

### Grosenbacher Road 16-Inch Approach and Border Main Project Solicitation Number: CO-00220 Job No.: 18-1125

# ADDENDUM 1 December 5, 2018

### To Bidder of Record:

This addendum, applicable to work referenced above, is an amendment to the bid proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the bid proposal.

### **RESPONSES TO QUESTIONS**

1. Question: When is the anticipated Award date? *Response:* After the January 15 board meeting.

2. Question: When is the anticipated Notice to Proceed date?

Response: After the January 15 board meeting.

3. Question: Will all funding for this project come directly from SAWS?

*Response:* Since this is a trilateral contract, funding will come from SAWS and the Developer, as stated in the SAWS Utility Service Agreement. The final percentages will be determined after the lowest bid has been accepted.

4. Question: In our opinion 90 days is not enough time for this work due to the limited work space and rock. Will SAWS increase the number of days to 150?

Response: It has been determined that 90 days should be enough time. See below on subgrade conditions under response to number 5.

5. Question: Is there a geo-tech available? There is rock on parts of this project.

Response: We have a geo-tech report for the adjacent subdivision but not for the water line. All bore logs for the subdivision indicate a clay subgrade with some areas with gravel or limestone seams, but none indicate the need to trench through solid limestone.

- 6. Question: The plans show a 16 ft. easement for the new water line.
  - a. Can SAWS obtain a temporary easement allowing enough room to build this project using normal construction practices?

Response: Unlikely, the street ROW (parkway) was meant to act as a temporary construction easement.

b. Has 100% of all easement been acquired?

Response: Yes

7. Question: Bid Item No. 18 shows 43 ea. tree protections. Will SAWS show with drawings how this work can be done in a 16 ft. easement with the new water line in the middle of the easement without trimming the trees and cutting roots? Does SAWS intend to use bends to go around the trees? Does SAWS intend to bore these trees? Response: One tree is intended to be bored (the bore located in private property). There are some locations where the intent is to trench through the outer half of the root protection zone and save the tree however there are no locations where the alignment is intended to be trenched within the inner half of the root protection zone and the tree to be saved. Bends have already been added to the alignment to compensate for trees to be saved.

SAN ANTONIO WATER SYSTEM 1 of 2

8. Question: Bid Item No. 2 calls for Restrained Pipe. Is this intended for pipe to restrained per SAWS spec or is the intention for 100% of all pipe to be restrained?

Response: Intended to be restrained per SAWS specs and not intended to be 100% restrained.

- 9. Question: Please advise which spec section will govern in the event there are conflicting specifications.
  - a. The table of contents in the bid package references as "separate documents" COSA Standard Specs for Public Works & SAWS Specs for Water and Sanitary Sewer construction.
  - b. The Special Conditions section SC-2.0 references SAWS Specs and TxDOT Standard Specs.

Response: Article III, 3.1 of the General Conditions states what will happen if there are conflicting issues.

- 10. Question: Please confirm the Bedding Specification is per SAWS Standard Specs Item 804 Excavation, Trenching and Backfilling.
  - a. Specifically to the Waterline installation 804.6, 1. Bedding / Initial Backfilling. *Response*: Yes.
- 11. Question: Bid Item 14: Please confirm Engineered Trench Safety Plans will not be required.

Response: Water main is intended to be installed 5' deep to top of main. Trench excavation safety protection is required based on this depth however engineered trench safety plans with structural trench support is not anticipated to be needed.

- **12.** Question: Bid Item **16**: Please advise which Specification will govern Hydro-mulching and Seeding. *Response*: CoSA specifications.
- 13. Question: Bid Item 20: Please confirm Engineered Traffic Control Plans will not be required.

Response: This should not be needed as the road crossing is being bored.

14. Question: Please advise how much construction easement will be available.

Response: 16' water easement plus the adjacent Grosenbacher Road ROW.

- 15. Question: Please confirm required easements have been acquired. (water easement & construction easement) *Response:* Water easements have been obtained.
- **16.** Question: Please advise if any TxDOT permitting is required. If so, have these permits been acquired? *Response:* No TxDOT permit will be required.
- 17. Question: Is there a tree plan drawing on the trees that need to be saved?

Response: Tree protection plan is attached to addendum.

