VANTAGE VIEW-E. BROADVIEW TO HILLCREST (ALLEY)
Solicitation Number: CO-00188
Job No.: 17-5591

ADDENDUM 2
July 24, 2018

To Bidder of Record:

This addendum, applicable to work referenced above, is an amendment to the bid proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the bid proposal.

CLARIFICATIONS

1. The Project name is formally being updated in this Addendum 2. The Power Point presentation and sign-in sheet for the non-mandatory pre-bid meeting held on July 19, 2018 at 2:00 PM have been updated and uploaded to the SAWS solicitation web page. The SAWS solicitation website has been updated to reflect the Project name correction. Please ensure to update your submittals accordingly to replace any mention of Broadway to Broadview.

END CLARIFICATIONS

RESPONSES TO QUESTIONS

1. **Question:** In the Statement of Bidder's Experience, pages SBE 1 to SBE 3, reference is asking for 3 projects that combines both scopes of work into one project. Most CIPP projects and water line replacement projects are designed and bid separately. So, to have 3 projects that would encompass both scopes of this project including the minimum linear footages that are required will be hard. Secondly, most CIPP lining companies usually subcontract out any open cut work and vice versa. Most open-cut contractors will sub out the CIPP lining. Can these be separated so that the bidding contractor can provide 3 projects for each scope, totaling 6 projects?

   ***Response**: The Statement of Bidder's Experience has been updated to have the contractor submit experience for two different projects utilizing CIPP for sewer main and open cut for water main installation. Please note A1 and A2 and utilize the same project if it meets the requirements; however, the third project requires to be a separate project. Revised form is attached to this addendum.*

2. **Question:** Can SAWS provide an additional "epoxy coating" for the Manhole Rehabilitation other than the Carboline that is specified with the spec change? As it is set right now, by removing the Raven 405; there is only one option for the manhole coating and this will drive up the price on the work by not giving multiple options to choose from.

   ***Response**: Carboline plastic 4500 and Carboline Reactamine ET are the only epoxy coating options that have been tested and approved for SAWS.*

3. **Question:** When will job start/be awarded?

   ***Response**: SAWS is currently estimating that the project will be awarded at the September Board meeting being held September 11, 2018. The job is estimated to start approximately two (2) weeks after Board award.*

4. **Question:** Engineers Estimate on SAWS sewer?

   Response*: The SAWS sewer estimate for this project is $440,805.00.*

5. **Question:** Engineers Estimate on SAWS water?

   Response*: The SAWS water estimate for this project is $459,610.00.*

6. **Question:** Can we get an excel Version of the bid tab?

   Response*: An excel version of the bid tab will not be made available for this project. The standard pdf version will be provided and posted for download.*

7. **Question:** Any contaminated soil/liquids in project area?

   Response*: There is not any contaminated soils/liquids anticipated for this project area.*

8. **Question:** Who is responsible for paying for Material Testing?

   Response*: Contractor is responsible for any cost associated with material testing and shall be in accordance with General Conditions Article V. Section 5.3. Contract Responsibilities within the Contract Documents.*

9. **Question:** Is a project schedule available?

   Response*: The project schedule is required to be submitted by bidder in accordance to General Conditions Article V Section 5.13 and Supplemental Conditions Section 5.13.5 within the Contract Documents.*

10. **Question:** Is a geotechnical report available?

    Response*: A geotechnical report is not available for this project.*

11. **Question:** Please provide the PG in reference to the asphalt binder and asphalt aggregate.

    Response*: The asphalt binder shall be in accordance to City of San Antonio Specification Item 205.2.D. Asphalt Binder, which require PG 70-22 for Local Type B Streets.*

12. **Question:** Can a TCP/detour route be provided?

    Response*: The contractor shall be responsible for preparing a Sequence for Work Plan Submittal to include proposed construction phasing plan, and a detailed traffic control and detour plan prepared by registered Texas Professional Engineer, and shall be submitted to the Engineer for review and approval. Preparation of the Sequence of Work Plan shall not be paid for separately.*

13. **Question:** Will the flowable fill be required to be quick set/high strength?

    Response*: The intent of the water design is to utilize the low strength flowable fill. However, contractor can install quick set/high strength to expedite construction but the cost difference will be at the contractor's expense.*

14. **Question:** Can a detail for the driveway be provided?

    Response*: The driveway detail can be accessed through the City of San Antonio website and shall be in accordance to City of San Antonio Standard Specification Item 503 Asphaltic Concrete, Portland Cement Concrete, and Gravel Driveways.*

15. **Question:** Can a specification for the 4" HDPE temporary waterline be provided?

    ***Response**: Yes, the Contract Documents have been updated to include Item No. 3100, Specification for 4", 6", and 16" Temporary Waterline, including fittings, Tie-Ins, Service Reconnections, and All Appurtenances to Provide A Temporary Water Main Construction.*

16. **Question:** Will the temporary waterline be required to be tested? Who will pay for testing?

    ***Response**: Yes, refer to updated Contract Documents that include Item No. 3100, Specification for 4", 6", and 16" Temporary Waterline, including fittings, Tie-Ins, Service Reconnections, and All Appurtenances to Provide A Temporary Water Main Construction. Testing is considered subsidiary to Item No. 3100.*

17. **Question:** What specific species of tree is to be provided to the owner of 4235 Vantage View Dr per note 6 sheet 5 of the water plans?

    ***Response**: City of San Antonio has directed to replace the existing tree with 2-inch Monterey Oak or Mexican Sycamore.*

18. **Question:** Who will pay for COSA ROW permits?

    ***Response**: The contractor shall obtain and pay for all construction permits, including review fees, inspections, and licenses in accordance to General Conditions Article V Section.5.3.7 Permits in Contract Documents.*

19. **Question:** Will all material need to be domestic? (DI main materials, fittings, steel, etc.)

    ***Response**: Does not appear that material (i.e. DI, steel, fittings, etc.) requires to be domestic.*

20. **Question:** Per note 8 on sheet 2 of the sewer plans, is it anticipated/required for all excavation to be non-mechanized in for the sewer scope?

    ***Response**: No, the intent of the design is to utilize non-mechanized excavation procedures only when excavating within twenty-four inches (24") of CPS facility (specifically 2-inch gas line). Additionally, it is the contractor's responsibility to locate all existing utilities prior to construction to confirm horizontal and vertical locations to determine the appropriate excavation method.*

21. **Question:** Can a pay item be provided for the chain link fencing on sheet 9 of the sewer plans?

    ***Response**: The intent of the design plans is to notify the contractor of an existing chain link fence within this location; however, there is sufficient separation distance and will not require removing or replacing the existing fence. Therefore, a pay item is not required for the chain link fencing on sheet 9 of the sewer plans.*

END RESPONSES TO QUESTIONS

CHANGES TO THE SPECIFICATIONS

1. **Contract Documents Cover Page.** The project name is hereby replaced with the following:

   VANTAGE VIEW – E. BROADVIEW TO HILLCREST (ALLEY)

2. **Invitation to Bidders**. The first paragraph of the Invitation to Bidders is hereby replaced with the following:

   Sealed bids are requested by the San Antonio Water System for the construction of approximately 2,315 LF of 6-inch and 8-inch CI Water Main from E. Broadview Drive to Hillcrest Drive (located within alley), and approximately 2,340 LF of 8-inch CT Sewer Main from E. Broadview Drive to Hillcrest Drive (located within

an alley for the **Vantage View - E. Broadview to Hillcrest (Alley)** Water & Sanitary Sewer Main Replacement Project, SAWS Job No. 17-5109-SAWS and Sewer Job No. 17-5591.

3. **Invitation to Bidders**. The last paragraph of the Invitation to Bidders is hereby replaced with the following:

   Sealed bids will be received by Counter Services in the Customer Service office across from the Guard Station, 2800 U.S. Hwy 281 North, Customer Center Building, San Antonio, Texas 78212, until **10:00 AM (CT), July 31, 2018**. Bids will then be publicly opened and read aloud by Contract Administration in **CR-C110**, Customer Center Building, 2800 U.S. Hwy 281 North, San Antonio, Texas. Each bid must be accompanied by a cashier's check, certified check, or bid bond in an amount not less than five percent of the total bid price.

