



**PURCHASING DEPARTMENT  
REQUEST FOR BID**

**17-016**

**RUFE SNOW/GLENVIEW  
INTERSECTION IMPROVEMENTS**

**BID EXTENSION**

**BIDS DUE FRIDAY, MAY 19, 2017**

**BY 10:00 A.M.**

**QUESTION DEADLINE HAS BEEN EXTENDED  
TO 12:00 P.M. FRIDAY MAY 12, 2017**





**PURCHASING DEPARTMENT  
REQUEST FOR BID**

**17-016**

**RUFE SNOW/GLENVIEW  
INTERSECTION  
IMPROVEMENTS**

**BIDS DUE THURSDAY, MAY 04, 2017**

**BY 1:00 P.M.**





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## **SECTION I**

### **BIDDING DOCUMENTS**

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## **NOTICE TO BIDDERS**

**SEALED BIDS** on forms prepared by the Engineer will be received by the office of the Purchasing Manager of the City of North Richland Hills at City Hall until 1:00pm (local time) on Thursday, May 4, 2017, for furnishing all labor, material, equipment and the performance of all work required for:

### **RUFE SNOW / GLENVIEW INTERSECTION IMPROVEMENTS**

at which time and place the bids will be publicly opened, read aloud and retained by the Public Works Department for tabulation, checking and evaluation.

**COMPLETED BID FORMS** shall be submitted in sealed envelopes upon the blank Bid Form furnished in the Construction Specifications. Sealed envelopes shall be marked: "RUFE SNOW / GLENVIEW INTERSECTION IMPROVEMENTS" – DO NOT OPEN UNTIL 1:00 P.M. on Thursday, May 4, 2017.

**COMPLETED BID FORMS** shall be accompanied by a Bid Guaranty consisting of either a cashier's check or a Bid Bond on the form included or similar form of Surety Company (FACSIMILES WILL NOT BE CONSIDERED RESPONSIVE) made payable to The City of North Richland Hills, and in the amount of five percent (5%) of the total amount of the largest amount bid as a guarantee that if the bid is accepted, the bidder will execute the Contract and furnish the required Bonds, within the time-frame indicated in the Bid Form, to the City of North Richland Hills.

**BIDDERS** should carefully examine the plans, specifications and other documents; visit the site of the work; fully inform themselves as to all conditions and matters that can in any way affect the work or the costs thereof. Should a bidder find discrepancies or omissions from the plans, specifications or any other documents or should he/she be in doubt as to the meaning, he/she should at once notify the Purchasing Manager and obtain clarification prior to submitting any bid.

**PLANS AND SPECIFICATIONS** and contract documents may be examined without charge at the City of North Richland Hills City Hall (4301 City Point Drive) Engineering Department. Bidding Documents can also be downloaded from *Public Purchase* (see below).

**A PRE-BID CONFERENCE** has not been scheduled for this Project. The City will not respond to any questions and/or comments regarding this Project after Noon on Tuesday, April 25, 2017.

**PUBLIC PURCHASE:** Bidders' are encouraged to register with the City of North Richland Hills Purchasing Manager, Scott Kendall, via email at [purchasing@nrhtx.com](mailto:purchasing@nrhtx.com). All Bidders who have registered with Public Purchase (<http://www.publicpurchase.com>) will receive automatic email notifications pertaining to this Bid, such as addendums and other related information released subsequent to the initial release of plans, specifications, bid forms, and contract documents. **It is the sole responsibility of the Bidder to register as a planholder with the City of North Richland Hills.**

**Questions pertaining to this project should be submitted via Public Purchase where the bid is advertised.**

Minimum wage rates to all laborers and mechanics on the project must not be less than as provided in the Contract Documents and Wage Provisions must particularly comply with all other applicable wage laws of the State of Texas.

The right is reserved, as the interest of the City of North Richland Hills may require, to reject any and all bids, to waive any informality in the bids received, and to select a bid best suited to the City of North Richland Hills' best interest.

In case of ambiguity or lack of clearness in stating bid prices, the City of North Richland Hills reserves the right to adopt the most advantageous construction thereof, or to reject any or all bids. No bid may be withdrawn within sixty (60) days after the date on which bids are opened.

#### **CITY OF NORTH RICHLAND HILLS**

Scott Kendall  
Purchasing Manager

#### **ADVERTISEMENT DATES:**

- **Friday, April 7, 2017**
- **Wednesday, April 12, 2017**

## INVITATION TO BID

The City of North Richland Hills is accepting sealed bids from all interested parties for:

- Bid Number: 17-016
- Bid Type: REQUEST FOR BID
- Bid Name: RUFÉ SNOW/GLENVIEW INTERSECTION IMPROVEMENTS
- Bid Due Date: Thursday, May 04, 2017
- Bid Due Time: 1:00 P.M. Central Standard Time
- Pre-Bid Conference: NONE SCHEDULED
- Deadline for questions:
  - Date: Tuesday, April 25, 2017
  - Time: 12:00 P.M. Central Standard Time

### DOCUMENTS MAY BE SUBMITTED ELECTRONICALLY VIA:

[www.publicpurchase.com](http://www.publicpurchase.com)

### DOCUMENTS MAY BE DELIVERED TO:

City of North Richland Hills  
Purchasing, Attn: 17-016 Rufe Snow/Glenview Intersection Improvements  
4301 City Point Drive  
North Richland Hills, TX 76180

If delivering a bid packet please include *One (1) hard copy and One (1) soft copy on Flash drive*. Submit documents in a sealed envelope with the following information marked plainly on the front:

### **ATTN: PURCHASING DEPARTMENT 17-016 RUFÉ SNOW/GLENVIEW INTERSECTION IMPROVEMENTS**

No oral explanation in regard to the meaning of the specifications will be made, and no oral instructions will be given after the pre-bid meeting and before the award of the contract. Requests from interested vendors for additional information or interpretation of the information included in the specifications should be directed in writing as a question related to this bid on Public Purchase and the question will be answered on Public Purchase. All addendums will also be posted to Public Purchase. It will be the vendor's responsibility to check all information related to this bid on Public Purchase before submitting a response.

The City of North Richland Hills reserves the right to reject in part or in whole all bids submitted, and to waive any technicalities for the best interest of the City of North Richland Hills.

## INVESTIGATION

The purpose of this investigation is to determine the effect of the following factors on the rate of reaction:

1. Temperature
  2. Concentration of reactants
  3. Surface area of the solid reactant
  4. Presence of a catalyst
- The rate of reaction will be measured by the volume of gas produced over a fixed period of time.

## APPARATUS AND MATERIALS

Apparatus: Conical flask, delivery tube, gas syringe, stop clock.

Materials: Hydrogen peroxide solution, manganese(IV) oxide catalyst.

Procedure: A fixed volume of hydrogen peroxide solution is poured into a conical flask. A small amount of manganese(IV) oxide catalyst is added. The flask is immediately inverted over a gas syringe. The volume of gas produced is recorded at regular intervals of time.

Results: The volume of gas produced increases with time. The rate of reaction is highest at the beginning and decreases as time goes on.

## DISCUSSION OF RESULTS

The results show that the rate of reaction is highest at the beginning and decreases as time goes on. This is because the concentration of the reactants decreases as the reaction proceeds. The rate of reaction is also affected by temperature, concentration, and surface area.

Conclusion: The rate of reaction is highest at the beginning and decreases as time goes on. The rate of reaction is also affected by temperature, concentration, and surface area.

## **SPECIAL INSTRUCTIONS TO BIDDERS**

### **1. BID SECURITY:**

A certified check or cashier's check or acceptable bidder's bond made payable to the City of North Richland Hills, Texas, in an amount of five percent (5%) of the bid submitted must accompany each bid as a guarantee that if awarded the contract, the bidder will promptly enter into a contract and execute such bonds as are required.

### **2. QUALIFICATION OF BIDDERS:**

No pre-qualification of bidders is required. However, in consideration of the bids, the City of North Richland Hills may require bidders to furnish a written experience record and a financial statement or the most recent audited financial statement of the firm. The City of North Richland Hills reserves the right to use these items of data to influence a decision as to the award of the contract. Bidders need not submit a statement of experience and financial condition unless requested to do so by the City of North Richland Hills.

### **3. CONFLICT OF INTEREST QUESTIONNAIRE:**

Bidders are required to complete the Conflict of Interest Questionnaire and to submit this completed form along with their bid form documents.

### **4. WAGE RATES:**

Attention is called to the fact that not less than the prevailing wage rates as hereinafter set forth in the Special Provisions of these Contract Documents, which are made a part hereof, must be paid on this project.

### **5. PRE-BID CONFERENCE:**

A Pre-Bidders Conference will not be conducted for this project.

### **6. BONDS:**

A performance bond and a payment bond, each in the amount of not less than one hundred percent (100%) of the contract price, conditioned upon the faithful performance of the contract and upon payment of all persons supplying labor or furnishing materials, will be required on this project. Additionally, a two (2) year maintenance bond, in the amount of not less than twenty percent (20%) of the final contract price, will be required on this project.

**7. POWER OF ATTORNEY:**

Attorneys-in-Fact who sign bid bonds or contract bonds must file with each bond a certified and current copy of their power of attorney.

**8. STANDARD SPECIFICATIONS:**

All work required by this project shall be in accordance with the "Public Works Design Manual" adopted by the City of North Richland Hills and the "Public Works Construction Standards - North Central Texas" adopted by the North Central Texas Council of Governments (NCTCOG), October 2004 Edition, except as modified in the Contract Documents. Where a conflict exists between the "Public Works Design Manual" and the "Public Works Construction Standards - North Central Texas", the "Public Works Design Manual" shall govern. Copies of both of these standards are included in the Contract Documents by reference and are made a part thereof. Omission of any section from this project's Contract Documents does not mean that such section is not applicable to this project.

**9. UNIT PRICE CONTRACT:**

The contract for this project is a "Unit Price" Contract. As such, the City of North Richland Hills reserves the right to add and/or delete quantities to specific pay items. The City of North Richland Hills may further delete an entire unit price pay item if the City of North Richland Hills desires. The City of North Richland Hills reserves the right to increase or decrease the amount of work to be done by any amount not to be exceeded by twenty-five percent (25%) of the original contract amount. In the event the increase pertains to items not originally bid, the Contractor shall submit a bid in writing to the City of North Richland Hills for approval.

It is further agreed that lump sum prices may be increased to cover additional work ordered by the City of North Richland Hills but not shown on the plans or required by the specifications, in accordance with the provisions of the general conditions; similarly, lump sum prices may be decreased to cover deletion of work so ordered.

The City of North Richland Hills reserves the right to reject the Contractor's bid on such extra work and secure such work to be done other than by said Contractor.

**10. MEASUREMENT AND PAYMENT:**

The basis of payment for the pay items noted in the proceeding pages shall be full compensation for furnishing all labor, materials, equipment and incidentals required to complete the work as specified and as shown in the project plans/drawings. Any item of work not specifically listed for payment but required by the project documents shall be considered an incidental item of the project and no specific payment will be made.

**11. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT:**

The successful bidder, upon his/her failure or refusal to execute and deliver the contract and bonds required within ten (10) days after he/she has received notice of the acceptance of his/her bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his/her bond.

**12. CONDITIONS OF WORK / OBLIGATION OF BIDDER:**

Each bidder must inform himself/herself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his/her obligation(s) to furnish all material, labor, equipment and incidentals necessary to carry out the provisions of this contract. Insofar as possible, the Contractor, in carrying out his/her work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor or City of North Richland Hills public employees.

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and Contract Documents (including all addenda). The failure or omission of any bidder to examine any form, instrument, or documents shall in no way relieve the bidder from any obligation in respect to his/her bid.

**13. ADDENDA AND INTERPRETATIONS:**

Bidders wanting further information, interpretation or clarification of the Contract Documents must make their request in writing to the Engineer no later than Noon on Tuesday, April 25, 2017. Answers to all such requests will be made a part of the Contract Documents. No other explanation or interpretation will be considered official or binding.

Should a bidder find discrepancies in, or omission from the Contract Documents, or should he/she be in doubt as to their meaning, he/she should at once notify the Engineer in order that a written addendum may be sent to all bidders. Any addenda issued will be mailed or be delivered to each prospective bidder. The bid form as submitted by the bidder must be so constructed as to include any addenda issued by the Engineer prior to 24 hours of the opening bids, with the appropriate recognition of addenda so noted in the bid form.

No interpretation of the meaning of plans, specifications or other pre-bid documents will be made to any bidder orally. Every request for such interpretation shall be in writing. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications and plans which, if issued, will be mailed to all prospective bidders (at the respective addresses furnished on the Plan Holders Sheet), not later than three (3) days prior to the date fixed for opening of bids. Failure of any bidder

to receive any such addendum or interpretation shall not relieve the bidder from any obligation under his/her bid submitted. All addenda shall become part of the Contract Documents.

**14. LAWS AND REGULATIONS:**

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

**15. SUBMITTALS:**

Prior to any construction commencing on this project the Contractor shall submit the required submittals to the Director of Public Works and have his approval for all such submittals as required in the Technical Specifications.

**16. BID SCHEDULE – BASE BID**

Depending on the City's available funding, this Project will be awarded on the basis of Base Bid as indicated in the Bid Schedule of the Bid Form Section.

## GENERAL CONDITIONS

In submitting this bid, the Bidder understands and agrees to be bound by the following terms and conditions. These terms and conditions shall become a part of the purchase order or contract and will consist of the invitation to bid, specifications, the responsive bid and the contract with attachments, together with any additional documents identified in the contract and any written change orders approved and signed by a city official with authority to do so. All shall have equal weight and be deemed a part of the entire contract. If there is a conflict between contract documents, the provision more favorable to the City shall prevail.

### 1. BID TIME

It shall be the responsibility of each Bidder to ensure his/her bid is turned in to the City of North Richland Hills on or before **1:00 P.M. Thursday, May 04, 2017**. The official time shall be determined by the clock located at the switchboard in the North Richland Hills City Hall lobby. Bids received after the time stated above will be considered ineligible and returned unopened.

All attached bid documents are to be returned completely filled out, totaled, and signed. Envelopes containing bids must be *sealed*. The City of North Richland Hills will not accept any bid documents other than the attached.

### 2. WITHDRAWING BIDS/PROPOSALS/QUOTES

Bids may be withdrawn at any time prior to the official opening; request for non-consideration of bids must be made in writing to the Purchasing Manager and received prior to the time set for opening bids. The bidder warrants and guarantees that his/her bid has been carefully reviewed and checked and that it is in all things true and accurate and free of mistakes. Bidder agrees that a bid price may not be withdrawn or canceled by the bidder for a period of ninety (90) days following the date designated for the receipt of bids.

### 3. IRREGULAR BIDS/PROPOSALS/QUOTES

Bids will be considered irregular if they show any omissions, alterations of form, additions, or conditions not called for, unauthorized alternate bids, or irregularities of any kind. However, the City of North Richland Hills reserves the right to waive any irregularities and to make the award in the best interest of the City.

### 4. REJECTION/DISQUALIFICATION

Bidders will be disqualified and/or their bids rejected, among other reasons, for any of the specific reasons listed below:

- a) Bid received after the time set for receiving bids as stated in the advertisement;
- b) Reason for believing collusion exists among the Bidders;
- c) Bid containing unbalanced value of any item; bid offering used or reconditioned equipment;
- d) Where the bidder, sub-contractor or supplier is in litigation with the City of North Richland Hills or where such litigation is contemplated or imminent;
- e) Uncompleted work which in the judgment of the City will prevent or hinder the prompt completion of additional work, or having defaulted on a previous contract;
- f) Lack of competency as revealed by reference checks, financial statement, experience and equipment, questionnaires, or qualification statement;

- g) Bid containing special conditions, clauses, alterations, items not called for or irregularities of any kind, which in the Owner's opinion may disqualify the Bidder.

However, the City of North Richland Hills reserves the right to waive any irregularities and to make the award in the best interest of the City of North Richland Hills.

**5. BID EVALUATION**

Award of bid, if it be awarded, will be made to the lowest responsible bidder or may be awarded to the bidder that offers the goods and/or services at the *best value* for the City (Texas Local Government Code, 252.043). In determining the best value the City will consider the following:

- a) The purchase price; terms and discounts; delivery schedule;
- b) The reputation of the bidder and of the bidder's goods or services;
- c) The quality of the bidders' goods or services;
- d) The extent to which the bidder's goods or services meet the City specifications and needs;
- e) The bidder's past relationship with the City;
- f) Total long term cost to the city to acquire the bidder's goods or services;
- g) Any relevant criteria specifically listed in the specifications;
- h) Compliance with all State and local laws, general conditions and Specifications;
- i) Results of testing, if required;
- j) Warranty and/or guarantee, maintenance requirements and performance data of the product requested;
- k) City's evaluation of the bidder's ability to perform to specifications.

**6. AWARD OF BID**

The bid award will be made within sixty (60) days after the opening of bids. No award will be made until after investigations are made as to the responsibilities of the best bidder.

The City of North Richland Hills reserves the right to award bids whole or in part when deemed to be in the best interest of the City. Bidder shall state on bid form if their bid is "all or none", otherwise it shall be considered as agreeing to this section.

Information contained in submitted bid documents shall not be available for inspection until after the award has been made by the City Council. Requests for this information must be submitted in writing.

**7. ASSIGNMENT**

The successful bidder may not assign his/her rights and duties under an award without the written consent of the North Richland Hills City Manager. Such consent shall not relieve the assignor of liability in the event of default by his assignee.

**8. SUBSTITUTIONS/EXCEPTIONS**

Exceptions/variations from the specifications may be acceptable provided such variations, in each instance, is noted and fully explained in writing and submitted with bid. NO substitutions or changes in the specifications shall be permitted after award of bid without prior written approval by the Purchasing Manager.

**9. DELIVERY/ACCEPTANCE**

The delivery date is an important factor of this bid and shall be considered during the evaluation process. The City considers delivery time the period elapsing from the time the order is placed until the City receives the order at the specified delivery location.

All material shall be delivered F.O.B. City of North Richland Hills to the address specified at the time of order. Acceptance by the City of North Richland Hills of any delivery shall not relieve the Contractor of any guarantee or warranty, expressed or implied, nor shall it be considered an acceptance of material not in accordance with the specifications thereby waiving the City of North Richland Hills right to request replacement of defective material or material not meeting specifications.

**10. NOTICE OF DELAYS**

Whenever the contractor encounters any difficulty which is delaying or threatens to delay timely performance, written notice shall immediately be given to the Purchasing Manager, stating all relevant information. Such notice shall not in any way be construed as a waiver by the City of any rights or remedies to which it is entitled by law. Delays in performance and/or completion may result in cancellation of agreement.

**11. SALES TAX**

The City of North Richland Hills is exempt from Federal Excise and State sales tax; therefore tax must not be added to bid.

**12. TIE BIDS**

In the event of a tie bid, State Law provides the bid or contract shall be awarded to the local bidder. In cases where a local bidder is not involved, tie bids shall be awarded by drawing lots at the City Council meeting, or as otherwise directed by the Mayor.

**13. BRAND NAME OR EQUAL**

If items are identified by a "brand name" description, such identification is intended to be descriptive, not restrictive, and is to indicate the quality and characteristics of products that will be satisfactory. As used in this clause, the term "brand name" includes identification of products by make and model.

Such products must be clearly identified in the bid as an equal product and published specifications of the equal products offered must be included with the bid reply.

Bids offering equal products will be considered for award if determined by the Purchasing Manager and the user department to be equal in all material respects to the brand name products referenced. The decision of acceptable "equal" items or variations in the specifications will solely be the City of North Richland Hills. Unless the bidder clearly indicates in his/her bid that he is offering an "equal" product, his bid shall be considered as offering the brand name product referenced in the invitation for bids.

**14. REFERENCES**

A minimum of three (3) references, preferably located within the Dallas/Fort Worth Metroplex, must be submitted with each bid. Company name, contact and phone number must be included with each reference.

**15. PROHIBITION AGAINST PERSONAL FINANCIAL INTEREST IN CONTRACTS**

No employee of the City of North Richland Hills shall have a direct or indirect financial interest in any proposed or existing contract, purchase, work, sale or service to or by the City (CMA-074, Standards of Conduct, Section IV).

**16. TERMINATION/NON PERFORMANCE**

Continuing non-performance of the vendor in terms of Specifications shall be a basis for the termination of the contract by the City. The City of North Richland Hills reserves the right to enforce the performance of this contract in any manner prescribed by law or deemed to be in the best interest of the City in the event of breach or default of this contract. The City reserves the right to terminate the contract immediately in the event the successful bidder fails to 1.) Meet delivery schedules or, 2.) Otherwise not perform in accordance with these specifications.

Breach of contract or default authorizes the City to award to another bidder, and/or purchase elsewhere and charge the full increase in cost and handling to the defaulting successful bidder.

The contract may be terminated by either party upon written thirty (30) days' notice prior to cancellation without cause.

**17. ATTORNEYS FEES**

Neither party to this contract shall be entitled to attorney fees for any matter arising under this contract, whether for additional work, breach of contract, or other claim for goods, services, or compensation. All claims for attorney's fees are hereby WAIVED.

**18. INDEMNITY**

City shall not be liable or responsible for, and shall be saved and held harmless by Contractor from and against any and all suits, actions, losses, damages, claims, or liability of any character, type, or description, including claims for copyright and patent infringement, and including all expenses of litigation, court costs, and attorney's fees for injury or death to any person, or injury to any property, received or sustained by any person or persons or property, arising out of, or occasioned by, directly or indirectly, the performance of Contractor under this agreement, including claims and damages arising in part from the negligence of City, without; however, waiving any governmental immunity available to the CITY under Texas law and without waiving any defenses of the parties under Texas law. The provisions of this indemnification are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

It is the expressed intent of the parties to this Agreement that the indemnity provided for in this section is an indemnity extended by Contractor to indemnify and protect City from the consequences of City's own negligence, provided, however, that the indemnity provided for in this section shall apply only when the negligent act of City is a contributory cause of the resultant injury, death, or damage, and shall have no application when the negligent act

of City is the sole cause of the resultant injury, death, or damage, unmixed with the legal fault of another person or entity. Contractor further agrees to defend, at its own expense, and on behalf of City and in the name of City, any claim or litigation brought in connection with any such injury, death, or damage.

The Contractor will secure and maintain Contractual Liability insurance to cover this indemnification agreement that will be primary and noncontributory as to any insurance maintained by the City for its own benefit, including self-insurance.

**19. PERFORMANCE AND PAYMENT BONDS**

In the event the total contract amount exceeds \$100,000, the Contractor shall be required to execute a performance bond in the amount of one hundred (100) percent of the total contract price; if the total contract amount exceeds \$50,000 the contractor shall be required to execute a payment bond in the amount of one hundred (100) percent of the total contract price, each in standard forms for this purpose, guaranteeing faithful performance of work and guaranteeing payment to all persons supply labor and materials or furnishing any equipment in the execution of the contract. It is agreed that this contract shall not be in effect until such performance and payment bonds are furnished and approved by the City of North Richland Hills. No exceptions to this provision allowed.

Unless otherwise approved in writing by the City of North Richland Hills, the surety company underwriting the bonds shall be acceptable according to the latest list of companies holding certificates of authority from the Secretary of the Treasury of the United States.

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and current copy of their power of attorney.

**20. INTERLOCAL AGREEMENT**

Successful bidder agrees to extend prices and terms to all entities who have entered into or will enter into joint purchasing interlocal cooperation agreements with the City of North Richland Hills.

**21. ELECTRONIC PROCUREMENT**

The City of North Richland Hills has adopted policies and procedures complying with Local Government Code Section 252.0415, Section 271.906 and Section 2155.062. The City of North Richland Hills may receive submittals in electronic form in response to procurement requests. However, a bid that is submitted non-electronically by the due date and time will be accepted and then entered electronically by Purchasing after the bid opening.

**22. DEPARTMENT OF TRANSPORTATION (TXDOT) RELATED BIDS**

*"The City of North Richland Hills, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement,*

*disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award."*

Due care and diligence has been used in preparation of this information, and it is believed to be substantially correct. However, the responsibility for determining the full extent of the exposure and the verification of all information presented herein shall rest solely with the bidder. The City of North Richland Hills and its representatives will not be responsible for any errors or omissions in these specifications, nor for the failure on the part of the proposer to determine the full extent of the exposures.

## INSURANCE REQUIREMENTS

Contractors performing work on City property or public right-of-way for the City of North Richland Hills shall provide the City a certificate of insurance evidencing the coverages and coverage provisions identified herein. Contractors shall provide the City evidence that all subcontractors performing work on the project have the same types and amounts of coverages as required herein or that the subcontractors are included under the contractor's policy. The City, at its own discretion, may require a certified copy of the policy.

**All insurance companies and coverages must be authorized by the Texas Department of Insurance to transact business in the State of Texas and must be acceptable to the City of North Richland Hills.**

Listed below are the types and amounts of insurance required. The City reserves the right to amend or require additional types and amounts of coverages or provisions depending on the nature of the work

Type of Insurance	Amount of Insurance	Provision
1. Commercial General Liability to include coverage for: a) Premises/Operations b) Products/Completed Operations c) Independent Contractors d) Personal Injury e) Contractual Liability f) Personal/Advertising Injury g) Medial Expense h) Fire Legal Liability i) Underground Hazard j) Explosion/Collapse Hazard k) Patent Infringement l) Copyright Law Violations	\$1,000,000 each occurrence, \$1,000,000 general aggregate;  Or  \$1,000,000 combined single limits	City to be listed as additional insured and provided 30 day-notice of cancellation or material change in coverage  City prefers that insurer be rated B+V1 or higher by A. M. Best or A or higher by Standard & Poors
2. Consultants, architects, engineers, Landscape design specialist, other professional services	\$500,000 Professional Liability with proof that aggregate is still available.	
3. Workers' Compensation & Employers' Liability	Statutory Limits \$500,000 each accident	Alternate employer endorsement required
4. Comprehensive Automobile Liability Insurance, including coverage for loading and unloading hazards, for a) Owned/Leased Vehicles b) Non-Owned Vehicles c) Hired Vehicles	\$500,000 Combined single limit for bodily injury and property damage	

**A PURCHASE ORDER WILL NOT BE ISSUED WITHOUT EVIDENCE OF INSURANCE.**



## NON-COLLUSION AFFIDAVIT OF BIDDER

State of Texas County of Dallas

Troy Eagle verifies that:  
(Name)

- (1) He/She is owner, partner, officer, representative, or agent of  
Ragle Inc, has submitted the attached  
bid: (Company Name)
- (2) He/She is fully informed in respect to the preparation, contents and  
circumstances in regard to attached bid;
- (3) Neither said bidder nor any of its officers, partners, agents or employees has  
in any way colluded, conspired or agreed, directly or indirectly with any other  
bidder, firm or person to submit a collusive or sham bid in connection  
with attached bid and the price or prices quoted herein are fair and proper.

[Signature]  
SIGNATURE

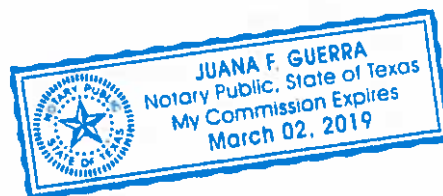
Troy Eagle  
PRINTED NAME

Subscribed and sworn to before me this  
3 Day of may 2017.

[Signature]  
NOTARY PUBLIC in and for

Dallas County, Texas.

My commission expires: 3/2/19



**THIS FORM MUST BE COMPLETED, NOTARIZED AND SUBMITTED WITH BID**

DECLARATION OF INTEREST

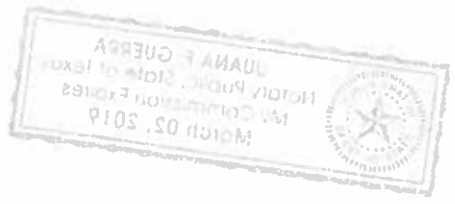
STATE OF TEXAS  
COUNTY OF DALLAS  
I, John Doe, do hereby declare that I am the owner of the property described in the foregoing instrument.

WITNESSED my hand and seal this 1st day of January, 2019.

My commission expires this 1st day of January, 2020.



John Doe



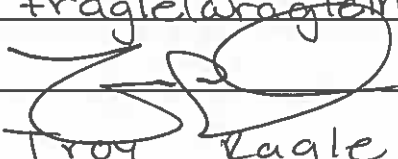
Notary Public  
Juan F. Guerra  
My Commission Expires  
March 02, 2019

THIS INSTRUMENT IS SUBJECT TO THE RECORDING ACT AND THE RECORDING ACT IS SUBJECT TO THE RECORDING ACT.

## BID CERTIFICATION

The Undersigned, in submitting this bid, represents and certifies:

- a. He/she is fully informed regarding the preparation, contents and circumstances of the attached bid;
- b. He/she proposes to furnish all equipment/service at the prices quoted herein and bid is in strict accordance with the conditions and specifications stated herein;
- c. There will be at no time a misunderstanding as to the intent of the specifications or conditions to be overcome or pleaded after the bids are opened;
- d. He/she is an equal opportunity employer, and will not discriminate with regard to race, color, national origin, age or sex in the performance of this contract.
- e. The undersigned hereby certifies that he/she has read, understands and agrees that acceptance by the City of North Richland Hills of the bidder's offer by issuance of a purchase order will create a binding contract. Further, he/she agrees to fully comply with documentary forms herewith made a part of this specific procurement.

COMPANY: Ragle Inc  
ADDRESS: PO Box 1130  
CITY, STATE & ZIP: Euless TX 76039  
TELEPHONE: 817-285-6060  
FAX: 817-472-9942  
EMAIL: tragle@ragleinc.com  
SIGNATURE:   
PRINTED NAME: Troy Ragle  
DATE: 5/3/2017

THE COUNTY OF DALLAS, TEXAS, DO HEREBY CERTIFY THAT

A. [Name] is the owner of the property described in the foregoing instrument, and that the same is not subject to any lien or claim of any person other than the owner thereof.

B. [Name] is the owner of the property described in the foregoing instrument, and that the same is not subject to any lien or claim of any person other than the owner thereof.

C. [Name] is the owner of the property described in the foregoing instrument, and that the same is not subject to any lien or claim of any person other than the owner thereof.

D. [Name] is the owner of the property described in the foregoing instrument, and that the same is not subject to any lien or claim of any person other than the owner thereof.

E. [Name] is the owner of the property described in the foregoing instrument, and that the same is not subject to any lien or claim of any person other than the owner thereof.

WITNESSED my hand and the seal of said County, this 1st day of [Month], 20[Year].

\_\_\_\_\_  
 County Clerk

\_\_\_\_\_  
 [Name]

\_\_\_\_\_  
 [Name]

\_\_\_\_\_  
 [Name]

\_\_\_\_\_  
 [Name]

\_\_\_\_\_  
 [Name]

\_\_\_\_\_  
 [Name]

\_\_\_\_\_  
 [Name]

# CERTIFICATE OF INTERESTED PARTIES

FORM 1295

1 of 1

Complete Nos. 1 - 4 and 6 if there are interested parties.  
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

## OFFICE USE ONLY CERTIFICATION OF FILING

Certificate Number:  
2017-201805

Date Filed:  
05/03/2017

Date Acknowledged:

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

Ragle Inc  
Eules, TX United States

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

City of North Richland Hills

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

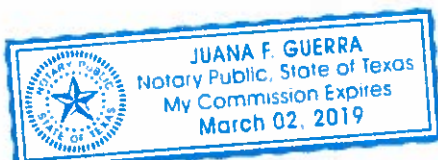
Bid: 17-016  
Rufe Snow/Glenview Intersection Improvements

4	Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
			Controlling	Intermediary
	Ragle Inc.	Eules, TX United States	X	

5 Check only if there is NO Interested Party. ☐

### 6 AFFIDAVIT

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.



AFFIX NOTARY STAMP / SEAL ABOVE

[Signature]  
Signature of authorized agent of contracting business entity

Sworn to and subscribed before me, by the said Troy Ragle, this the 3 day of May, 2017, to certify which, witness my hand and seal of office.

[Signature] Juana Guerra Notary  
Signature of officer administering oath Printed name of officer administering oath Title of officer administering oath



## COMPLIANCE WITH HOUSE BILL 1295

In 2015, the Texas Legislature adopted [House Bill 1295](#), which added section 2252.908 of the Government Code. The law states that a governmental entity may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the governmental entity at the time the business entity submits the signed contract to the governmental entity.

