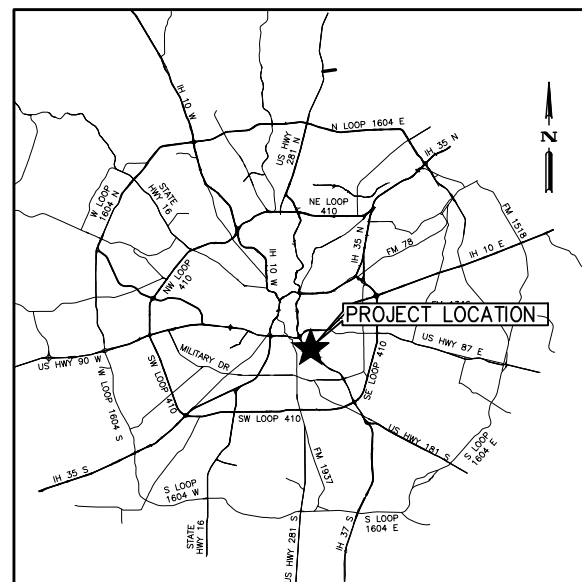


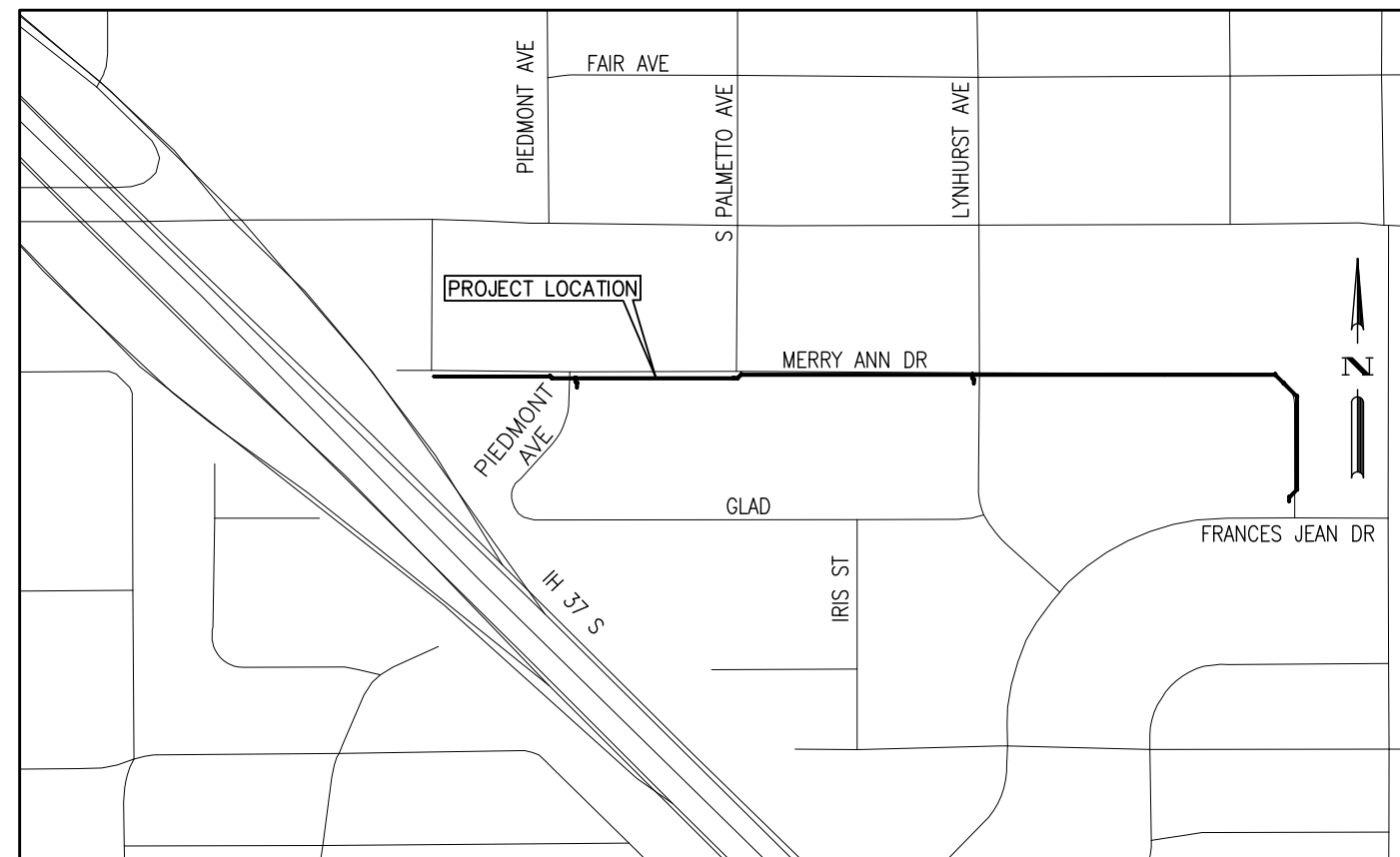
# SAN ANTONIO WATER SYSTEM

## SAWS WATER JOB NO. 17-5026

### 2017 SMP MERRY ANN DR. FROM FRANCES JEAN TO DEAD END



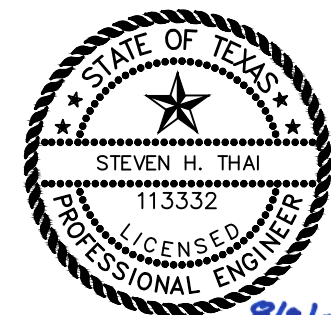
VICINITY MAP  
N.T.S.



LOCATION MAP  
N.T.S.

#### SHEET INDEX

NO.	SHEET DESCRIPTION
1	COVER SHEET
2	CONSTRUCTION NOTES AND QUANTITY SUMMARY
3	OVERALL PROJECT LAYOUT AND SURVEY CONTROL
4	WATER IMPROVEMENTS LINE A STA 1+00 TO STA 5+50
5	WATER IMPROVEMENTS LINE A STA 5+50 TO STA 11+00
6	WATER IMPROVEMENTS LINE A STA 11+00 TO STA 16+50
7	WATER IMPROVEMENTS LINE A STA 16+50 TO STA 20+00
8	WATER IMPROVEMENTS LINE A STA 20+00 TO STA 21+71.95
9	TREE PRESERVATION PLAN



8/1/17  
[Signature]

Brown & Gay Engineers, Inc.  
F-1046



BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

GENERAL SECTION

- 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 PUBLIC WORKS 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 233-3500, AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 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

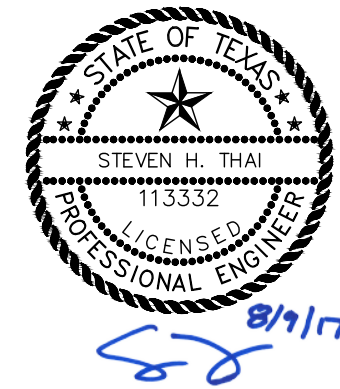
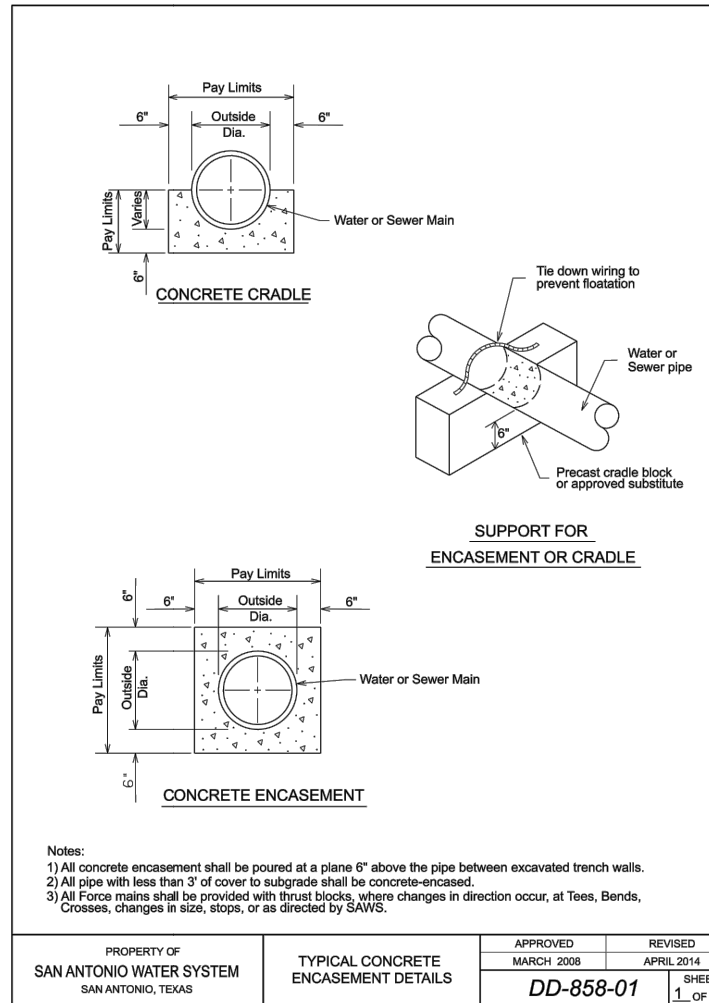
COSA DRAINAGE 207-8048  
COSA TRAFFIC SIGNAL OPERATIONS 207-7720  
TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811

- 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.

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 233-2016
- ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), MAYBE 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, "SPECIAL SPECIFICATION FOR 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)
- REPLACEMENT OF WATER METER BOXES ARE TO BE AT THE DISCRETION OF THE SAWS INSPECTOR.
- CONTRACTOR TO PLACE WATER METER BOXES WITHIN RIGHT-OF-WAY. AT PROPERTY LINE.
- CONTRACTOR SHALL RESTRAIN ALL PROPOSED PIPES, VALVES AND FITTINGS AT NO ADDITIONAL COST (RL=RESTRAINT LENGTH).
- FLOWABLE FILL TO FOLLOW SAWS STD DD-858-01 DETAIL.

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
103	Remove Concrete Curb	LF	18
205	Hot Mix Asphaltic Pavement - Type B (12" Compacted Depth)	SY	855.1
413	Flowable Fill	CY	6.5
500	Concrete Curb	LF	18
550	Trench Protection	LF	2099
818	6" PVC Waterline (Restrained)	LF	10
818	8" PVC Waterline (Restrained)	LF	2089
822	Short Yard Piping	LF	10
824	Relay 3/4" Long Service	EA	30
824	Relay 3/4" Short Service	EA	23
824	Relay 1" Short Service	EA	1
824	Relocate 3/4" Short Service	EA	2
828	8" Gate Valve	EA	6
833	Existing Meter & New Meter Box Relocation	EA	56
833	New Meter Box	EA	56
834	Fire Hydrant	EA	3
836	Pipe Fittings, All Sizes & Types	TN	1.18
840	6" Water Tie-Ins	EA	2
840	8" Water Tie-Ins	EA	2
841	Hydrostatic Testing	EA	5
844	2" Blow-off, Temporary	EA	4
1020	8" Water Main Break/Leak Repairs, all types	EA	5
3000	Removal, Transportation and Disposal of various sizes of A.C. Pipe	LF	346
3100	4" Temporary Waterline, including fittings, tie-ins, service connections, and all appurtenances to provide a temporary water main for water main construction.	LF	246



Brown & Gay Engineers, Inc.  
F-1046

BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date

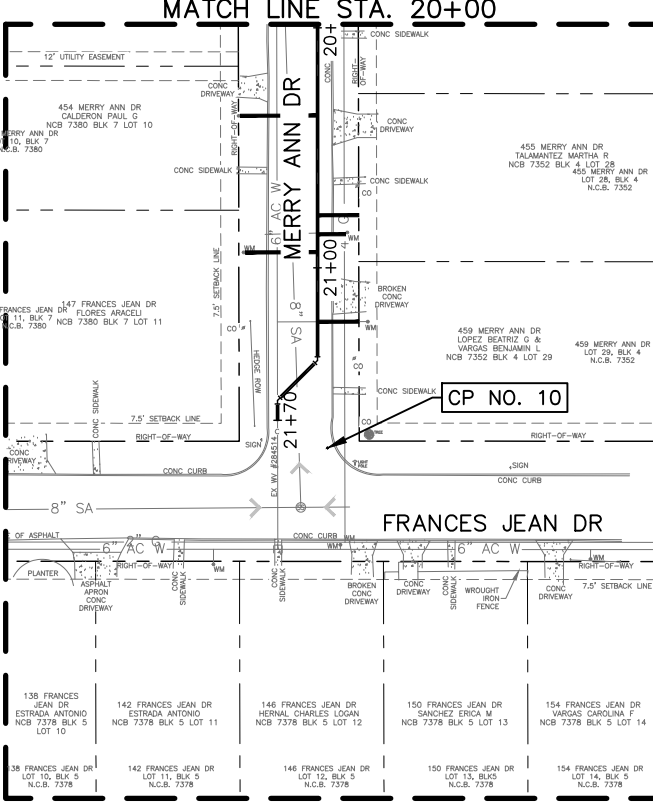
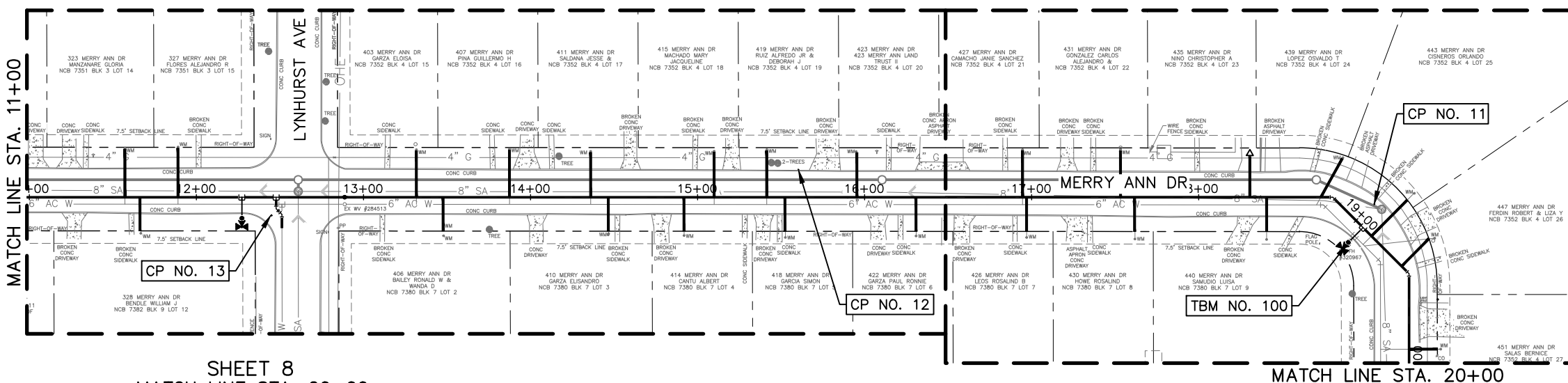
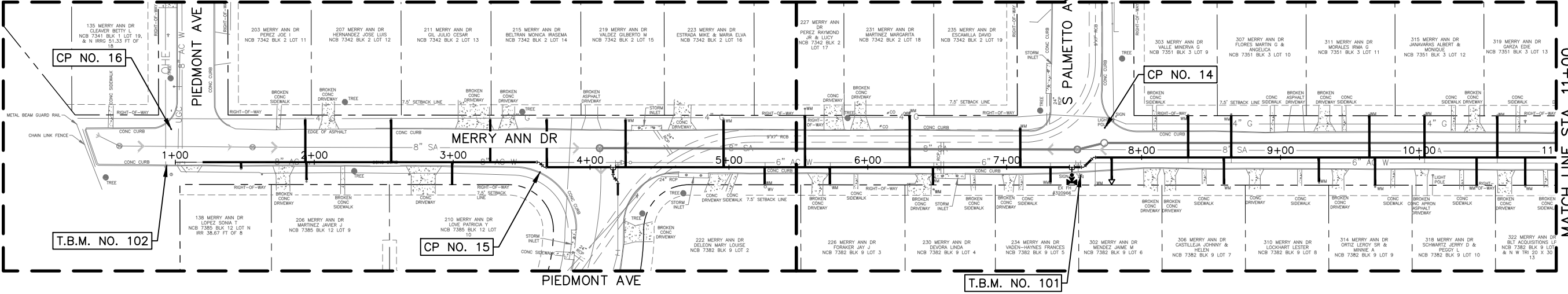
2017 SMP MERRY ANN DR  
FROM FRANCES JEAN TO  
DEAD END  
CONSTRUCTION NOTES AND  
QUANTITY SUMMARY

DEVELOPER:  
CONT. BUDGET PROJ.