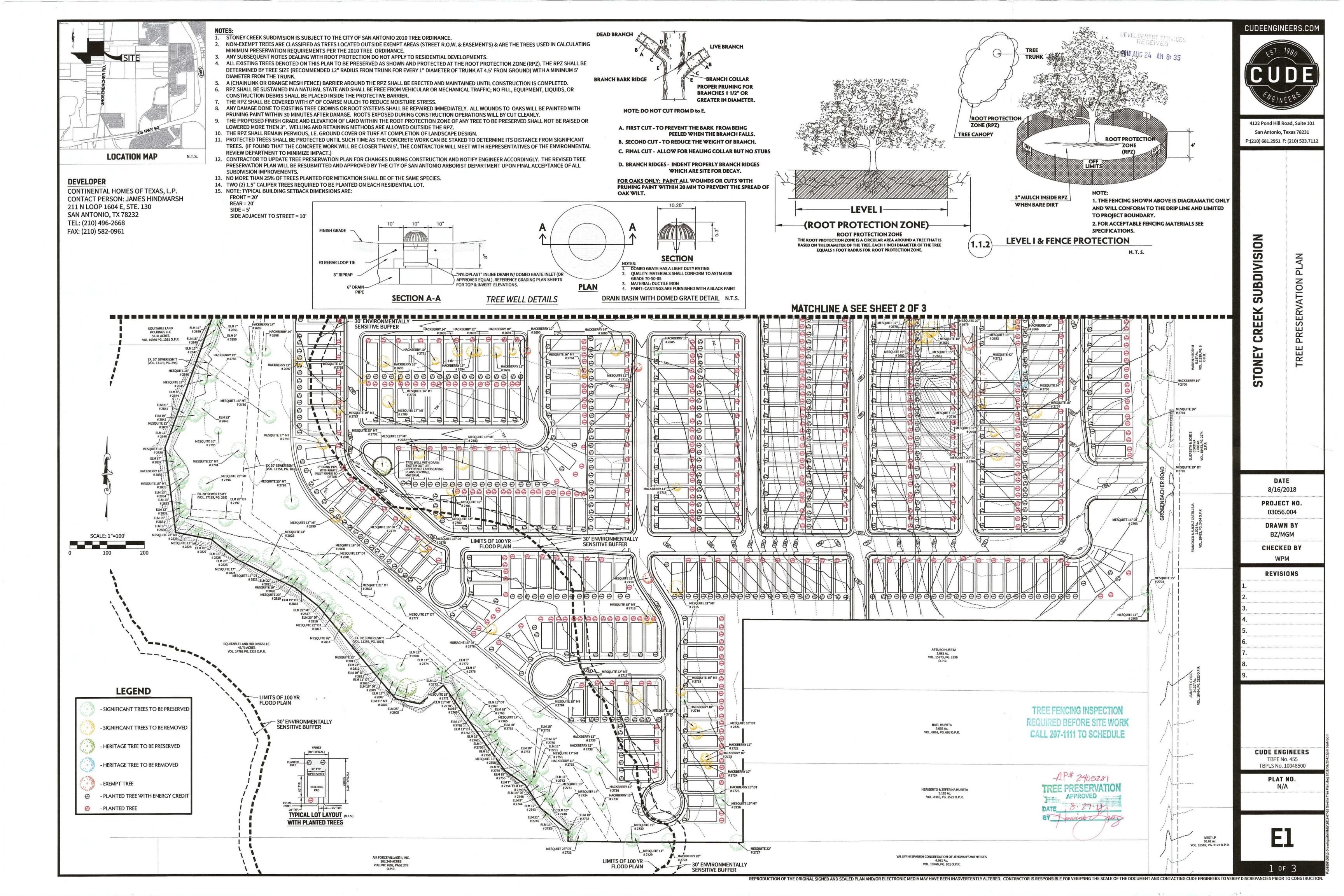
### **END OF ADDENDUM**

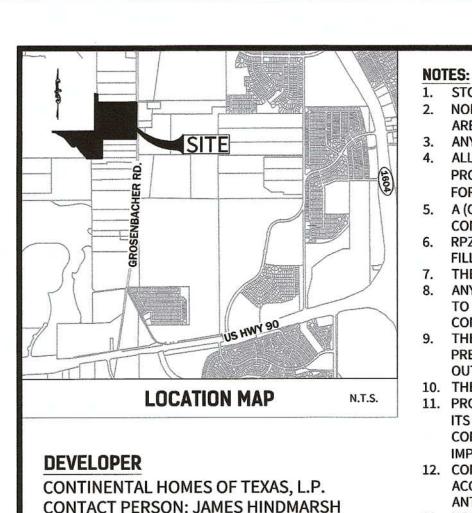
This Addendum, including these two (2) pages, is seven (7) pages with attachments in its entirety.

Attachments:

**Tree Preservation Plan** 

W. Patrick Murphy, P.E., CFM Senior Project Manager M.W. Cude Engineers, LLC TBPE FIRM #0455





CONTACT PERSON: JAMES HINDMARSH

211 N LOOP 1604 E, STE. 130 SAN ANTONIO, TX 78232 TEL: (210) 496-2668 FAX: (210) 582-0961

STONEY CREEK SUBDIVISION IS SUBJECT TO THE CITY OF SAN ANTONIO 2010 TREE ORDINANCE NON-EXEMPT TREES ARE CLASSIFIED AS TREES LOCATED OUTSIDE EXEMPT AREAS (STREET R.O.W. & EASEMENTS) & ARE THE TREES USED IN CALCULATING MINIMUM PRESERVATION REQUIREMENTS PER THE 2010 TREE ORDINANCE. ANY SUBSEQUENT NOTES DEALING WITH ROOT PROTECTION DO NOT APPLY TO RESIDENTIAL DEVELOPMENTS.

ALL EXISTING TREES DENOTED ON THIS PLAN TO BE PRESERVED AS SHOWN AND PROTECTED AT THE ROOT PROTECTION ZONE (RPZ). THE RPZ SHALL BE DETERMINED BY TREE SIZE (RECOMMENDED 12" RADIUS FROM TRUNK FOR EVERY 1" DIAMETER OF TRUNK AT 4.5' FROM GROUND) WITH A MINIMUM 5' DIAMETER FROM THE TRUNK. A (CHAINLINK OR ORANGE MESH FENCE) BARRIER AROUND THE RPZ SHALL BE ERECTED AND MAINTAINED LINTII

RPZ SHALL BE SUSTAINED IN A NATURAL STATE AND SHALL BE FREE FROM VEHICULAR OR MECHANICAL TRAFFIC; NO

ANY DAMAGE DONE TO EXISTING TREE CROWNS OR ROOT SYSTEMS SHALL BE REPAIRED IMMEDIATELY. ALL WOUNDS

CONSTRUCTION OPERATIONS WILL BY CUT CLEANLY. THE PROPOSED FINISH GRADE AND ELEVATION OF LAND WITHIN THE ROOT PROTECTION ZONE OF ANY TREE TO BE

10. THE RPZ SHALL REMAIN PERVIOUS, I.E. GROUND COVER OR TURF AT COMPLETION OF LANDSCAPE DESIGN. 11. PROTECTED TREES SHALL BE PROTECTED UNTIL SUCH TIME AS THE CONCRETE WORK CAN BE STAKED TO DETERMINE ITS DISTANCE FROM SIGNIFICANT TREES. (IF FOUND THAT THE CONCRETE WORK WILL BE CLOSER THAN 5', THE CONTRACTOR WILL MEET WITH REPRESENTATIVES OF THE ENVIRONMENTAL REVIEW DEPARTMENT TO MINIMIZE

ANTONIO ARBORIST DEPARTMENT UPON FINAL ACCEPTANCE OF ALL SUBDIVISION IMPROVEMENTS.

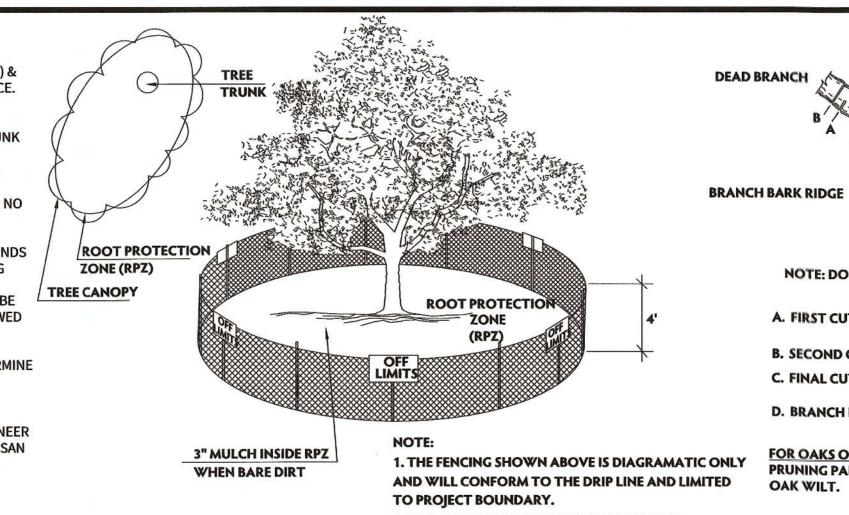
13. NO MORE THAN 25% OF TREES PLANTED FOR MITIGATION SHALL BE OF THE SAME SPECIES.

