within twenty-five (25) feet measured horizontally from centerline of the nearest track and when cranes or similar equipment positioned beyond 25-feet from the track centerline could foul the track in the event of tip over or other catastrophic occurrence, but not limited thereto for the following conditions:

1.05.02a When, upon inspection by Railway's Project Engineer, other conditions warrant.
1.05.02b When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway's Project Engineer, track or other Railway facilities may be subject to movement or settlement.

1.05.02c When C&M Work in any way interferes with the safe operation of trains at timetable speeds.

1.05.02d When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.

1.05.02e Special permission must be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.

1.05.03 Flagging services will be performed by qualified Railway flaggers.

1.05.03a Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by Railway's Project Engineer.

1.05.03b Each time a flagger is called, the minimum period for billing will be the eight (8) hour basic day.

1.05.03c The cost of flagger services provided by the Railway will be borne by City. The estimated cost for one (1) flagger is approximately between $800.00-$1,600.00 for an eight (8) hour basic day with time and one-half or double time for overtime, rest days and holidays. The estimated cost for each flagger includes vacation allowance, paid holidays, Railway and unemployment insurance, public liability and property damage insurance, health and welfare benefits, vehicle, transportation, meals, lodging, radio, equipment, supervision and other costs incidental to performing flagging services. Negotiations for Railway labor or collective bargaining agreements and rate changes authorized by appropriate Federal authorities may increase actual or estimated flagging rates. **THE GOVERNMENTAL FLAGGING RATE IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF FLAGGING PURSUANT TO THIS PARAGRAPH.**

1.05.03d The average train traffic on this route is 65 freight trains per 24-hour period at a timetable speed of 40 MPH and 2 passenger trains at a timetable speed of 15 MPH.

1.06 Contractor General Safety Requirements

1.06.01 C&M Work in the proximity of railway track(s) is potentially hazardous where movement of trains and equipment can occur at any time and in any direction. All work performed by contractors within 25 feet of any track must be in compliance with FRA Roadway Worker Protection Regulations. No Contractor shall conduct any tests, investigations or any other activity using mechanized equipment and/or machinery, or place or store any mechanized equipment, tools or other materials, within twenty-five (25) feet of the centerline of any railroad track on Railway Property, except after Contractor has obtained written approval from Railway Director Engineering Services, and then only in strict accordance with the terms and any conditions of such approval.

1.06.02 Before beginning any task on Railway Property, a thorough job safety briefing must be conducted with all personnel involved with the task and repeated when the
personnel or task changes. If the task is within 25 feet of any track, the job briefing must include the Railway's flagger, as applicable, and include the procedures the Contractor will use to protect its employees, subcontractors, agents or invitees from moving any equipment adjacent to or across any Railway track(s).

1.06.03 Workers must not work within 25 feet of the centerline of any track without an on track safety strategy approved by Railway's Project Engineer. When authority is provided, every contractor employee must know: (1) who the Railway flagger is, and how to contact the flagger, (2) limits of the authority, (3) the method of communication to stop and resume work, and (4) location of the designated places of safety. Persons or equipment entering flag/work limits that were not previously job briefed, must notify the flagger immediately, and be given a job briefing when working within 25 feet of the center line of track.

1.06.04 When Contractor employees are required to work on Railway Property after normal working hours or on weekends, Railway's Project Engineer must be notified. A minimum of two employees must be present at all times.

1.06.05 Any employees, agents or invitees of Contractor or its subcontractors under suspicion of being under the influence of drugs or alcohol, or in the possession of same, will be removed from the Railway Property and subsequently released to the custody of a representative of Contractor management. Future access to the Railway Property by that employee will be denied.

1.06.06 Any damage to Railway Property, or any hazard noticed on passing trains must be reported immediately to the Railway's Project Engineer. Any vehicle or machine which may come in contact with track, signal equipment, or structure (bridge) and could result in a train derailment must be reported immediately to the Railway's Project Engineer and to the Railway's Resource Operations Center at 1 (800) 832-5452. Local emergency numbers are to be obtained from Railway's Project Engineer prior to the start of any C&M Work and must be posted at the job site.

1.06.07 For safety reasons, all persons are prohibited from having pocket knives, firearms or other deadly weapons in their possession while working on Railway Property.

1.06.08 All personnel protective equipment (PPE) used on Railway Property must meet applicable OSHA and ANSI specifications. Current Railway personnel protective equipment requirements are listed on the web site, www.contractororientation.com, however, a partial list of the requirements include: a) safety glasses with permanently affixed side shields (no yellow lenses); b) hard hats c) safety shoe with: hardened toes, above-the-ankle lace-up and defined heel; and d) high visibility retro-reflective work wear. The Railway’s Project Engineer is to be contacted regarding local specifications for meeting requirements relating to hi-visibility work wear. Hearing protection, fall protection, gloves, and respirators must be worn as required by State and Federal regulations. (NOTE – Should there be a discrepancy between the information contained on the web site and the information in this paragraph, the web site will govern.)

1.06.09 THE CONTRACTOR MUST NOT PILE OR STORE ANY MATERIALS, MACHINERY OR EQUIPMENT CLOSER THAN 25'-0" TO THE CENTER LINE OF THE NEAREST RAILWAY TRACK. MATERIALS, MACHINERY OR EQUIPMENT MUST NOT BE STORED OR LEFT WITHIN 250 FEET OF ANY HIGHWAY/RAIL AT-GRADE CROSSINGS OR TEMPORARY CONSTRUCTION CROSSING, WHERE STORAGE OF
THE SAME WILL OBSTRUCT THE VIEW OF A TRAIN APPROACHING THE CROSSING. PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST ESTABLISH A STORAGE AREA WITH CONCURRENCE OF THE RAILWAY'S PROJECT ENGINEER.

- **1.06.10** Machines or vehicles must not be left unattended with the engine running. Parked machines or equipment must be in gear with brakes set and if equipped with blade, pan or bucket, they must be lowered to the ground. All machinery and equipment left unattended on Railway Property must be left inoperable and secured against movement. (See internet Engineering Contractor Safety Orientation program for more detailed specifications)

- **1.06.11** Workers must not create and leave any conditions at the work site that would interfere with water drainage. Any C&M Work performed over water must meet all Federal, State and Local regulations.

- **1.06.12** All power line wires must be considered dangerous and of high voltage unless informed to the contrary by proper authority. For all power lines the minimum clearance between the lines and any part of the equipment or load must be; 200 KV or below - 15 feet; 200 to 350 KV - 20 feet; 350 to 500 KV - 25 feet; 500 to 750 KV - 35 feet; and 750 to 1000 KV - 45 feet. If capacity of the line is not known, a minimum clearance of 45 feet must be maintained. A person must be designated to observe clearance of the equipment and give a timely warning for all operations where it is difficult for an operator to maintain the desired clearance by visual means.

**1.07 Excavation**

- **1.07.01** Before excavating, the Contractor must determine whether any underground pipe lines, electric wires, or cables, including fiber optic cable systems are present and located within the C&M Work area. The Contractor must determine whether excavation on Railway Property could cause damage to buried cables resulting in delay to Railway traffic and disruption of service to users. Delays and disruptions to service may cause business interruptions involving loss of revenue and profits. Before commencing excavation, the Contractor must contact Railway's Project Engineer, telephone number (402) 458-7537. All underground and overhead wires will be considered HIGH VOLTAGE and dangerous until verified with the company having ownership of the line. It is the Contractor's responsibility to notify any other companies that have underground utilities in the area and arrange for the location of all underground utilities before excavating.

- **1.07.02** The Contractor must cease all work and notify Railway immediately before continuing excavation in the area if obstructions are encountered which do not appear on drawings. If the obstruction is a utility and the owner of the utility can be identified, then the Contractor must also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work must be performed until the exact location has been determined. There will be no exceptions to these instructions.

- **1.07.03** All excavations must be conducted in compliance with applicable OSHA regulations and, regardless of depth, must be shored where there is any danger to tracks, structures or personnel.

- **1.07.04** Any excavations, holes or trenches on Railway Property must be covered, guarded and/or protected when not being worked on. When leaving work site areas at night and over weekends, the areas must be secured and left in a condition that will ensure that Railway
employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations must be back filled as soon as possible.

- **1.07.05** Contractor will be responsible at no cost to Railway to locate and make any adjustments necessary to any wire lines, pipe lines, or other utilities, fences, buildings, improvements or other facilities located within Railway Property (collectively, "Other Improvements"). Contractor must contact the owner(s) of the Other Improvements notifying them of any work that may damage these Other Improvements and/or interfere with their service and, if required, obtain the owner's written approval prior to so affecting the Other Improvements. Contractor must mark all Railway improvements and Other Improvements on the applicable Approved Plans or other plans and specifications approved in advance by Railway, and mark all Railway improvements and Other Improvements in the field in order to verify their locations. Contractor must also use all reasonable methods when working on or near Railway Property to determine if any Railway improvements or Other Improvements (fiber optic, cable, communication or otherwise) may exist. Failure to mark or identify any Railway improvements or Other Improvements will be sufficient cause for Railway to stop construction at no cost to Railway until such items are completed. Contractor must make all adjustments and other work described in this Section 1.07.05, including without limitation adjustments to Other Improvements and work on and affecting Railway Property, in a manner that does not adversely impact utility service to Railway.

1.08 Hazardous Waste, Substances and Material Reporting

- **1.08.01** If Contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railway Property, in or near any surface water, swamp, wetlands or waterways, while performing any work under this Agreement, Contractor must immediately: (a) notify the Railway's Resource Operations Center at 1 (800) 832-5452, of such discovery; (b) take safeguards necessary to protect its employees, subcontractors, agents and/or third parties; and (c) exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release.

1.09 Personal Injury Reporting

- **1.09.01** The Railway is required to report certain injuries as a part of compliance with Federal Railroad Administration (FRA) reporting requirements. Any personal injury sustained by an employee of the Contractor, subcontractor or Contractor's invitees while on the Railway Property must be reported immediately (by phone mail if unable to contact in person) to the Railway's Project Engineer. The Non-Employee Personal Injury Data Collection Form contained herein is to be completed and sent by Fax to the Railway at 1 (817) 352-7595 and to the Railway's Project Engineer no later than the close of shift on the date of the injury.
NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

INFORMATION REQUIRED TO BE COLLECTED PURSUANT TO FEDERAL REGULATION. IT SHOULD BE USED FOR COMPLIANCE WITH FEDERAL REGULATIONS ONLY AND IS NOT INTENDED TO PRESUME ACCEPTANCE OF RESPONSIBILITY OR LIABILITY.

1. Accident City/St
2. Date: ______________ Time: ______________ County:
3. Temperature:
4. Weather  (if non-Railway location)
5. Social Security #
6. Name (last, first, mi)
7. Address: Street: __________________________________________ City: St.______ Zip:_____
8. Date of Birth: ______________ and/or Age ______ Gender: (if available)
9. (a) Injury: __________________________________________ (b) Body Part:  
   (i.e. (a) Laceration (b) Hand)
11. Description of Accident (To include location, action, result, etc.):
12. Treatment:
   ___ First Aid Only
   ___ Required Medical Treatment
   ___ Other Medical Treatment
13. Dr. Name ________________________________  30. Date: ________
14. Dr. Address:
   Street: __________________________________________ City: ________________ St: _____ Zip:_____
15. Hospital Name:
16. Hospital Address:
   Street: __________________________________________ City: ________________ St: _____ Zip:_____
17. Diagnosis:

FAX TO RAILWAY AT (817) 352-7595
AND COPY TO RAILWAY ROADMASTER FAX
EXHIBIT C-1(A)

CONTRACTOR’S RIGHT OF ENTRY
For C&M Work
EXHIBIT C-1(A)

CONTRACTOR’S RIGHT OF ENTRY
For C&M Work

BNSF RAILWAY COMPANY
Attention: Project Engineer

Gentlemen:

The undersigned (hereinafter, the "Contractor"), has entered into a contract (the "Contract") dated ______________, 20_ with the City of Lincoln, Nebraska ("City") for the performance of certain work ("C&M Work") in connection with the construction of entertainment, recreation, lodging, offices, retail and/or other complementary and/or supporting facilities in Lincoln, Nebraska (collectively, the "West Haymarket Project"). The work to be performed under this Agreement is deemed to be "City C&M Work" (as defined in that certain Construction and Maintenance Agreement ["C&M Agreement"] dated _______, 2010, between BNSF Railway Company and the City). Performance of such C&M Work will necessarily require Contractor to enter BNSF RAILWAY COMPANY ("Railway") right of way and property ("Railway Property"). The Contract provides that no C&M Work will be commenced within Railway Property until the Contractor employed in connection with said C&M Work for the City of Lincoln, Nebraska (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If this Agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Contract, has agreed and does hereby agree with Railway as follows:

Section 1. RELEASE OF LIABILITY AND INDEMNITY

TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR SHALL RELEASE, INDEMNIFY, DEFEND AND HOLD HARMLESS RAILWAY AND RAILWAY’S AFFILIATED COMPANIES, PARTNERS, SUCCESSORS, ASSIGNS, LEGAL REPRESENTATIVES, OFFICERS, DIRECTORS, SHAREHOLDERS, EMPLOYEES AND AGENTS FOR, FROM AND AGAINST ANY AND ALL CLAIMS, LIABILITIES, FINES, PENALTIES, COSTS, DAMAGES, LOSSES, LIENS, CAUSES OF ACTION, SUITS, DEMANDS, JUDGMENTS AND EXPENSES (INCLUDING, WITHOUT LIMITATION, COURT COSTS AND ATTORNEYS’ FEES) OF ANY NATURE, KIND OR DESCRIPTION OF ANY PERSON (INCLUDING, WITHOUT LIMITATION, THE EMPLOYEES OF THE PARTIES HERETO) OR ENTITY DIRECTLY OR INDIRECTLY (COLLECTIVELY, "LIABILITIES") ARISING OUT OF, RESULTING FROM OR CAUSALLY RELATED TO (IN WHOLE OR IN PART):

(i) ANY RIGHTS OR INTERESTS GRANTED TO CONTRACTOR PURSUANT TO THIS AGREEMENT;
(ii) The use, occupancy or presence of contractor and contractor parties (defined below) and/or any work performed by contractor and contractor parties in, on, or about railway’s property or right-of-way and/or the west haymarket project, including, without limitation, operation of the pedestrian bridge, security fencing, or storm water mitigation by any contractor party (defined below);

(iii) any environmental matters arising from contractor and/or contractor parties’ use and occupancy of railway’s right-of-way or other railway property, including without limitation, use and occupancy of railway’s right-of-way or other railway property in connection with performance of the C&M work;

(iv) any damage to or destruction of any telecommunication lines in connection with the west haymarket project by contractor and/or contractor parties, including but not limited to (A) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractors, agents and/or employees as a result of such damage or destruction, and/or (B) any claim or cause of action for alleged loss of profits or revenue by, or loss of service by a customer or user of such telecommunication company(ies) as a result of such damage or destruction;

(v) contractor’s breach of the terms and conditions of this agreement; or

(vi) any act or omission of contractor or its officers, agents, invitees, employees or subcontractors (such officers, agents, invitees, employees and subcontractors being referred to herein individually as a "contractor party" and collectively, "contractor parties"), or anyone directly or indirectly employed by any of them, or anyone they control or exercise control over.

The liability assumed by contractor will not be affected by the fact, if it is a fact, that any damage, destruction, injury or death was occasioned by or contributed to by the negligence of railway, its agents, servants, employees or otherwise, but excluding claims wholly caused by railway’s sole negligence and excluding claims to the extent that such claims are caused by the willful misconduct or gross negligence of railway.

Further, to the fullest extent permitted by law, contractor agrees, regardless of any negligence or alleged negligence of railway, to indemnify, defend and hold harmless railway against and assume the defense of any liabilities asserted against or suffered by railway under or related to the federal employers’ liability act ("fela") whenever employees of contractor or any contractor party claim or allege that they are employees of railway or otherwise. This indemnity shall also extend, on the same basis, to fela claims based on actual or alleged violations of any federal, state or local laws or regulations, including but not limited to the safety appliance act, the locomotive inspection act, the occupational safety and health act, the resource
CONSERVATION AND RECOVERY ACT, AND ANY SIMILAR STATE OR FEDERAL STATUTE.

Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all Liabilities against Railway, and will, at Railway's discretion, appear and defend any suits or actions of law or in equity brought against Railway on any claim or cause of action arising out of any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claims and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all Liabilities arising out of any such claims or suits, provided that the foregoing indemnification obligations do not include Liabilities arising wholly out of the sole negligence of Railway or to the extent caused by the gross negligence or willful misconduct of Railway.

In addition to any other provision of this Agreement, in the event that all or any portion of this Article shall be deemed to be inapplicable for any reason, including without limitation as a result of a decision of an applicable court, legislative enactment or regulatory order, the parties agree that this Article shall be interpreted as requiring Contractor to indemnify Railway to the fullest extent permitted by applicable law. THROUGH THIS AGREEMENT THE PARTIES EXPRESSLY INTEND FOR CONTRACTOR TO INDEMNIFY RAILWAY FOR RAILWAY'S ACTS OF NEGLIGENCE, BUT EXCLUDING CLAIMS WHOLLY CAUSED BY RAILWAY'S SOLE NEGLIGENCE AND EXCLUDING CLAIMS TO THE EXTENT THAT SUCH CLAIMS ARE CAUSED BY THE WILLFUL MISCONDUCT OR GROSS NEGLIGENCE OF RAILWAY.

