2010 TREE PRESERVATION CALCULATION

OUTSIDE FLOODPLAIN AND FLOODPLAIN BUFFER

EXISTING TREE CANOPY AREA:	48.27 ACRES
EXISTING TREE CANOPY REQUIRED TO BE PRESERVED (30%):	14.48 ACRES
EXISTING TREE CANOPY TO BE PRESERVED (24.6%):	**11.86 ACRES**
MITIGATION REQUIRED:	14.48 ACRES – 11.86 ACRES = 2.62 ACRES
CONVERT TO TREES REQUIRED:	= 114,127 SF / 788 SF PER TREE = 145 TREES
INCHES MITIGATION REQUIRED:	= 145 TREES * 16.7" = 2,421.5 INCHES

FLOODPLAIN

EXISTING TREE CANOPY AREA:	5.08 ACRES
EXISTING TREE CANOPY AREA REQUIRED TO BE PRESERVED (80%):	4.07 ACRES
EXISTING TREE CANOPY AREA TO BE PRESERVED (100.0%):	**5.08 ACRES**
EXISTING TREE CANOPY AREA REMOVED:	0.00 ACRES

FLOODPLAIN BUFFER

EXISTING TREE CANOPY AREA:	0.75 ACRES
EXISTING TREE CANOPY REQUIRED TO BE PRESERVED: (80%):	0.60 ACRES
EXISTING TREE CANOPY TO BE PRESERVED (80.0%):	**0.60 ACRES**
EXISTING TREE CANOPY AREA REMOVED:	0.15 ACRES

STEEP SLOPES

EXISTING STEEP SLOPE AREA:	5.36 ACRES
EXISTING STEEP SLOPE AREA REQUIRED TO BE PRESERVED: (80%):	4.3 ACRES
EXISTING STEEP SLOPE AREA TO BE PRESERVED (80%):	**4.3 ACRES**
EXISTING STEEP SLOPE AREA TO BE REMOVED:	1.06 ACRES

TREE PLANTING

TOTAL LOTS WITHIN THE TREE PERMIT AREA	= 988 LOTS
TOTAL LOTS THAT FALL WITHIN THE TEXAS RESEARCH PARK MASTER TREE PLAN BOUNDARY	= 988 LOTS – 63 LOTS (UNIT–4) = 925 LOTS
REQUIRED TREES PLANTED PER LOT PER UDC WITHIN ALL UNITS (NOT COUNTED TOWARDS MITIGATION)	= 2 TREES / LOT X 925 LOTS = 1,850 TREES 1,850 TREES @ 1.5" MIN = 2,775"
ADDITIONAL TREES PLANTED PER LOT WITHIN THE UNITS 1, 2, 3, 5, 6A AND 6B (COUNTED TOWARD INCHES MITIGATION AND FINAL CANOPY REQUIREMENTS)	= 1 TREE / LOT X 425 LOTS = 425 TREES 425 TREES @ 1.5" MIN = 637.5"
ADDITIONAL TREES PLANTED PER LOT WITHIN THE UNITS 7A, 7B, AND 8 (COUNTED TOWARD INCHES MITIGATION AND FINAL CANOPY REQUIREMENTS)	= 2 TREE / LOT X 160 LOTS = 320 TREES 320 TREES @ 1.5" MIN = 480"
ADDITIONAL TREES PLANTED PER LOT WITHIN THE UNITS 9, 10A, 10B, 11, AND 13 (COUNTED TOWARD INCHES MITIGATION AND FINAL CANOPY REQUIREMENTS)	= 2 TREES / LOT X 289 LOTS = 578 TREES 578 TREES @ 2.5" MIN = 1445"
UPSIZE UDC TREES TO 2" WITHIN UNITS 9, 10A, 10B, 11, AND 13 (COUNTED TOWARDS MITIGATION)	= 2 TREES / LOT X 289 LOTS = 578 TREES 578 TREES @ 0.5" MIN = 289"
ADDITIONAL TREES PLANTED STREETSCAPE TREES (UNIT–1 & UNIT–3)	= 16 TREES = 16 X 1200 SF (90%) = 0.40 ACRES
ADDITIONAL TREES PLANTED & STREETSCAPE TREES (UNIT–5)	= 4 TREES = 4 X 1200 SF (90%) = 0.10 ACRES
ADDITIONAL TREES PLANTED IN UNIT–5 OPENSPACE	= 6 TREES = 6 X 1200 SF (90%) = 0.15 ACRES