The law applies only to a contract of a governmental entity that either (1) requires an action or vote by the governing body of the entity or agency before the contract may be signed or (2) has a value of at least \$1 million. The disclosure requirement applies to a contract entered into on or after January 1, 2016.

The Texas Ethics Commission has adopted rules necessary to implement the law, prescribed the disclosure of interested parties form, and posted a copy of the form on the commission's website.

### **Filing Process:**

The commission has made available on its website a new filing application that must be used to file Form 1295. A business entity must:

- 1) Use the application to enter the required information on Form 1295,
- 2) Print a copy of the completed form, which will include a certification of filing that will contain a unique certification number.
- 3) Sign the printed copy of the form (an authorized agent of the business entity must sign),
- 4) Have the form notarized,
- 5) File the completed Form 1295 with the certification of filing with the governmental body with which the business entity is entering into the contract.

The governmental entity must notify the commission, using the commission's filing application, of the receipt of the filed Form 1295 with the certification of filing not later than the 30th day after the date the contract binds all parties to the contract. The commission will post the completed Form 1295 to its website within seven business days after receiving notice from the governmental entity.

Information regarding how to use the filing application may be found at [https://www.ethics.state.tx.us/whatsnew/elf\\_info\\_form1295.htm](https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm).

## CHAPTER 1: INTRODUCTION

The first chapter of this book is an introduction to the field of statistics. It discusses the importance of statistics in various fields of study and the role of the statistician. It also covers the basic concepts of statistics, such as data, variables, and measures of central tendency and dispersion.

The second chapter discusses the different types of data and the methods for collecting and organizing them. It covers the concepts of qualitative and quantitative data, and the various methods of data collection, such as surveys, experiments, and observations.

The third chapter discusses the methods for summarizing and presenting data. It covers the concepts of measures of central tendency (mean, median, and mode) and measures of dispersion (range, variance, and standard deviation). It also discusses the different ways of presenting data, such as tables, graphs, and charts.

The fourth chapter discusses the methods for analyzing data. It covers the concepts of hypothesis testing, confidence intervals, and regression analysis. It also discusses the different types of statistical tests and the conditions under which they can be used.

The fifth chapter discusses the methods for interpreting the results of statistical analysis. It covers the concepts of statistical significance, effect size, and power. It also discusses the different ways of interpreting the results of statistical analysis, such as p-values, confidence intervals, and regression coefficients.

The sixth chapter discusses the methods for applying statistical analysis to real-world problems. It covers the concepts of statistical inference, decision making, and quality control. It also discusses the different ways of applying statistical analysis to real-world problems, such as hypothesis testing, confidence intervals, and regression analysis.

The seventh chapter discusses the methods for using statistical software. It covers the concepts of data entry, data manipulation, and data analysis. It also discusses the different ways of using statistical software, such as spreadsheets, statistical packages, and programming languages.

The eighth chapter discusses the methods for communicating the results of statistical analysis. It covers the concepts of statistical reporting, statistical writing, and statistical presentation. It also discusses the different ways of communicating the results of statistical analysis, such as reports, articles, and presentations.

## FOR DISADVANTAGED BUSINESS ENTERPRISES ONLY

Disadvantaged Business Enterprises (DBE) are encouraged to participate in the City of North Richland Hills bid process. Representatives from DBE Companies should identify themselves as such and submit a copy of their Certification.

The City of North Richland Hills recognizes the certifications of both the State of Texas Building and Procurement Commission HUB Program and the North Central Texas Regional Certification Agency. All companies seeking information concerning DBE certification are urged to contact:

Texas Building and Procurement Commission  
Statewide HUB Program  
1711 San Jacinto Blvd., Austin TX 78701-1416  
P O Box 13186, Austin, TX 78711-3186  
(512) 463-5872

<http://www.window.state.tx.us/procurement/prog/hub/hub-certification/>

North Central Texas  
Regional Certification Agency  
624 Six Flags Drive, Suite 216  
Arlington, Texas 76011  
(817) 640-0606  
<http://www.nctrca.org/certification.html>

NIA

If your company is already certified, attach a copy of your certification to this form and return as part of your packet.

Company Names: \_\_\_\_\_

Representative: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

Email address: \_\_\_\_\_

### INDICATE ALL THAT APPLY:

- ☐ Minority-Owned Business Enterprise
- ☐ Women-Owned Business Enterprise
- ☐ Disadvantaged Business Enterprise

# THE UNIVERSITY OF CALIFORNIA, BERKELEY

Department of Psychology  
 321A Evans Hall  
 Berkeley, California 94720-1550  
 Phone: (415) 848-5200

The purpose of this document is to provide information about the various programs and services offered by the Department of Psychology. This document is intended to be a general overview and is not intended to be a substitute for the information provided in the various program and service descriptions.

The Department of Psychology is a member of the University of California, Berkeley.

Department of Psychology

321A Evans Hall, Berkeley, CA 94720-1550

Phone: (415) 848-5200

FAX: (415) 848-5200

Website: <http://psych.berkeley.edu>

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Phone: (415) 848-5200

FAX: (415) 848-5200

Website: <http://psych.berkeley.edu>

## BIDDERS STATEMENT OF QUALIFICATIONS

Firm Name: Ragle Inc. Date Organized: 1993

Address: PO Box 1130

City: Eufless State: TX Zip: 76039

Telephone Number: 817-285-6060 Fax Number: 817-472-9942

E-mail: tragle@ragleinc.com

Number of years in business under present name: 24 years

Former name(s) of organization: NA

Title, Name and complete address of all principals in the firm:

1. Scott York - PO Box 444 Newburgh IN 47629 - President
2. Troy Ragle - PO Box 1130 Eufless TX 76039 - VP
3. Rahul Patel: PO Box 1130 Eufless TX 76039 - Ops Mngr

Number of full time employees: ~260

IRS Number: 35-1878024

Please attach the following to this statement of Qualifications:

1. Summary of the firm's latest financial statement; ✓
2. List of similar contracts currently being performed ✓  
(include contact name, address, and phone number);
3. List of all equipment required to perform this work and status of ownership (include all equipment, including year, make and model of each; and include a complete list of all equipment to be used during the course of this contract); ✓
4. List of at least four references (include Bank and trade with contact name, address and ✓  
phone number)

I hereby certify as Vice President of Ragle Inc  
(title) (Firm Name)

that all information provided above and attached herewith is true and correct.

Signature: 

Printed Name: Troy Ragle Date: 5/3/17

Name of Business: Ragle Inc.



Attachment A

9. a. List at least five of the largest jobs you have completed in the last five years which are similar in project work scope to this project. (Attach additional sheets if necessary)

Project Name and Contract Numbers	Owner's Name, Address, Contact Name and Telephone #	Scope of Work Performed	Original and Final Contract Amounts	Original and Final Completion Dates	Names of On-site Project Manager and Superintendent	Name of Surety
HP 2010(854) 0918-45-844	TXDOT 4777 East Highway 80 Mesquite, Texas 75150 Jacqueline Weeks: 214-319-6521	WORK CONSISTING OF WIDEN 2 TO 4 LN DIV (TO 8 LN) WGR SEP DALLAS COUNTY, TEXAS	Orig: 7,719,831.64 Fin: 8,629,408.00	12/2015 12/2015	Rahul Patil Catalino Flores	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland
NH 2013(908) 0047-18-068	TXDOT 3904 US 75 South Sherman, TX 75090 Jana Bolen: 903-888-9271	WORK CONSISTING OF WIDEN NON-FREEWAY GRAYSON COUNTY, TEXAS	Orig: 5,248,890.96 Fin: 5,539,198.05	04/2016 05/2016	Jason Stultz Catalino Flores	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland
BR 2013(832) 1159-02-031	TXDOT 124 FM 876 Waxahachie, Texas 75167 Billy Moon: 972-938-1570	WORK CONSISTING OF REPLACE BRIDGE AND APPROACHES ELLIS COUNTY, TEXAS	Orig: 889,807.76 Fin: 993,191.21	02/2016 06/2016	Rahul Patil Catalino Flores	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland
BR 2015(500) 0902-90-017	TXDOT- North Area Office2 501 W. Eules Blvd Eules, TX 76040 Sarah Johnson: 817-399-4324	WORK CONSISTING OF REPLACE BR & APPRS TARRANT COUNTY, TEXAS	Orig: 1,115,561.21 Fin: 1,134,073.09	06/2016 06/2016	James Gabe Catalino Flores	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland
IR-30794-A Road Wodening	INDOT Patrick Craig 812-401-5988	ADDED TRAVEL LANES, TRAFFIC SIGNAL MODERNIZATION, AND SIGNS VINCENNES DISTRICT COUNTY : WARRICK	12,196,677.56	07/2014 07/2014	Jason Ragle	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland



Attachment B

R. a. Contracts in force:

Project Name and Contract Numbers	Owner's Name, Address, and Contact Name and Telephone #	Scope of Work Performed	Contract Amount	Estimated Completion Date	Name of Surety
CC 902-48-838 0902-45-838	TXDOT 125 East 11th St, Austin TX 78701 Kimberley Smith: 817-370-6633	WORK CONSISTING OF GRADING, STRUCTURES AND PAVEMENT TARRANT COUNTY, TEXAS	\$10,457,967.33	2016	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland
CM 1102(122) 0081-01-046	TXDOT 125 East 11th St, Austin TX 78701 Kimberley Smith: 817-370-6633	WORK CONSISTING OF GR, DR, SIGNAL AND PAVEMENT TARRANT COUNTY, TEXAS	\$ 4,198,919.20	2016	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland
BR 2015(500) 0902-90-017	TXDOT- North Area Office2 501 W. Euless Blvd Euless, TX 76040 Sarah Johnson: 817-398-4324	WORK CONSISTING OF REPLACE BR & APPRS TARRANT COUNTY, TEXAS	\$ 1,115,561.21	June 2016	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland
CM 1502(091) 0353-05-082	TXDOT 4777 East Highway 80 Mesquite, Texas 75150 Richard Barker: 214-319-6521	WORK CONSISTING OF INTERSECTION IMPROVEMENTS AND UTILITY ADJUSTME DALLAS COUNTY, TEXAS	\$ 7,010,076.50	March 2017	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland
C 45-19-50 0045-19-050	TXDOT 3904 US 75 South Sherman, TX 75050 Jana Bolten: 903-968-9271	WORK CONSISTING OF CONST MAIN LNS OF A 4-LN SECTION WITH DEPR MED GRAYSON COUNTY, TEXAS	\$ 12,934,039.04	July 2017	Colonial American Casualty & Surety Company Fidelity & Deposit Company Of Maryland



# Attachment C

Semi Lowboy	RTX-ST02 RTX-LB003	Mack Black Talbert	CV713(Tri/A) Trailer	2003 2013
Excavator	RTX-EX01	John Deere	330C LC	2007
Excavator	RTX-EX02	Kobelco	SK 250 LC	2004
Excavator	RTX-EX03	John Deere	230C LC	2002
Excavator	RTX-EX04	John Deere	75D	2012
Excavator	RTX-EX05	John Deere	250G	2012
Excavator	RTX-EX06	John Deere	75D	2011
Excavator	RTX-EX07	Caterpillar	320 DL	2011
Excavator	RTX-EX08	Bobcat	E85M	2013
Excavator	RTX-EX10	John Deere	250GLC	2014
Dozer	RTX-DZ02	Caterpillar	D5M GPS	2001
Dozer	RTX-DZ05	John Deere	450J LGP	2006
Dozer	RTX-DZ03	Caterpillar	D6R III XW GPS	2007
Dozer	RTX-DZ04	John Deere	850K	2011
Loader	RTX-WL01	John Deere	644K	2012
Loader	RTX-WL02	Caterpillar	928H	2012
Trucks	RTX-WT01	Mack	CH613 4000G	2002
Trucks	RTX-WT02	Sterling	4000G	2005
Backhoe	RTX-BK06	Caterpillar	420E	2005
Backhoe	RTX-BK03	Caterpillar	420E IT	2008
Backhoe	RTX-BK04	Caterpillar	420F IT	2013
Backhoe	RTX-BK05	Caterpillar	420F IT	2013
Broom	RTX-BR01	Broce	RJ350	2006
Broom	RTX-BR02	Broce	RJ350	2005
Broom	RTX-BR03	Broce	RJ350	1999
Broom	RTX-BR04	Broce	RJ350	2008
Skid Steer	RTX-SK02	New Holland	LS 180	2002
Skid Steer	RTX-SK01	Gehl	RT210	2012
Skid Steer	RTX-SK04	Caterpillar	279 C2 XPS	2013
Skid Steer	RTX-SK03	Caterpillar	279C XPS	2013
Skid Steer	RTX-SK05	Caterpillar	279 C2	2013
Crane	RTX-CN02	Terex	RT6650	2008
Crane	RTX-CN03	Terex	RT230	2000
Lift	RTX-ML01	Genie	S-60X	2011
Concrete Paving	RTX-PV01	CMI	Texture & Cure	
Concrete Paving	RTX-PV04	Span-It	Work Bridge	2007
Concrete Paving	RTX-PV03	Gomaco	C-750 Deck	
Concrete Paving	RTX-PV05	Gomaco	Placer	1998
Concrete Paving	RTX-PV02	Gomaco	Commander III	2008
Concrete Paving	RTX-PV06	Gomaco	C-450 Deck	2001
Roller	RTX-RL04	Ingersoll-Rand	SDR70(66")	1999
Roller	RTX-RL01	Caterpillar	563E Padfoot(84")	2007
Roller	RTX-RL03	Sakai	SV510T(84")	2011
Roller	RTX-RL02	Ingersoll-Rand	SD116DX(84")	2005
Roller	RTX-RL05	Dynapac	CP271 Compactor	2006
Roller	RTX-RL06	Sakai	SV410 (66")	2014

Air Compressor	RTX-AC01	Sulair	185 Air Comp.	2011
Grader	RTX-MG01	John Deere	JD 772G	2011
Tiller	RTX-TM01	CMI	CMI 425	1998
Tiller	RTX-TM02	CMI	CMI 450	
Trench Roller	RTX-TR01	Wacker Neuson	33" Remote Control	2012
Equipment Attachment	RTX-EA01	Midco Demolition Tool	Hammer Atchmt.	

(x12) Message boards - Wanco and K&K

(x12) Wanco Arrow Boards

(x3) Light Plants



PO BOX 1130  
Eules TX 76039

Phone: 817-472-9939  
Fax: 817-472-9942

---

***"Building Roads and Bridges for America"***

### **Bank Reference:**

**Old National Bank**  
8577 Rufflan Ln  
Newburgh, IN 47630  
Phone: 812-853-7374  
Contact: Kathy Seger

### **Additional References:**

**Mulzer Crushed Stone**  
PO Box 249  
Tell City, IN 47586  
Phone: 812-547-7921  
Fax: 812-547-6757

**Concrete Supply LLC**  
PO Box 5667  
Evansville, IN 47716  
Phone: 812-474-6715  
Fax: 812-474-6717

**Central Concrete Supply**  
PO Box 6598  
Evansville, IN 47716  
Phone: 812-481-2331  
Fax: 812-481-1681

**Big City Crushed Concrete**  
PO Box 29816  
Dallas, TX 75229  
Phone: 972-243-5820  
Fax: 972-243-4353

**Western Data Systems**  
14722 Regnal St  
Houston, TX 77039  
Phone: 281-987-1815  
Fax: 817-865-1850

**Bobcat of Dallas**  
2727 East Loop 820 S  
Fort Worth, TX 76119  
Phone: 817-654-2202  
Fax: 972-457-9425

**Delta Rigging & Tools**  
1149 W. Hurst Blvd  
Hurst, TX 76053  
Phone: 817-590-8366  
Fax: 817-590-8363



## CONFLICT OF INTEREST QUESTIONNAIRE

Pursuant to Chapter 176 of the Texas Local Government Code, a person, or agent of a person, who contracts or seeks to contract for the sale or purchase of property, goods, or services with the City of North Richland Hills must file a completed conflict of interest questionnaire. The conflict of interest questionnaire must be filed with the City Secretary of the City of North Richland Hills no later than the seventh business day after the person or agent begins contract discussions or negotiations with the City of North Richland Hills or submits to the City of North Richland Hills an application, response to a request for proposal or bid, correspondence, or another writing related to a potential agreement with the City of North Richland Hills. An updated conflict of interest questionnaire must be filed in accordance with Chapter 176 of the Local Government Code. An offense under Chapter 176 is a Class C misdemeanor.

The Conflict of Interest Questionnaire is included as part of this document and can be found at:

<https://www.ethics.state.tx.us/forms/CIQ.pdf>

**CONFLICT OF INTEREST QUESTIONNAIRE****FORM CIQ**

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

**OFFICE USE ONLY**

Date Received

**1** Name of vendor who has a business relationship with local governmental entity.

NA

**2** ☐ Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)**3** Name of local government officer about whom the information is being disclosed.

NA

Name of Officer

**4** Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.

NA

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes☐ No

NA

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes☐ No

NA

**5** Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

NA

**6** ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).**7**

NA

Signature of vendor doing business with the governmental entity

Date

**CONFLICT OF INTEREST QUESTIONNAIRE**  
**For vendor doing business with local governmental entity**

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

**Local Government Code § 176.001(1-a):** "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

**Local Government Code § 176.003(a)(2)(A) and (B):**

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

\*\*\*  
(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

**Local Government Code § 176.006(a) and (a-1)**

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

- (1) the date that the vendor:
  - (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
  - (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or
- (2) the date the vendor becomes aware:
  - (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
  - (B) that the vendor has given one or more gifts described by Subsection (a); or
  - (C) of a family relationship with a local government officer.

# THE UNIVERSITY OF CHICAGO

## THE UNIVERSITY OF CHICAGO PRESS

THE UNIVERSITY OF CHICAGO PRESS  
530 North Dearborn Street, Chicago, Illinois 60610-5708  
Tel: (773) 707-7000 Fax: (773) 707-7001

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The University of Chicago Press is a not-for-profit corporation. The press is organized into three divisions: Academic, Reference, and Distribution. The Academic Division is responsible for the production and distribution of the press's academic books and journals. The Reference Division is responsible for the production and distribution of the press's reference works. The Distribution Division is responsible for the production and distribution of the press's distribution services.

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10/31/2018  
4/20/2019  
10/31/2019

\*Financial Statement Attached

## FINANCIAL STATEMENT

Condition of Bidder at close of Business month, \_\_\_\_\_, 20\_\_\_\_

	ASSETS	LIABILITIES
1. Cash on Hand	\$ _____	\$ _____
Cash in Bank	\$ _____	\$ _____
Cash Elsewhere	\$ _____	\$ _____
2. Accounts receivable from completed contracts (exclusive of claims not approved for payment)	_____	_____
3. Accounts receivable from other sources than above	\$ _____	\$ _____
4. Amounts earned on uncompleted contracts (not included in Item 3) (Contract price on completed portion of uncompleted contracts	_____	_____
5. Deposits for bids on other guarantees		\$ _____
6. Notes Receivable Past Due	\$ _____	
Due 90 days	\$ _____	
Due Later	\$ _____	
7. Interest Earned	\$ _____	

\* Financial  
statements &  
Attached

budgets - 10/20/2017  
10/20/2017

8. Real Estate, Business Property, present value

Other property, present value

9. Stocks and Bonds, Listed on Exchange

Unlisted

10. Equipment, Machinery, Fixtures

Less Depreciation

11. Other Assets

**TOTAL ASSETS**

\* Financial  
Statement  
Attached

## LIABILITIES AND NET WORTH

	ASSETS	LIABILITIES
1. Notes Payable to Banks Regular	\$ _____	
(For Certified Checks)	\$ _____	
Equipment Obligations	\$ _____	
Others	\$ _____	\$ _____
2. Accounts Payable Current	\$ _____	
Past Due	\$ _____	
3. Real Estate Mortgages	\$ _____	\$ _____
4. Other Liabilities		\$ _____
5. Reserves	\$ _____	
6. Capital Stock Paid Up		
Common	\$ _____	
Preferred	\$ _____	
7. Surplus	\$ _____	
<b>TOTAL LIABILITIES</b>	<b>\$ _____</b>	<b>\$ _____</b>

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 648. 2647-2648  
 649. 2648-2649  
 650. 2649-2650  
 651. 2650-2651  
 652. 2651-2652  
 653. 2652-2653  
 654. 2653-2654  
 655. 2654-2655  
 656. 2655-2656

## EXPERIENCE RECORD

*please see  
Attachment  
A*

**List of Projects your Organization has successfully completed:**

Amount of Contract Award	Type of Work	Date Accepted	Name and Address of Owner

**List of Projects your Organization is now engaged in completing:**

Amount of Contract Award	Type of Work	Anticipated Date of Completion	Name and Address of Owner

*please see  
Attachment  
B*

**List of Surety Bonds in Force on above Uncompleted Work:**

[illegible]

1 List every type of bond separately. If one project has more than one type of bond, list each and every bond for that project on a separate line.

## EQUIPMENT SCHEDULE

\* Please see  
Attachment  
C

List of Equipment owned by bidder that is in serviceable condition and available for use:

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Portions of work Bidder proposes to sublet if Awarded the Contract including amount and type:

Striping	- \$18,000.00
Electrical	- \$323,000.00



**BID FORM**

**FOR**

**RUFE SNOW / GLENVIEW**

**INTERSECTION IMPROVEMENTS**

**FOR THE**

**CITY OF NORTH RICHLAND HILLS, TEXAS**

**(THIS BID FORM MUST BE COMPLETED IN ITS ENTIRETY,  
SUBMITTED IN ITS ENTIRETY AND NOT REMOVED FROM THE  
CONTRACT DOCUMENTS)**

**Bid Opening Date: Thursday, May 4, 2017**

**TO: City of North Richland Hills**  
**4301 City Point Drive**  
**North Richland Hills, Texas 76180**

**FOR: Rufe Snow / Glenview Intersection Improvements**

Pursuant to the foregoing "Notice to Bidders", the undersigned bidder, having thoroughly examined the Contract Documents, the site of the project and understanding the amount of work to be done and the prevailing conditions, hereby proposes to fully complete all of the work and requirements as provided in the plans and Contract Documents and binds himself/herself upon acceptance of this bid form to execute a contract and furnish such bonds as required and proposes to complete the work within the time stated and for the following prices:



The undersigned bidder acknowledges receipt of the following Addenda: (If none is received, then write NONE across the blanks.)

Addendum No. 1 - Date Received 5/19/17 TAL

Addendum No. 2 - Date Received 5/19/17 TAL

Addendum No. 3 - Date Received \_\_\_\_\_

The undersigned bidder agrees to execute and file with the Owner a contract and bonds on the forms provided within ten (10) days after written notification of award of the contract to him and to begin the work to be performed under the contract within ten (10) days after written authorization to begin the work (Work Order) and to complete the work in full within 120 Consecutive Calendar Days, after the date specified in the "Notice to Proceed/Work Order".

Enclosed with this bid form is a certified check or cashier's check or bid bond payable to the City of North Richland Hills in the amount of five percent (5%) of the total bid, which is to become the property of the City of North Richland Hills, or the attached Bidder's Bond is to be forfeited in the event the contract and bond are not executed within the time set forth, as liquidated damages for delay and additional work caused thereby.

Respectfully Submitted,

Signed: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Doing Business As: \_\_\_\_\_

TAL  
Ragle Inc

PO Box 1130  
Eufless TX 76039

817 285 6060

817 -472- 9942

Troy Ragle

Ragle Inc.



an individual  
a partnership  
a corporation



**City of North Richland Hills Rufe Snow / Glenview Intersection Improvements BID FORM**

Item No.	Spec. Item	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
1	0100 6001 TxDOT	PREPARING ROW	1	AC	\$ 85,000.00	\$ 85,000.00
		Eighty Five Thousand Dollars and No Cents				
2	0104 6011 TxDOT	REMOVING CONC (MEDIANS)	170	SY	\$ 15.00	\$ 2,550.00
		Fifteen Dollars and No Cents				
3	0104 6017 TxDOT	REMOVING CONC (DRIVEWAYS)	410	SY	\$ 15.00	\$ 6,150.00
		Fifteen Dollars and No Cents				
4	0104 6022 TxDOT	REMOVING CONC (CURB AND GUTTER)	902	LF	\$ 12.00	\$ 10,824.00
		Twelve Dollars and No Cents				
5	0104 6036 TxDOT	REMOVING CONC (SIDEWALK OR RAMP)	374	SY	\$ 15.00	\$ 5,610.00
		Fifteen Dollars and No Cents				
6	0110 6001 TxDOT	EXCAVATION (ROADWAY)	460	CY	\$ 45.00	\$ 20,700.00
		Forty Five Dollars and No Cents				
7	0132 6001 TxDOT	EMBANKMENT (FINAL)(ORD COMP)(TY A)	25	CY	\$ 45.00	\$ 1,125.00
		Forty Five Dollars and No Cents				
8	0160 6001 TxDOT	FURNISHING AND PLACING TOPSOIL (4")	850	STA	\$ 0.01	\$ 8.50
		No Dollars and One Cent				
9	0162 6002 TxDOT	BLOCK SODDING	850	SY	\$ 9.00	\$ 7,650.00
		Nine Dollars and No Cents				
10	0247 6201 TxDOT	FL BS (CMP IN PLC)(TY A GR 4) (8")	1,138	SY	\$ 16.00	\$ 18,208.00
		Sixteen Dollars and No Cents				
11	0360 XXXX TxDOT	8" CONC PVM (PER NRH DETAILS)	899	SY	\$ 70.00	\$ 62,930.00
		Seventy Dollars and No Cents				
12	0360 6027 TxDOT	CURB (TYPE II)	950	LF	\$ 9.60	\$ 9,120.00
		Nine Dollars and Sixty Cents				
13	0416 6031 TxDOT	DRILL SHAFT (TRF SIG POLE) (30 IN)	55	LF	\$ 190.00	\$ 10,450.00
		One Hundred Ninety Dollars and No Cents				
14	0416 6032 TxDOT	DRILL SHAFT (TRF SIG POLE) (36 IN)	39	LF	\$ 205.00	\$ 7,995.00
		Two Hundred Five Dollars and No Cents				



City of North Richland Hills Rufe Snow / Glenview Intersection Improvements BID FORM

Item No.	Spec. Item	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
15	0500 6001 TxDOT	MOBILIZATION	1	LS	\$ 85,000.00	\$ 85,000.00
		Eighty Five Thousand Dollars and No Cents				
16	0502 6001 TxDOT	BARRICADES, SIGNS AND TRAFFIC HANDLING	4	MO	\$ 18,000.00	\$ 72,000.00
		Eighteen Thousand Dollars and No Cents				
17	0506 6038 TxDOT	TEMP SEDMT CONT FENCE (INSTALL)	1,640	LF	\$ 1.50	\$ 2,460.00
		One Dollar and Fifty Cents				
18	0506 6039 TxDOT	TEMP SEDMT CONT FENCE (REMOVE)	1,640	LF	\$ 1.00	\$ 1,640.00
		One Dollar and No Cents				
19	0528 6001 TxDOT	COLORED TEXTURED CONC (4")	100	SY	\$ 118.00	\$ 11,800.00
		One Hundred Eighteen Dollars and No Cents				
20	0528 6003 TxDOT	COLORED TEXTURED CONC (8")	19	SY	\$ 240.00	\$ 4,560.00
		Two Hundred Forty Dollars and No Cents				
21	0529 6008 TxDOT	CONC CURB & GUTTER (TY II)	90	LF	\$ 28.00	\$ 2,520.00
		Twenty Eight Dollars and No Cents				
22	0530 6004 TxDOT	DRIVEWAYS (CONC) (6")	110	SY	\$ 69.00	\$ 7,590.00
		Sixty Nine Dollars and No Cents				
23	0531 6001 TxDOT	CONC SIDEWALKS (4")	493	SY	\$ 50.00	\$ 24,650.00
		Fifty Dollars and No Cents				
24	0531 6004 TxDOT	CURB RAMPS (TY 1)	6	EA	\$ 1,410.00	\$ 8,460.00
		One Thousand Four Hundred Ten Dollars and No Cents				
25	0531 6005 TxDOT	CURB RAMPS (TY 2)	2	EA	\$ 1,400.00	\$ 2,800.00
		One Thousand Four Hundred Dollars and No Cents				
26	0531 6008 TxDOT	CURB RAMPS (TY 5)	1	EA	\$ 1,300.00	\$ 1,300.00
		One Thousand Three Hundred Dollars and No Cents				
27	0531 6010 TxDOT	CURB RAMPS (TY 7)	6	EA	\$ 1,450.00	\$ 8,700.00
		One Thousand Four Hundred Fifty Dollars and No Cents				
28	0531 6016 TxDOT	CURB RAMPS (TY 21)	2	EA	\$ 2,200.00	\$ 4,400.00
		Two Thousand Two Hundred Dollars and No Cents				



**City of North Richland Hills Rufe Snow / Glenview Intersection Improvements BID FORM**

Item No.	Spec. Item	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
29	0618 6023 TxDOT	CONDT (PVC) (SCH 40) (2")	350	LF	\$ 9.00	\$ 3,150.00
		Nine Dollars and No Cents				
30	0618 6029 TxDOT	CONDT (PVC) (SCH 40) (3")	205	LF	\$ 10.00	\$ 2,050.00
		Ten Dollars and No Cents				
31	0618 6030 TxDOT	CONDT (PVC) (SCH 40) (3") (BORE)	70	LF	\$ 18.00	\$ 1,260.00
		Eighteen Dollars and No Cents				
32	0618 6033 TxDOT	CONDT (PVC) (SCH 40) (4")	50	LF	\$ 12.00	\$ 600.00
		Twelve Dollars and No Cents				
33	0618 6034 TxDOT	CONDT (PVC) (SCH 40) (4") (BORE)	695	LF	\$ 20.00	\$ 13,900.00
		Twenty Dollars and No Cents				
34	0620 6008 TxDOT	ELEC CONDR (NO.8) INSULATED	2,830	LF	\$ 1.00	\$ 2,830.00
		One Dollar and No Cents				
35	0620 6009 TxDOT	ELEC CONDR (NO.6) BARE	1,075	LF	\$ 1.00	\$ 1,075.00
		One Dollar and No Cents				
36	0620 6010 TxDOT	ELEC CONDR (NO.8) INSULATED	40	LF	\$ 1.00	\$ 40.00
		One Dollar and No Cents				
37	0621 6005 TxDOT	TRAY CABLE (4 CONDR) (12 AWG)	1,075	LF	\$ 2.00	\$ 2,150.00
		Two Dollars and No Cents				
38	0624 6010 TxDOT	GROUND BOX TY D (162922)W/APRON	10	EA	\$ 790.00	\$ 7,900.00
		Seven Hundred Ninety Dollars and No Cents				
39	0628 6144 TxDOT	ELC SRV TY D 120/240 060(NS)SS(E)PS(U)	2	EA	\$ 5,000.00	\$ 10,000.00
		Five Thousand Dollars and No Cents				
40	0644 6001 TxDOT	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	4	EA	\$ 465.00	\$ 1,860.00
		Four Hundred Sixty Five Dollars and No Cents				
41	0644 6076 TxDOT	REMOVE SM RD SN SUP&AM	4	EA	\$ 150.00	\$ 600.00
		One Hundred Fifty Dollars and No Cents				
42	0666 6012 TxDOT	REFL PAV MRK TY I (W)4"(SLD)(100MIL)	363	LF	\$ 1.00	\$ 363.00
		One Dollar and No Cents				