It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

Section 2. TERM

This Agreement is effective from the date of the Contract until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

Section 3. INSURANCE

Contractor must, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

A. Commercial General Liability Insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of $5,000,000.00 per occurrence, and $10,000,000.00 in the aggregate, but in no event less than the amount otherwise carried by the Contractor. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limited to, the following:

- Bodily Injury and Property Damage
- Personal Injury and Advertising Injury
- Fire legal liability
- Products and completed operations
This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor of and acceptable to Railroad.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

It is agreed that the workers’ compensation and employers’ liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to Railroad employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this Agreement.

B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least $1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage
- Any and all vehicles owned, used or hired

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor of and acceptable to Railroad.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

C. Workers Compensation and Employers Liability Insurance. This insurance shall include coverage for, but not limited to:

- Contractor’s statutory liability under the worker’s compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- Employers’ Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.

D. Railroad Protective Liability Insurance. This insurance shall name only the Railroad as the Insured with coverage of at least $5,000,000 per occurrence and $10,000,000 in the aggregate. The policy shall be issued on a standard ISO form CG 00 35 10 93 and include the following:

- Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
- Endorsed to include the Limited Seepage and Pollution Endorsement.
• Endorsed to remove any exclusion for punitive damages.
• No other endorsements restricting coverage may be added.
• The original policy must be provided to Railroad prior to performing any work or services under this Agreement

In lieu of providing a Railroad Protective Liability Policy, Contractor may participate in BNSF’s Blanket Railroad Protective Liability Insurance Policy available to Contractor.

Other Requirements:

All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

Contractor agrees to waive its right of recovery against Railroad for all claims and suits against Railroad, except for claims and suits arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of Railroad. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railroad for all claims and suits, except for claims and suits arising wholly out of the sole negligence, or to the extent caused by the gross negligence of willful misconduct, of Railroad. The certificate of insurance must reflect the waiver of subrogation endorsement. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against Railroad for loss of its owned or leased property or property under Contractor’s care, custody or control, except for the right of recovery or right of subrogation arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of Railroad.

Contractor is not allowed to self-insure without the prior written consent of Railroad. If granted by Railroad, any deductible, self-insured retention or other financial responsibility for claims must be covered directly by Contractor in lieu of insurance. Any and all Railroad liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by Contractor’s insurance will be covered as if Contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing the C&M Work, Contractor must furnish to Railroad acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments. The policy(ies) must contain a provision that obligates the insurance company(ies) issuing such policy(ies) to notify Railroad in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration. This cancellation provision must be indicated on the certificate of insurance. Upon request from Railroad, a certified duplicate original of any required policy must be furnished. Certificate(s) should be sent to the following address:

Ebix BPO
PO Box 12010-BN
Hemet, CA  92546-8010
Fax number: 951-652-2882
Email: bnsf@ebix.com

Any insurance policy must be written by a reputable insurance company reasonably acceptable to Railroad or with a current Best’s Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.
Contractor represents that this Agreement has been thoroughly reviewed by Contractor’s insurance agent(s)/broker(s), who have been instructed by Contractor to procure the insurance coverage required by this Agreement. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above.

Not more frequently than once every five years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by Contractor, Contractor must require that its subcontractors provide and maintain the insurance coverages set forth herein, naming Railroad as an additional insured, and requiring that the subcontractors release, defend and indemnify Railroad to the same extent and under the same terms and conditions as Contractor is required to release, defend and indemnify Railroad herein.

Failure to provide evidence as required by this section will entitle, but not require, Railroad to immediately suspend work under this Agreement until such evidence is provided. Acceptance of a certificate that does not comply with this section will not operate as a waiver of Contractor's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by Contractor will not be deemed to release or diminish the liability of Contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad will not be limited by the amount of the required insurance coverage.

For purposes of this section, Railroad means "Burlington Northern Santa Fe, LLC", "BNSF Railway Company" and the subsidiaries, successors, assigns and affiliates of each.

Section 4. EXHIBIT C CONTRACTOR REQUIREMENTS

The Contractor must observe and comply with all provisions, obligations, requirements and limitations contained in the Contract, and the Contractor Requirements set forth on Exhibit C attached to this Agreement and the Contract, including, but not be limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site.

Section 5. TRAIN DELAY

Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service and contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.

For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.
Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other
grain, intermodal, coal and freight trains operate under incentive/penalty contracts between
Railway and its customer(s). Under these arrangements, if Railway does not meet its contract
service commitments, Railway may suffer loss of performance or incentive pay and/or be subject
to penalty payments. Contractor is responsible for any train performance and incentive penalties
or other contractual economic losses actually incurred by Railway which are attributable to a train
delay caused by Contractor or its subcontractors.

The contractual relationship between Railway and its customers is proprietary and
confidential. In the event of a train delay covered by this Agreement, Railway will share
information relevant to any train delay to the extent consistent with Railway confidentiality
obligations. Damages for train delay are currently $382.20 per hour per incident. **THE RATE
THEN IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER
WILL BE USED TO CALCULATE THE ACTUAL COSTS OF TRAIN DELAY PURSUANT TO
THIS AGREEMENT.**

Contractor and its subcontractors must give Railway's Project Engineer (402) 458-7537 thirty (30)
days' minimum advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the
project. Railway has the right at any time to revise or change the work windows due to
train operations or service obligations. Railway will not be responsible for any additional
costs or expenses resulting from a change in work windows. Additional costs or
expenses resulting from a change in work windows shall be accounted for in Contractor's
expenses for the project.

Contractor and subcontractors must plan, schedule, coordinate and conduct all
Contractor's work so as to not cause any delays to any trains.

[Signature page follows]
Kindly acknowledge receipt of this letter by signing and returning to the Railway two original copies of this letter, which, upon execution by Railway, will constitute an Agreement between us.

________________________
(Contractor)

By: ______________________
Printed Name: ______________
Title: ______________________

Contact Person: ______________
Address: ___________________

City: ___________________ State: ___ Zip: ____
Fax: ____________________
Phone: ____________________
E-mail: ___________________

BNSF Railway Company

By: ______________________
Name: ____________________

Project Engineer

Accepted and effective this _____day of 20__. 
EXHIBIT C-1(B)

CONTRACTOR’S RIGHT OF ENTRY
For C&M Work
EXHIBIT C-1(B)

CONTRACTOR’S RIGHT OF ENTRY
For C&M Work

BNSF RAILWAY COMPANY
Attention: Project Engineer

Gentlemen:

The undersigned (hereinafter, the "Contractor"), has entered into a contract (the "Contract") dated ____________, 20_ with the City of Lincoln, Nebraska ("City") for the performance of certain work ("C&M Work") in connection with the construction of entertainment, recreation, lodging, offices, retail and/or other complementary and/or supporting facilities in Lincoln, Nebraska (collectively, the "West Haymarket Project"). The work to be performed under this Agreement is deemed to be "City C&M Work" (as defined in that certain Construction and Maintenance Agreement ["C&M Agreement"] dated ________, 2010, between BNSF Railway Company and the City). Performance of such C&M Work will necessarily require Contractor to enter BNSF RAILWAY COMPANY ("Railway") right of way and property ("Railway Property"). The Contract provides that no C&M Work will be commenced within Railway Property until the Contractor, employed in connection with said C&M Work for the City of Lincoln, Nebraska (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If this Agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Contract, has agreed and does hereby agree with Railway as follows:

Section 1. RELEASE OF LIABILITY AND INDEMNITY

TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR SHALL RELEASE, INDEMNIFY, DEFEND AND HOLD HARMLESS RAILWAY AND RAILWAY'S AFFILIATED COMPANIES, PARTNERS, SUCCESSORS, ASSIGNS, LEGAL REPRESENTATIVES, OFFICERS, DIRECTORS, SHAREHOLDERS, EMPLOYEES AND AGENTS FOR, FROM AND AGAINST ANY AND ALL CLAIMS, LIABILITIES, FINES, PENALTIES, COSTS, DAMAGES, LOSSES, LIENS, CAUSES OF ACTION, SUITS, DEMANDS, JUDGMENTS AND EXPENSES (INCLUDING, WITHOUT LIMITATION, COURT COSTS AND ATTORNEYS' FEES) OF ANY NATURE, KIND OR DESCRIPTION OF ANY PERSON (INCLUDING, WITHOUT LIMITATION, THE EMPLOYEES OF THE PARTIES HERETO) OR ENTITY DIRECTLY OR INDIRECTLY (COLLECTIVELY, "LIABILITIES") ARISING OUT OF, RESULTING FROM OR CAUSALLY RELATED TO (IN WHOLE OR IN PART):

(i) ANY RIGHTS OR INTERESTS GRANTED TO CONTRACTOR PURSUANT TO THIS AGREEMENT;
(ii) THE USE, OCCUPANCY OR PRESENCE OF CONTRACTOR AND CONTRACTOR PARTIES (DEFINED BELOW) AND/OR ANY WORK PERFORMED BY CONTRACTOR AND CONTRACTOR PARTIES IN, ON, OR ABOUT RAILWAY’S PROPERTY OR RIGHT-OF-WAY AND/OR THE WEST HAYMARKET PROJECT, INCLUDING, WITHOUT LIMITATION, OPERATION OF THE PEDESTRIAN BRIDGE, SECURITY FENCING, OR STORM WATER MITIGATION BY ANY CONTRACTOR PARTY (DEFINED BELOW);

(iii) ANY ENVIRONMENTAL MATTERS ARISING FROM CONTRACTOR AND/OR CONTRACTOR PARTIES’ USE AND OCCUPANCY OF RAILWAY’S RIGHT-OF-WAY OR OTHER RAILWAY PROPERTY, INCLUDING WITHOUT LIMITATION USE AND OCCUPANCY OF RAILWAY’S RIGHT-OF-WAY OR OTHER RAILWAY PROPERTY IN CONNECTION WITH PERFORMANCE OF THE C&M WORK;

(iv) ANY DAMAGE TO OR DESTRUCTION OF ANY TELECOMMUNICATION LINES IN CONNECTION WITH THE WEST HAYMARKET PROJECT BY CONTRACTOR AND/OR CONTRACTOR PARTIES, INCLUDING BUT NOT LIMITED TO (A) ANY INJURY TO OR DEATH OF ANY PERSON EMPLOYED BY OR ON BEHALF OF ANY TELECOMMUNICATIONS COMPANY, AND/OR ITS CONTRACTORS, AGENTS AND/OR EMPLOYEES AS A RESULT OF SUCH DAMAGE OR DESTRUCTION, AND/OR (B) ANY CLAIM OR CAUSE OF ACTION FOR ALLEGED LOSS OF PROFITS OR REVENUE BY, OR LOSS OF SERVICE BY A CUSTOMER OR USER OF SUCH TELECOMMUNICATION COMPANY(IES) AS A RESULT OF SUCH DAMAGE OR DESTRUCTION;

(v) CONTRACTOR’S BREACH OF THE TERMS AND CONDITIONS OF THIS AGREEMENT; OR

(vi) ANY ACT OR OMISSION OF CONTRACTOR OR ITS OFFICERS, AGENTS, INVITEES, EMPLOYEES OR SUBCONTRACTORS (SUCH OFFICERS, AGENTS, INVITEES, EMPLOYEES AND SUBCONTRACTORS BEING REFERRED TO HEREIN INDIVIDUALLY AS A "CONTRACTOR PARTY" AND COLLECTIVELY, "CONTRACTOR PARTIES"), OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM, OR ANYONE THEY CONTROL OR EXERCISE CONTROL OVER.

THE LIABILITY ASSUMED BY CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT ANY DAMAGE, DESTRUCTION, INJURY OR DEATH WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF RAILWAY, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, BUT EXCLUDING CLAIMS WHOLLY CAUSED BY RAILWAY’S SOLE NEGLIGENCE AND EXCLUDING CLAIMS TO THE EXTENT THAT SUCH CLAIMS ARE CAUSED BY THE WILLFUL MISCONDUCT OR GROSS NEGLIGENCE OF RAILWAY.

FURTHER, TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR AGREES, REGARDLESS OF ANY NEGLIGENCE OR ALLEGED NEGLIGENCE OF RAILWAY, TO INDEMNIFY, DEFEND AND HOLD HARMLESS RAILWAY AGAINST AND ASSUME THE DEFENSE OF ANY LIABILITIES ASSERTED AGAINST OR SUFFERED BY RAILWAY UNDER OR RELATED TO THE FEDERAL EMPLOYERS’ LIABILITY ACT ("FELA") WHENEVER EMPLOYEES OF CONTRACTOR OR ANY CONTRACTOR PARTY CLAIM OR ALLEGED THAT THEY ARE EMPLOYEES OF RAILWAY OR OTHERWISE. THIS INDEMNITY SHALL ALSO EXTEND, ON THE SAME BASIS, TO FELA CLAIMS BASED ON ACTUAL OR ALLEGED VIOLATIONS OF ANY FEDERAL, STATE OR LOCAL LAWS OR REGULATIONS, INCLUDING BUT NOT LIMITED TO THE SAFETY APPLIANCE ACT, THE LOCOMOTIVE INSPECTION ACT, THE OCCUPATIONAL SAFETY AND HEALTH ACT, THE RESOURCE
CONSERVATION AND RECOVERY ACT, AND ANY SIMILAR STATE OR FEDERAL STATUTE.

Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all Liabilities against Railway, and will, at Railway's discretion, appear and defend any suits or actions of law or in equity brought against Railway on any claim or cause of action arising out of any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claims and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all Liabilities arising out of any such claims or suits, provided that the foregoing indemnification obligations do not include Liabilities arising wholly out of the sole negligence of Railway or to the extent caused by the gross negligence or willful misconduct of Railway.

In addition to any other provision of this Agreement, in the event that all or any portion of this Article shall be deemed to be inapplicable for any reason, including without limitation as a result of a decision of an applicable court, legislative enactment or regulatory order, the parties agree that this Article shall be interpreted as requiring Contractor to indemnify Railway to the fullest extent permitted by applicable law. THROUGH THIS AGREEMENT THE PARTIES EXPRESSLY INTEND FOR CONTRACTOR TO INDEMNIFY RAILWAY FOR RAILWAY'S ACTS OF NEGLIGENCE, BUT EXCLUDING CLAIMS WHOLLY CAUSED BY RAILWAY'S SOLE NEGLIGENCE AND EXCLUDING CLAIMS TO THE EXTENT THAT SUCH CLAIMS ARE CAUSED BY THE WILLFUL MISCONDUCT OR GROSS NEGLIGENCE OF RAILWAY.

It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

Section 2. TERM

This Agreement is effective from the date of the Contract until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

Section 3. INSURANCE

Contractor must, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

A. Commercial General Liability Insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of $2,000,000.00 per occurrence, and $4,000,000.00 in the aggregate, but in no event less than the amount otherwise carried by the Contractor. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limited to, the following:
   - Bodily Injury and Property Damage
   - Personal Injury and Advertising Injury
   - Fire legal liability
   - Products and completed operations
This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor of and acceptable to Railroad.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

It is agreed that the workers’ compensation and employers’ liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to Railroad employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this Agreement.

B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least $1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage
- Any and all vehicles owned, used or hired

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor of and acceptable to Railroad.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

C. Workers Compensation and Employers Liability Insurance. This insurance shall include coverage for, but not limited to:

- Contractor’s statutory liability under the worker’s compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- Employers’ Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.

D. Railroad Protective Liability Insurance. This insurance shall name only the Railroad as the Insured with coverage of at least $5,000,000 per occurrence and $10,000,000 in the aggregate. The policy shall be issued on a standard ISO form CG 00 35 10 93 and include the following:

- Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
- Endorsed to include the Limited Seepage and Pollution Endorsement.
• Endorsed to remove any exclusion for punitive damages.
• No other endorsements restricting coverage may be added.
• The original policy must be provided to Railroad prior to performing any work or services under this Agreement.

In lieu of providing a Railroad Protective Liability Policy, Contractor may participate in BNSF’s Blanket Railroad Protective Liability Insurance Policy available to Contractor.

Other Requirements:

All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

Contractor agrees to waive its right of recovery against Railroad for all claims and suits against Railroad, except for claims and suits arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of Railroad. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railroad for all claims and suits, except for claims and suits arising wholly out of the sole negligence, or to the extent caused by the gross negligence of willful misconduct, of Railroad. The certificate of insurance must reflect the waiver of subrogation endorsement. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against Railroad for loss of its owned or leased property or property under Contractor’s care, custody or control, except for the right of recovery or right of subrogation arising wholly out of the sole negligence, or to the extent caused by the gross negligence or willful misconduct, of Railroad.