14. TWO (2) 1.5" CALIPER TREES REQUIRED TO BE PLANTED ON EACH RESIDENTIAL LOT.

15. NOTE: TYPICAL BUILDING SETBACK DIMENSIONS ARE:

FRONT = 20' REAR = 20' SIDE = 5'

SIDE ADJACENT TO STREET = 10'



1. THE FENCING SHOWN ABOVE IS DIAGRAMATIC ONLY AND WILL CONFORM TO THE DRIP LINE AND LIMITED

2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

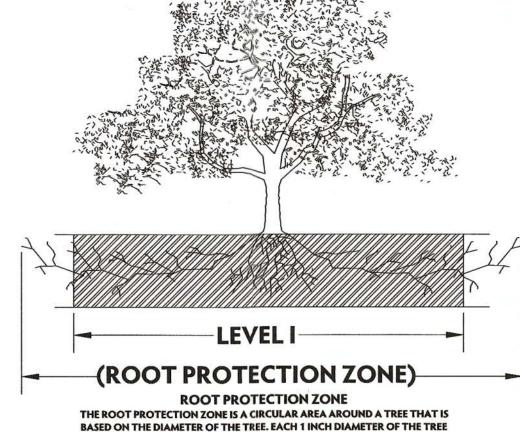
OAK WILT.

117 INCHES (DEFICIT)

24 INCHES (DEFICIT)

555 INCHES (CREDIT)

354 INCHES CREDIT



**EQUALS 1 FOOT RADIUS FOR ROOT PROTECTION ZONE.** 

= 2,511,961 S.F.

= 954,545 S.F.

= 7,382 S.F.

= 418,950 S.F.

= 682,763 S.F.

= 1,109,094 S.F. (44.15 %)

1,110,669.5 (44.22%)

685,125

LEVEL I & FENCE PROTECTION

N. T. S.

PRESERVATION CALCULATIONS - SIGNIFICANT TREES (OUTSIDE OF FLOODPLAIN) SIGNIFICANT TREES TOTAL INCHES = 818 INCHES SIGNIFICANT TREES PRESERVED INCHES = 169 INCHES = 649 INCHES SIGNIFICANT TREES REMOVED INCHES SIGNIFICANT TREES PRESERVATION RATE (35% REQ.) = 20.66% EXCESS PRESERVATION CREDIT/ DEFICIT (ABOVE 35% REQ.) = 117 INCHES (DEFICIT) PRESERVATION CALCULATIONS - HERITAGE (OUTSIDE OF ESA) HERITAGE TREES TOTAL INCHES = 49 INCHES = 25 INCHES HERITAGE TREES PRESERVED INCHES HERITAGE TREES REMOVED INCHES = 24 INCHES = 51.02% HERITAGE TREES PRESERVATION RATE (100% REQ.) HERITAGE TREE PRESERVATION DEFICIT  $= (24 \times 1) = 24$  INCHES PRESERVATION CALCULATIONS - SIGNIFICANT TREES (INSIDE OF ESA)

PRESERVATION CALCULATIONS - HERITAGE (INSIDE OF ESA)

PRESERVATION CALCULATIONS - SIGNIFICANT TREES (INSIDE THE FLOOD PLAIN) SIGNIFICANT TREES TOTAL INCHES = 2659 INCHES = 2552 INCHES SIGNIFICANT TREES PRESERVED INCHES = 107 INCHES SIGNIFICANT TREES REMOVED INCHES SIGNIFICANT TREES PRESERVATION RATE (80% REQ.) = 95.98%

PRESERVATION CALCULATIONS - HERITAGE (INSIDE OF FLOOD PLAIN) HERITAGE TREES TOTAL INCHES **= 179 INCHES = 179 INCHES** HERITAGE TREES PRESERVED INCHES = 0 INCHES HERITAGE TREES REMOVED INCHES = 100% HERITAGE TREES PRESERVATION RATE (100% REQ.) = 0 INCHES HERITAGE TREE PRESERVATION DEFICIT

MITIGATION SUMMERY SIGNIFICANT TREES (OUTSIDE OF FLOOD PLAIN) HERITAGE TREES (OUTSIDE OF ESA) PLANTED TREES (ABOVE TWO ~ 1.5 INCH REQ. PER LOT) (370 EXTRA TREES X 1.5 INCH)

TOTAL:

TYPICAL LOT LAYOUT (N.T.

WITH PLANTED TREES

**BRANCH COLLAR** 

FINAL CANOPY CALCULATIONS

PRESERVED TREE CANOPY

FINAL TOTAL CANOPY

PROPER PRUNING FOR **BRANCHES 1 1/2" OR GREATER IN DIAMETER.** 

PEELED WHEN THE BRANCH FALLS.

WHICH ARE SITE FOR DECAY.

NOTE: DO NOT CUT FROM D to E.

A. FIRST CUT - TO PREVENT THE BARK FROM BEING

B. SECOND CUT - TO REDUCE THE WEIGHT OF BRANCH.

D. BRANCH RIDGES - INDENT PROPERLY BRANCH RIDGES

FOR OAKS ONLY: PAINT ALL WOUNDS OR CUTS WITH

C. FINAL CUT - ALLOW FOR HEALING COLLAR BUT NO STUBS

PRUNING PAINT WITHIN 20 MIN TO PREVENT THE SPREAD OF

- SIGNIFICANT TREES TO BE REMOVED HERITAGE TREE TO BE PRESERVED

TOTAL PARCEL AREA (OUTSIDE OF FUTURE FLOODPLAIN)

PLANTED TREE-NO ENERGY CREDIT (531 x 875 S.F. x 0.9)

PLANTED TREE-ENERGY CREDIT (580 x 875 S.F. x 0.9 x 1.5)

REQUIRED FINAL CANOPY COVERAGE (38% REQ.)

HERITAGE TREE TO BE REMOVED - EXEMPT TREE

PLANTED TREE WITH ENERGY CREDIT

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE OCCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION

**LEGEND** 

SIGNIFICANT TREES TO BE PRESERVED

DATE 8/16/2018 PROJECT NO 03056.004 DRAWN BY BZ/MGM

CUDEENGINEERS.COM

4122 Pond Hill Road, Suite 101

San Antonio, Texas 78231

P:(210) 681.2951 F: (210) 523.7112

SUBDIVISION

CREEK

STONEY

**CHECKED BY WPM** REVISIONS

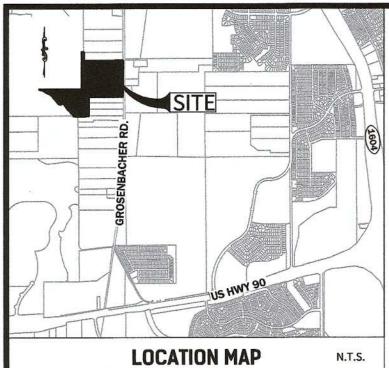
**CUDE ENGINEERS** TBPE No. 455 TBPLS No. 10048500

PLAT NO.

