



**CITY OF RALEIGH
DEPARTMENT OF PARKS, RECREATION and CULTURAL RESOURCES
REQUEST FOR INFORMAL BID**

Request for Quote: Construction Services
Project: **Glen Eden and Millbrook Exchange (MEX) Sidewalk and Patio Project**
Address: **1500 Glen Eden Drive access from Marshall Park Rd. Raleigh NC
MEX, 1905 Spring Forest Road, Raleigh NC**
Project Manager: Elizabeth Houck, PLA
Phone Number: (919) 996-4783
Advertisement Date: **March 10, 2020**
Site Visit (not mandatory) **March 17, 2020 @ 10:00 am (meet at 1500 Glen Eden Drive, Raleigh)**
Quote Due Date: **April 10, 2020 by 2:00 pm (emailed or delivered to address below)**

Project # 274-PR-GlenEdenMEX-20

City of Raleigh, Parks, Recreation and Cultural Resources Department
Attn: Elizabeth Houck, PLA
222 Hargett Street (Raleigh Municipal Building),
Suite 601, Raleigh, North Carolina 27601

Email: Elizabeth.Houck@raleighnc.gov

Plan and specifications are part of these documents

General Description of the Project:

Glen Eden Sidewalk (approx. 300 LF) for removal of existing asphalt trail, construction of 5' wide concrete sidewalk (4" thick) (167 SY), grading and addition of compacted base material, sod edges of sidewalk, R&R existing culvert pipe. New sidewalk grades to cross slope 2% and max 5% longitude slope. Install railings both sides at slopes steeper than 5% per ADA guidelines.

Millbrook Exchange Patio (approx. 235 SF.) (26 SY), 4" thick concrete reinforced patio, sawcut, broom finish, (electric box lid to be leveled with finish concrete), construct one sidewalk ramp

No permits are needed, replacement project.

The projects must adhere to the city's drawings and specifications contained hear in.

Quote will be received for single prime contractor per State of North Carolina law and requirements.

Contracts over \$30,000.00 require a General Contractors license.

Minority and Women-Owned Business Assistance Program

The City of Raleigh prohibits discrimination in any manner on the basis of race, color, creed, national origin, sex, age or handicap or sexual orientation and will pursue an affirmative policy of fostering, promoting and conducting business with women and minority owned business enterprises. The City

of Raleigh has adopted a goal of 15% for participation by small disadvantaged minority and women-owned businesses in order to reach the above stated goal.

The percentage of MWBE business participation engaged in this contract based on total contract amount is proposed to be ____%. Any variation from this amount is to be immediately conveyed to the City by written notice, Attention: MWBE Program Manager, PO BOX 590 Raleigh, NC 27602, with a copy to the City of Raleigh contact listed in the 'Notices' section of this Contract.

If this is a building project, documentation of good faith efforts to meet this goal is required. If this is a building project over \$300,000, this documentation must include the applicable MWBE affidavits. If there are any questions, Contact the MWBE Program Manager, PO BOX 590 Raleigh, NC 27602, mwbe@raleighnc.gov, or 919-996-4330.

IMPORTANT!! For Quote:

- 1. Submit forms PF-1 to PF 6, completed and notarized where requested.**
- 2. Submit forms MWBE - 4 to MWBE – 9, completed and notarized where requested.**

All the forms listed above must be included in submittal, any incomplete or missing will be determined a non-responsive bid.

PROPOSAL FORM FOR THE CONSTRUCTION OF GLEN EDEN SIDEWALK AND MILLBROOK EXCHANGE PATIO IN THE CITY OF RALEIGH, NORTH CAROLINA.

City of Raleigh
Parks, Recreation and Cultural Resources Department
Post Office Box 590
Raleigh, North Carolina 27602

Date: _____

The undersigned bidder has carefully examined the Form of Contract, the Form of Contract Bonds, the General Conditions, the Supplemental and/or Special Conditions, the Plans and Specifications, all of which are acknowledged to be part of the proposal and the Proposal Form, and the Bidder has also carefully examined the site of the proposed work. The undersigned further agrees to sign a Contract for all or part of the work determined based upon the below amount, if offered within ninety (90) days after receipt of quote, and to furnish surety. The Contractor further agrees to provide and furnish all necessary materials, equipment, machinery, and labor necessary to complete the construction of the work in full, in complete accordance with the plans and specifications and the contract documents to the full and entire satisfaction of the City of Raleigh and in accordance with these documents within the time limit specified below.

In addition to all other agreements and assurances, the undersigned Contractor understands and hereby agrees as follows:

1. If this contract is awarded to the Contractor, they must, upon completion of this contract, or at any other time requested, furnish to the Director of the Department of Parks, Recreation and Cultural Resources an accurate itemized statement of North Carolina Sales Taxes paid on materials, supplies, equipment and any other items charged to this contract, and otherwise fully comply with the *Procedure for Reporting North Carolina Sales Tax Expenditures*, attached.
2. The Contractor represents and agrees to complete the entire project in the following number of Consecutive Calendar Days: **120** from the date on the Notice to Proceed.
3. The Contractor agrees to comply with the City Code Raleigh's Standard Procedure regarding the Minority and Women-owned Business Enterprise Program.

In addition, the Contractor agrees to execute the work described and set forth in the Plans and Specifications for the amounts as follows:

Glen Eden Tennis Access Sidewalk

Quote Total (LUMP SUM): \$ _____
(In written word)

\$ _____
(In numerals)

Includes: material and installation for:

Removal existing asphalt trail (approx. 300 LF) add new base as needed, construct new 4" thick concrete sidewalk (5' wide), sawcut, broom finish, double walled culvert pipe replacement, ADA railings both sides at slopes steeper than 5%, sod edges of sidewalk (both sides) and seed and mulch disturbed areas.

Millbrook Exchange Tennis Center patio & curb ramp

Quote Total (LUMP SUM): \$ _____
(In written word)

\$ _____
(In numerals)

Includes: material and installation for:

(approx. 235 sf.) 4" concrete reinforced patio, sawcut, broom finish, (electric box lid to be leveled with finish concrete), one sidewalk ramp (removal existing concrete and construct ramp per detail), silt fence install per detail & plan (approx. 20 LF per plans), grading of patio site (235 sf) seed and mulch disturbed areas.

Name of General Contractor and License Number _____

Mailing address: _____

Contractor contact phone number: _____ email: _____

GS143-128(d) requires all single prime bidders to identify their subcontractors for the above subdivisions of work. A contractor whose bid is accepted shall not substitute any person as subcontractor in the place of the subcontractor listed in the original bid, except (i) if the listed subcontractor's bid is later determined by the contractor to be non-responsible or non-responsive or the listed subcontractor refuses to enter into a contract for the complete

Name of Sub-Contractors and License Number _____

Name of Sub-Contractors and License Number _____

UNIT PRICES

Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the base bid quantity of the work all in accordance with the contract documents.

- a. Unit cost for 4" concrete, installed \$ _____ per SY
- b. Seed (mix Bermuda) & mulch \$ _____ per SF
- c. sod (Bermuda) \$ _____ per SF

Pursuant to General Statutes of North Carolina Sections 143-128 and 143-131 and to City policy, the City of Raleigh encourages and provides equal opportunity for certified Minority and Women-Owned Business Enterprise (MWBE) businesses to participate in all aspects of the City's contracting and procurement programs to include - Professional Services; Goods and Other Services; and Construction. The prime contractor will be required to identify participation of MWBE businesses in their proposal, and how that participation will be achieved.

Furthermore, the City's goal is to contract or sub-contract fifteen percent (15%) of the contract amount to Certified MWBEs on construction projects over \$300,000, or with contracts that include \$100,000 or more in state funding. The goal breakdown is 8% for minorities and 7% for non-minority females.

Execute fully the nondiscrimination clause and appropriate affidavits.

PROPOSAL SIGNATURE PAGE

Respectfully submitted this day of _____

By: _____

(Name of firm or corporation making bid)

WITNESS:

(Proprietorship or Partnership)

By: _____

Signature

Name: _____

Print or type

Title _____

(Owner/Partner/Pres./V.Pres)

Address _____

ATTEST:

By: _____

License No. _____

Title: _____

(Corp. Sec. or Asst. Sec. only)

Federal I.D. No. _____

Email Address: _____

(CORPORATE SEAL)

QUALIFICATIONS:

1. List two references with contact person and telephone number who are qualified to objectively judge the results of similar work performed by the bidder in the last three years.

A. _____
NAME AND TITLE TELEPHONE NUMBER

PROJECT TITLE/DESCRIPTION DATE OF COMPLETION

B. _____
NAME AND TITLE TELEPHONE NUMBER

PROJECT TITLE/DESCRIPTION DATE OF COMPLETION

ADDITIONAL BIDDER'S CERTIFICATION

Acceptance of Terms:

In submitting this Proposal, the undersigned agrees that this Bid will remain in effect for a period of ninety (90) days following the opening of the Bids, that the undersigned agrees to enter into a Contract with the Owner, if awarded, on the basis of this Proposal, and that the undersigned agrees to complete the work in accordance with the Contract Documents.

Non-Collusion in Bidding:

The Bidder specifically agrees to abide by all applicable provisions of Article 3 of Chapter 133 of the North Carolina General Statutes. By submission of this Bid, each Bidder and each person signing on behalf of any Bidder certifies, and in case of a joint Bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best knowledge and belief:

1. The prices in this Bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or to any competitor;
2. Unless otherwise required by law, the prices quoted in the Bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to opening, directly or indirectly, to any other Bidder or to any competitor; and
3. No attempt has been made or will be made by the Bidder to induce any other person, partnership, or corporation to submit or not to submit a Bid for the purpose of restricting competition.

Type of Business:

The undersigned hereby represents that it is a _____
(corporation, partnership, or an individual)

If a corporation, the undersigned further represents that it is duly qualified as a corporation under the Laws of the State of North Carolina and it is authorized to do business in this State.

_____ Date

_____ Authorized Signature

_____ Title Name of Project

_____ Address of Business

CONTRACTOR'S PERFORMANCE POLICY

RESOLUTION NO. (1992) -790

A RESOLUTION TO REGULATE THE PARTICIPATION IN THE CITY CONSTRUCTION PROJECTS BY CONTRACTORS WHO MAY NOT BE CAPABLE OF TIMELY AND PROPER COMPLETION OF CITY PROJECTS.

WHEREAS, The City of Raleigh wishes to minimize cost and inconvenience to the citizenry caused by the failure of contractors to complete projects in a timely manner in accordance with approved project schedules; and

Whereas, North Carolina law allows cities to award bids to responsible bidders and the inability to complete work on time is one indication of a lack of responsibility.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF RALEIGH:

Section 1. That the City Manager may disqualify bidders from participation in bidding and award of contracts for city construction projects based on the following conditions existing simultaneously:

A. The dollar value of the work completed is less than the dollar value of the work which should have been completed on the basis of the contractor's approved progress schedule by more than twenty percent of the current contract amount. The dollar amount of the work completed will be the total estimate to date shown in the latest partial pay estimate. The current contract amount will be the contract estimate plus accumulated overruns and less accumulated underruns shown in the latest partial payment estimate.

B. The percentage of the work completed is less than the percentage of contract time elapsed on the work by more than twenty percent. The percentage of work completed will be the dollar value of the work completed as defined above divided by the current contract amount as defined above. The percentage of contract time elapsed will be the number of calendar days elapsed as shown in the latest partial pay estimate divided by the total contract time in calendar days.

Section 2. The City Manager shall not include any late days, which are caused by the City in any of his calculations directed at determining bid status.

Section 3. All City construction project specifications shall contain a specific provision clearly outlining the policies set in this Resolution, including the criteria for determining whether a contractor is behind schedule, and the specifications shall clearly state the City's intent to enforce the provisions of this Resolution.

Section 4. The terms of the Resolution shall apply only to contracts for which the specifications for bidders are issued after the effective date of this Resolution.

Section 5. Any contractor who wishes to contest the decision of the City Manager declaring ineligibility may appeal to the City Council by delivering a notice of appeal to the City Clerk no later than ten days after receipt of the City Manager's decision. The notice of appeal shall clearly set out the reasons why the Contractor believes that the terms of this Resolution have been inappropriately applied or the equitable arguments for not applying this Resolution's terms. When considering an appeal the City Council shall consider, among other things, the report of the City Manager, the notice of appeal, and the contractor's current status on any other current City Contracts and its performance on any contracts to which the contractor and the City have been parties to within the two calendar years immediately preceding the filing of the notice of appeal.

Section 6. Bidders so disqualified shall remain disqualified for any period in which they are still in conflict with the schedule provisions of this section.

Section 7. This Resolution is effective upon adoption Adopted 10/6/92

I have read and understand the City of Raleigh's policy as stated above.

SIGNATURE

PRINTED NAME

TITLE

DATE

INFORMATION FOR BIDDERS REGARDING COMPLIANCE WITH THE CITY OF RALEIGH'S MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISE (MWBE) PROGRAM

Policy

Pursuant to General Statutes of North Carolina Sections 143-128 and 143-131 and to City policy, the City of Raleigh encourages and provides equal opportunity for certified Minority and Women-Owned Business Enterprise (MWBE) businesses to participate in all aspects of the City's contracting and procurement programs to include - Professional Services; Goods and Other Services; and Construction. The prime contractor will be required to identify participation of MWBE businesses in their proposal, and how that participation will be achieved.

Furthermore, the City's goal is to contract or sub-contract fifteen percent (15%) of the contract amount to Certified MWBEs on construction projects over \$300,000, or with contracts that include \$100,000 or more in state funding. The goal breakdown is 8% for minorities and 7% for non-minority females.

Contractor Responsibilities

The bidders agree to use their best efforts to comply with all the terms and conditions of the City of Raleigh's Minority and Women Business Enterprise (MWBE) Program through award of subcontracts to certified minority and women-owned business enterprises and utilization of certified minority and women-owned business suppliers to the fullest extent consistent with the efficient performance of this contract.

Pursuant to N.C.G.S 143-128.2(g). As used in this contract, the term "minority and women business" shall mean a company that is 51% or more owned and controlled by minority group members or women. For the purpose of this definition, minority group members are Black Americans, Hispanic Americans, American Indians, Female Americans, Asian Americans, socially and economically disadvantaged individuals, and Disabled. The law defines socially disadvantaged individuals as "those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". (15 U.S.C., 637 (5)) Economically disadvantaged individuals "are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business that are not socially disadvantaged". (15 U.S.C., 637 (6)) The successful bidder will be expected to provide minority participation not less than the expected goals for this project shown herein. All bidders that bid as prime contractor must utilize their best efforts to meet participation goals through award of subcontracts to minority and women business enterprises.

It is mandatory that the Identification of Minority Participation form and Affidavit "A" Listing of Good Faith Efforts be properly completed as defined in the document specifications and submitted with your bid documents.

Pursuant to N.C.G.S. 143-128.2(c) The Identification of Minority Participation form must include, at a minimum, the names of all minority contractors who will be construction subcontractors, vendors, or suppliers on this project. Additional contact information such as business addresses, phone numbers, work types, and minority categories is important and useful. In accordance with N.C.G.S. 143-128.2(c) each bidder shall identify on its bid the MWBE businesses to be used on this project and pursuant to subsection (f) of this statute provide the total dollar value of the bid that will be performed by the minority businesses. This information shall be listed on the **Identification of Certified Minority Participation Form**. Failure to list, as a minimum, the minority firm business name and the total dollar value of MWBE firms contracting will render your bid as non-responsive and will not be considered for award.

The **Affidavit A, Listing of Good Faith Efforts**, must be properly executed with the bid providing evidence that the prime contractor has complied with the good faith efforts measures before bidding to solicit MWBEs and to meet the goals.

The **Affidavit B Intent to Perform Contract with Own Workforce form** must be executed with the bid only if the prime contractor intends to perform 100% of the work required for the contract without the use of subcontractors.

At the project bid opening, the MWBE goals for each bid will be recorded. The minority and women-owned business goals must be met separately (**7% Non-Minority Female – 8% Minority**) and not as a combined total. The apparent low bidder must submit Affidavit C or D depending on its adherence to the goals.

The apparent low bidder who has met or surpassed the expected goals must provide **Affidavit C Portion of Work to be performed by Minority Firms** within seventy-two hours (72) after being notified by City Staff

The apparent low bidder who does not meet the expected goals must submit **Affidavit D Good Faith Efforts** within seventy-two hours (72) after being notified by City Staff. The bidder shall satisfy the City that he/she has made a good faith effort to solicit MWBE participation. Good faith efforts can be demonstrated using, among other factors, the following:

- (a) Attending pre-solicitation or pre-bid meetings that are scheduled by the City to inform MWBE firms of contracting, subcontracting, and supply opportunities.
 - (b) Advertising in general circulation, trade association, or minority-focus media concerning subcontracting opportunities.
 - (c) Providing written notice, to a reasonable number of specific MWBE firms that their interest in the contract is being solicited, at least 10 days before bids are due, to allow MWBE firms time to participate.
 - (d) Following up initial solicitation of interest by contacting MWBE firms to determine with certainty whether the MWBE firms are interested.
 - (e) Identifying and selecting portions of the work to be performed by MWBE firms in order to increase the likelihood of MWBE participation (including where appropriate, breaking down contracts into economically feasible units to facilitate MWBE participation).
 - (f) Providing interested MWBE firms with equal access to plans, specifications, and requirements of the contract.
 - (g) Negotiating fairly with interested MWBE firms, not rejecting MWBE firms as unqualified without sound reasons based on a thorough investigation of their capabilities.
 - (h) Using the services of the City of Raleigh's MWBE office; available minority community organizations; minority contractors' groups; local, state, and federal minority business offices; and other organizations that provide assistance in the recruitment and placement of MWBE firms.
 - (i) Assisting interested MWBE firms in need of equipment, loan capital, lines of credit or joint pay agreements to secure loans, supplies or letters of credit, including waiving credit that is ordinarily required.
 - (j) Assisting interested MWBE firms in obtaining bonding, insurance, or providing alternatives to bonding or insurance for subcontractors.
 - (k) Negotiating joint venture and partnership arrangements with minority businesses to increase the opportunities for minority participation when possible.
 - (l) Provide for quick pay agreements and policies to enable minority contractors and suppliers to meet cash flow demands.
- The MWBE Coordinator shall evaluate the good faith efforts of each bidder and determine if the requirements of this program have been met. If the apparent low bidder does not agree to at least the expected goals for the project, the MWBE Coordinator shall review the good faith efforts and make a recommendation to the City Council. Any bidder not meeting the good faith efforts evaluation will be found non-responsive and his/her bid shall not be considered. The City

can reject bids for construction projects exceeding \$300,000 (or \$100,000 in state funding) and award a contract to the lowest responsible, responsive bidder.

During the course of the contract the successful bidder will be required to submit **Certified Subcontractor Payment Form**. Payments from the City will be held until contractor submits the Certified Subcontractor Payment Form.

During the construction of a project, if it becomes necessary to replace an MWBE subcontractor, the prime contractor shall advise the owner by submitting to the project manager and MWBE Coordinator the **Request to Change a Certified MWBE Subcontractor**. No MWBE subcontractor may be replaced with a different subcontractor except (1) if the subcontractor's bid is later determined by the prime contractor or construction manager to be nonresponsive or nonresponsive, or the listed subcontractor refuses to enter into a contract for the complete performance of the bid work (2) with the approval of City Council for good cause. Good faith efforts as set forth in N.C.G.S 143-131(b) shall apply to the selection of a substitute subcontractor. Prior to substituting a subcontractor, the contractor shall identify the substitute subcontractor and inform the project manager or its designee of its good faith efforts pursuant to N.C.G.S

§ 143-131. When counties, cities, towns and other subdivisions may let contracts on informal bids.

(a) All contracts for construction or repair work or for the purchase of apparatus, supplies, materials, or equipment, involving the expenditure of public money in the amount of thirty thousand dollars (\$30,000) or more, but less than the limits prescribed in G.S. 143-129, made by any officer, department, board, local school administrative unit, or commission of any county, city, town, or other subdivision of this State shall be made after informal bids have been secured. All such contracts shall be awarded to the lowest responsible, responsive bidder, taking into consideration quality, performance, and the time specified in the bids for the performance of the contract. It shall be the duty of any officer, department, board, local school administrative unit, or commission entering into such contract to keep a record of all bids submitted, and such record shall not be subject to public inspection until the contract has been awarded.

(b) All public entities shall solicit minority participation in contracts for the erection, construction, alteration or repair of any building awarded pursuant to this section. The public entity shall maintain a record of contractors solicited and shall document efforts to recruit minority business participation in those contracts. Nothing in this section shall be construed to require formal advertisement of bids. All data, including the type of project, total dollar value of the project, dollar value of minority business participation on each project, and documentation of efforts to recruit minority participation shall be reported to the Department of Administration, Office for Historically Underutilized Business, upon the completion of the project.

NONDISCRIMINATION AGREEMENT
****SUBMIT WITH BID****

4/16

This agreement is made and executed this ____ day of _____, 20____, by and between the undersigned.

To the extent permitted by North Carolina law, the parties hereto for themselves, their agents, officials, employees and servants agree not to discriminate in any manner on the basis of race, color, creed, national origin, sex, age, handicap, or sexual orientation with reference to the subject matter of this Contract. The parties further agree, to the extent permitted by law, to conform with the provisions and intent of City of Raleigh Ordinance 1969-889, as amended. This provision is hereby incorporated into this Contract for the benefit of the City of Raleigh and its residents, and may be enforced by action for specific performance, injunctive relief, or other remedy as provided by law. This provision shall be binding on the successors and assigns of the parties with reference to the subject matter of this Contract.

This agreement shall be binding on the successors and assigns of the parties with reference to the subject matter of this contract.

(Use the following form for signatures by a CORPORATION):

(Corporate Name)

ATTEST:

(Assistant) Secretary

By: _____
(Vice) President

(AFFIX CORPORATE SEAL)

(Use the following form for signatures by an INDIVIDUAL):

By: _____ (SEAL)

WITNESS:

USE OF CERTIFIED MWBE BUSINESSES

The City’s policy is to encourage Bidders to use Certified MWBE businesses as subcontractors. A presentation of that policy is made at the pre-bid conference. All construction Bid documents include the listing of the businesses in the construction-related fields that have been certified by the City is included following the Supplementary Conditions.

Minority and Women-Owned Business Enterprise Language:

“Pursuant to General Statutes of North Carolina Sections 143-128 and 143-131 and to City policy, the City of Raleigh encourages and provides equal opportunity for certified Minority and Women-Owned Business Enterprise (MWBE) businesses to participate in all aspects of the City’s contracting and procurement programs to include - Professional Services; Goods and Other Services; and Construction The prime contractor will be required to identify participation of MWBE businesses in their proposal, and how that participation will be achieved.

Furthermore, the City’s goal is to contract or sub-contract fifteen percent (15%) of the contract amount to Certified MWBEs on construction projects over \$300,000, or with contracts that include \$100,000 or more in state funding. The goal breakdown is 8% for minorities and 7% for non-minority females.”

Formal Bid Process

The City requires all Bidders to submit a list of their subcontractors with their Bid and to identify all certified minority & women-owned businesses. After the Bid opening, the City will attempt to verify if those listed by the low Bidder are Certified MWBE businesses and that those listed have had contact with the low Bidder relative to constructing a portion of the Project. It is understood that this information will be provided to the City Council in the agenda packet with the Bid tabulation on the Project. It is further understood that the Contract Documents include a provision that the City will be notified of any changes in subcontractors. The low Bidder will be informed of that responsibility prior to signing the Contract.

I have read and understand the City of Raleigh’s policy as stated above.

Signature

Printed Name

Title

Date

IDENTIFICATION OF CERTIFIED MWBE PARTICIPATION **SUBMIT WITH BID**

I, _____
(Name of Bidder)

I do hereby certify that on this project, we will use the following Certified MWBE businesses as construction subcontractors, vendors, suppliers or providers of professional services.

Project Name: _____

Total Project Bid \$ _____ Bid Date: _____

Business Name, Phone #, Email	Work Type	*MWBE	CERTIFIED NCHUB/NCDOT-DBE	Dollar Value	%

*MWBE Program Categories:

American Indian (AI), Asian American (AA), Black, African American (B), Hispanic (H), Non-minority female (NMF) Socially and Economically Disadvantaged (D)

Total dollar value of MWBE subs will be (\$) _____ **Total MWBE percentage** _____%

Breakdown is Minority _____% **- Non-minority Female** _____%

AFFIDAVIT A
Listing of Good Faith Effort
****SUBMIT WITH BID****

County of _____

Affidavit of _____

(Name of Bidder)

I have made a good faith effort to comply under the following areas checked:

(A minimum of 50 points must be obtained in order to have achieved a "good faith effort")

- 1-**Contacted Certified MWBE businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
Value= 10 points.
- 2-**Made the construction plans, specifications and requirements available for review by prospective Certified MWBE businesses, or providing these documents to them at least 10 days before the bids are due. **Value=10 points.**
- 3-**Broken down or combined elements of work into economically feasible units to facilitate Certified MWBE business participation.
Value = 15 points.
- 4-**Worked with Certified MWBE businesses trade, community, or contractor organizations identified by the MWBE Program and included in the bid documents that provide assistance in recruitment of Certified MWBE businesses.
Value=10 points.
- 5-**Attended pre-bid meetings schedule by the public owner.
Value=10 points.
- 6-**Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
Value=20 points.
- 7-**Negotiated in good faith with interested Certified MWBE businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a Certified MWBE business based on lack of qualification should have the reasons documented in writing.
Value =15 points.
- 8-**Provided assistance to an otherwise Certified MWBE businesses in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted Certified MWBE businesses in obtaining the same unit pricing with the bidder's suppliers in order to help Certified MWBE businesses in establishing credit.
Value=25 points.
- 9-**Negotiated joint venture and partnership arrangements with Certified MWBE businesses in order to increase opportunities for Certified MWBE businesses participation on a public construction or repair project when possible.
Value =20 points.
- 10-**Provided quick pay agreements and policies to enable Certified MWBE business contractors and suppliers to meet cash flow demands.

Value=20 points.

TOTAL POINTS OBTAINED _____.

In accordance with GS143-128.2 (d) the undersigned will enter into a formal agreement with the firms listed on the Identification of Certified MWBE Participation schedule conditional upon execution of a contract with the Owner. Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the MWBE Program commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____

Name of Authorized Officer: _____

Signature: _____

Title: _____

State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20__

Notary Public _____ My commission expires _____

SEAL

AFFIDAVIT B
Intent to Perform Contract with Own Workforce
****SUBMIT WITH BID****

County of _____
Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100 % of the work required for the
_____ Contract. **Total Project Bid \$** _____ **Bid Date** _____
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____
Signature: _____
Title: _____

State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____ my commission expires _____

SEAL

AFFIDAVIT C

Portion of the work to be performed by Certified MWBE Businesses

****This form is to be submitted only by the apparent lowest responsible, responsive bidder****

County of _____

If the portion of the work to be executed by Certified MWBE Businesses as defined in GS 143-128.2 (g) **is equal to or greater than 15%** of the bidders total contract price, then the bidder must complete this affidavit.
*This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.*

Affidavit of _____ I do hereby certify that on the

 (Name of Bidder)
 _____ Total Project Bid \$ _____ Bid Date _____
 (Project Name)

I will expend a minimum of _____% to minority and _____% to non-minority women of the total dollar amount of this contract. Total dollar value of Certified MWBE businesses is \$_____ for a total of _____ % of this contract. The Certified MWBE Businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required.

Business Name, Phone #, Email	Work Type	*MWBE	CERTIFIED NCHUB/NCDOT-DBE	Dollar Value	%

***Certified MWBE Business Program Categories:**

American Indian (AI), Asian American (AA), Black, African American (B), Hispanic (H), Non-minority female (NMF) Socially and Economically Disadvantaged (D)

Pursuant to GS 143-128.2 (d), the undersigned will enter into a formal agreement with Certified MWBE Business Program Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

Bidder must submit the Certified Subcontractor Payment with each payment request and final payment to the Project Manager.

Bidder must submit a Request to Change a Certified MWBE Subcontractor form to the Project Manager if necessary to replace/discontinue a MWBE Subcontractor.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____
Signature: _____
Title: _____

State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20__

Notary Public _____ my commission expires _____

SEAL

**AFFIDAVIT D
Good Faith Efforts**

****This form is to be submitted only by the apparent lowest responsible, responsive bidder****

County of _____

If the goal of 15% participation by Certified MWBE Businesses **is not** achieved, the Bidder shall provide the following documentation to the Owner of his Good Faith Efforts:

Affidavit of _____ I do hereby certify that the attached documentation is true
(Name of Bidder) and accurate presentation of my good faith efforts.