4. **STATEMENT OF BIDDER'S EXPERIENCE**. The header to the Statement of Bidder's Experience is hereby replaced with the following:

   STATEMENT OF BIDDER'S EXPERIENCE
   Vantage View – E. Broadview to Hillcrest (Alley)
   SAWS Water Job No. 17-5109, SAWS Sewer Job No. 17-5591
   SAWS Solicitation No. CO-00188

5. **STATEMENT OF BIDDER'S EXPERIENCE.** Incorporated additional project descriptions for sewer main installation (CIPP) and water main installation (Open Cut) as separate construction projects. Revised form is attached to this addendum.

6. **Good Faith Effort Plan for Construction SUBCONTRACTS for:**. The name of project for the Good Faith Effort Plan for Construction Subcontracts is hereby replaced with the following:

   VANTAGE VIEW – E. BROADVIEW TO HILLCREST (ALLEY)

7. **SPECIAL SPECIFICATION**. Included Special Specifications for the following items: Item 801 (Tree and Landscape Protection), Item 804 (Tree & Shrub Planting and Maintenance), Item 910 (Manhole Rehabilitation), Item 3100-1 (Temporary Waterline).

END CHANGES TO THE SPECIFICATIONS

CHANGES TO THE PLANS

1. Sewer General Notes Sheet 2 of 13 - Added COSA Item No.'s 535.1, 535.4, 535.16, 535.17 and 537.8 and quantities.
2. Sewer Plan Sheet 9 of 13 – Added Pavement Markings on E Broadview Dr, and COSA Item No.'s 535.1, 535.4, 535.16, 535.17 and 537.8 and quantities.
3. The Sewer Project Estimate has decreased from $456,413.00 to $440,805.00 to reflect additional Pavement Marking Items and current SAWS Bid Tabulation Unit Prices.

END CHANGES TO THE PLANS

END OF ADDENDUM 2

This Addendum, including these five (5) pages, is twenty-five (25) pages with attachments in its entirety.
Attachments:
Statement of Bidder's Experience
Special Specifications – Item 801 (Tree and Landscape Protection), Item 804 (Tree & Shrub Planting and Maintenance), Item 910 (Manhole Rehabilitation), Item 3100-1 (Temporary Waterline)
Sewer General Notes Sheet 2 of 13
Sewer Plan Sheet 9 of 13

Marcus G. Cantu, P.E.
RPS Infrastructure, Inc.

07/24/2018

STATEMENT OF BIDDER'S EXPERIENCE
Vantage View - E. Broadway to Hillcrest (Alley)
SAWS Water Job No. 17-5109, SAWS Sewer Job No. 17-5591
SAWS Solicitation No. CO-00188

A. Please complete **all** the fields below. Projects A-1, A-2, can utilize the same project experience. Project A-3 shall be a separate project.

Bidder must answer all questions completely and all information must be clear, accurate and comprehensive.

If all fields are not completed, the Bid is at risk for being rejected due to non-responsiveness. It is not acceptable to indicate "See attached".

Project A-1 is to have been completed by the Bidder.

- □ Project A-1 demonstrates construction of a minimum of 2,500 LF by CIPP construction for sanitary sewer mains 8-inches or larger, and 2,500 LF of water mains 8-inches or larger by open cut.
- □ Project A-1 shall have been completed between 2008 and 2018.

Project A-1 Description (2,500 LF by CIPP)
Name of Project:_____
Location:_____
Scope of Work:_____
Pipe Sizes:_____
Pipe Lengths:_____
Owner Name:_____
Owner Title:_____
Owner Phone Number:_____
Bid Amount:_____
Final Contract Amount:_____
Project Start Date:_____
Project End Date:_____
Additional Information:_____

Project A-1 Description (2,500 LF Open Cut)
Name of Project:_____
Location:_____
Scope of Work:_____
Pipe Sizes:_____
Pipe Lengths:_____
Owner Name:_____
Owner Title:_____
Owner Phone Number:_____
Bid Amount:_____
Final Contract Amount:_____
Project Start Date:_____
Project End Date:_____
Additional Information:_____

Project A-2 is to have been completed by the Bidder.

- □ Project A-2 demonstrates construction of a minimum of 2,500 LF by CIPP construction for sanitary sewer mains 8-inches or larger, and 2,500 LF of water mains 8-inches or larger by open cut.
- □ Project A-2 is within an alley.
- □ Project A-2 shall have been completed between 2008 and 2018.

Project A-2 Description (2,500 LF by CIPP)

Name of Project: _____
Location: _____
Scope of Work: _____
Pipe Sizes: _____
Owner Name: _____
Owner Title: _____
Owner Phone Number: _____
Bid Amount: _____
Final Contract Amount: _____
Project Start Date: _____
Project End Date: _____
Additional Information: _____

Project A-2 Description (2,500 LF Open Cut)

Name of Project: _____
Location: _____
Scope of Work: _____
Pipe Sizes: _____
Owner Name: _____
Owner Title: _____
Owner Phone Number: _____
Bid Amount: _____
Final Contract Amount: _____
Project Start Date: _____
Project End Date: _____
Additional Information: _____

Project A-3 is to have been completed by the Bidder.

- □ Project A-3 demonstrates construction of a minimum of 2,500 LF by CIPP construction for sanitary sewer mains 8-inches or larger, and 2,500 LF of water mains 8-inches or larger by open cut.
- □ Project A-3 shall have been completed between 2008 and 2018.

Project A-3 Description (2,500 LF by CIPP)

Name of Project: _____
Location: _____
Scope of Work: _____
Pipe Sizes: _____
Pipe Lengths: _____
Owner Name: _____
Owner Title: _____
Owner Phone Number: _____
Bid Amount: _____
Final Contract Amount: _____
Project Start Date: _____
Project End Date: _____
Additional Information: _____

Project A-3 Description (2,500 LF Open Cut)

Name of Project: _____
Location: _____
Scope of Work: _____
Pipe Sizes: _____
Pipe Lengths: _____
Owner Name: _____
Owner Title: _____
Owner Phone Number: _____
Bid Amount: _____
Final Contract Amount: _____
Project Start Date: _____
Project End Date: _____
Additional Information: _____

SPECIAL SPECIFICATIONS

ITEM 801
TREE AND LANDSCAPE PROTECTION

801.1 DESCRIPTION

This item shall govern the placing of protection for trees and other landscape plant material or natural areas to be protected during construction. No site preparation work shall begin in areas where tree preservation and treatment measures have not been completed and approved. *Where removal of trees is indicated on the drawings, they shall be marked as directed by the engineer or designated representatives*. This item shall also govern the excavation, filling, *trenching and boring* around trees described on the plans, and for furnishing all materials, water, labor, tools, equipment and supplies required as specified by this item or as indicated on the plans.

Reference Standards: City of San Antonio Tree Preservation ordinance # 85262

801.2 MATERIALS

LEVEL I FENCE PROTECTION (Detail 1.1.2):

Fabric: Fabric (4 foot height or 1.2 m) shall consist of orange plastic fencing as shown on the plans and shall be woven with 2-inch (50 mm) mesh openings such that in a vertical dimension of 23 inches (584 mm) along the diagonals of the openings there shall be at least seven meshes.

1. Installation Posts: Installation posts shall be a minimum of *72* inches (1.5 m) long and steel "T" shaped with a minimum weight of 1.3 pounds per linear foot (6.3 kg per meter).
2. Tie Wire: Wire for attaching the fabric to the t-posts shall be not less than No. 12 gauge galvanized wire. Sufficient fastening material shall be furnished to provide for the securing of the fabric to the "T" line posts.
3. Used Materials: Previously-used materials, meeting the above requirements and when approved by the Engineer, may be used.