Contractor is not allowed to self-insure without the prior written consent of Railroad. If granted by Railroad, any deductible, self-insured retention or other financial responsibility for claims must be covered directly by Contractor in lieu of insurance. Any and all Railroad liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by Contractor’s insurance will be covered as if Contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing the C&M Work, Contractor must furnish to Railroad acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments. The policy(ies) must contain a provision that obligates the insurance company(ies) issuing such policy(ies) to notify Railroad in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration. This cancellation provision must be indicated on the certificate of insurance. Upon request from Railroad, a certified duplicate original of any required policy must be furnished. Certificate(s) should be sent to the following address:

Ebix BPO
PO Box 12010-BN
Hemet, CA 92546-8010
Fax number: 951-652-2882
Email: bnsf@ebix.com

Any insurance policy must be written by a reputable insurance company reasonably acceptable to Railroad or with a current Best’s Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.
Contractor represents that this Agreement has been thoroughly reviewed by Contractor’s insurance agent(s)/broker(s), who have been instructed by Contractor to procure the insurance coverage required by this Agreement. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above.

Not more frequently than once every five years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by Contractor, Contractor must require that its subcontractors provide and maintain the insurance coverages set forth herein, naming Railroad as an additional insured, and requiring that the subcontractors release, defend and indemnify Railroad to the same extent and under the same terms and conditions as Contractor is required to release, defend and indemnify Railroad herein.

Failure to provide evidence as required by this section will entitle, but not require, Railroad to immediately suspend work under this Agreement until such evidence is provided. Acceptance of a certificate that does not comply with this section will not operate as a waiver of Contractor's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by Contractor will not be deemed to release or diminish the liability of Contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad will not be limited by the amount of the required insurance coverage.

For purposes of this section, Railroad means "Burlington Northern Santa Fe, LLC", "BNSF Railway Company" and the subsidiaries, successors, assigns and affiliates of each.

Section 4. EXHIBIT C CONTRACTOR REQUIREMENTS

The Contractor must observe and comply with all provisions, obligations, requirements and limitations contained in the Contract, and the Contractor Requirements set forth on Exhibit C attached to this Agreement and the Contract, including, but not be limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site.

Section 5. TRAIN DELAY

Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service and contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.

For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.
Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other grain, intermodal, coal and freight trains operate under incentive/penalty contracts between Railway and its customer(s). Under these arrangements, if Railway does not meet its contract service commitments, Railway may suffer loss of performance or incentive pay and/or be subject to penalty payments. Contractor is responsible for any train performance and incentive penalties or other contractual economic losses actually incurred by Railway which are attributable to a train delay caused by Contractor or its subcontractors.

The contractual relationship between Railway and its customers is proprietary and confidential. In the event of a train delay covered by this Agreement, Railway will share information relevant to any train delay to the extent consistent with Railway confidentiality obligations. Damages for train delay are currently $382.20 per hour per incident. **THE RATE THEN IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF TRAIN DELAY PURSUANT TO THIS AGREEMENT.**

Contractor and its subcontractors must give Railway’s Project Engineer (402) 458-7537 thirty (30) days’ minimum advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the project. Railway has the right at any time to revise or change the work windows due to train operations or service obligations. Railway will not be responsible for any additional costs or expenses resulting from a change in work windows. Additional costs or expenses resulting from a change in work windows shall be accounted for in Contractor’s expenses for the project.

Contractor and subcontractors must plan, schedule, coordinate and conduct all Contractor’s work so as to not cause any delays to any trains.

[Signature page follows]
Kindly acknowledge receipt of this letter by signing and returning to the Railway two original copies of this letter, which, upon execution by Railway, will constitute an Agreement between us.

________________________
(Contractor)

By: ______________________
Printed Name: ______________
Title: ______________________

Contact Person: ______________
Address: ____________________

City: ______________ State: ___ Zip: ___
Fax: _________________________
Phone: _______________________
E-mail: _______________________

BNSF Railway Company

By: ______________________
Name: ______________________
Project Engineer

Accepted and effective this _____ day of 20__. 
EXHIBIT D

Final Clearances

Pursuant to the provisions of Section 3.1.3 of the C&M Agreement, approved Final Clearances for each segment of City C&M Work being constructed pursuant to the City Work Final Design are attached hereto as Exhibit D.
EXHIBIT E
Soil Management Plan

In addition to and not in limitation of the requirements and obligations of City and City Contractors contained in the C&M Agreement, the following requirements shall apply to City and City Contractors with respect to management of impacted environmental media. In the event of conflicts between the terms of this Exhibit E and the rest of the C&M Agreement, including but not limited to the provisions of Exhibit C and, as applicable, Exhibit C-1(A) or Exhibit C-1(B), the most restrictive provisions shall apply to City and City Contractors.

Proper Management of Impacted Media

1. Access

Access to the West Haymarket Redevelopment Site (WHRS) is restricted to railroad and City of Lincoln personnel and contractors conducting work in their official capacity as employees or contractors of their respective organizations. Access to Railroad operating property for purposes of providing construction-related services is subject to specific safety and rules training certifications and requirements found at: www.contractororientation.com. Access to other non-railroad private property for purposes of performing construction-related services within the WHRS must be arranged through the EPMT.

2. Management Practices

Due to the potential risks and penalties involved in management of impacted media and protection of rare and unique saline wetlands as well as the wide applicability of these issues to planned construction activity, prescriptive management practices for these areas are as follows:

2.1 Impacted Soil and Debris Management

Attachment 3 - NDEQ Environmental Guidance Document 05-061 “Investigation Derived Waste and Remediation Considerations” (GD 05-061) is provided as reference. Relevant and critical points extracted from GD 05-061 as well as NDEQ’s Title 132 (Integrated Solid Waste Management Regulations) for purposes of implementation and compliance is as follows:

1. A fundamental premise regarding the regulatory status of any soils, debris or other media encountered during intrusive activities is that such items are not considered waste material until determined by the Project Manager in consultation with the Technical Representative to be no longer suitable for its intended purpose.

2. Title 132, Chapter 1, Section 041 defines fill as: “solid waste that consists only of one or more of the following: sand, gravel, stone, soil, rock, brick, concrete rubble, asphalt rubble, or similar material”.

3. The “use of fill for legitimate land improvement (backfilling a foundation) is allowed per Title 132, Chapter 2, Section 002.01 as long as the fill is not mixed with other solid wastes that have the potential to cause contamination that may threaten human health or the environment”.

4. From pg. 2 of NDEQ GD 05-161: “Activity not related to investigation or remediation is not considered “active management” under the waste regulations. For example, routine trench or foundation excavation spoils that are generated at a site that is not a remediation or investigation activity site or are not related to remediation or investigation activities are not considered a waste unless it is intended for disposal. Such spoils could normally be replaced in the excavation.”

5. Prior to initiation of each construction task, the project manager will consult with the technical representative to determine the type of material anticipated to be excavated, potential
contaminants of concern (if any) and allowable re-use (including use as fill), alternatives to be employed for excess soil or debris to be generated associated with his/her respective work task. The project manager will work with the construction representative and advise where excess soils or debris shall be stored. Provisions for temporary storage of potentially impacted soil/debris must be explicitly agreed upon.

2.2 Grading/Excavation

Construction grading and excavation activities associated with applicable WHRS project activities require coordination and compliance as follows:

1. Grading/excavation project manager/contractor’s representative (PM/CR) must contact the Technical Representative (TR) at least 14 days prior to initiation of grading/excavation work to discuss anticipated conditions and any special precautions to consider.

2. The PM/CR must arrange for all utility clearance.

3. The PM/CR must meet with the TR to discuss task – specific precautions (as detailed in any and all applicable work activities described in this Section).

4. A TR must be on-site or on call to respond to questions or observations that could require sampling or determinations relevant to management of impacted soil or debris. **It is the responsibility of the PM/CR to notify the TR of construction schedules and activities (including any changes in schedules or scope of work effort) that may require on-site support and observation.**

5. Unless superseded by other special considerations, grading/excavation activities may proceed per the contractual project/task plans and specifications.

6. Changing field considerations and observations (including encountering suspect soils/debris/other media or modifications of proposed areas/volumes of soil grading/excavation/filling) must be reported to the TR.

7. If during execution of contractual plans and specifications the PM/CR determines the need to manage excess soils/debris/other media) not previously addressed, the PM/CR will consult with the TR to discuss management of affected media. Resolution and ultimate fate of the affected media will be documented by the TR.

8. Work shutdown will be at the discretion of the PM/CR’s corporate health and safety policies and practices.

2.3 Utility Work

Contractors performing utility work including all intrusive work (trenching, boring, digging, etc.) where surface features (soil, concrete, asphalt, vegetated surfaces) will be disturbed require conformance to the following procedures:

1. The utility project manager/contractor’s representative (PM/CR) must contact the TR at least 14 days prior to initiation of intrusive utility work to discuss anticipated conditions and any special precautions to consider.

2. The PM/CR must arrange for all related utility clearance.

3. The PM/CR must meet with the TR to discuss task – specific precautions (as detailed in any and all applicable work activities described in this Section).

4. A TR must be on-site or on call to respond to questions or observations that could require sampling or determinations relevant to management of impacted soil or debris. **It is the**
responsibility of the PM/CR to notify the TR of construction schedules and activities (including any changes in schedules or scope of work effort) that may require on-site support and observation.

5. Unless superseded by other special considerations, utility construction activities may proceed per the contractual project/task plans and specifications.

6. Changing field considerations and observations (including encountering suspect soils/debris/other media or modifications of proposed routes of utility corridors) must be immediately reported to the TR.

7. In general, soil/debris/spoils which will not be removed from the site can be used as backfill around utilities if determined by the PM/CR to be suitable fill material and the material has no appearance of contamination or odor. Soil/debris/spoils removed during the course of intrusive utility work with an appearance of contamination or odor will be immediately notified to the TR for consultation and resolution including temporary storage of the suspect material.

8. If during execution of contractual plans and specifications the PM/CR determines there is a need to manage excess soils/debris/other media) not previously addressed, the PM/CR will consult with the TR to discuss management of affected media. Resolution and ultimate fate of the affected media will be documented by the TR.

9. Work shutdown will be at the discretion of the PM/CR’s corporate health and safety policies and practices.

SPILL/INCIDENT RESPONSE REFERRAL SHEET

SPILL REPORTING

First Call:

Environmental Project Management Team Technical Representatives:
Frank Uhlarik – Alfred Benesch & Company: 402-333-5792
Cell: 402-669-0546
Alternate:
Bill Imig – Olsson Associates: 402-458-5903
Cell: 402-314-4568
Alternate:
Miki Esposito – Environmental Project Management Team: 402-441-6173

Agencies/Railroad Authorities:

Nebraska Department of Environmental Quality: 402-471-2186 or 877-253-2603

After Hours, Weekends and Holidays:

Nebraska State Patrol Dispatch: 402-471-4545
BNSF Railway Company Resource Operations Center: 800-832-5452
Union Pacific Railroad Security: 888-877-7267
National Response Center: 800-424-8802

ALL OTHER INCIDENTS

Fire and Police: Dial 911
LIST OF ACRONYMS

CR  Contractor’s Representative
SMP  Soil Management Plan
EPMT  City of Lincoln Environmental Project Management Team
PM  Project Manager
TR  Environmental Project Management Team Technical Representative
WHRS  West Haymarket Redevelopment Site
Exhibit D
Terracon Payment Plan
West Haymarket Arena and Parking Garage

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Note: Payment schedule subject to change with approval of change orders.
SECTIONS 033000-G – CAST-IN-PLACE CONCRETE

PART I - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Proportioning, mixing, conveying, placing, and finishing of cast-in-place concrete.
   3. Installation of embedded items furnished under other sections.

B. Related Sections:
   1. Section 031000-G - Concrete Formwork.
   2. Section 031500-G - Concrete Accessories.
   3. Section 032000-G - Concrete Reinforcement.
   4. Section 033900-G - Concrete Curing.

1.3 REFERENCES

A. ACI 214 - Recommended Practice for Evaluation of Compression Test Results of Field
   Concrete.
B. ACI 301 - Specifications for Structural Concrete for Buildings.
C. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
D. ACI 305R - Hot Weather Concreting.
E. ACI 306R - Cold Weather Concreting.
F. ACI 309 - Standard Practice for Consolidation of Concrete.
G. ACI 318 - Building Code Requirements for Reinforced Concrete.
H. ASTM C31 - Methods of Making and Curing Concrete Test Specimens in the Field.
I. ASTM C33 - Specifications for Concrete Aggregates.
K. ASTM C42 - Test Methods of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.


M. ASTM C143 - Test Method for Slump of Portland Cement Concrete.


O. ASTM C172 - Method of Sampling Freshly Mixed Concrete.

P. ASTM C173 - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.


R. ASTM C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

S. ASTM C260 - Specifications for Air Entraining Admixtures for Concrete.

T. ASTM C494 - Specifications for Chemical Admixtures for Concrete.

U. ASTM C618 - Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

V. ASTM C666 - Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

W. ASTM C672 - Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.

X. ASTM C 989 - Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.


Z. AASHTO T 260 - Sampling and Testing for Total Chloride Ion in Concrete and Concrete Raw Materials.


1.4 SUBMITTALS

A. Make submittals in accordance with requirements of Division 01.

B. Mix Design - Include the following for each mix design:
   1. Proportions of all components including all admixtures (ACI 301, Paragraph 3.9).
   2. Water/cementitious materials ratio.
4. Gradation of coarse and fine aggregates.
5. Air content of freshly mixed concrete (ASTM C231 or ASTM C173) and of hardened concrete including parameters of air void system (ASTM C457).

1.5 QUALITY ASSURANCE

A. Work shall conform to the requirements of ACI 301 and ACI 318 except where more stringent requirements are shown on the Drawings or specified herein.

B. Testing Agency is responsible for conducting and reporting results of all tests required by Section 014523 and this Section. The Testing Agency has the authority to reject concrete not meeting these specifications.

1.6 DELIVERY AND DISCHARGE

A. Concrete transported by truck mixer shall be completely discharged within 1½ hours after water has been added to cement or cement has been added to aggregates. Time limit reduces to 1 hour for concreting in hot weather.

B. Adding water to mix is prohibited except as allowed by ACI 301 paragraph 7.5.2. No water shall be added after a superplasticizer has been added to a mix.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cement: ASTM C150, Type I. Use one brand throughout project.


C. Aggregates (Normal Weight):

1. Coarse - Crushed and graded limestone conforming to ASTM C33 or State of Nebraska Specifications. Minimum class designations shall be 1S for all below grade construction and 5S for all other concrete. Maximum aggregate size shall be 1 inch. No more than 10% of coarse aggregate shall be 1 inch.

2. Fine - Natural sand conforming to ASTM C33.

D. Fly Ash: ASTM C618, Class C or F with maximum loss on ignition of 3.0%, maximum retained on #325 sieve equal to 28%, and maximum water requirement as a percent of control equals 100%. Fly ash as a percentage of total cementitious materials shall not exceed 20%. Fly ash is permitted in pile caps, footings, grade beams and walls only. Limited amounts of fly ash may be used to aid pumping of slab on grade mixes.
E. Admixtures: The following products are pre-approved; substitutions must be approved by Engineer.

   b. Darex II or Daravair 1400, W.R. Grace.
   c. Protex AES, Protex Industries.

2. Water Reducing: ASTM C494, Type A.
   a. Eucon WR-75 or WR-89, Euclid Chemical Company.
   b. Pozzolith Polyheed 997, 220N or 322N, Master Builders.
   c. WRDA with Hycol or Daracem 55, W.R. Grace.

3. Superplasticizer: ASTM C494, Type F.
   a. Eucon 37, Euclid Chemical Company.
   b. Rheobuild 1000, Master Builders.
   c. WRDA - 19, W.R. Grace.

4. Non-chloride Accelerator: ASTM C494, Type C or E.
   a. Accelguard 80, Euclid Chemical Company.
   b. Pozzutec 20, Master Builders.

5. Each manufacturer shall certify compatibility of all admixtures combined in each mix design.
6. Calcium chloride or admixtures containing more than 0.05% chloride ions, by weight of admixture are prohibited.

F. Grout: ASTM C109, 6000 psi @ 28 days.

2. Euco NS, Euclid Chemical Company.
5. Masterflow 713 Grout, Master Builders.
6. Sure-Grip Grout, Dayton Superior Corp.

2.2 MIX DESIGN

A. Minimum strength, maximum water/cement ratio, maximum slump, and required air contents are listed in the General Notes on the Drawings.

B. Concrete flatwork placed when air temperature is below 50 degrees F. shall contain specified non-chloride accelerator.
C. Concrete exposed to freezing and thawing, in service condition, shall contain a minimum of 6 sacks (564 lbs.) of cement per cubic yard of 4000 psi concrete and 7 sacks (658 lbs.) of cement per cubic yard of 5,000 psi concrete.

D. Total aggregate in mix shall be approximately 60% course and 40% fine.

E. Where field conditions require slump to exceed maximum shown, increased slump shall be obtained by use of specified superplasticizer only.

F. Concrete that will receive superplasticizer shall arrive at job site with a slump of 2"-3". After Testing Agency verifies slump, superplasticizer shall be added such that concrete will have a slump of 7 inches ± 2 inches when deposited in forms. Slump shall not exceed 9 inches.

G. Water soluble chloride ion content of concrete mix shall not exceed 0.15% for conventionally reinforced concrete.

H. Hardened concrete shall have a maximum air void spacing factor of 0.0080 inches. Surface area of air voids shall be a minimum of 600 in.² per cubic inch of air void volume.

I. Hardened concrete shall have a maximum air void spacing factor of 0.0080 inches. Surface area of air voids shall be a minimum of 600 in.² per cubic inch of air void volume.