SUBMITTED \_\_\_\_\_

APPROVED \_\_\_\_\_

MAP No. 168562 AND 170562 SHEET  
SECT. No. 2  
DR. CK. JOB No. 17-5026 OF 9



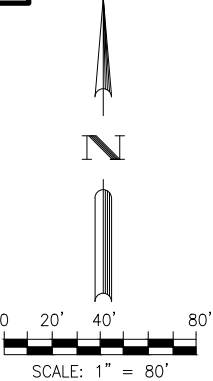
CP	NORTHING	EASTING	DESCRIPTION
10	13687006.97	2139894.50	CP MAG NAIL WITH WASHER MARKED "LNV-SA"
11	13687278.61	2139869.47	CP MAG NAIL WITH WASHER MARKED "LNV-SA"
12	13687299.11	2139524.73	CP MAG NAIL WITH WASHER MARKED "LNV-SA"
13	13687271.92	2139209.28	CP MAG NAIL WITH WASHER MARKED "LNV-SA"
14	13687304.13	2138737.85	CP MAG NAIL WITH WASHER MARKED "LNV-SA"
15	13687272.11	2138331.19	CP MAG NAIL WITH WASHER MARKED "LNV-SA"
16	13687303.21	2138065.76	CP MAG NAIL WITH WASHER MARKED "LNV-SA"

T.B.M.	NORTHING	EASTING	DESCRIPTION	ELEVATION
100	13687256.00	2139854.00	BM CHISELED PLUS ON FIRE HYDRANT BOLT	656.13
101	13687270.00	2138720.00	BM CHISELED PLUS ON FIRE HYDRANT BOLT	634.11
102	13687277.00	2138063.00	BM CHISELED SQUARE ON LAMP POST	631.67



Brown & Gay Engineers, Inc.  
F-1046



**LEGEND**

PROP. WATER MAIN	
PROP. SAN SERVICE CLEANOUT	
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	

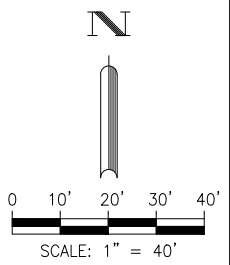
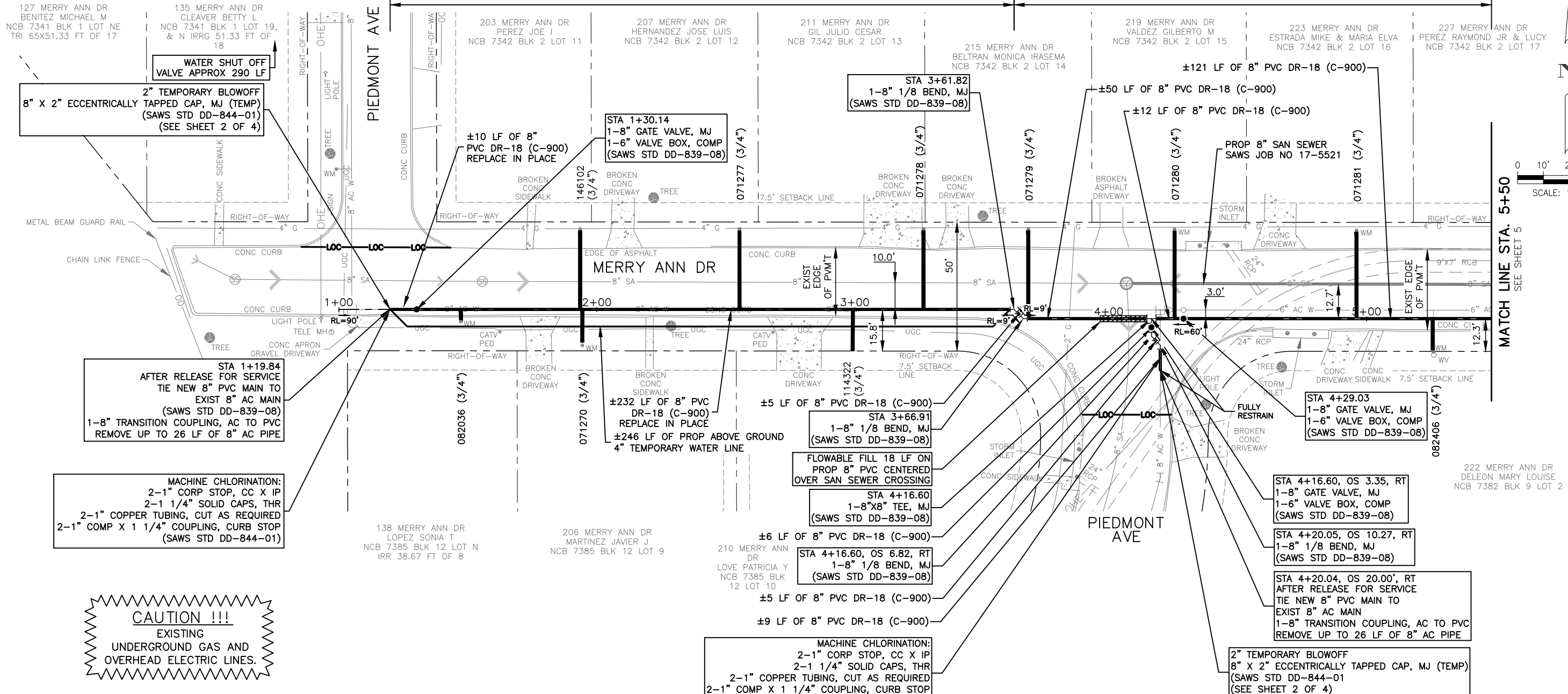
**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date
REVISIONS				
2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END				
OVERALL PROJECT LAYOUT AND SURVEY CONTROL				
DEVELOPER:				
CONT.		BUDGET PROJ.		
SUBMITTED				
APPROVED				
MAP No. 168562 AND 170562				SHEET
SECT. No.				3
DR.	CK.	JOB No. 17-5026		Of 9

BGE, INC. S:\TX\Projects\SANSAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Water\01\_Sheets\MANN WATER CV\PL.dwg Aug 09, 2017 2:48pm gscarbuz

REMOVE AND DISPOSE OF EXIST 8" AC WATER MAIN IN PLACE (NSPI)  
SAWS SHALL MACHINE CHLORINATE NEW 8" PVC MAIN

ABANDON EXIST 6" AC WATER MAIN IN PLACE (NSPI)  
SAWS SHALL MACHINE CHLORINATE NEW 8" PVC MAIN



MATCH LINE STA. 5+50  
SEE SHEET 5

STA 1+19.84  
AFTER RELEASE FOR SERVICE  
TIE NEW 8" PVC MAIN TO  
EXIST 8" AC MAIN  
(SAWS STD DD-839-08)  
1-8" TRANSITION COUPLING, AC TO PVC  
REMOVE UP TO 26 LF OF 8" AC PIPE

MACHINE CHLORINATION:  
2-1" CORP STOP, CC X IP  
2-1 1/4" SOLID CAPS, THR  
2-1" COPPER TUBING, CUT AS REQUIRED  
2-1" COMP X 1 1/4" COUPLING, CURB STOP  
(SAWS STD DD-844-01)

**CAUTION !!!**  
EXISTING  
UNDERGROUND GAS AND  
OVERHEAD ELECTRIC LINES.

MACHINE CHLORINATION:  
2-1" CORP STOP, CC X IP  
2-1 1/4" SOLID CAPS, THR  
2-1" COPPER TUBING, CUT AS REQUIRED  
2-1" COMP X 1 1/4" COUPLING, CURB STOP  
(SAWS STD DD-847-01)

**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

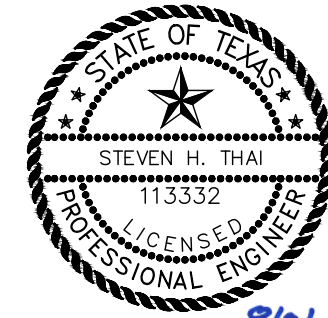
**ASBESTOS CEMENT (AC) PIPE:**

ASBESTOS CEMENT PIPE, ALSO KNOWN AS TRANSITE PIPE, AND WHICH IS KNOWN TO CONTAIN ASBESTOS - CONTAINING MATERIAL (ACM) IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THE PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000. (SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE)

**NOTE:**

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.

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
205	Hot Mix Asphaltic Pavement - Type B (12" Compacted Depth)	SY	183.3
413	Flowable Fill	CY	1.6
550	Trench Protection	LF	450
818	8" PVC Waterline (Restrained)	LF	450
824	Relay 3/4" Long Service	EA	6
824	Relay 3/4" Short Service	EA	4
828	8" Gate Valve	EA	3
833	Existing Meter & New Meter Box Relocation	EA	10
833	New Meter Box	EA	10
836	Pipe Fittings, All Sizes & Types	TN	0.45
840	8" Water Tie-Ins	EA	2
841	Hydrostatic Testing	EA	1
844	2" Blow-off, Temporary	EA	2
1020	8" Water Main Break/Leak Repairs, all types	EA	1
3000	Removal, Transportation and Disposal of various sizes of A.C. Pipe	LF	294
3100	4" Temporary Waterline, including fittings, tie-ins, service connections, and all appurtenances to provide a temporary water main for water main construction.	LF	246



Brown & Gay Engineers, Inc.  
F-1046

**LEGEND**

- PROP. WATER MAIN
- PROP. SAN SERVICE CLEANOUT
- 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

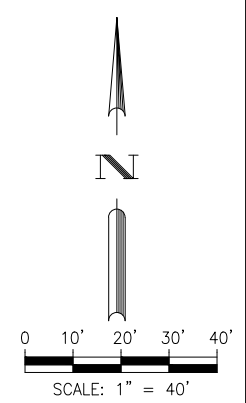
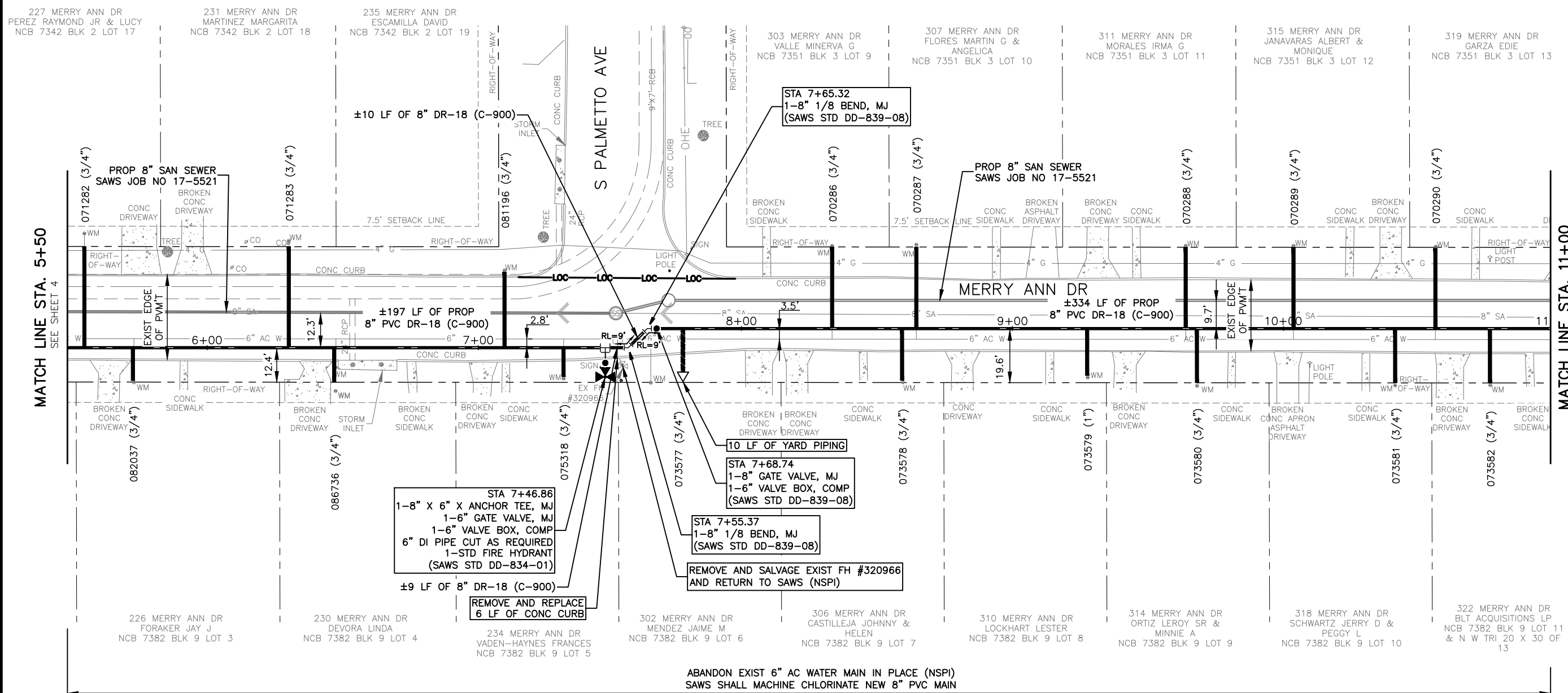
**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date

2017 SMP MERRY ANN DR  
FROM FRANCES JEAN TO  
DEAD END  
WATER IMPROVEMENTS  
LINE A STA 1+00 TO  
STA 5+50

DEVELOPER:  
CONT. BUDGET PROJ.  
SUBMITTED  
APPROVED  
MAP No. 168562 AND 170562  
SECT. No. 4  
DR. CK. JOB No. 17-5026 Of 9

BGE, INC. G:\Projects\SAWS\SAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Water\01\_Sheets\MANN WATER PLAN.dwg Aug 08, 2017 2:48pm gseanbz



**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

**ASBESTOS CEMENT (AC) PIPE:**

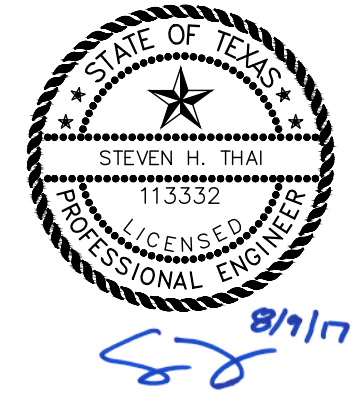
ASBESTOS CEMENT PIPE, ALSO KNOWN AS TRANSITE PIPE, AND WHICH IS KNOWN TO CONTAIN ASBESTOS - CONTAINING MATERIAL (ACM) IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THE PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000. (SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE)

**NOTE:**

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.

**CAUTION !!!**  
EXISTING  
UNDERGROUND GAS AND  
OVERHEAD ELECTRIC LINES.

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
103	Remove Concrete Curb	LF	6
205	Hot Mix Asphaltic Pavement - Type B (12" Compacted Depth)	SY	224.1
500	Concrete Curb	LF	6
550	Trench Protection	LF	550
818	8" PVC Waterline (Restrained)	LF	550
822	Short Yard Piping	LF	10
824	Relay 3/4" Long Service	EA	8
824	Relay 3/4" Short Service	EA	7
824	Relay 1" Short Service	EA	1
824	Relocate 3/4" Short Service	EA	1
828	8" Gate Valve	EA	1
833	Existing Meter & New Meter Box Relocation	EA	17
833	New Meter Box	EA	17
834	Fire Hydrant	EA	1
836	Pipe Fittings, All Sizes & Types	TN	0.11
841	Hydrostatic Testing	EA	1
1020	8" Water Main Break/Leak Repairs, all types	EA	1



Brown & Gay Engineers, Inc.  
F-1046

**LEGEND**

- PROP. WATER MAIN
- PROP. SAN SERVICE CLEANOUT
- 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

**BGE, Inc.**  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date
REVISIONS				

2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END WATER IMPROVEMENTS LINE A STA 5+50 TO STA 11+00

DEVELOPER: \_\_\_\_\_

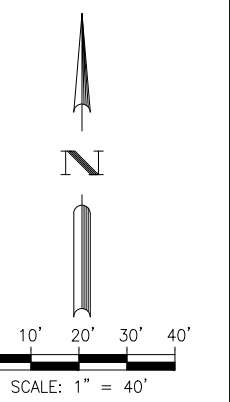
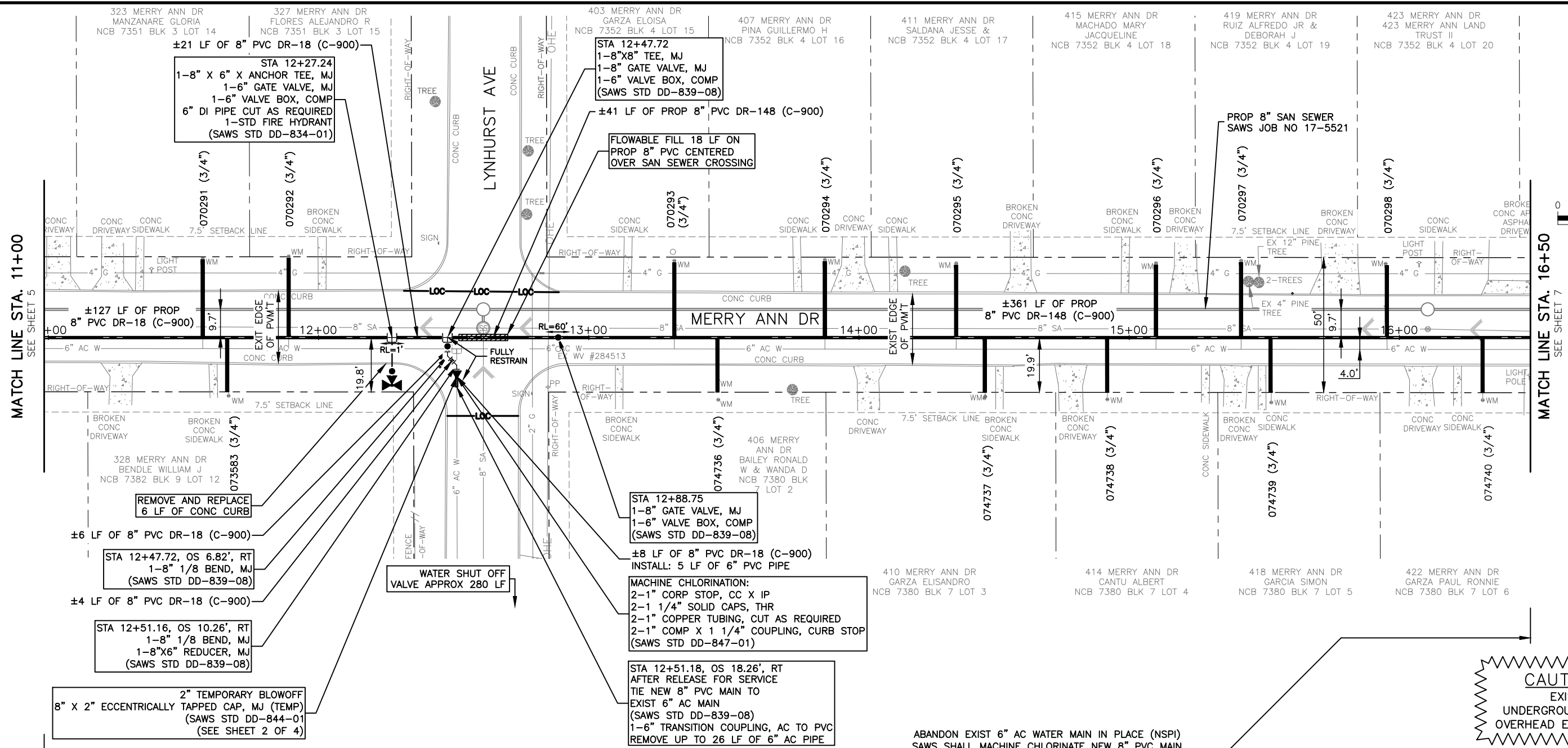
CONT. BUDGET PROJ. \_\_\_\_\_

SUBMITTED \_\_\_\_\_

APPROVED \_\_\_\_\_

MAP No. 168562 AND 170562	SHEET 5
SECT. No. _____	DR. CK. _____
JOB No. 17-5026	Of 9

BGE, INC. C:\Projects\SAWS\SAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Vater01\_Sheets\MANN WATER PLAN.dwg Aug 08, 2017 3:48pm gearshifz



**TRENCH EXCAVATION SAFETY PROTECTION:**  
 CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

**ASBESTOS CEMENT (AC) PIPE:**  
 ASBESTOS CEMENT PIPE, ALSO KNOWN AS TRANSITE PIPE, AND WHICH IS KNOWN TO CONTAIN ASBESTOS - CONTAINING MATERIAL (ACM) IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THE PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000. (SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE)

