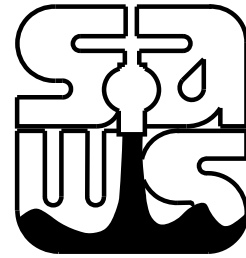
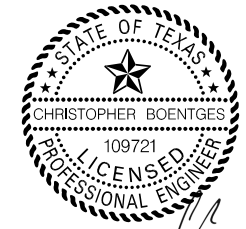


SAN ANTONIO WATER SYSTEM



2018 SMP JOB NO: 17-5114

CLIFFORD FROM S. PRESA ST. TO DEAD END WATER PLANS

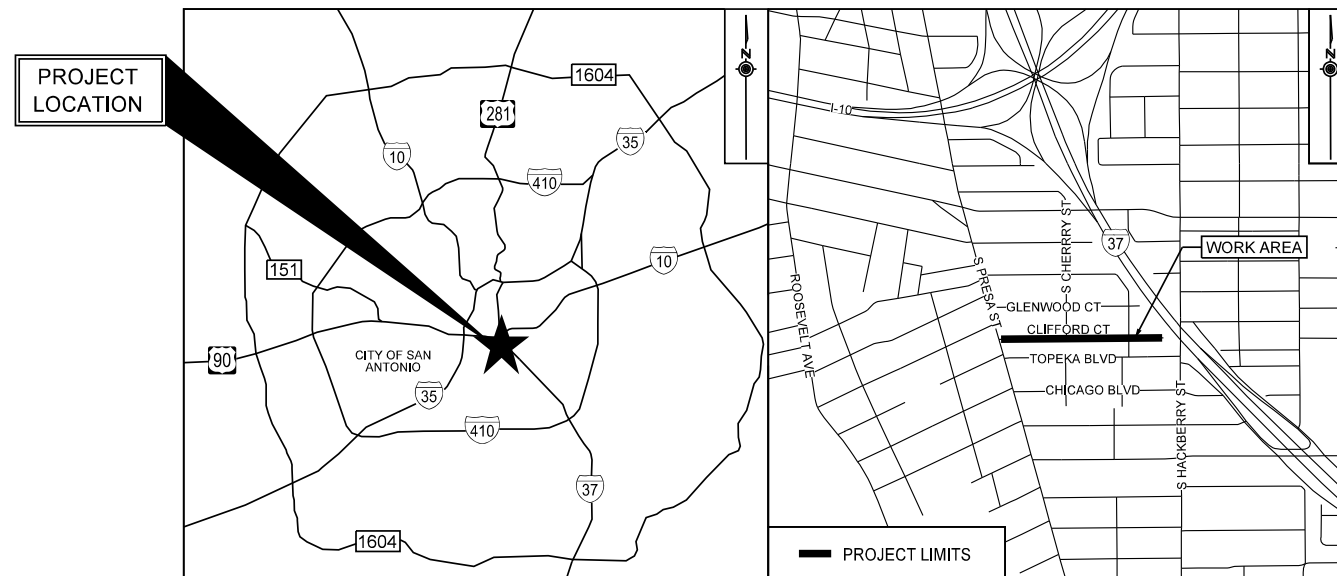


CB
12/14/17

SUBMITTAL PREPARED BY:



16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com



LOCATION MAP
NOT TO SCALE

SHEET LIST

SHT NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES AND QUANTITIES
3	PROJECT LAYOUT
4	WATER PLAN 01
5	WATER PLAN 02
6	WATER PLAN 03
7	WATER PLAN 04
8	TREE PROTECTION DETAILS

DECEMBER 2017

GENERAL WATER NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:
 - CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.
 - CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
 - CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
 - CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR CONSTRUCTION."
 - CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
- THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, [HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS](http://www.saws.org/business_center/specs), UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.
- THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500, AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 72 HOURS PRIOR TO EXCAVATION.
- LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
 SAN ANTONIO WATER SYSTEM:
 SAWS UTILITY LOCATES: [HTTP://WWW.SAWS.ORG/SERVICE/LOCATES](http://www.saws.org/service/locates)
 COSA DRAINAGE 210-207-8048
 COSA TRAFFIC SIGNAL OPERATIONS 210-207-7720
 TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.
- ALL WORK IN TEXAS HIGHWAY DEPARTMENT AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.
- THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
- THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
- ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.
- HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

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

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

- PRE CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION, THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS, (NSPI)
- POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS, AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.
- CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.

WATER SECTION

- PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS INSPECTION AND/OR SAWS PRODUCTION GROUPS AT LEAST ONE WEEK OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
SAWS PRODUCTION CONTROL CENTER 210-233-2016
- ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "HANDLING ASBESTOS CEMENT PIPE".
- VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSPI)

CPS ENERGY NOTE:

- CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION, DUE TO FEDERAL REGULATIONS TITLE 49, PART 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 PROJECT AREA.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS ENERGY OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREAS.
- CONTRACTOR TO FIELD VERIFY THE DEPTH OF GAS MAINS BEFORE BEGINNING OF CONSTRUCTION.

AT&T NOTES:

- 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.
- THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH THE "ONE CALL" UTILITY LOCATE SERVICE (1-800-545-6005) 48 HOURS PRIOR TO CONSTRUCTION/EXCAVATION WORK, CONTRACTORS HAVE THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.

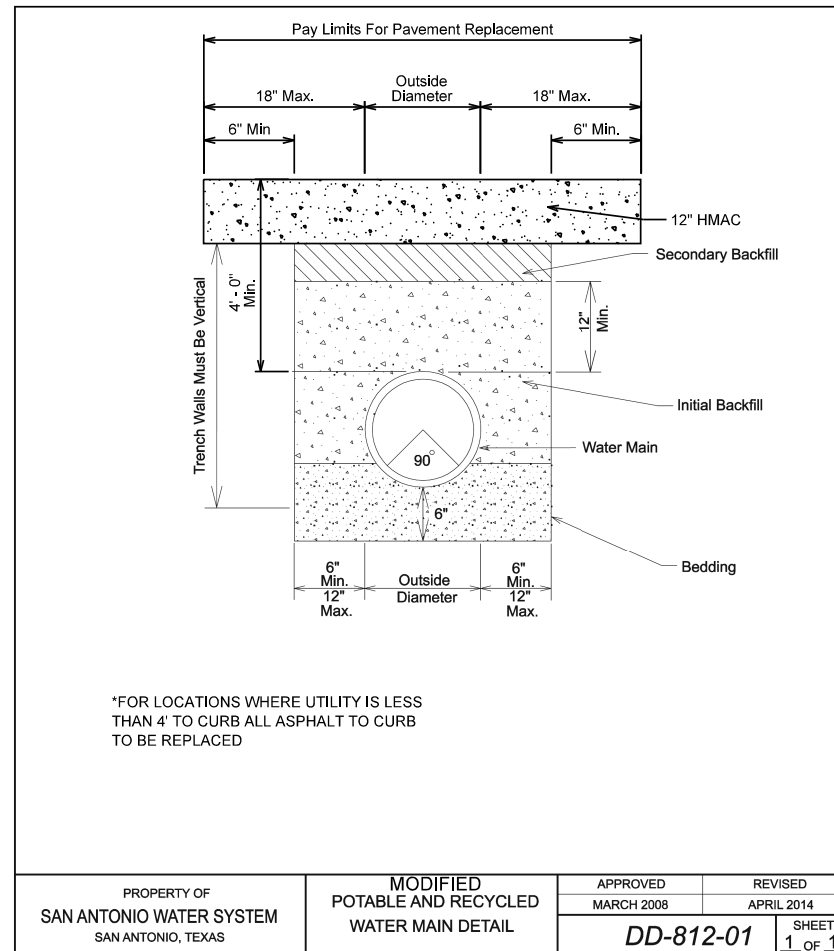
NOTE FOR THE CITY OF SAN ANTONIO FLATWORK:
ALL LIMITS FOR CURB, SIDEWALK, AND TREE PREP BEYOND WHAT IS CONSIDERED INCIDENTAL TO NORMAL UTILITY CONSTRUCTION WILL BE ADDRESSED BY THE SAWS INSPECTOR. SAWS INSPECTOR WILL ALSO DETERMINE IF ADDITIONAL COMPENSATION IS WARRANTED IF LIMITS EXCEED INCIDENTALS.

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 OF 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:
- CONTRACTOR SHALL RESTRAIN ALL PROPOSED PIPES, VALVES AND FITTINGS AT NO ADDITIONAL COST (RL=RESTRAINT LENGTH)
 - CONTRACTOR TO MAINTAIN WATER SERVICE CONNECTIONS AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL ALSO MAINTAIN ACCESS TO ALL EXISTING AND PROPOSED WATER VALVES AT ALL TIMES (NSPI).
 - NSPI - NOT A SEPARATE PAY ITEM.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING OPERATION OF ALL EXISTING UTILITIES AFFECTED BY PROPOSED CONSTRUCTION.
 - TREE REMOVAL IS NOT PERMITTED ON THIS PROJECT. CONTRACTOR SHALL TAKE EXTREME CARE WHEN WORKING AROUND TREES TO PREVENT DAMAGE. PRIOR TO THE START OF WORK, CALL 207-1111 TO SCHEDULE A PRE-CONSTRUCTION FENCING INSPECTION.
 - TREE PROTECTION IS NSPI.
 - THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. THE CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER, OR AS APPROVED BY THE OWNER AND CONSULTANT, AT THE SOLE EXPENSE OF THE CONTRACTOR.
 - THE CONTRACTOR SHALL RE-ESTABLISH ANY PROPERTY MARKER, BENCHMARK, ETC. DISTURBED DURING CONSTRUCTION TO ITS ORIGINAL LOCATION AND ELEVATION. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE VERTICAL AND HORIZONTAL CONTROL SHOWN ON THE PLANS THROUGHOUT THE PROJECT, RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PUBLIC SURVEYOR IN THE STATE OF TEXAS AT NO ADDITIONAL COST TO SAWS.
 - CONTRACTOR SHALL MAINTAIN ACCESS TO PUBLIC AND PRIVATE FACILITIES DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE AND THE SAN ANTONIO WATER SYSTEM.
 - CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING CONSTRUCTION OF THE PROJECTS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD TO OWNER AND THE CONSULTANT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXPECTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR CONSULTANT.

TOTAL ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
103	REMOVE CONCRETE CURB	LF	10
103	REMOVE SIDEWALKS & DRIVEWAYS	SF	30
205.2	HOT MIX ASPHALTIC PAVEMENT - TYPE B (12" COMPACTED DEPTH)	SY	732
413	FLOWABLE FILL	CY	11.9
500	CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER	LF	10
502	CONCRETE SIDEWALKS & WHEELCHAIR RAMPS	SY	3.4
530.1	BARRICADES, SIGNS, AND TRAFFIC HANDLING (CLIFFORD)	EA	*0.5
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	1753
818	6" PVC WATERLINE (RESTRAINED)	LF	20
818	8" PVC WATERLINE (RESTRAINED)	LF	1733
822	SHORT YARD PIPING	LF	10
824	RELAY 3/4" SHORT SERVICE	EA	25
824	RELAY 3/4" LONG SERVICE	EA	19
828	8" GATE VALVE	EA	7
833	EXISTING METER & NEW METER BOX RELOCATION	EA	7
833	NEW METER BOX	EA	44
834	FIRE HYDRANT	EA	4
836	PIPE FITTINGS, ALL SIZES & TYPES	TN	0.6
840	6" WATER TIE-IN	EA	4
841	HYDROSTATIC TESTING	EA	2
844	2" BLOW-OFF, TEMPORARY	EA	3
858	CONCRETE ENCASEMENT, CRADDLES, SADDLES, AND COLLARS	CY	3.2

*ITEM SPLIT FOR WORKSITE BETWEEN WATER AND SEWER PROJECTS.