_____ Total Project Bid \$_____ Bid Date _____
(Project Name)

I will expend a minimum of _____% to minority and _____% to non-minority women of the total dollar amount of this contract. Total dollar value of Certified MWBE businesses is \$_____ for a total of _____% of this contract. The Certified MWBE Businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required.

(Attach additional sheets if required)

Business Name, Phone #, Email	Work Type	*MWBE	CERTIFIED NCHUB/NCDOT-DBE	Dollar Value	%

*Certified MWBE Business Program Categories:

American Indian (AI), Asian American (AA), Black, African American (B), Hispanic (H), Non-minority female (NMF) Socially and Economically Disadvantaged (D)

Documentation of the Bidder’s Good Faith Efforts to meet the goals set forth in these provisions. Examples of documentation include, but are not limited to, the following evidence:

- A. Copies of solicitations for quotes to at least three (3) Certified MWBE businesses from the source list provide by the City of Raleigh for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid

documents can be reviewed, representative of the Prime Bidder to contract, and location, date and time when quotes must be received.

- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a Certified MWBE business is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to Certified MWBE business. Community or contractor organizations in an attempt to meet the goal.
- F. Copy of the pre-bid letter.
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for Certified MWBE business.
- H. Letter detailing reasons for rejections of Certified MWBE business due to lack of qualification.
- I. Letter documenting proposed assistance offered to Certified MWBE business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Bidder must submit the Certified Subcontractor Payment with each payment request and final payment to the Project Manager.

Bidder must submit a Request to Change a Certified MWBE Subcontractor form to the Project Manager if necessary to replace/discontinue a MWBE Subcontractor.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____
 Signature: _____
 Title: _____

State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20__

Notary Public _____ My commission expires _____

SEAL

APPENDIX E - CERTIFIED SUBCONTRACTOR PAYMENT FORM
****SUBMIT WITH EACH PAYMENT REQUEST AND FINAL PAYMENT****

City of Raleigh MWBE Report For Subcontractor Payments

Prime Contractor: _____

City of Raleigh Contract Number: _____

Total Contract Amount: \$ _____

City of Raleigh Project Manager Name: _____

Total MWBE Subcontractor Amount: \$ _____ Total MWBE ____ %

Prime Contractor's Pay Application Number: _____

Thru Date: _____

The Prime Contractor shall list below all payments for work completed by MWBEs including amounts requested for this pay application period.

MWBE Subcontractor Name	Contact Person Name	Contact Phone	Description of Work being performed	Total Subcontract amount	% of total contract per sub	Amount Completed Previously	Amount request this period	Amount Paid to date	% of total subcontract amount completed	MWBE	PROJECT COMPLETED DATE
Totals:											

MWBE Categories: American Indian (AI), Asian American (AA), Black African-American (B), Hispanic (H), Non-Minority Female (NMF), Socially and Economic Disadvantaged (D)

Date: _____

Submitted By: _____

Title: _____

Signature: _____

REQUEST TO CHANGE A CERTIFIED MWBE SUBCONTRACTOR

Project Name: _____
Prime Contractor: _____ Contact Name: _____
Phone #: _____ Email Address: _____
Project Manager Name: _____ Division: _____

Will this request change the dollar amount of the contract? Yes___ No___ If yes,
Original total contract amount \$ _____ and proposed total contract: \$ _____

The proposed request will do the following to overall MWBE participation (please check one):

Increase ___ Decrease ___ No Change ___

Name current MWBE subcontractor: _____

Service provided: _____

Proposed Action:

___ Replace MWBE subcontractor

___ Perform work in-house

You must provide one of the following reasons (Please check applicable reason):

___ The listed MWBE, after having had a reasonable opportunity to do so, fails or refuses to execute a written contract.

___ The listed MWBE is bankrupt or insolvent.

___ The listed MWBE fails or refuses to perform his/her subcontract or furnish the listed materials.

___ The work performed by the listed subcontractor is unsatisfactory according to industry standards and is not in accordance with the plans and specifications; or the subcontractor is substantially delaying or disrupting the progress of the work.

___ Other. Explain on company letter head.

Name of replacement subcontractor: _____

Is the subcontractor a certified MWBE? ___ Yes ___ No

If no, please attach documentation of outreach efforts employed by the firm to utilize an MWBE.

Dollar amount of amended subcontractor \$ _____ MWBE _____%

Printed Name

Title

Date

Interoffice Use Only:

Approval ___ Yes ___ No

Date _____

Signature _____

**PROCEDURE FOR REPORTING NORTH CAROLINA SALES TAX
EXPENDITURES ON CITY OF RALEIGH CONTRACTS**

1. The following procedure in handling the North Carolina Sales Tax is applicable to this project. Contractors shall comply fully with the requirements outlined hereinafter, in order that the owner may recover the amount of the tax permitted under the law.
2.
 - (a) It shall be the general contractor's responsibility to furnish the owner documentary evidence showing the materials used and sales tax paid by the general contractor and each of his subcontractors. Any county sales tax included in the contractor's statements must be shown separately from the state sales tax. If more than one county is shown, each county shall be listed separately.
 - (b) The documentary evidence shall consist of a certified statement, by the general contractor and each of his subcontractors individually, showing total purchases of materials from each separate vendor and total sales taxes by each county paid each vendor. The certified statement must show the invoice number (s) covered and inclusive dates of such invoices. State sales tax shall be listed separately from county sales tax. If more than one county is shown, each county shall be listed separately.
 - (c) Materials used from general contractor's or subcontractor's warehouse stock shall be shown in a certified statement at warehouse stock prices.
 - (d) The general contractor shall not be required to certify the subcontractor's statements.
 - (e) The documentary evidence to be furnished to owners eligible for sales or use tax refunds covers sales and/or use taxes paid on building materials used by contractors and subcontractors in the performance of contracts with churches, orphanages, hospitals not for profit, educational institutions not operated for profit and other charitable or religious institutions or organizations not operated for profit and incorporated cities, towns and counties in this State. The documentary evidence is to be submitted to the above-named institutions, organizations and governmental units to be included in claims for refunds to be prepared and submitted by them to obtain refunds provided by G.S. 105-164.14 and is to include the purchase of building materials, supplies, fixtures and equipment which become a part of or annexed to buildings or structures being erected, altered or repaired under contracts with such institutions, organizations or governmental units.
3. The contractor or contractors to whom an award is made on this project will be required to follow the procedure outlined above.
4. The contractor is advised that all requests for payment, partial or final, for work completed under this contract must include a sales tax report submitted in accordance with the procedures outlined above.

North Carolina Sales Tax

(Paid During This Estimate Period)

Project _____ Project Location _____ County _____ Estimate No. _____

Contractor _____ Period Ending _____

Date	Vendor	Invoice Number	Invoice Amount	State 4.75%	County 2.00%	Total 6.75%	County
TOTALS							

I certify that the above listed vendors were paid sales tax upon purchases of building materials during the period covered by the construction estimate, and the property upon which such taxes were paid with or will be used in the performance of this contract. No tax on purchases or rentals of tools and/or equipment is included in the above list. All of the material above became a part of or is annexed to the building or structure being erected, altered or repaired.

_____ County, North Carolina

Signed and sworn to (or affirmed) before this day by _____
(name of principal) (signature of principal)

Date: _____

 Notary Public's Signature

(Notary's printed or typed name, Notary Public)

(Official Seal) My commission expires: _____

GENERAL CONDITIONS

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1. DEFINITIONS OF TERMS

Wherever used in the Contract Documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

"Addenda" shall mean written or graphic instruments issued prior to the execution of the agreement, which modify or interpret the Contract Documents by additions, deletions, clarifications, or corrections.

"Architectural Supplemental Instructions" shall mean the information that allows an architect to provide additional instructions or make minor changes without having to rework the entire construction plan.

"Authorization Request" shall mean the final action in approving a cost event. It may result in a change in the project's contingency, which is included in the contract amount.

"Bad Weather Day" shall mean a day when construction Work cannot be performed and is attributable to unusual weather phenomena as defined herein.

"Bid" shall mean the offer or Proposal of the Bidder submitted on the prescribed form setting forth the price(s) for the Work to be performed.

"Bidder" shall mean any person, firm, or corporation submitting a Bid for the Work.

"Bonds" shall mean Bid, Performance, and Payment Bonds and other instruments of security, furnished by the Contractor and his surety in accordance with the Contract Documents.

"Change Order" shall mean the adjustment of the contract of time, or addition or deduction to the overall contract price. A Change Order shall be an amendment to the contract and requires approval by the City of Raleigh through the City Council or City Manager.

"Consultant" shall be defined as the professional services firm employed by the City or Owner.

"Contract Documents" shall consist of Advertisement for Bids, Instructions for Bidders, Proposal, Bid Bond, Contract, Contract Performance Bond, Payment Bond, General Requirements, General Conditions, Supplementary Conditions, Technical Specifications, Certificates of Insurance, and Drawings and any other pertinent documents. The intent of these documents is to include all materials, appliances, tools, labor, and services of every kind necessary for the proper execution of the Work, and the terms and conditions of payment therefore. The Contract Documents shall be considered as one, and whatever is called for by any one of them shall be as binding as if called for by all.

"Contract Price" shall mean the total monies payable to the Contractor under the terms and conditions of the Contract Documents.

"Contract Time" shall mean the number of calendar days stated in the Contract Documents for the completion of the Work.

"Contractor" or **"General Contractor"** shall mean the individual, firm, or corporation undertaking the execution of the Work as an independent Contractor under the terms of the Contract and acting through his or its agents or employees.

"Cost Event" shall mean a directive to perform work resulting from a proposed change. There may or may not be costs associated with the work. It is initiated as a proposal from the Contractor and sent to the Designer for review. If approved by the Designer, the Designer forwards it to the Owner as a recommendation from the Designer in the form of an Authorization Request.

"City" shall mean City of Raleigh.

"Designer" shall mean the professional architectural and/engineering firm and/or its subconsultants that are responsible for the project design and have placed their professional seals on the construction documents.

"Drawings" shall mean the part of the Contract Documents, which show largely through graphical presentation the characteristics, design and scope of the Work to be performed and which have been prepared or approved by the City.

"Final Acceptance" shall be defined as concurrence between the Designer and the Owner to accept the project from the contractor. Final acceptance of the project shall not be considered before the final inspection is conducted. Final acceptance does not infer the lack of claims on a project.

"Liquidated Damages" shall mean the amount reasonably estimated in advance to cover the consequential damages associated with the City's economic loss in not having the use of the project for its intended purposes resulting from the Contractor's failure to complete the project by the completion date.

"Notice of Award" shall mean the written notice to the successful bidder of the acceptance of the bid as approved by the City Council or City Manager. Notice may be issued in person or via regular mail, certified mail with receipt of delivery, or email with receipt of delivery.

"Notice to Proceed" shall mean written communication issued by the City or its Designer to the Contractor authorizing him to proceed with the Work and establishing the date of commencement of the Work. Notice may be issued in person or via regular mail, certified mail with receipt of delivery, or email with receipt of delivery.

"Owner" shall mean City of Raleigh.

"Owner's Contingency" shall mean the amount of funds included in the contract that represents the Owner's best estimate of funds to provide for unforeseen circumstances or conditions that may arise during the construction of the project.

"Project" shall mean the undertaking to be performed as provided in the Contract Documents.

"Project Manager" shall be the individual or individuals assigned to coordinate the project and insure that City procedures are followed and the quality of Work is up to the standards expected.

"Shall" is mandatory; **"may"** is permissive.

"Shop Drawings" shall mean all drawings, diagrams, illustrations, brochures, schedules, and other data, which are prepared by the Contractor, Subcontractor, manufacturer, Supplier, or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

"Specifications" shall mean a part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards, and Workmanship specified for this Project.

"Subcontractor" shall mean an individual, firm, or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

"Substantial Completion" shall mean that date determined by the City when the construction of the Project or an expressly stipulated part thereof is sufficiently completed, in accordance with the Contract Documents, so the Project or stipulated part can be fully utilized for the purposes for which it is intended.

"Supplemental General Conditions" shall mean a part of the Contract Documents consisting of modifications or additions to the General Conditions.

"Superintendent" shall mean the Contractor's authorized on job representative designated in writing by the Contractor prior to commencement of any Work

"Supplier" shall mean any person, supplier, or organization who furnishes materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

"Surety" shall mean the bonding or insurance company that represents the Contractor and that assumes responsibility for the completion of the project should the Contractor, for any reason, become unable to complete the project.

"Time Extension" shall mean an increase in the length of time specified in a contract resulting in a revised contract completion date.

"Work" of the Contractor or Subcontractor shall include all labor, material, equipment, transportation, skill, tools, machinery, and other equipment and things useful or necessary in order to complete the Contract.

"Written Notice" shall mean the notification either in handwritten, computer generated, typed, or email form that communicates information or directives.

2. APPLICABLE REQUIREMENTS

The Work shall comply with the Contract Documents and with all applicable codes, laws, and regulations of the City, State, or Federal agencies. In the event of any conflict between the terms of this Contract and such codes, laws, and regulations, the codes, laws, and regulations shall prevail. If the Contractor performs any Work contrary to such codes, laws, or regulations he shall assume full responsibility therefore and shall bear any and all costs necessary to correct the Work.

3. CONTRACT SECURITY

The Contractor shall furnish a Contract Performance Bond and a Payment Bond, each equal to one hundred percent (100%) of the Contract Price if the base bid price exceeds \$300,000. However, the City may impose this requirement on any contract in excess of \$30,000. Bonds given shall meet the requirements of the law of the State of North Carolina including but not limited to G.S. 143-129 and G.S. 44A-26. The surety on each Bond shall be a surety company satisfactory to the City and duly authorized to do business in the State of North Carolina.

4. NOTICE AND SERVICE THEREOF

Any notice to Contractor from the City relative to any part of this Contract shall be in accordance with the City's Form of Contract.

5. INTENT OF DRAWINGS AND SPECIFICATIONS

The intent of the Drawings, Specifications/project manual and all other documents comprising the Contract Documents, is that the Contractor shall be held responsible to provide and pay for all labor, materials, tools, power, water, equipment, transportation, and other facilities necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental Work necessary to complete the Project in an acceptable manner, ready for use, occupancy, or operation by the City.

The Drawings, Specifications/project manual, and all other documents comprising the Contract Documents, shall be supplementary to each other, and any material, Workmanship, and/or service which may be in one, but not called for in the others, shall be as binding as if indicated, called for, or implied by all. In case of discrepancy or disagreement in the contract documents, the order of precedence shall be: Construction Contract, Specifications, large-scale drawings, and small-scale drawings.

Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to the Designer for the City, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies, or ambiguities shall be done at the Contractor's risk.

Each section or type of Work is described separately in the Technical Specifications. For convenience of reference and to facilitate the letting of contracts and subcontracts, these Specifications are separated into titled sections. Such separation shall not, however, operate to make the City an arbiter to establish limits to the contracts between the Contractor and Subcontractors, nor shall such separation be interpreted as superseding normal construction trade jurisdictions. Should any item of material, equipment, Work, or combinations of such be required in one section, and not be described in that section and a similar item described in another section, that description shall apply regardless of the section under which it is described. In case of conflict between the Drawings and Specifications, the Specifications shall govern. Figure dimensions on Drawings shall govern over scale dimensions, and detailed drawings shall govern over general drawings.

Attention is directed to the fact that the detailed Specifications and separate sections may be written in short or abridged form. The Contractor shall in regard to every section of the Specifications and Drawings of articles, materials, operations, or methods:

1. Provide each item mentioned and indicated, of quality or subject to qualifications noted.
2. Perform according to conditions stated, each operation prescribed.
3. Provide therefore all necessary labor, equipment and incidentals.

Whenever in these Specifications or on the Drawings the words "directed," "required," "permitted," "ordered," or words of like import are used, it shall be understood that the direction, requirement, permission or order of the City is intended, and similar words, "approved," "acceptable," "satisfactory," or words of like import shall mean approved by, acceptable to, or satisfactory to the City.

Notwithstanding the appearance of such language in the various sections of the Specifications as, "The Paving Contractor," "The Grading Contractor," etc., the Contractor is responsible to the City for the entire Contract and the execution of all Work referred to in the Contract Documents.

The Designer for the City may (without changing the scope of the Work) furnish the Contractor additional instructions and detail drawings, as necessary to carry out the Work required by the Contract Documents. The additional drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.

6. PRESENT DOCUMENTS GOVERN

The Contractor shall in no case claim a waiver of any specification requirements on the basis of previous approval of material or Workmanship on other jobs of like nature or on the basis of what might be considered "standard" for material or Workmanship in any particular location. The Contract Documents for this job shall govern the Work.

7. CONTRACTOR'S SHOP DRAWINGS

Within thirty (30) consecutive days after the issuance of the Notice to Proceed, the Contractor shall submit a schedule for the submission of all shop drawings, product data, samples, and similar submittals to the Designer. The schedule shall indicate the items, relevant specification sections, other related submittal data, and the date when these items will be furnished to the Designer. Pay applications shall not be approved until the submittal schedule had been submitted.

The approved Drawings will be supplemented by such Shop Drawings as are needed to adequately control the Work. It is mutually agreed that all authorized alterations affecting the requirements and information given on the approved Drawings shall be in writing.

Shop Drawings to be furnished by the Contractor for any structure shall consist of such detailed drawings as may be required for the prosecution of the Work.

Shop Drawings must be approved by the Designer before the Work in question is performed. Drawings for false Work, centering, and formwork may also be required, and in such cases shall be likewise subjected to approval unless approval be waived. It is expressly understood, however, that approval of the Contractor's Shop Drawings does not relieve the Contractor of any responsibility for accuracy of dimensions and details. It is mutually agreed that the Contractor shall be responsible for agreement and conformity of his Shop Drawings with the approved Drawings and Specifications.

It is the responsibility of the Contractor to review and approve all Shop Drawings before same are submitted to the Designer for approval. Shop Drawings that have not been reviewed and approved by the Contractor will not be approved.

Shop Drawings shall be submitted only by the Contractor who shall indicate by a signed stamp on the drawings that he has reviewed and approved the Shop Drawings and that the Work shown on them is in accordance with Contract requirements and has been checked for dimensions and relationship with Work of all other trades involved. Under no conditions shall Shop Drawings be accepted from anyone other than the Contractor.

The Contractor shall furnish the Designer at least six (6) hard copies of all Shop Drawings for approval. Shop drawings may also be electronically submitted for approval utilizing construction/project management software. Either the Designer or the Contractor shall be the license holder of the software, house the software program on its server, and provide access to the City via a secured password and username. The Designer shall review required submittals promptly, noting desired corrections, if any, and retaining three (3) copies for his use. The remaining copies will be returned to the Contractor by the Designer for his use not later than twenty-one (21) days from the date of the receipt for multiple disciplines or fourteen (14) days from the date of receipt for single discipline. The Contractor shall furnish the required submittals with sufficient information and accuracy in order to obtain required approval of any item with no more than three submittals. Designer will record time beyond the initial three submittals for reviewing subsequent submittals of shop drawings, samples, or other items requiring approval and the Contractor shall reimburse the Owner for the charges for such time accrued by the Designer. The Contractor shall also be responsible for any delays to the project's schedule resulting from additional reviews.

The Contract Price shall include the cost of furnishing all Shop Drawings and the Contractor will be allowed no extra compensation for such drawings.

The approval of such Shop Drawings shall not relieve the Contractor from responsibility for deviations from Drawings or the Specifications unless he has in writing called attention to such deviations, and the Designer has approved the changes or deviations in writing at the time of submission, nor shall it relieve him from the responsibility for errors of any kind in Shop Drawings. When the Contractor does call such deviations to the attention of the Designer, he shall state in his letter whether or not such deviations involve any extra cost. If this is not mentioned, it will be assumed that no extra cost is involved for making the change.

8. INSTRUCTIONS, CHANGES, ETC.

All changes, alterations or instructions in regard to any feature of the Work that differ from the Drawings and Specifications must be approved in writing in all cases, and no verbal orders will be regarded as a basis for claims for extra Work.

If the Contractor claims that any instruction by Drawings for a change or otherwise involves extra cost or an extension of time, he shall notify the Designer in writing within ten (10) days after the receipt of such instruction and, in any event, before proceeding to execute the Work. Thereafter, the procedure shall be the same as that described for changes in the Work. No such claim shall be valid unless made in accordance with the terms of this section.

No claims for extra cost will be considered based on an escalation of material prices throughout the period of the Contract.

No extra Work is to be performed or any change made that involves any extra cost or extension of time unless approved through an Authorization Request.

The Designer shall have authority, however to order minor changes in the Work not necessitating a cost event or change order, and not inconsistent with the intent of the Contract Documents. Such minor changes shall be effected by written order, bulletin drawing, or supplemental architectural instructions and shall be binding to the Owner and the Contractor.

9. EXAMINATION OF WORK BY CONTRACTOR

It is understood and agreed that the Contractor, has by careful examination, satisfied himself as to the nature and location of the Work, the conformation of the ground, the character, quality, and quantity of the facilities needed preliminary to and during the prosecution of the Work, the general and local conditions, and all other matters which can in any way affect the Work or the cost thereof under this Contract. No verbal agreement or conversation with any officer, agent, or employee of the City, either before or after the execution of the Contract, shall affect or modify any of the terms or obligations herein contained.

The Contractor shall, in good Workmanlike manner, do and perform all Work and furnish all supplies and materials, machinery, equipment, facilities, and means, except as herein otherwise expressly specified, necessary, or proper to perform and complete all the Work required by this Contract, within the time herein specified, in accordance with the provisions of this Contract and said Specifications and in accordance with the Drawings of the Work covered by this Contract and any and all supplemental drawings of the Work covered by this Contract. He shall furnish, erect, maintain, and remove such construction, plants, and such temporary Works as may be required. He alone shall be responsible for the safety, efficiency, and adequacy of his plants, appliances, and methods, and for any damage, which may result from their failure or their improper construction, maintenance, or operation. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the Contract and Specifications, local ordinances, and State and Federal laws; and shall do, carry on, and complete the entire Work.

The Contractor is and remains fully responsible for his own acts or omissions as well as those of any subcontractor or any employee of either. The Contractor agrees that no contractual relationship exists between the subcontractor and the Owner in regard to the Contractor and that the subcontractor acts on this Work as an agent or employee of the Contractor.

10. MATERIALS, SERVICES AND FACILITIES

The Contractor shall at all times employ sufficient labor and equipment for prosecuting the Work to full completion in the manner and time specified. Failure of the Contractor to provide adequate labor and equipment may result in default of the Contract. The labor and equipment to be used in the Work by the Contractor shall be sufficient to meet the requirements of the Work and shall be such as to produce a satisfactory quality of Work, in accordance with accepted industry practices within the time specified in the Contract.

If at any time during the construction and completion of the Work covered by these construction documents, the language, conduct, or attire of any Workman of the various crafts be adjudged a nuisance to the Owner or Designer, or if any Workman be considered detrimental to the Work, the Contractor shall order such parties removed immediately from the ground.

Materials and equipment shall be so stored and handled as to insure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection. No product that has in any way become unfit for the intended purpose shall be incorporated into the Work.

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, cleaned, and conditioned as directed by the manufacturer.

Materials, supplies, and equipment to be incorporated into the Work shall be new and unused unless otherwise specifically stated in the Contract Documents. The source of supply for all such products shall be submitted to the Designer, together with detailed descriptions thereof in the form of samples, Shop Drawings, tests, or other means necessary to adequately describe the items proposed. If, after trial, it is found that sources of supply, even though previously approved by the Designer, have not furnished products meeting the intent of the Contract Documents, the Contractor shall thereafter furnish products from other approved sources, and shall remove completed Work incorporating products which do not meet Contract requirements.

11. "OR EQUAL" CLAUSE

In accordance with G.S. 133-3, whenever a material or article required is specified or shown on the Drawings and/or Specifications by using the name of the proprietary product or of a particular manufacturer or vendor, the Designer shall denote that the quality standard of the article desired is the intent and the Contractor is not restricted to the specific brand, make, or manufacturer so named. The Designer shall specify three or more examples of items of equal or equivalent design. Any material or article that will perform adequately the duties imposed by the general design may be considered equal and satisfactory providing the material or article so proposed is of equal substance and function. The opinion of the Designer shall be final and no substitute material or article shall be purchased or installed without such written approval.

Any proposed substitutions of materials, items, or equipment of equal or equivalent design shall be submitted to the Designer for approval or disapproval prior to the opening of bids. Proposed substitutions shall only be submitted by the prime contractors. No requests from subcontractors, manufacturers or suppliers will be accepted.

12. TESTING OF MATERIALS

Unless otherwise specifically provided for, testing of materials and finished articles to be incorporated in the Work at the site shall be made by bureaus, laboratories, or agencies approved by the Designer. All laboratory tests shall be paid by the Owner unless provided otherwise in the contract documents. The Contractor shall furnish evidence satisfactory to the Designer that the material and finished articles have passed the required tests prior to the incorporation of such materials and finished articles in the Work.

The Contractor shall pay for the laboratory tests to establish design mixes for concrete and for additional tests to prove compliance with contract documents where materials have tested deficient except where the testing laboratory did not follow the appropriate testing procedures as defined in the Specifications.

13. INSPECTION OF WORK

The Contractor shall, at all times, permit and facilitate inspection of the Work by authorized representatives of the City and authorities having jurisdiction in connection with the Work of this Contract. The presence or observations of the Designer or other City representatives at the site of the Work shall not be construed to, in any manner, relieve the Contractor of the responsibility for strict compliance with the provisions of the Contract Documents.

All Work shall be inspected by the Designer or the Owner's Consultants prior to being covered by the Contractor. The Contractor shall give a minimum of two weeks' notice unless otherwise agreed to by all parties. Not less than 48 hours prior to inspection or testing, the Contractor shall coordinate said events with the Designer, Owner, and/or respective parties. If inspection fails after the first re-inspection, all costs associated with additional re-inspections, including travel, per diem, etc. for the Designer or his authorized representative, shall be borne by the Contractor.

If the Specifications, City's instructions, laws, ordinances, or an authority having jurisdiction require any Work to be specially tested or approved, the Contractor shall give the Designer timely notice of its readiness for observation or inspection. If the inspection is by another authority, then the Designer shall be advised of the date fixed for such inspection. Required certificates of inspection shall be secured by the Contractor. Contractor having secured all certificates of inspection will deliver same to the Designer upon completion. If any Work should be covered up without approval or consent of the Designer, Project Manager, Special Inspector, it shall, if required by the Designer, be uncovered for examination at the Contractor's expense.

Should any disagreement or difference arise as to the estimate, quantities or classifications or as to the meaning of the Drawings or Specifications, or any point concerning the character, acceptability, and nature of the several kinds of Work, any materials and construction thereof, the decisions of the Designer shall be final and conclusive and binding upon all parties to the Contract.

14. AUTHORITY OF THE DESIGNER OF RECORD

The Contractor shall perform all of the Work herein specified under the general direction, and to the entire satisfaction, approval, and acceptance of the Designer. The Designer shall decide all questions relating to measurements of quantities; the character of the Work performed and as to whether the rate of progress is such that the Work will be completed within the time limit of the Contract. All questions as to the meaning of these Specifications will be decided by the Designer.

The approval of the Designer of any materials, plants, equipment, Drawings, or of any other items executed, or proposed by the Contractor shall be construed only to constitute an approval of general design. Such approval shall not relieve the Contractor from the performance of the Work in accordance with the Contract Documents, or from any duty, obligations, performance guarantee, or other liability imposed upon him.

15. PROHIBITED INTERESTS

No official of the City who is authorized in such capacity and on behalf of the City to negotiate, make, accept or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction, or material supply contract, or any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part hereof. No officer, employee, architect, attorney, engineer, or inspector of or for the City who is authorized in such capacity and on behalf of the City to exercise any legislative, executive, supervisory, or other similar functions in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.

16. REJECTIONS OF WORK AND MATERIALS, AND OWNER'S RIGHT TO DO WORK

The Contractor shall follow the procedures outlined in the specification, manufacturer's technical data, and/or industry standards to provide a complete and proper finished product. All materials and equipment furnished and all Work done that is not in accordance with the Drawings or Specifications or that is substandard, non-conforming or

defective will be rejected. All rejected materials, equipment, or Work shall be removed immediately. If rejected materials, equipment, or Work is not removed within forty-eight hours from the date of letter of notification, the Designer shall have the right and authority to stop the Contractor and his Work immediately, and/or shall have the right to arrange for the removal of said rejected materials, equipment, or Work at the cost and expense of the Contractor. All rejected materials, equipment, or Work shall be replaced with other material, equipment, or Work that conforms with the Drawings and Specifications at no additional cost to the City.