**NOTE:**  
 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.

**WATER SHUT OFF VALVE APPROX 280 LF**

**ABANDON EXIST 6" AC WATER MAIN IN PLACE (NSPI)  
 SAWS SHALL MACHINE CHLORINATE NEW 8" PVC MAIN**

**CAUTION !!!**  
 EXISTING UNDERGROUND GAS AND OVERHEAD ELECTRIC LINES.

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
103	Remove Concrete Curb	LF	6
205	Hot Mix Asphaltic Pavement - Type B (12" Compacted Depth)	SY	233.4
413	Flowable Fill	CY	1.6
500	Concrete Curb	LF	6
550	Trench Protection	LF	573
818	6" PVC Waterline (Restrained)	LF	5
818	8" PVC Waterline (Restrained)	LF	568
824	Relay 3/4" Long Service	EA	8
824	Relay 3/4" Short Service	EA	6
828	8" Gate Valve	EA	2
833	Existing Meter & New Meter Box Relocation	EA	14
833	New Meter Box	EA	14
834	Fire Hydrant	EA	1
836	Pipe Fittings, All Sizes & Types	TN	0.31
840	6" Water Tie-Ins	EA	1
841	Hydrostatic Testing	EA	1
844	2" Blow-off, Temporary	EA	1
1020	8" Water Main Break/Leak Repairs, all types	EA	1
3000	Removal, Transportation and Disposal of various sizes of A.C. Pipe	LF	26



**Brown & Gay Engineers, Inc.**  
 F-1046

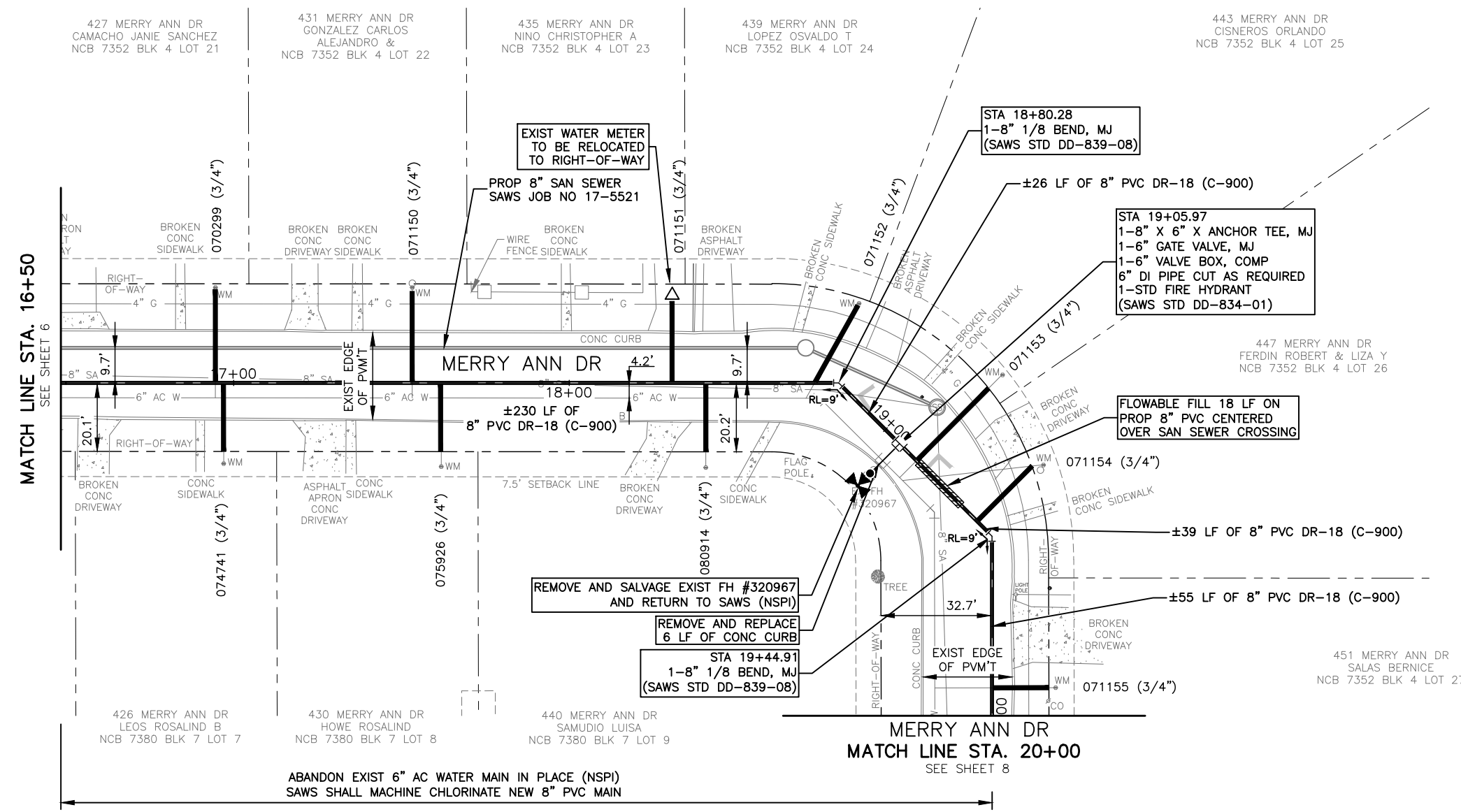
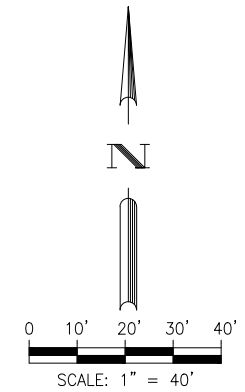
**LEGEND**

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

**BGE** BGE, Inc.  
 7330 San Pedro, Suite 202 San Antonio, Tx 78216  
 Tel: 210-581-3600 • www.bgeinc.com  
 TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date
REVISIONS				
2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END WATER IMPROVEMENTS LINE A STA 11+00 TO STA 16+50				
DEVELOPER: _____				
CONT. _____		BUDGET PROJ.		
SUBMITTED _____				
APPROVED _____				
MAP No. 168562 AND 170562			SHEET 6	
SECT. No. _____			DR. _____	
JOB No. 17-5026			Of 9	

BGE, INC. C:\Users\mthai\Documents\Projects\2017\170562\170562.dwg Aug 08, 2017 3:48pm gsean@bge.com



MATCH LINE STA. 16+50  
SEE SHEET 6

MATCH LINE STA. 20+00  
SEE SHEET 8

**CAUTION !!!**  
EXISTING  
UNDERGROUND GAS AND  
OVERHEAD ELECTRIC LINES.

**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

**ASBESTOS CEMENT (AC) PIPE:**

ASBESTOS CEMENT PIPE, ALSO KNOWN AS TRANSITE PIPE, AND WHICH IS KNOWN TO CONTAIN ASBESTOS - CONTAINING MATERIAL (ACM) IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THE PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000. (SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE)

**NOTE:**

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.

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
103	Remove Concrete Curb	LF	6
205	Hot Mix Asphaltic Pavement - Type B (12" Compacted Depth)	SY	142.6
413	Flowable Fill	CY	1.6
500	Concrete Curb	LF	6
550	Trench Protection	LF	350
818	8" PVC Waterline (Restrained)	LF	350
824	Relay 3/4" Long Service	EA	6
824	Relay 3/4" Short Service	EA	3
824	Relocate 3/4" Short Service	EA	1
833	Existing Meter & New Meter Box Relocation	EA	10
833	New Meter Box	EA	10
834	Fire Hydrant	EA	1
836	Pipe Fittings, All Sizes & Types	TN	0.11
841	Hydrostatic Testing	EA	1
1020	8" Water Main Break/Leak Repairs, all types	EA	1



Brown & Gay Engineers, Inc.  
F-1046

**LEGEND**

- PROP. WATER MAIN ————
- PROP. SAN SERVICE CLEANOUT ————
- EXIST. WATER MAIN — 0-6" C.I.W. ————
- GAS MAIN — 2" G ————
- SANITARY SEWER — 8" SA ————
- STORM SEWER — 24" ST ————
- 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 ————

**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date

**REVISIONS**

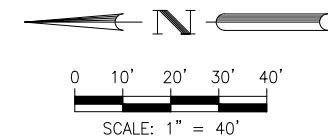
**2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END WATER IMPROVEMENTS LINE A STA 16+50 TO STA 20+00**

**DEVELOPER:** \_\_\_\_\_  
**CONT.** BUDGET PROJ.  
**SUBMITTED** \_\_\_\_\_  
**APPROVED** \_\_\_\_\_

MAP No. 168562 AND 170562 SHEET 7  
SECT. No. \_\_\_\_\_ Of 9  
DR. CK. JOB No. 17-5026

BGE, INC. C:\Projects\SAWS\SAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Water\01\_Sheets\MANN WATER PLAN.dwg Aug 09, 2017 3:48pm gseanbz

**CAUTION !!!**  
EXISTING  
UNDERGROUND GAS AND  
OVERHEAD ELECTRIC LINES.



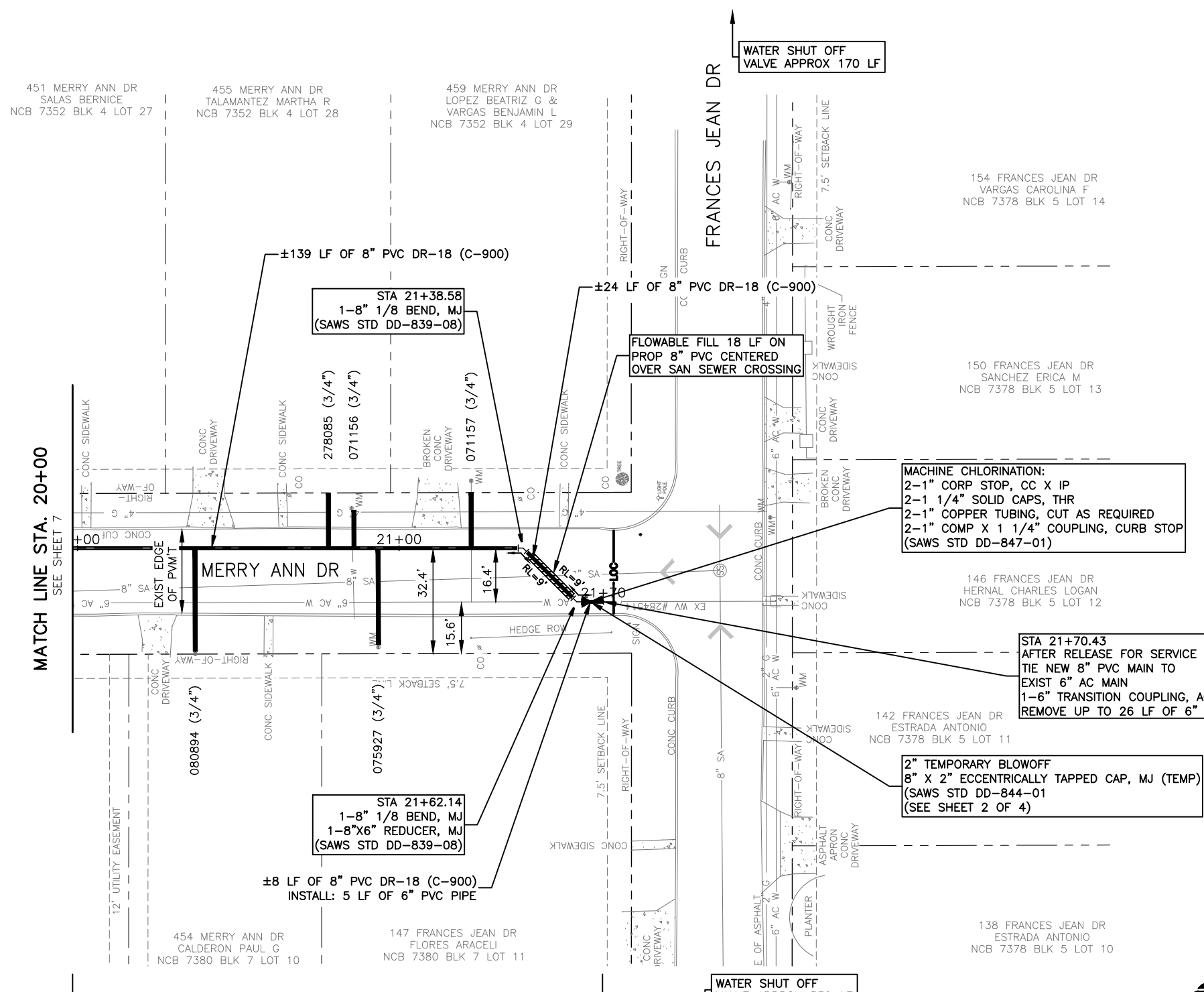
**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

**ASBESTOS CEMENT (AC) PIPE:**

ASBESTOS CEMENT PIPE, ALSO KNOWN AS TRANSITE PIPE, AND WHICH IS KNOWN TO CONTAIN ASBESTOS - CONTAINING MATERIAL (ACM) IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THE PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000. (SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE)

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
205	Hot Mix Asphaltic Pavement - Type B (12" Compacted Depth)	SY	71.7
413	Flowable Fill	CY	1.6
550	Trench Protection	LF	176
818	6" PVC Waterline (Restrained)	LF	5
818	8" PVC Waterline (Restrained)	LF	171
824	Relay 3/4" Long Service	EA	2
824	Relay 3/4" Short Service	EA	3
833	Existing Meter & New Meter Box Relocation	EA	5
833	New Meter Box	EA	5
836	Pipe Fittings, All Sizes & Types	TN	0.21
840	6" Water Tie-Ins	EA	1
841	Hydrostatic Testing	EA	1
844	2" Blow-off, Temporary	EA	1
1020	8" Water Main Break/Leak Repairs, all types	EA	1
3000	Removal, Transportation and Disposal of various sizes of A.C. Pipe	LF	26



**MACHINE CHLORINATION:**  
2-1" CORP STOP, CC X IP  
2-1 1/4" SOLID CAPS, THR  
2-1" COPPER TUBING, CUT AS REQUIRED  
2-1" COMP X 1 1/4" COUPLING, CURB STOP  
(SAWS STD DD-847-01)

**STA 21+70.43**  
AFTER RELEASE FOR SERVICE  
TIE NEW 8" PVC MAIN TO  
EXIST 6" AC MAIN  
1-6" TRANSITION COUPLING, AC TO PVC  
REMOVE UP TO 26 LF OF 6" AC PIPE

**2" TEMPORARY BLOWOFF**  
8" X 2" ECCENTRICALLY TAPPED CAP, MJ (TEMP)  
(SAWS STD DD-844-01  
(SEE SHEET 2 OF 4)

**STA 21+38.58**  
1-8" 1/8 BEND, MJ  
(SAWS STD DD-839-08)

**STA 21+62.14**  
1-8" 1/8 BEND, MJ  
1-8"X6" REDUCER, MJ  
(SAWS STD DD-839-08)

ABANDON EXIST 6" AC WATER MAIN IN PLACE (NSPI)  
SAWS SHALL MACHINE CHLORINATE NEW 8" PVC MAIN



Brown & Gay Engineers, Inc.  
F-1046

**LEGEND**

- PROP. WATER MAIN
- PROP. SAN SERVICE CLEANOUT
- 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

**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date
REVISIONS				

**2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END WATER IMPROVEMENTS LINE A STA 20+00 TO STA 21+71.95**

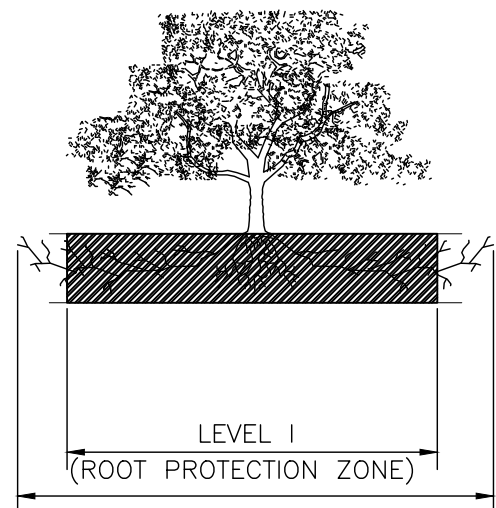
DEVELOPER: \_\_\_\_\_  
CONT. BUDGET PROJ. \_\_\_\_\_  
SUBMITTED \_\_\_\_\_  
APPROVED \_\_\_\_\_

MAP No. 168562 AND 170562	SHEET 8
SECT. No. _____	DR. CK. JOB No. 17-5026
DR. CK. JOB No. 17-5026	Of 9

BGE, INC. C:\Projects\SAWS\SAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Water\01\_Sheets\MANN WATER PLAN.dwg Aug 08, 2017 3:48pm gsearabz

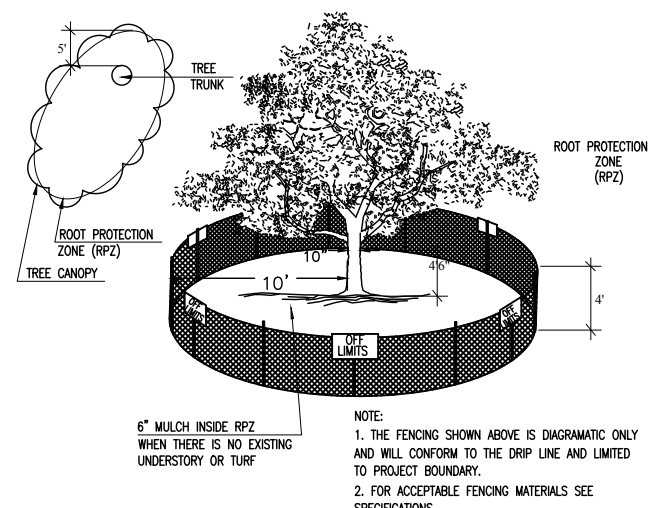


BGE, INC. C:\Projects\SAVINGS\SAVINGS - Merry Ann\03\_CADD\01\_Sheets\01\_TREE PRESERVATION PLAN.dwg Aug 09, 2017 3:48pm gsmitchez



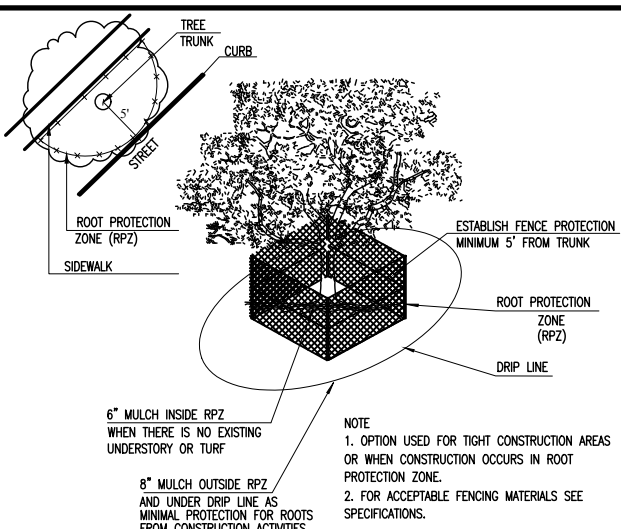
**1.1.1 ELEVATION**  
N. T. S.