2 OF 3

30' SANITARY SEWER EASEMENT (VOL. 11154, PG. 1873) 53.26 Ac. VOL. 15598, PG. 2196 O.P.R.C.B. 109.964 Ac. VOL. 18946, PG. 2188 O.P.R.C.B. SA GIVEN TO FLY, LLC LIMITS OF 100 YR FLOOD PLAIN SCALE: 1"=100' **EOUITABLE LAND** HOLDINGS LLC 52.31 ACRES VOL 15980 PG. 1091 O.P.R. MESQUITE 15"= # 2922 MESQUITE 16" MT # 2926 30' ENVIRONMENTALLY SENSITIVE BUFFER MESQUITE 26" MT\_ # 2914 LIMITS OF 100 PR FLOOD PLAIN #2924 LIMITS OF 100 – YR FLOOD PLAIN - 30' ENVIRONMENTALLY SENSITIVE BUFFER AMERICAN LEGION POST 30 0.628 Ac. VOL. 17914 PG. 462 O.P.R. # 2877 ELM 14" DT # 2873 # 2862 ELM 18" # 2861 ELM 16" # 2860 MESQUITE 10 / # 2859 ELM 11" / # 2858 # 2864
ELM 11"
# 2869
ELM 12"
# 2868
ELM 13"
# 2863
ELM 13"
# 2857
ELM 10"
# 2853
ELM 12"
|
# 2854
|
# 2852 

**MATCHLINE A SEE SHEET 1 OF 3** 



DEVELOPER

CONTINENTAL HOMES OF TEXAS, L.P. CONTACT PERSON: JAMES HINDMARSH 211 N LOOP 1604 E, STE. 130 SAN ANTONIO, TX 78232 TEL: (210) 496-2668 FAX: (210) 582-0961

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- 6. RPZ SHALL BE SUSTAINED IN A NATURAL STATE AND SHALL BE FREE FROM VEHICULAR OR MECHANICAL TRAFFIC; NO

  BRANCH BARK RIDGE
- FILL, EQUIPMENT, LIQUIDS, OR CONSTRUCTION DEBRIS SHALL BE PLACED INSIDE THE PROTECTIVE BARRIER. THE RPZ SHALL BE COVERED WITH 6" OF COARSE MULCH TO REDUCE MOISTURE STRESS.
- ANY DAMAGE DONE TO EXISTING TREE CROWNS OR ROOT SYSTEMS SHALL BE REPAIRED IMMEDIATELY. ALL WOUNDS TO OAKS WILL BE PAINTED WITH PRUNING PAINT WITHIN 30 MINUTES AFTER DAMAGE. ROOTS EXPOSED DURING
- CONSTRUCTION OPERATIONS WILL BY CUT CLEANLY. 9. THE PROPOSED FINISH GRADE AND ELEVATION OF LAND WITHIN THE ROOT PROTECTION ZONE OF ANY TREE TO BE PRESERVED SHALL NOT BE RAISED OR LOWERED MORE THEN 3". WELLING AND RETAINING METHODS ARE ALLOWED OUTSIDE THE RPZ.
- 10. THE RPZ SHALL REMAIN PERVIOUS, I.E. GROUND COVER OR TURF AT COMPLETION OF LANDSCAPE DESIGN. 11. PROTECTED TREES SHALL BE PROTECTED UNTIL SUCH TIME AS THE CONCRETE WORK CAN BE STAKED TO DETERMINE ITS DISTANCE FROM SIGNIFICANT TREES. (IF FOUND THAT THE CONCRETE WORK WILL BE CLOSER THAN 5', THE CONTRACTOR WILL MEET WITH REPRESENTATIVES OF THE ENVIRONMENTAL REVIEW DEPARTMENT TO MINIMIZE
- 12. CONTRACTOR TO UPDATE TREE PRESERVATION PLAN FOR CHANGES DURING CONSTRUCTION AND NOTIFY ENGINEER ACCORDINGLY. THE REVISED TREE PRESERVATION PLAN WILL BE RESUBMITTED AND APPROVED BY THE CITY OF SAN

2730

2732

MESQUITE 19\*

MESQUITE 23 DT\*

ELM 19\*

19

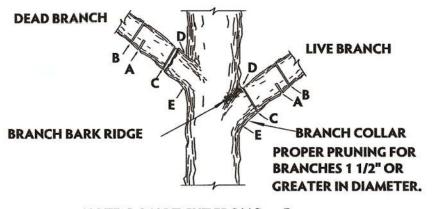
13

- ANTONIO ARBORIST DEPARTMENT UPON FINAL ACCEPTANCE OF ALL SUBDIVISION IMPROVEMENTS. 13. NO MORE THAN 25% OF TREES PLANTED FOR MITIGATION SHALL BE OF THE SAME SPECIES.
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SIDE = 5' SIDE ADJACENT TO STREET = 10'

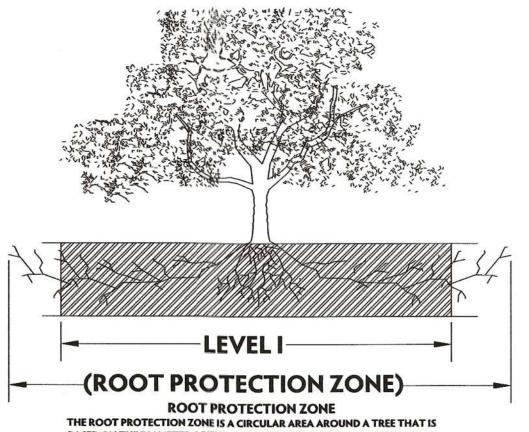
\* DENOTES TREES WITHIN FLOOD PLAIN.



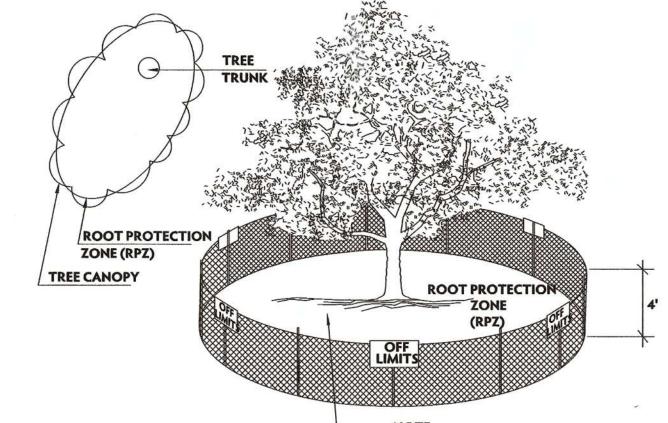
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- A. FIRST CUT TO PREVENT THE BARK FROM BEING
- PEELED WHEN THE BRANCH FALLS. B. SECOND CUT - TO REDUCE THE WEIGHT OF BRANCH.
- C. FINAL CUT ALLOW FOR HEALING COLLAR BUT NO STUBS
- D. BRANCH RIDGES INDENT PROPERLY BRANCH RIDGES WHICH ARE SITE FOR DECAY.

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



BASED ON THE DIAMETER OF THE TREE, EACH 1 INCH DIAMETER OF THE TREE EQUALS 1 FOOT RADIUS FOR ROOT PROTECTION ZONE.



3" MULCH INSIDE RPZ WHEN BARE DIRT

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.