PART 3 - EXECUTION

3.1 PREPARATION

A. Do not place concrete on frozen ground.

B. Clean all forms of dust and debris before placing concrete.

3.2 INSTALLATION

A. Temperature of concrete as placed shall not exceed 90 degrees F.

B. Finishing:

1. Slab-on-Grade.
   a. Bullfloat immediately after screeding.
   b. Provide broom finish per ACI 301, Section 11.7.4 as soon as bleed water has disappeared. Architect and Owner will approve finish on first slab on grade placement.
   c. Finishing tolerance shall be Class B per ACI 301, Section 11.9.
   d. All slabs shall be finished to proper elevations so that water flows to drains and so that no puddles exist.

C. Joints:

1. Construction, control and isolation joints are shown on Drawings.
2. Tool or "soff-cut" joints at time of finishing.
3. Coordinate configuration of tooled joints with control joint sealants.

D. Repair of Surface Defects.
1. Repair all defects exceeding ¼" width or depth and grind smooth all exposed form offsets or fins over 1/8".
2. Match color of concrete to be repaired.
3. Submit samples of materials, product data, and test data on proprietary compounds used for adhesion or patching ingredients to Architect for review before patching concrete.
4. Receive written acceptance by Architect of method and materials before making structural repairs to concrete.
5. Acceptable repair materials:
   a. Bonding Admixture: "SBR Latex" or "Flexcon", Euclid Chemical Co. or "Acryl 60", Standard Drywall Co.
   b. Epoxy Adhesive: Two component, 100% solids, 100% reactive compound suitable for use on dry or damp surfaces, "Euco Epoxy #463 or #620", Euclid Chemical Co. or "Sikadur Hi-Mod", Sika Corp.

E. Repair of Random Cracks:
1. Repair all random slab cracks in accordance with procedures and materials specified in Section 071000-G. Alternatively, submit proposed materials and procedures for approval.
2. Receive Engineer's approval of materials and procedures prior to application.

3.3 FIELD QUALITY CONTROL (TESTING AGENCY)

A. Air Content:
1. Sample freshly-mixed concrete at point of final placement in accordance with ASTM C172 and conduct one air content test in accordance with ASTM C231 or ASTM C173 for each truck of ready-mix, air-entrained concrete delivered to Project. Concrete shall be re-tested after any additional air entrainment is added. Concrete shall not be placed prior to verification of conformance with Project Specifications.
2. Sample fresh concrete immediately following placement and screeding and conduct air content tests in accordance with ASTM C231 or ASTM C173 at rate of two per slab-on-grade placement. One test shall be on concrete from first truckload so that air content can be adjusted as necessary on following loads.

B. Concrete Compressive Strength:
1. Mold test cylinders in accordance with ASTM C31 as follows:
   a. Take minimum of six cylinders for each 100 cubic yards, or fraction thereof, of each mix design of concrete placed in any one day.
b. Additional cylinders shall be taken under conditions of cold weather concreting (See Section 033900).

c. At Contractor's option and cost, additional cylinders may be taken to verify concrete strength prior to form removal.

2. Sample plastic concrete for testing at point of final placement, in accordance with ASTM C172.

3. Cover specimens properly, immediately after finishing. Protect outside surfaces of cardboard molds, if used, from contact with sources of water for first 24 hours after molding.

4. Cure test cylinders per ASTM C31 as follows:

a. To verify compressive strength prior to form removal or for additional test cylinders required due to cold weather concreting conditions:

   1) Store test cylinders on structure as near to point of sampling as possible and protect from elements in same manner as that given to portion of structure as cylinders represents.
   2) Transport to test laboratory no more than 4 hours before testing. Remove molds from cylinders immediately before testing.

b. To verify 28-day compressive strength:

   1) During first 24 hours after molding, store test cylinders under conditions that maintain temperature immediately adjacent to cylinders in range of 60 to 75 degrees F. and prevent loss of moisture from cylinders.
   2) Remove test cylinders from molds at end of 20 +/- 4 hours and store in moist condition at 73.4 +/- 3 degrees F. until time of test. Laboratory moist rooms shall meet requirements of ASTM C511.

5. Compression tests for conventionally reinforced concrete:

   a. Test 2 cylinders at 7 days.
   b. Test 2 cylinders at 28 days.
   c. Hold 2 cylinders in reserve for use as Engineer directs.

C. Slump Test:

1. Conduct one slump test per truck load of ready mixed concrete delivered to Project at truck.

2. When superplasticizer is used, initial slump must be verified by Testing Agency prior to the addition of superplasticizer.

D. Acceptance of Concrete:

1. Concrete compression tests will be evaluated by Engineer in accordance with ACI 301, Chapter 17. If number of tests conducted is inadequate for evaluation of concrete or test results for any type of concrete fail to meet specified strength requirements, core tests may be required as directed by Engineer. Air content and parameters of air-void system shall meet requirements of this Section.

2. Core tests, when required, shall be in accordance with ACI 301, Section 17.3.
3. Should tested concrete meet Specifications, Owner will pay for coring and testing of hardened concrete. Should tested concrete not meet Specifications, Contractor shall pay for coring and testing of hardened concrete and for any corrective action that may be required.

END OF SECTION 033000
SECTION 033000-R – CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Proportioning, mixing, conveying, placing, and finishing of cast-in-place concrete.
   3. Installation of embedded items furnished under other sections.

B. Related Sections:
   1. Section 031000-R - Concrete Formwork.
   2. Section 031500-R - Concrete Accessories.
   3. Section 032000-R - Concrete Reinforcement.
   4. Section 033900-R - Concrete Curing.

1.3 REFERENCES

A. ACI 214 - Recommended Practice for Evaluation of Compression Test Results of Field Concrete.
B. ACI 301 - Specifications for Structural Concrete for Buildings.
C. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
D. ACI 305R - Hot Weather Concreting.
E. ACI 306R - Cold Weather Concreting.
F. ACI 309 - Standard Practice for Consolidation of Concrete.
G. ACI 318 - Building Code Requirements for Reinforced Concrete.
H. ASTM C31 - Methods of Making and Curing Concrete Test Specimens in the Field.
I. ASTM C33 - Specifications for Concrete Aggregates.
K. ASTM C42 - Test Methods of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
M. ASTM C143 - Test Method for Slump of Portland Cement Concrete.
O. ASTM C172 - Method of Sampling Freshly Mixed Concrete.
P. ASTM C173 - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
R. ASTM C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
S. ASTM C260 - Specifications for Air Entraining Admixtures for Concrete.
T. ASTM C494 - Specifications for Chemical Admixtures for Concrete.
U. ASTM C618 - Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
V. ASTM C666 - Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
W. ASTM C672 - Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.
X. ASTM C 989 - Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
Z. AASHTO T 260 - Sampling and Testing for Total Chloride Ion in Concrete and Concrete Raw Materials.

1.4 SUBMITTALS

A. Make submittals in accordance with requirements of Division 01.

B. Mix Design - Include the following for each mix design:

1. Proportions of all components including all admixtures (ACI 301, Paragraph 3.9).
2. Water/cementitious materials ratio.
4. Gradation of coarse and fine aggregates.
5. Air content of freshly mixed concrete (ASTM C231 or ASTM C173) and of hardened concrete including parameters of air void system (ASTM C457).

1.5 QUALITY ASSURANCE

A. Work shall conform to the requirements of ACI 301 and ACI 318 except where more stringent requirements are shown on the Drawings or specified herein.

B. Testing Agency is responsible for conducting and reporting results of all tests required by Section 014523 and this Section. The Testing Agency has the authority to reject concrete not meeting these specifications.

1.6 DELIVERY AND DISCHARGE

A. Concrete transported by truck mixer shall be completely discharged within 1½ hours after water has been added to cement or cement has been added to aggregates. Time limit reduces to 1 hour for concreting in hot weather.

B. Adding water to mix is prohibited except as allowed by ACI 301 paragraph 7.5.2. No water shall be added after a superplasticizer has been added to a mix.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cement: ASTM C150, Type I. Use one brand throughout project.


C. Aggregates (Normal Weight):

1. Coarse - Crushed and graded limestone conforming to ASTM C33 or State of Nebraska Specifications. Minimum class designations shall be 1S for all below grade construction and 5S for all other concrete. Maximum aggregate size shall be 1 inch. No more than 10% of coarse aggregate shall be 1 inch.

2. Fine - Natural sand conforming to ASTM C33.

D. Fly Ash: ASTM C618, Class C or F with maximum loss on ignition of 3.0%, maximum retained on #325 sieve equal to 28%, and maximum water requirement as a percent of control equals 100%. Fly ash as a percentage of total cementitious materials shall not exceed 20%. Fly ash is permitted in pile caps, footings, grade beams and walls only. Limited amounts of fly ash may be used to aid pumping of slab on grade mixes.
E. Admixtures: The following products are pre-approved; substitutions must be approved by Engineer.

   b. Darex II or Daravair 1400, W.R. Grace.
   c. Protex AES, Protex Industries.

2. Water Reducing: ASTM C494, Type A.
   a. Eucon WR-75 or WR-89, Euclid Chemical Company.
   b. Pozzolith Polyheed 997, 220N or 322N, Master Builders.
   c. WRDA with Hycol or Daracem 55, W.R. Grace.

3. Superplasticizer: ASTM C494, Type F.
   a. Eucon 37, Euclid Chemical Company.
   b. Rheobuild 1000, Master Builders.
   c. WRDA -19, W.R. Grace.

4. Non-chloride Accelerator: ASTM C494, Type C or E.
   a. Accelguard 80, Euclid Chemical Company.
   b. Pozzutec 20, Master Builders.

5. Each manufacturer shall certify compatibility of all admixtures combined in each mix design.

6. Calcium chloride or admixtures containing more than 0.05% chloride ions, by weight of admixture are prohibited.

F. Grout: ASTM C109, 6000 psi @ 28 days.

2. Euco NS, Euclid Chemical Company.
5. Masterflow 713 Grout, Master Builders.
6. Sure-Grip Grout, Dayton Superior Corp.

2.2 MIX DESIGN

A. Minimum strength, maximum water/cement ratio, maximum slump, and required air contents are listed in the General Notes on the Drawings.

B. Concrete flatwork placed when air temperature is below 50 degrees F. shall contain specified non-chloride accelerator.

C. Concrete exposed to freezing and thawing, in service condition, shall contain a minimum of 6 sacks (564 lbs.) of cement per cubic yard of 4000 psi concrete and 7 sacks (658 lbs.) of cement per cubic yard of 5,000 psi concrete.

D. Total aggregate in mix shall be approximately 60% course and 40% fine.
E. Where field conditions require slump to exceed maximum shown, increased slump shall be obtained by use of specified superplasticizer only.

G. Concrete that will receive superplasticizer shall arrive at job site with a slump of 2"-3". After Testing Agency verifies slump, superplasticizer shall be added such that concrete will have a slump of 7 inches ± 2 inches when deposited in forms. Slump shall not exceed 9 inches.

H. Water soluble chloride ion content of concrete mix shall not exceed 0.15% for conventionally reinforced concrete.

I. Hardened concrete shall have a maximum air void spacing factor of 0.0080 inches. Surface area of air voids shall be a minimum of 600 in.² per cubic inch of air void volume.

PART 3 - EXECUTION

3.1 PREPARATION

A. Do not place concrete on frozen ground.

B. Clean all forms of dust and debris before placing concrete.

3.2 INSTALLATION

A. Temperature of concrete as placed shall not exceed 90 degrees F.

B. Finishing:

1. Slab-on-Grade.

   a. Bullfloat immediately after screeding.

   b. Provide broom finish per ACI 301, Section 11.7.4 as soon as bleed water has disappeared. Architect and Owner will approve finish on first slab on grade placement.

   c. Finishing tolerance shall be Class B per ACI 301, Section 11.9.

   d. All slabs shall be finished to proper elevations so that water flows to drains and so that no puddles exist.

C. Joints:

1. Construction, control and isolation joints are shown on Drawings.

2. Tool or "soff-cut" joints at time of finishing.

3. Coordinate configuration of tooled joints with control joint sealants.

D. Repair of Surface Defects.

1. Repair all defects exceeding ¼" width or depth and grind smooth all exposed form offsets or fins over ⅛".

2. Match color of concrete to be repaired.

3. Submit samples of materials, product data, and test data on proprietary compounds used for adhesion or patching ingredients to Architect for review before patching concrete.
4. Receive written acceptance by Architect of method and materials before making structural repairs to concrete.
5. Acceptable repair materials:
   a. Bonding Admixture: "SBR Latex" or "Flexcon", Euclid Chemical Co. or "Acryl 60", Standard Drywall Co.
   b. Epoxy Adhesive: Two component, 100% solids, 100% reactive compound suitable for use on dry or damp surfaces, "Euco Epoxy #463 or #620", Euclid Chemical Co. or "Sikadur Hi-Mod", Sika Corp.

E. Repair of Random Cracks:
1. Repair all random slab cracks in accordance with procedures and materials specified in Section 071000-G. Alternatively, submit proposed materials and procedures for approval.
2. Receive Engineer's approval of materials and procedures prior to application.

3.3 FIELD QUALITY CONTROL (TESTING AGENCY)
A. Air Content:
   1. Sample freshly-mixed concrete at point of final placement in accordance with ASTM C172 and conduct one air content test in accordance with ASTM C231 or ASTM C173 for each truck of ready-mix, air-entrained concrete delivered to Project. Concrete shall be re-tested after any additional air entrainment is added. Concrete shall not be placed prior to verification of conformance with Project Specifications.
   2. Sample fresh concrete immediately following placement and screeding and conduct air content tests in accordance with ASTM C231 or ASTM C173 at rate of two per slab-on-grade placement. One test shall be on concrete from first truckload so that air content can be adjusted as necessary on following loads.

B. Concrete Compressive Strength:
   1. Mold test cylinders in accordance with ASTM C31 as follows:
      a. Take minimum of six cylinders for each 100 cubic yards, or fraction thereof, of each mix design of concrete placed in any one day.
      b. Additional cylinders shall be taken under conditions of cold weather concreting (See Section 033900).
      c. At Contractor's option and cost, additional cylinders may be taken to verify concrete strength prior to form removal.
   2. Sample plastic concrete for testing at point of final placement, in accordance with ASTM C172.
3. Cover specimens properly, immediately after finishing. Protect outside surfaces of cardboard molds, if used, from contact with sources of water for first 24 hours after molding.

4. Cure test cylinders per ASTM C31 as follows:
   a. To verify compressive strength prior to form removal or for additional test cylinders required due to cold weather concreting conditions:
      1) Store test cylinders on structure as near to point of sampling as possible and protect from elements in same manner as that given to portion of structure as cylinders represent.
      2) Transport to test laboratory no more than 4 hours before testing. Remove molds from cylinders immediately before testing.
   b. To verify 28-day compressive strength:
      1) During first 24 hours after molding, store test cylinders under conditions that maintain temperature immediately adjacent to cylinders in range of 60 to 75 degrees F. and prevent loss of moisture from cylinders.
      2) Remove test cylinders from molds at end of 20 +/- 4 hours and store in moist condition at 73.4 +/- 3 degrees F. until time of test. Laboratory moist rooms shall meet requirements of ASTM C511.

5. Compression tests for conventionally reinforced concrete:
   a. Test 2 cylinders at 7 days.
   b. Test 2 cylinders at 28 days.
   c. Hold 2 cylinders in reserve for use as Engineer directs.

C. Slump Test:
   1. Conduct one slump test per truck load of ready mixed concrete delivered to Project at truck.
   2. When superplasticizer is used, initial slump must be verified by Testing Agency prior to the addition of superplasticizer.

D. Acceptance of Concrete:
   1. Concrete compression tests will be evaluated by Engineer in accordance with ACI 301, Chapter 17. If number of tests conducted is inadequate for evaluation of concrete or test results for any type of concrete fail to meet specified strength requirements, core tests may be required as directed by Engineer. Air content and parameters of air-void system shall meet requirements of this Section.
   2. Core tests, when required, shall be in accordance with ACI 301, Section 17.3.
3. Should tested concrete meet Specifications, Owner will pay for coring and testing of hardened concrete. Should tested concrete not meet Specifications, Contractor shall pay for coring and testing of hardened concrete and for any corrective action that may be required.

END OF SECTION 033000-R
SECTION 033000-AF - CAST-IN-PLACE CONCRETE (FOUNDATIONS BID PKG NO. 1)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following (all references to slab on grade and related portions herein are for reference only and will be officially issued in Bid Package No. 2):

1. Footings.
2. Foundation and retaining walls.
3. Slabs-on-grade.
4. Concrete toppings.
5. Building walls.

B. Related Sections include the following:

1. Division 03 Section "Architectural Concrete" for general building applications of specially finished formed concrete.
2. Division 03 "Decorative Concrete Floors" for colored and special finish concrete floors.
3. Division 09 for floor coverings.
4. Division 32 Section "Concrete Paving" for concrete pavement and walks.
5. Division 32 Section "Decorative Concrete Paving" for decorative concrete pavement and walks.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, slag cement, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.

