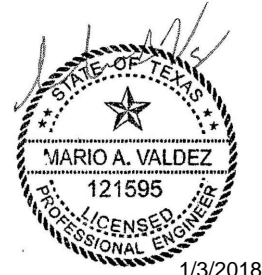
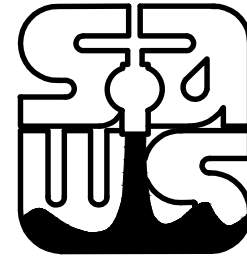


SAN ANTONIO WATER SYSTEM



1/3/2018

2018 SMP JOB NO: 17-5115

RANCHO BLANCO FROM CAPITOL AVE. TO GRANT WATER PLANS

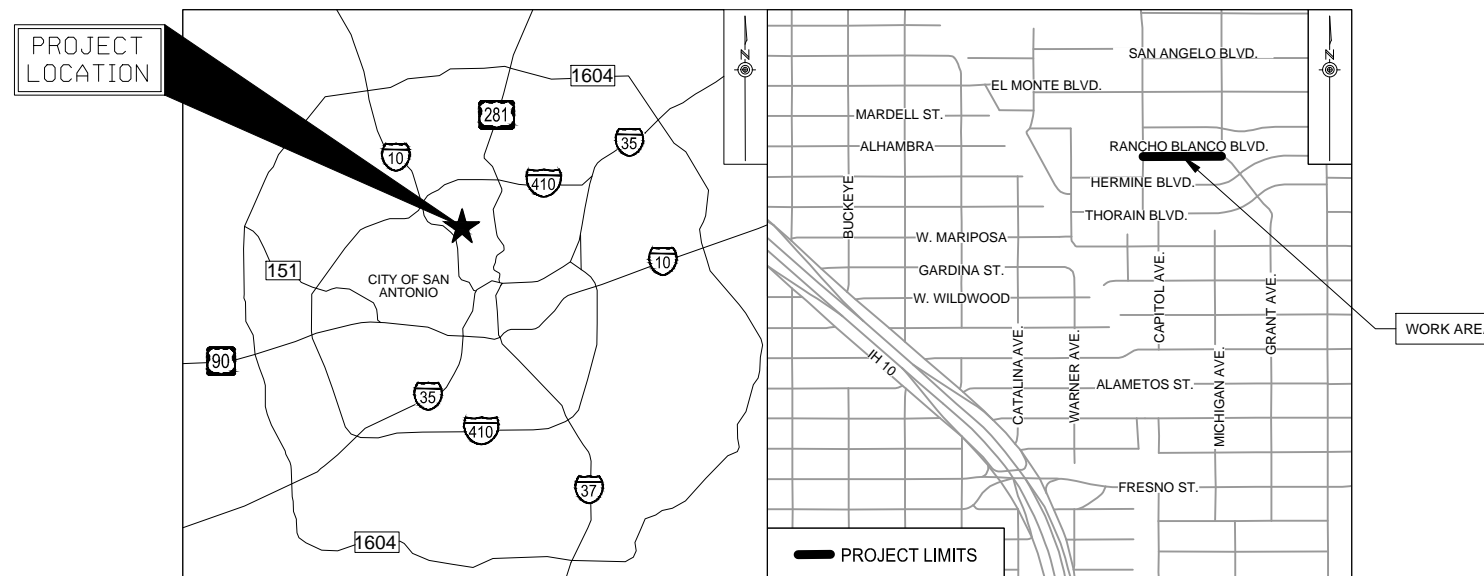
SUBMITTAL PREPARED BY:



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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	TREE PROTECTION DETAILS

JANUARY 2018

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 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 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 CONSTWKRQ@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 CONSTWKRQ@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 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 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 ITS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.

SAWS PRODUCTION CONTROL CENTER 210-233-2016
- ASBESTOS CEMENT (AC) PIPE, ALSO KNOW 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, "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)

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.

GENERAL NOTES

- CONTRACTOR SHALL RESTRAIN ALL PROPOSED PIPES, VALVES AND FITTINGS AT NO ADDITIONAL COST. (RL=RESTRAINED 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 PROTECTION IS NSPI. PRIOR TO THE START OF WORK, CALL 207-1111 TO SCHEDULE A PRE-CONSTRUCTION FENCING INSPECTION. TREE REMOVAL IS NOT PERMITTED
- 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 PROJECT, 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 THE 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.
- CONTRACTOR SHALL WORK WITHIN THE RANCHO BLANCO BLVD. AND CAPITOL AVE. INTERSECTION SOLELY BETWEEN THE HOURS OF 9 AM TO 2 PM AND ANYTIME AFTER 4 PM MONDAY THROUGH FRIDAY. ANY WORK TO BE PERFORMED OUTSIDE THE HOURS STATED ABOVE SHALL BE COORDINATED AND APPROVED BY SAWS AND/OR NEAL ELEMENTARY SCHOOL.

NOTE FOR THE CITY OF SAN ANTONIO FLATWORK:

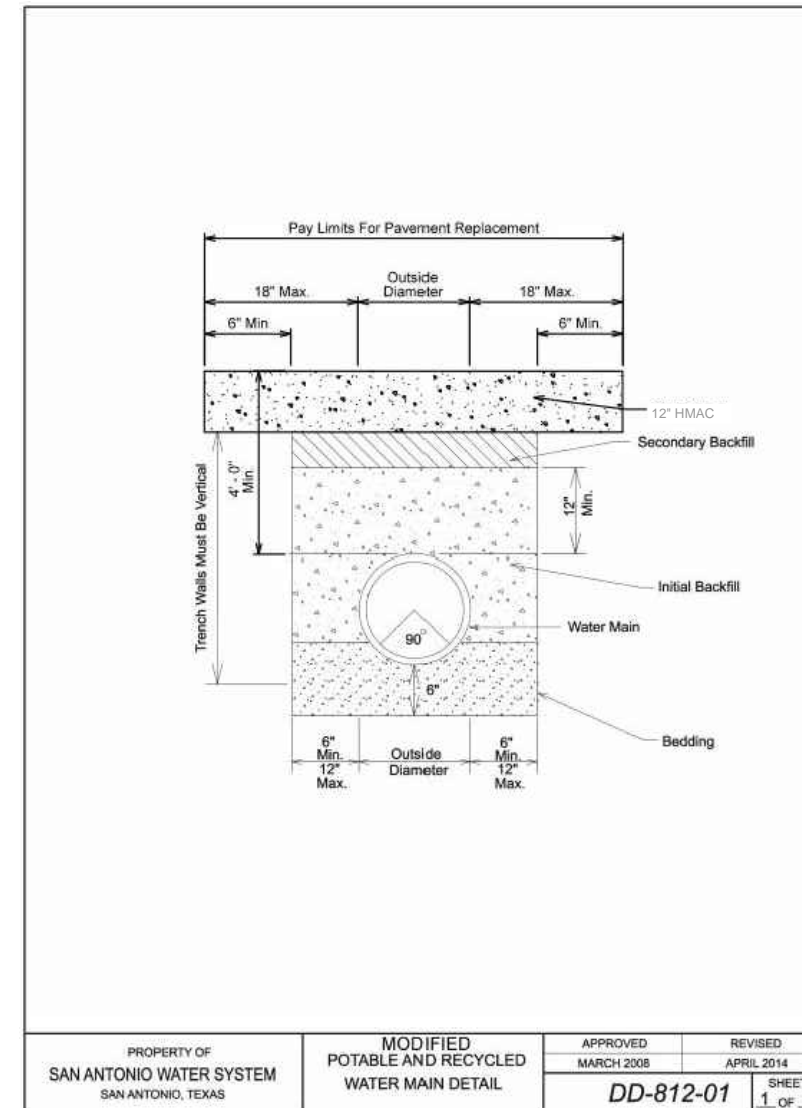
ALL LIMITS FOR CURB, SIDEWALK, AND TREE PREP BEYOND WHAT IS CONSIDERED INCIDENTAL TO NORMAL UTILITY CONSTRUCTION WILL BE ADDRESSED BY THE SAWS INSPECTOR. SAWS INSPECTOR WILL ALSO DETERMINE IF ADDITIONAL COMPENSATION IS WARRANTED IF LIMITS EXCEED INCIDENTALS.

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.

TOTAL ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
103.1	REMOVE CONCRETE CURB	LF	12
103.3	REMOVE SIDEWALKS & DRIVEWAYS	SY	2.5
203	TACK COAT	GAL	24.6
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	26
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (12" COMP. DEPTH)	SY	329
205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	246
208.1	SALVAGING, HAULING, AND STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (2" THICK)	SY	246
413	FLOWABLE FILL	CY	16.5
500	CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER	LF	12
502	CONCRETE SIDEWALKS & WHEELCHAIR RAMPS	SY	2.5
530.1	BARRICADES, SIGNS, AND TRAFFIC HANDLING (RANCHO BLANCO)	EA	*0.5
535	24-INCH WIDE WHITE LINE	LF	55
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	849
818	6" PVC WATERLINE (RESTRAINED)	LF	8
818	8" PVC WATERLINE (RESTRAINED)	LF	841
824	RELAY 3/4" SHORT SERVICE	EA	11
824	RELAY 3/4" LONG SERVICE	EA	11
828	8" GATE VALVE	EA	3
833	NEW METER BOX	EA	22
833	EXISTING AND NEW METER BOX RELOCATION	EA	9
834	FIRE HYDRANT	EA	1
836	PIPE FITTINGS, ALL SIZES AND TYPE	TN	1.4
840	6" WATER TIE-IN	EA	1
840	8" WATER TIE-IN	EA	2
841	HYDROSTATIC TESTING	EA	1
844	2" BLOW-OFF TEMPORARY	EA	3
3000	REMOVAL, TRANSPORT, DISPOSAL OF AC PIPE	LF	26

*ITEM SPLIT FOR WORKSITE BETWEEN WATER AND SEWER PROJECTS.



