CITY OF SAN ANGELO BELL STREET PAVING, WATER AND WASTWATER IMPROVEMENTS ALL PHASES SAN16188

ADDENDUM NO. 3 JANUARY 12, 2018

00 91 13 ADDENDUM NUMBER 003

The following additions, deletions, modifications, or clarifications shall be made to the appropriate sections of the Contract Documents. Bidders shall acknowledge receipt of this Addendum in the space provided on the Bid Form.

The Pre-Bid Questions Response Log documents all questions received by January 12, 2018 with responses provided by Freese and Nichols, Inc. If a question warranted a change to the bid documents then those changes are reflected in the addenda and supporting documentation. If a question did not warrant a change to the bid documents, a response is provided as part of the response log, which has been included as an attachment to this Addendum.



TECHNICAL SPECIFICATIONS:

REPLACE THE FOLLOWING SECTIONS:

Replace Section	With Section	
Price Proposal	Price Proposal	

DRAWINGS:

REPLACE THE FOLLOWING SHEETS

Phase	Replace Sheet	With Sheet
1	TS-02	TS-02
1	TS-04	TS-04
1	SMA-80(1)-12	SMA-80(1)-12
1	TS-FD-12	TS-FD-12
2	W-7	W-7
2	W-16	W-16
3	W-7	W-7

END OF ADDENDUM NO. 3

PHASE 1 PRE-BID QUESTIONS RESPONSE LOG



			Practical results
Project:	Bell Street Paving, Water, and Wastewater Improvements - All Phases	FNI Project No: SAN16188	Last Updated: <u>1/24/2018</u>
QUESTIONS SUBM	ITTED BY: DECEMBER 18, 2017		
NUM.	QUESTION	RESPONSE	ACTION
1	By-Pass Pumping System; Can the pumps required for the by-pass system be — One main pump running, one backup pump And a third stand by pump stationed in the contractors construction yard?	Yes, the stand-by pump may be positioned in the Contractor's construction yard, but the Contractor must demonstrate their ability to have the pump in operation in less than two hours. Once the pump is put in to operation, the Contractor shall have the ability to have another stand-by on site in less than 12 hours.	Refer to Addendum 01, A1-4 B.
2	By-Pass Pumping System; 2nd. Once the bypass contractor has set up the system and it's up and operational, can the time frame for The by-pass pump contractor to be on site change from 7 days to one day?	The By-Pass Contractor shall be required to be present during the first seven (7) days of operation of each by-pass pumping set up.	None
3	By-Pass Pumping System; 3rd. If the grade difference will allow, can we tie-into the existing sewer main on phase I with a tee-y and Once the new main is installed plug the tee-y . This will require an extra man-hole but the by-pass Pumping would not be required 24 hours a day 7 days a week?	This option could be considered but would likely be contingent upon replacing the wye with a straight run of pipe prior to final acceptance of the project.	None
4	Street Closure; As discussed in the first meeting can individual intersections be closed to accommodate utility crossings, If proper detours are in place? Even if the contractor was allowed only one closure at a time this would be Very helpful.	It is the EOR's opinion that non-signalized intersections could be temporarily closed during active work periods only, with an approved detour plan that is submitted by the Contractor.	None
5	Utility depth; There is a fair amount of rock excavation that will be encountered in this project. Would the city be Willing to change the depth of the new water main to 30 or 36 inches of cover? Or will the contractor Have to follow the profile on the plan sheets?	The Contractor shall follow the profile as shown in the plans.	None
6	Backfill Details; Per your detail backfill drawing you show only two vertical feet of base material required in the sewer and Water trenches in paved areas? Is this correct? If so, then we can use the material out of the sewer trench Above the bedding zone to backfill with correct?	Yes, the screened native soil may be used as backfill material below the first two feet and above the embedment zone, but it is required to meet the compaction densities stated in the specifications.	None
7	Backfill Details; Detail DT-05 Pipe embedment zone 1 shows 4 inches below pipe and 6 inches above pipe for gravel embedment. Detail — 4 — Pipe embedment zone shows 12 inches above pipe. Can you clarify what depth you will require?	Pipe Embedment Zone and required material shall extend to 12" above top of pipe.	None
8	Camera the Sewerlines; Would the city clean and camera the existing and new lines as agreed to earlier, or is the contractor going to camera and clean the lines. If the contractors has to hire someone this requires multiple trips and will be very costly.	After discussing with the City, Section 4.1.31 will govern the CCTV requirements, which means the City will camera and clean both the existing and proposed wastewater mains. Section 4.30 will be updated.	Refer to Addendum 1, Updated Technical Specifications, 4.30.
9	Asphalt Repair; Can hot mix cold lay material be used for the permanent asphalt repair on the utility cuts.	No, this is not allowed for the permanent repair.	None
10	Asphalt Repair; Do the bid item quantities for permanent asphalt repair , include all private asphalt repair behind the curb?	Yes, all permanent asphalt repair is accounted for as shown in the plan sets.	None.

PRE-BID QUESTIONS RESPONSE LOG





Innovative approaches Practical results Outstanding service

Project:	Bell Street Paving, Water, and Wastewater Improvements - All Phases	FNI Project No: SAN16188	Last Updated: <u>1/24/2018</u>
11	Asphalt Repair; Are we going to be required to put a temporary skin patch on utility trench cuts or can the base material just be maintained ?	Temporary asphalt repair is required unless final paving performed within 72 hours of completed backfill.	Refer to Addendum 01, Item A1-5 A.
12	Box Culvert; On phase II — water sheet 10 at station 15+20 there is an existing Concrete box culvert with a concrete apron, Approximately fifty feet wide, and five feet in depth . This will need to be a road bore, can we have a bid item For this crossing?	This section of the 16" waterline will be updated to show a By Other Than Open Cut Installation Method and the quantity will be added to the existing by other than open cut bid item in the Price Proposal.	Refer to Addendum 01, Updated Drawings, Phase II Sheet W-10 and the Updated Technical Specifications, Price Proposal.
13	Waterline Alignment; On phase III — 16 inch water line between Koberlin Street and Pulliam Street the plan sheets show the new water main to be installed five feet behind the curb. The existing phone line in most areas between these two streets is five feet behind the curb with the new gas line running between three and six feet . In my opinion there is no place to install the new water main without getting into Bell Street for this portion of project, would you allow the line to be installed in Bell Street?	After internal discussion and review with FNI's Construction Services team, it has been determined that it is possible to install the water main five feet behind the curb. There would be an increased cost and maintenance issues should the line be installed in Bell Street. In addition, the franchise utilities in this area have indicated that they may be relocating their lines, which may reduce the current congestion.	None.
14	Waterline Alignment; Contractor is also concerned about the tight tolerances between existing utilities and new installations-Particularly near Rio Concho.	After internal discussion and review with FNI's Construction Services team, it has been determined that it is possible to install the water main as shown in the plans that were issued for Bid.	None
15	Waterline Alignment; Contractor wishes to move towards the center/other side of street to save some curb removal (Phase II Sht W10).	The waterline alignment will remain as shown on the plans that were issued for Bid.	None
16	Phase III Water Construction; Sheet W 5 - Sta 24+19.26 The plan sheet shows a 12 inch 45 degree bend. We are reducing from 6 inch down to two inch water connection what is the 12 inch bend for?	Sheet W-5 has been updated to correct this call out at STA 24+19.26.	Refer to Addendum 01, Updated Drawings, Phase III Sheet W-5.
17	Phase III Water Construction; Plan sheet W 7 sta 32+46.63 Your label shows a 8x6 tee , shouldn't this be a 16x6 tee?	Yes. FNI will update the drawing.	Refer to Addendum 01, Updated Drawings, Phase III Sheet W-7.
18	Phase III Water Construction; Bid item for 8 inch valves phase III — calling for three each only found one at Sta. 8+42.05 plan sheet W 2 Can you tell me were the rest of the 8 inch valves are located?	FNI will update the bid item in the Price Proposal to call for one 8" gate valve instead of three.	Refer to Addendum 01, Updated Technical Specifications, Price Proposal.
19	Phase III- Sewer; Sheet SS 2 — Sta 0+ 36.45 shows a 5 foot Man-hole . Your profile sheet SS 4 line A2 shows this manhole to be a four foot diameter manhole , can yes clarify what size you need? Also line A 3 shows four foot drop plan sheet SS 3 Sta. 13+31.70 shows a five foot drop manhole?	The manhole on Sheet SS-4 at STA 0+36.45 should be a 5' Diameter Manhole. The drop on Sheet SS-4 should match what is shown in Sheet SS-3; therefore, it should be a 5' drop not a 4' drop.	Refer to Addendum 01, Updated Drawings, Phase III Sheet SS-4.
20	Phase II-Water; Plan sheet W 2 Sta. 6+ 82.57 The plan sheet calls for a 2 inch service with a pressure plug. Arc you just asking for a pvc cap?	Cap or plug is acceptable as long as it can handle the system pressure.	None
21	Phase II-Water; Plan sheet W 9 — Sta. 12+03.25 shows a 16x 6 tee for the fire hydrant lead this should be a 6x6 tee correct?	Yes. FNI will update the drawing to show a 6"x6"x6" tee at STA 12+03.25 in Phase II Sheet W- 9.	Refer to Addendum 01, Updated Drawings, Phase II Sheet W-9.

PRE-BID QUESTIONS RESPONSE LOG





Innovative approaches Practical results Outstanding service

Project:	Bell Street Paving, Water, and Wastewater Improvements - All Phases	FNI Project No: SAN16188	Last Updated: <u>1/24/2018</u>
22	Phase II-Water; Plan sheet W 15 — Sta 42+50 — Shows a 12x2x12 tee. This should be a 16x2x16 tee correct? Would you allow a service saddle verses a fitting instead2	Yes. FNI will update the drawing to show 16"x2"x16" tee at STA 42+50.00 in Phase II Sheet W-15. FNI will allow a service saddle.	Refer to Addendum 01, Updated Drawings, Phase II Sheet W-15.
23	Phase II-Water; Plan sheet W 7 Sta. 1+20 can you explain this tie in ? We have two 16 inch lines your tying in with a 12 inch line is this because you don't want to tap the line same size as line diameter?	That is correct. Also, this is a temporary connection as the line will connect to the proposed line but due to trying not to limit construction sequencing we are showing this tie- in to the existing line.	None
24	Phase II-Water; Plan sheet W 16 — Sta 1+78.96 the tap you show on the 20 inch line can you tell me if it's concrete cylinder or ductile pipe?	It is our understanding that this is concrete cylinder pipe but it is the Contractor's responsibility to field verify exact location and pipe type.	None
25	Regarding Specification 4.29.0.1, which states "a) This item pertains to Phase I of the Bell Street improvements." Is limitation to Phase I appropriate?	No. FNI will update to include all relevant phases.	Refer to Addendum 01, Item A1-2 A.
26	Contractor requested further review of testing requirements during pre-bid meetings.	After internal discussion and review with FNI's Construction Services team, it has been determined that there will be no changes to the testing requirements.	Refer to Addendum 01, Updated Drawings, Sheet Notes-1 for Phase 1, 2 and 3, which have been reissued to provide clarification regarding the responsible party for testing payment.
27	Contractor inquired if using low profile concrete barriers for TCP is required. Low profile concrete barriers are included in the TxDOT Standards for TCP, but they are not specifically referenced in any of the plan sets.	Low profile concrete barriers are not required for the typical conditions depicted in the TCP plans.	None.
28	Contractors requested clarification on their ability to shutdown multiple side street intersection at once as this would make RCC more feasible.	Multiple side street intersection closures during active work periods will be considered as part of the Contractors proposed TCP/Detour plans.	None.
29	Provide Clarification on available boring methods for TxDOT crossing (HDD or Dry/Auger Bore)	TxDOT states that dry or wet bore is acceptable.	None.
30	Contractor requested clarification regarding the allowable material for water services.	Type K Copper tubing and Rehau Municipex are both allowable material for water services.	Refer to Addendum 01, Item A1-1 A and A1-2 A.
31	What are the procedures for deviating from the TCP and what are the requirements for Detours?	Deviation from the TCP is subject to the City's approval of the Contractor's proposed TCP. With respect to detours, see response to Question Nos. 4 and 28 above.	None.
32	Contractor requests clarification on location of staging area.	Location of staging area and requirements have been provided in Addendum 01. The staging area will be located east of Marie St where Bryan St intersects for Contractor's use. Staging area shall be removed at the end of construction and all areas of disturbed soil permanently stabilized with vegetation or other material approved by COSA. Debris, unused stockpiles and materials shall be recycled or properly disposed of including the removal of soil contaminated from equipment leaks.	Refer to Addendum 01, Item A1-5 B.
33	Contractor requests clarification on bid items 5-16, 11-20, 16-16: 1" Water Meter & bid items 5-17 & 11-21: 2" Water Meter. Contractor understood that CoSA will normally provide water meters.	I ne віd item has been updated to clarify that the meter will be provided by the City.	Reter to Addendum 01, Updated Technical Specifications, Price Proposal.