Inspection of the Work shall not relieve the Contractor of any of his obligations to fulfill his Contract and defective Work shall be made good regardless of whether such Work, material, or equipment has been previously inspected by the Designer and accepted or estimated for payment. Neither the final certificate, final payment, occupancy of the premises by the Owner, nor any provision of the contract, nor any other act or instrument of the Owner, nor the Designer shall relieve the Contractor from responsibility for negligence or faulty material or Workmanship or failure to comply with the drawings and Specifications. The failure of the Designer to condemn improper materials or Workmanship shall not be considered as a waiver of any defect, which may be discovered later, or for Work actually defective. All Work, material, and/or equipment shall be guaranteed against defects for a period of one (1) year after final acceptance of the work performed.

If during the progress of the Work or during the period of guarantee, the Contractor fails to prosecute the Work properly or to perform any provision of the contract, the Owner, after seven days' written notice sent in person or via email with delivery confirmation or certified mail, return receipt requested, to the Contractor from the Designer, may perform or have performed that portion of Work. The cost of the Work may be deducted from any amount due or to become due to the Contractor, including retainage, such action and cost of same having been first approved by the Designer. Should the cost of such action of the Owner exceed the amount due or to become due to the Contractor, then the Contractor or his surety, or both, shall be liable for and shall pay to the Owner the amount of said excess.

17. ROYALTIES AND PATENTS

The Contractor shall hold and save the City and its officers, agents, servants, and employees, harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the City, unless otherwise specifically stipulated in the Contract Documents.

18. CONTRACTOR'S PERSONNEL

The Contractor will supervise and direct the Work. He will be solely responsible for the means, methods, techniques, sequences, and procedures of construction. An experienced Superintendent and the necessary assistants competent to supervise the particular types of Work involved shall be assigned to the Project by the Contractor, and shall be present at the site at all times when Work is in progress. The name of the Superintendent shall be submitted with qualifications of same prior to start of the Work and shall be approved by the Designer prior to start of the Work. The Superintendent so named by the Contractor shall be employed by the Contractor and shall have served in a supervisory capacity on at least one Project of like description and size performed by the Contractor during the previous twelve months. Under no circumstances shall an employee of any Subcontractor serve as Project Superintendent. The Superintendent shall represent the Contractor, and all directions given to the Superintendent shall be as binding as if given to the Contractor.

Only persons skilled in the type of Work that they are to perform shall be employed. The Contractor shall, at all times, maintain discipline and good order among his employees, and shall not employ on the Work any unfit person or persons or anyone unskilled in the Work assigned him. The Contractor shall insure that all employees maintain proper respect and courtesy for the any persons/individuals on the project site or in adjacent off site areas.

19. LINES, GRADES AND MEASUREMENTS

The Contractor shall be responsible for all layout work needed to properly execute this project. Such stakes and markings as the Designer may set for either its or the Contractor's guidance shall be preserved by the Contractor. Failure to protect such stakes or markings, or gross negligence on the Contractor's part resulting in loss of same, may result in the Contractor being charged for their replacement.

The Contractor must exercise proper care and caution to verify the grades and figures given him before proceeding with the Work, and shall be responsible for any damage or defective Work caused by his failure of such care and caution. The Contractor shall promptly notify the Designer of any errors or discrepancies he may discover in order that the proper corrections may be made.

20. PERMITS, LICENSES, TESTING AND IMPACT FEES

Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be secured by the Contractor. Costs for permits, licenses, and impact fees may be included in the total contract amount as an allowance. Refer to the bid documents or Supplemental General Conditions.

The Contractor shall be responsible for all testing, layout, and inspections required prior to the release of the project to the City. The Contractor shall provide proof of testing to the City of those areas identified to be tested or specifically requested to be tested in the specifications.

21. LAWS AND REGULATIONS

The Contractor's attention is directed to the fact that all applicable Federal, State, and City laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the Contract Documents the same as though herein written out in full. The Contractor shall keep himself fully informed of all laws, ordinances, and regulations of the Federal, State, and City in any manner affecting those engaged or employed in the Work or the materials used in the Work or in any way affecting the conduct of the Work and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over same. If any discrepancy or inconsistency should be discovered in this Contract, or in the Drawings or Specifications herein referred to, in relation to any such law, regulation, ordinance, order, or decree, he shall herewith report the same, in writing, to the Designer. He shall at all times himself observe and comply with all such laws, ordinances, and regulations, and shall protect and indemnify the City and its agents against any such law, ordinance, regulation, order, or decree, whether by himself or by his employees.

22. SUBCONTRACTING

The Contractor understands and agrees that it shall be a breach of this Contract to subcontract any portion of the Work on this Project unless the Work and the Contractor proposed to perform it have been declared in the Proposal to the Contract. Within thirty (30) days after award of the contract, the Contractor shall submit to the Designer and Owner a list giving the names and addresses of subcontractors, and equipment and material suppliers he proposes to use together with the scope of their respective parts of the Work. Should any subcontractor be disapproved by the Designer or Owner, the Designer or Owner shall communicate its decision to the Contractor. The Contractor shall present substitutions to the Designer and Owner for approval. If the subcontractor is listed on the MWBE affidavits, another MWBE subcontractor with similar certification/classification shall be substituted.

THE CONTRACTOR FURTHER UNDERSTANDS AND AGREES THAT ANY WORK ON THIS PROJECT WHICH THE CONTRACTOR SECURES IN VIOLATION OF THIS PROVISION SHALL BE DEEMED A GRATUITY FROM THE CONTRACTOR FOR WHICH THE CITY OF RALEIGH SHALL NOT BE OBLIGATED TO PAY. ALSO, THAT ANY WORK DONE BY THE SUBCONTRACTOR AND NOT MEETING THE SPECIFICATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE AT HIS OWN COST.

Nothing contained in this Contract shall create any contractual relation between any Subcontractor and the City.

23. ASSIGNMENTS

The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of the City.

24. INSURANCE REQUIREMENTS

Please see the City of Raleigh Form of Contract and Supplemental Conditions for the insurance requirements.

25. LAND AND RIGHTS-OF-WAY

Prior to entering on any land or right-of-way, the Contractor shall ascertain the requirements of applicable permits or easements secured by the City or required of the Contractor and shall conduct his Work in accordance with requirements thereof including the giving of notice.

The Contractor shall provide at his own expense and without liability to the City any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

26. PROTECTION OF WORK, PROPERTY AND PERSONS

The Contractor will be required to protect all Work and materials against damage or injury from the weather. If, in the opinion of the Designer, any Work or materials shall have been damaged or injured by reason of failure to protect such, all such materials or Work shall be removed and replaced at the expense of the Contractor.

The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, lakes, drainage ways, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. Contractor shall provide continuously sufficient illumination at all barricades and at protective barriers around excavations so that the public is adequately warned of such hazards. The Contractor shall, where necessary, provide and maintain access to and from all adjacent properties as directed by the plans and Specifications, or the Designer, or the Owner's Representative, for street rights of way, along the line of his Work. He shall abide by the Manual on Uniform Traffic Control Devices (MUTCD) for any street closures or traffic control.

The Contractor will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the Work, all necessary warning safeguards for devices and safety and protection of the Work, the public, and adjoining property. He will notify Owners of adjacent utilities when prosecution of the Work may affect them. The Contractor will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

The Contractor shall, prior to commencing other on-site Work, accurately locate above and below ground utilities and structures, which may be affected by the Work, using whatever means may be appropriate. The Contractor shall mark the location of existing utilities and structures, not otherwise readily visible, with flagging, stakes, barricades, or other suitable means, and shall preserve and protect all utilities and placement in the course of construction. He shall notify the Designer promptly on discovery of any conflict between the Contract Documents and any existing facility.

In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, or unanticipated conditions where delay would substantially impact the time or cost of Work, the Contractor, upon notification to the Designer, shall act to prevent threatened damage, injury, or loss. Any claim for compensation or extension of time by the Contractor due to such extra Work shall be submitted to the Designer within ten (10) days of the date of performing such Work or deviations in the manner prescribed for a cost event or change order. The Designer will evaluate and determine if the claims asserted by the Contractor warrant a cost event or change order, and will make a recommendation to the Owner.

All existing utilities, both public and private, including sewer, gas, water, electrical, and telephone services, etc., shall be protected and their operation shall be maintained through the course of the Work. Any temporary shutdown of an existing service shall be arranged between the Contractor and the utility responsible and hold the City harmless from the result of any damage that may occur as a result of the Contractor's activities.

Please see the City's Form of Contract and the Supplemental Conditions for additional safety requirements.

27. PRIOR USE BY CITY

Prior to completion of the Work, the City may take over operation and/or use of the uncompleted Project or portions thereof. The Contractor must agree to the prior use, and it must not prevent the Contractor from completing the Work. Such prior use of facilities by the City shall not be deemed as acceptance of any Work or relieve the Contractor from any of the requirements of the Contract Documents.

Where the City has beneficial occupancy of a usable facility prior to the expiration of the specified Contract Time, but where contract Work items remain outstanding, the City, at its option, may, in lieu of all or a proportion of liquidated damages owed by the Contractor, charge the Contractor for actual cost of administering the Contract for a period subsequent to expiration of the Contract completion date (not to exceed the total amount which could be assessed under liquidated damages).

28. CLEANING UP AND SITE ACCESS

The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by Contractor's employees or Work. Upon completion of the Work, the Contractor shall remove all his equipment, tools, materials, and other articles from the property of the City.

Delivery of construction materials and equipment shall be only from locations approved by the City.

29. DISPOSAL OF WASTE MATERIALS FROM ANY CONSTRUCTION

Disposal of all waste material from construction sites shall be made in strict accordance with all State laws and City ordinances pertaining to disposal of construction or hazardous waste. It shall be the responsibility of the Contractor to secure the necessary permits and provide all information required to secure said permits. The Contractor shall designate the disposal site prior to beginning construction and in the event waste material is to be disposed of on private property, a letter from the property Owner shall be furnished to the Owner or its representative granting the Contractor or his agent(s) such permission and listing the requirements made by the property Owner on the Contractor, if any.

30. CHANGES IN THE WORK

The City may at any time, as the need arises, order changes within the scope of the Work without invalidating the agreement. If such changes increase or decrease the amount due under the Contract Documents or in the time required for performance of the Work, an adjustment may be authorized by a cost event or change order.

The Designer, also, may at any time, make changes in the details of the Work. The Contractor shall proceed with the performance of any changes in the Work so ordered by the Designer unless the Contractor believes that such change entitles him to a change in contract price, time, or both, in which event he shall give the Designer written notice thereof within five (5) days after the receipt of the ordered change, and the Contractor shall not execute such changes pending the receipt of authorization from the City or the Designer.

Where the extra Work involved is covered by unit prices quoted in the proposal, or subsequently agreed to by the Contractor, Designer, and the City, the value of the change shall be computed by application of unit prices based on quantities, estimate or actual as agreed of the items involved, except in such cases where a quantity exceeds the estimated quantity allowance in the contract by more than 100%. In such cases, either party may elect to negotiate a new unit price, based on actual costs, or apply the unit prices in the original bid/proposal.

See following page for sample Quotation Form for Cost Change Proposal:

(this space intentionally left blank)

City of Raleigh Cost Change Proposal (CCP)

(To Authorize the use of Owner's Contingency Allowance within the Construction Contract)

Contractor Name and Address: _____

Project Name and ID: _____ Submitted Date: _____

CCP #: _____ Description of Change: (attach supporting documentation – see below): _____

1. Products (itemized breakdown attached)	\$ _____	(1)
2. Rental of Equipment (list breakdown attached) *	\$ _____	(2)
SUBTOTAL of line 1 + line 2 =		\$ _____ (item A)
3. Labor (itemized man hours breakdown attached)	\$ _____	(3)
4. Insurance (Worker's Comp, Social Security, etc.) _____% of line 3 (30% max.)	\$ _____	(4)
SUBTOTAL (item A) + line 3 + line 4 =		\$ _____ (item B)
5. Overhead and Profit –(15% max. of item B if an add or 10% max. of item B if deduct)	\$ _____	(5)
SUBTOTAL (item B) + line 5 =		\$ _____ (item C)
6. Sales Tax on Subtotal of Products and Rentals (item A)	\$ _____	(6)
SUBTOTAL of (item C) + line 6 =		\$ _____ (item D)
7. Subcontracted Work (if applicable, with itemized breakdown attached)	\$ _____	(7)
8. Subcontracted Overhead and Profit – (15% max. of Line 7 if add, 10% max if deduct)	\$ _____	(8)
9. Prime Contractor's overhead and profit (5% max. of line 7 if add, 0% if deduct)	\$ _____	(9)
SUBTOTAL of line 7 + line 8 + line 9=		\$ _____ (item E)
SUBTOTAL of (item D) + (item E) =		\$ _____ (item F)
10. Performance / Payment Bonds _____% of (item F)	\$ _____	(10)
TOTAL COST CHANGE PROPOSAL (CCP): (item F) + line 10 =		\$ _____ (item G)

Extension of Time requested: _____ calendar days (Any accepted time extension will be processed as a change order)

Note: * Include current schedules with each request if equipment is involved.

Proposal by: _____ (Contractor) Accepted by: _____ (Architect/Engineer)

Authorization for Cost/Credit to be applied to the Owner's Contingency Allowance

Original Amount of Owner's Construction Contingency Allowance: \$ _____

Total of Cost Change Proposals previously approved (enter credits as a negative) [Cost] [Credit] \$ _____

Current CCP Authorization Request (item G noted above) [Cost] [Credit] \$ _____

Owner's Contingency Allowance Remaining: \$ _____

By Signature Below, the City of Raleigh authorizes use of the Owner's Contingency Allowance funds and authorizes the above CCP to proceed in accordance with the construction contract.

Authorized by City of Raleigh: _____

31. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

It is hereby understood and mutually agreed, by and between the Contractor and the City, that the date of beginning, rate of progress and the time for completion of the Work are essential conditions of this Contract; and it is further mutually understood and agreed that the Work embraced in this Contract shall be commenced on a date to be specified in the Notice to Proceed.

The Contractor agrees that said Work shall be prosecuted regularly, diligently and uninterrupted at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the City, that the time for the completion of the Work described herein is a reasonable time for the completion of the same, taking into consideration the average climate range prevailing in this locality.

If the said Contractor shall neglect, fail or refuse to complete the Work within the time herein specified, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the City, the amount specified herein or in the Supplemental Conditions, not as a penalty, but as liquidated damages.

It is further agreed that time is of the essence of each and every portion of this Contract and of the Specifications wherein a definite portion and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any Work, the new time limit fixed by such extension shall be the essence of this Contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the Work is due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or to the public enemy, acts of the City, acts of another Contractor in the performance of a contract with the City, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather exceeding the average climatic conditions in that area of the Work.

Provided further, that the Contractor shall within ten days from the beginning of such delay, notify the City, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

Time of completion and liquidated damages are stated in the Supplemental General Conditions and other contract documents.

32. TIME EXTENSIONS

If the contract is delayed at any time in the progress of his Work, solely by an act or negligence of the Owner, Designer, or by any employee of either; by any separate Contractor employed by the Owner; by changes ordered in the Work; by labor disputes at the project site; by abnormal weather conditions not reasonably anticipated for the locality where the Work is performed; by unavoidable casualties; by any causes beyond the Contractor's control; or by any other causes which the Designer and Owner determine may justify the delay, then the contract time may be extended by change order only for the time which the Designer and Owner may determine is reasonable.

Time extensions will not be granted for rain, wind, snow, or other natural phenomena of normal intensity for the locality where Work is performed. The time for completion includes an allowance for bad weather days based on climatological data and is adjusted to reflect the number of working days per month, which would be affected.

For the purposes of this contract bad weather days are defined as follows:

- a. Days on which precipitation exceeds 0.10 inch.
- b. Days on which the temperature fails to exceed 40 degrees F average.

(A day, which qualifies on criteria for both precipitation and temperature, shall be counted as one day.)

B. Bad weather working days included:

Month	Days	Month	Days	Month	Days
January	17	May	7	September	5
February	15	June	4	October	3
March	5	July	5	November	9
April	4	August	5	December	10

c. If the total accumulated number of working days lost to bad weather exceeds the total number tabulated above time for completion will be extended by the difference. Time of completion will not be adjusted for actual bad weather days which total less than the number included in the tabulation, or not requested within the 10 days of occurrence.

For the purposes of determining the extent of a delay attributable to unusual weather phenomena, please see the Supplemental Conditions, which define the maximum number of days by month that can be considered "bad weather" days. Time extensions for weather delays, acts of God, labor disputes, fire, delays in transportation, unavoidable casualties or other delays which are beyond the control of the Owner do not entitle the Contractor to compensable damages for delays. Any Contractor claim for compensable damages is limited to delays caused solely by the Owner or its agents. Contractor caused delays shall be accounted for before Owner or Designer caused delays in the case of concurrent delays.

No weather delays shall be considered after the building has been dried in unless Work claimed to be delayed is on the critical path of the baseline schedule or approved updated schedule. This determination can only be made in consultation with the Designer and Owner.

33. PAYMENTS TO CONTRACTOR

Cost Breakdown - The Contractor shall be prepared to submit a cost breakdown immediately after the opening of Bids. Cost breakdown shall be based on values of parts of the Work as divided according to sections of the Specifications, and shall be further subdivided into labor and materials. The Contractor shall use the AIA G702 & G703 Forms for cost breakdown and all payment requests.

Applications for payment shall be submitted to the Designer for review and certification prior to submittal to the Owner for payment. Applications that have not been certified by the Designer shall be rejected by the Owner and returned to the Contractor. Designers will forward certified pay applications to the Project Manager for prompt payment. The pay application shall include the following information:

- a. Total of the contract including change orders or approved authorization requests.
- b. Value of Work completed to date.
- c. Less 5% Retainage (see additional clarification in this section).
- d. Less previous payments.
- e. Current amount due.
- f. The Contractor shall provide a sales tax statement certifying the amount of sales taxes paid for the Work provided under the contract. Manufacturers are not exempt from paying North Carolina sales taxes for providing an item directly to the City of Raleigh. If you have any questions about the sales tax requirements for the state of North Carolina, please contact the North Carolina Department of Revenue at (919)707-0880.

As specified in G.S. 143-134.1(b), within seven (7) days of receipt of payment by the Contractor of each periodic or final payment, the Contractor shall pay its subcontractor(s) based on Work completed or service(s) provided. If any periodic or final payment to the subcontractor is delayed by more than seven days after receipt of periodic or final payment by the Contractor, the Contractor shall pay the subcontractor interest, beginning on the eighth day, as a rate of one percent (1%) per month or fraction thereof on the unpaid balance as is due.

In accordance with G.S. 143-134.1(b1), no retainage on periodic or final payments made by the Owner or Contractor shall be allowed on public construction contracts in which the total project costs are less than one

hundred thousand dollars (\$100,000). When the project is fifty percent (50%) complete, the Owner, with written consent of the surety, shall not retain any further retainage from periodic payments due the Contractor, if the Contractor continues to perform satisfactorily and any nonconforming Work identified in writing prior to that time by the designer or Owner has been corrected and accepted by the designer or Owner. If the Owner determines that the Contractor's performance is unsatisfactory, the Owner may reinstate retainage.

Each pay application shall reference the City's assigned purchase order number.

Materials and Work Covered by Partial Payments - All materials and Work covered by progress payments shall, upon payment thereof, become the sole property of the City, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and Work upon which payments have been made, or the restoration of any damaged Work.

34. PAYMENTS WITHHELD

The Designer may recommend to the Owner to withhold payment for any of the following reasons:

- a. Faulty Work not corrected.
- b. The unpaid balance on the contract is insufficient to complete the Work in the judgment of the Designer.
- c. To provide for sufficient contract balance to cover liquidated damages that will be assessed.
- d. Evidence that subcontractors have not been paid.

35. SCHEDULES, REPORTS AND RECORDS

The Contractor shall submit to the Designer such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records, and other data as the Designer may request concerning Work performed or to be performed.

The Contractor shall submit to the Designer within thirty (30) days after the issuance of the Notice to Proceed schedules showing the order in which he proposes to carry on the Work, including dates at which he will start the various parts of the Work, estimated date of completion of each part; and, as applicable, the dates at which special detail drawings will be required, and respective dates for submission of Shop Drawings, the beginning of manufacture, the testing and the installation of materials, supplies and equipment. The basic project schedule shall be presented at the preconstruction meeting and no partial payments shall be made until it has been submitted to the Designer and City. The Designer shall specify acceptable scheduling or project management software programs, type of schedule methodology, either bar chart or critical path, to be utilized by the Contractor in reflecting the construction project's progress. The Contractor shall provide the schedule to the Designer and Owner electronically and in hard copy. See supplemental conditions if there are preferred scheduling software required by the Designer and/or Owner and any specific scheduling requirements.

Where a bar chart schedule is required, it shall be time-scaled in weekly increments, shall indicate the estimated starting and completion dates for each major element of Work by trade and by area, level, or zone, and shall schedule dates for all salient features, including, but not limited to the placing of orders for materials, submission of shop drawings, and other submittals for approval, approval of shop drawings by Designers, the manufacture and delivery of material, the testing and the installation of materials, supplies and equipment and all Work activities to be performed by the Contractor. The Contractor shall allow sufficient time in his schedule for all commissioning, required inspections and completion of the final punchlist(s). Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

Critical Path Method (CPM) schedule is required for all formal projects. The CPM schedule shall be in time-scaled precedence format. It shall be drawn or plotted with activities grouped or zoned by Work area of subcontract as opposed to random format. The CPM schedule shall be time-scaled on a weekly basis and shall be drawn or plotted at a level of detail or logic which will schedule all salient features of the Work to be performed by the Contractor. The Contractor shall allow sufficient time in his schedule for all commissioning, required inspections, and completion of final punchlist(s). Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

The CPM will identify and describe each activity, state the duration of each activity, the calendar dates for the early and late start and the early and late finish of each activity, and clearly highlight all activities on the critical path. "Total float" and "free float" shall be indicated for all activities. Float time shall not be considered for the exclusive use or benefit of either the Owner or the Contractor, but must be allocated in the best interest of completing the Work within the contract time. Extensions to the Contract time, when granted, will be granted only when equitable time adjustment exceeds the total float in the activity or path of activities affected by the change.

The Contractor shall submit updated schedules at each monthly meeting or at the request of the Designer or Owner. If any activities are behind schedule, the Contractor must indicate in writing what measures will be taken to bring each activity back on schedule and to ensure that the contract completion date is not exceeded. A plan of action and recovery schedule shall be developed and submitted to the Designer when: (1) the Contractor's report indicates delays, that are in the opinion of the Designer or Owner, of sufficient magnitude that the Contractor's ability to complete the Work by the scheduled completion date is brought into question; or (2) the updated construction schedule is thirty (30) days behind the planned or baseline schedule and no legitimate time extensions are in process or have been approved; or (3) the Contractor desires to make changes in the logic (sequencing of Work) or the planned duration of future activities of the CPM schedule which, in the opinion of the Designer or Owner, are of a major nature. The plan of action, when requested by the Designer or Owner, shall be submitted to the Designer and Owner, within five calendar (5) days of the request. The recovery schedule, when required, shall be submitted to the Designer and Owner, within five (5) calendar days of the request.

Failure to provide updated construction schedules, plans of action, or recovery schedules, as requested or required, shall be considered grounds for rejection of pay applications.

The Contractor shall also submit a schedule of payments that he anticipates he will earn during the course of the Work.

36. CITY'S RIGHT TO TERMINATE

Please see the City of Raleigh Form of Contract concerning the City's right to terminate.

37. FINAL ACCEPTANCE OF WORK AND FINAL PAYMENT

Final Acceptance shall occur when the Designer and Owner mutually agree to accept the project from the contractor. Final acceptance of the project shall not be considered before the final inspection is conducted. Final acceptance of the project may occur prior to correction of punch list items.

- A. Final Inspection: Upon notice from the Contractor that his Work is completed, the Designer and Owner shall make a final inspection of the Work and shall notify the Contractor of all instances where his Work fails to comply with the Drawings and Specifications, as well as any defects he may discover. Deficiencies shall be recorded on a "punch list" and the Contractor shall immediately make such alterations as are necessary to make the Work comply with the Drawings and Specifications.
- B. Final Payment: When the Work under this Contract is completed, a final payment request shall be submitted representing the original Contract Price, cost events, and change orders to the Contract. The final payment shall not be due until the Contractor shall have completed all Work necessary and reasonably incidental to the Contract, including final clean up. The final payment may not be processed until the Designer has certified that the project has been completed in accordance with the contract specifications and drawings. All close-out documents, including record drawings, guarantees, warranties, reports, operations and maintenance manuals, etc., shall have been provided to the Owner for final payment to be issued. Any training requirements shall also have been satisfied before final payment shall be issued.

Final acceptance of the Work and the making of final payment shall not constitute a waiver of any claims by the City. Payments otherwise due the Contractor, including Retainage, may be withheld by the City because of defective Work not remedied and unadjusted damage to others by the Contractor or Subcontractors, vendors or laborers.

All claims for final payment must be submitted within 60 days after the Work has been completed and accepted by the City. Failure to present said claims within that period shall constitute a waiver of the claim by the Contractor. All claims are subject to final approval and audit by the City of Raleigh.

38. GUARANTEE, WARRANTIES, AND CORRECTION OF WORK

The Contractor shall guarantee all Work to have been accomplished in conformance with the Contract Documents. Neither the final payment application nor any provision of the Contract Documents, nor partial or entire occupancy or use of the Work by the City, shall constitute an acceptance of any part of the Work not done in accordance with the Contract Documents, or relieve the Contractor of liability for incomplete or faulty materials or workmanship. The Contractor shall promptly remedy any omission or defect in the Work and pay for any damage to other improvements or facilities resulting from such omission or defect which shall appear within a period as defined in the Supplemental Conditions. In the event that the Contractor should fail to make repairs, adjustments or other remedy that may be made necessary by such defects, the City may do so and charge the Contractor the cost thereby incurred.

39. CONTRACTOR EVALUATION

The Contractor's overall Work performance on this project shall be fairly evaluated by the Owner and the Designer for determining qualifications to bid on future City projects. In addition to the final evaluation, interim evaluations may be prepared during the progress of the project. The Owner may request the Contractor evaluate the Designer's performance.

SUPPLEMENTAL GENERAL CONDITIONS

DESCRIPTION

The following supplements modify the City of Raleigh's General Conditions for Construction. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect. These modifications shall be incorporated into all Contract Forms.

SECTION 07 – CONTRACTOR'S SHOP DRAWINGS

PRODUCT INFORMATION/SHOP DRAWINGS:

The Contractor shall provide shop drawings or manufacturer product reference information for all equipment and site amenities.

SECTION 10 – MATERIALS, SERVICES AND FACILITIES

SCOPE

Furnish, erect, and maintain temporary facilities and perform temporary work required in the performance of this Contract, including those shown and specified.

USE OF TEMPORARY FACILITIES

Contractor may be required by the City to provide and maintain a suitable temporary office on the site for his own use and for the use of representatives of the City.

FIELD OFFICES

Contractor and his Subcontractors shall provide such additional offices, storage shanties, tool sheds and other temporary buildings as required for their own use and those employed on the Work. Any materials stored outside of these storage buildings or vehicles shall be inside a fenced and locked space constructed for temporary storage.

FIELD OFFICE MAINTENANCE AND REMOVAL

- A. Utilities and Furnishings: Contractor shall furnish sufficient heat, artificial light, ventilation and janitor's service, and shall also provide a table or desk, plan rack and chairs, all for the use of those visiting the job, in addition to such furnishings as Contractor provides for his own use.
- B. Location and Removal: Temporary offices and other structures shall be located where approved by City and shall be removed from the premises upon completion of the Contract or earlier if so directed by the City. They shall remain the property of the Contractor.

TOILET AND WASHING FACILITIES

- A. Toilet Building: Contractor may be required by the City, at the beginning of work, to provide on premises suitable and adequate temporary toilets and enclosure for use of workers on the job; maintain same in sanitary condition; remove same at completion of building operations and/or when directed.
- B. Sanitary Regulations: Do not allow any sanitary nuisances to be committed in or about work, enforce sanitary regulations of local and State Health Authorities.

UTILITIES DURING CONSTRUCTION

- A. Utilities: Contractor shall furnish all utilities and pay for all utility bills used during construction. Utilities shall include electric power or fuel of any sort used for heating, etc., and water.
- B. Connections to Utilities: Contractor shall provide all temporary connections to utilities when not provided by utility company or others.

TELEPHONE

Contractor shall, if required by the City, install and maintain at his own expense, a job telephone at the field office for duration of the Contract.