**City of North Richland Hills Rufe Snow / Glenview Intersection Improvements BID FORM**

Item No.	Spec. Item	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
43	0666 6036 TxDOT	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	115	LF	\$ 2.00	\$ 230.00
		Two Dollars and No Cents				
44	0666 6042 TxDOT	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	952	LF	\$ 3.00	\$ 2,856.00
		Three Dollars and No Cents				
45	0666 6048 TxDOT	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	282	LF	\$ 6.00	\$ 1,752.00
		Six Dollars and No Cents				
46	0666 6054 TxDOT	REFL PAV MRK TY I (W)(ARROW)(100MIL)	7	EA	\$ 125.00	\$ 875.00
		One Hundred Twenty Five Dollars and No Cents				
47	0666 6078 TxDOT	REFL PAV MRK TY I (W)(WORD)(100MIL)	6	EA	\$ 135.00	\$ 810.00
		One Hundred Thirty Five Dollars and No Cents				
48	0666 6126 TxDOT	REFL PAV MRK TY I (Y)4"(SLD)(100MIL)	210	LF	\$ 1.00	\$ 210.00
		One Dollar and No Cents				
49	0666 6170 TxDOT	REFL PAV MRK TY II (W) 4" (SLD)	363	LF	\$ 0.10	\$ 36.30
		No Dollars and Ten Cents				
50	0666 6178 TxDOT	REFL PAV MRK TY II (W) 8" (SLD)	115	LF	\$ 0.20	\$ 23.00
		No Dollars and Twenty Cents				
51	0666 6180 TxDOT	REFL PAV MRK TY II (W) 12" (SLD)	952	LF	\$ 0.30	\$ 285.60
		No Dollars and Thirty Cents				
52	0666 6182 TxDOT	REFL PAV MRK TY II (W) 24" (SLD)	282	LF	\$ 0.60	\$ 175.20
		No Dollars and Sixty Cents				
53	0666 6184 TxDOT	REFL PAV MRK TY II (W) (ARROW)	7	EA	\$ 10.00	\$ 70.00
		Ten Dollars and No Cents				
54	0666 6182 TxDOT	REFL PAV MRK TY II (W) (WORD)	6	EA	\$ 10.00	\$ 60.00
		Ten Dollars and No Cents				
55	0666 6207 TxDOT	REFL PAV MRK TY II (Y) 4" (SLD)	210	LF	\$ 0.10	\$ 21.00
		No Dollars and Ten Cents				
56	0672 6007 TxDOT	REFL PAV MRKR TY I-C	151	EA	\$ 4.00	\$ 604.00
		Four Dollars and No Cents				



City of North Richland Hills Rufe Snow / Glenview Intersection Improvements BID FORM

Item No.	Spec. Item	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
57	0672 6009 TxDOT	REFL PAV MRKR TY II-A-A	128	EA	\$ 4.00	\$ 512.00
		Four Dollars and No Cents				
58	0672 6016 TxDOT	TRAFFIC BUTTON TY W	190	EA	\$ 4.00	\$ 760.00
		Four Dollars and No Cents				
59	0672 6017 TxDOT	TRAFFIC BUTTON TY Y	492	EA	\$ 4.00	\$ 1,968.00
		Four Dollars and No Cents				
60	0677 6001 TxDOT	ELIM EXT PAV MRK & MRKS (4")	195	LF	\$ 0.75	\$ 146.25
		No Dollars and Seventy Five Cents				
61	0677 6005 TxDOT	ELIM EXT PAV MRK & MRKS (12")	560	LF	\$ 1.50	\$ 840.00
		One Dollar and Fifty Cents				
62	0677 6007 TxDOT	ELIM EXT PAV MRK & MRKS (24")	182	LF	\$ 3.00	\$ 546.00
		Three Dollars and No Cents				
63	0678 6001 TxDOT	PAV SURF PREP FOR MRK (4")	573	LF	\$ 0.10	\$ 57.30
		No Dollars and Ten Cents				
64	0678 6004 TxDOT	PAV SURF PREP FOR MRK (8")	115	LF	\$ 0.20	\$ 23.00
		No Dollars and Twenty Cents				
65	0678 6006 TxDOT	PAV SURF PREP FOR MRK (12")	952	LF	\$ 0.30	\$ 285.60
		No Dollars and Thirty Cents				
66	0678 6008 TxDOT	PAV SURF PREP FOR MRK (24")	292	LF	\$ 0.60	\$ 175.20
		No Dollars and Sixty Cents				
67	0678 6009 TxDOT	PAV SURF PREP FOR MRK (ARROW)	7	EA	\$ 10.00	\$ 70.00
		Ten Dollars and No Cents				
68	0678 6016 TxDOT	PAV SURF PREP FOR MRK (WORD)	6	EA	\$ 10.00	\$ 60.00
		Ten Dollars and No Cents				
69	0680 6002 TxDOT	INSTALL HWY TRF SIG (ISOLATED)	2	EA	\$ 45,000.00	\$ 90,000.00
		Forty Five Thousand Dollars and No Cents				
70	0680 6004 TxDOT	REMOVING TRAFFIC SIGNALS	1	EA	\$ 2,000.00	\$ 2,000.00
		Two Thousand Dollars and No Cents				



**City of North Richland Hills Rufe Snow / Glenview Intersection Improvements BID FORM**

Item No.	Spec. Item	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
71	0682 6001 TxDOT	VEH SIG SEC (12")LED(GRN)	17	EA	\$ 300.00	\$ 5,100.00
		Three Hundred Dollars and No Cents				
72	0682 6002 TxDOT	VEH SIG SEC (12")LED(GRN ARW)	5	EA	\$ 300.00	\$ 1,500.00
		Three Hundred Dollars and No Cents				
73	0682 6003 TxDOT	VEH SIG SEC (12")LED(YEL)	17	EA	\$ 300.00	\$ 5,100.00
		Three Hundred Dollars and No Cents				
74	0682 6004 TxDOT	VEH SIG SEC (12")LED(YEL ARW)	8	EA	\$ 300.00	\$ 2,400.00
		Three Hundred Dollars and No Cents				
75	0682 6005 TxDOT	VEH SIG SEC (12")LED(RED)	17	EA	\$ 300.00	\$ 5,100.00
		Three Hundred Dollars and No Cents				
76	0682 6006 TxDOT	VEH SIG SEC (12")LED(RED ARW)	4	EA	\$ 300.00	\$ 1,200.00
		Three Hundred Dollars and No Cents				
77	0682 6018 TxDOT	PED SIG SEC (LED)(COUNTDOWN)	16	EA	\$ 650.00	\$ 10,400.00
		Six Hundred Fifty Dollars and No Cents				
78	0682 6035 TxDOT	BACK PLATE (12")(3 SEC)(VENTED)ALUM	17	EA	\$ 100.00	\$ 1,700.00
		One Hundred Dollars and No Cents				
79	0682 6036 TxDOT	BACK PLATE (12")(4 SEC)(VENTED)ALUM	3	EA	\$ 110.00	\$ 330.00
		One Hundred Ten Dollars and No Cents				
80	0682 6037 TxDOT	BACK PLATE (12")(5 SEC)(VENTED)ALUM	1	EA	\$ 120.00	\$ 120.00
		One Hundred Twenty Dollars and No Cents				
81	0684 6007 TxDOT	TRF SIG CBL (TY A)(12 AWG)(2 CONDR)	2,255	LF	\$ 1.00	\$ 2,255.00
		One Dollar and No Cents				
82	0684 6033 TxDOT	TRF SIG CBL (TY A)(14 AWG)(7 CONDR)	1,025	LF	\$ 1.00	\$ 1,025.00
		One Dollar and No Cents				
83	0684 6036 TxDOT	TRF SIG CBL (TY A)(14 AWG)(10 CONDR)	1,075	LF	\$ 2.00	\$ 2,150.00
		Two Dollars and No Cents				
84	0684 6042 TxDOT	TRF SIG CBL (TY A)(14 AWG)(16 CONDR)	1,075	LF	\$ 3.00	\$ 3,225.00
		Three Dollars and No Cents				



City of North Richland Hills Rufe Snow / Glenview Intersection Improvements BID FORM

Item No.	Spec. Item	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
85	0886 6032 TxDOT	INS TRF SIG PL AM(S)1 ARM(28")LUM&ILSN	2	EA	\$ 6,900.00	\$ 13,800.00
		Six Thousand Nine Hundred Dollars and No Cents				
86	0886 6034 TxDOT	INS TRF SIG PL AM(S)1 ARM(32")ILSN	2	EA	\$ 6,700.00	\$ 13,400.00
		Six Thousand Seven Hundred Dollars and No Cents				
87	0886 6036 TxDOT	INS TRF SIG PL AM(S)1 ARM(32")LUM&ILSN	1	EA	\$ 7,400.00	\$ 7,400.00
		Seven Thousand Four Hundred Dollars and No Cents				
88	0886 6040 TxDOT	INS TRF SIG PL AM(S)1 ARM(36")LUM&ILSN	1	EA	\$ 7,800.00	\$ 7,800.00
		Seven Thousand Eight Hundred Dollars and No Cents				
89	0886 6044 TxDOT	INS TRF SIG PL AM(S)1 ARM(40")LUM&ILSN	2	EA	\$ 8,600.00	\$ 17,200.00
		Eight Thousand Six Hundred Dollars and No Cents				
90	0887 6001 TxDOT	PED POLE ASSEMBLY	8	EA	\$ 1,800.00	\$ 14,400.00
		One Thousand Eight Hundred Dollars and No Cents				
91	0886 6001 TxDOT	PED DETECT PUSH BUTTON (APS)	16	EA	\$ 1,050.00	\$ 16,800.00
		One Thousand Fifty Dollars and No Cents				
92	6002 6001 TxDOT	VIVDS PROCESSOR SYSTEM	2	EA	\$ 6,700.00	\$ 13,400.00
		Six Thousand Seven Hundred Dollars and No Cents				
93	6002 6002 TxDOT	VIVDS CAMERA ASSEMBLY	8	EA	\$ 1,400.00	\$ 11,200.00
		One Thousand Four Hundred Dollars and No Cents				
94	6002 6003 TxDOT	VIVDS SET-UP SYSTEM	2	EA	\$ 500.00	\$ 1,000.00
		Five Hundred Dollars and No Cents				
95	6002 6005 TxDOT	VIVDS COMMUNICATION CABLE (COAXIAL)	1,485	LF	\$ 2.00	\$ 2,930.00
		Two Dollars and No Cents				
96	6054 6002 TxDOT	COAXIAL CABLE	160	LF	\$ 3.00	\$ 480.00
		Three Dollars and No Cents				
97	7012 6001 TxDOT	CURB INLET SEDIMENT PROTECTION	120	LF	\$ 12.00	\$ 1,440.00
		Twelve Dollars and No Cents				
98	7035 6019 TxDOT	ADJUST AND/OR RELOC OF WTR METER BOX	2	EA	\$ 500.00	\$ 1,000.00
		Five Hundred Dollars and No Cents				



**City of North Richland HillsRufe Snow / Glenview Intersection ImprovementsBID FORM**

Item No.	Spec. Item	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
99	XXXX XXXX TxDOT	OPTICOM CABLE	1,150	LF	\$ 1.00	\$ 1,150.00
		One Dollar and No Cents				
100	XXXX XXXX TxDOT	OPTICOM SYSTEM	2	LS	\$ 5,000.00	\$ 10,000.00
		Five Thousand Dollars and No Cents				
101	XXXX XXXX TxDOT	REMOVE EXISTING DECORATIVE STREET LIGHT	1	EA	\$ 500.00	\$ 500.00
		Five Hundred Dollars and No Cents				
102	XXXX XXXX TxDOT	REMOVE EXISTING RAISED PAVEMENT MARKER	1,233	EA	\$ 0.35	\$ 431.55
		No Dollars and Thirty Five Cents				
103	XXXX XXXX TxDOT	PROJECT SIGN	1	EA	\$ 750.00	\$ 750.00
		Seven Hundred Fifty Dollars and No Cents				
104	COG 105.3 TxDOT	STORM WATER POLLUTION PREVENTION PLAN	1	LS	\$ 15,000.00	\$ 15,000.00
		Fifteen Thousand Dollars and No Cents				
105	XXXX XXXX TxDOT	PAVING CONTINGENCY	1	LS	\$ 10,000.00	\$ 10,000.00
		Ten Thousand Dollars and No Cents				
106	XXXX XXXX TxDOT	UTILITY CONTINGENCY	1	LS	\$ 10,000.00	\$ 10,000.00
		Ten Thousand Dollars and No Cents				
107	XXXX XXXX TxDOT	LANDSCAPE CONTINGENCY	1	LS	\$ 10,000.00	\$ 10,000.00
		Ten Thousand Dollars and No Cents				

**TOTAL BASE BID**

**\$**

**861,116.50**

**(Total Amount Bid, Numerical Value)**



## **SECTION II**

### **CONTRACTUAL DOCUMENTS**

2021.11.11

2021.11.11

**STANDARD FORM OF CONSTRUCTION AGREEMENT**

**THE STATE OF TEXAS   §  
                                  §  
COUNTY OF TARRANT   §**

THIS AGREEMENT is entered into this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between the CITY NORTH RICHLAND HILLLS, a municipal corporation, of the County of Tarrant and State of Texas, hereinafter called "OWNER" and \_\_\_\_\_ of the City of \_\_\_\_\_, County of \_\_\_\_\_ and State of \_\_\_\_\_ hereinafter called "CONTRACTOR."

OWNER and CONTRACTOR in consideration of the mutual covenants contained in this Agreement, agree as follows:

**ARTICLE 1. WORK.**

CONTRACTOR covenants and agrees to perform the Work in every detail, in a good and first-class workmanlike manner as specified and indicated in the Contract Documents, of which are incorporated in this Agreement in their entirety as if they were herein set out at length written word for word. The CONTRACTOR shall furnish all labor, materials, tools and equipment required to perform and complete the Work in strict accordance with these Contract Documents. The Work is described as follows:

**RUFE SNOW / GLENVIEW INTERSECTION IMPROVEMENTS**

**ARTICLE 2. CONTRACT PRICE.**

OWNER agrees to pay CONTRACTOR for completion of the Work in accordance with the Contract Documents, the price or prices shown in the bidder's proposal, which total the following amount:

\_\_\_\_\_  
(\$ \_\_\_\_\_)

**ARTICLE 3. CONTRACT TIME / LIQUIDATED DAMAGES.**

Unless otherwise stated in this agreement, **time shall be considered of the essence.**

- a. When **time is of the essence**, the CONTRACTOR shall be liable for failure to deliver or delay in delivery occasioned by and including without limitation strikes, lock-outs, inability of obtaining material or shopping space, breakdowns, delays of carriers or suppliers, and preexisting governmental acts and regulations of the Federal and State governments or any subdivision thereof, unless such governmental acts and regulations affecting delivery could not be found, recognized, or discovered by due diligence on the part of the CONTRACTOR prior to submission of his/her bid and City Council's acceptance thereof.
- b. When **time is not of the essence**, this agreement shall be inoperative during such period of time that aforesaid delivery or acceptance may be rendered impossible by reason of fire, strike, Acts of God, or government regulation. Provided, however, to the extent that the CONTRACTOR has any commercially reasonable alternative method of performing this contract by purchase on the market or otherwise, he/she shall not be freed of his/her obligation hereunder by this clause, even though the goods intended for this contract were destroyed or their delivery delayed because of any event described above.

**As time is of the essence on this contract**, CONTRACTOR agrees to commence work under this contract within ten (10) days from the date specified in the "Notice to Proceed" and to totally complete the Work within 120 consecutive calendar

(Contract Time per City Council Award)

days after the date specified in the "Notice to Proceed", subject to such extensions of time as noted below or as indicated in the Special Provisions.

This contract time is both multi-tiered and cumulative. The CONTRACTOR further agrees to pay the following as liquidated damages:

- (1) \$150 per calendar day for any unfinished work for the first 30 days beyond the 120<sup>th</sup> day. This \$150 rate will start on the 121<sup>st</sup> consecutive calendar  
(Contract Time per City Council Award) (Day After Contract Time Expires)  
day after the "Notice to Proceed" issuance date and continue through the 150<sup>th</sup>  
consecutive calendar day after the "Notice to Proceed" issuance date.  
(Day 30 After Contract Time Expires)

- (2) \$300 per calendar day for any unfinished work beyond the 150<sup>th</sup> consecutive  
(Day 30 After Contract Time Expires)  
calendar day after the "Notice to Proceed" issuance date. This rate shall continue  
until such time that the Project is complete and accepted by the OWNER.

It is understood between the parties hereto that these sums shall be treated as liquidated damages and not as a penalty, and the OWNER may withhold from the CONTRACTOR's compensation such sums as liquidated damages.

#### **ARTICLE 4. PARTIAL PAYMENT.**

OWNER shall make payments to the CONTRACTOR in the following manner. On or about the first of each month, the OWNER, or the OWNER's Authorized Representative, will make accurate estimates of the value, based on contract prices, of the work done and materials incorporated in the work and of materials suitably stored at the site during the preceding calendar month. The CONTRACTOR shall furnish to the OWNER, or the OWNER's Representative, such detailed information as the OWNER may request to aid OWNER as a guide in the preparation of the monthly estimate.

Within the following thirty (30) days, OWNER shall make partial payments to the CONTRACTOR for work performed during the preceding calendar month as estimated by the OWNER or OWNER's Representative. Ten percent (10%) of each estimate shall be retained by the OWNER until final completion and acceptance of all work covered by the Contract for contracts less than four hundred thousand dollars (\$ 400,000). Five percent (5%) of each estimate shall be retained by the OWNER until final completion and acceptance of all work covered by the Contract for contracts greater than four hundred thousand dollars (\$ 400,000). Upon completion and acceptance of all work in compliance with the Contract, the OWNER shall, within thirty (30) days, pay the CONTRACTOR the balance due under the terms and conditions of the Contract.

It is understood that the monthly estimates shall be approximate only, and all monthly estimates and partial payments shall be subject to correction in the estimate rendered following the discovery of an error in any previous estimate, and such estimate shall not in any respect be taken as an admission of the OWNER of the amount of work done or of its quality or sufficiency nor as an acceptance of the work or the release of the CONTRACTOR of any of its responsibility under the Contract.

#### **ARTICLE 5. DISCRIMINATION.**

The CONTRACTOR agrees, in connection with the performance of work under this contract as follows:

- a. The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, creed, color, sex, religion, national origin or ancestry. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruiting or recruitment, advertising, layoff, termination, rates of pay or other forms of compensation and selection for training, including apprenticeship.
- b. The CONTRACTOR agrees to include this non-discrimination clause in any subcontracts connected with the performance of this agreement.

- c. In the event of the CONTRACTOR's non-compliance with the above non-discrimination clause, the contract may be canceled or terminated by the OWNER. The CONTRACTOR may be declared by the OWNER to be ineligible for future contracts with the OWNER, until satisfactory proof of intent to comply shall be made by the CONTRACTOR.

#### **ARTICLE 6. ENTIRE CONTRACT.**

This Contract and Agreement contains the entire understanding and agreement of the parties upon the subject matter hereof. There is no agreement, oral or otherwise, which is not set forth in writing as part of this Agreement or the Contract Documents.

#### **ARTICLE 7. MODIFICATION.**

This contract cannot be modified except by a writing signed by both parties.

#### **ARTICLE 8. VARIABLES IN COST.**

The parties hereto assume and understand that the variables in the CONTRACTOR's cost of performance may fluctuate; consequently, the parties hereto agree that any fluctuations in the CONTRACTOR's costs will in no way alter the CONTRACTOR's obligations under this contract nor excuse nonperformance or delay on his/her part.

#### **ARTICLE 9. VENUE.**

This contract shall be governed by the laws of the State of Texas. Venue for any court proceedings shall be in Tarrant County, Texas.

#### **ARTICLE 10. CONTRACT DOCUMENTS.**

Documents Listed. The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR for the performance of and payment for the Work, consist of the following:

- (1) This Agreement
- (2) Addendum(s)
- (3) "Notice to Bidders" advertisement
- (4) Bidder's Proposal
- (5) Special Instruction to Bidders
- (6) Performance, Payment and Maintenance Bonds
- (7) Certification of Insurance
- (8) Notice to Proceed
- (9) Technical Specifications
- (10) City of North Richland Hills' Public Works Design Manual
- (11) Special Provisions

- (12) General Provisions
- (13) Special Specifications
- (14) Project Construction Plans/Drawings
- (15) Special Material and/or Equipment Specifications
- (16) Special Material and/or Equipment Drawings
- (17) "Public Works Construction Standards - North Central Texas" adopted by the North Central Texas Council of Governments (NCTCOG), October 2004 Edition
- (18) North Central Texas Council of Government references

IN TESTIMONY WHEREOF, the CITY OF NORTH RICHLAND HILLS has caused this instrument to be signed in its corporate name, and on its behalf by the Mayor, duly authorized to execute this instrument by action of the City Council and \_\_\_\_\_ a corporation, a partnership, an individual acting  
*(Name of Contractor)* *("X" out the inappropriate wording)*  
 by and through its duly authorized officials, thereby binding themselves for the faithful and full performance of the terms and provisions of this Agreement.

<u>City of North Richland Hills</u> <b>OWNER</b>	<u>CONTRACTOR</u>
By: _____ City Manager	By: _____  Title: _____
Attest: _____	Attest: _____
Title: _____	Title: _____



Bond No. \_\_\_\_\_

**PERFORMANCE BOND**

**STATE OF TEXAS**

§

§ **KNOW ALL MEN BY THESE PRESENTS:**

**COUNTY OF TARRANT §**

**THAT** \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_ T \_\_\_\_\_, and fully authorized to transact business in the State of Texas, whose address is \_\_\_\_\_ of the City of \_\_\_\_\_, County of \_\_\_\_\_, and State of \_\_\_\_\_, (hereinafter referred to as "Principal"), and \_\_\_\_\_ (hereinafter referred to as "Surety"), a corporation organized under the laws of the State of \_\_\_\_\_ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto \_\_\_\_\_ (hereinafter referred to as "Owner") in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) [not less than 100% of the approximate total amount of the contract as evidenced in the bid proposal] in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

**WHEREAS**, the Principal has entered into a certain written Contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of:

**RUFE SNOW / GLENVIEW  
INTERSECTION IMPROVEMENTS**

**NOW, THEREFORE**, the condition of this obligation is such, that if the said Principal fully and faithfully executes the work and performance of the Contract in accordance with the plans, specifications and Contract Documents, including any extensions thereof which may be granted with our without notice to Surety, during the original term thereof, and during the life of any guaranty required under the Contract, and according to the true intent and meaning of said Contract and the plans and specifications hereto annexed, if the Principal shall repair and/or replace all defects due to faulty materials or workmanship that appear within a period of two years from the date of final completion and final acceptance of the work by owner; and if the Principal shall fully indemnify and save harmless the Owner from all costs and damages which Owner may suffer by reason of failure to so perform herein and shall fully reimburse and repay Owner all outlay and expense which the Owner may incur in making good any default or deficiency, then this obligation shall be void; otherwise, to remain in full force and effect; and in case said contractor shall fail to do so, it is agreed that the Owner may do said work and supply such materials and charge the same against said contractor and Surety on this obligation. Provided further, that if any legal action be filed on this Bond, venue shall lie in Tarrant County, Texas.

**PROVIDED, HOWEVER**, that this Bond is executed pursuant to the provisions of Texas Government Code, Chapter 2253, as amended, and Chapter 3503 of the Insurance Code, as amended, and all liabilities on this Bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the Bond shall automatically be increased by the amount of any Change Order or supplemental agreement with increases the Contract price with or without notice to the Surety, but in no event shall a Change Order or supplemental agreement which reduces the Contract price decrease the penal sum of this Bond. And further that no change, extension of time, alteration, or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time alteration, or addition to the terms of the Contract or to the work to be performed thereunder.

Surety agrees that this Bond provides for the repairs and/or replacement of all defects due to faulty materials and workmanship that appear within a period of two (2) years from the date of completion and acceptance of the improvement by the Owner.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument on this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(Company Name of Principal)

\_\_\_\_\_  
(Company Name of Surety)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Address Line 1)

\_\_\_\_\_  
(Address Line 1)

\_\_\_\_\_  
(Address Line 2)

\_\_\_\_\_  
(Address Line 2)

\_\_\_\_\_  
(City, State and Zip Code)

\_\_\_\_\_  
(City, State and Zip Code)

\_\_\_\_\_  
(Witness)

\_\_\_\_\_  
(Witness)

The name and address of the Resident Agent of Surety is:

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Address Line 1)

\_\_\_\_\_  
(Address Line 2)

\_\_\_\_\_  
(City, State and Zip Code)

\_\_\_\_\_  
(Telephone Number)

\_\_\_\_\_  
(Fax Number)

THE STATE OF NEW YORK, County of \_\_\_\_\_, ss. I, \_\_\_\_\_, Clerk of the County of \_\_\_\_\_, do hereby certify that the within and foregoing is a true and correct copy of the original as the same appears from the records of the County of \_\_\_\_\_.

Witness my hand and the seal of the County of \_\_\_\_\_ at \_\_\_\_\_, New York, this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_  
Clerk of the County of \_\_\_\_\_

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

THE STATE OF NEW YORK, County of \_\_\_\_\_, ss. I, \_\_\_\_\_, Clerk of the County of \_\_\_\_\_, do hereby certify that the within and foregoing is a true and correct copy of the original as the same appears from the records of the County of \_\_\_\_\_.

\_\_\_\_\_  
Clerk of the County of \_\_\_\_\_

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

\_\_\_\_\_  
Notary Public for the State of New York

Bond No. \_\_\_\_\_

**PAYMENT BOND**

STATE OF TEXAS                   §  
                                          §   **KNOW ALL MEN BY THESE PRESENTS:**  
COUNTY OF TARRANT         §

THAT \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, and fully authorized to transact business in the State of Texas, whose address is \_\_\_\_\_ of the City of \_\_\_\_\_, County of \_\_\_\_\_, and State of \_\_\_\_\_, (hereinafter referred to as "Principal"), and \_\_\_\_\_ (hereinafter referred to as "Surety"), a corporation organized under the laws of the State of \_\_\_\_\_ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto \_\_\_\_\_ (hereinafter referred to as "Owner") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) [not less than 100% of the approximate total amount of the Contract as evidenced in the bid proposal] in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal has entered into a certain written Contract with the Owner, dated the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of:

**RUFE SNOW / GLENVIEW  
INTERSECTION IMPROVEMENTS**

**NOW, THEREFORE,** the condition of this obligation is such, that the Bond guarantees the full and proper protection of all claimants supplying labor and material in the prosecution of the work provided for in said Contract and for the use of each claimant, and that conversely should the Principal faithfully perform said Contract and in all respects duly and faithfully observe and perform all and singular the covenants, conditions, and agreements in and by said Contract, agreed to by the Principal, and according to the true intent and meaning of said Contract and the claims and specifications hereto annexed, and any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modification to Surety being hereby waived, then this obligation shall be void; otherwise, to remain in full force and effect. Provided further, that if any legal action be filed on this Bond, venue shall lie in Tarrant County, Texas.

**PROVIDED, HOWEVER,** that this Bond is executed pursuant to the provisions of Texas Government Code, Chapter 2253, as amended, and Chapter 3503 of the Insurance Code, as amended, and all liabilities on this Bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the Bond shall automatically be increased by the amount of any Change Order or supplemental agreement with increases the Contract price with or without notice to the Surety and that no change, extension of time, alteration, or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

**IN WITNESS WHEREOF**, the said Principal and Surety have signed and sealed this instrument on this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
*(Company Name of Principal)*

\_\_\_\_\_  
*(Company Name of Surety)*

\_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Printed Name)*

\_\_\_\_\_  
*(Printed Name)*

\_\_\_\_\_  
*(Title)*

\_\_\_\_\_  
*(Title)*

\_\_\_\_\_  
*(Address Line 1)*

\_\_\_\_\_  
*(Address Line 1)*

\_\_\_\_\_  
*(Address Line 2)*

\_\_\_\_\_  
*(Address Line 2)*

\_\_\_\_\_  
*(City, State and Zip Code)*

\_\_\_\_\_  
*(City, State and Zip Code)*

\_\_\_\_\_  
*(Witness)*

\_\_\_\_\_  
*(Witness)*

**The name and address of the Resident Agent of Surety is:**

\_\_\_\_\_  
*(Name)*

\_\_\_\_\_  
*(Address Line 1)*

\_\_\_\_\_  
*(Address Line 2)*

\_\_\_\_\_  
*(City, State and Zip Code)*

\_\_\_\_\_  
*(Telephone Number)*

\_\_\_\_\_  
*(Fax Number)*

TO THE HONORABLE THE SENATE OF THE STATE OF NEW YORK

IN SENATE,

January 10, 1901.

REPORT OF THE

COMMISSIONER OF THE LAND OFFICE

IN RESPONSE TO A RESOLUTION PASSED BY THE SENATE

ON APRIL 11, 1899.

ALBANY:

THE STATE PRINTING OFFICE,

1901.

Bond No. \_\_\_\_\_

**MAINTENANCE BOND**

**STATE OF TEXAS**

§

**COUNTY OF TARRANT**

§

**KNOW ALL MEN BY THESE PRESENTS:**

§

**THAT** \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, and fully authorized to transact business in the State of Texas, whose address is \_\_\_\_\_ of the City of \_\_\_\_\_, County of \_\_\_\_\_, and State of \_\_\_\_\_, (hereinafter referred to as "Principal"), and \_\_\_\_\_ (hereinafter referred to as "Surety"), a corporation organized under the laws of the State of \_\_\_\_\_ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto \_\_\_\_\_ (hereinafter referred to as "Owner") in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

**WHEREAS**, the Principal has entered into a certain written Contract with the Owner, dated the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of:

**RUFE SNOW / GLENVIEW  
INTERSECTION IMPROVEMENTS**

The maintenance under this Bond contemplates the complete restoration of the work to a functional use if that should be necessary. It is the intended purpose of this bond to require the correction of all defective conditions resulting from materials furnished or work and labor performed by the Contractor under the Contract; and in case the Contractor or Surety shall fail or refuse to commence and actively pursue such corrections within ten (10) days after written notification has been furnished to them by the Owner, it is agreed that the Owner may do the work and supply such materials and the Contractor and Surety shall be liable for the payment of all costs thereby incurred, jointly and severally.

It is further understood and agreed that the obligation under this bond shall be a continuing one against the Contractor and Surety, and that successive recoveries may be had hereon for successive breaches until the full amount shall have been exhausted. It is further understood that the obligation to maintain the work shall continue throughout the maintenance period, and the same shall not be changed, diminished, or in any manner affected from any cause during that time.

**NOW, THEREFORE,** the condition of this obligation is such, that the Bond guarantees the full and proper maintenance and repair of the work herein contracted to be done and performed for a period of two (2) years from the date of acceptance and Principal will do all necessary backfilling that may arise on account of sunken conditions in ditches, or otherwise, and do and perform all necessary work and repair any defective condition growing out of or arising from the improper laying or construction of same, or on account of any breaking of same caused by said Contractor in construction of same, or account of any defect arising in any of said work laid or constructed by said Contractor or on account of improper excavation or backfilling, it being understood that the purpose of this section is to cover all defective conditions arising by reason of defective materials, work or labor performed by said Contractor, then this obligation shall be void; otherwise, to remain in full force and effect; and in case said Contractor shall fail to do so, it is agreed that the Owner may do said work and supply such materials and charge the same against said Contractor and Surety on this obligation. Provided further, that if any legal action be filed on this Bond, venue shall lie in Tarrant County, Texas.

The Owner shall be entitled to its reasonable attorneys' fees and costs in any legal proceeding to enforce the Owner's rights under this bond.

**PROVIDED, HOWEVER,** that said Surety, for value received, stipulates and agrees that the Bond shall automatically be increased by the amount of any Change Order or supplemental agreement with increases the Contract price with or without notice to the Surety and that no change, extension of time, alteration, or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

**IN WITNESS WHEREOF,** the said Principal and Surety have signed and sealed this instrument on this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(Company Name of Principal)

\_\_\_\_\_  
(Company Name of Surety)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Address Line 1)

\_\_\_\_\_  
(Address Line 1)

\_\_\_\_\_  
(Address Line 2)

\_\_\_\_\_  
(Address Line 2)

\_\_\_\_\_  
(City, State and Zip Code)

\_\_\_\_\_  
(City, State and Zip Code)

\_\_\_\_\_  
(Witness)

\_\_\_\_\_  
(Witness)

The name and address of the Resident Agent of Surety is:

---

*(Name)*

---

*(Address Line 1)*

---

*(Address Line 2)*

---

*(City, State and Zip Code)*

---

*(Telephone Number)*

---

*(Fax Number)*

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

Power of Attorney must be attached.

Amount and Term of Maintenance Bond shall be as stated in the "Special Conditions".

### CONTRACTOR'S RELEASE TO CITY

TO: CITY OF NORTH RICHLAND HILLS

RE: RUFÉ SNOW / GLENVIEW INTERSECTION IMPROVEMENTS

This is to certify that \_\_\_\_\_, by acceptance  
(NAME OF CONTRACTOR)

of this final payment, hereby releases the OWNER, the City of North Richland Hills, from all claims and all liabilities of the City of North Richland Hills for all things done or furnished in connection with work on this project and further releases the City of North Richland Hills from any and all liabilities arising from any act of the OWNER or his/her agent arising in connection with this project. This release in no way operates to release the CONTRACTOR or his/her Surety from any obligations under this contract or the bond tendered pursuant thereto.