PROPOSED TEXAS RESEARCH PARK TREE CANOPY CALCULATIONS

EXISTING TREE CANOPY TO BE PRESERVED =11.86 ACRES

TREE CANOPY PLANTED PER UDC (LARGE SHADE = 2/LOT)= 1,200 SQUARE FEET x 90% = 1080 SQUARE FEET OF CANOPY PER TREE

PROPOSED TREE CANOPY PLANTED FROM UDC TREES = 925 LOTS @ 2 TREES/LOT = 1,850 TREES
@ 1080 SQUARE FEET OF SHADE AREA/TREE = 45.87 ACRES

PROPOSED TREE CANOPY PLANTED FROM ADDITIONAL TREES = 425 LOTS @ 1 TREES/LOT = 425 TREES
@ 1080 SQUARE FEET OF SHADE AREA/TREE = 10.54 ACRES

ADDITIONAL PROPOSED TREE CANOPY PLANTED FROM ADDITIONAL TREES = 160 LOTS @ 2 TREES/LOT = 320 TREES
@ 1080 SQUARE FEET OF SHADE AREA/TREE = 7.93 ACRES

ADDITIONAL PROPOSED TREE CANOPY PLANTED FROM ADDITIONAL TREES = 289 LOTS @ 2 TREES/LOT = 578 TREES
@ 1080 SQUARE FEET OF SHADE AREA/TREE = 14.33 ACRES

ADDITIONAL TREE CANOPY = 0.60 ACRES (FLOODPLAIN BUFFER) + 0.40 ACRES (STREETSCAPE TREES UNITS 1 & 3) + 0.10 ACRES (STREETSCAPE TREES UNIT 5) + 0.15 ACRES (OPEN SPACE TREES UNIT 5) = 1.25 ACRES

PRESERVED CANOPY + PROPOSED CANOPY =11.86 ACRES + 45.87 ACRES + 10.54 ACRES + 7.93 ACRES + 14.33 ACRES + 1.25 ACRES = 91.78 ACRES

TOTAL AREA OF TEXAS RESEARCH PARK MDP = 257.25 ACRES

TOTAL AREA OF TEXAS RESEARCH PARK UNIT–4 TREE PROTECTION PLAN (A/P #2183603) = 20.29 ACRES

TOTAL AREA OF TEXAS RESEARCH PARK MASTER TREE PLAN = 257.25 ACRES – 20.29 ACRES = 236.96 ACRES

REQUIRED TREE CANOPY (38% COVERAGE) = 236.96 * 38% = 90.04 ACRES

PROPOSED TREE CANOPY COVERAGE = 91.78/236.96 ACRES = 38.7% (38% REQUIRED)

PROTECTED HERITAGE TREES TO REMAIN

TAG #	SPECIES	DBH (IN)
1375	OAK	26
4900	OAK	25
4901	OAK	25
4903	ELM	28
4906	OAK	34
4908	ELM	42
4909	OAK	39
4910	OAK	30
4911	OAK	29
4913	ELM	27
4915	ELM	40
4918	ELM	25
4921	ELM	24
4922	PECAN	24
4923	PECAN	26
4926	MESQUITE	27
4929	PECAN	29
4930	HACKBERRY	25
4931	MESQUITE	28
4934	MESQUITE	26
4935	MESQUITE	42
4938	ELM	26
4939	ELM	24
4940	ELM	25
4942	OAK	25
4946	OAK	24
4948	ELM	24
4949	OAK	35
4950	OAK	35
4951	OAK	25
4953	OAK	28
4954	OAK	36
4955	OAK	31
4956	OAK	27
4957	OAK	24
4958	ELM	37
4959	OAK	23
4960	OAK	24
4963	OAK	24
4964	OAK	26
	TOTAL	**1144**