16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com

No.	Revision	Drawn	Approved	Date

REVISIONS

CLIFFORD FROM S. PRESA ST. TO DEAD END
GENERAL NOTES AND QUANTITIES

DEVELOPER: _____

CONT. _____ BUDGET PROJ. _____

SUBMITTED _____

APPROVED _____

MAP No. _____ SHEET 2

SECT. No. _____

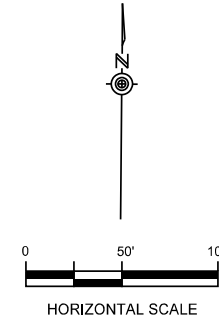
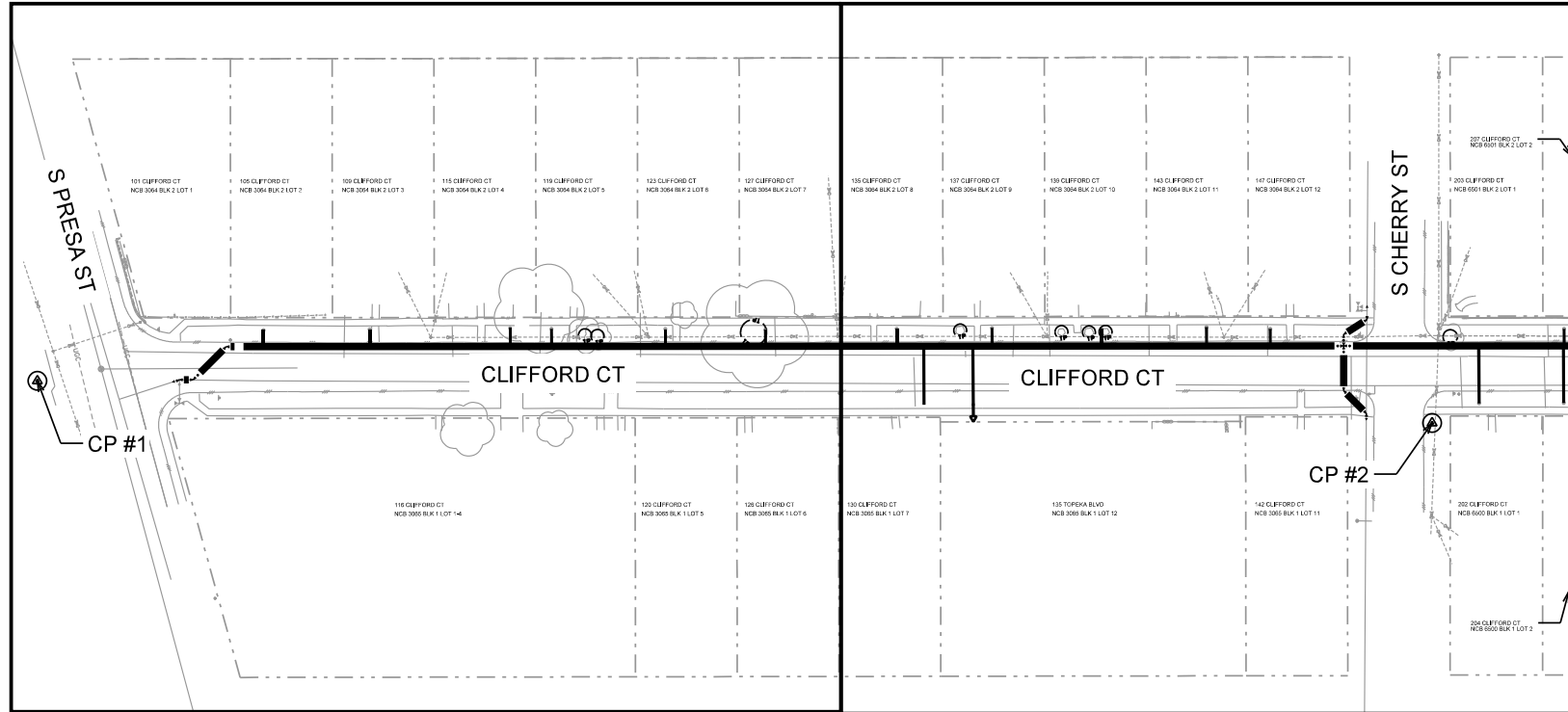
DR. _____ CK. _____ JOB No. 17-5114 OF 8

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MODIFIED POTABLE AND RECYCLED WATER MAIN DETAIL	APPROVED MARCH 2008	REVISED APRIL 2014
DD-812-01		SHEET 1 OF 1	

X:\Projects\0639_SAWS SMP Clifford\DWG\Sheets\0639_WTR_NOTES-DETAILS.dgn modified by adensler on 1/2/2018 - 4:38:07 PM

SHEET 4 OF 8

SHEET 5 OF 8

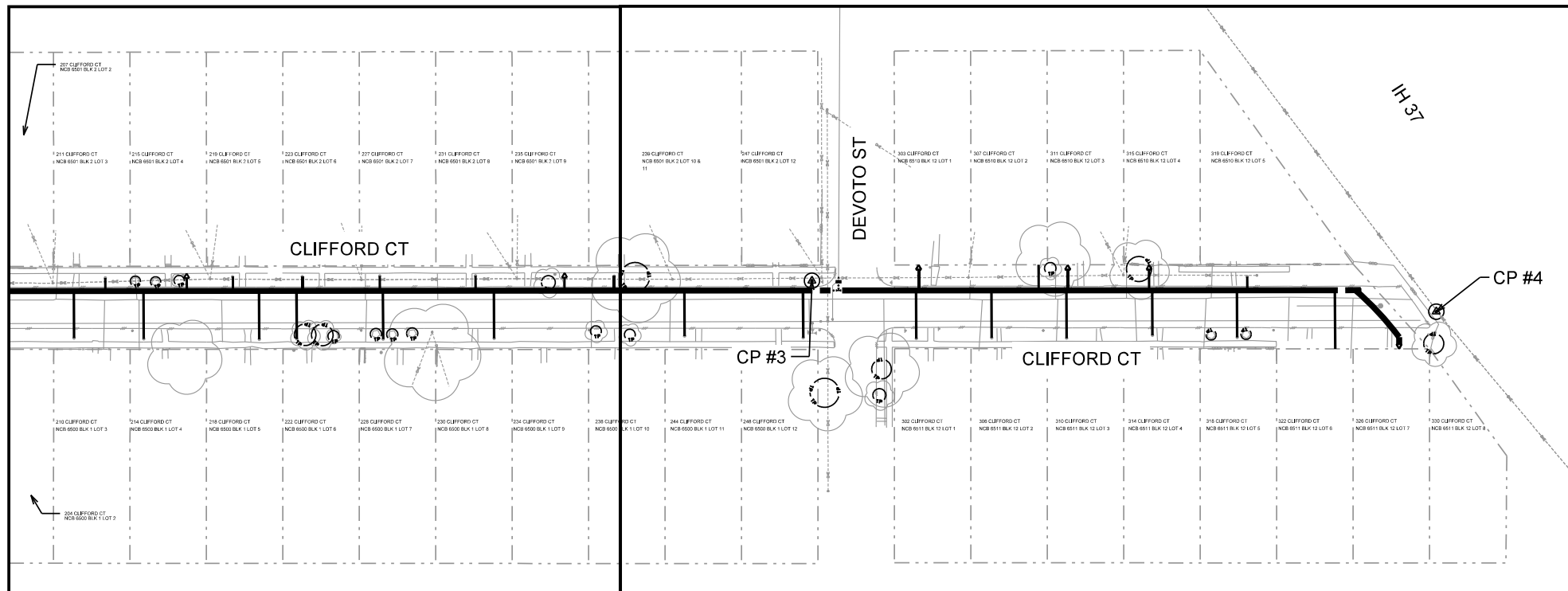


CONTROL POINTS TABLE

POINT NO.	X	Y	ELEVATION	DESCRIPTION
CP #1	2,134,235.23	13,688,811.06	611.19	1/2 IR W/ GREEN CAP GD #5005
CP #2	2,134,989.28	13,688,794.69	611.14	1/2 IR W/ GREEN CAP GD #5005
CP #3	2,135,594.70	13,688,848.32	615.81	1/2 IR W/ GREEN CAP GD #5005
CP #4	2,136,003.29	13,688,831.59	619.69	1/2 IR W/ GREEN CAP GD #5005

SHEET 6 OF 8

SHEET 7 OF 8

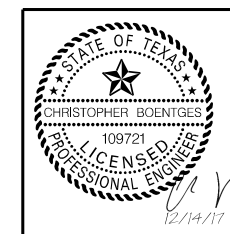


K FRIESE + ASSOCIATES
PUBLIC PROJECT ENGINEERING
16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com

LEGEND

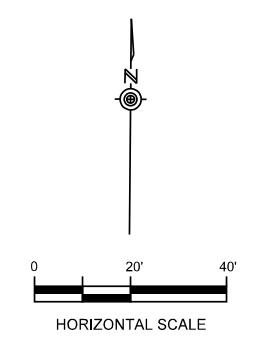
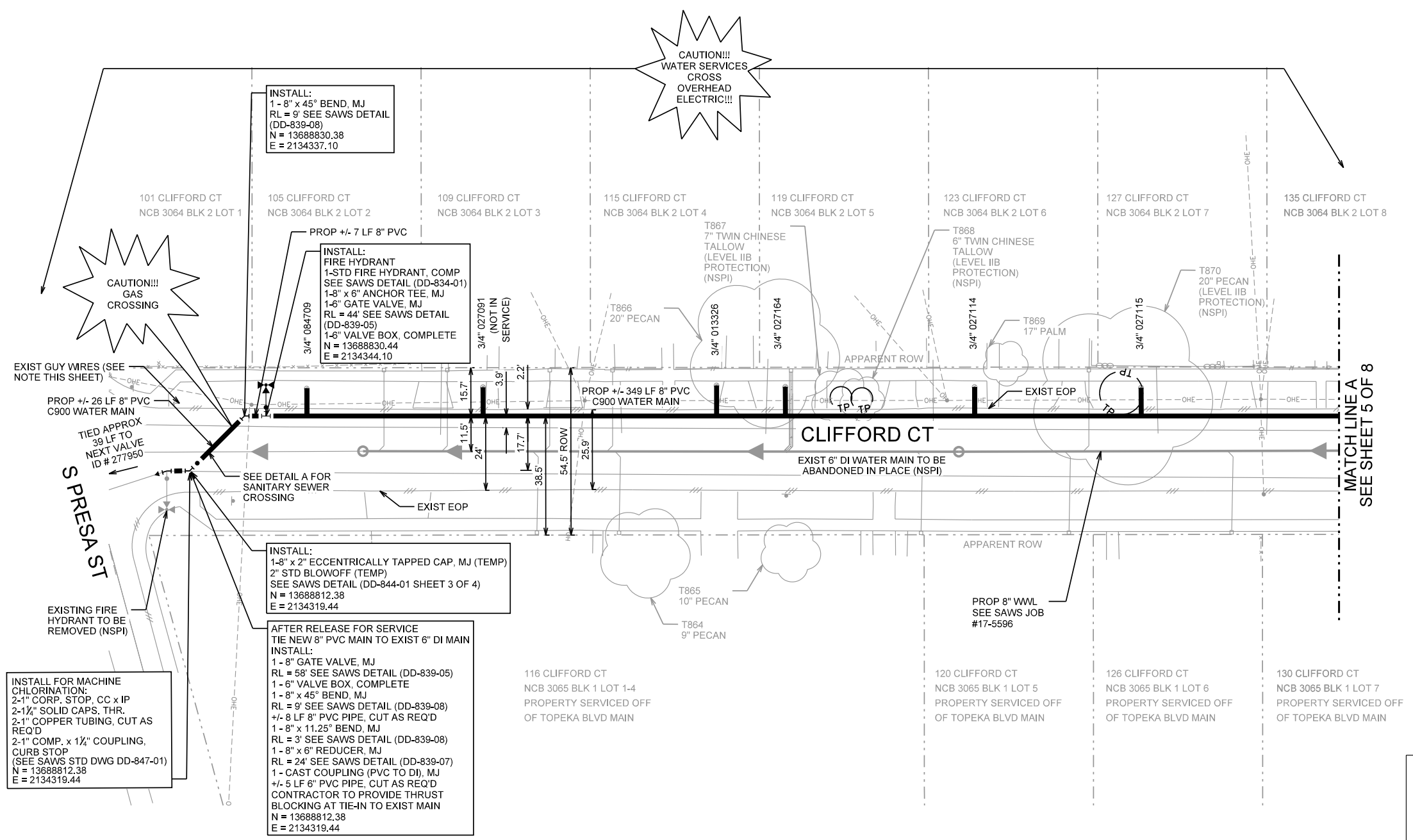
- PROP. WATER MAIN ————
- EXIST. WATER MAIN —o—6" C.I.—
- GAS MAIN ———— 2" G
- SANITARY SEWER ———— 8" SA
- STORM SEWER ———— 24" ST
- UTILITY POLE LINE ————
- ELECTRIC CABLE ———— E
- TELEPHONE CABLE ———— T
- DUAL BRANCH SERV. ————
- NEW UNMETERED SERVICE:
 - 3/4" SINGLE ————
 - 1" DUAL ————
- SERVICE RECONNECT:
 - 3/4" ————
 - 1" OR LARGER ————
- SERVICE RELAY:
 - 3/4" ————
 - 1" OR LARGER ————
- SERVICE RELOCATE:
 - 3/4" ————
 - 1" OR LARGER ————
- RELOCATE METER ————
- NEW SERVICE:
 - 3/4" ————
 - 1" OR LARGER ————

No.	Revision	Drawn	Approved	Date
REVISIONS				
CLIFFORD FROM S. PRESA ST. TO DEAD END PROJECT LAYOUT				
DEVELOPER: _____				
CONT. _____		BUDGET PROJ.		
SUBMITTED _____				
APPROVED _____				
MAP No. _____				SHEET
SECT. No. _____				3
DR. _____	CK. _____	JOB No. 17-5114 OF 8		



X:\Projects\0539_SAWS SMP Clifford\DWG\Sheets\0539_WTR_PROJ_LAYOUT.dgn modified by adensler on 1/2/2018 - 4:38:12 PM

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205.2	HOT MIX ASPHALTIC PAVEMENT - TYPE B (12" COMPACTED DEPTH)	SY	168
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	402
818	6" PVC WATERLINE (RESTRAINED)	LF	5
818	8" PVC WATERLINE (RESTRAINED)	LF	397
824	RELAY 3/4" SHORT SERVICE	EA	6
828	8" GATE VALVE	EA	1
833	NEW METER BOX	EA	6
834	FIRE HYDRANT	EA	1
836	PIPE FITTINGS, ALL SIZES & TYPES	TN	0.1
840	6" WATER TIE-IN	EA	1
844	2" BLOW-OFF, TEMPORARY	EA	1



K FRIESE + ASSOCIATES
PUBLIC PROJECT ENGINEERING
16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com

LEGEND

PROP. WATER MAIN	
EXIST. WATER MAIN	
GAS MAIN	
SANITARY SEWER	
STORM SEWER	
UTILITY POLE LINE	
ELECTRIC CABLE	
TELEPHONE CABLE	
DUAL BRANCH SERV.	
NEW UNMETERED SERVICE:	
3/4" SINGLE	
1" DUAL	
SERVICE RECONNECT:	
3/4"	
1" OR LARGER	
SERVICE RELAY:	
3/4"	
1" OR LARGER	
SERVICE RELOCATE:	
3/4"	
1" OR LARGER	
RELOCATE METER	
NEW SERVICE:	
3/4"	
1" OR LARGER	

No.	Revision	Drawn	Approved	Date

REVISIONS

CLIFFORD FROM S. PRESA ST. TO DEAD END

WATER PLAN 01

DEVELOPER:

CONT. BUDGET PROJ.