TEMPORARY HEAT

The Contractor shall provide at his own expense temporary heat as necessary to protect all work and materials against injury and damage from dampness and cold. Fuel, equipment and method of heating shall not present a fire hazard, shall meet all applicable codes and regulatory requirements and shall be satisfactory to the City. See requirements in detail Specifications for temperatures to be maintained for application of work under the various trades.

SECTION 18 – CONTRACTOR’S PERSONNEL

ONSITE PROJECT LABOR FORCE

The Contractor shall, at his own expense, provide the employees on the job with identifiable uniforms, name tags or other identification to indicate the name of the firm for which the employee is working while on the project.

SECTION 26 – PROTECTION OF WORK, PROPERTY AND PERSONS

SITE CONDITIONS

The Contractor shall provide a safe site work area at all times. Any holes are to be properly protected from access by children or others when the workers are not on the job site. All areas of potential hazard shall be fenced, barricaded, or appropriately marked with other devices to insure adequate notice is provided to the facility users of potential danger. All equipment shall be locked or otherwise protected to prevent the equipment from being started by people other than the work force when the job site is vacated. All hazardous materials shall be kept under lock while on the job site except when in use. The storage of all such hazardous materials shall be in a protected area and the materials stored shall be properly posted on the trailer, fence, or other device used to secure the materials.

The Contractor shall be responsible for the safe condition of the site from the initiation of work until final inspection of the project. During the time period of the project all materials, equipment, tools and other items brought to the site shall be secured if not installed, kept in neat orderly, safe stacks or piles, fenced or properly marked with warning tape or other manner to prevent users of the facilities from harm or injury. The Contractor shall not leave any excavation, hole, or pit on the project unsecured. All holes, excavations, or pits shall be covered, fenced or adequately protected and secured to prevent children or others from accessing them.

All roadway and walk pavements, sodded and planted areas, structures and substructures not specifically provided for in the Scope of Work which are disturbed by the Contractor during the execution of the work, shall be carefully protected and restored to their original conditions and in a manner satisfactory to the Owner without additional compensation.

PRESERVING NATURAL FEATURES

On lands owned by the City or others adjacent to the Work, the Contractor shall protect trees and shrubbery from being cut, trimmed or injured. The Contractor shall prevent employees from tramping in shrubbery and vehicles from unnecessarily being driven through wooded or vegetated areas adjacent to the Limits of Construction or in Owner-designated protection areas within the Limits of Construction.

MAINTENANCE OF TRAFFIC AND PARKING

The Contractor shall conduct his operations in such a manner as to minimize interference with the passage of vehicles, pedestrians and all other kinds of public traffic. The Contractor must take every precaution against accidents happening to such vehicles, pedestrians and other traffic because of his operations. Particular care must

be given to existing adjacent parking areas and vehicular access and proper care taken to minimize the impact of construction activities on these neighboring properties and activities. Particular care shall be given by the Contractor to minimize the impact of site access and construction vehicle traffic on site access and the neighboring community.

SECTION 30 – CHANGES IN THE WORK

CHANGES/ADDENDA:

The Contractor shall submit any addenda and interpretation questions to the Owner prior to making the changes in the work. The submittal shall contain any explanation needed or description of the item in question. The submittal shall also include any price changes either credits or debits. The submittal shall also contain any time delays related to the item or items in question.

SECTION 31 - TIME FOR COMPLETION AND LIQUIDATED DAMAGES:

The Contractor shall commence work to be performed under this agreement on a date to be specified in writing from the City and shall fully complete all work hereunder within the allotted Consecutive Calendar Days indicated on the bid form from the said date. For each day in excess of the contract number of days, the contractor shall pay the owner the sum in accordance with the schedule provided below as liquidated damages (per day) reasonably estimated and agreed upon with the signing of the contract. The liquidated damages are to cover any losses incurred by the Owner by reason of the failure of the Contractor to complete the work within the time specified such time being the essence of this contract and a material consideration thereof.

SECTION 32 - TIME EXTENSION:

The Contractor shall notify his surety in writing of any granted extensions of the Contract Time.

No claim shall be allowed because of the failure to furnish drawings or instructions until fifteen (15) days after written request for such drawings or instructions is made, and not then unless such claim is reasonable. Such action does not exclude the recovery of damages for delay by either party under other provisions of the Contract Documents.

Any request for extension of time shall be made within ten (10) days following the occurrence of the cause for the delay and shall be in writing to the City: otherwise, any claim shall be waived. In case of a continuing delay, only one claim is necessary. When such request for extension is made, the Contractor shall provide an estimate of the probable effect of such delay on the progress of the work.

Bad Weather Allowance for Time in the Contract:

A. The time for completion as stated above includes an allowance for bad weather days based on climatological data and is adjusted to reflect the number of working days per month, which would be affected. For the purposes of this contract bad weather days are defined as follows:

1. Days on which precipitation exceeds 0.10 inch.
2. Days on which the temperature fails to exceed 40 degrees F average.

(Any day which qualifies on criteria for both precipitation and temperature shall only be counted as a single day.)

B. Bad weather working days included:

DAILY CHARGE PER CALENDAR DAY							
January	17 days		May	7 days		September	5 days
February	15 days		June	4 days		October	3 days
March	5 days		July	5 days		November	9 days
April	4 days		August	5 days		December	10 days

- C. If the total accumulated number of working days lost to bad weather exceeds the total number tabulated above time for completion will be extended by the difference. Time of completion will not be adjusted for actual bad weather days which total less than the number included in the tabulation, or not requested within the 10 days of occurrence.
- D. The bad weather days and any time extension shall be based on the "Local Climatological Data Sheets" compiled and published by the National Weather Center at Raleigh-Durham Airport and on daily weather logs kept on the job by the Contractor reflecting the effect of the weather on progress of the work at the site. All data supporting a request for extension of time shall be supplied by the General Contractor or the project expediter assigned to the project.
- E. The City shall be the judge as to division of responsibility between the several contractors and shall apportion the amount of liquidated damages to be paid by each of them according to delay caused by any or all of them. This will relate to the construction schedules filed for the project by each contractor.

FAILURE OR DELAY IN COMPLETING WORK ON TIME:

Time is an essential element of the Contract, and any delay in the prosecution of the work may inconvenience the public or interfere with the daily operations of the department and demand additional time for supervision. For this reason, it is important that the work be pressed vigorously to completion. Should the Contractor fail to complete the work within the time stipulated in the contract or within such extra time that may be allowed, charges shall be assessed against any money due or that may become due the Contractor in accordance with the following schedule:

SCHEDULE OF DEDUCTIONS FOR EACH DAY OF OVERRUN IN CONTRACT TIME

ORIGINAL CONTRACT AMOUNT			DAILY CHARGE PER CALENDAR DAY
<i>FROM:</i>	<i>TO:</i>		
\$0	\$ 25,000		\$ 250
25,001	50,000		\$ 300
50,001	100,000		\$ 350
100,001	500,000		\$ 450
500,001	1,000,000		\$ 550
1,000,001	2,000,000		\$700
2,000,001	2,000,001 +		\$850

Liquidated Damages:

The amount of such damages is hereby agreed upon as fixed liquidated damages due the City after the expiration of the time for completion specified in the Contract. The Contractor and his Surety shall be liable for liquidated damages in excess of the amount due the Contractor on the final payment.

These fixed liquidated damages are not established as a penalty but are calculated and agreed upon in advance by the City and the Contractor due to the uncertainty and impossibility of making a determination as to the actual and consequential damages which are incurred by the City, and the public as a result of the failure on the part of the Contractor to complete the Work on time.

Application of Damages:

Liquidated damages shall start in accordance with the above schedule upon notification to the Contractor in writing that the apparent Contract Time has been consumed.

1. Deduction from Partial Payments: Liquidated damages, as they accrue, will be deducted from periodic payments, such deductions shall be in addition to the retainage provided for the Contract.

2. Deduction from Final Payment: The full amount of liquidated damages will be deducted from the final payment to the Contractor and /or his Surety.
3. No liquidated damages charged for delay by the City: In case of default of the Contract and the subsequent completion of the Work by the City as hereinafter provided, the Contractor and his Surety shall be liable for the liquidated damages under the Contract, but no liquidated damages shall be chargeable for any delay in the final completion of the Work by the City due to any unreasonable action, negligence, omission or delay of the City. In any suit for the collection of or involving the assessment of liquidated damages, the reasonableness of the amount shall be presumed. The liquidated damages referred to herein are intended to be and are cumulative and shall be in addition to every other remedy now or hereafter enforceable at law, in equity, by statute, or under the Contract.

The Contractor shall be liable for and shall pay to the City the above stated amount as fixed, agreed and liquidated damages for each day beyond the designated completion date until the project is completed and accepted.

SECTION 033000 - CAST IN PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes cast-in-place concrete for the following:

1. Slabs on deck.
2. Slabs on grade.
3. Walls.
4. Footings.
5. Fill for metal pan stairs
6. Mechanical equipment pads and housekeeping pads.
7. Control, expansion and contraction joint devices.

1.2 REFERENCES

A. American Concrete Institute:

1. ACI 301 - Specifications for Structural Concrete.
2. ACI 305 - Hot Weather Concreting.
3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
4. ACI 308.1 - Standard Specification for Curing Concrete.
5. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:

1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
2. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
3. ASTM C33 - Standard Specification for Concrete Aggregates.
4. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
5. ASTM C42/C42M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
6. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
7. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
8. ASTM C150 - Standard Specification for Portland Cement.
9. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
10. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
11. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
12. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
13. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
14. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
15. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
16. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
17. ASTM C685/C685M - Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing.
18. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
19. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
20. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
21. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
22. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink).
23. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
24. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.

25. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
26. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
27. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
28. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
29. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
30. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
31. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
32. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
33. ASTM E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.
34. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.3 PERFORMANCE REQUIREMENTS

- A. Vapor Barrier Permeance: testing results from ASTM F 1249 or ASTM E 96 must state a water vapor transmission rate (WVTR) of less than 0.01 perms (grains/[hour * ft² * in. Hg])

1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on joint devices, attachment accessories and admixtures.
- C. Design Data:
 1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
 - a. Hot and cold weather concrete work.
 - b. Air entrained concrete work.
 2. Identify mix ingredients and proportions, including admixtures.
 3. Identify chloride content of admixtures and whether or not chloride was added during manufacture.
- D. LEED Submittals:
 1. Credit MR 4.1 and Credit MR 4.2: Product Data indicating percentages by weight of postconsumer and pre-consumer recycled content for concrete materials and steel reinforcement.
 - a. Include statement indicating costs all materials having recycled content.
City of Raleigh, Parks and Recreation
 2. Credit MR 5.1 and Credit MR 5.2: Product Data indicating percentages by weight of concrete materials and steel reinforcement that have been extracted and manufactured within 500 miles of the project site.
 - a. Include statement indicating costs for each material extracted and manufactured within 500 miles of project site.
- E. Manufacturer's Installation Instructions: Submit installation procedures and interface required with adjacent Work.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01770 - Execution and Closeout Requirements: Closeout procedures.
- B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301 and ACI 318.
- B. Conform to ACI 305 when concreting during hot weather.
- C. Conform to ACI 306.1 when concreting during cold weather.
- D. Acquire cement and aggregate from one source for Work.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Maintain concrete temperature after installation at minimum 50 degrees F for minimum 7 days.

1.8 COORDINATION

A. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, and as follows:

1. Type I, except where other type is specifically permitted or required.

a. Type I may be replaced by Type III (high early strength) for concrete placed during cold weather.

B. Fly Ash: ASTM C 618, Type C or F.

1. Maximum allowable loss on ignition: 4.0 percent.

C. Water: Potable.

D. Aggregates:

1. Normal weight concrete: ASTM C 33, uniformly graded as follows:

a. Class: Moderate weathering region, but not less than 3M

b. Nominal Maximum Aggregate Size:

1) Slabs on Grade: 1-inch.

2) Footings and Walls: 3/4-inch.

2. Structural lightweight aggregate concrete: Expanded shale or slate produced by the rotary kiln method conforming to ASTM C 330.

a. Maximum size of coarse aggregates: 3/4-inch.

E. Admixtures - General: Admixtures which result in more than 0.1 percent of soluble chloride ions by weight of cement are prohibited.

F. Air-Entraining Admixture: ASTM C 260 and certified by manufacturer for compatibility with other mix components.

G. Water-Reducing Admixture: ASTM C 494, Type A.

H. Water-Reducing, Retarding Admixture: ASTM C 494, Type D.

I. Water-Reducing and Accelerating Admixtures: ASTM C 494, Type E.

2.2 REINFORCEMENT

A. Deformed Reinforcement: ASTM A615/A615M; 60 ksi yield strength, steel bars, unfinished.

2.3 REINFORCEMENT ACCESSORY MATERIALS

A. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions including load bearing pad on bottom to prevent vapor retarder puncture.

B. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: Plastic tipped steel type; size and shape to meet Project conditions.

2.4 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. Vapor Retarder: ASTM E 1745, Class B, high density rubber modified polyolefin sheet

1. Properties:

a. Min. Permeance: ASTM E-96, 0.02 perms.

b. Water Vapor Retarder: ASTM E-1745, meets or exceeds Class B.

c. Thickness of Retarder: ACI 302.112-96, not less than 12 mils.

2. Manufacturers:

a. Stego Wrap, (877) 464-7834.

b. Griffolyn T-85 by Reef Industries, (800) 231-6075.

c. Moistop Ultra A by Fortifiber Industries, (800) 773-4777.

d. Vapor Mat, W.R. Meadows Inc.

3. Seam Tape: Manufacturer's recommended low permeance tape composed of a high density

polyethylene film and a rubber based, pressure-sensitive adhesive.

B. Nonshrink Grout: ASTM C 1107.

1. Type: Provide nonmetallic type only.

2. Products: The following products, provided they comply with requirements of the contract documents, will be among those considered acceptable:

a. Nonmetallic type:

- 1) "Masterflow 928"; Master Builders, Inc.
- 2) "SonogROUT 14k"; Sonneborn Building Products Division/ChemRex, Inc.
- 3) "Euco N-S Grout"; The Euclid Chemical Company.
- 4) "Supreme"; Cormix Construction Chemicals.
- 5) "Crystex"; L & M Construction Chemicals, Inc.
- 6) "Sure-Grip High Performance Grout"; Dayton Superior Corporation.
- 7) "Horn Non-Corrosive Non-Shrink Grout"; A. C. Horn, Inc.
- 8) "Five Star Grout"; Five Star Products, Inc.

C. Burlap: AASHTO M 182, Class 2 jute or kenaf cloth.

D. Moisture-Retaining Cover: ASTM C 171, and as follows:

1. Curing paper.
2. Polyethylene film.
3. White burlap-polyethylene sheeting.

E. Liquid Curing Compounds:

1. Manufacturers: Provide products complying with requirements of the contract documents and made by one of the following:

- a. Master Builders, Inc.
- b. Anti-Hydro International, Inc.
- c. The Euclid Chemical Company.
- d. A. C. Horn, Inc.
- e. Dayton Superior Corporation.
- f. W. R. Meadows, Inc.
- g. The Burke Company.
- h. Sonneborn Building Products Division/ChemRex, Inc.
- i. L & M Construction Chemicals, Inc.
- j. Setcon Industries, Inc.
- k. Cormix, Inc.

2. Material - curing compounds: Comply with ASTM C 309, Type 1.

- a. Non-yellowing formulation where subject to ultraviolet light.
- b. Where compounds are proposed for use on surfaces to which finishes, coatings, or coverings subsequently will be applied, compound shall possess demonstrated compatibility with finish, coating, or covering, and use shall be subject to approval of the architect.
- c. Curing and sealing compound: Where indicated, provide curing and sealing formulation with long-lasting finish that is resistant to chemicals, oil, grease, deicing salts, and abrasion.

3. Solvents: Water-based products where used on interior surfaces.

F. Self-Expanding Strip Waterstops: Manufactured rectangular or trapezoidal strip, sodium bentonite or other hydrophylic material for adhesive bonding to concrete.

1. Products: Subject to compliance with requirements, provide one of the following:

- a. Volclay Waterstop-RX;
- b. Colloid Environmental Technologies Co.
- c. ConSeal CS-231; Concrete Sealants Inc.
- d. SwellSeal Joint; De Neef Construction Chemicals (U.S.) Inc.
- e. Hydrotite; Greenstreak.
- f. Mirastop; Mirafi Moisture Protection, Div. of Royal Ten Cate (USA), Inc.
- g. Adeka Ultra Seal; Mitsubishi International Corporation.
- h. Superstop; Progress Unlimited Inc.

G. Underlayment Compound: Self-leveling cementitious compound designed for pumping.

1. Products: Provide one of the following:
 - a. "Flo-Top"; The Euclid Chemical Company.
 - b. "Thoro Underlayment Self-Leveling"; Thoro System Products Division/ICI Americas.
- H. Expansion Joint Filler:
1. Interior – Non- extruding bituminous type: ASTM D 1751.
 2. Exterior - Sponge rubber type: ASTM D 1752, Type I.

2.5 FIBER REINFORCEMENT

- A. Synthetic Fibrillated Fibers: Fibrillated polypropylene fibers engineered and designed for use in concrete pavement, complying with ASTM C1116, Type III, 1/2 to 1-1/2 inches long:
1. Available products:
 - a. Axim Concrete Technologies; Fibrasol F.
 - b. Euclid Chemical Company (The); Fiberstrand F.
 - c. FORTA Corporation; Forta.
 - d. Grace Construction Products, W. R. Grace & Co.; Grace Fibers.
 - e. Propex Concrete Systems; Fibermesh.
- B. Synthetic Macro Fibers (defined as coarse by ASTM Subcommittee C09.42): ASTM C1116, Type III, manufactured from virgin polyolefin and engineered for use as temperature and shrinkage reinforcement.
1. Properties:
 - a. Equivalent diameter: 0.016 inches to 0.05 inches.
 - b. Aspect ratio: 50, minimum.
 - c. Average Residual Stress: 125 psi, minimum, in accordance with ASTM C1399.
 - d. Fire Rating: up to 2 hours in accordance with ASTM E119.
 2. Available products:
 - a. Grace Construction Products, W. R. Grace & Co.; Strux 90/40.
 - b. Propex Concrete Systems; Fibermesh 650.
 - c. FORTA Corporation; FORTA-FERRO.

2.6 CONCRETE MIX DESIGN - GENERAL

- A. Review: Do not begin concrete operations until proposed mixes have been reviewed and approved by the architect.
- B. Proportioning of Concrete: Comply with recommendations of ACI 211.1 for normal weight concrete and ACI 211.2 for structural lightweight concrete.
- C. Required Average Strength: For each type and strength of concrete, establish the required average strength $f'(cr)$ of the design mix on the basis of either field experience or trial mixtures as specified in ACI 301, and proportion mixes accordingly. If trial mixtures method is used, employ an independent testing agency acceptable to the architect for preparing and reporting proposed mix designs.
- D. Specified Compressive Strength $f'(c)$ at 28 Days for Locations as Indicated on Drawings:
1. Supported slab 3500 psi light weight
 2. Slab on grade 3500 psi normal weight
 3. Retaining walls 4500 psi normal weight
 4. Footings 4000 psi normal weight
 5. Fill for metal pan stairs 3500 psi light weight
 6. Equipment pads 3000 psi normal weight
- E. Verify air-dry unit weight of lightweight concrete in accordance with ASTM C 567, and correlate with fresh unit weight for use in acceptance of fresh concrete during construction.
- F. Fiber Reinforcement:
1. Synthetic Fibrillated Fibers in Slabs on Grade: Add to concrete mixture, according to manufacturer's written instructions, at a rate of 1.5 lb/cu.yd.
 2. Synthetic Macro-Fibers in Suspended Slabs: Uniformly disperse in concrete mixture at rate required to achieve specified average residual stress, but not less than 5.0 lb/cu. yd
- G. Fly Ash:
1. The contractor may elect to replace a portion of the portland cement with fly ash up to a maximum of 25 percent by weight of cement plus fly ash.
- H. Admixtures:

1. Air-entraining admixture: Use in mixes for exterior exposed concrete unless otherwise specifically indicated. Add at rate to achieve total air content in accordance with Table 1.4.3 of ACI 201.2. For concrete not exposed to exterior, add at rate to achieve total air content between 2 percent and 4 percent.

a. Do not use in slabs-on-grade scheduled to receive topping, unless manufacturer of topping recommends use over air-entrained concrete.

2. Water-reducing admixture: Add as required for placement and workability.

3. Water-reducing and retarding admixture: Add as required in concrete mixes to be placed at ambient temperatures above 90 degrees F.

4. Water-reducing and accelerating admixture: Add as required in concrete mixes to be placed at ambient temperatures below 50 degrees F.

5. Do not use admixtures not specified or approved.

I. Mix Adjustments: Provided that no additional expense to owner is involved, contractor may submit for architect's approval requests for adjustment to approved concrete mixes when circumstances such as changed project conditions, weather, or unfavorable test results occur. Include laboratory test data substantiating specified properties with mix adjustment requests.

2.7 CONTROL OF MIX IN THE FIELD

A. Slump: A tolerance of up to 1 inch above approved design mix slump will be permitted for 1 batch in 5 consecutive batches tested. Concrete of lower slump than that specified may be used, provided proper placing and consolidation is obtained.

B. Total Air Content: A tolerance of plus or minus 1-1/2 percent of approved design mix air content will be allowed for field measurements.

C. Do not use batches that exceed tolerances.

2.8 CONCRETE MIXING

A. Transit Mixers: Mix concrete materials in transit mixers, complying with requirements of ASTM C 94.

1. At ambient temperatures of 85 to 90 degrees F, reduce mixing and delivery time to 75 minutes.

2. At ambient temperatures above 90 degrees F, reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 013100 - Administrative Requirements: Coordination and project conditions.

B. Verify requirements for concrete cover over reinforcement.

C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.

B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

C. Remove debris and ice from formwork, reinforcement, and concrete substrates.

D. Remove water from areas receiving concrete before concrete is placed.

3.3 PLACING CONCRETE

A. Place concrete in accordance with ACI 301 and ACI 318.

B. Notify testing laboratory and Architect/Engineer minimum 24 hours prior to commencement of operations.

C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.

- D. Install vapor barrier under interior slabs on grade in accordance with ASTM E1643. Lap joints minimum 6 inches and seal watertight by taping edges and ends.
- E. Repair vapor barrier damaged during placement of concrete reinforcing. Repair with vapor barrier material; lap over damaged areas minimum 6 inches and seal watertight.
- F. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- G. Install joint device anchors. Maintain correct position to allow joint cover to be flush with floor and wall finish.
- H. Install joint covers in longest practical length, when adjacent construction activity is complete.
- I. Apply sealants in joint devices in accordance with Section 07920.
- J. Deposit concrete at final position. Prevent segregation of mix.
- K. Place concrete in continuous operation for each panel or section determined by predetermined joints.
- L. No free falls in excess of 3 feet shall be permitted. For falls in excess of 3 feet, chutes or elephant trunks shall be employed.
- M. Concrete shall be thoroughly compacted during placing and thoroughly worked around reinforcing and embedded fixtures and into the corners of the form. Vibration shall be employed to aid the compaction of the concrete under experienced supervision. Forms shall be designed to withstand their action. Supplement vibration by spading. No forking and/or raking shall be permitted. At least one spare vibrator shall be on hand for emergency use.
- N. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- O. Place concrete continuously between predetermined expansion, control, and construction joints.
- P. Do not interrupt successive placement; do not permit cold joints to occur.
- Q. No concrete that has partially hardened, become contaminated by foreign materials, or has been re-tempered shall be deposited.
- R. Place floor slabs in saw cut pattern indicated.
- S. Saw cut joints within 12 hours after placing. Use 3/16-inch-thick blade, cut into 1/4 depth of slab thickness.
- T. Screed floors and slabs on grade level, maintaining surface flatness of maximum 1/4 inch in 10 ft. Refer to Section 03350 for floor flatness requirements at polished concrete slabs.
- U. Provide control joints in concrete terrazzo flooring per NTMA recommendations and as follows: Provide control joints at no more than 6'-0" on center. Provide control joints at all corner locations.

3.4 FINISHING FORMED SURFACES

- A. Repairs, General: Repair surface defects, including tie holes, immediately after removing formwork.
 - 1. Remove honeycombed areas and other defective concrete down to sound concrete, cutting perpendicular to surface or slightly undercutting. Dampen patch location and area immediately surrounding it prior to applying bonding compound or patching mortar.
 - 2. Before bonding compound has dried, apply patching mixture matching original concrete in materials and mix except for omission of coarse aggregate, and using a blend of white and normal portland cement as necessary to achieve color match. Consolidate thoroughly and strike off slightly higher than surrounding surface.
- B. Unexposed Form Finish: Repair tie holes and patch defective areas. Rub down or chip off fins or other raised areas exceeding 1/4 inch height.
- C. Exposed Form Finish: Repair and patch defective areas, with fins or other projections completely removed and smoothed.
 - 1. Smooth rubbed finish: Apply to surfaces indicated no later than 24 hours after form removal.
 - a. Wet concrete surfaces to be finished and rub with Carborundum brick or other abrasive until uniform color and texture are achieved.
 - b. Do not apply separate grout mixture.
 - 2. Contiguous unformed surfaces: Strike smooth and float to a similar texture tops of walls, horizontal offsets, and other unformed surfaces adjacent to or contiguous with formed surfaces. Continue final finish of formed surfaces across unformed surfaces, unless otherwise specifically indicated.

3.5 FINISHING SLABS

A. Finishing Operations - General:

1. Do not directly apply water to slab surface or dust with cement.
2. Use hand or powered equipment only as recommended in ACI 302.1R.
3. Screeding: Strike off to required grade and within surface tolerances indicated. Verify conformance to surface tolerances. Correct deficiencies while concrete is still plastic.
4. Bull Floating: Immediately following screeding, bull float or darby before bleed water appears to eliminate ridges, fill in voids, and embed coarse aggregate. Recheck and correct surface tolerances.
5. Do not perform subsequent finishing until excess moisture or bleed water has disappeared and concrete will support either foot pressure with less than 1/4-inch indentation or weight of power floats without damaging flatness.
6. Final floating: Float to embed coarse aggregate, to eliminate ridges, to compact concrete, to consolidate mortar at surface, and to achieve uniform, sandy texture. Recheck and correct surface tolerances.
7. Troweling: Trowel immediately following final floating. Apply first troweling with power trowel except in confined areas and apply subsequent troweling with hand trowels. Wait between troweling to allow concrete to harden. Do not over trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over it. Consolidate concrete surface by final troweling operation. Completed surface shall be free of trowel marks, uniform in texture and appearance, and within surface tolerance specified.
 - a. Grind smooth surface defects which would telegraph through final floor covering system.

B. Coordinate appearance and texture of required final finishes with the architect before application.

C. Float Finish: As specified above.

D. Broomed Float Finish: After floating and when water sheen has practically disappeared, apply uniform transverse corrugations approximately 1/16-inch-deep, without tearing surface.

E. Trowel Finish: As specified above.

F. Trowel and Fine Broom Finish: Follow trowel finishing operation immediately with fine brooming to achieve slightly scarified surface.

G. Chemical Hardener Finish:

1. Trowel finish and allow complete curing and drying of concrete surface.
2. Apply chemical hardener finish following manufacturer's printed application instructions, applying in 3 coats diluted with water. Evenly apply each coat, allowing 24 hours for drying between coats.
3. Remove any surplus hardener according to manufacturer's instructions.

H. Slab Surface Tolerances:

1. Achieve flat, level planes except where grades are indicated. Slope uniformly to drains.
2. Floated finishes: Depressions between high spots shall not exceed 1/4 inch under a 10-foot straightedge.
3. Troweled finishes: Achieve level surface plane so that depressions between high spots do not exceed the following dimension, using a 10-foot straightedge:
 - a. 1/8 inch non-cumulative in any direction and equivalent to FF50 (floor flatness), FL35 (floor levelness) at areas to receive wood flooring and special sports flooring as noted in Division 9.
 - b. 3/16 inch all others receiving troweled finishes.
4. Refer to Section 03350 for flatness requirements at polished concrete slabs.