E. Welding certificates.

F. Material and Certificates: For each of the following, submit the products to be used and certificates signed by manufacturers:

1. Cementitious materials.
2. Aggregates.
3. Admixtures.
5. Steel reinforcement and accessories.
6. Waterstops.
7. Curing compounds.
8. Floor and slab treatments.
10. Adhesives.
11. Vapor retarders.
12. Semirigid joint filler.

G. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

A. An experienced installer who has completed concrete work similar in material, design and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

D. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."
E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
   a. Contractor's superintendent.
   b. Independent testing agency responsible for concrete design mixtures.
   c. Ready-mix concrete manufacturer.
   d. Concrete subcontractor.
   e. Owner's special inspection and testing agency.

2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, concrete protection, and special inspection and testing procedures.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
   1. Plywood, metal, or other approved panel materials.
   2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
      a. High-density overlay, Class I or better.
      b. Medium-density overlay, Class I or better; mill-release agent treated and edge sealed.
      c. Structural I, B-B or better; mill oiled and edge sealed.
      d. B-B (Concrete Form), Class I or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Provide forms with sufficient wall thicknesses to resist plastic concrete loads without detrimental deformation. Forms shall provide a smooth, uniform surface. Provide one of the following:
   1. Forms shall be spiral constructed fiber tubes with non-water sensitive adhesive between plies. Surfaces shall be wax impregnated for moisture protection. Tubes shall have a vapor barrier to protect the dry strength of the fibers.
   2. Forms shall be spiral constructed fiber tubes with non-water sensitive adhesive between plies. Surfaces shall be wax impregnated for moisture protection. Tubes shall have a lining which eliminates spiral indications in the concrete surface.

D. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

E. Earth cuts may be used as forms for footings, grade beams, and pile caps. If earth cuts do not hold a vertical face such as sandy soil conditions, the Contractor shall be responsible for forming footings.

F. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.

G. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

H. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
I. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodbile metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.
C. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.
D. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.
E. Headed Anchor Rods: ASTM F 1554, Grade 55, weldable, straight.


2.4 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut bars true to length with ends square and free of burrs.
B. Zinc Repair Material: ASTM A 780, zinc-based solder, paint containing zinc dust, or sprayed zinc.
C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
2.5 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I gray.
   a. Fly Ash: ASTM C 618, Class C or F.

B. Normal weight aggregates shall meet requirements of ASTM C 33, and shall be from a source approved by the Nebraska Department of Roads.

1. Coarse aggregate shall be crushed limestone with gradation meeting requirements of Nebraska Department of Roads coarse aggregate for Class 47B concrete. Coarse aggregate shall be a minimum of 30 percent of total aggregate.
2. Fine aggregate shall be sand gravel with gradation meeting requirements of Nebraska Department of Roads sand gravel.


2.6 ADMIXTURES


B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride. Concrete must have a verified slump of 2 to 4 inches before adding chemical admixtures.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Accelerating Admixture: ASTM C 494/C 494M, Type C.
4. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
5. Water Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.
6. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
7. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
8. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
2.7 WATERSTOPS

A. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch (19 by 25 mm).

1. Available Products:
   a. Colloid Environmental Technologies Company; Volclay Waterstop-RX.
   b. Concrete Sealants Inc.; Conseal CS-231.
   c. Greenstreak; Swellstop.
   d. Henry Company, Sealants Division; Hydro-Flex.
   e. JP Specialties, Inc.; Earthshield Type 20.
   f. Progress Unlimited, Inc.; Superstop.
   g. TCMiraDRI; Mirastop.
   h. Or Approved Equal.

2.8 VAPOR RETARDERS AND GRANULAR FILL

A. Vapor Barrier: Provide vapor barrier which conforms to ASTM E1745, Class A. The membrane shall have a water-vapor transmission rate no greater than 0.008 gr./ft²/Hr. when tested in accordance with ASTM E96.

1. Available Products:
   a. Stego Wrap (15 mil) Vapor Barrier by Stego Industries LLC.
   b. Griffolyn Vaporguard by Reef Industries.

B. Granular Fill: Granular fill for use under slab on grade shall be crushed concrete, rock, stone, or gravel reasonably free of clay, shale, and soft particles, or other deleterious matter. Material shall withstand foot traffic without displacement. Sand shall not be used. Sizes and gradation of granular fill shall be as follows:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent By Weight Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4-inch</td>
<td>100</td>
</tr>
<tr>
<td>No. 100</td>
<td>0 - 15</td>
</tr>
<tr>
<td>No. 200</td>
<td>0 - 4</td>
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</tbody>
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2.9 FLOOR AND SLAB TREATMENTS

A. Penetrating Liquid Floor Hardener: Clear, chemically reactive, waterborne solution of inorganic silicate or silicate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces. Minimum of 30% solids.

1. Available products
   a. Dayton Superior Corporation; Day-Chem Sure Hard.
   b. Euclid Chemical Company (The); Euco Diamond Hard.
c. L&M Construction Chemicals, Inc.; Seal Hard.

B. Penetrating sealer shall be a water based silane-siloxane sealer with a minimum solids content of 40 percent. Sealer shall provide a minimum water absorption reduction of 85 percent when tested in accord with NCHRP 244 Series II and a minimum reduction in chloride-ion absorption of 87 percent when tested in accord with NCHRP 244 Series IV.

1. Products:
   a. Enviroseal 40; Harris Specialty Chemicals, Inc.
   b. Aquapel+Plus; L & M Construction Chemicals, Inc.
   c. Baracade WB 244; The Euclid Chemical Company.

2.10 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

1. Available Products:
   a. Axim Concrete Technologies; Cimfilm.
   b. BASF Construction Chemicals, LLC; Confilm.
   c. Burke by Edoco; BurkeFilm.
   d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; AquaFilm.
   e. Dayton Superior Corporation; Sure Film.
   f. Euclid Chemical Company (The); Eucobar.
   g. L&M Construction Chemicals, Inc.; E-Con.
   h. Meadows, W. R., Inc.; Sealight Evapre.
   i. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
   j. Sika Corporation, Inc.; SikaFilm.
   k. Symons Corporation, a Dayton Superior Company; Finishing Aid.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

C. Moisture-Retaining Wet Cure Cover: White synthetic fiber mat with a white 4-mil plastic sheet backing applied to one side.

1. Products:
   a. Transguard 4000; Reef Industries, Inc.
   b. Hydracure M5 by PNA Construction Technologies, Inc.

D. Water: Potable.

2.11 RELATED MATERIALS

A. Joint-Filler Strips: Superior grade closed cell polyethylene.
B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
   a. Available Products:
      1) Euco #452 Series or Durakrete Series.
      2) Sikadur Hi-Mod Series by the Sika Chemical Corp.

D. Reglets: Fabricate reglets of not less than 0.0217-inch- (0.55-mm-) thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

E. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch (0.85 mm) thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.12 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.

B. Repair Overlay: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested according to ASTM C 109/C 109M.
2.13 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
   1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
   1. Fly Ash: 15 percent. Fly ash shall not be used in concrete for exposed floors.

C. Limit water-soluble, chloride-ion content in hardened concrete to 1.00 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.
   1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
   2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2.14 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Proportion normal-weight concrete mixture with 28 day compressive strengths and other requirements indicated on the Drawings:

2.15 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.16 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
   1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.
PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
   1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.
   2. Class B, 1/4 inch (6 mm) for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
   1. Install keyways, reglets, recesses, and the like, for easy removal.
   2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

M. Contractor shall be responsible for forming footings if soil will not maintain a vertical face such as in sandy soil conditions.
3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
3. Install dovetail anchor slots in concrete structures as indicated. Install in vertical position with a horizontal spacing of 24 inches, unless noted otherwise, where concrete is veneered with masonry.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

A. Comply with ACI 318 (ACI 318M) and ACI 301 for design, installation, and removal of shoring and reshoring.

B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.
3.5 VAPOR RETARDERS AND GRANULAR FILL

A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
   1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

B. Granular Course: Place granular fill and compact with mechanical equipment to elevation tolerance of plus 0 inch (0 mm) or minus 3/4 inch (19 mm) before installing vapor retarder.

3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
   1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
   1. Weld reinforcing bars according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire. Pulling or hooking welded wire reinforcements is not acceptable.

F. Wet setting of vertical dowels and other reinforcing is not acceptable.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
   1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
   2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
   3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and
girders and at the top of footings or floor slabs.

5. Space vertical joints in walls. Locate joints beside piers integral with walls, near corners,
and in concealed locations where possible.

6. Use a bonding agent at locations where fresh concrete is placed against hardened or
partially hardened concrete surfaces.

7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened
or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning
concrete into areas as indicated. Construct contraction joints for a depth equal to at least
one-fourth of concrete thickness as follows:

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof
abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete
when cutting action will not tear, abrade, or otherwise damage surface and before
concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab
junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and
other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished
concrete surface, unless otherwise indicated.

2. Terminate full-width joint-filler strips not less than 11/2 inch (13 mm) or more than 1 inch
(25 mm) below finished concrete surface where joint sealants, specified in Division 07
Section "Joint Sealants," are indicated.

3. Install joint-filler strips in lengths as long as practicable. Where more than one length is
required, lace or clip sections together.

E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate
or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 WATERSTOPS

A. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated,
according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and
firmly pressing into place. Install in longest lengths practicable.

3.9 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded
items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless
approved by Architect.
C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

F. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.
3.10 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:

1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

3. Cork-Float Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in one direction.

1. Apply scratch finish to surfaces indicated and to receive concrete floor toppings and to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.

2. Except where specifically indicated on the drawings, finish surface to the following tolerances, according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface:

   a. Specified overall values of flatness, \( F(F) \leq 25 \); and of levelness, \( F(L) \leq 20 \); with minimum local values of flatness, \( F(F) \geq 17 \); and of levelness, \( F(L) \geq 15 \). Use at slabs on grade with carpet and areas with no floor covering.

   b. Specified overall values of flatness, \( F(F) \leq 30 \); and of levelness, \( F(L) \leq 20 \); with minimum local values of flatness, \( F(F) \geq 24 \); and of levelness, \( F(L) \geq 15 \); for suspended slabs. Use at slabs on grade with ceramic tile, sheet flooring, vinyl tile and other thin flooring materials.

   c. Specified overall values of flatness, \( F(F) \leq 50 \); and of levelness, \( F(L) \leq 40 \); with minimum local values of flatness, \( F(F) \geq 40 \); and of levelness, \( F(L) \geq 35 \). Use at gymnasiums.

   d. Specified overall values of flatness, \( F(F) = 25 \); with minimum local values of \( F(F) = 20 \). Use on elevated slabs and toppings.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.
F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.12 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

3.13 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Reducer: Apply evaporation reducer to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing. Do not use evaporation reducer as a finishing aid.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water.
   b. Continuous water-fog spray.
c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period. Apply a second coat at the completion of construction according to the manufacturer's written instructions.

5. Curing Methods for Floor Slabs and Toppings shall be as follows:
   a. Adhesive Applied Floor Coverings: Moisture retaining covers or curing compound that will not interfere with bonding of floor covering.
   b. Cementitious Applied Floor Coverings and Toppings: Moisture cure or moisture retaining covers.
   c. Adhesive Type Coverings and Coatings Such As Paints and Resinous Coatings: Moisture retaining covers.
   d. Penetrating Treatments Such As Hardeners and Sealers: Moisture cure or moisture retaining covers.
   e. Non-Bonding Coverings With Slip Sheets: Any of the curing methods.
   f. Exposed Concrete Floors With No Hardeners or Sealers: Curing and sealing compound.
   g. Wood Floors: Moisture retaining covers or curing compound.

3.14 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Hardener: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Do not apply to concrete that is less than seven days old.
3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

3.15 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension in solid concrete, but not less than 1 inch (25 mm) in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

2. After concrete has cured at least 14 days, correct high areas by grinding.

3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.

4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.16 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency per Section 014000 to perform field tests and inspections and prepare test reports.

B. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.
7. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.
   a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, measured at the point of placement, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is
   40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test
   for each composite sample.

   for each composite sample, but not less than one test for each day's pour of each concrete
   mixture.

7. Compression Test Specimens: ASTM C 31/C 31M.
   a. Cast and laboratory cure one set of three standard cylinder specimens for each
      composite sample.

   1) If 4 x 8 concrete test cylinders are used, cast and laboratory cure one set of
      four cylinder specimens.

   laboratory-cured specimens at 7 days and two specimens at 28 days. For 4 x 8 cylinders
   test one specimen at 7 days and 3 specimens at 28 days.
   a. A compressive-strength test shall be the average compressive strength from a set of
      two specimens obtained from same composite sample and tested at age indicated.

9. Strength of each concrete mixture will be satisfactory if every average of any three
   consecutive compressive-strength tests equals or exceeds specified compressive strength
   and no compressive-strength test value falls below specified compressive strength by
   more than 500 psi (3.4 MPa).

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

11. Nondestructive Testing: Rebound hammer, ultrasonic, or other nondestructive device
    may be permitted by Architect but will not be used as sole basis for approval or rejection
    of concrete.

12. Additional Tests: Testing and inspecting agency shall make additional tests of concrete
    when test results indicate that slump, air entrainment, compressive strengths, or other
    requirements have not been met, as directed by Architect. Testing and inspecting agency
    may conduct tests to determine adequacy of concrete by cored cylinders complying with
    ASTM C 42/C 42M or by other methods as directed by Architect.

13. Additional testing and inspecting, at Contractor's expense, will be performed to determine
    compliance of replaced or additional work with specified requirements.

14. Correct deficiencies in the Work that test reports and inspections indicate does not
    comply with the Contract Documents.

D. Measure floor and slab flatness and levelness of gymnasium slabs according to ASTM E 1155
   (ASTM E 1155M) within 72 hours of finishing. The slab flatness and levelness is the
   responsibility of the General Contractor. Any remedial work (grinding or filling) to arrive at
   the proper flatness and levelness shall be the responsibility of the General Contractor. All other
   floors do not need to be measured unless the suitability of the floor for a particular floor
   covering is called into question. Remedial work shall be the responsibility of the General
   Contractor.
E. Measure floor and slab flatness and levelness according to ASTM E 1155 (ASTM E 1155M) within 72 hours of finishing.

END OF SECTION 033000
PART I - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Proportioning, mixing, conveying, placing, and finishing of cast-in-place concrete.
   3. Installation of embedded items furnished under other sections.

B. Related Sections:
   1. Section 031000-G - Concrete Formwork.
   2. Section 031500-G - Concrete Accessories.
   3. Section 032000-G - Concrete Reinforcement.
   4. Section 033900-G - Concrete Curing.

1.3 REFERENCES

A. ACI 214 - Recommended Practice for Evaluation of Compression Test Results of Field Concrete.
B. ACI 301 - Specifications for Structural Concrete for Buildings.
C. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
D. ACI 305R - Hot Weather Concreting.
E. ACI 306R - Cold Weather Concreting.
F. ACI 309 - Standard Practice for Consolidation of Concrete.
G. ACI 318 - Building Code Requirements for Reinforced Concrete.
H. ASTM C31 - Methods of Making and Curing Concrete Test Specimens in the Field.
I. ASTM C33 - Specifications for Concrete Aggregates.
K. ASTM C42 - Test Methods of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.


M. ASTM C143 - Test Method for Slump of Portland Cement Concrete.


O. ASTM C172 - Method of Sampling Freshly Mixed Concrete.

P. ASTM C173 - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.


R. ASTM C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

S. ASTM C260 - Specifications for Air Entraining Admixtures for Concrete.

T. ASTM C494 - Specifications for Chemical Admixtures for Concrete.

U. ASTM C618 - Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

V. ASTM C666 - Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

W. ASTM C672 - Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.

X. ASTM C 989 - Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.


Z. AASHTO T 260 - Sampling and Testing for Total Chloride Ion in Concrete and Concrete Raw Materials.


1.4 SUBMITTALS

A. Make submittals in accordance with requirements of Division 01.

B. Mix Design - Include the following for each mix design:

1. Proportions of all components including all admixtures (ACI 301, Paragraph 3.9).
2. Water/cementitious materials ratio.
4. Gradation of coarse and fine aggregates.
5. Air content of freshly mixed concrete (ASTM C231 or ASTM C173) and of hardened concrete including parameters of air void system (ASTM C457).

1.5 QUALITY ASSURANCE

A. Work shall conform to the requirements of ACI 301 and ACI 318 except where more stringent requirements are shown on the Drawings or specified herein.

B. Testing Agency is responsible for conducting and reporting results of all tests required by Section 014523 and this Section. The Testing Agency has the authority to reject concrete not meeting these specifications.

1.6 DELIVERY AND DISCHARGE

A. Concrete transported by truck mixer shall be completely discharged within 1½ hours after water has been added to cement or cement has been added to aggregates. Time limit reduces to 1 hour for concreting in hot weather.

B. Adding water to mix is prohibited except as allowed by ACI 301 paragraph 7.5.2. No water shall be added after a superplasticizer has been added to a mix.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cement: ASTM C150, Type I. Use one brand throughout project.


C. Aggregates (Normal Weight):

1. Coarse - Crushed and graded limestone conforming to ASTM C33 or State of Nebraska Specifications. Minimum class designations shall be 1S for all below grade construction and 5S for all other concrete. Maximum aggregate size shall be 1 inch. No more than 10% of coarse aggregate shall be 1 inch.

