

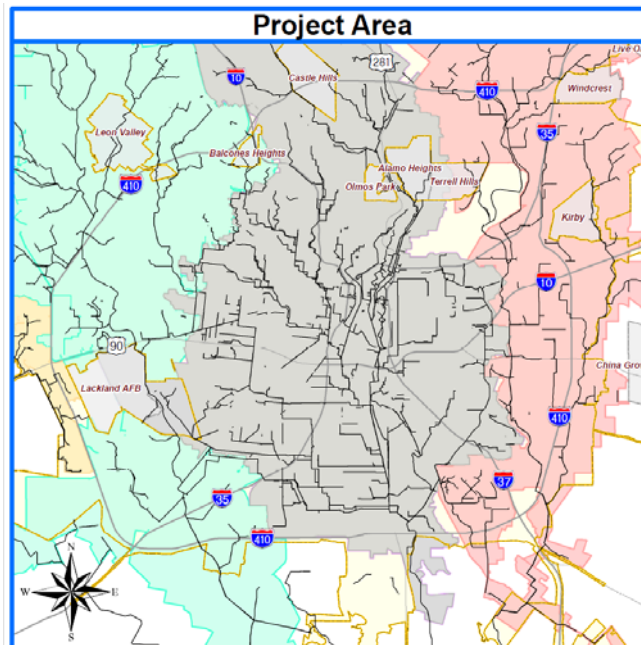
# Condition Remedial Measures Selection

## Large Diameter Open Cut

### 30% Design Package 2

#### Central Basin – 24” and Greater

July 2018



Central Basin

Prepared for:



# Condition Remedial Measures Selection

## Large Diameter Open Cut

### 30% Design Package 2

Central Basin – 24” and Greater

July 2018

**Basin Planning Consultant for the  
Sanitary Sewer Overflow Reduction Program (SSORP) Team**

Prepared for:



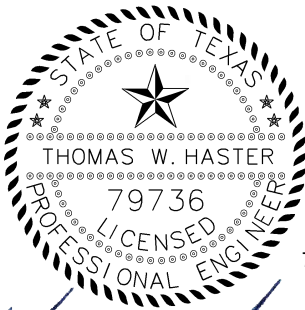
Prepared by:

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7/16/2018

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7/16/2018

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# 1.0 INTRODUCTION

The purpose of the Basin Planning Consultants is to provide support to the Sanitary Sewer Overflow Reduction Program (SSORP) team. This was mandated by the 2013 Consent Decree (CD) between San Antonio Water System (SAWS) and the Environmental Protection Agency (EPA). Freese and Nichols, Inc. (FNI) and Gonzalez De La Garza (GD) developed 30% design packages for the large diameter D and E assets within the Central Basin chosen by the SSORP team to be rehabbed. Large diameter pipes are 24” and greater.

This Package 2 TM contains the 30% design information for the all large diameter pipes that will be rehabilitated using the Open Cut replacement method. The Package 1 TM contains the 30% design information for the large diameter pipes to be rehabbed using a trenchless method. All packages that will be submitted are summarized in **Table 1-1**. This TM documents the constructability issues, desktop studies, and recommended condition remedial measures (CRM) for each pipe. The CRMs were assigned in the 10% design analysis; see *Condition Remedial Measures Selection Large Diameter Technical Memorandum* dated October 2017. Also included in this TM are design plan map exhibits for each asset, See **Appendix A**.

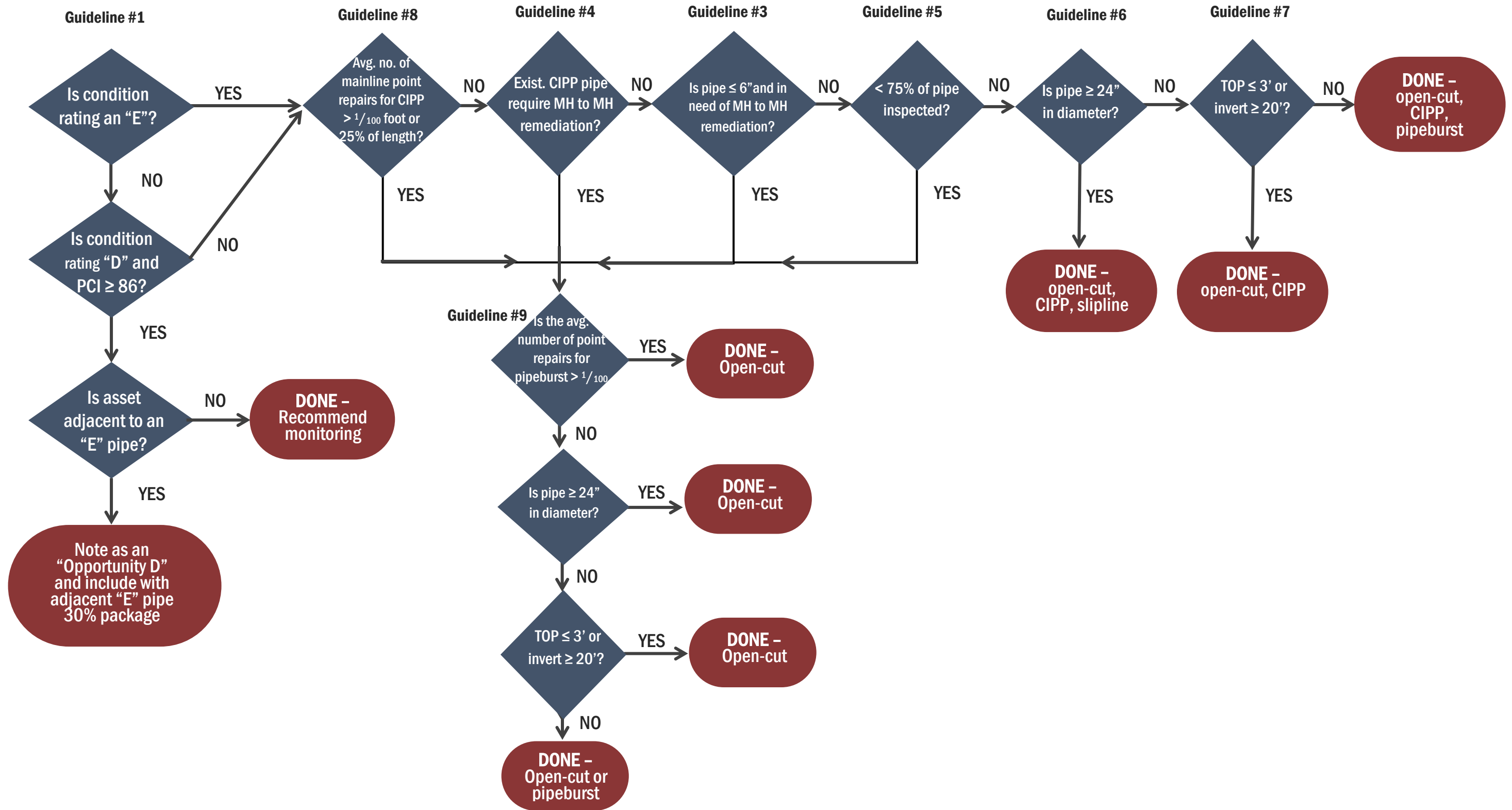
**Table 1-1 – Package Summary**

Package Number	Number of Assets	Length of Pipe (LF)	Package Description
1	53	15,738	Trenchless Rehabilitation
2	3	612.8	Open-Cut Replacement

# 2.0 REMEDIAL MEASURES

FNI used the decision guidelines developed by SAWS in the *Guidelines TM* to develop a protocol with which to recommend a remedial measure. This protocol is shown in **Figure 2-1** as a flowchart (decision tree) resulting in a preferred remedial measure.

Figure 2-1 - Remedial Measure Flow Chart



### 3.0 ADDITIONAL AND BASE PIPES

This package does not include Additional pipes. All three assets included within this package are considered to be Base pipes.

### 4.0 ASSUMPTIONS

In order to provide as much data to the engineering consultants who will develop the 100% design for those assets, the following assumptions were applied to maintain a consistent design over all of the 30% design packages.

#### 4.1 LATERALS

A lateral shapefile was created by the BPCs using the defect codes in the PACP databases provided by SAWS. This shapefile was used to populate the quantity tables for the number of laterals on each pipe. The defect codes used to identify laterals in the pipe are listed in **Table 3.0**. The location and status of the laterals will need to be determined by the 100% design engineer and surveyor.

**Table 3.0** Lateral Defect Codes.

Defect Code	Definition
TB	Tap Break-in/Hammer
TBA	Tap Break-in/Hammer Activity
TBD	Tap Break-in/Hammer Defective
TBI	Tap Break-in/Hammer Intruding
TF	Tap Factory
TFA	Tap Factory Activity
TFD	Tap Factory Defective
TFI	Tap Factory Intruding
TS	Tap Saddle
TSA	Tap Saddle Activity
TSD	Tap Saddle Defective
TSI	Tap Saddle Intruding

## **4.2 PAVEMENT REPAIR**

The City of San Antonio (CoSA) determines the street repair necessary for disturbed pavement based on the pavement condition index (PCI) of the road. Roads with a PCI greater than or equal to 86 are considered to be in excellent condition and require curb-to-curb restoration (full street restoration). Roads with a PCI less than 50 are considered to be in poor condition and only require repair of the road within the limits of the trench. Roads with a PCI between 50 and 85 are considered to be in fair condition and are evaluated by CoSA on a case-by-case basis.