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F	Project:	Bell Street Paving, Water, and Wastewater Improvements - All Phases	FNI Project No: SAN16188	Last Updated: 1/24/2018
C	QUESTIONS SUBM	ITTED BY: JANUARY 23, 2018		
	NUM.	QUESTION	RESPONSE	ACTION
	34	There are no concrete traffic barriers setup as a pay item on this project. However, there are 120 LF with end terminals to be placed when in installing the 10' X 5' box culvert just north of Koberlin (sheet 15 on Phase 2)? Does this item need to be added to bid sheet or is it covered under Barricades, Signs and Traffic Handling?	The cost of these items should be included in the bid price for Barricades, Signs, and Traffic Handling. No separate payment is provided.	No Action
	35	I've been looking for frequency of density testing roadway items (subgrade, base, asphalt) in specs/drawings but having a hard time finding them. Can you point me to the right section(s)?	For subgrade and base, testing should be in accordance with Sheet DT-02 City of San Angelo Detail. Asphalt density testing frequency is at the discretion of the City.	No Action
	36	It might be a good idea to add a bid item for testing to each one of the phases. It will be large enough that it will over inflate any bid item. Also, a bid item would show the city how much they are spending for testing.	Please bid as specified.	No Action
	36	Please find info below and attachments. Please advise on how we should quote this job because the plans and bid items do not match up. Per the bid items: 1 – SMA 28 4 – SMA 32 1 – SMA 32L 1 – SMA 36L 1 – SMA 40 Per the plans – SMA 80 sheet (PH1 – 2 OF 2, PAGE 11) 1 – SMA 28S 3 – SMA 32S 1 – SMA 32L 2 – SMA 36L 1 – SMA 40L	Clarification to bid item and quantities have been provided in Addendum 03.	Refer to revised signalization plan sheets provided with Addendum 03.
	37	Per the plans – Traffic Signal Summary (PH 1 – 1 OF 2 – PAGES 74-80) PAGE 76 & 77 SHOULD MATCH AND THEY DON'T PAGE 76 1 – SMA 36L 1 – SMA 40 1 – SMA 40 1 – SMA 32 PAGE 77 1 – SMA 28 (30FT UPRIGHT – NO LUM) 1 – SMA 40 (30FT UPRIGHT – NO LUM) 1 – SMA 32 (30FT UPRIGHT – NO LUM)	Clarification to bid item and quantities have been provided in Addendum 03.	Refer to revised signalization plan sheets provided with Addendum 03
	38	PAGE 78 & 79 SHOULD MATCH AND THEY DON'T PAGE 78 1 – SMA 36L 3 – SMA 32 PAGE 79 1 – SMA 32L 2 – SMA 32 (30FT UPRIGHT – NO LUM) 1 – SMA 28 (H HEIGHT OF 35'-NO LUM MARKED)	Clarification to bid item and quantities have been provided in Addendum 03.	Refer to revised signalization plan sheets provided with Addendum 03.
	39	Will prime be required under the Ty-B hot mix?	Prime coat is allowed for protecting the finished base but is not required. In the event the contractor applies a prime coat, the cost should be considered subsidiary to the flex base and no separate payment will be provided.	No Action

	PRE-BID QUESTIONS RESPONSE LOG	FREESE MICHOLS	Innovative approaches Practical results Outstanding service
Project:	Bell Street Paving, Water, and Wastewater Improvements - All Phases	FNI Project No: SAN16188	Last Updated: <u>1/24/2018</u>
40	I would like to submit a question, regarding the estimated quantity of rock your engineering firm anticipates the contractor will find installing the water and sewer for phases one, two, and three. Historically this area is known for substantial amounts of rock. Several places along the route of the utilities the rock surfaces to the top of the ground. My concern is how much rock either by I.f. or cubic yard Did the engineers include in there construction estimate? We conducted our own investigation and have a concern that the information provided is very misleading. I know there no rock clause for removal but There must have been a quantity figured to have an accurate construction estimate or just say we don't know.	The Direct Quantity of Rock was not calculated. The Bore Logs and City knowledge of the area were used to determine the depth and likelihood of encountering rock and the Price per linear foot of pipe was adjusted to take in to account the additional effort associated with hard rock excavation.	No Action
41	Please forward question to the appropriate people for an answer. The quantities need minor adjustment to be corrected. Please find attachment explaining why. The foundations need to have an adjusted quantity because of the poles that are being called for. Please let me know is you need anything else.	Clarification to bid item and quantities have been provided in Addendum 03.	Refer to revised signalization plan sheets and bid quantities for drilled shafts provided with Addendum 03.

UPDATED TECHNICAL SPECIFICATIONS



Pursuant to the Foregoing Notice to Respondents, the undersigned Respondent hereby proposes to do all work and furnish all necessary superintendence, labor, machinery, equipment, tools, and materials, and whatever else may be necessary to complete all work upon which he Proposals, as provided by the attached specifications and shown on the plans, and binds himself on acceptance of this proposal to execute an Agreement and Bonds according to the accompanying forms, for performing and completing the said work within the time stated, and furnishing all required guarantees, for the following prices to-wit.

At a minimum, the Respondent will specify one paving alternative. If Respondent proposes to both paving alternatives, City to determine which alternative will be selected for each phase of this Project.

PHASE I - SO	PHASE I - SOUTH					
ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT
UNIT 1: GENER	RAL					
1-1	CoSA 500	1	LS	MOBILIZATION / PREPARING ROW		
				TOTAL AMOUNT BID F	OR UNIT 1: GENERAL	
UNIT 2: PAVIN	G IMPROVEMI	ENTS				
2-1	CoSA 104	1496	SY	REMOVING CONCRETE (DRIVEWAYS AND SIDEWALK)		
2-2	CoSA 104	6809	LF	REMOVING CONCRETE (CURB & GUTTER)		
2-3	CoSA 105	25450	SY	REMOVE ASPHALT PAVEMENT (4" AVG DEPTH)		
2-4	CoSA 132	273	CY	EMBANKMENT (DENS CNTRL)(CL 3)		
2-5	CoSA 162	4316	SY	DRILL SEEDING		
2-6	CoSA 247	1511	SY	FL BS (CMP IN PLC)(TY A)(GR1-2)(6")(TCP TEMP PAVT)		
2-7	CoSA 275	28604	SY	CEMENT TREATED SUBGRADE (8")		
2-8	CoSA 275	395	TN	CEMENT		
2-9	CoSA 640	1511	SY	D-GR HMA(SQ) TY D PG 64-72 (2" THICK)(TCP TEMP PAVT)		
2-10	CoSA 502	18	мо	BARRICADES, SIGNS AND TRAFFIC HANDLING		
2-11	CoSA 502	48	LF	ROCK FILTER DAMS		
2-12	CoSA 506	48	LF	REMOVE ROCK FILTER DAMS		
2-13	CoSA 506	2150	LF	TEMP SEDIMENT CONTROL FENCE (INSTALL)		
2-14	CoSA 506	2150	LF	TEMP SEDIMENT CONTROL FENCE (REMOVE)		
2-15	CoSA 529	7233	LF	CONCRETE CURB & GUTTER (6")		
2-16	CoSA 530	2159	SY	DRIVEWAYS (CONCRETE)		
2-17	CoSA 531	2313	SY	CONCRETE SIDEWALKS (4")		
2-18	CoSA 531	26	EA	CURB RAMPS (TY 7)		
2-19	CoSA 531	2	EA	CURB RAMPS (TY 10)		
2-20	CoSA 560	9	EA	MAILBOX INSTALL-S (TWG POST) TY 1		
2-21	TxDOT 644	17	EA	RELOCATE SM RD SIGN SUP & AMS		

2-22	CoSA 644	12	EA	INST SM RD SIGN SUP & AM	
2-23	CoSA 666	1631	LF	REFL PAVEMENT MARKING TY 1 (W) 4" (BRK)	
2-24	CoSA 666	219	LF	REFL PAVEMENT MARKING TY 1 (W) 8" (SLD)	
2-25	CoSA 666	744	LF	REFL PAVEMENT MARKING TY 1 (W) 24" (SLD)	
2-26	CoSA 666	2	EA	REFL PAVEMENT MARKING TY 1 (W) (ARROW)	
2-27	CoSA 666	2	EA	REFL PAVEMENT MARKING TY 1 (W) (WORD)	
2-28	CoSA 666	7242	LF	REFL PAVEMENT MARKING TY 1 (Y) 4" (SLD)	
2-29	CoSA 666	170	LF	REFL PAVEMENT MARKING TY 1 (Y) 12" (SLD)	
2-30	CoSA 672	98	EA	REFLECTOR PAVEMENT MARKING TY 2 - A - A	
2-31	CoSA 672	82	EA	REFLECTOR PAVEMENT MARKING TY 1 - C	
2-32	CoSA 680	2	EA	INSTALL HWY TRAF SIGNAL (ISOLATED)	
2-33	CoSA 690	6	EA	REMOVAL OF TRAFFIC SIGNAL POLE ASSEM	
2-34	CoSA 6002	2	EA	VIVIDS PROCESSOR SYSTEM	
2-35	CoSA 6002	2	EA	VIVIDS CAMERA ASSEMBLY	
2-36	TxDOT 6002	2	EA	VIVIDS SETUP SYSTEM (ISOLATED)	
2-37	TxDOT 6002	132	LF	VIVDS COMMUNICATION CABLE (Cat-5)	
2-38	TxDOT 618	235	LF	CONDT (PVC) (SCH 40) (2")	
2-39	TxDOT 618	156	LF	CONDT (PVC) (SCH 40) (3")	
2-40	TxDOT 618	464	LF	CONDT (PVC) (SCH 40) (3") (BORE)	
2-41	TxDOT 618	40	LF	CONDT (RM) (2")	
2-42	TxDOT 620	861	LF	ELEC CONDR (NO. 6) BARE	
2-43	TxDOT 620	108	LF	ELEC CONDR (NO.6) INSULATED	
2-44	TxDOT 621	680	LF	TRAY CABLE (4 CONDR) (12 AWG)	
2-45	TxDOT 684	1785	LF	TRF SIG CBL (TY A)(14 AWG)(5 CONDR)	
2-46	TxDOT 684	897	LF	TRF SIG CBL (TY A)(14 AWG)(16 CONDR)	
2-47	TxDOT 6089	259	LF	CAT 5 ETHERNET CABLE	
2-48	TxDOT 684	404	LF	TRF SIG CBL (TY A)(14 AWG)(3 CONDR)	
2-49	TxDOT 6054	112	LF	COAXIAL CABLE	
2-50	TxDOT 416	78	LF	DRILL SHAFT (TRF SIG POLE) (24 IN)	
2-51	TxDOT 416	60	LF	DRILL SHAFT (TRF SIG POLE) (30 IN)	
2-52	CoSA 416	42	LF	DRILL SHAFT (TRF SIG POLE) (36 IN)	
2-53	CoSA 682	16	EA	VEH SIG SEC (12")LED(GRN)	

JNIT 4: ALT. B ITEM NO. 4-1 4-2 JNIT 5: WATEI ITEM NO. 5-1 5-2	SPEC. NO. TxDOT 3016 CoSA 110 R IMPROVEME SPEC. NO. CoSA 4.9 CoSA 4.9	EST. QTY 25793 6976 EST. QTY 4196 20	UNITS CY UNITS LF LF	ROLLER COMPACTED CONCRETE (8.5" THICK) (BID ALT B) EXCAVATION (ROADWAY)(BID ALT B) TOTAL AMOUNT BID FOR UNIT 4: ROLLER COI DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING	UNIT COST	AMOUNT
JNIT 4: ALT. B ITEM NO. 4-1 4-2 JNIT 5: WATE ITEM NO. 5-1	SPEC. NO. TxDOT 3016 CoSA 110 R IMPROVEME SPEC. NO. CoSA 4.9	EST. QTY 25793 6976 ENTS EST. QTY 4196	SY CY UNITS LF	ROLLER COMPACTED CONCRETE (8.5" THICK) (BID ALT B) EXCAVATION (ROADWAY)(BID ALT B) TOTAL AMOUNT BID FOR UNIT 4: ROLLER COI DESCRIPTION 16" WATER LINE	UNIT COST	AMOUNT
JNIT 4: ALT. B ITEM NO. 4-1 4-2 JNIT 5: WATE ITEM NO.	SPEC. NO. TxDOT 3016 CoSA 110 R IMPROVEME SPEC. NO.	EST. QTY 25793 6976 ENTS EST. QTY	SY CY UNITS	ROLLER COMPACTED CONCRETE (8.5" THICK) (BID ALT B) EXCAVATION (ROADWAY)(BID ALT B) TOTAL AMOUNT BID FOR UNIT 4: ROLLER COI DESCRIPTION 16" WATER LINE	WPACTED CONCRETE	AMOUNT
JNIT 4: ALT. B ITEM NO. 4-1 4-2 JNIT 5: WATE	SPEC. NO. TxDOT 3016 CoSA 110	25793 6976 NTS	SY CY	ROLLER COMPACTED CONCRETE (8.5" THICK) (BID ALT B) EXCAVATION (ROADWAY)(BID ALT B) TOTAL AMOUNT BID FOR UNIT 4: ROLLER CO	MPACTED CONCRETE	
JNIT 4: ALT. B ITEM NO. 4-1 4-2	SPEC. NO. TxDOT 3016 CoSA 110	25793 6976	SY CY	ROLLER COMPACTED CONCRETE (8.5" THICK) (BID ALT B) EXCAVATION (ROADWAY)(BID ALT B) TOTAL AMOUNT BID FOR UNIT 4: ROLLER COM	MPACTED CONCRETE	
JNIT 4: ALT. B ITEM NO. 4-1 4-2	SPEC. NO. TxDOT 3016 CoSA 110	25793 6976	SY CY	ROLLER COMPACTED CONCRETE (8.5" THICK) (BID ALT B) EXCAVATION (ROADWAY)(BID ALT B)		
INIT 4: ALT. B ITEM NO. 4-1	SPEC. NO. TxDOT 3016	25793	SY			
JNIT 4: ALT. B	SPEC. NO.	EST. QTY	011110			
INIT 4: ALT. B			LINITS	DESCRIPTION	UNIT COST	AMOUNT
UNIT 4: ALT. B - ROLLER COMPACTED CONCRETE						
				TOTAL AMOUNT BID FOR I	UNIT 3: HMAC PAVING	
3-4	110	12906	CY			
3-3	341	25793	SY			
3-2	341	25793	SY			
3-1	247 CoSA	28604	SY	и LEA DAOL (UMP IN FEAUE)() I A GIV I-2/(FINAL PUO)()2 / (DID ALT A)		
ITEM NO.	SPEC. NO.	EST. QTY	UNITS		UNIT COST	AMOUNT
NIT 3: ALT. A	- HMAC PAVII	NG	1			
				TOTAL AMOUNT BID FOR UNIT 2: PA	VING IMPROVEMENTS	
2-68	624	2	EA	GRUUND BUX TY D (162922) W/APRUN		
2-67	TxDOT 624	11	EA			
2-66	TxDOT 687	13	EA	PED POLE ASSEMBLY		
2-65	TxDOT 688	16	EA	PED DETECT PUSH BUTTON (APS)		
2-64	TxDOT 686	1	EA	INS TRF SIG PL AM 1 ARM(40')		
2-63	TxDOT 686	2	EA	INS TRF SIG PL AM 1 ARM(36')LUM		
2-62	TxDOT 686	θ	EA	INS TRF SIG PL AM 1 ARM(32')LUM		
2-61	TxDOT 686	4	EA	INS TRF SIG PL AM 1 ARM(32')		
2-60	TxDOT 686	1	EA	INS TRF SIG PL AM 1 ARM(28')		
2-59	TxDOT 682	16	EA	PED SIG SEC (LED)(COUNTDOWN)		
2-58	TxDOT 682	1	EA	VEH SIG SEC (12")LED(RED ARW)		
2-57	TxDOT 682	16	EA	VEH SIG SEC (12")LED(RED)		
2-56	TxDOT 682	1	EA	VEH SIG SEC (12")LED(YEL ARW)		
2-55	TxDOT 682	16	EA	VEH SIG SEC (12")LED(YEL)		
	682	1	EA	VEH SIG SEC (12")LED(GRN ARW)		