**LEVEL I & FENCE PROTECTION** 

2868	ELM 12*	12					
2869	ELM 11*	11					
2870	ELM 16 DT*	16					
2871	ELM 7*	7					
2872				24			
2873	ELM 24 DT*	14	<del>                                     </del>	24			
2874	ELM 14 DT*	9					
ADMINISTRAL A	ELM 9*		<b>_</b>				-
2875	ELM 9*	9					
2876	ELM 17*	17			_		
2877	ELM 8*	8					
2878	ELM 19 TT*	19					
2879	ELM 16*	16					
2880	ELM 9*	9					
2881	ELM 13*	13					
2882	MESQUITE 13*	13			Allert		
2883	ELM 12*	12					
2884		7					
2885	ELM 7*	11					
	ELM 11 TT*						+
2886	ELM 6*	6	-	-			-
2887	MESQUITE 16*	16	1				+
2888	ELM 15 TT*	15	-				
2889	ELM 14 DT*	14	1				
2890	ELM 15 DT*	15					
2891	ELM 12*	12					
2892	ELM 7*	7					
2893	ELM 11*	11					
2894	ELM 21*	21					
2895	MESQUITE 12*	12					
2896	Name of the same o	18					
2897	ELM 18 DT*	18					
2898	ELM 18 DT*	19	-				
	MESQUITE 19 TT*	19					
2899	ELM 24*	40	<u> </u>	24			_
2900	ELM 18*	18		ļ			<del></del>
2901	ELM 17*	17		<u> </u>			
2902	ELM 16*	16					
2903	OAK 22*	22					
2904	OAK 18*	18					
2905	ELM 16*	16					
2906	ELM 17 DT*	17					
2907	MESQUITE 12*	12					
2908	MESQUITE 16 DT*	16					
2909	MESQUITE 20 TT*	20					
2910		18					
2911	ELM 18 DT*	13					-
2912	MESQUITE 13*	6			-		
-	ELM 6*			-			-
2913	HACKBERRY 16 DT*	16			+	-	
2914	MESQUITE 26 MT*			26			
2915	HACKBERRY 14*	14					1
2916	ELM 8*	8					
2917	HACKBERRY 10*	10					
2918	MESQUITE 15*	15					
2919	MESQUITE 15*	15					
2920	MESQUITE 13*	13					
2921	MESQUITE 10*	10					
2922	MESQUITE 15*	15					
2923	MESQUITE 12*	12					
2924		10					
2925	MESQUITE 10*	12		-	<del></del>	-	
1500100040	MESQUITE 12*			-	-		-
2926	MESQUITE 16 MT*	16		-			
2927	MESQUITE 16 DT*	16	-				
	I was a second and	12			1	1	
2929 2931	MESQUITE 12*	13	<u> </u>				-

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION

2799 MESQUITE 17 MT\* 2800 MESQUITE 18 DT\* 23

2805

MESQUITE 17 DT\*

2802 MESQUITE 21 MT\*

Number	Species	Significant Tree Inches Preserved	Significant Tree2 Inches Removed	Heritage Tree Inches Preserved	Heritage Tree3 Inches Removed	Exempt Tree	Shade value (Sq. ft.)
7	OAK 25*	i i coci veu	removed	25	HOHIOVCU		
8	OAK 29*			29			
2666	HACKBERRY 16		16				
2667	HACKBERRY 13		13				
2668	MESQUITE 19		19				
2671	MESQUITE 14					14	
2672	MESQUITE 13					13	
2673	MESQUITE 17		17				
2674	MESQUITE 10		10				
2675	MESQUITE 11		11				
2676	MESQUITE 15		15		42		
2677	MESQUITE 13		13				
2678	MESQUITE 17		17				
2679	MESQUITE 20		20				
2680	MESQUITE 10		10				
2681	MESQUITE 15		15				
2682	MESQUITE 19		19				
2683	MESQUITE 19					19	
2684	MESQUITE 13		13				
2685	HACKBERRY 12	12					629
2686	HACKBERRY 14		14				
2688	MESQUITE 14 DT*	14					
2689	MESQUITE 20 MT*	20					
2690	HACKBERRY 10					10	
2691	HACKBERRY 10		10				
2692	HACKBERRY 15		15				
2693	HACKBERRY 12		12				
2694	HACKBERRY 15		15				
2695	HACKBERRY 14		14				
2696	HACKBERRY 16		16				
2697	HACKBERRY 12*		12				
2698	HACKBERRY 14*	14					
2699	HACKBERRY 14*	14					
2700	HACKBERRY 14	14					734
2701	MESQUITE 16	16					527
2702	MESQUITE 19 DT	19					626
2703	MESQUITE 16 DT	16					527
2704	MESQUITE 15	15					494
2705	MESQUITE 11	11					362
2706	MESQUITE 24				24		
2707	MESQUITE 18		18				
2708	MESQUITE 12		12				
2709	MESQUITE 20 DT		20				
2710	MESQUITE 13	****	13				
2711	MESQUITE 42					42	
2712	MESQUITE 12					12	
2713	HACKBERRY 11		11				
2714	MESQUITE 15					15	
2715	MESQUITE 21 MT		21				
2716	MESQUITE 18 MT	-9-20	18				
2717	MESQUITE 22 MT		22			-	
2718	MESQUITE 15 MT		15			-	
2719	HACKBERRY 10	10					524
2720	MESQUITE 10		10			-	
2721	MESQUITE 18 DT		18				
2722	HACKBERRY 12		12				
2723	HACKBERRY 16		16			ļ	
2724	HACKBERRY 10		10				
2725	HACKBERRY 15 DT	15					786
2726	MESQUITE 19 MT	19					626
2727	MESQUITE 22	22					725
2728	HACKBERRY 20*	20	1	1		1	1