SUBMITTED _____

APPROVED _____

MAP No. _____ **SHEET** 4

SECT. No. _____ **DR.** _____ **CK.** _____ **JOB No.** 17-5114 **Of** 8

X:\Projects\0539_SAWS SMP Clifford\DWG\Sheets\0539_WTR_PLAN_1.dgn modified by adensler on 1/2/2018 - 4:38:13 PM

GAS NOTE:
CONTRACTOR TO USE EXTREME CAUTION WHEN EXCAVATING NEAR EXISTING GAS. LESS THAN 3' OF SEPARATION IN LIMITED AREAS.

GUY WIRE NOTE:
GUY WIRES AND ANCHORS SHALL BE LOCATED AND PROTECTED AT ALL TIMES DURING WATER AND SEWER SERVICE INSTALLATION. DAMAGE TO GUY WIRES OR ANCHORS SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE (NSPI).

ROOT PROTECTION ZONE NOTE:
THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER WITHIN 20 MINUTES, TO PREVENT OAK WILT.

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 SYSTEM, 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 OF 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!!!
WATER MAINS &
SERVICES CROSS
GAS MAIN &
OVERHEAD
ELECTRIC!!!

REMOVE AND
SALVAGE EXIST FIRE
HYDRANT (NSPI)

INSTALL:
1 - 8" x 45° BEND, MJ
RL = 9' SEE SAWS DETAIL
(DD-839-08)
1 - 8" x 11.25° BEND, MJ
RL = 2' SEE SAWS DETAIL
(DD-839-08)
N = 13688842.16
E = 2134941.05

AFTER RELEASE FOR SERVICE
TIE NEW 8" PVC MAIN TO EXIST 6" CI MAIN
INSTALL:
1 - 8" x 45° BEND, MJ
RL = 9' SEE SAWS DETAIL (DD-839-08)
1 - 8" x 11.25° BEND, MJ
RL = 2' SEE SAWS DETAIL (DD-839-08)
1 - STD FIRE HYDRANT, COMP
SEE SAWS DETAIL (DD-834-01)
1 - 8" x 6" ANCHOR TEE, MJ
1 - 6" GATE VALVE, MJ
RL = 44' SEE SAWS DETAIL (DD-839-05)
1 - 6" VALVE BOX, COMPLETE
1 - 8" x 6" REDUCER, MJ
RL = 24' SEE SAWS DETAIL (DD-839-07)
1 - CAST COUPLING (PVC TO CI), MJ
+/- 5 LF 6" PVC PIPE, CUT AS REQ'D
CONTRACTOR TO PROVIDE THRUST
BLOCKING AT TIE-IN TO EXIST MAIN
N = 13688850.32
E = 2134953.61

INSTALL:
1 - 8" x 8" CROSS, MJ
4 - 8" GATE VALVE, MJ
RL = 58' SEE SAWS DETAIL
(DD-839-05)
4 - 6" VALVE BOX, COMPLETE
N = 13688835.92
E = 2134941.12

CAUTION!!!
OVERHEAD
ELECTRIC
CROSSING

INSTALL:
1 - 8" x 45° BEND, MJ
N = 13688788.70
E = 2134941.35

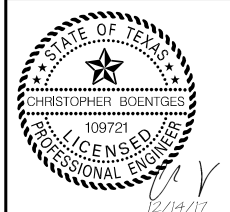
INSTALL:
1 - 8" x 2" ECCENTRICALLY TAPPED CAP, MJ (TEMP)
2" STD BLOWOFF (TEMP)
SEE SAWS DETAIL (DD-844-01 SHEET 3 OF 4)
N = 13688795.58
E = 2134953.76

AFTER RELEASE FOR SERVICE
TIE NEW 8" PVC MAIN TO EXIST 6" CI MAIN
INSTALL:
1 - 8" x 45° BEND, MJ
RL = 9' SEE SAWS DETAIL (DD-839-08)
1 - 8" x 6" REDUCER, MJ
RL = 24' SEE SAWS DETAIL (DD-839-07)
1 - CAST COUPLING (PVC TO CI), MJ
+/- 5 LF 6" PVC PIPE, CUT AS REQ'D
CONTRACTOR TO PROVIDE THRUST
BLOCKING AT TIE-IN TO EXIST MAIN
N = 13688795.58
E = 2134953.76

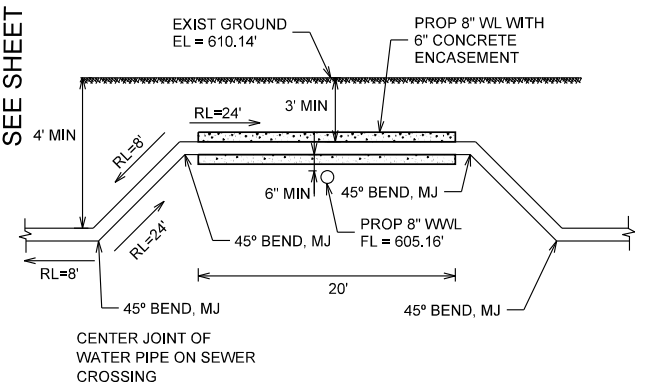
GAS NOTE:
CONTRACTOR TO USE EXTREME CAUTION WHEN EXCAVATING NEAR EXISTING GAS. LESS THAN 3' OF SEPARATION IN LIMITED AREAS.

ROOT PROTECTION ZONE NOTE:
THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER WITHIN 20 MINUTES, TO PREVENT OAK WILT.

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 SYSTEM, 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 OF 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.



ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
103	REMOVE CONCRETE CURB	LF	10
103	REMOVE SIDEWALKS & DRIVEWAYS	SF	30
205.2	HOT MIX ASPHALTIC PAVEMENT - TYPE B (12" COMPACTED DEPTH)	SY	194
413	FLOWABLE FILL	CY	3.2
500	CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER	LF	10
502	CONCRETE SIDEWALKS & WHEELCHAIR RAMPS	SY	3.4
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	474
818	6" PVC WATERLINE (RESTRAINED)	LF	10
818	8" PVC WATERLINE (RESTRAINED)	LF	464
824	RELAY 3/4" SHORT SERVICE	EA	6
824	RELAY 3/4" LONG SERVICE	EA	4
828	8" GATE VALVE	EA	4
833	EXISTING METER & NEW METER BOX RELOCATION	EA	1
833	NEW METER BOX	EA	10
834	FIRE HYDRANT	EA	1
836	PIPE FITTINGS, ALL SIZES & TYPES	TN	0.4
840	6" WATER TIE-IN	EA	2
841	HYDROSTATIC TESTING	EA	1
844	2" BLOW-OFF, TEMPORARY	EA	1
858	CONCRETE ENCASUREMENT, CRADDLES, SADDLES, AND COLLARS	CY	3.2



DETAIL B
SCALE: NTS

LEGEND

PROP. WATER MAIN	
EXIST. WATER MAIN	
GAS MAIN	
SANITARY SEWER	
STORM SEWER	
UTILITY POLE LINE	
ELECTRIC CABLE	
TELEPHONE CABLE	
DUAL BRANCH SERV.	
NEW UNMETERED SERVICE:	
3/4" SINGLE	
1" DUAL	
SERVICE RECONNECT:	
3/4"	
1" OR LARGER	
SERVICE RELAY:	
3/4"	
1" OR LARGER	
SERVICE RELOCATE:	
3/4"	
1" OR LARGER	
RELOCATE METER	
NEW SERVICE:	
3/4"	
1" OR LARGER	

K. FRIESE + ASSOCIATES
PUBLIC PROJECT ENGINEERING
16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com

No.	Revision	Drawn	Approved	Date

REVISIONS

CLIFFORD FROM S. PRESA ST. TO DEAD END

WATER PLAN 02

DEVELOPER: _____

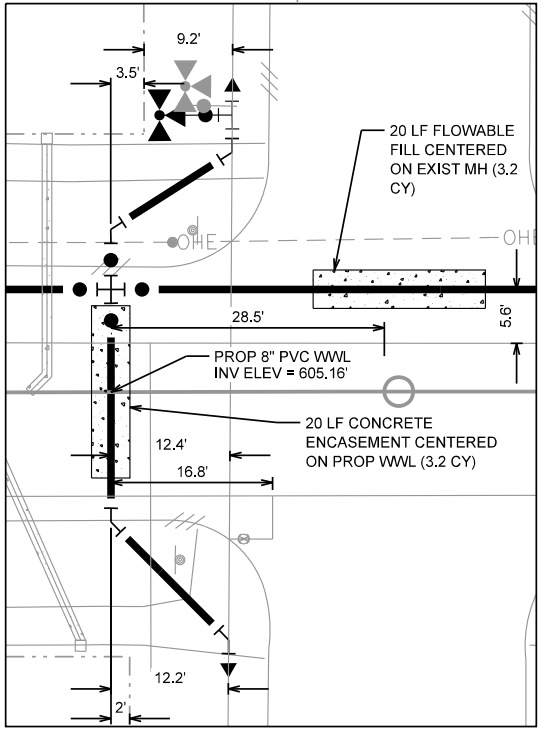
CONT.: _____ **BUDGET PROJ.**

SUBMITTED: _____

APPROVED: _____

MAP No. _____ **SHEET** 5

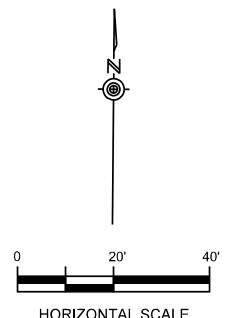
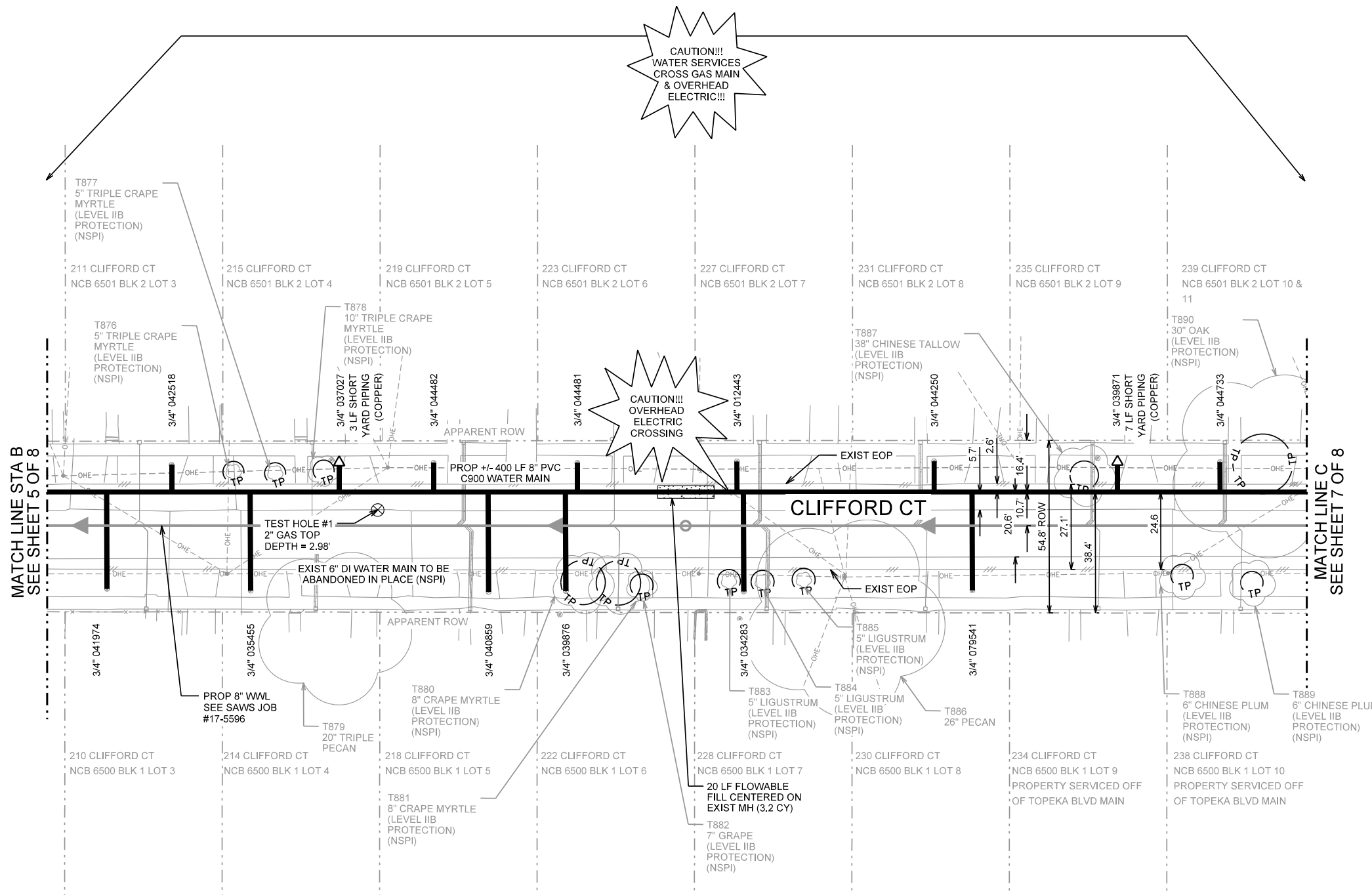
SECT. No. _____ **DR.** _____ **CK.** _____ **JOB No. 17-5114** **Of 8**



DETAIL A
SCALE: 1"=20'

X:\Projects\0539_SAWS SMP Clifford\DWG\Sheets\0539_WTR_PLAN_2.dgn modified by adensler on 1/2/2018 - 4:38:14 PM

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205.2	HOT MIX ASPHALTIC PAVEMENT - TYPE B (12" COMPACTED DEPTH)	SY	171
413	FLOWABLE FILL	CY	3.2
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	400
818	8" PVC WATERLINE (RESTRAINED)	LF	400
822	SHORT YARD PIPING	LF	10
824	RELAY 3/4" SHORT SERVICE	EA	8
824	RELAY 3/4" LONG SERVICE	EA	6
833	EXISTING METER & NEW METER BOX RELOCATION	EA	2
833	NEW METER BOX	EA	14

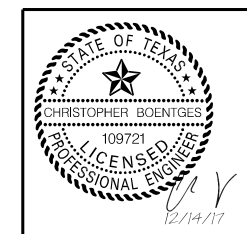


X:\Projects\0539_SAW'S SMP Clifford\DWG\Sheets\0539_WTR_PLAN_3.dgn modified by adensler on 1/2/2018 - 4:38:15 PM

GAS NOTE:
CONTRACTOR TO USE EXTREME CAUTION WHEN EXCAVATING NEAR EXISTING GAS. LESS THAN 3' OF SEPARATION IN LIMITED AREAS.