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 PROTECTED SIZE TREES 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 1 PROTECTION AS PER ITEM No. 801. (TREE AND LANDSCAPE PROTECTION) AND AS DETAILED IN 1.1.2.
  - ALL TREES SHALL REMAIN UNLESS NOTED ON THE CITY APPROVED PLANS.
  - NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND PROTECTION MEASURES HAVE NOT BEEN COMPLETED AND APPROVED BY THE CITY ARBORIST OFFICE.
  - TREE PROTECTION FENCING SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.
  - THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES (3") IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR IF ROOTS LARGER THAN THREE INCHES (3") WITHIN THE FIVE FOOT (5') ROOT PROTECTION ZONE NEED TO BE PRUNED.
  - 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 ONE FOOT (1') PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A TEN INCH (10") DIAMETER TREE WOULD HAVE A TEN FOOT (10') 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. ALL OAK WOUNDS SHALL BE PAINTED OVER, WITHIN TWENTY (20) MINUTES TO PREVENT OAK WILT.
  - NO DISTURBANCE SHALL OCCUR CLOSER TO THE TRUNK THAN HALF THE ROOT PROTECTION ZONE AREA.
  - TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND.
  - TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED.
  - 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 OFFICE PRIOR TO ITS REMOVAL.

**1.3 GENERAL NOTES**

**TREE PROTECTION TABLE**

TREE SHEET #	TREE/CALIPER	STATION OR NUMBER	LOCATION	ITEM 801	PROTECTION MEASURE	ITEM 802 MAINTENANCE/TREATMENTS/PROTECTION	REMOVAL SEE GENERAL NOTE No. 2
4	PECAN/13"	2+23	OUTSIDE ROW				
4	PALM/6"	2+29	WITHIN ROW				
4	HACKBERRY/24"	3+51	OUTSIDE ROW				
4	OAK/31"	4+39	WITHIN ROW	PROTECTED		II A	
4	OAK/12"	4+68	OUTSIDE ROW				
5	SYCAMORE/7"	5+87	WITHIN ROW				
5	RETAMA/11"	7+26	WITHIN ROW				
5	MESQUITE/32"	7+88	WITHIN ROW	PROTECTED		II A	
6	SYCAMORE/13"	12+45	WITHIN ROW				
6	PERENNIAL/9"	12+79	WITHIN ROW				
6	PERENNIAL/12"	12+80	WITHIN ROW				
6	PECAN/9"	13+77	WITHIN ROW				
6	PALM/16"	14+19	WITHIN ROW				
6	PINE/4"	15+46	WITHIN ROW				
6	PINE/12"	15+49	WITHIN ROW				
7	OAK/12"	19+58	OUTSIDE ROW				
8	OAK/31"	21+78	OUTSIDE ROW				

**1.3 TREE PROTECTION TABLE**

**TREE INVENTORY SUMMARY**  
(8" DIAMETER AND LARGER)

TOTAL DIAMETER INCHES, R.O.W	237
TOTAL DIAMETER INCHES REMOVED	0
TOTAL DIAMETER INCHES PRESERVED	237
TOTAL PERCENTAGE INCHES PRESERVED	100%
TOTAL INCHES TO BE MITIGATED	0

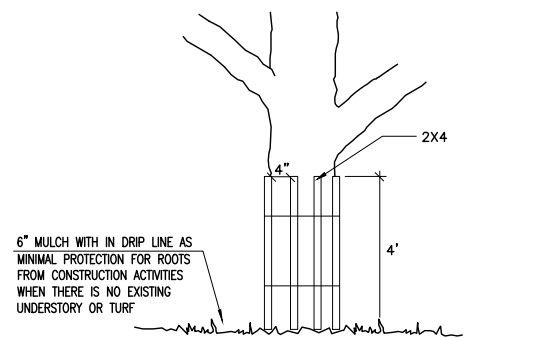
**1.3 TREE INVENTORY SUMMARY**



Brown & Gay Engineers, Inc.  
F-1046

**BGE, Inc.**  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date
REVISIONS				
2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END				
TREE PRESERVATION PLAN				
DEVELOPER:				
CONT.		BUDGET PROJ.		
SUBMITTED _____				
APPROVED _____				
MAP No. 168562 AND 170562				SHEET
SECT. No.				9
DR.	CK.	JOB No. 17-5026		Of 9

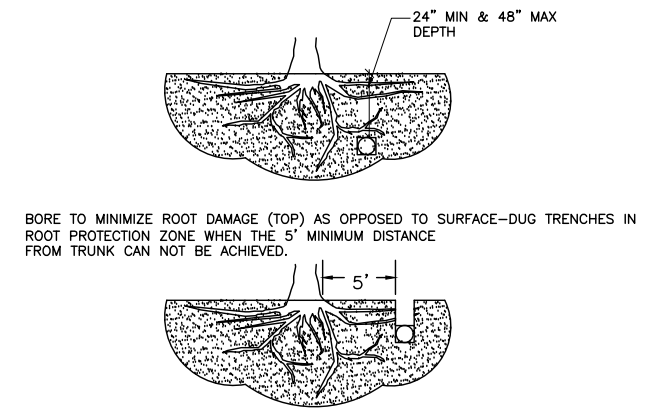


**1.1.4 LEVEL II B FENCE PROTECTION**  
N. T. S.

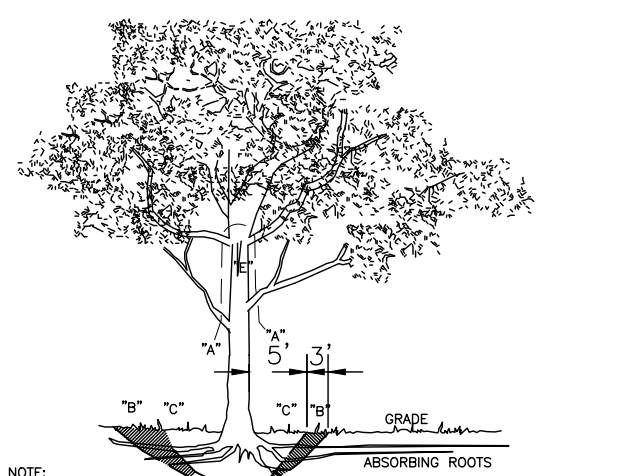
NOTE  
WRAP TREE TRUNK WITH 2"x4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREES IN WORK AREAS.

TREES THAT ARE MARKED TO BE PRESERVED ON A SITE PLAN AND FOR WHICH UTILITIES MUST PASS THROUGH THEIR ROOT PROTECTION ZONES MAY REQUIRE BOREING AS OPPOSED TO OPEN TRENCHES. THE DECISION TO BORE WILL BE DETERMINED ON A CASE BY CASE BASIS BY THE CITY.

BORES SHALL BE DUG THROUGH THE ROOT PROTECTION ZONE IN ORDER TO MINIMIZE ROOT DAMAGE.

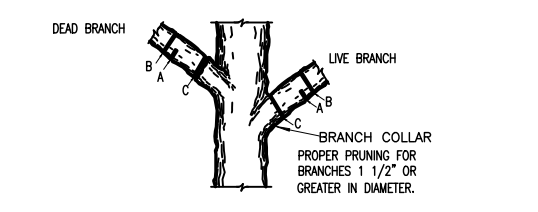


**1.2 BORING THRU TREE ROOT ZONE**  
N. T. S.



**1.3 TREE REMOVAL DIAGRAM**  
N. T. S.

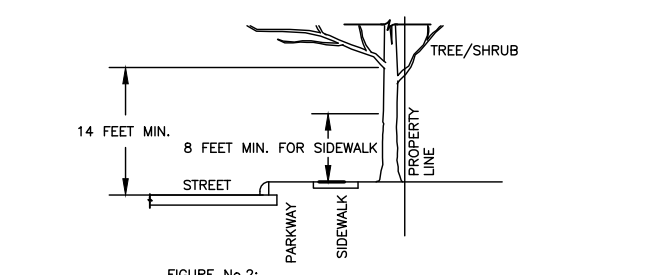
NOTE:  
A" REMOVE BULKY TREE PARTS "SHRED" AND/OR HAUL SEPARATELY.  
B" BEGIN EXCAVATION APPROX. 8' FROM THE TRUNK - CUT THRU ANCHOR ROOTS AT AN ANGLE - 3' TO 4' DEEP  
C" USING TREE TRUNK AS A LEVER PUSH AT POINT "E" TO REMOVE TREE BOLE AND LARGE FEEDER ROOTS (4" TO 10" IN DIAM.)  
D" BACKFILL HOLE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



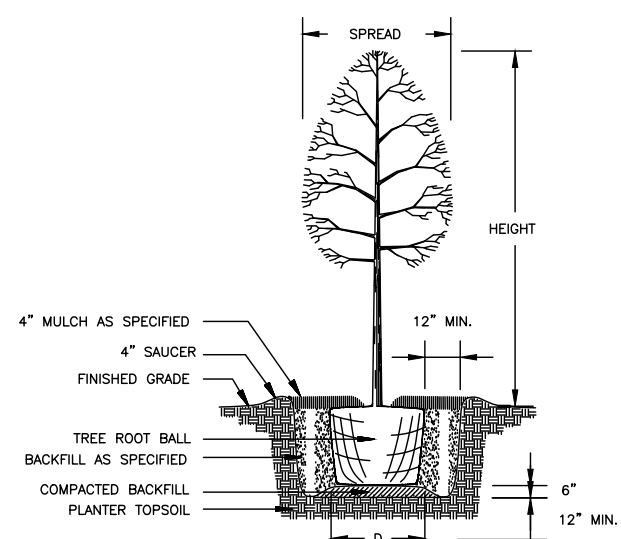
**1.4 BRANCH PRUNING DETAIL**  
N. T. S.

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

FOR OAKS ONLY: PAINT ALL WOUNDS OR CUTS WITH PRUNING PAINT WITHIN 20 MIN TO PREVENT THE SPREAD OF OAK WILT.

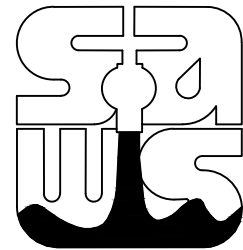


**1.5 BRANCH CLEARANCE DETAIL**  
N. T. S.



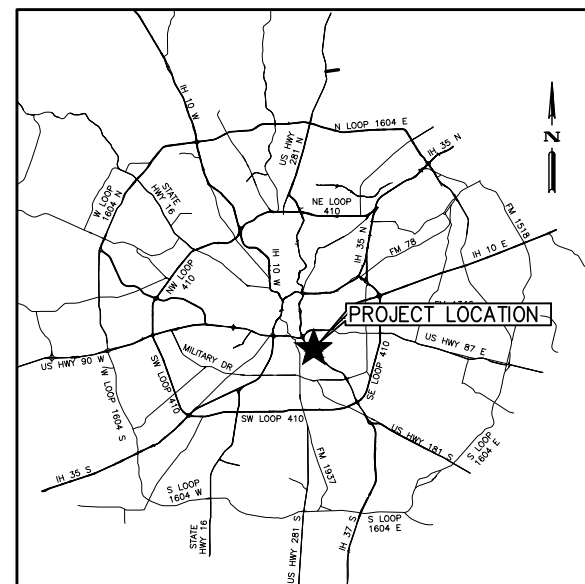
**1.6 NEW TREE PLANTING DETAIL**  
N. T. S.

# SAN ANTONIO WATER SYSTEM



## SAWS SEWER JOB NO. 17-5521

### 2017 SMP MERRY ANN DR. FROM FRANCES JEAN TO DEAD END



VICINITY MAP  
N.T.S.



LOCATION MAP  
N.T.S.

#### SHEET INDEX

NO.	SHEET DESCRIPTION
1	COVER SHEET
2	CONSTRUCTION NOTES AND QUANTITY SUMMARY
3	OVERALL PROJECT LAYOUT AND SURVEY CONTROL
4	SANITARY SEWER - LINE A STA 1+00 TO STA 4+00
5	SANITARY SEWER - LINE A STA 4+00 TO STA 7+00
6	SANITARY SEWER - LINE A STA 7+00 TO STA 10+00
7	SANITARY SEWER - LINE A STA 10+00 TO STA 12+90
8	SANITARY SEWER - LINE A STA 12+90 TO STA 16+04.21
9	TREE PRESERVATION PLAN



Brown & Gay Engineers, Inc.  
F-1046



BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

SAWS GENERAL CONSTRUCTION NOTES

GENERAL SECTION

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

- A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.
- B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
- C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
- D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION."
- E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

2. THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, [HTTP://WWW.SAWS.ORG/BUSINESS\\_CENTER/SPECS](http://www.saws.org/business_center/specs). UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.

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

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

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

SAN ANTONIO WATER SYSTEM:  
SAWS UTILITY LOCATES: [HTTP://WWW.SAWS.ORG/SERVICE/LOCATES](http://www.saws.org/service/locates)

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

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

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

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

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

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

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

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

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

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

SEWER SECTION:

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

- A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT (210)233-2015. PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
- B. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
- C. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.
- D. CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
- E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.
- F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND 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.

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

16. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 233-3500 AND/OR SAWS PRODUCTION GROUPS AT LEAST ONE WEEK OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE 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.

17. 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).

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

CPS ENERGY NOTES:

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

2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.

NOTES:

1. TRENCH EXCAVATION SAFETY PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE MOST RECENT PROVISIONS OF PART 1926, SUBPART P-EXCAVATIONS, TRENCHING AND SHORING OF THE OSHA STANDARDS AND INTERPRETATIONS, AS MAY BE AMENDED.

2. MAINTAIN MINIMUM VERTICAL CLEARANCE OF 2 FT WHERE SEWER MAIN CROSSES EXISTING AND PROPOSED UTILITIES, UNLESS OTHERWISE SHOWN ON PLANS. PROVIDE TEMPORARY SUPPORT OF EXISTING UTILITY AS REQUIRED. WHEN SEWER MAIN PARALLELS WATER MAIN, MAINTAIN MINIMUM 4 FT HORIZONTAL CLEARANCE.

3. THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH "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.

4. SEPARATION DISTANCE BETWEEN PARALLEL WATER MAIN AND SEWER MAINS ARE IN ACCORDANCE WITH SAWS VARIANCES TO SECTIONS OF TCEQ RULES.

5. CONTRACTOR TO PROVIDE SEQUENCING DURING PRE-CONSTRUCTION.

6. CONSTRUCTION TO BE IN ACCORDANCE WITH SAWS TCEQ VARIANCE ITEM 3.

7. FLOWABLE FILL TO FOLLOW SAWS STD DD-858-01 DETAIL.

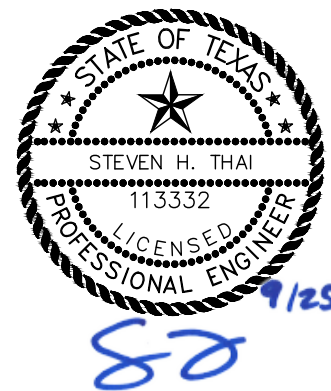
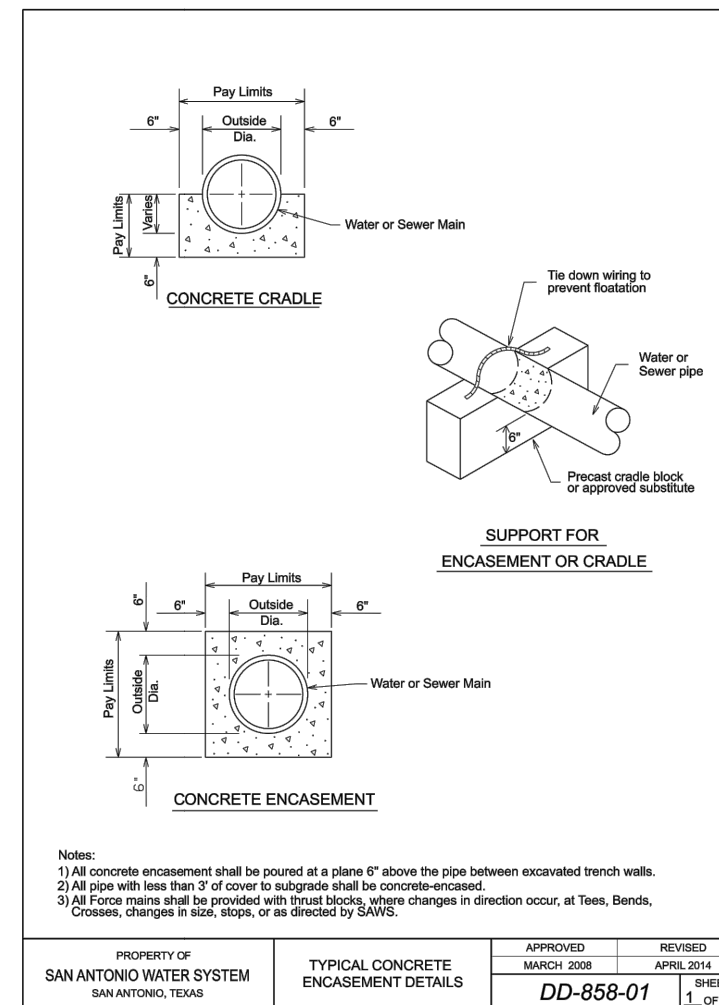
8. ALL TREE WORK SHALL BE PERFORMED BY AN ISA CERTIFIED ARBORIST.

9. CONTRACTOR SHALL INDICATE TO THE CITY OF SAN ANTONIO DSD PROPOSED LIMITS OF CLEARANCE WITH TREES DURING PRE-CONSTRUCTION MEETING AND WITH PROJECT SUBMITTALS.

