

TREE CANOPY CALCULATION

CANOPY STATE	CANOPY AREA (SF)	SITE AREA (SF)	CANOPY COVERAGE (%)	25% MIN. NON-RESIDENT, CANOPY PRESERVATION (YES/NO)
PRE-DEVELOP CANOPY	206,035.03	534,918.10	28.51%	YES
POST-DEVELOP CANOPY	95,697.80	534,918.10	17.89%	NO

MITIGATION TABLE

Canopy - Lot Area
Site Area = 534,918.10 sf
17.89% Current Canopy Area = 95,697.80 sf
25% Min. Required Canopy Area = 133,730 sf
Area to Mitigate = 133,730 - 95,697.80 = 38,032.20 sf
Number of Trees = (38032.20 sf) / (788 sf/tree) = 48 trees
Inches = 48 trees X 1.5 in = 72 in
72 in X \$200 = \$14,400.00

NO.	SIZE	DESC.
113	13	MSQ
600	9	HACK
601	MUL. 14	HACK
602	9	HACK
603	6	HACK
604	8	HACK
605	9	HACK
606	10	HACK
607	12	HACK
608	11	HACK
609	9	HACK
610	12	HACK
611	13	HACK
612	14	HACK
613	24	MSQ
614	8	HACK
615	12	MSQ
616	18	HACK
617	18	HACK
618	10 x 3	HACK
619	23	MSQ
620	10	HACK
621	MUL. 24	HACK
622	15	MSQ
623	15	HACK
625	8	MSQ
627	12	MSQ
628	13	MSQ
629	MULT 12	MSQ
630	20	MSQ
631	13	MSQ
632	15	MSQ
633	6	MSQ
634	6	MSQ
635	6	MSQ
636	6	MSQ
637	16	MSQ
638	12	MSQ
639	10	MSQ
640	10	MSQ
641	12	MSQ
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643	12	MSQ
644	9	MSQ
645	9	MSQ
649	9	MSQ
650	12	MSQ
651	12	MSQ
652	7	MSQ
653	7	HACK
654	16	MSQ
655	16	MSQ
656	15	MSQ
657	15	MSQ
658	12	MSQ
659	14	MSQ
660	14	MSQ
661	14	MSQ
662	14	MSQ
663	16 x 10	MSQ
664	9 x 15	MSQ
665	15	MSQ
667	16 x 12	MSQ
668	14	MSQ
669	14	MSQ
670	14	MSQ
671	14	MSQ
672	14	MSQ
673	4 x 8	MSQ
674	14	MSQ
675	9 x 15	MSQ
676	8	HACK
677	9 x 13	MSQ
678	16	MSQ
679	17	MSQ
680	16	MSQ
681	14	MSQ

NO.	SIZE	DESC.
682	7	MSQ
683	10	MSQ
684	6	MSQ
685	6	MSQ
686	13	MSQ
687	12	MSQ
688	11	MSQ
689	17	MSQ
690	9 x 9	MSQ
691	9 x 11 x 11	MSQ
692	9	MSQ
693	8 x 8 x 9	MSQ
694	12	MSQ
695	8	MSQ
696	16	MSQ
697	12	MSQ
698	7	MSQ
699	9 x 10	MSQ
700	15	MSQ
701	11 x 11	MSQ
702	6 x 11	MSQ
703	11	MSQ
704	9	MSQ
705	7 x 9	MSQ
706	12	MSQ
707	10	MSQ
708	9	MSQ
709	8 x 9 x 10	MSQ
710	8	MSQ
711	7	MSQ
712	8 x 12	MSQ
713	6	HACK
714	12	MSQ
715	10	MSQ
716	11	MSQ
717	8	MSQ
718	7	MSQ
719	13	MSQ
720	7	MSQ
721	18	MSQ
722	8	MSQ
723	8 x 10	MSQ
724	12	MSQ
725	20	MSQ
726	14	MSQ
727	14	MSQ
728	10	MSQ
729	8	MSQ
730	7	MSQ
731	16	MSQ
732	16	MSQ
733	7	MSQ
734	22	MSQ
735	16	MSQ
736	16	MSQ
737	11	MSQ
738	9	MSQ
739	24	MSQ
740	18	MSQ
741	7 x 14	MSQ
742	9 x 10	MSQ
743	12 x 12	MSQ
744	10	MSQ
745	11	MSQ
746	10 x 11	MSQ
747	13	MSQ
748	11	MSQ
749	15	MSQ
750	8	MSQ
751	7	HACK
752	10	MSQ
753	17	MSQ
754	14	MSQ
755	18	MSQ
756	13	MSQ
757	14	MSQ

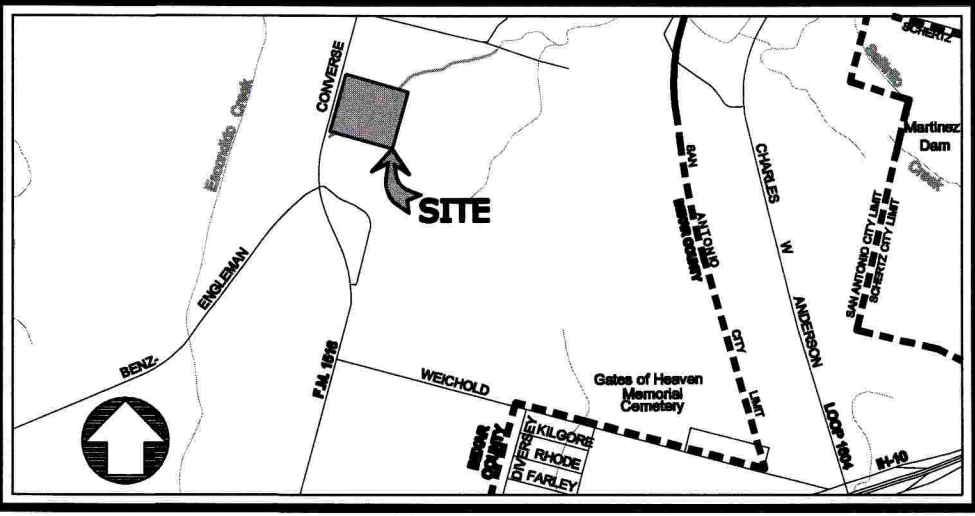
NOTES:

- EXIST. TREE LOCATION — 6230
- SIZE OF TREES ARE IN INCHES OF A FOOT
- (MUL.) = MULTI-TRUNK
- FOUND HERITAGE TREES= 613, 621 & 739

AERIAL TAKEN: 11/17/12



PRE-DEVELOP SITE CONDITIONS



LOCATION MAP
NOT TO SCALE / MAPSCO 2010 / PAGE:586 / GRID:D5

SCALE: 1" = 60'

LEGEND

CANOPY AREA

CANOPY AREA

REVISIONS

NO.	DESCRIPTION	DATE	APPR.

SEAL

Gaylord E. Reaves

TEXAS TREE REGISTRATION F-140

G.E. Reaves Engineering, Inc.
P.O. Box 791793
San Antonio, TX 78279-1793
(210) 490-4506 Fax 490-4812
www.ge-reaveseng.com

SHEET TITLE:

F.M. 1516 SELF STORAGE
TREE STAND DELINEATION PLAN

JOB NO:

14-0418

DATE:

09/21/2015

DESIGNER:

OB

CHECKED:

OB

DRAWN:

JYB

SHEET: 1 OF 2

TP901

FILE: H:\CIVIL\CVIL14-0418\DWG\EX150921.dwg

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TREE STAND DELINEATION CALCULATION FOR UPLANDS
AREA WITHOUT FLOODPLAIN & FLOODPLAIN BUFFER AREA

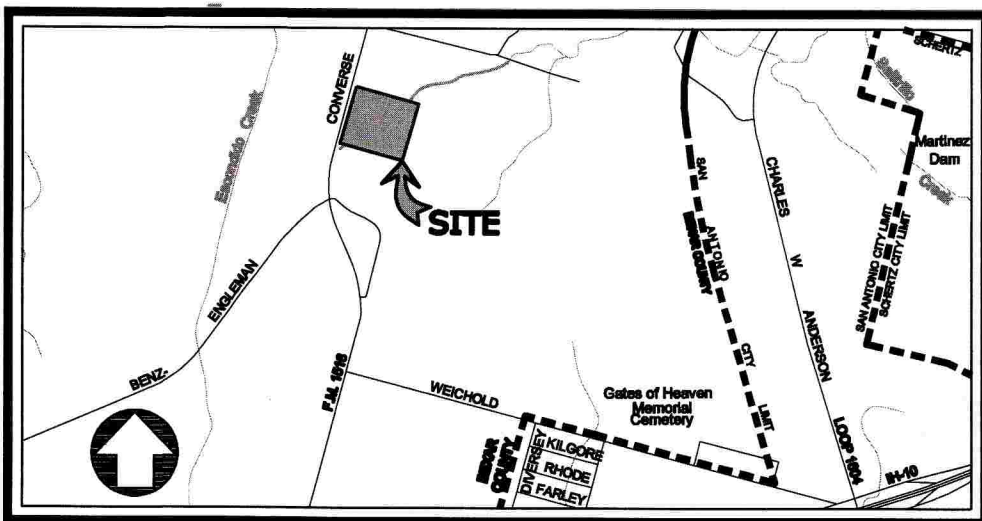
CANOPY STATE	CANOPY AREA (SF)	CANOPY COVERAGE (%)	35% MIN. NON-RESIDENT. CANOPY PRESERVATION (YES/NO)
(2012) PRE-DEVELOP CANOPY	184,810.80	100%	YES
(2015) POST-DEVELOP CANOPY	84,168.49	45.5%	YES

TREE STAND DELINEATION CALCULATION FOR
FLOODPLAIN

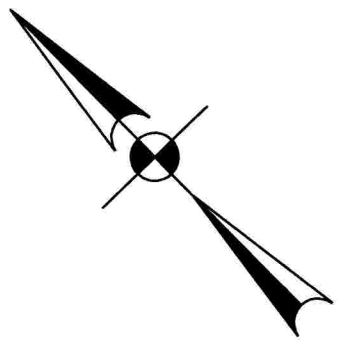
CANOPY STATE	CANOPY AREA (SF)	CANOPY COVERAGE (%)	80% MIN. FLOODPLAIN CANOPY PRESERVATION (YES/NO)
(2012) FLOODPLAIN	80,339.85	100%	YES
(2015) FLOODPLAIN	70,855.05	88%	YES

TREE STAND DELINEATION CALCULATION FOR
FLOODPLAIN BUFFER

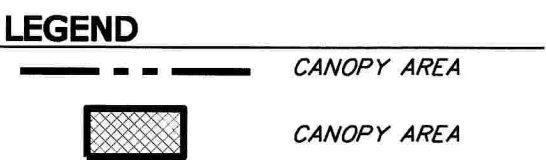
CANOPY STATE	CANOPY AREA (SF)	CANOPY COVERAGE (%)	80% MIN. FLOODPLAIN BUFFER CANOPY PRESERVATION (YES/NO)
(2012) FLOODPLAIN BUFFER	21,224.23	100%	YES
(2015) FLOODPLAIN BUFFER	11,529.31	54%	NO



NOT TO SCALE / MAPSCO 2010 / PAGE:586 / GRID:D5



SCALE: 1" = 60'



UPLANDS MITIGATION TABLE

Canopy - Uplands Area
45.5% Current Canopy Area= 84,168.49 sf
35% Min. Required Canopy Area=64,698.78 sf
Excess of Canopy Uplands Area = 19,469.71 sf

FLOODPLAIN BUFFER
MITIGATION TABLE

Canopy - Floodplain Buffer Area
54% Current Canopy Area= 11,529.31 sf
80% Min. Required Canopy Area=16,949 sf
Area to Mitigate = 16,949 sf - 11,529.31 sf = 5,419.69 sf
Number of Trees = (5,419.69 sf) / (875 sf/tree) = 6.23 trees
Inches = 6.23 trees X 16.7 in. = 104 in
104 in X \$200 = \$20,800.00

NOTE: EXCESS OF UPLANDS CANOPY AREA TO BE APPLIED ON FLOODPLAIN BUFFER CANOPY AREA TO COVER AREA REQUIRED.

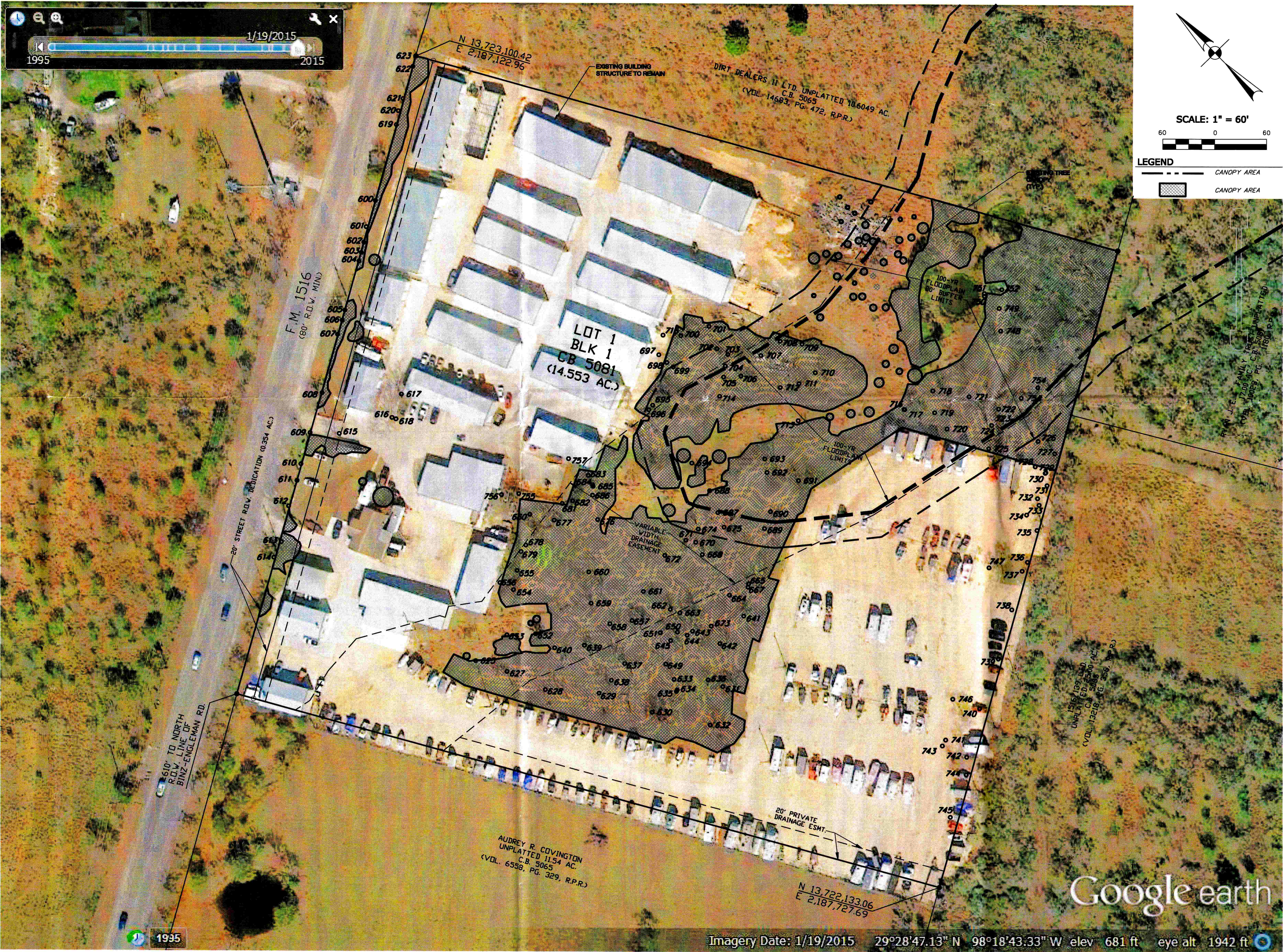
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607	12	HACK
608	11	HACK
609	9	HACK
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611	13	HACK
612	14	HACK
613	24	MSQ
614	8	HACK
615	12	MSQ
616	18	HACK
617	18	HACK
618	10 x 3	HACK
619	23	MSQ
620	10	HACK
621	MUL 24	HACK
622	15	MSQ
623	15	HACK
625	8	MSQ
627	12	MSQ
628	13	MSQ
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653	6	HACK
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661	14	MSQ
662	14	MSQ
663	16 x 10	MSQ
664	9 x 15	MSQ
665	15	MSQ
667	16 x 12	MSQ
668	14	MSQ
669	14	MSQ
670	14	MSQ
671	14	MSQ
672	14	MSQ
673	4 x 8	MSQ
674	14	MSQ
675	9 x 15	MSQ
676	8	HACK
677	9 x 13	MSQ
678	16	MSQ
679	17	MSQ
680	16	MSQ
681	14	MSQ

NO.	SIZE	DESC.
682	7	MSQ
683	10	MSQ
684	6	MSQ
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686	13	MSQ
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692	9	MSQ
693	8 x 8 x 9	MSQ
694	12	MSQ
695	8	MSQ
696	16	MSQ
697	12	MSQ
698	9	MSQ
699	9 x 10	MSQ
700	15	MSQ
701	11 x 11	MSQ
702	6 x 11	MSQ
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705	7 x 9	MSQ
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707	10	MSQ
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712	8 x 12	MSQ
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734	22	MSQ
735	16	MSQ
736	16	MSQ
737	11	MSQ
738	9	MSQ
739	24	MSQ
740	18	MSQ
741	7 x 14	MSQ
742	9 x 10	MSQ
743	12 x 12	MSQ
744	10	MSQ
745	11	MSQ
746	10 x 11	MSQ
747	13	MSQ
748	11	MSQ
749	15	MSQ
750	8	MSQ
751	7	HACK
752	10	MSQ
753	17	MSQ
754	14	MSQ
755	18	MSQ
756	13	MSQ
757	14	MSQ

NOTES:

- EXIST. TREE LOCATION = 6230
- SIZE OF TREES ARE IN INCHES OF A FOOT
- (MUL.) = MULTI-TRUNK
- FOUND HERITAGE TREES= 613, 621 & 739