ROOT PROTECTION ZONE NOTE:
THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER WITHIN 20 MINUTES, TO PREVENT OAK WILT.

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 SYSTEM, 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 OF 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.



LEGEND	
PROP. WATER MAIN	
EXIST. WATER MAIN	
GAS MAIN	
SANITARY SEWER	
STORM SEWER	
UTILITY POLE LINE	
ELECTRIC CABLE	
TELEPHONE CABLE	
DUAL BRANCH SERV.	
NEW UNMETERED SERVICE:	
3/4" SINGLE	
1" DUAL	
SERVICE RECONNECT:	
3/4"	
1" OR LARGER	
SERVICE RELAY:	
3/4"	
1" OR LARGER	
SERVICE RELOCATE:	
3/4"	
1" OR LARGER	
RELOCATE METER	
NEW SERVICE:	
3/4"	
1" OR LARGER	

K. FRIESE + ASSOCIATES
PUBLIC PROJECT ENGINEERING
16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com

No.	Revision	Drawn	Approved	Date

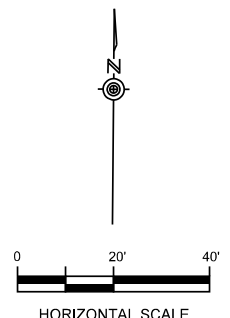
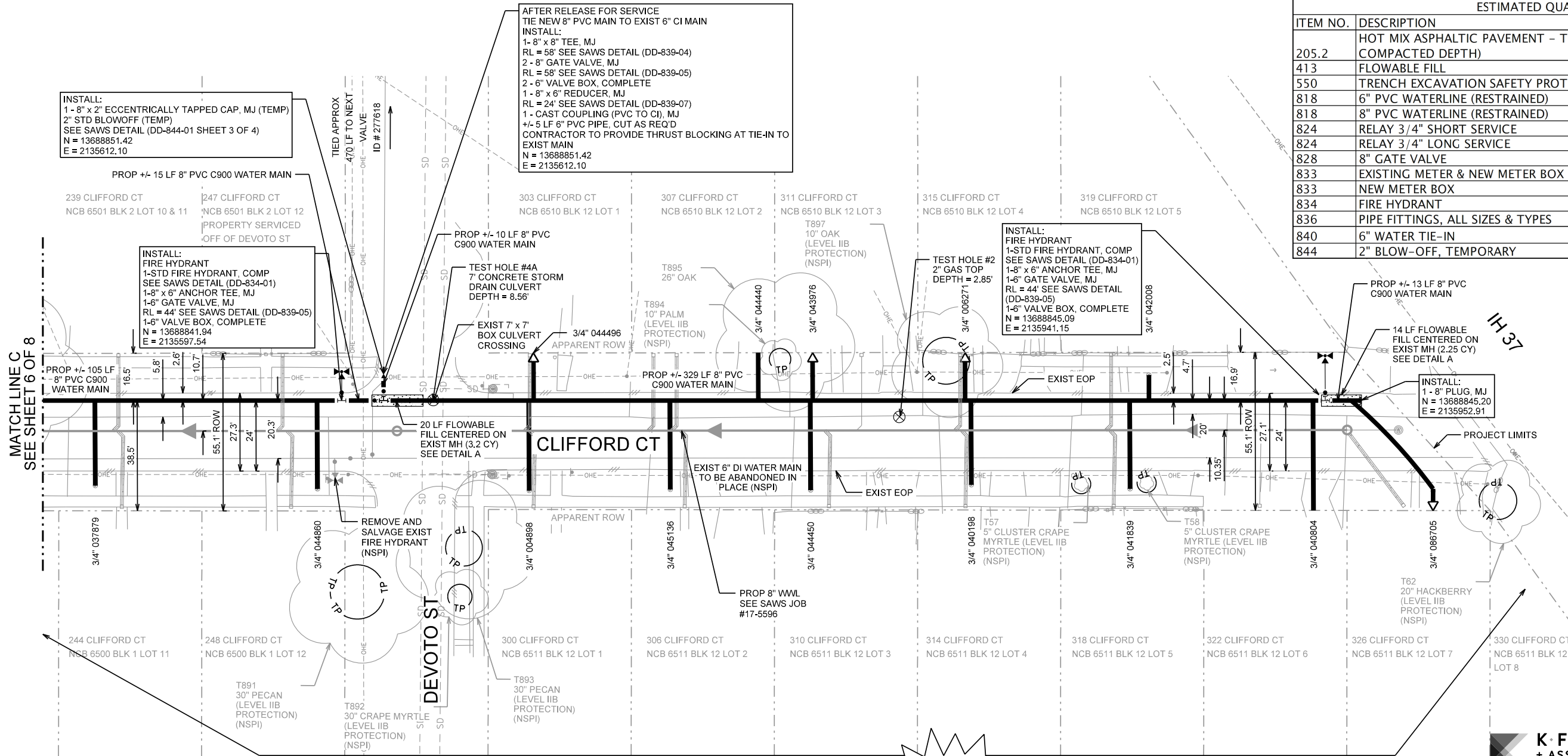
REVISIONS

CLIFFORD FROM S. PRESA ST. TO DEAD END

WATER PLAN 03

DEVELOPER:	
CONT.	BUDGET PROJ.
SUBMITTED	
APPROVED	
MAP No.	SHEET
SECT. No.	6
DR.	CK.
JOB No. 17-5114	Of 8

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205.2	HOT MIX ASPHALTIC PAVEMENT - TYPE B (12" COMPACTED DEPTH)	SY	199
413	FLOWABLE FILL	CY	5.5
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	477
818	6" PVC WATERLINE (RESTRAINED)	LF	5
818	8" PVC WATERLINE (RESTRAINED)	LF	472
824	RELAY 3/4" SHORT SERVICE	EA	5
824	RELAY 3/4" LONG SERVICE	EA	9
828	8" GATE VALVE	EA	2
833	EXISTING METER & NEW METER BOX RELOCATION	EA	4
833	NEW METER BOX	EA	14
834	FIRE HYDRANT	EA	2
836	PIPE FITTINGS, ALL SIZES & TYPES	TN	0.1
840	6" WATER TIE-IN	EA	1
844	2" BLOW-OFF, TEMPORARY	EA	1



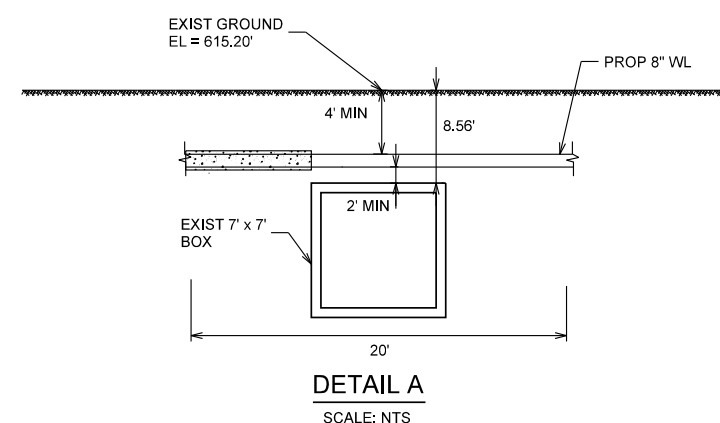
K FRIESE + ASSOCIATES
 PUBLIC PROJECT ENGINEERING
 16170 JONES MALTSBERGER ROAD
 SUITE 109
 SAN ANTONIO, TEXAS 78247
 P - 210.491.2391 F - 512.338.1784
 TBPE Firm #6535 www.kfriese.com

CAUTION!!!
 WATER SERVICES
 CROSS GAS MAIN
 & OVERHEAD
 ELECTRIC!!!

GAS NOTE:
 CONTRACTOR TO USE EXTREME CAUTION WHEN EXCAVATING NEAR EXISTING GAS. LESS THAN 3' OF SEPARATION IN LIMITED AREAS.

ROOT PROTECTION ZONE NOTE:
 THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER WITHIN 20 MINUTES, TO PREVENT OAK WILT.

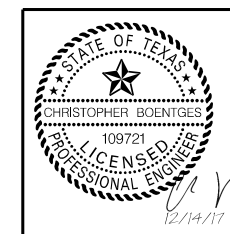
TRENCH EXCAVATION SAFETY PROTECTION:
 CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGNER/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM, 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 OF 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.



DETAIL A
 SCALE: NTS

LEGEND

PROP. WATER MAIN	
EXIST. WATER MAIN	
GAS MAIN	
SANITARY SEWER	
STORM SEWER	
UTILITY POLE LINE	
ELECTRIC CABLE	
TELEPHONE CABLE	
DUAL BRANCH SERV.	
NEW UNMETERED SERVICE:	
3/4" SINGLE	
1" DUAL	
SERVICE RECONNECT:	
3/4"	
1" OR LARGER	
SERVICE RELAY:	
3/4"	
1" OR LARGER	
SERVICE RELOCATE:	
3/4"	
1" OR LARGER	
RELOCATE METER	
NEW SERVICE:	
3/4"	
1" OR LARGER	



No.	Revision	Drawn	Approved	Date

REVISIONS

CLIFFORD FROM S. PRESA ST. TO DEAD END

WATER PLAN 04

DEVELOPER: _____

CONT. _____ **BUDGET PROJ.**

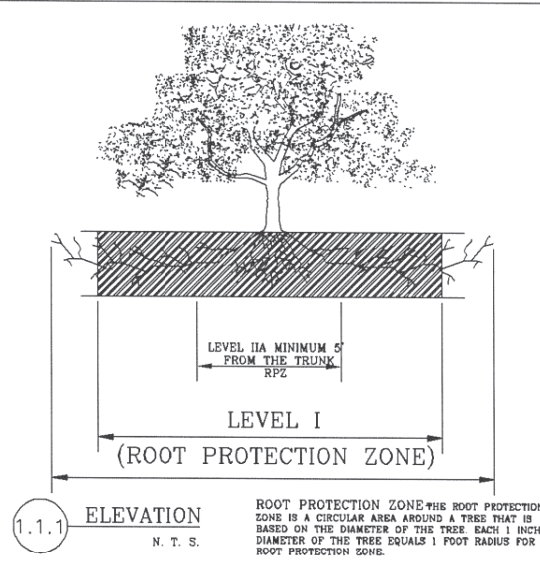
SUBMITTED _____

APPROVED _____

MAP No. _____ **SHEET** 7

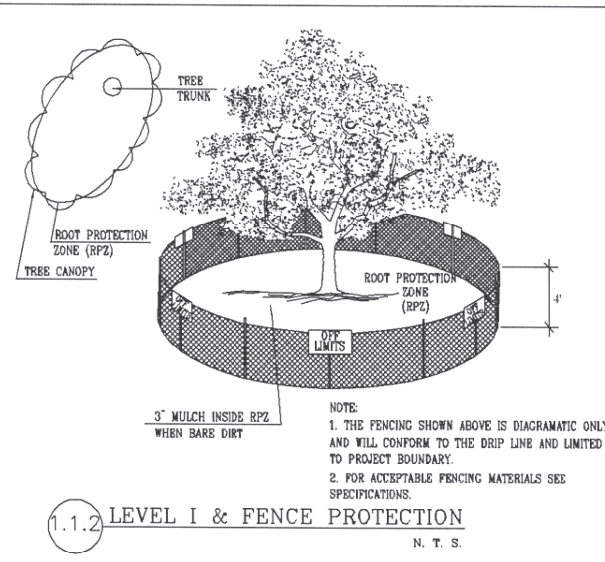
SECT. No. _____ **DR.** _____ **CK.** _____ **JOB No. 17-5114** **Of 8**

X:\Projects\0339_SAW'S SMP Clifford\DWG\Sheets\0339_WTR_PLAN.dgn modified by adensler on 1/2/2018 - 4:38:16 PM



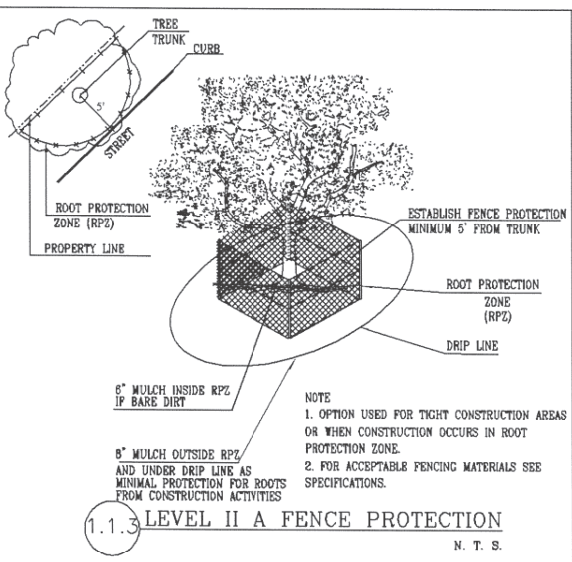
1.1.1 ELEVATION
N. T. S.