2. Fine - Natural sand conforming to ASTM C33.

D. Fly Ash: ASTM C618, Class C or F with maximum loss on ignition of 3.0%, maximum retained on #325 sieve equal to 28%, and maximum water requirement as a percent of control equals 100%. Fly ash as a percentage of total cementitious materials shall not exceed 20%. Fly ash is permitted in pile caps, footings, grade beams and walls only. Limited amounts of fly ash may be used to aid pumping of slab on grade mixes.
E. Admixtures: The following products are pre-approved; substitutions must be approved by the Engineer.

   b. Darex II or Daravair 1400, W.R. Grace.
   c. Protex AES, Protex Industries.

2. Water Reducing: ASTM C494, Type A.
   a. Eucon WR-75 or WR-89, Euclid Chemical Company.
   b. Pozzolith Polyheed 997, 220N or 322N, Master Builders.
   c. WRDA with Hycol or Daracem 55, W.R. Grace.

3. Superplasticizer: ASTM C494, Type F.
   a. Eucon 37, Euclid Chemical Company.
   b. Rheobuild 1000, Master Builders.
   c. WRDA - 19, W.R. Grace.

4. Non-chloride Accelerator: ASTM C494, Type C or E.
   a. Accelguard 80, Euclid Chemical Company.
   b. Pozzutec 20, Master Builders.

5. Each manufacturer shall certify compatibility of all admixtures combined in each mix design.
6. Calcium chloride or admixtures containing more than 0.05% chloride ions, by weight of admixture are prohibited.

F. Grout: ASTM C109, 6000 psi @ 28 days.

2. Euco NS, Euclid Chemical Company.
5. Masterflow 713 Grout, Master Builders.
6. Sure-Grip Grout, Dayton Superior Corp.

2.2 MIX DESIGN

A. Minimum strength, maximum water/cement ratio, maximum slump, and required air contents are listed in the General Notes on the Drawings.

B. Concrete flatwork placed when air temperature is below 50 degrees F. shall contain specified non-chloride accelerator.
C. Concrete exposed to freezing and thawing, in service condition, shall contain a minimum of 6 sacks (564 lbs.) of cement per cubic yard of 4000 psi concrete and 7 sacks (658 lbs.) of cement per cubic yard of 5,000 psi concrete.

D. Total aggregate in mix shall be approximately 60% course and 40% fine.

E. Where field conditions require slump to exceed maximum shown, increased slump shall be obtained by use of specified superplasticizer only.

F. Concrete that will receive superplasticizer shall arrive at job site with a slump of 2\"-3\". After Testing Agency verifies slump, superplasticizer shall be added such that concrete will have a slump of 7 inches ± 2 inches when deposited in forms. Slump shall not exceed 9 inches.

G. Water soluble chloride ion content of concrete mix shall not exceed 0.15% for conventionally reinforced concrete.

H. Hardened concrete shall have a maximum air void spacing factor of 0.0080 inches. Surface area of air voids shall be a minimum of 600 in.² per cubic inch of air void volume.

I. Hardened concrete shall have a maximum air void spacing factor of 0.0080 inches. Surface area of air voids shall be a minimum of 600 in.² per cubic inch of air void volume.

PART 3 - EXECUTION

3.1 PREPARATION

A. Do not place concrete on frozen ground.

B. Clean all forms of dust and debris before placing concrete.

3.2 INSTALLATION

A. Temperature of concrete as placed shall not exceed 90 degrees F.

B. Finishing:
   1. Slab-on-Grade.
      a. Bullfloat immediately after screeding.
      b. Provide broom finish per ACI 301, Section 11.7.4 as soon as bleed water has disappeared. Architect and Owner will approve finish on first slab on grade placement.
      c. Finishing tolerance shall be Class B per ACI 301, Section 11.9.
      d. All slabs shall be finished to proper elevations so that water flows to drains and so that no puddles exist.

C. Joints:
   1. Construction, control and isolation joints are shown on Drawings.
WEST HAYMARKET ARENA  
LINCOLN, NEBRASKA  

2. Tool or "soff-cut" joints at time of finishing.  
3. Coordinate configuration of tooled joints with control joint sealants.

D. Repair of Surface Defects.

1. Repair all defects exceeding ¼" width or depth and grind smooth all exposed form offsets or fins over 1/8".
2. Match color of concrete to be repaired.
3. Submit samples of materials, product data, and test data on proprietary compounds used for adhesion or patching ingredients to Architect for review before patching concrete.
4. Receive written acceptance by Architect of method and materials before making structural repairs to concrete.
5. Acceptable repair materials:
   a. Bonding Admixture: "SBR Latex" or "Flexcon", Euclid Chemical Co. or "Acryl 60", Standard Drywall Co.
   b. Epoxy Adhesive: Two component, 100% solids, 100% reactive compound suitable for use on dry or damp surfaces, "Euco Epoxy #463 or #620", Euclid Chemical Co. or "Sikadur Hi-Mod", Sika Corp.

E. Repair of Random Cracks:

1. Repair all random slab cracks in accordance with procedures and materials specified in Section 071000-G. Alternatively, submit proposed materials and procedures for approval.
2. Receive Engineer’s approval of materials and procedures prior to application.

3.3 FIELD QUALITY CONTROL (TESTING AGENCY)

A. Air Content:

1. Sample freshly-mixed concrete at point of final placement in accordance with ASTM C172 and conduct one air content test in accordance with ASTM C231 or ASTM C173 for each truck of ready-mix, air-entrained concrete delivered to Project. Concrete shall be re-tested after any additional air entrainment is added. Concrete shall not be placed prior to verification of conformance with Project Specifications.
2. Sample fresh concrete immediately following placement and screeding and conduct air content tests in accordance with ASTM C231 or ASTM C173 at rate of two per slab-on-grade placement. One test shall be on concrete from first truckload so that air content can be adjusted as necessary on following loads.

B. Concrete Compressive Strength:

1. Mold test cylinders in accordance with ASTM C31 as follows:
   a. Take minimum of six cylinders for each 100 cubic yards, or fraction thereof, of each mix design of concrete placed in any one day.
b. Additional cylinders shall be taken under conditions of cold weather concreting (See Section 033900).
c. At Contractor's option and cost, additional cylinders may be taken to verify concrete strength prior to form removal.

2. Sample plastic concrete for testing at point of final placement, in accordance with ASTM C172.

3. Cover specimens properly, immediately after finishing. Protect outside surfaces of cardboard molds, if used, from contact with sources of water for first 24 hours after molding.

4. Cure test cylinders per ASTM C31 as follows:
   a. To verify compressive strength prior to form removal or for additional test cylinders required due to cold weather concreting conditions:
      1) Store test cylinders on structure as near to point of sampling as possible and protect from elements in same manner as that given to portion of structure as cylinders represents.
      2) Transport to test laboratory no more than 4 hours before testing. Remove molds from cylinders immediately before testing.
   b. To verify 28-day compressive strength:
      1) During first 24 hours after molding, store test cylinders under conditions that maintain temperature immediately adjacent to cylinders in range of 60 to 75 degrees F. and prevent loss of moisture from cylinders.
      2) Remove test cylinders from molds at end of 20 +/- 4 hours and store in moist condition at 73.4 +/- 3 degrees F. until time of test. Laboratory moist rooms shall meet requirements of ASTM C511.

5. Compression tests for conventionally reinforced concrete:
   a. Test 2 cylinders at 7 days.
   b. Test 2 cylinders at 28 days.
   c. Hold 2 cylinders in reserve for use as Engineer directs.

C. Slump Test:
   1. Conduct one slump test per truck load of ready mixed concrete delivered to Project at truck.
   2. When superplasticizer is used, initial slump must be verified by Testing Agency prior to the addition of superplasticizer.

D. Acceptance of Concrete:
   1. Concrete compression tests will be evaluated by Engineer in accordance with ACI 301, Chapter 17. If number of tests conducted is inadequate for evaluation of concrete or test results for any type of concrete fail to meet specified strength requirements, core tests may be required as directed by Engineer. Air content and parameters of air-void system shall meet requirements of this Section.
   2. Core tests, when required, shall be in accordance with ACI 301, Section 17.3.
3. Should tested concrete meet Specifications, Owner will pay for coring and testing of hardened concrete. Should tested concrete not meet Specifications, Contractor shall pay for coring and testing of hardened concrete and for any corrective action that may be required.

END OF SECTION 033000
SECTION 033000-R – CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Proportioning, mixing, conveying, placing, and finishing of cast-in-place concrete.
   3. Installation of embedded items furnished under other sections.

B. Related Sections:
   1. Section 031000-R - Concrete Formwork.
   2. Section 031500-R - Concrete Accessories.
   3. Section 032000-R - Concrete Reinforcement.
   4. Section 033900-R - Concrete Curing.

1.3 REFERENCES

A. ACI 214 - Recommended Practice for Evaluation of Compression Test Results of Field Concrete.
B. ACI 301 - Specifications for Structural Concrete for Buildings.
C. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
D. ACI 305R - Hot Weather Concreting.
E. ACI 306R - Cold Weather Concreting.
F. ACI 309 - Standard Practice for Consolidation of Concrete.
G. ACI 318 - Building Code Requirements for Reinforced Concrete.
H. ASTM C31 - Methods of Making and Curing Concrete Test Specimens in the Field.
I. ASTM C33 - Specifications for Concrete Aggregates.
K. ASTM C42 - Test Methods of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
WEST HAYMARKET ARENA
LINCOLN, NEBRASKA

M. ASTM C143 - Test Method for Slump of Portland Cement Concrete.
O. ASTM C172 - Method of Sampling Freshly Mixed Concrete.
P. ASTM C173 - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
R. ASTM C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
S. ASTM C260 - Specifications for Air Entraining Admixtures for Concrete.
T. ASTM C494 - Specifications for Chemical Admixtures for Concrete.
U. ASTM C618 - Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
V. ASTM C666 - Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
W. ASTM C672 - Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.
X. ASTM C989 - Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
Z. AASHTO T 260 - Sampling and Testing for Total Chloride Ion in Concrete and Concrete Raw Materials.

1.4 SUBMITTALS

A. Make submittals in accordance with requirements of Division 01.
B. Mix Design - Include the following for each mix design:
   1. Proportions of all components including all admixtures (ACI 301, Paragraph 3.9).
   2. Water/cementitious materials ratio.
   4. Gradation of coarse and fine aggregates.
5. Air content of freshly mixed concrete (ASTM C231 or ASTM C173) and of hardened concrete including parameters of air void system (ASTM C457).

1.5 QUALITY ASSURANCE

A. Work shall conform to the requirements of ACI 301 and ACI 318 except where more stringent requirements are shown on the Drawings or specified herein.

B. Testing Agency is responsible for conducting and reporting results of all tests required by Section 014523 and this Section. The Testing Agency has the authority to reject concrete not meeting these specifications.

1.6 DELIVERY AND DISCHARGE

A. Concrete transported by truck mixer shall be completely discharged within 1½ hours after water has been added to cement or cement has been added to aggregates. Time limit reduces to 1 hour for concreting in hot weather.

B. Adding water to mix is prohibited except as allowed by ACI 301 paragraph 7.5.2. No water shall be added after a superplasticizer has been added to a mix.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cement: ASTM C150, Type I. Use one brand throughout project.


C. Aggregates (Normal Weight):

1. Coarse - Crushed and graded limestone conforming to ASTM C33 or State of Nebraska Specifications. Minimum class designations shall be IS for all below grade construction and 5S for all other concrete. Maximum aggregate size shall be 1 inch. No more than 10% of coarse aggregate shall be 1 inch.

2. Fine - Natural sand conforming to ASTM C33.

D. Fly Ash: ASTM C618, Class C or F with maximum loss on ignition of 3.0%, maximum retained on #325 sieve equal to 28%, and maximum water requirement as a percent of control equals 100%. Fly ash as a percentage of total cementitious materials shall not exceed 20%. Fly ash is permitted in pile caps, footings, grade beams and walls only. Limited amounts of fly ash may be used to aid pumping of slab on grade mixes.
E. Admixtures: The following products are pre-approved; substitutions must be approved by Engineer.

   b. Darex II or Daravair 1400, W.R. Grace.
   c. Protex AES, Protex Industries.

2. Water Reducing: ASTM C494, Type A.
   a. Eucon WR-75 or WR-89, Euclid Chemical Company.
   b. Pozzolith Polyheed 997, 220N or 322N, Master Builders.
   c. WRDA with Hycol or Daracem 55, W.R. Grace.

3. Superplasticizer: ASTM C494, Type F.
   a. Eucon 37, Euclid Chemical Company.
   b. Rheobuild 1000, Master Builders.
   c. WRDA - 19, W.R. Grace.

4. Non-chloride Accelerator: ASTM C494, Type C or E.
   a. Accelguard 80, Euclid Chemical Company.
   b. Pozzutec 20, Master Builders.

5. Each manufacturer shall certify compatibility of all admixtures combined in each mix design.

6. Calcium chloride or admixtures containing more than 0.05% chloride ions, by weight of admixture are prohibited.

F. Grout: ASTM C109, 6000 psi @ 28 days.

2. Euco NS, Euclid Chemical Company.
5. Masterflow 713 Grout, Master Builders.
6. Sure-Grip Grout, Dayton Superior Corp.

2.2 MIX DESIGN

A. Minimum strength, maximum water/cement ratio, maximum slump, and required air contents are listed in the General Notes on the Drawings.

B. Concrete flatwork placed when air temperature is below 50 degrees F. shall contain specified non-chloride accelerator.

C. Concrete exposed to freezing and thawing, in service condition, shall contain a minimum of 6 sacks (564 lbs.) of cement per cubic yard of 4000 psi concrete and 7 sacks (658 lbs.) of cement per cubic yard of 5,000 psi concrete.

D. Total aggregate in mix shall be approximately 60% course and 40% fine.
E. Where field conditions require slump to exceed maximum shown, increased slump shall be obtained by use of specified superplasticizer only.

G. Concrete that will receive superplasticizer shall arrive at job site with a slump of 2"-3". After Testing Agency verifies slump, superplasticizer shall be added such that concrete will have a slump of 7 inches ± 2 inches when deposited in forms. Slump shall not exceed 9 inches.

H. Water soluble chloride ion content of concrete mix shall not exceed 0.15% for conventionally reinforced concrete.

I. Hardened concrete shall have a maximum air void spacing factor of 0.0080 inches. Surface area of air voids shall be a minimum of 600 in.² per cubic inch of air void volume.

PART 3 - EXECUTION

3.1 PREPARATION

A. Do not place concrete on frozen ground.

B. Clean all forms of dust and debris before placing concrete.

3.2 INSTALLATION

A. Temperature of concrete as placed shall not exceed 90 degrees F.

B. Finishing:
   1. Slab-on-Grade.
       a. Bullfloat immediately after screeding.
       b. Provide broom finish per ACI 301, Section 11.7.4 as soon as bleed water has disappeared. Architect and Owner will approve finish on first slab on grade placement.
       c. Finishing tolerance shall be Class B per ACI 301, Section 11.9.
       d. All slabs shall be finished to proper elevations so that water flows to drains and so that no puddles exist.

C. Joints:
   1. Construction, control and isolation joints are shown on Drawings.
   2. Tool or "soff-cut" joints at time of finishing.
   3. Coordinate configuration of tooled joints with control joint sealants.

D. Repair of Surface Defects.
   1. Repair all defects exceeding ¼" width or depth and grind smooth all exposed form offsets or fins over 1/8".
   2. Match color of concrete to be repaired.
   3. Submit samples of materials, product data, and test data on proprietary compounds used for adhesion or patching ingredients to Architect for review before patching concrete.
4. Receive written acceptance by Architect of method and materials before making structural repairs to concrete.
5. Acceptable repair materials:
   a. Bonding Admixture: "SBR Latex" or "Flexcon", Euclid Chemical Co. or "Acryl 60", Standard Drywall Co.
   b. Epoxy Adhesive: Two component, 100% solids, 100% reactive compound suitable for use on dry or damp surfaces, "Euco Epoxy #463 or #620", Euclid Chemical Co. or "Sikadur Hi-Mod", Sika Corp.
E. Repair of Random Cracks:
   1. Repair all random slab cracks in accordance with procedures and materials specified in Section 071000-G. Alternatively, submit proposed materials and procedures for approval.
   2. Receive Engineer's approval of materials and procedures prior to application.

3.3 FIELD QUALITY CONTROL (TESTING AGENCY)
A. Air Content:
   1. Sample freshly-mixed concrete at point of final placement in accordance with ASTM C172 and conduct one air content test in accordance with ASTM C231 or ASTM C173 for each truck of ready-mix, air-entrained concrete delivered to Project. Concrete shall be re-tested after any additional air entrainment is added. Concrete shall not be placed prior to verification of conformance with Project Specifications.
   2. Sample fresh concrete immediately following placement and screeding and conduct air content tests in accordance with ASTM C231 or ASTM C173 at rate of two per slab-on-grade placement. One test shall be on concrete from first truckload so that air content can be adjusted as necessary on following loads.
B. Concrete Compressive Strength:
   1. Mold test cylinders in accordance with ASTM C31 as follows:
      a. Take minimum of six cylinders for each 100 cubic yards, or fraction thereof, of each mix design of concrete placed in any one day.
      b. Additional cylinders shall be taken under conditions of cold weather concreting (See Section 033900).
      c. At Contractor's option and cost, additional cylinders may be taken to verify concrete strength prior to form removal.
   2. Sample plastic concrete for testing at point of final placement, in accordance with ASTM C172.
3. Cover specimens properly, immediately after finishing. Protect outside surfaces of cardboard molds, if used, from contact with sources of water for first 24 hours after molding.