I. Slab Finish Schedule: Apply finishes in the following typical locations and as otherwise shown on the drawings:

1. Float finish:
 - a. Surfaces to receive thickset stone flooring
2. Broomed float:
 - a. Sidewalks.
 - b. Exterior slabs not otherwise scheduled.
3. Trowel finish:
 - a. Exposed interior floors not otherwise scheduled.
 - b. Surfaces to receive resilient tile.
 - c. Surfaces to receive carpet.
4. Trowel and fine broom:

- a. Surfaces to receive thin set tile.
- 5. Chemical hardener finish: In locations shown on the drawings.
- J. Repair of Slab Surfaces: Test slab surfaces for smoothness and to verify surface plane to tolerance specified. Repair defects as follows:
 - 1. High areas: Correct by grinding after concrete has cured for not less than 14 days.
 - 2. Low areas: Immediately after completion of surface finishing operations, cut out low areas and replace with fresh concrete. Finish repaired areas to blend with adjacent concrete. Proprietary patching compounds may be used when approved by the architect.
 - 3. Crazed or cracked areas: Cut out defective areas, except random cracks and single holes not exceeding 1 inch in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts. Dampen exposed concrete and apply bonding compound. Mix, place, compact, and finish patching concrete to match adjacent concrete.
 - 4. Isolated cracks and holes: Groove top of cracks and cut out holes not over 1 inch in diameter. Dampen cleaned concrete surfaces and apply bonding compound; place dry pack or proprietary repair compound acceptable to architect while bonding compound is still active:
 - a. Dry-pack mix: One-part Portland cement to 2-1/2 parts fine aggregate and enough water as required for handling and placing.
 - b. Install patching mixture and consolidate thoroughly, striking off level with and matching surrounding surface. Do not allow patched areas to dry out prematurely.
 - 5. Underlayment: Leveling of slabs for subsequent application of floor finishes may be achieved by use of specified underlayment material, at contractor's option.
- K. Surface Sealer: Apply to all interior concrete slabs to remain exposed.
 - 1. Allow concrete to cure for 30 days prior to application of sealer.
 - 2. Use clear solvent base, 100% solid epoxy sealer similar to Tamms Duraltex 1705. Apply two coats. Follow manufacturers recommendation for surface preparation.

3.6 CONCRETE CURING AND PROTECTION

- A. General:
 - 1. Prevent premature drying of freshly placed concrete, and protect from excessively cold or hot temperatures until concrete has cured.
 - 2. Provide curing of concrete by one of the methods listed and as appropriate to service conditions and type of applied finish in each case.
- B. Normal Curing Period:
 - 1. Not less than 7 days for standard cements and mixes.
 - 2. Not less than 4 days for high early strength concrete using Type III cement.
- C. Formed Surfaces: Cure formed concrete surfaces by moist curing with forms in place for full curing period or until forms are removed.
 - 1. Keep wooden or metal forms moist when exposed to heat of the sun.
 - 2. If forms are removed prior to completion of curing process, continue curing by one of the applicable methods specified.
- D. Surfaces Not in Contact with Forms:
 - 1. Refer to Specification 03350 for curing requirements of polished concrete slabs.
 - 2. Start initial curing as soon as free water has disappeared, but before surface is dry.
 - 3. Keep continuously moist for not less than 7 days by uninterrupted use of any of the following:
 - a. Water ponding.
 - b. Water-saturated sand.
 - c. Water-fog spray.
 - d. Saturated burlap: Provide 4-inch minimum overlap at joints.
 - 4. Begin final curing procedures immediately following initial curing and before concrete has dried.
 - a. Moisture-retaining cover: Lap not less than 3 inches at edges and ends, and seal with waterproof tape or adhesive. Repair holes or tears during curing period with same tape or adhesive. Maintain covering in intimate contact with concrete surface. Secure to avoid displacement.
 - 1) Extend covering past slab edges at least twice the thickness of slab.
 - 2) Do not use plastic sheeting on surfaces which will be exposed to view when in service.

- b. Curing compound: Apply at rate stated by manufacturer to conform with moisture-retention requirements specified, using second, immediate application at right angles to first, if necessary, and reapply if damaged by rain.
 - c. Curing and sealing compound: Apply at rate stated by manufacturer to conform with moisture-retention requirements specified, using second, immediate application at right angles to first, if necessary, and reapply if damaged by rain. Apply additional coat near substantial completion to act as sealer.
 - d. Use curing compounds only in locations permitted or required, and where use will not interfere with other finishes, coatings, or coverings to be applied.
5. Continue final curing to end of curing period.
- E. Avoid rapid drying at end of curing period.
- F. During and following curing period, protect concrete from temperature changes of adjacent air in excess of 5 degrees F per hour and 50 degrees F per 24 hours. Progressively adjust protective measures to provide uniform temperature changes over entire concrete surface.

3.7 MISCELLANEOUS CONCRETE ITEMS

- A. Fill-in: Fill in holes and openings left in concrete structures for passage of work by other trades after such work is in place. Place such fill-in concrete to blend with existing construction, using same mix and curing methods.
- B. Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as indicated on drawings. Set anchor bolts at correct elevations, complying with diagrams or templates of equipment manufacturer.
 - 1. Grout base plates and foundations as indicated with nonshrink grout.
 - 2. Use nonmetallic grout for exposed conditions, unless otherwise indicated.
- C. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Screed, Tamp, and finish concrete surfaces as scheduled.
- D. Reinforced Masonry: Provide concrete grout for reinforced masonry where indicated on drawings and as scheduled.

3.8 CONCRETE REPAIRS

- A. Perform cosmetic repairs of concrete surfaces as specified under concrete application.
- B. Perform structural repairs with prior approval of the architect for method and procedure, using epoxy bonding systems. The architect's approval is required for repair methods using materials other than those specified.

3.9 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. Composite Sampling and Making and Curing of Specimens: ASTM C 172 and ASTM C 31.
 - 1. Take samples at point of discharge.
 - 2. For pumped concrete, perform sampling and testing at the frequencies specified herein at point of delivery to pump, and perform additional sampling and testing at the same frequency at discharge from line. Results obtained at discharge from line shall be used for acceptance of concrete.
- B. Slump: ASTM C 143. One test per strength test and additional tests if concrete consistency changes.
 - 1. Modify sampling to comply with ASTM C 94.
- C. Air Content of Normal Weight Concrete: ASTM C 173 or ASTM C 231. One test per strength test performed on air-entrained concrete.
- D. Air Content of Lightweight Concrete: ASTM C 173. One test per strength test performed on air-entrained concrete.
- E. Approximate Air-Dry Weight of Lightweight Concrete: ASTM C 567. Determine fresh unit weight once per strength test and report approximate air-dry weight of concrete represented.
- F. Concrete Temperature:
 - 1. Test hourly when air temperature is 40 degrees F or below.
 - 2. Test hourly when air temperature is 90 degrees F or above.

3. Test each time a set of strength test specimens is made.
- G. Compressive Strength Tests: ASTM C 39.
1. Compression test specimens: Mold and cure one set of 4 standard cylinders for each compressive strength test required.
 2. Testing for acceptance of potential strength of as-delivered concrete:
 - a. Obtain samples on a statistically sound, random basis.
 - b. Minimum frequency:
 - 1) One set per 100 cubic yards or fraction thereof for each day's pour of each concrete class.
 - 2) One set per 3500 square feet of slab or wall area or fraction thereof for each day's pour of each concrete class.
 - 3) When less than 5 cubic yards is placed in one day, the architect may, at architect's option, waive laboratory testing of specimens if adequate evidence of satisfactory strength is provided. (Molding and curing of these specimens is not waived.)
 - 4) When the above testing frequency would provide fewer than 5 strength tests for a given class of concrete during the project, conduct testing from not less than 5 randomly selected batches, or from each batch if fewer than 5.
 - c. Test one specimen per set at 7 days for information unless an earlier age is required.
 - d. Test 2 specimens per set for acceptance of strength potential; test at 28 days unless other age is specified. The test result shall be the average of the two specimens. If one specimen shows evidence of improper sampling, molding, or testing, the test result shall be the result of the remaining specimen; if both show such evidence, discard the test result and inform the architect.
 - e. Retain one specimen from each set for later testing, if required.
 - f. Strength potential of as-delivered concrete will be considered acceptable if all of the following criteria are met:
 - 1) No individual test result falls below specified compressive strength by more than 500 psi.
 - 2) Not more than 10 percent of individual test results fall below specified compressive strength $f'(c)$.
 - 3) Average of any 3 consecutive strength test results equals or exceeds specified compressive strength $f'(c)$.
 3. Removal of forms or supports: Mold additional specimens and field-cure with concrete represented; test to determine strength of concrete at proposed time of form or support removal.
- H. Test Results: Testing agency shall report test results in writing to architect and contractor within 24 hours of test.
1. Test reports shall contain the following data:
 - a. Project name, number, and other identification.
 - b. Name of concrete testing agency.
 - c. Date and time of sampling.
 - d. Concrete type and class.
 - e. Location of concrete batch in the completed work.
 - f. All information required by respective ASTM test methods.
 2. Nondestructive testing devices such as impact hammer or sonoscope may be used at architect's option for assistance in determining probable concrete strength at various locations or for selecting areas to be cored, but such tests shall not be the sole basis for acceptance or rejection.
 3. The testing agency shall make additional tests of in-place concrete as directed by the architect when test results indicate that specified strength and other concrete characteristics have not been attained.
 - a. Testing agency may conduct tests of cored cylinders complying with ASTM C 42, or tests as directed.

b. Cost of additional testing shall be borne by the contractor when unacceptable concrete has been verified.

END OF SECTION 033000

SECTION 329200
TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Planting Soil.
2. Preparation of planting soil.
3. Turf and Grasses
 - a. Turfgrass Seeding.
 - b. Turfgrass Sodding.
 - c. Turfgrass Sprigging/Plugging.
 - d. Naturalized grasses and wildflowers including no-mow grasses, and meadow grasses.
 - e. Wet Zone Grass Seed.
4. Turf renovation.
5. Maintenance and protection
6. Turf and Grasses Warranty.

B. Related Sections include the following:

1. Division 01 General Requirements
2. Division 31 Earthwork.
3. Division 32 Exterior Improvements.
4. Division 33 Utilities

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

D. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill immediately beneath planting soil.

E. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

F. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 SUBMITTALS

- A. Request for Deviations from Specifications: If any deviations from specifications are proposed, include written description and reasons for proposed deviations. Do not proceed until written approval is given by the Owner of any deviations.
- B. The following required submittals shall be submitted in accordance with 013300 Submittal Procedures.
- C. Product Data and Testing
1. Planting Soil Analysis: For existing surface soil and imported or manufactured topsoil.
 - a. Contractor shall deliver samples to testing laboratory, have testing reports sent directly to the Owner and pay all cost. Report shall be submitted at least thirty- (30) days prior to the start of Work under this Section.
 - b. Mechanical and chemical (pH soluble salts) analysis shall be in accordance with the current "Standards" of the Association of Official Analytical Chemists (AOAC).
 - c. Soil Test Report shall include a mechanical sieve analysis with soil classification including gradation of sand, silt, and clay content. Organic matter content and Cation Exchange Capacity (CEC) shall be reported. Chemical analysis shall include pH (1:1 soil-water ratio), buffer pH, Soluble Salts (1:2 soil-water ratio), Nitrate Nitrogen, Ammonium Nitrogen, Phosphorus, Potassium, Calcium, Aluminum, Magnesium, Manganese, Ferric Iron and Sulfate.
 - d. Soil test report shall clearly recommend appropriate application of deficiencies and to adjust planting soil as necessary to support successful turfgrass growth and to meet the requirements of planting soil as specified, herein.
 - e. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action
 - f. Based on the test results, state recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil
 2. Certification of Grass Seed: From seed vendor for each grass seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety; percentage of purity; germination rates; inert matter; and percentage of weed seed. Include the year of production and date of packaging.
 3. Pesticides and Herbicides: Include product literature, manufacturer's application instructions, and recommended treatment specific to this Project. Comply with City of Raleigh Parks and Recreation Pesticide Policy.
 4. Inorganic Soil Amendments: Include product label and manufacturer's application instructions specific to this Project.
 5. Organic Soil Amendments: Include product label and manufacturer's application instructions specific to this Project.
 6. Fertilizer: Include product literature and manufacturer's application instructions specific to this Project. Submit fertilization rates for fertilizer product based upon soil testing, analysis, and recommendations as described in this Section at least thirty- (30) days prior to the start of Work under this Section.
- D. Qualification Data:
1. For landscape Installer. Submittal shall include key personnel background and list of similar projects, minimum 3 projects completed and 5 years of experience in grass installation by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

E. Water Supply Method and Schedule: Submit proposed methods of providing a water source and the schedule for watering for new plantings during the specified construction establishment/maintenance period for approval by the Owner at least thirty- (30) days prior to the start of Work under this Section.

F. Installation Schedule: Submit Schedule for planting soil preparation and grass installation to the Owner for approval to ensure that the Schedule of Work will minimize the potential for turf damage and to insure timely installation of all material.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer shall be a licensed Landscape Contractor. Only a landscape Contractor as defined by the General Statutes of North Carolina and licensed in North Carolina shall be permitted to perform this work. A copy of the Landscape Contractor's License or License Number shall be presented to the Owner's representative at the time the contract is executed

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when turf installation is in progress.
2. Personnel Certifications: Installer's field supervisor shall have certification with the Turfgrass Council of North Carolina
3. Pesticide Applicator: North Carolina licensed, commercial.

B. Planting Soil Testing Laboratory Qualifications: A public extension service agency or a certified private testing laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials under waterproof covers on material allowing clearance of ground. Protect materials from handling damage, injury, and theft.

B. Seed: Deliver seed in original sealed, labeled, and undamaged containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

C. Sod: Harvest, deliver, store, and handle sod according to requirements in Turfgrass Producers International's "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in its "Guideline Specifications to Turfgrass Sodding." or other approved professional organization such as North Carolina State University's Turf Files or Clemson University. Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

D. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion control measures to prevent erosion or displacement of bulk materials, discharged of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.7 COORDINATION

A. Pre-Installation Conference: Arrange a pre-installation conference with the Owner two (2) weeks prior to the initiation of any installation activities.

B. Planting Restrictions: Plant during one of the following periods. Coordinate turf seeding/sodding periods with maintenance periods to provide required maintenance from date of Substantial Completion. Any deviation in schedule shall be pre-approved by Owner.

1. Temporary Seeding Schedule:

Date	Type	Min. Application Rate
Sept. 15 – Mar. 30	Tall Fescue and Winter Rye	250 lbs/acre and 50 lbs/acre

Apr. 1 – Sept. 15	Tall Fescue and German Millet or Sudangrass (small-stemmed var.)	250 lbs/acre and 25 lbs/acre and 30 lbs/acre
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2. Permanent Seeding Schedule – Turf Areas

Date	Type	Min. Application Rate
Apr. 1 – July 15	Common Bermudagrass or Improved Bermudagrass	75 lbs/acre

Apr. 1 – July 15 Centipedegrass 40 lbs/acre

Apr. 1 – July 15 Zoysiagrass 75 lbs/acre

June 1 – Aug. 15	Tifway 419 or Tifton 10 Zoysiagrass	6 bushels/1,000 sq ft (sprigs) and 6 bushels/1,000 sq ft (sprigs)
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June 1 – Aug. 15	Tifway 419 or Tifton 10 sod	Centipedegrass or Zoysiagrass
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Sept. 1 – Oct 15	Turf Type Tall Fescue	350 lbs/acre
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Sept. 1 – Oct 15	Turf Type Tall Fescue sod	
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3. Permanent Seeding Schedule – Play Fields

Date	Type	Min. Application Rate
Apr. 1 – July 15	Improved Bermudagrass	75 lbs/acre (seeded)

June 1 – Aug. 15	Tifway 419 or Tifton 10	6 bushels/1,000 sq ft (sprigs)
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June 1 – Aug. 15	Tifway 419 or Tifton 10	sod
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4. Naturalized/Wildflower/Native Seeding Schedule for Meadow, Wildflower, and No-Mow Grasses

Date	Min. Application Rate	Type
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C. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

D. Coordination with Exterior Plants and Planting Areas: For all seeded/sodded areas to be installed adjacent to exterior plants, only install seed/sod after exterior plants have been completely installed and after finish grades are established unless otherwise approved to Owner. When installing exterior plantings

after seeding/sodding, protect turf and naturalized grass areas and promptly repair damage caused by planting operations.

1.8 CERTIFICATE OF ACCEPTANCE

A. Following completion of all turf and grass establishment, the Contractor shall request the Owner in writing for a formal inspection of the planting.

B. If turf and grass establishment and workmanship are acceptable, written notice will be given by the Owner to the Contractor stating that the turf and naturalized grass areas have received provisional acceptance and that the Maintenance Service period shall commence

1.9 MAINTENANCE SERVICE

A. Provide complete Maintenance Service by skilled employees of landscape installer. Maintain as required in Part 3. Begin maintenance immediately after each area is seeded/sodded and continue until acceptable turf or naturalized grass stands are established and for not less than twelve (12) months from Substantial Completion, or as directed by Owner.

B. Maintenance Service: Submit to Owner on the first day of each month a Maintenance Report Form (provided) showing weekly maintenance completed the month prior. Owner shall verify and sign off on Maintenance Report Form prior to issuing any payment for maintenance.

C. Installer shall repair or replace turf or naturalized grass, including meadow and no-mow grass, and accessories that fail in materials, workmanship, or growth within 12 months from Substantial Completion. Turf and naturalized grass installation shall meet the following criteria as determined by Owner:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 6 by 6 inches.
2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
3. Satisfactory Plugged Turf: At end of maintenance period, the required number of plugs has been established as well-rooted, viable plants; and areas between plugs are free of weeds and other undesirable vegetation
4. Satisfactory Sprigged Turf: At end of maintenance period, the required number of sprigs has been established as well-rooted, viable plants; and areas between sprigs are free of weeds and other undesirable vegetation.
5. Satisfactory Naturalized Grass, including meadow and no-mow grasses: At end of maintenance period, a healthy stand of naturalized grass has been established, free of weeds, with coverage exceeding 90 percent over any 100 sq. ft. area.

D. Renovate, reseed or replace any unsatisfactory turf or naturalized grass, as required in Part 3, at end of 12-month Maintenance Service period.

PART 2 - PRODUCTS

2.1 TURFGRASS SEED

A. Turfgrass Seed: Fresh, clean, dry, new-crop seed complying with Association of Official Seed Analysts' "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Turfgrass Seed Type: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed:

1. Permanent seeding: Turf Type Tall Fescue
Improved Bermudagrass
Centipedegrass
Zenith Zoysiagrass
2. Temporary seeding: Tall Fescue and Winter Rye
Tall Fescue and, German Millet or Sudangrass

2.2 TURFGRASS SOD

A. Turfgrass Sod: Certified complying with Turfgrass Producers International's "Specifications for Turfgrass Sod Materials" in its "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.

B. Sod shall be machine cut at a uniform soil thickness. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be 5%. Broken pads and torn or uneven ends will not be acceptable.

C. Turfgrass Sod type:

1. Tifway 419, Tifton 10, Centipedegrass, Zoysiagrass or Turf Type Tall Fescue

2.3 SPRIGS

A. Sod Sprigs: Healthy living stems, rhizomes, or stolons with a minimum of two nodes and any attached roots free of soil.

B. Turfgrass sprig type:

1. Tifway 419, Tifton 10 or Zoysiagrass

2.4 NATURALIZED GRASSES AND WILDFLOWERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Ernst Seed Co. (800-873-3321)
2. Prairie Nursery (800-476-9453)
3. Adam Briscoe Seed Company (770-775-7826)
4. Jelitto Perennial Seeds (502-895-0807)

B. Seed mix shall contain native species as approved by Owner.

1. Wildflower Seed Mix: Fresh, clean, dry, new seed, mixed species as follows:
 - a. [Example - Contains: Asclepias, Rudbeckia, Monarda, Vernonia, Solidago, Aster, Coreopsis, Helianthus, Eupatorium, Echinacea, Liatris, Baptisia, Verbena, Eryngium, Penstemon]
2. No-Mow Grass Seed Mix: Fresh, clean, dry, new seed, mixed species as follows:
 - a. [Example - Contains: Eragrostis, Spartina, Spectabilis, Schizachyrium scoparium, Sporobolus, Bouteloua, annual rye (not more than 30%), Carex spp.]

3. Wildflower and Native Grass Seed Mix: Fresh, clean, dry, new seed, mixed species as follows:
 - a. [Example - Contains: Asclepias, Rudbeckia, Monarda, Vernonia, Solidago, Aster, Andropogon virginicus, Schizachyrium scoparium, Panicum virgatum, Sporobolus heterolepis, Penstemon]
4. Wet Zone Grass Seed Mix: Fresh, clean, dry, new seed, mixed species as follows:
 - a. [Example - Contains: Aster, Carex, Chasmanthium, Eupatorium, Lobelia, Scirpus, rush, sedge.]

C. Seed Carrier: Inert material, sharp clean sand or perlite, mixed with seed at a ratio of not less than two parts seed carrier to one-part seed, or as recommended by seed manufacturer.

2.5 PLANTING SOILS

A. Planting soil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 10 percent organic material content; free of stones 1/2 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1. Planting Soil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce viable planting soil via specified soil testing and analysis process. Remove roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
2. Planting Soil shall be free of hard clods, stiff clay, hardpan, sods, weeds, roots, rhizomes of undesirable grasses, partially disintegrated stone, stone over one-half (1/2") inch in diameter, lime, excessive amounts of small stones or gravel, cement, ashes, slag, concrete, tar residues, tarred paper, boards, chips, glass, sticks, or any other undesirable material. Planting Soil shall not contain excessively acid or alkaline soil
3. Amend surface soil per soil test recommendations and notify Owner of type and quantity of amendments.
4. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient.

2.6 INORGANIC SOIL AMENDMENTS

A. Inorganic soil amendments shall be used to counteract soil deficiencies as recommended by the soil analysis and as approved by the Owner.

B. Lime for adjustment of pH: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

1. Class: Class T, with a minimum 99 percent passing through No. 8 sieve and a minimum 75 percent passing through No. 60 sieve.
2. Provide lime in form of dolomitic limestone.

C. Sulfur for adjustment of pH: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.

D. Sand: Clean, washed, natural or manufactured, free of toxic materials, particle size as approved by Owner. Sand shall not be used in clay soils unless approved by Owner

2.7 ORGANIC SOIL AMENDMENTS

A. Organic soil amendments shall be used to counteract soil deficiencies as recommended by the soil analysis and as approved by the Owner.

B. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings.

C. Manure: Well-rotted, unleached, stable or cattle manure not less than eight months and not more than two years old. It shall be free from sawdust, shavings or refuse of any kind and shall not contain over twenty-five percent straw. Manure shall be free of toxic substances, stones, sticks, soil, weed seed, and other material harmful to plant growth.

2.8 FERTILIZER

A. Fertilizers shall be specific for use in turfgrass or naturalized grass. Fertilizers shall be used to counteract soil deficiencies as recommended by the soil analysis and as approved by the Owner.

B. Commercial fertilizer shall be a product complying with North Carolina and United States fertilizer laws. Fertilizer shall be delivered to the site in the original unopened containers, which shall bear the manufacturer's Certificate of Compliance covering analysis, which shall be furnished to the Owner. At least 50% by weight of the nitrogen content shall be derived from organic materials. Phosphorus shall be soluble. Fertilizer shall contain not less than the percentages by weight of ingredients as needed to meet all recommendations of the soil analysis. Fertilizers shall also contain required micro-nutrients as needed to meet all recommendations of the soil analysis.

C. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.

D. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

E. Slow-Release Fertilizer: Granular or pelletized fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

2. Fish-emulsion, compost tea.

F. Other Organic Fertilizer: Contractor is encouraged to utilize other organic fertilizer with a lower nitrogen value, such as worm castings, sewage sludge. Contractor shall submit product information for Owner's approval prior to application.

2.9 MULCHES

A. Straw Mulch: Provide straw mulch that is air-dry and clean, mildew- and seed-free. Source shall be from threshed straw of wheat, rye, oats, or barley.

B. Hydroseeding products:

1. Fiber Mulch: Biodegradable, wood cellulose-fiber mulch. Material shall be nontoxic and free of plant-growth or germination inhibitors. Maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

2. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

3. Asphalt Emulsion: ASTM D 977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

2.10 WATER

A. The Contractor shall be responsible for furnishing his own supply of water to the site at no extra cost. If possible, the Owner will furnish the Contractor upon request with an adequate source and supply of water at no charge. However, if the Owner's water supply is not available or not functioning or the irrigation system is not operable the Contractor will be held responsible to furnish adequate supplies at his own cost. Any turf or naturalized grass area injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct. Water shall be free from impurities injurious to vegetation.

2.11 PESTICIDES AND HERBICIDES

A. Any pesticide and herbicides used shall be specific in use on and safe for turf or naturalized grass areas.

B. Pesticides: Shall be registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides. Obtain approval of use by Owner prior to use.

C. Pre-Emergent herbicide: Shall be used for controlling the germination of growth of weeds within planted areas at the soil level directly below the mulch layer. Obtain approval of use by Owner prior to use.

D. Post-Emergent Herbicide: Shall be used for controlling weed growth that has already germinated. Obtain approval of use by Owner prior to use.

2.12 EROSION-CONTROL MATERIALS

A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples.

B. Erosion-Control Fiber Mesh: Biodegradable twisted jute or spun-coir mesh, a minimum of 0.92 lb/sq. yd., with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine areas to receive turf and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after Owner approves the subgrade and unsatisfactory conditions have been corrected.

B. Grade strictly according to the proposed grading plan.

C. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding overspray.

D. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.2 PLANTING SOIL PREPARATION

A. Limit subgrade preparation to areas to be planted with turf or naturalized grass.

B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension. Remove sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Planting soil shall be amended with organic soil amendments, inorganic soil amendments, and fertilizers as per by the soil analysis, specific to the type of plant(s) to install in each planting area.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. Mix lime with dry soil before mixing fertilizer.
2. Spread planting soil mix to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Reduce grade of planting soil to allow for soil thickness of sod.

C. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:

1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
2. Loosen surface soil to a depth of 6-12 inches. Apply soil amendments and fertilizers according to planting soil analysis. Thoroughly mix amendments into top 6 inches of soil. Till soil to a homogeneous mixture of fine texture.
3. Remove stones larger than 1 inch in any dimension. Remove sticks, roots, trash, and other extraneous matter.
4. Legally dispose of waste material, including removed grass, vegetation, and turf, off Owner's property.

D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.

E. Moisten prepared turf areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

F. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.3 SEEDING

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged.

B. Sow seed at the rate recommended by seed manufacturer and as required to achieve 95% coverage over any 10 sq. ft.

C. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.

D. Protect seeded areas with slopes exceeding 1:6 with erosion-control fiber mesh and 1:4 with erosion-control blankets installed and stapled according to manufacturer's written instructions.

E. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Uniformly spread straw mulch at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Bond straw mulch by spraying with asphalt emulsion at the rate of 10 to 13 gal./1000 sq. ft. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

F. Protect seeded areas from hot, dry weather or drying winds by applying peat or compost mulch within 24 hours after completing seeding operations. Soak and scatter uniformly to a depth of 1/4 inch and roll to a smooth surface. Water daily or more frequently as necessary to maintain moist soil to a minimum depth of 2 inches.

3.4 HYDROSEEDING

A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

1. Mix slurry with a tackifier.
2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply mulch at a minimum rate of 1500-lb/acre dry weight but not less than the rate required to obtain specified seed-sowing rate.

3.5 SODDING

A. Installation of sod shall comply with Turfgrass Producers International's "Specifications for Turfgrass Sod Materials" in its "Guideline Specifications to Turfgrass Sodding."

B. Any plastic netting or backing shall be removed from sod prior to installation.

C. The soil on which the sod is laid shall be reasonably moist and shall be watered as needed on a regular basis during installation of sod.

D. Lay sod within 24 hours of harvesting. Do not lay dormant sod unless approved by Owner. Do not install if ground is frozen or muddy.

E. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across angle of slopes exceeding 1:3.
2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.

F. Saturate sod with fine water spray within two hours of planting. Water daily or more frequently as necessary to maintain moist soil to a minimum depth of 2 inches below sod.

3.6 SPRIGGING AND STOLONIZING

A. Plant freshly shredded sod sprigs in furrows 2 to 3 inches deep. Place individual sprigs with roots and portions of stem in moistened soil, spaced as recommend by grass manufacturer, and fill furrows without covering growing tips. Lightly roll and firm soil around sprigs after planting.

B. Broadcast sprigs uniformly over prepared surface at the rate recommended by grass manufacturer and mechanically force sprigs into lightly moistened soil.

1. Spread a 1/4-inch-thick layer of peat or compost mulch on sprigs.

2. Apply pre-emergent herbicide at rates recommended by manufacturer.
3. Lightly roll and firm soil around sprigs after planting.
4. Water sprigs immediately after planting and keep moist by frequent watering until well rooted.