ROOT PROTECTION ZONE THE ROOT PROTECTION ZONE IS A CIRCULAR AREA AROUND A TREE THAT IS BASED ON THE DIAMETER OF THE TREE. EACH 1 INCH DIAMETER OF THE TREE EQUALS 1 FOOT RADIUS FOR ROOT PROTECTION ZONE.



1.1.2 LEVEL I & FENCE PROTECTION
N. T. S.

NOTE:
1. THE FENCING SHOWN ABOVE IS DIAGRAMATIC ONLY AND WILL CONFORM TO THE DRIP LINE AND LIMITED TO PROJECT BOUNDARY.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

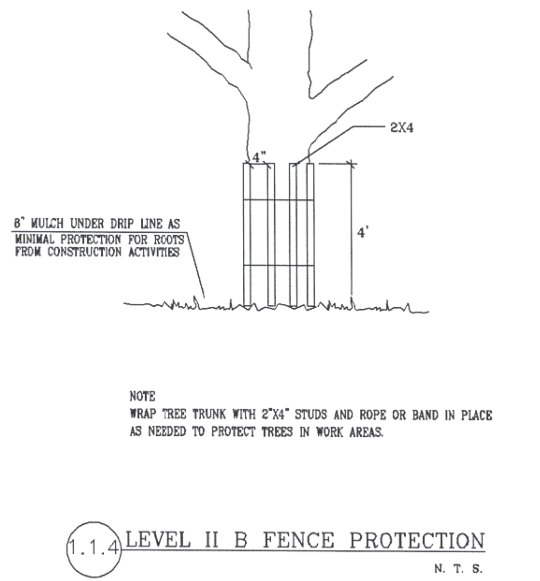


1.1.3 LEVEL II A FENCE PROTECTION
N. T. S.

NOTE:
1. OPTION USED FOR TIGHT CONSTRUCTION AREAS OR WHEN CONSTRUCTION OCCURS IN ROOT PROTECTION ZONE.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

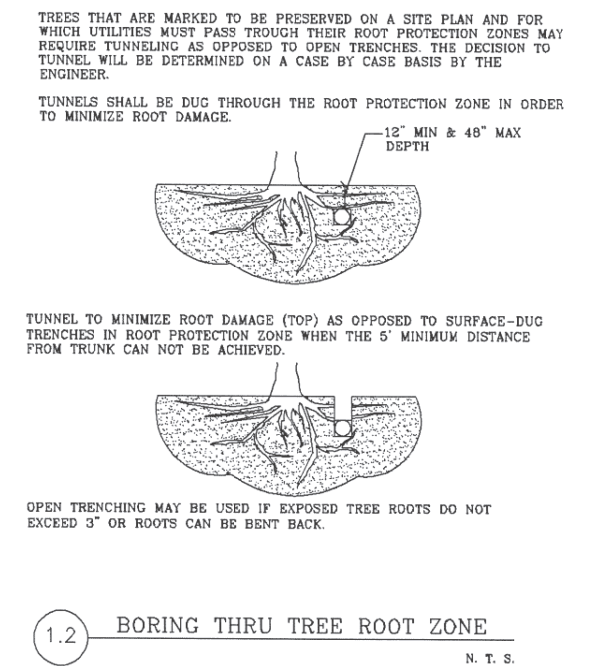
- GENERAL NOTES**
- ALL THE TREES WITH A DIAMETER GREATER THAN 3 INCHES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AND ROOTS TRIMMED AND PRUNED ACCORDING TO ITEM No. 802. TREE PRUNING, SOIL AMENDING AND FERTILIZATION, UNLESS SPECIFIED TREES SHALL RECEIVE LEVEL 2 PROTECTION AS PER ITEM No. 802. TREES TO RECEIVE LEVEL 1 PROTECTION AS PER ITEM No. 802 ARE SHOWN ON TREE PROTECTION TABLE ON THIS SHEET.
 - ALL TREES SHALL REMAIN UNLESS NOTED ON THE PLANS.
 - NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
 - TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.
 - THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR.
 - THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER, WITHIN 20 MINUTES TO PREVENT OAK WILT.
 - ACCESS TO FENCED AREAS WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER OR CITY INSPECTOR.
 - GRADING, IF REQUIRED, SHALL BE LIMITED TO A 3 INCH CUT OR FILL WITHIN THE FENCED ROOT ZONE AREAS.
 - TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND AS DIRECTED BY THE PROJECT MANAGER OR CITY INSPECTOR.
 - TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE ENGINEER'S SATISFACTION.
 - EXPOSED ROOTS SHALL BE COVERED AT THE END OF EACH DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
 - ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST PRIOR TO ITS REMOVAL.

1.3 GENERAL NOTES



1.1.4 LEVEL II B FENCE PROTECTION
N. T. S.

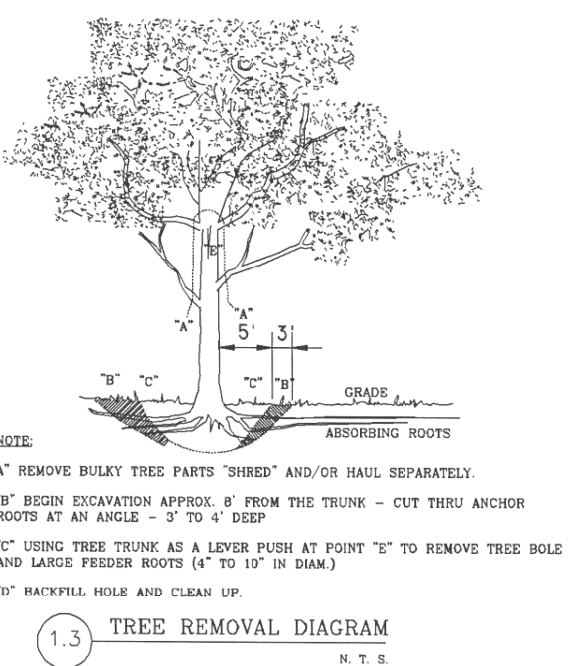
NOTE:
WRAP TREE TRUNK WITH 2"x4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREES IN WORK AREAS.



1.2 BORING THRU TREE ROOT ZONE
N. T. S.

TUNNEL TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5' MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.

OPEN TRENCHING MAY BE USED IF EXPOSED TREE ROOTS DO NOT EXCEED 3" OR ROOTS CAN BE BENT BACK.



1.3 TREE REMOVAL DIAGRAM
N. T. S.

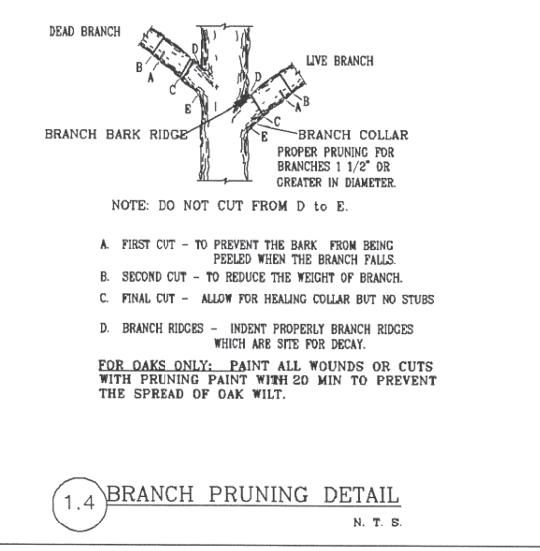
NOTE:
"A" REMOVE BULKY TREE PARTS "SHRED" AND/OR HAUL SEPARATELY.
"B" BEGIN EXCAVATION APPROX. 8' FROM THE TRUNK - CUT THRU ANCHOR ROOTS AT AN ANGLE - 3' TO 4' DEEP
"C" USING TREE TRUNK AS A LEVER PUSH AT POINT "E" TO REMOVE TREE BOLE AND LARGE FEEDER ROOTS (4" TO 10" IN DIAM.)
"D" BACKFILL HOLE AND CLEAN UP.

TREE PROTECTION TABLE					
TREE NUMBER	TYPE	SIZE	PROTECTION	ACTION	SHEET NO.
T867	TWIN CHINESE TALLOW	7"	LEVEL IIB	PRESERVE	4
T868	TWIN CHINESE TALLOW	6"	LEVEL IIB	PRESERVE	4
T870	PECAN	20"	LEVEL IIB	PRESERVE	4
T871	MIMOSA	5"	LEVEL IIB	PRESERVE	5
T872	CAPE MYRTLE	4"	LEVEL IIB	PRESERVE	5
T873	CAPE MYRTLE	4"	LEVEL IIB	PRESERVE	5
T874	CAPE MYRTLE	3"	LEVEL IIB	PRESERVE	5
T875	CAPE MYRTLE	7"	LEVEL IIB	PRESERVE	5
T876	TRIPLE CAPE MYRTLE	5"	LEVEL IIB	PRESERVE	6
T877	TRIPLE CAPE MYRTLE	5"	LEVEL IIB	PRESERVE	6
T878	TRIPLE CAPE MYRTLE	10"	LEVEL IIB	PRESERVE	6
T880	CAPE MYRTLE	8"	LEVEL IIB	PRESERVE	6
T881	CAPE MYRTLE	8"	LEVEL IIB	PRESERVE	6
T882	GRAPE	7"	LEVEL IIB	PRESERVE	6
T883	LIGUSTRUM	5"	LEVEL IIB	PRESERVE	6
T884	LIGUSTRUM	5"	LEVEL IIB	PRESERVE	6
T885	LIGUSTRUM	5"	LEVEL IIB	PRESERVE	6
T887	CHINESE TALLOW	38"	LEVEL IIB	PRESERVE	6
T888	CHINESE PLUM	6"	LEVEL IIB	PRESERVE	6
T889	CHINESE PLUM	6"	LEVEL IIB	PRESERVE	6
T890	OAK	30"	LEVEL IIB	PRESERVE	6

TREE PROTECTION TABLE					
TREE NUMBER	TYPE	SIZE	PROTECTION	ACTION	SHEET NO.
T891	PECAN	30"	LEVEL IIB	PRESERVE	7
T892	CAPE MYRTLE	30"	LEVEL IIB	PRESERVE	7
T893	PECAN	30"	LEVEL IIB	PRESERVE	7
T894	PALM	10"	LEVEL IIB	PRESERVE	7
T897	OAK	10"	LEVEL IIB	PRESERVE	7
T57	CAPE MYRTLE	5"	LEVEL IIB	PRESERVE	7
T58	CAPE MYRTLE	5"	LEVEL IIB	PRESERVE	7
T62	HACKBERRY	20"	LEVEL IIB	PRESERVE	7

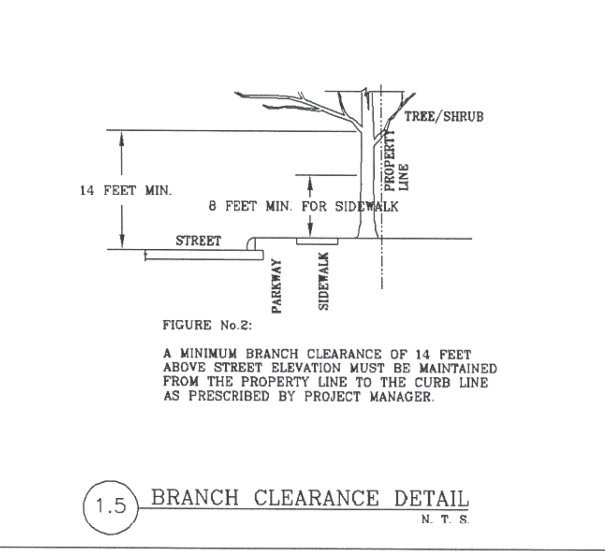
TREE INVENTORY SUMMARY	
TOTAL DIAMETER INCHES, R.O.W. & ESMNTS =	334
TOTAL DIAMETER INCHES REMOVED =	0
TOTAL DIAMETER INCHES PRESERVED =	334
TOTAL PERCENTAGE INCHES PRESERVED =	100%
TOTAL INCHES TO BE MITIGATED =	0

K FRIESE + ASSOCIATES
PUBLIC PROJECT ENGINEERING
16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com



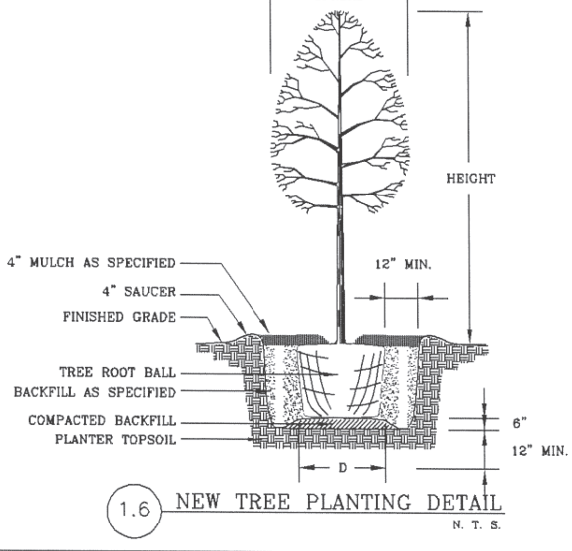
1.4 BRANCH PRUNING DETAIL
N. T. S.