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No.	Revision	Drawn	Approved	Date

REVISIONS

SAWS

RANCHO BLANCO FROM CAPITOL AVE TO GRANT
 GENERAL NOTES AND QUANTITIES

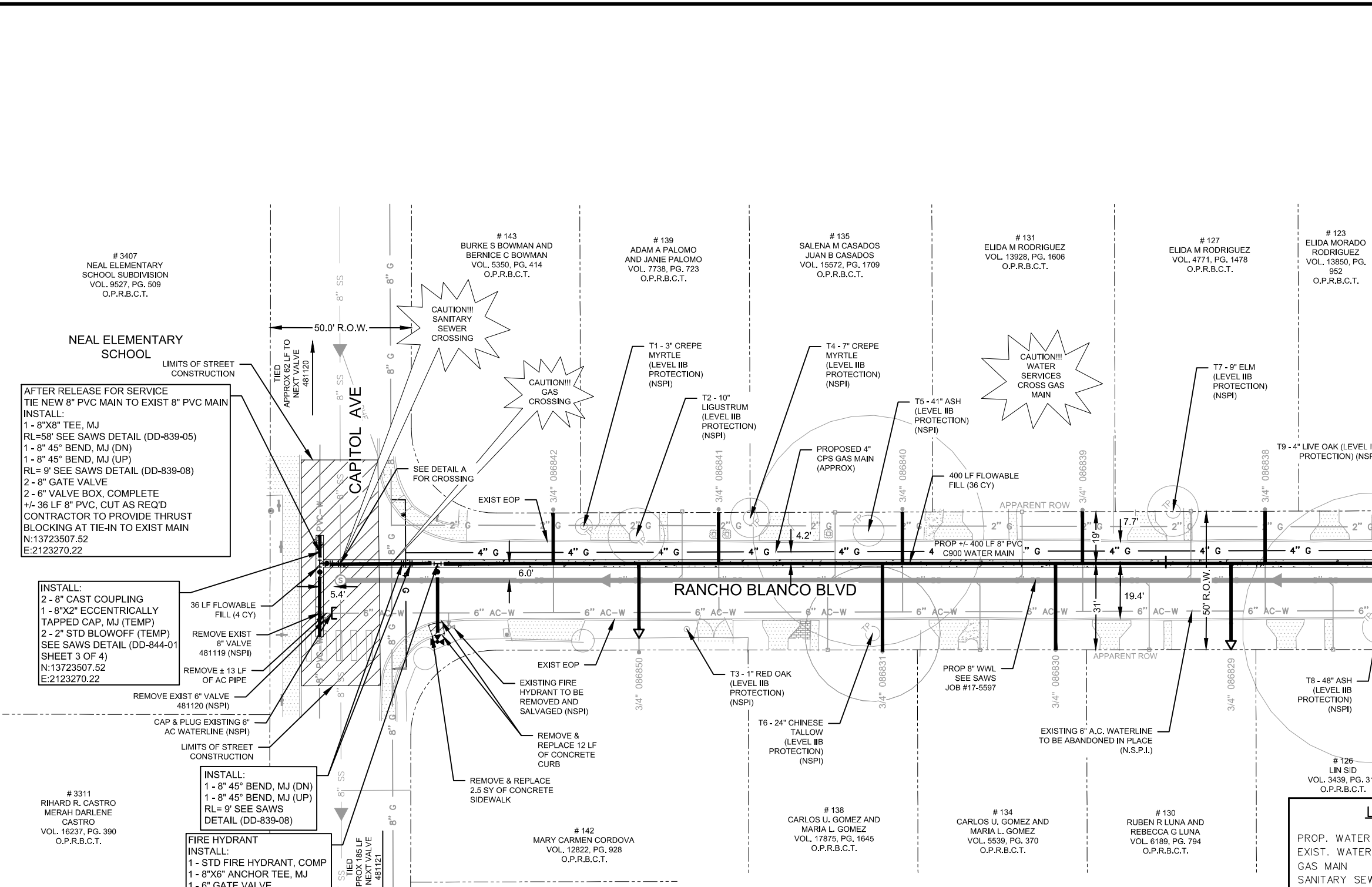
DEVELOPER: _____
 CONT. _____ BUDGET PROJ.

SUBMITTED _____
 APPROVED _____

MAP No.	SECT. No.	DR.	CK.	JOB No. 17-5115	SHEET 2 OF 6

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	

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
103.1	REMOVE CONCRETE CURB	LF	12
103.3	REMOVE SIDEWALKS & DRIVEWAYS	SY	2.5
203	TACK COAT	GAL	24.6
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	26
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (12" COMP. DEPTH)	SY	158
205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	246
208.1	SALVAGING, HAULING, AND STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (2" THICK)	SY	246
413	FLOWABLE FILL	CY	40
500	CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER	LF	12
502	CONCRETE SIDEWALKS & WHEELCHAIR RAMPS	SY	2.5
535	24-INCH WIDE WHITE LINE	LF	55
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	436
818	8" PVC WATERLINE (RESTRAINED)	LF	436
824	RELAY 3/4" SHORT SERVICE	EA	6
824	RELAY 3/4" LONG SERVICE	EA	5
828	8" GATE VALVE	EA	2
833	NEW METER BOX	EA	11
833	EXISTING AND NEW METER BOX RELOCATION	EA	3
834	FIRE HYDRANT	EA	1
836	PIPE FITTINGS, ALL SIZES AND TYPE	TN	0.7
840	8" WATER TIE-IN	EA	2
841	HYDROSTATIC TESTING	EA	1
844	2" BLOW-OFF TEMPORARY	EA	2
3000	REMOVAL, TRANSPORT, DISPOSAL OF AC PIPE	LF	13



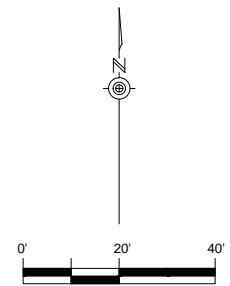
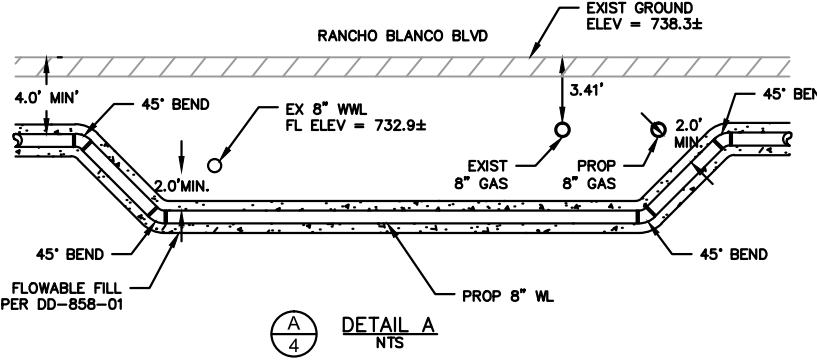
AFTER RELEASE FOR SERVICE
TIE NEW 8" PVC MAIN TO EXIST 8" PVC MAIN
INSTALL:
1 - 8"x8" TEE, MJ
RL=58" SEE SAWS DETAIL (DD-839-05)
1 - 8" 45° BEND, MJ (DN)
1 - 8" 45° BEND, MJ (UP)
RL=9" SEE SAWS DETAIL (DD-839-08)
2 - 8" GATE VALVE
2 - 6" VALVE BOX, COMPLETE
+/- 36 LF 8" PVC, CUT AS REQ'D
CONTRACTOR TO PROVIDE THRUST
BLOCKING AT TIE-IN TO EXIST MAIN
N:13723507.52
E:2123270.22

INSTALL:
2 - 8" CAST COUPLING
1 - 8"x2" ECCENTRICALLY
TAPPED CAP, MJ (TEMP)
2 - 2" STD BLOWOFF (TEMP)
SEE SAWS DETAIL (DD-844-01
SHEET 3 OF 4)
N:13723507.52
E:2123270.22

INSTALL:
1 - 8" 45° BEND, MJ (DN)
1 - 8" 45° BEND, MJ (UP)
RL=9" SEE SAWS
DETAIL (DD-839-08)

FIRE HYDRANT
INSTALL:
1 - STD FIRE HYDRANT, COMP
1 - 8"x6" ANCHOR TEE, MJ
1 - 6" GATE VALVE
1 - 6" VALVE BOX, COMPLETE
SEE SAWS DETAIL (DD-834-01)
N:13723503.40
E:2123312.00

- NOTES**
- 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.
 - ASBESTOS CEMENT PIPE CONNECTIONS & REMOVAL NOTES:
ASBESTOS CEMENT (A.C.) 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 SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 30000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".
 - GAS LINE WITHIN PROJECT LIMITS NOT SURVEYED. CONTRACTOR TO VERIFY LOCATION PRIOR TO CONSTRUCTION. SEE SHEET 3 FOR SUE INFORMATION.
 - 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.
 - CONTRACTOR SHALL WORK WITHIN THE RANCHO BLANCO BLVD. AND CAPITOL AVE. INTERSECTION SOLELY BETWEEN THE HOURS OF 9 AM TO 2 PM AND ANYTIME AFTER 4 PM MONDAY THROUGH FRIDAY. ANY WORK TO BE PERFORMED OUTSIDE THE HOURS STATED ABOVE SHALL BE COORDINATED AND APPROVED BY SAWS AND/OR NEAL ELEMENTARY SCHOOL.



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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

W&A

RANCHO BLANCO FROM CAPITOL AVE TO GRANT

WATER PLAN 01

DEVELOPER: _____

CONT. _____ **BUDGET PROJ.** _____

SUBMITTED _____

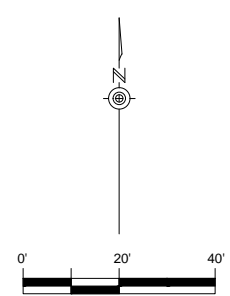
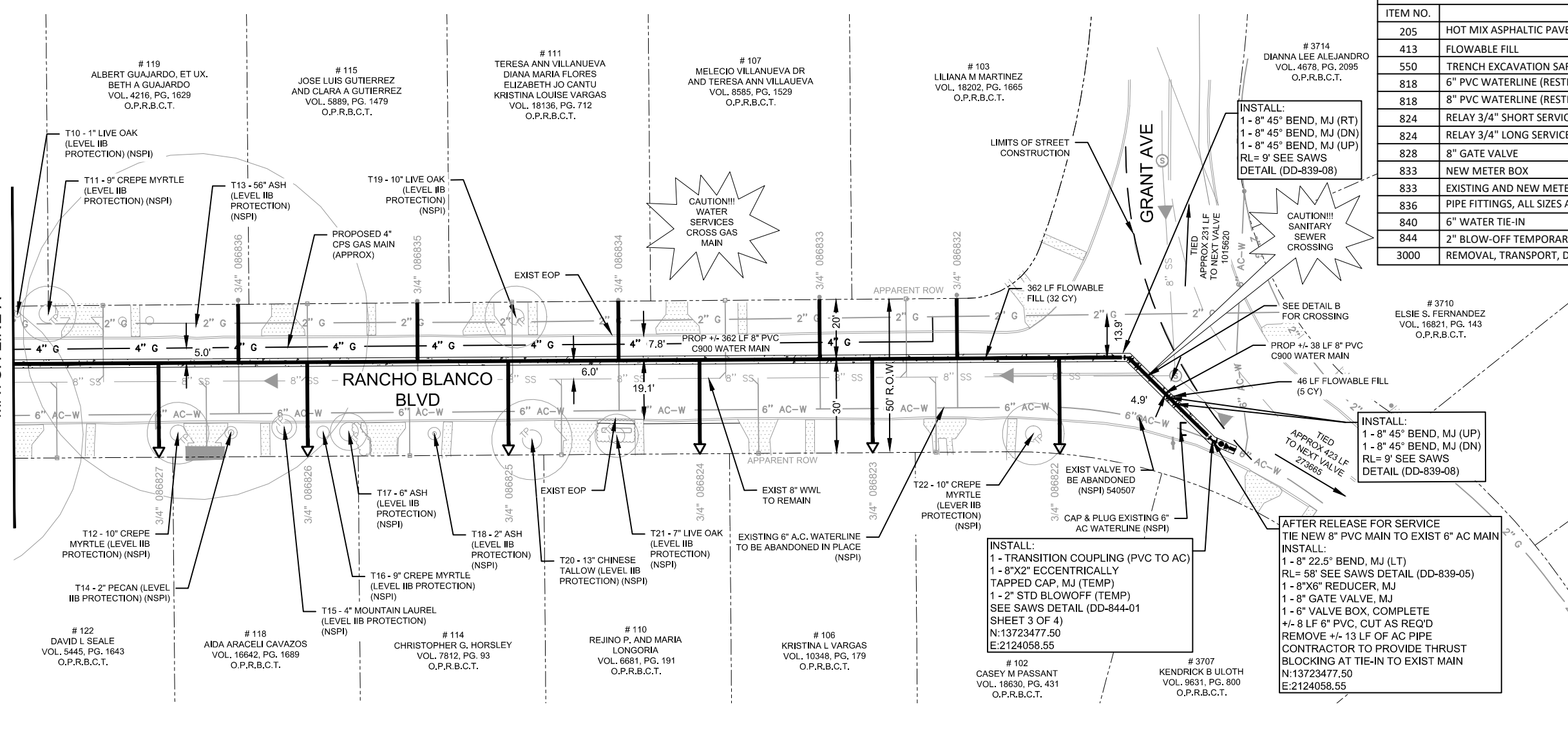
APPROVED _____

MAP No. _____ **SHEET** 4

SECT. No. _____ **DR.** _____ **CK.** _____ **JOB No. 17-5115** **Of 6**

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205	HOT MIX ASPHALTIC PAVEMENT, TYPE B (12" COMP. DEPTH)	SY	171
413	FLOWABLE FILL	CY	37
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	408
818	6" PVC WATERLINE (RESTRAINED)	LF	8
818	8" PVC WATERLINE (RESTRAINED)	LF	400
824	RELAY 3/4" SHORT SERVICE	EA	5
824	RELAY 3/4" LONG SERVICE	EA	6
828	8" GATE VALVE	EA	1
833	NEW METER BOX	EA	11
833	EXISTING AND NEW METER BOX RELOCATION	EA	6
836	PIPE FITTINGS, ALL SIZES AND TYPE	TN	0.7
840	6" WATER TIE-IN	EA	1
844	2" BLOW-OFF TEMPORARY	EA	1
3000	REMOVAL, TRANSPORT, DISPOSAL OF AC PIPE	LF	13

SEE SHEET 4 OF 6
MATCH LINE A

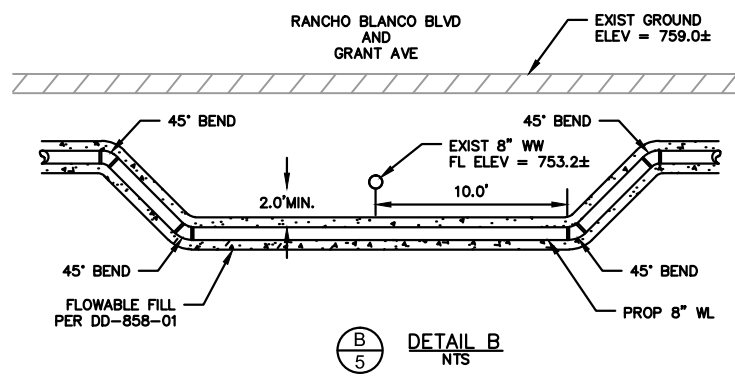


1/3/2018

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NOTES

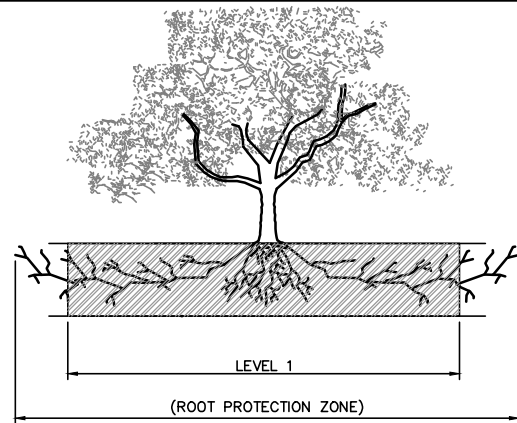
- ROOT PROTECTION ZONE NOTE:** THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER 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.
- ASBESTOS CEMENT PIPE CONNECTIONS & REMOVAL NOTES:** ASBESTOS CEMENT (A.C.) 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 SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 30000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".
- GAS LINE WITHIN PROJECT LIMITS NOT SURVEYED.** CONTRACTOR TO VERIFY LOCATION PRIOR TO CONSTRUCTION. SEE SHEET 3 FOR SUE INFORMATION.
- 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.
- CONTRACTOR SHALL WORK WITHIN THE RANCHO BLANCO BLVD. AND CAPITOL AVE. INTERSECTION SOLELY BETWEEN THE HOURS OF 9 AM TO 2 PM AND ANYTIME AFTER 4 PM MONDAY THROUGH FRIDAY. ANY WORK TO BE PERFORMED OUTSIDE THE HOURS STATED ABOVE SHALL BE COORDINATED AND APPROVED BY SAWS AND/OR NEAL ELEMENTARY SCHOOL.**



LEGEND

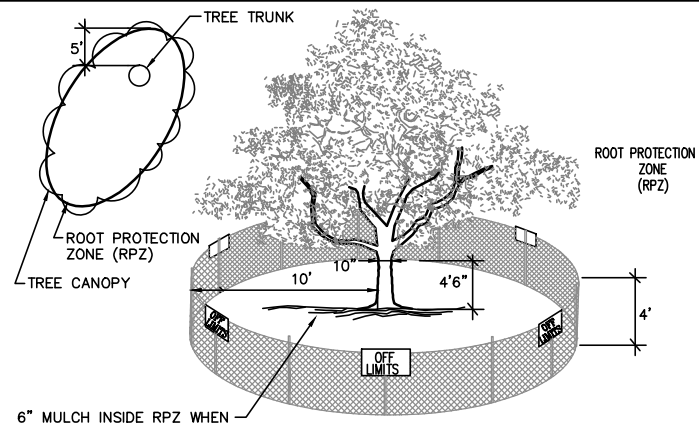
PROP. WATER MAIN	
EXIST. WATER MAIN	
GAS MAIN	
SANITARY SEWER	
STORM SEWER	
UTILITY POLE LINE	
ELECTRIC CABLE	
TELEPHONE CABLE	
DUAL BRANCH SERV.	
NEW UNMETERED SERVICE:	
3/4" SINGLE	
1" DUAL	
SERVICE RECONNECT:	
3/4"	
1" OR LARGER	
SERVICE RELAY:	
3/4"	
1" OR LARGER	
SERVICE RELOCATE:	
3/4"	
1" OR LARGER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

No.	Revision	Drawn	Approved	Date
REVISIONS				
RANCHO BLANCO FROM CAPITOL AVE TO GRANT WATER PLAN 02				
DEVELOPER:				
CONT.		BUDGET PROJ.		
SUBMITTED _____				
APPROVED _____				
MAP No.		SHEET 5		
SECT. No.		Of 6		
DR.	CK.	JOB No. 17-5115		



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.

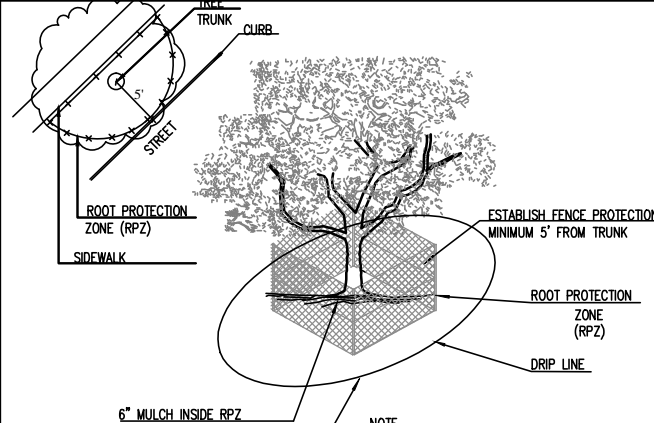
1.1.1 ELEVATION
N. T. S.



6" MULCH INSIDE RPZ WHEN THERE IS NO EXISTING UNDERSTORY OR TURF

NOTES:
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.

1.1.2 LEVEL I FENCE PROTECTION
N. T. S.



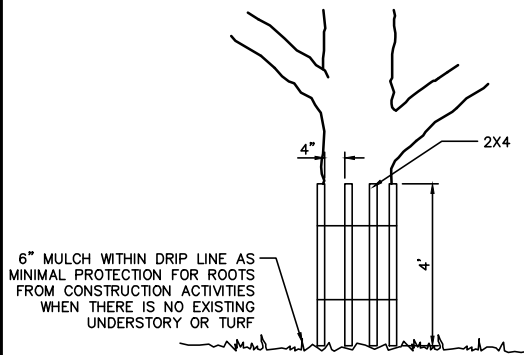
6" MULCH INSIDE RPZ WHEN THERE IS NO EXISTING UNDERSTORY OR TURF

8" MULCH OUTSIDE RPZ AND UNDER DRIP LINE AS MINIMAL PROTECTION FOR ROOTS FROM CONSTRUCTION ACTIVITIES

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

1.1.3 LEVEL II FENCE PROTECTION
N. T. S.

TREE PROTECTION TABLE					
#	TYPE	DIAMETER/CANOPY	PROTECTION	ACTION	SHEET NO.
1	CREPE MYRTLE	3	LEVEL IIB	PRESERVE	4
2	LIGUSTUM	10	LEVEL IIB	PRESERVE	4
3	RED OAK	1	LEVEL IIB	PRESERVE	4
4	CREPE MYRTLE	7	LEVEL IIB	PRESERVE	4
5	ASH	41	LEVEL IIB	PRESERVE	4
6	CHINESE TALLOW	24	LEVEL IIB	PRESERVE	4
7	ELM	9	LEVEL IIB	PRESERVE	4
8	ASH	48	LEVEL IIB	PRESERVE	4
9	LIVE OAK	4	LEVEL IIB	PRESERVE	4
10	LIVE OAK	1	LEVEL IIB	PRESERVE	4
11	CREPE MYRTLE	9	LEVEL IIB	PRESERVE	5
12	CREPE MYRTLE	10	LEVEL IIB	PRESERVE	5
13	ASH	56	LEVEL IIB	PRESERVE	5
14	PECAN	2	LEVEL IIB	PRESERVE	5
15	MOUNTAIN LAUREL	4	LEVEL IIB	PRESERVE	5
16	CREPE MYRTLE	9	LEVEL IIB	PRESERVE	5
17	ASH	6	LEVEL IIB	PRESERVE	5
18	ASH	2	LEVEL IIB	PRESERVE	5
19	LIVE OAK	10	LEVEL IIB	PRESERVE	5
20	CHINESE TALLOW	13	LEVEL IIB	PRESERVE	5
21	LIVE OAK	7	LEVEL IIB	PRESERVE	5
22	CREPE MYRTLE	10	LEVEL IIB	PRESERVE	5



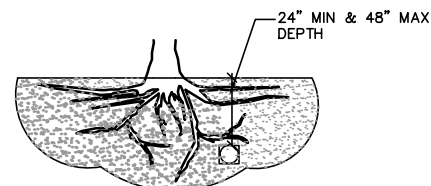
6" MULCH WITHIN DRIP LINE AS MINIMAL PROTECTION FOR ROOTS FROM CONSTRUCTION ACTIVITIES WHEN THERE IS NO EXISTING UNDERSTORY OR TURF

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

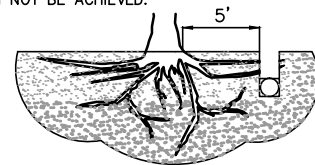
1.1.4 LEVEL II B FENCE PROTECTION
N. T. S.

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.

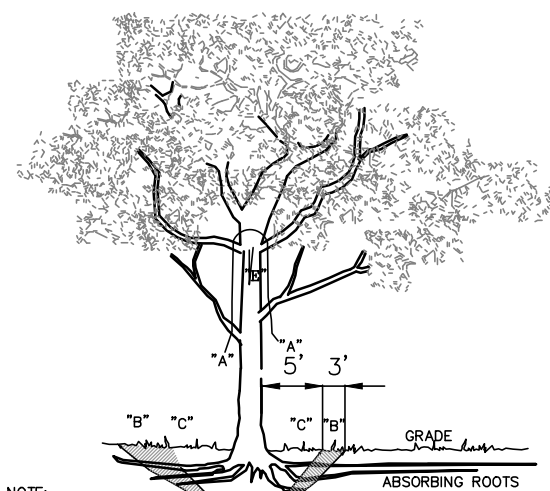


BORE TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5" MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.



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.

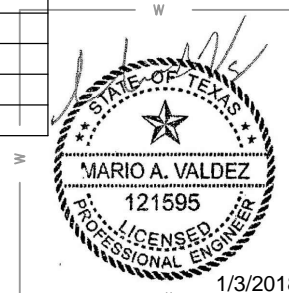
"B" BEGIN EXCAVATION APPROX. 8' FROM THE TRUNK - CUT THRU ANCHOR ROOTS AT AN ANGLE - 3' TO 4' DEEP

"C" USING TREE TRUNK AS A LEVER PUSH AT POINT "E" TO REMOVE TREE BOLE AND LARGE FEEDER ROOTS (4" TO 10" IN DIAM.)

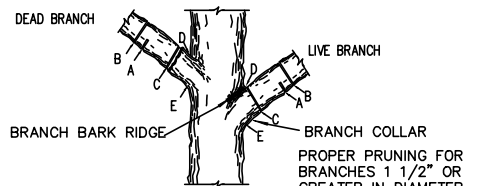
"D" BACKFILL HOLE AND CLEAN UP.

1.3 TREE REMOVAL DIAGRAM
N. T. S.

TREE INVENTORY SUMMARY (6" DIAMETER AND LARGER)	
TOTAL DIAMETER INCHES, R.O.W. EASEMENTS =	286
TOTAL DIAMETER REMOVED =	0
TOTAL DIAMETER PRESERVED =	286
TOTAL PERCENTAGE INCHES PRESERVED =	100
TOTAL INCHES TO BE MITIGATED =	0



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601 NW LOOP 410 SUITE 350
SAN ANTONIO, TX 78216
TEL. NO. 210-541-9166
FAX NO. 210-541-8699



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 WITHIN 20 MIN TO PREVENT THE SPREAD OF OAK WILT.

1.4 BRANCH PRUNING DETAIL
N. T. S.

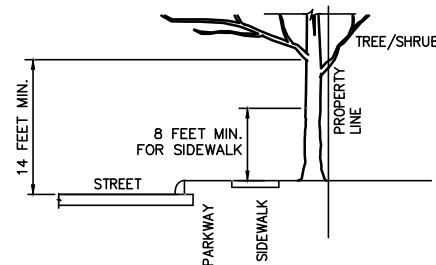


FIGURE No.2:

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.

- A ROOT PROTECTION ZONE WILL BE ESTABLISHED AROUND EACH TREE OR ANY VEGETATION TO BE PRESERVED TO MEET THE LANDSCAPE OR TREE PRESERVATION ORDINANCES. THE ROOT PROTECTION ZONE SHALL BE AN AREA DEFINED BY THE RADIUS EXTENDING OUTWARD FROM THE TRUNK OF THE TREE A DISTANCE OF ONE (1) LINEAR FOOT FOR EACH DIAMETER INCH AT BREAST HEIGHT (4.5') OF THE TREE. A 10-INCH DIAMETER TREE WILL HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE.
- NO WORK SHALL BEGIN WHERE TREE PROTECTION FENCING HAS NOT BEEN COMPLETED AND APPROVED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING CONSTRUCTION. THE FENCING SHALL BE A MINIMUM OF 4' HEIGHT.
- ALL ROOTS LARGER THAN ONE-INCH DIAMETER ARE TO BE CUT CLEANLY AND OAK WOUNDS PAINTED WITHIN 30 MINUTES.
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE WORK DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
- NO EQUIPMENT, VEHICLES OR MATERIALS SHALL BE OPERATED OR STORED WITHIN THE ROOT PROTECTION ZONE. NO CLEAN-OUT AREAS WILL BE CONSTRUCTED SO THAT THE MATERIAL WILL BE IN OR MIGRATE TO THE ROOT PROTECTION ZONE.
- NO GRADE CHANGE MORE THAN 3" IS ALLOWED WITHIN THE ROOT PROTECTION ZONE.
- ROOTS OR BRANCHES IN CONFLICT WITH CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. ALL OAK WOUNDS SHALL BE PAINTED WITHIN 30 MINUTES TO PREVENT OAK WILT INFECTION.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST (207-8053).
- TREES WHICH ARE DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED.
- TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE WATERING THE ROOT PROTECTION ZONE AND/OR WASHING FOLIAGE.
- NO WIRES, NAILS OR OTHER MATERIALS MAY BE ATTACHED TO PROTECTED TREES.

1.6 GENERAL NOTES
N. T. S.

No.	Revision	Drawn	Approved	Date

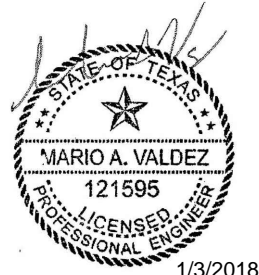
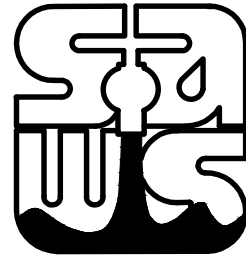
REVISIONS



RANCHO BLANCO FROM
CAPITOL AVE TO GRANT
TREE PROTECTION
DETAILS

DEVELOPER:		BUDGET PROJ.	
SUBMITTED _____		APPROVED _____	
MAP No.	SECT. No.	JOB No. 17-5115	SHEET 6
DR. _____	CK. _____		OF 6

SAN ANTONIO WATER SYSTEM



1/3/2018

2018 SMP JOB NO: 17-5597

RANCHO BLANCO FROM CAPITOL AVE. TO GRANT SEWER PLANS

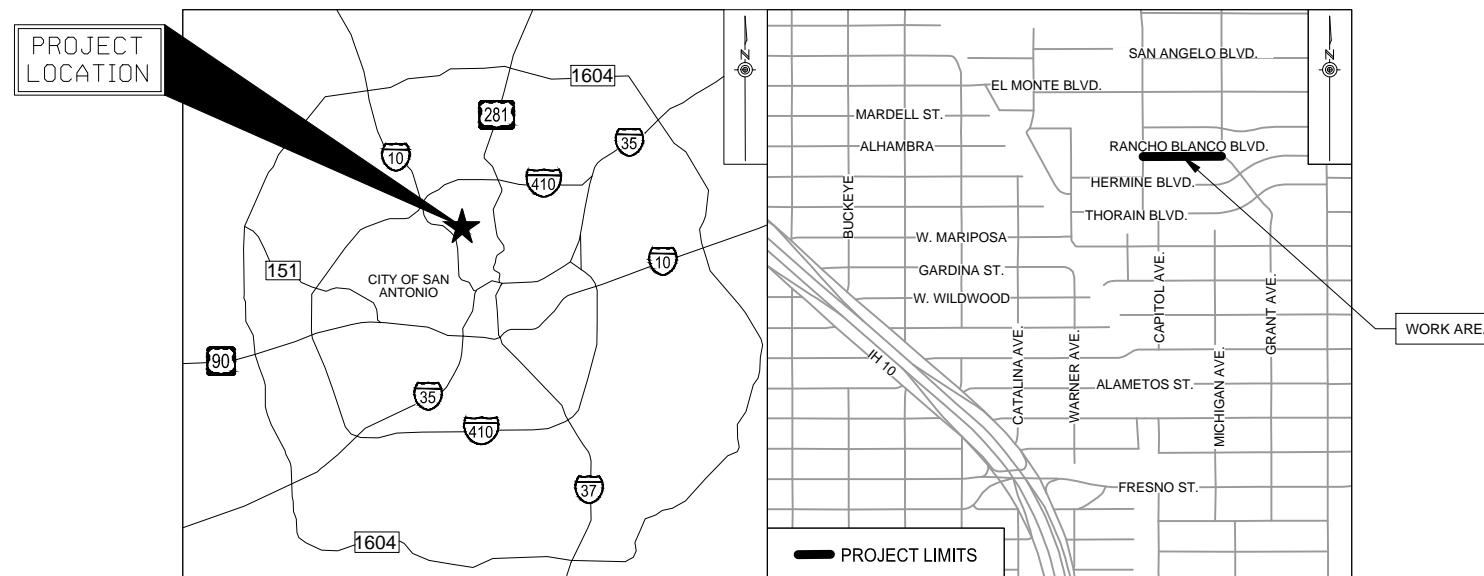
SUBMITTAL PREPARED BY:



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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
5	SANITARY SEWER PLAN AND PROFILE STA 5+00 TO END
6	TREE PROTECTION DETAILS

JANUARY 2018

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 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 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 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:

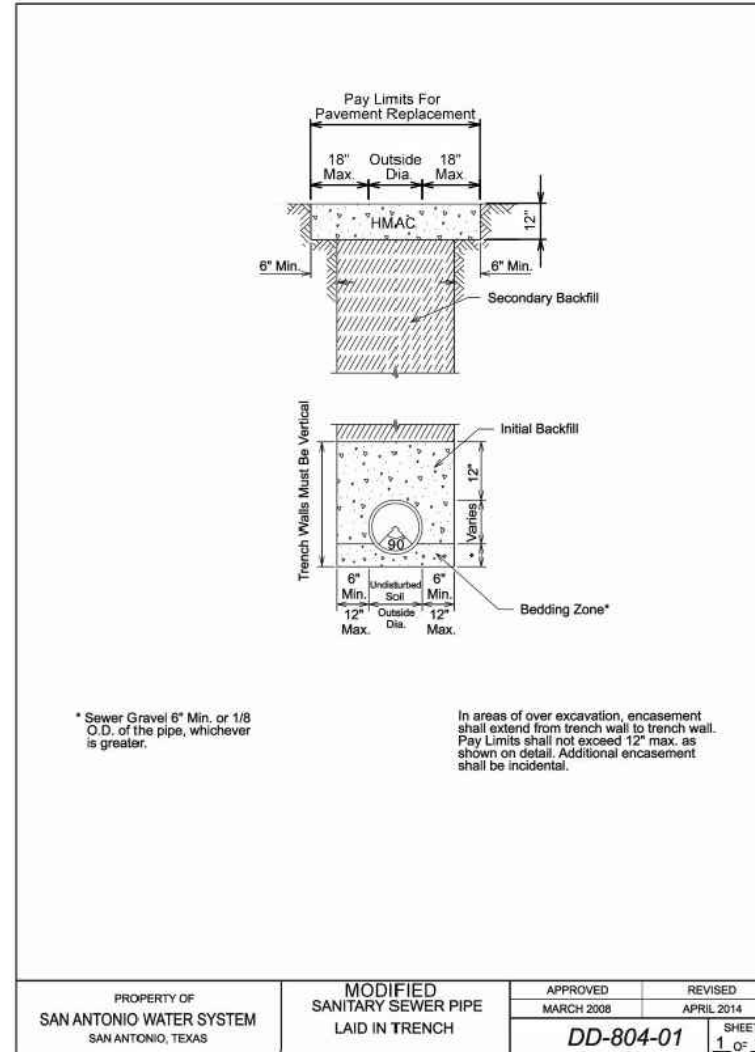
ALL LIMITS FOR CURB, SIDEWALK, AND TREE PREP BEYOND WHAT IS CONSIDERED INCIDENTAL TO NORMAL UTILITY CONSTRUCTION WILL BE ADDRESSED BY THE SAWS INSPECTOR. SAWS INSPECTOR WILL ALSO DETERMINE IF ADDITIONAL COMPENSATION IS WARRANTED IF LIMITS EXCEED INCIDENTALS.

GENERAL NOTES:

- CONTRACTOR TO VERIFY EXISTING TIE-IN ELEVATIONS BEFORE STARTING CONSTRUCTION
- CONTRACTOR SHALL VERIFY AND CONTACT SAWS IF THERE ARE ANY LATERALS CONNECTION TO THE MAIN NO SHOWN ON THE PLANS.
- 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-INCHED BELOW THE LATERAL, 6-INCHES ABOVE THE LATERAL, AND 6-INCHED ON EITHER SIDE OF THE LATERAL.
- TREE PROTECTION IS NSPI. PRIOR TO THE START OF WORK, CALL 207-1111 TO SCHEDULE A PRE-CONSTRUCTION FENCING INSPECTION. TREE REMOVAL IS NOT PERMITTED
- THE CONTRACTOR SHALL MAINTAIN AT LEAST TWO FEET OF VERTICAL SEPARATION DISTANCE BETWEEN ALL PROPOSED SEWER LINES (MAINS AND LATERALS) AND EXISTING GAS MAINS.
- 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. (N.S.P.I.)
- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING CONSTRUCTION OF THE PROJECT, 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 THE 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.
- CONTRACTOR SHALL WORK WITHIN THE RANCHO BLANCO BLVD. AND CAPITOL AVE. INTERSECTION SOLELY BETWEEN THE HOURS OF 9 AM TO 2 PM AND ANYTIME AFTER 4 PM MONDAY THROUGH FRIDAY. ANY WORK TO BE PERFORMED OUTSIDE THE HOURS STATED ABOVE SHALL BE COORDINATED AND APPROVED BY SAWS AND/OR NEAL ELEMENTARY SCHOOL.

TOTAL ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205	HOT MIX ASPHALTIC PAVEMENT, TYPE B (12" COMP. DEPTH)	SY	170
413	FLOWABLE FILL	CY	15
530.1	BARRICADES, SIGNS, AND TRAFFIC HANDLING (RANCHO BLANCO)	EA	*0.5
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	385
848	8" PVC GRAVITY SANITARY SEWER PIPE (SDR 26-2241, 160 PSI), (0' - 6' CUT)	LF	385
851	ADJUST EXISTING MANHOLES	EA	2
854	SANITARY SEWER LATERALS, (SDR 26, ASTM 2241, 160 PSI)	LF	504
854	TWO-WAY SANITARY SEWER CLEAN-OUT	EA	20
864-S1	BYPASS PUMPING (SMALL DIAMETER SANITARY SEWERS) (RANCHO BLANCO)	EA	1
866	PRE SANITARY SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	769
866	POST SANITARY SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	385
910.1	MANHOLE REHABILITATION	VF	5.36

*ITEM SPLIT FOR WORKSITE BETWEEN WATER AND SEWER PROJECTS.



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No.	Revision	Drawn	Approved	Date
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REVISIONS

RANCHO BLANCO FROM CAPITOL AVE TO GRANT

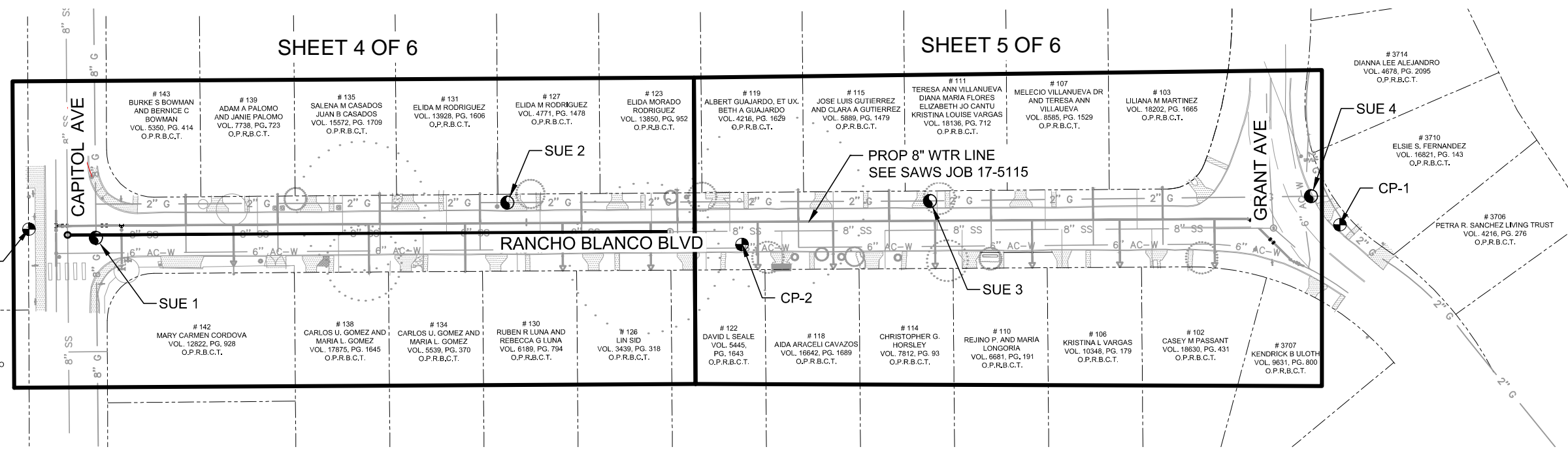
GENERAL NOTES AND QUANTITIES

DEVELOPER: _____
 CONT. _____ BUDGET PROJ. _____

SUBMITTED _____
 APPROVED _____

MAP No. _____ SHEET _____
 SECT. No. _____ 2

DR. _____ CK. _____ JOB No. 17-5597 Of 6



SHEET 4 OF 6

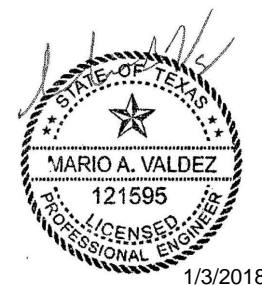
SHEET 5 OF 6

CONTROL POINTS TABLE

POINT NO.	EASTING	NORTHING	ELEVATION	DESCRIPTION
CP-3	2123252.86	13723501.38	738.63	1/2" IRON ROD W/ PINK PLASTIC CAP STAMPED "MTR CONTROL"
CP-2	2123707.61	13723489.63	747.45	MAG NAIL IN SHINER STAMPED "MTR ENGINEERING"
CP-1	2124089.07	13723500.53	759.81	1/2" IRON ROD W/ PINK PLASTIC CAP STAMPED "MTR CONTROL"

SUBSURFACE UTILITY EXPLORATION

SUE NO.	DEPTH	NORTHING	EASTING	DESCRIPTION
SUE 1	3.41'	13723495.65	2123295.64	8-INCH GAS LINE
SUE 2	3.95'	13723516.99	2123558.17	2-INCH GAS LINE
SUE 3	3.86'	13723516.82	2123827.76	2-INCH GAS LINE
SUE 4	3.32'	13723518.83	2124070.78	2-INCH GAS LINE



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REVISIONS

RANCHO BLANCO FROM CAPITOL AVE TO GRANT

PROJECT LAYOUT

DEVELOPER: _____

CONT. _____ BUDGET PROJ. _____

SUBMITTED _____

APPROVED _____

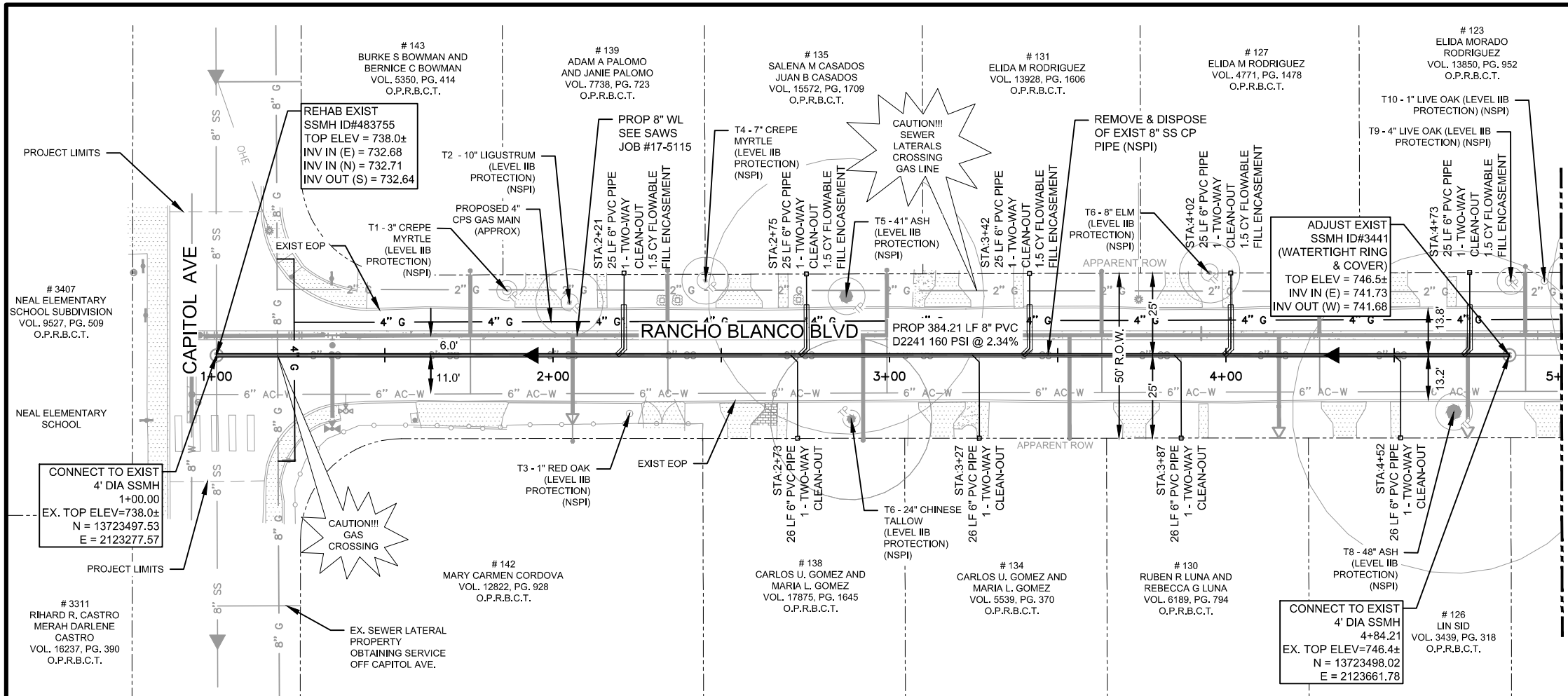
MAP No. _____

SECT. No. _____

DR. _____ CK. _____

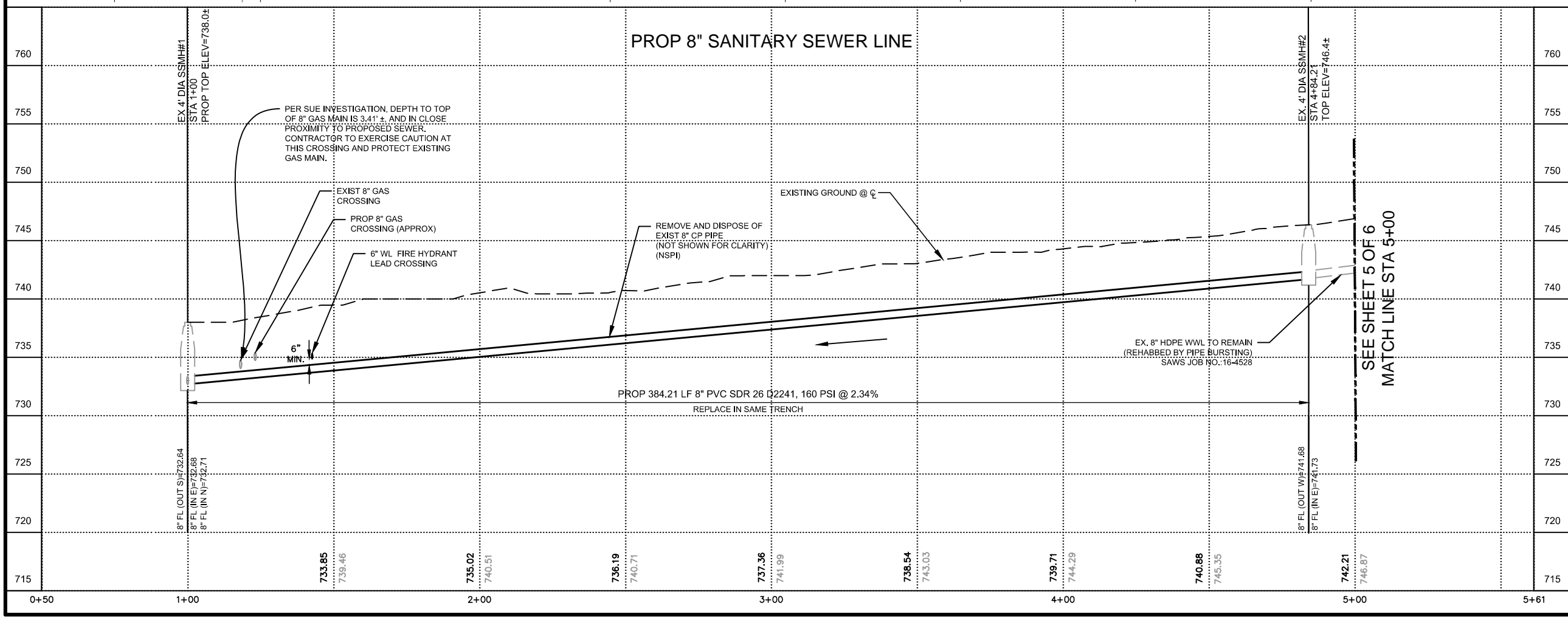
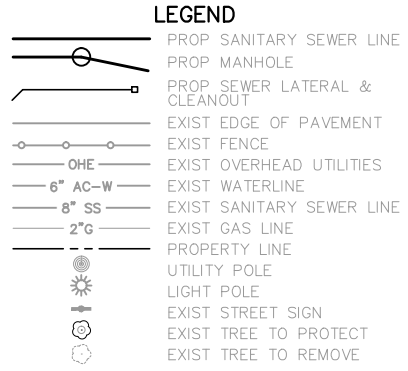
SHEET
3
OF 6

JOB No. 17-5597



ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
205	HOT MIX ASPHALTIC PAVEMENT, TYPE B (12" COMP. DEPTH)	SY	170
413	FLOWABLE FILL	CY	7.5
550	TRENCH EXCAVATION SAFETY PROTECTION	LF	385
848	8" PVC GRAVITY SANITARY SEWER PIPE (SDR 26-2241, 160 PSI), (0' - 6' CUT)	LF	385
851	ADJUST EXISTING MANHOLES	EA	1
854	SANITARY SEWER LATERALS, (SDR 26, ASTM 2241, 160 PSI)	LF	229
854	TWO-WAY SANITARY SEWER CLEAN-OUT	EA	9
866	PRE SANITARY SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	400
866	POST SANITARY SEWER MAIN TELEVISION INSPECTION (8"-24")	LF	385
910.1	MANHOLE REHABILITATION	VF	5.36

- NOTES:
- CONTRACTOR TO PRE-TELEVISION THE EXISTING SANITARY SEWER PRIOR TO CONSTRUCTION TO VERIFY THE LOCATION OF ALL LATERALS.
 - ALL CLEAN-OUTS LOCATED WITHIN DRIVEWAYS OR EXISTING PAVEMENT SHALL BE INSTALLED WITH A HEAVY DUTY SANITARY SEWER CAP.
 - CONTRACTOR SHALL WORK WITHIN THE RANCHO BLANCO BLVD. AND CAPITOL AVE. INTERSECTION SOLELY BETWEEN THE HOURS OF 9 AM TO 2 PM AND ANYTIME AFTER 4 PM MONDAY THROUGH FRIDAY. ANY WORK TO BE PERFORMED OUTSIDE THE HOURS STATED ABOVE SHALL BE COORDINATED AND APPROVED BY SAWS AND/OR NEAL ELEMENTARY SCHOOL.



Scale: 0' 20' 40'

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No.	Revision	Drawn	Approved	Date

REVISIONS

DEVELOPER: RANCHO BLANCO FROM CAPITOL AVE TO GRANT SANITARY SEWER PLAN AND PROFILE BEGIN TO STA 5+00

CONT.: BUDGET PROJ.

SUBMITTED: _____

APPROVED: _____

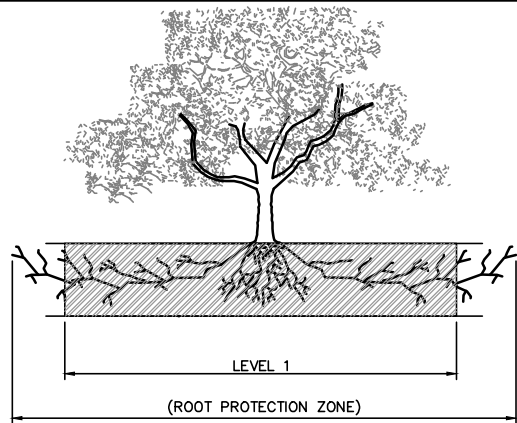
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SECT. No.: _____

DR.: _____ **CK.:** _____

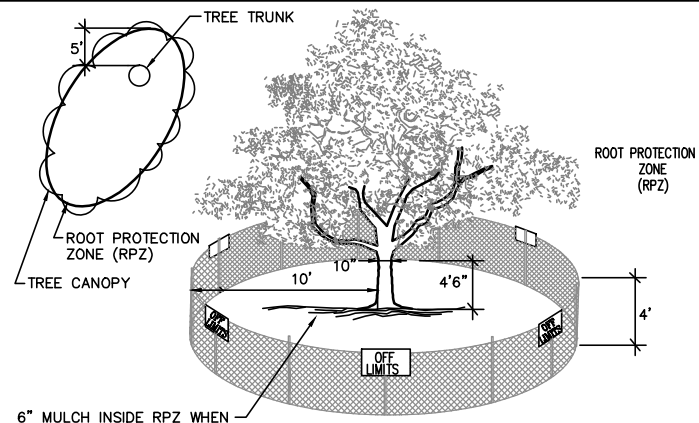
JOB No. 17-5597

SHEET 4 OF 6



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.

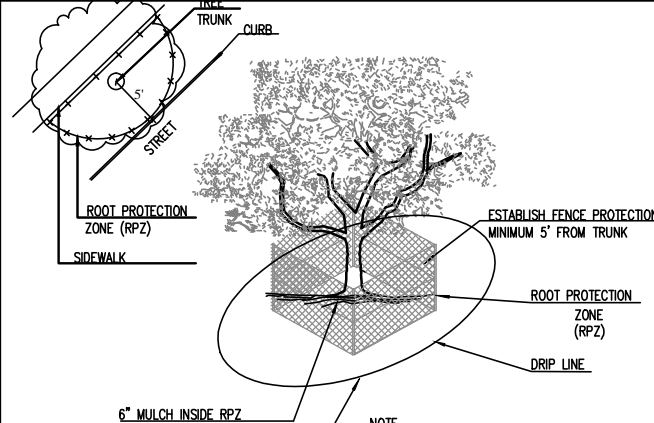
1.1.1 ELEVATION
N. T. S.



6" MULCH INSIDE RPZ WHEN THERE IS NO EXISTING UNDERSTORY OR TURF

NOTES:
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.

1.1.2 LEVEL I FENCE PROTECTION
N. T. S.



6" MULCH INSIDE RPZ WHEN THERE IS NO EXISTING UNDERSTORY OR TURF

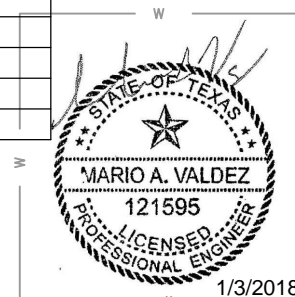
8" MULCH OUTSIDE RPZ AND UNDER DRIP LINE AS MINIMAL PROTECTION FOR ROOTS FROM CONSTRUCTION ACTIVITIES

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

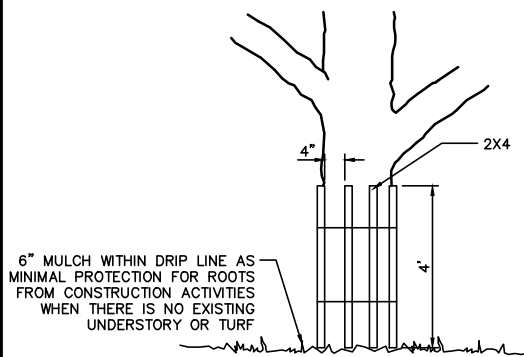
1.1.3 LEVEL II FENCE PROTECTION
N. T. S.

TREE PROTECTION TABLE					
#	TYPE	DIAMETER/CANOPY	PROTECTION	ACTION	SHEET NO.
1	CREPE MYRTLE	3	LEVEL IIB	PRESERVE	4
2	LIGUSTUM	10	LEVEL IIB	PRESERVE	4
3	RED OAK	1	LEVEL IIB	PRESERVE	4
4	CREPE MYRTLE	7	LEVEL IIB	PRESERVE	4
5	ASH	41	LEVEL IIB	PRESERVE	4
6	CHINESE TALLOW	24	LEVEL IIB	PRESERVE	4
7	ELM	9	LEVEL IIB	PRESERVE	4
8	ASH	48	LEVEL IIB	PRESERVE	4
9	LIVE OAK	4	LEVEL IIB	PRESERVE	4
10	LIVE OAK	1	LEVEL IIB	PRESERVE	4
11	CREPE MYRTLE	9	LEVEL IIB	PRESERVE	5
12	CREPE MYRTLE	10	LEVEL IIB	PRESERVE	5
13	ASH	56	LEVEL IIB	PRESERVE	5
14	PECAN	2	LEVEL IIB	PRESERVE	5
15	MOUNTAIN LAUREL	4	LEVEL IIB	PRESERVE	5
16	CREPE MYRTLE	9	LEVEL IIB	PRESERVE	5
17	ASH	6	LEVEL IIB	PRESERVE	5
18	ASH	2	LEVEL IIB	PRESERVE	5
19	LIVE OAK	10	LEVEL IIB	PRESERVE	5
20	CHINESE TALLOW	13	LEVEL IIB	PRESERVE	5
21	LIVE OAK	7	LEVEL IIB	PRESERVE	5
22	CREPE MYRTLE	10	LEVEL IIB	PRESERVE	5

TREE INVENTORY SUMMARY (6" DIAMETER AND LARGER)	
TOTAL DIAMETER INCHES, R.O.W. EASEMENTS =	286
TOTAL DIAMETER REMOVED =	0
TOTAL DIAMETER PRESERVED =	286
TOTAL PERCENTAGE INCHES PRESERVED =	100
TOTAL INCHES TO BE MITIGATED =	0



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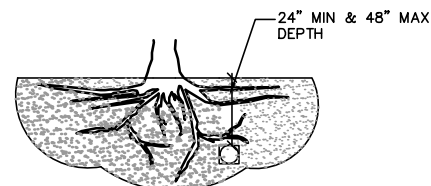
6" MULCH WITHIN DRIP LINE AS MINIMAL PROTECTION FOR ROOTS FROM CONSTRUCTION ACTIVITIES WHEN THERE IS NO EXISTING UNDERSTORY OR TURF

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

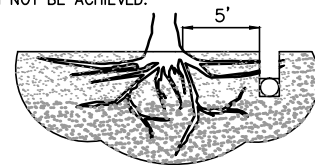
1.1.4 LEVEL II B FENCE PROTECTION
N. T. S.

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.

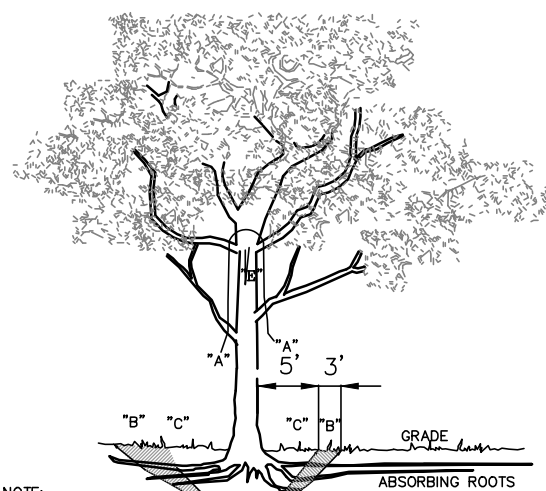


BORE TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5" MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.



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:

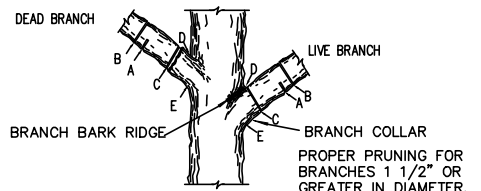
"A" REMOVE BULKY TREE PARTS "SHRED" AND/OR HAUL SEPARATELY.

"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.



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 WITHIN 20 MIN TO PREVENT THE SPREAD OF OAK WILT.

1.4 BRANCH PRUNING DETAIL
N. T. S.

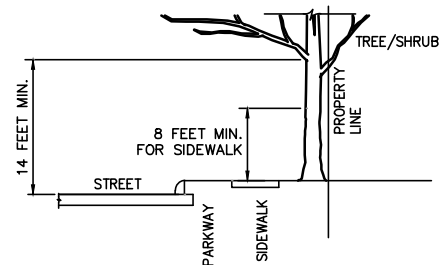


FIGURE No.2:

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.

- A ROOT PROTECTION ZONE WILL BE ESTABLISHED AROUND EACH TREE OR ANY VEGETATION TO BE PRESERVED TO MEET THE LANDSCAPE OR TREE PRESERVATION ORDINANCES. THE ROOT PROTECTION ZONE SHALL BE AN AREA DEFINED BY THE RADIUS EXTENDING OUTWARD FROM THE TRUNK OF THE TREE A DISTANCE OF ONE (1) LINEAR FOOT FOR EACH DIAMETER INCH AT BREAST HEIGHT (4.5') OF THE TREE. A 10-INCH DIAMETER TREE WILL HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE.
- NO WORK SHALL BEGIN WHERE TREE PROTECTION FENCING HAS NOT BEEN COMPLETED AND APPROVED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING CONSTRUCTION. THE FENCING SHALL BE A MINIMUM OF 4' HEIGHT.
- ALL ROOTS LARGER THAN ONE-INCH DIAMETER ARE TO BE CUT CLEANLY AND OAK WOUNDS PAINTED WITHIN 30 MINUTES.
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE WORK DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
- NO EQUIPMENT, VEHICLES OR MATERIALS SHALL BE OPERATED OR STORED WITHIN THE ROOT PROTECTION ZONE. NO CLEAN-OUT AREAS WILL BE CONSTRUCTED SO THAT THE MATERIAL WILL BE IN OR MIGRATE TO THE ROOT PROTECTION ZONE.
- NO GRADE CHANGE MORE THAN 3" IS ALLOWED WITHIN THE ROOT PROTECTION ZONE.
- ROOTS OR BRANCHES IN CONFLICT WITH CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. ALL OAK WOUNDS SHALL BE PAINTED WITHIN 30 MINUTES TO PREVENT OAK WILT INFECTION.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST (207-8053).
- TREES WHICH ARE DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED.
- TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE WATERING THE ROOT PROTECTION ZONE AND/OR WASHING FOLIAGE.
- NO WIRES, NAILS OR OTHER MATERIALS MAY BE ATTACHED TO PROTECTED TREES.

1.6 GENERAL NOTES
N. T. S.

No.	Revision	Drawn	Approved	Date

REVISIONS

RANCHO BLANCO FROM
CAPITOL AVE TO GRANT

TREE PROTECTION
DETAILS

DEVELOPER: _____

CONT. BUDGET PROJ.

SUBMITTED _____

APPROVED _____

MAP No. _____ SHEET 6

SECT. No. _____

DR. CK. JOB No. 17-5597 Of 6