3.7 NATURALIZED GRASS

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 1. Do not use wet seed or seed that is moldy or otherwise damaged.
- B. Sow seed at the rate recommended by seed manufacturer.
- C. Brush seed into top 1/8 inch of topsoil, roll lightly, and water with fine spray.
- D. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch within 24 hours after completing seeding operations. Soak and scatter uniformly to a depth of 1/4 inch and roll to a smooth surface.
- E. Water newly planted areas and keep moist until grass or meadow is established with minimum 95% coverage.

3.8 TURF RENOVATION

- A. Renovate existing turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.
 1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
- B. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.
- C. Remove topsoil containing foreign materials resulting from Contractor's operations, including oil drippings, fuel spills, stone, gravel, and other construction materials, and replace with new topsoil.
- D. Mow, dethatch, core aerate, and rake existing turf.
- E. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.
- F. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.
- G. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.
- H. Apply soil amendments and fertilizers required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Provide new planting soil to fill low spots and meet finish grades.
- I. Apply seed and protect with straw mulch as required for new turf.
- J. Water newly planted areas and keep moist until new turf is established.

3.9 TURF MAINTENANCE

A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, top-dress and replant bare or eroded areas and remulch to produce a uniformly smooth turf.

1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.

B. Watering: Provide and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.

1. Schedule watering to comply with the latest City of Raleigh Water Conservation Ordinance.
2. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
3. Water turf at a minimum rate of 1 inch per week and document on Maintenance Report Form.

C. Mowing: Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 33 percent of grass height. Remove no more than 33 percent of grass-leaf growth in initial or subsequent mowing. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.

D. Reseeding: When reseeding must take place out-of-season for permanent grass, appropriate temporary seeding shall be done and the contractor shall be responsible for permanent seeding as specified in season at no additional cost to Owner. Do not allow temporary cover to grow over 12 inches in height before mowing.

3.10 NATURALIZED GRASS MAINTENANCE

A. Begin maintenance immediately after each area is planted and continue until acceptable meadow or no-mow grass is established with minimum 95% coverage but for not less than 12 months from date of Substantial Completion.

B. Maintain and establish meadow or no-mow grass by watering, weeding, mowing, trimming, replanting, removing invasive species, and other operations. Roll, regrade, and replant bare or eroded areas and re-mulch.

C. Watering: Provide and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep meadow uniformly moist.

1. Schedule watering to comply with the latest City of Raleigh Water Conservation Ordinance.
2. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
3. Water meadow at a minimum rate of 1/2 inch per week for 8 weeks after planting.

D. Mowing: Mow meadow once to a height of 4 to 6 inches in late January or early February.

3.11 PESTICIDE AND HERBICIDE APPLICATION

A. Apply pesticides and other chemical projects and biological control agents in accordance with requirements of authorities having jurisdiction and the product label. Coordinate applications with owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicide: Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.12 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect barricades and warning signs as required protecting newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after turf is established.
- C. Remove erosion-control measures after grass establishment period.

END OF SECTION 329200

NORTH CAROLINA
WAKE COUNTY

CONTRACT FOR CONSTRUCTION/REPAIR

THIS CONTRACT is entered into by and between _____, hereinafter referred to as the “Contractor”, and the City of Raleigh, a North Carolina municipal corporation, hereinafter referred to as the “City” for the project entitled: Glen Eden and Millbrook Exchange (MEX) Sidewalk and Patio Project and for the not to exceed total Contract Amount of: _____ (dollars and cents), unless changed by a duly authorized amendment or change order.

WITNESSETH:

WHEREAS, the City desires to procure a contractor to perform services; and

WHEREAS, the City has completed necessary steps for retention of construction/repair services under State law and applicable City policies; and

WHEREAS, the City has agreed to engage the Contractor, and the Contractor has agreed to contract with the City, for performance of services as described, and according to the further terms and conditions, set forth herein.

NOW THEREFORE, in consideration of sums to be paid to the Contractor, and other good and valuable consideration, the Contractor and City do contract and agree as follows:

1. Description of Work

The Contractor, at his (its) own proper cost and expense and with skill and diligence, shall furnish all labor, tools, materials and equipment and do all things necessary for the proper construction and completion ready for use of the following improvements:

Glen Eden Sidewalk (approx. 300 LF) for removal of existing asphalt trail, construction of 5’ wide concrete sidewalk (4” thick) (167 SY), grading and addition of compacted base material, sod edges of sidewalk, R&R existing culvert pipe. New sidewalk grades to cross slope 2% and max 5% longitude slope. Install railings both sides at slopes steeper than 5% per ADA guidelines.
Millbrook Exchange Patio (approx. 235 SF.) (26 SY), 4” thick concrete reinforced patio, sawcut, broom finish, (electric box lid to be leveled with finish concrete), construct one sidewalk ramp.

In strict accordance with and as shown in the specifications, schedules, drawings and other documents set forth herein or incorporated by reference as follows: Plans and specifications as part of:

Glen Eden and Millbrook Exchange (MEX) Sidewalk and Patio Project bid # 274-PR-GlenEdenMEX-20

In case of conflict between this Contract and any incorporated attachments or references, the terms of this Contract shall prevail. The Contractor shall further perform in accordance with the directions (not inconsistent therewith) given from time to time during the construction by the Project Engineer of such other official, employee, or other agent of the City as the City may designate.

2. General Obligations of the Contractor

The Contractor will accept the prices specified in this Contract in full compensation and satisfaction for the performance of this Contract and as consideration of this Contract. The Contractor shall be responsible for all loss and damages of every kind and nature which may arise out of or an account of the performance of the work required by this Contractor, and for all risks of every description connected with the said work; and the Contractor shall be responsible for well and faithfully completing the whole work according to all applicable plans and specifications and the terms and conditions of this Contract.

3. Time of Commencement and Completion

The entire work required by this Contract shall be completed by the Contractor not later than 120 days after the date of Notice-to-Proceed.

4. Workmanship and Quality of Services/Warranties

All work under this Contract shall be done and performed to the satisfaction of the Project Engineer of the City of Raleigh, or of such other official, employee, or agent of the City of Raleigh as may be designated by the City, and such official, employee or agent designated by the City shall in all cases of dispute determine the quantity, quality, acceptability and fitness of the work and materials and of several portions thereof which are to be paid for under this Contract and shall decide and determine all questions which may arise as to the measurements, lines, levels and dimensions of the work and all questions respecting the true construction, interpretation or meaning of the plans and specifications. In case of dispute between the Contractor and the said official, employee, or agent of the City, the decision and determination of the latter shall be taken, and shall be final and conclusive.

The Contractor, in executing this Contract, warrants that he will be responsible for the maintenance or correction of any work completed under this Contract that may become defective due to faulty workmanship or materials for a period of one (1) year after final acceptance of the work performed.

It is understood and agreed by the parties hereto that work done under this Contract shall be subject to all ordinances of the City of Raleigh relating to work done in the public streets or other public property of the City. Particularly reference is made to the provisions of Part 11, Chapter 6 of the Raleigh City Code.

5. Compensation

In consideration of the performance of this Contract and the full completion of the work required of the Contractor by the terms and conditions of this Contract, the City agrees to pay to the Contractor the contract amount based on the following: Partial payments will be made to the Contractor by the City NET thirty (30) days after presentation of a true and accurate payment application to the City as certified by the Project Engineer or agent of the City of Raleigh. **All invoices must include the following Purchase Order Number _____**. Final estimate of the amount due to the Contractor will be made within thirty (30) days after the certified completion and final acceptance of all the work required by the Contract less retainage per Section 6. Payment to the Contractor by the City of the amounts so determined to be due, in accordance with this Contract, shall relieve the City from all claims for work done and materials and equipment furnished under this Contract.

It is further mutually agreed between the parties that no estimate or partial payment made under this Contract shall be conclusive evidence of the performance of this Contract, either wholly or in part, and that no such payment shall be construed to be an acceptance of defective work or improper materials.

6. Retainage

This section will only apply if this public construction contract pertains to a project in which the total project costs are equal to or greater than one hundred thousand dollars (\$100,000.00).

To ensure proper performance of the Contract, the City may retain five percent (5%) of the amount of each approved partial or periodic payment application until the project work is fifty percent (50%) complete, provided that the Contractor continues to perform satisfactorily and any non-conforming work identified in writing prior to that date has been corrected by the Contractor and accepted by the Construction Manager.

If the City determines the Contractor's performance is unsatisfactory, the City may reinstate retainage in the amount of five percent (5%) for each subsequent partial or periodic payment application until the Contractor's performance becomes satisfactory. The project shall be deemed fifty percent (50%) complete when the contractor's gross project invoices, excluding the value of materials stored off-site, equal or exceed fifty percent (50%) of the value of the contract, except the value of materials stored on-site shall not exceed twenty percent (20%) of the contractor's gross project invoices for the purpose of determining whether the project is fifty percent (50%) complete. Following fifty percent (50%) completion of the project, the City may also withhold additional retainage from any subsequent periodic payment, not to exceed five percent (5%), in order to allow the City to retain two and one-half percent (2 ½%) total retainage through the completion of the project.

Within sixty (60) days after the submission of a pay request, the City with written consent of the surety shall release to the Contractor all retainage on payments held by the City if (1) the City receives a certificate of substantial completion from the architect, engineer, or designer in charge of the project; or (2) the City receives beneficial occupancy or use of the project. However, the City may retain sufficient funds to secure completion of the project or corrections on any work. If the City retains funds, the amount retained shall not exceed two and one-half (2 ½) times the estimated value of the work to be completed or corrected. Any reduction in the amount of the retainage on payments shall be with the consent of the contractor's surety.

Retainer provisions contained in Contractor's subcontracts may not exceed the terms and conditions for retainage provided herein. Contractors are further required to satisfy the retainage provisions of N.C.G.S. 143-134.1(b2) with regard to subcontracts for early finishing trades (structural steel, piling, caisson, and demolition) and to coordinate the release of retainage for such trades from the retainage held by the City from the Contractor pursuant to statute. Nothing shall prevent the City from withholding payment to the Contractor in addition to the amounts identified herein for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the City or reasonable evidence that a third-party claim will be filed.

7. Notices

All notices, requests for payment, or other communications arising hereunder shall be sent to the following:

City of Raleigh
Attn: Elizabeth Houck
Telephone: 919-996-4783
P.O. Box 590
Raleigh, NC 27602

Contractor

8. Non-Discrimination

To the extent permitted by North Carolina law, the parties hereto for themselves, their agents, officials, employees and servants agree not to discriminate in any manner on the basis of race, color, creed, national origin, sex, age, handicap, or sexual orientation with reference to the subject matter of this Contract. The parties further agree, to the extent permitted by law, to conform with the provisions and intent of City of Raleigh Ordinance 1969-889, as amended. This provision is hereby incorporated into this Contract for the benefit of the City of Raleigh and its residents, and may be enforced by action for specific performance, injunctive relief, or other remedy as provided by law. This provision shall be binding on the successors and assigns of the parties with reference to the subject matter of this Contract.

9. Minority and Women Owned Business Enterprise

The City of Raleigh prohibits discrimination in any manner on the basis of race, color, creed, national origin, sex, age or handicap or sexual orientation and will pursue an affirmative policy of fostering, promoting and conducting business with women and minority owned business enterprises. The City of Raleigh has adopted a goal of 15% for participation by small disadvantaged minority and women-owned businesses in order to reach the above stated goal.

The percentage of MWBE business participation engaged in this contract based on total contract amount is proposed to be ____%. Any variation from this amount is to be immediately conveyed to the City by written notice, Attention: MWBE Program Manager, PO BOX 590 Raleigh, NC 27602, with a copy to the City of Raleigh contact listed in the 'Notices' section of this Contract.

If this is a building project, documentation of good faith efforts to meet this goal is required. If this is a building project over \$300,000, this documentation must include the applicable MWBE affidavits. If there are any questions, Contact the MWBE Program Manager, PO BOX 590 Raleigh, NC 27602, mwbe@raleighnc.gov, or 919-996-4330.

10. Assignment

This Contract may not be assigned without the express written consent of the City.

11. Applicable Law

All matters relating to this Contract shall be governed by the laws of the State of North Carolina, without regard to its choice of law provisions, and venue for any action relating to this Contract shall be Wake County Civil Superior Court or the United States District Court for the Eastern District of North Carolina, Western Division.

12. Insurance

Contractor agrees to purchase at its own expense insurance coverages to satisfy the following minimum requirements. A certificate reflecting the following minimum coverages shall accompany this Contract:

Workers' Compensation Insurance:

Limits:

Workers Compensation:	Statutory for the State of North Carolina
Employers Liability:	Bodily Injury by Accident \$1,000,000 each accident
Bodily Injury by Disease	\$1,000,000 policy limit
Bodily Injury by Disease	\$1,000,000 each employee

Commercial General Liability:

Limits:

Each Occurrence:	\$1,000,000
Personal and Advertising Injury	\$1,000,000
General Aggregate Limit	\$2,000,000
Products and Completed Operations Aggregate	\$2,000,000

The aggregate limit must apply per project. The form of coverage must be the ISO CG 00 01 policy as approved by the State of North Carolina Department of Insurance. If a form of coverage other than the CG 00 01 is used it must be approved by the City of Raleigh Risk Manager. Any endorsed exclusions or limitations from the standard policy must be clearly stated in writing and attached to the Certificate of Insurance. Completed Operations coverage must be maintained for the period of the applicable statute of limitations.

The City of Raleigh must be added as an Additional Insured to the Commercial General Liability policy.

Commercial Automobile Liability:

Limits:

\$1,000,000 combined single limit.

The City of Raleigh must be added as an Additional Insured on the Commercial Auto Liability policy.

Additional Insured – Contractor agrees to endorse the City as an Additional insured on the Commercial General Liability, Auto Liability and Umbrella Liability if being used to meet the standard of the General Liability and Automobile Liability. The Additional Insured shall read **‘City of Raleigh is named additional insured as their interest may appear’**.

The Certificate Holder address should read:

**City of Raleigh
Post Office Box 590
Raleigh, NC 27602-0590**

Builders Risk Coverage:

Limits:

Minimum limit in the amount of total bid price.

The Builder Risk policy must be endorsed to increase the limit of insurance for all change orders.

Policy Form:

Builder Risk coverage must be on a direct physical loss basis and contain no exclusion for theft, collapse or damage to foundations or underground structures, pipes or conduits.

Named Insured:

The Named Insured shall be The City of Raleigh, the Contractor and all sub-contractors with a contractual assumption of responsibility for damage to the project.

All insurance companies must be admitted to do business in North Carolina and be acceptable to the City of Raleigh's Risk Manager. If the insurance company(s) is a permitted surplus lines insurer, the insurance company name, and NAIC number must be submitted to the Raleigh Risk Manager for approval before commencing work. Contractor shall be required to provide the City no less than thirty (30) days notice of cancellation, or any material change, to any insurance coverage required by this Contract.

A Certificate of Insurance (COI) must be issued by an authorized representative of the insurance carrier(s). Certificates of Insurance must have the Insurance Company name and NAIC number clearly identified. The acceptance of or the review of Certificates of Insurance by the City of Raleigh does not relieve Contractor of any requirements in the contract to provide specific insurance coverage required by the contract, nor does the acceptance of or review of Certificates of Insurance covenant all insurance requirements have been met.

13. Surety Bonds

If Surety Bonds are required by the City for this project, the Contractor shall have furnished and attached hereto a Performance Bond and a Payment Bond each in the penal sum of the full Contract amount covering the faithful performance of the Contract and the payment of all obligations arising hereunder, in such form and content as the City may prescribe and with surety approved by the City. Should any surety upon the bond for the performance of this Contract become unacceptable to the City, the Contractor must promptly furnish additional security as may be required from time to time by the City to protect the interests of the City and of persons, firms and corporations supplying labor or materials in the performance of the work contemplated by the Contract.

14. Indemnity

- a. To the fullest extent allowed by law, Contractor shall indemnify, defend, and hold harmless the City, its officers, officials, employees, agents, or indemnities (collectively called "Indemnified Parties") from and against those Losses, liabilities, damages, and costs proximately caused by, arising out of, or resulting from the sole negligence of the Contractor, the Contractor's agents, or the Contractor's employees.
- b. In matters other than those covered by Section 14 paragraph A, above, and to the fullest extent allowed by law, Contractor shall indemnify, defend, and hold harmless the Indemnified Parties from and against those Losses, liabilities, damages, and costs caused by, arising out of, resulting from, or in connection with the execution of the work provided for in this Agreement when the Fault of the Contractor or its Derivative Parties is a proximate cause of the Loss, liability, damage, or expense indemnified.
- c. Costs and expenses shall include attorneys' fees, litigation or arbitration expenses, or court costs actually incurred by the Indemnified Parties to defend against third-party claims alleged in any court, tribunal, or alternative dispute resolution procedure required of any of the Indemnified Parties by law or by contract, only if the Fault of the Contractor or its Derivative Parties is a proximate cause of the attorney's fees, litigation or arbitration expenses, or court costs to be indemnified.

d. The Contractor's duty to indemnify, defend, and hold harmless described hereinabove shall survive the termination or expiration of this Contract.

e. Definitions:

1. For the purposes of Section 14, the term "Fault" shall mean any breach of contract; negligent, reckless, or intentional act or omission constituting a tort under applicable statutes or common law; or violation of applicable statutes or regulations.
2. For the purposes of Section 14, the term "Loss" or "Losses" shall include, but not be limited to, fines, penalties, and/or judgments issued or levied by any local, state, or federal governmental entity.
3. For the purposes of Section 14, the term "Derivative Parties" shall mean any of the Contractor's subcontractors, agents, employees, or other persons or entities for which the Contractor may be liable or responsible as a result of any statutory, tort, or contractual duty.

15. Force Majeure

Except as otherwise provided in any environmental laws, rules, regulations or ordinances applicable to the parties and the services performed under this Contract, neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by an act of war, hostile foreign actions, nuclear explosion, earthquake, hurricane, tornado, or other catastrophic natural event or act of God. Either party to the Contract must take reasonable measures and implement reasonable protections when a weather event otherwise defined as a force majeure event is forecast to be eligible to be excused from the performance otherwise required under this Contract by this provision.

16. Advertising

The Contractor shall not use the existence of this Contract, or the name of the City of Raleigh, as part of any advertising without prior written approval of the City.

17. Termination

If the Contractor fails to perform the work described herein by the time allowances provided in Section 3, or fails to provide adequate staff and resources required to properly execute said work in a workmanlike and safe manner, the City of Raleigh can declare the Contractor in Default. If the Contractor fails to complete the work in the provided project duration as stated in item 3 of this document, or fails to meet periodic schedules describing work sequence, or fails to comply with all appropriate local, federal, or state laws, rules and regulations the City may, without prejudice to any other right or remedy and after giving the Contractor and his surety a maximum of seven (7) days from delivery of a written notice, declare the Contract in default, take possession of the project and of all equipment, tools, materials thereon owned by the Contractor and call upon the surety or appropriate legal recourse to finish the work by whatever method deemed expedient.

18. Laws/Safety Standards

The Contractor shall comply with all laws, ordinances, codes, rules, regulations, safety standards and licensing requirements that are applicable to the conduct of its business, including those of Federal, State, and local agencies having jurisdiction and/or authority.

All manufactured items and/or fabricated assemblies subject to operation under pressure, operation by connection to an electric source, or operation involving a connection to a manufactured, natural, or LP gas source shall be constructed and approved in a manner acceptable to the appropriate state inspector which customarily requires the label or re-examination listing or identification marking of the appropriate safety standard organization, such as the American Society of Mechanical Electrical Engineers for pressure vessels; the Underwriters' Laboratories and/or National Electrical Manufacturers' Association for electrically operated assemblies; or the American Gas Association for gas operated assemblies, where such approvals of listings have been established for the type(s) of devices offered and furnished. Further, all items furnished by the Contractor shall meet all requirements of the Occupational Safety and Health Act (OSHA), and state and federal requirements relating to clean air and water pollution.

Contractor must comply with *North Carolina Occupational Safety and Health Standards for General Industry, 29CFR 1910*. In addition, Contractor shall comply with all applicable occupational health and safety and environmental rules and regulations.

Contractor shall effectively manage their safety and health responsibilities including:

a. Accident Prevention

Prevent injuries and illnesses to their employees and others on or near their job site. Contractor managers and supervisors shall ensure personnel safety by strict adherence to established safety rules and procedures.

b. Environmental Protection

Protect the environment on, near, and around their work site by compliance with all applicable environmental regulations.

c. Employee Education and Training

Provide education and training to all contractor's employees before they are exposed to potential workplace or other hazards as required by specific OSHA Standards.

19. Applicability of North Carolina Public Records Law

Notwithstanding any other provisions of this Contract, this Contract and all materials submitted to the City by the Contractor are subject to the public records laws of the State of North Carolina and it is the responsibility of the Contractor to properly designate materials that may be protected from disclosure as trade secrets under North Carolina law as such and in the form required by law prior to the submission of such materials to the City. Contractor understands and agrees that the City may take any and all actions necessary to comply with federal, state, and local laws and/or judicial orders and such actions will not constitute a breach of the terms of this Contract. To the extent that any other provisions of this Contract conflict with this paragraph, the provisions of this section shall control.

20. Miscellaneous

The Contractor shall be responsible for the proper custody and care of any property furnished or purchased by the City for use in connection with the performance of this Contract and will reimburse the City for the replacement value of its loss or damage. The Contractor shall keep the job sites and surrounding area reasonably free from rubbish at all times and shall remove debris from the site from time to time or when directed to do so by the City. Before final inspection and acceptance of the project, the Contractor shall thoroughly clean the job sites, and completely prepare the project and site for use by the City.

The Contractor shall be considered to be an Independent Contractor and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. Nothing herein is intended or will be construed to establish any agency, partnership, or joint venture. Contractor represents that it has, or will secure at its own expense, all personnel required in performing the services under this Contract. Such employees shall not be employees of or have any individual contractual relationship with the City.

This Contract may be amended only by written agreement of the parties executed by their authorized representatives.

21. Right of Audit and Examination of Records

- a. The City may conduct an audit of any services performed and fees paid subject to this Contract. The City, or its designee, may perform such an audit throughout the contract period and for three (3) years after termination thereof or longer if otherwise required by law.
- b. The Contractor and its agents shall maintain all books, documents, papers, accounting records, contract records and such other evidence as may be appropriate to substantiate costs incurred under this Contract. The City, or its designee, shall have the right to, including but not limited to: review and copy records; interview current and former employees; conduct such other investigation to verify compliance with contract terms; and conduct such other investigation to substantiate costs incurred by this Contract.
- c. "Records" shall be defined as data of every kind and character, including but not limited to books, documents, papers, accounting records, contract documents, information, and materials that, in the City's sole discretion, relate to matters, rights, duties or obligations of this Contract.
- d. Records and employees shall be available during normal business hours upon advanced written notice. Electronic mail shall constitute written notice for purposes of this section.
- e. Contractor shall provide the City or its designee reasonable access to facilities and adequate and appropriate workspace for the conduct of audits.
- f. The rights established under this section shall survive the termination of the Contract, and shall not be deleted, circumvented, limited, confined, or restricted by contract or any other section, clause, addendum, attachment, or the subsequent amendment of this Contract.

- g. The Contractor shall reimburse the City for any overcharges identified by the audit within ninety (90) days of written notice of the City's findings.
- h. If an audit discloses overpricing or overcharges by the Contractor or Subcontractor in excess of one percent (1%) of the total contract billings, the Contractor shall reimburse the City for the cost of the audit.
- i. Contractor shall ensure that all contracts with any subcontractors provide the City with an equivalent right to audit as contained herein.

22. Incorporation of Documents/Complete Agreement

This Contract, and any documents incorporated below, represent the entire Contract between the parties and suspend all prior oral or written statements, agreements or Contracts.

Specifically incorporated into this Contract are the following attachments, or if not physically attached, are incorporated fully herein by reference:

- Advertisement for Proposals
- Contractor's Proposal
- Procedure for N.C. Sales Tax Reporting
- Performance Bond (w/Power-of-Attorney)
- Payment Bond (w/Power-of-Attorney)
- Certificate of Insurance
- General Conditions
- Special or Supplemental Conditions
- Job Specifications
- SDMWOB Affidavits/documentation
- Other (Describe) Plan set dated 2.15.2020

23. E – Verify

Contractor shall comply with *E-Verify*, the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law and as in accordance with N.C.G.S. §64-25 *et seq.* In addition, to the best of Contractor's knowledge, any subcontractor employed by Contractor as a part of this contract shall be in compliance with the requirements of E-Verify and N.C.G.S. §64-25 *et seq.* In cases of conflict between this Contract and any of the above incorporated attachments or references, the terms of this Contract shall prevail.

24. Iran Divestment Act Certification

Contractor certifies that, as of the date listed below, it is not on the Final Divestment List as created by the State Treasurer pursuant to N.C.G.S. § 147-86.55, et seq. In compliance with the requirements of the Iran Divestment Act and N.C.G.S. § 147-86.59, Contractor shall not utilize in the performance of the contract any subcontractor that is identified on the Final Divestment List.

25. Companies Boycotting Israel Divestment Act Certification

Contractor certifies that it has not been designated by the North Carolina State Treasurer as a company engaged in the boycott of Israel pursuant to N.C.G.S. 147-86.81.

The remainder of this page is left blank intentionally.

THIS CONTRACT is entered into this _____ day of _____, 2020.

IN WITNESS WHEREOF, the Contractor has executed the foregoing with the signature(s) of its duly authorized officer(s), under seal, and the City has executed with the signature of its City Manager, attested by its (Assistant/Deputy) Clerk-Treasurer, with the official seal affixed, the day and year first above written.

CONTRACTOR:

CITY OF RALEIGH

By:

By:

City Manager or Authorized Designee

Printed Name/Title

(If corporate)

ATTEST:

ATTEST:

By:_____

By:_____

(Deputy) Clerk-Treasurer

Printed Name/Title

(Affix Seal)

(Affix Seal)

THIS INSTRUMENT APPROVED AS TO FORM:

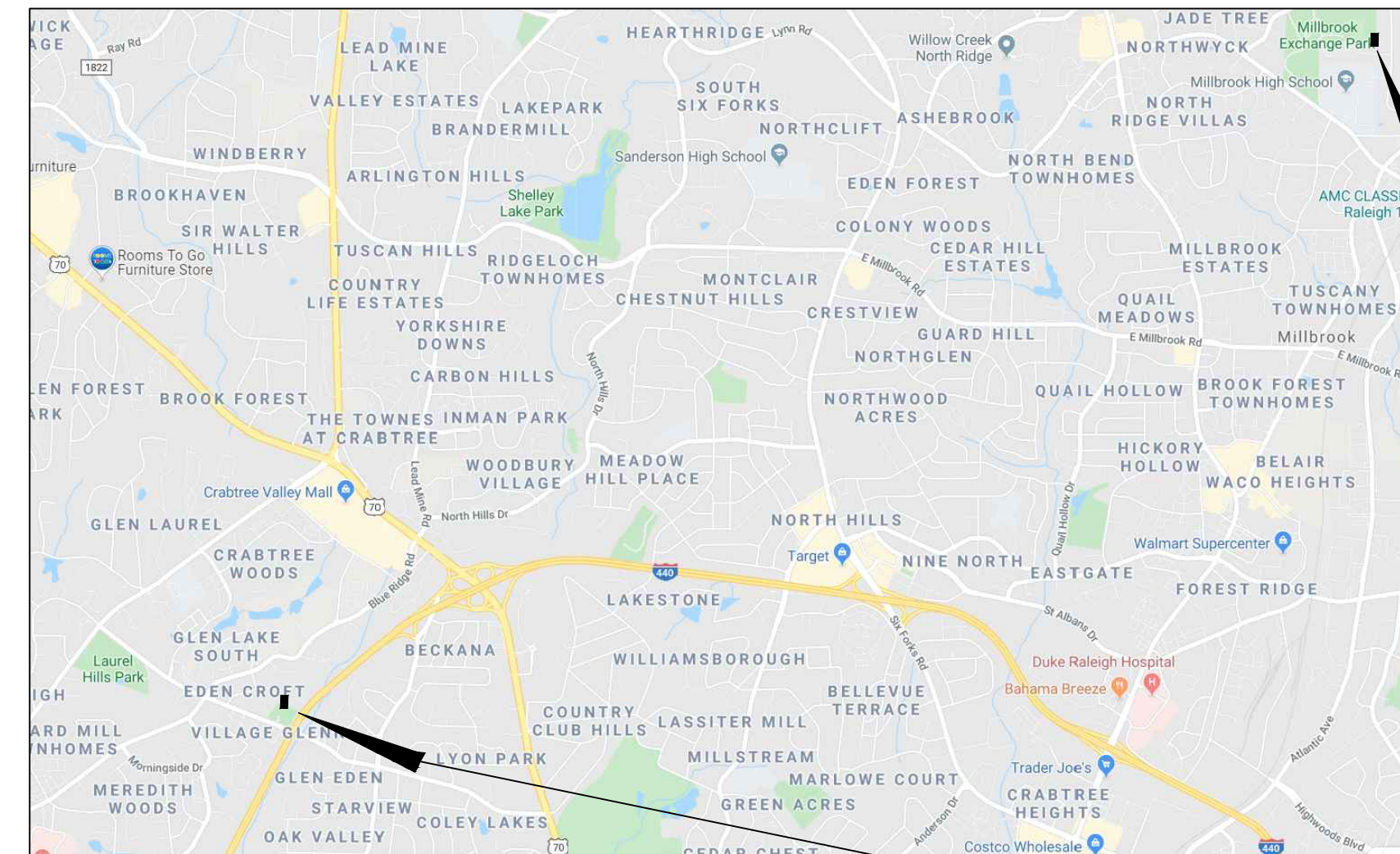
City Attorney



GLEN EDEN & MILLBROOK EXCHANGE SIDEWALK & PATIO PROJECT



LOCATION MAP
CITY OF RALEIGH, WAKE COUNTY, NORTH CAROLINA



MILLBROOK EXCHANGE TENNIS CENTER
1950 SPRING FOREST ROAD, RALEIGH

GLEN EDEN PILOT PARK
1500 GLEN EDEN DRIVE
TENNIS COURTS, ENTER FROM
MARSHALL PARK LANE

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GLEN EDEN - CONSTRUCTION LAYOUT & DETAILS
3	MILLBROOK EXCHANGE CONSTRUCTION LAYOUT & DETAILS

GENERAL STATEMENT

GLEN EDEN PILOT PARK - THE CHARACTER AND INTENDED USE OF THIS PROJECT SHALL BE CONSTRUCT CONC. SIDEWALK AT ADA ACCESSIBLE TO REPLACING EXISTING.