NOTE: DO NOT CUT FROM D TO E.
A. FIRST CUT - TO PREVENT THE BARK FROM BEING PEELED WHEN THE BRANCH FALLS.
B. SECOND CUT - TO REDUCE THE WEIGHT OF BRANCH.
C. FINAL CUT - ALLOW FOR HEALING COLLAR BUT NO STUBS
D. BRANCH RIDGES - INDENT PROPERLY BRANCH RIDGES WHICH ARE SITE FOR DECAY.
FOR OAKS ONLY: PAINT ALL WOUNDS OR CUTS WITH PRUNING PAINT WITH 20 MIN TO PREVENT THE SPREAD OF OAK WILT.



1.5 BRANCH CLEARANCE DETAIL
N. T. S.

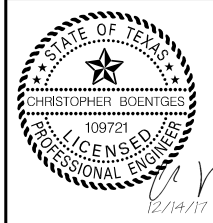
FIGURE No.2:
A MINIMUM BRANCH CLEARANCE OF 14 FEET ABOVE STREET ELEVATION MUST BE MAINTAINED FROM THE PROPERTY LINE TO THE CURB LINE AS PRESCRIBED BY PROJECT MANAGER.



1.6 NEW TREE PLANTING DETAIL
N. T. S.

LEGEND

PROP. WATER MAIN	—●—
EXIST. WATER MAIN	—○— 6" C.I.W.
GAS MAIN	—2" G—
SANITARY SEWER	—8" SA—
STORM SEWER	—24" ST—
UTILITY POLE LINE	—●—
ELECTRIC CABLE	—E—
TELEPHONE CABLE	—T—
DUAL BRANCH SERV. NEW UNMETERED SERVICE:	
3/4" SINGLE	—■—
1" DUAL	—■—
SERVICE RECONNECT:	
3/4"	—■—
1" OR LARGER	—■—
SERVICE RELAY:	
3/4"	—■—
1" OR LARGER	—■—
SERVICE RELOCATE:	
3/4"	—■—
1" OR LARGER	—■—
RELOCATE METER	▷
NEW SERVICE:	
3/4"	—■—
1" OR LARGER	—■—



No.	Revision	Drawn	Approved	Date

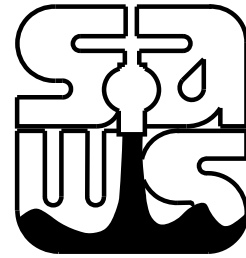
REVISIONS

CLIFFORD FROM S. PRESA ST. TO DEAD END
TREE PROTECTION DETAILS

DEVELOPER: _____
CONT. BUDGET PROJ.
SUBMITTED _____
APPROVED _____

MAP No. _____ SHEET 8
SECT. No. _____
DR. CK. JOB No. 17-5114 OF 8

SAN ANTONIO WATER SYSTEM



2018 SMP JOB NO: 17-5596

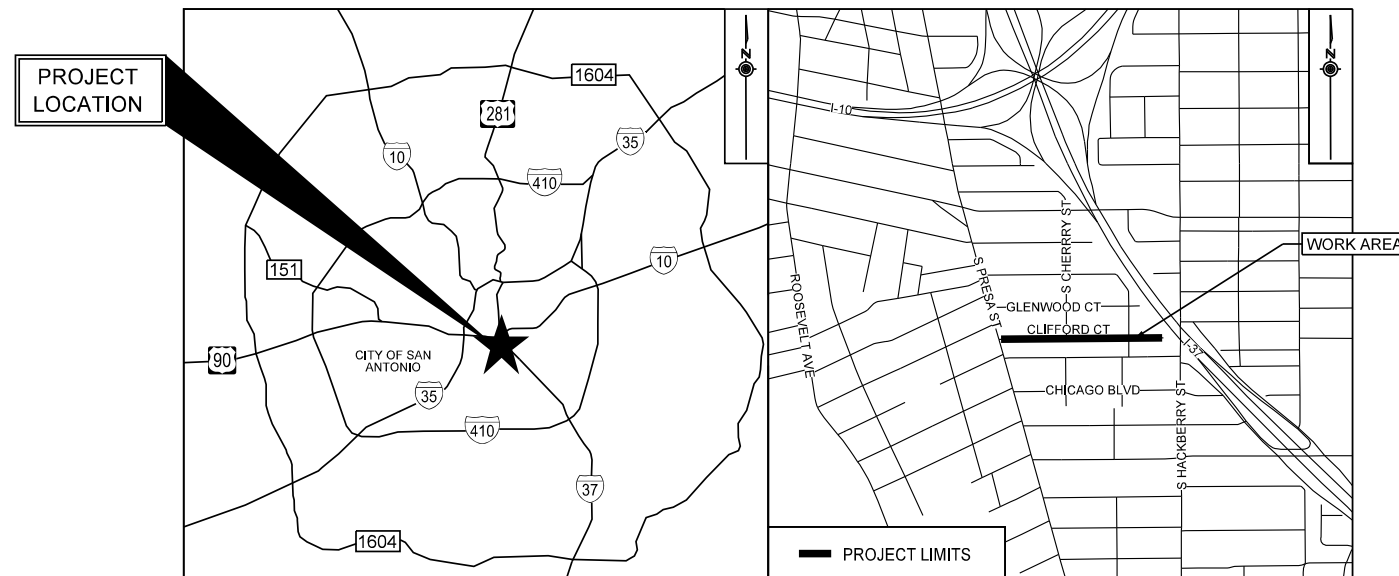
CLIFFORD FROM S. PRESA ST. TO DEAD END SEWER PLANS



SUBMITTAL PREPARED BY:



16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com



LOCATION MAP
NOT TO SCALE

SHEET LIST

SHT NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES AND QUANTITIES
3	PROJECT LAYOUT
4	SANITARY SEWER PLAN AND PROFILE BEGIN TO STA 5+00.00
5	SANITARY SEWER PLAN AND PROFILE STA 5+00.00 TO STA 9+00.00
6	SANITARY SEWER PLAN AND PROFILE STA 9+00.00 TO STA 13+00.00
7	SANITARY SEWER PLAN AND PROFILE STA 13+00.00 TO STA 17+00.00
8	SANITARY SEWER PLAN AND PROFILE 17+00.00 TO END
9	TREE PROTECTION DETAILS

DECEMBER 2017

GENERAL WATER NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:
 - CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.
 - CURRENT TxDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
 - CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
 - CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR CONSTRUCTION."
 - CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
- THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.
- THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500, AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 72 HOURS PRIOR TO EXCAVATION.
- LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
 SAN ANTONIO WATER SYSTEM:
 SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES
 COSA DRAINAGE 210-207-8048
 COSA TRAFFIC SIGNAL OPERATIONS 210-207-7720
 TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.
- ALL WORK IN TEXAS HIGHWAY DEPARTMENT AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.
- THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
- THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
- ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.
- HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

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

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

- PRE CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION. THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS. (NSPI)
- POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS, AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.
- CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.

SEWER SECTION:

- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:
 - IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT 210-704-SAWS (210-704-7297). PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
 - ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
 - CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.
 - CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
 - CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.
 - MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISIONING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.

SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.

- THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED, IN ACCORDANCE WITH SAWS SPECIFICATION ITEM NO. 864-S1, "BYPASS PUMPING SMALL DIAMETER SANITARY SEWERS" AND ITEM NO. 864-S2, "BYPASS PUMPING LARGE DIAMETER SANITARY SEWERS". PAYMENT FOR SUCH WORK WILL BE MADE UNDER THE BID ITEM "SANITARY SEWER (BYPASS PUMPING)" (LUMP SUM) AS PER SAWS SPECIAL SPECIFICATION.
- PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 AND/OR SAWS PRODUCTION GROUPS AT LEAST ONE WEEK OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
- ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS (NSPI).
- SMART MANHOLE COVERS: THE CONTRACTOR SHALL NOTIFY JUAN C. RAMIREZ AT 210-233-3558 AND SAWS EOC AT 210-704-SAWS (210-233-7297) A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE. IN ORDER TO HAVE SAWS REMOVE THE SMART COVER. ANY DAMAGE DONE TO THE SMART COVER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.

CPS ENERGY NOTES:

- CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-545-6005, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
- DUE TO FEDERAL REGULATIONS TITLE 49, PART 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 PROJECT AREA.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS ENERGY OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREAS.

AT&T NOTES:

- 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 PLANT DURING CONSTRUCTION.

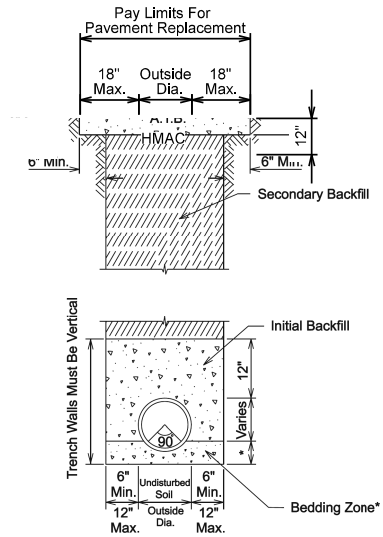
NOTE FOR THE CITY OF SAN ANTONIO FLATWORK:
 ALL LIMITS FOR CURB, SIDEWALK, AND TREE PREP BEYOND WHAT IS CONSIDERED INCIDENTAL TO NORMAL UTILITY CONSTRUCTION WILL BE ADDRESSED BY THE SAWS INSPECTOR. SAWS INSPECTOR WILL ALSO DETERMINE IF ADDITIONAL COMPENSATION IS WARRANTED IF LIMITS EXCEED INCIDENTALS.

NOTES:

- CONTRACTOR TO VERIFY EXISTING TIE-IN ELEVATIONS BEFORE STARTING CONSTRUCTION.
- CONTRACTOR SHALL VERIFY AND CONTACT SAWS IF THERE ARE ANY LATERALS CONNECTING TO THE MAIN NOT SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING OPERATION OF ALL EXISTING UTILITIES AFFECTED BY PROPOSED CONSTRUCTION.
- IF SANITARY SEWER LATERALS ARE WITHIN 9 FEET OF PROPOSED WATER SERVICE LINES, THE SANITARY SEWER LATERALS SHALL BE ENCASED WITH FLOWABLE FILL. THE ENCASEMENT SHALL BE 6-INCHES BELOW THE LATERAL, 6-INCHES ABOVE THE LATERAL, AND 6-INCHES ON EITHER SIDE OF THE LATERAL.
- TREE REMOVAL IS NOT PERMITTED ON THIS PROJECT. CONTRACTOR SHALL TAKE EXTREME CARE WHEN WORKING AROUND TREES TO PREVENT DAMAGE. PRIOR TO THE START OF WORK, CALL 207-1111 TO SCHEDULE A PRE-CONSTRUCTION FENCING INSPECTION.
- TREE PROTECTION IS NSPI.
- THE CONTRACTOR SHALL MAINTAIN AT LEAST TWO FEET OF VERTICAL SEPARATION DISTANCE BETWEEN ALL PROPOSED SEWER LINES (MAINS AND LATERALS) AND EXISTING GAS MAINS.
- PERCENT SLOPE OF SEWER MAIN IS CALCULATED BETWEEN TWO MANHOLES AT THE INVERT IN/OUT OF THE INSIDE OF THE MANHOLE.
- THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. THE CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER, OR AS APPROVED BY THE OWNER AND CONSULTANT, AT THE SOLE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL RE-ESTABLISH ANY PROPERTY MARKER, BENCHMARK, ETC. DISTURBED DURING CONSTRUCTION TO ITS ORIGINAL LOCATION AND ELEVATION. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE VERTICAL AND HORIZONTAL CONTROL SHOWN ON THE PLANS THROUGHOUT THE PROJECT, RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PUBLIC SURVEYOR IN THE STATE OF TEXAS AT NO ADDITIONAL COST TO SAWS.
- REMOVAL OF EXISTING SEWER LINES TO BE REPLACED WITH PROPOSED LINES SHALL BE SUBSIDIARY TO THE COST OF THE PROPOSED SEWER LINES. NO SEPARATE PAY ITEM.
- CONTRACTOR SHALL MAINTAIN ACCESS TO PUBLIC AND PRIVATE FACILITIES DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE AND THE SAN ANTONIO WATER SYSTEM.
- CONTRACTOR MAY ENCOUNTER CONCRETE ENCASEMENT IN THE IMMEDIATE VICINITY OF EXISTING MANHOLES. ANY CONCRETE REMOVAL REQUIRED FOR THE PROPER INSTALLATION OF PROPOSED SEWER MAIN AND TIE-INS SHALL BE AT NO ADDITIONAL COST TO THE OWNER. (NSPI)
- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING CONSTRUCTION OF THE PROJECTS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD TO OWNER AND THE CONSULTANT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXPECTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR CONSULTANT.

TOTAL ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205.2	HOT MIX ASPHALTIC PAVEMENT - TYPE B (12" COMPACTED DEPTH)	SY	654
413	FLOWABLE FILL	CY	62.5
530.1	BARRICADES, SIGNS, AND TRAFFIC HANDLING (CLIFFORD)	EA	*0.5
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	1574
848	8" PVC GRAVITY SANITARY SEWER PIPE (SDR 26-2241, 160 PSI), (0'-6' CUT)	LF	590
848	8" PVC GRAVITY SANITARY SEWER PIPE (DR 26-2241, 160 PSI), (6'-14' CUT)	LF	984
852	SANITARY SEWER MANHOLE (0'-6')	EA	6
852	EXTRA DEPTH MANHOLES (GREATER THAN 6')	VF	6.4
854	SANITARY SEWER LATERALS, (SDR 26, ASTM 2241, 160 PSI)	LF	1597
854	TWO-WAY SANITARY SEWER CLEAN-OUT	EA	59
860	VERTICAL STACKS	VF	25.5
	BYPASS PUMPING (SMALL DIAMETER SANITARY SEWERS)		
864-S1	(CLIFFORD)	EA	1
866	PRE SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	1680
866	POST SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	1574

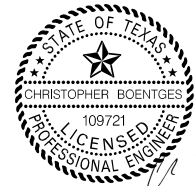
*ITEM SPLIT FOR WORKSITE BETWEEN WATER AND SEWER PROJECTS.