4. Cure test cylinders per ASTM C31 as follows:
   a. To verify compressive strength prior to form removal or for additional test cylinders required due to cold weather concreting conditions:
      1) Store test cylinders on structure as near to point of sampling as possible and protect from elements in same manner as that given to portion of structure as cylinders represents.
      2) Transport to test laboratory no more than 4 hours before testing. Remove molds from cylinders immediately before testing.
   b. To verify 28-day compressive strength:
      1) During first 24 hours after molding, store test cylinders under conditions that maintain temperature immediately adjacent to cylinders in range of 60 to 75 degrees F. and prevent loss of moisture from cylinders.
      2) Remove test cylinders from molds at end of 20 +/- 4 hours and store in moist condition at 73.4 +/- 3 degrees F. until time of test. Laboratory moist rooms shall meet requirements of ASTM C511.

5. Compression tests for conventionally reinforced concrete:
   a. Test 2 cylinders at 7 days.
   b. Test 2 cylinders at 28 days.
   c. Hold 2 cylinders in reserve for use as Engineer directs.

C. Slump Test:
   1. Conduct one slump test per truck load of ready mixed concrete delivered to Project at truck.
   2. When superplasticizer is used, initial slump must be verified by Testing Agency prior to the addition of superplasticizer.

D. Acceptance of Concrete:
   1. Concrete compression tests will be evaluated by Engineer in accordance with ACI 301, Chapter 17. If number of tests conducted is inadequate for evaluation of concrete or test results for any type of concrete fail to meet specified strength requirements, core tests may be required as directed by Engineer. Air content and parameters of air-void system shall meet requirements of this Section.
   2. Core tests, when required, shall be in accordance with ACI 301, Section 17.3.
3. Should tested concrete meet Specifications, Owner will pay for coring and testing of hardened concrete. Should tested concrete not meet Specifications, Contractor shall pay for coring and testing of hardened concrete and for any corrective action that may be required.

END OF SECTION 033000-R
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following (all references to slab on grade and related portions herein are for reference only and will be officially issued in Bid Package No. 2):

1. Footings.
2. Foundation and retaining walls.
3. Slabs-on-grade.
4. Concrete toppings.
5. Building walls.

B. Related Sections include the following:

1. Division 03 Section "Architectural Concrete" for general building applications of specially finished formed concrete.
2. Division 03 "Decorative Concrete Floors" for colored and special finish concrete floors.
3. Division 09 for floor coverings.
4. Division 32 Section "Concrete Paving" for concrete pavement and walks.
5. Division 32 Section "Decorative Concrete Paving" for decorative concrete pavement and walks.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, slag cement, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
   1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.

E. Welding certificates.

F. Material and Certificates: For each of the following, submit the products to be used and certificates signed by manufacturers:
   1. Cementitious materials.
   2. Aggregates.
   3. Admixtures.
   5. Steel reinforcement and accessories.
   6. Waterstops.
   7. Curing compounds.
   8. Floor and slab treatments.
  10. Adhesives.
  11. Vapor retarders.
  12. Semirigid joint filler.

G. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

A. An experienced installer who has completed concrete work similar in material, design and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

D. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."
E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
   a. Contractor's superintendent.
   b. Independent testing agency responsible for concrete design mixtures.
   c. Ready-mix concrete manufacturer.
   d. Concrete subcontractor.
   e. Owner's special inspection and testing agency.

2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, concrete protection, and special inspection and testing procedures.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
   1. Plywood, metal, or other approved panel materials.
   2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
      a. High-density overlay, Class I or better.
      b. Medium-density overlay, Class I or better; mill-release agent treated and edge sealed.
      c. Structural I, B-B or better; mill oiled and edge sealed.
      d. B-B (Concrete Form), Class I or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Provide forms with sufficient wall thicknesses to resist plastic concrete loads without detrimental deformation. Forms shall provide a smooth, uniform surface. Provide one of the following:
   1. Forms shall be spiral constructed fiber tubes with non-water sensitive adhesive between plies. Surfaces shall be wax impregnated for moisture protection. Tubes shall have a vapor barrier to protect the dry strength of the fibers.
   2. Forms shall be spiral constructed fiber tubes with non-water sensitive adhesive between plies. Surfaces shall be wax impregnated for moisture protection. Tubes shall have a vapor barrier to protect the dry strength of the fibers. Tubes shall have a lining which eliminates spiral indications in the concrete surface.

D. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

E. Earth cuts may be used as forms for footings, grade beams, and pile caps. If earth cuts do not hold a vertical face such as sandy soil conditions, the Contractor shall be responsible for forming footings.

F. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.

G. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

H. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
I. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.

C. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.

D. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.

E. Headed Anchor Rods: ASTM F 1554, Grade 55, weldable, straight.


2.4 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut bars true to length with ends square and free of burrs.

B. Zinc Repair Material: ASTM A 780, zinc-based solder, paint containing zinc dust, or sprayed zinc.

C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
WEST HAYMARKET ARENA  
LINCOLN, NEBRASKA  
BID PACKAGE 1

2.5 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I gray.
   a. Fly Ash: ASTM C 618, Class C or F.

B. Normal weight aggregates shall meet requirements of ASTM C 33, and shall be from a source approved by the Nebraska Department of Roads.

1. Coarse aggregate shall be crushed limestone with gradation meeting requirements of Nebraska Department of Roads coarse aggregate for Class 47B concrete. Coarse aggregate shall be a minimum of 30 percent of total aggregate.
2. Fine aggregate shall be sand gravel with gradation meeting requirements of Nebraska Department of Roads sand gravel.


2.6 ADMIXTURES


B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride. Concrete must have a verified slump of 2 to 4 inches before adding chemical admixtures.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Accelerating Admixture: ASTM C 494/C 494M, Type C.
4. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
5. Water Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.
6. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
7. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
8. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
2.7 WATERSTOPS

A. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch (19 by 25 mm).

1. Available Products:
   a. Colloid Environmental Technologies Company; Volclay Waterstop-RX.
   b. Concrete Sealants Inc.; Conseal CS-231.
   c. Greenstreak; Swellstop.
   d. Henry Company, Sealants Division; Hydro-Flex.
   e. JP Specialties, Inc.; Earthshield Type 20.
   f. Progress Unlimited, Inc.; Superstop.
   g. TCMiraDRI; Mirastop.
   h. Or Approved Equal.

2.8 VAPOR RETARDERS AND GRANULAR FILL

A. Vapor Barrier: Provide vapor barrier which conforms to ASTM E1745, Class A. The membrane shall have a water-vapor transmission rate no greater than 0.008 gr./ft²/Hr. when tested in accordance with ASTM E96.

1. Available Products:
   a. Stego Wrap (15 mil) Vapor Barrier by Stego Industries LLC.
   b. Griffolyn Vaporguard by Reef Industries.

B. Granular Fill: Granular fill for use under slab on grade shall be crushed concrete, rock, stone, or gravel reasonably free of clay, shale, and soft particles, or other deleterious matter. Material shall withstand foot traffic without displacement. Sand shall not be used. Sizes and gradation of granular fill shall be as follows:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent By Weight Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4-inch</td>
<td>100</td>
</tr>
<tr>
<td>No. 100</td>
<td>0 - 15</td>
</tr>
<tr>
<td>No. 200</td>
<td>0 - 4</td>
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</tbody>
</table>

2.9 FLOOR AND SLAB TREATMENTS

A. Penetrating Liquid Floor Hardener: Clear, chemically reactive, waterborne solution of inorganic silicate or silicate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces. Minimum of 30% solids.

1. Available Products
   a. Dayton Superior Corporation; Day-Chem Sure Hard.
   b. Euclid Chemical Company (The); Euco Diamond Hard.
EXHIBIT E (c)

WEST HAYMARKET ARENA
LINCOLN, NEBRASKA

BID PACKAGE 1

10-10124-00

B. Penetrating sealer shall be a water based silane-siloxane sealer with a minimum solids content of 40 percent. Sealer shall provide a minimum water absorption reduction of 85 percent when tested in accord with NCHRP 244 Series II and a minimum reduction in chloride-ion absorption of 87 percent when tested in accord with NCHRP 244 Series IV.

1. Products:
   a. Enviroseal 40; Harris Specialty Chemicals, Inc.
   b. Aquapel+Plus; L & M Construction Chemicals, Inc.
   c. Baracade WB 244; The Euclid Chemical Company.

2.10 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

1. Available Products:
   a. Axim Concrete Technologies; Cimfilm.
   b. BASF Construction Chemicals, LLC; Confilm.
   c. Burke by Edoco; BurkeFilm.
   d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Aquafilm.
   e. Dayton Superior Corporation; Sure Film.
   f. Euclid Chemical Company (The); Eucobar.
   g. L&M Construction Chemicals, Inc.; E-Con.
   h. Meadows, W. R., Inc.; Sealight Evapre.
   i. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
   j. Sika Corporation, Inc.; SikaFilm.
   k. Symons Corporation, a Dayton Superior Company; Finishing Aid.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

C. Moisture-Retaining Wet Cure Cover: White synthetic fiber mat with a white 4-mil plastic sheet backing applied to one side.

1. Products:
   a. Transguard 4000; Reef Industries, Inc.
   b. Hydracure M5 by PNA Construction Technologies, Inc.

D. Water: Potable.

2.11 RELATED MATERIALS

A. Joint-Filler Strips: Superior grade closed cell polyethylene.
B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
   a. Available Products:
      1) Euco #452 Series or Durakrete Series.
      2) Sikadur Hi-Mod Series by the Sika Chemical Corp.

D. Reglets: Fabricate reglets of not less than 0.0217-inch- (0.55-mm-) thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

E. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch (0.85 mm) thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.12 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.

B. Repair Overlay: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested according to ASTM C 109/C 109M.
2.13 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash: 15 percent. Fly ash shall not be used in concrete for exposed floors.

C. Limit water-soluble, chloride-ion content in hardened concrete to 1.00 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2.14 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Proportion normal-weight concrete mixture with 28 day compressive strengths and other requirements indicated on the Drawings:

2.15 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.16 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.
3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
   1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.
   2. Class B, 1/4 inch (6 mm) for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
   1. Install keyways, reglets, recesses, and the like, for easy removal.
   2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

M. Contractor shall be responsible for forming footings if soil will not maintain a vertical face such as in sandy soil conditions.
3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC’s "Code of Standard Practice for Steel Buildings and Bridges."
2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
3. Install dovetail anchor slots in concrete structures as indicated. Install in vertical position with a horizontal spacing of 24 inches, unless noted otherwise, where concrete is veneered with masonry.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

A. Comply with ACI 318 (ACI 318M) and ACI 301 for design, installation, and removal of shoring and reshoring.

B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

CAST-IN-PLACE CONCRETE
3.5 VAPOR RETARDERS AND GRANULAR FILL

A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer’s written instructions.
   1. Lap joints 6 inches (150 mm) and seal with manufacturer’s recommended tape.

B. Granular Course: Place granular fill and compact with mechanical equipment to elevation tolerance of plus 0 inch (0 mm) or minus 3/4 inch (19 mm) before installing vapor retarder.

3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI’s "Manual of Standard Practice" for placing reinforcement.
   1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
   1. Weld reinforcing bars according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire. Pulling or hooking welded wire reinforcements is not acceptable.

F. Wet setting of vertical dowels and other reinforcing is not acceptable.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
   1. Place joints perpendicular to main reinforcement. Continue reinforcement across sides of strip placements of floors and slabs.
   2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
   3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.

5. Space vertical joints in walls. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

2. Terminate full-width joint-filler strips not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface where joint sealants, specified in Division 07 Section "Joint Sealants," are indicated.

3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 WATERSTOPS

A. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

3.9 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

F. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.
3.10 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:

1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in one direction.

1. Apply scratch finish to surfaces indicated and to receive concrete floor toppings and to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.

2. Except where specifically indicated on the drawings, finish surface to the following tolerances, according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface:
   a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15. Use at slabs on grade with carpet and areas with no floor covering.
   b. Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs. Use at slabs on grade with ceramic tile, sheet flooring, vinyl tile and other thin flooring materials.
   c. Specified overall values of flatness, F(F) 50 and of levelness, F(L) 40; with minimum local values of flatness, F(F) 40; and of levelness, F(L) 35. Use at gymnasiums.
   d. Specified overall values of flatness, F(F)=25; with minimum local values of F(F)=20. Use on elevated slabs and toppings.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.
F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.12 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

3.13 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Reducer: Apply evaporation reducer to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing. Do not use evaporation reducer as a finishing aid.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water.
   b. Continuous water-fog spray.
c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period. Apply a second coat at the completion of construction according to the manufacturer's written instructions.

5. Curing Methods for Floor Slabs and Toppings shall be as follows:
   a. Adhesive Applied Floor Coverings: Moisture retaining covers or curing compound that will not interfere with bonding of floor covering.
   b. Cementitious Applied Floor Coverings and Toppings: Moisture cure or moisture retaining covers.
   c. Adhesive Type Coverings and Coatings Such As Paints and Resinous Coatings: Moisture retaining covers.
   d. Penetrating Treatments Such As Hardeners and Sealers: Moisture cure or moisture retaining covers.
   e. Non-Bonding Coverings With Slip Sheets: Any of the curing methods.
   f. Exposed Concrete Floors With No Hardeners or Sealers: Curing and sealing compound.
   g. Wood Floors: Moisture retaining covers or curing compound.

3.14 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Hardener: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Do not apply to concrete that is less than seven days old.
3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

3.15 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension in solid concrete, but not less than 1 inch (25 mm) in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

2. After concrete has cured at least 14 days, correct high areas by grinding.

3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.

4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.16 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency per Section 014000 to perform field tests and inspections and prepare test reports.

B. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.
7. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.
   a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, measured at the point of placement, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
6. Density: ASTM C 138/C 138M, fresh density of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
7. Compression Test Specimens: ASTM C 31/C 31M.
   a. Cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
      1) If 4 x 8 concrete test cylinders are used, cast and laboratory cure one set of four cylinder specimens.
8. Compressive-Strength Tests: ASTM C 39/C 39M for standard cylinders; test one laboratory-cured specimens at 7 days and two specimens at 28 days. For 4 x 8 cylinders test one specimen at 7 days and 3 specimens at 28 days.
   a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
9. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
10. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive strength, and type of break for both 7- and 28-day tests.
11. Nondestructive Testing: Rebound hammer, ultrasonic, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
12. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
13. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
14. Correct deficiencies in the Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Measure floor and slab flatness and levelness of gymnasium slabs according to ASTM E 1155 (ASTM E 1155M) within 72 hours of finishing. The slab flatness and levelness is the responsibility of the General Contractor. Any remedial work (grinding or filling) to arrive at the proper flatness and levelness shall be the responsibility of the General Contractor. All other floors do not need to be measured unless the suitability of the floor for a particular floor covering is called into question. Remedial work shall be the responsibility of the General Contractor.
E. Measure floor and slab flatness and levelness according to ASTM E 1155 (ASTM E 1155M) within 72 hours of finishing.

END OF SECTION 033000
SECTION 078100 - APPLIED FIREPROOFING

PART I - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Section includes sprayed fire-resistive materials (SFRM).
B. Related Requirements:
1. Section 078123 "Intumescent Fireproofing" for mastic and intumescent fire-resistive coatings.

1.3 PREINSTALLATION MEETINGS
A. Preinstallation Conference: Conduct conference at Project site.
1. Review products, design ratings, restrained and unrestrained conditions, densities, thicknesses, bond strengths, and other performance requirements.

1.4 ACTION SUBMITTALS
A. Product Data: For each type of product.
1. For paints and coatings, provide documentation of VOC content.
B. Shop Drawings: Framing plans, schedules, or both, indicating the following:
1. Extent of fireproofing for each construction and fire-resistance rating.
2. Applicable fire-resistance design designations of a qualified testing and inspecting agency acceptable to authorities having jurisdiction.
3. Minimum fireproofing thicknesses needed to achieve required fire-resistance rating of each structural component and assembly.
4. Treatment of fireproofing after application.

1.5 INFORMATIONAL SUBMITTALS
A. Qualification Data: For Installer.
B. Product Certificates: For each type of fireproofing.
C. Evaluation Reports: For fireproofing, from ICC-ES.

D. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A firm or individual certified, licensed, or otherwise qualified by fireproofing manufacturer as experienced and with sufficient trained staff to install manufacturer's products according to specified requirements.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Do not apply fireproofing when ambient or substrate temperature is 40 deg F (4.5 deg C) or lower unless temporary protection and heat are provided to maintain temperature at or above this level for 24 hours before, during, and for 24 hours after product application.

B. Ventilation: Ventilate building spaces during and after application of fireproofing, providing complete air exchanges according to manufacturer's written instructions. Use natural means or, if they are inadequate, forced-air circulation until fireproofing dries thoroughly.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Assemblies: Provide fireproofing, including auxiliary materials, according to requirements of each fire-resistance design and manufacturer's written instructions.