LEVEL IIA FENCE PROTECTION (Detail 1.1.3):

Materials same as Level I -OR-

LEVEL IIB FENCE PROTECTION (Detail 1.1.4):

1. Sleeve: 2x4 lumber to a height of 4 feet above the root crown.
2. 2x4 shall be utilized as called for on plan.
3. Tie Wire: Wire for securing the 2x4s shall not be less than No. 12 gauge.

OTHER MATERIALS:

1. Tree Dressing - Asphaltic Tree Wound Paint

801.3 CONSTRUCTION METHODS:

LEVEL I FENCE PROTECTION:

All trees and shrubs in the proximity of the construction site shall be protected prior to beginning any development activity.

Protective fencing shall be erected outside the dripline at locations shown in the plans or as directed by the Inspector and/or City Arborist or in accordance with the details shown on the plans at the drip line of trees (Root Protection Zone, RPZ) and/or landscape plant material including natural areas. Fencing shall be maintained and repaired by the contractor during site construction.

Protective fence locations in close proximity to street intersections or drives shall adhere to the City of San Antonio's site distance criteria.

The protective fencing shall be erected before site work commences and shall remain in place during the entire construction phase. Access to fenced areas will be permitted only with the approval of the engineer.

The installation posts will be placed every 6 feet (2 m) around the drip line or RPZ and embedded to 18 inches (457 mm) deep. Fabric attachment shall be attached to the installation posts by the use of sufficient wire ties to securely fasten the fabric to the "T" posts as to hold the fabric in a stable and upright position.

1. Do not clear, fill or grade in the RPZ of any tree.

2. Do not store, stockpile or dump any job material, soil or rubbish under the spread of the tree branches.

3. Do not park or store any equipment or supplies under the spread of the tree branches.

4. Do not set up any construction operations under the spread of the tree branches. (E.g. pipe cutting and threading, mortar mixing, painting or lumber cutting)

5. Do not nail or attach temporary signs, meters, switches, wires, bracing or any other item to the trees.

6. Do not permit runoff from waste materials including solvents, concrete washouts, asphalt tack coats (MC-30 oil), etc. to enter the RPZ. Barriers are to be provided to prevent such runoff substances from entering the RPZ whenever possible, including in an area where rain or surface water could carry such materials to the root system of the tree.

The contractor shall avoid cutting roots larger than one inch in diameter when excavation occurs near existing trees. Excavation in the vicinity of trees shall proceed with caution. The contractor shall contact the city inspector.

Remove all trees, shrubs or bushes to be cleared from protected root zone areas as directed by engineer by hand.

Trees damaged or lost due to contractor's negligence during construction shall be mitigated at the contractor's expense and to the engineer's satisfaction.

Any tree removal shall be approved by the city arborist prior to its removal.

Cover exposed roots at the end of each day with soil, mulch or wet burlap.

In critical root zone areas that cannot be protected during construction and where heavy traffic is anticipated, cover those areas with (8) inches of organic mulch to minimize soil compaction. This (8) inch depth of mulch shall be maintained throughout construction.

Water all trees, most heavily impacted by construction activities, deeply once a week during periods of hot dry weather. Spray tree crowns with water periodically to reduce dust accumulation on the leaves.

When installing concrete adjacent to the root zone of a tree, use a plastic vapor barrier behind the concrete to prohibit leaching of lime into the soil. See related specifications.

When an excavation or embankment is placed within the dripline of any tree greater than (8) inches in diameter, a Tree well shall be constructed to protect the tree as indicated, when the cut or fill exceeds (8) inches. See related specifications.

Where paving or filling is necessary within the dripline of any tree (8) inches or greater, a permeable pavement and aeration system must be installed as indicated. See related specifications.

LEVEL II A FENCE PROTECTION:

Protective fencing shall be erected within the RPZ at locations shown in the plans or as directed by the Inspector and/or City Arborist or in accordance with the details shown on the plans at the drip line of trees (Root Protection Zone, RPZ) and/or landscape plant material including natural areas. Fencing shall be maintained and repaired by the contractor during site construction.

Fabric: Fabric (4 foot height or 1.2 m) shall consist of orange plastic fencing as shown on the plans and shall be woven with 2-inch (50 mm) mesh openings such that in a vertical dimension of 23 inches (584 mm) along the diagonals of the openings there shall be at least seven meshes.

1. Installation Posts: Installation posts shall be a minimum of *72* inches (1.5 m) long and steel "T" shaped with a minimum weight of 1.3 pounds per linear foot (6.3 kg per meter).

2. Tie Wire: Wire for attaching the fabric to the t-posts shall be not less than No. 12 gauge galvanized wire. Sufficient fastening material shall be furnished to provide for the securing of the fabric to the "T" line posts.
3. Used Materials: Previously-used materials, meeting the above requirements and when approved by the Engineer, may be used.

LEVEL II B FENCE PROTECTION:

Trunk protection shall be erected at locations shown in the plans or as directed by the Inspector and/or City Arborist shall be maintained and repaired by the contractor during site construction.

1. Installation Sleeve: 2x4 lumber to a height of 4 feet above the root crown.
2. Tie Wire for securing the 2x4s shall not be less than No. 12 gauge

801.4 MEASUREMENT

Protective fencing will be measured by the linear foot of accepted work, complete in place for the duration of construction activity.

801.5 PAYMENT

Tree and Landscape Protective Fencing will be paid for at the unit price bid per linear foot (meter), which price shall be full compensation for furnishing and placing all materials, manipulation, labor, tools, equipment and incidentals necessary to complete the work.

BID ITEMS

Item 801.1: Level I Protective Fencing - per linear foot (meter)

Item 801.2: Level IIA Protective Fencing - per linear foot (meter)

Item 801.3: Level IIB Protective Fencing - per linear foot (meter)

ITEM

804 New Tree & Shrub Planting and Maintenance

804.1 DESCRIPTION: *This item shall govern the procedure for selecting planting and maintaining trees and other vegetation to be used as enhancements or for mitigation on a construction project*

804.2 SELECTION OF TREES:

A. Size-grading of trees is in accordance with the Texas Association of Nurseryman Grades and Standards. Following is a summary (caliper is measured by a "slot" type caliper, "pincer" type caliper or a diameter tape):
B. For Shade trees caliper takes precedence. Caliper is measured at 6 inches above soil level in the pot ground for trees up to and including 4 inch caliper size, and 12 inches above the ground for larger trees
C. For flowering trees, height takes precedence for trees up to 6 feet in height and then caliper
D. Trees will be a minimum of 2 inch caliper and/or 6 feet in height unless specified.
E. Trees will be straight, single trunked unless specified or approved.
F. Trees will be containerized/boxed /balled and burlaped/b&b
G. No species substitution unless authorized
H. Trees will be free of insect and diseases with a well-developed rootball no girdling roots
I. For palm trees, measurement will be by overall height or trunk height and will specify to species or to type; palmate or pinnate
    - If a tree transplant or ball and burlap is approved or specified, it must have been grown out in a nursery for at least 2 growing seasons and ball size must comply with ANSI

804.3 PLANTING:

A. Excavate pits, beds and trenches with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage
B. Depth of the excavated area is to be the same as the length of the root ball so that the top of the root flare is at the ground surface level. Minimum depths shall be measured from finished grade
C. Width of excavation must be a minimum of 3 times the diameter of the root ball.
D. Loosen hard subsoil in bottom of excavation
E. Fill excavation for tree/plant with water and allow it to percolate out before planting.
F. Use excavated parent soil material in the backfill mixture at a ratio of 70:30 with the soil amendment as specified in item 802. Particle size of backfill material must be less than 4 inch diameter

G. Saturate with water when the pit or bed is half full of backfill and again when full.
H. Cover excavation area with mulch as specified in item 802
I. Water to prevent soil from dying out
J. Plants will be rejected if the ball of earth surrounding roots has been disturbed or damaged prior to or during installation. Replacement tree/plant to be of equal or better quality
K. Control growth of weeds. Apply a glyphosate type (Round-up 41%) herbicide in the excavated area in accordance with manufacture's label instructions