* Sewer Gravel 6" Min. or 1/8 O.D. of the pipe, whichever is greater.

In areas of over excavation, encasement shall extend from trench wall to trench wall. Pay Limits shall not exceed 12" max. as shown on detail. Additional encasement shall be incidental.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE LAI IN TRENCH	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-804-01	
		SHEET 1 OF 1	

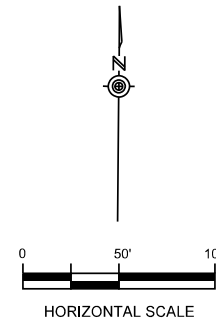
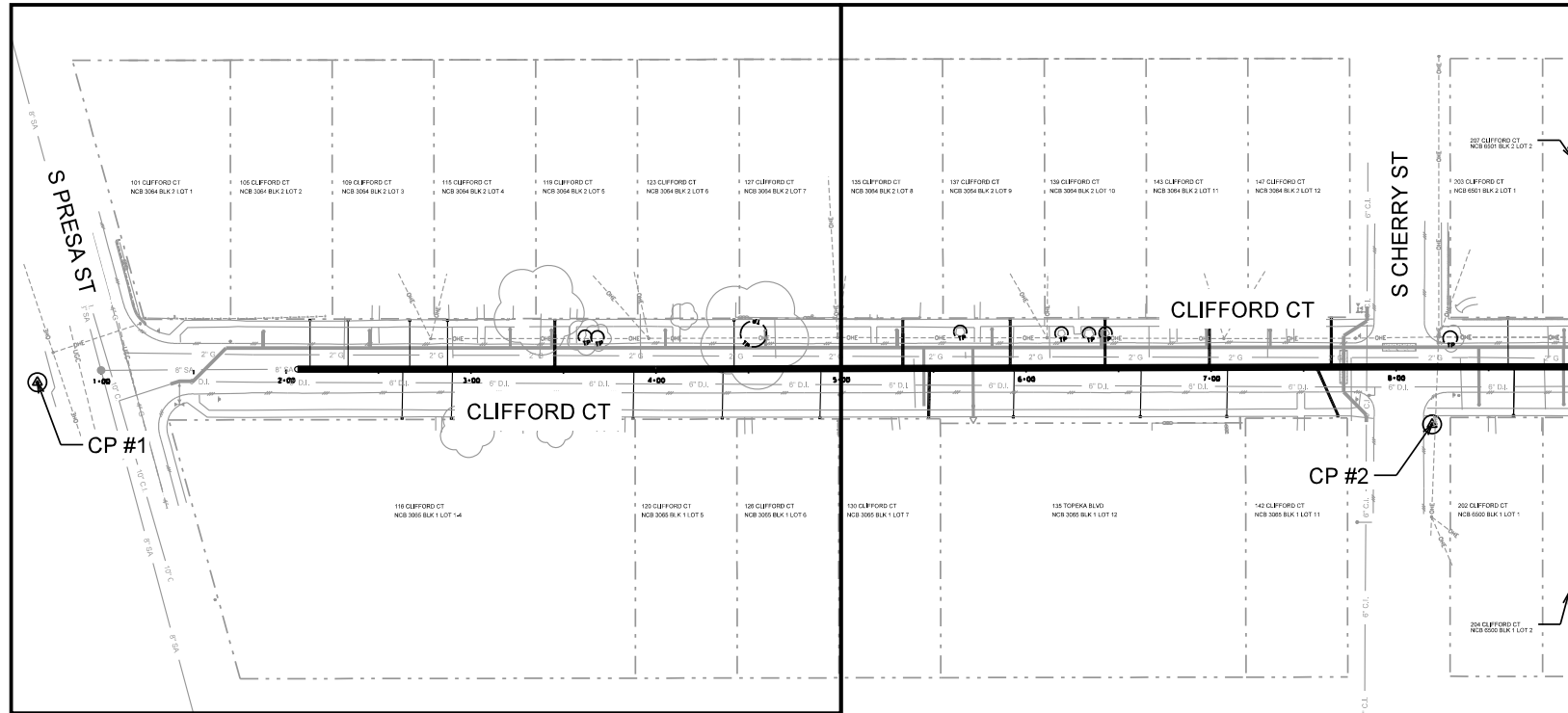


K FRIESE + ASSOCIATES
 PUBLIC PROJECT ENGINEERING
 16170 JONES MALTSBERGER ROAD
 SUITE 109
 SAN ANTONIO, TEXAS 78247
 P - 210.491.2391 F - 512.338.1784
 TBPE Firm #6535 www.kfriese.com

No.	Revision	Drawn	Approved	Date
REVISIONS				
		CLIFFORD FROM S. PRESA ST. TO DEAD END		
GENERAL NOTES AND QUANTITIES				
DEVELOPER:				
CONT.		BUDGET PROJ.		
SUBMITTED _____				
APPROVED _____				
MAP No.				SHEET
SECT. No.				2
DR.	CK.	JOB No. 17-5596		Of 9

SHEET 4 OF 9

SHEET 5 OF 9



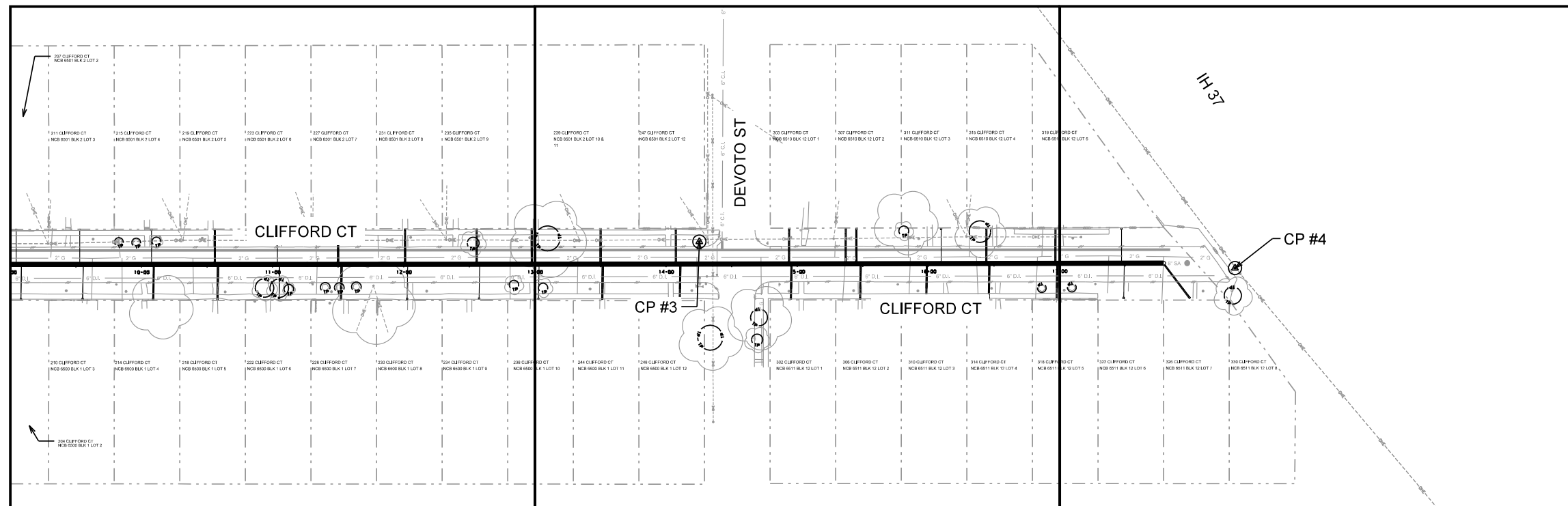
CONTROL POINTS TABLE

POINT NO.	X	Y	ELEVATION	DESCRIPTION
CP #1	2,134,235.23	13,688,811.06	611.19	1/2 IR W/ GREEN CAP GD #5005
CP #2	2,134,989.28	13,688,794.69	611.14	1/2 IR W/ GREEN CAP GD #5005
CP #3	2,135,594.70	13,688,848.32	615.81	1/2 IR W/ GREEN CAP GD #5005
CP #4	2,136,003.29	13,688,831.59	619.69	1/2 IR W/ GREEN CAP GD #5005

SHEET 6 OF 9

SHEET 7 OF 9

SHEET 8 OF 9



12/19/17



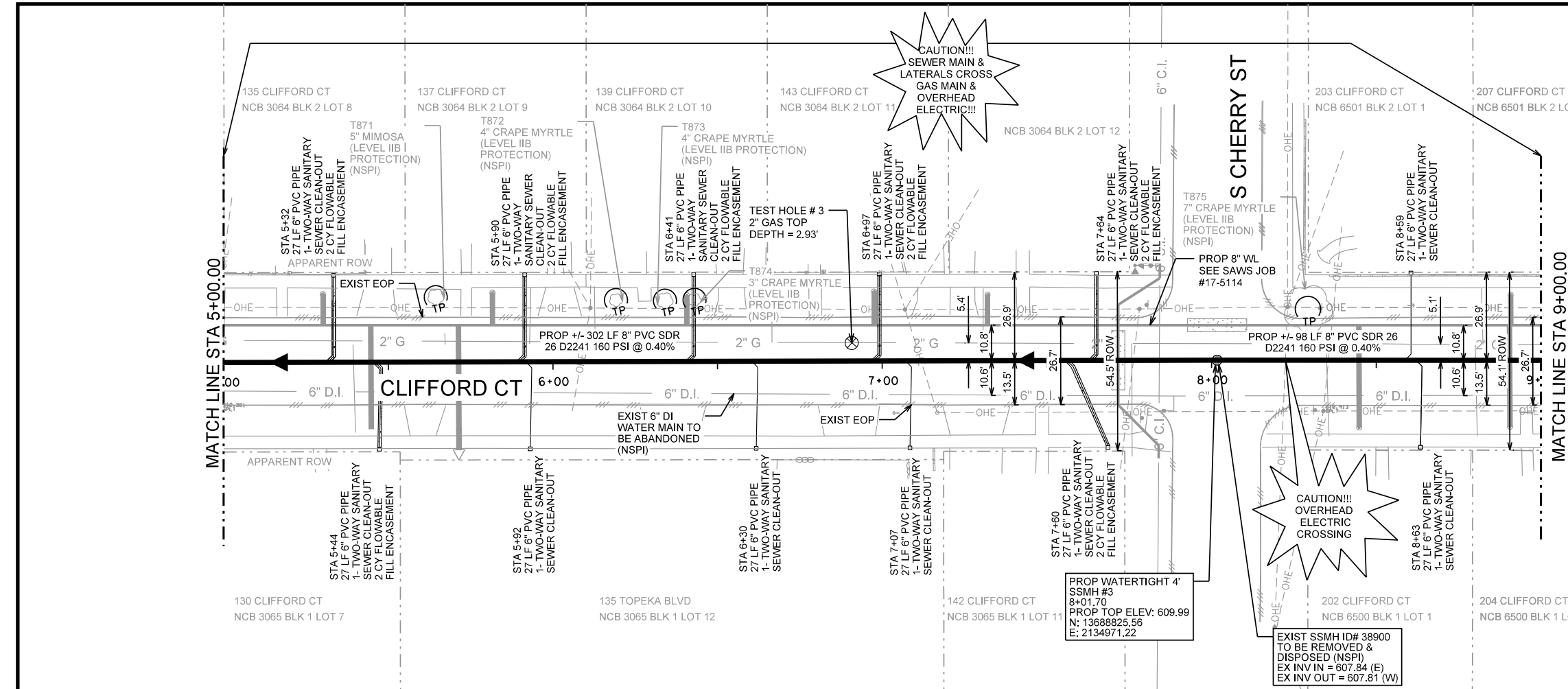
16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfrlese.com

No.	Revision	Drawn	Approved	Date

REVISIONS	
	CLIFFORD FROM S. PRESA ST. TO DEAD END PROJECT LAYOUT

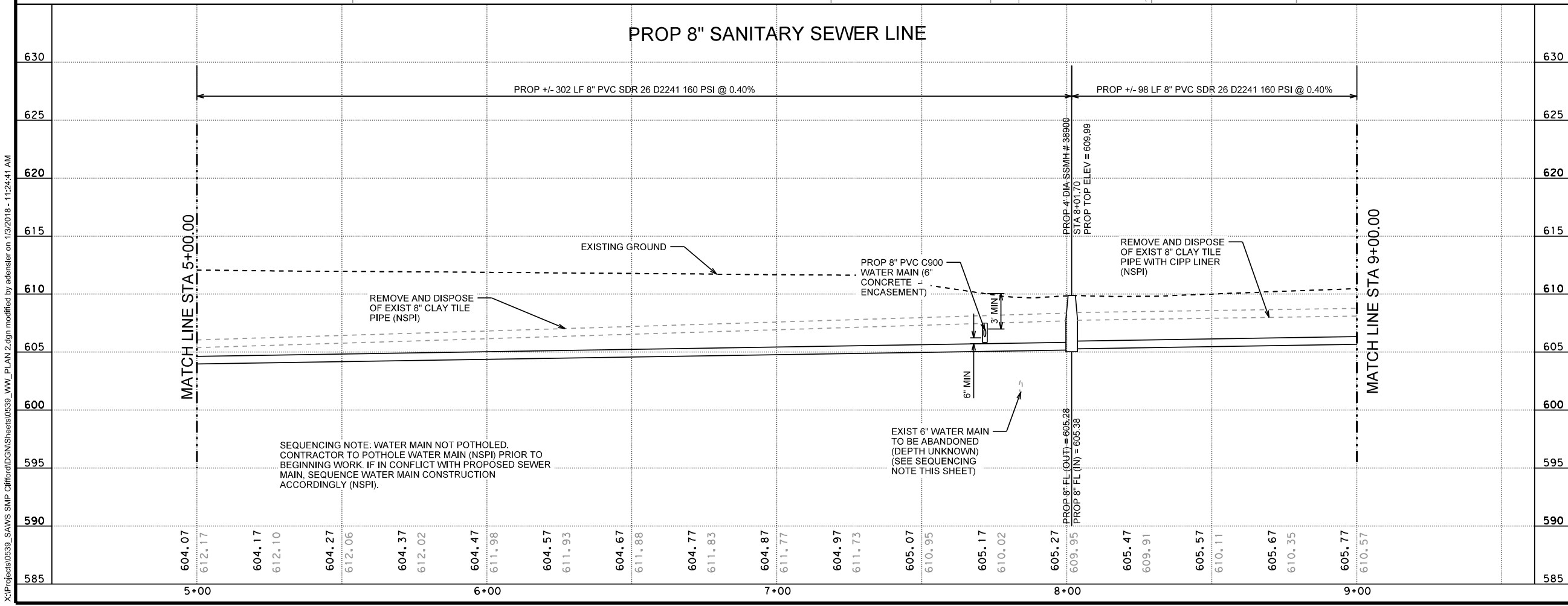
DEVELOPER:	
CONT.	BUDGET PROJ.
SUBMITTED _____	
APPROVED _____	
MAP No.	SHEET 3
SECT. No.	OF 9
DR. CK.	JOB No. 17-5596