PROTECTED HERITAGE TREES TO BE REMOVED

TAG #	SPECIES	DBH (IN)
1091	OAK	25
1094	OAK-M	30.5
4961	OAK	28
4962	OAK	24
4967	MESQUITE	24
	TOTAL	**131.5**

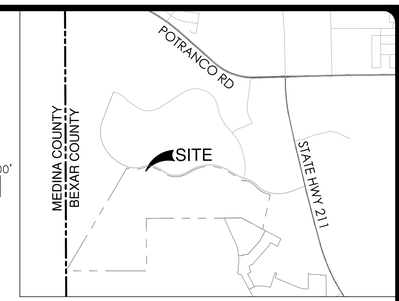
2010 HERITAGE TREE PRESERVATION CALCULATION

TOTAL HERITAGE INCHES	= 1144" PROTECTED PRESERVED + 131.5" PROTECTED REMOVED = 1,275.5"
REQUIRED HERITAGE PRESERVATION	= 1,275.5" X 100% = 1,275.5"
MITIGATION REQUIRED	= 131.5" REMOVED X 3:1 MITIGATION = 394.5"
MITIGATION REQUIRED FROM TREE CANOPY REMOVAL	= 145 TREES * 16.7" = 2,421.5"
TOTAL MITIGATION REQUIRED	= 394.5" + 2,421.5" = 2,816"
ADDITIONAL INCHES FROM PLANTING	= 637.5" + 480" + 1445" + 289" = 2,851.5"
EXCESS MITIGATION	2,851.5" FROM PLANTING – 2,816" REQUIRED MITIGATION = 35.5" EXCESS

SCALE: 1"= 200'
0' 200' 400' 600'