804.4 QUALITY ASSURANCE:

A. All tree installation work shall be performed by a single firm specializing in tree transplanting work, with a minimum of 3 years experience in the acceptable performance of similar work to that specified. The firm performing the work shall have the following minimum certifications.
B. Texas Nurseryman & Landscape Association (TNLA) certification
C. Be licensed for application and use of pesticides
D. Meet state requirements for insurance
E. Must be bonded

804.5 TREE MAINTENANCE POST TRANSPLATATION:

WATERING THE TREE:

A. The key to newly planted tree survival is providing adequate water
B. Contractor shall water the newly planted trees weekly until the end of the one-year warranty. Contractor shall provide a schedule and method of watering the trees to the City for the project
C. Initially, a newly planted tree needs to be properly watered with an adequate amount to pack the soil, to remove root-drying air and to moisten the root ball.
D. On adequately draining soils, 5 gallons of initial water should be enough.
E. Fast draining soils may need more frequent watering than a slow draining soil.
F. Critical period to provide adequate water during the annual growing season, between late spring and autumn
G. Use of Gatorbags is acceptable method of irrigation. Follow prescribed irrigation schedule for proper establishment

804.6 MULCHING THE TREE:

A. Mulching a newly planted tree ensures that moisture is available to roots over time and reduces grass competition
B. Good mulch (organic materials like leaves, bark, needles and fine wood chips) should ring the tree base (over the critical root zone) but never touch the trunk of the tree. Use local/native hardwood mulch. No fertilizer is necessary when quality composted mulch is used
C. Maintain the mulch level with no more than 4 inches of material over the roots; mulch should not touch the trunk of the tree. A 3' to 6'minimum radius of mulch should be placed around the tree (the wider the better)

804.7 STAKING THE TREE:

A. Not all newly planted trees need staking to remain standing straight. Stake only if the root ball is unstable or the tree trunk is bending. Use only loosely-tied wide straps (recommend use of 'Chain-Lock' staking system) and limit the number of straps to a minimum for support
B. Use tree stakes only when needed. Every tree does not require automatic staking.
C. Inspect all stakes and straps during spring and autumn for loose fit and alter to prevent trunk damage. All straps should be removed after the first or second year

804.8 INSPECTING TREE HEALTH:

A. Checking a tree's health should be done by a certified arborist, a Landscape Architect or registered Landscape Professional an expert. Things that can be done to alert of tree health problems
B. When inspecting a tree consider the following:
C. Is the current year's growth much less than past years' growth? Although fast growth does not necessarily mean good health, a dramatic reduction in growth rate may be an indication of poor health
D. Are there dead limbs, odd colors on leaves and bark or a patchy canopy. These tree symptoms can be the first indicators that a tree is unhealthy and should be inspected in detail
E. Remember that planting a healthy tree in the beginning is the best way to assure its future health

804.9 PRUNING THE TREE:

A. Prune only critical branches that are either dead or broken after planting. Remove multiple leaders to leave only one central stem. (may be best to postpone pruning to avoid transplanting shock due to loss of leaves)
B. Prune only critical branches and/or eliminate extra leaders in the tree's first year. Prune lightly in Year 2 or 3

804.10 REPLACEMENT:

A. Any dead trees or shrubs during the warranty period shall be replaced by the contractor at no cost to the city
B. At the end of the one-year warranty, any tree or shrub that is not in good condition as determined by the city arborist and project manager shall be replaced by the contractor at no cost to the city

804.11 MEASUREMENT:

Tree installations will be measured by the number and size of trees/plants (cost should include installation, warranty, mulch, irrigation/gatorbags, monitoring/treatments as needed, staking, etc.)

804.12 PAYMENT:

Payment shall be made per each of the type and size of tree specified on the bid proposal

804.13 BID ITEM:

Item 804 – New Tree & Shrub Planting and Maintenance

ITEM 910
MANHOLE REHABILITATION SPECIFICATION

910.1 DESCRIPTION

This item shall govern rehabilitation of manholes complete and in place and the materials used therein, including cleaning, interior surface restoration, priming the prepared surface and coating (including bench and invert of the manhole). It shall also include all required by-pass pumping necessary to complete the work.

910.2 CERTIFICATION

Manufacturer shall certify that Applicator has been trained and approved in the handling, mixing and application of the products to be used. Equipment to be used for applying the products by the Applicator shall be certified and approved by the Manufacturer. At least five (5) recent references of Applicator indicating successful application of proposed liner on project of similar size and scope shall be submitted by Contractor. *Only manhole rehabilitation products approved by the SAWS Standards Committee shall be used. All contractors doing this work must have a minimum of 15,000 vertical feet installed within the State of Texas.*

The Contractor shall submit descriptive information including technical data sheets and ASTM test results on each product proposed indicating that the product conforms to and it is suitable for its intended use per these specifications. *All required submittals must be satisfactory to SAWS.*

910.3 SURFACE PREPARATION

Proper surface preparation procedures must be followed to ensure adequate bond strength to any surface to be coated. Applicator shall inspect all surfaces specified to receive a liner prior to surface preparation. Applicator shall notify Owner of any noticeable disparity in the surfaces which may interfere with the proper preparation or application of the repair mortar and/or liner(s). Concrete that is not sound or has been damaged by chemical exposure shall be removed to a sound, concrete surface. All contaminants including: all oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed. Surface preparation methods(s) should be based upon the conditions of the substrate and the requirements of the liner to be applied.

Surface to receive liner shall be cleaned and abraded to produce a sound concrete surface with adequate profile and porosity to provide a strong bond between the protective coating and substrate. High pressure cleaning with a minimum of 4,000 psi, and 4 gallons per minute using a rotating pencil nozzle, shall be used to clean and free all foreign material within the manhole. Detergent water and cleaning or muratic acid shall be used when grease and oil are present. All materials resulting from the cleaning of the manhole shall be removed prior to application of coating.

Active water infiltration shall be stopped by using a cementitious water plug or hydroactive grout such as Strong-Seal Strong-Plug, Quadex Hydra-Plug or approved equal, which is compatible with the specified coating. Prepared surfaces should be tested after cleaning but prior to application of the coating, if a specific pH or moisture content of the concrete is required according to manufacturer's recommendations.

910.4 PRODUCT HANDLING

Protective-coating materials are to be handled according to their material safety data sheets. Materials are to be kept dry, protected from weather and stored under cover.

Repair/under-coat materials must be accepted and approved by the protective coating manufacturer for compatibility with the specified liner and shall be used to fill voids, structurally reinforce and/or rebuild surfaces, etc. as determined necessary by the engineer and liner applicator.

910.5 MATERIALS AND COMPONENTS

(1) Concrete: Concrete shall conform to City of San Antonio (CoSA) Standard Specifications for Public Works Constructed dated October 1995. Item 300-Concrete (concrete class "A").

(2) Mortar shall be composed of one part Portland Cement, one part masonry cement (or ¼ part hydrated lime) and masonry sand equal to 2-1/2 to 3 times the sum of the volumes of the cements and lime used.

(3) Unless otherwise specified, all grouting shall be done with non-shrinking grout. Non- shrinking Grout: Non-shrinking grout shall be furnished factory premixed so only water is added at the job site. Grout shall be mixed in a mechanical mixer. No more water shall be used than is necessary to produce a flowable grout. All proportioning and mixing of the components shall be in accordance with manufacturer's recommendations.

(4) Reinforcement: Reinforcing steel shall conform to the requirements of COSA Item 301- Reinforcing Steel.

(5) Brick: Replacement brick for ring adjustment courses shall be of first quality, sound, kiln fired, new unbroken brick.