X:\Projects\0539_SAWS SMP Clifford\DWG\Sheets\0539_WW_PROJ_LAYOUT.dgn modified by adensler on 1/3/2018 - 11:24:39 AM



ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205.2	HOT MIX ASPHALTIC PAVEMENT - TYPE B (12" COMPACTED DEPTH)	SY	166
413	FLOWABLE FILL	CY	14.0
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	400
848	8" PVC GRAVITY SANITARY SEWER PIPE (SDR 26-2241, 160 PSI), (0'-6' CUT)	LF	155
848	8" PVC GRAVITY SANITARY SEWER PIPE (DR 26-2241, 160 PSI), (6'-14' CUT)	LF	245
852	SANITARY SEWER MANHOLE (0'-6')	EA	1
854	SANITARY SEWER LATERALS, (SDR 26, ASTM 2241, 160 PSI)	LF	324
854	TWO-WAY SANITARY SEWER CLEAN-OUT	EA	12
866	PRE SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	400
866	POST SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	400

LEGEND	
	PROP SANITARY SEWER LINE
	PROP MANHOLE
	PROP SEWER LATERAL & TWO-WAY SANITARY SEWER CLEAN-OUT
	EXIST EDGE OF PAVEMENT
	EXIST FENCE
	EXIST OVERHEAD UTILITIES
	EXIST WATERLINE
	EXIST SANITARY SEWER LINE
	EXIST GAS LINE
	PROPERTY LINE
	UTILITY POLE
	EXIST TREE TO PROTECT
	EXIST TREE TO REMOVE



PROP 8" SANITARY SEWER LINE

PROP +/- 302 LF 8" PVC SDR 26 D2241 160 PSI @ 0.40%

PROP +/- 98 LF 8" PVC SDR 26 D2241 160 PSI @ 0.40%

EXISTING GROUND

REMOVE AND DISPOSE OF EXIST 8" CLAY TILE PIPE (NSPI)

REMOVE AND DISPOSE OF EXIST 8" CLAY TILE PIPE WITH CIPP LINER (NSPI)

EXIST 6" WATER MAIN TO BE ABANDONED (DEPTH UNKNOWN) (SEE SEQUENCING NOTE THIS SHEET)

PROP 8" PVC C900 WATER MAIN (6" CONCRETE ENCASEMENT)

3" MIN

6" MIN

PROP 4" DIA. SSMH # 38900 STA 8+01.70 PROP TOP ELEV = 609.99

REMOVE AND DISPOSE OF EXIST SSMH ID# 38900 TO BE REMOVED & DISPOSED (NSPI) EX INV IN = 607.84 (E) EX INV OUT = 607.81 (W)

HORIZONTAL SCALE: 0 20' 40'

VERTICAL SCALE: 0 5' 10'

K FRIESE + ASSOCIATES
PUBLIC PROJECT ENGINEERING

16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com

No.	Revision	Drawn	Approved	Date

REVISIONS

CLIFFORD FROM S. PRESA ST. TO DEAD END SANITARY SEWER PLAN AND PROFILE STA 5+00.00 TO STA 9+00.00

DEVELOPER: _____

CONT. BUDGET PROJ.

SUBMITTED _____

APPROVED _____

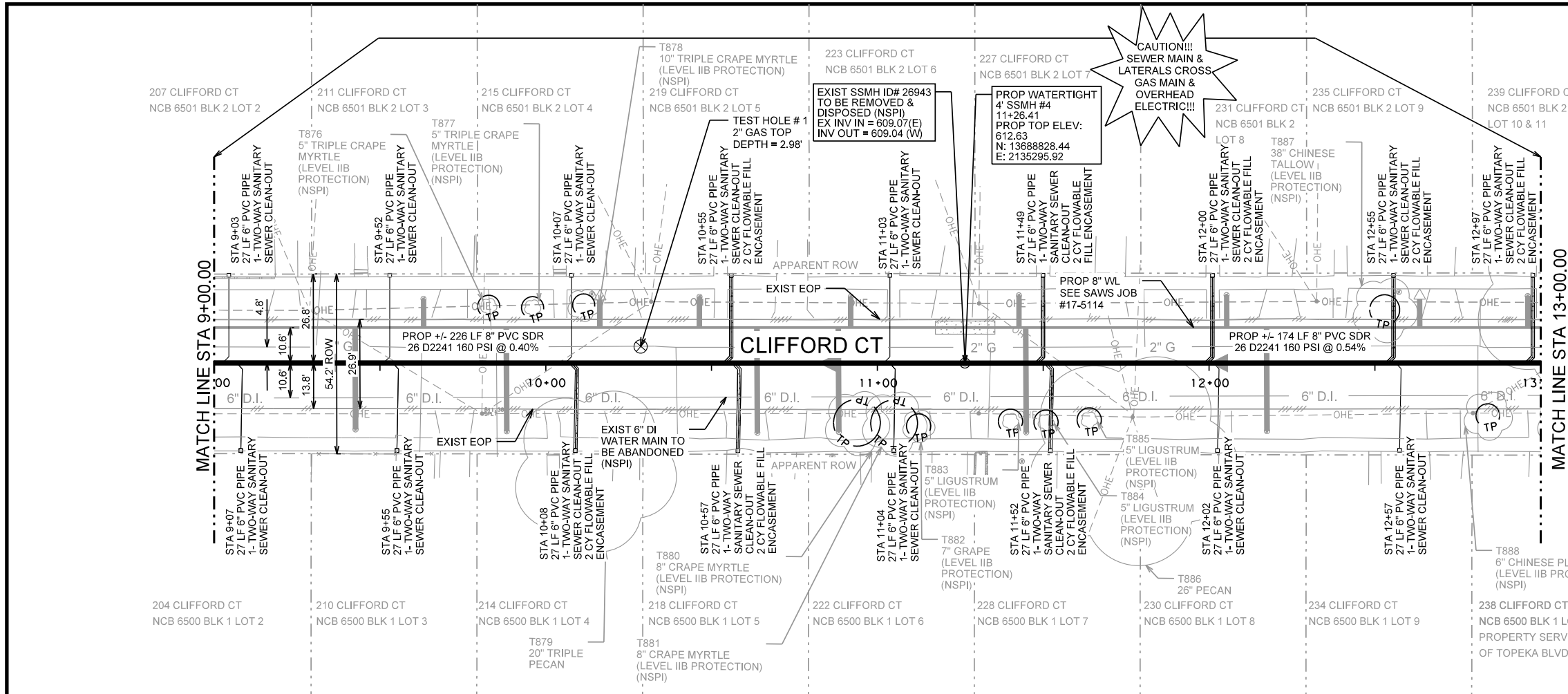
MAP No. _____ SHEET 5

SECT. No. _____

DR. _____ CK. _____ JOB No. 17-5596 OF 9

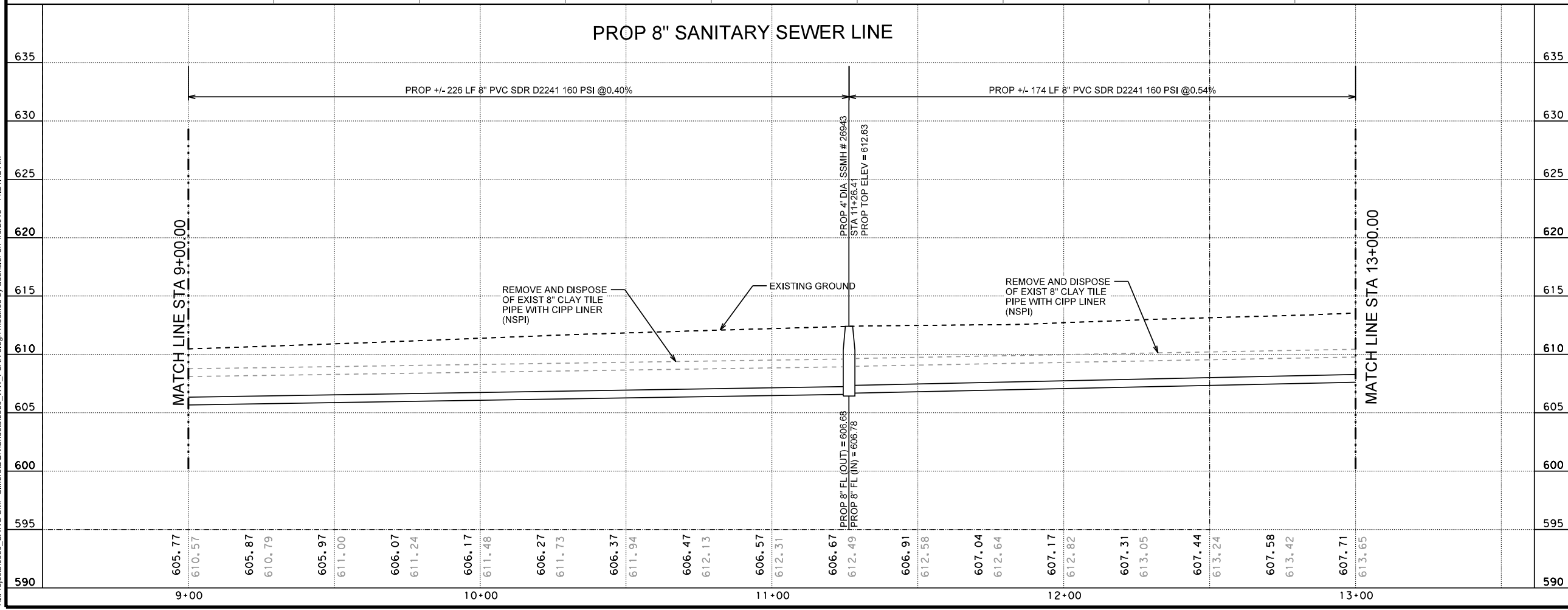
X:\Projects\0639_SAWS SMP Clifford\DWG\Sheets\0639_WW_PLAN_2.dgn modified by adensler on 1/3/2018 - 11:24:41 AM

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205.2	HOT MIX ASPHALTIC PAVEMENT - TYPE B (12" COMPACTED DEPTH)	SY	166
413	FLOWABLE FILL	CY	16.0
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	400
848	8" PVC GRAVITY SANITARY SEWER PIPE (SDR 26-2241, 160 PSI), (0'-6" CUT)	LF	400
852	SANITARY SEWER MANHOLE (0'-6")	EA	1
854	SANITARY SEWER LATERALS, (SDR 26, ASTM 2241, 160 PSI)	LF	459
854	TWO-WAY SANITARY SEWER CLEAN-OUT	EA	17
866	PRE SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	400
866	POST SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	400



LEGEND

- PROP SANITARY SEWER LINE
- PROP MANHOLE
- PROP SEWER LATERAL & TWO-WAY SANITARY SEWER CLEAN-OUT
- EXIST EDGE OF PAVEMENT
- EXIST FENCE
- EXIST OVERHEAD UTILITIES
- EXIST WATERLINE
- EXIST SANITARY SEWER LINE
- PROPERTY LINE
- UTILITY POLE
- EXIST TREE TO PROTECT
- EXIST TREE TO REMOVE



PROF 8" SANITARY SEWER LINE

PROP +/- 226 LF 8" PVC SDR D2241 160 PSI @ 0.40%

PROP +/- 174 LF 8" PVC SDR D2241 160 PSI @ 0.54%

HORIZONTAL SCALE

VERTICAL SCALE

12/14/17

K FRIESE + ASSOCIATES
PUBLIC PROJECT ENGINEERING

16170 JONES MALTSBERGER ROAD
SUITE 109
SAN ANTONIO, TEXAS 78247
P - 210.491.2391 F - 512.338.1784
TBPE Firm #6535 www.kfriese.com

No.	Revision	Drawn	Approved	Date

REVISIONS

CLIFFORD FROM S. PRESA ST. TO DEAD END
SANITARY SEWER PLAN AND
PROFILE STA 9+00.00 TO
STA 13+00.00

DEVELOPER:	
CONT.	BUDGET PROJ.
SUBMITTED _____	
APPROVED _____	
MAP No.	SHEET 6
SECT. No.	DR. CK. JOB No. 17-5596 Of 9

X:\Projects\0539_SAWS SMP Clifford\DWG\Sheets\0539_WW_PLAN_3.dgn modified by adensler on 1/3/2018 - 11:24:42 AM