2733	ELM 13*	13		1			
2734	MESQUITE 14*	14					
2735	HACKBERRY 11*	11					
2736	HACKBERRY 11*	11					
2737	HACKBERRY 10*	10					
2738		13				PROPERTY OF THE PROPERTY OF TH	
2739	HACKBERRY 13*	12			<del>                                     </del>		-
2740	HACKBERRY 12*	10			1		
ELL VE	ELM 10*	20000		-			-
2741	MESQUITE 13*	13	-				
2742	ELM 11*	11					
2743	ELM 12*	12					
2744	ELM 9*	9				V. Street and Street	
2745	ELM 11*	11					
2748	ELM 14 DT*	14					
2749	ELM 13*	13					
2750	ELM 12*	12					
2751	ELM 11*	11					
2752		18					
2753	ELM 18*	17			1		
2754	MESQUITE 17 MT*	7					
	ELM 7*			-	+	-	<del> </del>
2755	ELM 18*	18			-		
2756	ELM 9*	9		-			
2757	ELM 10*	10					
2758	MESQUITE 13*	13					
2759	ELM 10*	10					
2760	ELM 7*	7					
2761	ELM 10*	10					
2762	ELM 16*	16					
2763	ELM 11 DT*	11		T			
2764	MESQUITE 15 MT*	15			1		1
2765		14		-	+		<del>                                     </del>
2766	MESQUITE 14*	18			1		
	ELM 18*	200400		+	+		-
2767	ELM 15 DT*	15		-			<u> </u>
2768	ELM 17*	17		-			
2769	ELM 9*	9					-
2770	ELM 15 MT*	15					
2771	MESQUITE 18*	18					
2772	ELM 9*	9					
2773	ELM 12*	11					
2774	ELM 11*	11					
2775	ELM 6*	6					
2776	HUISACHE 15 DT*		40				
2777		17	15				1
2778	MESQUITE 17 DT*		1922	-	-		<del>                                     </del>
PORTECTOR	MESQUITE 16 DT*		16				1
2779	MESQUITE 16 DT*	Turners Santa-Francisco	16	- <del> </del>	-		
2780	MESQUITE 14*		14	-	-		
2781	MESQUITE 16		16				-
2782	MESQUITE 19 MT		19				
2783	MESQUITE 18 MT	Contrary.	18	and the second second second			
2784	MESQUITE 16 MT		16				
2785	HACKBERRY 12*	12					
2786	MESQUITE 18 MT*	18					
2787	MESQUITE 19 MT		19			1	
2788	1		19		1	12	
2789	MESQUITE 12					12	
	MESQUITE 17 MT		17	1		<u> </u>	
2790	MESQUITE 14 MT		14				
2791	HACKBERRY 10		10				
2792	MESQUITE 25 MT*			25			823
2793	MESQUITE 17 MT*		17				
2794	MESQUITE 22 MT*	22		100			
2795	MESQUITE 10*	10					
2796	MESQUITE 20 MT*	20					
2797	ELM 20 DT*	20		SHIP			
			-	-	and the second second		

2806	ELM 21 MT*	21					
2807	ELM 13*	13					
2808	ELM 12*	12					
2809	ELM 18 DT*	18					
2810	ELM 11 DT*	11					
2811	ELM 10 DT*	10					
2812	ELM 23*	23					
2813	MESQUITE 12*	12					
2814	The same and the s						
2815	MESQUITE 26*	23		26			
	MESQUITE 23 DT*						
2816	ELM 20 DT*	20					
2817	ELM 22 MT*	22					
2818	ELM 19 DT*	19				Mr	
2819	MESQUITE 20*	20					
2820	MESQUITE 10*	10			-500000-0000		
2821	ELM 22*	22					
2822	MESQUITE 17 DT*	17					
2823	MESQUITE 23*	23			.1		
2824	MESQUITE 17*	17					
2825	ELM 20*	20					
2826	ELM 13*	13					7-7-1
2827	ELM 10*	10	150			t to the second second	
2828	MESQUITE 11*	11					
2829		22					
2830	MESQUITE 22 MT*	17					
2831	ELM 17*	14					-
	ELM 14*						
2832	ELM 13*	13					
2833	ELM 13*	13					
2834	ELM 13*	13					·
2835	MESQUITE 18 MT*	18					,,,,
2836	HACKBERRY 12*	12					
2837	ELM 17*	17					
2838	MESQUITE 10*	10					
2839	MESQUITE 12*	12					
2840	ELM 11*	11					
2841	ELM 21*	21					7. V.C. Mills - W.L.
2842	ELM 19*	19			0.		
2843	ELM 23*	23					
2844	ELM 8*	8					
2845	MESQUITE 13*	13					
2846		18	100000000000000000000000000000000000000				
2847	MESQUITE 18*	15					
2848	ELM 15*	16					
	ELM 16*						
2849	ELM 11*	11					
2850	ELM 9*	9	N				
2851	ELM 7*	7					
2852	ELM 10*	10					
2853	ELM 10*	10					
2854	ELM 12*	12					2
2855	MESQUITE 19*	19	-				
2856	MESQUITE 14*	14					
2857	ELM 13*	13					
2858	ELM 11*	11					
2859	MESQUITE 10*	10	1				
2860	ELM 16*	16					
2861	ELM 18*	18					
2862	ELM 7*	7	<u> </u>				
2863	ELM 7*	13					
2864		20				i	
2004		q	Q. B.				
2865	ELM 9*	9					
2865	ELM 9* ELM 12*	12					
2865 2866 2867	ELM 9*						

CUDEENGINEERS.COM

4122 Pond Hill Road, Suite 101 San Antonio, Texas 78231 P:(210) 681.2951 F: (210) 523.7112

SUBDIVISION

CREEK STONEY

ERVATION

8/16/2018 PROJECT NO.

DRAWN BY BZ/MGM **CHECKED BY** 

03056.004

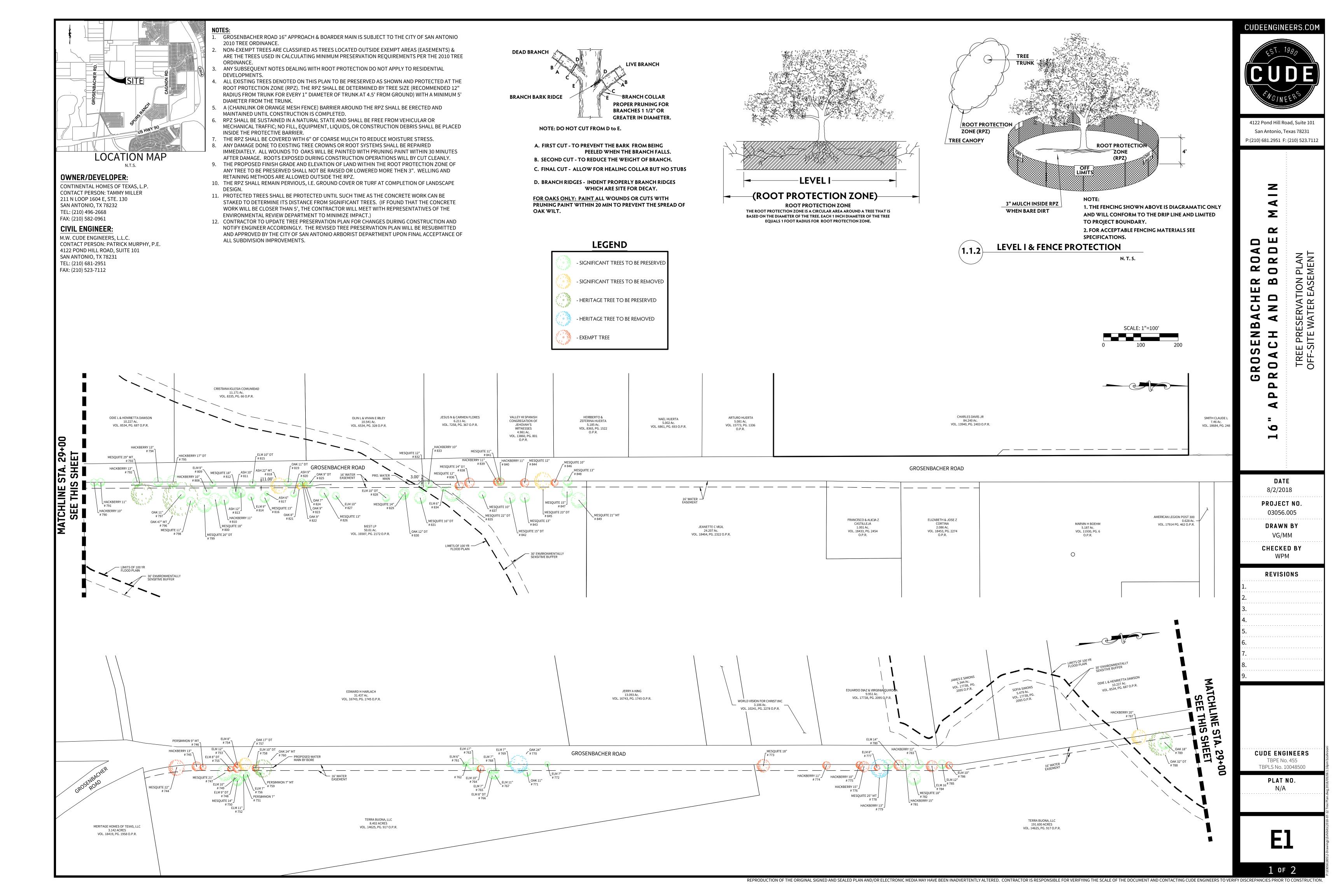
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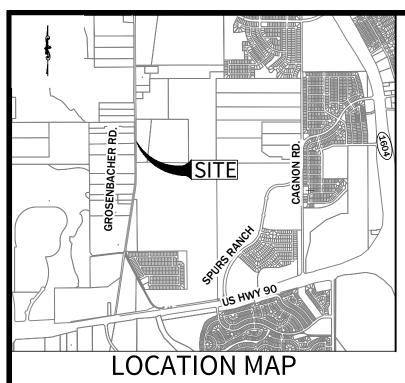
**CUDE ENGINEERS** 