1 5-4	CoSA 4.9	985	LF	8" WATER LINE		
1 5-5	CoSA 4.9	189	LF	6" WATER LINE		
5-6	CoSA 4.9	20	LF	24" PVC CASING BY OTHER THAN OPEN CUT		
5-7	CoSA 4.4	4829	LF	TRENCH SAFETY		
5-8	CoSA 4.10	1	EA	2" COMBINATION AIR VALVE		
5-9	CoSA 4.10	5	EA	16" GATE VALVE		
5-10	CoSA 4.10	12	EA	8" GATE VALVE		
1 5-11	CoSA 4.10	10	EA	6" GATE VALVE		
5-12	CoSA 4.13	7	EA	FIRE HYDRANTS		
<u>1</u> 5-13	CoSA 4.14	9	EA	1" WATER SERVICE		
5-14	CoSA 4.14	1	EA	2" WATER SERVICE		
5-15	CoSA 4.14	9	EA	2" WATER SERVICE WITH DOUBLE 1" SERVICE		
1 5-16	CoSA 4.14	θ	EA	4" WATER METER		
<u>_1</u> 5-17	CoSA 4.14	θ	EA	2" WATER METER		
5-18	CoSA 4.19	1	EA	20" LINESTOP		
5-19	CoSA 4.19	2	EA	16" LINESTOP		
5-20	CoSA 4.14	1	EA	20"X16" WET TAP & VALVE		
<u>1</u> 5-21	CoSA 4.14	1	EA	16"X16" WET TAP & VALVE		
5-22	CoSA 4.14	1	EA	8"X8" TAPPING SLEEVE & VALVE		
<u>_1</u> 5-23	CoSA 4.14	θ	EA	8"X2" TAPPING SADDLE & VALVE		
5-24	CoSA 4.14	1	EA	CONNECTION TO EXISTING 16" WATER LINE		
5-25	CoSA 4.14	5	EA	CONNECTION TO EXISTING 8" WATER LINE		
5-26	CoSA 4.14	7	EA	CONNECTION TO EXISTING 6" WATER LINE		
5-27	CoSA 4.1	273	CY	WATER LINE ABANDONMENT GROUT		
5-28	CoSA 4.10	21	EA	REMOVE EXISTING VALVE		
5-29	CoSA 4.13	7	EA	REMOVE EXISTING FIRE HYDRANT		
5-30	CoSA 4.17	3	EA	REMOVE EXISTING WATER METER		
5-31	CoSA 4.6	20	SY	8" FLEX BASE (FOR ALLEY REPAIR BEYOND PROPOSED PAVEMENT LIMITS)		
5-32	CoSA 4.7	235	SY	PERMANENT ASPHALT PAVEMENT REPAIR		
			-	TOTAL AMOUNT BID FOR UNIT 5: WA	TER IMPROVEMENTS	

UNIT 6: SANIT	UNIT 6: SANITARY SEWER IMPROVEMENTS						
ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT	
<u>_1</u> 6-1	CoSA 4.23	1381	LF	24" SANITARY SEWER LINE			
6-2	CoSA 4.23	134	LF	18" SANITARY SEWER LINE			
6-3	CoSA 4.23	1509	LF	12" SANITARY SEWER LINE			
6-4	CoSA 4.23	50	LF	12" SANITARY SEWER LINE INSIDE OF CASING			
<u></u>	CoSA 4.23	1351	LF	10" SANITARY SEWER LINE			
6-6	CoSA 4.23	1796	LF	8" SANITARY SEWER LINE			
6-7	CoSA 4.23	108.8	LF	8" PRESSURED RATED SANITARY SEWER LINE			
6-8	CoSA 4.4	6280	LF	TRENCH SAFETY			
6-9	CoSA 4.23	50	LF	CONCRETE ENCASEMENT			
6-10	CoSA 4.25	7	EA	4' DIAMETER MANHOLE			
6-11	CoSA 4.25	9	EA	5' DIAMETER MANHOLE			
<u>1</u> 6-12	CoSA 4.25	9	EA	5' DIAMETER DROP MANHOLE			
6-13	CoSA 4.25	1	EA	6' DIAMETER DROP MANHOLE			
<u>1</u> 6-14	CoSA 4.23	5	EA	TRENCH/CHECK DAM			
6-15	CoSA 4.27	9	EA	SANITARY SEWER SERVICE			
6-16	CoSA 4.34	158	CY	SANITARY SEWER LINE ABANDONMENT GROUT			
<u>_1</u> 6-17	CoSA 4.34	6	EA	REMOVE/ABANDON EXISTING MANHOLE			
6-18	CoSA 4.34	1	EA	REMOVE EXISTING CLEANOUT			
6-19	CoSA 4.5	3002	SY	DRILL SEEDING			
6-20	CoSA 4.29	1	LS	BYPASS PUMPING			
6-21	CoSA 4.7	1118	SY	PERMANENT ASPHALT PAVEMENT REPAIR			

ITEM NO. UNIT 7: GENERA 7-1	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT
UNIT 7: GENER 7-1	AL CoSA					
7-1	CoSA 500					
	500	1	LS	MOBILIZATION / PREPARING ROW		
				TOTAL AMOUNT BID F	OR UNIT 7: GENERAL	
UNIT 8: PAVING	IMPROVEME	INTS				
8-1	CoSA 100	8107	SY	REMOVING CONCRETE PAVEMENT (6"-8" THICK)		
8-2	CoSA REMOVING CONCRETE (DRIVEWAYS AND SIDEWALK) 100 169 SY					
8-3	CoSA 100	3405	LF	REMOVING CONCRETE (CURB & GUTTER)		
8-4	CoSA 105	17275	SY	REMOVE ASPHALT PAVEMENT (4" AVG DEPTH)		
8-5	CoSA 132	310	CY	EMBANKMENT (FINAL)(ORD COMP)(TY B)(CL 3)		
8-6	CoSA 107	3185	SY	DRILL SEEDING		
8-7	CoSA 247	333	SY	FL BS (CMP IN PLC)(TY A)(GR1-2)(6")(Temp Pavt)		
8-8	CoSA 275	16703	SY	CEMENT TREATED SUBGRADE (8")		
8-9	CoSA 275	230	TN	CEMENT		
8-10	CoSA 340	333	SY	D-GR HMA(SQ) TY D PG 64-72 (2" THICK)(Temp Pavt)		
8-11	CoSA 502	10	MO	BARRICADES, SIGNS AND TRAFFIC HANDLING		
8-12	CoSA 506	660	LF	TEMP SEDIMENT CONTROL FENCE (INSTALL)		
8-13	CoSA 506	660	LF	TEMP SEDIMENT CONTROL FENCE (REMOVE)		
8-14	CoSA 506	50	LF	TEMP EROSION CONTROL LOGS (INSTALL)		
8-15	CoSA 506	50	LF	TEMP EROSION CONTROL LOGS (REMOVE)		
8-16	CoSA 529	2068	LF	CONCRETE CURB & GUTTER (STANDARD)		
8-17	CoSA 529	2259	LF	CONCRETE CURB & GUTTER (MOUNTABLE)		
8-18	CoSA 530	790	SY	DRIVEWAYS (CONCRETE)		
8-19	CoSA 560	10	EA	MAILBOX INSTALL-S (TWG POST) TY 1		
8-20	CoSA 644	9	EA	RELOCATE SM RD SIGN SUP & AMS		
8-21	CoSA 644	18	EA	INST SM RD SIGN SUP & AM		
8-22	CoSA 666	1072	LF	REFLECTOR PAVEMENT MARKING TY 1 (W) 4" (BRK)		
8-23	CoSA 666	145	LF	REFLECTOR PAVEMENT MARKING TY 1 (W) 4" (SLD)		
8-24	CoSA 666	70	LF	REFLECTOR PAVEMENT MARKING TY 1 (W) 24" (SLD)		
8-25	CoSA 666	4	EA	REFLECTOR PAVEMENT MARKING TY 1 (W) (ARROW)		
8-26	CoSA 666	4	EA	REFLECTOR PAVEMENT MARKING TY 1 (W) (WORD)		
8-27	CoSA 666	4288	LF	REFLECTOR PAVEMENT MARKING TY 1 (Y) 4" (SLD)		

8-28	CoSA 672	53	EA	REFLECTOR PAVEMENT MARKING TY 2 - A - A		
8-29	CoSA 672	53	EA	REFLECTOR PAVEMENT MARKING TY 1 - C		
			1	TOTAL AMOUNT BID FOR UNIT 8: PAV	ING IMPROVEMENTS	
UNIT 9: ALT. A	- HMAC PAVI	NG				
ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT
9-1	CoSA 247	16703	SY	FLEX BASE (CMP IN PLACE)(TY A GR 2)(CL 4)(12" THICK) (BID ALT A)		
9-2	CoSA 341	14974	SY	D-GR HMA TY-B PG64-22 (2.5" THICK)(BID ALT A)		
9-3	CoSA 341	14974	SY	D-GR HMA TY-D PG64-22 (1.5" THICK)(BID ALT A)		
9-4	CoSA 110	9130	CY	EXCAVATION (ROADWAY)(BID ALT. A)		
				TOTAL AMOUNT BID FOR U	NIT 9: HMAC PAVING	
UNIT 10: ALT.	B - ROLLER C	OMPACTED	CONCR	RETE		
ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT
10-1	TxDOT 3016	14974	SY	ROLLER COMPACTED CONCRETE (8.5" THICK) (BID ALT B)		
10-2	CoSA 110	6050	CY	EXCAVATION (ROADWAY)(BID ALT B)		
			•	TOTAL AMOUNT BID FOR UNIT 10: ROLLER CON	IPACTED CONCRETE	
UNIT 11: WATE		ENTS				
ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT
11-1	CoSA 4.9	82	LF	20" WATER LINE		
11-2	CoSA 4.9	4137	LF	16" WATER LINE		
11-3	CoSA 4.9	483	LF	16" WATER LINE INSIDE CASING BY OTHER THAN OPEN CUT		
11-4	CoSA 4.9	2382	LF	12" WATER LINE		
11-5	CoSA 4.9	173	LF	8" WATER LINE		
11-6	CoSA 4.9	38	LF	2" WATER LINE		
11-7	CoSA 4.9	483	LF	30" STEEL CASING BY OTHER THAN OPEN CUT		
11-8	CoSA 4.4	6774	LF	TRENCH SAFETY		
11-9	CoSA 4.10	1	EA	2" COMBINATION AIR VALVE		
11-10	CoSA 4.10	1	EA	20" GATE VALVE		
11-11	CoSA 4.10	8	EA	16" GATE VALVE		
11-12	CoSA 4.10	5	EA	12" GATE VALVE		
11-13	CoSA 4.10	2	EA	8" GATE VALVE		
11-14	CoSA 4.10	6	EA	6" GATE VALVE		
11-15	CoSA 4.10	1	EA	12" INSERTA-VALVE		
11-16	CoSA 4.10	1	EA	4" BLOW OFF VALVE		
11-17	CoSA 4.13	6	EA	FIRE HYDRANTS		
11-18	CoSA 4.14	23	EA	1" WATER SERVICE		
11-19	CoSA 4.14	11	EA	2" WATER SERVICE WITH DOUBLE 1" SERVICE		
11-20	CoSA 4.14	θ	EA	1" WATER METER		

11-21	CoSA 4.14	θ	EA	2" WATER METER		
11-22	CoSA 4.19	1	EA	16" LINE STOP		
11-23	CoSA 4.14	1	EA	CONNECTION TO EXISTING 20" WATER LINE		
11-24	CoSA 4.14	5	EA	CONNECTION TO EXISTING 16" WATER LINE		
11-25	CoSA 4.14	1	EA	CONNECTION TO EXISTING 12" WATER LINE		
11-26	CoSA 4.14	2	EA	CONNECTION TO EXISTING 8" WATER LINE		
11-27	CoSA 4.14	4	EA	CONNECTION TO EXISTING 6" WATER LINE		
11-28	CoSA 4.14	4	EA	CONNECTION TO EXISTING 2" WATER LINE		
11-29	CoSA 4.1	336	CY	WATER LINE ABANDONMENT GROUT		
11-30	CoSA 4.10	14	EA	REMOVE EXISTING VALVE		
11-31	CoSA 4.13	4	EA	REMOVE EXISTING FIRE HYDRANT		
11-32	CoSA 4.44	5	SY	CONCRETE VALLEY GUTTER		
11-33	CoSA 4.44	1611	LF	PERMANENT CURB AND GUTTER REPAIR		
11-34	CoSA 4.7	2653	SY	PERMANENT ASPHALT PAVEMENT REPAIR		
11-35	CoSA 4.14	3	EA	2" WATER SERVICE		
11-36	CoSA 4.7	19	SY	8" FLEXBASE (FOR PARKING LOT REPAIR BEYOND PROPOSED PAVEMENT LIMITS)		
11-37	CoSA 4.19	1	EA	20" LINESTOP		
				TOTAL AMOUNT BID FOR UNIT 11: WA	ATER IMPROVEMENTS	