(6) For rehabilitation of existing manholes, apply a combination of cementitious coating and epoxy coating, with the cementitious coating first, followed by the epoxy coating. Lafarge SewperCoat PG applied at the required one inch thick application, are the only product approved which do not require a subsequent epoxy coating. Other approved materials are as follows:

Cementitious coating: With required one inch thick application.

- Permaform CR-5000
- Strong - Seal MS-2C

- Standard Cement Material Inc. Reliner
- Quadex Aluminaliner
- ConShield Biotech Armor

Epoxy coating: With specified thickness application.

- Raven 405 Series High Build Epoxy Liner: Required thickness 125 mils
- Carboline Plasite 4500: Required Thickness – 125 mils

910.6 LINER APPLICATION

Application procedures shall conform to the recommendations of the liner manufacturer, including material handling, mixing, environmental controls during application, safety, and equipment. The liner application equipment shall be specifically designed to accurately apply the specified liner materials and shall be regularly maintained and proper working order. The liner material must be applied by a Certified Applicator of the liner manufacturer. The liner shall be applied to minimum thickness or as specified by the Engineer according to the Owner's requirements and manufacturer's recommendations. Temperature of the surface to be coated shall be maintained between 40 deg F and 120 deg F during application. Prior to and during application, care should be taken to avoid exposure of direct sunlight or other intense heat source to the structure being coated. Where varying surface temperatures do exist, care should be taken to apply the liner when the temperature is falling versus rising (later afternoon into evening versus early morning into afternoon).

910.7 MEASUREMENT

Manhole Rehabilitation shall be measured by vertical feet of manhole depth. Sewer Structure Rehabilitation (Noncircular Manholes, and Manholes Greater than 4 ft. in Diameter) shall be measured by the square feet of area to be rehabilitated.

The bench area of the manhole or manhole structure is considered to be subsidiary to the measurement of the rehabilitated manhole or manhole structure, and, shall be rehabilitated as necessary.

910.8 TESTING

Contractor shall perform testing for manhole rehabilitation in accordance with the following:

A. Leakage Testing:

All rehabilitated manholes must pass a leakage test prior to coating. The contractor shall test each manhole (after assembly and backfilling) for leakage, separate and independent of all other sanitary sewer piping, by means of hydrostatic testing, vacuum testing, or other methods approved by the Engineer.

1. Hydrostatic Testing: Hydrostatic testing shall be conducted by utilizing approved plugs to seal all influent and effluent pipes in the manhole and filling the manhole to the top of the cone with water. Additional water may be added over a 24 hour period to compensate for absorption and evaporation losses. At the conclusion of the 24

hour saturation period, the manhole shall be filled to the top of the cone and observed for one hour. A loss greater than 0.025 gallons per foot diameter per foot of manhole depth per hour shall be considered an unsuccessful test. If the test is unsuccessful, the Contractor shall then assess the needed repairs, perform such repairs (subject to the approval of the Engineer), and notify the Inspector when the retest can be performed.

All effort, materials, retesting or other costs shall be solely at the Contractor's expense.

2. Vacuum Testing:
   a. General: Manholes shall be tested after construction/installation and backfilling with all connections (existing and/or proposed) in place. Lift holes and any other voids shall be plugged with an approved non-shrink grout prior to testing. Drop-connections and gas sealing connections shall be installed prior to testing.

   b. Test Procedure: The lines entering the manhole shall be temporarily plugged with the plugs braced to prevent them from being drawn into the manhole. The plugs shall be installed in the lines beyond drop connections, gas sealing connections, etc. Contractor shall use a minimum 60 inch/lb torque wrench to tighten the external clamps that secure the test cover to the top of the manhole. The test head shall be inflated in accordance with the manufacturer's recommendations. A vacuum of 10 inches of mercury shall be drawn, and the vacuum pump will be turned off. With the valve closed, the level vacuum shall be read after the required test time. If the drop in the level is less than 1 inch of mercury (final vacuum greater than 9 inches of mercury), the manhole will have passed the vacuum test. The required test time is 2 minutes.

   c. Acceptance: Manholes will be accepted with relation to vacuum test requirements, if they meet the criteria above. Any manhole which fails the initial test must be repaired with a non-shrink grout or other suitable material that is compatible with the material of which the manhole is constructed. The manhole shall be retested as described above until a successful test is attained. After a successful test, the temporary plugs will be removed. To insure that the plugs have been removed, Contractor shall do so in the presence of the Inspector.

   d. Repairs to Existing Manholes: Any existing manhole which fails to pass the vacuum test shall be closely examined by the Inspector and the Contractor to determine if the manhole can be repaired. Thereafter, the Contractor shall either repair or remove and replace the manhole as directed. The manhole shall then be retested and coated with a SAWS-approved sewer structural coating as stated above. The Owner may elect to simply remove and replace the existing manhole with a new one. Any manhole excavated for repairs or excavated for tie in shall be backfilled with flowable fill up to 1 foot below the top of the cone. The Contractor also has the option of backfilling with approved secondary

materials, subject to the provisions of Item No. 804, "Excavation, Trenching and Backfill."

B. Holiday Testing:

Inspect each manhole that is rehabilitated using high-voltage holiday detection equipment. All detected holidays shall be marked and repaired by abrading the coating surface with grit disk paper or other hand tooling method. After abrading and cleaning, additional protective coating material shall be applied to the repair area. All touch-up repair procedures shall follow the protective coating manufacturer's recommendations.

If a manhole fails to pass one of the above tests, it shall be repaired in accordance with the manufacturer's recommendation and re-tested. It shall not be accepted until it passes all tests. All repairs and re-testing shall be at no additional cost to SAWS.

For manholes located within the Edwards Aquifer Recharge Zone (EARZ), under no circumstances shall flows be released in the system until all testing has been approved by SAWS.

910.9 WARRANTY

Contractor shall warrant all work against defects in materials and workmanship for a period of two (2) years, unless otherwise noted, from the date of final acceptance of the projects. Applicator shall, within a reasonable time after receipt of written notice thereof, repair defects in material or workmanship which may develop during said two (2) year period, and any damage to other work caused by such defects or the repairing of same, at their own expense and without cost to the Owner.

910.10 PAYMENT

This item shall be paid for by square foot at the unit price bid or by the vertical foot of depth for the unit price bid for "Manhole Rehabilitation." Payment shall be full compensation for materials, labor, equipment, tools, testing, and any incidentals necessary to complete the work including the bench, invert, and all interior surfaces of the manhole. Payment will be made under the following:

Pay Item (910.1): Manhole Rehabilitation (Standard Manholes 4 ft diameter) per Vertical Feet.

Pay Item (910.2): Sewer Structure Rehabilitation (Noncircular Manholes, and Manholes Greater than 4 ft. in Diameter) – per Square Feet.

ITEM NO. 3100
SPECIFICATIONS FOR
4", 6" and 16" TEMPORARY WATERLINE, INCLUDING FITTINGS, TIE-INS, SERVICE CONNECTIONS, AND ALL APPURTENANCES TO PROVIDE A TEMPORARY WATER MAIN FOR WATER MAIN CONSTRUCTION

DESCRIPTION: This item shall consist of the installation of 4", 6" and 16" temporary waterline, including fittings, tie-ins, service connections, and all appurtenances to provide a temporary water main in accordance with these specifications.

MATERIALS: Contractor is to use an approved SAWS material for the temporary water main. All types of pipe materials will be part of this bid item.

CONSTRUCTION: The contractor is responsible for maintaining access to impacted homes and securing the temporary water main during construction and be responsible for any damage and /or injuries resulting from the installation of the temporary water main. The temporary water main is intended to be an above ground installation, but may be placed underground. The contractor is to fully restrain the entire length of the temporary water main if placed above ground. If the temporary water main is underground the pipe will be a restrained system and must adhere to Standard details DD-839-04 through DD-839-08 or as shown on plan drawings. Restraints for the temporary water main are inclusive to this bid item. The contractor shall notify residents 48 hours prior to installation of the temporary main. Temporary main must be chlorinated, sampled, and tested prior to activation.