The estimated quantity of pavement repair for the following CRMs are listed below:

- PCI greater than or equal to 86
  - OPEN-CUT - will require full pavement repair for the full length of pipe curb to curb.
- PCI between 51 and 85
  - OPEN-CUT - will require full pavement repair for the full length of pipe at 10' wide.
- PCI of 50 or lower
  - OPEN-CUT - will require full pavement repair for the length of pipe and width of the trench. Trench width is typically the outside diameter of the pipe plus 4'.

## **4.3 POINT REPAIRS**

This package does not include Point Repairs.

## **4.4 MANHOLES**

The quantity of manholes to be rehabilitated were identified by the type of CRM recommended for each asset. The CRM and the associated assumed manhole rehab is listed below:

- OPEN-CUT – install a new manhole



## 4.5 COST ESTIMATING

The BPCs were not tasked with providing preliminary construction cost estimates. The BPCs were tasked with providing quantities only.

The 30% condition design packages did not quantify the following items and it is assumed that the 100% design engineer and surveyor will identify, provide, and quantify the following:

- Other Utility Realignments
- Laterals
- New sewer testing per SAWS' Specifications

## 5.0 QUANTITIES

### 5.1 ASSETS

The quantities for the remedial measures for Package 2, separated for base and additional pipe, are located in **Table 4-1**.

**Table 4-1:** Summary of Package 2 Assets

PREFERRED REMEDIAL MEASURE	Diameter (in)	Base	Additional	Total Length (LF)
REPLACE OPEN-CUT	24	256.8	0	256.8
	36	356.0	0	356.0
REPLACE OPEN-CUT Total		<b>612.8</b>	<b>0</b>	<b>612.8</b>
<b>TOTAL</b>				<b>612.8</b>

### 5.2 PAVEMENT REPAIR

The street repairs are summarized in **Table 4-2**.

**Table 4-2:** Pavement Repair for Remediation Measures

Item No.	Item Description	Unit	Quantity
203	Tack Coat	GAL	70
205.2	Hot Mix Asphaltic Pavement - Type B (10" Compacted Depth)	SY	380
205.4	Hot Mix Asphaltic Pavement - Type D (2" Compacted Depth)	SY	693

### **5.3 BYPASS PUMPING**

By-pass pumping data was provided to get a high-level cost estimate for the 30% condition design package. Flows in the pipe, number of set-ups, upstream (US) suction manhole and downstream (DS) discharge manholes, and the length of the bypass were provided and quantified separately for base and additional pipes. For this package there was a total of 3 bypass pumping set-ups for base pipes.

A bypass set-up was determined to be a configuration that removes flow from the pipe that is being rehabbed. Bypass will be designed based on number of pipes adjacent to each other unless there is an additional pipe that breaks the linked pipes. Bypass for “additional” pipes are quantified separately.

In order to cost the bypass pumping set-ups, peak wet weather and average day flows (MGD) were provided for each pipe on the F Sheets. The flows shown were taken from the FNI hydraulic model that was run with 30% I/I reduction.

Bypass pumping length was determined by identifying the next upstream suction manhole(s) and measuring the length to the asset’s downstream discharge manhole. If multiple sewer mains were connected to the pipe, multiple upstream manholes and the downstream manhole were selected in order to provide a bypass length for cost estimation. These upstream suction manholes and downstream discharge manholes may not be preferred by the 100% design engineer and thus may be modified.

### **6.0 SITE IMPACT CHECK**

The project sites were analyzed for potential impacts such as anything that would affect construction, rehabilitation or maintenance of the sanitary sewer pipes. Windshield surveys were performed for the assets contained within Package 2. Desktop studies were performed to obtain environmental and geotechnical data. None of the sanitary sewer pipes contained within Package 2 were located in a stream or outside of public right-of-way. Sanitary Sewer mains are to be constructed in the same trench to lessen geotechnical concerns. Therefore, a full geotechnical investigation was not needed. All of the windshield surveys and desktop study findings are located on the F-Sheets.

A full environmental study was performed for the assets contained within Package 2. Field investigations were conducted on January 23, 2018 by two CP&Y biologists. No jurisdictional waters, NWI (National Wetland Inventory), or other wetlands were observed during field investigations. Additional findings were that the project areas do not contain threatened or endangered species. They are not located within USFWS (United States Fish and Wildlife Service) Karst Zones and the project area did not contain suitable habitat for threatened bird species. The full environmental study will be submitted with the Large Diameter 30% Design Condition Final Report.

## **7.0 DESIGN PLAN SHEETS**

In addition to the desktop study/survey information; Package 2 design plan sheets include the following information for each asset.

- Pipe COMPKEY
- Package priority number
- UNITID (upstream MH)
- UNITID 2 (downstream MH)
- Number of Laterals (taken from PACP codes provided by SAWS)
- Pipe Material (identified in 10% Design)
- Surveyed Pipe Length
- Diameter (nominal diameter of pipe in inches)
- Verified Condition (SAWS-provided rating; and indication if consultant disagreed)
- 100-year floodplain
- Sags
- Preferred remedial measure
- Low-Income area
- Street width (if asset is located in a street)
- PCI Rating of street on which asset is located
- Bypass Pumping Data
  - Wet weather flow
    - Obtained from the model for pipes 12" and greater

- Average Day flow
  - Obtained from the model for pipes 12" and greater
- Parcels Impacted
- Quantities
  - Pavement to be replaced
  - Linear Footage of pipe to be repaired and appurtenances
  - Bypass Pumping

## **8.0 CONCLUSION**

Package 2 contains the large diameter pipes to be replaced via open-cut method. The package contains 3 assets totaling 612.8 LF (0.12 miles) of pipe to be replaced. The two 24" diameter assets have been quantified as Polyvinyl Chloride (PVC) pipe. The single 36" diameter asset has been quantified as Fiber Reinforced Sewer Pipe (FRP).

**APPENDIX A**  
**Package Maps**

# SAN ANTONIO WATER SYSTEM

## CONDITION DESIGN DEVELOPMENT (30%) - PACKAGE 2 LARGE DIAMETER



### SSO REDUCTION PROGRAM

Job No.: SWB16406

JULY 2018

Engineer:

**Freese and Nichols, Inc.**

Texas Firm: F-2144  
 9601 McAllister Freeway, Ste. 1008 San Antonio, TX 782016 (210) 298-3898

SURVEYOR Gonzalez-De La Garza 4800 Fredericksburg Road Suite 200 San Antonio, TX 78229 Texas Firm: F-10193922

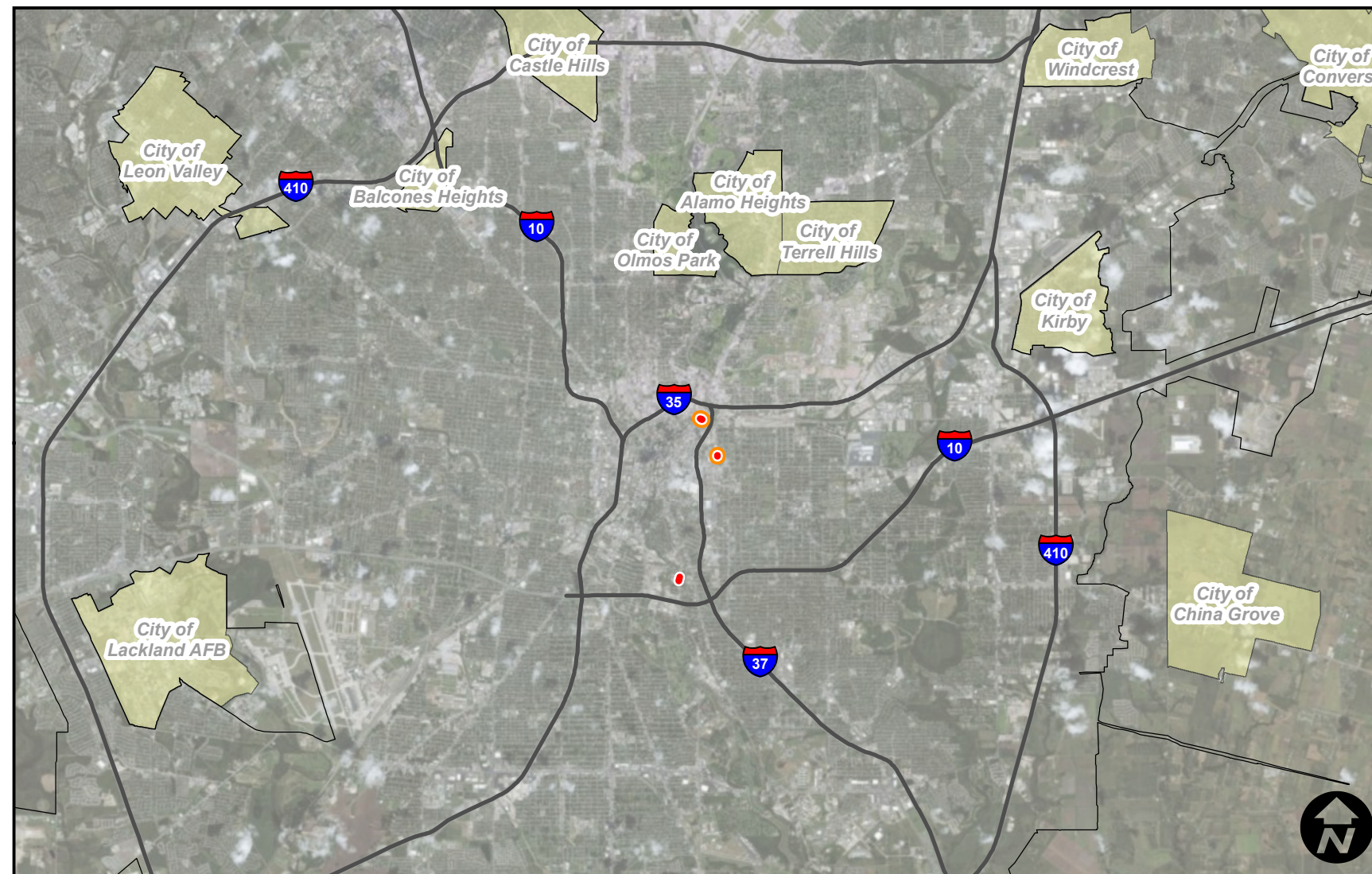
CIVIL ENGINEER Gonzalez-De La Garza 4800 Fredericksburg Road Suite 200 San Antonio, TX 78229 Texas Firm: F-10015

ENVIRONMENTAL CONSULTANT CP&Y, Inc. 12500 San Pedro Ave Suite 450 San Antonio, TX 78216 Texas Firm: F-1741

GEOTECHNICAL ENGINEER Arias Geoprofessionals 142 Chula Vista Dr San Antonio, TX 78232 Texas Firm: F-32



Gonzalez De La Garza



LOCATION MAP



**Disclaimer: For 30% Design**

NOT FOR CONSTRUCTION

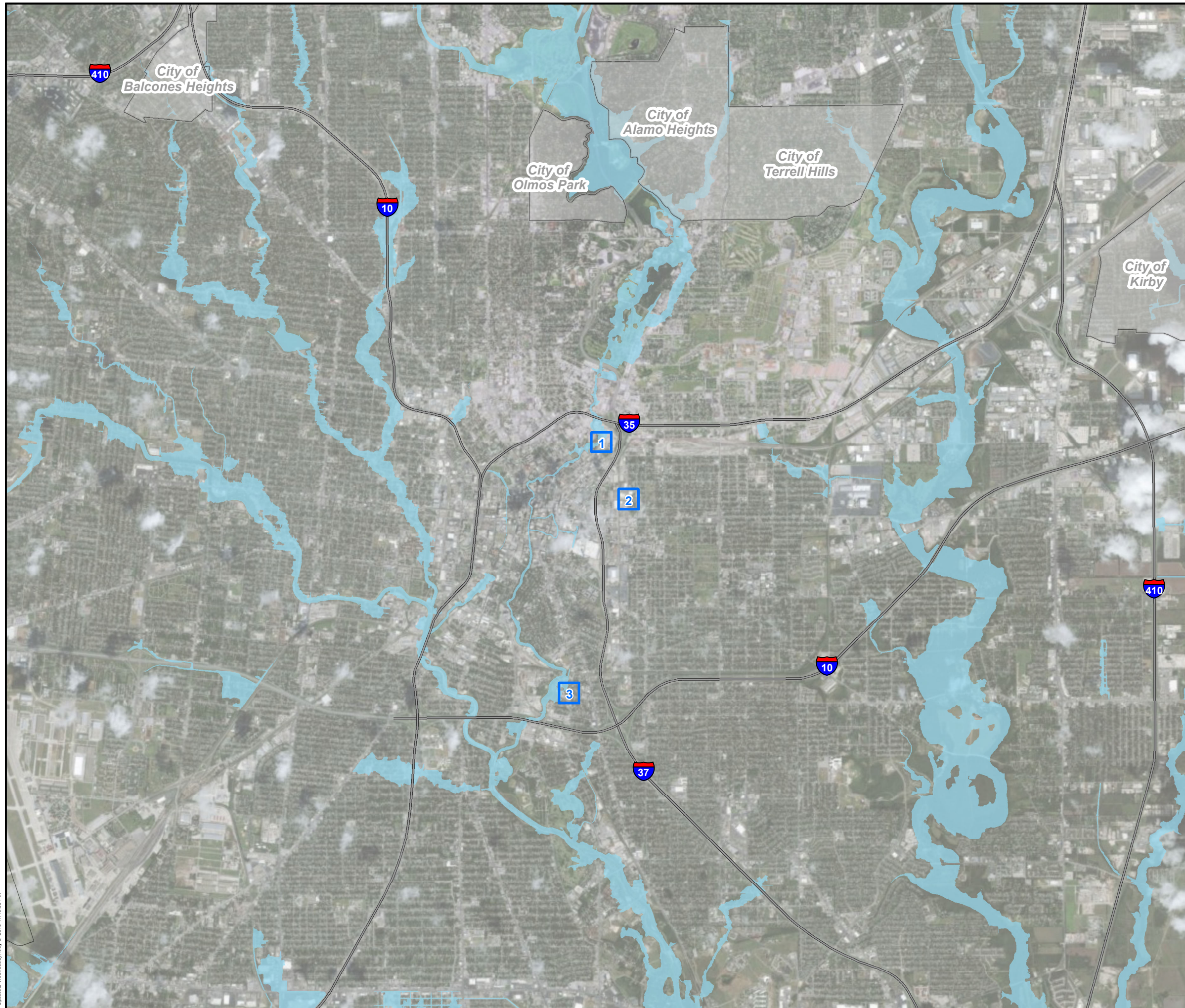
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERM REVIEW UNDER THE AUTHORITY OF MACK W. THOMAS III, P.E. TEXAS NO: 85607 ON DATE: 7/16/18 THIS IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

**SHEET INDEX**

- T-0 TITLE SHEET
- I-1 INDEX
- G-1 KEY MAP
- G-2 NOTES
- G-3 QUANTITY TABLE
- C-1 3129161 (E. JONES AVE)
- F-1 3129161
- C-2 985387 (N. CHERRY ST)
- F-2 985387
- C-3 984418 (ROOSEVELT AVE)
- F-3 984418
- C-4 ROOSEVELT AVE - 36" FRP STRUCTURE EXHIBIT

<b>K P F G Z</b>	
<b>Project</b>	SSO Basin Planning Consultant 30% Condition Large Diameter Package 2
<b>Date:</b>	7/16/2018
	Sheet I-1
 GONZALEZ DE LA GARZA SURVEYORS ENGINEERS CONTRACTORS	 San Antonio Water System

Created By: Freese and Nichols, Inc.  
Job No.: SW016406  
Project: San Antonio Water System - SSO Basin Planning Consultant  
Update: Monday, December 11, 2017 12:07 PM  
Path: \\server\shared\Documents\GIS\Packaging\02\_Sheet\_Index\_BCF007E05C5D-46C-932-BD7E0C06F7Vid102\_Sheet\_Index.mxd



0 5,000  
SCALE IN FEET

LEGEND	
	Interstates
	100Yr Floodplain
	30% Design Plan Sheet
	City Limit
	Other City

## KEY MAP

**Project** SSO Basin Planning Consultant  
30% Condition Large Diameter Package 2

**Date:** 5/24/2018

Sheet G-1



Created By Freese and Nichols, Inc.  
Job No.: SWB16406  
Project: San Antonio Water System, City Package 2 GIS01\_Key\_Map.mxd  
Updated: Wednesday, May 9, 2018 11:46:38 AM



30% DESIGN DISCLAIMER:

1. THE PRODUCTION OF THE 30% DESIGN EXHIBITS ARE FOR INFORMATIONAL PURPOSES ONLY. THE DESIGN ENGINEER OF RECORD IS TO ENSURE THAT ALL UTILITIES SHOWN ON THE 30% DESIGN EXHIBITS HAVE BEEN VERIFIED BY OBTAINING AVAILABLE RECORDS SUCH AS BLOCK MAPS OR AS-BUILTS, TOPOGRAPHICAL SURVEY DATA, SUE WORK INFORMATION, UTILITY LOCATES BY A THIRD PARTY, AND/OR OTHER MEANS OF UTILITY INFORMATION AVAILABLE.
2. THE ITEMIZED QUANTITIES SHOWN ON THE 30% DESIGN EXHIBITS DO NOT INCLUDE ALL THE ASSOCIATED ITEMS NEEDED TO COMPLETE THE FINAL QUANTITY TABLE. THE DESIGN ENGINEER OF RECORD IS TO INCLUDE ALL UNIT ITEM QUANTITIES THAT WILL IMPACT THE COST FOR CONSTRUCTION WHEN SUBMITTING THE 100% SIGNED AND SEALED PLANS.
3. IN SOME INSTANCES, ITEMS QUANTIFIED IN THE 30% DESIGN EXHIBITS DO NOT MATCH THE UNIT DESCRIPTIONS THAT ARE TYPICALLY USED BY THE SAN ANTONIO WATER SYSTEM (SAWS). THE DESIGN ENGINEER OF RECORD IS TO VERIFY THAT THE UNIT DESCRIPTIONS CORRELATE WITH SAWS' SPECIFICATION UNIT DESCRIPTIONS.
4. BYPASS PUMPING CALCULATIONS ARE BASED ON FLOWS ACQUIRED FROM SAWS' HYDRAULIC MODEL FOR PIPES THAT ARE 12 INCHES IN DIAMETER OR GREATER. THE DESIGN ENGINEER OF RECORD IS TO VERIFY BYPASS CALCULATIONS FOR FINAL DESIGN SUBMITTAL.
5. THE ENGINEER OF RECORD IS TO OBTAIN THE LATEST PCI RATINGS FROM THE CITY OF SAN ANTONIO'S ROW DEPARTMENT FOR THE FINAL DESIGN. BASED ON THE STREET PCI RATING, THE DESIGN ENGINEER OF RECORD IS TO ADJUST THE FINAL QUANTITIES TO INCLUDE THE STREET REPAIR UNIT ITEMS THAT ARE TYPICALLY INCLUDED WITHIN SAWS FINAL DESIGN PLANS.
6. LATERAL QUANTITIES AND LOCATIONS WERE OBTAINED BY REFERENCING PACP LOGS TO FINALIZE THE 30% DESIGN SUBMITTAL. THE ENGINEER OF RECORD IS TO VERIFY LATERAL LOCATIONS AND QUANTITIES FOR FINAL DESIGN SUBMITTAL.
7. THE ENGINEER OF RECORD IS TO VERIFY EASEMENT INFORMATION AND PROPERTY DEED RECORDS WHEN FINALIZING THE SANITARY SEWER FINAL DESIGN SUBMITTAL.
8. PIPES THAT ARE RECOMMENDED TO BE "MONITORED" ARE TO BE COORDINATED WITH SAWS' STAFF FOR FURTHER EVALUATION DURING PREPARATION OF FINAL DESIGN.

## NOTES

**Project** SSO Basin Planning Consultant  
30% Condition Large Diameter Package 2

**Date:** 5/24/2018

Sheet G-2



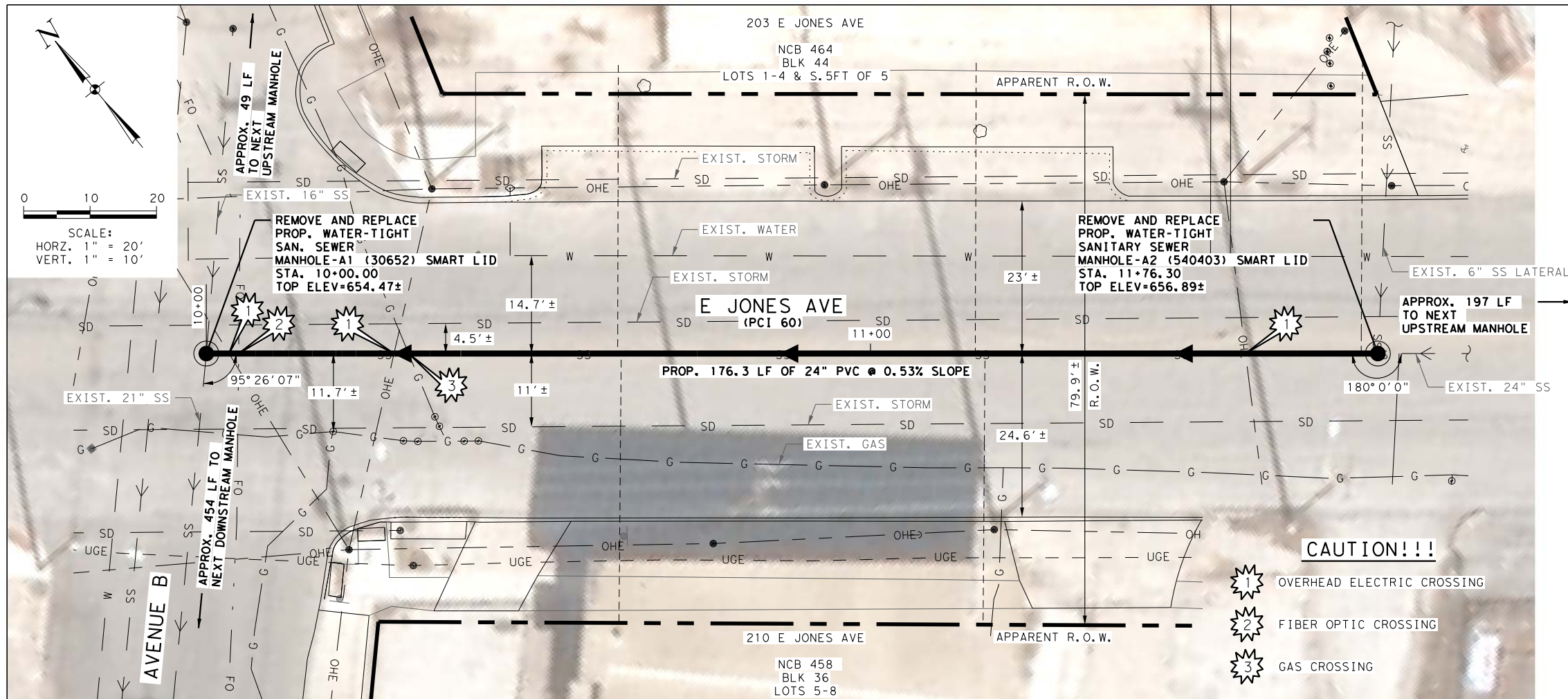
**ESTIMATED QUANTITIES**

ITEM	BID ITEM DESCRIPTION	UNIT	QTY
203	TACK COAT	GAL	70
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	380
205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	693
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	612.8
848	24" PVC SANITARY SEWER PIPE	LF	256.8
850	SANITARY SEWER STRUCTURE	EA	2
852.1	SANITARY SEWER MANHOLE	EA	4
852.3	EXTRA DEPTH MANHOLE	VF	45
854	SANITARY SEWER LATERAL RECONNECTIONS BY OPEN CUT	EA	5
857	36" FRP SANITARY SEWER PIPE	LF	356.0
864	BYPASS PUMPING (SET-UP)	EA	3
866	SEWER MAIN TELEVISION INSPECTION	LF	612.8

**QUANTITY TABLE**

<b>Project</b>	SSO Basin Planning Consultant 30% Condition Large Diameter Package 2	
<b>Date:</b>	7/16/2018	Sheet G-3





ITEM	BID ITEM DESCRIPTION	UNIT	QTY
203	TACK COAT	GAL	20
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	98
205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	196
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	176.3
848	24" PVC SANITARY SEWER PIPE	LF	176.3
852.1	SANITARY SEWER MANHOLE	EA	2
852.3	EXTRA DEPTH MANHOLE	VF	18
854	SANITARY SEWER LATERAL RECONNECTIONS BY OPEN CUT	EA	5
864	BYPASS PUMPING (SET-UP)	EA	1
866	SEWER MAIN TELEVISION INSPECTION	LF	176.3

**AT&T:**  
 THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR IS TO CONTACT THE TELEPHONE COMPANY LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-828-5127. CONTRACTOR IS TO PROTECT AND SUPPORT TELEPHONE COMPANY CABLE DURING CONSTRUCTION.

**CPS ENERGY:**  
 CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 192.181, CPS ENERGY 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. THE PROJECT MUST BE GAS LEAK SURVEYED PRIOR TO THE FINAL OVERLAY. ALLOW 10 WORKING DAYS FOR VALVE ADJUSTMENTS. THE CONTRACTOR MUST COORDINATE THE SURVEY AND THE ADJUSTMENTS THROUGH THE PROJECT INSPECTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS ENERGY OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREAS.

**TRENCH EXCAVATION 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 THE 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 EXCAVATION 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.

- CAUTION!!!**
- 1 OVERHEAD ELECTRIC CROSSING
  - 2 FIBER OPTIC CROSSING
  - 3 GAS CROSSING

PROF. INVERT ELEVATION	EXIST. INVERT ELEVATION	PROF. INVERT ELEVATION	EXIST. INVERT ELEVATION	PROF. INVERT ELEVATION	EXIST. INVERT ELEVATION	PROF. INVERT ELEVATION	EXIST. INVERT ELEVATION	PROF. INVERT ELEVATION	EXIST. INVERT ELEVATION	PROF. INVERT ELEVATION	EXIST. INVERT ELEVATION
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630		630		630		630		630		630	

30% DESIGN

**LEGEND**

- APPARENT R.O.W. - - - - -
- PROP. SAN SEWER - - - - -
- EXIST. SAN SEWER LATERAL - - - - -
- EXIST. WATER MAIN - W - - - -
- GAS MAIN - G - - - -
- SANITARY SEWER - - - - -
- STORM SEWER - SD - - - -
- UTILITY POLE LINE - - - - -
- OVERHEAD ELECTRIC CABLE - OHE - - - -
- OVERHEAD TELEPHONE CABLE - OHT - - - -
- UNDERGROUND FIBER OPTIC CABLE - FO - - - -

**REVISIONS**

No.	Revision	Drawn	Approved	Date

**DEVELOPER:** CONT. BUDGET PROJ.

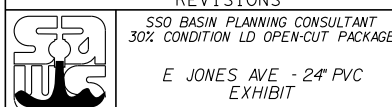
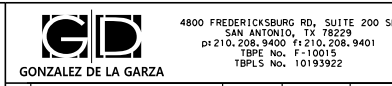
**SUBMITTED** \_\_\_\_\_

**APPROVED** \_\_\_\_\_

**MAP No.** \_\_\_\_\_

**SECT. No.** \_\_\_\_\_

**DR. HH** **CK. MWT** **COMPKEY 3129161** **C-1**





CompKey

Final Rehab

Basin

Diameter

Length (ft)

Length Surveyed

75% Televised

Upstream MH

Downstream MH

Siphon #

Sags

US Depth

DS Depth

Material

VerifiedCondition

Condition (Consultant)

No of Point Repairs   Yes Point Repair Identified by a Professional

No of Laterals

Construction Access	Yes - Green	Within in ROW of E Jones Ave
Operational Access	Yes - Green	Within in ROW of E Jones Ave
Jurisdictional Water	No - Green	
Existing Utilities	Yes - Red	Parallel water main
Permit Coordination	Yes - Red	COSA - East Jones Ave
Endangered Species	No - Green	
In Karst Zones	No - Green	Within karst zone 5, an area that does not contain karst species
Critical Habitat	No - Green	
Environmental Factors	No - Green	
Hazardous Sites	Yes - Red	Entries in hazardous material database search resulted in finding: Low risk: 2 LPSTs (1 sit)
Archeological Sites	Yes - Red	Segment 3129161 is located within the local RIO-2 riverfront district and the boundaries of the Old Lone Star Brewery local landmark. It is also within 300 feet of the plotted position of the historic River acequia and one locally designated historic building.
Geomorphology Issues	No - Green	
Geotechnical Findings	Yes - Red	Shallow groundwater, sumps may be required during trench excavation. Rock excavation equipment may be required.

- Available Grade
- Available Cover
- Large Trees
- Site Access by Combo Truck
- Crosses Creek, TxDOT Rd, or Bridge
- Large WTR Mains
- Large Gas Mains

Easement Required (number of parcels)	0
NA	



By-Pass Pumping Info

By-Pass Info	
No parallel sewer mains	
Peak Wet Weather (Model)	3.37
Average Day (from Model)	0.07
US Suction Manhole	30675
DS Suction Manhole	30652
By-Pass Length	373

Street Repair Data

Street Width	46
Trench Repair	10' Wide
Quantity - of Street Repair (LF)	177
PCI	60

30% Package Number

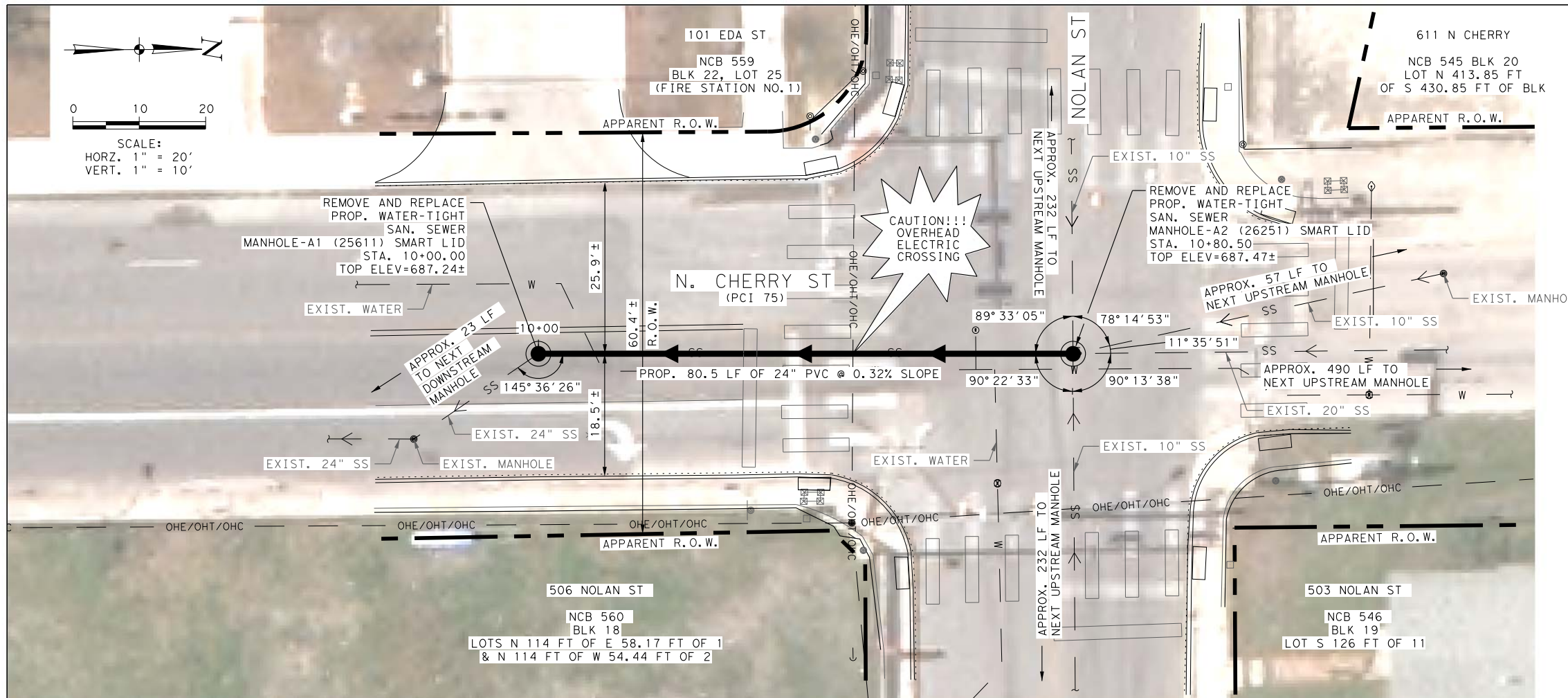
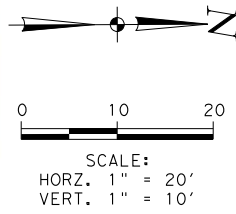
Reason Selected for 30%