PHASE III -	CENTRAL	1	1			
ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT
UNIT 12: GEN	ERAL					
12-1	CoSA 500	1	LS	MOBILIZATION / PREPARING ROW		
		1		TOTAL AMOUNT BID FC	R UNIT 12: GENERAL	
UNIT 13: PAVI		IENTS				
13-1	CoSA 100	2474	SY	REMOVING CONCRETE PAVEMENT (6"-8" THICK)		
13-2	CoSA 100	1282	SY	REMOVING CONCRETE (DRIVEWAYS AND SIDEWALK)		
13-3	CoSA 100	4087	LF	REMOVING CONCRETE (CURB & GUTTER)		
13-4	CoSA 105	19020	SY	REMOVE ASPHALT PAVEMENT (4" AVG DEPTH)		
13-5	CoSA 132	300	CY	EMBANKMENT (FINAL)(ORD COMP)(TY B)(CL 3)		
13-6	CoSA 107	3393	SY	DRILL SEEDING		
13-7	CoSA 247	820	SY	FL BS (CMP IN PLC)(TY A)(GR1-2)(6")(TCP TEMP PAVT)		
13-8	CoSA 275	20106	SY	CEMENT TREATED SUBGRADE (8")		
13-0	CoSA 275	277.4		CEMENT		
13-9	CoSA	277.4	EV.	D-GR HMA(SQ) TY D PG 64-72 (2" THICK)(TCP TEMP PAVT)		
13-10	CoSA	820	51	BARRICADES, SIGNS AND TRAFFIC HANDLING		
13-11	502 CoSA	18	МО	ROCK FILTER DAMS		
13-12	506 CoSA	48	LF	REMOVE ROCK FILTER DAMS		
13-13	506	48	LF			
13-14	506	1298	LF			
13-15	CoSA 506	1298	LF	TEMP SEDIMENT CONTROL FENCE (REMOVE)		
13-16	CoSA 506	120	LF	TEMP EROSION CONTROL LOGS (INSTALL)		
13-17	CoSA 506	120	LF	TEMP EROSION CONTROL LOGS (REMOVE)		
13-18	CoSA 529	5227	LF	CONCRETE CURB & GUTTER (STANDARD)		
13-19	CoSA 529	40	LF	CONCRETE CURB & GUTTER (SAWTOOTH)		
13-20	CoSA 531	1211	SY	DRIVEWAYS (CONCRETE)		
13-21	CoSA 531	1633	SY	CONCRETE SIDEWALKS (4")		
13-22	CoSA 53	10	EA	CURB RAMPS (TY 7)		
13-23	CoSA 560	4	EA	MAILBOX INSTALL-S (TWG POST) TY 1		
13-24	CoSA 560	1	EA	MAILBOX (GANG TYPE)(RELOCATE)(INST 4" CONC PAD)		
13-25	CoSA 644	8	EA	RELOCATE SM RD SIGN SUP & AMS		
13-26	CoSA 644	14	EA	REMOVE SM RD SIGN SUP & AMS		
13-27	CoSA 644	14	EA	INST SM RD SIGN SUP & AM		
1	1	I	1]	1