MILLBROOK EXCHANGE TENNIS CENTER - GRADE AREAS AND CONSTRUCT CONCRETE PATIO AND RAMP.



UTILITIES

TIME WARNER CABLE	(919) 595-4892	
DUKE ENERGY	(919) 546-6111	
CITY OF RALEIGH STORMWATER ENGINEERING	(919) 996-4027	BRADLEY STUART
CITY OF RALEIGH W & S DEPARTMENT	(919) 996-1932	
PSNC ENERGY	(877) 776-2427	

NOTE:

- THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION

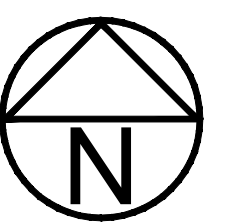
PLANS PREPARED BY:
CITY OF RALEIGH
PARKS, RECREATION &
CULTURAL RESOURCES DEPARTMENT

PARK DEVELOPMENT & COMMUNICATIONS DIVISION
222 WEST HARGETT STREET, STE 601
RALEIGH, NC 27601

GENERAL NOTES

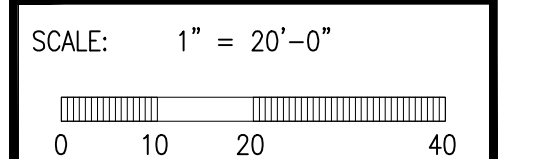
- CONTRACTOR SHALL NOT COMPROMISE ACCESS TO BUSINESSES DURING THE CONSTRUCTION
- ALL EXISTING UNDER GROUND UTILITIES AND FACILITIES HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND AVOID ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. ALL DAMAGE RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- ANY REQUIRED ADJUSTMENT ON TELEPHONE & GAS LINES DURING CONSTRUCTION SHALL BE DONE BY OTHERS.
- COORDINATION TO AVOID POSSIBLE CONFLICTS BETWEEN WATER MAINS, PRESSURE MAINS, GRAVITY SEWERS AND OTHER CONSTRUCTION UNDER THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL DISPOSE OF EXCAVATED MATERIALS UNSUITABLE FOR PROJECT OFF SITE.
- CONTRACTOR SHALL BE REQUIRED TO NOTIFY UTILITY CONTACTS PRIOR TO CONSTRUCTION TO ALLOW UTILITY RELOCATIONS AND INSTALLATION OF FACILITIES, SUCH AS CONDUIT CROSSING FOR FUTURE USE, THESE SHALL BE ACOMPLISHED BY THE RESPECTIVE UTILITY OWNER.
- PROVIDE A MINIMUM OF 6" CLEARANCE, OR AS NOTED BETWEEN ALL UTILITIES. NO SPECIAL PAYMENT ALLOWED.
- SURVEY SUPPLIED IS CURRENT, ALTHOUGH SOME UNDERGROUND UTILITIES WILL NEED LOCATED PRIOR TO CONSTRUCTION
- EROSION AND SEDIMENTATION CONTROL
 - CONTRACTOR SHALL UTILIZE EROSION/SEDIMENTATION CONTROL BEST MANAGEMENT PRACTICES AS NECESSARY DURING CONSTRUCTION TO RETAIN SEDIMENT ONSITE.
 - EROSION/SEDIMENTATION CONTROL MEASURES SHALL BE PLACED PRIOR TO SITE WORK.
 - AREAS RECEIVING RUNOFF FROM CONSTRUCTION SITE SHALL BE PROTECTED WITH A TYPE III SILT FENCE PER CITY ENGINEERING DESIGN MANUEL.
 - ALL EROSION/SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED IN WORKING CONDITION THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL CHECK AND REPAIR, IF NECESSARY, THE EROSION/SEDIMENTATION CONTROL MEASURES AT THE END OF EACH WORKING DAY.
 - PERMANENT VEGETATION SHALL BE PLACED AS EARLY AS POSSIBLE.

COVER SHEET



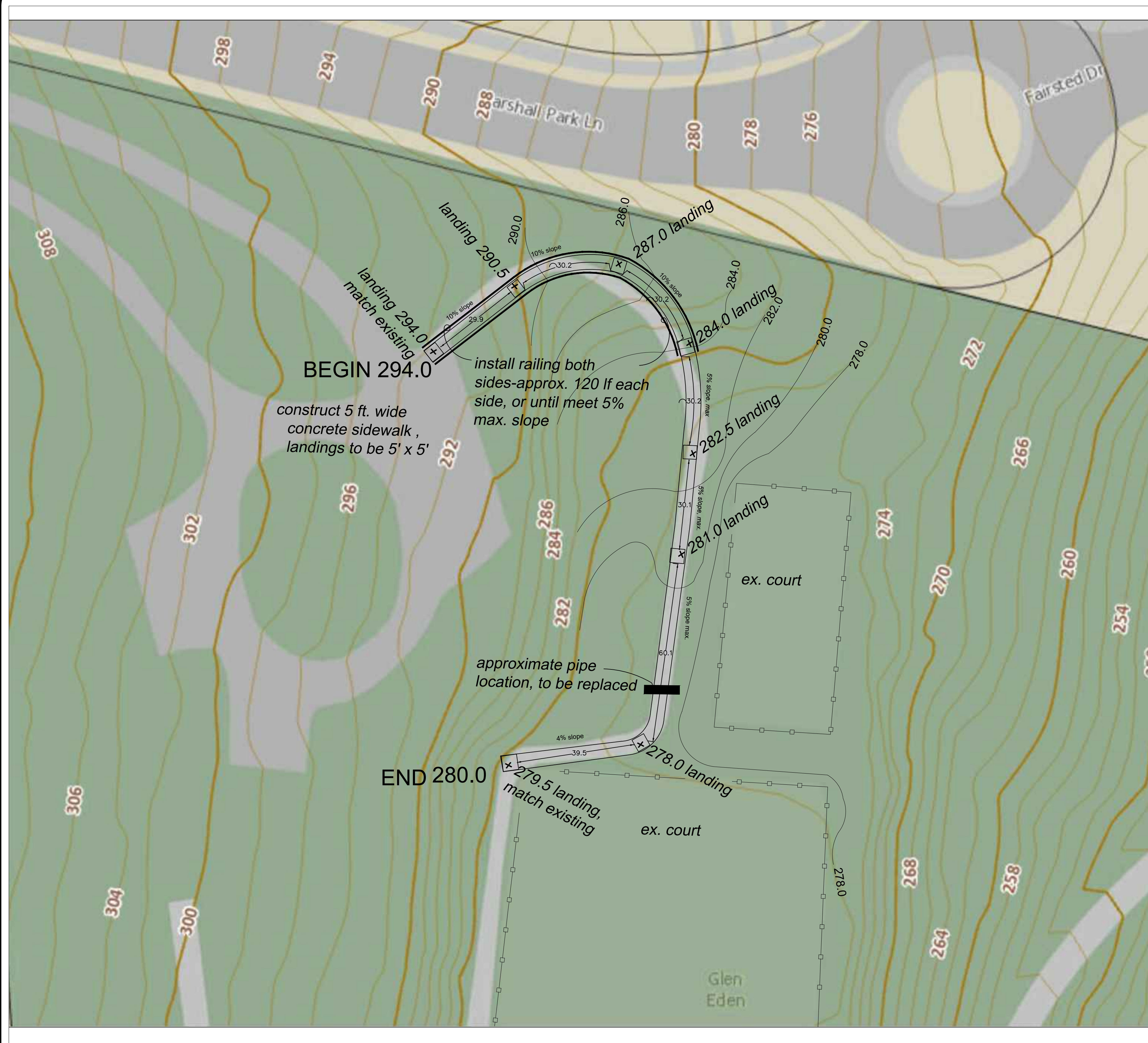
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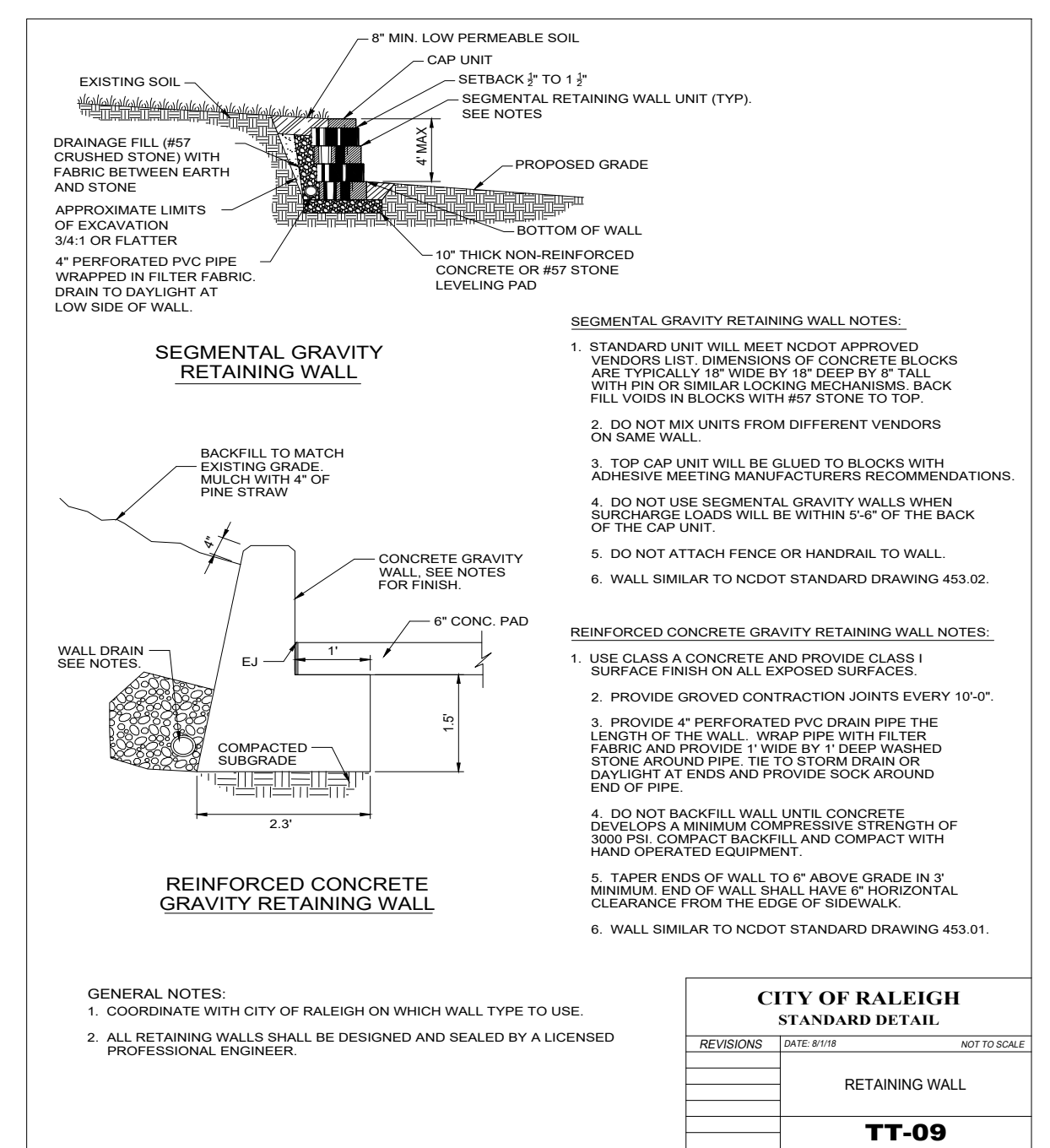
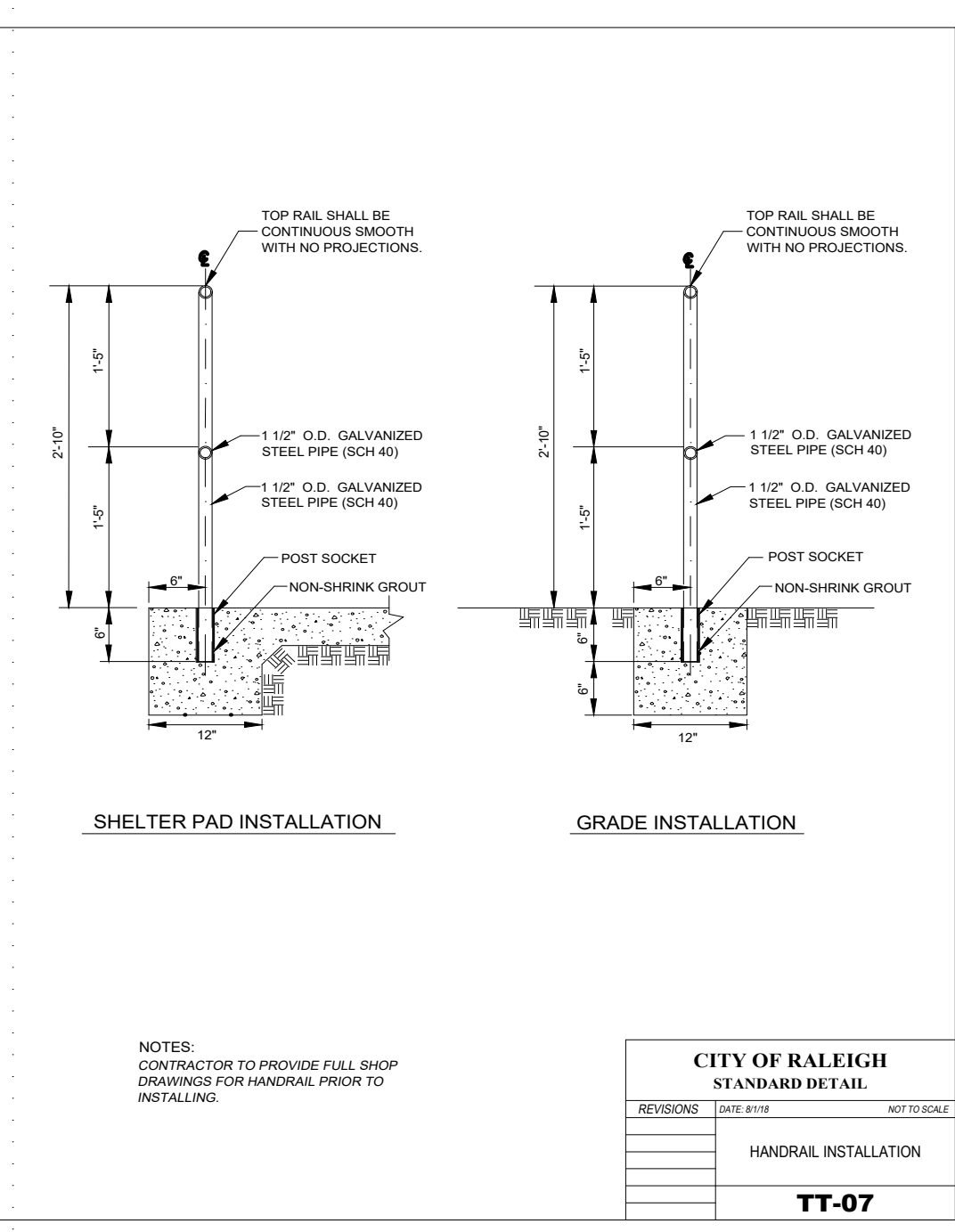
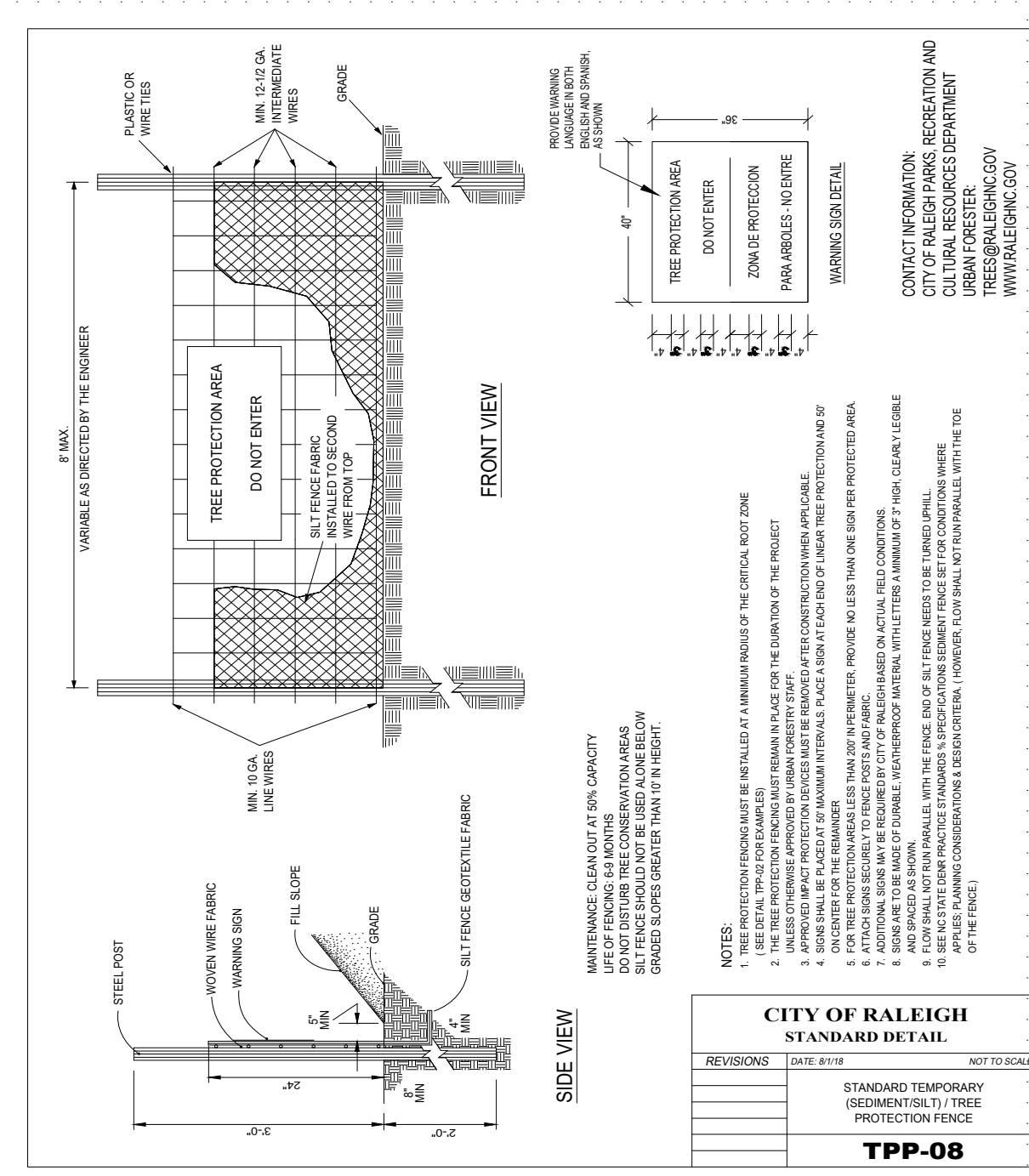
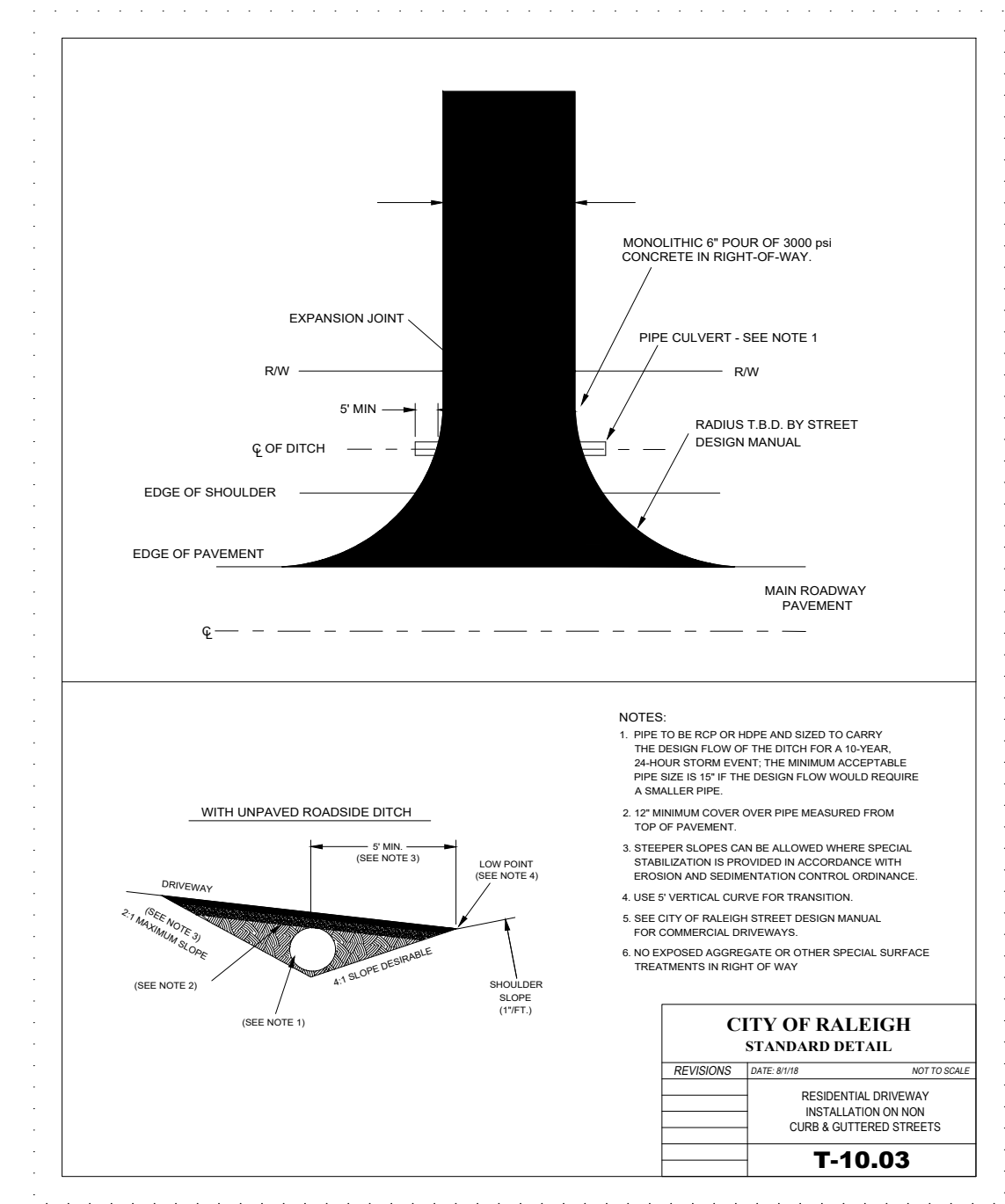
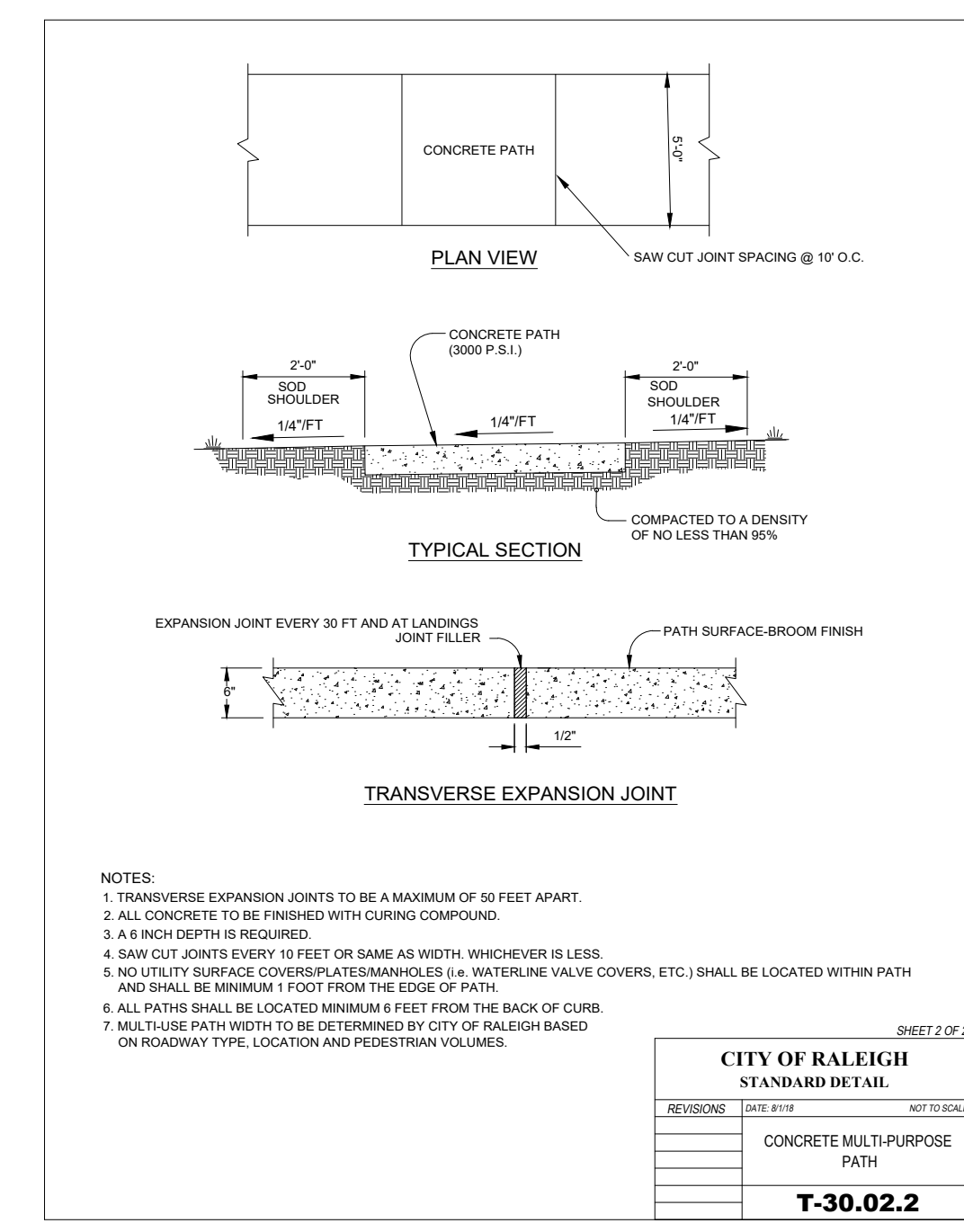