CITY OF SAN ANTONIO NOTES:

1. ALL LIMITS FOR CURB, SIDEWALK, AND TREE PREP BEYOND WHAT IS CONSIDERED INCIDENTAL TO NORMAL UTILITY CONSTRUCTION WILL BE ADDRESSED BY THE SAWS INSPECTOR. ALL COMMUNICATION FROM THE CITY WILL BE COORDINATED THROUGH THE SAWS INSPECTOR. SAWS INSPECTOR WILL ALSO DETERMINE IN ADDITIONAL COMPENSATION IS WARRANTED IF LIMITS EXCEED INCIDENTALS.

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
205	Hot Mix Asphaltic Pavement, Type B (12" Compacted Depth)	SY	616.8
413	Flowable Fill	CY	13.2
550	Trench Protection	LF	1514
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (0'-6' cut)	LF	602
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (6'-14' cut)	LF	912
852	Sanitary Sewer Manhole (0'-6')	EA	4
852	Sanitary Sewer Drop Manhole (0'-6')	EA	1
852	Extra Depth Manholes (greater than 6')	VF	2.1
854	Sanitary Sewer Laterals, (SDR 26, ASTM 2241, 160 psi)	LF	924
854	Two-Way Sanitary Sewer Clean-out	EA	41
858	Concrete Encasement, Cradles, Saddles and Collars	CY	8.4
862	Abandonment of Sanitary Sewer Manholes	EA	1
864	Small Diameter - Bypass Pumping System	LF	1
866	Pre Sewer Main Television Inspection (6"-12")	LF	1514
866	Post Sewer Main Television Inspection (8"-12")	LF	1514
910	Manhole Rehabilitation	VF	8.9



Brown & Gay Engineers, Inc.  
F-1046

BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • [www.bgeinc.com](http://www.bgeinc.com)  
TBPE Registration No. F-1046

No.	Revision	Drawn	Approved	Date

REVISIONS

2017 SMP MERRY ANN DR  
FROM FRANCES JEAN  
TO DEAD END

CONSTRUCTION NOTES AND  
QUANTITY SUMMARY

DEVELOPER: \_\_\_\_\_

CONT. BUDGET PROJ. \_\_\_\_\_

SUBMITTED \_\_\_\_\_

APPROVED \_\_\_\_\_

MAP No. 168562 AND 170562 SHEET 2

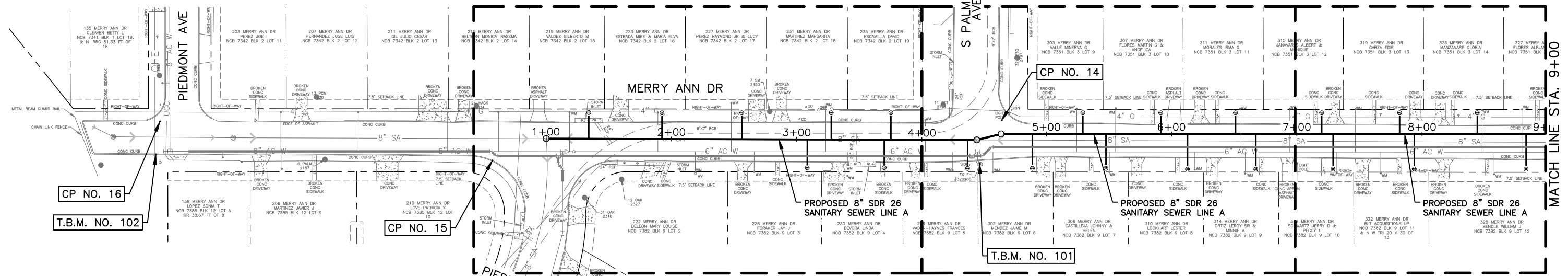
SECT. No. \_\_\_\_\_ OF 9

DR. CK. JOB No. 17-5521

SHEET 4

SHEET 5

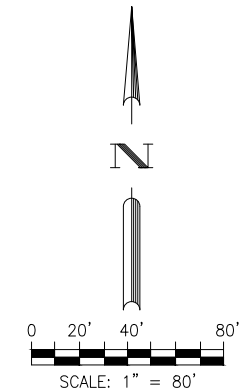
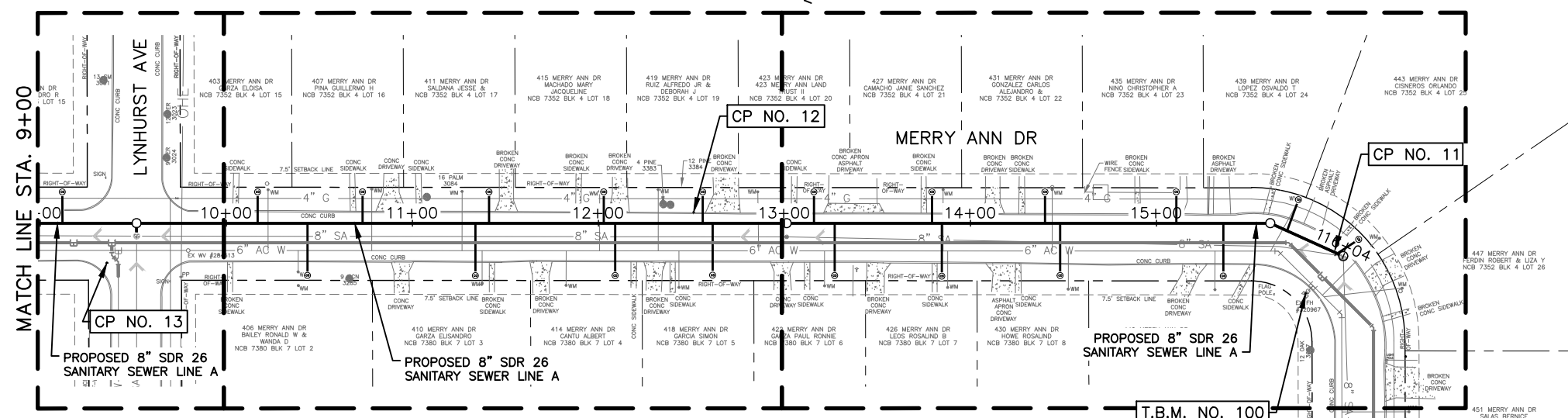
SHEET 6



SHEET 6

SHEET 7

SHEET 8



Brown & Gay Engineers, Inc.  
F-1046

SURVEY CONTROL				
CP	NORTHING	EASTING	DESCRIPTION	
10	13687006.97	2139894.50	CP MAG NAIL WITH WASHER MARKED "LNV-SA"	
11	13687278.61	2139869.47	CP MAG NAIL WITH WASHER MARKED "LNV-SA"	
12	13687299.11	2139524.73	CP MAG NAIL WITH WASHER MARKED "LNV-SA"	
13	13687271.92	2139209.28	CP MAG NAIL WITH WASHER MARKED "LNV-SA"	
14	13687304.13	2138737.85	CP MAG NAIL WITH WASHER MARKED "LNV-SA"	
15	13687272.11	2138331.19	CP MAG NAIL WITH WASHER MARKED "LNV-SA"	
16	13687303.21	2138065.76	CP MAG NAIL WITH WASHER MARKED "LNV-SA"	
T.B.M.	NORTHING	EASTING	DESCRIPTION	ELEVATION
100	13687256.00	2139854.00	BM CHISELED PLUS ON FIRE HYDRANT BOLT	656.13
101	13687270.00	2138720.00	BM CHISELED PLUS ON FIRE HYDRANT BOLT	634.11
102	13687277.00	2138063.00	BM CHISELED SQUARE ON LAMP POST	631.67

**LEGEND**

- PROP. WATER MAIN
- PROP. SAN SERVICE CLEANOUT
- 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				
2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END OVERALL PROJECT LAYOUT AND SURVEY CONTROL				
DEVELOPER:				
CONT.		BUDGET PROJ.		
SUBMITTED				
APPROVED				
MAP No. 168562 AND 170562				SHEET
SECT. No.				3
DR.	CK.	JOB No. 17-5521		Of 9

BGE, INC. C:\Users\pjohnson\OneDrive\Documents\Projects\2017\17-5521\17-5521.dwg Sep 15, 2017 4:56pm acalderson

215 MERRY ANN DR  
BELTRAN MONICA IRASEMA  
NCB 7342 BLK 2 LOT 14

219 MERRY ANN DR  
VALDEZ GILBERTO M  
NCB 7342 BLK 2 LOT 15

223 MERRY ANN DR  
ESTRADA MIKE & MARIA ELVA  
NCB 7342 BLK 2 LOT 16

227 MERRY ANN DR  
PEREZ RAYMOND JR & LUCY  
NCB 7342 BLK 2 LOT 17

231 MERRY ANN DR  
MARTINEZ MARGARITA  
NCB 7342 BLK 2 LOT 18

235 MERRY ANN DR  
ESCAMILLA DAVID  
NCB 7342 BLK 2 LOT 19

**TREE PROTECTION NOTE:**

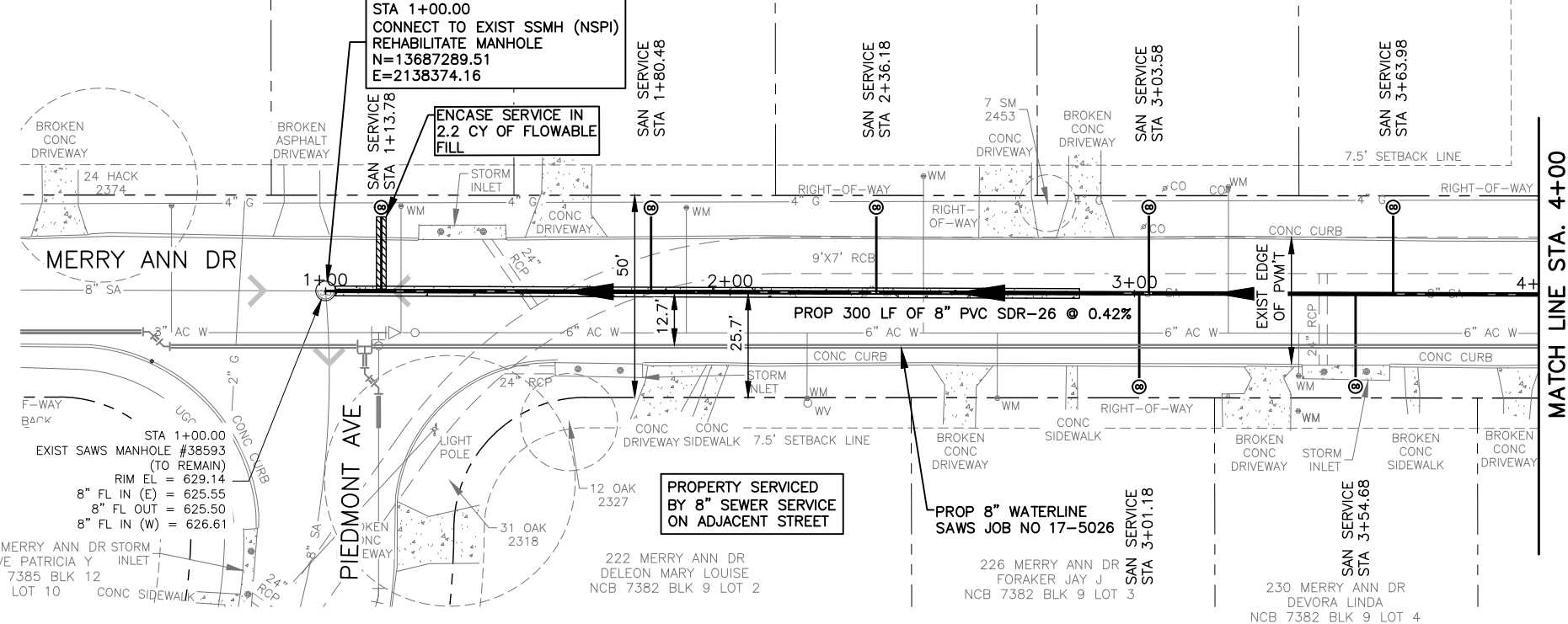
THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS ONE FOOT (1') PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A TEN INCH (10") DIAMETER TREE WOULD HAVE A TEN FOOT (10') 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. ALL OAK WOUNDS SHALL BE PAINTED OVER, WITHIN TWENTY (20) MINUTES TO PREVENT OAK WILT.

**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

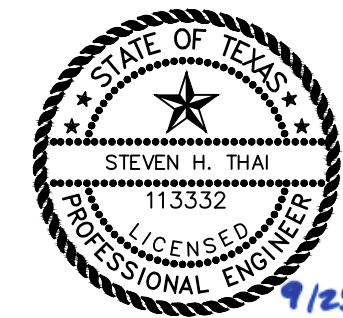
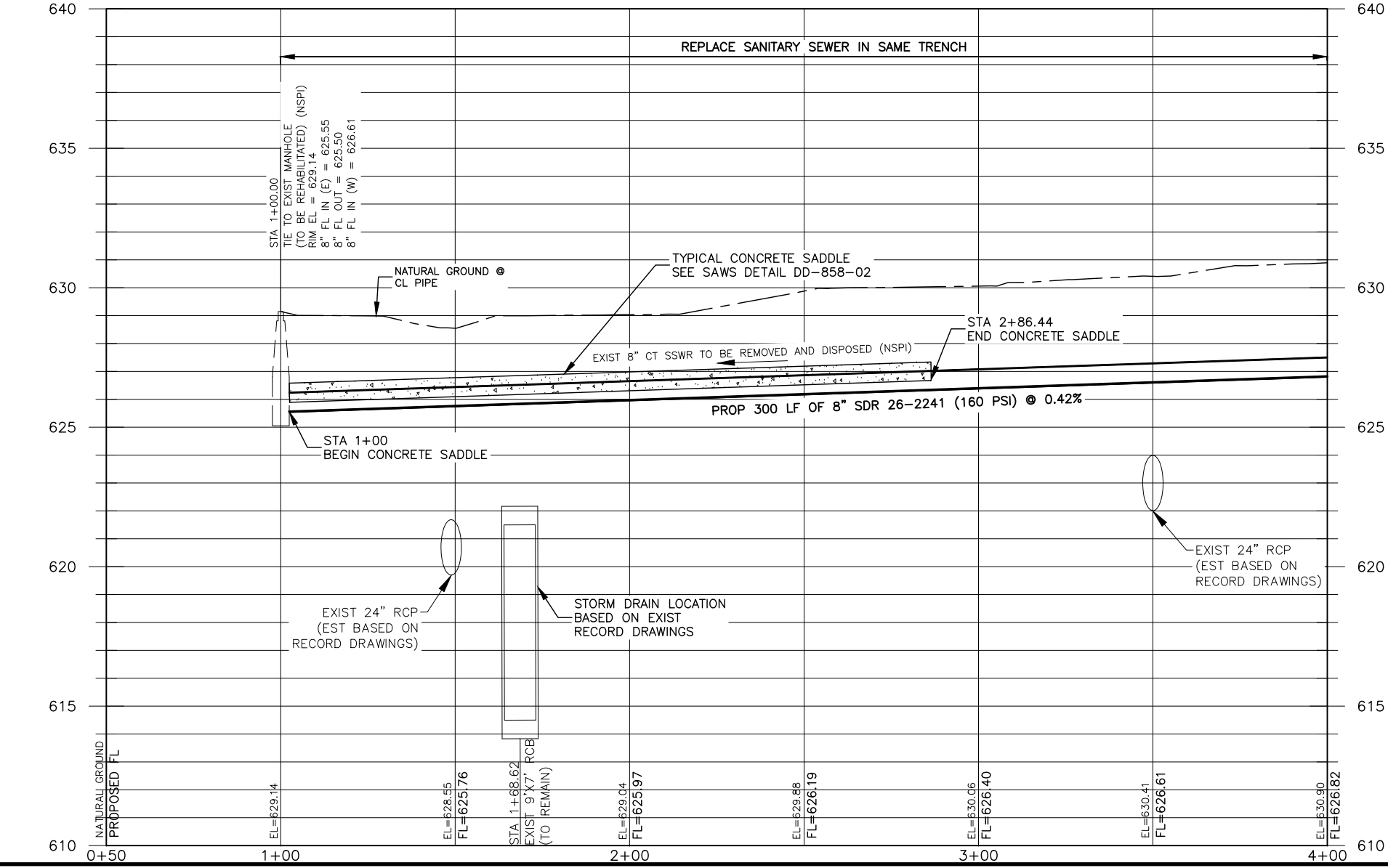
**NOTE:**

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.