MEASUREMENT: The temporary waterline shall be measured by the linear foot (LF) along the temporary water main.

PAYMENT: 4", 6" and 16" temporary waterline, including fittings, tie-ins, service connections, and all appurtenances to provide a temporary water main for water main construction will be paid at the unit bid price per linear foot, inclusive of all the above stated items installed. Such payment shall also include trench excavation, if required, accomplished either manually or mechanically.

(2) ADDENDUM 2 (07-24-2018) - ADDED COSA ITEM NO.'s 535.1, 535.4, 535.16, 535.17 AND 537.8 AND QUANTITIES.

GENERAL NOTES

1 ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:

A CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) " DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND " PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290

B CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREET, AND DRAINAGE."

C CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION."

D CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION."

E CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM)

2 THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.

3 THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 233-3500, AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS

4 LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.

5 THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

SAN ANTONIO WATER SYSTEM:
SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES

COSA DRAINAGE 207-8048
COSA TRAFFIC SIGNAL OPERATIONS 207-7720
TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811

6 THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.

7 ALL WORK IN TEXAS HIGHWAY DEPARTMENT AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMITS.

8 THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

9 THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.

10 ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.

11 HOLIDAY WORK : CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG

ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.

12 PRE CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION. THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS. (NSPI)

GENERAL NOTES (CONTINUED)

13 POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS, AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.

14 CONSTRUCTION SEQUENCING: IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.

SEWER NOTES

15 THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:

A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT (210)233-2015. PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.

B. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.

C. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.

D. CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.

E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.

F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.

SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA.

NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.

16 THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED OR REHABILITATED, IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864, "BYPASS PUMPING". PAYMENT FOR SUCH WORK WILL BE MADE UNDER THE BID ITEM "SANITARY SEWER (BYPASS PUMPING)" (LUMP SUM) AS PER SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864 "BYPASS PUMPING".

17 PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 233-3500 AND/OR SAWS PRODUCTION GROUPS AT LEAST ONE WEEK OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.

18 ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS. (NSPI).

19 SMART MANHOLE COVERS: THE CONTRACTOR SHALL NOTIFY JUAN C. RAMIREZ AT (210)233-3558 AND SAWS E.O.C. AT (210)233-2015 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE SMART COVER. ANY DAMAGE DONE TO THE SMART COVER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.

20 SANITARY SEWER MAINS AND LATERALS SHALL BE SDR 26 PVC PIPE WITH A PRESSURE RATING OF 115 PSI UNLESS DESCRIBED OTHERWISE.

21 SERVICE LATERAL CONNECTIONS:

A THE EXACT LOCATION AND ELEVATION OF THE SERVICE LATERALS AND CLEAN OUTS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. (NSPI)

B A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER LATERAL AT SUBGRADE.

SEWER NOTES (CONTINUED)

C THE EXACT LOCATION AND ELEVATION OF THE SERVICE LATERALS AND CLEAN OUTS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. (NSPI)

D A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER LATERAL AT SUBGRADE.

22 CONTRACTOR MUST NOTIFY SAWS INSPECTION AT (210) 233-3500 48 HOURS BEFORE ANY OF THE FOLLOWING ACTIVITIES TAKE PLACE:

1. NOTIFICATION OF PRE-TELEVISION INSPECTION.
2. NOTIFICATION OF BYPASS PUMPING SETUP OPERATIONS.
3. NOTIFICATION OF THE CIPP INSTALLATION.

CPS ENERGY NOTES

1 CALL CPS ENERGY LOCATOR AT 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.

2 THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

3 DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

4 OVERHEAD LINES EXIST IN THE WORK AREAS. THESE LINES MAY NOT HAVE BEEN MARKED ON THE DRAWINGS SINCE THEY ARE CLEARLY VISIBLE. THE CONTRACTOR SHALL LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752 HEALTH AND SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN TEN (10) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. CONTRACTORS SHALL MAINTAIN A MINIMUM CLEARANCE OF 3' RADIUS FROM NEUTRAL AND 10' RADIUS FROM PRIMARY BETWEEN PROPOSED TRAFFIC SIGNAL EQUIPMENT. INCLUDING SPAN WIRE, AND EXISTING OVERHEAD ELECTRICAL LINES.

5 THE CONTRACTOR IS LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS CARRIES BOTH CRIMINAL AND CIVIL LIABILITY.

6 CONTRACTOR SHALL PAY CPS ENERGY THE ACTUAL EXPENSE INCURRED BY THE OPERATOR IN PROVIDING THE CLEARANCE PRESCRIBED IN THE AGREEMENT. CPS ENERGY MAY REQUIRE PAYMENT IN ADVANCE AND IS NOT REQUIRED TO PROVIDE THE CLEARANCE UNTIL THE CONTRACTOR MAKES THE PAYMENT.

7 CONTRACTOR SHALL CONTACT AND COORDINATE WITH CPS ENERGY REPRESENTATIVE FOR POLES TO BE BRACED AND LINES TO BE DE-ENERGIZED AND/OR MOVED. CONTRACTOR IS RESPONSIBLE TO CPS ENERGY FOR ANY COSTS ASSOCIATED WITH BRACING OF POWER POLES OR DE-ENERGIZING AND/OR MOVING ANY CONFLICTING OVERHEAD POWER LINES.

8 WHEN EXCAVATING WITHIN TWENTY FOUR INCHES (24") OF THE INDICATED LOCATION OF CPS ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.

9 WHEN CPS ENERGY FACILITIES ARE EXPOSED, CONTRACTOR SHALL PROVIDE SUFFICIENT SUPPORT TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

10 CONTRACTOR SHALL NOT BEGIN WORK OR ACTIVITY UNTIL THE CONTRACTOR HAS NEGOTIATED A SATISFACTORY MUTUAL AGREEMENT WITH CPS ENERGY TO PROVIDE TEMPORARY DE-ENERGIZATION AND GROUNDING, TEMPORARY RELOCATION OR RAISING OF THE LINE, OR TEMPORARY MECHANICAL BARRIERS TO SEPARATE AND PREVENT CONTACT BETWEEN THE LINE AND THE MATERIAL OR EQUIPMENT OR THE PERSON PERFORMING THE WORK, ACTIVITY, OR FUNCTION.

TRAFFIC CONTROL

1 IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". THE CITY'S CONSTRUCTION INSPECTOR AND TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF, IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED.

2 CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES AS PER THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

3 ALL UTILITIES THAT MAY AFFECT TRAFFIC SHALL BE ADJUSTED PRIOR TO TRAFFIC DISTRIBUTION.

4 THE CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES ADJACENT TO AND IN THE WORK AREAS AT ALL TIMES. CONTRACTOR SHALL MAINTAIN VEHICULAR ACCESS TO ALL DRIVEWAYS AT ALL TIMES. CONTRACTOR SHALL CONSTRUCT TEMPORARY DRIVEWAYS FOR ACCESS AS NECESSARY. (N.S.P.I.)

5 ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL DEVICES, MARKINGS, AND STRIPING REQUIRED FOR THIS PROJECT SHALL BE INCIDENTAL TO THE PROJECT.

6 CONTRACTOR SHALL NOTIFY SAWS AND THE CITY'S PUBLIC WORKS DEPARTMENT, AMBULANCE, POLICE, FIRE AND OTHER EMERGENCY SERVICE AGENCIES AT LEAST 48 HOURS PRIOR TO CLOSURE OF ANY STREET, INTERSECTION OR LANE OF TRAFFIC. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO ALLOW ACCESS TO EMERGENCY VEHICLES AT ALL TIMES.