B. Source Limitations: Obtain fireproofing for each fire-resistance design from single source.

C. Fire-Resistance Design: Tested according to ASTM E 119 or UL 263 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

D. VOC Content: Products shall comply with the following VOC limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Primers, Sealers, and Undercoaters: 200 g/L.
4. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.

E. Asbestos: Provide products containing no detectable asbestos.

2.2 SPRAYED FIRE-RESISTIVE MATERIALS

A. SFRM: Manufacturer's standard, factory-mixed, lightweight, dry formulation, complying with indicated fire-resistance design, and mixed with water at Project site to form a slurry or mortar
before conveyance and application or conveyed in a dry state and mixed with atomized water at place of application.


Available products that may be incorporated into the Work include, but are not limited to, the following:

a. Carboline Company, subsidiary of RPM International, Fireproofing Products Div.; AD Southwest Fireproofing Type 7GP.
b. Isolatek International; Cafco Blaze-Shield II.
c. Pyrok, Inc.; Pyrok-MD.
d. Southwest Fireproofing Products Co.; Type 7GP.

2. Application: Designated for exterior use by a qualified testing agency acceptable to authorities having jurisdiction.

3. Bond Strength: Minimum 1000-lbf/sq. ft. (47.88-kPa) cohesive and adhesive strength based on field testing according to ASTM E 736.

4. Density: Not less than 22 lb/cu. ft. (350 kg/cu. m) and as specified in the approved fire-resistance design, according to ASTM E 605.

5. Thickness: As required for fire-resistance design indicated, measured according to requirements of fire-resistance design or ASTM E 605, whichever is thicker, but not less than 0.375 inch (9 mm).


7. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

   a. Flame-Spread Index: 10 or less.
   b. Smoke-Developed Index: 10 or less.

8. Compressive Strength: Minimum 100 lbf/sq. in. (689 kPa) according to ASTM E 761.


10. Deflection: No cracking, spalling, or delamination according to ASTM E 759.

11. Effect of Impact on Bonding: No cracking, spalling, or delamination according to ASTM E 760.

12. Air Erosion: Maximum weight loss of 0.025 g/sq. ft. (0.270 g/sq. m) in 24 hours according to ASTM E 859.

13. Fungal Resistance: Treat products with manufacturer's standard antimicrobial formulation to result in no growth on specimens per ASTM G 21.

2.3 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that are compatible with fireproofing and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance designs indicated.

B. Substrate Primers: Primers approved by fireproofing manufacturer and complying with one or both of the following requirements:
1. Primer and substrate are identical to those tested in required fire-resistance design by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

2. Primer's bond strength in required fire-resistance design complies with specified bond strength for fireproofing and with requirements in UL's "Fire Resistance Directory" or in the listings of another qualified testing agency acceptable to authorities having jurisdiction, based on a series of bond tests according to ASTM E 736.

C. Bonding Agent: Product approved by fireproofing manufacturer and complying with requirements in UL's "Fire Resistance Directory" or in the listings of another qualified testing agency acceptable to authorities having jurisdiction.

D. Reinforcing Fabric: Glass- or carbon-fiber fabric of type, weight, and form required to comply with fire-resistance designs indicated; approved and provided by fireproofing manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions with Installer present, for compliance with requirements for substrates and other conditions affecting performance of the Work and according to each fire-resistance design. Verify compliance with the following:

1. Substrates are free of dirt, oil, grease, release agents, rolling compounds, mill scale, loose scale, incompatible primers, paints, and encapsulants, or other foreign substances capable of impairing bond of fireproofing with substrates under conditions of normal use or fire exposure.

2. Objects penetrating fireproofing, including clips, hangers, support sleeves, and similar items, are securely attached to substrates.

3. Substrates receiving fireproofing are not obstructed by ducts, piping, equipment, or other suspended construction that will interfere with fireproofing application.

B. Verify that concrete work on steel deck has been completed before beginning fireproofing work.

C. Verify that roof construction, installation of roof-top equipment, and other related work is complete and building is dried in before beginning fireproofing work.

D. Conduct tests according to fireproofing manufacturer's written recommendations to verify that substrates are free of substances capable of interfering with bond.

E. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

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

3.2 PREPARATION

A. Cover other work subject to damage from fallout or overspray of fireproofing materials during application.
B. Clean substrates of substances that could impair bond of fireproofing.

C. Prime substrates where included in fire-resistance design and where recommended in writing by fireproofing manufacturer unless compatible shop primer has been applied and is in satisfactory condition to receive fireproofing.

D. For applications visible on completion of Project, repair substrates to remove surface imperfections that could affect uniformity of texture and thickness in finished surface of fireproofing. Remove minor projections and fill voids that would telegraph through fire-resistant products after application.

3.3 APPLICATION

A. Construct fireproofing assemblies that are identical to fire-resistance design indicated and products as specified, tested, and substantiated by test reports; for thickness, primers, sealers, topcoats, finishing, and other materials and procedures affecting fireproofing work.

B. Comply with fireproofing manufacturer's written instructions for mixing materials, application procedures, and types of equipment used to mix, convey, and apply fireproofing; as applicable to particular conditions of installation and as required to achieve fire-resistance ratings indicated.

C. Coordinate application of fireproofing with other construction to minimize need to cut or remove fireproofing.

1. Do not begin applying fireproofing until clips, hangers, supports, sleeves, and other items penetrating fireproofing are in place.

2. Defer installing ducts, piping, and other items that would interfere with applying fireproofing until application of fireproofing is completed.

D. Metal Decks:

1. Do not apply fireproofing to underside of metal deck substrates until concrete topping, if any, has been completed.

2. Do not apply fireproofing to underside of metal roof deck until roofing has been completed; prohibit roof traffic during application and drying of fireproofing.

   a. Fireproofing is only required for roof areas that are less than 20 ft. (6 m) above floor.

E. Install auxiliary materials as required, as detailed, and according to fire-resistance design and fireproofing manufacturer's written recommendations for conditions of exposure and intended use. For auxiliary materials, use attachment and anchorage devices of type recommended in writing by fireproofing manufacturer.

F. Spray apply fireproofing to maximum extent possible. Following the spraying operation in each area, complete the coverage by trowel application or other placement method recommended in writing by fireproofing manufacturer.

G. Extend fireproofing in full thickness over entire area of each substrate to be protected.
H. Install body of fireproofing in a single course unless otherwise recommended in writing by fireproofing manufacturer.

I. Cure fireproofing according to fireproofing manufacturer's written recommendations.

J. Do not install enclosing or concealing construction until after fireproofing has been applied, inspected, and tested and corrections have been made to deficient applications.

K. Finish: Apply fireproofing to produce manufacturer’s standard sprayed on finish.

3.4 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Test and inspect as required by the IBC, 1704.10.

B. Perform the tests and inspections of completed work in successive stages. Do not proceed with application of fireproofing for the next area until test results for previously completed applications of fireproofing show compliance with requirements. Tested values must equal or exceed values as specified and as indicated and required for approved fire-resistance design.

C. Fireproofing will be considered defective if it does not pass tests and inspections.

1. Remove and replace fireproofing that does not pass tests and inspections, and retest.
2. Apply additional fireproofing, per manufacturer's written instructions, where test results indicate insufficient thickness, and retest.

D. Prepare test and inspection reports.

3.5 CLEANING, PROTECTING, AND REPAIRING

A. Cleaning: Immediately after completing spraying operations in each containable area of Project, remove material overspray and fallout from surfaces of other construction and clean exposed surfaces to remove evidence of soiling.

B. Protect fireproofing, according to advice of manufacturer and Installer, from damage resulting from construction operations or other causes, so fireproofing will be without damage or deterioration at time of Substantial Completion.

C. As installation of other construction proceeds, inspect fireproofing and repair damaged areas and fireproofing removed due to work of other trades.

D. Repair fireproofing damaged by other work before concealing it with other construction.

E. Repair fireproofing by reapplying it using same method as original installation or using manufacturer's recommended trowel-applied product.
3.6 FIRE RATING SCHEDULE

A. Fire-Resistance Rating (time in hours) schedule shall be as follows based on Monokote Z-106:

1. Steel Columns: 2 hr. for columns supporting floors, 1 hr. for columns supporting roof only, Design no. Y782
2. Floor Assemblies (Decks): 2 hr., Design no. J712, Restrained
3. Floor Beams/Girders: 2 hr., Design no. N782, Restrained
4. Roof Assemblies (Decks): 1 hr. Design no. P725, Restrained
5. Roof Beams/Girders: 1 hr., Design no. P725, Restrained

END OF SECTION 078100
SECTION 078123 - INTUMESCENT FIREPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Section includes mastic and intumescent fire-resistive coatings (MIFRC).
B. Related Requirements:
   1. Section 078100 "Applied Fireproofing" for sprayed fire-resistive materials (SFRM).

1.3 PREINSTALLATION MEETINGS
A. Preinstallation Conference: Conduct conference at Project site.
   1. Review products, design ratings, restrained and unrestrained conditions, thicknesses, and other performance requirements.

1.4 ACTION SUBMITTALS
A. Product Data: For each type of product.
   1. For paints and coatings, provide documentation of VOC content.
B. Shop Drawings: Structural framing plans indicating the following:
   1. Extent of fireproofing for each construction and fire-resistance rating.
   2. Applicable fire-resistance design designations of a qualified testing and inspecting agency acceptable to authorities having jurisdiction.
   3. Minimum fireproofing thicknesses needed to achieve required fire-resistance rating of each structural component and assembly.
   4. Treatment of fireproofing after application.
C. Samples: For each exposed product and for each color and texture specified, in manufacturer's standard dimensions but no less than 6 inches (150 mm) square in size.

1.5 INFORMATIONAL SUBMITTALS
A. Qualification Data: For Installer.
B. Product Certificates: For each type of fireproofing.
C. Evaluation Reports: For fireproofing, from ICC-ES.
D. Field quality-control reports.

1.6 QUALITY ASSURANCE
A. Installer Qualifications: A firm or individual certified, licensed, or otherwise qualified by fireproofing manufacturer as experienced and with sufficient trained staff to install manufacturer's products according to specified requirements.
B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and to set quality standards for materials and execution.
1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
3. Apply sample section of 100 sq.ft. (9.64 m/sq.) to representative substrate on site.

1.7 FIELD CONDITIONS
A. Environmental Limitations: Do not apply fireproofing when ambient or substrate temperature is 40 deg F (4.5 deg C) or lower unless temporary protection and heat are provided to maintain temperature at or above this level for 24 hours before, during, and for 24 hours after product application.
B. Ventilation: Ventilate building spaces during and after application of fireproofing, providing complete air exchanges according to manufacturer's written instructions. Use natural means or, if they are inadequate, forced-air circulation until fireproofing dries thoroughly.

PART 2 - PRODUCTS
2.1 MATERIALS, GENERAL
A. Assemblies: Provide fireproofing, including auxiliary materials, according to requirements of each fire-resistance design and manufacturer's written instructions.
B. Source Limitations: Obtain fireproofing for each fire-resistance design from single source.
C. Fire-Resistance Design: Tested according to ASTM E 119 or UL 263 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
D. VOC Content: Products shall comply with the following VOC limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Primers, Sealers, and Undercoaters: 200 g/L.
4. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.

E. Asbestos: Provide products containing no detectable asbestos.

2.2 MASTIC AND INTUMESCENT FIRE-RESISTIVE COATINGS

A. MIFRC: Manufacturer's standard, factory-mixed formulation or factory-mixed, multicomponent system consisting of intumescent base coat and topcoat, and complying with indicated fire-resistance design.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. Albi Manufacturing, Division of StanChem Inc.; Albi Clad TF.
   b. Carboline Company, subsidiary of RPM International, Fireproofing Products Div.; AD Firefilm III.
   c. Isolatek International; Cafco SprayFilm-WB 5.

2. Application: Designated for "interior general purpose" and "conditioned interior space purpose" use by a qualified testing agency acceptable to authorities having jurisdiction.
3. Thickness: As required for fire-resistance design indicated, measured according to requirements of fire-resistance design.
4. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   a. Flame-Spread Index: 15 or less.
   b. Smoke-Developed Index: 30 or less.

5. Hardness: Not less than 65, Type D durometer, according to ASTM D 2240.
6. Finish: Smooth to slight orange peel.
   a. Color and Gloss: As selected by Architect from manufacturer's full range.

2.3 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that are compatible with fireproofing and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance designs indicated.

B. Substrate Primers: Primers approved by fireproofing manufacturer and complying with required fire-resistance design by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

C. Topcoat: Suitable for application over applied fireproofing; of type recommended in writing by fireproofing manufacturer for each fire-resistance design.
PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrates and other conditions affecting performance of the Work and according to each fire-resistance design. Verify compliance with the following:

1. Substrates are free of dirt, oil, grease, release agents, rolling compounds, mill scale, loose scale, incompatible primers, paints, and encapsulants, or other foreign substances capable of impairing bond of fireproofing with substrates under conditions of normal use or fire exposure.
2. Objects penetrating fireproofing, including clips, hangers, support sleeves, and similar items, are securely attached to substrates.
3. Substrates receiving fireproofing are not obstructed by ducts, piping, equipment, or other suspended construction that will interfere with fireproofing application.

B. Conduct tests according to fireproofing manufacturer's written recommendations to verify that substrates are free of substances capable of interfering with bond.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

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

3.2 PREPARATION

A. Cover other work subject to damage from fallout or overspray of fireproofing materials during application.

B. Clean substrates of substances that could impair bond of fireproofing.

C. Prime substrates where included in fire-resistance design and where recommended in writing by fireproofing manufacturer unless compatible shop primer has been applied and is in satisfactory condition to receive fireproofing.

D. For applications visible on completion of Project, repair substrates to remove surface imperfections that could affect uniformity of texture and thickness in finished surface of fire-resistant products after application.

3.3 APPLICATION

A. Construct fireproofing assemblies that are identical to fire-resistance design required and products as specified, tested, and substantiated by test reports; for thickness, primers, topcoats, finishing, and other materials and procedures affecting fireproofing work.

B. Comply with fireproofing manufacturer's written instructions for mixing materials, application procedures, and types of equipment used to mix, convey, and apply fireproofing; as applicable
to particular conditions of installation and as required to achieve fire-resistance ratings indicated.

C. Coordinate application of fireproofing with other construction to minimize need to cut or remove fireproofing.

   1. Do not begin applying fireproofing until clips, hangers, supports, sleeves, and other items penetrating fireproofing are in place.
   2. Defer installing ducts, piping, and other items that would interfere with applying fireproofing until application of fireproofing is completed.

D. Install auxiliary materials as required, as detailed, and according to fire-resistance design and fireproofing manufacturer's written recommendations for conditions of exposure and intended use. For auxiliary materials, use attachment and anchorage devices of type recommended in writing by fireproofing manufacturer.

E. Spray apply fireproofing to maximum extent possible. Following the spraying operation in each area, complete the coverage by placement method recommended in writing by fireproofing manufacturer.

F. Extend fireproofing in full thickness over entire area of each substrate to be protected.

G. Install body of fireproofing as recommended in writing by fireproofing manufacturer.

H. Apply top coat in color selected in accordance with manufacturer's instructions.

I. Provide a uniform finish complying with description indicated for fireproofing material and matching finish approved for required mockups.

J. Cure fireproofing according to fireproofing manufacturer's written recommendations.

K. Do not install enclosing or concealing construction until after fireproofing has been applied, inspected, and tested and corrections have been made to deficient applications.

3.4 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

   1. Test and inspect as required by the IBC, 1704.11.


B. Perform the tests and inspections of completed Work in successive stages. Do not proceed with application of fireproofing for the next area until test results for previously completed applications of fireproofing show compliance with requirements. Tested values must equal or exceed values as specified and as indicated and required for approved fire-resistance design.

C. Fireproofing will be considered defective if it does not pass tests and inspections.
1. Remove and replace fireproofing that does not pass tests and inspections, and retest.
2. Apply additional fireproofing, per manufacturer's written instructions, where test results indicate insufficient thickness, and retest.

D. Prepare test and inspection reports.
E. In addition to special inspections installer to perform continuous Wet Film Thickness checks during application.

3.5 CLEANING, PROTECTING, AND REPAIRING
A. Cleaning: Immediately after completing spraying operations in each containable area of Project, remove material overspray and fallout from surfaces of other construction and clean exposed surfaces to remove evidence of soiling.
B. Protect fireproofing, according to advice of manufacturer and installer, from damage resulting from construction operations or other causes, so fireproofing will be without damage or deterioration at time of Substantial Completion.
C. As installation of other construction proceeds, inspect fireproofing and repair damaged areas and fireproofing removed due to work of other trades.
D. Repair fireproofing damaged by other work before concealing it with other construction.
E. Repair fireproofing by reapplying it using same method as original installation or using manufacturer's recommended product.

3.6 FIRE RATING SCHEDULE
A. Fire-Resistance Rating (time in hours) schedule shall be as follows:
1. Steel Pipe Columns: 2 hr. for columns supporting floors, 1 hr. for columns supporting roof only
3. Exposed Beams/Girders attached to Steel Pipe columns and where indicated: 2 hr. Restrained

END OF SECTION 078123