MATCH LINE STA. 4+00  
SEE SHEET 5

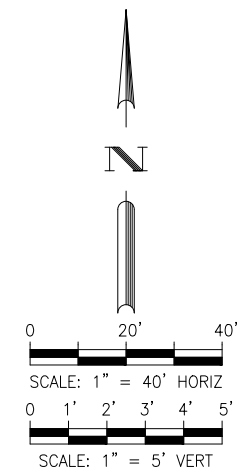
SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
205	Hot Mix Asphaltic Pavement, Type B (12" Compacted Depth)	SY	122.2
413	Flowable Fill	CY	2.2
550	Trench Protection	LF	300
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (0'-6' cut)	LF	300
854	Sanitary Sewer Laterals, (SDR 26, ASTM 2241, 160 psi)	LF	189
854	Two-Way Sanitary Sewer Clean-out	EA	7
858	Concrete Encasement, Cradles, Saddles and Collars	CY	8.4
864	Small Diameter - Bypass Pumping System	LF	1
866	Pre Sewer Main Television Inspection (6"-12")	LF	300
866	Post Sewer Main Television Inspection (8"-12")	LF	300
910	Manhole Rehabilitation	VF	3.6



9/25/17  
88

Brown & Gay Engineers, Inc.  
F-1046

**CAUTION !!!**  
EXISTING  
UNDERGROUND GAS AND  
OVERHEAD ELECTRIC LINES.



**LEGEND**

- PROP. WATER MAIN
- PROP. SAN SERVICE CLEANOUT
- 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

**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

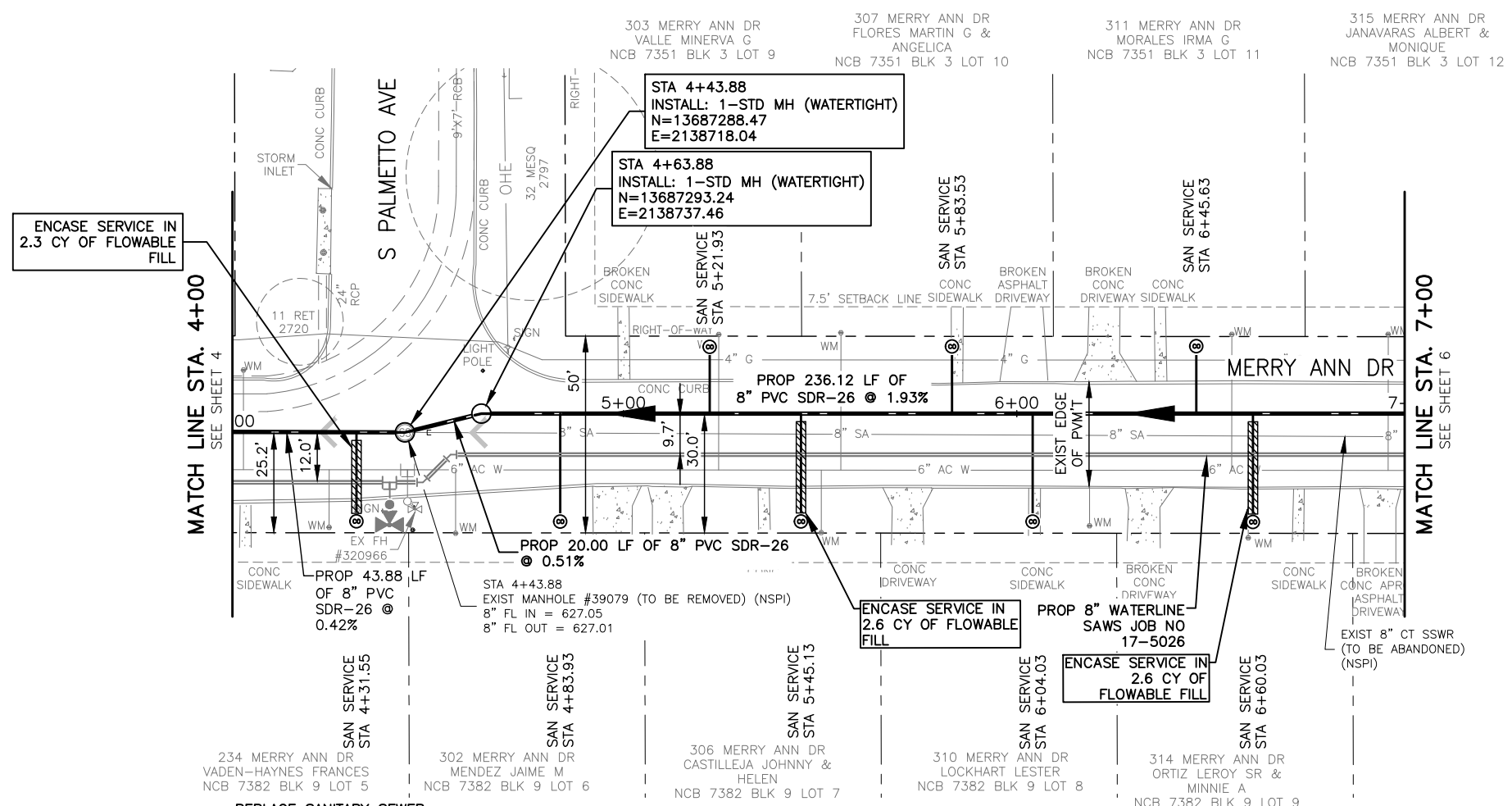
No.	Revision	Drawn	Approved	Date
REVISIONS				

2017 SMP MERRY ANN DR  
FROM FRANCES JEAN  
TO DEAD END  
SANITARY SEWER - LINE A  
STA 1+00 TO STA 4+00

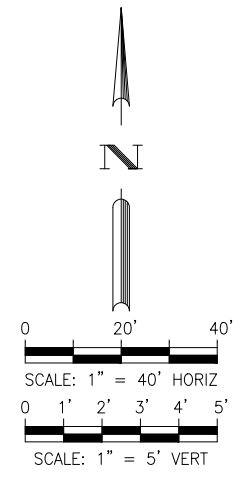
DEVELOPER:  
CONT. BUDGET PROJ.  
SUBMITTED  
APPROVED  
MAP No. 168562 AND 170562  
SECT. No. 4  
DR. CK. JOB No. 17-5521 Of 9

BGE, INC. C:\Projects\SAWS\SAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Sewer\01\_Sheets\MANN SSWR PWP.dwg Sep 15, 2017 5:46pm acaldron

BGE, INC. C:\Projects\2017\17-5521\Drawings\17-5521-SMP-MerryAnn-Dr-Sanitary-Sewer-Plan.dwg Sep 15, 2017 5:46pm acaldran



**CAUTION !!!**  
EXISTING  
UNDERGROUND GAS AND  
OVERHEAD ELECTRIC LINES.



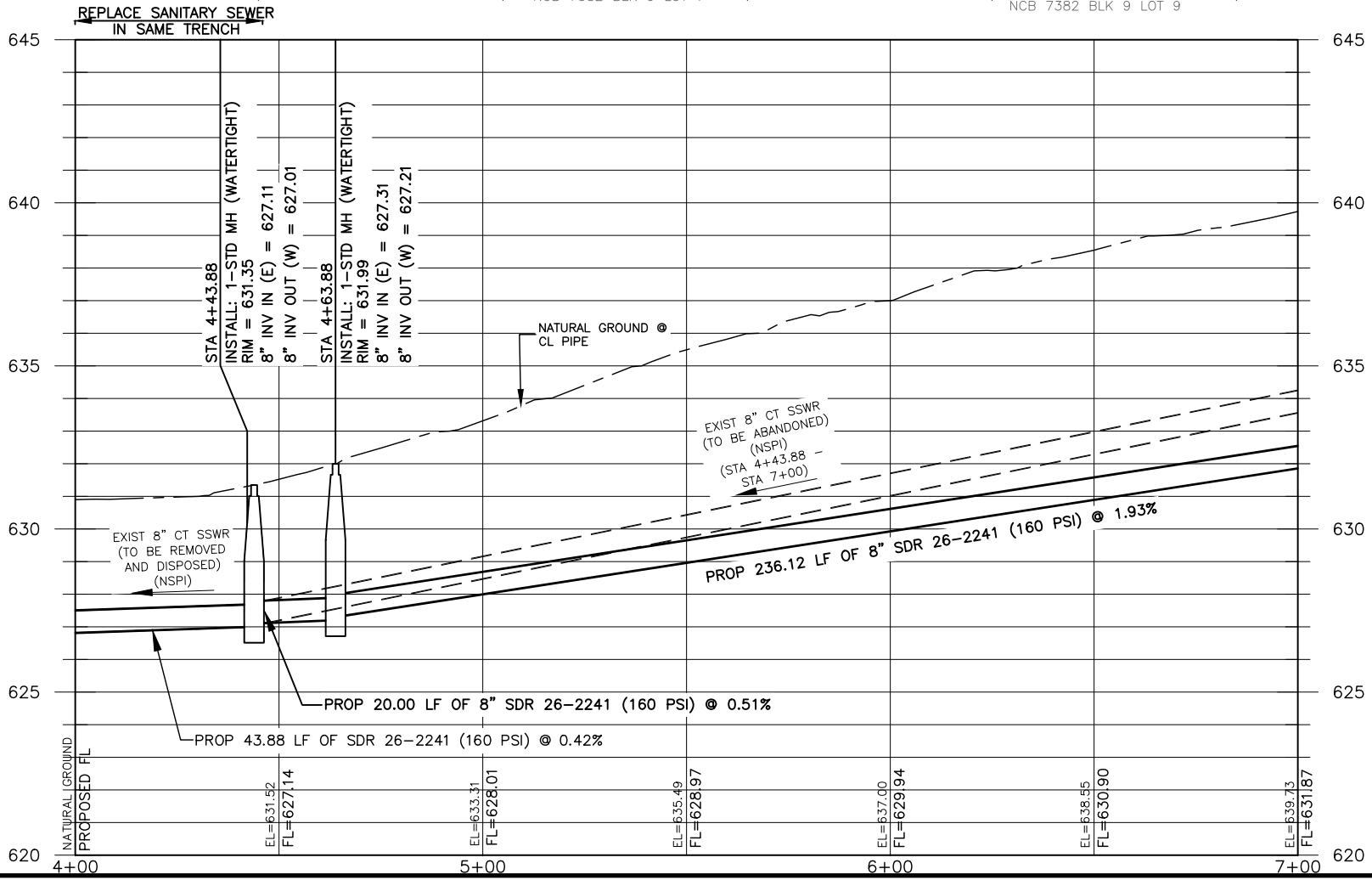
**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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:**

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.

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
205	Hot Mix Asphaltic Pavement, Type B (12" Compacted Depth)	SY	122.2
413	Flowable Fill	CY	7.4
550	Trench Protection	LF	300
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (0'-6" cut)	LF	125
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (6'-14" cut)	LF	175
852	Sanitary Sewer Manhole (0'-6")	EA	2
854	Sanitary Sewer Laterals, (SDR 26, ASTM 2241, 160 psi)	LF	183
854	Two-Way Sanitary Sewer Clean-out	EA	8
866	Pre Sewer Main Television Inspection (6"-12")	LF	300
866	Post Sewer Main Television Inspection (8"-12")	LF	300



**TREE PROTECTION 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 ONE FOOT (1') PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A TEN INCH (10") DIAMETER TREE WOULD HAVE A TEN FOOT (10') 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. ALL OAK WOUNDS SHALL BE PAINTED OVER, WITHIN TWENTY (20) MINUTES TO PREVENT OAK WILT.

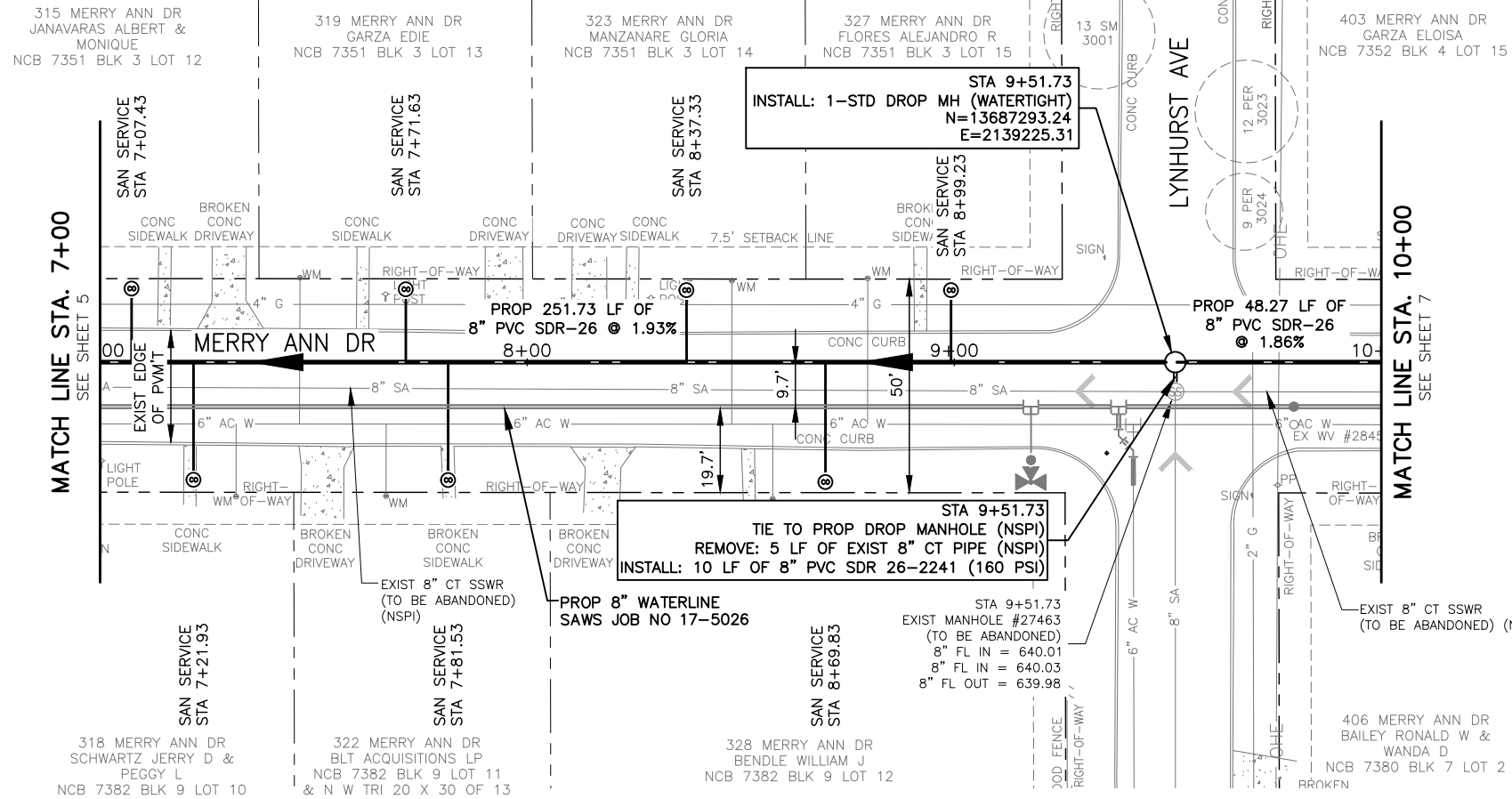
Brown & Gay Engineers, Inc.  
F-1046

**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

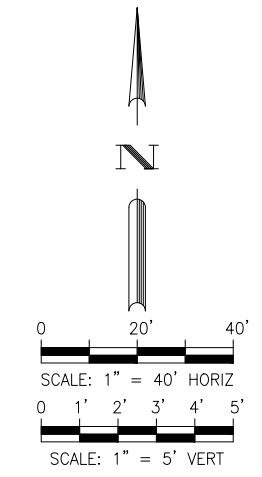
**LEGEND**

- PROP. WATER MAIN
- PROP. SAN SERVICE CLEANOUT
- 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				
2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END				
SANITARY SEWER - LINE A STA 4+00 TO STA 7+00				
DEVELOPER:				
CONT.		BUDGET PROJ.		
SUBMITTED				
APPROVED				
MAP No. 168562 AND 170562				SHEET
SECT. No.				5
DR.	CK.	JOB No. 17-5521		Of 9



**CAUTION !!!**  
EXISTING  
UNDERGROUND GAS AND  
OVERHEAD ELECTRIC LINES.



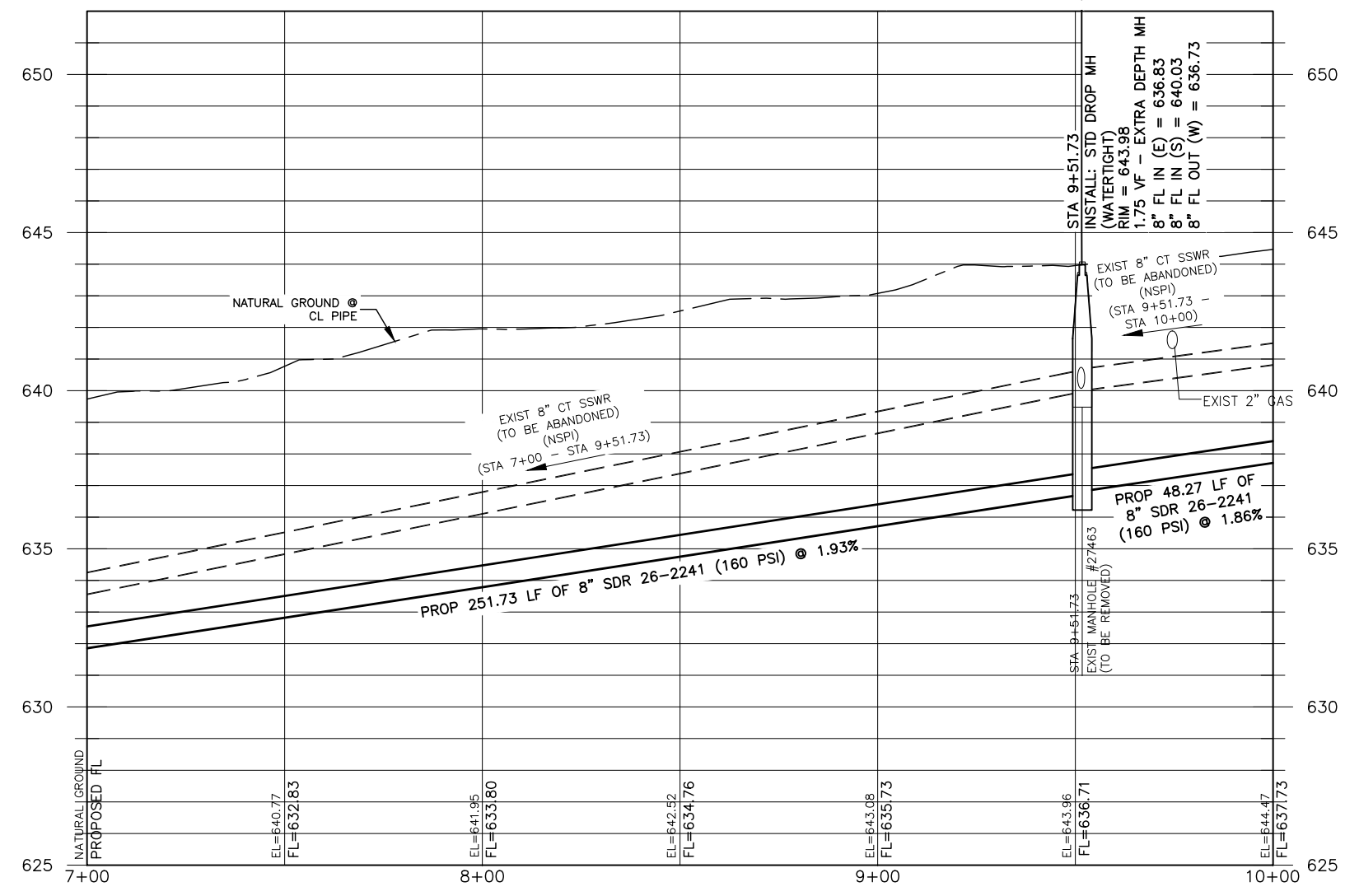
**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

**NOTE:**

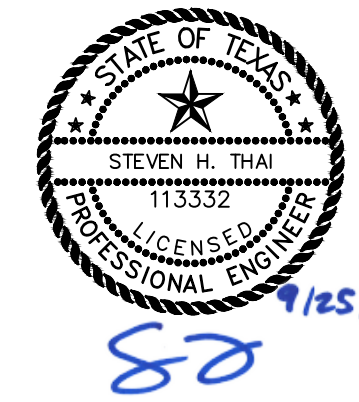
LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES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

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
205	Hot Mix Asphaltic Pavement, Type B (12" Compacted Depth)	SY	126.3
550	Trench Protection	LF	310
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (6'-14" cut)	LF	310
852	Sanitary Sewer Drop Manhole (0'-6")	EA	1
852	Extra Depth Manholes (greater than 6')	VF	1.3
854	Sanitary Sewer Laterals, (SDR 26, ASTM 2241, 160 psi)	LF	150
854	Two-Way Sanitary Sewer Clean-out	EA	7
862	Abandonment of Sanitary Sewer Manholes	EA	1
866	Pre Sewer Main Television Inspection (6"-12")	LF	310
866	Post Sewer Main Television Inspection (8"-12")	LF	310



**TREE PROTECTION 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 ONE FOOT (1') PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A TEN INCH (10") DIAMETER TREE WOULD HAVE A TEN FOOT (10') 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. ALL OAK WOUNDS SHALL BE PAINTED OVER, WITHIN TWENTY (20) MINUTES TO PREVENT OAK WILT.