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QTY
205.3	HOT MIX ASPHALTIC PAVEMENT, TYPE C (3" COMP. DEPTH) (COSA Spec)	SY	1787
206.1	ASPHALT TREATED BASE (ATB) (10" COMPACTED DEPTH) (COSA Spec)	SY	1
208.1	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT(3" DEPTH) (COSA Spec)	SY	1787
500.1	CONCRETE CURBING (< 1,000 L.F.) (COSA Spec)	LF	2
503.1	PORTLAND CEMENT CONCRETE DRIVEWAYS (< 100 S.Y.) (COSA Spec)	SY	8
503.5	GRAVEL DRIVEWAY(< 100 S.Y.) (COSA Spec)	SY	1
505.1	CONCRETE RIPRAP (5" THICK) (< 100 S.Y.) (COSA Spec)	SY	4
509.1	METAL BEAM GUARD RAIL (COSA Spec)	LF	35
530	BARRICADE, SIGNS, AND TRAFFIC HANDLING (COSA Spec)	LS	1
(2) 535.1	4 INCH WIDE YELLOW LINE (<100,000 LF)	LF	570
535.4	8 INCH WIDE WHITE LINE	LF	570
535.16	STRAIGHT WHITE ARROW BICYCLE FACILITY	EA	2
535.17	BICYCLE RIDER SYMBOL	EA	2
537.8	PAVEMENT MARKER (TYPE II A-A)	EA	16
801.2	LEVEL IA PROTECTIVE FENCING (SOSA Spec)	LF	81
851	ADJUSTING EXISTING MANHOLES	EA	8
864-S1	BYPASS PUMPING (SMALL DIAMETER SANITARY SEWERS)	LS	1
866	SEWER MAIN TELEVISION INSPECTION (8" THROUGH 15")	LF	2337
901	8-INCH CIPP SEWER MAIN REHABILITATION (WATER-CURED) ALL DEPTHS	LF	2337
910	MANHOLE REHABILITATION	VF	36
1103.1	POINT REPAIRS FOR 8" DIAMETER, (0'-10') INCLUDING UP TO 20 LF OF PIPING	EA	6
1103.1	POINT REPAIRS FOR 8" DIAMETER, (10'-15') INCLUDING UP TO 20 LF OF PIPING	EA	3
1103.1	POINT REPAIRS FOR 8" DIAMETER, (>15') INCLUDING UP TO 20 LF OF PIPING	EA	1
1103.4	OBSTRUCTION REMOVAL BY REMOTE, 8" DIAMETER, ALL DEPTHS	EA	5
1109	SERVICE RECONNECTION, ALL DEPTHS (W/REMOTE CONTROL CUT DEVICE)	EA	20

Marcus G. Cantu, P.E.

STATE OF TEXAS
MARCUS G. CANTU
120345
LICENSED PROFESSIONAL ENGINEER

7/24/2018

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY MARCUS G. CANTU, PE #120345 ON 07/24/2018. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT. THE RECORD COPY OF THE DRAWING IS ON FILE AT THE OFFICES OF RPS ASSOCIATES 4801 NW LOOP 410, STE. 910 SAN ANTONIO, TEXAS 78229.

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Formerly Klotz Associates, Inc.
Texas PE Firm Reg. #F-929

VANTAGE VIEW
SANITARY SEWER IMPROVEMENTS

GENERAL NOTES

DEVELOPER:

CONT. | BUDGET PROJ.

SUBMITTED 7/24/2018
APPROVED

MAP NO.
SECT. NO.
DR. CC | CK. MGC | JOB NO. 17-5591

SHEET 2 OF 13

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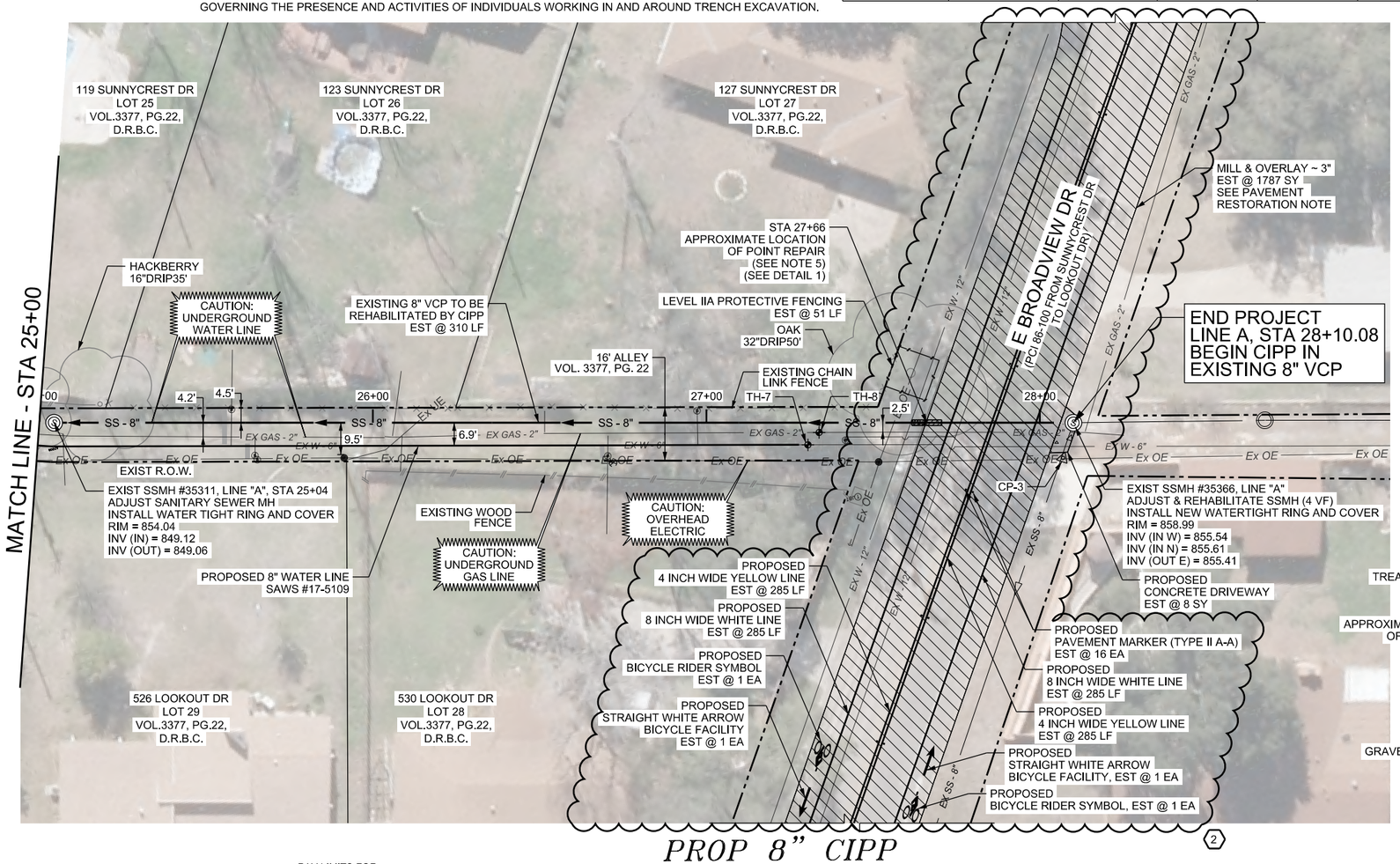
CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES WHETHER PUBLIC OR PRIVATE, PRIOR TO CONSTRUCTION

TRENCH SAFETY PROTECTION:
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATIONS SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

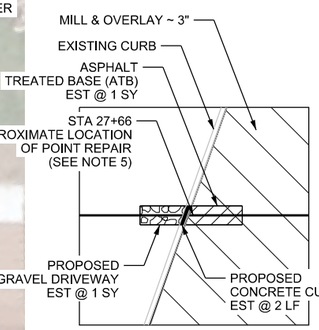
(2) ADDENDUM 2 (07-24-2018) - ADDED PAVEMENT MARKINGS ON E BROADVIEW DR, AND COSA ITEM NO.'s 535.1, 535.4, 535.16, 535.17 AND 537.8 AND QUANTITIES.