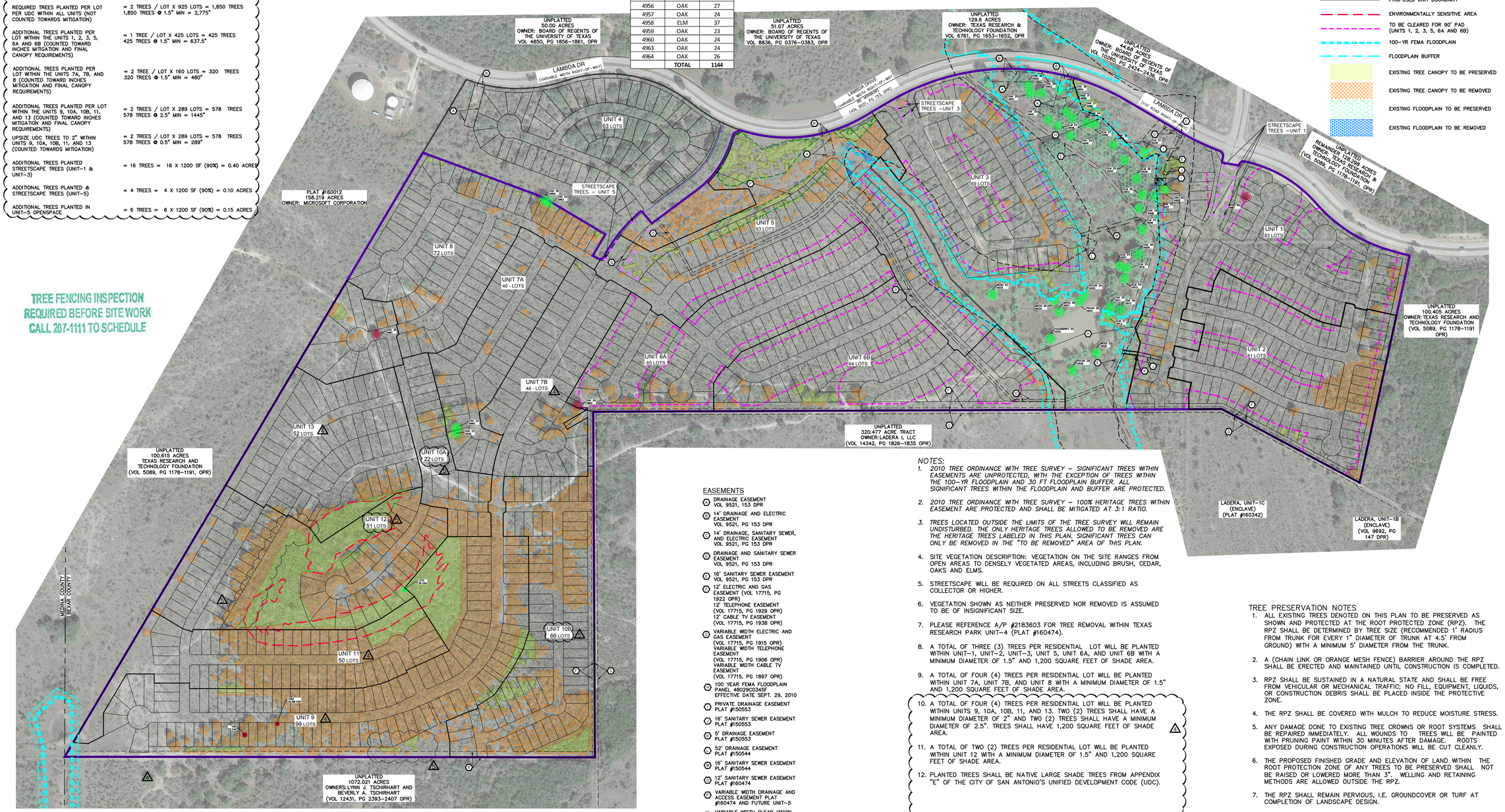
DATE OF PRINT: December 22, 2016

AP# 2038316 / BSA# 2223277-2038316
TRE-APP-APP20-38800125
TREE PRESERVATION APPROVED
DATE 8/10/2021
BY Eric Rodriguez
Revision



LOCATION MAP

SCALE: 1"=2000'



TREE FENCING INSPECTION REQUIRED BEFORE SITE WORK
CALL 207-1111 TO SCHEDULE

LEGEND

- STREETSCAPE TREE
- EXEMPT HERITAGE TREE
- PROTECTED HERITAGE TREE TO BE REMOVED
- HERITAGE TREE TO REMAIN
- TEXAS RESEARCH PARK TREE PRESERVATION PLAN BOUNDARY
- PROPOSED UNIT BOUNDARY
- ENVIRONMENTALLY SENSITIVE AREA
- TO BE CLEARED FOR 90' PAD (UNITS 1, 2, 3, 5, 6A AND 6B)
- 100–YR FEMA FLOODPLAIN
- FLOODPLAIN BUFFER
- EXISTING TREE CANOPY TO BE PRESERVED
- EXISTING TREE CANOPY TO BE REMOVED
- EXISTING FLOODPLAIN TO BE PRESERVED
- EXISTING FLOODPLAIN TO BE REMOVED