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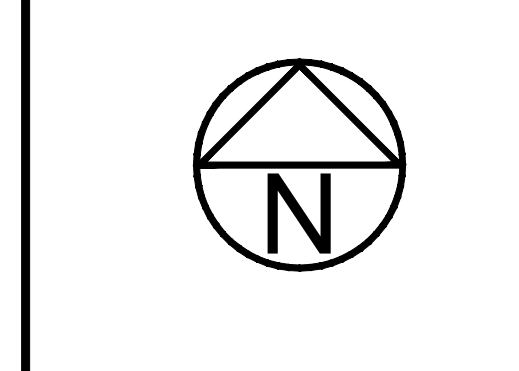
**GLEN EDEN & MILLBROOK EXCHANGE
SIDEWALK & PATIO PROJECT**
 GLEN EDEN PARK - 1500 GLEN EDEN DRIVE
 MILLBROOK EXCHANGE PARK 1950 SPRING FOREST ROAD
 Raleigh, North Carolina
 DATE: 2/15/2020



- NOTES:
- RESERVE GRADED SOIL MATERIAL TO ADD BACK TO FINISHED CONCRETE EDGES TO BRING BACK TO GRADE, LEAVE 3" BELOW EDGE FOR SOD. PLACE 18" STRIP OF SOD AROUND ALL NEW CONCRETE, TOP OF SOD SHOULD BE 1/2" TO 1" (INCH) BELOW FINISHED CONCRETE.
 - CONCRETE TO BE ADA ACCESSIBLE, GRADIENT TO FOLLOW ADA GUIDELINES, CONCRETE CROSS SLOPE MAX 2% TOWARDS DOWNHILL, POSITIVE DRAINAGE, BROOM FINISH
 - CONCRETE MAX. LONGITUDE SLOPE 2%
 - ALL AREAS DISTURBED BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED BY CONTRACTOR, SOD TO MATCH, EXISTING ASPHALT OR CONCRETE.
 - STAGING AREA TO BE DETERMINED, CONTRACTOR SHALL SECURE ALL MATERIALS AND EQUIPMENT LEFT ON SITE WITH FENCING OR CONTAINERS.
 - NO TREES ARE MARKED FOR REMOVAL, FLAG AND NOTIFY STAFF IF REMOVAL IS REQUIRED BEFORE GRADING WALKWAY.
 - SIDEWALK LENGTH APPROXIMATE 300 LF (1,500 SF) (168 SY) AS DRAWN



IMPROVEMENT LAYOUT PLAN GLEN EDEN



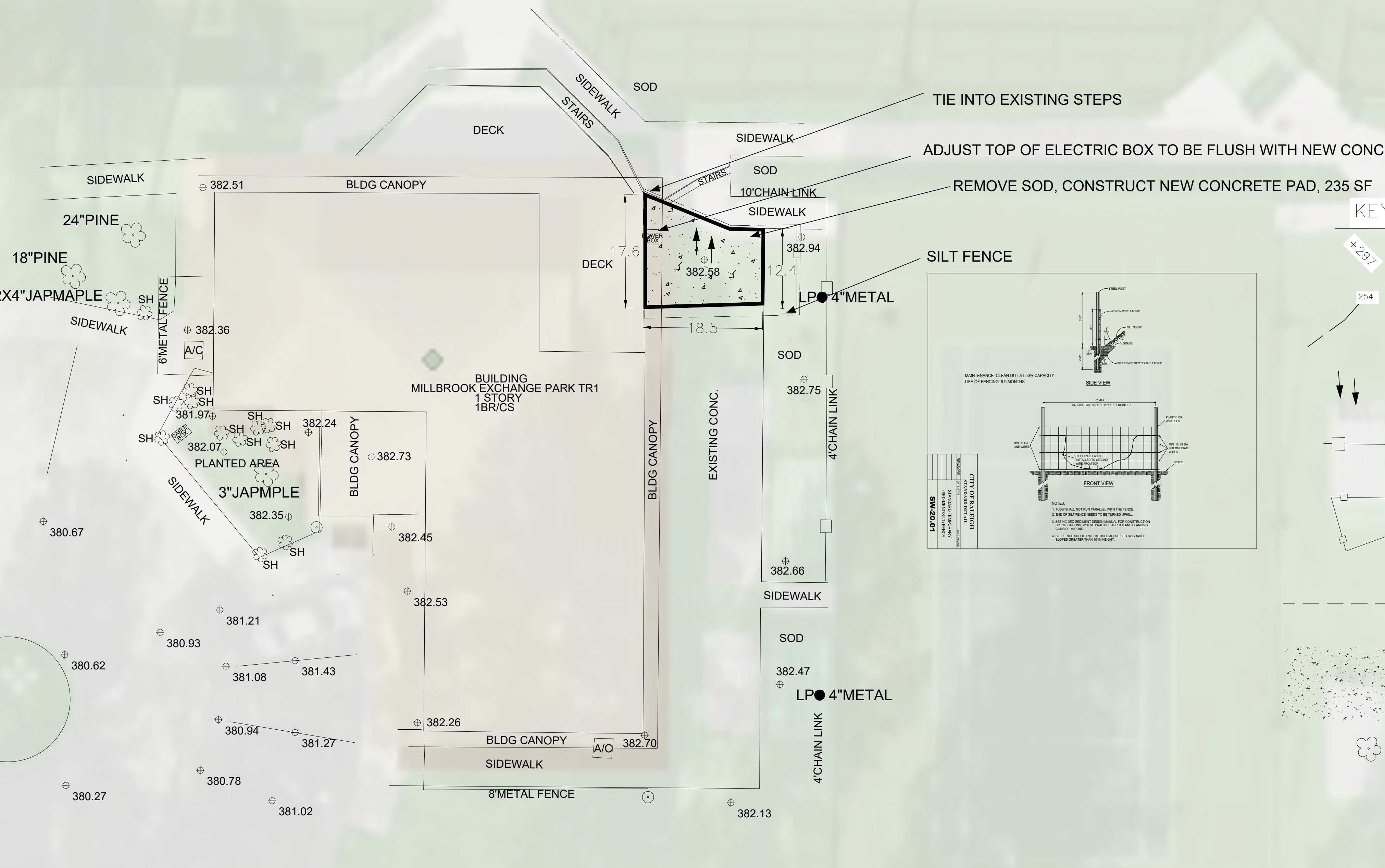
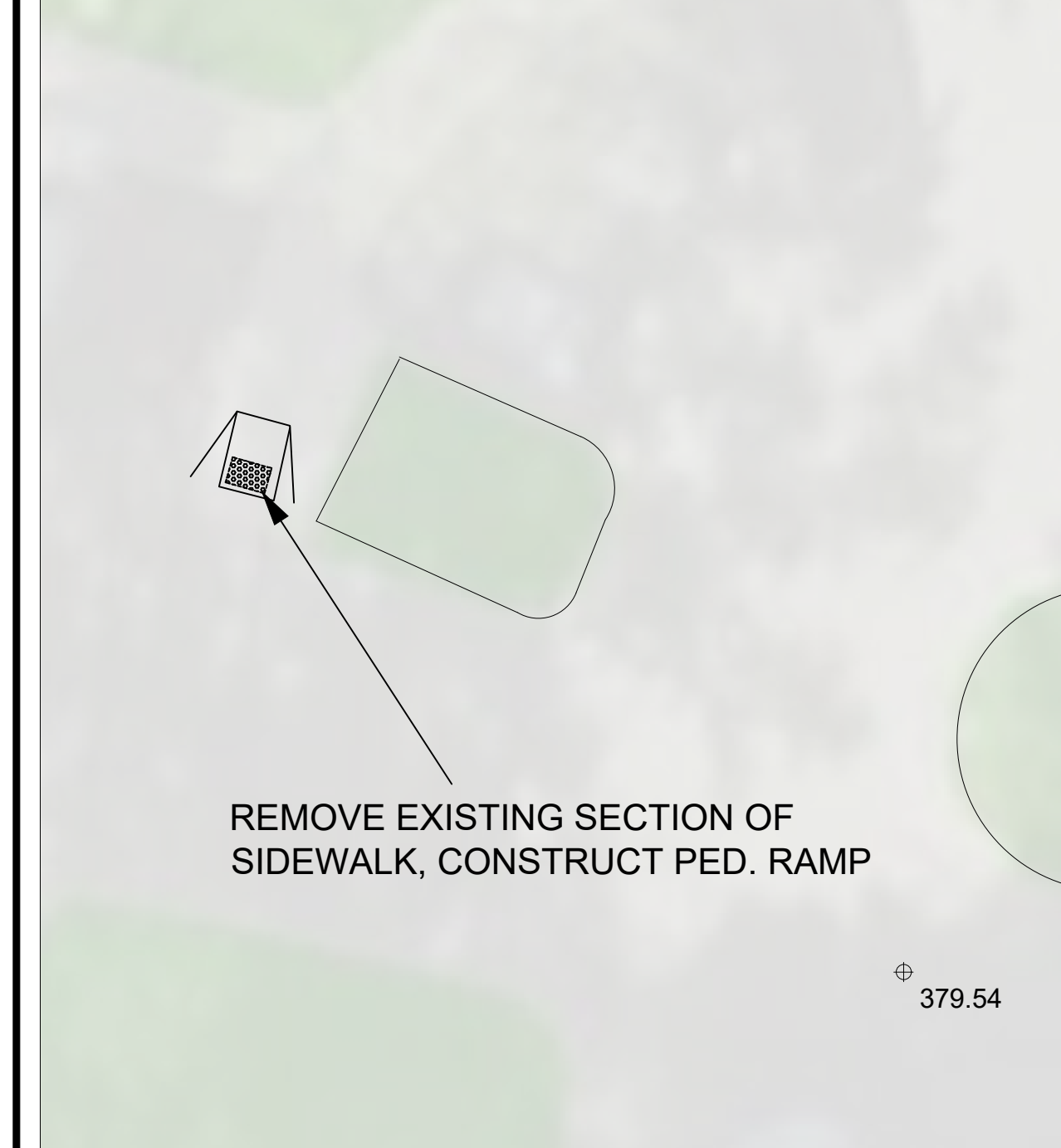
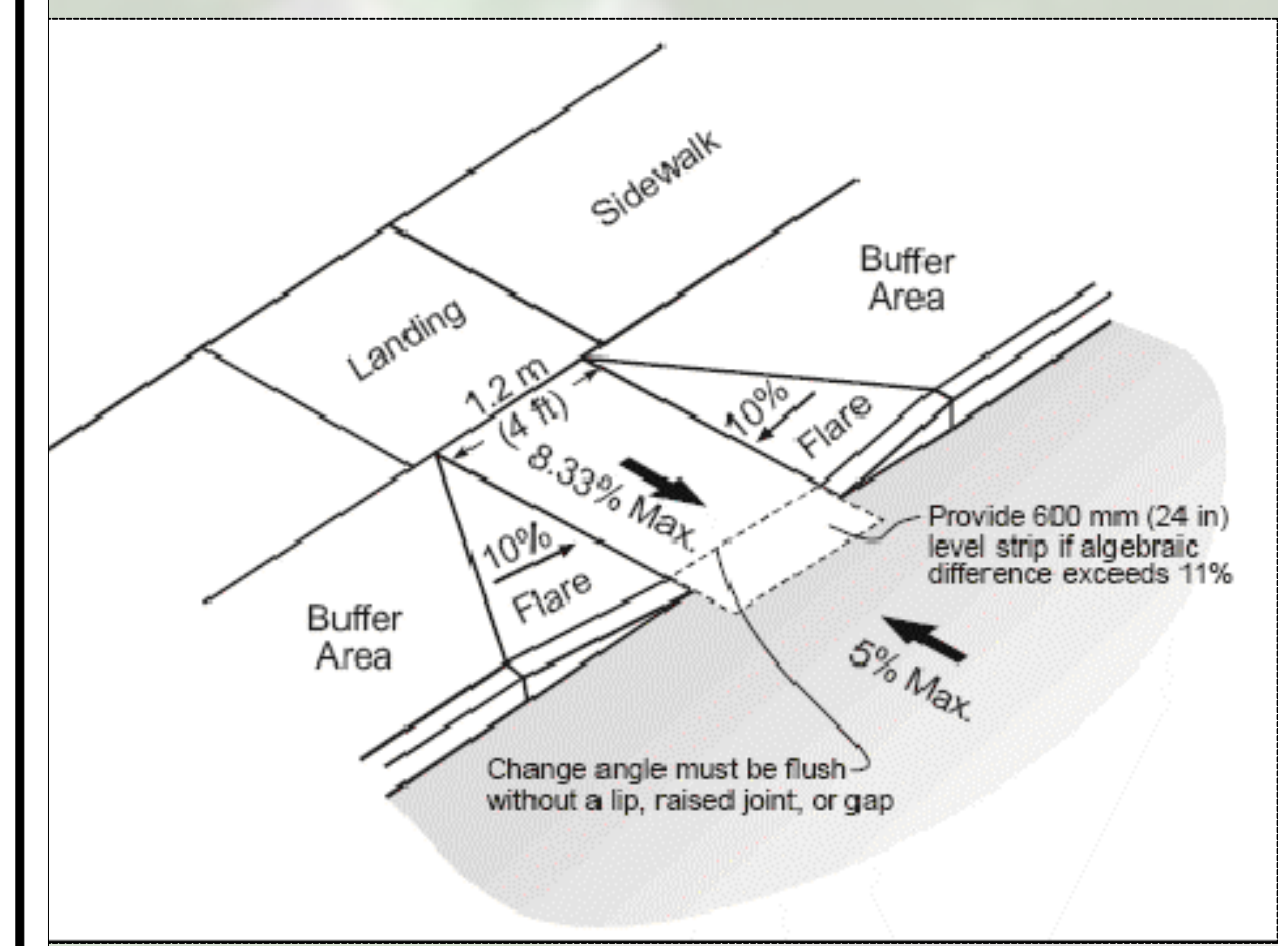
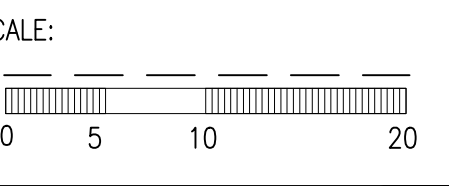
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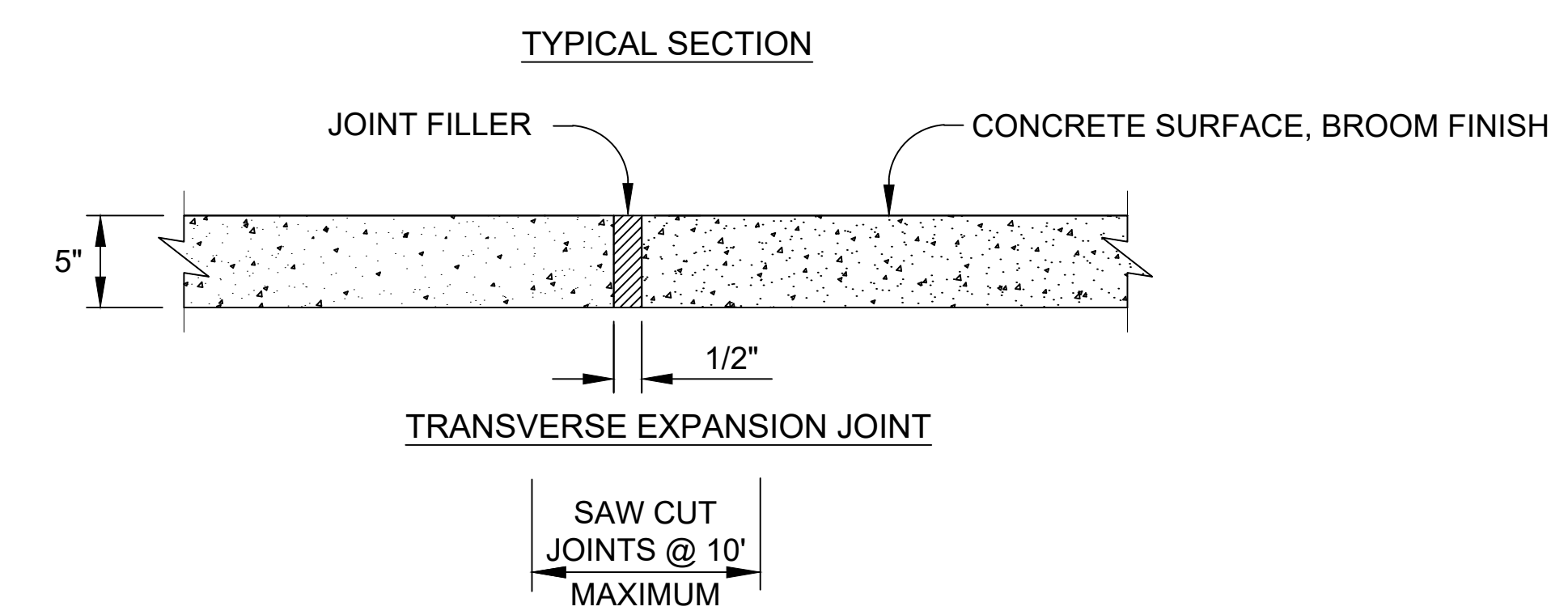
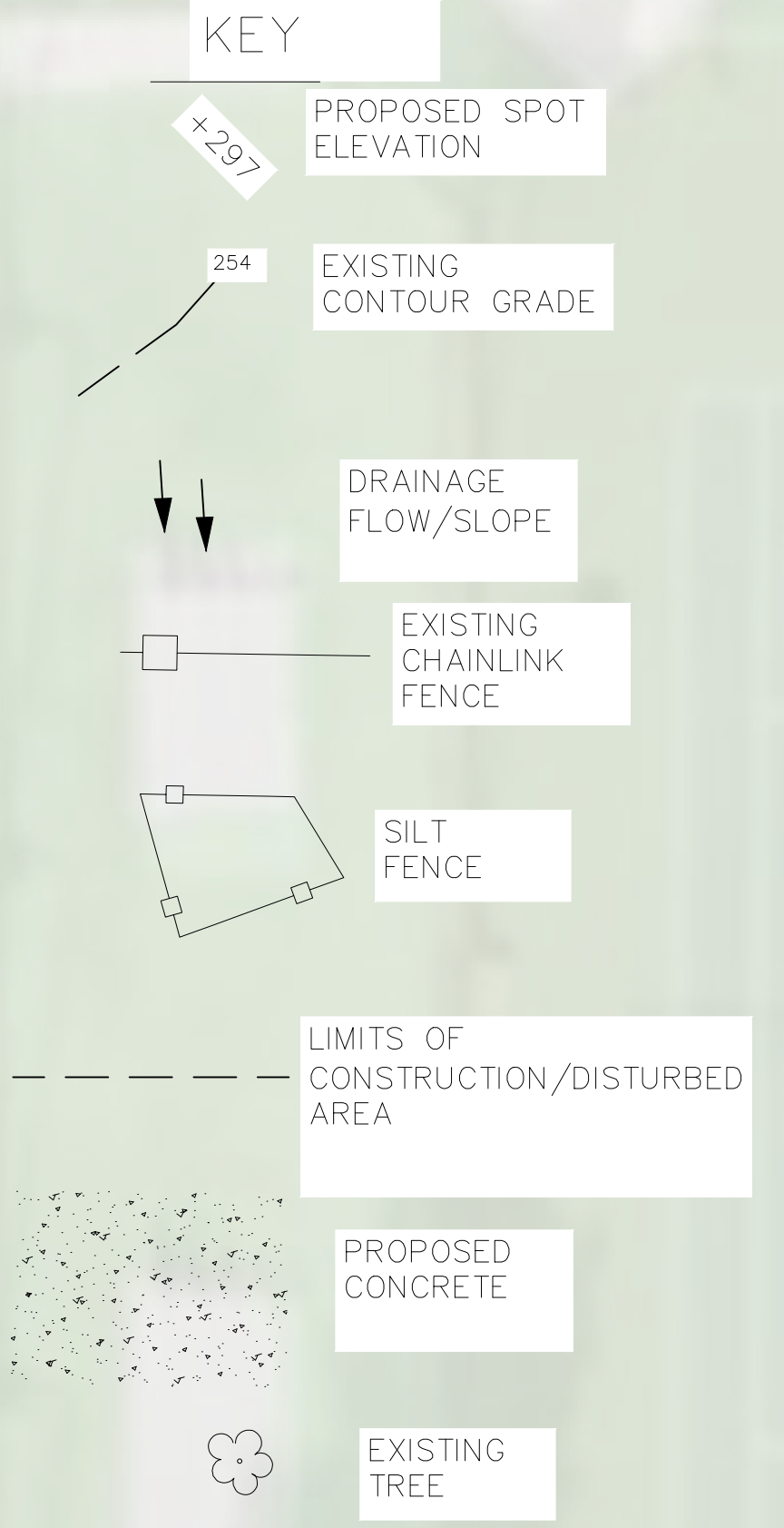
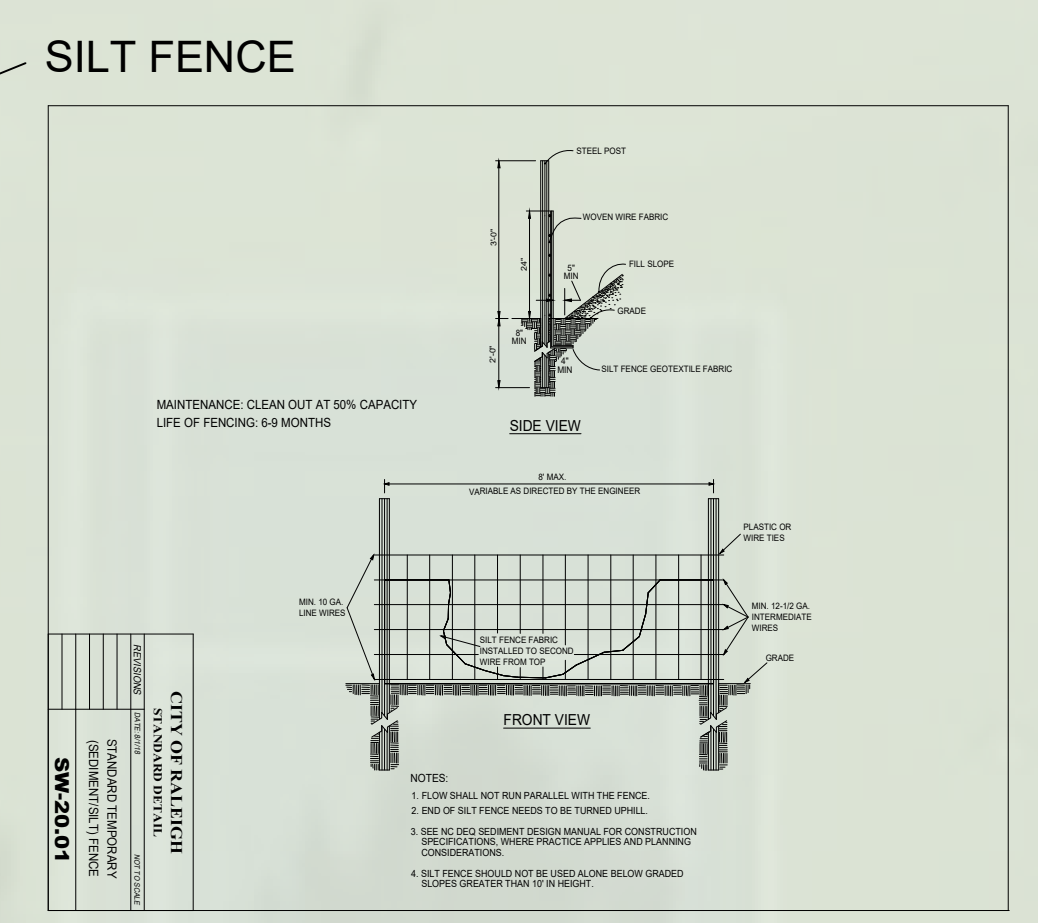
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NO.	

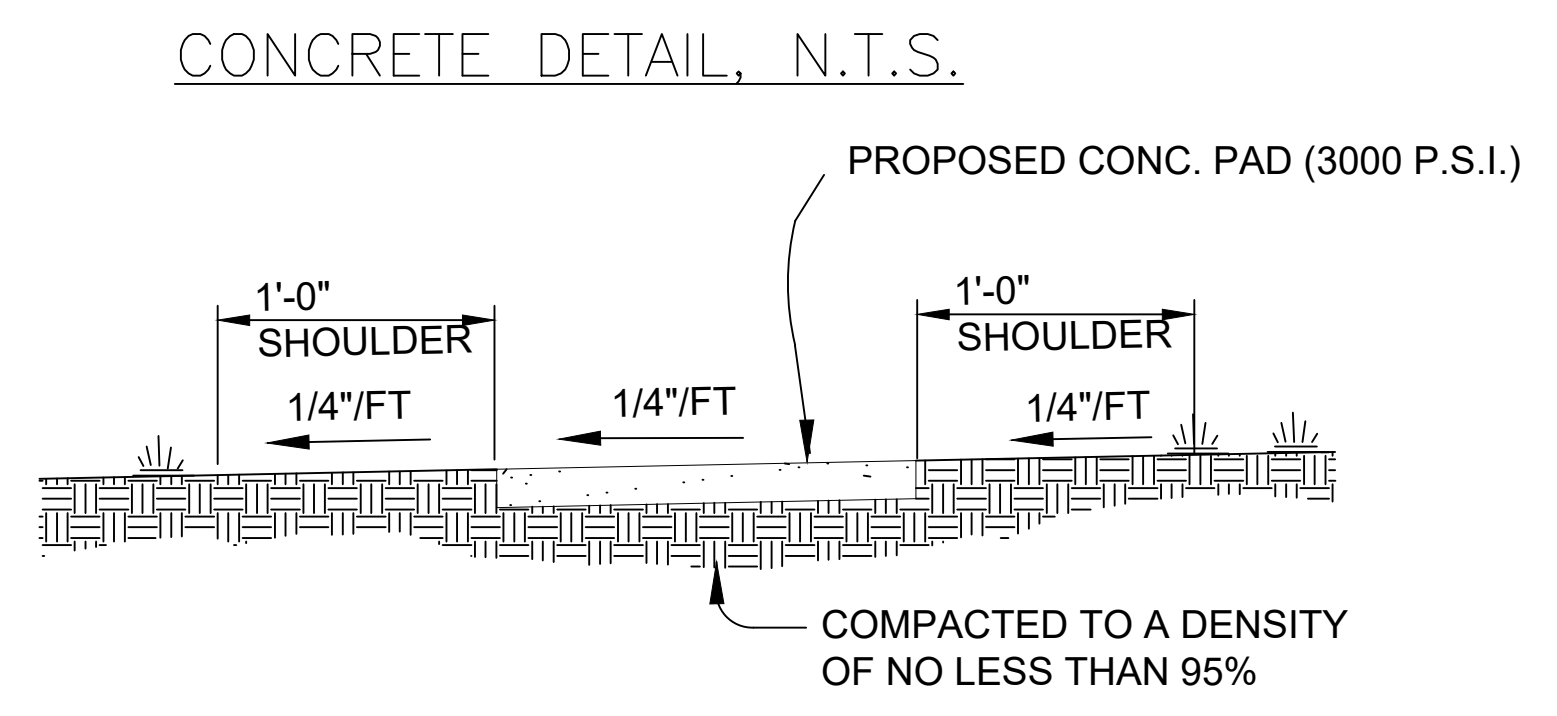


TIE INTO EXISTING STEPS
 ADJUST TOP OF ELECTRIC BOX TO BE FLUSH WITH NEW CONC.
 REMOVE SOD, CONSTRUCT NEW CONCRETE PAD, 235 SF



- NOTES:
- RESERVE GRADED SOIL MATERIAL TO ADD BACK TO FINISHED CONCRETE EDGES TO BRING BACK TO GRADE, LEAVE 3" BELOW EDGE FOR SOD. PLACE 18" STRIP OF SOD AROUND ALL NEW CONCRETE, TOP OF SOD SHOULD BE 1/2" TO 1" (INCH) BELOW FINISHED CONCRETE.
 - CONCRETE TO BE ADA ACCESSIBLE, GRADIENT TO FOLLOW ADA GUIDELINES, CONCRETE CROSS SLOPE MAX 2% TOWARDS DOWNHILL, POSITIVE DRAINAGE, BROOM FINISH
 - CONCRETE MAX. LONGITUDE SLOPE 2%

- NOTES:
- ALL AREAS DISTURBED BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED BY CONTRACTOR, SOD TO MATCH, EXISTING ASPHALT OR CONCRETE.
 - STAGING AREA TO BE DETERMINED, CONTRACTOR SHALL SECURE ALL MATERIALS AND EQUIPMENT LEFT ON SITE WITH FENCING OR CONTAINERS.



- NOTES
- TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 30 FEET.
 - ALL CONCRETE TO BE 3000 PSI AND FINISHED WITH CURING COMPOUND.
 - A 5 INCH DEPTH IS REQUIRED, WITH WELDED WIRE MESH.
 - SAW CUT JOINTS EVERY 10 FEET OR SAME AS WIDTH.