Brown & Gay Engineers, Inc.  
F-1046

**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

**LEGEND**

- PROP. WATER MAIN
- PROP. SAN SERVICE CLEANOUT
- 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

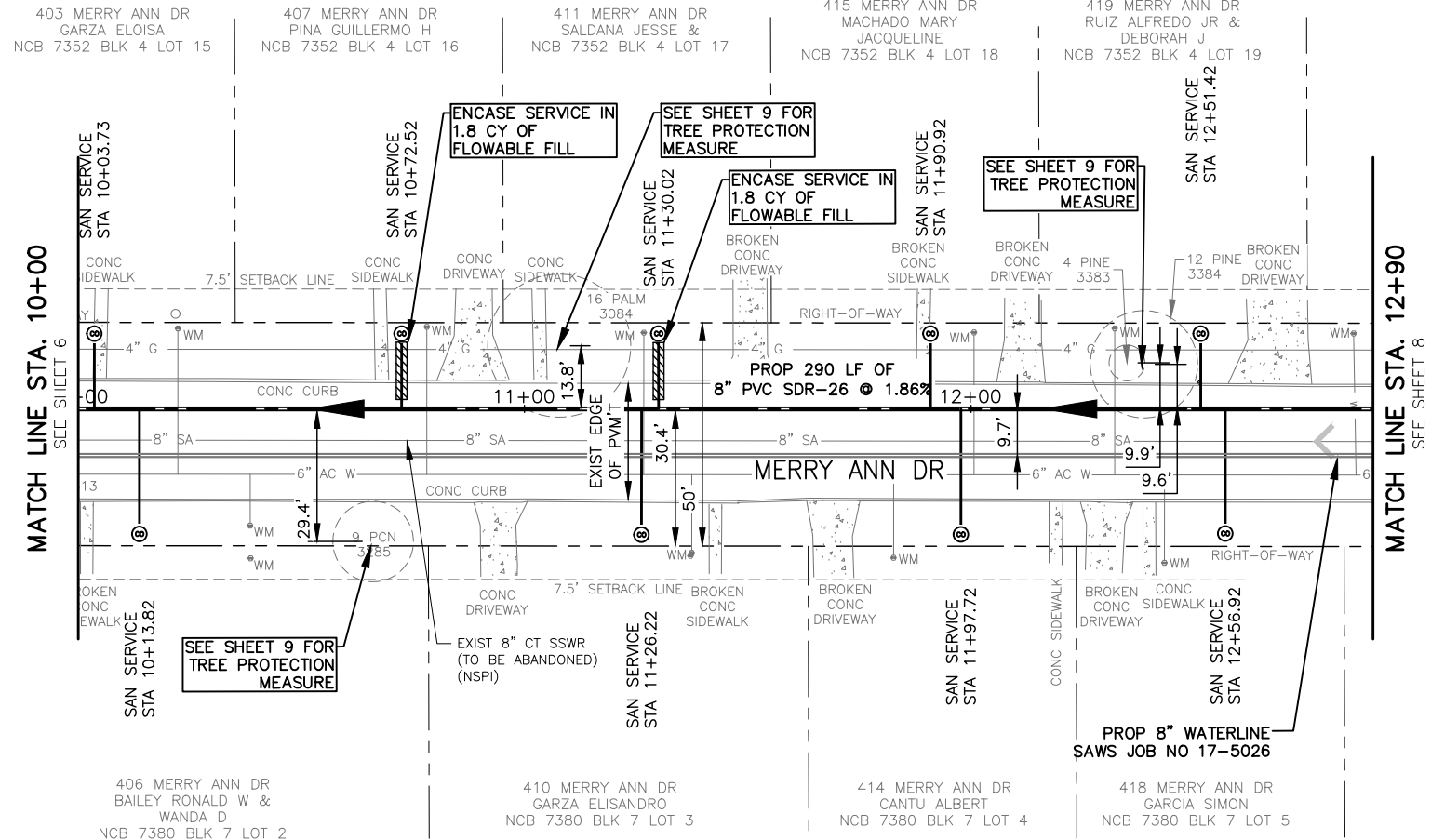
No.	Revision	Drawn	Approved	Date
REVISIONS				

2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END  
SANITARY SEWER - LINE A STA 7+00 TO STA 10+00

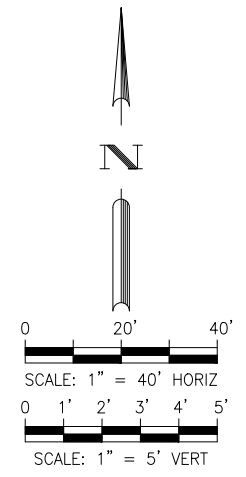
DEVELOPER: \_\_\_\_\_  
CONT. BUDGET PROJ.  
SUBMITTED \_\_\_\_\_  
APPROVED \_\_\_\_\_

MAP No. 168562 AND 170562 SHEET 6  
SECT. No. \_\_\_\_\_ OF 9  
DR. CK. JOB No. 17-5521

BGE, INC. C:\Projects\SAWS\SAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Sewer\01\_Sheets\MANN\_SSWR\_PWP.dwg Sep 15, 2017 5:46pm acaldron



**CAUTION !!!**  
EXISTING  
UNDERGROUND GAS AND  
OVERHEAD ELECTRIC LINES.



**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

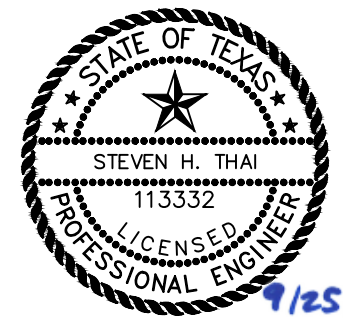
**NOTE:**

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.

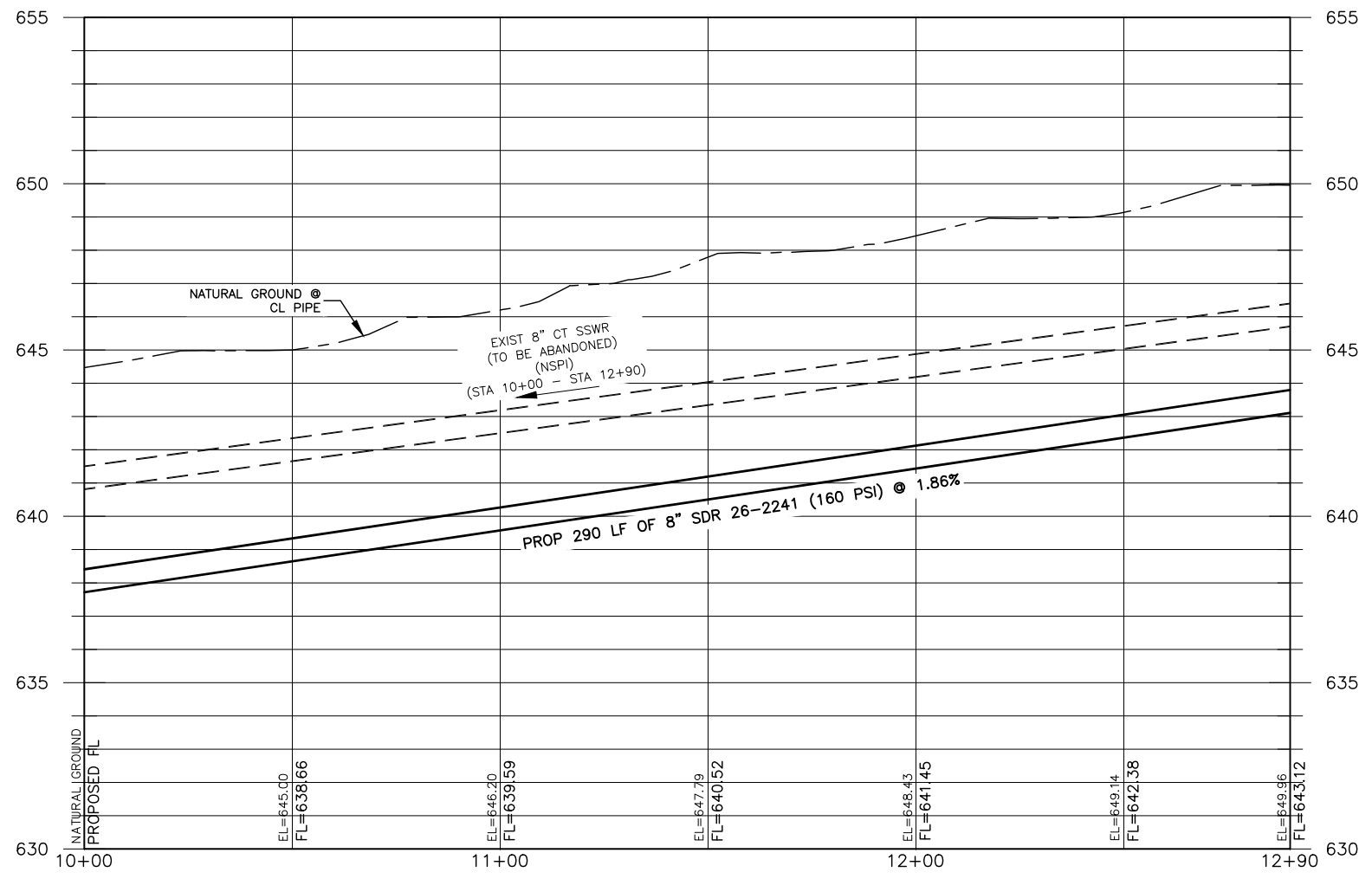
SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
205	Hot Mix Asphaltic Pavement, Type B (12" Compacted Depth)	SY	118.1
413	Flowable Fill	CY	3.6
550	Trench Protection	LF	290
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (6'-14" cut)	LF	290
854	Sanitary Sewer Laterals, (SDR 26, ASTM 2241, 160 psi)	LF	194
854	Two-Way Sanitary Sewer Clean-out	EA	9
866	Pre Sewer Main Television Inspection (6"-12")	LF	290
866	Post Sewer Main Television Inspection (8"-12")	LF	290

**TREE PROTECTION 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 ONE FOOT (1') PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A TEN INCH (10") DIAMETER TREE WOULD HAVE A TEN FOOT (10') 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. ALL OAK WOUNDS SHALL BE PAINTED OVER, WITHIN TWENTY (20) MINUTES TO PREVENT OAK WILT.



Brown & Gay Engineers, Inc.  
F-1046



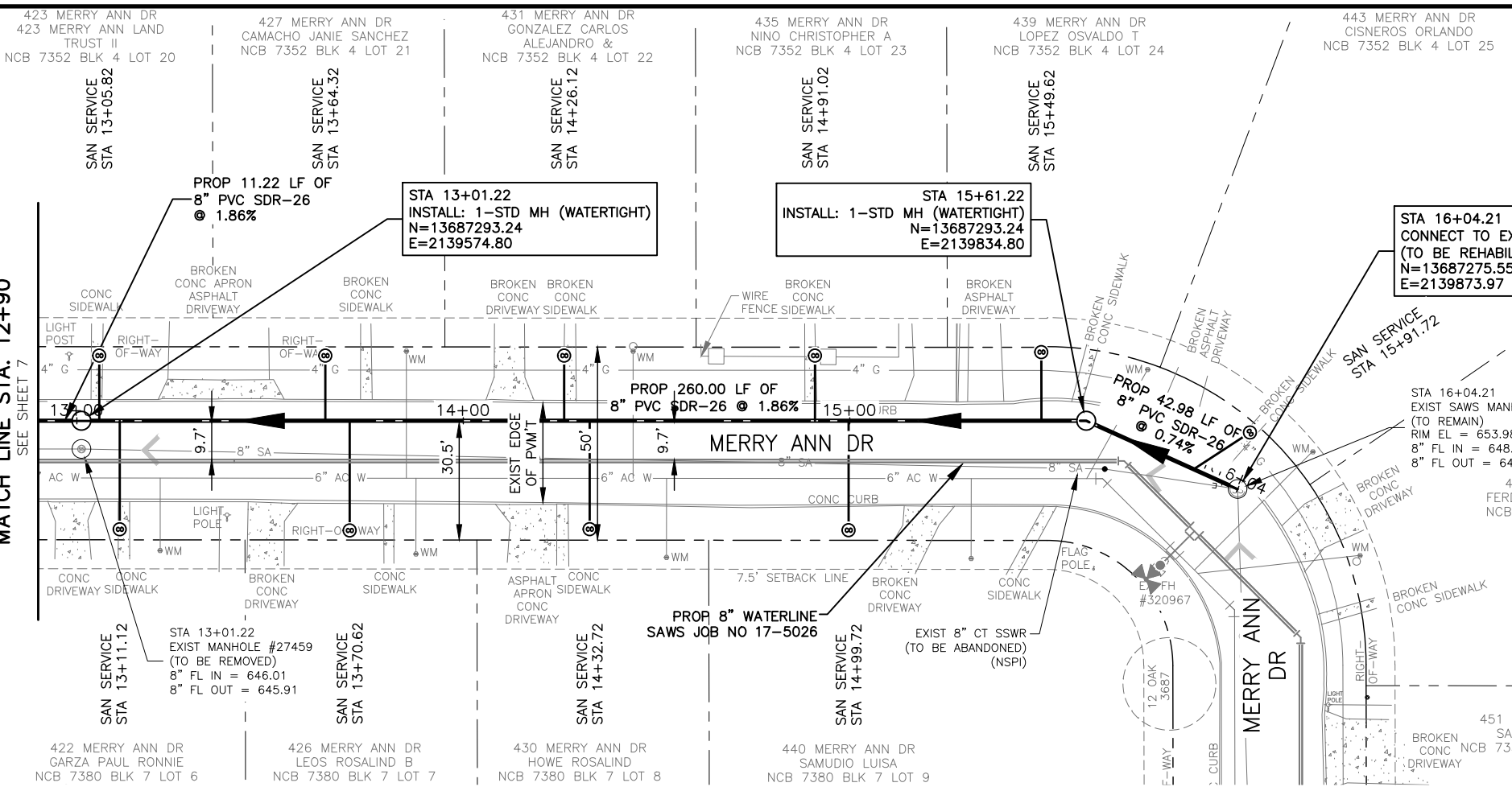
**LEGEND**

- PROP. WATER MAIN: Solid line with 'W'
- PROP. SAN SERVICE CLEANOUT: Solid line with 'SC'
- EXIST. WATER MAIN: Dashed line with 'W'
- GAS MAIN: Dashed line with 'G'
- SANITARY SEWER: Solid line with 'S'
- STORM SEWER: Solid line with 'ST'
- UTILITY POLE LINE: Solid line with 'U'
- ELECTRIC CABLE: Solid line with 'E'
- TELEPHONE CABLE: Solid line with 'T'
- DUAL BRANCH SERV. NEW UNMETERED SERVICE: Solid line with 'DBS'
- SERVICE RECONNECT: Solid line with 'SR'
- SERVICE RELAY: Solid line with 'SR'
- SERVICE RELOCATE: Solid line with 'SR'
- RELOCATE METER: Solid line with 'RM'
- NEW SERVICE: Solid line with 'NS'

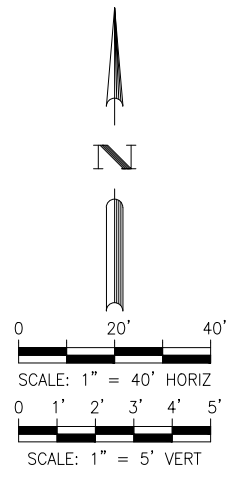
BGE, Inc. 7330 San Pedro, Suite 202 San Antonio, Tx 78216 Tel: 210-581-3600 • www.bgeinc.com TBPE Registration No. F-1046			
No.	Revision	Drawn	Approved
<b>REVISIONS</b>			
2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END SANITARY SEWER - LINE A STA 10+00 TO STA 12+90			
DEVELOPER:			
CONT.		BUDGET PROJ.	
SUBMITTED			
APPROVED			
MAP No. 168562 AND 170562		SHEET 7	
DR.	CK.	JOB No. 17-5521	Of 9

BGE, INC. C:\Projects\SAWS\SAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Sewer\01\_Sheets\MANN\_SSWR\_PNP.dwg Sep 15, 2017 5:46pm acaldaron