EASEMENTS

(A) DRAINAGE EASEMENT VOL 9521, 153 DPR
(B) 14' DRAINAGE AND ELECTRIC EASEMENT VOL 9521, PG 153 DPR
(C) 14' DRAINAGE, SANITARY SEWER, AND ELECTRIC EASEMENT VOL 9521, PG 153 DPR
(D) DRAINAGE AND SANITARY SEWER EASEMENT VOL 9521, PG 153 DPR
(E) 16' SANITARY SEWER EASEMENT VOL 9521, PG 153 DPR
(F) 19' ELECTRIC AND GAS EASEMENT (VOL 17715, PG 1922 OPR)
12' TELEPHONE EASEMENT (VOL 17715, PG 1929 OPR)
12' CABLE TV EASEMENT (VOL 17715, PG 1938 OPR)
(G) VARIABLE WIDTH ELECTRIC AND GAS EASEMENT (VOL 17715, PG 1915 OPR)
VARIABLE WIDTH TELEPHONE EASEMENT (VOL 17715, PG 1906 OPR)
VARIABLE WIDTH CABLE TV EASEMENT (VOL 17715, PG 1897 OPR)
(H) 100 YEAR FEMA FLOODPLAIN PANEL 48029C0345F EFFECTIVE DATE SEPT. 29, 2010
(I) PRIVATE DRAINAGE EASEMENT PLAT #150553
(J) 16' SANITARY SEWER EASEMENT PLAT #150553
(K) 5' DRAINAGE EASEMENT PLAT #150553
(L) 52' DRAINAGE EASEMENT PLAT #150544
(M) 16' SANITARY SEWER EASEMENT PLAT #150544
(N) 12' SANITARY SEWER EASEMENT PLAT #160474
(O) VARIABLE WIDTH DRAINAGE AND ACCESS EASEMENT PLAT #160474 AND FUTURE UNIT–5
(P) VARIABLE WIDTH CLEAR VISION EASEMENT (VOL 20001, PG 8–11 DPR)
(Q) 28' ELECTRIC EASEMENT (DOC NO. 20190212556)

NOTES:

1. *2010 TREE ORDINANCE WITH TREE SURVEY – SIGNIFICANT TREES WITHIN EASEMENTS ARE UNPROTECTED, WITH THE EXCEPTION OF TREES WITHIN THE 100–YR FLOODPLAIN AND 30 FT FLOODPLAIN BUFFER. ALL SIGNIFICANT TREES WITHIN THE FLOODPLAIN AND BUFFER ARE PROTECTED.*
2. *2010 TREE ORDINANCE WITH TREE SURVEY – 100% HERITAGE TREES WITHIN EASEMENT ARE PROTECTED AND SHALL BE MITIGATED AT 3:1 RATIO.*
3. *TREES LOCATED OUTSIDE THE LIMITS OF THE TREE SURVEY WILL REMAIN UNDISTURBED. THE ONLY HERITAGE TREES ALLOWED TO BE REMOVED ARE THE HERITAGE TREES LABELED IN THIS PLAN. SIGNIFICANT TREES CAN ONLY BE REMOVED IN THE "TO BE REMOVED" AREA OF THIS PLAN.*
4. SITE VEGETATION DESCRIPTION: VEGETATION ON THE SITE RANGES FROM OPEN AREAS TO DENSELY VEGETATED AREAS, INCLUDING BRUSH, CEDAR, OAKS AND ELMS.
5. STREETSCAPE WILL BE REQUIRED ON ALL STREETS CLASSIFIED AS COLLECTOR OR HIGHER.
6. VEGETATION SHOWN AS NEITHER PRESERVED NOR REMOVED IS ASSUMED TO BE OF INSIGNIFICANT SIZE.
7. PLEASE REFERENCE A/P #2183603 FOR TREE REMOVAL WITHIN TEXAS RESEARCH PARK UNIT–4 (PLAT #160474).
8. A TOTAL OF THREE (3) TREES PER RESIDENTIAL LOT WILL BE PLANTED WITHIN UNIT–1, UNIT–2, UNIT–3, UNIT 5, UNIT 6A, AND UNIT 6B WITH A MINIMUM DIAMETER OF 1.5" AND 1,200 SQUARE FEET OF SHADE AREA.
9. A TOTAL OF FOUR (4) TREES PER RESIDENTIAL LOT WILL BE PLANTED WITHIN UNIT 7A, UNIT 7B, AND UNIT 8 WITH A MINIMUM DIAMETER OF 1.5" AND 1,200 SQUARE FEET OF SHADE AREA.
10. A TOTAL OF FOUR (4) TREES PER RESIDENTIAL LOT WILL BE PLANTED WITHIN UNITS 9, 10A, 10B, 11, AND 13. TWO (2) TREES SHALL HAVE A MINIMUM DIAMETER OF 2" AND TWO (2) TREES SHALL HAVE A MINIMUM DIAMETER OF 2.5". TREES SHALL HAVE 1,200 SQUARE FEET OF SHADE AREA. (1)
11. A TOTAL OF TWO (2) TREES PER RESIDENTIAL LOT WILL BE PLANTED WITHIN UNIT 12 WITH A MINIMUM DIAMETER OF 1.5" AND 1,200 SQUARE FEET OF SHADE AREA.
12. PLANTED TREES SHALL BE NATIVE LARGE SHADE TREES FROM APPENDIX "E" OF THE CITY OF SAN ANTONIO'S UNIFIED DEVELOPMENT CODE (UDC).