TBPLS No. 10048500 PLAT NO. N/A

TBPE No. 455

3 OF 3





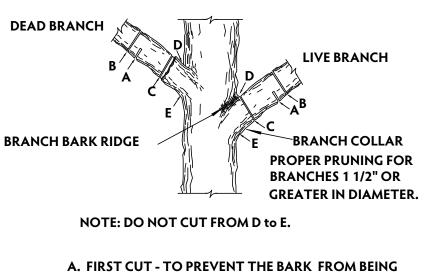
### OWNER/DEVELOPER:

CONTINENTAL HOMES OF TEXAS, L.P. CONTACT PERSON: TAMMY MILLER 211 N LOOP 1604 E, STE. 130 SAN ANTONIO, TX 78232 TEL: (210) 496-2668 FAX: (210) 582-0961

# **CIVIL ENGINEER:**

M.W. CUDE ENGINEERS, L.L.C. CONTACT PERSON: PATRICK MURPHY, P.E. 4122 POND HILL ROAD, SUITE 101 SAN ANTONIO, TX 78231 TEL: (210) 681-2951 FAX: (210) 523-7112

- GROSENBACHER ROAD 16" APPROACH & BOARDER MAIN IS SUBJECT TO THE CITY OF SAN ANTONIO 2010 TREE ORDINANCE.
- NON-EXEMPT TREES ARE CLASSIFIED AS TREES LOCATED OUTSIDE EXEMPT AREAS (EASEMENTS) & ARE THE TREES USED IN CALCULATING MINIMUM PRESERVATION REQUIREMENTS PER THE 2010 TREE
- ANY SUBSEQUENT NOTES DEALING WITH ROOT PROTECTION DO NOT APPLY TO RESIDENTIAL DEVELOPMENTS.
- ALL EXISTING TREES DENOTED ON THIS PLAN TO BE PRESERVED AS SHOWN AND PROTECTED AT THE ROOT PROTECTION ZONE (RPZ). THE RPZ SHALL BE DETERMINED BY TREE SIZE (RECOMMENDED 12" RADIUS FROM TRUNK FOR EVERY 1" DIAMETER OF TRUNK AT 4.5' FROM GROUND) WITH A MINIMUM 5'
- A (CHAINLINK OR ORANGE MESH FENCE) BARRIER AROUND THE RPZ SHALL BE ERECTED AND
- MAINTAINED UNTIL CONSTRUCTION IS COMPLETED. RPZ SHALL BE SUSTAINED IN A NATURAL STATE AND SHALL BE FREE FROM VEHICULAR OR
- MECHANICAL TRAFFIC; NO FILL, EQUIPMENT, LIQUIDS, OR CONSTRUCTION DEBRIS SHALL BE PLACED
- THE RPZ SHALL BE COVERED WITH 6" OF COARSE MULCH TO REDUCE MOISTURE STRESS. ANY DAMAGE DONE TO EXISTING TREE CROWNS OR ROOT SYSTEMS SHALL BE REPAIRED IMMEDIATELY. ALL WOUNDS TO OAKS WILL BE PAINTED WITH PRUNING PAINT WITHIN 30 MINUTES
- AFTER DAMAGE. ROOTS EXPOSED DURING CONSTRUCTION OPERATIONS WILL BY CUT CLEANLY. 9. THE PROPOSED FINISH GRADE AND ELEVATION OF LAND WITHIN THE ROOT PROTECTION ZONE OF ANY TREE TO BE PRESERVED SHALL NOT BE RAISED OR LOWERED MORE THEN 3". WELLING AND RETAINING METHODS ARE ALLOWED OUTSIDE THE RPZ.
- 10. THE RPZ SHALL REMAIN PERVIOUS, I.E. GROUND COVER OR TURF AT COMPLETION OF LANDSCAPE
- 11. PROTECTED TREES SHALL BE PROTECTED UNTIL SUCH TIME AS THE CONCRETE WORK CAN BE STAKED TO DETERMINE ITS DISTANCE FROM SIGNIFICANT TREES. (IF FOUND THAT THE CONCRETE WORK WILL BE CLOSER THAN 5', THE CONTRACTOR WILL MEET WITH REPRESENTATIVES OF THE ENVIRONMENTAL REVIEW DEPARTMENT TO MINIMIZE IMPACT.)
- 12. CONTRACTOR TO UPDATE TREE PRESERVATION PLAN FOR CHANGES DURING CONSTRUCTION AND NOTIFY ENGINEER ACCORDINGLY. THE REVISED TREE PRESERVATION PLAN WILL BE RESUBMITTED AND APPROVED BY THE CITY OF SAN ANTONIO ARBORIST DEPARTMENT UPON FINAL ACCEPTANCE OF ALL SUBDIVISION IMPROVEMENTS.



- PEELED WHEN THE BRANCH FALLS.
- B. SECOND CUT TO REDUCE THE WEIGHT OF BRANCH.
- C. FINAL CUT ALLOW FOR HEALING COLLAR BUT NO STUBS

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.