**CAUTION !!!**  
EXISTING UNDERGROUND GAS AND OVERHEAD ELECTRIC LINES.



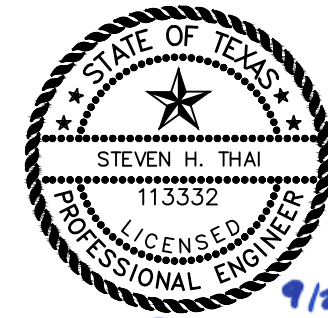
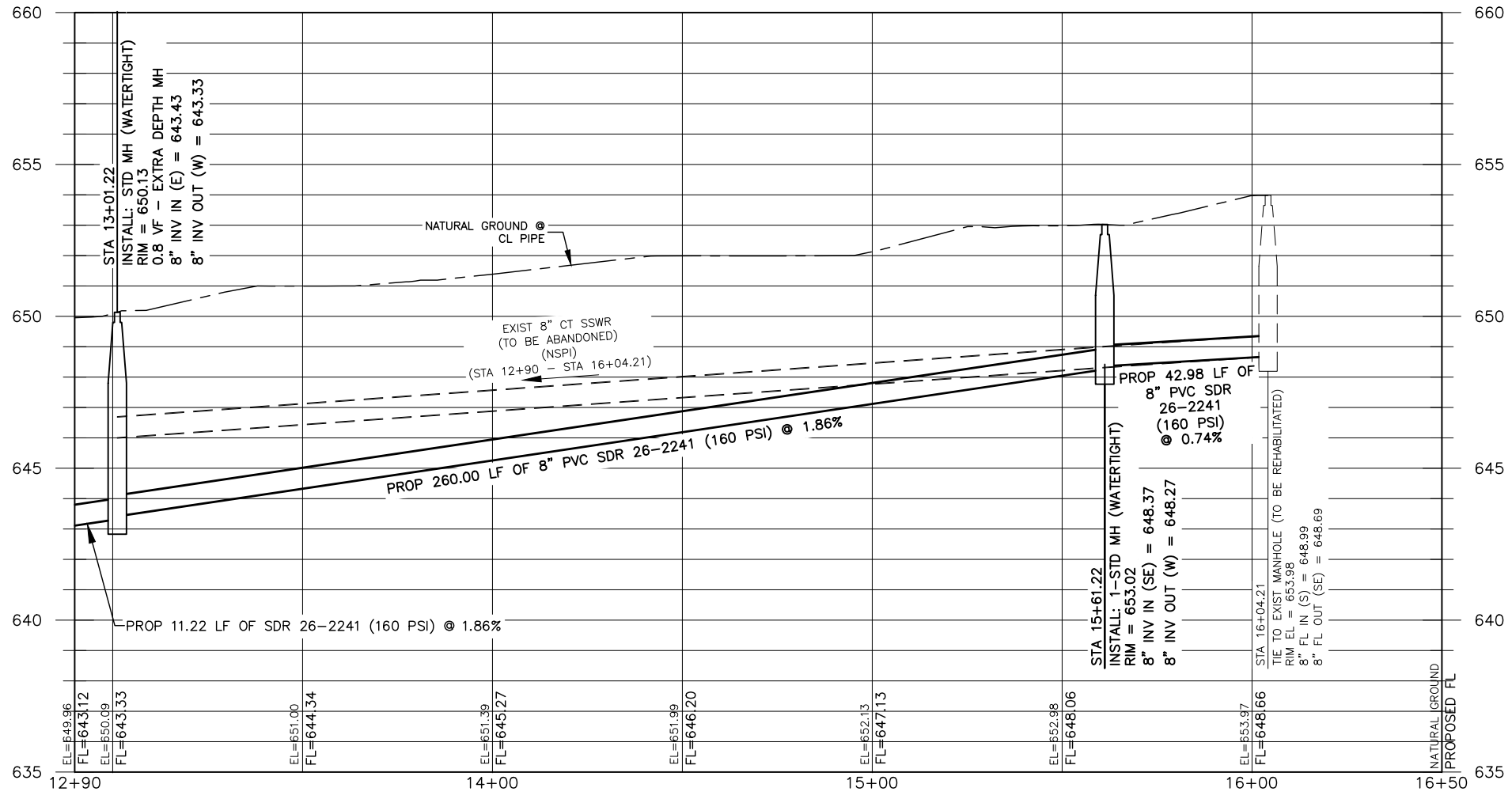
**TRENCH EXCAVATION SAFETY PROTECTION:**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURE/DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE 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.

**NOTE:**

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.

SPEC NO.	UNIT DESCRIPTION	UNIT	QUANTITY
205	Hot Mix Asphaltic Pavement, Type B (12" Compacted Depth)	SY	127.9
550	Trench Protection	LF	314
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (0'-6' cut)	LF	177
848	8" PVC Gravity Sanitary Sewer Pipe (SDR 26-2241, 160 psi) (6'-14' cut)	LF	137
852	Sanitary Sewer Manhole (0'-6")	EA	2
852	Extra Depth Manholes (greater than 6')	VF	0.8
854	Sanitary Sewer Laterals, (SDR 26, ASTM 2241, 160 psi)	LF	209
854	Two-Way Sanitary Sewer Clean-out	EA	10
866	Pre Sewer Main Television Inspection (6"-12")	LF	314
866	Post Sewer Main Television Inspection (8"-12")	LF	314
910	Manhole Rehabilitation	VF	5.3



**TREE PROTECTION 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 ONE FOOT (1') PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A TEN INCH (10") DIAMETER TREE WOULD HAVE A TEN FOOT (10') 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. ALL OAK WOUNDS SHALL BE PAINTED OVER, WITHIN TWENTY (20) MINUTES TO PREVENT OAK WILT.

Brown & Gay Engineers, Inc.  
F-1046

**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

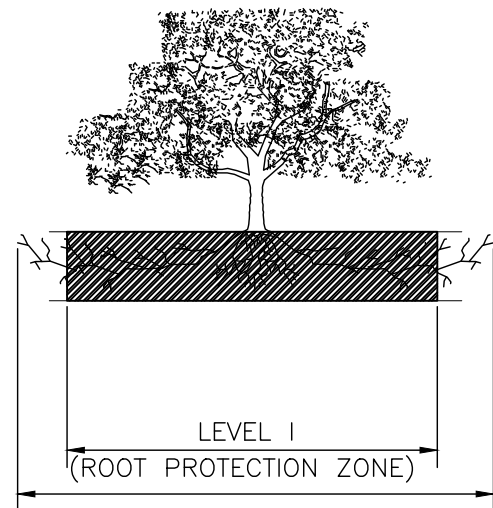
**LEGEND**

- PROP. WATER MAIN: Solid line with 'W'
- PROP. SAN SERVICE CLEANOUT: Dashed line with 'S'
- EXIST. WATER MAIN: Solid line with 'W'
- GAS MAIN: Solid line with 'G'
- SANITARY SEWER: Solid line with 'S'
- STORM SEWER: Solid line with 'ST'
- UTILITY POLE LINE: Solid line with 'U'
- ELECTRIC CABLE: Solid line with 'E'
- TELEPHONE CABLE: Solid line with 'T'
- DUAL BRANCH SERV. NEW UNMETERED SERVICE: Solid line with 'D'
- SERVICE RECONNECT: Solid line with 'R'
- SERVICE RELAY: Solid line with 'L'
- SERVICE RELOCATE: Solid line with 'R'
- RELOCATE METER: Solid line with 'M'
- NEW SERVICE: Solid line with 'N'

No.	Revision	Drawn	Approved	Date
REVISIONS				
2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END				
SANITARY SEWER - LINE A STA 12+90 TO STA 16+04.21				
DEVELOPER:				
CONT.		BUDGET PROJ.		
SUBMITTED				
APPROVED				
MAP No. 168562 AND 170562		SHEET 8		
SECT. No.	DR.	CK.	JOB No. 17-5521	Of 9

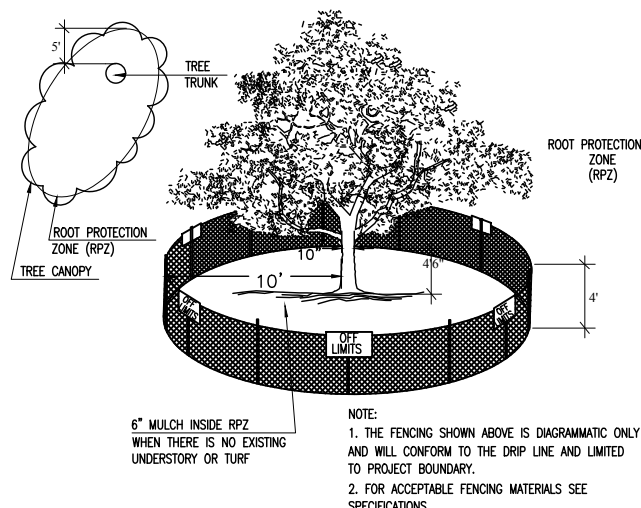
BGE, INC. C:\Projects\SAWS\SAWS - Merry Ann\03\_CADD\01\_Sheets\Merry Ann\_Sewer\01\_Sheets\MANN\_SSWR\_PWP.dwg Sep 15, 2017 5:46pm acalldron

BGE, INC. - Merry Ann/03\_CADD/01\_Sheets/Merry Ann\_Sewer/01\_Sheets/18\_TREE PRESERVATION PLAN.dwg Sep 15, 2017 5:46pm acalleron



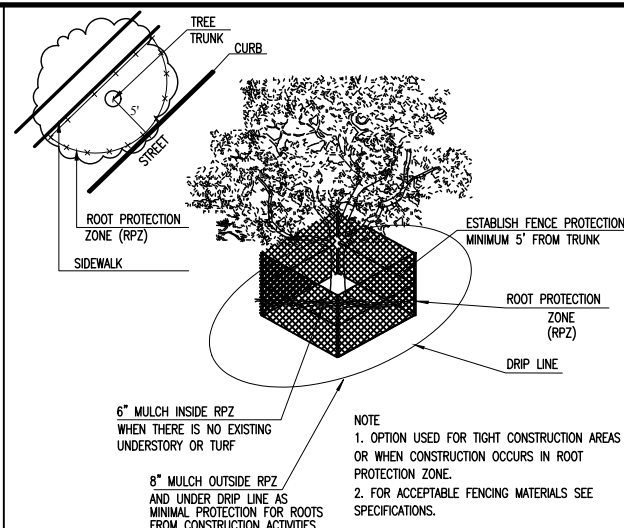
**1.1.1 ELEVATION**  
N. T. S.

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 DIAGRAMMATIC 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 PROTECTED SIZE TREES 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 1 PROTECTION AS PER ITEM No. 801. (TREE AND LANDSCAPE PROTECTION) AND AS DETAILED IN 1.1.2.
  - ALL TREES SHALL REMAIN UNLESS NOTED ON THE CITY APPROVED PLANS.
  - NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND PROTECTION MEASURES HAVE NOT BEEN COMPLETED AND APPROVED BY THE CITY ARBORIST OFFICE.
  - TREE PROTECTION FENCING SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.
  - THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES (3") IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR IF ROOTS LARGER THAN THREE INCHES (3") WITHIN THE FIVE FOOT (5') ROOT PROTECTION ZONE NEED TO BE PRUNED.
  - 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 ONE FOOT (1') PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A TEN INCH (10") DIAMETER TREE WOULD HAVE A TEN FOOT (10') 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. ALL OAK WOUNDS SHALL BE PAINTED OVER, WITHIN TWENTY (20) MINUTES TO PREVENT OAK WILT.
  - NO DISTURBANCE SHALL OCCUR CLOSER TO THE TRUNK THAN HALF THE ROOT PROTECTION ZONE AREA.
  - TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND.
  - TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED.
  - 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 OFFICE PRIOR TO ITS REMOVAL.

**1.3 GENERAL NOTES**

**TREE PROTECTION TABLE**

TREE SHEET #	TREE/CALIPER	STATION OR NUMBER	LOCATION	ITEM 801	PROTECTION MEASURE	
					ITEM 802 MAINTENANCE/TREATMENTS/PROTECTION	REMOVAL SEE GENERAL NOTE No. 2
4	HACKBERRY/24"	0+44	OUTSIDE ROW			
4	OAK/31"	1+31	WITHIN ROW			
4	OAK/12"	1+60	OUTSIDE ROW			
4	SYCAMORE/7"	2+79	WITHIN ROW			
5	RETAMA/11"	4+17	WITHIN ROW			
5	MESQUITE/32"	4+76	WITHIN ROW			
6	SYCAMORE/13"	9+37	WITHIN ROW			
6	PERENNIAL/9"	9+71	WITHIN ROW			
6	PERENNIAL/12"	9+72	WITHIN ROW			
7	PECAN/9"	10+66	WITHIN ROW	PROTECTED	II A	
7	PALM/16"	11+08	WITHIN ROW	PROTECTED	II A	
7	PINE/4"	12+37	WITHIN ROW	PROTECTED	II A	
7	PINE/12"	12+40	WITHIN ROW	PROTECTED	II A	
8	OAK/12"	13+59	OUTSIDE ROW			

**1.3 TREE PROTECTION TABLE**

**TREE INVENTORY SUMMARY**  
(8" DIAMETER AND LARGER)

TOTAL DIAMETER INCHES, R.O.W	193
TOTAL DIAMETER INCHES REMOVED	0
TOTAL DIAMETER INCHES PRESERVED	193
TOTAL PERCENTAGE INCHES PRESERVED	100%
TOTAL INCHES TO BE MITIGATED	0

**1.3 TREE INVENTORY SUMMARY**

**BGE** BGE, Inc.  
7330 San Pedro, Suite 202 San Antonio, Tx 78216  
Tel: 210-581-3600 • www.bgeinc.com  
TBPE Registration No. F-1046

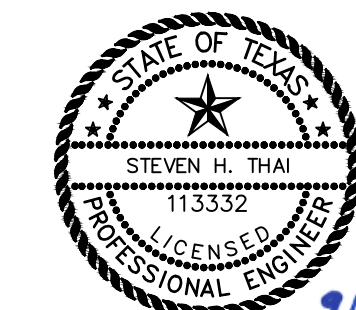
No.	Revision	Drawn	Approved	Date
REVISIONS				

2017 SMP MERRY ANN DR FROM FRANCES JEAN TO DEAD END  
**TREE PRESERVATION PLAN**

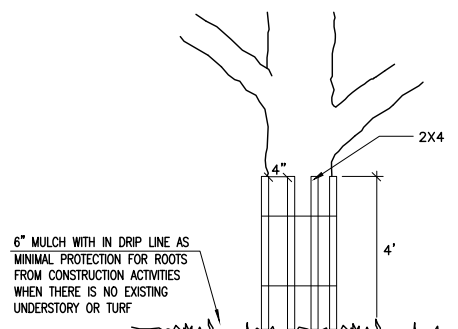
DEVELOPER: \_\_\_\_\_  
CONT. \_\_\_\_\_ BUDGET PROJ. \_\_\_\_\_

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

MAP No. 168562 AND 170562	SHEET 9
SECT. No. _____	Of 9
DR. _____	JOB No. 17-5521



Brown & Gay Engineers, Inc.  
F-1046

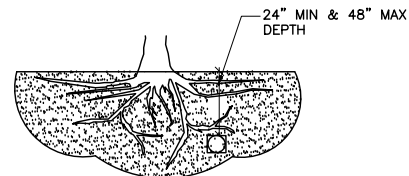


**1.1.4 LEVEL II B FENCE PROTECTION**  
N. T. S.

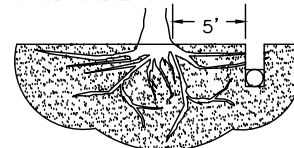
NOTE  
WRAP TREE TRUNK WITH 2"x4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREES IN WORK AREAS.

TREES THAT ARE MARKED TO BE PRESERVED ON A SITE PLAN AND FOR WHICH UTILITIES MUST PASS THROUGH THEIR ROOT PROTECTION ZONES MAY REQUIRE BORING AS OPPOSED TO OPEN TRENCHES. THE DECISION TO BORE WILL BE DETERMINED ON A CASE BY CASE BASIS BY THE CITY.

BORES SHALL BE DUG THROUGH THE ROOT PROTECTION ZONE IN ORDER TO MINIMIZE ROOT DAMAGE.

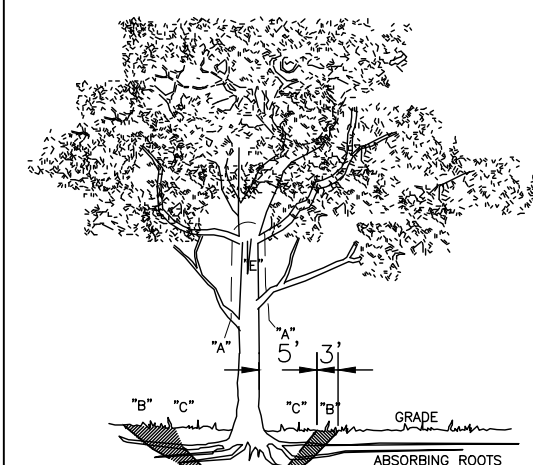


BORE TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5" MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.



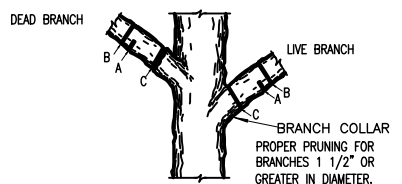
OPEN TRENCHING MAY BE USED IF EXPOSED TREE ROOTS DO NOT EXCEED 3" OR ROOTS CAN BE BENT BACK.

**1.2 BORING THRU TREE ROOT ZONE**  
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.

**1.3 TREE REMOVAL DIAGRAM**  
N. T. S.



- FIRST CUT - TO PREVENT THE BARK FROM BEING PEELED WHEN THE BRANCH FALLS.
- SECOND CUT - TO REDUCE THE WEIGHT OF BRANCH.
- FINAL CUT - ALLOW FOR HEALING COLLAR BUT NO STUBS

FOR OAKS ONLY: PAINT ALL WOUNDS OR CUTS WITH PRUNING PAINT WITHIN 20 MIN TO PREVENT THE SPREAD OF OAK WILT.

**1.4 BRANCH PRUNING DETAIL**  
N. T. S.

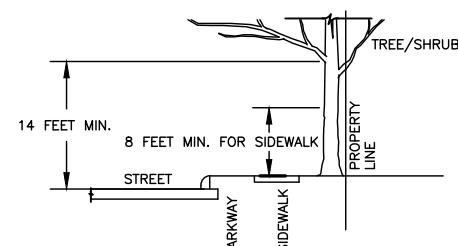
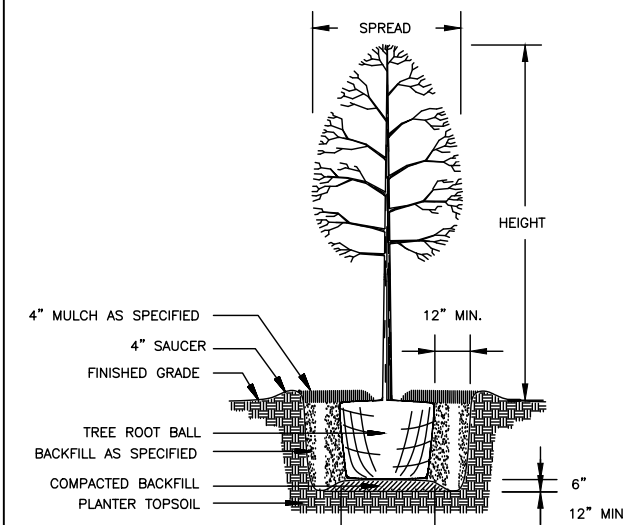


FIGURE No.2:  
A MINIMUM BRANCH CLEARANCE OF 14 FEET ABOVE STREET ELEVATION MUST BE MAINTAINED FROM THE PROPERTY LINE TO THE CURB LINE AS PRESCRIBED BY PROJECT MANAGER.

**1.5 BRANCH CLEARANCE DETAIL**  
N. T. S.



**1.6 NEW TREE PLANTING DETAIL**  
N. T. S.