TREE PRESERVATION NOTES

1. ALL EXISTING TREES DENOTED ON THIS PLAN TO BE PRESERVED AS SHOWN AND PROTECTED AT THE ROOT PROTECTED ZONE (RPZ). THE RPZ SHALL BE DETERMINED BY TREE SIZE (RECOMMENDED 1' RADIUS FROM TRUNK FOR EVERY 1" DIAMETER OF TRUNK AT 4.5' FROM GROUND) WITH A MINIMUM 5' DIAMETER FROM THE TRUNK.
2. A (CHAIN LINK OR ORANGE MESH FENCE) BARRIER AROUND THE RPZ SHALL BE ERECTED AND MAINTAINED UNTIL CONSTRUCTION IS COMPLETED.
3. 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 INSIDE THE PROTECTIVE ZONE.
4. THE RPZ SHALL BE COVERED WITH MULCH TO REDUCE MOISTURE STRESS.
5. ANY DAMAGE DONE TO EXISTING TREE CROWNS OR ROOT SYSTEMS SHALL BE REPAIRED IMMEDIATELY. ALL WOUNDS TO TREES WILL BE PAINTED WITH PRUNING PAINT WITHIN 30 MINUTES AFTER DAMAGE. ROOTS EXPOSED DURING CONSTRUCTION OPERATIONS WILL BE CUT CLEANLY.
6. THE PROPOSED FINISHED GRADE AND ELEVATION OF LAND WITHIN THE ROOT PROTECTION ZONE OF ANY TREES TO BE PRESERVED SHALL NOT BE RAISED OR LOWERED MORE THAN 3". WELLING AND RETAINING METHODS ARE ALLOWED OUTSIDE THE RPZ.
7. THE RPZ SHALL REMAIN PERVIOUS, I.E. GROUNDCOVER OR TURF AT COMPLETION OF LANDSCAPE DESIGN.

NO.	REVISION	DATE
1	REVISED FLOODPLAIN LIMIT AND UPDATED CALCS ACCORDINGLY	4-19-17
2	REVISED TREE SAVE AREAS	3-6-18
3	REVISED TREE SAVE AREAS, PLANTING IN UNIT–5	11-6-18
4	REVISED TREE SAVE AREAS, PLANTING TREE SIZES	12-28-20
5	REVISED TREE SAVE AREA	5-12-21

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TEXAS BOARD OF PROFESSIONAL LAND SURVEYING: FIRM REGISTRATION # 100288-00

TEXAS RESEARCH PARK
SAN ANTONIO, TEXAS
MASTER TREE PRESERVATION PLAN
MDP #15-00004.01

PLAT NO. N/A
JOB NO. 8946-03
DATE JUNE 2017
DESIGNER DW
CHECKED SSC DRAWN DW
SHEET 1 OF 2

Date: May 24, 2021, 4:27pm User ID: YSanchez
File: K:\SAN\VA\103\Design\Civil\MDP\TRP Master Tree Preservation Plan–REV5.dwg

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