CONTROL POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
3	SET 1/2" IR W/GREEN GD CAP #5005	13721124.51	2104880.529	858.864

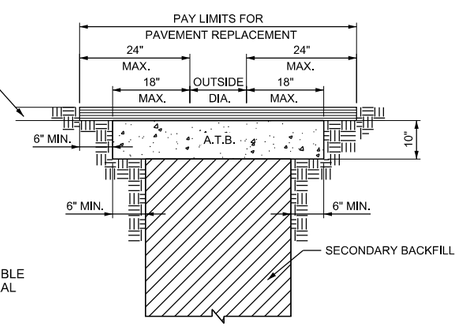
TEST HOLE NO.	UTILITY	STATION	NORTHING	EASTING	ELEVATION
7	6" WATER	LINE "A" 27+30.46	13721102.56	2104953.90	858.23
8	4" GAS	LINE "A" 27+33.83	13721099.75	2104949.75	857.83



PROP 8" CIPP
LINE "A" – 310 L.F.



DETAIL 1
N.T.S.

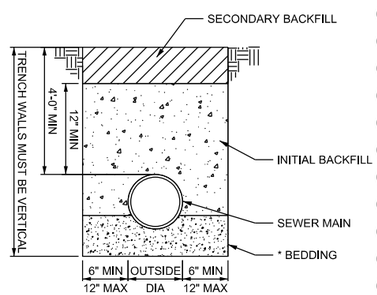


PAVEMENT RESTORATION NOTE:
CONTRACTOR SHALL MILL & OVERLAY ~ 3", CURB TO CURB, BLOCK TO BLOCK (SUNNYCREST DR TO LOOKOUT DR), AS REQUIRED BY THE CITY OF SAN ANTONIO PAVEMENT RESTORATION CRITERIA.

SEWER LATERAL NOTE:
SEWER LATERAL PLACEMENTS WERE BASED ON PRE-TELEVISING INSPECTION AND SAWS BLOCK MAPS. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF THE SEWER LATERAL LOCATIONS AND EXISTING UTILITIES, BEFORE CONSTRUCTION BEGINS.

TEMPORARY FENCING NOTE:
CONTRACTOR TO INSTALL TEMPORARY CHAIN LINK FENCE (6 FT HIGH) PER SAWS INSPECTOR DIRECTIONS. (NSPI) THERE WILL BE NO SEPARATE PAYMENT FOR TEMPORARY CHAIN LINK FENCE WITH ALL RELATED COSTS INCLUDED IN THE ITEM TO WHICH IT PERTAINS.

TYPICAL DETAIL
(WITHIN PAVEMENT LIMITS)
N.T.S.



(*) SEWER GRAVEL 6" MIN OR 1/8 O.D. OF THE PIPE, WHICHEVER IS GREATER AS DIRECTED BY THE INSPECTOR

TYPICAL DETAIL
(WITHIN ALLEY)
N.T.S.

STREET	FROM	TO	PCI
E BROADVIEW DR	SUNNYCREST DR	LOOKOUT DR	86-100

HORIZONTAL SCALE: 1" = 40'

LEGEND

- EXISTING PROPERTY/R.O.W.
- EXISTING OVERHEAD ELECTRIC — Ex OE
- EXISTING UG ELECTRIC — Ex UE
- EXISTING WATER LINE — EX W - 6"
- EXISTING SANITARY SEWER LINE — EX SS - 8"
- EXISTING UG GAS LINE — EX GAS - 2"
- EXISTING UG TELEPHONE LINE — Ex UT
- EXISTING UG WASTEWATER LINE — Ex WW
- EXISTING SANITARY SEWER MH
- EXISTING POWER POLE
- EXISTING TREE
- PROPOSED SANITARY SEWER MH
- PROPOSED SANITARY SEWER LINE — 8"-SS
- PROPOSED WATER LINE
- PAVEMENT RESTORATION LIMITS
- TEST HOLE
- SURVEY CONTROL POINT

NOTES

1. THE EXISTING UNDERGROUND UTILITIES SHOWN ON PLANS ARE BASED UPON RECORD INFORMATION ONLY AND ARE APPROXIMATE. THE EXACT LOCATION OF ALL EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL ALSO CONTACT THE UTILITY SURVEYORS BEFORE BEGINNING WORK. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL AND ANY DAMAGES THAT MIGHT OCCUR BY FAILURE TO ACCURATELY LOCATE ALL EXISTING UNDERGROUND UTILITIES AND PRESERVE EXISTING CONDITIONS.
2. CONTRACTOR SHALL REFER TO TREE PROTECTION DETAILS FOR TREE PROTECTION REQUIREMENTS.
3. CONTRACTOR MUST FIELD VERIFY ALL DEPTHS, DISTANCES, PIPE, SIZES, AND GRADES BEFORE START OF CONSTRUCTION. (N.S.P.I.)
4. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SEWER SERVICE TO EXISTING SEWER MAINS AND SERVICES AT ALL TIMES.
5. CONTRACTOR SHALL SUPPORT EXISTING UTILITIES DURING RECONSTRUCTION OF SANITARY SEWER LINES AND MANHOLES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION. (NSPI)
7. LOCATIONS OF POINT REPAIRS ARE APPROXIMATE AND SHALL BE FIELD LOCATED BY THE CONTRACTOR. ALL POINT REPAIRS SHALL BE APPROVED BY SAWS INSPECTOR AND DESIGN ENGINEER PRIOR TO CONSTRUCTION VIA SEWER MAIN TELEVISING.

ESTIMATED QUANTITIES

(2)

ITEM NO.	DESCRIPTION	UNIT	QTY
205.3	HOT MIX ASPHALTIC PAVEMENT, TYPE C (3" COMP. DEPTH) (COSA Spec)	SY	1787
206.1	ASPHALT TREATED BASE (ATB) (10" COMPACTED DEPTH) (COSA Spec)	SY	1
208.1	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT(3" DEPTH) (COSA Spec)	SY	1787
500.1	CONCRETE CURBING (< 1,000 L.F.) (COSA Spec)	LF	2
503.1	PORTLAND CEMENT CONCRETE DRIVEWAYS (< 100 S.Y.) (COSA Spec)	SY	8
503.5	GRAVEL DRIVEWAY(< 100 S.Y.) (COSA Spec)	SY	1
535.1	4 INCH WIDE YELLOW LINE (<100,000 LF)	LF	570
535.4	8 INCH WIDE WHITE LINE	LF	570
535.16	STRAIGHT WHITE ARROW BICYCLE FACILITY	EA	2
535.17	BICYCLE RIDER SYMBOL	EA	2
537.8	PAVEMENT MARKER (TYPE II A-A)	EA	16
801.2	LEVEL IIA PROTECTIVE FENCING (COSA Spec)	LF	51
851	ADJUSTING EXISTING MANHOLES	EA	2
866	SEWER MAIN TELEVISION INSPECTION (8" THROUGH 15")	LF	310
901	8-INCH CIPP SEWER MAIN REHABILITATION (WATER-CURED) ALL DEPTHS	LF	310
910	MANHOLE REHABILITATION	VF	4
1103.1	POINT REPAIRS FOR 8" DIAMETER, (0'-10') INCLUDING UP TO 20 LF OF PIPING	EA	1

Marcus G. Cantu, P.E.

STATE OF TEXAS
MARCUS G. CANTU
120345
LICENSED PROFESSIONAL ENGINEER
7/24/2018

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY MARCUS G. CANTU, PE #120345 ON 07/24/2018. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT. THE RECORD COPY OF THE DRAWING IS ON FILE AT THE OFFICES OF RPS ASSOCIATES 4801 NW LOOP 410, STE. 910 SAN ANTONIO, TEXAS 78229.

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VANTAGE VIEW
SANITARY SEWER IMPROVEMENTS

SEWER PLAN - LINE "A"
STA 25+00 TO STA 28+10.08

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CONT. | BUDGET PROJ.
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SHEET 9 OF 13

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