\_\_\_\_\_  
(NAME OF CORPORATION)

\_\_\_\_\_  
(AUTHORIZED AGENT)

### CORPORATION ACKNOWLEDGMENT

STATE OF TEXAS           §  
                                      §  
COUNTY OF \_\_\_\_\_ §

BEFORE ME, the undersigned authority in and for Tarrant County, Texas, on this day personally appeared \_\_\_\_\_ known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that he/she is the \_\_\_\_\_ of the said \_\_\_\_\_, a corporation, and that he/she is authorized by said corporation to execute the foregoing instrument as the act of such corporation for the purposes and consideration therein expressed, and in the capacity therein stated.

**CONTRACTOR'S RELEASE TO CITY (Continued)**

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the \_\_\_\_\_ day of

\_\_\_\_\_, 2017.

\_\_\_\_\_  
(Notary Public in and for the State of Texas)

\_\_\_\_\_  
(Type or Print Notary's Name)

My Commission Expires: \_\_\_\_\_

### CONTRACTOR'S AFFIDAVIT OF FINAL PAYMENT

STATE OF TEXAS §

§

COUNTY OF \_\_\_\_\_ §

BEFORE ME, the undersigned authority, on this day personally appeared

\_\_\_\_\_, (hereinafter referred to as "Affiant"), who,  
(NAME)

after being by me duly sworn, deposes and says that he/she is the \_\_\_\_\_  
(TITLE)

\_\_\_\_\_ of \_\_\_\_\_ (a  
(NAME OF COMPANY)

corporation, partnership, trade name) of \_\_\_\_\_ County, State of  
("X" OUT THE INCORRECT)

\_\_\_\_\_ (hereinafter referred to as "Contractor"), which said Contractor was awarded

the contract dated the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, for the construction of the

**RUFE SNOW / GLENVIEW INTERSECTION IMPROVEMENTS** (hereinafter referred

to as the "Work"), for a total consideration of \_\_\_\_\_

\_\_\_\_\_ and \_\_\_\_\_ Dollars ( \$ \_\_\_\_\_ )

to be paid to the said Contractor (the "Contract"), and that Affiant has full power of  
authority to make this affidavit.

That \_\_\_\_\_, (hereinafter referred to as  
"Owner"), has approved the final estimate on said Work, and that the said Contractor has  
fully satisfied and paid any and all claims that may be covered by Texas Government Code,  
Chapter 2253, as amended, or any other applicable statutes or charter provisions, and that all  
just bills for labor and materials have been paid and discharged by said Contractor insofar as  
they pertain to the Work in question.

That in addition to any funds which may have been previously paid by the Owner, the Contractor hereby accepts the amount of \_\_\_\_\_ and \_\_\_\_\_ Dollars ( \$ \_\_\_\_\_ ) as **FULL AND FINAL PAYMENT** under the aforementioned Contract, and hereby waives and releases any right Affiant and/or the Contractor may have to pursue claims of any nature against the Owner arising out of or in any manner connected with the performance of the Work and/or the Contract, including but not limited to claims of third parties that supplied material and/or labor for the Work for or through the Contractor (hereinafter referred to as "Subcontractors"), as well as claims for delay, additional compensation or for recovery of liquidated damages which may have been withheld by the Owner. The Contractor shall defend, hold harmless and indemnify the Owner from any such claims of such Subcontractors. The Contractor further releases the Owner from any claim or liability arising from any act or neglect of the Owner related to or connected with the Contract. This affidavit is given pursuant to the final payment provisions of the Contract, and shall not be deemed to alter or modify the terms and provisions of said Contract.

This affidavit is made in compliance with the law and in compliance especially with Chapter 2253 of the Texas Government Code, as amended, and that the undersigned, upon his/her oath, states that the facts indicated in the above instrument of writing are true and correct and that he/she is not incapacitated in any way from making this affidavit.

WITNESS my hand this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
(Affiant)

\_\_\_\_\_  
(Printed Name)

SUBSCRIBED AND SWORN TO BEFORE ME, this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
(Notary Public in and for the State of Texas)

\_\_\_\_\_  
(Type or Print Notary's Name)

My Commission Expires: \_\_\_\_\_

## **SECTION III**

### **TECHNICAL SPECIFICATIONS**

### SECTION III

## TECHNICAL SPECIFICATIONS

Technical specifications for this project shall be governed by the City of North Richland Hills Design Manual (City Specifications) and by "Public Works Construction Standards" (COG Specifications) adopted by the North Central Texas Council of Governments (NCTCOG), October 2004 Edition.

## **CONCRETE QUALITY AND WORKMANSHIP**

The finished concrete pavement construction under these specifications is expected to meet certain quality standards for surface of the concrete including the durability, texture, riding surface and appearance.

For this project, the pavement shall be hand or machine placed concrete with a broom finish in accordance with the specifications below. The quality of the broom finish shall be acceptable to the City Inspector prior to proceeding with additional panels.

The surface must be durable, firm, dense and well bonded to the aggregate to maintain an appearance and texture that is satisfactory to the Owner. Concrete pavement having a poor surface that has spalled (exposed aggregate) due to poor quality paste, high water-cement ratio, over-vibration, improper curing, extreme weather or any other reason, or does not have a satisfactory riding surface shall be removed and replaced at the Contractor's expense. It is extremely important that the pavement have a good riding surface, free from undulations and rough joints. The City Engineer shall determine the acceptability of the pavement.

### **Broom Finish**

If the surface texture is to be a broom finish, it shall be applied when the water sheen has practically disappeared. The broom shall be drawn from the center to the edge of the pavement with adjacent strokes slightly overlapping. The broom operation shall be so executed that the corrugation produced in the surface shall be uniform in appearance and not more than 1/16-inch in depth. Brooming shall be completed before the concrete is in such condition that the surface will be torn or unduly roughened by the operation. The surface thus finished shall be free from rough and porous areas, irregularities, and depressions resulting from improper handling of the broom. Brooms shall be the quality, size, and construction and shall be operated to produce a surface finish meeting the approval of the Owner. Subject to the approval of the Owner, the Contractor may be permitted to substitute mechanical brooming in lieu of the manual brooming as herein described.

### **Hand Finishing**

Hand finishing of concrete pavement will be permitted in areas where it is not practical or possible to construct with finishing machines. These areas include, but are not limited to, intersections, left turn lanes, crossovers, transition areas and where the pavement width is not uniform. In all hand finished areas, one (1) extra sack of cement per cubic yard of concrete shall be used in the mix. In hand finished areas, the concrete shall be struck off with an approved strike-off screed to such elevation that when consolidated and finished the surface of the pavement shall conform to the required section and grade. The strike template shall be moved forward with a combined transverse and longitudinal motion in the direction the work is progressing, maintaining a slight excess of material in front of the cutting edge. The concrete shall then be tamped with an approved tamping template to compact the concrete thoroughly and eliminate surface voids and the surface screeded to required section. After completion of a strike-off, consolidation and transverse screeding; a hand-operated longitudinal float shall be operated to test and level the surface to the required grade.

Workmen shall operate the float from approved bridges riding on the forms and spanning the pavement. The longitudinal float shall be held in contact with the surface and parallel to the centerline and operated with short longitudinal strokes while being passed from one side of the pavement to the other. If contact with the pavement is not made at all points, additional concrete shall be placed, if required, and-screeded, and the float shall be used to produce a satisfactory surface. Care shall be exercised to keep the ends of the float from digging into the surface of the pavement. After a section has been smoothed so that the float maintains contact with the surface at all points in being passed from one side to the other, the bridges may be moved forward half the length of the float and the operation repeated. Other operations and surface tests shall be as required for machine finishing.

#### Edging at Forms and Joints

After the final finish, but before the concrete has taken its initial set, the edges of the pavement along each side of each slab, and on each side of transverse expansion joints, formed joints, transverse construction joints, and emergency construction joints shall be worked with an approved tool and rounded to the radius required by the plans. A well-defined and continuous radius shall be produced and a smooth, dense, mortar finish obtained. The surface of the slab shall not be unduly disturbed by tilting of the tool during use.

At all joints, any tool marks appearing on the slab adjacent to the joints shall be eliminated by brooming the surface. In doing this, the rounding of the edge shall not be disturbed. All concrete on top of the joint filler shall be completely removed.

All joints shall be tested with a straightedge before the concrete has set, and correction shall be made if one side of the joint is higher than the other or if they are higher or lower than the adjacent slabs.

### **Technical Specifications**

The following are governing specifications for the Plans for Traffic Signal Design Rufe Snow / Glenview Intersection Improvements.

All specifications applicable to traffic signal equipment and construction for this project are identified as follows:

TxDOT Standard Specifications: Adopted by the Texas Department of Transportation February 1, 2014. Standard specifications are incorporated into the contract by reference.

Item 100	Preparing ROW
Item 104	Removing Concrete
Item 110	Excavation
Item 132	Embankment
Item 160	Topsoil
Item 162	Sodding for Erosion Control
Item 247	Flexible Base
Item 360	Concrete Pavment
Item 416	Drilled Shaft Foundations (421)(440)(448)
Item 500	Mobilization
Item 502	Barricades, Signs, and Traffic Handling
Item 506	Temporary Erosion, Sedimentation, and Environmental Controls (161)(432)(556)
Item 528	Colored Textured Concrete and Landscape Pavers (420)(421)(440)
Item 529	Concrete Curb, Gutter, and Combined Curb and Gutter (360)(420)(421)(440)
Item 530	Intersections, Driveways, and Turnouts (247)(360)(421)(440)
Item 531	Sidewalks (360)(420)(421)(440)
Item 618	Conduit (400)(476)
Item 620	Electrical Conductors
Item 621	Tray Cable
Item 624	Ground Boxes (420)(421)(432)(440)(618)(620)
Item 628	Electrical Services (441)(445)(449)(618)(620)(627)(656)
Item 644	Small Roadside Sign Assemblies (421)(440)(441)(442)(445)(636)(643)(656)
Item 666	Reflectorized Pavement Markings
Item 672	Raised Pavement Markers
Item 677	Eliminating Existing Pavement Markings and Markers (300)(302)(316)
Item 678	Pavement Surface Preparation for Markings (677)
Item 680	Highway Traffic Signals (610)(625)(627)(636)(656)
Item 682	Vehicle and Pedestrian Signal Heads
Item 684	Traffic Signal Cables
Item 686	Traffic Signal Pole Assemblies (Steel)
Item 687	Pedestal Pole Assemblies (445)(449)(656)
Item 688	Pedestrian Detectors and Vehicle Loop Detectors (618)(624)(682)(684)

#### TxDOT Special Provisions

SP132-002 Embankment

SP506-003 Temporary Erosion, Sedimentation, and Environmental Controls

**TxDOT Special Specifications**

**SS6002      Video Imaging Vehicle Detection System**

**SS6054      Spread Spectrum Radios for Traffic Signals**

## Special Provision to Item 132

### Embankment



Item 132, "Embankment" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

**Article 132.3.4., "Compaction Methods."** The last sentence is replaced by the following.

Compact embankments in accordance with Section 132.3.4.1., "Ordinary Compaction," or Section 132.3.4.2., "Density Control," as shown on the plans. The Contractor may use Section 132.3.4.3., "Density Control by Computer-Generated (CG) Curve," as an option for density control.

**Article 132.3.4., "Compaction Methods,"** is supplemented by the following.

**3.4.3. Density Control by Computer-Generated (CG) Curve.** At the Contractor's discretion, CG curves may be used for density control.

Compact each layer to the required density using equipment complying with Item 210, "Rolling." Determine the maximum lift thickness based on the ability of the compacting operation and equipment to meet the required density. Do not exceed layer thickness of 12 in. loose or 10 in. compacted material, unless otherwise approved. Maintain a level layer with consistent thickness to ensure uniform compaction.

When using this method for each source and type of material, or when directed, sample and conduct testing according to the input parameters specified in Table 3 and provide CG field moisture-density curves based on each soil-compactor-lift thickness combination and CG Tex-114-E moisture-density curves based on each lift of soil. The CG field dry density ( $D_{fcg}$ ) must be greater than or equal to the CG Tex-114-E maximum dry density ( $D_{acg}$ ). The Engineer may obtain independent soil samples for supplemental Tex-114-E lab tests to check a supplemental maximum dry density ( $D_a$ ) and optimum moisture content ( $W_{opt}$ ) for reference when new CG curves are submitted. Provide access to the computer program used to generate the curve, when directed.

**Table 3**  
**Computer-Generated Lab and Field Compaction Curve Input Criteria**

Input Variables	Test Method
Liquid Limit, %	Tex-104-E
Plasticity Index (PI), %	Tex-106-E
Soil gradation	Tex-110-E
Soil classification	Tex-111-E
Compaction roller brand, type, and model	N/A
Loose lift thickness, in.	N/A
Soil specific gravity	Use 2.65 for soil type SC. Use 2.68 for soil type CL. Use 2.69 for soil type CH.

Provide a compaction control report showing all input and output parameters and CG compaction curves, including:

- CG Tex-114-E laboratory maximum dry density ( $D_{acg}$ ),
- CG Tex-114-E laboratory optimum moisture content ( $W_{optcg}$ ),
- CG field maximum dry density ( $D_{fcg}$ ),

- CG field optimum moisture content ( $W_{f_{optcg}}$ ),
- graph of CG laboratory and field compaction curves and the "Zero Air Voids Line," and
- minimum number of roller passes to achieve the required density and moisture content.

Meet the requirements for field maximum dry density ( $D_{fcg}$ ) and field optimum moisture content ( $W_{f_{optcg}}$ ) specified in Table 4, unless otherwise shown on the plans. Use only the specific roller and soil properties utilized in lift construction as input parameters to generate the CG field curve used to meet moisture-density requirements in construction.

**Table 4**  
**Computer-Generated Lab and Field Compaction Curve Input Criteria**

Description	Density	Moisture Content
	Tex-115-E	
$PI \leq 15$	$\geq 98\% D_{fcg}$	$\geq W_{f_{optcg}}$
$15 < PI \leq 35$	$\geq 98\% D_{fcg}$ and $\leq 102\% D_{fcg}$	$\geq W_{f_{optcg}}$
$PI > 35$	$\geq 95\% D_{fcg}$ and $\leq 100\% D_{fcg}$	$\geq W_{f_{optcg}}$

Each layer is subject to testing by the Engineer for density and moisture content. During compaction, the moisture content of the soil should be above CG optimum moisture content but should not exceed the value shown on the moisture-density curve, above optimum, required to achieve 98% dry density.

When the CG field maximum dry density ( $D_{fcg}$ ) is not achieved, perform the following steps in order.

- Verify that construction controls including lift soil properties, minimum number and uniformity of compactor passes, lift thickness, and moisture content are correct.
- If needed, rework the lift with the corrected controls using the original CG curve.
- Generate a new CG field compaction curve based on actual in-place soil properties and rework the lift.
- Generate a non-CG Tex-114-E moisture-density reference standard and rework the material using this reference standard.

When required, remove small areas of the layer to allow for density tests. Replace the removed material and recompact at no additional expense to the Department. Proof-roll in accordance with Item 216, "Proof Rolling," when shown on the plans or as directed. Correct soft spots as directed.

**Article 132.3.5., "Maintenance of Moisture and Reworking."** The first sentence is replaced by the following.

Maintain the density and moisture content once all requirements in Table 2 or 4 are met.

## Special Provision to Item 506

### Temporary Erosion, Sedimentation, and Environmental Controls



Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

**Article 506.1., "Description."** The second paragraph is voided and replaced by the following.

Contractor is considered primary operator to have day-to-day operational control as defined in TPDES GP TXR150000.

- 1.1. For projects with soil disturbance of less than 1 acre, no submittal to TCEQ will be required but Contractor will follow SWP3. For projects with soil disturbance of 1 acre to less than 5 acres a small site notice will be posted at the site. For projects with soil disturbance of 5 acres or more a notice of intent (NOI) is required and a large site notice posted at site. Postings will be in accordance with TPDES GP TXR150000. Postings not associated with project specific locations will be in same location as Department's postings.
- 1.2. **Notice of Intent (NOI).** Submit a NOI, if applicable, with the TCEQ under the TPDES GP TXR150000 at least 7 days prior to commencement of construction activities at the project site. Provide a signed copy to the Engineer and any other MS4 operators at the time of submittal. The Department will submit their NOI prior to contractor submission and will provide a copy for Contractor's use in completing the Contractor's NOI form.
- 1.3. **Notice of Change (NOC).** Upon concurrence of the Engineer, submit a NOC, if applicable, to the TCEQ within 14 days of discovery of a change or revision to the NOI as required by the TPDES GP TXR150000. Provide a signed copy of the NOC to the Engineer and any other MS4 operators at the time of submittal.
- 1.4. **Notice of Termination (NOT).** Upon concurrence of the Engineer, submit a NOT, if applicable, to the TCEQ within 30 days of the Engineer's approval that 70% native background vegetative cover is met or equivalent permanent stabilization have been employed in accordance with the TPDES GP TXR 150000. Provide a signed copy of the NOT to the Engineer and any other MS4 operators at the time of submittal.

**Section 506.3.3., "Training,"** is supplemented by the following:

Training is provided by the Department at no cost to the Contractor and is valid for 3 yr. from the date of completion. The Engineer may require the following training at a frequency less than 3 yr. based on environmental needs:

- "Environmental Management System: Awareness Training for the Contractor" (English and Spanish) (Approximate running time 20 min.), and
- "Storm Water: Environmental Requirements During Construction" (English and Spanish) (Approximate running time 20 min.)

The CRPE, alternate CRPE designated for emergencies, Contractor's superintendent, Contractor, and subcontractor lead personnel involved in soil disturbing or SWP3 activities must enroll in and complete the training listed below and provide the certificate of completion to the Engineer before performing soil disturbing or SWP3 activities on the project. Coordinate enrollment as prescribed by the Department and pay associated fees for the following training:

- "Revegetation During Construction"
- "Construction General Permit Compliance," and

■ "Construction Stage Gate Checklist (CSGC)."

Training and associated fee will not be measure or paid for directly but are subsidiary to this Item.

# Special Specification 6002

## Video Imaging Vehicle Detection System



### 1. DESCRIPTION

Install a Video Imaging Vehicle Detection System (VIVDS) that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device.

A VIVDS configuration for a single intersection will consist of variable focal length cameras, VIVDS card rack processor system, and all associated equipment required to setup and operate in a field environment, including a video monitor and laptop (if required), connectors, and camera mounting hardware.

The system is composed of these principal items: the cameras, the field communications link between the camera and the VIVDS processor unit, and the VIVDS processor unit along with a PC, video monitor, or associated equipment required to setup the VIVDS and central control software to communicate to the VIVDS processor.

The VIVDS Card Rack Processor must be either NEMA TS 2 TYPE 1 or TYPE 2. TYPE 2 must have RS 485 SDLC.

### 2. DEFINITIONS

- 2.1. **VIVDS Processor Unit.** The electronic unit that converts the video image provided by the cameras, generates vehicle detections for defined zones, and collects vehicular data as specified.
- 2.2. **VIVDS Processor System.** One or more VIVDS processor modular units required to handle the number of camera inputs.
- 2.3. **Central Control.** A remotely located control center, which communicates with the VIVDS. The VIVDS operator at the central control has the ability to monitor the operation and modify detector placement and configuration parameters. The equipment that constitutes central control is comprised of a workstation microcomputer along with the associated peripherals as described in this Special Specification.
- 2.4. **Field Setup Computer.** A portable microcomputer used to set up and monitor the operation of the VIVDS processor unit. If required to interface with the VIVDS processor unit, the field setup computer with the associated peripherals described in this Special Specification and a video monitor, also described in this Special Specification, must be supplied as part of the VIVDS.
- 2.5. **Field Communications Link.** The communications connection between the camera and the VIVDS processor unit. The primary communications link media may be coaxial cable or fiber optic cable.
- 2.6. **Remote Communications Link.** The communications connection between the VIVDS processor unit and the central control.
- 2.7. **Camera Assembly.** The complete camera or optical device assembly used to collect the visual image. The camera assembly consists of a charged coupled device (CCD) camera, environmental enclosure, sun shield, temperature control mechanism, and all necessary mounting hardware.
- 2.8. **Occlusion.** The phenomenon when a vehicle passes through the detection zone but the view from the sensor is obstructed by another vehicle. This type of occlusion results in the vehicle not being detected by the sensor or when a vehicle in one lane passes through the detection zone of an adjacent lane. This type of occlusion can result in the same vehicle being counted in more than one lane.

- 2.9. **Detection Zone.** The detection zone is a line or area selected through the VIVDS processor unit that when occupied by a vehicle, sends a vehicle detection to the traffic controller or freeway management system.
- 2.10. **Detection Accuracy.** The measure of the basic operation of a detection system (shows detection when a vehicle is in the detection zone and shows no detection when there is not a vehicle in the detection zone).
- 2.11. **Live Video.** Video being viewed or processed at 30 frames per second.
- 2.12. **Lux.** The measure of light intensity at which a camera may operate. A unit of illumination equal to one lumen per square meter or to the illumination of a surface uniformly one meter distant from a point source of one candle.
- 2.13. **Video Monitor.** As a minimum must be a 9-in. black and white monitor with BNC connectors for video in and out.

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### 3. FUNCTIONAL CAPABILITIES

The system software must be able to detect either approaching or departing vehicles in multiple traffic lanes. A minimum of 4 detector outputs per video processor module card and each card must have a minimum of 24 detection zones. Each zone and output must be user definable through interactive graphics by placing lines or boxes in an image on a video or VGA monitor. The user must be able to redefine previously defined detection zones.

The VIVDS must provide real time vehicle detection (within 112 milliseconds (ms) of vehicle arrival).

The VIVDS processor unit must be capable of simultaneously processing information from various video sources, including CCTV video image sensors and video tape players. The video sources may be, but are not required to be, synchronized or line-locked. The video must be processed at a rate of 30 times per second by the VIVDS processor unit.

The system must be able to detect the presence of vehicles in a minimum of 12 detection zones within the combined field of view of all cameras (a minimum of 12 detection zones per camera input to the VIVDS processor unit).

Provide detection zones that are sensitive to the direction of vehicle travel. The direction to be detected by each detection zone must be user programmable.

The VIVDS processor unit must compensate for minor camera movement (up to 2% of the field of view at 400 ft.) without falsely detecting vehicles. The camera movement must be measured on the unprocessed video input to the VIVDS processor unit.

The camera must operate while directly connected to VIVDS Processor Unit.

Once the detector configuration has been downloaded or saved into the VIVDS processor unit, the video detection system must operate with the monitoring equipment (monitor or laptop) disconnected or online.

When the monitoring equipment is directly connected to the VIVDS processor unit, it must be possible to view vehicle detections in real time as they occur on the field setup computer's color VGA display or the video monitor.

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### 4. VEHICLE DETECTION

- 4.1. **Detection Zone Placement.** The video detection system must provide flexible detection zone placement anywhere within the combined field of view of the image sensors. Preferred presence detector configurations must be lines or boxes placed across lanes of traffic or lines placed in line with lanes of traffic. A single detector must be able to replace one or more conventional detector loops. Detection zones must be able to

be fully overlapped. In addition, detection zones must have the capability of implementing "AND" and "OR" logical functions including presence, extension and delay timing. These logical functions may be excluded if provisions are made to bring each detector separately into the controller and the controller can provide these functions.

- 4.2. **Detection Zone Programming.** Placement of detection zones must be by means of a graphical interface using the video image of the roadway. The monitor must show images of the detection zones superimposed on the video image of traffic while the VIVDS processor is running.

The detection zones must be created by using the mouse or keypad to draw detection zones on the monitor. The detection zones must be capable of being sized, shaped and overlapped to provide optimal road coverage and detection. It must be possible to upload detector configurations to the VIVDS processor unit and to retrieve the detector configuration that is currently running in the VIVDS processor unit.

The mouse or keypad must be used to edit previously defined detector configurations so as to fine tune the detection zone placement size and shape. Once a detection configuration has been created, the system must provide a graphic display of the new configuration on its monitor. While this fine-tuning is being done, the detection must continue to operate from the detector configuration that is currently called.

When a vehicle occupies a detection zone, the detection zone on the live video must indicate the presence of a vehicle, thereby verifying proper operation of the detection system. With the absence of video, the card must have an LED that will indicate proper operation of the detection zones.

Provide detection zones that are sensitive to the direction of vehicle travel. The direction to be detected by each detection zone must be user programmable. The vehicle detection zone should not activate if a vehicle traveling any direction other than the one specified for detection occupies the detection zone. Cross-street and wrong way traffic should not cause a detection.

- 4.3. **Design Field of View.** The video detection system must reliably detect vehicle presence in the design field of view. The design field of view must be defined as the sensor view when the image sensor is mounted 24 ft. or higher above the roadway, when the camera is adjacent (within 15 ft.) to the edge of the nearest vehicle travel lane, and when the length of the detection area is not greater than 10 times the mounting height of the image sensor. Within this design field of view, the VIVDS processor unit must be capable of setting up a single detection zone for point detection (equivalent to the operation of a 6 ft. x 6 ft. inductive loop). A single camera, placed at the proper mounting height with the proper lens, must be able to monitor up to and including 5 traffic lanes simultaneously.

- 4.4. **Detection Performance.** Detection accuracy of the video detection system must be comparable to properly operating inductive loops. Detection accuracy must include the presence of any vehicle in the defined detection zone regardless of the lane, which the vehicle is occupying. Occlusion produced by vehicles in the same or adjacent lanes must not be considered a failure of the VIVDS processor unit, but a limitation of the camera placement. Detection accuracy (a minimum of 95%) must be enforced for the entire design field of view on a lane by lane and on a time period basis. When specified on the plans, furnish up to 24 continuous hours of recorded video of all installed intersection cameras within the 30 day test period for verification of proper camera placement, field of view, focus, detection zone placement, processor setup and operation. The video from each camera must show vehicle detections for all zones.

- 4.5. **Equipment Failure.** Either camera or VIVDS processor unit must result in constant vehicle detection on affected detection zones.

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## 5. VIVDS PROCESSOR UNIT

- 5.1. **Cabinet Mounting.** The VIVDS processor unit must be rack mountable.
- 5.2. **Environmental Requirements.** The VIVDS processor unit must be designed to operate reliably in the adverse environment found in the typical roadside traffic cabinet. It must meet the environmental

requirements set forth by the latest NEMA (National Electrical Manufacturers Association) TS1 and TS2 standards as well as the environmental requirements for Type 170, Type 179 and 2070 controllers. Operating temperature must be from -30°F to +165°F at 0% to 95% relative humidity, non-condensing.

**5.3. Electrical.** The VIVDS must have a modular electrical design.

The VIVDS must operate within a range of 89 to 135 VAC, 60 Hz single phase. Power to the VIVDS must be from the transient protected side of the AC power distribution system in the traffic control cabinet in which the VIVDS is installed.

Serial communications to the field setup computer must be through an RS 232, USB or Ethernet port. This port must be able to download the real time detection information needed to show detector actuations. A connector on the front of the VIVDS processor unit must be used for serial communications.

The unit must be equipped with RS 170 (monochrome) or RS170A (color) composite video inputs video inputs, so that signals from image sensors or other synchronous or asynchronous video sources can be processed in real time. BNC connectors on the front of the VIVDS processor unit or video patch panel must be used for all video inputs.

The unit must be equipped with a single RS 170 composite video output. This output must be capable of corresponding to any one of the video inputs, as selected remotely via the field setup computer or front panel switch. Multiple video outputs requiring external cable connections to create a combined single video output must not be acceptable. A BNC or RCA connector must be used for video output on the front of the processor unit. Any other video formats must be approved by a Department TRF Signal Operation Engineer before use.

Software upgrades or changes must be presented to and approved by the Department's TRF-TM Division before use. Failure to do so will be grounds for termination of contract and probation for responsible parties.

The unit software and the supervisor software must include diagnostic software to allow testing the VIVDS functions. This must include the capability to set and clear individual detector outputs and display the status of inputs to enable setup and troubleshooting in the field.

## **6. CAMERA ASSEMBLY**

**6.1. Camera.** The video detection system must use medium resolution, monochrome image sensors as the video source for real time vehicle detection. The cameras must be approved for use with the VIVDS processor unit by the supplier of the VIVDS. As a minimum, each camera must provide the following capabilities:

- Images must be produced with a Charge Coupled Device (CCD) sensing element with horizontal resolution of at least 480 lines for black and white or 470 lines for color and vertical resolution of at least 350 lines for black and white or color. Images must be output as a video signal conforming to RS170.
- Useable video and resolvable features in the video image must be produced when those features have luminance levels as low as 0.1 lux for black and white, and as low as 1.0 lux for color, for night use.
- Useable video and resolvable features in the video image must be produced when those features have luminance levels as high as 10,000 lux during the day.
- The camera must include an electronic shutter or auto-iris control based upon average scene luminance and must be equipped with an electronic shutter or auto-iris lens with variable focal length and variable focus that can be adjusted without opening up the camera housing to suit the site geometry. The variable focal length must be adjustable from 6 mm to 34 mm.

**6.2. Camera and Lens Assembly.** The camera and lens assembly must be housed in an environmental enclosure that provides the following capabilities:

- The enclosure must be waterproof and dust tight to the latest NEMA 4 specifications.

- The enclosure must allow the camera to operate satisfactorily over an ambient temperature range from -30°F to +140°F while exposed to precipitation as well as direct sunlight.
- The enclosure must allow the camera horizon to be rotated in the field during installation.
- The enclosure must include a provision at the rear of the enclosure for connection of power and video signal cables fabricated at the factory. Input power to the environmental enclosure must be nominally 115 VAC 60 Hz.
- A thermostatically controlled heater must be at the front of the enclosure to prevent the formation of ice and condensation, as well as to assure proper operation of the lens's iris mechanism. The heater must not interfere with the operation of the camera electronics, and it must not cause interference with the video signal.
- The enclosure must be light colored or unfinished and must include a sun shield to minimize solar heating. The front edge of the sunshield must protrude beyond the front edge of the environmental enclosure and must include provision to divert water flow to the sides of the sunshield. The amount of overhang of the sun shield must be adjustable to block the view of the horizon to prevent direct sunlight from entering the lens. Any plastics used in the enclosure must include ultra violet inhibitors.
- The total weight of the image sensor in the environmental enclosure with sunshield must be less than 10 lb.
- When operating in the environmental enclosure with power and video signal cables connected, the image sensor must meet FCC class B requirements for electromagnetic interference emissions.

The video output of the cameras must be isolated from earth ground. All video connections for the cameras to the video interface panel must also be isolated from earth ground.

Use waterproof, quick disconnect connectors to the image sensor for both video and power.

Provide a camera interface panel capable of being mounted to sidewalls of a controller cabinet for protection of the VIVDS processor unit, camera video and power inputs/outputs. The panel must consist of, as a minimum, 4 Edco CX06 coax protectors, an Edco ACP-340 for the cameras and VIVDS processor unit power, a 10 amp breaker, a convenience outlet protected the ACP-340 and a terminal strip with a minimum of sixteen 8-32 binder head screws. The terminal strip must be protected by a piece of 1/8 in. Plexiglas.

When the connection between the image sensor and the VIVDS processor unit is coaxial cable, the coaxial cable used must be a low loss, 75 ohm, precision video cable suited for outdoor installation, such as Belden 8281 or a Department-approved equal.

Camera mounting hardware must allow for vertical or horizontal mounting to the camera enclosure. Pelco AS-0166-4-62 or equivalent is acceptable.

## 7. FIELD COMMUNICATION LINK

The field communications link must be a one way communications connection from the camera to the equipment cabinet. The primary communications link media may be coaxial cable or fiber optic cable accompanied by a 3 conductor minimum 18 AWG, 24 VDC or 115 VAC camera power cable, or appropriate cable as approved.

The following requirements must govern for the various types of field communications link media described on the plans:

- 7.1. **Coaxial Cable.** In locations where the plans indicate coaxial cable is required as the primary communications link, this cable must be of the RG 59 type with a nominal impedance of 75 ohms. All cable must have a polyethylene dielectric with copper braid shield having a minimum of 98% shield coverage and not greater than 0.78 dB attenuation per 100 feet at 10 MHz with a minimum 18 AWG external 3 conductor power cable or approved equivalent as directed.

- 7.2. **Fiber Optic Cable.** If shown on the plans, furnish fiber optic cable in accordance with the Special Specification for fiber optic cable.

- 7.3. **Twisted Wire Pairs.** Must be Belden 9556 or equivalent 18 AWG TWP control cable.

All connection cables must be continuous from the equipment cabinet to the camera. No splices of any type will be permitted.

Install lightning and transient surge suppression devices on the processor side of the field communications link to protect the peripheral devices. The suppression devices must be all solid state. Lightning protection is not required for fiber optic communication lines. The devices must present high impedance to, and must not interfere with, the communications lines during normal operation. The suppression devices must not allow the peak voltage on any line to exceed 300% of the normal operating peak voltage at any time. The response time of the devices must not exceed 5 nanoseconds.

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## 8. VIVDS SET-UP SYSTEM

The minimum VIVDS set-up system, as needed for detector setup and viewing of vehicle detections, must consist of a field setup computer and Windows based interface software (if required) or a video monitor with interface software built-in to the VIVDS processor unit. Live video (30 frames per second) must be available on the field setup computer to determine proper operation of detectors. The field set-up computer as a minimum, must have an NTSC video input port or equivalent.

If a field setup computer is required for system set-up, it must be supplied by the supplier of the VIVDS.

The field setup computer must include all necessary cabling and a Windows based program to interface with the VIVDS processor unit. This software must provide an easy to use graphical user interface and support all models/versions of the supplied VIVDS.

Live video with the detection overlaid is required for field verification of the system.

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## 9. TEMPORARY USE AND RETESTING

- 9.1. **Temporary Use.** When shown on the plans, the VIVDS equipment must be used to provide vehicle detection on a temporary basis. When the permanent vehicle detection system and related equipment are installed and made operational, the VIVDS equipment must be carefully removed and delivered to the location shown on the plans.
- 9.2. **State Retesting and Acceptance.** Before acceptance, all VIVDS equipment may be retested by the Department, even if the system was operating properly before removal. Repair or replace any equipment damaged during removal or transport and any equipment that does not meet the various test requirements.

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## 10. OPERATION FROM CENTRAL CONTROL

The central control must transmit and receive all information needed for detector setup, monitor the vehicle detection, view the vehicle traffic flow at a rate of 2 frames per second or greater for telephone, or 5 frames per second or greater for ISDN lines (as specified by the plans), and interrogate all required stored data. The remote communications link between the VIVDS processor unit and central control may be dial-up (telephone or ISDN lines) or dedicated twisted wire pair communications cable which may be accompanied with coaxial cable or fiber-optic cable, as shown on the plans. Communications with the central control must not interfere with the on-street detection of the VIVDS processor. Quality of the video at 2 frames per second rate must be such that the view with the traffic flow is clear and in focus.

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**11. INSTALLATION AND TRAINING**

The supplier of the video detection system must supervise the installation and testing of the video and computer equipment. A factory certified representative from the supplier must be on site during installation.

If the field setup computer is furnished by the Department, such installation and testing must be done at the time that training is conducted.

Provide up to 2 days of training to personnel of the Department in the operation, setup and maintenance of the video detection system. Provide instruction and materials for a maximum of 20 persons and conduct at a location selected by the Department. The Department will be responsible for any travel and room and board expenses for its own personnel.

Instruction personnel are required to be certified by the equipment manufacturer. The User's Guide is not an adequate substitute for practical, classroom training and formal certification by an approved agency.

Formal levels of factory authorized training are required for installers, contractors, and system operators. All training must be certified by the manufacturer.

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**12. WARRANTY, MAINTENANCE, AND SUPPORT**

The video detection system must be warranted to be free of defects in material and workmanship for a period of 5 yr. from date of shipment from the supplier's facility. During the warranty period, the supplier must repair with new or refurbished materials, or replace at no charge, any product containing a warranty defect provided the product is returned FOB to the supplier's factory or authorized repair site. Return product repair or replaced under warranty by the supplier with transportation prepaid. This warranty does not apply to products damaged by accident, improperly operated, abused, serviced by unauthorized personnel or unauthorized modification.

During the warranty period, technical support must be available from the supplier via telephone within 4 hr. of the time a call is made by a user, and this support must be available from factory certified personnel or factory certified installers.

Ongoing software support by the supplier must include updates of the VIVDS processor unit and supervisor software (if a field setup computer is required for set up). Provide these updates free of charge during the warranty period. The update of the VIVDS software to be NTCIP compliant must be included.

The supplier must maintain a program for technical support and software updates following expiration of the warranty period. Make this program available to the Department in the form of a separate agreement for continuing support.

The supplier must maintain an ongoing program of technical support for the wireless camera system. This technical support must be available via telephone or personnel sent to the installation site.

The supplier must maintain an adequate inventory of parts to support maintenance and repair of the camera system.

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**13. MEASUREMENT**

The VIVDS will be measured as each major system component furnished, installed, made fully operational, and tested in accordance with this Special Specification or as directed.

The VIVDS communication cable will be measured by the foot of the appropriate media type furnished, installed, made fully operational, and tested in accordance with this Specification, other referenced Special Specifications or as directed.

When the VIVDS is used on a temporary basis, the VIVDS will be measured as each system furnished, installed, made fully operational, including reconfiguration and removal if required by the plans, and tested in accordance with this Special Specification or as directed.

This is a plans quantity measurement item. The quantity to be paid is the quantity shown in the proposal unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

When recorded video is required by the plans it will be paid for by each camera recorded.

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#### 14. PAYMENT

The work performed, materials, and all accompanying software furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid for "VIVDS Processor System," "VIVDS Camera Assembly," "VIVDS Central Control," "VIVDS Set-up System," "VIVDS Temporary," "VIVDS Communication Cable (Coaxial)," "VIVDS Communication Cable (Fiber Optic)," and "VIVDS Video Recording." These prices are full compensation for furnishing, placing, and testing all materials and equipment, and for all tools, labor, equipment, hardware, operational software packages, supplies, support, personnel training, shop drawings, documentation, and incidentals. A 3-conductor power cable must be included with the communication cable.

These prices also include any and all interfaces required for the field and remote communications links along with any associated peripheral equipment, including cables; all associated mounting hardware and associated field equipment; required for a complete and fully functional visual image vehicle detection system component.

# Special Specification 6054

## Spread Spectrum Radios for Traffic Signals



### 1. DESCRIPTION

Furnish and install spread spectrum radios.

### 2. MATERIALS

Supply complete manufacturer specifications for radio, antennas, cables, connectors, power supply, mounting hardware, and lightning surge protector, including the exact gain of the antenna.

### 3. SPREAD SPECTRUM RADIO

Furnish spread spectrum radios with the following operating minimum characteristics:

**Table 1**  
**Radio Characteristics**

Radio Parameters	Radio Requirements
FREQUENCY	902 - 928 MHz
RANGE	15 Miles line of sight
REPEAT CAPABILITIES	Store and Forward Repeater Capabilities
POWER	1.0 Watt Transmitting Power
ENVIRONMENT	Temperature -22°F to 140°F
FCC APPROVAL	No License Requirements Type acceptance under FCC Part 15.247
DATA CHARACTERISTICS	Half or Full Duplex Operation RS232C interface Selectable 1,200 thru 19,200 bps
REGULATED POWER SUPPLY	Voltage 12 DC Amperage 3 Amp Operating Temp -22°F to 140°F

Install radios as shown on the plans or as directed.

Supply radios with diagnostic software capable of testing the link between the master radio and the remote radios. Provide software capable of detecting channels which are not adequate for the transmission of data and allow for the exclusion of these frequencies in the selection of frequencies to be scanned.

### 4. RADIO ANTENNA

Furnish radio antennas with the following minimum characteristics:

**Table2**  
**Antenna Characteristics**

<b>Antenna Parameters</b>	<b>Antenna Requirements</b>
REMOTE SITE	Unidirectional (Yagi), Minimum 9 dB gain (dB reference to half wave dipole)
MASTER SITE	Omni-directional, Minimum 6 dB gain (dB reference to half wave dipole)
RANGE	15 Miles
IMPEDANCE	50 Ohm
WIND RATING	125 miles per hour
CONNECTORS	Type "N" Female

Mount the antenna on a traffic signal pole, an illumination pole, or a separate steel pole as directed. Ground the antenna to the metal support. Do not use a wood pole or support.

## 5. CABLE

Furnish low loss coaxial cable with the following minimum characteristics:

**Table3**  
**Coaxial Cable Characteristics**

<b>Cable Parameters</b>	<b>Cable Requirements</b>
NOMINAL IMPEDANCE	50 Ohm
MAX ATTENUATION	4.2 dB/100 ft. at 900 MHz

Furnish heliax type cable for runs over 100 ft. in length. Furnish cable connectors with a type "N" male connector. Install cable connectors in accordance with manufacturer's recommendations. Install cable as shown on the plans or as directed.

Furnish a coaxial protector (PolyPhaser IS-50NX-C2, Andrew APG-BNFN- 090, Huber Suhner 3400-41-0048, or equivalent). Mount coaxial protector adjacent to and bonded to the cabinet ground bus.

## 6. TESTING, TRAINING, AND WARRANTY

Provide a factory certified representative for installation and testing of the equipment. Conduct a test site survey prior to the installation of the equipment. The Department reserves the right to conduct their own site survey as needed.

When required, provide up to 2 days of training to Department personnel in the operation, setup, and maintenance of the spread spectrum radio system. Provide instruction and materials for a maximum of 20 persons and at a location selected by the Department. Provide instruction personnel certified by the manufacturer. The User's Guide is not an adequate substitute for practical classroom training and formal certification.

Provide equipment with no less than 95% of the manufacturer's standard warranty remaining when equipment invoices are submitted for payment. Any equipment with less than 95% of its warranty remaining will not be accepted.

Provide updates of the spread spectrum radio software free of charge during the warranty period, including the update to NTCIP compliancy.

## 7. MEASUREMENT

This Item will be measured by each spread spectrum radio, antenna and by the linear foot of cable furnished and installed.

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8.**PAYMENT**

The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid for "Spread Spectrum Radio," "Antenna" of the type specified, "Coaxial Cable," and "Helix Cable." The price is full compensation for furnishing, assembling, and installing the spread spectrum radios, antennas, and cable; for mounting attachments; and for testing, labor, tools, equipment, and incidentals.



**PART 1 – GENERAL**

**1.01 Scope of work:**

Protect trees and shrubs that are to remain in place from foliage, trunk and root damage that may result from construction operations.

Preserve all trees not indicated on drawings to be removed

**1.02 Protect trees that are to remain from the following damage:**

- A. Compaction of root area by material storage.
- B. Compaction by driving or parking within the drip-line.
- C. Trunk damage by moving equipment, material storage, nailing, or bolting.
- D. Girding by tying constrictive material to trees.
- E. Poisoning by pouring solvents, gas, paint, etc. on or around trees and roots.
- F. Cutting of roots 1 ½" in diameter or over. All excavation and earthwork within the drip line of trees will be done by hand.
- G. Changes of soil pH factor by disposal of lime base material such as concrete, plaster, etc.
- H. Burning of material around tree or tree itself.
- I. Damaging trees so that they are misshapen or sustain permanent damage.

**1.03 Pruning Operation:**

- A. Trees to be pruned shall include only existing trees affected by construction.
- B. Pruning shall consist of the following methods:
  - 1. Remove deadwood and broken limbs. Remove cross branching where necessary.
  - 2. Root Pruning Trenching Operation:
    - a. Trenching areas shall be determined and marked in the field by the contractor and inspected and approved by the City or landscape architect prior to any trenching.
    - b. Hand cut roots by digging a trench along the outside perimeter of existing trees adjacent to construction areas. A minimum depth of 2' and a width of 8" is required and all cuts will be marked in the ground. Cut roots on tree side with Lopper after trenching is complete and trench is open.
    - c. The trenching shall be backfilled and compacted immediately.
    - d. Install Root Barrier if roots are within 4' of pavement. Century Products, Deep Root, or approved equal.

C. Tree Protection Fence:

1. Install tree protection fencing around all trees shown as existing on plans. Tree protection fencing shall consist of 4' minimum height orange plastic fencing installed with 8' metal T-Stakes spaced 8' o.c. maximum. Place one strand, continuous nylon tie string along top of posts. Tie tundra weight orange flagging, 2' in length at 3' o.c. along nylon tie string.
2. Fencing to be installed at the drip line of all preserved trees unless construction occurs within this zone. In that case, contact landscape architect for recommendations.

- 1.04 Damages: The Contractor shall be responsible for all unauthorized cutting or damage to existing trees caused by careless operation of equipment, stockpiling of materials, etc. as listed in Item 1.02. These trees shall be replaced at the Contractors' cost of two hundred dollars (\$200) per caliper inch on an escalating scale which adds an additional fifty percent (50%) per inch over six (6) inch caliper as fixed and agreed upon liquidated damages. Caliper shall be measured at breast height, four and a half (4.5) feet above ground.

END OF SECTION

**PART 1 – GENERAL**

**1.01 Scope of Work:**

Provide all labor, materials, equipment and incidentals required to prepare planting beds and install landscape planting in accordance with the plans and as specified.

**1.02 Related Work Specified Elsewhere:**

Section 02952 – Site Maintenance

**1.03 General Requirements:**

- A. **Finish Grade:** The Contractor will perform the fine grading and amend the soil as required by these specifications. The Contractor is responsible for any trees/shrubs that are planted prior to achieving final grade.
- B. Comply with applicable Federal, State, County and local codes, ordinances and regulations governing landscape materials and work.
- C. The work shall be coordinated with other trades to prevent conflicts.
- D. All planting shall be performed by personnel familiar with planting procedures and under the supervision of a qualified landscape foreman.
- E. Prior to the preparation of planting areas and plant pits, ascertain the location of all electrical cable, conduits, utility lines, oil tanks, supply lines and other subsurface structures, so that proper precautions may be taken not to disturb or damage any of these elements or improvements.
- F. Prior to bidding, the Contractor shall visit the site and ascertain all site conditions, including utilities, slopes, access and available work space to preclude any misunderstandings and ensure a trouble-free installation. It shall be the Contractor's responsibility to avoid conflicts with existing underground and overhead utilities. The contractor shall notify all utilities servicing the work area at least 48 hours prior to any excavation so that underground utilities may be located.
- G. Prior to commencing with planting of trees, obtain the Engineer's approval of soil amendments and backfill soil; rototill to a minimum depth of 12" all areas that have been mechanically compacted 90% to 95% for construction purposes.
- H. Excavate all planting beds to their proper dimensions per the details.
- I. The Contractor shall take all necessary precautions to avoid damage to any building, building structure, or waterproofing while working adjacent to fixed buildings, walls, or other structures. The use of mechanical equipment within five (5) feet of any building or existing structure to move plants or materials shall be approved by the Engineer prior to its use. The Contractor shall be responsible for all damages to the subsurface utilities, buildings, or building footings caused by his operations.

**1.04 Applicable Documents:**

- A. **Plants:**
  - 1. **Nomenclature:** Shall conform to the names given in "Standardized Plant Names", 1942 Editions, prepared by the American Joint Committee on Horticultural Nomenclature.
  - 2. Names of varieties not included therein shall conform generally with names accepted in the nursery trade.
  - 3. Substitutions will be permitted only upon submission of proof that any specified plant is not obtainable or suitable for the location as specified on the plan and upon written authorization of the Owner.

**1.05 Quality Control:**

- A. Plants shall have a habit of growth that is normal for the species and shall be sound, healthy, vigorous and free from insect pest, fungi plant diseases and injuries.
- B. Trees shall be heavily branched with straight trunks. All trees shall have a dominant leader and no crossing branches.
- C. Plant material shall meet the standards outlined in the publication "The American Standard for Nursery Stock".
- D. The Landscape Architect/Owner shall have the right, at any stage of the operations, to reject any and all work and materials, which, in their opinion do not meet the requirements of these specifications or aesthetically do not comply with design intent. Trees that are scarred or damaged during delivery or off loading will be rejected.
- E. Representative samples of proposed plant materials are required to be inspected and approved by the Landscape Architect/Owner prior to any delivery to the project site. Such samples may be viewed at the respective nurseries prior to delivery to the project site.

**1.06 Certificate of Inspection:**

All required inspection certificates shall accompany the bill of lading or invoices. Required transportation documents are to be submitted with invoices as back-up.

**1.07 Soil Testing and Analysis:**

- A. The Landscape Contractor is required to take representative samples of the site soils and submit a 1 gallon minimum sample of each for review and testing.
- B. Submit all samples to an approved independent testing laboratory for analysis. Laboratory selection is required to be approved by the Owner. Test for soil composition and organic content, including but not limited to pH, salts, magnesium, calcium, phosphorus, and potash. Report from laboratory will identify nutrient deficiencies and recommendations to correct the deficiencies and to adjust pH to comply with the specifications. Submittal of the Contractor's fertilizer program for the maintenance period is required prior to acceptance.
- C. If soil fails to achieve a pH between 5.0 and 7.0 and minimum organic composition quantity of 25%, the contractor shall till an adequate amount of compost in to the existing soil until it meets the requirements throughout the planting depth.
- D. Soil testing shall be provided to the Owner, for the purpose of reviewing the suitability of existing soils to sustain the proposed plant materials. The Owner reserves the right to request amendments to the existing soil in lieu of enriched topsoil and planting bed mix as required in sections 2.01-2.02 of this specification. The Owner reserves the right to eliminate enriched topsoil and planting bed mix as a cost savings measure.

**1.08 Shipment and Delivery:**

- A. Contractor shall notify the Owner, a minimum of 48 hours in advance, of all plant material deliveries.
- B. Plant materials shall be protected from weather and adequately packed to prevent breakage and drying during transit.
- C. The Owner may exercise its option to inspect, select and assist the Contractor with the tagging of plant materials at the nursery.
- D. Legible tags will be attached to at least one plant of each species. Packages, boxes, or bunches of plants will be identified with a similar tag attached. Plants which do not meet specifications for quality herein stated or plants that show improper handling or arrive on site in an unsatisfactory condition will be rejected. Rejected plants shall immediately be

removed, disposed of and replaced with approved nursery stock of like variety, size and age. These plants shall be replaced without additional cost to the Owner.

## PART 2 – PRODUCTS

### 2.01 Topsoil:

Topsoil material shall be "Enriched Top Soil" by Soil Building Solutions (or approved equal) and shall be free from subsequent hard clods, stiff clay, hard pan, trash, stones larger than one (1) inch in diameter, twigs/branches, noxious weeds and plants, including nut grass and torpedo grass, sods, partially disintegrated debris, insects or any other undesirable material, plants, or seeds, that would be toxic or harmful to growth. Topsoil shall be natural, friable, and fertile with a pH range of 6.0-6.5 and with at least 25% organic material. The particle sizes shall be such that 98.5% of the topsoil will pass through a 1/2 inch screen, and 99% more shall pass through a 3/4 inch screen. All areas which contain topsoil contaminated with nut grass or torpedo grass shall have the top 24" of soil removed and replaced with uncontaminated soil or fumigated at no additional cost to the Owner. The Contractor shall submit topsoil samples in 1 gal (min.) container for review and approval by owner/landscape architect prior to installation.

### 2.02 Planting Bed Preparation:

- A. All planting bed pit backfill areas to be prepared using "Ready to Plant Bedding Mix" by Soil Building Solutions (or approved equal). Install to depths per planting details (12" depth min.) Finished grades of planting beds to be 1" max. below finished grade of adjacent concrete mow strip or as shown on grading plan. Planting bed pit soil shall be a mixture of 50% compost with 50% screened and weed-free native soil and screened sharp sand. 98.5% of the planting bed pit soil particles will pass through a 1/2 inch screen and 99% or more shall pass through a 3/4 inch screen. Color will be a medium brown with a weight of 1900-2250 lbs. per cubic yard (depending on the moisture content.)
- B. All planting areas shall be stripped of all grass, weeds, trash, soil, etc. Planting beds shall be excavated and prepared with the soil mix as detailed.
- C. All other planting and lawn areas shall be aerated by rototilling prior to any planting.

### 2.03 Plant Material:

- A. The words "Plant Materials" or "Plants" refer to and include trees, shrubs, ground cover, grass or herbaceous materials.
- B. Plant species shall conform to those indicated on the plans and in the specifications.
- C. Plants shall be sound, healthy, vigorous, free from plant diseases, insect pests or their eggs and shall have healthy normal growth and root systems. Tree trunks shall have the specified caliper, straight with no fresh cuts, scrapes or scars, and shall have the specified clear trunk height.
- D. Plants shall not be pruned prior to delivery except as approved by the Owner.
- E. All shrubs and ground covers are required to be container grown. Trees are required to be one of the following:
  - 1. Container Grown:
    - a. Plastic containers: Trees grown in plastic containers should be well established in the container. Root bound container plants will not be accepted.

- b. Fabric containers: Trees grown in fabric bags should be hardened off in the nursery following harvesting for 60-90 days.
- 2. Field Grown: Shall have the appropriate root ball size based on the trees diameter and height as established by the American National Standards Institutes recommendations. Field grown trees should be hardened off in the nursery for a period of 60-90 days.
- F. Collected plants shall not be used unless specifically called for in the specifications or approved in writing by the Owner. The type, size and availability of specific species will be the basis of selection of any collected plants.
- G. All plants for this project, which are secured outside of North Texas, are required to be acclimatized for a minimum period of six (6) months. The acclimatization of these plants must take place off-site at the Contractor's secured property or certified nursery grower's site. The cost of acclimatization and its scheduling are the responsibility of the contractor.

2.04 Quantities:

The quantities shown in the leader call outs in the plans govern the required installed quantities. The Plant List is provided as a reference only. The Contractor is responsible for his own take-off. Discrepancies must be brought to the Owner's attention, in writing, and be corrected by the Contractor at no additional expense to the Owner.

2.05 Fertilizer for Plantings:

- A. All trees and shrubs shall be fertilized based on the recommendations of the soil analysis laboratory from the required contractor submittal of existing soils. The contractor shall use Agriform 20-10-5 Tablets at time of planting (see table below for application rates). Tablets shall be placed at the mid-depth point of the plant pit.
  - 1. Container grown trees, shrubs and ground covers: Agriform 21 gram tablets, rate of application as follows:

1-2 gallon plants:	1 tablet
3-5 gallon plants:	2 tablets
7-10 gallon plants:	3 tablets
15 gallon plants:	4 tablets
30 gallon plants:	6 tablets
65 gallon plants:	8 tablets
100 gallon plants:	10 tablets
200 gallon plants:	15 tablets
  - 2. Field grown trees – see manufacturer's recommendations for application rates.
- B. The fertilizer mixture shall contain the necessary minor elements suitable for the plants or trees being used.

2.06 Mulch:

All planting beds to be top dressed with a minimum of 3" "Rustic Cut Hardwood Mulch" by Soil Building Solutions (or approved equal.) The pH range shall be from 6.5-8.5 and shall be free of man-made foreign matter, lumber, treated materials, pallets, grass and leaves. No particle size should exceed 3.5" in length.

PART III – EXECUTION

3.01 General:

- A. The Contractor's work shall conform to accepted horticultural practices as used in the trade, unless specifically directed to the contrary by the contract documents or by the Owner.
- B. Plants shall be protected upon arrival at the site by being thoroughly watered and properly maintained until planted. Plants shall not remain unprotected for a period exceeding 24 hours. At all times, workmanlike and customary horticultural practices shall be exercised.

3.02 Digging of Pits:

- A. The existence and location of underground structures, elements and utilities are shown on drawings other than the landscape plans. All elements shall be investigated and verified in the field before starting work. Excavation in the vicinity of existing structures and utilities shall be performed with due caution. Coordination with the Owner of all site excavation is required to address existing work and new work by other Contractors.
- B. Should overhead or underground obstructions be encountered which interfere with the specified plantings, alternate locations or plan modifications will be selected and approved by the Owner.
- C. Before digging of holes or beds, the location and arrangement of the planting shall be staked by the Contractor and then approved by the Owner. Staking shall conform to the plant list, specifications, plans and details. Shrubs shall be placed in true straight lines and evenly spaced as specified. Ground covers shall be triangular spaced.
- D. Shrub and groundcover planting beds shall be backfilled (12" minimum depth) with plant bedding mix per section 2.02 of this specification. In order to control weed growth, all bedding areas shall be treated with a PREEN® Weed Prevention Granules, or approved equal. Apply material per manufacturer standards (1 oz. per 10 sf)

3.03 Tree Installation:

- A. All tree pits shall be excavated to size and depth in accordance with the plans and details, and backfilled with soil as specified. Test all tree pits with water before planting to ensure proper drainage percolation is available. All tree pits shall drain fully within one hour after being filled with water. No allowance will be made for lost plants due to improper drainage.
  - 1. Container-grown plants
    - a. In loose soils, dig the planting hole two to three times wider than the container and as deep as the container is tall. Most shrubs and trees normally develop shallow root systems and the wider planting hole can make a significant difference in the rate of establishment in hard or compacted soils.
    - b. Gently place the plant straight in the hole and be sure the top of the root ball is no deeper than the existing landscape soil surface. In areas of compacted or poorly drained soils, the top of the root ball may be positioned slightly above the soil surface to provide an adequate volume of well-drained soil for root development. Fill around the ball with "Tree Mix" by Soil Building Solutions (or approved equal) and gently firm the soil. Do not pack the soil. Water thoroughly while planting to remove air pockets.

- c. Do not mound soil over the roots, but form a saucer-like catch basin around the edge of the root ball with an earth saucer 4 inches high to facilitate watering.
- d. Mulch with 3 inch layer of "Rustic Cut Hardwood Mulch" by Soil Building Solutions (or approved equal) to buffer soil temperature, reduce weed competition, and conserve moisture. Be sure to keep the mulch layer approximately 3 inches away from the plant stem, and expose 'buttress root' at the rootball.
- e. If rock bed is encountered, contractor shall provide necessary adjustments for poor drainage conditions, as illustrated on the planting details. Any costs for this work shall be inclusive of the unit price for each tree installed.

2. Balled and Burlapped plants

Planting procedures for balled and burlapped plants are similar to those for planting container-grown plants. Always move balled and burlapped plants by the root ball only. Never use the trunk as a handle to pick up or move these plants. Care should be taken not to disturb the root ball, as this would severely damage the root system. Removal of all the burlap before planting is not necessary, although the top one third of the burlap should be pulled back from the stem. Removal of woven plastic wraps completely after setting the plant in the hole is necessary. Non-degradable, woven plastic fabrics can girdle roots as they expand through the material. However, this practice may not be feasible when moving large trees that have been sleeved in woven plastic materials before being placed in wire baskets. Slice the material through the wire basket to facilitate healthy root growth into the landscape soil. Always remove nylon twine tied around the plant stem. Nylon twine does not rot and will eventually girdle the stem if left in place.

- B. No trees shall be planted prior to completion of final finish grading.
- C. Trees shall be set plumb and held in position until the planting mixture has been flushed into place with slow full hose stream.

3.04 All Plant Materials:

- A. Plants shall be set on prepared planting soil backfilled, tamped, and brought to a height permitting planting at the same depth the plants grew in the nursery. Upright plants shall be kept in a vertical position. All trees shall be handled by a padded nylon strap for lifting purposes.
- B. Circular receiving holes with vertical sides shall be excavated for all plants except for bare-root ground covers. Diameter of receiving holes for all plants shall be approximately two to three times wider than the diameter of the rootball.
- C. After placing the plant in the pit, the planting soil specified herein shall be watered and firmly tamped to ensure the backfill mixture is surrounding the root ball. All tamping shall be such that no plants will settle below their original growing height and the finish grade specified.
- D. Plants in containers shall be carefully removed from the pots, cans, boxes or other containers in a manner not to damage the roots or the rootball of soil formed by the container. Scarifying the rootball on the sides and bottom to stimulate new root growth outside of the existing rootball should be performed prior to placement into the pit. Plants shall be set in the pit with the planting mixture carefully washed and tamped around the base of each to fill voids.

- E. All plants shall be thoroughly watered at the time of planting and kept adequately watered until time of acceptance. No additional allowances will be made for plant losses due to lack of adequate or proper watering.
- F. Pruning shall be done after planting and with due regard to the natural form and growth characteristics of each species. Method and amount of pruning shall be determined by the Landscape Architect/Owner. Trees with pruned terminal leaders will not be accepted.
- G. During the course of planting, excess and waste materials shall be removed daily. All reasonable precautions shall be taken to avoid damage to structures and plantings. When planting in an area has been completed, the area shall be fully policed for debris and maintained in this finished state until Final Acceptance.

3.05 Mulching:

- A. Plants and planting beds shall receive a layer of the specified mulch, entirely covering the area around each plant or the entire 3" minimum surface of each planting bed.
- B. Mulch shall be placed between and around all newly planted trees and shrubs as shown on drawings and as specified. For individual plants, the mulch shall be spread to cover the saucer area and maintained until acceptance. Mulch shall be kept a minimum of 3" away from the trunks of all trees. When in place, the mulch is to be watered thoroughly.

3.06 Guying and Staking:

- A. Guy and stake plant materials as specified and detailed to assure upright form.
- B. Prevent plants from falling or being blown over, re-straighten and replant all plants which lean or fall, and replace all plants which are damaged due to lack of guying and staking.
- C. If un-guyed plants are blown over by high winds, the Owner/Landscape Architect will determine if the plant is to be replaced. Such decision shall not be cause for additional expense to the Owner. Damaged plants shall be replaced and guyed or staked at no additional cost to the Owner.
- D. All stakes and staking material should be removed in the 12<sup>th</sup> month following planting, except of those trees identified by the Owner/Landscape Architect. The Contractor shall notify the Owner/Landscape Architect fourteen (14) days prior to removing stakes and staking material.

3.07 Maintenance Prior to Substantial Completion:

- A. Maintenance shall commence after each plant is planted and shall continue until substantial completion. After substantial completion, the formal 12 month maintenance period shall commence and all maintenance operations shall be conducted consistent with Section 02952 Site Maintenance.
- B. Plant maintenance shall include watering, pruning, weeding, cultivating, mulching, tightening and repair of guys, replacement of sick or dead plants, resetting plants to proper grades or upright position, restoration of the planting saucer, and all other care required for proper growth of the plants. Proper protection of lawn areas shall be provided and any damages resulting from planting or maintenance operations shall be repaired promptly by the Contractor at no additional cost to the Owner.
- C. The Contractor shall ensure all plant materials receive necessary water for optimum plant growth through hand watering and/or use of an automatic irrigation system. The watering period shall extend for a total of twelve (12) months after the date of substantial completion. The Contractor shall be responsible for monitoring climate and plant moisture conditions and determining if watering beyond or less than the watering guideline described below shall be need. Not only plant survival, but plant health conditions optimum for plant growth.

- D. The Contractor shall maintain the quality defined by "The American Standard for Nursery Stock" during the twelve (12) month watering period and shall guarantee plants through the end of the twelve (12) month period.
- E. The following water guidelines have been established for Contractor bidding and shall be considered only as an estimate of water need. Depending on climate, soil and plant conditions, the contractor shall adjust his water schedule and amount per application to meet optimum plant growth conditions. The Contractor is responsible for any necessary permitting, ascertaining the location of all landscape underdrain trenches, electrical cables, conduits, utility lines, oil tanks, supply lines and other subsurface structures, so that proper precautions may be taken not to disturb or damage any of these elements or improvements. The Contractor shall properly maintain and protect existing utilities and repair all items damage by this work at no additional expense to the Owner.

#### WATER USE GUIDELINES

##### Amount of Water Applied

- Trees Apply a minimum of 10 gallons of water per tree at each application. Water applied should be a slow soaking a 4 GPM maximum.
- Groundcover Plants Apply a minimum of 2 gallons of water per plant at each application.
- Sod Apply a minimum of ½" of water at each application for days 1-180. Thereafter, provide water applications as directed by the Owner.

##### Irrigation Frequency

Plant Material	Day	Frequency	No. Applications
All	1-45	Daily	45
All	46-180	Every 3 <sup>rd</sup> Day	45
All	181-365	Every 7 <sup>th</sup> Day	26

Note: Frequency and number of applications may vary due to climate, soil, and plant conditions. Less water may be used during wet, cool periods whereas more water may be needed during hot, dry periods. Contractor shall adjust as needed for optimum plant health. The Owner reserves the right to direct the contractor on watering procedures and frequency.

- F. Damage resulting from erosion, gullies, washouts or other causes shall be repaired by the Contractor by filling with topsoil, tamping, re-fertilization and re-stabilizing slopes, at no additional cost to the Owner.
- G. Spray head or rotary head watering shall not take place between the hours of 10:00 a.m. and 6:00 p.m. Watering of grass during this time frame will be allowed during establishment period of one month only.

##### 3.08 Guarantee and Replacement:

- A. All work shall be guaranteed for a period of twelve (12) months from the date of final completion/acceptance. All plants shall be alive and in satisfactory growth through out the guarantee period. If, at any time during the twelve (12) month maintenance period, substandard or dead trees or plants are identified by the Owner, such trees and plants shall be replaced by the Contractor within thirty (30) calendar days of notification, at no additional cost to the Owner.

- B. The landscape Contractor shall notify the Owner, in writing, thirty (30) days prior to expiration of guarantee periods, and said guarantee period shall be continued until such time as written notification is received.
- C. At the end of the guarantee period, an inspection will be made by the Contractor and the Owner. All plants that are dead or fail to meet the grade requirements initially specified or are otherwise considered in unsatisfactory condition, as determined by the Owner, shall be removed from the site and immediately replaced with approved plants meeting the original specifications.
- D. All replacements shall be plants of the same species and size as specified in the Plant List. They shall be furnished and planted as specified with no additional cost to the Owner.
- E. All replacement plants shall become guaranteed for a period of one year from the date of their acceptance. A written agreement is required to be submitted by the Contractor for this additional guarantee.

**3.09 Maintenance: See Section 02952 – Site Maintenance**

**END OF SECTION**



## PART 1 GENERAL

### 1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.02 DESCRIPTION OF WORK INCLUDED IN THIS SECTION

- A. Topsoil Spreading
- B. Soil Preparation
- C. Seeding
- D. Mulches
- E. Maintenance
- F. Warranty

### 1.03 QUALITY ASSURANCE

- A. Contractor shall retain for inspection the following items:
  - 1. Receipts for all fertilizer, enriched topsoil, and grass seed.
  - 2. Seed and fertilizer in unopened bags, bearing the analysis of the contents, and in sufficient quantities to meet the requirements of the project.

### 1.04 WARRANTY

- A. Provide a uniform stand of grass by watering, mowing, and maintaining lawn areas until final acceptance. Re-seed seeded areas which fail to provide a uniform stand of grass, with specified materials until all affected areas are accepted by the landscape architect.
- B. The contractor shall employ hay or straw bale checks in all swales, at intervals not exceeding 150 lineal feet. Stake bales into grade and clean out all sediment after each storm. Re-seed area disturbed by cleaning.

## PART 2 PRODUCTS

### 2.01 FERTILIZER

Granular, not less than 50% slow release, analysis: Lawns: 10-6-4.

### 2.02 LAWN SEED

- A. Lawn Seed: Fresh, clean and new crop seed mixture.
  - 1. Composed of the following varieties, mixed to the specified proportions by weight, and tested to minimum percentages of purity and germination. Seed shall be free of: Poa Annua, bent grass, and noxious weed seed.
  - 2. Rate: 2 pounds per 1,000 square feet.
- B. Types:

<u>Types</u>	<u>Parts</u>	<u>Purity</u>	<u>Germination</u>
<u>Common</u> <u>Bermuda</u>	100%	95%	95%
<u>Buffalograss</u>	100%	95%	95%
<u>Perennial</u> <u>Ryegrass</u>	100%	95%	90%

Apply Bermuda May 15-Sept. 15, and Ryegrass during cool weather.

2.04 MULCH

- A. Straw Mulch: Clean oat or wheat straw well seasoned before baling, free from mature seed bearing stalks or roots of prohibited or noxious weeds.
- B. Hydro-Mulch: Cellulose fiber mulch shall consist of specially prepared cellulose processed into a uniform fibrous physical state. The fiber mulch, including dye, shall contain no germination or growth inhibiting factors. The mulch material shall be manufactured and processed in such a manner that the cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form an homogeneous slurry. The mulch shall cover and hold grass seed in contact with the soil with out inhibiting the growth of the grass seedlings.

2.05 WATER

- A. Free of substance harmful to plant growth. Hoses, pumps, sprinklers or other methods of transportation furnished by contractor.

2.06 TOPSOIL

- A. General Topsoil
  - 1. Topsoil material shall be "Enriched Top Soil" by Soil Building Solutions (or approved equal) and shall be free from subsequent hard clods, stiff clay, hard pan, trash, stones larger than one (1) inch in diameter, twigs/branches, noxious weeds and plants, including nut grass and torpedo grass, sods, partially disintegrated debris, insects or any other undesirable material, plants, or seeds, that would be toxic or harmful to growth. Topsoil shall be natural, friable, and fertile with a pH range of 6.0-6.5 and with at least 25% organic material. The particle sizes shall be such that 98.5% of the topsoil will pass through a 1/2 inch screen, and 99% more shall pass through a 3/4 inch screen. All areas which contain topsoil contaminated with nut grass or torpedo grass shall have the top 24" of soil removed and replaced with uncontaminated soil or fumigated at no additional cost to the City. The Contractor shall submit topsoil samples in 1 gal (min.) container for review and approval by owner/landscape architect prior to installation.

2.07 SEEDING ACCESSORIES

- A. Herbicide:  
Non-Selective Herbicides shall be of the Glyphosate type, (i.e. Round-Up or approved equal).

Non-Selective Herbicides shall only be used prior to installing sod (minimum 7-10 days.) These shall be applied by a licensed applicator. Attain approval from city or landscape architect before laying sod in an area that has been treated with herbicide.

- B. Mulch Tackifier:  
Apply liquid tackifier uniformly at the rate of 60 gallons per acre, if needed, to keep straw mulch in place.
- C. Ground Limestone:  
Ground limestone shall contain not less than 85% of total carbonates and ground to such fineness that 50% will pass through a No. 100 mesh sieve, and 90% will pass through a No. 20 mesh sieve.

### PART 3 EXECUTION

#### 3.01 FINISH GRADING

- A. Topsoil may be spread at the option of the contractor at any time that will not cause a disruption of other construction or site improvement operations, provided that it has been approved by the city/landscape architect/owner and is thoroughly loosened to its full depth, and brought to a friable, mellow condition immediately prior to the start of planting operations. Topsoil shall measure 4" in depth after compaction over the entire area of the site designated to receive planting.
- B. Spreading Topsoil: Topsoil shall be spread over all areas that have been disturbed in any manner during construction or other site improvement operations. Do not place topsoil until the previously established subgrade has been approved by the landscape architect. Use equipment, and conduct all finish grading operations in such a manner as to avoid the lifting of subsoil or other unsuitable material. Do not place topsoil until the entire area to be covered has been shaped, trimmed, and cleaned up, and all construction or site improvement work in the area has been completed.
- C. Stock pile of Delivered Topsoil: Topsoil may be brought on to the site with the city/landscape architect's approval of the enriched topsoil submittal and stockpiled before the start of actual planting work, provided the locations of stockpiles are acceptable to the city/landscape architect.
- D. Finished Grades: Shall be understood to be final spot grades and contours indicated on the contract drawings. Where final spot grades or new contours are not indicated, finished grades shall be uniformly level or sloping between points for which elevations are given or contours are shown.
- E. Tops and Bottoms of All Slopes: Round tops and bottoms of slopes and drainage swales. Adjust and warp slopes, at intersections of cuts and fills, to flow into each other or into the existing natural ground surface without noticeable break. Cuts and fills shall have a maximum slope of 3' horizontally to 1' vertically, unless otherwise shown on the contract drawings. The finished surface of all lawn areas after planting shall not be less than 1/4" below or more than 1" below the finished grade of all walks or other surface areas.
- F. Fine Grading Lawn Areas: Bring the grade of areas to receive turf to a uniform, level slope, as determined by the use of surveying instruments, by disking, harrowing and other methods approved by the landscape architect. When establishing finish grades, remove and dispose of all clods, hard lumps, rocks, roots, litter and other foreign matter not passing through the teeth of a

hand iron rake. Tractor drawn raking equipment that compacts lawn areas will not be allowed. Where lawns are intended to drain across pavements, the uphill grade shall be flush with the pavement; the downhill grade shall be 1/2" to 1" below the pavement grade.

- G. Settlement: Maintain ground surfaces to the finish grades shown on the contract drawings, and deposit whatever additional topsoil that may be required to correct any settlement or erosion that occurs prior to the date of issuance of the Certificate of Final Acceptance. The surface upon which additional topsoil is to be deposited shall be raked or otherwise satisfactorily prepared to ensure a proper bond. Fill hollows that develop from settling, to the finished elevations, with approved topsoil. Finished lawn areas shall be left sufficiently high to meet all paved areas and catch basins after settlement.

### 3.03 SEEDING LAWNS

- A. Seeding Limits: All ground area within the indicated project limit lines, or any additional area which has been disturbed in any way by the construction operations, shall be fine graded and planted in seed or sod unless otherwise indicated on the drawings to be covered with trees, shrubs, structures, walks, roads, or other surfaced areas. All disturbed areas outside of the median or not called out to be sod shall be seeded.

- B. Responsibility: The contractor shall utilize all such measures as may be necessary, including, but not limited to, protective fencing, sod, or erosion control netting to produce a finished continuous blanket of turf over all areas designated to receive turf.

1. Contractor shall be responsible for establishing a solid stand of warm season grass (Bermudagrass) in all sloped areas. Any areas exceeding 5:1 slope should be treated with erosion control blankets by Curlex<sup>®</sup>, approved equal, or other erosion control methods deemed necessary by the contractor in order to establish a solid lawn area.

C. Fertilizer

1. Apply fertilizer to the indicated turf areas at a rate equal to 0.3 pounds of actual nitrogen per 1,000 square feet (140 pounds of fertilizer per acre).
2. Apply fertilizers by mechanical rotary or drop type distributor, thoroughly and evenly incorporated into soil to a depth of 3", by disking or other approved method. Fertilize areas inaccessible to power equipment with hand tools and incorporate into soil.
3. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed, after fine grading and prior to seeding.

D. Seeding Operations

1. Dry Seeding

- a. Seed immediately after preparation of bed.
- b. Seed indicated areas, within contract limits and areas adjoining contract limits, disturbed as a result of construction operations.
- c. Perform seeding operations when the soil is dry and when winds do not exceed 5 miles per hour velocity.

- d. Apply seed with a rotary or drop type distributor. Install seed evenly by sowing equal quantities in two directions, at right angles to each other.
- e. Sow grass seed at specified rate.
- f. After seeding, lightly rake or drag surface of soil to incorporate seed into top 1/8" of soil. Roll with light lawn roller.

**E. Mulching of Lawn Areas**

- 1. Place straw mulch on seeded areas within 24 hours after seeding.
- 2. Place straw mulch uniformly, in a continuous blanket, at the rate of 2-1/2 tons per acre or two 50 pound bales per 1,000 square feet of area. A mechanical blower may be used for straw mulch application, when acceptable to the landscape architect.
- 3. Anchor straw mulch with liquid tackifier, applied uniformly at a rate of 60 gallons per acre.
- 4. Protect buildings, paving, plantings and all non-seeded areas from liquid tackifier over-spray.
- 5. Provide straw bale checking in ditches or problem swales at intervals required to adequately slow water velocity and impede soil loss.

**F. Hydroseeding**

Use a hydromulcher (sprayer) and apply mixture(s) at the following rates. Mix in accordance with manufacturer's recommendations.

**1. Lawns**

- a. Grass Seed: Minimum 86 pounds/acre.
- b. Fertilizer: 430 pounds/acre.
- c. Tackifier: 60 gallons/acre.
- d. Wood Cellulose Fiber Mulch: 2,000 pounds/acre.

**G. Timing**

- 1. Contractor shall be responsible for establishing a permanent stand of warm season turf (Bermudagrass).
- 2. Bermudagrass shall not be seeded in planting periods other than the following unless special permission is granted by the Owner: May 15th to September 15<sup>th</sup>.
- 3. Should operations take place after September 15<sup>th</sup> and before May 15th, the contractor shall seed with Winter Rye grass, and apply Bermudagrass seed as specified, during the following growing season, in order to establish a permanent stand of warm season grass by June 30th.

3.04 LAWN AND MAINTENANCE

- A. Maintain seeded areas for a period of at least one year after substantial completion and acceptance of seeding operations.
- B. Maintain seeded lawn areas, including watering, spot weeding, mowing, applications of herbicides, fungicides, insecticides and reseeded until a full, uniform stand of grass free of weeds, undesirable grass species, disease and insects is achieved and accepted by the landscape architect.
- C. Water daily to maintain adequate surface soil moisture for proper seed germination. Continue daily watering for not less than 30 days. Thereafter, apply 1/2" of water twice weekly until acceptance.
- D. Repair, rework, and re-seed all areas that are washed out, eroded, or do not catch.
- E. Mow lawn areas as soon as lawn top growth exceeds a 4" height. Cut back to 3" in height. Repeat mowing as required to maintain specified height.
- F. Apply fertilizer to lawns approximately 30 days after seeding, at a rate equal to 0.3 pounds of actual nitrogen per 1,000 square feet (140 pounds/acre). Apply with mechanical rotary or drop type distributor. Thoroughly water fertilizer into soil.
- G. Maintain seeded banks, ditches, medians and fields. Re-grade and re-seed washed out or eroded areas as required, until a suitable cover is established.

3.05 FINAL ACCEPTANCE

- A. Inspection to determine final acceptance of seeded lawns will be made by the landscape architect upon contractor's request. Provide notification at least 10 working days before requested inspection date.
  - 1. Seeded areas will be acceptable provided all requirements, including maintenance, have been completed and a healthy, uniform, close stand of the specified grass is established, free of weeds, undesirable grass species, disease and insects.
  - 2. In areas requested to be inspected, no individual lawn areas shall have bare spots or unacceptable cover totaling more than 2% of the individual areas.
- B. Upon final acceptance of the seeding operations and completion of the maintenance period, the owner will assume lawn maintenance.

END OF SECTION

## PART 1 GENERAL

### 1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

### 1.02 DESCRIPTION OF WORK INCLUDED IN THIS SECTION

- A. Fine Grading
- B. Soil Preparation
- C. Sod Installation
- D. Maintenance
- E. Warranty

### 1.03 QUALITY ASSURANCE

Contractor to follow standards set forth in the following references:

- A. American Standard for Nursery Stock published by American Association of Nurserymen; October 27, 1980, Edition.
- B. American Joint Committee on Horticultural Nomenclature; 1942 Edition of Standardized Plant Names.

### 1.04 SUBMITTALS

Contractor shall submit for inspection the following items:

- A. Receipts for all fertilizer, enriched topsoil, and grass sod.
- B. Sample of Grass Sod and Stakes.
- C. Herbicide receipts/type.

### 1.05 WARRANTY

Provide a uniform stand of grass by watering, mowing and maintaining lawn areas until final acceptance. Re-sod areas which fail to provide a uniform stand of grass with specified materials until all affected areas are accepted by the Owner. Sod shall have a one-year warranty from date of substantial completion per Section 02800. Warranty shall include staking materials whereby stakes shall maintain sod in a stable position until such time that the root system has established itself. Contractor shall replace sod and staking immediately as needed during the warranty period.

## PART 2 PRODUCTS

### 2.01 HERBICIDE

Non-Selective Herbicides shall be of the Glyphosate type, (i.e. Round-Up or approved equal). Non-Selective Herbicides shall only be used prior to installing sod (minimum 7-10 days.) These shall be applied by a licensed applicator. Attain approval from city or landscape architect before laying sod in an area that has been treated with herbicide.

### 2.02 LAWN SOD

Lawn Sod: Sod shall be as specified on drawings. The sod shall be free of weeds, undesirable plants, large stones, roots, and other materials which may be detrimental to the establishment and/or future maintenance of the turf.

2.03 STAKING

Sod shall be staked on all slopes over 3:1 with wooden pegs, wire staples, or other appropriate devices approved by the Owner.

2.04 WATER

Free of substances harmful to plant growth. Hoses, pumps, sprinklers or other methods of transportation shall be furnished by Contractor.

2.05 TOPSOIL

A. General Topsoil

1. Topsoil material shall be "Enriched Top Soil" by Soil Building Solutions (or approved equal) and shall be free from subsequent hard clods, stiff clay, hard pan, trash, stones larger than one (1) inch in diameter, twigs/branches, noxious weeds and plants, including nut grass and torpedo grass, sods, partially disintegrated debris, insects or any other undesirable material, plants, or seeds, that would be toxic or harmful to growth. Topsoil shall be natural, friable, and fertile with a pH range of 6.0-6.5 and with at least 25% organic material. The particle sizes shall be such that 98.5% of the topsoil will pass through a 1/2 inch screen, and 99% more shall pass through a 3/4 inch screen. All areas which contain topsoil contaminated with nut grass or torpedo grass shall have the top 24" of soil removed and replaced with uncontaminated soil or fumigated at no additional cost to the City. The Contractor shall submit topsoil samples in 1 gal (min.) container for review and approval by owner/landscape architect prior to installation.

2.06 FERTILIZER

Fertilizer shall be uniform in composition, free-flowing, pelleted, or liquid and suitable for application with approved equipment. It shall be balanced grade, (10-10-10), and suitable for application with approved equipment.

**PART 3 EXECUTION**

3.01 HERBICIDE APPLICATION

- A. Non-Selective Herbicide: Contractor shall utilize licensed applicator to apply Non-Selective herbicide in two applications to soil as follows:

1. 15-20 days prior to sod installation
2. 7-10 days prior to sod installation

3.02 FINISH GRADING

- A. Topsoil will be spread as necessary by the site work contractor as part of the work of Section 02200.
- B. Finished Grades: Shall be understood to be final spot grades and contours indicated on the contract drawings. Where final spot grades or new contours are not indicated, finished grades shall be uniformly level or sloping between points for which elevations are given or contours are shown.
- C. Tops and Bottoms of All Slopes: Round tops and bottoms of slopes and drainage swales. Adjust and warp slopes, at intersections of cuts and fills, to flow into each other or into the existing natural ground surface without noticeable break. Cuts and fills shall have a maximum slope of 3' horizontally to 1' vertically, unless otherwise shown on the contract

drawings. The finished surface of all lawn areas after planting shall not be less than ¼" below or more than 1" above the finished grade of all walks or other surface areas.

- D. Fine Grading Lawn Areas: Bring the grade of areas to receive turf to a uniform, level slope, as determined by the use of surveying instruments, by discing, harrowing and other methods approved by the Owner. When establishing finish grades, remove and dispose of all clods, hard lumps, rocks, roots, litter and other foreign matter not passing through the teeth of a hand iron rake. Tractor drawn raking equipment that compacts the lawn areas will not be allowed. Where lawns are intended to drain across pavements, the uphill grade shall be flush with the pavement; the downhill grade shall be ½" to 1" below the pavement grade.
- E. Settlement: Maintain ground surfaces to the finish grades shown on the contract drawings, and deposit whatever additional topsoil that may be required to correct any settlement or erosion that occurs prior to the date of issuance of the Certificate of Final Acceptance. The surface upon which additional topsoil is to be deposited shall be raked or otherwise satisfactorily prepared to ensure a proper bond. Fill hollows that develop from settling, to the finished elevations, with approved topsoil. Finished lawn areas shall be left sufficiently high to meet all paved areas after settlement.

### 3.03 SODDING OF LAWNS

- A. Sodding Limits: All indicated ground areas within the project limit lines shall be fine graded and sodded unless otherwise indicated on the drawings to be covered with trees, shrubs, structures, walks, roads, or other surfaced areas.
- B. Responsibility: The contractor shall utilize all such measures as may be necessary, including, but not limited to, protective fencing, and/or staking of sod to produce a finished continuous blanket of turf over all areas designated to receive turf.
- C. Fertilizer - Contractor shall apply fertilizer at a rate of 1-3 lbs. of N/1000 SF, according to the following schedule:
  - 1. 2-3 weeks following installation
  - 2. 4-6 weeks following first application

### 3.04 LAWN AND MAINTENANCE

- A. Maintain sodded areas for a period of at least one year after substantial completion and acceptance of sodding operations.
- B. Maintain sodded lawn areas, including watering, spot weeding, mowing, applications of herbicides, fungicides, insecticides and reseeding until a full, uniform stand of grass free of weeds, undesirable grass species, disease and insects is achieved and accepted by the Owner.
- C. Water daily to maintain adequate surface soil moisture for proper root establishment. Continue daily watering for not less than 45 days. Thereafter, apply ½" of water twice weekly until acceptance. Following acceptance, contractor shall water sod areas as noted in Section 02800-3.07 and as directed by the city.
- D. Repair, rework, and re-sod all areas that are washed out, eroded, or die out.
- E. Mow lawn areas as soon as lawn top growth exceeds a 5" height. Cut back to 3" height. Repeat mowing as required to maintain specified height.

### 3.05 FINAL ACCEPTANCE

Inspection to determine final acceptance of sodded lawns will be made by the Owner upon Contractor's request. Provide notification at least 10 working days before requested inspection date.

Sodded areas will be acceptable provided all requirements, including maintenance, have been completed and a healthy, uniform, close stand of the specified grass is established, free of weeds,

undesirable grass species, disease and insects.

END OF SECTION

**PART I GENERAL**

**1.01 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

**1.02 DESCRIPTION OF WORK INCLUDED IN THIS SECTION**

- A. Furnishing and installing all irrigation material shown on plans
- B. Maintenance
- C. Warranty

**1.03 QUALITY ASSURANCE**

- A. **Codes and Standards:** The contractor shall be responsible for constructing the system in complete accordance with all applicable codes, ordinances, and laws or any modifications made to conform with said codes, laws and ordinances shall be completed at the contractor's expense at no additional cost to the owner.
- B. **Contractor's Crews:** The Contractor shall have his labor crews controlled and directed by an irrigation foreman well versed in standard plumbing procedures, PVC assembly procedures, reading blueprints and coordination with others performing services in the job areas in order to execute installation rapidly and correctly.
- C. **Superintendent:** The Contractor shall provide a competent Superintendent on the work at all times, who shall be fully authorized as the Contractor's agent on the work.

**1.04 SUBMITTALS**

- A. **General:** Submit in accordance with the General Conditions of the Contract for Construction. Shop drawings submitted for review by the Owner shall include manufacturer's product specifications and installation instructions. Include other data as may be required to show compliance with these specifications. Distribute an additional copy of each installation instruction to the field superintendent responsible for the installation.
- B. **Product Data:** Submit six (6) copies of manufacturer's technical data and installation instructions for underground irrigation system.
- C. **Shop Drawings:** Submit six (6) sets of shop drawings showing actual layout of control equipment, and other accessories, including electrical wiring for control equipment, water quality control equipment, and all other related components.

**1.05 DELIVERY, STORAGE AND HANDLING**

- A. Materials delivered to the site shall be left in their original boxes, wrappings or containers until such time as they are employed in the project construction. This provision does not include unpacking for inspection purposes.
- B. The CONTRACTOR shall be responsible for storage and protection of materials to be used until final acceptance of the project by the OWNER. CONTRACTOR also will be solely responsible for all tools and equipment left used in conjunction with the project.
- D. All material and manufacturer warranties and guarantees shall be given to the OWNER at

the time of final acceptance of the project.

## 1.06 MATERIALS

### A. Pipe and Fittings

1. Pressure Pipe & Sleeves: Provide PVC Class 200 SDR 21 for all mains. Manufacture all pipe from clean, virgin, NSF approved Type 1, Grade 1 PVC, conforming to ASTM specifications D-1784 and D-2241. All main piping placed in sleeves shall be sch. 40 solvent weld pipe, which shall be adequately thrust blocked to prevent any movement. Directional changes for tree pit sleeving shall be made with electrical sweep ells at corner locations only.

2. Circuit Pipe (downstream from circuit valves): Comply with the following:

3/4" diameter pipe and smaller - S.D.R. 21.  
1" diameter and larger pipe - S.D.R. 26.

Provide lateral piping of un-plasticized polyvinyl chloride pipe, type 1120 or 1220, solvent weld type as manufactured by Certainteed Corporation or approved equal.

3. Pipe Fittings: Pipe mainline fittings shall be PVC, minimum of Schedule 40 pipe conforming to the requirements of Subsection 726.03.09, "Pipe and Fittings." Make all taps on mains or branch mains with tees. Provide all non-threaded type joints of socket type, designed for solvent-cement type application. Prior to the connection of any joint with PVC solvent, treat all fittings and pipes 1" and larger with a high etch (purple) PVC cleaner. A medium body, gray in color, cement shall be used to bond each section of the PVC pipe. Use only cleaner and solvent compatible with the PVC pipe used. Upon completion of the glue joints, keep irrigation system out of service for the period of time specified by the glue manufacturer. Make screw joints with an acceptable screw joint pipe joint compound.

### C. Line Termination Box:

Furnish and install, for connection in the field, 2-wire communication paths to the Controller, a TUCOR LTB-100 Line Termination Box. This Line Termination Box shall provide for Surge Protection on the 2-Wire Communication wires to prevent surges coming from the field wires back to the controller. In addition to facilitating connection of the 2-Wire Communication wires to the Computer it shall also provide for connection of the Sensor Devices into the system. The Line Termination Box shall provide terminals for connecting up to two (2) 2-Wire communication paths. The Line Termination Box shall be mounted near the Computer, where shown on the drawings and/or where directed. Install a A#12, or larger, bare copper grounding wire from the ground terminal in the line termination box to a ground rod, as specified under Surge Protection and Grounding, of this specification.

### D. Line Decoders:

Furnish and install, where shown on the drawings, TUCOR Line Decoders, LD-50, LD-100, LD-200, or LD-400, for interfacing between the communication 2-Wire path and the remote control valves of the sprinklers. The decoders shall be completely epoxy sealed for complete water proofing. Each decoder shall have "built-in" surge protection as an integral part of the

basic decoder. The decoder shall have two (2) blue colored wires for connection onto the 2-Wire Communication path and two (2) white colored wires for connection to the solenoid of the remote control valve. Each decoder shall be clearly marked with a three (3) or four (4) digit number (from 1000 to 2000) indicating the number (address) that it has been set to respond to. Decoders may be installed in any random order desired.

The output of the decoder shall be 24 VAC. Each LD-100 decoder shall be capable of operating a maximum of two (2) solenoids (24 VAC, 2W). The secondary wiring, from the first solenoid to the second solenoid, when two (2) solenoids are being powered and controlled from one decoder – shall be Size #14, TUCOR wire as hereinafter specified. The LD-200 decoder shall operate two (2) solenoids; the LD-400 – four (4) solenoids; and the LD-600 – six (6) solenoids.

The contractor shall be responsible for accurately recording on the drawings, as each decoder is being installed, the address number of the decoder at that location. It is also necessary that it be indicated which remote control valves are being controlled by each specified decoder. In this way he will have the necessary information when he is ready to input the system installation data.

Where the decoders are activating and controlling individual remote control valves, the valve and the decoder shall be installed in a standard plastic valve box of sufficient size to provide easy and necessary access to service the valve and decoder.

**E. Field Access Unit:**

Furnish a TUCOR FA-100 Portable Field Access Unit for manual operation of decoders from remote locations in the field. It shall be possible to "Plug" the Portable Field Access Unit into the 2-Wire Communications path and by keying in the proper decoder identification – have the central computer "turn on" or "turn off" the designated decoder. It shall be possible to turn on decoders in any order desired, anywhere on the system, for a length of time from 1 to 999 minutes for each to operate and to have as many in operation at one time (up to a maximum of 10 solenoids/decoders total) as may be desired.

**F. Two-Wire Communication Paths:**

All wire required for the 2-Wire Communication Paths, from the Line Termination Box, at the central computer location out to the various field decoders shall be TUCOR double jacketed two (2) conductor cable specially designed for use with the TUCOR Flowmaster Control Systems. The cable shall be suitable for direct burial and may also be installed in ducts or conduits.

The conductors shall be thin coated, soft drawn, annealed, solid copper conforming to ASTM 33 with 4/64" thick PVC (polyvinyl chloride) insulation, conforming to UL Standard #493 for thermoplastic-insulated style UF (Underground Feeder), rated at 60 degree C.

The two insulated conductors shall be laid in parallel and encased in a single outer jacket of 3/64" thick, high density, sunlight resistant Polyethylene conforming to ICEA S-61-402 and NEMA WC5, having a minimum wall thickness of .045" The outer jacket shall be pressure extruded so as to completely fill the interstices between the two insulated wires, or may have Tube Jacketing to form an envelope over the two insulated UF conductors lying in parallel, at the discretion of the manufacturer.

The tow conductors shall be color coded with one conductor black and the other red. Both

conductors shall be the SAME SIZE and shall be of sizes as required for the proper operation of the Field Decoders and solenoids and/or as called for on the drawings.

All splices and connections in this wiring shall be made using 3M, DBY (direct burial), series 7000 epoxy wire connector kits with Gel Caps. Any other type of wire connectors are NOT acceptable. Care shall be taken with each wire joint or connection to assure that a completely good, waterproof connection will result. It is important that all wire connections be absolutely watertight and with NO leakage to ground or any shorting from one conductor to the other.

The Grounding Network shall measure not more than 15 OHMS when measured with a Vibra-Ground, or similar type instrument. It will greatly increase the effectiveness of the Surge Protection Equipment, if the grounding grid network can be 5 OHMS or less. It is extremely important that a good ground be maintained for the surge arrestors to be effective and periodic testing is recommended, to assure that you do have a good grounding system at all times.

The system shall be capable of using existing multi-wired control circuits by converting them into a two-wire layout utilizing the SCB-100 Conversion Terminal.

G. Surge Protection - General:

All surge protection, grounding and installation of equipment, specified, shall be installed in strict compliance with the manufacturer's recommendations and in accordance with Local, State and Federal codes and requirements.

Primary Power Surge Protection:

Furnish and install on the Power Circuit, for furnishing power to the power transformer and the central computer equipment, a "Zap Trap" or equal, surge arrestor. Install the Zap Trap in the electrical panel, or at the wall outlet according to the manufacturer's recommendations. Ground the unit to the electrical panel grounding bus. The Zap Trap shall be model Z-2, as manufactured by Tyte-wadd Power Filter, Springfield, MO 65807 (412) 887-3770.

Field Surge Protection:

Surge protection SP-100 shall be installed at every line termination point. Additional installation of SP-100's are needed per 600 feet of wire cable, located at the nearest line decoder. The SP-100 ground wires shall be connected to a single eight foot ground rod. If the valve is metallic or the solenoid valve has a metallic center pin, on SP-100 ground wire shall be connected to this.

H. Sprinkler Heads:

Heads shall conform to manufacturer's specifications concerning gallons per minute at given pressure.

I. Gate Valves

Provide A.W.W.A. brass body double disc gate valves model number NEPCO T-180, or approved equal for mainline gate valves and 150 lbs. brass gate valves with non-rising stems for smaller valves. Provide valve box for each in-ground valve. All valves 4" or greater

shall have a square nut for opening and closing the valve.

J. Control Valves

Provide remote control valves of type and size shown on drawings, each in a valve box.

K. Valve Boxes

The valve boxes shall also be rectangular in shape with a cover and large enough to allow repair of valve without its removal from valve box.

L. Electric and Control Wire

1. Shall be TUCOR compliant. 120 Volt Electric Wiring: Install all 120 volt AC wiring in conduit and raceway in accordance with the current National Electric Code. Bury all conduit to a minimum depth of 2'- 0". Splice wire only at connections or tee locations for service. Provide pull boxes as required. Make all splices in wiring watertight, using UL approved methods and products. Provide only type THWN wiring.
2. Control Wire: Provide irrigation control cable of the size as recommended by TUCOR, Inc

1.07 CONSTRUCTION

Excavation

- A. Existing private irrigation systems adjacent to roadway shall be capped prior to commencement of any grading, trenching, or excavation activities.
- B. Trenching: Trenching shall conform to the provisions of Section 208, "Trench Excavation and Backfill." Perform all excavation necessary to install the system as indicated on drawings, including all necessary clearing and grubbing of any foreign substance encountered in trench area. Pile excavation material suitable for backfill at a sufficient distance from trench to avoid overloading, slides and/or cave-ins. Dispose of, off site, all organic or unsuitable foreign materials removed during excavation. Provide additional suitable fill materials required for backfilling of excavated areas.
- C. Trenches: Make trench bottoms smooth, clean and free of all stones, stumps and rock. If such materials are encountered in trenching, excavate trench 6 inches deeper than ordinarily required and spread a 6" layer of sand to provide a firm bedding of the pipe.
- D. Trench Width: Excavate trenches to a width to allow a minimum of 2" between parallel pipe lines.

Piping

- A. Piping: Lay pipe on solid sub-base, uniformly sloped without humps or depressions.
- B. Installation: Install PVC pipe in dry weather when temperature is above 40 F (4 C) in strict accordance with manufacturer's instructions.
- C. Pipe Sizing: The size of all main and lateral piping (indicated by inside diameters) shall be

as indicated on the plan. If the diameter of the pipe is not shown on the plan, the following criteria shall be used to determine the pipe size:

Accumulated theoretical gallons per minute

(GPM) Pipe Size:

0 - 5 G.P.M.	1/2"
6- 10 G.P.M.	3/4"
11 - 16 G.P.M.	1"
16-26 G.P.M.	1-1/4"
28 - 35 G.P.M.	1 - 1/2"
36 - 55 G.P.M.	2"
56 - 80 G.P.M.	2-1/2"
81 - 120 G.P.M.	3"
21 - 200 G.P.M.	4"
210 - 420 G.P.M.	6"

- D. Restore plantings disturbed by this work to condition prior to disturbance.

Installation

- A. General: Install all materials and equipment in a neat and workmanlike manner following the recommendations of the manufacturers of the materials. The OWNER retains the right to order removal or replacement of any items which, in his opinion, does not present a reasonable neat and workmanlike appearance. Perform and complete any required removal and replacing of materials without additional expense to the CONTRACTING AGENCY.
- B. Main Piping: All main line piping shall be installed at a minimum of 18" below finished grade, or at a depth necessary to tie into tree pit encasement.
- C. Sleeve Installation: Individually sleeve all PVC piping that cross sidewalks and pathways. All sleeves under roadways and driveways shall be installed 24" below grade.
- D. Circuit Control Valves: Install all valve boxes, or any other miscellaneous marker or access box so the top of said structure is at finished grade. Install all valve boxes as indicated on drawings.
- E. Valve Boxes: Control valve boxes must be underlaid with a minimum of 6" of pea gravel.
- F. Adjustments: Adjust automatic control valves to provide flow rate of rated operating pressure required for each circuit.
- G. Install Electric Remote Control Valves: as indicated on the drawings and according to manufacturer's recommendations.
- H. Ball Valves: Install a PVC ball valve, equal to the size of the control valve, on the pressure side of all remote control valves.
- I. Flow Control: Adjust flow control stem on all remote control zone valves downward to minimize any over pressurization before any individual adjustment are performed.

Flushing and Testing

- A. **Hydrostatic Test:** Upon completion of the irrigation main and prior to the installation of any control valves test the entire main or portion(s) of the main for proper operation. Flush all air from the mains being tested and check all components for proper operation. After completion of the flushing operation, test the main lines with 125 psi hydrostatic pressure for a minimum of 4 hours. After the pressure within the mains has stabilized, no pressure loss will be allowed for the test period. Remove and/or replace any item or component of the system which does not comply with the test and test the entire system again until satisfactory test results are obtained. All testing shall be done in the presence of the Owner and a minimum of 48 hours notice shall be given to the Owner prior to conducting the hydrostatic pressure test.
- B. **Balance:** Adjust the various components of the irrigation system so the overall operation of the system is efficient. Balancing and adjustment shall include a synchronization of the controllers, water quality control equipment, emitter heads, and individual station adjustments on the controllers.
- C. **Training of Maintenance Personnel:** Upon completion of the work and final acceptance by the Owner, the Contractor shall train the Owner's designated maintenance personnel in the operation, maintenance, and repair of the system. Provide copies of all parts lists, trouble shooting lists, specifications sheets, and catalog sheets to the schedules and programming of the automatic controllers in accordance with the specifications and/or irrigation drawings.

**Backfill**

- A. **Backfilling:** Backfill over-excavation of trenches under pipe with clean fill material, free of organic materials and objects larger than 1/2" diameter.
- B. **Backfill Trenches:** from pipe flow line to 2" above top of pipe with clean fill material free of organic materials and objects larger than 1/2" diameter.
- C. **Backfill Trenches:** from 4" above top of pipe up to finish grade with clean fill material removed by excavation.
- D. **Tape:** Provide blue irrigation tape stating "Caution-Underground Water Line" on all mains or laterals 1" or larger in diameter and place not more than 8" or less than 6" below finished grade or concrete.
- E. **Pavements:** No pavement shall be cut to install irrigation work unless otherwise approved by the Owner. Coordinate with paving operation previously performed by others to assure all sleeves are installed under drives and sidewalks where needed to complete work required under this Contract. All known road crossing sleeve locations will be made available to the Contractor.
- F. **Excavate:** trench to required depth and width.

**Irrigation Heads**

- A. **Flush circuit lines** with the operational head of water until free of debris and install heads.
- B. **Install all heads** according to manufacturer's specifications and as stated on drawings.

Electrical Components

- A. Electric Control Lines: Size all electric control wire as previously stated.
- B. Wire Connections: Connections at all remote control valves and at all wire splices, leave wire with sufficient "slack" so that in case of repair the valve bonnet or splice may be brought to the surface without disconnecting the wires. No wire splice shall be permitted except at the individual valve locations in valve boxes. Make splices using UL listed waterproof wire connectors as recommended by the wire manufacturer.
- C. Remote Control Valves: Each remote control valve shall be connected to one station of the controller. Provide wire sizes as recommended by the manufacturer. Connect all remote control valves to a common ground wire of a size as recommended by the manufacturer. Provide the controller with a common ground wire system. Connect the remote control valves to the controller's common ground wire system. The control valve configuration piping shall not be of the prefabricated type but shall be manufactured in the field only using schedule 80 nipples and couplings.
- D. Valve Boxes: Install all valve boxes so that the tops of all boxes are level with each other and the sides of all boxes are parallel to each other.
- E. Dielectric Protection: Use dielectric fittings at connection where pipes of dissimilar metal are joined.

Guarantee

For a period of one (1) year from the date of issuance of Certificate of Final Completion, the Contractor shall promptly furnish and install, without cost to the Owner, any parts or equipment which prove defective in material and/or workmanship.

END OF SECTION

**SECTION IV**  
**SPECIAL PROVISIONS**



## **SPECIAL PROVISIONS**

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*Special Provisions*

## **SPECIAL PROVISIONS**

### **SP-1: GENERAL**

For this contract, the General Provisions (Division 100) of the "Public Works Construction Standards - North Central Texas" adopted by the North Central Texas Council of Governments (NCTCOG), October 2004 Edition, with all amendments thereto, shall govern and shall constitute as the Special Provisions except as herein amended, modified or supplemented. Omission of any section from this Project's Contract Documents does not mean that such section is not applicable to this Project. The NCTCOG General Provisions will be referred to as the General Provisions (GP) and will not be physically bound with the other contract documents. Copies may be obtained from the North Central Texas Council of Governments.

The following Special Provisions shall take precedence over all other contract conditions, specifications and agreements.

### **SP-2: PROJECT DESCRIPTION**

The work associated with this Project includes, but is not limited to, the following tasks:

1. Traffic Signal
2. Turn Lanes
3. Landscaping and Irrigation Improvements

### **SP-3: DEFINITIONS**

Modify GP Item 101.1 Definitions as follows:

The word "City" or "OWNER" in these documents shall be understood as referring to:

The City of North Richland Hills, Texas  
4301 City Point Drive  
North Richland Hills, Texas 76180

The word "Engineer" in these specifications shall be understood as referring to the City-Employed Professional Engineer whose stamp appears on the construction drawings.

Or such other representatives as may be authorized by said Owner to act in any particular position.

The word "Inspector" in these documents shall be understood as referring to the technical construction inspector within the OWNER's Public Works Department.

The word "OWNER's Representative" in these documents shall be understood as referring to the OWNER's Director of Public Works, Public Works Technical Construction Inspector(s),

Engineer of the OWNER, or such other Engineer or Supervisor as may be authorized by the OWNER to act in any particular position.

Any reference to "Special Conditions" or "Supplemental Special Conditions" shall be understood as referring to these Special Provisions.

**SP-4: INFORMATION CONCERNING CONDITIONS**

Add the following to GP Item 102.3. Examination of Plans, Specifications and Site of the Work:

Prospective bidders shall make a careful examination of the entire site of the project and shall make such explorations as may be necessary to determine the subsoil and water conditions to be encountered; improvements and obstructions which may be encountered, especially those to be protected; methods of providing ingress and egress to private as well as public property; methods of handling traffic during construction and maintenance of the entire project as well as any section thereof; protection of all existing structures both above and below ground; and how the plans fit the proposed project and especially if any discrepancies exist.

The accuracy of the information furnished by the Engineer or the plans and specifications as to underground structures and surface structures, foundation conditions, character of soil, position and quality of ground and subsoil water, etc., are not guaranteed by the OWNER.

Subsurface exploration, to ascertain the nature of the soils at the project site, including the amount of rock, if any, is to be the responsibility of any and all prospective bidders. Whether prospective bidders perform this subsurface exploration jointly or independently, it shall be left to the discretion of such prospective bidders. Subsurface exploration shall not be attempted without the approval of the Engineer.

**SP-5: ADDENDA**

Bidders wanting further information, interpretation or clarification of the Contract Documents must make their request in writing to the City's Purchasing Department by the date listed in the Notice to Bidders. Answers to all such requests will be made a part of the Contract Documents. No other explanation or interpretation will be considered official or binding.

Should a bidder find discrepancies in, or omission from the Contract Documents, or should he/she be in doubt as to their meaning, he/she should at once notify the Engineer in order that a written addendum may be sent to all bidders. Any addenda issued will be mailed or be delivered to each prospective bidder who has requested and received a bid packet. The bid proposal as submitted by the bidder must be so constructed as to include any addenda issued by the Engineer prior to 48 hours of the bid opening, with the appropriate recognition of addenda so noted in the bid proposal.

**SP-6: PROPOSED GUARANTY**

Modify GP Item 102.5. Proposal Guaranty to include:

The five percent (5%) proposal guaranty shall be five percent (5%) of the largest possible total for the bid submitted.

**SP-7: FILING OF PROPOSAL**

Add the following to GP Item 102.6. Filing of Proposals:

Bids, affidavits and proposed construction schedules must be submitted in sealed envelopes within the time limit for receiving proposals, as stated in the "NOTICE TO BIDDERS", which envelopes bear a legible notation, "PROPOSAL", and the name of the project. The original copy shall be filed with the City of North Richland Hills in the office of the City Secretary at City Hall.

**SP-8: REJECTION OF PROPOSALS**

Add the following reasons to GP Item 102.11. Rejection of Proposals:

- (7) Proposals that are incomplete insofar as the required signatures, proposal guaranty, or containing any material irregularities.

**SP-9: DISQUALIFICATION OF BIDDERS**

Add the following reason to GP Item 102.12. Disqualification of Bidders:

- (9) where more than one proposal for an individual firm, partnership, or corporation is filed under the same or different names and where such proposals are not identical in every respect.

**SP-10: QUALIFICATION TO PERFORM**

The OWNER may make such investigations as he/she deems necessary to determine the bidder's ability to perform the work, and the bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any bid if the evidence submitted fails to satisfy the OWNER that such bidder can properly carry out the obligations of the contract and to complete the work contemplated therein.

**SP-11: AWARD OF CONTRACT**

Add the following to GP Item 103.2. Award of Contract and Commencement of Work:

The award, if made, shall be on the basis of the lowest acceptable bid submitted by a qualified responsible bidder, as determined by the OWNER, within 60 days after the opening of proposals. In determining the lowest acceptable bid, the OWNER will consider all relative factors such as: efficiency of a single contractor in the project area, increase in public safety due to a single contractor's operations, length of construction, coordination of construction activities, previous experience the OWNER may have had with the bidder, effects on area traffic due to construction detours and efficient use of City funds. The right is reserved, as the interest of the OWNER may require, to reject any and all bids and to waive any formality in bids received. It is the intention of the OWNER to award a single contract for this work.

**SP-12: BONDS - AMOUNT AND TERMS**

In addition to GP Item 103.3. Surety Bonds, add the following:

With the execution and delivery of the contract, the CONTRACTOR shall furnish and file with the City in the amount herein required, the following surety bonds:

- (1) A good and sufficient Performance Bond in an amount equal to one hundred ten percent (100%) of the total awarded contract price, guaranteeing the full and faithful execution of the work and performance of the contract and for the protection of the City against any improper execution of the work or the use of inferior materials.
- (2) A good and sufficient Payment Bond in an amount equal to one hundred percent (100%) of the total awarded contract price, guaranteeing payment for all labor, materials and equipment used in the construction of the project.
- (3) A good and sufficient Maintenance Bond in an amount equal to twenty percent (20%) of the final contract price, guaranteeing the maintenance in good condition of such project for a period of two (2) years from and after the time of its completion and acceptance by the City.

General conditions for bonds are as follows:

1. The surety on each bond must be a responsible surety company which is licensed and qualified to do business in the State of Texas (surplus lines carriers are not acceptable) and satisfactory to the City. No surety will be accepted who is in default or delinquent on any bond or who is interested in any litigation against the City. Should any surety on the contract be determined unsatisfactory at any time by the City, notice will be given to the CONTRACTOR to the effect, and the CONTRACTOR shall forthwith substitute a new Surety or Sureties satisfactory to the City. (Texas Lloyd's Plan carriers are not acceptable.) No payment will be made under the contract until the new Surety or Sureties, as required, have qualified and have been accepted by the City. The contract shall not be operative nor shall any payments be due until approval of the bonds has been made by the City.
2. The surety company should be listed in the current circular of the "Federal Register - Department of the Treasury - Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsurance Companies".
3. The surety shall/must have an underwriting limitation (as shown in the Federal Register) to cover 110% of the project cost. Exceptions to a requirement may be made in unusual circumstances, subject to approval by the Office of Risk Management and the City Attorney's Office.
4. All bonds shall be made on forms furnished by the City and shall conform to the requirements as set forth herein.
5. Each Bond shall be executed by the CONTRACTOR and the Surety. The name and residence of each individual party to the bond shall be inserted in the body thereof, and each such party shall sign the bond with his/her usual signature on the line opposite the scroll seal, and if signed in the States of Main, Massachusetts, or New Hampshire, an adhesive seal shall be fixed opposite the signature.

6. If the principals are partners, their individual names will appear in the body of the bond or on proceeding pages to be included with said bond with the recital that they are partners composing a firm, naming it, and all the members of the firm shall execute the bond as individuals.
7. The signature of a witness shall appear in the appropriate place, attesting the signature of each individual party to the bond.
8. The principal or surety shall be a corporate surety; the name of the state in which incorporated shall be inserted in the appropriate place in the body of the bond or on proceeding pages to be included with said bond, and said instrument shall be executed and attested under the corporate seal, the fact shall be stated, in which case a scroll or adhesive seal shall appear following the corporate name.
9. The official character and authority of the person or persons executing the bond for the principal, if a corporation, shall be certified by the secretary or assistant secretary according to the form attached hereto. In lieu of such certificate, records of the corporation as will show the official character and authority of the officer signing, duly certified by the secretary or assistant secretary, under the corporate seal, to be true copies.
10. The date of any bond must not be prior to the date of the contract in connection with which it is given.

#### **SP-13: INSURANCE REQUIREMENTS**

In addition to the provisions of GP Item 1.03.4. Insurance, add the following:

**Workmen's Compensation Insurance:** Statutory requirements as specified by the Workmen's Compensation Law of the State of Texas and adopted by the Texas Workers' Compensation Commission per Title 28, TAC §110.110. **Workers' Compensation Insurance Coverage:**

##### **A. Definitions:**

- 1) **Certificate of coverage ("certificate")** - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees (including those subject to a coverage agreement) providing services on a project for the duration of the project.
- 2) **Building or construction** - Has the meaning defined in the Texas Labor Code, §406.096(e)(1).
- 3) **Contractor** - A Person bidding for or awarded a building or construction project by a governmental entity.
- 4) **Coverage** - Workers' compensation insurance meeting the statutory requirements of the Texas Labor Code, §401.011(44).

- 5) Coverage Agreement - A written agreement on form TWCC-81, form TWCC-82, form TWCC-83, or form TWCC-84, filed with the Texas Workers' Compensation Commission which establishes a relationship between the parties for purposes of the Workers' Compensation Act, pursuant to the Texas Labor Code, Chapter 406, Subchapters F and G, as one of employer/employee and establishes who will be responsible for providing workers' compensation coverage for persons providing services on the project.
  - 6) Duration of the project - Includes the time from the beginning of the work on the project until the work on the project has been completed and accepted by the governmental entity.
  - 7) Persons providing services on the project ("subcontractor" in §406.096) - Includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the CONTRACTOR and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.
  - 8) Project - Includes the provision of all services related to a building or construction contract for a governmental entity.
- B. The CONTRACTOR shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the CONTRACTOR providing services on the project for the duration of the project.
  - C. The CONTRACTOR must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
  - D. If the coverage period shown on the CONTRACTOR's current certificate of coverage ends during the duration of the project the CONTRACTOR must prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
  - E. The CONTRACTOR shall obtain from each person providing services on the project and provide to the governmental entity:
    - 1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

- 2) no later than seven days after receipt by the CONTRACTOR, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- F. The CONTRACTOR shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- G. The CONTRACTOR shall notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the CONTRACTOR knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.
- H. The CONTRACTOR shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- I. The CONTRACTOR shall contractually require each person with whom it contracts to provide services on a project, to:
- 1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
  - 2) provide to the CONTRACTOR, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
  - 3) provide the CONTRACTOR, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
  - 4) obtain from each other person with whom it contracts, and provide to the CONTRACTOR:
    - (a) a certificate of coverage, prior to the other person beginning work on the project; and
    - (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
  - 5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
  - 6) notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

- 7) contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.
- J. By signing this contract or providing or causing to be provided a certificate of coverage, the CONTRACTOR is representing to the governmental entity that all employees of the CONTRACTOR who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the CONTRACTOR to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- K. The CONTRACTOR's failure to comply with any of these provisions is a breach of contract by the CONTRACTOR which entitles the governmental entity to declare the contract void if the CONTRACTOR does not remedy the breach within ten (10) days after receipt of notice of breach from the governmental entity.

In accordance with statutory requirements, the CONTRACTOR shall:

- 1) provide coverage for its employees providing services on the project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
- 2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;
- 3) provide the governmental entity, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the CONTRACTOR's current certificate of coverage ends during the duration of the project;
- 4) obtain from each person providing services on the project, and provide to the governmental entity:
  - (a) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
  - (b) no later than seven (7) days after receipt by the contract, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- 5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- 6) notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after contractor knew or should have known, of any change that

materially affects the provision of coverage of any person providing services on the project;

- 7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text in Figure 1 provided by the commission on the sample notice, without any additional words or changes:

Figure 1:

#### REQUIRED WORKERS' COMPENSATION COVERAGE

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee"

"Call the Texas Workers' Compensation Commission at (512) 440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

In GP Item 103.4.1.2. Commercial General Liability, change the respective limits as follows:

Contractor's General Liability and Property Damage Insurance:

Bodily Injury (or Death) ..... \$ 600,000 each occurrence

Property Damage ..... \$ 600,000 each occurrence

#### SP-14: POLICY ENDORSEMENTS AND SPECIAL CONDITIONS

In addition to the provisions of GP Item 103.4.5. Policy Endorsements and Special Conditions, add the following:

- Item # 1 CONTRACTOR will not be issued a Work Order to commence work on this Contract until he/she has obtained all the insurance required under this section and such insurance has been approved by the OWNER or his representative.
- Item # 2 CONTRACTOR shall procure and shall maintain during the life of this Contract, insurance coverage as herein specified, and in case of any work sublet, shall require any subcontractor in like manner to secure and maintain such minimum limits of insurance coverage, also.
- Item # 3 The CONTRACTOR shall furnish the OWNER with certificates showing the type, amount, class of operations covered, effective dates, and dates of expiration of policies. Such certificates shall contain substantially the following statement: "The insurance covered by

this certificate will not be canceled or materially altered except after thirty (30) days written notice has been received by the OWNER."

**SP-15: ORDER OF WORK**

Add the following to GP Item 103.6. Notice to Proceed and Commencement of Work:

The CONTRACTOR shall be fully responsible for proper coordination for the relocation of utilities (i.e. power poles, electrical lines, gas lines, telephone lines, television (TV) cable lines, buried cables, etc.) public and private unless otherwise noted on the plans/drawings.

**SP-16: PRIORITY OF CONTRACT DOCUMENTS**

Delete GP Item 105.1.1. Priority of Contract Documents and substitute the following:

In case of conflict between contract documents, priority of interpretation shall be in the following order:

- 1) This Agreement
- 2) Addendum(s)
- 3) "Notice to Bidders" advertisement
- 4) Bidder's Proposal
- 5) Special Instruction to Bidders
- 6) Performance, Payment and Maintenance Bonds
- 7) Certification of Insurance
- 8) Notice to Proceed
- 9) Technical Specifications
- 10) City of North Richland Hills' Public Works Design Manual
- 11) Special Provisions
- 12) General Provisions
- 13) Special Specifications
- 14) Project Construction Plans/Drawings
- 15) Special Material and/or Equipment Specifications
- 16) Special Material and/or Equipment Drawings
- 17) "Public Works Construction Standards - North Central Texas" adopted by the North Central Texas Council of Governments (NCTCOG), October 2004 Edition
- 18) North Central Texas Council of Government references

**SP-17: WARRANTY**

In GP Item 105.2.2. Special Warranty, change all references from one year to two (2) years and add the following:

Notwithstanding any certificate which may have been given by the Engineer, if any materials, equipment or any workmanship which does not comply with the requirements of this contract shall be discovered within two (2) years after completion of construction of the project, and acceptance by the OWNER, the CONTRACTOR shall replace such defective materials or equipment, or remedy any such defective workmanship within ten (10) days after notice in writing of the existence thereof shall have been given by the OWNER or Engineer. In the event of failure of the CONTRACTOR to replace any such defective materials or equipment or to remedy defective workmanship as herein provided, the OWNER may replace such defective materials or equipment or remedy such workmanship as the case may be and in such event the CONTRACTOR shall pay to the OWNER the cost and expense thereof.

**SP-18: LINES AND GRADES**

Add the following to GP Item 105.4. Construction Stakes:

The CONTRACTOR is responsible to provide all construction staking under this contract.

All work under this contract shall be constructed in accordance with the lines and grades shown on the plans/drawings. The full responsibility for the holding to alignment and grade shall rest upon the CONTRACTOR.

The CONTRACTOR shall protect all property corner markers, and when any such markers or monuments are in danger of being disturbed, they shall be properly referenced and if disturbed shall be reset at the expense of the CONTRACTOR.

**SP-19: INSPECTION AND TESTING**

Add the following to GP Item 106.5. Samples and Tests of Materials:

The CONTRACTOR shall be responsible for paying for all testing and testing related items (acquiring specimens, proper specimen control, etc.) on this Project.

During the progress of the work, all materials, equipment and workmanship shall be subjected to such inspections and tests as will assure conformance with the contract requirements.

The CONTRACTOR shall furnish at his/her expense all necessary specimens and samples for testing.

Sampling and testing of all materials or construction methods shall be performed by a commercial laboratory, approved by the Engineer, and permitted with the City of North Richland Hills' Public Works Department.

Testing Services provided shall include but are not limited to the following:

- a. Reinforced Concrete Pavement
  - 1. Analysis of Aggregates
  - 2. Decantation Tests
  - 3. Slump and Air Content Tests
  - 4. Flexural or Compressive Strength Tests
- b. Lime Treated Base or Flexible Base

1. Lime requirements as indicated by test method ASTM C977-83a, Appendix XI
  2. Field Compaction Tests – ASTM D698-90 Method A
- c. Embankment or Pavement Subgrade
1. Moisture – Density Curves
  2. Field Compaction Tests – Test Method ASTM D698-90 Method A
- d. Structural Concrete
1. Mix Design
  2. Batch Plant Weight and Moisture Checks
  3. Slump and Air Tests
  4. Compressive Strength Tests
- e. Utility Trenches
1. Moisture – Density Curves
  2. Field Compaction Tests – Test Method ASTM D698

When the CONTRACTOR's materials, construction items or products incorporated in the project fail to satisfy the minimum requirements of the initial test and he/she has to bear the cost of any retesting, he/she shall be responsible for any and all cost associated with such retesting. If in this situation, the CONTRACTOR utilizes the same testing laboratory as the OWNER, the CONTRACTOR shall pay said testing laboratory in full or the testing laboratory shall be able to gain recourse through the CONTRACTOR's Payment Bond.

In the event a conflict arises concerning the interpretation of A.S.T.M., A.C.I., A.W.W.A., etc., specifications/standards, the Engineer shall make his/her determination of the interpretation and his/her determination shall be final.

#### **SP-20: INDEMNIFICATION**

The CONTRACTOR shall familiarize himself/herself with GP Item 107.2. Indemnification and GP Item 107.19.3.2. Indemnification. Additionally, the following shall be added to both Indemnification items:

This agreement, however, does not waive any governmental immunity available to the OWNER under Texas law and nor any defenses of the parties under Texas law. The provisions of this paragraph are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

#### **SP-21: SALES TAX**

Add the following to GP Item 107.14. State and Local Sales and Use Taxes:

The OWNER qualifies for exemption from state and local sales and use taxes, pursuant to the provisions of Section 151.309 of the Texas Limited Sales, Excise and Use Tax Act, as amended. Therefore, the OWNER shall not be liable for, or pay the CONTRACTOR's cost of such sales and use taxes which would otherwise be payable in connection with the performance of this contract.

**SP-22: TRAFFIC CONTROL**

Add the following to GP Item 107.19.2. Protection of Persons and Property:

The CONTRACTOR shall not remove any regulatory sign, instructional sign, street name sign, or other sign which has been erected by the City. If it is determined that a sign must be removed to permit required construction, the CONTRACTOR shall contact the City to remove the sign. In the case of regulatory signs, the CONTRACTOR must replace the permanent sign with a temporary sign meeting the requirements of the above referenced manual and such temporary sign must be installed prior to the removal of the permanent sign. If the temporary sign is not installed correctly or if it does not meet the required specifications, the permanent sign shall be left in place until the temporary sign requirements are met. When construction work is completed to the extent that the permanent sign can be reinstalled, the CONTRACTOR shall again contact the City to reinstall the permanent sign and shall leave his temporary sign in place until such installation is completed.

The CONTRACTOR shall prosecute his traffic control work in such a manner as to create a minimum of interruption to traffic and pedestrian facilities and to the flow of vehicular and pedestrian traffic within the project area.

Access to adjacent property shall be maintained at all times unless otherwise approved by the OWNER.

**SP-23: TRENCH SAFETY**

Add the following paragraph to GP Item 107.19.3. Trench Safety:

Per Chapter 756, Texas Health & Safety Code, it shall be the responsibility of the CONTRACTOR to provide and maintain a viable trench safety system at all times during construction activities. The CONTRACTOR is directed to become knowledgeable and familiar with the standards as set forth by the Occupational Safety and Health Administration for trench safety that will be in effect during the period of construction of the project and the CONTRACTOR is responsible for conforming to such regulations as prescribed by Occupational Safety and Health Administration standards.

**SP-24: WORK-SITE AREA AND CLEAN-UP**

Add the following to GP Item 107.21. Working Area:

During construction the CONTRACTOR shall at all times keep the job site free from waste, debris and rubbish, and shall maintain a daily routine of clean-up.

The working operations of the CONTRACTOR shall at all times be conducted so as to create a minimum of inconvenience to the OWNER or to the public. Stringing of pipe, stockpiling of materials, etc., will be allowed only where no inconvenience is caused and only in amounts that can be readily used by the CONTRACTOR.

All trees, stumps, slashings, brush or other debris to be removed from the site, shall be disposed of in a manner consistent with Local Ordinances and all State Regulations. Burning

of trash, etc., will only be permitted where allowed by Local Ordinances and State Pollution Regulations.

All excavated earth in excess of that required for project embankments and/or backfilling shall be removed from the job site and disposed of in a satisfactory manner. Disposal of excess material into area creeks and drainageways will not be allowed.

Any trees or other landscape features scarred or damaged by the CONTRACTOR's operations shall be restored or replaced at the CONTRACTOR's expense. Trimming or pruning to facilitate the work will be permitted only by experienced workmen in an approved manner. Pruned limbs of one inch (1") diameter or larger, shall be thoroughly treated as soon as possible with a tree wound dressing.

The CONTRACTOR shall take all precautions required to prevent soil erosion during construction. If, in the opinion of the Engineer, excessive erosion occurs, the CONTRACTOR shall take immediate measure to prevent further erosion and restore the disturbed surface with topsoil at completion of the work.

All property along and adjacent to the CONTRACTOR's operations including lawns, yards, shrubs, trees, etc., shall be preserved or restored after completion of the work, to a condition equal to or better than existed prior to start of work.

Upon completion of the work as a whole and prior to final acceptance, the CONTRACTOR shall clean and remove from the site all surplus and discarded materials, temporary structures and all debris. He/She shall leave the site in a neat and orderly condition with an appearance satisfactory to the Engineer and OWNER. Method and location of disposal or surplus and waste materials shall be satisfactory to the Engineer.

The CONTRACTOR shall then thoroughly clean all equipment and materials installed by him/her and shall present for final inspection materials and equipment in a clean, bright and new condition.

No extra payment will be made for any of this type of work required on the project.

#### **SP-25: EXISTING STRUCTURES, FACILITIES AND IMPROVEMENTS**

Add the following to GP Item 107.23. Existing Structures, Facilities and Appurtenances:

The CONTRACTOR's attention is directed to the necessity of taking adequate measures to protect all existing structures, facilities, improvements and utilities, including sprinkler systems, encountered.

The plans show the locations of most known surface and subsurface structures. However, the OWNER assumes no responsibility for failure to show any or all of these structures on the plans or in their exact location. It is mutually agreed that such failure shall not be considered sufficient basis for claims for additional compensation for extra work, or for increasing the pay quantities in any manner, unless the obstruction encountered is such as to necessitate substantial changes in the lines or grades, or requires the building of special works not provided for in the Contract Documents.

Any non-City utilities (cable, electric, gas, telephone, etc.) damaged by the CONTRACTOR shall be the responsibility of the CONTRACTOR for relocation and/or repair as well as the costs associated with the relocation and/or repair of utilities. Any City utilities (sanitary sewer main and water distribution main) damaged by the non-negligent acts of the CONTRACTOR will not be the responsibility of the CONTRACTOR for repair. Any delays associated with the relocation and/or repair of utilities shall not be basis for a claim for extra pay.

In the progress of the work, the CONTRACTOR may have to relocate certain existing utility service lines. All relocation, repairs and replacement work shall be done at the expense of the CONTRACTOR to the satisfaction of the OWNER, except those for which specific pay items appear in the Bid Proposal.

Any utilities damaged during construction work shall be immediately repaired at the CONTRACTOR's expense.

The CONTRACTOR shall at all times maintain streets and drives in a condition which will provide easy ingress and egress and upon completion of the work, repair all damages to roads and streets used during construction, to a condition at least as good as existed prior to the start of work.

#### **SP-26: PROSECUTION OF CONSTRUCTION**

Add the following to GP Item 108.2. Prosecution of the Work:

The CONTRACTOR will, unless otherwise approved by the Engineer, prosecute the construction of this project during normal working hours as defined below:

- A. Normal Work Day shall mean the normal eight (8) hour working day between the hours of 8:00am and 5:00pm
- B. Normal Work Week shall mean the forty (40) hour work week encompassing the five (5) eight-hour days, Monday through Friday.
- C. Holidays to be observed and to be included into the normal work week will be:

New Years Day .....	January 1 <sup>st</sup>
MLK Day .....	Third Monday in January
Memorial Day .....	Last Monday in May
Independence Day .....	July 4th
Labor Day .....	First Monday in September
Thanksgiving Holiday .....	Fourth Thursday in November and the following Friday
Christmas Holiday .....	December 24th & December 25th

Any of the above dates falling on a Sunday shall be observed on the following Monday.

- D. All work contemplated to be done which will not be in accordance with the normal hours will require prior approval from the Engineer. The CONTRACTOR shall request permission by the Engineer 72 hours in advance of the time he/she intends to work.

Work which is of necessity performed at times other than normal working hours will not require prior approval unless construction scheduling can be arranged to prevent such conflict of time requirements.

All work performed other than the normal working hours, whether scheduled or required, will in no way increase the cost to the OWNER for the performance of such work. The CONTRACTOR shall pay the OWNER for inspection services, city administrative fees, etc. when work has been approved to be performed on Weekends, Holidays and outside any normal working hours. These services shall be charged at the rate of \$75.00 per hour and shall include a four (4) hour minimum charge.

- E. Calendar Days is defined as any day of the week or month; no days being excepted, such as, Saturdays, Sundays, holidays and inclement weather days. Counting of contract time will only be stopped when the Owner issues a written notice stating this fact, or when the project is noted as substantially complete by written notice from the Owner. The Owner shall determine when such action is necessary.

Extensions of time due to weather delays shall be determined in accordance with the following formula:

$E = R - P$  where R is greater than or equal to P, and

E = Extra Precipitation Days

P = Average Precipitation Days

R = Total Precipitation Days

Average Precipitation Days (P) is defined as a day of rain, sleet, hail, snow or any combination thereof, and shall be based upon the average precipitation for each month of the year as defined in the Local Climatological Data summaries issued by the National Climatic Data Center in Asheville, North Carolina, and for this contract shall be as follows:

Average Precipitation

Month No. of Days	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
	6	6	7	7	8	6	4	4	6	6	6	6

Partial months shall be prorated uniformly for the entire month and the sum of all the months used will be rounded to the nearest whole number. This number shall be P.

Total Precipitation Days (R) is defined as a day of rain, sleet, hail, snow or any combination thereof, if determined by the Owner's Project Representative that the Contractor's construction cannot progress substantially due to precipitation and thus be put in the Daily Inspection Logs as a precipitation day. The sum of all precipitation days shall be R.

The total number of Extra Precipitation Days (E) shall be granted to the Contractor as extension of time due to weather delays, and no additional time due to drying time for saturated soil will be allowed.

**SP-27: LIQUIDATED DAMAGES FOR FAILURE TO COMPLETE ON TIME**

Delete the Table [Schedule 108.8.1.(a) Liquidated Damages] within GP Item 108.8.1. Priority of Contract Documents and substitute the following:

The contract time for the entire project from the "Notice to Proceed" issuance date through the final completion date is 120 consecutive calendar days (note, this 120 consecutive calendar days is for final completion and not substantial completion). This contract time is both multi-tiered and cumulative.

Liquidated damages will be assessed at the rate of \$100 per calendar day for any unfinished work for the first 30 days beyond the 120<sup>th</sup> day. This \$100 rate will start on the 121<sup>st</sup> consecutive calendar day after the "Notice to Proceed" issuance date and continue through the 150<sup>th</sup> consecutive calendar day after the "Notice to Proceed" issuance date.

Liquidated damages will be assessed at the rate of \$200 per consecutive calendar day for any unfinished work beyond the 150<sup>th</sup> calendar day after the "Notice to Proceed" issuance date. This rate shall continue until such time that the Project is complete and accepted by the OWNER.

**SP-28: OCCUPATIONAL SAFETY AND HEALTH ACT**

All work performed under this contract shall meet the requirements of the Occupational Safety and Health Act. It is the responsibility of the CONTRACTOR to familiarize himself/herself with the latest provisions of regulations published by the Occupational Safety and Health Administration in the Federal Register and to perform all of his/her responsibilities thereunder.

The CONTRACTOR shall comply with the provisions of the Occupational Safety and Health Act and the standards and regulations issued thereunder and warrant that all work, materials and products furnished under this contract will conform to and comply with said standards and regulations that are in existence on the date of this contract. The CONTRACTOR further agrees to indemnify, defend, and hold harmless the OWNER for all damages suffered by the OWNER as a result of the CONTRACTOR's failure to comply with the Act and the Standards

issued thereunder and for the failure of any material and/or equipment furnished under this contract to so comply.

The CONTRACTOR shall also comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., if not in conflict with those of the Occupational Safety and Health Act and shall maintain an accurate record of all cases of death, occupational disease and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment or work under the contract.

The CONTRACTOR alone shall be responsible for the safety, efficiency and adequacy of his/her equipment and employees and for any damage that may result from their failure or their improper construction, maintenance or operation.

**SP-29: EASEMENTS/RIGHTS-OF-WAY**

Without cost to the CONTRACTOR, the OWNER will provide the necessary easements or rights-of-way required for the project. However, the CONTRACTOR may desire additional temporary easements for the duration of the work for his/her construction, storage or access. All such temporary easements shall be obtained by the CONTRACTOR at no additional cost to the contract or the OWNER.

Unless specifically provided otherwise, the CONTRACTOR, as part of his/her work, shall clear all easements or rights-of-way of all obstructions to the work. On conclusion of his/her operations, he/she shall replace, repair or restore any improvements that may have been removed or damaged, as directed by the Engineer.

**SP-30: RIGHT OF ENTRY**

The OWNER reserves the right to enter the property or location on which the works herein contracted for are to be constructed or installed, by such agent or agents as he/she may elect, for the purpose of inspecting the work, or for the purchase of constructing or installing such collateral work as said OWNER may desire.

**SP-31: AUTHORITY AND DUTIES OF INSPECTOR**

Inspectors, designated by and acting under the direction of the OWNER, shall have the authority to inspect all work done and all materials furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication or manufacture of the materials to be used. He/She is authorized to call to the attention of the CONTRACTOR any failure of the work or materials to conform to the plans, specifications and contract documents. He/She shall have the authority to reject materials or suspend the work until any situation at issue can be referred to and decided by the OWNER.

The Inspector is not authorized to revoke, alter or waive any requirements of the plans and specifications. He/She shall in no case act as foreman or perform other duties for the CONTRACTOR, interfere with the management of the work by the latter. Any advice, which the Inspector may give the CONTRACTOR, shall otherwise not be construed as binding the Engineer in any way, or releasing the CONTRACTOR from fulfilling all of the terms of the Contract.

If the CONTRACTOR refuses to suspend operations on verbal order of the Inspector, a written order will be presented to the CONTRACTOR by the Inspector giving the reason for suspension of work. After placing the order in the hand of the "man-in-charge", the Inspector shall immediately leave the job. Work performed during the absence of the Inspector will not be accepted nor paid for, and shall be removed and replaced.

Notwithstanding any other provision of this agreement or any other Contract Documents, the Inspector shall not be in any way responsible or liable for any act, errors, omissions or negligence of the CONTRACTOR, any subcontractor or any of the CONTRACTOR's or subcontractor's agents, servants or employees or any other person, firm or corporation performing or attempting to perform any of the work.

**SP-32: OWNER-ENGINEER RELATIONSHIP**

The Engineer will be the OWNER's representative during construction. The duties, responsibilities and limitations of authority of the Engineer as the OWNER's Representative during construction are as set forth in the Contract Documents and shall not be extended or limited without written consent of the OWNER and Engineer. The Engineer will advise and consult with the OWNER, and all of OWNER's instructions to the CONTRACTOR shall be issued through the Engineer.

**SP-33: PROFESSIONAL INSPECTION BY ENGINEER**

The Engineer shall make periodic visits to the Site to familiarize himself/herself generally with the progress of the executed work and to determine if such work generally meets the essential performance and design features and the technical and functional engineering requirements of the Contract Documents; provided and except, however, that the Engineer shall not be responsible for making any detailed, exhaustive, comprehensive or continuous on-site inspection of the quality or quantity of the work or be in any way responsible, directly or indirectly, for the construction means, methods, techniques, sequences, quality, procedures, programs, safety precautions or lack of same incident thereto or in connection therewith.

Notwithstanding any other provision of this agreement or any other Contract Documents, the Engineer shall not be in any way responsible or liable for any acts, errors, omissions or negligence of the CONTRACTOR, any subcontractor or any of the CONTRACTOR's or subcontractor's agents, servants or employees or any other person, firm or corporation performing or attempting to perform any of the work.

**SP-34: COPIES OF PLANS AND SPECIFICATIONS FURNISHED**

Four (4) sets of plans and specifications (not including the General Provisions) shall be furnished to the CONTRACTOR at no charge for construction purposes. Additional sets may be obtained from the Engineer at \$50.00 per set for full size (24"X36").

**SP-35: VERIFICATION OF MEASUREMENTS**

Before ordering any material or doing any work, the CONTRACTOR shall verify all measurements involved and shall be responsible for the correctness of these measurements. No extra charge or compensation will be allowed because of differences between actual dimensions and the dimensions shown on the drawings; any difference that may be found

shall be called to the attention of the Engineer for consideration before proceeding with the work.

**SP-36: PAY ITEMS - INCIDENTAL CONSTRUCTION**

The CONTRACTOR shall be paid only for those items which are listed in the proposal or which are added to the job through a change order. All construction or removal considerations that are not listed as a separate pay item shall be considered as incidental construction. Cost for these items shall be considered in the most appropriate item listed in the schedule(s) of pay items.

**SP-37: OMISSIONS**

- A. In the event that the specifications inadvertently omit some of the usual and customary work, auxiliary equipment or material required for the satisfactory installation and operation of all work, equipment or material, the CONTRACTOR shall provide these items as directed by the Engineer at his/her own expense. The CONTRACTOR will be assumed to be an experienced and qualified CONTRACTOR in this type of work, and to have studied the purpose of operation of the equipment and the results to be obtained, and is to furnish equipment suitable for the work to be done.
- B. In the event that the specifications inadvertently fail to contain a specification for work to be done and material to be furnished, then the Standard Current Specification or Requirements of the A.W.W.A., A.S.T.M., A.S.C.E., A.S.E.E., A.S.M.E., N.B.F.U., N.E.C., N.E.M.A., O.S.H.A., NCTCOG "Standard Specifications for Public Works Construction" or TxDOT "Standard Specifications for Construction of Highways, Streets and Bridges" shall apply. Should the above specifications not apply, then the work done, equipment or material furnished shall be as directed by the Engineer.

**SP-38: MINIMUM WAGE RATES**

For the work required of this project, the CONTRACTOR and all sub-contractors shall pay his/her employees the prevailing wage rates in accordance with the Texas Government Code, Chapter 2258. The prevailing wage rates determined applicable for this project are the current prevailing wage rate schedules of the United States Department of Labor adopted in accordance with the Davis-Bacon Act (40 U.S.C. Section 276a, et. seq.) and its subsequent amendments. These prevailing wage rates can be obtained from the following web page: [www.access.gpo.gov/davisbacon/tx.html](http://www.access.gpo.gov/davisbacon/tx.html) (Tarrant County).

A CONTRACTOR or sub-contractor who does not pay his/her employees in accordance with these prevailing wages shall pay \$60.00 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in these prevailing wage rates to the CITY.

**SP-39: LOSSES FROM NATURAL CAUSES**

Unless otherwise specified, all loss or damage to the CONTRACTOR arising out of the nature of the work to be done, or from the action of the elements, or from any unforeseen circumstance in the prosecution of same, or from unusual obstructions or difficulties which may be encountered in the prosecution of the work, shall be sustained and borne by the CONTRACTOR at his/her own cost and expense.

**SP-40: EXPLOSIVES, BLASTING, ETC.**

Neither explosives nor blasting shall be allowed or used on this project.

**SP-41: WORK WITH OWN FORCES**

The CONTRACTOR shall perform with his own forces work of a value of not less than fifty percent (50%) of the contract amount.

**SP-42: PROJECT NAME CONSTRUCTION SIGNS**

The CONTRACTOR shall install two (2) Project Name Construction Signs on Rufe Snow Dr. and Glenview Dr., one facing each direction on either side of the project limits. The exact locations shall be approved by the OWNER prior to installation.

These signs shall be in accordance with Figure 2M (R 02-26-2007) of the City of North Richland Hills' Public Works Design Manual. Per the detail, half-size dimensions shall be used for this residential street. These signs shall be installed within 15 calendar days from the date the OWNER awards the contract and shall remain in place during the entire construction period. These Signs shall be removed within 15 calendar days after the OWNER's acceptance of the project improvements.

Sign Data:

Project Name: **Rufe Snow / Glenview Intersection Improvements**

Projected Completion: *To Be Determined After Contract Award*

**SP-43: WATER FOR CONSTRUCTION**

The CONTRACTOR shall make the necessary arrangements for securing and transporting all water required in the construction, including water required for mixing of concrete, sprinkling, testing, flushing or jetting.

The CONTRACTOR may remit the City a deposit for a fire hydrant water meter; additionally, the CONTRACTOR will be billed for the water used on the construction of this contract and measured by such fire hydrant meter. Additionally, the cost of any temporary pipe line, metering or other equipment which may be necessary to make use of such fire hydrant water meter and water, shall be considered as incidental to the work and payment therefore shall be included in the various bid items of the proposal. If the CONTRACTOR chooses to use such fire hydrant water meter, he/she shall assume full responsibility for it and return it in the same or similar condition as received otherwise the CONTRACTOR will not be returned his/her deposit.

**SP-44: OWNERSHIP OF DRAWINGS**

All drawings, specifications and copies thereof furnished by the Engineer shall not be reused on other work, and, with the exception of the signed contract sets, are to be returned to him on request, at the completion of the work. All models are the property of the OWNER.

**SP-45: ADEQUACY OF DESIGN**

It is understood that the OWNER believes it has employed competent engineers and designers. It is, therefore, agreed that the Engineer shall be responsible for the adequacy of the design, sufficiency of the Contract Documents, the safety of the structure and the practicability of the operations of the completed project; provided the CONTRACTOR has complied with the requirements of the Contract Documents, all approved modifications thereof, and additions and alterations thereto approved in writing by the OWNER. The burden of proof of such compliance shall be upon the CONTRACTOR to show that he/she has complied with the requirements of the Contract Documents, approved modifications thereof and all approved additions and alternations thereto.

**SP-46: PROTECTION OF TREES AND PLANTS**

No trees, plants or Landscape outside the project limits shall be damaged or removed unless otherwise shown in the construction plans. Any trees or other landscape features scarred or damaged by the Contractor's operations shall be restored or replaced at the Contractor's expense. Trimming or pruning to facilitate the work will be permitted only by experienced workmen in an approved manner. Pruned limbs of 1" (one inch) diameter or larger, shall be thoroughly treated as soon as possible with a tree wound dressing. Contractor is to notify property Owner before pruning begins.

**SP-47: PROJECT VIDEO**

Prior to start of construction, CONTRACTOR shall videotape and narrate the construction area and property adjacent to construction. Videotaping shall be in the presence of the Owner or the Owner's Representative. The CONTRACTOR shall furnish the CITY a copy of the tape that has been transferred into DVD format. This shall be subsidiary to project.

**SP-48: SHOP DRAWINGS**

The Contractor shall submit 3-sets of shop drawings to the ENGINEER. All copies shall be from an original copy, no fax copies will be permitted. Maximum paper size of submittal shall be 11"x 17".

Submittals shall be made on all materials incorporated into the project that include but are not limited to the following:

- Concrete Mix Design / Reinforcing Steel
- Utility Relocation and Irrigation Relocation Pipe, Fittings and Materials

**SP-49: CLARIFICATION OF PAY ITEMS**

Any and all Work called for in the Contract Documents or which is required for the proper construction of items called for in the Contract Documents is to be performed by CONTRACTOR unless specifically noted otherwise. The cost of all work for which there is no separate pay item in the proposal shall be included in the price for a related pay item such that work called for or required by the Contract Documents will be constructed for the Contract Price

The following descriptions are intended to clarify the nature of the work required for this project, the provisions of the standard technical specifications shall apply, except as otherwise noted herein.

### **BID ITEM 1 – Preparing ROW**

Preparing ROW shall be in accordance with TxDOT Specification Item 100. This pay item will include removal of improvements or obstructions not specifically provided for in other pay items of the Bid Proposal to include removing asphalt and concrete pavement, drive approaches, trees, landscaping, shrubbery, and plantings, fences, brick columns and other items located within the right-of-way.

The work will consist of trimming, if required, removal of above ground foliage and tree formations, and complete removal of all root systems below grade for trees / shrubs less than 3" in trunk diameter which are not specifically identified for removal on the plans but which must be removed because they are in conflict with the proposed sidewalk or will have exposed roots due to parkway grading. The City's representative shall authorize any tree/shrub removal which is not specifically identified in the plans.

Only trees, landscaping and plantings located within the right-of-way and designated for removal on the plans shall be removed. Trees or shrubs which overhang the proposed sidewalk shall be trimmed to be clear of the sidewalk to a height of 72". Tree/shrub trimming is subsidiary to ROW maintenance. All other trees and landscaping shall be protected from damage as shown in the plan details. This Item includes all safety measures and additional traffic control as needed to complete the work. All trees and plant materials shall be properly disposed of offsite.

Pavements and sidewalks shall be patched if necessary to allow for vehicular and pedestrian traffic. All excavated areas shall be backfilled and compacted to prevent additional damage to pavement or other structures. Any damage to yard areas shall be restored at no additional pay, including planters and landscape edging and irrigation systems. Irrigation systems that extend into the ROW shall be capped at the property line prior to pavement removal, leaving the system operable on the resident's property. Systems shall be restored to working order within the ROW once the paving work is complete.

Right-of-way maintenance shall include providing temporary all-weather access to local residences and temporary mailboxes at each driveway location if needed.

**MEASUREMENT AND PAYMENT:** The lump sum unit price shall include, but not be limited to all labor, equipment, and materials necessary for the preparation and maintenance of the right-of-way for the duration of construction.

### **BID ITEM 2 – Removing Conc (Median)**

This item shall include all necessary materials, labor, tools and incidentals required to remove the concrete within the islands as shown on the Plans. The existing curb shall remain.

**MEASUREMENT AND PAYMENT:** Payment for this item shall be at the contract unit price per each square yard of removed concrete within the back of curb limits on the designated islands.

**BID ITEM 6 – Excavation (Roadway)**

Excavation shall consist of all the required excavation within the project limits as shown on the Plans, the removal, proper utilization or disposal of all excavated material, and the shaping and finishing of all earthwork in conformity with the lines and grades as shown on the Construction Plans or as established by the Owner. Any usable material from excavation shall be compacted in the areas of the project limits needing fill, and the required compaction testing of this excess material shall be included in this bid item and be completed in accordance with City standards. Excavation (Roadway) shall comply with TxDOT Specification 110.

**MEASUREMENT AND PAYMENT:** Unclassified Street Excavation shall be measured and paid for, in accordance with TxDOT Item 110 6001 of the TxDOT Specifications, by the cubic yard, and shall include all materials excavated without regard to the materials encountered.

**BID ITEM 7 – Embankment (Final)(Ord Comp)(TYA)**

This item shall consist of the work, labor, and materials necessary for furnishing and placing embankment, including the bermed areas. Payment shall be on a cubic yard basis. Item shall be installed per TxDOT Specification 132.

**BID ITEM 8 & 9 – Furnishing and Placing Topsoil (4”) and Block Sodding**

Topsoil and Sod shall be installed per TxDOT Specification Items 160 and 162 and Technical Specification 02938 Sodding. The type of sod placed shall match the type of grass in the adjacent lawn area. A 4-inch layer of topsoil, furnished in accordance with Item 162, shall be placed on all areas to be sodded. Suitable on-site topsoil may be utilized or topsoil shall be imported to achieve 4-inches. Fertilizer shall be furnished in accordance with Item 166 and applied at time of initial sodding only. Fertilizer shall be considered subsidiary to Block Sod placement. Watering during construction will be considered subsidiary to block sodding and will be done in accordance with Item 168. Watering shall be done until accepted by the owner and the City.

**MEASUREMENT AND PAYMENT:** The square yard unit price shall include 4-inches of topsoil and all labor, equipment and materials necessary to complete the work including preparation of topsoil, watering, fertilizing and maintenance until accepted by the property owner and the City. The cost of fertilizer and watering is incidental to the unit price of sodding.

**BID ITEM 10 – FL BS (CMP IN PLC)(TYA GR 4)(8”)**

The subgrade shall be flexible base and installed per TxDOT Specification Item 247 to a depth of 8” as shown on the Plans.

**MEASUREMENT AND PAYMENT:** Payment for this item shall be at the contract unit price per each square yard of subgrade thickness as specified in the construction plans from point 12-inches behind the backs of the proposed curbs.

**BID ITEM 11 & 12 – 8” Conc Pvmnt (Per NRH Details) and Curb (Type II)**

This item shall include all necessary materials, labor, tools and incidentals required to construct the proposed 8” Concrete Pavement and Integral Curb. The curb shall be poured integrally with the concrete pavement and shall be installed per the City’s details, TxDOT Specification Item 360, and the Plans.

Reinforced concrete paving shall meet TxDOT Specification Item 360 material requirements.

**MEASUREMENT AND PAYMENT:** Measurement and Payment for this item shall be at the contract unit price per square yard, complete in place and include all concrete, reinforcing steel, required joint work, expansion material, approved elastomeric joint seal material, and other incidentals. Measurement and payment by the square yard for concrete pavement shall be made to the back of curbs. Payment shall be based on Plan dimensions to face of curb and no separate payment shall be provided for extra thickness of concrete pavement placed. Vibratory screeds are not permitted. No separate pay for saw-cut and curb.

No fly-ash is allowed in the concrete mix.

**BID ITEM 15 - MOBILIZATION**

The work under this item shall include the establishment of offices and other facilities on the project site and the movement of personnel, construction equipment and supplies to the project site or to the vicinity of the project site in order to enable the Contractor to begin work on the contract. The cost of all bonds and insurance for the project will also be considered part of this specification.

Mobilization will be measured as a lump sum item as the work progresses. Partial payments for mobilization shall be paid for at the Total Unit Price as shown in the bid proposal with the regular monthly estimates as follows: The adjusted contract amount for construction items as used below is defined as the total contract amount less the lump sum bid for Mobilization.

- a. When 1% and less than 5% of the adjusted contract amount for construction items is completed, 50% of the mobilization lump sum bid will be paid.
- b. When 5% and less than 10% of the adjusted contract amount for construction items is completed, 75% of the mobilization lump sum bid will be paid. Previous payments under this section will be deducted from this amount.
- c. When 10% or more of the adjusted contract amount for construction items is completed, 95% of the mobilization lump sum bid will be paid. Previous payments under this section will be deducted from this amount.
- d. Payment for the remainder of the lump sum bid for “Mobilization” will be made

on the final estimate.

**BID ITEM 16 – Barricades, Signs, and Traffic Handling**

This item shall include the furnishing and installing traffic control devices in accordance with the Traffic Control Plan in the Plans. Traffic control shall comply with the Texas Manual of Uniform Traffic Control Devices, Item 502 of the TxDOT Specifications, and City Specifications.

The standard details shall be considered the minimum requirements necessary to construct the project. Additional measures may be needed to address local traffic control issues and additional sequencing not covered. Prior to construction, the CONTRACTOR shall submit schedule and any additional phasing or traffic control information needed.

A schedule shall also be submitted to address times of completion of each stage of the construction sequence and projected dates of road closings, detours, and utility interruptions. The CONTRACTOR shall update this schedule on a monthly basis.

The CONTRACTOR shall follow the sequence of construction. Any deviations from the Plans must be submitted in writing to the CITY for approval. Proper notification must be given to all affected property owners at least 48 hours in advance of all construction operations. No street shall be closed except upon written authority from the OWNER.

Access to adjacent properties must be maintained except for short periods of time when construction actually blocks the driveway. The CONTRACTOR shall place gravel or take other means to insure all-weather access to properties after working hours and during weekends and holidays. All driveways shall be constructed in 2 phases. See Traffic Control Plan.

**MEASUREMENT AND PAYMENT:** The month unit price shall include, but not be limited to all labor, equipment, and materials necessary to implement, maintain, move and remove traffic control devices during all phases of construction.

**BID ITEM 19 & 20 – Colored Textured Conc (4”) and (8”)**

This item shall include all necessary materials, labor, tools and incidentals required to install the colored concrete within the back of curb limits of the intersection islands and within the crosswalk as shown on the Plans. The colored concrete shall match the Paving Details shown at both intersections. The existing curb shall remain in the intersection islands. Any damage to the existing curb shall be considered incidental to the installation of colored concrete.

The CONTRACTOR shall provide 2’x2’ mock-ups for each intersection prior to construction for approval by City and Engineer.

**MEASUREMENT AND PAYMENT:** Payment for this item shall be at the contract unit price per each square yard of colored within the limits as shown on the plans

#### **BID ITEMS 23 – Conc Sidewalks (4")**

Four inch (4") thick reinforced concrete sidewalk, including reinforcing steel, shall be constructed in accordance with the width and details shown on the Plans and TxDOT Specification Items 360 and 531. Reinforced concrete paving shall be constructed in accordance with TxDOT Specification Items 360 and 531 with the appropriate strength. One (1") inch thick layer of cushion sand under the sidewalk is subsidiary to the unit price of the sidewalk.

Sidewalks widths vary and shall be installed per the Plans. Expansion joint material and elastomeric filler shall be placed along the full length of the sidewalk between the back of curb and sidewalk (for areas where sidewalk is adjacent to back of curb), and shall be included in the unit price per of the sidewalk. Sidewalks located adjacent to the back of curb shall have a sidewalk lug installed per Figure 11P-3 on the Plans. This is subsidiary to sidewalk installation.

In areas where there is sidewalk with curb adjacent to curb (Paving Plan and Paving Details), the integral concrete sidewalk curb is subsidiary to sidewalk. This shall be installed per Paving Details and TxDOT Detail included in the Plans. Sidewalk and curb shall conform to TxDOT Specification Items 360 and 531.

The Contractor shall be responsible to ensure all sidewalk construction is in accordance with the Americans with Disabilities Act (ADA) and Texas Accessibility Standards (TAS). Any portions of sidewalks which are constructed and do not meet the requirements of ADA and TAS will be required to be removed and replaced at the Contractor's Expense.

**MEASUREMENT AND PAYMENT:** Payment for this item shall be at the contract unit price per square yard including excavation, concrete, reinforcing steel, cushion sand, joint sealer, expansion joint material and elastomeric filler complete in place.

#### **BID ITEMS 24-28 –Curb Ramps**

This item shall govern the installation of Curb Ramps in accordance with the details provided in the Plans and TxDOT Specification Item 531.

The Contractor shall be responsible to ensure all barrier free ramp construction is in accordance with the Americans with Disabilities Act (ADA) and Texas Accessibility Standards (TAS). Any portions of the barrier free ramp which are constructed and do not meet the requirements of ADA and TAS will be required to be removed and replaced at the Contractor's Expense.

Please refer to the City's Standard Details provided in the construction plans for meeting current requirements of the Texas Accessibility Standards. Per Texas Accessibility Standards Technical Memorandum TM 08-01 Revised Issued: August 16, 2011, "The ONLY surface texture TDLR is currently aware of that meets the intent of both the Texas Accessibility Standards and the currently enforceable federal Americans with Disabilities Act Accessibility Guidelines are detectable warnings (aka truncated domes) meeting the technical specifications of TAS 4.29.2." Truncated dome surface shall be provided by using prefabricated truncated dome mats in a color approved by the City representative.

In accordance with Administrative Rules 68.102 and TAS 2.2, the detectable warning surface to be a minimum of 24" in depth. The truncated domes must still extend the full width of the curb ramp (or landing as applicable at parallel curb ramps) and comply with TAS 4.29.2." For diagonal curb ramps the detectable warning shall be located so that the truncated dome surface edge nearest the curb line is 6" minimum and 10" maximum from the curb line.

**MEASUREMENT AND PAYMENT:** Payment for this item shall be on a "per-each" basis furnished and installed.

**BID ITEM 41 - REMOVE SM RD SN SUP & AM**

This item shall include the removing, salvaging and relocating as needed any existing signs. Existing sign poles shall be reset in accordance with the standard details provided in the construction plans for new pole assemblies.

**MEASUREMENT AND PAYMENT:** The per each price shall include removing and re-setting existing poles and signs as needed, including all labor, materials and equipment necessary to complete the work in an acceptable manner.

**BID ITEMS 104 – Storm Water Pollution Prevention Plan**

It will be the responsibility of the CONTRACTOR to develop a SWPPP. The CONTRACTOR shall submit the plan to the OWNER in accordance with 105.3 of the COG Specifications. Once the SWPPP is deemed acceptable, the CONTRACTOR shall obtain a National Pollutant Discharge Elimination System (NPDES) permit. The SWPPP is to be kept on the construction site and implemented throughout the construction duration.

This item shall govern the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the Texas Commission on Environmental Quality's (TCEQ) Texas Pollution Discharge Elimination System (TPDES) General Permit Number TXR150000. Implementation of the SWPPP, installation of erosion control devices, maintenance of such devices, removal of the devices after completion of the project and vegetation has been re-established in all disturbed areas, and all required documentation, and any required application fees as outlined in the TPDES General Permit TXR150000 shall be included in the price of this item. The Contractor shall submit to the City a copy of TPDES documents, as appropriate, prior to commencing construction. See NCTCOG Item 201 for erosion control devices.

**MEASUREMENT AND PAYMENT:** Payment for this item shall be at the contract unit price of lump sum for the preparation of the SWPPP and its implementation, including any site postings from the beginning of construction through final acceptance and establishment of grass coverage. Payment will be made on a monthly basis by dividing the lump sum contract price by the total contract time (months) for the project.

### **BID ITEM 103 - PROJECT SIGNS**

The CONTRACTOR shall install two (2) Project Signs on Rufe Snow Dr. and Glenview Dr. The exact locations shall be approved by the OWNER prior to installation.

These signs shall be in accordance with Figure 2M (R 02-26-2007) of the City of North Richland Hills' Public Works Design Manual. These signs shall be installed within 15 calendar days from the date the OWNER awards the contract and shall remain in place during the entire construction period. These Signs shall be removed within 15 calendar days after the OWNER's acceptance of the project improvements. The CONTRACTOR shall maintain the signs for the duration of the construction. The Project Signs shall be measured and paid for at the bid price "per each".

Sign Data:

Project Name: **Rufe Snow / Glenview Intersection Improvements**

Project - \$: *To Be Determined After Contract Award*

Projected Completion: *To Be Determined After Contract Award*

MEASUREMENT AND PAYMENT: Payment for this item shall be at the contract unit price per each project sign furnished.

### **BID ITEM 105- PAVING CONTINGENCY AS DIRECTED BY OWNER**

Paving Contingency Allowance is provided to cover the cost of minor adjustments to the work as directed by the Owner. A maximum allowance of \$10,000.00 is provided for this item. Owner reserves the right to delete any or all of this item from the Contract if it is not needed.

MEASUREMENT AND PAYMENT: Payment for this item shall be based upon the agreed upon adjustments to the contract upon completion of an executed change order and shall be paid for under the contract bid item number of those items that are adjusted.

### **BID ITEM 106 – UTILITY CONTINGENCY AS DIRECTED BY OWNER**

Utility Contingency is provided to cover the cost of minor adjustments to the work as directed by the Owner. A maximum allowance of \$10,000.00 is provided for this item. Owner reserves the right to delete any or all of this item from the Contract if it is not needed.

MEASUREMENT AND PAYMENT: Payment for this item shall be based upon the agreed upon adjustments to the contract upon completion of an executed change order and shall be paid for under the contract bid item number of those items that are adjusted.

### **BID ITEM 107 – LANDSCAPING CONTINGENCY AS DIRECTED BY OWNER**

Landscape Contingency is provided to cover the cost of minor adjustments or repair of landscaping and irrigation features that may be damaged during construction, as directed by the Owner. A maximum allowance of \$10,000.00 is provided for this item. Owner reserves the right to delete any or all of this item from the Contract if it is not needed.

The CONTRACTOR is responsible for capping irrigation systems at the ROW line before construction and then restoring them to full function as covered under Bid Item 1 (Preparing ROW). Any irrigation adjustments or repairs shall conform to Technical Specification 02951 Irrigation Systems. Any landscape adjustments or repairs shall conform to Technical Specification 02800 Landscape Work.

**MEASUREMENT AND PAYMENT:** Payment for the repair of landscaping or irrigation systems shall be based on the invoices for the landscaping or from the licensed irrigator. Payment will only be made for repairs that have been identified to the contractor prior to repair.