15.29 Code 15.39 Code 15.39 Code 15.30 Code 15.30 </th <th>13-28</th> <th>CoSA 900</th> <th>1252</th> <th>LF</th> <th>REFLECTOR PAVEMENT MARKING TYT (W)4 (BRK)</th> <th></th> <th></th>	13-28	CoSA 900	1252	LF	REFLECTOR PAVEMENT MARKING TYT (W)4 (BRK)		
Solo Code 10 Code 10 <thcode 10 <thcode 10 <thcode< td=""><td>13-29</td><td>CoSA 900</td><td>79</td><td>LF</td><td>REFLECTOR PAVEMENT MARKING TY 1 (W) 8" (SLD)</td><td></td><td></td></thcode<></thcode </thcode 	13-29	CoSA 900	79	LF	REFLECTOR PAVEMENT MARKING TY 1 (W) 8" (SLD)		
10-31 CodA (4) L <thl< th=""> L L <th< td=""><td>13-30</td><td>CoSA 900</td><td>174</td><td>LF</td><td>REFLECTOR PAVEMENT MARKING TY 1 (W) 24" (SLD)</td><td></td><td></td></th<></thl<>	13-30	CoSA 900	174	LF	REFLECTOR PAVEMENT MARKING TY 1 (W) 24" (SLD)		
15.00 Code (a) IF REFLICING ADVIRUENT LARGENCY TY (7) 47 (EX) 15.30 Code (b) (b) (c) (c) (c) 15.30 Code (c) (c) (c) (c) (c) 15.30 Code (c) (c) (c) (c) (c) (c) 15.30 Code (c) (c) (c) (c) (c) (c) (c) 15.30 Code (c) (c) (c) (c) (c) (c) (c) (c) 15.30 Code (c) (c)	13-31	CoSA 900	2	EA	REFLECTOR PAVEMENT MARKING TY 1 (W) (ARROW)		
ISAB ODA IF EVENTION FAVORABLE VARIANCE VARIA	13-32	CoSA 900	6066	LF	REFLECTOR PAVEMENT MARKING TY 1 (Y) 4" (SLD)		
1534 Costa 153 177 16 REF_ECTOR RAVIES/INT MARGING 17 3- A - A 1535 Costa 1530 Costa 1530 177 16 REF_ECTOR RAVIES/INT MARGING 17 3- C TOTAL AMOUNT BID FOR UNIT 12 PAINING MEROPERATION UNIT 14: ALT A - HMAC PAINIO TOTAL AMOUNT BID FOR UNIT 12 PAINING MEROPERATION UNIT 5: ALT A - HMAC PAINIO UNIT 5: ALT A - HMAC PAINING Colspan="2">Colspan="2">A MOUNT BID FOR UNIT 5: ALT A UNIT 5: ALT B - ROLLER COMPACTED CONCRETE TOTAL AMOUNT BID FOR UNIT 6: HMAC PAINING UNIT 5: ALT B - ROLLER COMPACTED CONCRETE TOTAL AMOUNT BD FOR UNIT 6: ROLLER COMPACTED CONCRETE TOTAL AMOUNT BD FOR UNIT 6: ROLLER COMPACTED CONCRETE TOTAL AMOUNT BD FOR UNIT 6: ROLLER COMPACTED CONCRETE TOTAL AMOUNT 8D FOR UNIT 6: ROLLER COMPACTED CONCRETE TOTAL AMOUNT 8D FOR UNIT 6: ROLLER COMPACTED CONCRETE TOTAL AMOUNT 8D FOR UNIT 6: ROLLER	13-33	CoSA 900	191	LF	REFLECTOR PAVEMENT MARKING TY 1 (Y) 12" (SLD)		
13.00 COSA (7) 4 Lo. REFLECTOR PACIFICATION MARKING YY - C TOTAL AMOUNT BID FOR UNIT 12: PACHING MERODEMENTS UNIT 14: ALT HMAC PAVING UNIT 14: ALT HMAC PAVING UNIT 14: ALT HMAC PAVING UNIT 3: PAVING MERODEMENTS UNIT 14: ALT HMAC PAVING COSA COSA UNIT 3: PAULE PAVING PACEAD COSA COSA UNIT 16: ALT. 8: FOLLER COMPACTED CONCRETE TOTAL AMOUNT BD FOR UNIT 46: HAMC PAVING UNIT 15: ALT. 8: FOLLER COMPACTED CONCRETE TOTAL AMOUNT BD FOR UNIT 46: HAMC PAVING UNIT 15: ALT. 8: FOLLER COMPACTED CONCRETE TOTAL AMOUNT BD FOR UNIT 46: HAMC PAVING UNIT 16: ALT. 8: FOLLER COMPACTED CONCRETE TOTAL AMOUNT BD FOR UNIT 16: FOLLER COMPACTED CONCRETE TOTAL AMOUNT BD FOR UNIT 16: FOLLER COMPACTED CONCRETE UNIT 16: ALT. 8:	13-34	CoSA 672	117	EA	REFLECTOR PAVEMENT MARKING TY 2 - A - A		
TOTAL AMOUNT BD FOR UNIT 15: PAYNED INFORMATION UNIT 15: PAYNED INFORMATION OF PAYNED IPER NO. SPEC. NO. EST. OTY UNIT 5 OLD REAL PAYNED UNIT COST AMOUNT 14-1 CGA 301 911 301 20106 901 DESCRIPTION UNIT COST AMOUNT 14-2 CGA 1913 901 OCR MAX TVB PERLAD (2017 TROUGHER AT A) 1 <t< td=""><td>13-35</td><td>CoSA 672</td><td>4</td><td>EA</td><td>REFLECTOR PAVEMENT MARKING TY 1 - C</td><td></td><td></td></t<>	13-35	CoSA 672	4	EA	REFLECTOR PAVEMENT MARKING TY 1 - C		
UNIT 14: ALT, A - HMAC PAVING UNITS DESCRIPTION UNIT COST AMOUNT 14:1 $COSA$ 587. CTV WITS DESCRIPTION UNIT COST AMOUNT 14:1 $COSA$ 1913 SV FLEX DASE (CMF IN PLACE(ITY A GR 2(ICL 4) (BD ALT A) Image: Comparison of the c		B		1	TOTAL AMOUNT BID FOR UNIT 13: PAV	/ING IMPROVEMENTS	
TEN NO. SPEC. NO. EST. GTV UNITS DESCRIPTION UNIT COST AMOUNT 14-1 2004 20108 5V LEX MORE (CMP / IN PLACE) (Y & GE 2) (CL / (UD / N-T A) 14-2 3011 9113 5V ORIHUA TV B PSEA 22 (25 'THOU) (BD /A, T A) 14-3 3014 9113 5V ORIHUA TV B PSEA 22 (25 'THOU) (BD /A, T A) <t< td=""><td>UNIT 14: ALT.</td><td>A - HMAC PAV</td><td>ING</td><td></td><td></td><td></td><td></td></t<>	UNIT 14: ALT.	A - HMAC PAV	ING				
4.1 264/ 27 2010 200 av Alexage (CMP IN FLACE)(YA GIR 2QC 4) (BD ALT 4) 4.2 Alexage (CMP IN FLACE)(YA GIR 2QC 4) (BD ALT 4) Alexage (CMP IN FLACE)(YA GIR 2QC 4) (BD ALT 4) 14.2 361 18113 av Serie Mar Ye 6 FG64.22 (L5 THON) (BD ALT A) Image Company 14.4 063 10.6 0.4 Secie Antron (RCMPAry) (BD ALT A) Image Company 14.4 063 10.6 0.4 Secie Antron (RCMPAry) (BD ALT A) Image Company 14.4 063 10.6 0.4 Secie Antron (RCMPAry) (BD ALT A) Image Company 14.4 063 10.6 BC44 RAIL TO COMPACTED CONCRETE The Company (BD ALT B) Image Company UNIT 15: ALT B - ROLLER COMPACTED CONCRETE 0 Company Company Company Company Company 15.2 0.0 6 16.1 0 Company Company Company Company Company Company Company 15.2 0.6 6.7 7 Mart TA Description UNIT Cost Amount 15.2 </td <td>ITEM NO.</td> <td>SPEC. NO.</td> <td>EST. QTY</td> <td>UNITS</td> <td>DESCRIPTION</td> <td>UNIT COST</td> <td>AMOUNT</td>	ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT
1.4.2 SAM 18113 SY GR1 HA TV B PG4 22 (2 THON) BD A T A) Image: Comparison of the C	14-1	CoSA 247	20106	SY	FLEX BASE (CMP IN PLACE)(TY A GR 2)(CL 4) (BID ALT A)		
14.3 $\frac{6}{3}$ 1913 SY $\frac{1}{2}$ Correction (RMA 1YA) PG4-22 (15" THCN (RM A 1YA) Image: Correction (RMA 1YA) 14.4 $\frac{1}{10}$ $\frac{1}{1$	14-2	CoSA 341	18113	SY	D-GR HMA TY-B PG64-22 (2.5" THICK)(BID ALT A)		
14.4 $\frac{1}{10}$ $\frac{1}{604}$ $\frac{1}{2}$ <th< td=""><td>14-3</td><td>CoSA 341</td><td>18113</td><td>SY</td><td>D-GR HMA TY-D PG64-22 (1.5" THICK) (BID ALT A)</td><td></td><td></td></th<>	14-3	CoSA 341	18113	SY	D-GR HMA TY-D PG64-22 (1.5" THICK) (BID ALT A)		
Image: Constraint of the	14-4	CoSA 110	8048	CY	EXCAVATION (ROADWAY)(BID ALT. A)		
UNIT 16: ALT. B - ROLLER COMPACTED CONCRETE ITEM NO. SPEC. NO. EST. QTV UNITS DESCRIPTION UNIT COST AMOUNT 15.1 3388 18113 SY POLLER COMPACTED CONCRETE (6.5" THCK) (BID ALT 8) - - 15.2 $CGAA$ 3881 CV EXCAUATION (ROADWAY(BID ALT B) - - 15.2 $CGAA$ 3881 CV EXCAUATION (ROADWAY(BID ALT B) - - 15.2 $CGAA$ 3881 CV EXCAUATION (ROADWAY(BID ALT B) - - 15.3 $CGAA$ 3881 CV EXCAUATION (ROADWAY(BID ACT B) UNIT COST AMOUNT 16.4 $CGAA$ 3905 LF 1° WATER LINE DESCRIPTION UNIT COST AMOUNT 16.4 $CGAA$ 3905 LF 1° WATER LINE INSIDE OF CASING UNIT COST AMOUNT 16.4 $CGAA$ 3905 LF 1° WATER LINE BY OTHER THAN OPEN CUT - - - 16.4 $CGAA$ 3905 LF <td></td> <td></td> <td></td> <td></td> <td>TOTAL AMOUNT BID FOR U</td> <td>NIT 14: HMAC PAVING</td> <td></td>					TOTAL AMOUNT BID FOR U	NIT 14: HMAC PAVING	
UNIT 15: ALT B - ROLLER CONTACT (CONTACT PERMITTIN NO. UNIT COST AMOUNT 15:1 $COSA$ 3016 18113 SY ROLLER COMPACTED CONCRETE (B 5'THICK) (BID ALT B) Image: Cost and the second secon				CONCE			
ITEM NO. SPEC. NO. EST. QT UNITS DESCRIPTION UNIT COST AMOUNT 115-1 2034 18113 SY ROLLER COMPACTED CONCRETE (8.5' THICK) (80 ALT B) Image: Concentration of the compact test	UNIT 15: ALT.	B - RULLER C	OWPACTED	CONCR			
15-1 3316 18113 SY EXCAUATION (ROADWAY)(BD ALT B) 15-2 $COSA$ 3881 CV EXCAUATION (ROADWAY)(BD ALT B) TOTAL AMOUNT BID FOR UNIT 15: ROLLER COMPACTED CONCRETE UNIT 16: WATER IMPROVEMENTS TIEM NO. SPEC NO. EST. QTY UNIT DESCRIPTION UNIT COST AMOUNT Δ 16-1 $COSA$ 3095 LF 10* WATER LINE DESCRIPTION UNIT COST AMOUNT Δ 16-1 $COSA$ 90 LF 10* WATER LINE BY OTHER THAN OPEN CUT COST AMOUNT 16-3 $COSA$ 90 LF 10* WATER LINE BY OTHER THAN OPEN CUT CO CO 16-4 $COSA$ 90 LF TRENCH SAFETY CO CO 16-5 $COSA$ 3005 LF TRENCH SAFETY CO CO CO 16-6 $COSA$ 30 EA 2' COMBINATION AR VALVE CO CO CO CO 16-6 $COSA$ 4.1 6 EA <	ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION ROLLER COMPACTED CONCRETE (8.5" THICK) (BID ALT B)	UNIT COST	AMOUNT
15-2 \bigcirc \bigcirc EXAMINATION (RUNDIAL III) IS2 \bigcirc \bigcirc EXAMINATION (RUNDIAL III) TOTAL AMOUNT BID FOR UNIT 15: ROLLER COMPACTED CONCRETE UNIT 16: SPEC. NO. EST. QT UNITS DESCRIPTION UNIT COST AMOUNT \triangle 16-1 \bigcirc SPEC. NO. EST. QT UNITS DESCRIPTION UNIT COST AMOUNT \triangle 16-1 \bigcirc SPEC. NO. EST. QT UNITS DESCRIPTION UNIT COST AMOUNT \triangle 16-1 \bigcirc SPEC. NO. EST. QT UNITS DESCRIPTION UNIT COST AMOUNT \triangle 16-2 \bigcirc 90 LF If WATER LINE BY OTHER THAN OPEN CUT If COSA If SPEC. NO. SPEC. NO. SPEC. NO. SPEC. NO. SPEC. NO. SPEC. NO. If SPEC. NO. SPEC. NO. SPEC. NO. If SPEC. NO. If SPEC. NO.	15-1	3016	18113	SY			
IDTAL AMOUNT BID FOR UNIT 18: ROLLER COMPACTED CONCRETE UNIT 16: WATER IMPROVEMENTS ITEM NO. SPEC. NO. EST. OTY UNITS DESCRIPTION UNIT COST AMOUNT \triangle 16-1 4^{OS} 3095 LF 10"WATER LINE DESCRIPTION UNIT COST AMOUNT $16-2$ 4^{OS} 90 LF 10"WATER LINE INSIDE OF CASING Image: Cost of the state of	15-2	110	3881	CY	EXCAVATION (ROADWAY)(BID ALT B)		
UNIT 16: WATER IMPROVEMENTS ITEM No. SPEC. NO. EST. QTY UNITS DESCRIPTION UNIT COST AMOUNT \triangle 16-1 \bigcirc \bigcirc 3095 LF 1^{10} WATER LINE III IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII							
ITEM NO. SPEC. NO. EST. QTY UNITS DESCRIPTION UNIT COST AMOUNT \widehat{M} 16-1 4.9 3095 LF 16' WATER LINE I					TOTAL AMOUNT BID FOR UNIT 15: ROLLER COM	MPACTED CONCRETE	
\triangle 16-1 CoSA 4.9 3085 LF 1° WATER LINE Image: Cost of the state	UNIT 16: WATI	ER IMPROVEM	ENTS		TOTAL AMOUNT BID FOR UNIT 15: ROLLER CON		
$16\cdot2$ 4.9 90 LF 16° WATER LINE INSIDE OF CASING $16\cdot3$ 4.9 89 LF 16° WATER LINE BY OTHER THAN OPEN CUT $16\cdot4$ 4.9 89 LF 30° STEEL CASING BY OTHER THAN OPEN CUT $16\cdot4$ 4.9 90 LF 30° STEEL CASING BY OTHER THAN OPEN CUT $16\cdot4$ 4.9 90 LF TRENCH SAFETY $16\cdot5$ $CoSA$ 3095 LF TRENCH SAFETY $16\cdot6$ $CoSA$ 3095 LF TRENCH SAFETY $16\cdot6$ $CoSA$ 4.4 3095 LF $16\cdot6$ $CoSA$ 4.4 3095 LF $16\cdot7$ $CoSA$ 4.4 3095 LF $16\cdot7$ $CoSA$ 4.1 2 2° COMBINATION AIR VALVES 10° GATE VALVES $16\cdot7$ $CoSA$ 4.1 2 EA 10° GATE VALVES 10° GATE VALVES $16\cdot9$ 4.1 2 EA 8° GATE VALVES 10° GATE VALVES 10° GATE VALVES 10° GATE VALVES 10° GATE VALV	UNIT 16: WATI	ER IMPROVEM SPEC. NO.	ENTS EST. QTY	UNITS	DESCRIPTION		AMOUNT
16-3 CoSA 4.9 89 LF 16 WATER LINE BY OTHER THAN OPEN CUT 16-4 CoSA 4.9 90 LF 30" STEEL CASING BY OTHER THAN OPEN CUT 16-5 CoSA 4.4 3095 LF TRENCH SAFETY 16-6 CoSA 4.1 3 EA 2" COMBINATION AIR VALVE 16-7 CoSA 4.1 6 EA 16" GATE VALVES 16-8 CoSA 4.1 1 EA 12" GATE VALVES 16-8 CoSA 4.1 1 EA 12" GATE VALVES 16-9 4.1 2 EA 10" GATE VALVES 16-9 CoSA 4.1 2 EA 10" GATE VALVES 16-9 4.1 2 EA 10" GATE VALVES 16-10 CoSA 4.1 2 EA 8" GATE VALVES 16-10 CoSA 4.1 2 EA 8" GATE VALVES 16-11 4.1 10 EA 6" GATE VALVES 16-14 4.13 4" BLOW-OFF VALVE 1 16-13 CoSA 4.13 4" BLOW-OFF VALVE 1 16-14 4.14 5 EA	UNIT 16: WATH ITEM NO.	ER IMPROVEM SPEC. NO. CoSA 4.9	ENTS EST. QTY 3095	UNITS	DESCRIPTION		AMOUNT
16-4 CoSA 4.9 90 LF 90" STEEL CASING BY OTHER THAN OPEN CUT 16-5 CoSA 4.4 3095 LF TRENCH SAFETY Image: CosA 4.1 3095 LF TRENCH SAFETY Image: CosA 4.1 3 EA 2" COMBINATION AIR VALVE Image: CosA 4.1 3 EA 2" COMBINATION AIR VALVE Image: CosA 4.1 16" GATE VALVES Image: CosA 4.1 1 EA 16" GATE VALVES Image: CosA 4.1 1 EA 10" GATE VALVES Image: CosA 4.1 1 EA 10" GATE VALVES Image: CosA 4.1 1 EA 10" GATE VALVES Image: CosA 4.1 2 EA 8" GATE VALVES Image: CosA 4.1 2 EA 8" GATE VALVES Image: CosA 4.1 1 EA 6" GATE VALVES Image: CosA 4.1 1 EA FIRE HYDRANTS	UNIT 16: WATI ITEM NO. 16-1 16-2	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9	ENTS EST. QTY 3095 90	UNITS LF LF	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING		AMOUNT
16-5 $\begin{array}{c} CoSA \\ 4.4 \\ 4.4 \end{array}$ 3095 LF TRENCH SAFETY 16-6 $\begin{array}{c} 4.1 \\ 4.1 \end{array}$ 3 EA $\begin{array}{c} 2^{\circ}$ COMBINATION AIR VALVE $\begin{array}{c} \end{array}$ 16-6 $\begin{array}{c} 4.1 \\ 4.1 \end{array}$ 6 EA $\begin{array}{c} 10^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ 16-7 $\begin{array}{c} 4.1 \\ 4.1 \end{array}$ 6 EA $\begin{array}{c} 10^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ 16-8 $\begin{array}{c} 4.1 \\ 4.1 \end{array}$ 1 EA $\begin{array}{c} 12^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ 16-9 $\begin{array}{c} 4.1 \\ 4.1 \end{array}$ 2 EA $\begin{array}{c} 10^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ 16-10 $\begin{array}{c} CoSA \\ 4.1 \end{array}$ 2 EA $\begin{array}{c} 0^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ $\begin{array}{c} \hline 16-10 \end{array}$ $\begin{array}{c} 4.1 \\ 4.1 \end{array}$ 2 EA $\begin{array}{c} 0^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ $\begin{array}{c} \hline 16-11 \end{array}$ $\begin{array}{c} 4.1 \\ 4.1 \end{array}$ 10 EA $\begin{array}{c} 0^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} 10^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} 10^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} 10^{\circ}$ GATE VALVES $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ $\begin{array}{c} \end{array}$ </td <td>UNIT 16: WATI ITEM NO. 16-1 16-2 16-3</td> <td>ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9</td> <td>ENTS EST. QTY 3095 90 89</td> <td>UNITS LF LF LF</td> <td>DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT</td> <td></td> <td>AMOUNT</td>	UNIT 16: WATI ITEM NO. 16-1 16-2 16-3	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9	ENTS EST. QTY 3095 90 89	UNITS LF LF LF	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT		AMOUNT
$16-6$ $CoSA$ 3 EA 2° COMBINATION AIR VALVE $16-7$ 4.1 3 EA 2° COMBINATION AIR VALVE $16-7$ 4.1 6 EA 16° GATE VALVES $16-8$ 4.1 1 EA 12° GATE VALVES $16-9$ $CoSA$ 4.1 2 EA 10° GATE VALVES $16-9$ $CoSA$ 4.1 2 EA 10° GATE VALVES $16-10$ $CoSA$ 4.1 2 EA a° GATE VALVES $16-10$ 4.1 2 EA a° GATE VALVES $16-10$ 4.1 2 EA a° GATE VALVES $16-11$ 4.1 10 EA a° GATE VALVES $16-12$ $CoSA$ 4.1 10 EA a° GATE VALVES $16-14$ 4.13 4 EA a° BLOW-OFF VALVE <td>UNIT 16: WATH ITEM NO. 16-1 16-2 16-3 16-4</td> <td>ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9</td> <td>ENTS EST. QTY 3095 90 89 90</td> <td>UNITS LF LF LF</td> <td>DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT</td> <td></td> <td>AMOUNT</td>	UNIT 16: WATH ITEM NO. 16-1 16-2 16-3 16-4	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9	ENTS EST. QTY 3095 90 89 90	UNITS LF LF LF	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT		AMOUNT
16.7 $CoSA$ 6 EA 16° GATE VALVES 16.8 4.1 1 EA 12° GATE VALVES 16.8 4.1 1 EA 12° GATE VALVES 16.9 $CoSA$ 4.1 2 EA 10° GATE VALVES 16.9 $CoSA$ 4.1 2 EA 10° GATE VALVES 16.10 $CoSA$ 4.1 2 EA 8° GATE VALVES 16.10 $CoSA$ 4.1 2 EA 8° GATE VALVES 16.11 $CoSA$ 4.1 10° EA 6° GATE VALVES 16.12 $CoSA$ 4.1 10° EA 6° GATE VALVE 16.13 4.11 1° EA $FIRE$ HYDRANTS 16.14 4.14 5 EA 1° WATER SERVICE	UNIT 16: WATH ITEM NO. 16-1 16-2 16-3 16-4 16-5	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9	ENTS EST. QTY 3095 90 89 90 3095	UNITS LF LF LF LF LF	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY		AMOUNT
16-8 $CoSA$ 4.1 1 EA $12" GATE VALVES$ $16-9$ 4.1 2 EA $10" GATE VALVES$ $16-9$ 4.1 2 EA $10" GATE VALVES$ $16-10$ 4.1 2 EA $8" GATE VALVES$ $16-10$ 4.1 2 EA $8" GATE VALVES$ $16-11$ 4.1 10 EA $6" GATE VALVES$ $16-12$ $CoSA$ 4.1 1 EA $4" BLOW-OFF VALVE$ $16-13$ $CoSA$ 4.13 4 EA FIRE HYDRANTS $16-14$ 4.14 5 EA $1" WATER SERVICE$	UNIT 16: WATH ITEM NO. 16-1 16-2 16-3 16-4 16-5 16-6	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.4 CoSA 4.1	ENTS EST. QTY 3095 90 89 90 3095 3	UNITS LF LF LF LF LF EA	DESCRIPTION DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 2" COMBINATION AIR VALVE		AMOUNT
$16-9$ $CoSA$ 4.1 2 EA 10° GATE VALVES 10° GATE VALVES \underline{M} $16-10$ $\frac{CoSA}{4.1}$ 2 EA 8° GATE VALVES 10° \underline{M} $16-11$ $\frac{4.1}{4.1}$ 10 EA 6° GATE VALVES 10° $16-12$ $\frac{CoSA}{4.1}$ 1 EA 4° BLOW-OFF VALVE 10° \underline{M} $16-13$ $\frac{CoSA}{4.13}$ 4 EA FIRE HYDRANTS 10° $16-14$ $\frac{CoSA}{4.14}$ 5 EA 1° WATER SERVICE 10° 10°	UNIT 16: WATH ITEM NO. 16-1 16-2 16-3 16-4 16-5 16-6 16-7	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.4 CoSA 4.1 CoSA 4.1	ENTS EST. QTY 3095 90 89 90 3095 3 3	UNITS LF LF LF LF LF EA	DESCRIPTION DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 2" COMBINATION AIR VALVE 16" GATE VALVES		AMOUNT
$\widehat{\square}$ 16-10 \widehat{CoSA} 4.12EA8° GATE VALVES $\widehat{\square}$ 16-11 \widehat{CoSA} 4.110EA6° GATE VALVES16-12 \widehat{CoSA} 4.11EA4° BLOW-OFF VALVE $\widehat{\square}$ 16-13 \widehat{CoSA} 4.134EAFIRE HYDRANTS16-14 \widehat{CoSA} 4.145EA1° WATER SERVICE	UNIT 16: WATI ITEM NO. 16-1 16-2 16-3 16-3 16-4 16-5 16-6 16-6 16-7 16-8	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.4 CoSA 4.1 CoSA 4.1	ENTS EST. QTY 3095 90 89 90 3095 3 3 6 1	UNITS LF LF LF LF EA EA	DESCRIPTION DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 2" COMBINATION AIR VALVE 16" GATE VALVES 12" GATE VALVES		AMOUNT
$\widehat{\square}$ 16-11 $\widehat{CosA}_{4.1}$ 10 EA \widehat{e}^{a} GATE VALVES16-12 $\widehat{CosA}_{4.1}$ 1 EA \widehat{e}^{a} BLOW-OFF VALVE $\widehat{\square}$ 16-13 $\widehat{CosA}_{4.13}$ 4 EA FIRE HYDRANTS16-14 $\widehat{CosA}_{4.14}$ 5 EA 1" WATER SERVICE	UNIT 16: WATI ITEM NO. 16-1 16-2 16-3 16-4 16-5 16-6 16-6 16-7 16-8 16-9	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.1 CoSA 4.1 CoSA 4.1 CoSA 4.1	ENTS EST. QTY 3095 90 89 90 3095 3 3 6 1 1 2	UNITS LF LF LF LF EA EA	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 2" COMBINATION AIR VALVE 16" GATE VALVES 10" GATE VALVES 10" GATE VALVES		AMOUNT
16-12 Cosa 4.1 1 EA # BLOW-OFF VALVE 1 1 EA # BLOW-OFF VALVE	UNIT 16: WATI ITEM NO. 16-1 16-2 16-3 16-4 16-5 16-6 16-7 16-8 16-9 16-9 16-10	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.1 CoSA 4.1 CoSA 4.1 CoSA 4.1 CoSA 4.1	ENTS EST. QTY 3095 90 89 90 3095 3 3 6 1 1 2 2	UNITS LF LF LF EA EA EA EA	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 2" COMBINATION AIR VALVE 16" GATE VALVES 10" GATE VALVES 8" GATE VALVES		AMOUNT
Cosa Fire Hydrants 16-13 Cosa 4 EA Fire Hydrants 16-14 Cosa 4 5 EA 1" WATER SERVICE	UNIT 16: WATI ITEM NO. 16-1 16-2 16-3 16-4 16-5 16-6 16-7 16-8 16-9 16-9 16-10 16-10 16-11	CosA CosA 4.9 CosA CosA 4.9 CosA 4.9 CosA 4.9 CosA 4.9 CosA 4.1 CosA 4.1 CosA 4.1 CosA 4.1 CosA 4.1 CosA 4.1	ENTS EST. QTY 3095 90 89 90 3095 3 3 6 1 1 2 2 2 10	UNITS LF LF LF EA EA EA EA	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 2" COMBINATION AIR VALVE 16" GATE VALVES 10" GATE VALVES 8" GATE VALVES 6" GATE VALVES		AMOUNT
CoSA 1" WATER SERVICE 16-14 4.14 5 EA	UNIT 16: WATI ITEM NO.	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.1	ENTS EST. QTY 3095 90 89 90 3095 3 3 6 1 2 2 2 10 1	UNITS LF LF LF EA EA EA EA EA EA	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 2" COMBINATION AIR VALVE 16" GATE VALVES 10" GATE VALVES 8" GATE VALVES 6" GATE VALVES 4" BLOW-OFF VALVE		AMOUNT
	UNIT 16: WATI ITEM NO. 16-1 16-2 16-3 16-4 16-5 16-6 16-7 16-8 16-9 16-10 16-10 16-11 16-12 16-13 16-13	ER IMPROVEM SPEC. NO. CoSA 4.9 CoSA 4.9 CoSA 4.9 CoSA 4.1	ENTS EST. QTY 3095 90 89 90 3095 3 3 6 1 2 2 2 10 1 1 4	UNITS LF LF LF EA EA EA EA EA EA	DESCRIPTION 16" WATER LINE 16" WATER LINE INSIDE OF CASING 16" WATER LINE BY OTHER THAN OPEN CUT 30" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 2" COMBINATION AIR VALVE 16" GATE VALVES 12" GATE VALVES 8" GATE VALVES 6" GATE VALVES 4" BLOW-OFF VALVE FIRE HYDRANTS		AMOUNT