- SIGNIFICANT TREES TO BE PRESERVE

- SIGNIFICANT TREES TO BE REMOVED

- HERITAGE TREE TO BE PRESERVED

- HERITAGE TREE TO BE REMOVED

- EXEMPT TREE

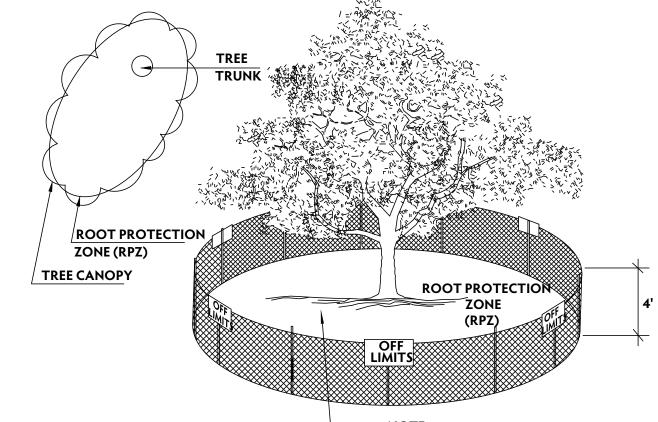
HACKBERRY\*

**LEGEND** 

D. BRANCH RIDGES - INDENT PROPERLY BRANCH RIDGES

# -(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.** 



3" MULCH INSIDE RPZ WHEN BARE DIRT

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.

13

**MESQUITE\*** 

**HACKBERRY\*** 

793

LEVEL I & FENCE PROTECTION

29

# OFF-SITE WATER EASEMENT CALCUATIONS (TOTAL TREES OUTSIDE OF FLOODPLAIN & ESA)

PRESERVATION CALCULATIONS - TREES (OUTSIDE OF FLOODPLAIN & ESA)

PROTECTED TREES TOTAL INCHES = 740 INCHES PROTECTED TREES PRESERVED INCHES **= 387 INCHES** = 353 INCHES PROTECTED TREES REMOVED INCHES = 52.30% PROTECTED TREES PRESERVATION RATE (25% REQ.)

# OFF-SITE WATER EASEMENT CALCUATIONS (FLOODPLAIN & ESA TREES)

PRESERVATION CALCULATIONS - SIGNIFICANT TREES (INSIDE OF ESA)

SIGNIFICANT TREES TOTAL INCHES = 28 INCHES SIGNIFICANT TREES PRESERVED INCHES = 28 INCHES = 0 INCHES SIGNIFICANT TREES REMOVED INCHES SIGNIFICANT TREES PRESERVATION RATE (80% REQ.) = 100%

# PRESERVATION CALCULATIONS - HERITAGE (INSIDE OF ESA)

PRESERVATION CALCULATIONS - SIGNIFICANT TREES (INSIDE THE FLOOD PLAIN)

SIGNIFICANT TREES TOTAL INCHES **= 429 INCHES** = 372 INCHES SIGNIFICANT TREES PRESERVED INCHES SIGNIFICANT TREES REMOVED INCHES = 57 INCHES SIGNIFICANT TREES PRESERVATION RATE (80% REQ.) = 86.71%

## PRESERVATION CALCULATIONS - HERITAGE (INSIDE OF FLOOD PLAIN)

HERITAGE TREES TOTAL INCHES **= 108 INCHES** HERITAGE TREES PRESERVED INCHES = 108 INCHES HERITAGE TREES REMOVED INCHES = 0 INCHES HERITAGE TREES PRESERVATION RATE (100% REQ.) = 100% = 0 INCHES HERITAGE TREE PRESERVATION DEFICIT

MITIGATION SUMMERY

NO MITIGATION REQUIRED

		Significant Tree	Significant Tree	Heritage Tree	Heritage Tree	Exempt
Number	Species	Inches Preserved	Inches Removed	Inches Preserved	Inches Removed	Tree
744	MESQUITE					22
745	HACKBERRY					13
746	PERSIMMON					9
747	MESQUITE	21				
748	ELM	9				
749	ELM	10				
750	MESQUITE	14				
751	PERSIMMON	7				
752	ELM	11				
753	ELM					12
754	ELM					8
755	ELM					8
756	ELM	7				
757	OAK		17			
758	ELM					10
759	PERSIMMON	7				
760	OAK			24		
761	ELM	6				
762	ELM	6				
763	ELM	17				
764	ELM					10
765	ELM	7				
766	ELM	8				
767	ELM	11				
768	ELM	7				
769	ELM	7				
770	OAK				24	
771	OAK	11				
<del>772</del> 772	ELM	7				
<del>772</del> 773	MESQUITE					18
<del>773</del> 774	HACKBERRY					11
775	HACKBERRY					10
776	HACKBERRY					15
<del>773</del> 777	ELM					8
	MESQUITE				35	
778		13			25	
779	HACKBERRY	15				1 1
780	ELM	15				14
781	HACKBERRY	15				
782	MESQUITE	18				
783	HACKBERRY	12				4.0
784	ELM	42				16
785	ELM	12				
786	ELM					10
787	HACKBERRY*		20			
788	OAK*			32		
789	OAK*	18				
790	HACKBERRY*	10				
791	HACKBERRY*	11				

\* DENOTES TREES WITHIN FLOOD PLAIN.

\*\* DENOTES TREES WITHIN ESA.

794	HACKBERRY	13				
795	HACKBERRY*	17				
796	OAK*			47		
797	OAK*	11				
798	MESQUITE*	11				
799	MESQUITE*	20				
800	MESQUITE *	18				
808	HACKBERRY*	10				
809	ELM*	9				
810	HACKBERRY*	11				
811	ASH*	10				
812	MESQUITE*	18				
813	ASH*	12				
814	ELM*	9				
815	ELM*	10				
816	MESQUITE*	13				
817	ASH*	6				
818	ASH*		22			
819	OAK*	11				
820	ASH*	9				
821	OAK*	_	8			
822	OAK*	9				
823	OAK*	9				
824	OAK*	_	7			
825	OAK*	9	,			
826	MESQUITE*	13				
827	ELM*	10				
828	ELM*	10				
829	MESQUITE*	14				
830	OAK*	12				
831	MESQUITE*	16				
832	MESQUITE**	12				
833	HACKBERRY**	10				
834	ELM**	6				
835	MESQUITE	22				
836	MESQUITE					12
837	MESQUITE	10				12
838	MESQUITE	10				14
839	HACKBERRY					11
840	HACKBERRY					11
841	MESQUITE	11				11
842	MESQUITE	15				
843	MESQUITE	13				
844	MESQUITE	15				12
845	MESQUITE		23			12
845	MESQUITE		25			10
	MESQUITE	15				10
847		13				+
848	MESQUITE					
849	MESQUITE	21	07	422	40	254
		763	97	132	49	264

**CUDEENGINEERS.COM** 4122 Pond Hill Road, Suite 101

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ESERVATE WATER

DATE 8/2/2018 PROJECT NO.

DRAWN BY VG/MM **CHECKED BY** 

WPM

REVISIONS

03056.005

**CUDE ENGINEERS** TBPE No. 455 TBPLS No. 10048500

PLAT NO.

2 of 2 REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION