Consulting Engineers

Morgan City Corporation

Commercial Street Streetscape

CONTRACT DOCUMENTS, SPECIFICATIONS AND DRAWINGS

April 2017

Prepared by

JONES & ASSOCIATES Consulting Engineers
CONTRACT DOCUMENTS FOR

the

COMMERCIAL STREET STREETSCAPE PROJECT

for

MORGAN CITY CORPORATION

April 2017

prepared by

JONES AND ASSOCIATES
Consulting Engineers

1716 East 5600 South
South Ogden, Utah 84403
www.jonescivil.com
(801) 476-9767
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for

CONTRACT DOCUMENTS FOR CONSTRUCTION OF

COMMERCIAL STREET STREETSCAPE PROJECT

for

MORGAN CITY CORPORATION

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(NSPE/ACEC Document C-700)

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COMMERCIAL STREET STREETSCEAPE PROJECT

MORGAN CITY CORPORATION

Sealed bids will be received at the Morgan City Recorder’s Office, 90 West Young Street, Morgan, Utah, until 2:00 pm on May 11, 2017, for the COMMERCIAL STREET STREETSCEAPE PROJECT at which time, bids will be opened publicly.

PROJECT DESCRIPTION: The work consists of the removal and replacement of curb & gutter, sidewalk, ADA ramps and asphalt tie ins on Commercial Street between 100 North Street and approximately 200 North. It includes installation of colored and stamped concrete flatwork, installation of new decorative street lighting, and lighted bollards. Construction of “Bump out” islands and planter boxes for landscaping together with a sprinkler system, installing 12” and 15” storm drain pipe with associated inlet and cleanout boxes, installing underground power conduits and wire to connect to new street lights, lighted bollards, and 120 and 240 volt outlets, upgrading culinary water services and meter boxes, and the placement of park benches and bicycle racks.

Contract Documents, including Drawings and Technical Specifications, may be obtained online for a $20.00 non-refundable fee at www.jonescivil.com or at the office of the Engineer; Jones and Associates, 1716 East 5600 South, South Ogden, Utah 84403 upon application and payment of a $40.00 non-refundable fee. Each bid shall be accompanied by a certified check, cashier's check or bid bond in the amount of five percent (5%) of the total bid price payable to MORGAN CITY CORPORATION.

There will be a mandatory Site visit on May 2nd at 10:00 am. All that are planning on bidding this job will be need to be in attendance. All work covered by the contract documents shall be completed by September 30, 2017.

Dated this 18th day of April, 2017

By: Denise Woods
City Recorder
Morgan City Corporation

Published: April 26 and May 3, 2017
Bid Information

COMMERCIAL STREET STREETSCAPE PROJECT

MORGAN CITY CORPORATION

RECEIPT OF BIDS: Sealed bids will be received at the Morgan City Recorder's Office, 90 West Young Street, Morgan, Utah, until 2:00 pm on May 11, 2017, for the COMMERCIAL STREET STREETSCAPE PROJECT at which time, bids will be opened publicly.

DESCRIPTION OF WORK: The work consists of the removal and replacement of curb & gutter, sidewalk, ADA ramps and asphalt tie ins on Commercial Street between 100 North Street and approximately 200 North. It includes installation of colored and stamped concrete flatwork, installation of new decorative street lighting and lighted bollards, construction of "Bump out" islands and planter boxes for landscaping together with a sprinkler system, installing 12" and 15" storm drain pipe with associated inlet and cleanout boxes, installing underground power conduits and wire to connect to new street lights, lighted bollards, and 120 and 240 volt outlets, upgrading culinary water services and meter boxes, and the placement of park benches and bicycle racks.

LOCATION OF THE WORK: The project is located on Commercial Street between 100 North Street and 200 North.

COMPLETION OF THE WORK: All work covered by the contract documents shall be completed on or before September 30, 2017. The contract completion date is critical because of the businesses that will be affected by the work. There will be a mandatory Site visit on May 2nd at 10:00 am. All that are planning on bidding this job will need to be in attendance.

OPENING OF BIDS: The bids will be publicly opened at 2:00 pm on Wednesday, May 11, 2017 at the Morgan City Offices, 90 West Young Street, Morgan City, Utah 84050.

OBTAINING CONTRACT DOCUMENTS: Contract Documents, including Drawings and Technical Specifications, may be obtained online for a $20.00 non-refundable fee at www.jonescivil.com or at the office of the Engineer; Jones and Associates, 1716 East 5600 South, South Ogden, Utah 84403 upon application and payment of a $40.00 non-refundable fee.

BID SECURITY: Each bid shall be accompanied by a certified check, cashier's check or bid bond in the amount of five percent (5%) of the total bid price payable to MORGAN CITY CORPORATION as a guarantee that the bidder, if his bid is accepted, will promptly execute the Contract, secure payment of worker's compensation insurance and furnish a satisfactory, faithful performance bond in the amount of one hundred percent (100%) of the contract price and a payment bond in the amount of one hundred percent (100%) of the contract price.

WAITING PERIOD BEFORE AWARD: A waiting period of 30 calendar days from the date of opening of bids to the award of contract may be required. Bidder's shall assume full responsibility for and shall guarantee the bid price during this period and make certain the time period is stated in and does not restrict the proposal guarantee.

AWARDING PROCESS: The contract will either be awarded or all proposals rejected within thirty (30) calendar days of the bid opening.

PROJECT ADMINISTRATION: All questions relative to this Project prior to the opening of bids shall be directed to the Project Engineer. It shall be understood, however, that no specification interpretations will be made by telephone, nor will any "or equal" products be considered for approval prior to award of contract.

OWNER'S RIGHTS RESERVED: The Owner reserves the right to reject any or all bids, to waive any informality in a bid, and to make awards in the interest of the Owner.

Dated this 18th day of April 2017

By: Denise Woods, City Recorder
Morgan City Corporation

Published: April 26 and May 3, 2017 in Standard Examiner and April 21, April 28, & May 5, 2017 in Morgan County News
INSTRUCTION TO BIDDER

1. PREPARATION OF PROPOSAL

Proposals must be made on the prescribed forms. Each blank provided in the form titled “Proposal” shall be completed in ink (or typing). Where indicated, amounts are to be both words and figures with amounts extended and totaled. In case of discrepancy between written amounts and figures, the written amounts shall govern.

Any proposal must be deemed informal which contains omissions, erasures, alterations, additions, or irregularities of any kind.

The Bidder shall sign his name in the blank space provided. If the proposal is made by a partnership or corporation, the name and address of the partnership or corporation shall be shown. If the proposal is made by a partnership, it must be acknowledged by one of the partners; if made by a corporation, by one of the officers. The Bidder shall comply with all other specific requirements of the proposal form.

2. EXAMINATION OF SITE AND CONDITIONS

Before making a proposal, the Bidder shall examine the site of the work and determine for himself the existing conditions and the extent of which they will affect the proposal. Failure to do so will not relieve him from performing the work in strict accordance with the requirements of the Contract Documents. In the event that the contractor desires to access portions of the Project outside of the City right-of-way, he shall contact the City Public Works Director to make prior arrangements before trespassing. There will be a mandatory Site visit on May 2nd at 10:00 am. All that are planning on bidding this job will need to be in attendance.

No statement made by the Owner, or its officers, agents or employees pertaining to the site of the work or the conditions under which the work must be performed will be binding on the Owner.

3. SUBMISSION OF PROPOSAL

Each proposal shall be completely sealed in a package, marked with the name and address of the Bidder and the name of the Project. The proposal must be delivered to the place named in the official advertisement and before the specified time.

4. MODIFICATION OF DELIVERED PROPOSAL

Change in a proposal already delivered will be permitted only if the request for the privilege of making such modification is made in writing, signed by the Bidder and the specific modification itself is stated prior to the scheduled closing time for the receipt of proposals. To be effective, every modification must be made in writing over the signature of the Bidder. No other form or procedure will be acceptable.

5. WITHDRAWAL OF PROPOSAL

A proposal may be withdrawn prior to the scheduled closing time if the Bidder appears in person, or upon his telegraphic or written request. A telephoned request for withdrawal will not be recognized for this purpose. No Bidder will be permitted to withdraw his proposal after the scheduled closing time for filing bids, unless the contract has not been awarded before the expiration of the thirty day period immediately following the proposal submittal date. Bids received after the scheduled closing time will be returned to the Bidder unopened.

6. OPENING AND REJECTION OF PROPOSALS
All proposals received prior to the scheduled closing time and which are not withdrawn as above provided will be opened and read even though there may be irregularities or informalities therein, except that any proposal which is not signed will not be read and will be rejected without consideration.

The Owner reserves the right before or after opening, to reject any or all proposals or to waive any informalities therein if it is believed that the best interests of the Owner will be served thereby.

7. AWARD OF CONTRACT

The contract will either be awarded or all proposals rejected within thirty (30) calendar days of the bid opening.

8. INTERPRETATION OF DOCUMENTS

If any person contemplating submitting a proposal is in doubt as to the true meaning of any part of the Contract Documents, or finds discrepancies in or omissions from the drawings or specifications, he may submit to the Engineer a written request for an interpretation or correction thereof and to be given consideration, shall be received at least five (5) days prior to date fixed for opening proposals. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the documents will be made only by addendum duly issued, and a copy of the addendum will be e-mailed to each person receiving a set of the Contract Documents. It may also be posted to the project engineer’s website at www.jonescivil.com. Neither the Owner nor the Engineer will be responsible for any other explanation or interpretation of the Contract Documents.

9. ADDENDA

Any addenda issued during the time of bidding will be in the form of written addenda to the specifications and will be emailed or faxed to each person who has previously received a set of Contract Documents. It may also be posted to the project engineer’s website at www.jonescivil.com. However, it is the bidder’s responsibility to check for any issued addenda prior to submitting a bid. No addenda will be issued after 24 hours prior to the bid opening. All addenda so issued shall become a part of the Contract Documents.

10. EMPLOYEE STATUS VERIFICATION

Utah Code Annotated Section 63G-12-302 (3) states: “Beginning July 1, 2009, a public employer may not enter into a contract for the physical performance of services within the state with a contractor unless the contractor registers and participates in the Status Verification System to verify the work eligibility status of the contractor’s new employees that are employed in the State.” All bidders are required to conform to this law and should not submit a bid unless they currently comply with its provisions.
PROPOSAL

Date: _________________

MORGAN CITY CORPORATION
90 West Young Street
Morgan, Utah 84414

Gentlemen:

Complying with your request for bids and the information and instructions to bidders and all documents related thereto, the undersigned hereby proposes to furnish all labor and materials and to perform all work for the COMMERCIAL STREET STREETScape PROJECT as required by and in strict accordance with drawings and specifications prepared for the same by Jones and Associates, Consulting Engineers, 1716 East 5600 South, South Ogden, Utah 84403, for the prices shown on the bidding schedule(s).

All work covered by the contract documents shall be completed on or before September 30, 2017.

It is understood and agreed that the Contractor shall pay the Owner, as liquidated damages, the sum of $1000.00 for each and every day that the work remains uncompleted after the elapse of the contract time, as provided as identified in the contract agreement.

Upon written notice, within 10 days after the date of opening of the proposals, or at any time thereafter before this proposal is withdrawn, the undersigned agrees that he, or they, will execute and deliver a contract, a performance bond, and labor and materials payment bond, as specified in accordance with proposals accepted.

Enclosed is ______________________________________________________________________ as required in the sum of $____________.

Bid Bond or Cashier’s Check

Addenda Nos. ____________________________________________________________________ have been received

Proposed Sub-contractors:

Name: __________________________________________________ Type of Work: _________________________________

________________________________________________________ _________________________________

________________________________________________________ ________________________________
# BIDDING SCHEDULE
MORGAN CITY CORPORATION
COMMERCIAL STREET STREETSCAPE PROJECT – BASE BID

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<th>Unit Price</th>
<th>Amount</th>
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<td>Mobilization</td>
<td>1</td>
<td>ls</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Remove existing Curb &amp; gutter</td>
<td>865</td>
<td>lf</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Saw cut existing flatwork 4&quot; to 6&quot; thick in front of buildings and other places</td>
<td>576</td>
<td>lf</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Remove and dispose of existing concrete flatwork 4&quot; to 6&quot; thick</td>
<td>8,470</td>
<td>sf</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Saw cut existing asphalt pavement 3&quot; to 5&quot; thick</td>
<td>1,019</td>
<td>lf</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Remove and dispose of existing 3&quot; to 5&quot; thick asphalt pavements</td>
<td>4,022</td>
<td>cy</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Furnish &amp; install 3/4&quot; or 1&quot; untreated base course in asphalt patch areas where needed</td>
<td>442</td>
<td>ton</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Excavate undesirable material from under new asphalt areas, new curb &amp; gutter areas and new sidewalk areas</td>
<td>278</td>
<td>cy</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Furnish &amp; install 3&quot; thick asphalt surface course in large areas to match new curb &amp; gutter grades</td>
<td>6692</td>
<td>sf</td>
<td></td>
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<tr>
<td>10.</td>
<td>Furnish &amp; install 3&quot; thick asphalt surface course in small patch areas to match new curb &amp; gutter grades (mostly 1' to 2' wide in front of new curb &amp; gutter)</td>
<td>305</td>
<td>sf</td>
<td></td>
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<td>11.</td>
<td>Construct 30&quot; curb &amp; gutter with 4&quot; roadbase under</td>
<td>1009</td>
<td>lf</td>
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<td>12.</td>
<td>Construct 4&quot; colored &amp; stamped concrete flatwork with 4&quot; roadbase under</td>
<td>2,574</td>
<td>sf</td>
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<td>13.</td>
<td>Construct 4&quot; plain concrete flatwork including ADA Ramps with 4&quot; roadbase under (2' x 4' Truncated dome panel to be paid under a separate item)</td>
<td>6,537</td>
<td>sf</td>
<td></td>
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</tr>
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<td>14</td>
<td>Construct 6” plain concrete flatwork with 4” roadbase under</td>
<td>657 sf</td>
<td></td>
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<td>15</td>
<td>Furnish &amp; install 2’ x 4’ truncated dome panel in ADA ramp (4” concrete flatwork to be paid for under a separate item)</td>
<td>6 ea</td>
<td></td>
<td></td>
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<td>16</td>
<td>Construct 2’ wide by 1’ deep plain reinforced concrete curbing with 4” roadbase under, located at the back of the Plaza Island.</td>
<td>58 lf</td>
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<td>17</td>
<td>Raise existing telephone manhole lid to grade in Plaza Island on the east side of Commercial Street. Set to elevation of nearest curb. Coordinate efforts with telephone company</td>
<td>1 ea</td>
<td></td>
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<tr>
<td>18</td>
<td>Construct 6” wide by 30” deep reinforced concrete curb wall in bump out planter islands.</td>
<td>152 lf</td>
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<td>19</td>
<td>Construct Planter Box - 6’ long by a 4’ wide by 36” deep with 8” reinforced concrete walls</td>
<td>8 ea</td>
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<td>20</td>
<td>Furnish &amp; install Topsoil in the plaza island, bump out planter islands, and planter boxes (4” thick in planter islands and 1 deep in planter boxes)</td>
<td>600 cf</td>
<td></td>
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<td><strong>STORM DRAIN IMPROVEMENTS</strong></td>
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<tr>
<td>21</td>
<td>Remove existing inlet Box</td>
<td>1 ea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Remove top of existing inlet box along with existing frame &amp; grate. Salvage existing frame &amp; grate to the City</td>
<td>2 ea</td>
<td></td>
<td></td>
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<tr>
<td>23</td>
<td>Remove existing twin 6” C.M.P. storm drain pipe across Commercial street.</td>
<td>180 lf</td>
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<tr>
<td>24</td>
<td>Reconstruct top of existing inlet box and set to new grade. Install new bicycle safe grate.</td>
<td>2 ea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Furnish &amp; install single inlet box with City Standard frame &amp; grate. Connect to new piping</td>
<td>5 ea</td>
<td></td>
<td></td>
</tr>
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<td>Item</td>
<td>Description</td>
<td>Quantity</td>
<td>Unit Price</td>
<td>Amount</td>
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<tr>
<td>26</td>
<td>Furnish &amp; install 3' x 3' storm drain cleanout box with steel frame and solid lid. Connect to new piping</td>
<td>1 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>27</td>
<td>Furnish &amp; install 12'' Reinforced Concrete Pipe</td>
<td>191 lf</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>28</td>
<td>Furnish &amp; install 15'' Reinforced Concrete Pipe</td>
<td>158 lf</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>29</td>
<td>Connect new 12'' RCP to existing storm drain inlet boxes</td>
<td>2 ea</td>
<td>__________</td>
<td>________</td>
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**CULINARY WATER**

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<th>Quantity</th>
<th>Unit Price</th>
<th>Amount</th>
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<tbody>
<tr>
<td>30</td>
<td>Remove existing water meter box and replace with new 18'' concrete or white PVC box.</td>
<td>8 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>31</td>
<td>Install <strong>City furnished</strong> meter box ring &amp; cover to new sidewalk grades</td>
<td>13 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>32</td>
<td>Furnish &amp; install 3/4'' type K copper water service line (City side &amp; customer side)</td>
<td>126 lf</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>33</td>
<td>Connect new 3/4'' copper service line to existing corp. stop, new water meter yoke, or existing galvanized service line</td>
<td>24 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>34</td>
<td>Remove existing water meter box and replace with new 21'' concrete or white PVC box.</td>
<td>2 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>35</td>
<td>Furnish &amp; install 1'' Type K copper water service line for sprinkler service</td>
<td>30 lf</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>36</td>
<td>Construct 1'' corp. stop on existing 8'' D.I.P. main (corp. stop furnished and tapped on main line by City)</td>
<td>2 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>37</td>
<td>Furnish &amp; install 3/4'' meter yoke</td>
<td>11 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>38</td>
<td>Furnish &amp; install 1'' meter yoke</td>
<td>2 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>39</td>
<td>Connect new 1'' copper service line to new corp. stop and/or new water meter yoke. Also for connection to sprinkler duel backflow preventer</td>
<td>8 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>40</td>
<td>Abandon old, unused existing meter box - fill with gravel</td>
<td>1 ea</td>
<td>__________</td>
<td>________</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>Quantity</td>
<td>Unit Price</td>
<td>Amount</td>
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<tr>
<td>41</td>
<td>Remove existing Fire Hydrant and auxiliary valve. Salvage to the City</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Furnish &amp; install New Fire Hydrant assembly including 6” gate valve &amp; box</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Raise existing water valve box to new finish concrete grade in flatwork area</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Raise existing water valve box to new finish asphalt grade and place City standard concrete collar</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPRINKLER IMPROVEMENTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Furnish &amp; install 1” sch. 40 PVC pipe sprinkler line</td>
<td>800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Furnish &amp; install 30” concrete or ADS sprinkler valve box with a “D &amp; L Supply” A-1123 ring &amp; cover marked “WATER”. Includes “Watts” duel check backflow preventer &amp; “TORO” battery powered timer</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Furnish &amp; install &quot;Rainbird&quot; for PGA valve</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Furnish &amp; Install &quot;Netafim&quot; point source series landscape drip line for planters</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELECTRICAL IMPROVEMENTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Install 2 City furnished Lighted Bollards (&quot;Sternberg Lighting&quot; model #3801LB decorative lighted bollard) on the Plaza island as shown in the drawings on sheet 5. See also the Bollard Detail on sheet 18. Complete with conduit, wire, and connection to the receptacle at the top of the hill about 30’ away (see photos on sheet 15 and details in the specifications).</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Construct all electrical improvements as shown on drawings sheets 13 through 20, excluding item 49 shown above. Includes the installation of the City furnished 14’ decorative light with single LED light (Mountain States Lighting) as shown on sheet 8.</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>Quantity</td>
<td>Unit Price</td>
<td>Amount</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>----------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>51</td>
<td>Furnish &amp; install Round Tube Steel Wave Bike Rack -3 loops 5 bikes - (&quot;Belson Outdoors&quot; model #CBBR-5UR-BK)</td>
<td>2 ea</td>
<td>_________</td>
<td>________</td>
</tr>
<tr>
<td>52</td>
<td>Furnish &amp; install Steel Outdoor Bench (&quot;Belson Outdoors&quot; model #CBPB-6SB-BK)</td>
<td>7 ea</td>
<td>_________</td>
<td>________</td>
</tr>
<tr>
<td>53</td>
<td>Remove existing cluster mail box and replace in new location</td>
<td>1 ea</td>
<td>_________</td>
<td>________</td>
</tr>
<tr>
<td></td>
<td><strong>PAINTING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Paint 4&quot; wide white striping for parking stalls and ADA parking areas</td>
<td>3,552 lf</td>
<td>_________</td>
<td>________</td>
</tr>
<tr>
<td>55</td>
<td>Furnish &amp; place Thermoplastic striping, 24&quot; wide x 10' long, 24&quot; apart for crosswalk stripes and stop bars as shown on the drawings.</td>
<td>164 lf</td>
<td>_________</td>
<td>________</td>
</tr>
<tr>
<td>56</td>
<td>Paint ADA parking symbols</td>
<td>5 ea</td>
<td>_________</td>
<td>________</td>
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<tr>
<td></td>
<td><strong>TOTAL BASE BID</strong> (items 1-56)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$________________________________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alt 1</td>
<td>Delete the bid items for the 2 Bump out Islands on the 2 corners of 125 North and Commercial Street</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Delete- 30&quot; curb &amp; gutter with 4&quot; road base under</td>
<td>70 lf</td>
<td>_________</td>
<td>________</td>
</tr>
<tr>
<td>2</td>
<td>Delete- 4&quot; plain concrete flatwork with 4&quot; road base under</td>
<td>97 sf</td>
<td>_________</td>
<td>________</td>
</tr>
<tr>
<td>3</td>
<td>Delete- 4&quot; colored &amp; stamped concrete flatwork with 4&quot; road base under</td>
<td>168 sf</td>
<td>_________</td>
<td>________</td>
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<tr>
<td>4</td>
<td>Delete- 6&quot; wide by 30 &quot; deep reinforced concrete curb wall in planter islands.</td>
<td>76 lf</td>
<td>_________</td>
<td>________</td>
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<tr>
<td>5</td>
<td>Delete- &quot;Netafim&quot; point source series landscape drip line for planters</td>
<td>2 ea</td>
<td>_________</td>
<td>________</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>Quantity</td>
<td>Unit Price</td>
<td>Amount</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
<td>------------</td>
<td>--------</td>
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<tr>
<td>6</td>
<td>Delete- 1&quot; type K water service line for sprinkler service</td>
<td>250</td>
<td>If</td>
<td></td>
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<tr>
<td>7</td>
<td>Delete- 1&quot; sch. 40 PVC pipe sprinkler line</td>
<td>92</td>
<td>If</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Delete- single inlet box with City Standard frame &amp; grate. Connect to new piping</td>
<td>1</td>
<td>ea</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Delete- 12&quot; Reinforced Concrete Pipe</td>
<td>26</td>
<td>If</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Delete- Connect new 12&quot; RCP to existing storm drain inlet boxes</td>
<td>1</td>
<td>ea</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Delete- Furnish &amp; install top soil in 2 bump out islands</td>
<td>51</td>
<td>cf</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Delete- Saw cut existing asphalt pavement 3&quot; to 5&quot; thick</td>
<td>52</td>
<td>If</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>delete- remove existing 3&quot; to 5&quot; thick asphalt</td>
<td></td>
<td></td>
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</table>

Alt 1 Total of items to be deleted if the 2 Bump out Islands at 126 North are removed from the contract $4

Alt 2 Delete the bid items for 2 Bump out Islands: one on the south end at the corner of 100 North and Commercial Street, the other on the north end by Front Street Gifts.

7 Delete- 30" curb & gutter with 4" road base under                          | 70       | If         |        |
<p>| 2    | Delete- 4&quot; plain concrete flatwork with 4&quot; road base under                  | 97       | sf         |        |
| 3    | Delete- 4&quot; colored &amp; stamped concrete flatwork with 4&quot; road base under     | 182      | sf         |        |
| 4    | Delete- 6&quot; wide by 30 &quot; deep reinforced concrete curb wall in planter islands. | 76       | If         |        |
| 5    | Delete- &quot;Netafim&quot; point source series landscape drip line for planters      | 2        | ea         |        |
| 6    | Delete- 1&quot; sch. 40 PVC pipe sprinkler line                                  | 99       | If         |        |</p>
<table>
<thead>
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<th>Quantity</th>
<th>Unit Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Delete- Furnish &amp; install top soil in 2 bump out islands</td>
<td>51</td>
<td>cf</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Delete- Saw cut existing asphalt pavement 3&quot; to 5&quot; thick</td>
<td>136</td>
<td>lf</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Delete- Remove existing 3&quot; to 5&quot; thick asphalt</td>
<td>184</td>
<td>sy</td>
<td></td>
</tr>
<tr>
<td>Alt 2</td>
<td>Total of items to be deleted if the 2 Bump out Islands, 1 at 100 North &amp; 1 at the North end by Front Street Gifts are removed from the contract</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alt 3</td>
<td>Delete the bid items for the Plaza Island located on the east side of Commercial Street at 100 North Street</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Delete- 30&quot; curb &amp; gutter with 4&quot; road base under</td>
<td>106</td>
<td>lf</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Delete - 2' wide by 1' deep plain reinforced concrete curbing with 4&quot; roadbase under, located at the back of the Plaza Island.</td>
<td>50</td>
<td>if</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Delete- 4&quot; colored &amp; stamped concrete flatwork with 4&quot; road base under</td>
<td>420</td>
<td>sf</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Delete- Saw cut existing asphalt pavement 3&quot; to 5&quot; thick</td>
<td>129</td>
<td>if</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Delete- Remove existing 3&quot; to 5&quot; thick</td>
<td>144</td>
<td>sy</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Delete - raise existing telephone manhole to grade</td>
<td>1</td>
<td>ea</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Delete -12&quot; Reinforced Concrete Pipe</td>
<td>63</td>
<td>lf</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Delete -Remove existing inlet Box</td>
<td>1</td>
<td>ea</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Delete -Single inlet box with City Std. frame &amp; grate. Connect to new piping</td>
<td>2</td>
<td>ea</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Delete -3' x 3' storm drain cleanout box with steel frame and solid lid. Connect to new piping</td>
<td>1</td>
<td>ea</td>
<td></td>
</tr>
</tbody>
</table>
11 Delete- Install City furnished Lighted Bollard on the Plaza Island as shown in the drawings on sheet 5. See also the Bollard Detail on sheet 18. Complete with conduit, wire, and connection to the receptacle at the top of the hill about 30’ away.

12 Delete- Furnish & install top soil in plaza island

Alt 3 Total of items to be deleted on the Plaza Island located on the east side of Commercial Street at 100 North St.