16-15	4 14		EA			
		1				
Δ	CoSA			1" WATER METER		
<u>/1</u> 16-16	4.14	θ	EA			
16 17	CoSA	1	EA	16" LINE STOP		
10-17	4.19	1	EA			
16-18	CoSA 4.14	2	EA	CONNECTION TO EXISTING 16" WATER LINE		
	0-04					
16-19	4.14	1	EA	CONNECTION TO EXISTING 12" WATER LINE		
	CoSA			CONNECTION TO EXISTING 10" WATER LINE		
16-20	4.14	2	EA			
	CoSA			CONNECTION TO EXISTING 8" WATER LINE		
16-21	4.14	1	EA			
16.00	CoSA	E	۲۸	CONNECTION TO EXISTING 6" WATER LINE		
10-22	4.14	5	EA			
16-23	CoSA 4.14	1	EA	CONNECTION TO EXISTING 2" WATER LINE		
	0-04					
16-24	4.1	184	CY	WATER LINE ABANDUNMENT GROUT		
_	CoSA			REMOVE EXISTING VALVE		
<u>1</u> 16-25	4.1	19	EA			
	CoSA			REMOVE EXISITNG FIRE HYDRANT		
	4.13	3	EA			
16-26						
16-26	CoSA			REMOVE EXISTING WATER METER		
16-26 16-27	CoSA 4.17	2	EA	REMOVE EXISTING WATER METER		
16-26 16-27 16-28	CoSA 4.17 CoSA 529	2	EA	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR		
16-26 16-27 16-28	CoSA 4.17 CoSA 529	2 45	EA LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR		
16-26 16-27 16-28 16-29	CoSA 4.17 CoSA 529 CoSA 4.1	2 45 12	EA LF CY	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND		
16-26 16-27 16-28 16-29	CoSA 4.17 CoSA 529 CoSA 4.1	2 45 12	EA LF CY	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR		
16-26 16-27 16-28 16-29 16-30	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7	2 45 12 149	EA LF CY SY	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR		
16-26 16-27 16-28 16-29 16-30	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7	2 45 12 149	EA LF CY SY	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR		
16-26 16-27 16-28 16-29 16-30	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7	2 45 12 149	EA LF CY SY	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: WA		
16-26 16-27 16-28 16-29 16-30	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7	2 45 12 149	EA LF CY SY	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W.	ATER IMPROVEMENTS	
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER	2 45 12 149 IMPROVEM	EA LF CY SY ENTS	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: WA		
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO.	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO.	2 45 12 149 IMPROVEM EST. QTY	EA LF CY SY ENTS UNITS	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W, DESCRIPTION	ATER IMPROVEMENTS	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23	2 45 12 149 IMPROVEM EST. QTY 834	EA LF CY SY ENTS UNITS	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W. DESCRIPTION 21" SANITARY SEWER LINE	ATER IMPROVEMENTS	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23	2 45 12 149 IMPROVEM EST. QTY 834	EA LF CY SY ENTS UNITS LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W. DESCRIPTION 21° SANITARY SEWER LINE	ATER IMPROVEMENTS	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-1 17-2	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23	2 45 12 149 IMPROVEM EST. QTY 834 73	EA LF CY SY ENTS UNITS LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W, DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE	ATER IMPROVEMENTS	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-2	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23	2 45 12 149 IMPROVEM EST. QTY 834 73	EA LF CY SY ENTS UNITS LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W. DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE R" SANITARY SEWER LINE	ATER IMPROVEMENTS	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-2 17-3	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23	2 45 12 149 IMPROVEM EST. QTY 834 73 369	EA LF CY SY ENTS UNITS LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W. DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE	ATER IMPROVEMENTS	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-1 17-2 17-3	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA	2 45 12 149 IMPROVEM EST. QTY 834 73 369	EA LF CY SY ENTS UNITS LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W. DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE	ATER IMPROVEMENTS	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-2 17-3 17-4	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23	2 45 12 149 IMPROVEM EST. QTY 834 73 369 310	EA LF CY SY ENTS UNITS LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W. DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE	ATER IMPROVEMENTS	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-2 17-3 17-4	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23	2 45 12 149 IMPROVEM EST. QTY 834 73 369 310	EA LF CY SY UNITS LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W. DESCRIPTION 21* SANITARY SEWER LINE 8* PRESSURE RATED SANITARY SEWER	ATER IMPROVEMENTS UNIT COST	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-2 17-3 17-4 17-5	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23	2 45 12 149 IMPROVEM EST. QTY 834 73 369 310 73	EA LF CY SY ENTS UNITS LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W. DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" PRESSURE RATED SANITARY SEWER	ATER IMPROVEMENTS UNIT COST	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-2 17-3 17-4 17-5 17-6	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA	2 45 12 149 IMPROVEM EST. QTY 834 73 369 310 73 310	EA LF CY SY ENTS UNITS LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 16" STEEL CASING BY OTHER THAN OPEN CUT	ATER IMPROVEMENTS UNIT COST	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-2 17-3 17-4 17-5 17-6	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA	2 45 12 149 MPROVEM EST. QTY 834 73 369 310 73 310	EA LF CY SY ENTS UNITS LF LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 16" STEEL CASING BY OTHER THAN OPEN CUT	UNIT COST	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-2 17-3 17-4 17-5 17-6 17-7	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23	2 45 12 149 MPROVEM EST. QTY 834 73 369 310 73 310 73 310	EA LF CY SY ENTS UNITS LF LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE 10" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY	ATER IMPROVEMENTS UNIT COST	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-1 17-3 17-4 17-5 17-7	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA	2 45 12 149 MPROVEM EST. QTY 834 73 369 310 73 310 73 310 1203	EA LF CY SY ENTS UNITS LF LF LF LF LF LF	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 16" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY	ATER IMPROVEMENTS UNIT COST	AMOUNT
16-26 16-27 16-28 16-29 16-30 UNIT 17: SANIT ITEM NO. 17-1 17-1 17-1 17-3 17-4 17-5 17-6 17-7 11-8	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA	2 45 12 149 MPROVEM EST. QTY 834 73 369 310 73 369 310 73 310 1203 4	EA LF CY SY ENTS UNITS LF LF LF LF LF LF EA	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 8" SANITARY SEWER LINE 16" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 4' DIAMETER MANHOLES	ATER IMPROVEMENTS UNIT COST	AMOUNT
16-26 $16-27$ $16-28$ $16-29$ $16-30$ UNIT 17: SANIT ITEM NO. $17-1$	CoSA 4.17 CoSA 529 CoSA 4.1 CoSA 4.7 TARY SEWER SPEC. NO. CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA 4.23 CoSA	2 45 12 149 MPROVEM EST. QTY 834 73 369 310 73 310 73 310 1203 4	EA LF CY SY ENTS UNITS LF LF LF LF LF LF LF LF EA	REMOVE EXISTING WATER METER PERMANENT CURB AND GUTTER REPAIR CEMENT STABILIZED SAND PERMANENT ASPHALT PAVEMENT REPAIR TOTAL AMOUNT BID FOR UNIT 16: W, DESCRIPTION 21" SANITARY SEWER LINE 10" SANITARY SEWER LINE 8" SANITARY SEWER LINE 10" STEEL CASING BY OTHER THAN OPEN CUT TRENCH SAFETY 4' DIAMETER MANHOLES 5' DIAMETER MANHOLES	ATER IMPROVEMENTS UNIT COST	AMOUNT

17-10	CoSA 4.25	3	EA	5' DIAMETER DROP MANHOLES		
17-11	CoSA 4.23	1	EA	CONNECTION TO EXISTING 24" SANITARY SEWER LINE		
17-12	CoSA 4.34	68	CY	SANITARY SEWER LINE ABANDONMENT GROUT		
17-13	CoSA 4.34	6	EA	REMOVE/ABANDON EXISTING MANHOLES		
17-14	CoSA 4.29	1	LS	BY-PASS PUMPING		
17-15	CoSA 4.7	16	SY	PERMANENT ASPHALT PAVEMENT REPAIR		
				TOTAL AMOUNT BID FOR UNIT 17: SANITARY SEV	WER IMPROVEMENTS	
UNIT 18: DRAI	NAGE IMPRO	/EMENTS				
ITEM NO.	SPEC. NO.	EST. QTY	UNITS	DESCRIPTION	UNIT COST	AMOUNT
18-1	CoSA 110	800	CY	EXCAVATION (CHANNEL)		
18-2	CoSA 466	15	CY	SLOPED HEADWALL		
18-3	CoSA 432	6	CY	RIPRAP CONCRETE 5"		
18-4	CoSA 432	20	CY	RIPRAP STONE, COMMON, 18"		
18-5	CoSA 450	148	LF	TXDOT TYPE C223 RAIL		
18-6	CoSA 462	144	LF	CONCRETE BOX CULVERT 10' X 5'		
18-7	CoSA 464	388	LF	REINFORCED CONCRETE PIPE, 18", CLASS IV		
18-8	CoSA 466	4	EA	WINGWALL PW-1 (HW=7')		
				TOTAL AMOUNT BID FOR UNIT 18: DRAIN	AGE IMPROVEMENTS	

SUMMARY NO.	PHASE	UNITS	TOTAL AMOUNT			
Α		1 + 2 + 5 + 6				
В	PHASE I - SOUTH	3				
с		4				
		TOTAL PHASE I - SOUTH (A + B)				
		TOTAL PHASE I - SOUTH (A + C)				
D		7 + 8 + 11				
E	PHASE II - NORTH	9				
F		10				
		TOTAL PHASE II - NORTH (D + E)				
		TOTAL PHASE II - NORTH (D + F)				
G		12 + 13 + 16 + 17 + 18				
н	PHASE III - CENTRAL	14				
ЛI		15				
		TOTAL PHASE III - CENTRAL (G + H)				
		TOTAL PHASE III - CENTRAL (G + I)				
<u>∕</u> ⊥ J		ALL PHASES CONTINGENCY *	\$ 1,191,600			
AK		ADD (+) OR DEDUCT (-) **				
<u>/11</u> K	ITEM NO.(S	3) TO APPLY ADDITIONS OR DEDUCTIONS TO:				
		TOTAL ALL PHASES BID (A + B + D + E + G + H + J + K)				
		TOTAL ALL PHASES BID (A + C + D + F + G + I + J + K)				

* The item "Contingency" is included for additional work that may be performed. The total unit cost for this line item may not be paid in full. The respondent shall submit change order requests within the contract to the City consistent with the requirement of the Owner's Construction General Conditions of the contract documents. Generally, change order requests will be funded by the "CONTINGENCY" line item. The respondent shall include the cost for this item in the "Total Base Price".

** Provision is made for Respondent to include an addition or deduction in his bid, if he wishes, to reflect any last minute adjustments in price. The Respondent shall also provide the bid item(s) that the addition or deduction applies to.

In the case of a pricing discrepancy, the Unit Price will prevail.

It is understood the quantities of work to be done at unit prices are approximate and are intended for bidding purposes only. Unit quantities may be adjusted to determine final contract amount. Funding availability may also determine final contract amount.

Work zone temporary flexible, reflective roadway marker tabs (Tabs) will be subsidiary to the total bid amount.

A Performance Bond and Payment Bond will be required based on the Total Base Bid.

Bidder hereby agrees to commence the work on the above project in accordance with a date to be specified in a written "Notice to Proceed" from the Owner and to complete the project in compliance with the following schedule. There is the possibility of the Work to be performed concurrently in multiple Milestones.

Milestone A [Phase I (South)] – Bidder agrees to begin Work within 7 calendar days of Notice to Proceed, reach Substantial Completion, as defined in the Special Conditions of the Contract, within 540 calendar days of beginning Work. Bidder also agrees to pay Owner Liquidated Damages in the amount of \$820.00 per calendar day if Substantial Completion is not reached, and continue to pay Liquidated Damages until the project is brought into compliance with the time given.

Milestone B [Phase II (North)] – Bidder agrees to begin Work concurrently with Milestone A, or within 7 calendar days of Substantial Completion of Milestone C, and reach Substantial Completion, as defined in the Special Conditions of the Contract, within 540 calendar days of beginning Work. Bidder also agrees to pay Owner Liquidated Damages in the amount of \$820.00 per calendar day if Substantial Completion is not reached, and continue to pay Liquidated Damages until the project is brought into compliance with the time

Milestone C [Phase III (Central] – Bidder agrees to begin Work within 7 calendar days of Substantial Completion of Milestone A, and reach Substantial Completion, as defined in the Special Conditions of the Contract, within 540 calendar days of beginning Work. Bidder also agrees to pay Owner Liquidated Damages in the amount of \$820.00 per calendar day if Substantial Completion is not, and continue to pay Liquidated Damages until the project is brought into compliance with the time given.

Milestone D [Offsite Improvements: 24" Sewer from Sta 1+00 – 14+50 (Phase I plan set), 16" Water Line B from Sta 1+05 – 44+00 (Phase II plan set), Drainage Channel from Sta 2+30 – 16+50 (Phase III plan set)] – Bidder agrees to begin Work concurrently with either Milestone A, B, or C. This Milestone shall be completed within the time allowance for whichever Milestone the Work is concurrent with.

Reservation

Respondent understands the City reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the City and conforms to State and local laws and ordinances pertaining to the letting of construction contracts.

UPDATED DRAWINGS



Plot Plot

Frisco SACCOUNTS Date: Jan. 22, 2018 - 02:29:23 PM User: sli File: N:\IF\Drawings\Phase I\ph1-trt-gn-typicals02.



MINIMUM PEDESTRIAN TIMING									
PHASE	PEDESTRIAN SIGNAL HEAD NUMBERS	WALK	FLASHING DON'T WALK	TOTAL					
φ2	2, 14	7	7	14					
φ4	9, 15	14	14	28					
ф6	5, 10	7	7	14					
ф8	1, 6	14	14	28					
Minimum	Signal Cycle Length			42					

NOTE: ALL PEDESTRIAN PUSH BUTTONS TO THE ADA ACCESSIBLE WITH BUILT-IN AVALIBLE MESSAGE CAPABILITIES, POLARA OR APPROVED EQUAL. PED HEADS SHALL INCORPORATE COUNTDOWN INDICATIONS.

			S	IGNAL HEA	D AND PO	LE PLACEM	ENT			
	MAST									
	ARM									
POLE	LENGTH	А	В	С	D	E	F	G	н	LUMINAIRE
T-1	PED	9'	-	-	-	-	-	8'	-	-
T-2	PED	9'	-	-	-	-	-	8'	-	-
T-3	36'	14'	20'	12'	-	34'	30'	-	35'	1
T-4	PED	9'	-	-	-	-	-	8'	-	-
T-5	PED	8'	-	-	-	-	-	8'	-	-
T-6	28'	9'	11'	11'	-	22'		-		-
T-7	PED	11'	-	-	-	-	-	8'	-	-
T-8	PED	12'	-	-	-	-	-	8'	-	-
T-9	40'	8'	15'	12'	11'	38'		-		
T-10	PED	8'	-	-	-	-	-	8'	-	-
T-11	PED	9'	-	-	-	-	-	8'	-	-
T-12	32'	17'	19'	11'	-	30'		-		-
TOTAL	-	-	-	-	-	-	-	-	-	1

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D	E C ►
	FACE OF CURB

	ELECTRICAL SERVICE DETAILS										
ELEECTRIC SERVICE NO.	SHEET NO.	ELECTRICAL SERVICE DESCRIPTION (SEE ED(4)&ED(5)-14	SERVICE CONDUIT SIZE (RMC)	SERVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CIRCUIT BREAKER POLE/AMP	TWO-POLE CONTACTOR AMPS	PANEL BD. / LOADCENTER AMP RATING	CIRCUIT NO.	BRANCH CIRCUIT BREAKER POLE/AMPS	KVA LOAD
1		ELEC SRV TY D 120/240 070 (NS)SS(E)SP(O)	2"	3/#4	N/A	2P/70	30	100	1-TS 2-LUM	1P/50 2P/15	6.2

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						CO	NDUIT RI	JNSAND	DIN-POLE SUN	IMARY					
			ITEM	1618			ITEM	1620	ITEM 621		ITEM 684	ļ	ITEM 6045	ITEM 620	ITEM 6054
			CONDU	IT RUN			ELECT	RICAL CO	ONDUCTORS	SIGN	AL CONDU	ICTORS	GRIDSMART	OPTICOM	RADIO
RUN NO.	RUN								TRAY CABLE	5 CNDR		16 CNDR	CANNELIVY	3 CNDR	CAT SE
	LENGTH	2" PVC	3" PVC	3" PVC	2" RIGID	4" PVC	NO. 6	NO. 6	4 CNDR	CABLE	10 CNDR	CABLE	CAT5E CABLE	NO. 14	CABLE
	(FEET)	TRENCH	TRENCH	BORE	METAL	TRENCH	BARE	XHHW	NO. 12	NO. 14	CABLE	NO.14	(LF)	(LF)	(LF)
1	12	0\	/erhead,	by powe	er compa	nv								(/	(/
2A	10	1	, 	T T		ĺ	1	2	2						
2B	28	1					1	2	_						
2C	18	1					1		2						
3A	10		1				1					4	1		
3B	10		1				1			8				2	1
4	14		1				1		1			1	1	1	1
5	12	1					1			1					
6	16	1					1			1					
7	104			1			1		1	4		2	1		
8	13	1					1			1					
9	11	1					1			1			1		
10	13						1					1			
11	65		1	1			1		1	2		1			
12	4	1					1			1					
13	16	1					1			1					
14	24						1		1			1	1		
15	81		1	1			1			2		1		1	
16	10	1					1			1					
17	11	1					1			1					
18	5		1				1					1		1	
SUBTOT	AL (LF)	149	76	250	0	0	475	76	263	881	0	450	151	120	24
SA					20										
T-1										10					
T-2										10					
T-3									40			5		45	30
T-4										10					
T-5										10					
T-6												5			
T-7										10					
T-8										10					
T-9									40			5	40		
T-10										10					
T-11										10					
T-12												5		45	
TOTA	L (LF)	149	76	250	20	0	475	76	343	961	0	470	191	210	54
Note: Wi	ring lengt	ths from s	ignal pole	e termin	al block t	o signal h	eads is ir	ncidenta	I to the pay ite	em for th	e signal h	eads.			
Note: Pro	ovide 5' o	f each cab	le coiled	l up in ea	ach groun	id box and	pole bas	se.							

		CABLE TERMIN	NATION CHART			
			CABLE 1	CABLE 2	CABLE 3	CABLE 4
	DUASE		16 CN DR	16 CNDR	16 CNDR	16 CNDR
CNDK #	PHASE	CINDR COLOR	FROM CNTRL	FROM CNTRL	FROM CNTRL	FROM CNTRL
			TO T-3	TO T-6	TO T-9	TO T-12
1	LT FLASHING YELLOW ARROW	BLACK	SPARE	SPARE	SH 13 φ 1 FYA	SPARE
2			SH	SH	SH	SH
2	SIGNAL COMIMON	WHITE	COMMON	COMMON	COMMON	COMMON
2		PED	SH 3, 4	SH 7, 8	SH 11, 12	SH 16, 17
ſ	NED THRO FHASE	RED	φ 2 R	φ 8 R	φ6R	φ 4 R
л		OPANCE	SH 3, 4	SH 7, 8	SH 11, 12	SH 16, 17
4	TELLOW THRO PHASE	ORANGE	φ 2 Y	φ 8Y	φ 6 Y	φ 4 Y
5	GREEN THRUDHASE	GREEN	SH 3, 4	SH 7, 8	SH 11, 12	SH 16, 17
,	GREEN THRO FHASE	GREEN	φ 2 G	φ 8G	φ6G	φ4G
6	WALK	BLUE	SPARE	SPARE	SPARE	SPARE
7	DON'T WALK	WHITE/BLACK	SPARE	SPARE	SPARE	SPARE
8	LT RED ARROW	RED/BLACK	SPARE	SPARE	SH 13 φ 1<-R	SPARE
9	LT GREEN ARROW	GREEN/BLACK	SPARE	SPARE	SH 13 φ 1<-G	SPARE
10	LT YELLOW ARROW	ORANGE/BLACK	SPARE	SPARE	SH 13 ф 1<-Y	SPARE
11	RED THRU PHASE	GREEN/WHITE	SPARE	SPARE	SPARE	SPARE
12	YELLOW THRU PHASE	BLUE/WHITE	SPARE	SPARE	SPARE	SPARE
13	GREEN THRU PHASE	BLACK/RED	SPARE	SPARE	SPARE	SPARE

CABLE RUNS 5,6,7,8,9,10,11, AND 12 FROM CNTRL TO T-1, T-2, T-4, T-5, T-7, T-8, T-10, AND T-11 RESPECTIVELY, ARE 5 CNDR CABLES TO SERVE THE PEDESTRIAN HEADS AND PUSH BUTTONS ON THE PEDESTAL POLES. USE CONSISTENT CONDUCTOR COLORS FOR EACH INSTALLATION.



FREESE AND NICHOLS, INC. TEXAS REGISTERED ENGINEERING FIRM F-2144		XPTE OF YEL			64700 SY	CENSED 11-12-2018	USIONAL ENG	all all all a
			FREESE		 4055 International Plaza, Suite 200 Fort Worth, Texas 76109-4895 	Phone - (817) 735-7300 Fax - (817) 735-7491	Web - www.freese.com	
	UNVER CITCLE VED	CITY OF SAN ANGELO, IEXAS	PHASE I	BELL STREET ROADWAY AND UTILITIES IMPROVEMENTS	TRAFFIC SIGNALS			TRAFFIC SIGNAL SUMMARY
	DATE F&N JOB NO.	SAN16188	DATE 12/2017	DESIGNED JWP	DRAWN EB	1/12/18 REVISED	ILE NAME CHECKED WH	ph1-trt-pl-signal01-2.dgn
	NO. ISSUES BY					▲ ADDEMDUM NO.3	VERIFY SCALE Bar is one inch on original	0 1 drawing. It not one inch on this sheet, adjust scale.
	SF SE	IEE :Q.	T	S	-(7)2		

	MINIMUM PED	ESTRIAN T	TIMING							
PHASE	PEDESTRIAN SIGNAL HEAD NUMBERS	WALK	FLASHING DON'T WALK	TOTAL						
φ2	1, 13	7	7	14						
φ4	φ4 9,14 14 28									
φ6	5, 10	7	7	14						
φ8 2,6 14 14 28										
Minimum	Signal Cycle Length			42						

NOTE: ALL PEDESTRIAN PUSH BUTTONS TO THE ADA ACCESSIBLE WITH BUILT-IN AVALIBLE MESSAGE CAPABILITIES, POLARA OR APPROVED EQUAL. PED HEADS SHALL INCORPORATE COUNTDOWN INDICATIONS.

			S	IGNAL HEA	D AND PO	le placem	ENT			
	MAST									
	ARM									
POLE	LENGTH	А	В	С	D	E	F	G	н	LUMINAIRE
T-1	PED	6'	-	-	-	-	-	8'	-	-
T-2	36'	11'	18'	12'	-	30'	30'	8'	35'	1
T-3	PED	8'	-	-	-	-	-	8'	-	-
T-4	PED	8'	-	-	-	-	-	8	-	-
T-5	32'	8'	23'	8'	-	31'	·- '	-		
T-6	PED	9'	-	-	-	-	-	8'	-	-
T-7	32'	8'	15'	12'	-	27'	'	8'	!	
T-8	PED	9'	-	-	-	-	-	8'	-	-
T-9	32'	14'	19'	12'	-	31'		8'		
TOTAL	-	-	-	-	-	-	-	-	-	1

1

				FLECTRICA		DETAILS					
				ELECTRICA	LSERVICE	DETAILS					
ELEECTRIC SERVICE NO.	SHEET NO.	ELECTRICAL SERVICE DESCRIPTION (SEE ED(4)&ED(5)-14	SERVICE CONDUIT SIZE (RMC)	SERVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CIRCUIT BREAKER POLE/AMP	TWO-POLE CONTACTOR AMPS	PANEL BD. / LOADCENTER AMP RATING	CIRCUIT NO.	BRANCH CIRCUIT BREAKER POLE/AMPS	KVA LOAI
2		ELEC SRV TY D 120/240 070 (NS)SS(E)SP(O)	2"	3/#4	N/A	2P/70	30	100	1-TS 2-LUM	1P/50 2P/15	6.2