Base or Additional

Not Originally Assigned to BPC

Low Income Area

On CPMS Project

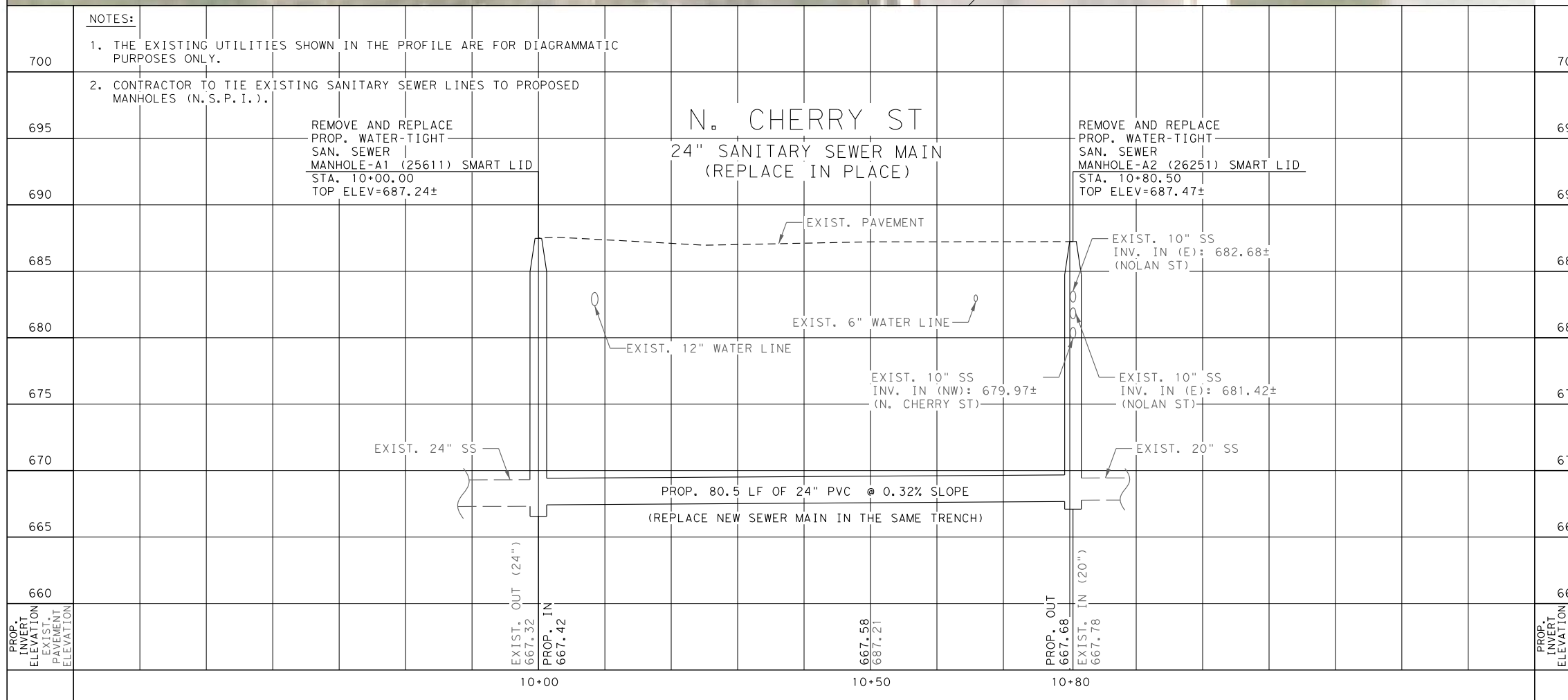


ITEM	BID ITEM DESCRIPTION	UNIT	QTY
203	TACK COAT	GAL	10
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	45
205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	101
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	80.5
848	24" PVC SANITARY SEWER PIPE	LF	80.5
852.1	SANITARY SEWER MANHOLE	EA	2
852.3	EXTRA DEPTH MANHOLE	VF	27
864	BYPASS PUMPING (SET-UP)	EA	1
866	SEWER MAIN TELEVISION INSPECTION	LF	80.5

**AT&T:**  
 THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR IS TO CONTACT THE TELEPHONE COMPANY LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-828-5127. CONTRACTOR IS TO PROTECT AND SUPPORT TELEPHONE COMPANY CABLE DURING CONSTRUCTION.

**CPS ENERGY:**  
 CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 192.181, CPS ENERGY 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. THE PROJECT MUST BE GAS LEAK SURVEYED PRIOR TO THE FINAL OVERLAY. ALLOW 10 WORKING DAYS FOR VALVE ADJUSTMENTS. THE CONTRACTOR MUST COORDINATE THE SURVEY AND THE ADJUSTMENTS THROUGH THE PROJECT INSPECTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS ENERGY OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREAS.

**TRENCH EXCAVATION 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 THE 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 EXCAVATION 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.



**NOTES:**

- THE EXISTING UTILITIES SHOWN IN THE PROFILE ARE FOR DIAGRAMMATIC PURPOSES ONLY.
- CONTRACTOR TO TIE EXISTING SANITARY SEWER LINES TO PROPOSED MANHOLES (N.S.P.I.).

**LEGEND**

- APPARENT R.O.W. - Dashed line
- PROP. SAN SEWER - Solid line
- EXIST. WATER MAIN - Line with 'W' symbol
- GAS MAIN - Line with 'G' symbol
- SANITARY SEWER - Line with 'SS' symbol
- STORM SEWER - Line with 'SD' symbol
- UTILITY POLE LINE - Line with circle symbol
- OVERHEAD ELECTRIC CABLE - Line with 'OHE' symbol
- OVERHEAD TELEPHONE CABLE - Line with 'OHT' symbol
- UNDERGROUND FIBER OPTIC CABLE - Line with 'FO' symbol

**30% DESIGN**

**REVISIONS**

No.	Revision	Drawn	Approved	Date

**DEVELOPER:** GONZALEZ DE LA GARZA

**SSO BASIN PLANNING CONSULTANT**  
 30% CONDITION LD OPEN-CUT PACKAGE  
 N. CHERRY ST - 24" PVC EXHIBIT

**DEVELOPER:** BUDGET PROJ.

**SUBMITTED** \_\_\_\_\_  
**APPROVED** \_\_\_\_\_

**MAP No.** \_\_\_\_\_  
**SECT. No.** \_\_\_\_\_  
**DR. HH** | **CK. MWT** | **COMPKEY 985387** | **C-2**

**CompKey**

**Final Rehab**

**Basin**

Diameter  Upstream MH

Length (ft)  Downstream MH

Length Surveyed

75% Televised

Siphon #

Sags

US Depth  Material

DS Depth  VerifiedCondition

Condition (Consultant)

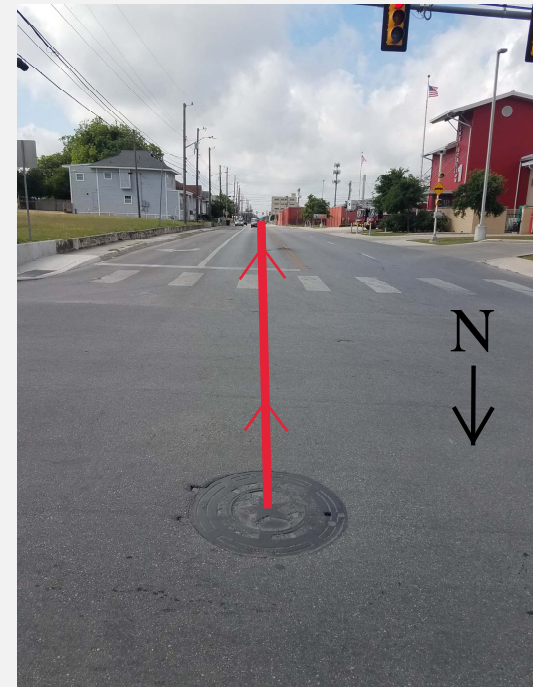
No of Point Repairs   Yes Point Repair Identified by a Professional

No of Laterals

Construction Access	Yes - Green	Within ROW of North Cherry
Operational Access	Yes - Green	Within ROW of North Cherry
Jurisdictional Water	No - Green	
Existing Utilities	Yes - Red	Parallel water main
Permit Coordination	Yes - Red	COSA - North Cherry
Endangered Species	No - Green	
In Karst Zones	No - Green	Within karst zone 5, an areas that does not have karst species
Critical Habitat	No - Green	
Environmental Factors	No - Green	
Hazardous Sites	Yes - Red	Entries in hazardous material database search resulted in finding: Low risk: 1 IHWCA/APAR, 1 site with 1 LPST, 1 GWCC, 1 LPST High risk: 1 BF
Archeological Sites	Yes - Red	Segment 985387 is located parallel along the outer boundaries of the Dignowity Hill Local Historic District and in close proximity to a plotted section of the San Antonio Valley acequia.
Geomorphology Issues	No - Green	
Geotechnical Findings	Yes - Red	Shallow groundwater, sumps may be required during trench excavation. Rock excavation equipment may be required.

- Available Grade
- Available Cover
- Large Trees
- Site Access by Combo Truck
- Crosses Creek, TxDOT Rd, or Bridge
- Large WTR Mains
- Large Gas Mains

Easement Required (number of parcels)	0
NA	



### By-Pass Pumping Info

**By-Pass Info**

No parallel sewer mains

Peak Wet Weather (Model)

Average Day (from Model)

US Suction Manhole

DS Suction Manhole

By-Pass Length

### Street Repair Data

Street Width

Trench Repair

Quantity - of Street Repair (LF)

PCI

30% Package Number

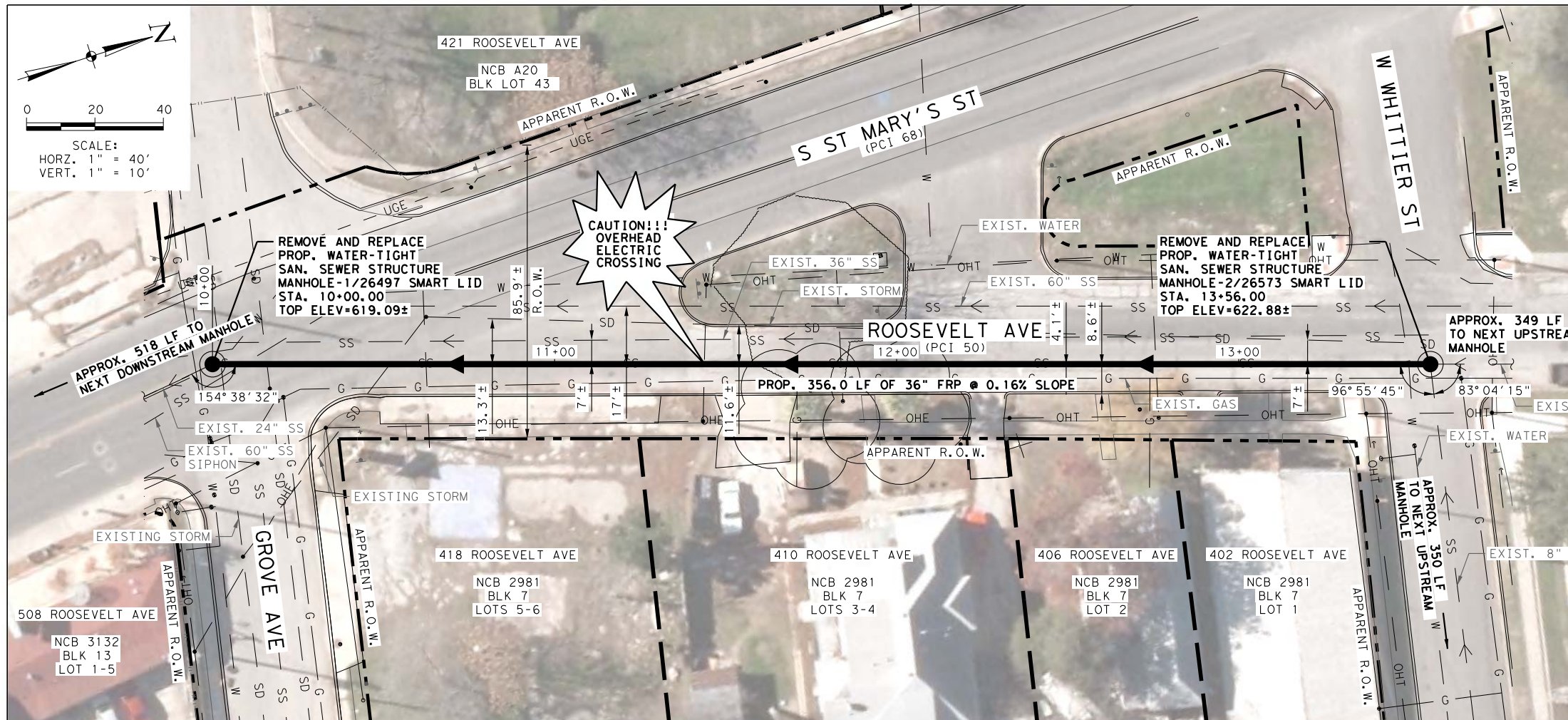
Reason Selected for 30%

Base or Additional

Not Originally Assigned to BPC

Low Income Area

On CPMS Project



ITEM	BID ITEM DESCRIPTION	UNIT	QTY
203	TACK COAT	GAL	40
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	237
205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	396
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	356.0
850	SANITARY SEWER STRUCTURE	EA	2
857	36" FRP SANITARY SEWER PIPE	LF	356.0
864	BYPASS PUMPING (SET-UP)	EA	1
866	SEWER MAIN TELEVISION INSPECTION	LF	356.0

**AT&T:**

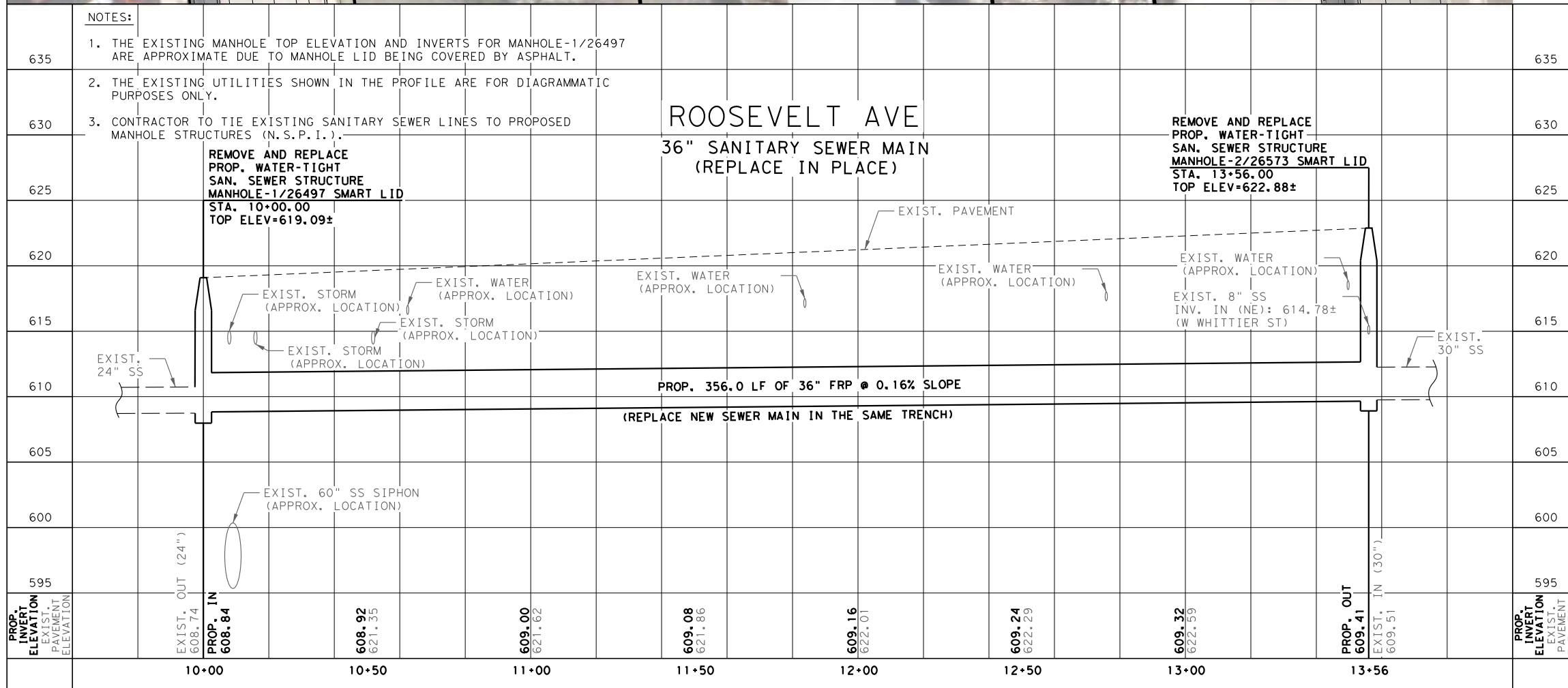
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**NOTES:**

- THE EXISTING MANHOLE TOP ELEVATION AND INVERTS FOR MANHOLE-1/26497 ARE APPROXIMATE DUE TO MANHOLE LID BEING COVERED BY ASPHALT.
- THE EXISTING UTILITIES SHOWN IN THE PROFILE ARE FOR DIAGRAMMATIC PURPOSES ONLY.
- CONTRACTOR TO TIE EXISTING SANITARY SEWER LINES TO PROPOSED MANHOLE STRUCTURES (N.S.P.I.).

**LEGEND**

- APPARENT R.O.W. - - - - -
- PROP. SAN SEWER - - - - -
- EXIST. WATER MAIN - W - - - -
- GAS MAIN - G - - - -
- SANITARY SEWER - > SS - - - -
- STORM SEWER - SD - - - -
- UTILITY POLE LINE - - - - -
- OVERHEAD ELECTRIC CABLE - OHE - - - -
- OVERHEAD TELEPHONE CABLE - OHT - - - -
- UNDERGROUND ELECTRIC CABLE - UGE - - - -

**30% DESIGN**

**CD** 4800 FREDERICKSBURG RD, SUITE 200 SL  
SAN ANTONIO, TX 78229  
P: 210.208.9400 F: 210.208.9401  
T: 210.208.9401  
TBLPS No. 10193922

**GONZALEZ DE LA GARZA**

No.	Revision	Drawn	Approved	Date

**REVISIONS**

**SSA** SSO BASIN PLANNING CONSULTANT  
30% CONDITION LD OPEN-CUT PACKAGE

**Roosevelt Ave - 36" FRP EXHIBIT**

DEVELOPER: \_\_\_\_\_  
CONT. BUDGET PROJ. \_\_\_\_\_

SUBMITTED \_\_\_\_\_  
APPROVED \_\_\_\_\_

MAP No. \_\_\_\_\_  
SECT. No. \_\_\_\_\_  
DR. HH CK. MWT

COMPKEY 984418 C-3

CompKey	984418
Final Rehab	REPLACE OPEN-CUT
Basin	CENTRAL

Diameter	36	Upstream MH	26573
Length (ft)	356	Downstream MH	26497
Length Surveyed	380	Siphon #	
<input checked="" type="checkbox"/> 75% Televised		Sags	No

US Depth	13	Material	CT
DS Depth	12	VerifiedCondition	E
		Condition (Consultant)	

No of Point Repairs	0	Yes	Point Repair Identified by a Professional
No of Laterals	0		

Construction Access	Yes - Green	Within ROW of Roosevelt Ave
Operational Access	Yes - Green	Within ROW of Roosevelt Ave
Jurisdictional Water	No - Green	
Existing Utilities	Yes - Red	Two parallel sewer mains, water main, gas main, storm sewer
Permit Coordination	Yes - Red	COSA - Roosevelt Ave
Endangered Species	No - Green	
In Karst Zones	No - Green	Within karst zone 5, an area that does not have karst species
Critical Habitat	No - Green	
Environmental Factors	No - Green	
Hazardous Sites	Yes - Red	Entries in hazardous material database search resulted in finding: Low risk: 1 LPST, 1 SEMS; High risk: 1 IHWCA, etc.
Archeological Sites	Yes - Red	Segment is mainly located parallel along the outer boundaries of the National Register of Historic Places-listed Mission Parkway District and the local Mission and RIO-4 districts, extending slightly into these districts at its southwest terminus.
Geomorphology Issues	No - Green	
Geotechnical Findings	Yes - Red	Shallow groundwater, sumps may be required during trench excavation. Rock excavation equipment may be required.

- Available Grade
- Available Cover
- Large Trees
- Site Access by Combo Truck
- Crosses Creek, TxDOT Rd, or Bridge
- Large WTR Mains
- Large Gas Mains

Easement Required (number of parcels)	0
NA	


**By-Pass Pumping Info**

By-Pass Info	
parallel 36" sewer main	
Peak Wet Weather (Model)	9.01
Average Day (from Model)	0.02
US Suction Manhole	27638
DS Suction Manhole	24424
By-Pass Length	720

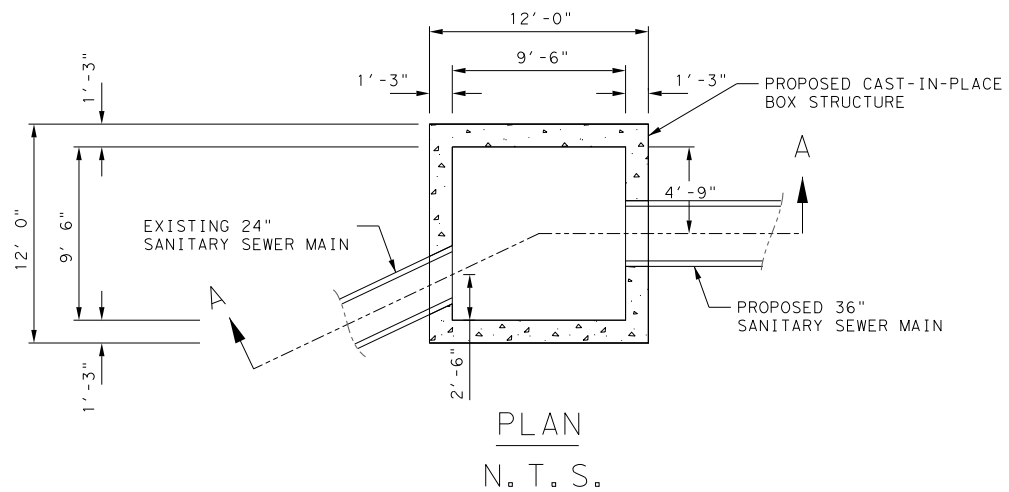
**Street Repair Data**

Street Width	28
Trench Repair	10' Wide
Quantity - of Street Repair (LF)	356
PCI	50

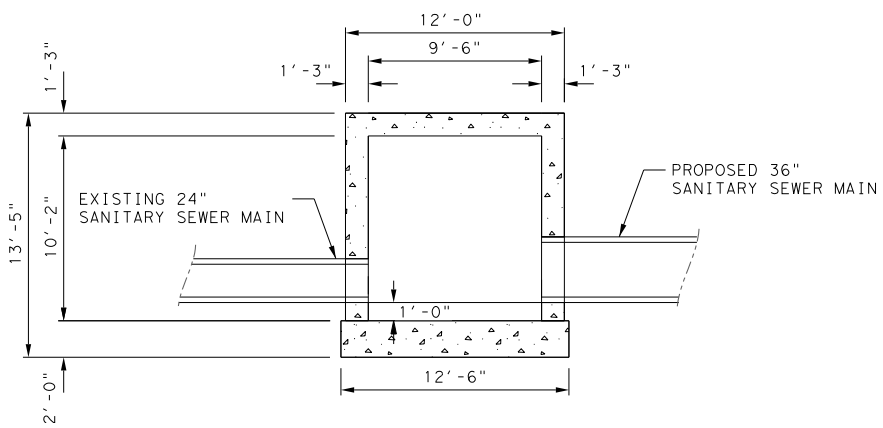
30% Package Number	2
Reason Selected for 30%	E Under Roads BPC
Base or Additional	Base Pipe
Not Originally Assigned to BPC	<input checked="" type="checkbox"/>
Low Income Area	No
On CPMS Project	0



MANHOLE STRUCTURE 1

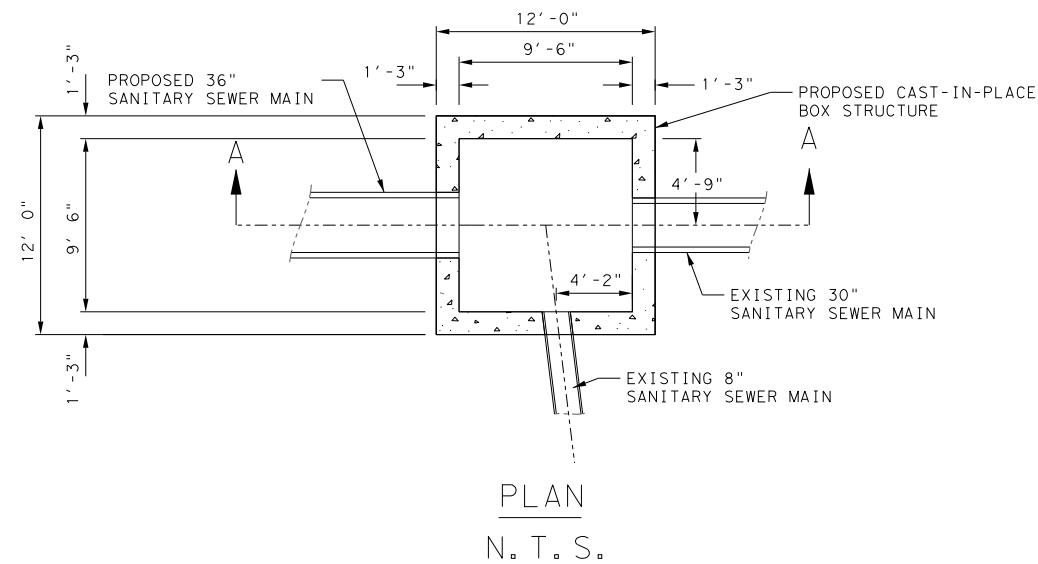


PLAN  
N. T. S.

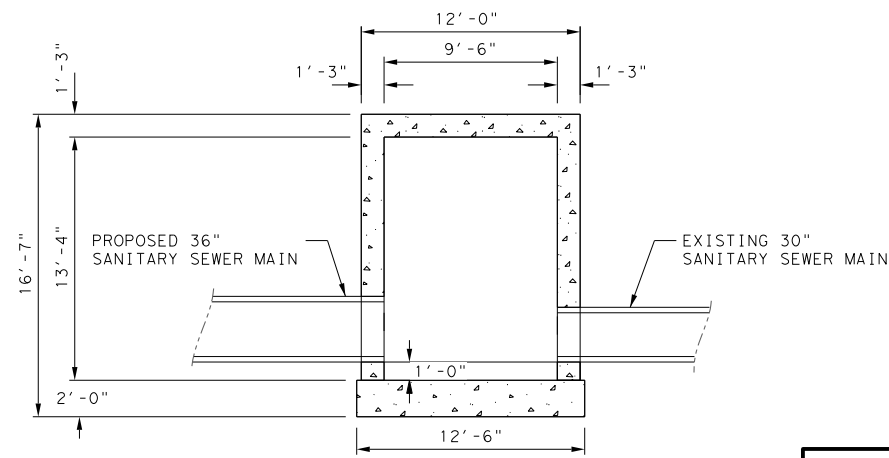


SECTION A-A  
N. T. S.

MANHOLE STRUCTURE 2



PLAN  
N. T. S.



SECTION A-A  
N. T. S.

NOTES:

1. MANHOLE STRUCTURES ARE TO INCLUDE STEEL REINFORCEMENT AS NEEDED.
2. MANHOLE STRUCTURES ARE TO BE COATED WITH A SAWS APPROVED SEWER COATING PRODUCT.

30% Design

**ROOSEVELT AVE - 36" FRP  
STRUCTURE EXHIBIT**

**Project** SSO Basin Planning Consultant  
30% Condition Ncti g'F lco gvt 'Rcenci g'4

**Date:** 6/29/2018

Sheet E/6