BID SUMMARY

TOTAL BASE BID (ITEMS 1-54)

ALT 1 (Delete bump out islands at 125 north)

ALT 2 (Delete bump out islands at 100 North & 200 North)

ALT 3 (Delete plaza island at 125 north)

It is understood that the quantities stated are approximate only and are for the purpose of comparing bids and fixing the amount of bonds, and the payments will only be made on the basis of the above unit prices in the actual quantities, as determined by the Owner’s Engineer in the completed work.

The undersigned have checked carefully all of the above figures and understand that the Owner will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

In submitting this bid, it is understood that the right is reserved by the Owner to reject any and all bids and award any and all schedules together or separately in the interest of the Owner. Alternate bid items shall not be considered in the award of the contract.

It is agreed that the bid may not be withdrawn over a period of thirty (30) days from the opening thereof.

Respectfully submitted:

_________________________________  _____________________________
Contractor      Contractor’s License #

By: ______________________________  ______________________________
Title

_________________________________  _____________________________
Business Address               City     State    Zip Code
BID BOND

KNOW ALL MEN BY THESE PRESENTS,

That ____________________________________________ as Principal,

and ____________________________________________ as Surety,

are held and firmly bound by MORGAN CITY CORPORATION

hereinafter called "Owner", in the sum of ____________________________

(not less than 5% of the total amount)

dollars, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a bid to said Owner to perform all work required under the

bidding schedule(s) ____________________________________________ of the

Owner's Contract Documents entitled COMMERCIAL STREET STREETSCAPE PROJECT

NOW THEREFORE, if said Principal is awarded a contract by said Owner and, within the time and in the manner required under the heading "Instruction to Bidders", enters into a written contract on the form of agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond within 10 calendar days after receipt of contract from said Owner, then this obligation shall be null and void; otherwise, it shall remain in full force and effect. In the event suit is brought upon this bond by said Owner and judgment is recovered, said Surety shall pay all costs incurred by said Owner in such suit, including reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this ______ day of ____________________________, ____________.

__________________________________________ (SEAL) ____________________________ (SEAL)

Principal Surety

By: ___________________________________ By: ___________________________________

Signature Signature

(SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY)
CONTRACT AGREEMENT

This contract made and entered into the _____ day of ______________ in the year 2017 between MORGAN CITY CORPORATION, hereinafter called the OWNER and [CONTRACTOR], hereinafter called the CONTRACTOR.

Part I--Statement of Work

CONTRACTOR shall furnish all materials, equipment and personnel necessary to construct the COMMERCIAL STREET STREETScape PROJECT (“WORK”). The WORK shall be accomplished in accordance with the Plans, Technical Specifications, General Conditions and Special Conditions (“SPECIFICATIONS”) prepared by JONES AND ASSOCIATES, Consulting Engineers (“ENGINEER”).

SPECIFICATIONS are incorporated herein by reference.

Part II--Period of Performance

The CONTRACTOR shall complete all work under this contract on or before September 30, 2017.

Contractor and Owner recognize that time is of the essence and that Owner will suffer financial loss if the Work is not completed within the time specified above, plus any approved extensions as outlined in the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner $1,000.00 per day for each day that expires after the completion time specified in this agreement until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner $1,000.00 for each day that expires after the contract completion time for completion and readiness for final payment until the Work is completed and ready for final payment.

Part III--Consideration

For and in consideration of the performance of this contract, the CONTRACTOR shall be paid: $_________________

(Unit price contract-- Contract Price to be adjusted based on actual quantity of the work)

Part IV--Special Provisions

A. Wage Rate--N/A.
B. Terms and Conditions
   (1) All provisions of the General Conditions of the Contract, EJCDC Document C-700 shall be applicable to this contract except as may be modified by the joint written consent of owner and contractor.
   (2) CONTRACTOR shall deliver to the OWNER required Bonds and Certificates of Insurance naming the OWNER, MORGAN CITY CORPORATION, and it’s elected and appointed officials, employees, volunteers, agents, and others working on behalf of the OWNER as additional insured.
   (3) Indemnification: CONTRACTOR at its own expense, agrees to protect, indemnify, pay on behalf of, defend and hold harmless the OWNER, its elected and appointed officials, employees and volunteers and their agents from all claims, demands, judgments, expenses, and all other damages of every kind and nature, made, rendered, or incurred by or in behalf of any person or persons whomsoever, including the parties hereto and their employees, which may arise out of any act or failure to act, work or other activity related in any way to this Project under this contract, by the CONTRACTOR, contractor’s agents, employees, subcontractors, or suppliers in the performance and execution of this contract as outlined in Section 6.2 of the General Conditions.
   (4) Utah Code Annotated Section 63G-12-302 (3) states: “Beginning July 1, 2009, a public employer may not enter into a contract for the physical performance of services within the state with a contractor unless the contractor registers and participates in the Status Verification System to verify the work eligibility status of the contractor’s new employees that are employed in the State.”

Owner:
MORGAN CITY CORPORATION
90 West Young Street
Morgan City, UT 84050

Signature ____________________________________________
Title ________________________________________________
Attest______________________________________________

Contractor:
[CONTRACTOR]
[Contractor Address]
[City, State, Zip]

Signature ____________________________________________
Title ________________________________________________
Private Employer Affidavit of Compliance Pursuant To Utah Code 63G-12-302

By executing this affidavit, the undersigned private employer verifies its compliance with Utah Code 63G-12-302, stating affirmatively that the individual, firm or corporation has registered with and utilizes the federal work authorization program commonly known as E-Verify, or other authorized Status Verification System, in accordance with the applicable provisions and deadlines established in Utah Code. Furthermore, the undersigned private employer hereby attests that its federal work authorization user identification number and date of authorization are as follows:

_________________________________
Federal Tax ID #

_________________________________
Name of Private Employer on File with E-Verify

I hereby declare under penalty of perjury that the foregoing is true and correct. I also acknowledge that the company will indemnify Morgan City from all fines, penalties, and costs associated with the company’s non-compliance with Utah Code 63G-12-302.

_________________________________
Signature of Authorized Officer or Agent

_________________________________
Date

_________________________________
Printed Name and Title of Authorized Officer or Agent

STATE OF UTAH )
    :SS
County of ______________ )

On _________________, _____, 20__, personally appeared before me ___________________________________________________________________ the signer of the within instrument, who duly acknowledged to me that he/she executed the same.

________________________________
Notary Public
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS,

That ___________________________________________________________ as Contractor,

and ___________________________________________________________ as Surety,

are held and firmly bound unto MORGAN CITY CORPORATION

hereinafter called “Owner”, in the sum of ____________________________________________

(not less than 100% of the total amount)

dollars, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Contractor has been awarded and is about to enter into the annexed Contract with said Owner to perform all work required under the bidding schedule(s) of the Owners Contract Documents entitled:

COMMERCIAL STREET STREETSCAPE PROJECT

NOW THEREFORE, if said Contractor shall perform all the requirements of said Contract required to perform on his part, at the times and in the manner specified therein, then the obligation shall be null and void; otherwise, it shall remain in full force and effect.

PROVIDED, that any alterations in the work to be done or the materials furnished, or changes in the time of completion, which may be made pursuant to the terms of said Contract, shall not in any way release said Contractor or said Surety thereunder, nor shall any extensions of time granted under the provisions of said Contract release either said Contractor or said Surety, and notice of such alterations or extensions of the Contract is hereby waived by said Surety.

SIGNED AND SEALED, this __________ day of ____________________________, __________.

____________________________________ (SEAL) __________________________________________ (SEAL)
Contractor

Surety

By:______________________________________  By:_____________________________________
Signature

Signature

(SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY)
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS,

That ____________________________________________ as Contractor,
and ____________________________________________ as Surety,

are held and firmly bound unto MORGAN CITY CORPORATION

hereinafter called "Owner", in the sum of _________________________________________________
(not less than 100% of the total amount)

dollars, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors,
administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Contractor has been awarded and is about to enter into the annexed Contract with said
Owner to perform all work required under the bidding schedule(s) of the Owners Contract Documents
entitled:

COMMERCIAL STREET STREETSCAPE PROJECT

NOW THEREFORE, if said Contractor, or subcontractor, fails to pay for all materials, equipment, or other
supplied, or for rental of same, used in connection with the performance of work contracted to be done, or
for amounts due under applicable State law for any work or labor thereon, said surety will pay for the
same in an amount not exceeding the sum specified above, and, in the event suit is brought upon this
bond, a reasonable attorney's fee to be fixed by the court.  This bond shall inure to the benefit of any
persons, companies, or corporations entitled to file claims under applicable State law.

PROVIDED, that any alterations in the work to be done or the materials furnished, or changes in the time
of completion, which may be made pursuant to the terms of said Contract, shall not in any way release
said Contractor or said Surety thereunder, nor shall any extensions of time granted under the provisions
of said Contract release either said Contractor or said Surety, and notice of such alterations or extensions
of the Contract is hereby waived by said Surety.

SIGNED AND SEALED, this __________ day of ______________________, ________.

____________________________________ (SEAL)  __________________________ (SEAL)

Contractor  Surety

By: ________________________________  By: ________________________________
    Signature  Signature

(SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY)
std-mdc-gnc-700-standard-general-conditions-of-the-construction-contract

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. Addenda—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. Agreement—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. Application for Payment—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. Asbestos—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. Bid—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. Bidder—The individual or entity who submits a Bid directly to Owner.


8. Bidding Requirements—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.

9. Change Order—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. Claim—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. Contract—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
12. **Contract Documents**—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. **Contract Price**—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. **Contract Times**—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer’s written recommendation of final payment.

15. **Contractor**—The individual or entity with whom Owner has entered into the Agreement.

16. **Cost of the Work**—See Paragraph 11.01 for definition.

17. **Drawings**—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. **Effective Date of the Agreement**—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. **Engineer**—The individual or entity named as such in the Agreement.

20. **Field Order**—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. **General Requirements**—Sections of Division 1 of the Specifications.

22. **Hazardous Environmental Condition**—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.

23. **Hazardous Waste**—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. **Laws and Regulations; Laws or Regulations**—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. **Liens**—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. **Milestone**—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
27. **Notice of Award**—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. **Notice to Proceed**—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. **Owner**—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. **PCBs**—Polychlorinated biphenyls.

31. **Petroleum**—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. **Progress Schedule**—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.

33. **Project**—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. **Project Manual**—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. **Radioactive Material**—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. **Resident Project Representative**—The authorized representative of Engineer who may be assigned to the Site or any part thereof.

37. **Samples**—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

38. **Schedule of Submittals**—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

39. **Schedule of Values**—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.

46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.

47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.

48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

49. *Unit Price Work*—Work to be paid for on the basis of unit prices.

50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an
addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. Intent of Certain Terms or Adjectives:

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
   
   a. does not conform to the Contract Documents; or
   
   b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
   
   c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. Furnish, Install, Perform, Provide:
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. Evidence of Insurance: Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.
2.04 **Starting the Work**

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 **Before Starting Construction**

A. **Preliminary Schedules:** Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 **Preconstruction Conference; Designation of Authorized Representatives**

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 **Initial Acceptance of Schedules**

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of
the Work, nor interfere with or relieve Contractor from Contractor’s full responsibility therefor.

2. Contractor’s Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor’s Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 Intent

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 Reference Standards

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies:
1. **Contractor’s Review of Contract Documents Before Starting Work:** Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. **Contractor’s Review of Contract Documents During Performance of Work:** If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

**B. Resolving Discrepancies:**

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

   a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or

   b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

**3.04 Amending and Supplementing Contract Documents**

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer’s approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer’s written interpretation or clarification.

3.05 Reuse of Documents

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or

2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 Electronic Data

A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user’s sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data’s creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data’s creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the
Contract Price or Contract Times, or both, as a result of any delay in Owner’s furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner’s interest therein as necessary for giving notice of or filing a mechanic’s or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 Subsurface and Physical Conditions

A. Reports and Drawings: The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

4.03 Differing Subsurface or Physical Conditions

A. Notice: If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. Engineer's Review: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner’s obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer’s findings and conclusions.

C. Possible Price and Times Adjustments:

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
   a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
   b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
   a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
   b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor’s making such final commitment; or
   c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other
professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 Underground Facilities

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

   a. reviewing and checking all such information and data;

   b. locating all Underground Facilities shown or indicated in the Contract Documents;

   c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and

   d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated:

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price
or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 **Reference Points**

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer’s judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 **Hazardous Environmental Condition at Site**

A. **Reports and Drawings:** The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.

B. **Limited Reliance by Contractor on Technical Data Authorized:** Contractor may rely upon the accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by
Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall oblige Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall oblige Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.
I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor’s obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 Licensed Sureties and Insurers

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.03 Certificates of Insurance

A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

C. Failure of Owner to demand such certificates or other evidence of Contractor’s full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor’s obligation to maintain such insurance.

D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.

E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner in the Contract Documents.

5.04 Contractor’s Insurance

A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor’s performance of the Work and Contractor’s other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor’s employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
   a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
   b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include contractual liability insurance covering Contractor’s indemnity obligations under Paragraphs 6.11 and 6.20;

4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

6. include completed operations coverage:
   a. Such insurance shall remain in effect for two years after final payment.
   b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 Owner’s Liability Insurance

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner’s option, may purchase and maintain at Owner’s expense Owner’s own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 Property Insurance

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;

2. be written on a Builder’s Risk “all-risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property
insurance coverage within the limits of such amounts, each may purchase and maintain it at the
purchaser’s own expense.

E. If Contractor requests in writing that other special insurance be included in the property
insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such
insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior
to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or
not such other insurance has been procured by Owner.

5.07 Waiver of Rights

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will
protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities
identified in the Supplementary Conditions as loss payees (and the officers, directors, members,
partners, employees, agents, consultants, and subcontractors of each and any of them) in such
policies and will provide primary coverage for all losses and damages caused by the perils or
causes of loss covered thereby. All such policies shall contain provisions to the effect that in the
event of payment of any loss or damage the insurers will have no rights of recovery against any
of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each
other and their respective officers, directors, members, partners, employees, agents, consultants
and subcontractors of each and any of them for all losses and damages caused by, arising out of
or resulting from any of the perils or causes of loss covered by such policies and any other
property insurance applicable to the Work; and, in addition, waive all such rights against
Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary
Conditions as loss payees (and the officers, directors, members, partners, employees, agents,
consultants, and subcontractors of each and any of them) under such policies for losses and
damages so caused. None of the above waivers shall extend to the rights that any party making
such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise
payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers,
directors, members, partners, employees, agents, consultants and subcontractors of each and any
of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond
direct physical loss or damage to Owner’s property or the Work caused by, arising out of, or
resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting
from fire or other insured peril or cause of loss covered by any property insurance maintained
on the completed Project or part thereof by Owner during partial utilization pursuant to
Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final
payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss
referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment
of any such loss, damage, or consequential loss, the insurers will have no rights of recovery
against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 Receipt and Application of Insurance Proceeds

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner’s exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 Acceptance of Bonds and Insurance; Option to Replace

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party’s interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 Partial Utilization, Acknowledgment of Property Insurer

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.
ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.01  Supervision and Superintendence

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02  Labor; Working Hours

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03  Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.
6.04  Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05  Substitutes and “Or-Equals”

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or-equal” item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. “Or-Equal” Items: If in Engineer’s sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an “or-equal” item, in which case review and approval of the proposed item may, in Engineer’s sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

   1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

   2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and

   3) it has a proven record of performance and availability of responsive service.

b. Contractor certifies that, if approved and incorporated into the Work:

   1) there will be no increase in cost to the Owner or increase in Contract Times; and

   2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
2. **Substitute Items:**

   a. If in Engineer’s sole discretion an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

   b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

   c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.

   d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

      1) shall certify that the proposed substitute item will:

         a) perform adequately the functions and achieve the results called for by the general design,

         b) be similar in substance to that specified, and

         c) be suited to the same use as that specified;

      2) will state:

         a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor’s achievement of Substantial Completion on time,

         b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

         c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

      3) will identify:

         a) all variations of the proposed substitute item from that specified, and

         b) available engineering, sales, maintenance, repair, and replacement services; and
4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer’s sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer’s Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No “or equal” or substitute will be ordered, installed or utilized until Engineer’s review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an “or equal.” Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor’s expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer’s Cost Reimbursement: Engineer will record Engineer’s costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. Contractor’s Expense: Contractor shall provide all data in support of any proposed substitute or “or-equal” at Contractor’s expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner’s acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or
other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor’s own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.
6.07 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 Permits

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 Laws and Regulations

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor’s compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all
court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor’s responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor’s obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 Taxes

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas:

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor’s performance of the Work.

B. Removal of Debris During Performance of the Work: During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor
shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. Contractor shall comply with the applicable requirements of Owner’s safety programs, if any. The Supplementary Conditions identify any Owner’s safety programs that are applicable to the Work.
D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor’s safety program with which Owner’s and Engineer’s employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor’s duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 Safety Representative

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 Hazard Communication Programs

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 Emergencies

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 Shop Drawings and Samples

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.
1. **Shop Drawings:**
   a. Submit number of copies specified in the General Requirements.
   b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. **Samples:**
   a. Submit number of Samples specified in the Specifications.
   b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer’s review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. **Submittal Procedures:**

1. Before submitting each Shop Drawing or Sample, Contractor shall have:
   a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
   b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
   c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
   d. determined and verified all information relative to Contractor’s responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor’s obligations under the Contract Documents with respect to Contractor’s review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop
Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer’s Review:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer’s review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer’s review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer’s review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 Continuing the Work

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 Contractor’s General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor’s warranty and guarantee.

B. Contractor’s warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor,
Supplier, or other individual or entity under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer’s officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

### 6.21 Delegation of Professional Design Services

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor’s responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional’s written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer’s review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer’s review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.
ARTICLE 7 – OTHER WORK AT THE SITE

7.01 Related Work at Site

A. Owner may perform other work related to the Project at the Site with Owner’s employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner’s employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor’s Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor’s Work. Contractor’s failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor’s Work except for latent defects and deficiencies in such other work.

7.02 Coordination

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.
7.03  **Legal Relationships**

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor’s wrongful actions or inactions.

C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor’s wrongful action or inactions.

**ARTICLE 8 – OWNER’S RESPONSIBILITIES**

8.01  **Communications to Contractor**

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02  **Replacement of Engineer**

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03  **Furnish Data**

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04  **Pay When Due**

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05  **Lands and Easements; Reports and Tests**

A. Owner’s duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner’s identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06  **Insurance**

A. Owner’s responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07  **Change Orders**

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.
8.08 **Inspections, Tests, and Approvals**

A. Owner’s responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 **Limitations on Owner’s Responsibilities**

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

8.10 **Undisclosed Hazardous Environmental Condition**

A. Owner’s responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 **Evidence of Financial Arrangements**

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner’s obligations under the Contract Documents.

8.12 **Compliance with Safety Program**

A. While at the Site, Owner’s employees and representatives shall comply with the specific applicable requirements of Contractor’s safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

**ARTICLE 9 – ENGINEER’S STATUS DURING CONSTRUCTION**

9.01 **Owner’s Representative**

A. Engineer will be Owner’s representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner’s representative during construction are set forth in the Contract Documents.

9.02 **Visits to Site**

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits
and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 Project Representative

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer’s consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 Authorized Variations in Work

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 Rejecting Defective Work

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 Shop Drawings, Change Orders and Payments

A. In connection with Engineer’s authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
B. In connection with Engineer’s authority, and limitations thereof, as to design calculations and
design drawings submitted in response to a delegation of professional design services, if any, see
Paragraph 6.21.

C. In connection with Engineer’s authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer’s authority as to Applications for Payment, see Article 14.

9.07 Determinations for Unit Price Work

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed
by Contractor. Engineer will review with Contractor the Engineer’s preliminary determinations
on such matters before rendering a written decision thereon (by recommendation of an
Application for Payment or otherwise). Engineer’s written decision thereon will be final and
binding (except as modified by Engineer to reflect changed factual conditions or more accurate
data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 Decisions on Requirements of Contract Documents and Acceptability of Work

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge
of the acceptability of the Work thereunder. All matters in question and other matters between
Owner and Contractor arising prior to the date final payment is due relating to the acceptability
of the Work, and the interpretation of the requirements of the Contract Documents pertaining to
the performance of the Work, will be referred initially to Engineer in writing within 30 days of
the event giving rise to the question.

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If
Owner or Contractor believes that any such decision entitles them to an adjustment in the
Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date
of Engineer’s decision shall be the date of the event giving rise to the issues referenced for the
purposes of Paragraph 10.05.B.

C. Engineer’s written decision on the issue referred will be final and binding on Owner and
Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show
partiality to Owner or Contractor and will not be liable in connection with any interpretation or
decision rendered in good faith in such capacity.

9.09 Limitations on Engineer’s Authority and Responsibilities

A. Neither Engineer’s authority or responsibility under this Article 9 or under any other provision of
the Contract Documents nor any decision made by Engineer in good faith either to exercise or
not exercise such authority or responsibility or the undertaking, exercise, or performance of any
authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract,
tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other
individual or entity, or to any surety for or employee or agent of any of them.
B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer’s review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 Compliance with Safety Program

A. While at the Site, Engineer’s employees and representatives shall comply with the specific applicable requirements of Contractor’s safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 Unauthorized Changes in the Work

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.
10.03 **Execution of Change Orders**

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner’s correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 **Notification to Surety**

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor’s responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 **Claims**

A. *Engineer’s Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant’s written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The
opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant’s last submittal (unless Engineer allows additional time).

C. Engineer’s Action: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part;

2. approve the Claim; or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer’s sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer’s written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 Cost of the Work

A. Costs Included: The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers’ compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on
Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers’ field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor’s Cost of the Work and fee shall be determined in the same manner as Contractor’s Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:
   a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor’s employees incurred in discharge of duties connected with the Work.
   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
   c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
   d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
   e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor’s fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. **Costs Excluded:** The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor’s officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor’s principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor’s fee.

2. Expenses of Contractor’s principal and branch offices other than Contractor’s office at the Site.

3. Any part of Contractor’s capital expenses, including interest on Contractor’s capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

C. **Contractor’s Fee:** When all the Work is performed on the basis of cost-plus, Contractor’s fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor’s fee shall be determined as set forth in Paragraph 12.01.C.
D. **Documentation:** Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

### 11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. **Cash Allowances:**

1. Contractor agrees that:
   
   a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
   
   b. Contractor’s costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. **Contingency Allowance:**

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

### 11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor’s overhead and profit for each separately identified item.
D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
2. there is no corresponding adjustment with respect to any other item of Work; and
3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor’s fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. Contractor’s Fee: The Contractor’s fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
   a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor’s fee shall be 15 percent;
   b. for costs incurred under Paragraph 11.01.A.3, the Contractor’s fee shall be five percent;
c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor’s fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor’s fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 Delays

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the
control of Owner, or other causes not the fault of and beyond control of Owner and Contractor,
then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment
is essential to Contractor’s ability to complete the Work within the Contract Times. Such an
adjustment shall be Contractor’s sole and exclusive remedy for the delays described in this
Paragraph 12.03.C.

D. Owner, Engineer, and their officers, directors, members, partners, employees, agents,
consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or
damages (including but not limited to all fees and charges of engineers, architects, attorneys, and
other professionals and all court or arbitration or other dispute resolution costs) sustained by
Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays
within the control of Contractor. Delays attributable to and within the control of a Subcontractor
or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF
DEFECTIVE WORK

13.01 Notice of Defects

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be
given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this
Article 13.

13.02 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner,
independent testing laboratories, and governmental agencies with jurisdictional interests will
have access to the Site and the Work at reasonable times for their observation, inspection, and
testing. Contractor shall provide them proper and safe conditions for such access and advise them
of Contractor’s safety procedures and programs so that they may comply therewith as applicable.

13.03 Tests and Inspections

A. Contractor shall give Engineer timely notice of readiness of the Work for all required
inspections, tests, or approvals and shall cooperate with inspection and testing personnel to
facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all
inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph
13.04.B shall be paid as provided in Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.
C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner’s and Engineer’s acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor’s purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor’s expense unless Contractor has given Engineer timely notice of Contractor’s intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 Uncovering Work

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer’s observation and replaced at Contractor’s expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer’s request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner’s special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor’s use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner’s written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner’s written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute
resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor’s obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer’s recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner’s evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer’s recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor’s services related thereto, take possession of Contractor’s tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and
equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner’s representatives, agents and employees, Owner’s other contractors, and Engineer and Engineer’s consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor’s defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner’s rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 Progress Payments

A. Applications for Payments:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner’s interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the
Work have been applied on account to discharge Contractor’s legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer’s reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer’s recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer’s observations of the executed Work as an experienced and qualified design professional, and on Engineer’s review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer’s knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor’s being entitled to such payment appear to have been fulfilled in so far as it is Engineer’s responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer’s review of Contractor’s Work for the purposes of recommending payments nor Engineer’s recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work, or
b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor’s failure to comply with Laws and Regulations applicable to Contractor’s performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer’s opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer’s opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer’s recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment:

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor’s performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or
d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.

3. Upon a subsequent determination that Owner’s refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 Contractor’s Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor’s notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner’s objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities
pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer’s issuing the definitive certificate of Substantial Completion, Engineer’s aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 Partial Utilization

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor’s performance of the remainder of the Work, subject to the following conditions:

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 Final Inspection

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.
14.07 Final Payment

A. Application for Payment:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
   
   b. consent of the surety, if any, to final payment;
   
   c. a list of all Claims against Owner that Contractor believes are unsettled; and
   
   d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer’s Review of Application and Acceptance:

1. If, on the basis of Engineer’s observation of the Work during construction and final inspection, and Engineer’s review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor’s other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer’s recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due:
1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer’s recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 Final Completion Delayed

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor’s final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor’s continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:
1. Contractor’s persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor’s disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor’s repeated disregard of the authority of Engineer; or


B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor’s tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor’s services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor’s services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 **Owner May Terminate For Convenience**

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 **Contractor May Stop Work or Terminate**

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor’s stopping the Work as permitted by this Paragraph.
ARTICLE 16 – DISPUTE RESOLUTION

16.01 Methods and Procedures

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer’s action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or

2. agrees with the other party to submit the Claim to another dispute resolution process; or

3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 Giving Notice

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Computation of Times

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.
17.03 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 Survival of Obligations

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 Controlling Law

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 Headings

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.
SUPPLEMENTARY CONDITIONS

The General Conditions of this contract are hereby modified as follows:

SC-4.02 Add the following new paragraph(s) immediately after Paragraph 4.02.B:

C. Contractor is required to visit the Site to become familiar with and satisfied as to the general, local, and Site conditions that may affect cost, progress, performance, and furnishing of the Work. This is to involve an alert, heads-up, eyes-open, reasonable examination of the area and the conditions under which the Work is to be performed (see GC-4.03.C.2.b). It is expected that any special requirements for such examination will be set forth in the Instructions (see I-4 and related Notes to User) or elsewhere in the Contract Documents if the Contract is to be awarded on the basis of negotiation rather than after receipt of Bids. The extent of such an examination will depend to a great extent on the peculiarities of the job and the Site as well as Owner’s preference. EJCDC believes, however, that the requirements for any such pre-Bid Site examination should be realistic and clearly stated and that detailed Site and subsurface investigations should ordinarily not be required because of their cost, the constraints of time and other practical considerations.

SC 4.05 Delete Paragraph 4.05 (Reference Points) in its entirety and insert the following in its place:

Surveys: the ENGINEER will provide all staking necessary to establish both the line and grade for construction of the project. Restaking required by the ENGINEER as a result of the CONTRACTOR’S carelessness or failure to protect survey marks and stakes shall be accomplished at the expense of the CONTRACTOR. Application for construction stakes must be made by the CONTRACTOR at least three (3) working days before services of a survey party will be required to accomplish the staking.

SC-4.06 Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:

A. No reports on drawings related to Hazardous Environmental Conditions are known to Owner or Engineer.

B. Not Used.

SC-5.04 Add the following new paragraph immediately after Paragraph 5.04.B:

C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers’ Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2 of the General Conditions:
   a. State: Statutory
   b. Applicable Federal (e.g., Longshoreman’s): Statutory
   c. Employer’s Liability: $1,000,000

2. Contractor’s General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor:

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a. General Aggregate $ 1,000,000
b. Products - Completed Operations Aggregate $ 1,000,000
c. Personal and Advertising Injury $ 1,000,000
d. Each Occurrence (Bodily Injury and Property Damage) $ 1,000,000
e. Property Damage liability insurance will provide Explosion, Collapse, and under-ground coverages where applicable.
f. Excess or Umbrella Liability
   1) General Aggregate $ 3,000,000
   2) Each Occurrence $ 1,000,000

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:
   a. Bodily Injury:
      Each person $ provided by Contractor
      Each Accident $ provided by Contractor
   b. Property Damage:
      Each Accident $ 500,000
   c. Combined Single Limit of $ 1,000,000

4. The Contractual Liability coverage required by Paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:
   a. Bodily Injury:
      Each Accident $ 1,000,000
      Annual Aggregate $ 3,000,000
   b. Property Damage:
      Each Accident $ provided by Contractor
      Annual Aggregate $ provided by Contractor

5. Contractor shall deliver to the Owner certificates of insurance naming the Owner, together with its officials, employees, volunteers, agents and others working in behalf of the Owner as additional insured.

SC-5.06.A. Delete Paragraph 5.06.A in its entirety and insert the following in its place:

A. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof.
1. This insurance shall:
   a. include the interests of Owner, Contractor, Subcontractors, Engineer and any other individuals or entities identified herein, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
   b. in addition to the individuals and entities specified, include as additional insureds, the following:

   Contractor shall deliver to the Owner certificates of insurance naming the Owner, together with its officials, employees, volunteers, agents and others working in behalf of the Owner as additional insured.

   c. be written on a Builder’s Risk “all-risk” or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;
   d. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
   e. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
   f. allow for partial utilization of the Work by Owner;
   g. include testing and startup; and
   h. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

2. Contractor shall be responsible for any deductible or self-insured retention.

3. The policies of insurance required to be purchased and maintained by Contractor in accordance with this Paragraph SC-5.06.A shall comply with the requirements of paragraph 5.06.C of the General Conditions.

SC-6.06 Add a new paragraph immediately after Paragraph 6.06.G:

H. Owner or Engineer may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by a particular Subcontractor or Supplier.

SC-7.04 Add the following new paragraph immediately after paragraph GC-7.03:
SC-7.04 Claims Between Contractors

A. Should Contractor cause damage to the work or property of any other contractor at the Site, or should any claim arising out of Contractor’s performance of the Work at the Site be made by any other contractor against Contractor, Owner, Engineer, or the construction coordinator, Contractor shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law.

B. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner, Engineer, the construction coordinator and the officers, directors, partners, employees, agents and other consultants and subcontractors of each and any of them from and against all claims, costs, losses and damages (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any other contractor against Owner, Engineer, Engineer’s Consultants, or the construction coordinator to the extent said claim is based on or arises out of Contractor’s performance of the Work. Should another contractor cause damage to the Work or property of Contractor or should the performance of work by any other contractor at the Site give rise to any other Claim, Contractor shall not institute any action, legal or equitable, against Owner, Engineer, or the construction coordinator or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner, Engineer, or the construction coordinator on account of any such damage or Claim.

C. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of another contractor, and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a Claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be Contractor’s exclusive remedy with respect to Owner, Engineer, and construction coordinator for any delay, disruption, interference, or hindrance caused by any other contractor. This paragraph does not prevent recovery from Owner, Engineer, or construction coordinator for activities that are their respective responsibilities.

SC-8.11 Add the following new paragraph immediately after Paragraph 8.11.A:

B. On request of Contractor prior to the execution of any Change Order involving a significant increase in the Contract Price, Owner shall furnish to Contractor reasonable evidence that adequate financial arrangements have been made by Owner to enable Owner to fulfill the increased financial obligations to be undertaken by Owner as a result of such Change Order.

SC-11.03.D Delete Paragraph 11.03.D in its entirety and insert the following in its place:

D. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

1. if the Bid price of a particular item of Unit Price Work amounts to 50 percent or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 50 percent from the estimated quantity of such item indicated in the Agreement; and

2. if there is no corresponding adjustment with respect to any other item of Work; and

3. if Contractor believes that Contractor has incurred additional expense as a result thereof or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.
SC-14.02.A.4 Add the following:

14.02.A.4

Interest on Retainage: If the Contractor seeks to obtain interest on the retainage held by the Owner, it shall be the responsibility of the Contractor to establish an escrow account in the name of the Owner for said retainage. This account shall be established prior to the issuance of notice to proceed. If no account is established by this time, the Contractor hereby waives and forfeits any claim to interest on retainage against the Owner.

As partial payments are made, two checks will be issued by the Owner: one check to the Contractor for the requested amount less retainage and a second check to the escrow account for retainage. At the time of final payment the escrow amount will be released to the Contractor by the Owner. If the Contractor has set up an interest bearing account as described, the accrued interest, if any, will also be paid to the Contractor by the Owner as part of the final payment.
Special Conditions

SECTION 3
SECTION 3.1

SPECIAL PROJECT CONDITIONS

3.1.01 PROJECT LOCATION: The work is located on Commercial Street between 100 North and approximately 200 North.

3.1.02 PROJECT DESCRIPTION: The work consists of the removal and replacement of curb & gutter, sidewalk, ADA ramps and asphalt tie ins on Commercial Street between 100 North Street and approximately 200 North. It includes installation of colored and stamped concrete flatwork, installation of new decorative street lighting and lighted bollards, construction of “Bump out” islands and planter boxes for landscaping together with a sprinkler system, installing 12” and 15” storm drain pipe with associated inlet and cleanout boxes, installing underground power conduits and wire to connect to new street lights, lighted bollards, and 120 and 240 volt outlets, upgrading culinary water services and meter boxes, and the placement of park benches and bicycle racks.

3.1.03 CONTRACT TIME: The contractor shall complete the construction of the work covered under the contract documents on or before September 30, 2017. It is agreed that time is the essence of this contract, and if construction is not complete by the end of the contract time, liquidated damages in the amount of $1000.00 per calendar day shall be assessed on the Project for each additional calendar day until construction is certified by the Engineer as being substantially complete.

3.1.04 SOIL CONDITIONS: No test holes or pits have been dug in connection with this project, the Contractor should examine the site to make his own judgement concerning soil conditions.

3.1.05 EXISTING UTILITIES: Engineer has attempted to show the location of all known underground utilities, but the accuracy or completeness of the presentation is not guaranteed. It shall be the responsibility of the Contractor to contact utility companies to determine the exact location, type and shall be responsible for the protection of these utilities. In the event these utilities or service lines are damaged, they shall be repaired at no additional expense to the Owner.

3.1.06 WORK ON STATE, COUNTY AND CITY ROADS: The Owner will obtain all required licenses for construction on State, County and City Roads, but securing of digging permits and posting of required bonds will be the responsibility, and at the expense of the Contractor.

All survey monuments and markers shall be protected and preserved by the Contractor. In the event the construction requires the removal and re-establishing of survey monuments or markers, the Contractor shall so inform the Engineer.

Re-staking by the Engineer as a result of the Contractor's carelessness or failure to protect survey marks and stakes shall be accomplished at the expense of the Contractor. Application for construction stakes must be made by the Contractor at least 72 Hours before the services of a survey party will be required to accomplish the staking.

3.1.07 WATER FOR CONSTRUCTION: Water required for consolidation of trench backfilling, testing, flushing, and other construction purposes shall be provided by the Contractor unless other arrangements have been made with the water superintendent. Normally water is available and can be obtained through a city approved fire hydrant using a meter provided by the City. A deposit is normally required for the security of the meter.

3.1.08 PUBLIC CONVENIENCE AND SAFETY: During the progress of the work, adequate provisions shall be made by the Contractor to accommodate the normal traffic over the road or street being used as to cause a minimum inconvenience to the public. Means of ingress and egress for occupants of property adjacent to the work, with convenient access to driveways, houses and buildings shall be provided when applicable.
The Contractor shall provide and maintain barriers, guards, lights, and temporary bridges and post flagmen and watchmen when and where necessary in order to effectively guard the public from danger involved with the work being done.

3.1.09 **CLEAN-UP**: Throughout all phases of construction, the Contractor shall keep the construction areas in a clean condition free from rubbish and debris. All materials and equipment required in connection with the construction of any portion of the work shall be removed from the site as soon as the use of said materials and equipment at that location in no longer necessary, and the area shall be thoroughly cleaned by sweeping with power and/or hand brooms or by other means which will produce results equal to or better than conditions prior to construction.

Care shall be taken to prevent spillage on streets over which hauling is done and any such spillage or debris deposited on streets due to the Contractor's operations shall be immediately removed and the streets cleaned.

Excess excavated material resulting from excavation shall be removed from the site immediately, except that sufficient material may remain for use as backfill material if such use is permitted by the provisions of the Specifications. Likewise, forms and form lumber shall be removed from the site immediately following the striping operation.

Upon completion of the work and prior to final inspection, the entire site of the operation shall be cleared of equipment, unused materials, and rubbish so as to present a clean and neat appearance satisfactory to the Engineer. All costs of "clean-up" shall be absorbed in the prices bid for the various bid items.

3.1.11 **SANITARY PROVISIONS**: The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with all applicable laws, ordinances and regulations pertaining to public health and sanitation.

3.1.12 **DUST ABATEMENT**: During the performance of the work required by these Specifications or any operations appurtenant thereto, whether on the right-of-way provided by the City or elsewhere, the Contractor shall furnish all labor, equipment, materials, and means required, and shall carry out proper and efficient measures wherever and as often as necessary to reduce the dust nuisance and to prevent dust which is originated from the operations under these Specifications on City right-of-way or elsewhere. The cost of sprinkling or other methods of reducing formation of dust shall be included in the prices bid in the schedules for other items of work.

3.1.13 **PROTECTION OF EXISTING UTILITIES**: The Contractor shall take all reasonable precautions to protect all existing utilities at all times during construction under this contract.

3.1.14 **INSPECTION**: All construction work shall be subject to inspection by the Owner's Engineer or its representatives. Certain types of construction shall have continuous inspections while others may have only periodic inspection. The Contractor shall notify the Owner's Engineer or its representative of timetable when concrete pours are to be made, in advance of pour sufficient to allow inspections of forms, grades, etc.

On construction requiring continuous inspection, the Contractor shall be notified and no work shall be done without the inspector's approval.

An inspection shall be made by the Engineer after all construction work is completed. Any faulty or defective work shall be corrected by the persons responsible for the work within a period of thirty (30) days of the date of the Engineer's Inspection Report defining the faulty or defective work.

3.1.15 **SURVEY & TESTING**: The Owner shall pay for surveying of the Project one time to ensure proper location of infrastructure. The Contractor shall be responsible to maintain surveying stakes and locating devices. In the event that survey staking is damaged, moved, or destroyed,
the Contractor shall pay for re-staking. Pressure testing of the infrastructure according the
specifications set forth herein shall be required and included in the appropriate line item bid by
the Contractor. The owner shall pay for compaction testing and any other testing deemed
necessary that is not specifically required by the contract specifications.

3.1.16 CONSTRUCTION THROUGH PRIVATE PROPERTY: The Contractor shall confine all his
operations to the area within the Public Right-of-way or construction easement which has been
acquired by the City. In general, the easement or right-of-way area is intended to provide
reasonable access and working area for efficient operation by the Contractor. If additional
easement width and/or additional access routes are desired, the Contractor shall negotiate with
and compensate the private owners for such use.

3.1.17 MEASUREMENT, PAYMENT AND WORK QUANTITIES: Measurement and payment for all
work shall be defined in Section 3.2.

The right is reserved to increase or decrease or to entirely eliminate certain items from the work if
found desirable or expedient, and the Contractor is cautioned against unbalancing of his bid by
prorating this overhead and profit into one or two items when there are a number of items on the
Proposal. The overhead, indirect charges and profit should be prorated on all items in the
Proposal.

The Contractor will be allowed no claims for anticipated profits, loss of profits or for damages
because of any difference between the estimated and the actual amounts of work done, or
materials furnished or used in the completed Project.

3.1.18 GUARANTEE: The Contractor warrants and guarantees that the materials and workmanship of
the improvements provided for hereunder, and every part thereof, remain in good condition for a
period of one (1) year after the date of completion and conditional acceptance by the Owner,
which date shall be the date of approval for the final estimate of the work as given by the
Engineer, and agrees to make all repairs to, and maintain the improvements and every part
thereof, in good condition during the time, with no cost to the Owner; and the bonds shall remain
in full force until conditions of this contract are fulfilled.
SECTION 3.2
MEASUREMENT AND PAYMENT

3.2.01 **GENERAL:** Measurement and calculation of quantities for payment will be specified in this section. Unit price bid shall be full compensation for furnishing all labor, materials, tools and equipment, and doing all work shown on the Drawings or stipulated in the Specifications.

3.2.02 **MOBILIZATION (Bid item 1):** Measurement and payment for this item shall be on a lump sum basis and is provided to cover the Contractor’s cost for general and miscellaneous responsibilities and operations not normally attributed to any other single bid item. This shall include, but is not limited to mobilization, maintaining access to businesses during business hours, traffic control including pedestrian traffic, demobilization from the site, all bond and insurance expenses, permits, and coordination with adjoining business and property owners, and dust control. Water needed for dust control and other things will need to be coordinated through Jamie Grandpre of the water department. Keeping a clean job site is important and shall be covered under this bid item.

3.2.03 **REMOVE EXISTING 30" CONCRETE CURB AND GUTTER (Bid item 2):** Measurement and payment for this item shall be on a per lineal foot basis as measured along the top back of curb in the field prior to construction to remove existing curb & gutter in the locations as shown on the drawings and disposal of at a suitable location off site. Payment shall be at the unit price bid amount and be full compensation to complete the work associated with removing and disposing of existing curb and gutter. The work includes but is not limited to the following: coordination with property owners, concrete saw-cut if necessary, removing existing curb and gutter, hauling away and disposal of all waste material. Also includes all labor, materials, and equipment. Item includes restoration or relocation of any damaged private property owner improvements and cleanup following construction.

3.2.04 **SAW CUT EXISTING CONCRETE FLATWORK (Bid Item 3):** Measurement and payment for this item shall be on a per lineal foot basis for the field measured quantity of existing concrete flatwork saw cut as shown on the drawings or in the bidding schedule. Payment shall include coordination with property owners, all labor, materials, and equipment and shall be full compensation to saw cut the concrete flatwork, 4” to 6” thick, along the front of the buildings and other places where needed, cleanup following construction, and restoration of miscellaneous improvements damaged during cutting. When cut next to the building, it shall be as close as possible to the building. Water needed for cutting needs to be coordinated through Jamie Grandpre of the water department.

3.2.05 **REMOVE AND DISPOSE OF EXISTING CONCRETE FLATWORK (Bid Item 4):** Measurement and payment for this item shall be on a per square foot basis for the field measured quantity of existing concrete flatwork, 4” to 6” thick, removed and disposed of off site, from the locations as shown on the drawings or in the bidding schedule. Payment shall also include coordination with property owners, all labor, materials, and equipment and shall be full compensation to perform the removal and proper disposal of all waste materials, all excavation, cleanup following construction and restoration of miscellaneous improvements that may have been damaged during removal.

3.2.06 **SAW CUT EXISTING ASPHALT PAVEMENT 3" TO 5" THICK (Bid item 5):** Measurement and payment for this item shall be on a per lineal foot basis for the field measured quantity of existing asphalt, 3” to 5” thick, as shown on the drawings or in the bidding schedule. Payment shall be full compensation for all labor, materials, equipment, horizontal control, water and cleanup following saw cut. Water needed for cutting needs to be coordinated through Jamie Grandpre of the water department.
3.2.07 **REMOVE AND DISPOSE OF EXISTING ASPHALT PAVEMENT** (Bid item 6): Measurement and payment for this item shall be on a per square yard basis as measured in the field during construction to remove and dispose of the existing pavement, 3” to 5” thick, to the limits indicated on the drawings. Payment shall be at the unit price bid amount and shall be full compensation for completing the work including all labor, materials, tools, equipment, excavation of existing pavement and concrete collars if present, haul and disposal of asphalt and excess materials off site, grading, dust control, and cleanup following construction.

3.2.08 **FURNISH AND INSTALL UNTREATED BASE COURSE** (Bid Item 7): Measurement and payment for this item shall be on a per ton basis to furnish and install ¾” or 1” untreated base course material as needed in the roadway patch areas as shown on the drawings and as directed by a City representative according to City Standards. Verification of tonnage shall be documented by delivery tickets supplied by the Contractor to the City inspection representative. All tickets shall indicate the Owner's name, date, type material, truck number, project location, project number, gross weight and net weight of each material. Delivery tickets are to be turned in daily to the inspection representative or the Owner's office. Payment shall be full compensation to complete the bid item including hauling, furnishing and installing the UTBC, compaction to 95% of a T-180 modified proctor, grading and cleanup following construction. *(Payment for road base under sidewalk and curb & gutter will be paid for under those items).*

3.2.09 **EXCAVATE AND DISPOSE OF UNDESIRABLE SUBGRADE MATERIAL** (Bid item 8): Measurement and payment for this item shall be on a cubic yard basis as measured in the field during construction. Cubic yards shall be estimated based on truckloads hauled and shall be counted daily by the contractor and verified by the City or the City’s designated representative. Prior to starting this work item the City and the Contractor shall agree to the estimated capacity of the hauling equipment used for the project. Payment shall be full compensation for labor, equipment, and all work associated with the excavation of materials from under new asphalt surface areas, new curb & gutter and sidewalk areas, which includes loading, hauling and disposing of materials offsite, compaction of subgrade to 95%, grading and cleanup.

3.2.10 **FURNISH & INSTALL 3” BITUMINOUS SURFACE COURSE IN PATCH AREAS** (Bid Item 9 & 10): Measurement and payment for bituminous surface course in patch areas shall be on a per square foot basis for all materials delivered and used to construct the final pavement section. Payment shall be at the unit price bid amount and shall be full compensation for completing the work in the **large** patch areas in the intersection and the parking areas as well as the **small** areas that are only 1 or 2 feet wide in front of new curb & gutter, including all labor, materials, required tack coat on the edges, furnishing and installing the required thickness of bituminous surf course, rolling and compacting the surface course materials to 96%, and cleanup following construction.

3.2.11 **CONSTRUCT 30” CONCRETE CURB AND GUTTER** (Bid item 11): Measurement and payment for this item shall be on a per lineal foot basis as measured along the top back of curb in the field following construction. Payment shall be at the unit price bid amount and be full compensation to complete the work associated with constructing new curb and gutter in the locations shown on the drawings. The work includes but is not limited to the following: all labor, materials, equipment, grade controls, placing 4” thick road base material under new curb & gutter, forming, furnishing concrete, constructing drop back for driveway approaches and ADA ramps, expansion joints, contraction joints, construction joints, finishing and curing concrete, and cleanup following construction. Engineer or owners representative must be allowed to inspect curb string line or forms before casting of curb and gutter.

3.2.12 **CONSTRUCT 4” COLORED & STAMPED CONCRETE FLATWORK** (Bid Item 12) Measurement and payment for this item shall be on a per square foot basis as measured in the field for the quantity of 4” colored and stamped concrete flatwork constructed in areas as shown on the drawings. It shall be colored brown and stamped with a pattern approved by the City. Payment shall be full compensation to complete the item including compaction of subgrade, furnish, place and compact 4” of road base material under flatwork, forming, furnishing concrete, expansion material, all jointing, finishing, and curing concrete, placing a sealer on top of concrete.
after the concrete has cured, and cleanup following construction. Also includes restoration of any damaged private property owner improvements damaged during construction, and coordination of work with all residents.

3.2.13 CONSTRUCT PLAIN CONCRETE FLATWORK FOR SIDEWALK, DRIVE APPROACHES & ADA RAMP (Bid items 13 & 14): Measurement and payment for these items shall be on a square foot basis as measured in the field following construction for 4” or 6” thick sidewalk, drive approaches and ADA ramp as shown in the bidding schedule, on the drawings and as per details included in this bid document. Payment shall be full compensation to complete the construction including preparation of subgrade, compaction of subgrade, furnish, place and compact 4” of UTBC material under flatwork, all labor, materials, equipment, grade controls, grading, forming, joints, expansion material, finishing concrete, curing, form stripping, in case of ADA ramp, truncated dome panel shall be paid for under a separate item, restoration of miscellaneous surface improvements and other improvements damaged during construction, and cleanup following construction.

3.2.14 FURNISH & INSTALL 2’ X 4” TRUNCATED DOME PANEL FOR ADA RAMP (Bid Item 15): Measurement and payment for this item shall be on per each basis and shall be full compensation for all labor, materials, and equipment needed to furnish & install yellow truncated dome warning pad into 4” flatwork on handicap access ramp (flatwork paid for under separate item), and cleanup following construction.

3.2.15 CONSTRUCT 2’ WIDE BY 1’ DEEP REINFORCED CONCRETE CURBING (Bid item 16): Measurement and payment for this item shall be on a per lineal foot basis as measured along the top of curb in the field following construction. Payment shall be at the unit price bid amount and be full compensation to complete the work associated with constructing a 2’ wide by 1’ deep plain concrete curbing along the back of the Plaza Island as shown on the drawings. The work includes but is not limited to the following: all labor, materials, equipment, grade controls, placing and compacting 4” thick road base material under new curb, furnish and install 2 #4 rebar, 1’ apart, continuous through curbing, forming, furnishing concrete, expansion joints, contraction joints, construction joints, finishing and curing concrete, and cleanup following construction. Engineer or owners representative must be allowed to inspect curb string line, rebar and forms before casting of curb.

3.2.16 RAISE EXISTING TELEPHONE MANHOLE TO GRADE IN THE PLAZA ISLAND (Bid Item 17): Measurement and payment for this item shall be on a per each basis. Payment shall be at the unit price bid amount and shall be full compensation for labor, materials, and equipment to protect the existing manhole cover, excavation around the manhole, raising the manhole to the required finish grade (elevation of the nearest curb), and coordinate efforts with the telephone company.

3.2.17 CONSTRUCT 6” WIDE BY 30” DEEP REINFORCED CONCRETE CURB WALL (Bid item 18): Measurement and payment for this item shall be on a per lineal foot basis as measured along the top of wall in the field following construction. Payment shall be at the unit price bid amount and be full compensation to complete the work associated with constructing a 6” wide by 30” deep concrete curb wall in the bump out planter islands as shown on the drawings. The work includes but is not limited to the following: all labor, materials, equipment, placing (3) #3 reinforcing steel continuous around the island with #3 bar vertical at 2’ on center spacing as shown on the drawings, grade controls, forming, placing ¾” chamfered corner on top, furnishing concrete, finishing concrete, and cleanup following construction. Engineer or owners representative must be allowed to inspect forms and reinforcing steel before pouring the wall.

3.2.18 CONSTRUCT PLANTER BOX 6’ LONG BY 4’- 4” WIDE BY 36” DEEP WITH 8” REINFORCED CONCRETE WALL (Bid item 19): Measurement and payment for this item shall be on a per each basis as counted in the field following construction. Payment shall be at the unit price bid amount and be full compensation to complete the work associated with constructing a 6’ long by 4’- 4” wide by 36” deep concrete wall in various locations along the project area as shown on the drawings. The work includes but is not limited to the following: all labor, materials, and equipment to construct planter box with 8” walls reinforced with #4 bar at 12” on center each way with 2 #4
bar around the top as shown on the drawings, finish concrete and place ¾” chamfered corners on
top, grade controls, forming, furnishing concrete, and cleanup following construction. Engineer or
owners representative must be allowed to inspect forms and reinforcing steel before pouring the
wall.

3.2.19 **FURNISH AND INSTALL TOPSOIL** (Bid item 20): Measurement and payment for this item shall
be on a per cubic foot basis for imported topsoil placed 4” thick in the Plaza island, 4” thick in the
bump out planter islands, and 1’ deep the planter boxes as shown on the drawings and in the
specifications. Payment shall be full compensation to complete the bid item including all labor,
materials, equipment, hauling, furnishing and installing the imported topsoil, grading, and cleanup
following construction.

3.2.20 **REMOVE EXISTING STORM DRAIN INLET BOX** (Bid item 21): Measurement and payment for
this item shall be on a per each basis to remove and dispose of an existing storm drain inlet box
as shown on the plans. Payment shall be full compensation to complete the bid item including all
labor, materials, equipment, hauling away and disposing of the box.

3.2.21 **REMOVE TOP OF EXISTING STORM DRAIN INLET BOX** (Bid item 22): Measurement and
payment for this item shall be on a per each basis to jack hammer or saw cut the top of an
existing curb inlet box, remove and dispose of the curb top, frame & grate at locations as shown
on the plans. The frame & grate to be salvaged to the City. Payment shall be full compensation to
complete the bid item including all labor, materials, equipment, hauling away and disposing of the
concrete, but salvage grate & frame to the City.

3.2.22 **REMOVE EXISTING C.M.P. STORM DRAIN PIPE** (Bid item 23): Measurement and payment
for this item shall be on a per lineal foot basis to remove existing twin 6” to 8” corrugated metal
pipe from under and across Commercial Street. Payment shall be full compensation for all labor,
materials, and equipment to remove and dispose of the existing pipe.

3.2.23 **RECONSTRUCT TOP OF EXISTING INLET BOX AND SET TO NEW GRADE** (Bid Item 24):
Measurement for this item shall be on a per each basis. Payment shall be full compensation to
extend the grate and frame to final grade, form the top of the box and curb and gutter to receive
new frame, bicycle safe grate, all labor, materials, equipment, excavation, backfill, compaction,
furnishing concrete, forming, placing concrete, finishing concrete and placing reinforcing bars if
needed. Payment shall also include compensation for restoration of miscellaneous improvements
damaged during construction and cleanup following installation.

3.2.24 **FURNISH & INSTALL SINGLE INLET BOX WITH CITY STANDARD GRATE & FRAME** (Bid
Item 25): Measurement for this item shall be on a per each basis. Payment shall be full
compensation to furnish and install the inlet box complete with City standard bicycle safe grate &
frame *(do not use curb inlet type frame & grate)*, including forming the top of the box and curb
and gutter to receive the new grate and frame, all labor, materials, equipment, excavation,
backfill, compaction, furnishing concrete, forming, placing concrete, finishing concrete, connection
to all piping, and cleanup following installation.

3.2.25 **FURNISH & INSTALL 3’ X 3’ PRECAST CONCRETE CLEANOUT BOX** (Bid Item 26):
Measurement and payment for this item shall be on a per each basis and shall be full
compensation to furnish & install a 3’ X 3’ precast concrete inlet box with a steel frame and solid
lid as shown on the drawings and in the bidding schedule. Payment shall be full compensation to
complete the item including all excavation, labor, materials, equipment, backfill, compaction,
place precast box, and connecting necessary piping. Payment shall also include compensation
for restoration of miscellaneous improvements damaged during construction and cleanup
following installation.

3.2.26 **FURNISH & INSTALL REINFORCED CONCRETE PIPING** (Bid item 27 & 28): Measurement
and payment for this item shall be on a per lineal foot basis to install piping of the type, size and
class shown on the drawings and in the bidding schedule. Measurement shall be along the
centerline of the pipe as measured in the field following construction. No deduction in length for payment will be made for structures.

No classification of excavated materials shall be made, and excavation shall include the removal and subsequent handling of all water, earth, shale, loose or cemented gravel, loose rock, solid rock, or other materials of whatever nature excavated or otherwise removed in the performance of the contract work.

Payment per foot of pipe shall be full compensation for scheduling service interruptions and coordination with residents/owners, unclassified excavation, de-watering as necessary, backfilling, pipe bedding material and compaction (compaction of pipe bedding 6” below pipe and up to a foot above the pipe—shall be with a hand compactor such as a jumping jack), necessary foundation gravel, furnishing and installing pipe bedding to one foot above pipe throughout project, video inspecting the pipe, temporary re-routing of existing water flows if present, labor, materials, tools and equipment necessary to furnish and install the pipe complete, cleanup following construction. Payment shall also include compensation to remove and replace surface improvements damaged or relocated during construction, including but not limited to signs, erosion control, shoulder gravel and miscellaneous items not specifically mentioned in the bidding schedule. This item includes tracer wire for PVC or poly pipe. The cost of haul and disposal of excess material shall be included in this item.

3.2.27 CONNECT NEW 12" RCP TO EXISTING STORM DRAIN INLET BOX (Bid Item 29): Measurement for this item shall be on a per each basis. Payment shall be full compensation to cut or jack hammer hole in the side of an existing inlet box, place new pipe and pour a concrete collar around and under the pipe at the place of connection. Includes all labor, materials, equipment, excavation, backfill, compaction, furnishing concrete, forming, and placing concrete. Payment shall also include compensation for restoration of miscellaneous improvements damaged during construction and cleanup following installation.

3.2.28 REMOVE & REPLACE EXISTING WATER METER BOX (Bid Item 30 & 34): Measurement and payment for this item shall be on a per each basis to remove the existing water meter box and replace with new 18” or 21” concrete or white PVC box to the proper grade as shown on the drawings and in the Bidding Schedule. Payment shall be full compensation to complete the work including but not limited to the following: equipment, labor, excavation, removal of meter box, furnish & install new box, backfill, compaction, and clean up after construction.

3.2.29 INSTALL CITY FURNISHED METER BOX RING & COVER TO NEW SIDEWALK GRADES (Bid Item 31): Measurement and payment for this item shall be on a per each basis as counted in the field following construction. Payment shall be full compensation to complete the work associated with installing a new City furnished meter box ring & cover in locations as shown on the drawings. The work includes but is not limited to the following: labor, equipment, excavation if needed, installing new meter box ring and cover to the height of the new sidewalk, shims, and anything else needed to finish the installation, complete. Flatwork placement shall be paid under a separate bid item.

3.2.30 FURNISH AND INSTALL 3/4” & 1” TYPE K SERVICE LINE (Bid Item 32 & 35): Measurement and payment for this item shall be on a per lineal foot basis as measured in the field during construction at the size and location as shown on the drawings and in the Bidding Schedule. Payment shall be full compensation to complete the work associated with installing the service lines from the water main to the new meter location or from the new meter location to the existing service line going into the private property or from the new meter location to the new sprinkler dual check and valve box. The work includes but is not limited to the following: furnishing and installing Type K copper service line of the size shown on the drawings and in the bid schedule to the fixtures mentioned. Also includes all labor, equipment, material, excavation, backfill, compaction, and cleanup. Connections, Asphalt, curb & gutter and flatwork replacement shall be paid under a separate bid item.
3.2.31 CONNECT TO CORP STOP, METER YOKE, EXISTING SERVICE LINE OR SPRINKLER DUEL CHECK BACKFILL PREVENTER (Bid Item 33, & 39): Measurement and payment for this item shall be on a per each basis to provide a connection to new or existing corp. stop, meter yoke, galvanized service line, or sprinkler box. Payment shall be full compensation to complete the work including excavation, install all required fittings, bends, and reducers where specified, couplings, sleeves, all items needed to make the connection, backfilling, compaction, labor and equipment to provide the connection complete. Also includes cleanup following construction. Asphalt patch shall be paid under a separate bid item.

3.2.32 CONSTRUCT 1" CORPORATION STOP (Bid Item 36): Measurement and payment for this item shall be on a per each basis as counted in the field following construction. Payment shall be full compensation to complete the work associated with excavation to existing 8” water main, excavation around existing water main in preparation for City personnel to furnish, tap, and install new 1” corporation stops and saddles on the existing 8” D.I.P. water main line. The work includes but is not limited to the following: locating and protecting existing utility lines, labor, material, excavation, backfill, compaction, and cleanup. Corp stops to be placed in the locations shown on the drawings.

3.2.33 FURNISH AND INSTALL 3/4” OR 1” METER YOKE (Bid Item 37 & 38): Measurement and payment for this item shall be on a per each basis as counted in the field following construction. Payment shall be full compensation to complete the work associated with furnishing and installing new meter yokes in the size and the locations as shown on the drawings. The work includes but is not limited to the following: locating and protecting existing utility lines, labor, excavation, backfill, compaction, and cleanup.

3.2.34 ABANDON OLD, UNUSED WATER METER BOX (Bid Item 40): Measurement and payment for this item shall be on a per each basis. Payment shall be full compensation to complete the bid item in locations as shown on the drawings including all labor, materials, equipment, excavation, location of the existing water meter, remove old ring & cover and salvage to the City, fill the remaining box with road base or gravel, backfill, compaction, and cleanup following construction.

3.2.35 REMOVE EXISTING FIRE HYDRANT ASSEMBLY (Bid Item 41): Measurement and payment for this item shall be on a per each basis as counted in the field following construction and shall be full compensation to complete the work associated with removing an existing fire hydrant assembly including existing 6” valve at the locations as shown on the drawings. The work includes but is not limited to the following: excavation, disconnecting and removing the existing fire hydrant and valve; backfilling, compaction, salvage and delivery of the fire hydrant and valve to the City and cleanup.

3.2.36 FURNISH & INSTALL NEW FIRE HYDRANT ASSEMBLY (Bid Item 42): Measurement and payment for this item shall be on a per each basis for each fire hydrant assembly and 6” companion auxiliary gate valve and box of the type, size and class shown on the drawings and in the bidding schedule. Payment shall be full compensation to complete the item including all labor, materials, equipment, excavation, backfilling, compaction, thrust blocking, fittings, and piping complete with auxiliary gate valve and box with fire hydrant and valve box adjusted to finished concrete grade.

3.2.37 RAISE WATER VALVE BOX TO GRADE (Bid Items 43 & 44): Measurement and payment for these items shall be on a per each basis. Payment shall be at the unit price bid amount and shall be full compensation for labor, materials, and equipment to protect the existing valve boxes during construction, excavation around the item to the required depth, raising the valve box to the required finish concrete or asphalt grade, and installing a 12 inch thick concrete collar around the valve box that is in asphalt complete. The concrete will be placed 1/2" below the top of the new asphalt and slope another 1/4" to the top of the lid. The contractor shall be responsible to mark the location of all valve boxes on the curb so that they can be found and raised to grade following street paving.

3.9
3.2.38 **FURNISH AND INSTALL SCH 40 SPRINKLER PIPING** *(Bid Item 45)*: Measurement and payment for this item shall be on a per lineal foot basis to furnish and install piping of the type, size and class shown on the drawings and in the bidding schedule. Measurement shall be along the centerline of the pipe as measured in the field following construction. No deduct in length for payment will be made for structures.

No classification of excavated materials shall be made, and excavation shall include the removal and subsequent handling of all water, earth, shale, loose or cemented gravel, loose rock, solid rock, or other materials of whatever nature excavated or otherwise removed in the performance of the contract work.

Payment per foot of pipe shall be full compensation for unclassified excavation, backfilling, compaction, pipe bedding, pressure testing, pipe fittings, furnishing and installing the pipe complete.

3.2.39 **FURNISH & INSTALL 30" CONCRETE OR ADS SPRINKLER VALVE BOX** *(Bid item 46)*: Measurement and payment for this item shall be on a per each basis to furnish and install a 30" concrete or ADS sprinkler valve box as shown on the drawings and in the Bidding Schedule as counted in the field after construction. Payment shall be full compensation to complete the work associated with installing a Sprinkler Valve Box for use as an enclosure for a duel check backflow preventer, sprinkler valves, and a battery powered irrigation system controller for the planter areas drip sprinkler system as described on the drawings and in the Bidding schedule. The work includes but is not limited to the following: furnish and install box with a D & L Supply A-1123 cast iron ring and cover, marked “WATER”, set to finish concrete walkway elevation, a 1” “Watts” 909 series duel check backflow preventer without strainer but including a ¼ turn, full port, resilient seat ball valve on both ends, a battery operated “TORO” DDCWP-4 timer to control 1” “Rainbird” 100 PGA valves *(Rainbird valves to be paid under a separate item)*, all labor, material, equipment, excavation, backfill, compaction, cleanup, coordination with City personnel to set up clock and any other items necessary to complete the item. Box set in concrete walkways shall be flush or even with the walking surface.

3.2.40 **FURNISH AND INSTALL “RAINBIRD 100 PGA VALVE** *(Bid item 47)*: Measurement and payment for this item shall be on a per each basis to furnish and install a 1” “Rainbird” 100 PGA valve in the sprinkler valve box. Payment shall be full compensation to complete the item including tools, labor, materials, equipment, connection to piping, and cleanup following construction.

3.2.41 **FURNISH AND INSTALL “NETAFIM” POINT SOURCE SERIES LANDSCAPE DRIP LINE** *(Bid item 48)*: Measurement and payment for this item shall be on a per each basis to furnish and install a “Netafim” point source series landscape drip line for planter islands and planter boxes. Payment shall be full compensation to complete the item including tools, labor, materials, equipment, connection to piping, cleanup following construction, and coordination with City personnel.

3.2.42 **INSTALL 2 CITY FURNISHED LIGHTED BOLLARDS** *(Bid item 49)*: Measurement and payment for this item shall be on a lump sum basis to Install 2 City furnished Lighted Bollards (“Sternberg Lighting” model #3801LB decorative lighted bollard) on the Plaza Island as shown in the drawings on sheet 5. See also the Bollard Detail on sheet 18. Complete with conduit, wire, and connection to the receptacle at the top of the hill about 30’ away (see photos on sheet 15 and details in the specifications). Payment shall be at the unit price bid amount and be full compensation to complete the work associated with installing two lighted Bollards as shown and includes all labor, materials, equipment, cleanup and coordination with City Power department.

3.2.43 **CONSTRUCT ALL ELECTRICAL IMPROVEMENTS AS SHOWN ON DRAWINGS 13 THROUGH 20** *(Bid item 50)*: Measurement and payment for this item shall be on a lump sum basis to construct all electrical improvements as shown on drawings sheets 13 through 20, excluding item 49 shown above. Includes the installation of the 10 City furnished, 14’ decorative...
lights with single LED light as shown on sheet 8. Payment shall be full compensation to complete all the work described above, and includes all labor, conduits, wire, boxes and other materials, equipment, trenching to the City power pole where power will be fed from cleanup and coordination with Morgan City Power department.

3.2.44 **FURNISH & INSTALL ROUND TUBE STEEL WAVE BIKE RACK (Bid item 51):** Measurement and payment for this item shall be on a per each basis to furnish & install a City Furnished round tube steel bike rack – 3 loops for 5 bikes (“Belson Outdoors” model #CBBR-5UR-BK) in the locations noted on the drawings or as directed by a City representative. Bike racks to be anchored per manufactures recommendations. Payment includes all labor, equipment, and material needed to install the bike racks, cleanup and coordination with City personnel.

3.2.45 **FURNISH & INSTALL STEEL OUTDOOR BENCH WITH STRAIGHT BACK (Bid item 52):** Measurement and payment for this item shall be on a per each basis to furnish & install a steel outdoor bench (“Belson Outdoors” model #CBPB-6SB-BK) in the locations noted on the drawings or as directed by a City representative. Benches are to be anchored per manufactures recommendations. Payment includes all labor, equipment, and material needed to install the benches, cleanup and coordination with City personnel.

3.2.46 **REMOVE & REPLACE CLUSTER MAIL BOX (Bid item 53):** Measurement and payment for this item shall be on a per each basis to remove the existing cluster mailbox and replace in a new location with adequate foundation for stability. Payment includes all labor, equipment, and tools needed to complete the item, cleanup and coordination with the US Post office and with City personnel.

3.2.47 **PAINT PAVEMENT STRIPING (Bid Item 54):** Measurement and payment for this item shall be on a per lineal foot basis as measured in the field following construction to paint 4” wide white stripes. Payment shall be full compensation for all labor, materials, traffic control and equipment needed to complete the work associated with applying permanent traffic striping on City Streets of the width shown in the Bidding Schedule and on the drawings. The work includes but is not limited to the following: Cleaning the road surface, installing tabs or control points to locate pavement markings where placed previously or in the case of the parking stripes, place on a 45° angle, furnishing and applying paint. Place as shown in the Bidding Schedule and as specified in the drawings, includes cleanup following construction and coordination with City personnel. Paint and materials used for pavement striping shall conform to current UDOT Standards and Specifications.

3.2.48 **FURNISH & PLACE THERMOPLASTIC STRIPING FOR CROSSWALKS & STOP BARS (Bid item 55):** Measurement and payment for this item shall be on a per lineal foot basis as measured in the field following construction to place 24” wide thermoplastic stripes for crosswalks and stop bars as shown on the drawings and in the Bidding Schedule. Payment shall be full compensation for all labor, materials, traffic control and equipment needed to complete the work associated with applying permanent striping for crosswalks & stop bars on City Streets. The work includes but is not limited to the following: Cleaning the road surface, installing tabs or control points to locate pavement markings where needed, furnishing and applying thermoplastic stripes. Place as shown in the Bidding Schedule and as specified in the drawings, includes cleanup following construction and coordination with City personnel. Thermoplastic materials used for crosswalk and stop bar striping shall conform to current UDOT Standards and Specifications.

3.2.49 **PAINT ADA TRAFFIC SYMBOLS (Bid Item 56):** Measurement and payment for this item shall be on a per each basis as measured in the field following construction. Payment shall be full compensation for all labor, materials, and equipment needed to complete the work associated with applying permanent ADA traffic symbols on City Streets of the type shown in the Bidding Schedule and on the drawings. The work includes but is not limited to the following: furnishing and applying paint, installing control points for markings to locate them at the locations to restore existing symbols and as specified in the drawings, and cleanup following construction. Paint and
materials used for pavement symbols shall conform to current UDOT Standards and Specifications.

3.2.50 **QUANTITY LIMITS:** The owner reserves the right to adjust and direct the actual quantities of work performed and eliminate or add any bid items on the Project as necessary. All unit price bid amounts will not be considered for negotiated modifications unless the quantity of the work performed amounts to 50% above or below that shown on the original bidding schedule.
DIVISION 1
GENERAL REQUIREMENTS

Section 1.01 PURPOSE OF DOCUMENTS:

The purpose of these Standard Specifications and Standard Drawings is to govern any work done or improvements installed within Public right-of-ways or across easements. Construction work shall comply with Morgan City Code, Planning and Zoning. Developers/Contractors should thoroughly read and understand these specifications and standards before constructing public improvements.

The Developer/Contractor shall contact Public Works/Engineering for all matters dealing with construction work within a City right-of-way or with any work connecting onto a City utility. SPECIAL PERMITS AND BONDING ARE REQUIRED FOR ALL SUCH WORK.

Section 1.02 PERMIT, FEES AND BONDING REQUIRED:

It shall be unlawful to do any construction, excavation work on any street, curb, gutter, sidewalk, sewer line, water line, pressure irrigation line, storm drain or other infra-structure addition or improvement in the City of Morgan without a Public Works' permit from the City to do so. The City of Morgan and all utility companies are bound by these standard specifications. No work shall be started until a permit is secured. In order to obtain a Public Work's Permit, the Developer's/Contractor's authorized signature is required. If a contract to do such work for the City has been finalized, the contract fulfills the permit requirement.

Sub-section A. All Public Works' permit applications shall include:

1. Start and completion dates of the project.
2. The exact address or location of the work to be done.
3. The type of work to be done.
4. A request for all utility companies to be contacted through Blue Stakes 1-800-662-4111.

Sub-section B.

Before a permit is issued, a permit fee and an inspection fee shall be paid to the City. These fees will be set by Council resolution. Fees shall be assessed on the following items:

A. Sewer and Water Lateral Installation Inspection (Applies to those not covered by Building Permit)
B. Pressure irrigation service connection.
C. Re-inspection (When an inspection has been requested, the inspection is performed and the work is not complete, a re-Inspection fee shall be assessed.)
D. Bond

All public improvement projects done for Public Works shall be bonded. Each contractor doing work in the City is required to maintain a $5000.00 bond with the City. Bond requirements are to guarantee the following:

1. Construction work is completed.
2. Final inspection is conducted.
3. Repairs and/or replacement of required public improvements are finished and accepted.

Cash bonds for a one-time permit will be calculated based on the estimated cost of street repairs plus 10%.

The bonds shall be in the form of a bond from a surety company or a cash bond paid directly to the City. The City shall approve all bonds submitted. No bond shall be released until all improvements are completed and accepted by the City.

Section 1.03 CONTRACTOR AND CONSTRUCTION PLAN APPROVAL:

4.3
Before a Contractor performs any work within the City, the City shall approve the Contractor. Approval is granted for a period of one (1) year upon submission of the following:

A. A current Utah State Contractor's License. (Work will be restricted to that authorized by the license.)

Proof of comprehensive general liability insurance. Bodily injury insurance will be in an amount of not less than three hundred thousand dollars ($300,000.00) for any one occurrence. Property damage insurance will be in an amount of not less than two hundred thousand dollars ($200,000.00) for any one occurrence and shall include underground exposure. Combined liability insurance will be in an amount of not less than five hundred thousand dollars ($500,000.00) for any one occurrence.

A five thousand dollar ($5000.00) performance bond owing to the City, that will be in effect for a period of one (1) year or one (1) year after the completion of work performed by the contractor, whichever is greater.

The Public Works Representative/Engineer shall approve construction plans and cut sheets before any work begins. Developers/Contractors proceeding with work without such approvals shall have the project shut down until such approvals are obtained. Repeated offenses may result in the Contractor losing its pre-qualification to perform work in the City.

**Section 1.04 PRE-CONSTRUCTION CONFERENCE:**

A pre-construction meeting with the Developer and the Contractor(s) involved in the subdivision construction shall be held with the Public Works Representative/Engineer prior to commencement of any work. The location of the meeting shall be at the Morgan City Center, 90 West Young Street, Morgan, Utah 84050 or other location as determined. The following items shall be furnished at the meeting:

1. A detailed outline showing the sequences of construction of principle items of work. The outline shall show the beginning and ending dates of the major items of work on the Project.

2. A list of names, titles, addresses, and telephone numbers of the Developer/Contractor's responsible personnel, indicating those who may be reached outside normal working hours.

3. A list of Sub-Contractors and Materials Suppliers to be involved with the project and the items of work they are going to perform or furnish materials for. The City will notify the Developer/Contractor of any concerns or pre-qualification deficiencies of the companies they plan to use.

Other items may be discussed at this pre-construction conference as determined by the Public Works Representative/Engineer. Official minutes of this meeting as prepared by the Public Works Representative/Engineer shall become part of the project file for the project.

**Section 1.05 TIMELY COMPLIANCE WITH THE ISSUED PERMIT:**

The Developer/Contractor shall perform in accordance with the terms of the permit and the Standard Specifications and Standard Drawings in effect at the date of the permit. The work shall be done in a timely manner. Time limits may be a condition of the permit and may be shortened because of safety concerns. Permits may be suspended if compliance is not met.

**Sub-section A. Inspections:**

All work covered by a Public Works' permit shall be inspected by the Public Works Representative prior to the following:

A. Backfilling and compacting.
B. Placing concrete and asphalt
C. Placing any underground piping
D. Making any connection into a city utility line
E. Other work done in a public right of way.

Public Works shall also be notified prior to starting any Public Works project.

Sub-section B. Notification of Needed Inspections:

The Contractor shall request inspections forty-eight (48) hours in advance. Inspections are done on regular working days during the regular work hours of the City.

A charge shall be assessed for inspection call-backs.

Sub-section C. Responsibility of the Developer:

The developer is responsible for the complete development, including construction of the entire subdivision, until it is finalized and accepted by the City.

Sub-section D. Definition of "Public Works Representative/Engineer:"

The term "Public Works Representative/Engineer" as used in these specifications refers to the Public Works Director, Public Works Inspector, City Engineer, Public Works staff and others as designated by the Public Works Director.

Sub-section E. Conflict:

These Standard Specifications and Standard Drawings are the minimum requirements of the City of Morgan. In the event that any provisions herein conflict with general industrial standards, or with other requirements specified by the City, the more stringent of the standards will apply.

Section 1.06 ELECTRONIC AND RECORD DRAWINGS:

When the Developer's Engineer has the capability, plat and improvement drawings shall be furnished electronically in MicroStation Format (.dgn), AutoCAD format (.dwg) or Data Exchange Format (.dxf). These electronic files shall be provided to the City after final approval but before recording of the Plat.

After completion of all public works improvements the Developer shall provide the City with a set of sepia (reproducible) "record drawings" which have been corrected, stamped and certified by the Developer's Engineer, to show the constructed improvements. Final payment from the bond shall not be made until these records are received.

Section 1.07 TEMPORARY SERVICES:

Any temporary services and utilities such as telephone, electrical, water toilet facilities, etc., shall be the responsibility of the Developer/Contractor.

Section 1.08 CODES AND STANDARDS:

Where codes and standards are referred to they shall be current, approved copies. It shall be the duty of the supplier of any material on this work to submit evidence, if requested, that its material is in compliance with the applicable codes and standards.

Section 1.09 STATE AND LOCAL LAWS:

The Developer/Contractor shall conform to all applicable state and local laws in carrying out its obligations under the Contract.

This shall include, but is not limited to, compliance by the Developer/Contractor with the requirements of Chapter 30, of Title 34, of the Utah Code Annotated, 1953 as Amended. If the provisions of Section 34-30-1, of the Utah Code Annotated, 1953 as amended, are not complied with, this Contract shall be void.
Section 1.10 COMPLIANCE WITH GOVERNMENTAL REGULATIONS:

The Developer/Contractor's personnel, equipment, and operations shall comply fully with all applicable standards, regulations, and requirements of existing Federal, Utah State, and Local governmental agencies. This shall include, but not necessarily be limited to, the following:

Sub-section A. United States Occupational Safety and Health Administration Regulations:

Sub-section B. Utah State Industrial Commission Regulations:
The Utah Occupational Safety and Health Act (1973) and Employer-Employee Safe Practices for Excavations and Trenching Operations (Jan. 1, 1974), as published by the Utah State Industrial Commission, including any and all amendments or revisions effective prior to performance of the work.

Sub-section C. City Ordinances:
The Developer/Contractor shall be required to comply with all Morgan City Ordinances.

Sub-section D. UDOT Requirements:
When crossing or working within Utah Department of Transportation rights-of-way the Developer/Contractor shall be responsible to obtain all necessary permits and comply with all appropriate UDOT regulations including applicable sections in "State of Utah Standard Specifications for Road and Bridge Construction," latest edition.

Sub-section E. Permits:
The Developer/Contractor is responsible to obtain all required business licenses and building permits applicable to this project. Developer/Contractor shall be subject to the conditions of all permits and agreements between the Owner and the permitting agencies.

Section 1.11 FEDERAL, STATE, AND LOCAL INSPECTING AGENCIES:
The site of construction is to be open at all reasonable times and places for periodic observation by accredited representatives of the Federal, State, and local agencies who have regulatory or supervisory authority over any part of the work proposed or regulated thereto.

Section 1.12 PUBLIC SAFETY AND CONVENIENCE:
The convenience of the general public and the protection of persons and property is of prime importance and shall be provided for by the Developer/Contractor during this project. The Developer/Contractor shall use every reasonable precaution to safeguard persons and property. Failure of the Owner or the Public Works Representative/Engineer to notify the Developer/Contractor of any deficiencies in providing for public safety and convenience shall not relieve the Developer/Contractor from its responsibility. The Developer/Contractor shall be required to comply with the requirements of the Manual on Uniform Traffic Control Devices (MUTCD).

Sub-section A. Compliance with Rules and Regulations:
The Developer/Contractor shall comply with all rules and regulations of the City, County, and State authorities regarding the closing of public streets, or highways, to the use of public traffic. If conditions justify, the Public Works Representative/Engineer may authorize the Developer/Contractor to close general traffic to not more than one (1) city block at any given time. No such closure shall be made without authorization of the Public Works Representative/Engineer. Closure of streets or highways shall be in conformance with the (MUTCD).
Sub-section B.  Road Closures and Obstructions:

No road shall be closed by the Developer/Contractor to the public except by express permission of the Public Works Representative/Engineer. The Developer/Contractor shall, at all times, conduct its work so as to insure the least possible obstruction to traffic and normal commercial pursuits.

Sub-section C.  Protection of the Traveling Public:

All obstructions within traveled roadways shall be protected by signs, barricades, and lights where necessary for the safety of the traveling public. All barricades and obstructions shall be protected at night by signal lights which shall be suitably distributed across the roadway and kept burning from sunset to sunrise. Barricades shall be of substantial construction. Failure of the Owner or the Public Works Representative/Engineer to notify the Developer/Contractor to maintain barricades, barriers, lights, flares, danger signals, or guards shall not relieve the Developer/Contractor from its responsibility.

Sub-section D.  Hazardous Conditions:

Whenever the Developer/Contractor's operations create a hazardous condition, it shall furnish flaggers and guards to give adequate warning to the public of any dangerous conditions to be encountered. It shall furnish, erect, and maintain fences, barricades, signs, lights, and other devices that may be necessary to prevent injury and damage to persons and property. Flaggers and guards shall be UDOT trained and shall hold current certification and shall be equipped with signs, flags, etc. as required by the Utah State Department of Transportation (UDOT) regulations.

Sub-section E.  Dust and Debris Control:

The Developer/Contractor shall control dust and debris that originates in the construction right-of-way or site. Dust, trash, and other debris shall be controlled on a daily basis by methods that shall include, but not be limited to, the use of a dust setting spray, a "pick-up broom or street sweeper and trash disposal. When conditions warrant and at the sole determination of the City, the Developer/Contractor shall maintain on the project site a water truck. The Developer/Contractor shall be responsible to secure a source of water and shall obtain the necessary permission for its use. Failure by the Developer/Contractor to adequately control dust and debris may result in the City initiating dust and debris control measures and deducting the cost from payment due to the Developer/Contractor.

Section 1.13 CONFINEMENT OF WORK AND ACCESS TO RIGHT-OF-WAY AND EASEMENTS:

The Developer/Contractor will be required to confine construction operations within the dedicated right-of-way for public thoroughfares or within areas for which construction easements have been obtained unless it has made special arrangements with the affected property owners in advance. The Developer/Contractor will be required to protect stored materials, lawn, trees, and other features located adjacent to the proposed construction site. During construction operations, the Developer/Contractor shall construct and maintain such facilities as may be required to provide access by all property owners to their property. No person shall be cut off from access to their residences or places of business for a period exceeding eight (8) hours, unless the Developer/Contractor has made special arrangements with the affected persons prior to commencing work in the area.

Section 1.14  NOTIFICATION OF RESIDENTS:

All property owners and residents adjacent to the streets or easements affected by the construction shall be notified by the Developer/Contractor at least forty-eight (48) hours in advance of time construction begins. The Developer/Contractor can satisfy this requirement by placing a written notice on the door of each residence or business.

Section 1.15  WEATHER CONDITIONS:

In the event of temporary suspension of work, or during inclement weather, the Developer/Contractor will, and will cause its SubDeveloper/Contractors to, protect any project work or materials against damage from the weather. If, in the opinion of the Public Works Representative/Engineer, any Project work or materials become damaged by reason
of failure on the part of the Developer/Contractor or any of its SubDeveloper/Contractors to so protect its work, such work or materials shall be removed and replaced at the expense of the Developer/Contractor.

Section 1.16 LAND MONUMENTS:

The Developer/Contractor shall preserve existing City, County, State, and Federal land monuments whenever possible. When these monuments cannot be preserved, the Developer/Contractor shall notify the Public Works Representative/Engineer at least two (2) weeks in advance of the proposed construction in order that the Public Works Representative/Engineer will have ample opportunity to reference these monuments for later replacement.

Section 1.17 SOURCE OF MATERIALS:

All materials furnished or incorporated in this project shall conform to the requirements of these Specifications.

The Developer/Contractor shall acquire the necessary rights, at its own expense, to take material from aggregate sources and to use properties for plant site, hauling roads, and other purposes.

The Developer/Contractor may select areas for disposal of surplus materials; however, the Developer/Contractor will be responsible for acquiring the necessary right, at its own expense, to use the property for such purpose.

Section 1.18 OPERATION AND MAINTENANCE MANUALS:

The Developer/Contractor shall furnish the Public Works Representative/Engineer with two (2) sets of all operation and maintenance manuals, drawings, diagrams, etc., for all pumps, motors, control panels, valves, meters, etc., for use in the Operation and Maintenance Manual.

Section 1.19 INTERFERING STRUCTURES, UTILITIES AND FACILITIES:

The Developer/Contractor shall exercise all possible caution to prevent damage to existing structures and utilities, whether above ground or underground. While these structures and utilities may be shown on the improvements plans, the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and it is presented simply as a guide to possible difficulties. The Developer/Contractor shall notify all utility offices concerned at least forty-eight (48) hours in advance of construction operations in which a utility agency's facility may be involved. Notification to blue stakes does not necessarily cover all buried lines. This shall include, but not be limited to, irrigation, water, telephone, electric, sewer, storm drain, gas, and cable television. The Developer/Contractor shall be responsible for any and all changes to, relocation of, or re-connection to public utility facilities encountered or interrupted, which could have been reasonably foreseen, during the prosecution of the work. All costs relating thereto shall be at the Developer/Contractor's expense.

It shall be the responsibility of the Developer/Contractor to expose all existing underground structures and utilities in such a manner as to prevent damage to the same. Any structure or utilities damaged by the work shall be repaired or replaced at the Developer/Contractor's expense.

If the Developer/Contractor encounters existing structures that will prevent construction, it shall notify the Public Works Representative/Engineer before continuing with the construction in order that the Developer's Engineer or Public Works Representative/Engineer may make such field revisions as necessary to avoid conflict with the existing structures.

Section 1.20 MATERIAL AND COMPACTION TESTING:

During the course of the work, a Geotechnical Engineer/Testing Company may perform such tests as are required to identify materials, to determine gradation, to determine compaction characteristics, to determine moisture, to determine density of fills in place, to determine concrete strength, to determine density and mixture of asphalt. These tests will be used to verify that the construction conforms to the requirements of the specifications. Such tests are not intended to provide the Developer/Contractor with the information required by it for the proper execution of the work and their performance shall not relieve the Developer/Contractor of the necessity of completing the construction in accordance with these specifications and Standard Drawings.
DIVISION 2
TRENCH EXCAVATION AND BACKFILL

Section 2.01 GENERAL:

This section covers the requirements for trenching and backfilling for underground pipelines. Unless otherwise shown or ordered, pipe shall be laid in an open trench. All incidental clearing, preliminary grading, structure removal, and benching shall be considered a part of the trenching operation.

Section 2.02 BARRICADES:

Barriers shall be placed at each end of all excavations, and at such places as may be necessary along excavations, to warn all pedestrians and vehicular traffic of such excavations. Lights shall also be placed along excavations from one hour before sunset each day to one hour after sunrise of the next day, until such excavations are entirely refilled, compacted, and surfaced or final graded. All excavations shall be barricaded in such a manner as to prevent persons from walking into, falling into, or otherwise entering those excavations.

Signs, signals, pavement markings, channelizing devices and other traffic control devices on roadways in and around work zones shall meet the standards contained in the most recent publication of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD).

Section 2.03 BLASTING:

Blasting will not be allowed except by permission from the Public Works Representative/Engineer. The Developer/Contractor shall comply with all laws, regulations, ordinances, and safety codes relative to the handling, storage, and use of explosives. The Developer/Contractor shall be fully responsible for all damage to life and property attributable to its blasting operations. Excessive blasting or overshooting will not be permitted. The Developer/Contractor shall remove any material outside the authorized cross section, which may be shattered or loosened by blasting.

Section 2.04 SHEETING, BRACING AND SHORING OF EXCAVATIONS:

Excavations shall be sheeted, braced, and shored as required to support the walls of the excavations. These measures shall be taken to protect the workers, the work in progress, existing utilities, structures, and improvements, from damage due to sliding and settling of trench walls. All such sheeting, bracing, and shoring shall comply with the regulations of the Utah State Industrial Commission, and accident prevention and safety provisions of the Contract.

The Developer/Contractor shall be fully responsible for the adequacy of methods and materials used in trench sheeting, bracing, shoring, and other systems provided to protect workers. Injury to or death of workers resulting from inadequate trench safety measures shall be the full and complete responsibility of the Developer/Contractor. All damages resulting from lack of adequate sheeting, bracing and shoring shall be the responsibility of the Developer/Contractor, and the Developer/Contractor shall affect all necessary repairs or reconstruction at its own expense resulting from such damage.

Sheeting or shoring that does not extend below the centerline of the pipe may be removed at the discretion and responsibility of the Developer/Contractor after the pipe embedment has been placed and compacted to a level twelve inches (12”) above the top of the pipe. Following removal of the sheeting or bracing, the trench shall be immediately backfilled and compacted or consolidated.

Section 2.05 CONTROL OF GROUNDWATER:

All trenches shall be kept free from water during excavation, fine grading, pipe laying and jointing, and pipe embedment operations. Where the trench bottom is mucky or otherwise unstable because of the presence of groundwater, and in all cases where the static groundwater is above the bottom of any trench or bell hole excavation, such groundwater shall be lowered to the extent necessary to keep the trench free from water and the trench bottom stable when the work within the trench is in progress. The discharge from excavation dewatering shall be conducted
to natural drainage channels, gutters, drains, or storm sewers. No sanitary sewer shall be used for disposal of trench water. Surface water shall be prevented from entering trenches. The Developer/Contractor shall verify the capacity of receiving facilities to ensure that downstream flooding will not occur. Permission must be obtained before discharging into private ditches or canals.

Section 2.06  TRENCH EXCAVATION:

Excavation for pipelines shall be located as shown on the Drawings or as staked in the field. Trenches shall be excavated to the depths and widths required to accommodate the construction of the pipelines, as follows:

Sub-section A. Normal Excavation:

Except in ledge-rock, cobbles, stones, or water-saturated earth, mechanical excavation of trenches shall not extend below an elevation four inches (4") above the bottom of the pipe after placement in its final position. All additional excavation necessary for preparation of the trench bottom shall be made manually.

Sub-section B. Authorized Over-Excavation:

Where ledge-rock, cobble rock, stones or other material render the trench material unsuitable for pipe bedding, as determined by the Public Works Representative/Engineer, bedding material shall be imported and placed. The trench shall be excavated to a minimum of four-inches (4") below the bottom of the pipe after placement in its final position.

Where unstable material is encountered in the excavation, foundation material may be required, as determined by the Public Works Representative/Engineer. In such cases, a minimum of eight inches (8") below the bottom of the pipe after placement in its final position shall be removed. Over-excavation not ordered, specified, or shown shall be considered to be unauthorized excavation.

Sub-section C. Unauthorized Over-Excavation:

Any excavation carried below the elevation required to install the pipe as specified in these Specifications, or directed by the Public Works Representative/Engineer, shall be considered to be unauthorized. Such excavation shall be backfilled in accordance with Section 2.07, all at the Developer/Contractor's expense.

Sub-section D. Trench Width:

The trench shall be excavated such that the pipe is always centered in the trench. The minimum clear trench width at the horizontal diameter of the pipe must not be less than the outside diameter of the pipe plus twelve inches (12").

Trench width for pipeline structures, valves, or other accessories shall be sufficient to leave at least twelve inches (12") clear between their outer surfaces and the trench. Backfill with earth under structures or valves will not be permitted. Any unauthorized excess excavation below the elevation indicated for foundation of any structures shall be backfilled in accordance with Section 2.07, at the Developer/Contractor's expense.

Sub-section E. Trenches in Embankments:

Before laying pipes that are to be in fill or embankment areas, the embankment shall first be placed and compacted to the specified density to a depth of not less than two feet (2') above the top of the proposed pipe. After placing and compacting the embankment, the trench for the pipe or conduit shall be excavated through the fill and fine graded and the pipe installed as specified.

Sub-section F. Placement of Excavated Material:

All excess material shall be hauled away from the construction site and disposed of in an area obtained by the Developer/Contractor and approved by the Public Works Representative/Engineer. The Developer/Contractor shall be responsible for all rights-of-way, easements, and access associated with the disposal of excess excavated material. It shall further be responsible to obtain permission from the property owner.
owner or person controlling the property where the Developer/Contractor plans to dispose of excavated material. No compensation will be made to the Developer/Contractor for disposal of excess excavated material.

Non-excess excavated material shall be piled in a manner that will not endanger the work and will avoid obstructing sidewalks and driveways. Gutters and irrigation ditches shall be kept clear or other satisfactory provisions shall be made for street drainage and continuity of irrigation.

Grading of the area surrounding the trenches, including excavated materials, shall be performed as necessary to prevent surface water from flowing into trenches, or other excavations. Control of groundwater shall be as specified in section 2.05, Control of Groundwater.

Sub-section G. Fine Grading the Trench Bottom:

The bottom of the trench shall be accurately graded and prepared to provide uniform bearing and support on undisturbed soil or compacted granular bedding at every point along the entire length of the pipe. Bell holes shall be hand excavated after the trench bottom has been fine graded. Bell holes shall be only large enough to permit making the joints and to assure that any portion of the joint or bell does not support the pipe.

Section 2.07 TRENCH BACKFILL

Trench backfill for piping consists of four zones: foundation, bedding, initial backfill, and final backfill. "Pipe embedment" is a commonly used term that refers to the region including the bedding and initial backfill zones, or any region within one foot (1') of any pipe, pipeline structure, or accessory. The foundation is defined as the region between eight inches (8") and four inches (4") below the bottom of the pipe. The bedding is defined as the region between four inches (4") below the bottom of the pipe and the bottom of the pipe. The initial backfill is defined as the region between the bottom of the pipe and twelve inches (12") above the top of the pipe. The final backfill is defined as the region above twelve inches (12") above the pipe.

All fill materials shall be compacted as specified in this section.

The Public Works Representative/Engineer shall determine the suitability of excavated materials for use as foundation, bedding, initial backfill, and final backfill. When the excavated materials are not satisfactory for foundation, bedding, or backfill, the Developer/Contractor shall provide imported granular material.

Sub-section A. Imported Granular Material:

Imported granular material for foundation, bedding, and backfill shall be cleaned crushed rock or gravel, free from sod, vegetation, and other organic or deleterious material. Slag will not be allowed in the pipe embedment. Imported granular material shall conform to the following gradation specifications:

1. Foundation Material. One hundred percent (100%) less than two-inch (2") and maximum of five percent (5%) less than one-half-inch (½").

2. Embedment Material. Ductile-iron pipe - One hundred percent (100%) less than two-inch (2") and maximum of five percent (5%) passing a No. 200 sieve.
   PVC or polyethylene pipe - One hundred percent (100%) less than one-inch (1") and maximum five percent (5%) passing a No. 200 sieve.

3. Final Backfill Material. One hundred percent (100%) less than twelve-inch (12") and maximum of fifteen percent (15%) passing a No. 200 sieve.

Sub-section B. Foundation Placement:

When over-excavation is authorized by the Public Works Representative/Engineer, foundation material shall be placed in the foundation zone and below. The foundation material shall be placed so that the
trench can be properly fine graded as specified. The foundation material shall be deposited over the entire trench width and compacted in layers. The layers shall have a maximum uncompacted thickness of six-inches (6").

The material shall then be fine graded in accordance with the specification for Fine grading herein.

**Sub-section C. Pipe Embedment:**

Embedment material for other than PVC pipe may be excavated materials consisting of loose earth, sand, or gravel having no material larger than two-inches (2") in any dimension. For PVC pipe, the material must be no greater than-one inch (1") in any dimension. If the excavated materials are not satisfactory, the specified imported granular material shall be used for pipe embedment.

1. **Bedding.** The bedding material shall be deposited over the entire trench width to a compacted thickness of no less than four inches (4"). The material shall have a maximum un-compacted thickness of six inches (6").

2. **Initial Backfill.** After the pipe is in place, initial backfill material shall be placed at any point below the mid-point of the pipe simultaneously and uniformly on both sides of the pipe in un-compacted layers not to exceed ten-inches (10") or one-half the diameter of the pipe, whichever is less. Initial backfill material shall be placed with care to prevent displacement of or damage to the pipe during the embedment process. Initial backfill material shall be scattered alongside the pipe and not dropped into the trench in compact masses.

That section of the pipe zone from the mid-point of the pipe to twelve inches (12") above the top of the pipe shall then be filled with initial backfill materials and compacted.

**Sub-section D. Final Backfill:**

Final backfill shall be from twelve inches (12") above the top of the pipe to the level shown on the Drawings. Excavated materials consisting of fines, sand, and gravel shall be used for final backfill. No oil cake, bituminous pavement, concrete, rock, or other lumpy material shall be used in the final backfill unless these materials are scattered and do not exceed six inches (6") in any dimension. Perishable or spongy material shall not be used in final backfilling.

**Sub-section E. Compaction:**

Backfill shall be compacted by means of sheepsfoot rollers, pneumatic tire rollers, vibrating rollers, or mechanical tampers.

Under pavements or other surface improvements the in-place density shall be a minimum of ninety-six percent (96%) of laboratory standard the maximum dry density as determined by AASHTO T-99. In shoulders and other areas the in-place density shall be a minimum of ninety percent (90%) of the maximum dry density as determined by AASHTO T-99.

Fill material shall be placed at a moisture content and un-compacted lift thickness such that after compaction the required relative densities will be produced. In no event will the material be placed in lifts that, prior to compaction, exceed six inches (6") for foundation and embedment and twelve inches (12") for final backfill.

If the required relative density is not attained, test sections will be required to determine any adjustments in compaction equipment, thickness of layers, moisture content and compactive effort necessary to attain the specified minimum relative density.

Approval of equipment, thickness of layers, moisture content, and compactive effort shall not be deemed to relieve the Developer/Contractor of the responsibility for attaining the specified minimum relative densities. The Developer/Contractor, in planning its work, shall allow sufficient time to perform the work.
connected with test sections and to permit the Public Works Representative/Engineer to make tests for relative densities.

Sub-section F. Consolidation

Consolidation of backfill shall be accomplished by those methods in which water is used as the essential agent to produce the desired condition of density and stability. Water shall be applied by jetting unless flooding is specifically authorized by the Public Works Representative/Engineer. Authorization by the Public Works Representative/Engineer to use any consolidation method does not relieve the contractor of his responsibility to meet the specified density requirements. Water for consolidation shall be furnished by the contractor at his expense.

In the jetting procedure the jets shall be inserted at not more than four-foot intervals (staggered throughout the length of the back filled area) and shall be slowly forced down to the bottom of the trench or top of previously jetted lift and held until the trench back fill is completely saturated with water. Depth of jetted lift shall not exceed 5 feet unless otherwise approved by the Public Works Representative/Engineer.

The minimum size of hose equipment shall be as to provide a minimum pressure of 35 pounds per square inch at the discharge. The jet shall be a rigid iron pipe with a minimum diameter of one inch.

After the water-settled trench has set for several days, any depression in the trench shall be filled, mounded over, and wheel rolled to compact the material thus placed.

All precautions necessary shall be taken by the contractor to prevent damage and movement (including floating) of the pipeline, structures, and existing adjacent improvements and utilities. The use of consolidation methods will be allowed only when they not result in damage to adjacent ground. The contractor shall make his own determination in this regard, and shall assume all risks and liability for settlement or lateral movement of adjacent ground, improvements, or utilities, either on the surface of the ground or underground.

Section 2.08 TRENCH CROSSINGS AND EASEMENTS:

At road crossings or where existing driveways occur on a road, the Developer/Contractor shall make provisions for trench crossings either by means of backfill, tunnels, or temporary bridges.

Any disturbance to property caused by the Developer/Contractor's activity within easements shall be restored as near as possible to preexisting conditions and shall work with the owner of the property to resolve specific and reasonable concerns directly related to the work on private property. If necessary, shrubs, fences, or other objects shall be removed carefully. If work must occur on a lawn, the lawn shall be cut to a width of two feet (2') wider than the intended work area (one foot (1') on each side). The lawn sod shall be stacked separately from and shall not be mixed with other excavated material.

After the sod is removed, if excavation is necessary, the topsoil shall be removed to a depth of twelve inches (12"), or the actual depth of the topsoil, whichever is less. The topsoil shall be stored separately from and shall not be mixed with other excavated material.

Following completion of the backfilling and the compaction of the trench, the Developer/Contractor shall replace topsoil, lawn sod, shrubs, fences, and other items that may have been removed from within the easement area and shall clean up and remove any rocks, dirt or any other debris that remain from the construction work.

Section 2.09 RESTORATION OF CONSTRUCTION SITE:

During the progress of the Work, the Developer/Contractor shall clean up all construction debris, excess excavation, and excess materials, and shall restore all fences, irrigation structures, ditches, culverts, and similar items. The Developer/Contractor shall stockpile the excavated trench material so as to do the least damage to adjacent grassed areas, or fences, regardless of whether these are on private property or public rights-of-way. All excavated materials shall be removed from grassed and planted areas and these surfaces shall be left in a conditions equivalent to their original surface and free from all rocks, gravel, boulders, or other foreign materials.
Section 2.10 DEVELOPER/CONTRACTOR'S RESPONSIBILITY:

The Developer/Contractor will be responsible to see that the backfilling and compaction are properly and adequately done. Settlement of trenches within a period of one- (1) year after final acceptance of the project shall be considered incontrovertible evidence of inadequate compaction, and the Developer/Contractor shall be responsible for correcting the condition in accordance with the provisions of these Specifications. This includes the replacement of sidewalk, curb and gutter, and other surface improvements.
DIVISION 4
CONCRETE PIPE

Section 4.01 GENERAL:

This section covers the requirements for concrete pipe materials and installation in sanitary sewer, storm drain, and other gravity line construction.

Section 4.02 PIPE:

Concrete pipe used in sewer line, storm drain line and other gravity line construction shall be reinforced concrete pipe or non-reinforced concrete pipe, as required by design loading and fill heights and as follows:

Sub-section A. Reinforced Concrete Pipe:

All reinforced concrete pipe used in the construction shall be of the rubber gasket type, bell and spigot joint design, conforming to the requirements of the latest revision of ASTM Designation C-76. Pipe class shall be as shown on the Drawings. The minimum joint length of all pipes provided shall be 7 ½ feet (D load calculations, submitted to the City Engineer, are required for justification of reinforced and/or non-reinforced concrete pipe).

Sub-section B. Non-Reinforced Concrete Pipe:

All non-reinforced concrete pipe used in the construction shall be of the rubber gasket type, bell and spigot joint design, conforming to the requirements of the latest revision of ASTM Designation C-14. Pipe class shall be as shown on the Drawings. The minimum joint length for pipe shall be four feet for pipe up to ten inches and seven and a half feet for all other pipe.

Sub-section C. Bell and Spigot Joints:

Bell and spigot joints, including rubber gaskets, shall conform to the requirements of the latest revision of ASTM Designation C-443. The pipe joint shall be so designed as to provide for self-centering, and when assembled, to compress the gasket to form a watertight seal. The gasket shall be confined in a groove on the spigot, so that pipe movement or hydrostatic pressure cannot displace the gasket.

Sub-section D. Minimum Size and Slope Requirements:

In no case shall sanitary sewer mains be less than eight inches in diameter. Sewers shall be laid with uniform slope between manholes. All sewers shall be designed and constructed to give mean velocities of not less than 2 feet per second when flowing full, based on Manning’s formula using an n value of .013. Absolute minimum slope allowed shall be those published by the Utah Department of Environmental Quality, Division of Water Quality Administrative Rules for Design Requirements for Wastewater Collection, Treatment and Disposal System, R317-3, Table R317-3-2.3 (D)(4) Minimum Slopes.

Whenever possible the slope should exceed 0.006 ft/ft. The pipe should be sized to meet anticipated hydraulic loads, increasing the pipe size to reduce the minimum slope requirements shall not be allowed. Sewer slopes shall not exceed 0.12 ft/ft, drop manholes shall be used when steeper slopes are needed, drop manholes shall be used to keep line grade below maximum grade allowed.

Section 4.03 PIPE LAYING:

All concrete pipe installation shall proceed upgrade on a stable foundation, with joints closely and accurately fitted. Rubber gaskets shall be fitted properly in place, and care shall be taken in joining the pipe units to avoid twisting of gaskets. Joints shall be clean and dry, and a joint lubricant as recommended by the pipe supplier shall be applied uniformly to the mating joint surfaces to facilitate easy positive joint closure.

Pipe shall be installed with uniform bearing under the full length of the barrel, with suitable excavations being made to receive pipe bells.
Select material shall be compacted around the pipe to firmly bed the pipe in position. If adjustment of position of a pipe length is required after being laid, it shall be removed and re-jointed as for a new pipe. When laying is not in progress, the ends of the pipe shall be closed with a tight-fitting stopper to prevent the entrance of foreign material.

In addition to the above requirements, all pipe installation shall comply with the specific requirements of the pipe manufacturer.

Section 4.04 GRAVEL FOUNDATION FOR PIPE:

Wherever the subgrade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, or where groundwater must be drained, the subgrade shall be excavated to such depth as may be necessary and replaced with crushed rock or gravel compacted into place.

Gravel for concrete pipe foundation shall be clean crushed rock or gravel with one hundred percent (100%) passing a one-inch (1") screen and five percent (5%) passing a No. 4 sieve.

Section 4.05 INSTALLATION REQUIREMENTS FOR LINE AND GRADE:

All concrete pipe shall be installed accurately to the defined line and grade with the following limits:

Variance from established line and grade shall not be greater than one-sixteenth (1/16) inch per inch of pipe diameter in ten feet, and not to exceed one-half inch in ten feet, provided that such variation does not result in a level or reverse sloping invert; provided also that variation in the invert elevation between adjoining ends of pipe, due to non-concentricity of joining surface and pipe interior surfaces, does not exceed one-sixty-fourth (1/64) inch per inch of pipe diameter, or one-half (½) inch maximum.

Section 4.06 PIPE BEDDING:

All pipes shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded.

A groove shall be excavated in the bottom of the trench to receive the bottom quadrant of the pipe. Before preparing the groove, the trench bottom shall be excavated or filled and compacted to an elevation sufficiently above the grade of the pipe so that, when completed, the pipe will be true to line and grade. Bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom.

Pipe bedding materials placed at any point below the mid-point of the pipe shall be deposited and compacted in layers not to exceed ten-inches (10") in un-compacted depth. Deposition and compaction of bedding materials shall be done simultaneously and uniformly on both sides of the pipe. Compaction shall be accomplished with hand or mechanical compactors. All bedding materials shall be placed in the trench in such a manner that they will be scattered alongside the pipe and not dropped into the trench in compact masses. Bedding materials shall be loose earth, free from lumps; sand or gravel, free from rocks larger than two-inch (2") diameter. All materials shall be free from roots, sod, or other vegetable matter.

In the event trench materials are not satisfactory for pipe bedding, modified bedding will be required. Modified bedding shall consist of placing compacted granular material on each side of and to the level of twelve-inches (12") above the top of the pipe.

Modified bedding material shall be graded as follows: One-hundred percent (100%) passing a one and one-half inch (1-1/2") screen and five percent (5%) passing a No. 4 sieve.

Section 4.07 TESTS:

The Developer/Contractor will be required to conduct a TV video inspection and air test. Displacement, infiltration, exfiltration, and mandrel tests may be required by the City Engineer; at the cost of the developer depending on
results of the previous two tests. All test shall be conducted in the presence of the Public Works Representative/Engineer or his representative. Tests shall be performed as follows:

All gravity flow pipe lines shall be washed and vacuumed out prior to any testing or inspection to prohibit materials from flowing downstream.

Sub-section A. TV video Inspection:

The Developer/Contractor or his representative (a qualified firm or individual agreed upon by the City Engineer and the Contractor) shall furnish labor, equipment, and materials, including camera and video tapes, and shall perform, in presence of the Public Works Representative/Engineer or his representative, an internal television test of the completed pipe before it can be placed in service. The contractor shall supply the City with a copy of the video tape. The television test shall be subject to the City Engineer's approval. Any defects in the pipe or the pipe installation noted on the internal TV inspection shall be corrected by the contractor and the repaired section shall be TV inspected after the repair to verify that the defective section has been corrected. Pipelines shall be pressure washed clean immediately prior to TV video inspection.

Sub-section B. Air Testing:

The Developer/Contractor or his representative (a qualified firm or individual agreed upon by the Public Works Representative/Engineer and the Developer/Contractor) shall furnish labor, equipment, and materials, including pumps and compressors, shall perform, in the presence of the Public Works Representative/Engineer or his representative, air tests of the completed pipe before it can be placed in service. Each section of sanitary sewer pipeline between manholes shall be tested after all the four-inch service laterals (and plugs) have been installed. Each test section shall be pressurized to 4.0 psi. For the purpose of stabilizing the air pressure in each test section, the 4.0 psi pressure shall be maintained for a two-minute period. Each test section shall then be re-pressurized to 4.0 psi for a period of four minutes. The test section shall be accepted if, after four minutes, the pressure gauge indicates 3.5 psi or greater. Failure of the Developer/Contractor's testing equipment to properly function shall render the test unacceptable. All faulty sections of pipeline shall be repaired and re-tested until the minimum air testing requirements have been met.

Sub-section C. Displacement Test:

In conducting the displacement test a light will be flashed between manholes or, if the manholes have not as yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror. If the illuminated interior of the pipe shows broken, misaligned or displaced pipe or other defects, the defects designated by the Public Works Representative/Engineer or his representative, shall be remedied at the Developer/Contractor's expense.

Sub-section D. Infiltration Test:

The Developer/Contractor shall furnish labor, equipment, and materials, including pumps, and shall perform, in the presence of the Public Works Representative/Engineer or his representative, infiltration tests of the completed line before it can be placed into service. The Developer/Contractor shall furnish and install the measuring weirs or other measuring devices. The length of line to be tested at any time shall be subject to the approval of the Public Works Representative/Engineer or his representative. The maximum allowable infiltration shall not exceed one-hundred-fifty (150) gallons per inch diameter per mile per twenty-four hours (24 hrs) for all installed pipe. If the quantity of infiltration is in excess of the maximum allowable, the leaking joints shall be repaired to the satisfaction of the Public Works Representative/Engineer or his representative at the expense of the Developer/Contractor.

Sub-section E. Exfiltration Test:

The Developer/Contractor shall furnish labor, equipment, and materials, including pumps, and shall perform, in the presence of the Public Works Representative/Engineer or his representative, ex-filtration tests of the completed line before it can be placed into service. The length of line to be tested at one time shall be limited to the length between adjacent manholes. The maximum allowable ex-filtration shall not exceed one-hundred-fifty (150) gallons per inch diameter per mile per 24 hours for all installed pipe. The end of the line which projects into the manhole shall be plugged. The pipe shall then be filled with water from the upper manhole, and the line maintained under a light pressure of four feet (4') of head. The inflow of water necessary to maintain this head shall be recorded as the leakage of the system. If the quantity of
ex-filtration is in excess of the maximum allowable, the leaking joints shall be repaired to the satisfaction of the Public Works Representative/Engineer or his representative at the expense of the Developer/Contractor.

**Sub-section F. Mandrel Test ("GO/NO-GO" MANDREL PROOF TESTING):**

Not less than thirty (30) days after installation of the flexible sewer or drain pipe, the City may require that the Developer/Contractor shall test the buried pipe to insure that ring-deflection of the pipe does not exceed five percent (5%) of the pipe's specified minimum inside diameter (ID). This proof test shall establish that the Developer/Contractor has installed the flexible pipe in full compliance with the Project Specifications thereby providing required pipe/soil structural strength.

The Developer/Contractor, with Inspector present, shall pull a "Go/No-Go" Mandrel, inspected and approved by the Public Works Representative/Engineer or his representative, through the full length of installed flexible pipe. The Mandrel shall be fabricated from suitable metal with a minimum of nine (9) properly sized radial fins mounted upon a center pulling shaft. In any case, the Mandrel shall be provided with an odd number of rigidly mounted radial fins. The Mandrel shall be provided with a proof-sizing ring that can demonstrate that the Mandrel's minimum outside diameter (OD) is not less than ninety-five percent (95%) of the specified minimum inside diameter of the installed flexible pipe. The Mandrel shall be pulled by the Developer/Contractor through one hundred percent (100%) of the installed flexible pipe without using mechanical equipment. Failure of the Mandrel to pass through a pipeline shall be deemed evidence of inadequate installation by the Developer/Contractor not in compliance with the Project Specifications.

The Public Works Representative/Engineer or his representative may require, if deemed appropriate or necessary, additional proof testing of designated lengths of the buried flexible pipe approximately anytime within the two (2) year guarantee period after installation but prior to the expiration of the Developer/Contractor's Maintenance Bond. The flexible pipeline shall be cleaned adequately prior to performing the "Go/No-Go" Mandrel ring deflection proof test. The Developer/Contractor, with Inspector present, shall pull a Mandrel, approved by the Public Works Representative/Engineer or his representative, through the designated length of pipeline without using mechanical equipment. Failure of the Mandrel to pass through the pipeline shall be deemed evidence of inadequate installation by the Developer/Contractor not in compliance with the Project Specifications.

**Section 4.08 MANHOLE CONNECTIONS:**

Concrete pipe connections to manholes shall be achieved by use of manhole coupling adapters, rubber gaskets, positive seal gasket system with 300 series nonmagnetic corrosion-resistant steel bands, or grouting a bell or spigot pipe at the appropriate locations. Connections shall meet the requirements of Division 5 MANHOLES.

**Section 4.09 SEWER SERVICE LATERALS:**

New service laterals shall be constructed with materials and procedures as specified herein.

Existing service laterals shall be constructed with materials compatible with the existing laterals with appropriate connections for joining the ends of existing laterals. All laterals shall be four-inch (4") in diameter unless shown otherwise.

**Sub-section A. Extent and Location of Laterals:**

New sewer laterals installed to lots shall be located fifteen-foot (15') uphill of the lowest front property corner. Service laterals shall extend from the sewer main to a point fifteen-foot (15') beyond the property line unless shown or staked otherwise. A two-inch (2") by four-inch (4") by six-foot (6') marker, with the top twelve-inches (12") painted green, shall be installed to clearly mark the end of each lateral line. In addition to the marker, the Developer/Contractor shall station (give a distance) the location of the lateral connection to the main from the nearest downstream manhole. This information shall be provided on the as-built drawings. Laterals shall be capped with a cap suitable to withstand test pressure and prevent any leakage into or out of the lateral.
When an existing sewer lateral is encountered along the line and grade of a new pipeline it shall be relocated using appropriate pipe and fittings and graded to insure adequate slope to drain properly. Minimum slope shall be one-quarter-inch (1/4") per foot. Sewer laterals shall have at least ten (10) feet horizontal separation and twelve (12) inches vertical separation (below) the culinary water service.

**Sub-section B.  Excavation and Backfill:**

Trench excavation and backfill shall conform to the applicable paragraphs of Division 2 and the bedding requirements of this Division.

**Sub-section C.  Pipe:**

Pipe used for new service laterals shall be PVC Plastic Pipe conforming to ASTM D-3034 SDR 35.

**Sub-section D.  Connection to Main:**

Connection to a new main shall be made using a precast wye or tee installed in the main line at time of installation with a 4-inch PVC adapter or rubber gasket into which the 4-inch PVC lateral is inserted to form a water tight connection. In pipes 12-inches and larger the connection may be made using a cored hole in the pipe and a rubber boot. Recommendations of the manufacturer of the materials used shall be carefully followed. Connections onto existing sewer mains shall be made with field installed service saddles (gasketed and clamped or a nose in rubber gasketed connection approved by the City). All connections by field installed service saddles on existing sewer mains shall be done with a sewer tapping machine and all required fittings and materials. Connections shall be made as shown on the Standard Drawing and at the location specified herein, shown on the improvement drawings or as staked in the field.

**Sub-section E.  Cover Over Sewer Lateral Lines:**

There shall be a minimum of three (3) feet of cover over all sewer lateral lines (3’6” minimum at property line.)

**Sub-section F.  Sewer Clean Outs:**

There shall be a maximum distance of 5 feet from the foundation wall to the first exterior clean out with a maximum distance between clean-outs of ninety (90) feet. There shall be a clean out when a combination of bends is ninety degrees (90°) or greater.

**Sub-section G.  Testing:**

The service laterals shall be tested as a part of the sewer main to which they are connected.

**Sub-section H.  Damage and Repair of Sewers and Appurtenances:**

The Developer/Contractor shall be responsible for the protection of existing improvements, and any damage resulting from its operations shall be its sole responsibility. Damage to the sewers, laterals, or appurtenances shall be repaired by acceptable and approved methods.
DIVISION 7
EARTHWORK

Section 7.01  GENERAL:
This section defines the requirements for excavation and backfill for structures, construction requirements of earth embankments and earth fills, and subgrade preparation required by the Standard Drawings and Specifications.

Section 7.02  EXCAVATION FOR STRUCTURES:
Where suitable subgrade soils exist, structures shall be founded on undisturbed original subsoil. All unauthorized excavation below the specified subgrade shall be replaced with concrete, monolithic with that of the slab above or with coarse gravel thoroughly compacted into place.

Subgrade soils for structures not suitable for proper support shall be replaced with firm, dense, thoroughly compacted and consolidated material free from mud and muck. Coarse gravel or crushed stone may be used for subsoil reinforcement if satisfactory results can be obtained thereby. Such material shall be applied in thin layers, each layer being embedded in the subsoil by thorough tamping. All excess soil shall be removed to compensate for the displacement of the gravel or crushed stone and the finished elevation of any subsoil reinforced in this manner shall not be above the specified subgrade elevation.

Section 7.03  GRANULAR FOUNDATION BORROW:
Granular foundation borrow shall be compacted to not less than 95% of maximum dry density as determined by ASTM D-1557.

Section 7.04  BACKFILL AROUND STRUCTURES:
No backfilling around or behind structures shall be initiated until the concrete is fully cured for seven days. Backfill around structures shall be placed to the lines shown on the drawings, or as directed. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, all forms shall be removed and the excavation shall be cleaned of all trash and debris. Hand compacted fill, including fill compacted by manually-directed power tampers, shall be placed in layers whose thickness before compaction is not greater than four (4) inches. Material for backfilling shall consist of suitable excavated material or imported sand, gravel, or other suitable material with no rocks whose greatest dimension is larger than two (2) inches.

Fill shall be placed in a manner that will prevent damage to the structures and will allow the structures to assume the loads from the fill gradually and uniformly. The height of the fill adjacent to a structure shall be increased at approximately the same rate on all sides of the structure. Each layer shall be compacted by hand or machine tampers or by other suitable equipment to a density equal to 95% of maximum dry density as measured by ASTM D1557.

Section 7.05  CONSTRUCTION OF EMBANKMENTS AND FILLS:

Sub-section A.  Foundation Preparation:
Foundations for earth fill shall have unsuitable materials, such as weeds, sod, roots larger than 1/4-inch in diameter, vegetation, or other organic material shall be removed by clearing, stripping, and/or grubbing. Except as otherwise specified, earth foundation surfaces shall be graded to remove surface irregularities and shall be scarified parallel to the axis of the fill or otherwise acceptably scored and loosened to a minimum depth of six inches. The moisture content of the loosened material shall be controlled as specified for the earth fill, and the surface materials of the foundation shall be compacted and bonded with the first layer of earth fill as specified for subsequent layers of earth fill.
Earth abutment surfaces shall be free of loose, uncompacted earth in excess of 2 inches in depth normal to the slope and shall be at such a moisture content that the earth fill can be compacted against them to effect a good bond between the fill and the abutments.

Rock foundation and abutment surfaces shall be cleared of all loose material by hand or other effective means and shall be free of standing water when fill is placed upon them. Occasional rock outcrops in earth foundations for earth fill, except in dams and other structures designed to restrain the movement of water, shall not require special treatment if they do not interfere with compaction of the foundation and initial layers of the fill or the bond between the foundation and the fill.

Sub-section B. Placement:

Fill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by the Public Works Representative/Engineer and any Regulatory Agency having authority over the project. Fill shall not be placed upon a frozen surface, nor shall snow, ice, or frozen material be incorporated in the fill.

Fill shall be placed in approximately horizontal layers. The thickness of each layer before compaction shall not exceed the maximum thickness specified. Materials placed by dumping in piles or windrows shall be spread uniformly not more than the specified thickness before being compacted. Hand compacted fill, including fill compacted by manually-directed power tampers, shall be placed in layers whose thickness before compaction is not greater than four (4) inches. All rock whose greatest dimension is larger than two-inch (2") shall be removed from the material receiving compaction by manually directed power tampers.

Earth fill designed to restrain the movement of water shall be placed so as to meet the following additional requirements:

1. The distribution of materials throughout each zone shall be essentially uniform, and the fill shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material.

2. If the surface of any layer becomes too hard and smooth for proper bond with the succeeding layer, it shall be scarified parallel to the axis of the fill, to a depth of not less than 2 inches before the next layer is placed.

3. The top surfaces of embankments shall be maintained approximately level during construction, except that a crown or cross-slope of not less than 2 percent shall be maintained to ensure effective drainage, and except as otherwise specified for drain fill zones. If the Drawings or specifications require or the Public Works Representative/Engineer directs that fill be placed at a higher level in one part of the embankment than another is, the top surface of each part shall be maintained as specified above.

4. Dam embankments shall be constructed in continuous layers from abutment to abutment except where openings to facilitate construction of inlet and outlet pipes are specifically authorized in the contract.

5. Embankments built at different levels as described in 3 and 4 shall be constructed so that the slope of the bonding surfaces between the embankment in place and embankment to be placed is not steeper than 2 feet horizontal to 1-foot vertical. The bonding surface of the embankment in place shall be stripped of all loose material, scarified, moistened and recompacted when the new fill is placed against it. This is needed to ensure a good bond with the new fill, to obtain the specified moisture content and specified density at the junction of the in-place and new fill.

Sub-section C. Borrow:

When the embankment or fill exceeds the amount of excavation, sufficient additional material shall be obtained from borrow pits provided by the Developer/Contractor. All material proposed to be imported shall be subject to the review and approval of the Public Works Representative/Engineer prior to starting of hauling operations.
The materials used for embankment and fill construction shall be free from sod, grass, roots larger than 1/4-inch diameter, trash, clods, rocks larger than six inches in diameter, and all other material unsuitable for construction of compacted fills. Rotomilled asphalt meeting the large rock requirement may be used as borrow.

Grading of completed embankments and fills shall bring the surfaces to a smooth, uniform condition with final grades being within 0.1 foot of the design grade.

Section 7.06  COMPACTION OF MATERIALS:

The material shall be deposited in horizontal layers having a thickness of not more than eight-inches (8") prior to being compacted as hereinafter specified. The distribution of materials shall be such that the compacted material will be homogeneous and free from lenses, pockets, or other imperfections.

During placement and compaction of fill, the moisture content of the materials being placed shall be maintained within the specified range, and the moisture content shall be uniform throughout the layers. Discing, blading or other approved methods prior to compaction of the layer shall obtain uniform moisture distribution. The moisture shall be controlled at a level to permit compaction of the fill as specified, but in no case greater or less than two percent plus or minus of the optimum moisture as determined by AASHTO T-99.

The application of water to the fill materials shall be accomplished at the borrow areas insofar as practicable. Water may be applied by sprinkling the materials after placement on the fill, if necessary.

Material that is too wet when deposited on the fill shall either be removed or dried to specified moisture content prior to compaction.

If the top surface of the preceding layer, a foundation or abutment surface in the zone of contact with the fill becomes too dry to permit suitable bond it shall be scarified and moistened by sprinkling to the required moisture content prior to placement of the next layer of fill.

When the material has been conditioned as here in before specified the backfill or embankment shall be compacted to a minimum of 96% of maximum density specified above. Densification of earth fill shall be performed by equipment designated solely for that purpose. Each layer of fill shall be compacted as necessary to make the density of the fill matrix not less than the minimum density specified. The fill matrix is defined as the portion of the fill material finer than the maximum particle size used in the compaction test method specified.

Sub-section A.  Under Roadways:

Under roadways and extending one foot beyond the proposed curb-line the fill or embankment material shall be compacted to a minimum of 96% of maximum density specified above.

Sub-section B.  Under Sidewalks and Driveways:

Under sidewalks and driveways extending one foot each side of the edge of slab the fill or embankment material shall be compacted to a minimum of 96% of maximum density specified above.

7.07  REMOVAL AND PLACEMENT OF DEFECTIVE FILL:

Fill placement at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced with acceptable fill. The replacement fill and the foundation, abutment and fill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control and compaction.
DIVISION 8
PORTLAND CEMENT CONCRETE

Section 8.01 GENERAL:
The work shall consist of furnishing, forming, placing, finishing, and curing Portland cement concrete, as required.

Section 8.02 MATERIALS:

Sub-section A. Portland Cement:
Portland cement shall be Type II and shall comply with the Standard Specification for Portland Cement, ASTM C-150.
If air-entraining cement is to be used, the Developer/Contractor shall furnish the manufacturers written statement giving the source, amount and brand name of the air-entraining addition.
Cement shall be stored in such a manner as to be protected from weather, dampness or other destructive agents. Cement that is partially hydrated or otherwise damaged will be rejected.

Sub-section B. Aggregates:
Aggregates shall conform to Tentative Specifications for Concrete Aggregates, ASTM C-33 for the specified sizes. Aggregates that fail to meet any requirement may be accepted only when: (1) the specified alternate conditions of acceptance can be proved prior to the use of the aggregates on the job and within a period of time such that no work under the contract will be delayed by the requirements of such proof; or, (2) the specification for concrete expressly contains a provision of special mix requirements to compensate for the effects of the deficiencies.

The potential reactivity of aggregates with the alkalies in cement shall be evaluated by petrographic examination and, where applicable, the chemical method of test, ASTM Designation C 289, or by the results of previous tests or service records of concrete made from similar aggregates from the same source. The standards for evaluating potential reactivity shall be as described in ASTM Specification C-33, Appendix A1.
Aggregates indicated by any of the above to be potentially reactive shall not be used, except under one of the following conditions:
1. Applicable test results of mortar bar tests, made according to ASTM Method C-227, are available which indicate an expansion of less than 0.10 per cent at six months in mortar bars made with cement containing not less than 0.8 per cent alkalies expressed as sodium oxide; or
2. Concrete made from similar aggregates from the same source has been demonstrated to be sound after 3 years or more of service under conditions of exposure to moisture and weather similar to those anticipated for the concrete under these specifications.

Aggregates indicated to be potentially reactive, but within acceptable limits as determined by mortar bar test results or service records, shall be used only with "low alkali" cement, containing less than 0.60 per cent alkalies expressed as sodium oxide.

Aggregate of each class and size shall be stored and handled by methods that prevent segregation of particle sizes or contamination by intermixing with other materials.

Sub-section C. Water:
Water shall be cleaned and free from injurious amounts of oil, salt, acid, alkali, organic matter or other deleterious substances.

Sub-section D. Air-Entraining Agent:
Air-entraining agent shall be used in all concrete exposed to the weather. The agent shall conform to ASTM Designation C-175 and C-260, except that the relative durability factor in the freezing and thawing test shall be not less than 95.

**Sub-section E.**

Steel reinforcement shall be free from rust, oil, grease, paint or other deleterious matter.

Steel bars for concrete reinforcement requiring bends shall be deformed billet-steel bars conforming to ASTM Specification A-615, Grade 40 or Grade 60.

*Straight steel bars shall be deformed bars conforming to one of the following specifications:*

- Deformed Billet-Steel Bars for Concrete Reinforcement (Grade 40 or Grade 60) - ASTM Designation A-615.
- Rail-Steel Deformed Bars for Concrete Reinforcement (Grade 50 or Grade 60) - ASTM Designation A-616.
- Axle-Steel Deformed Bars for Concrete Reinforcement (Grade 40 or Grade 60) - ASTM Designation A-617.
- Fabricated Steel bar mats shall conform to the requirements of ASTM Specification A-184.

Welded steel wire fabric reinforcement shall conform to the requirements of ASTM Specification A-185.

Welded deformed steel wire fabric for concrete reinforcement shall conform to the requirements of ASTM Specification A-497.

Cold-drawn steel wire reinforcement shall conform to the requirements of ASTM Specification A-82.

Deformed steel wire for concrete reinforcement shall conform to the requirements of ASTM Specification A-496.

Gages, spacing and arrangement of wires in welded steel wire fabric shall be as defined in ACI Standard 315 of the American Concrete Institute for the specified style designations.

Steel reinforcement stored at the site of the work shall be stored above the ground surface on platforms, skids or other supports and shall be protected from mechanical injury and corrosion.

**Sub-section F.  Water-Reducing and Set-Retarding Admixtures:**

Water-reducing and set-retarding admixtures shall conform to the requirements of ASTM Specification C-494, except that resistance to freezing and thawing shall be determined in all cases, and the minimum relative durability factor shall be 95.

Admixtures shall be Type A, Water-Reducing or Type D, Water-Reducing and Retarding, as defined in ASTM Specification C-494.

When added, in the manner and amount recommended by the manufacturer, to the concrete used on the job, with no change in the cement content or proportions of the aggregates, admixtures shall have the following effects:

Type A or Type D: The water content at the required slump shall be at least 5 per cent less with the admixture than without. The air content shall remain within the range specified, but shall not exceed 8 per-cent in any case.

Type D: The time of initial setting, determined as prescribed in ASTM C-494, shall be from 1 to 3 hours longer with the admixture than without.

**Sub-section G.  Curing Compound:**
Curing compound for concrete shall meet the requirements of ASTM Specification C-309.

Unless otherwise specified, the compound shall be Type 2.

All curing compound shall be delivered to the site of the work in the original container bearing the name of the manufacturer and the brand name. The compound shall be stored in a manner to prevent damage to the containers and to protect water-emulsion types from freezing.

Section 8.03 CLASS OF CONCRETE:

For the purpose of practical identification, concrete has been divided into four classes: Class AA(AE), A(AE), B(AE) and C(AE). The specific use for each Class is identified in the Division in which the concrete is used. The symbol (AE) designates air-entrainment. Basic requirements for each class are as follows:

<table>
<thead>
<tr>
<th>Concrete</th>
<th>Maximum Net Class of Water Content (gallons/bag)</th>
<th>Minimum Cement Content (bags/cu.yd.)</th>
<th>Minimum 28-day Comp. Strength (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA(AE)</td>
<td>5</td>
<td>6 ½</td>
<td>4,000</td>
</tr>
<tr>
<td>A(AE)</td>
<td>6</td>
<td>6</td>
<td>3,500</td>
</tr>
<tr>
<td>B(AE)</td>
<td>7</td>
<td>5</td>
<td>2,500</td>
</tr>
<tr>
<td>C(AE)</td>
<td>8</td>
<td>4</td>
<td>2,000</td>
</tr>
</tbody>
</table>

Section 8.04 COMPOSITION OF CONCRETE:

Sub-section A. Aggregates:

Aggregates maximum size shall be not larger than one-fifth (1/5) of the narrowest dimension between forms within which the concrete is to be cast, nor larger than three-fourths (3/4) of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms. For un-reinforced concrete slabs, the maximum size of aggregates shall not be larger than one-fourth (1/4) the slab thickness.

Sub-section B. Water:

Water shall be added to the mix to produce concrete with the minimum practicable slump. The slump of mechanically vibrated concrete shall not exceed four-inch (4”). No concrete shall be placed with a slump in excess of five-inch (5”).

Sub-section C. Air-Content:

Air-Content for air-entrained concrete shall comply with the following:

<table>
<thead>
<tr>
<th>Course Aggregate Size (in.)</th>
<th>Air Content (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ½ to 2 ½</td>
<td>5 ± 1</td>
</tr>
<tr>
<td>3/4 or 1</td>
<td>6 ± 1</td>
</tr>
<tr>
<td>3/8 or ½</td>
<td>7 ± 1</td>
</tr>
</tbody>
</table>

The air-entraining agent shall be added as liquid to the mixing water by means of mechanical equipment capable of accurate measurement and control.
Sub-section D. Water Reducing:

Water reducing, set retarding admixtures shall not be used except with previous approval from the Public Works Representative/Engineer and shall in such a case, conform to the standards of materials set forth in the specification.

Section 8.05 DESIGN OF THE CONCRETE MIX:

The proportions of the aggregates shall be such as to produce a concrete mixture that will work readily into the corners and angles of the forms and around reinforcement when consolidated, but will not segregate or exclude free water during consolidation.

Prior to placement of concrete, the Developer/Contractor shall furnish the Public Works Representative/Engineer, for approval, a statement of the materials and mix proportions (including admixtures, if any) it intends to use. The statement shall include evidence satisfactory to the Public Works Representative/Engineer that the materials and proportions will produce concrete conforming to this specification. The materials and proportions so stated shall constitute the "job mix." After the job mix has been reviewed for conformance to specification by the Public Works Representative/Engineer, neither the source, character, grading of the aggregates, the type and brand of cement, nor admixture shall be changed without prior notice to the Public Works Representative/Engineer. If such changes are necessary, no concrete containing such new or altered materials shall be placed until the Public Works Representative/Engineer has approved a revised job mix.

Section 8.06 OBSERVATION AND TESTING:

The Public Works Representative/Engineer shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facilities shall be provided for the Public Works Representative/Engineer to observe the materials, equipment and processes and to obtain samples of the concrete. All tests and observations will be conducted so as not to interfere unnecessarily with manufacture and delivery of the concrete.

Section 8.07 HANDLING AND MEASUREMENT OF MATERIALS:

Materials shall be stockpiled and batched by methods that will prevent segregation or contamination of aggregates and insure accurate proportioning of the ingredients of the mix.

Except as otherwise provided in Division 8, cement and aggregates shall be measures as follows:

Cement shall be measured by weight or in bags of 94 pounds each. When cement is measured in bags, no fraction of a bag shall be used unless weighed.

Aggregates shall be measured by weight. Mix proportions shall be based on saturated, surface-dry weights. The batch weight of each aggregate shall be the required saturated, surface-dry weight plus the weight of surface moisture it contains.

Water shall be measured by weight, to accuracy within one per cent of the total quantity of water required for the batch.

Admixtures shall be measured within a limit of accuracy of three (3) percent.

Section 8.08 MIXERS AND MIXING:

Concrete shall be uniform and thoroughly mixed when delivered to the work. Variations in slump of more than one (1) inch within a batch will be considered evidence of inadequate mixing and shall be corrected by increasing mixing time or other means. For stationary mixers, the mixing time after all cement and aggregates are in the mixer drum shall be not less than 1½ minutes. When concrete is mixed in a truck mixer, the number of revolutions of the drum or blades at mixing speed shall be not less than 70 or more than 100.

Unless otherwise specified, volumetric batching and continuous mixing at the construction site will be permitted if approved by Public Works Representative/Engineer. The batching and mixing equipment shall conform to the requirements of ASTM Specification C-685 and shall be demonstrated prior to placement of concrete, by tests with
the job mix, to produce concrete meeting the specified proportioning and uniformity requirements. Concrete made by this method shall be produced, inspected, and certified in conformance with Sections 6, 7, 8, 13, and 14 of ASTM Specification C-685.

No mixing water in excess of the amount called for by the job mix shall be added to the concrete during mixing or hauling or after arrival at the delivery point.

Section 8.09 FORMS:

Forms shall be of wood, plywood, steel or other approved material and shall be mortar tight. The forms and associated falsework shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Form surfaces shall be smooth and free from holes, dents, sags or other irregularities. Forms shall be coated with a non-staining form oil before being set into place.

Metal ties or anchors within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least one inch without injury to the concrete.

All edges that will be exposed to view when the structure is completed shall be chamfered by placing molding in the forms, unless finishing with molding tools.

Section 8.10 PREPARATION OF FORMS AND SUBGRADE:

Prior to placement of concrete the forms and subgrade shall be free of chips, sawdust, debris, water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings. Any oil on the reinforcing steel or other surfaces required to be bonded to the concrete shall be removed. Rock surfaces shall be cleaned by air-water cutting, wet sandblasting or wire brush scrubbing, as necessary, and shall be wetted immediately prior to placement of concrete. Earth surfaces shall be firm and damp. Placement of concrete on mud, dried earth or uncompacted fill or frozen subgrade will not be permitted.

Unless otherwise specified, when concrete is to be placed over drain fill, the contact surface of the drain fill shall be covered with a layer of asphalt-impregnated building paper or polyvinyl sheeting prior to placement of the concrete. Forms for weepholes shall extend through this layer into the drain fill.

Items to be embedded in the concrete shall be positioned accurately and anchored firmly.

Weepholes in walls or slabs shall be formed with nonferrous materials.

Section 8.11 CONVEYING:

Concrete shall be delivered to the site and discharged into the forms within 1 ½ hours after the introduction of the cement to the aggregates. In hot weather or under conditions contributing to quick stiffening of the concrete, the time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes. The Public Works Representative/Engineer may allow a longer time, provided the setting time of the concrete is increased a corresponding amount by the addition of an approved set-retarding admixture. In any case, concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods that will prevent segregation of the aggregates or loss of mortar.

Concrete shall not be dropped more than five feet vertically unless suitable equipment is used to prevent segregation.

Section 8.12 PLACING:

Concrete shall not be placed until the subgrade, forms and steel reinforcement have been inspected and approved. No concrete shall be placed except in the presence of the Public Works Representative/Engineer. The Developer/Contractor shall give 48-hour notice to the Public Works Representative/Engineer each time it intends to place concrete. Such notice will give the Public Works Representative/Engineer adequate time to inspect the subgrade, forms, steel reinforcement and other preparations for compliance with the specifications before concrete is delivered for placing.
The concrete shall be deposited as closely as possible to its final position in the forms and shall be worked into the corners and angles of the forms and around all reinforcements and embedded items in a manner to prevent segregation of aggregates or excessive laitance. Unless otherwise specified, slab concrete shall be placed to design thickness in one continuous layer. Formed concrete shall be placed in horizontal layers not more than 20 inches thick. Hoppers and chutes, pipes or "elephant trunks" shall be used as necessary to prevent splashing of mortar on the forms and reinforcing steel above the layers being placed.

Immediately after the concrete is placed in the forms, it shall be consolidated by spading, hand tramping or vibration as necessary to insure smooth surfaces and dense concrete. Each layer shall be consolidated to insure monolithic bond with the preceding layer. If the surface of a layer of concrete in place sets to the degree that it will not flow and merge with the succeeding layer when spaded or vibrated, the Developer/Contractor shall discontinue placing concrete and shall make a construction joint according to the procedure specified.

If placing is discontinued when a incomplete horizontal layer is in place, the unfinished end of the layer shall be formed by a vertical bulkhead.

Section 8.13 CONSTRUCTION JOINTS:

Construction joints shall be made at the locations shown on the Drawings. If construction joints are needed which are not shown on the Drawings, they shall be placed in locations approved by the Public Works Representative/Engineer.

Where a featheredge would be produced at a construction joint, as in the top surface of a sloping wall, an inset form shall be used so that the resulting edge thickness on either side of the joint is not less than six-inches (6”).

In walls and columns, as each lift is completed, the top surfaces shall be immediately and carefully protected from any condition that might adversely affect the hardening of the concrete.

Steel tying and form construction adjacent to concrete in place shall not be started until the concrete has cured at least 12 hours. Before new concrete is deposited on or against concrete that has hardened, the forms shall be retightened. New concrete shall not be placed until the hardening concrete has cured at least 12 hours.

Surfaces of construction joints shall be cleaned of all unsatisfactory concrete, laitance, coatings or debris by washing and scrubbing with a wire brush or wire broom or by other means approved by the Public Works Representative/Engineer. The surfaces shall be kept moist for at least one hour prior to placement of the new concrete.

Section 8.14 EXPANSION AND CONTRACTION JOINTS:

Expansion and contraction joints shall be made only at locations shown on the drawings.

Exposed concrete edges at expansion and contraction joints shall be carefully tooled or chamfered, and the joints shall be free of mortar and concrete. Joint filler shall be left exposed for its full length with clean and true edges.

Preformed expansion joint filler shall be held firmly in the correct position as the concrete is placed.

Open joints, when specified, shall be constructed by the insertion and subsequent removal of a wooden strip, metal plate or other suitable template in such a manner that the corners of the concrete will not be chipped or broken. The edges of open joints shall be finished with an edging tool prior to removal of the joint strips.

Section 8.15 WATERSTOP:

Waterstops shall be held firmly in the correct position as the concrete is placed. Joints in metal waterstops shall be soldered, brazed or welded. Joints in rubber or plastic waterstops shall be cemented, welded or vulcanized as recommended by the manufacturer.

Section 8.16 REMOVAL OF FORMS:
Forms shall not be removed without the approval of the Public Works Representative/Engineer. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take the stresses due to its own weight uniformly and gradually.

**Section 8.17    FINISHING FORMED SURFACES:**

Immediately after the removal of the forms:

A. All fins and irregular projections shall be removed from exposed surfaces.

B. On all surfaces, the holes produced by the removal of form ties, cone-bolts, and she-bolts shall be cleaned, wetted and filled with a dry-pack mortar consisting of one part Portland cement, three parts sand that will pass a No. 16 sieve, and water just sufficient to produce a consistency such that the filling is at the point of becoming rubbery when the material is solidly packed.

**Section 8.18    FINISHING UNFORMED SURFACES:**

All exposed surfaces on the concrete shall be accurately screeded to grade and then float finished, unless specified otherwise.

Excessive floating or troweling of surfaces while the concrete is soft will not be permitted.

The addition of dry cement or water to the surface of the screeded concrete to expedite finishing will not be allowed.

Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools.

**Section 8.19    CURING AND PROTECTION:**

Concrete shall be prevented from drying for a curing period of at least 7 days after it is placed. Exposed surfaces shall be kept continuously moist for the entire period, or until curing compound is applied as specified below. Sprinkling, flooding or fog spraying shall maintain moisture or by covering with continuously moistened canvas, cloth mats, straw, sand or other approved material. Wood forms (except plywood) left in place during the curing period shall be kept wet. Formed surfaces shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged.

As soon as the concrete has hardened sufficiently to prevent damage, the finished surface shall be protected for curing one of the following ways:

1. Ponding of water on the surface or continuous sprinkling.

2. Application of absorptive mats such as three-inches (3") of cured hay, clean straw or fabric kept continuously wet.

3. Application of two-inches (2") of moist earth or sand uniformly distributed on the surface and kept saturated by spraying with water.

4. Application of light colored waterproof plastic materials, conforming to "Specifications for Waterproof Sheet Materials for Curing Concrete" ASTM C-171, placed and maintained in contact with the surface of the concrete.

5. Application of a curing compound, conforming to "Specifications for Liquid Membrane - Forming Compounds for Curing Concrete" ASTM C-309. The compound shall be light in color and shall be applied in accordance with the manufacturers recommendations immediately after any water sheen, which may develop after finishing, has disappeared from the concrete surface.
Curing compound shall not be applied to surfaces requiring bond to subsequently placed concrete, such as construction joints, shear plates, reinforcing steel and other embedded items. If the membrane is damaged during the curing period, the damaged area shall be re-sprayed at the rate of application specified above.

Section 8.20 REMOVAL OR REPAIR:

When concrete is honey combed, damaged or otherwise defective, the Developer/Contractor shall remove and replace the structure or structural member containing the defective concrete or, where feasible, correct or repair the defective concrete. Prior to starting repair work the Developer/Contractor shall obtain the Public Works Representative/Engineer’s approval of its plan for effecting the repair. The Developer/Contractor shall perform all repair work in the presence of the Public Works Representative/Engineer.

Section 8.21 CONCRETING IN COLD WEATHER:

Concrete shall not be mixed nor placed when the daily minimum atmospheric temperature is less than 40 degrees unless facilities are provided to prevent the concrete from freezing. The use of accelerators or antifreeze compounds will not be allowed.

Section 8.22 CONCRETING IN HOT WEATHER:

The Developer/Contractor shall apply effective means to maintain the temperature of the concrete below 90 degrees during mixing, conveying and placing.
DIVISION 9
REINFORCING STEEL

Section 9.01 GENERAL:

Furnish and place reinforcing steel and reinforcing steel (epoxy-coated). Use deformed billet-steel bars as specified. All reinforcing bars shall be Grade 40 or Grade 60 as required. Wire Fabric shall conform to ASTM A185-70.

Before supply of steel, the Developer/Contractor shall provide all order lists and bending diagrams for approval of the Public Works Representative/Engineer. The approval of such lists and diagrams shall in no way relieve the Developer/Contractor of responsibility for the correctness of reinforcing supplied and all expenses incidental to revision of furnished reinforcing steel shall be carried by the Developer/Contractor.

Section 9.02 FABRICATION AND PLACING REINFORCEMENT:

Sub-section A. Fabrication:

Reinforcement shall be cold bent to the shapes shown in accordance with ACI 1997 Standard Code (ACI 318-97) Chapter 7 Section 7.1.

Sub-section B. Clearances:

All bars shall be of the size specified and shall be placed in the positions shown on the Drawings in such a manner as to be firmly held during the placing of the concrete. Where not otherwise indicated, minimum clearance and cover as required by the ACI Code, Section 7.7 shall be maintained.

<table>
<thead>
<tr>
<th>Reinforced Clearances</th>
<th>Minimum Cover (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cast in Place Concrete (Non Prestressed)</td>
<td></td>
</tr>
<tr>
<td>Concrete cast against and permanently exposed to earth</td>
<td>3</td>
</tr>
<tr>
<td>Concrete exposed to earth or weather:</td>
<td></td>
</tr>
<tr>
<td>No. 6 through No. 18 Bar</td>
<td>2</td>
</tr>
<tr>
<td>No. 5 Bar, W31 or D31 wire, and smaller</td>
<td>1 ½</td>
</tr>
<tr>
<td>Concrete not exposed to weather or in contact with ground:</td>
<td></td>
</tr>
<tr>
<td>Slabs, Walls, and Joists-</td>
<td></td>
</tr>
<tr>
<td>No. 14 and No. 18 Bar</td>
<td>1 ½</td>
</tr>
<tr>
<td>No. 11 Bar and smaller</td>
<td>3/4</td>
</tr>
<tr>
<td>Beams, Columns-</td>
<td></td>
</tr>
<tr>
<td>Primary reinforcements, ties, stirrups, spirals</td>
<td>1 ½</td>
</tr>
<tr>
<td>Shells, Folded Plate Members</td>
<td></td>
</tr>
<tr>
<td>No. 6 Bar and larger</td>
<td>3/4</td>
</tr>
<tr>
<td>No. 5 Bar, W31 or D31 wire, and smaller</td>
<td>½</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reinforced Clearances</th>
<th>Minimum Cover (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precast Concrete (Manufactured Under Plant Controlled Conditions)</td>
<td></td>
</tr>
<tr>
<td>Concrete Exposed to earth or weather-</td>
<td></td>
</tr>
<tr>
<td>Wall Panels:</td>
<td></td>
</tr>
</tbody>
</table>
### Reinforced Clearances

<table>
<thead>
<tr>
<th>Precast Concrete (Manufactured Under Plant Controlled Conditions)</th>
<th>Minimum Cover (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 14 and No. 18 Bars</td>
<td>1 ½</td>
</tr>
<tr>
<td>No. 11 Bar and smaller</td>
<td>3/4</td>
</tr>
<tr>
<td>Other Members:</td>
<td></td>
</tr>
<tr>
<td>No. 14 and No. 18 bars</td>
<td></td>
</tr>
<tr>
<td>No. 6 through No. 11 Bars</td>
<td>1 ½</td>
</tr>
<tr>
<td>No. 5 Bar, W31 or D31 wire, and smaller</td>
<td>1 1/4</td>
</tr>
</tbody>
</table>

Concrete not exposed to weather or in contact with ground:-

| Slabs, Walls, and Joists:                                         |                        |
| No. 4 and No. 18 Bars                                            | 1 1/4                  |
| No. 11 Bar and smaller                                            | 5/8                    |

| Beams, Columns:                                                  |                        |
| Primary reinforcement                                           | 1 ½                    |
| Ties, stirrups, spirals                                         | 3/8                    |

| Shells, folded plate members:                                    |                        |
| No. 6 Bar and larger                                            | 5/8                    |
| No. 5 Bar, W31 or D31, and smaller                               | 3/8                    |

### Sub-section C. Support:

Bars shall be tied at all intersections except where the spacing is less than twelve inches (12") where alternate intersections shall be tied. Distance from supports shall be by means of ties, hangers, or other approved supports. Metal chairs of approved design shall be used to hold reinforcement from contact with the forms. Metal chairs that are in contact with the exterior surface of the concrete shall be galvanized. Layers of bars or when placing concrete directly on a prepared subgrade reinforcing shall be separated by precast mortar blocks or by other equally suitable devices. The use of stones, pieces of broken brick, metal pipe, or wooden blocks shall not be permitted. Reinforcement in any member shall be placed and then inspected and approved by the Public Works Representative/Engineer before the placement of concrete begins. Concrete placed in violation of this provision may be rejected in which case removal will be required.

If the fabric reinforcement is shipped in rolls, it shall be straightened into flat sheets before being placed.

### Sub-section D. Splicing:

All splices shall be staggered so that splices in adjacent bars shall be not less than four feet (4') apart, and shall conform to ACI Code Section 12.15.

### Section 9.03 EPOXY COATING:

#### Sub-section A. Prequalify all Coatings:

Ensure that epoxy coating applicator has Concrete Reinforcing Steel Institute (CRSI) fusion bonded epoxy coating applicator plant certification. Furnish a copy of the Prequalification Test Report to the Public Works Representative/Engineer. Provide an 8-ounce sample of the coating material from each batch.

#### Sub-section B. Coat Bars as Specified:
The following requirements shall be followed:

Maintain the coating thickness between 8 and 12 mils.

Coat bars after bending, unless the fabricator can show that satisfactory results can be obtained by coating before bending

Reject any bent bars with visible cracks or damage in the coating.

**Sub-section C: Handling:**

Do not damage the bars or the coating during handling and storage.

Use systems with padded contact areas when handling coated bars.

Pad all bundling bands.

Lift all bundles with strong back, multiple supports, or a platform bridge.

Do not drop or drag bars.

Repair damaged bars or coating at no additional cost to the Owner.

Use patching material per manufacturer's recommendation to repair damaged coating.

Have the coated bars inspected for damage to the coating after the bars are in place and immediately before concrete placement.

Repair all visible defects using the specified patching or repair material.

**Section 9.04  FIELD CUTTING:**

**Sub-section A. Cutting:**

Saw or shear epoxy-coated bars that are specified to be cut in the field. Do not flame cut.

**Sub-section B. Repairing:**

Repair the sawed or sheared end using the specified patching or repair material.
DIVISION 10

RESTORATION OF SURFACE IMPROVEMENTS

Section 10.01 GENERAL:

The Developer/Contractor shall be responsible for the protection and the restoration or replacement of any improvements existing on public or private property at the start of work or placed there during the progress of the work.

Existing improvements shall include but not to be limited to permanent surfacing, curbs, gutters, sidewalks, planted areas, ditches, driveways, culverts, fences, and walls. All improvements shall be reconstructed to equal or better, in all respects, than the existing improvements removed.

Section 10.02 FIELD VERIFICATION OF IMPROVEMENTS:

In submitting a bid, the Developer/Contractor will be deemed to have carefully examined the site of the work and to have acquainted itself with all conditions relating to the protection and restoration of existing improvements. The Public Works Representative/Engineer does not guarantee that all improvements are shown on the Drawings, and it shall be the Developer/Contractor's responsibility to provide in its bid for the protection and restoration of all existing improvements whether or not each is provided for specifically on the Drawings and/or Bid Form.

Section 10.03 REMOVAL OF PAVEMENT, SIDEWALKS, CURBS, ETC.:

The pavement, sidewalk, curb and gutter, driveway, etc. shall be cut vertically along the lines forming the trench, or nearest full joint, in such a manner as to not cause damage to adjoining pavement, sidewalk, curb and gutter, driveway, etc. An undercut level at the rate of one inch (1") per foot of thickness or an underlap joint will be provided at the proposed junction between old and new surfaces. The portion to be removed shall be broken up in a manner that will not cause damage to the pavement or concrete outside the limits of the trench; however, any pavement damaged by operations outside the limits of the trench shall be replaced at the Developer/Contractor's expense. Broken paving materials shall be removed immediately from the site of the work.

Section 10.04 MATERIALS:

Materials used for repair or replacement of surface improvements shall be equal to or better than the material removed

Sub-section A. Untreated Base Course:

Untreated base course shall comply with the requirements of Division 11, Section 11.08, Base Course. The Public Works Representative/Engineer shall take samples of the untreated base course on a random basis. All materials not meeting the tolerance requirements shall be removed from the project and replaced with specification material.

Sub-section B. Bituminous Surface Course.

The bituminous surface shall be hot-rolled plant mix in accordance with Division 11, Section 11.09, Bituminous Asphalt Cement Pavement.

Sub-section C. Concrete:

Concrete shall comply with Division 8 of these Standard Specifications. Concrete shall be Class AA(AE).
Section 10.05 RESTORING BITUMINOUS, CONCRETE, OR ASPHALT STREET SURFACES:

Where trenches are in or cross bituminous or concrete surfaced roads, traffic lanes, driveways, parking areas, etc., the bituminous or concrete surface shall be cut, restored as quickly as there is sufficient quantity to make it practical, weather permitting, and maintained as follows:

Sub-section A. Before Excavation.

All existing asphalt or concrete surfaces shall be saw cut or roto-milled to a square edge before excavation.

Sub-section B. Temporary Graded Surface.

Until resurfacing can be done in paved areas a temporary gravel surface shall be placed deep enough to provide a minimum of eight inches (8”) below the bottom of the bituminous surface and shall be brought flush with the paved surface.

The untreated base shall be placed in the trench at the time it is backfilled. Excess material shall be removed from the premises immediately. The Developer/Contractor will maintain the temporary gravel surface until the asphalt is placed.

Sub-section C. Preparation for Paving.

The area over trenches to be resurfaced shall be graded and rolled with a roller weighing not less than 12 tons, or with the rear wheels of a five-yard truck loaded to capacity, until the subgrade is firm and unyielding. Mud or other soft or spongy material shall be removed and the void filled with gravel and rolled and tamped thoroughly in layers not exceeding six inches in thickness. The edges of trenches, which are broken down during the making of subgrade, shall be removed and trimmed neatly before resurfacing.

Before any permanent resurfacing is placed, the Developer/Contractor shall trim the existing paving to clean straight lines as nearly parallel to the centerline of the trench as practicable. Said straight lines shall be thirty feet minimum lengths and no deviations from such lines shall be made except as specifically permitted by the Public Works Representative/Engineer.

Existing bituminous paving shall be saw cut or roto-milled back a minimum of six inches beyond the limits of any excavation or cave-in along the trench so that the edges of the new paving will rest on at least six-inches (6”) of undisturbed soil.

Sub-section D. Bituminous Surface.

The bituminous surface over trenches shall be restored by standard paving practices to a minimum thickness of three inches (3”). Gradation of aggregate shall conform to the 3/4-inch gradation limits as defined in the Standard Specifications for Road and Bridge Construction.

Pavement restoration shall include priming of pavement edges with Type MC-70 bituminous material and placing rolled plant hot mix bituminous material to the level of the adjacent pavement surfaces.

Section 10.06 GRAVEL SURFACE:

Where trenches are excavated through gravel-surfaced areas such as roads and shoulders, parking areas, unpaved driveways, etc., the gravel surface shall be restored and maintained as follows:

Sub-section A:

The gravel shall be placed deep enough to provide a minimum of six inches of material.

Sub-section B:
The gravel shall be placed in the trench at the time it is backfilled. The surface shall be maintained by blading, sprinkling, rolling, adding gravel, etc., to maintain a safe, uniform surface. Excess material shall be removed from the premises immediately.

Sub-section C:

Material for use on gravel surfaces shall be obtained from sound, tough, durable gravel or rock meeting the following requirements for gradation:

<table>
<thead>
<tr>
<th>Sieve Diameter</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-inch</td>
<td>100%</td>
</tr>
<tr>
<td>1/2-inch</td>
<td>79-91%</td>
</tr>
<tr>
<td>No. 4 sieve</td>
<td>49-61%</td>
</tr>
<tr>
<td>No. 16 sieve</td>
<td>27-35%</td>
</tr>
<tr>
<td>No. 200 sieve</td>
<td>7-11%</td>
</tr>
</tbody>
</table>

Section 10.07 MISCELLANEOUS IMPROVEMENTS:

It shall be the Developer/Contractor's responsibility to restore to their original condition all irrigation canals, levees, culverts, gates, fences, drainage ditches, and all such improvements which are cut or disturbed during construction. Topsoil in farming areas or along road edges shall be stored separate from subsoil during pipe trench excavation. Topsoil shall be replaced during backfill operations as nearly as possible to its original condition, thereby assuring suitable soil for reseeding.

Section 10.08 RESTORATION OF SURFACES:

Unless otherwise directed, all street surfacing, curbs, gutters, sidewalks, driveways, or other hard surface that must be removed in the performance of the work shall be restored in kind by the Developer/Contractor in accordance with the Specifications contained herein. Deviation of more than one-fourth inch (1/4") between old and new work or within new construction shall be corrected. Such measurement shall be made from a ten-foot (10') minimum length straight edge. Adjoining surfaces between old and new must be flush.

Section 10.09 CLEANUP:

At the completion of each area of work all equipment, barricades, and similar items shall be removed from the area. All excess material will be removed. Adjacent borrow pits and road shoulders used for storage of excavating materials will be smoothed and returned to its original contour.

Section 10.10 PAVEMENT MARKINGS:

The Developer/Contractor shall be responsible for restoration of pavement markings on all City and/or County roadways. Restoration of pavement markings shall conform to the applicable local and state specifications.

On roadways under UDOT jurisdiction temporary pavement markings shall be provided for any removed or obliterated markings. The temporary markings shall conform to UDOT standards and specifications. Permanent pavement markings will be replaced by UDOT.
DIVISION 11
ROADWAY CONSTRUCTION

Section 11.01 GENERAL:

This Division covers roadway construction. Work shall consist of pulverizing existing asphalt, earthwork, roadway excavation, 6-inch curb walls, 24-inch curb and gutter, 6-foot monolithic curb gutter and sidewalk, and drive approaches. It will also include imported granular borrow, curb face inlet boxes including connection to existing storm drain, subgrade preparation, untreated base course, asphalt surface and raising manholes and valve boxes to grade.

Section 11.02 PULVERIZING:

The Developer/Contractor shall pulverize the existing asphalt and roadbase to a depth of 6 to 8 inches. The limits of the area to be pulverized will be as shown on the improvement drawings. This material will be used for granular borrow or untreated roadbase. The Developer/Contractor has the option of methods he feels will result in the least work and best product in breaking up the existing asphalt, provided that the maximum size for a single piece of asphalt does not exceed 3-inches. Placing, grading and compacting of this material shall comply with the requirements of borrow or roadbase. The existing asphalt edges where the pulverizing terminates shall be saw cut following or prior to being pulverized.

Section 11.03 EARTHWORK:

The earthwork needed for roadway construction shall meet the requirements of Division 7, Earthwork.

Section 11.04 ROADWAY EXCAVATION:

Following completion of the curb and gutter improvements the roadway between lip of gutters shall be excavated to the lines and grades shown on the improvements drawings. Materials not suitable for use as granular borrow or roadbase shall be removed from the road section. Excavation may be done on one-half of the road at a time.

Section 11.05 SUBGRADE PREPARATION:

This work shall consist of the shaping and compacting of the subgrade in accordance with these specifications and in conformity with the lines, grades, and typical cross sections shown on the Drawings or as established by the Public Works Representative/Engineer.

Following roadway excavation the subgrade shall be proof rolled by running moderate-weight rubber tire-mounted construction equipment uniformly over the surface at least twice. During the rolling operation moisture content of the subgrade layer shall be maintained at not less than 97% or more than 105% of the optimum moisture content. Rolling shall be continued until the entire roadbed is compacted to the specified density to a minimum depth of 8 inches.

Section 11.06 GRANULAR BORROW:

Granular borrow (foundation or roadway) material shall consist of well graded granular bank run natural aggregate material with a maximum size of 3 inches and less than 15% passing a No. 200 sieve. The material shall meet the following gradation:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 10</td>
<td>50 max.</td>
</tr>
<tr>
<td>No. 40</td>
<td>30 max.</td>
</tr>
<tr>
<td>No. 200</td>
<td>15 max.</td>
</tr>
</tbody>
</table>
The granular borrow material shall be compacted to not less than 96% maximum dry density as determined by AASHTO T-99. Granular foundation borrow shall be compacted to not less than 95% of maximum dry density as determined by ASTM D-1557. Surfaces shall be true to the established grade with thickness being not less than 1/4-inch from the required layer thickness and with the surface elevation varying not more than 3/8-inch in ten feet from the true profile and cross section.

Section 11.07 GRANULAR BACKFILL BORROW:

Granular backfill borrow shall be free draining natural aggregate material meeting the following gradation:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - ½ inch</td>
<td>100</td>
</tr>
<tr>
<td>1 inch</td>
<td>95-100</td>
</tr>
<tr>
<td>½ inch</td>
<td>25-60</td>
</tr>
<tr>
<td>No. 4</td>
<td>0-10</td>
</tr>
</tbody>
</table>

Section 11.08 BASE COURSE:

Base for all streets shall consist of select material, either natural aggregate or crushed slag, and shall be graded as follows:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4 inch</td>
<td>100</td>
</tr>
<tr>
<td>3/8 inch</td>
<td>78-92</td>
</tr>
<tr>
<td>No. 4 sieve</td>
<td>55-67</td>
</tr>
<tr>
<td>No. 16 sieve</td>
<td>28-38</td>
</tr>
<tr>
<td>No. 200 sieve</td>
<td>7-11</td>
</tr>
</tbody>
</table>

Slag 4133 (3/4 inch minus) and slag 4120 (3/4 inch minus) can be used.

The material shall be deposited and spread in a uniform layer, without segregation of size, with such depth that when compacted the layer will have the required thickness as stated below. Each layer shall be compacted for the full width and depth. Alternate blading and rolling will be required to provide a smooth, even and uniformly compacted course true to cross section and grade. Places inaccessible to rolling shall be compacted with mechanically operated hand tampers.

The gravel base shall be compacted to not less than 96% maximum dry density as determined by AASHTO T-180. Surfaces shall be true to the established grade with thickness being not less than 1/4-inch from the required layer thickness and with the surface elevation varying not more than 3/8-inch in ten feet from the true profile and cross section.

Section 11.09 BITUMINOUS ASPHALT CEMENT PAVEMENT:
The bituminous asphalt cement surface course shall not be placed until the Public Works Representative/Engineer has approved the underlying base course. The bituminous asphalt cement surface course shall be placed no less than 7 days following this approval. After 7 days the base course must be re-inspected before the surface course is placed.

Over the dry, dust-free compacted base course the Developer/Contractor shall place and compact a bituminous asphalt cement surface course. The surface course shall consist of a mixture of mineral aggregate and binder. Gradation of aggregate shall conform to the following:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4 inch</td>
<td>100</td>
</tr>
<tr>
<td>3/8 inch</td>
<td>69-91</td>
</tr>
<tr>
<td>No. 4</td>
<td>42-58</td>
</tr>
<tr>
<td>No. 16</td>
<td>17-31</td>
</tr>
<tr>
<td>No. 50</td>
<td>9-21</td>
</tr>
<tr>
<td>No. 200</td>
<td>4-8</td>
</tr>
</tbody>
</table>

The Developer/Contractor shall establish a mix gradation, and the amount of bituminous material shall be subject to the approval of the Public Works Representative/Engineer and shall meet the requirements of the gradation selected. Regardless of the bituminous content, there shall not be more than 3% voids in the aggregate.

The bituminous material for the surface course shall be AC-10 penetration asphalt cement conforming to the requirements of ASTM M20-60.

The bituminous surface course shall be mixed at a mixing plant and spread and compacted on the prepared base in conformance with the lines and dimensions shown on the Drawings and in accordance with these Specifications.

The bituminous mixtures shall be spread with self-propelled mechanical spreading and conditioning equipment capable of distributing at least a 12-foot width. The mixture shall be spread and struck off in such a manner that the finished surface shall result in a uniform smooth surface. The longitudinal joints in succeeding courses shall be offset at least 6-inches transversely to avoid a vertical joint through more than one course. *The final elevation of the asphalt shall be 1/4" above the lip of curb elevation.* Pavement shall be completed within 7 days from the time of roadbase preparation, unless otherwise approved by the City Engineer. *The contractor is responsible for all trench maintenance until paving is complete.*

The temperature of the bituminous mix shall be between 270 deg. F. and 325 deg. F. when placing.

After the mixture has been spread, the surface shall be rolled in longitudinal direction commencing at the outside edge or lower side and proceeding to the higher side. Each pass of the roller shall overlap the preceding pass at least one-half the width of the roller. Rolling shall continue until 95% of the laboratory density as determined in accordance with ASTM Designation D-1559 for the bituminous mixture being used has been obtained. Density tests shall be done following the procedures of ASTM D-2950.

Rolling operations shall be conducted in such a manner that shoving or distortion will not develop beneath the roller.

The surface of the pavement, after compaction, shall be uniform and true to the established grade. When tested with a ten-foot (10) straight edge placed on the surface of the pavement, at any point, the surface shall not deviate more than one-eighth of an inch from the lower edge of the straight edge. All high and low spots shall be remedied immediately by removing the wearing course material over the affected areas and replacing it with fresh, hot wearing course and surface finish material and immediately compacting it to conform with surrounding area.
It is the responsibility of the Developer/Contractor to control traffic. All traffic shall be kept off the completed surface for a minimum period of 24 hours unless specifically approved by the City.

No bituminous surface course shall be placed when the temperature of the air or roadbed is 50 deg. F. or below, during rainy weather, when the base is wet, or during other unfavorable weather conditions as determined by the Public Works Representative/Engineer. The air temperature shall be measured in the shade.

Section 11.10 ADJUSTING MANHOLES AND VALVE BOXES TO FINAL GRADE:

This section covers the requirements for adjusting manholes and valves to final grade. The adjustment shall be made with cast-iron ring inserts concrete grade rings or cast-in-place concrete collars. Cast-in-place concrete collars shall be constructed after the asphalt surface has been placed.

When concrete rings are used the concrete shall conform to the requirements of Division 8. Concrete shall be Class AA(AE). The concrete mix shall be one part cement to two parts sand or Kent Seal.

Manhole rings shall be set to the grade and slope of the road – shim and grout ring into place.

Manholes, valves and monuments placed in asphalt surfacing shall be set in a concrete collar. The collar shall be at least eleven inches (11") thick and extend at least twelve to eighteen inches (12" to 18") from the cast iron ring or valve box. The concrete collar shall be constructed such that at the interface with the asphalt, the collar shall be one-half inch (½") lower than the pavement. The cast iron ring or valve box shall be constructed such that it is three-fourths inch (3/4") lower than the pavement. All collars shall be installed within fourteen days (14) of asphalt placement.

Where manholes are to be raised this is be accomplished by removing the cover and frame and raising the manhole to proper elevation with concrete.

Rings and covers shall be protected during backfilling and compaction of the soil and during the placing or replacing of road surfaces. Any ring or cover loosened from the manhole section shall be resent in cement mortar and any ring or cover damaged or broken shall be replaced by the Developer/Developer/Contractor at its expense.

Section 11.11 SLURRY SEAL COAT:

Slurry Seal shall consist of a properly proportioned mixture of fine graded aggregate, mineral filler, emulsified asphalt and water mixed and evenly spread as a surface treatment. The cured slurry shall have a homogeneous appearance, fill all cracks, adhere firmly to the surface and have skid resistant texture.

Materials shall be per Section 405 of the Utah Department of Transportation Standard Specifications and as follows:

A. The emulsified asphalt shall meet the current specifications of the American Society of Testing and Materials (ASTM) for cationic emulsified asphalt grade CSS-1hr (ASTM D 2397), grade SS-1hr for anionic emulsified asphalt (ASTM D 977) or quick setting asphalt emulsion (QSH) or (CQS-1hr).

B. Aggregate: The mineral aggregate shall consist of natural or manufactured sand, slag, crushed fines or a combination thereof. The aggregate shall be clean and free from other materials. The aggregate blend shall have a sand equivalent of not less than forty-five (45). The mineral aggregate shall conform to the quality requirements of ASTM D 1073.

C. Mineral Filler: Mineral filler shall be portland cement, hydrated lime or aluminum sulfate conforming to ASTM D 242.

D. The combined aggregate and mineral filler shall conform to the following gradation:
<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>PERCENT PASSING BY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4</td>
<td>100</td>
</tr>
<tr>
<td>No. 8</td>
<td>85-100</td>
</tr>
<tr>
<td>No. 16</td>
<td>10-25</td>
</tr>
<tr>
<td>No. 50</td>
<td>0-5</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-2</td>
</tr>
</tbody>
</table>

E. The aggregate spread shall be an average of eighteen (18) pounds per square yard and not less than fifteen (15) pounds shall receive a second application at the contractors expense.

F. Water: All water used with the slurry mixture shall be potable and free from harmful soluble slats.

G. Selection of materials and rate or percentage of each in the slurry mix shall be in accordance with the following:

The contractor shall provide the Engineer with test results from an independent laboratory of materials he intends to use. The tests results shall conform to the requirements of ASTM D 3910-80a and shall be as follows:

1. Consistency Test  4.4.4
2. Set Time  4.4.5
3. Cure Time  4.4.6
4. Wet Track Abrasion Test  4.4.7

The contractor shall include the cost of the above tests in the unit bid price for Asphalt for Slurry Seal Coat.

H. Equipment. The equipment shall be designed specifically for the blending, mixture and placing of "Slurry Seal" similar and/or equal to the #804 Young Continuous Mix Slurry Machine. The slurry machine shall have been calibrated in advance to ensure proper proportioning of the materials, and all equipment used in the performance of this work shall be maintained in satisfactory working order at all times.

Surface preparation, asphalt material application, cover material application, and surface rolling shall be in accordance with Section 405 of the Utah Department of Transportation Standard Specifications and as follows:

**Preparation of Surfaces**: Immediately prior to applying the slurry, unsatisfactory areas shall be repaired and the surface shall be cleaned of all oil spots, loose paint, silt spots, vegetation, and other loose and objectionable material. Any standard cleaning method may be used, except that water flushing will not be permitted in areas where considerable cracks are present in the pavement surface. Areas that have been subject to fuel or oil spillage shall be wire-brushed to remove any dirt accumulations. The area shall then be primed with shellac or a synthetic resin to prevent the sealcoat from debonding. The authorized representative of the owner shall give final approval that the surface has been prepared properly.

**Application**: The surface shall be pre-wetted by fogging ahead of the slurry box. Water shall be applied at a rate of 0.02 to 0.05 gals/yd². No free water shall be on the surface of the pavement in front of the slurry box. The slurry mixture shall be of the desired consistency upon deposit on the surface and no additional elements shall be added. A sufficient amount of slurry shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader shall be avoided. No lumping, balling or unmixed aggregate shall be permitted. No segregation of the emulsion and aggregate fines from the coarse shall be permitted. No excessive breaking of emulsion shall be allowed in the spreader box. No streaks, such as those caused by oversized aggregate will be left in the finished pavement.
Joints: Build up on longitudinal and traverse joints shall not be permitted. Slurry seal placed adjacent to concrete pavements or concrete curb and gutter shall be placed with a straight longitudinal edge and shall not overlap the concrete by more than two (2") inches. All edges shall be straight and neat in appearance.

Hand Work: Approved squeegees shall be used to spread slurry in non-accessible areas to slurry mixer. Care should be exercised not to leave an unsightly appearance from handwork.

Curing: Treated areas shall be allowed to cure until such time as the Engineer permits opening to traffic.

Weather Limitations: No slurry shall be applied, a) when there is any danger that the unfinished product will freeze before it cures completely; b) when the pavement or air temperature is 55°F (13°C) or below and falling, but may be applied when both air and pavement temperature are 45°F (7°C) or above and rising; or c) in the period following a rain while puddles of water remain on the surface to be coated. Slurries that cure by evaporation should not be laid during periods of abnormally high humidity, or when rain may fall within a few hours. Slurries that cure by chemical ejection of water may be laid without regard to existing humidity, even during periods of light rainfall.

Traffic Control: Suitable methods such as barricades, flagmen, pilot cars, etc., shall be used to protect the uncured slurry surface from all types of traffic. Any damage to the uncured slurry will be the responsibility of the contractor. Unless otherwise approved, all traffic control devices are to remain in place at least 24 hours.

Section 11.12 ASPHALT PAVING:

All streets shall be surfaced in accordance with the following, unless otherwise specified by the City Engineer.

Local Streets:
A. 8-inch minimum crushed gravel base course over prepared subgrade.
B. 3-inch minimum compacted thickness plant mix asphalt surfacing on streets.

Collector Streets:
A. 10-inch minimum crushed gravel base course over prepared subgrade.
B. 4-inch minimum compacted thickness plant mix asphalt surfacing on streets.

Minor Arterial Streets:
A. 10-inch minimum crushed gravel base course over prepared subgrade.
B. 4-inch minimum compacted thickness plant mix asphalt surfacing on streets.

Arterial Streets:
A. Pavement structure will be based on specific design to meet specific conditions.

Note – The developer may be required to submit a pavement design for review on any street.
DIVISION 12

CONCRETE CURB AND GUTTER AND SIDEWALK

Section 12.01 GENERAL:

This section covers installation of curb and gutter, sidewalk, combination of curb, gutter and sidewalk, cross gutter, drive approaches handicap ramps and curb returns. All improvements shall be constructed to the dimensions and thickness shown on the Standard Drawings.

Section 12.02 CONCRETE:

Concrete shall be Class AA(AE) and shall meet all of the requirements of Division 8, Portland Cement Concrete. Under no condition shall the water cement ratio exceed 0.53.

Section 12.03 GRADE:

After construction, gutters shall be checked by flowing water. The Public Works Representative/Public Works Representative/Engineer shall be present during the flow test. Removing concrete and replacing to the correct grade shall repair any high spots or depressions (which exceed 0.02 feet). (Minimum flow line grade shall be 0.5 percent.)

Section 12.04 FORMS:

All forms shall be steel, except at curves with a radius smaller than 200 feet. They shall be of a size to match the sections shown on the Drawings. Forms shall be held firmly in place with stakes or other approved means and shall be true to line and grade.

All forms shall be clean and coated with a light oil to prevent the concrete from adhering to them. Clamps, spreaders and braces shall be used where required to insure rigidity in the forms.

Forms shall not vary from vertical grade by more than 0.02 feet and from horizontal alignment by more than 0.05 feet. All forms shall have smooth even lines in both the horizontal and vertical plane.

Forms for curved sections shall be so constructed and placed that the finish surface of walls and edge of sidewalks, curbs and gutters will not deviate from the arc of the curve.

Section 12.05 SUBGRADE PREPARATION:

The developer/Developer/Contractor shall grade to the line and grade approved by the City. No concrete shall be placed without approved cut sheets. The sub-grade shall be properly shaped to conform with the cross section shown on the Standard Drawings, graded and compacted. Compaction shall meet the requirements of Division 7 Earthwork.

All excess material excavated by the Developer/Developer/Contractor shall be removed from the site. Removal of the excavated material shall be done before or immediately after the concrete is placed. The Developer/Developer/Contractor shall maintain adequate barricades and other devices to protect the public until excavated material is removed.

Placement of concrete on unsuitable materials shall not be permitted. The subgrade surface shall have a 4-inch roadbase foundation as shown on the Standard Drawings. Immediately prior to the placing of concrete, the subgrade shall be compacted using a mechanical foot compactor, with compaction being at least ninety-six percent (96%) density.

Section 12.06 CONSTRUCTION OF CURB, GUTTER AND SIDEWALK:

Concrete curb, gutter and sidewalk may be constructed by first constructing the curb and gutter and then constructing the sidewalk behind it. If this method is used the joint between the back of curb and front edge of sidewalk shall be sealed. The curb and gutter may be placed using stationary forms or the slip method of forming.
Concrete curb, gutter and sidewalk may be constructed at the same time, combination curb, gutter and sidewalk. Stationary forms can be used to place combination curb, gutter and sidewalk or the slip form method can be used if it can be demonstrated that the tolerances specified herein can be met.

Curb and gutter to be installed with bituminous asphalt cement pavement shall have contraction joints placed every 10 feet by use of 1/8-inch steel template of the exact cross section of the curb and gutter. Remove the templates as the concrete takes initial set. Cut the joint 1-1/2 inches deep when using the slip form method to place the concrete. Use 1/2-inch thick, pre-molded, expansion joint filler at curb and gutter radii, where the curb and gutter abuts a solid object and at intervals not to exceed 50 feet, unless otherwise specified by the Public Works Representative/Engineer or his representative.

Joints in sidewalk, when placed separately and adjacent to the curb shall match the contraction and expansion joints in the curb and gutter as well as where the sidewalk abuts a solid object. Sidewalks not placed adjacent the curb shall have contraction joints set at an interval equal to the width of the sidewalk but not to exceed 10-feet. The joints shall be approximately 3/16 inch wide and approximately one-fourth of the total slab thickness in depth. Expansion joints shall be 1/2-inch thick, shall be placed every 32 feet, adjoins existing sidewalks, or abuts a solid object.

Material for 1/2-inch expansion joints shall be as specified in AASHTO M-153 and AASHTO M-213, and shall be installed with its top approximately 1/4-inch below the concrete surface.

After the concrete placed for a sidewalk has been brought to the established grade and screeded, it shall be float finished, edged and then given a light broom finish. In no case shall dry cement or a mixture of dry cement and sand be sprinkled on the surface to absorb moisture or hasten hardening. Surface edges of all slabs shall be rounded to a radius of ½ inch.

After concrete has been placed in curb and gutter forms, it shall be consolidated so as to insure a thorough mixture, eliminate air pockets, and create uniform, smooth sides. As the concrete takes its initial set the forms shall be removed and all exposed surfaces shall be float finished, edged and broomed lightly. The curb and gutter shall be constructed to the dimensions shown in the Standard Drawings.

The top and face of the curb and also the top of the apron on combination curb and gutter must be finished true to line and grade and without any noticeable irregularities of surface. No portion of the surface or face of the curb and gutter shall depart more than 1/4 inch from a straight edge ten feet in length, placed on the curb parallel to the street center line nor shall any part of the exposed surface present a wavy appearance.

**Section 12.07 CONCRETE CURB WALL:**

Concrete curb wall shall be Class AA(AE) and shall meet all of the requirements of Division 8, Portland Cement Concrete.

Reinforcing steel shall meet the requirements of Division 9, Reinforcing Steel.

Excavation for and backfill around the curb walls shall meet all the requirements of Division 7, Earthwork.

The curb walls shall be constructed to the dimensions and grades shown on the Standard Drawings or improvement drawings or as determined by the Public Works Representative/Engineer.

**Section 12.08 6-INCH CONCRETE DRIVE APPROACH:**

The concrete to be used for the drive approach shall be Class AA(AE) and shall meet the requirements of Division 8, Portland Cement Concrete.

When the location of a residential driveway is known, it shall be a minimum of six (6) inches thick. On commercial sites the drive approach shall be a minimum of six (6) inches thick. They shall be constructed to the dimensions shown on the Standard Drawings. The concrete shall be finished as described above for sidewalks.

The driveways shall have a compacted 4-inch untreated base course under them.
Section 12.09 AMERICAN DISABILITIES ACCESSIBILITY STANDARDS IN PUBLIC STREET RIGHT-OF-WAYS:

This section sets guidelines for accessibility to places of public accommodation and commercial facilities by individuals with disabilities. These guidelines are to be applied during the design, construction, and alteration of street construction or public buildings. The construction of curb ramps and drive approaches shall conform to the Standard Drawings.

Sub-section A. Curb Ramp Location:

Curb ramps complying with Section 12.05 shall be provided wherever an accessible route crosses a curb.

Sub-section B. Curb Ramp Slope:

Slope of curb ramps shall be the least possible slope. The maximum slope of a ramp in new construction shall be 1:12. The maximum rise for any run shall be thirty (30) inches. Transitions from ramps to walks, gutters, or streets shall be flush and free of abrupt changes. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1:20.

Sub-section C. Curb Ramp Width:

The minimum width of a curb ramp shall be forty-eight (48) inches, exclusive of flared sides.

Sub-section D. Curb Ramp Surface:

Surface of curb ramps shall include an ADA approved detectable warning surface.

Sub-section E. Sides of Curb Ramps:

If a curb ramp is located where pedestrians must walk across the ramp, or where it is not protected by hand rails or guardrails, it shall have flared sides: the maximum slope of the flare shall be 1:12 (see Standard Drawings). Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp.

Sub-section E. Built up Curb Ramps:

Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes.

Sub-section G. Obstructions:

Curb ramps shall be located or protected to prevent their obstruction by parked vehicles.

Sub-section H. Location of Marked Crossings:

Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.

Sub-section I. Diagonal Curb Ramps:

If diagonal (or corner type) curb ramps have returned curbs or other well defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have a forty-eight (48) inch minimum clear space. If diagonal curb ramps are provided at marked crossings, the forty-eight (48) inch clear space shall be within the markings. If diagonal curb ramps have flared sides, they shall also have at least a twenty-four (24) inch long segment of straight curb located on each side of the curb ramp and within the marked crossing.

Sub-section J. Islands:

Any raised islands in crossing shall be cut through level with the street or have curb ramps at both sides and a level area at least forty-eight (48) inches long between the curb ramp in the part of the island intersected by the crossing.
Section 12.10  LANDSCAPE RESTORATION:

Areas of new construction that cover or disturb existing landscaped areas with fills and cuts or areas disturbed by construction of retaining walls shall have the landscape restored. Areas that have lawn or flower beds shall be restored including sprinkling systems that might be damaged or relocated because of construction. Lawn covered or removed shall be replaced by sod.

The topsoil shall be fertile, sandy loam topsoil, obtained from well-drained areas. It shall be without admixture of subsoil or slag and shall be free of stones, lumps, sticks, plants or their roots, toxic substances or other extraneous matter that may be harmful to plant growth and would interfere with future maintenance. Topsoil pH range shall be 5.3 to 6.0.
DIVISION 13

STORM DRAINS

Section 13.01  GENERAL:

This section covers installation of storm drainpipe, manholes, and curb face inlet boxes. All improvements shall be constructed to the dimension and thickness shown on the Standard Drawings.

Section 13.02  PIPE INSTALLATION:

Installation of pipe shall be in an open trench unless otherwise shown. Trench and backfill shall meet the requirements of Division 2, Trench Excavation and Backfill.

Section 13.03  PIPE:

Pipe and pipe laying shall meet the requirements of Division 4, Concrete Pipe, and Division 4A. Pipe shall be laid with the bells up grade.

Section 13.04  MANHOLES:

Manholes shall meet the requirements of Division 5, Manholes. Where the size of the storm drain does not permit use of manholes, precast or cast-in-place reinforced concrete boxes shall be used. Concrete used in precast or cast-in-place boxes shall be Class AA(AE).

Section 13.05  CONCRETE:

Concrete shall meet the requirements of Division 8, Portland Cement Concrete.

Section 13.06  REINFORCING STEEL:

Reinforcing steel shall meet the requirements of Division 9, Reinforcing Steel.

Section 13.07  STORM DRAIN INLET BOXES:

The concrete to be used for the storm drain inlet boxes shall be Class AA(AE). The boxes shall be built to the dimensions and reinforced as shown on the Standard Drawings. The boxes may be precast or cast-in-place.

Excavation and backfill of the boxes shall meet the requirements of Division 7, Earthwork.

The storm drain inlet grate and frame shall be a D & L Supply I-3518 single unit with curb box with type "V" grate or equal. Grates and frames are to be dipped in cold tar epoxy following fabrication.

Section 13.08  PIPE CONNECTING INLET BOXES TO EXISTING STORM DRAINS:

The pipe to be used for connecting a new inlet box to an existing storm drain shall be of the same type of pipe as the existing pipe to which it is being connected. Where possible such connections shall be made by installation of a manhole. The Public Works Representative/Engineer shall approve connection locations and methods.

Connections to concrete pipe shall be by coring a hole in the pipe and then grouting the connecting pipe to the concrete pipe. Connections to PVC pipe shall be as per manufacture's recommendations. These recommendations will be reviewed with the Public Works Representative/Engineer prior to construction.
Section 13.09  STORM DRAIN LATERALS:

Where storm drain laterals are required to drain commercial sites, the minimum diameter shall be 6”. A two-inch (2”) by four-inch (4”) by six-foot (6’) marker, with the top twelve-inches (12”) painted yellow, shall be installed to clearly mark the end of each lateral line.
Do the Wave

The Wave Bike Rack has a sleek and modern look that radiates reliability and simplicity. This imported Wave Rack provides the same support and security of the 'U' Rack, but has a larger bike parking capacity. This rack is available in three lengths that each can secure up to 5, 7 or 9 bicycles.

Features

- 1-7/8" O.D. Steel Tube
- 304 Stainless Steel

It is created with popular and durable steel with either a black powder-coated finish or stainless steel finish. The Wave style bike rack uses solid base flanges, which block tube entrances to keep out insects, small creatures and moisture.

Dimensions

3 Loops 5 Bike - 42-1/8"L x 36"H
### Powder-Coated Black Wave Bike Racks | 3 Loops 5 Bikes

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### Stainless Steel Wave Bike Racks | 3 Loops 5 Bikes

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STEEL OUTDOOR BENCH WITH STRAIGHT BACK

Model # CBPB-6SB-BK
STEEL OUTDOOR BENCH WITH STRAIGHT BACK

BEFORE ASSEMBLY, PLEASE MAKE SURE ALL COMPONENTS ARE INCLUDED

A □ (1) SEAT ASSEMBLY
B □ (1) SUPPORT BAR
C □ (1) RIGHT END FRAME
D □ (1) LEFT END FRAME
E □ (6) STAINLESS STEEL TORX BOLTS
F □ (6) STAINLESS STEEL WASHERS
G □ (1) SECURITY TORX WRENCH
H □ (2) END FRAME SOCKET CAPS
J □ (4) EXPAND ANCHOR BOLTS

www.belson.com
Make sure to assemble the bench on a soft mat to prevent scratching of the product’s surface. 
DURING ASSEMBLY, DO NOT TIGHTEN BOLTS COMPLETELY.

Step 1: Start by positioning the seat assembly (A) on its backside for ease of assembly.

Step 2: Raise up the front of the seat assembly (A) to align with the bolt hole at the front of the end frame (C) and attach the end frame to the seat using one torx bolt (E) and washer (F), do not tighten bolt completely. Slide the upper sleeve of the end frame (C) over the backrest extension at the top of the seat assembly (A). Insert one torx bolt (E) with washer (F) into the pre-tapped hole at the top of the end frame to hold securely, but do not tighten.

Step 3: Repeat Step 2 on other side of the bench using end frame (D), but do not tighten bolts completely yet.

Step 4: Place the support bar (B) under the seat assembly between the end frames, and align it with the pre-drilled holes in the back of each end frame. Screw in remaining bolts enough to hold securely, but do not tighten.

Step 5: Position the bench upright and carefully adjust the components to make sure that the bench is square and level. Finally, tighten the bolts to a snug fit.

Step 6: Optional end frame socket caps (H) are included to insert into end frame sockets.
Plan Drawings are included in a separate book