 $\sim \sim \sim$

				64.0		CO		JNS AND	IN-POLE SUM	MARY	ITENACO		17514 6045	17514 630	
			TIEM	618			TIEN	1620	TEM 621		TENI684	+	11EM 6045	TTEM 620	11EM 6054
			CONDU	IT RUN			ELECT	RICAL CO	NDUCTORS	S (Т	IGNAL CA Y-A, 14 A\	BLE VG)	GRIDSMART CAMERA	OPTICOM	RADIO ANTENNA
KUN NO.	RUN								TRAY CABLE	5 CNDR	10 CNIDD	16 CNDR		3 CN DR	CATSE
	LENGTH	ZPVC	3 PVC	3 PVC	ZRIGID		NO. 6	NO. 6	4 CN DR	CABLE	TUCNDR	CABLE		NO. 14	CABLE
	(FEET)	TRENCH	IKENCH	BURE		TRENCH	BARE		NO. 12	NO.14	CABLE	NO. 14	(LF)	(LF)	(LF)
1	63	0\	verhead,	by powe	er compar	ıy									
2A	6	1					2	2	2						
2B	10	1					1	2							
2C	20	1					1		2						
3A	8		1				1					4	1		1
3B	8		1				1			8				2	
4	20		1				1		1			1	1	1	1
5	15		1				1		1	1		2			
6	5	1					1			1					
7	82			1			1		1	4		2			
8	5	1					1			1					
9	16	1					1			1					
10	5		1				1					1			
11	72			1			1		1	2		1			
12	4	1					1			1					
13	16		1				1		1	1		1			
14	60			1%			1			2		1		1	
15	8		1				1			1		1		1	
16	20	1					1			1					
SUBTOT	AL (LF)	86	80	214	0	0	386	32	257	744	0	407	28	104	28
SA					20										
T-1										10					
T-2									40	10		5	40	45	30
T-3										10					
T-4										10					
T-5												5			
T-6										10					
T-7										10		5			
T-8										10					
T-9									40	10		5		45	
												-			
τοτα	(IE)	96	80	214	20	0	296	27	227	824	0	437	69	10/	EQ
Note: Wi	ring langt	hs from s	ignal nole	termin	al block t	o signal h	ooc adsisir	l J2 Incidenta	to the navite	m for th	e signal h	eads	00	174	50

		CABLE TERMI	NATION CHART			
			CABLE 1	CABLE 2	CABLE 3	CABLE 4
			16 CNDR	16 CNDR	16 CNDR	16 CNDR
CNDR #	PHASE	CNDR COLOR	FROM CNTRL	FROM CNTRL	FROM CNTRL	FROM CNTRL
			TO T-2	TO T-5	TO T-7	TO T-9
			CDADE	CDADE	CDADE	CDADE
1		BLACK	SPARE	SPARE	SPARE	SPARE
2	SIGNAL COMMON	WHITE	SH	SH	SH	SH
_			COMMON	COMMON	COMMON	COMMON
3	RED THRU PHASE	RED	SH 3, 4	SH 7, 8	SH 11, 12	SH 16, 17
			φ 2 R	φ 8 R	φ 6 R	φ 4 R
4	YELLOW THRU PHASE	ORANGE	SH 3, 4	SH 7, 8	SH 11, 12	SH 16, 17
			φ 2 Υ	φ 8Υ	φ 6Y	φ 4 Υ
5	GREEN THRU PHASE	GREEN	SH 3, 4	SH 7, 8	SH 11, 12	SH 16, 17
			φ2G	φ 8 G	φ 6 G	φ 4 G
6	WALK	BLUE	WALK	SPARE	WALK	WALK
7	DON'T WALK	WHITE/BLACK	φ 4&8	SPARE	φ 2&6	φ 4&8
8	WALK	RED/BLACK	SPARE	SPARE	SPARE	SPARE
9	DON'T WALK	GREEN/BLACK	SPARE	SPARE	SPARE	SPARE
10	LT RED ARROW	ORANGE/BLACK	SPARE	SPARE	SPARE	SPARE
11	LT YELLOW ARROW	BLUE/BLACK	SPARE	SPARE	SPARE	SPARE
12	LT GREEN ARROW	BLACK/WHITE	SPARE	SPARE	SPARE	SPARE
13	LT FLASHING YELLOW ARROW	RED/WHITE	SPARE	SPARE	SPARE	SPARE
14	SPARE	GREEN/WHITE	SPARE	SPARE	SPARE	SPARE
15	SPARE	BLUE/WHITE	SPARE	SPARE	SPARE	SPARE
16	SPARE	BLACK/RED	SPARE	SPARE	SPARE	SPARE

CABLE RUNS 5,6,7,8, AND 9 FROM CNTRL TO T-1, T-3, T-5, T-6, AND T-8 RESPECTIVELY, ARE 5 CNDR CABLES TO SERVE THE PEDESTRIAN HEADS AND PUSH BUTTONS ON THE PEDESTAL POLES. USE CONSISTENT CONDUCTOR COLORS FOR EACH INSTALLATION.



							FREESE AND NICHOLS, INC. TEXAS REGISTERED ENGINEERING FIRM F-214	214.4
SE	SF	NO. ISSUES BY	DATE	F&N JOB NO.				
Q.	ΗEE			SAN1615	8 CITY OF SAN ANGELO, IEXAS		XPAR OF 764	
1	т			DATE 12/20	PHASE I	FREESE		
<u>د</u>	ç			DESIGNED JW	BELL STREET ROADWAY AND UTILITIES IMPROVEMENTS		KEVINB ST. JACOUES	
- <u>(</u> 79	_ r			DRAWN E	TRAFFIC SIGNALS	 4055 International Plaza, Suite 200 Fort Worth, Texas 76109-4895 	23: 69700 A	
4 ر	ער ער	🕂 АДДЕМДИМ NO.3	01/22/15	3 REVISED		Phone - (817) 735-7300 Fax - (817) 735-7491	A CONTONNED NO	
		VERIFY SCALE Bar is one inch on original	FILE NAME	CHECKED W		Web - www.freese.com	V 01-22-201	018
	-	0 1 drawing. It not one inch on L this sheet, adjust scale.	ph1-trt-	pl-signal02-2.d	TRAFFIC SIGNAL SUMMARY			

Arm ROUND POLES POLYGONAL POLES		PPINIC PARTS LIST	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
$\begin{bmatrix} \text{Length} & \text{D}_{\text{B}} & \text{D}_{19} & \text{D}_{24} & \text{D}_{30} & 1 \text{ thk} & \text{D}_{\text{B}} & \text{D}_{19} & \text{D}_{24} & \text{D}_{30} & 1 \text{ thk} & \text{Outnotion} \\ \hline \text{ft} & \text{in} & \text$	Ship each pole with the following attached: e	enlarged hand hole, pole cap, fixed	-arm
20 10.5 7.8 7.1 6.3 .179 11.5 8.5 7.7 6.8 .179 30-A	connection bolts and washers and any additi	ional hardware listed in the table.	
24 11.0 8.3 7.6 6.8 .179 12.0 9.0 8.2 7.3 .179 30-A 28 11.5 8.8 8.1 7.3 .179 12.5 9.5 8.7 7.8 .179 30-A	30' Poles With Luminaire	24' Poles With ILSN]	19' Poles With No Luminaire and No ILSN
32 12.5 9.8 9.1 8.3 .179 12.0 9.0 8.2 7.3 .239 30-A 36 12.0 9.3 8.6 7.8 .239 12.5 9.5 8.7 7.8 .239 36-A	Arm (or two if ILSNE attached) Length small hand hole, clamp-on simplex	Above hardware plus one small hand hole	See note above
40 12.0 9.3 8.6 7.8 .239 13.5 10.5 9.7 8.8 .239 36-A 44 12.5 9.8 9.1 8.3 .239 14.0 11.0 10.2 9.3 .239 36-A	ft Designation Quantity 20 20L-80	Designation Quantity 20S-80	Designation Quantity 20-80
48 13.0 10.3 9.6 8.8 .239 15.0 12.0 11.2 10.3 .239 36-A	24 24L-80	24S-80	24-80
Arm ROUND ARMS POLYGONAL ARMS	28 28L-80	28S-80 X	28-80 1
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	36 36L-80 2	36S-80 A	36-80
20 19.1 6.5 3.8 .179 1'-9'' 19.1 7.0 3.5 .179 1'-8''	40 40L-80	40S-80	40-80 1
24 23.1 7.5 4.3 .179 1'-10" 23.1 7.5 3.5 .179 1'-9" 28 27.1 8.0 4.2 170 1'-11" 27.1 8.0 3.5 179 1'-9"	44 44L-80 48 48L-80	445-80	44-80
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		403 00	
36 35.0 9.5 4.6 .179 2'-4'' 35.0 10.0 3.5 .179 2'-1''	Traffic Signal Arms (1 per Pole)	Ship each arm with the	E listed equipment attached
40 39.0 9.5 4.1 .239 2'-8" 39.0 9.5 3.5 .239 2'-3" 44 43.0 10.0 4.1 230 2'-11" 43.0 10.0 3.5 239 2'-6"	Nominal	Type ILLETT (2 Signola)	
44 45.0 10.0 41.1 12.33 2.11 43.0 10.0 5.3 12.03 2.0 48 47.0 10.5 4.1 .239 3'-4" 47.0 11.0 3.5 .239 2'-9"	Arm Length 1 CGB connector	1 Bracket Assembly and 2 CGB Connectors	2 Bracket Assemblies and 3 CGB Connectors
UB = Pole Base 0.D. U2 = Arm End 0.D. D19 = Pole Top 0.D. with no Luminaire L1 = Shaft Length and no. II SN L1 = Nominal Arm Length	ft Designation Quantity	Designation Quantity	Designation Quantity
D ₂₄ = Pole Top 0.D. with ILSN w(aut Luminoire	20 201380	0.4150	
D_{30} = Pole Top 0.D. with Luminaire	24 24580	241-80	
(1) Thickness shown are minimums, thicker materials may be used.	32	321580 4	32 11-80
(2) D_2 may be increased by up to 1" for polygonal arms.	36	361580 2	36 11-80
Nominal Arm Length - L	40		
See "Tenon Detail"	48		4811-80
See "Slip Joint Detail"	Lumingire Arms (1 per 30' pole)		K
	Nominal Arm Length	Quantity	K
	8' Arm	X 2	<pre>k</pre>
Note: The arm shall be fabricated straight with connection-			
TRAFFIC SIGNAL ARM	IESN Arm (Max. 2 per pole) Ship with clam Nominal Arm Length	nps, bolts and washers Quantity	4
(Fixed Mount)	7' Arm		
See Sheet"MA-D"	9' Arm		<
	Anchor Bolt Assemblies (1 per pole)		4
See See	Anchor Anchor	Each anchor bolt assembly c	consists of the following:
ILSN Arm Connection- See Sheet "MA-C(ILSN)" Nom Arm Lgth "MA-D"	Diameter Length Quantity	Iop and Bottom templates, 8 flat washers, and 4 nut ar per Standard Drawing "T'	4 anchor bolts, 8 nuts, nchor devices (Type 2) S-FD''
Nominal Arm Length - L (8") U Detail B or C	1 1/2" 3'-4" 5 1 3/4" 3'-10" 3		
3'-0" Bracket 3'-0" SNS"		Templates may be remained	oved for shipment.
	······		mm
	ADDENDUM #3		SHEET 1 OF 2
(3) Threaded Coupling for Traffic Signal Arm (1) (5) (6) (7) (3) CGB Connector CGB Connector Traffic Signal Arm (1) (7) (7) (7) (3) CGB Connector See "ARM COUPLING DETAILS" See Sheet "MA-D" (1) (7) (7) (7)		Texas	Department of Transportation
Sheet 2 of 2 Detail D,E or F E E E			raffic Operations Division
TABLE OF DIMENSIONS A "			
$\begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $			VI SIRUCIUKES
Arm Type 10' 11' 12' 12'		SINGLE MA	ASI ARM ASSEMBLY
See Sheet		(80 M	PH WIND ZONE)
			SMA-80(1)-12
Foundation		(C) TxDOT August 1995 REVISIONS	DN: MS CK: JSY DW: MMF CK: JSY CONT SECT JOB HIGHWAY
STRUCTURE ASSEMBLY See Sheet		5-96 11-99 1-12	DIST COUNTY SHEET NO.
SACCOUNTS Date: Jan. 22. 2018 - 01:28:28 PM User: sii File: N:\/F\Drawinas\TXDOT Details\Phase Txdot Details\Traffic Signal Details\smg-80.dan		1224	

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(FOL	JNDA	TION	SUI	MMAR	Y TA	ABLE	3	
(AVG.		NO	[RILLED	SHAFT	LENGTH	6
\geq		N BLOW	FDN	NO.		INCLUD	(FEET)	22110111	0
5		∕ft.	TIPE	ΕA	24-A	30-A	36-A	36-B	42-A
(RIO CONCHO/BELL								
7	T 1 0 4 5 7 0 10 11	10	04.4		6				
\geq	T-6, T-12	10	24-A	8 2	6	12			
	T-39	10	36-A	2		12	14		
(- 0,0	10	00 //	2					
7									
$\left \right\rangle$	HARRIS/BELL								
(T-1,3,4,6,8	10	24-A	5	6				
7	1-5,7,9	10	30-A	3		12	14		
>	1-2	10	30-A				14		
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(TOTAL DRILLED SH	HAFT L	ENGTH	S	78	60	42		
	Signals and int Reinforcing	erim r steelsk	evisior nall con	is the form	reto. to Iter	n 440,			
	"Reinforcing S Concrete sh	teel''. nall be (Class ''	С''.					
	Threads for rolled or cut t in diameter or and nuts shall Galvanized nut	anchoi hreads UNC s have C s shall	r bolts of 8UI eries 1 lass 2 be tap	and N seri for all A and ped a	nuts sh ies up sizes.E 1 2B fi fter ga	all be to 2'' Bolts t tolerai Ivanizing	nces. g.		
	Anchor bolts shall conform mild steel" per bolts that are to ASTM A36. thread length otherwise note shall be galvan	s that o to ''allo 'Item 1'' in d Galvar plus 6'' ed. Expo ized. All	are lar by step 449, " iamete ize a for al osed w Igalvar	ger th el'' or Anchc ir or l minim l anch asher nizing	nan 1" i "mediu or Bolts ess sho um of or bolts s and e shall be	n diame im-strer 21 confo the top 5 unless exposed in	eter ngth or rm o end s I nuts		
	accordance wi Templates c Lubricate and structure in a	ind eml tighten ccordar	445, beddec anchc nce wit	nuts or bolt h Iter	need i s when n 449,	not be erectir ''Ancho	galvaniz ng the or Bolts	ed.	
		7	Tex	as E)epartı Traffic	nent ot Operation	f Trai ns Divisi	nsporta ^{on}	tion
TRAFFIC SIGNAL									
POLE FOUNDATION									
						-	TS-I	FD-	12
	5-96 11-99	C TxDOT	August	1995	DN: CO	MS NT SECT	JOB	DW: MAO/MM	F CK: JSY/T HIGHWAY
	1-12				DIS	т	COUNTY		SHEET NO.

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