AERIAL TAKEN: 1/19/15



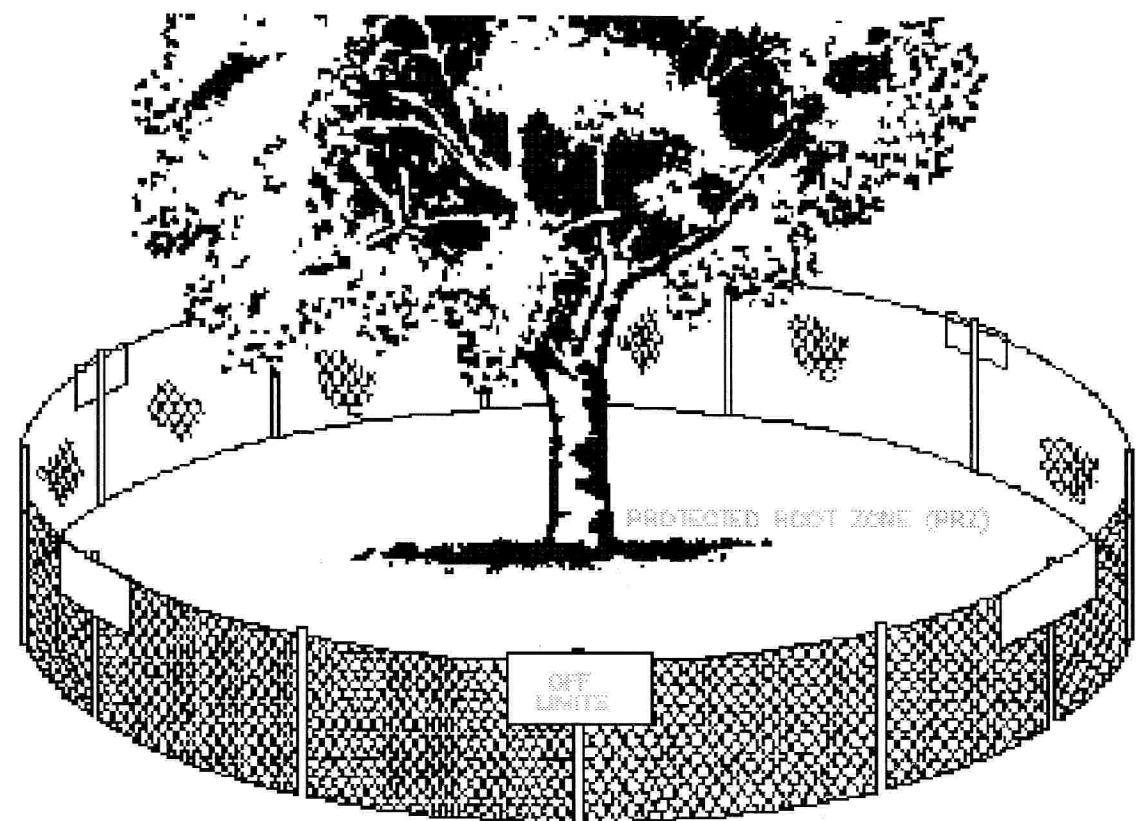
POST-DEVELOP SITE CONDITIONS



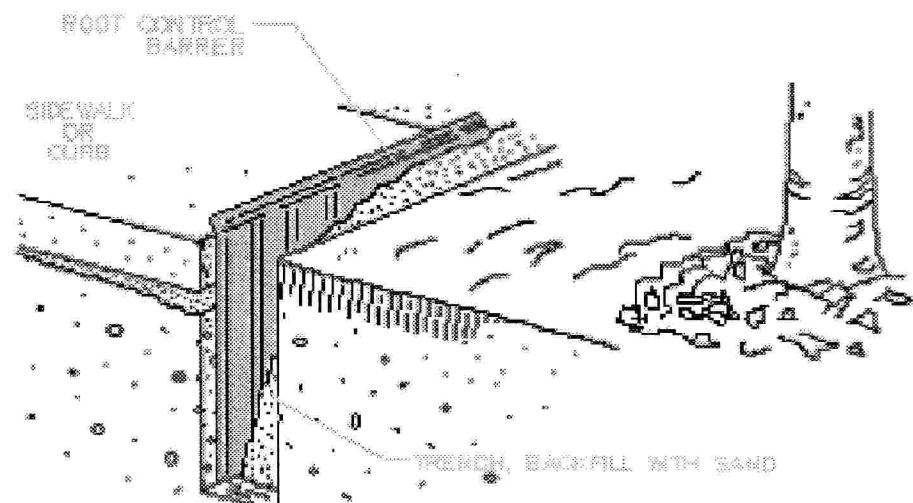
F.M. 1516 SELF STORAGE
TREE STAND DELINEATION PLAN
PLAT NO. 140551
5050 F.M. 1516
CONVERSE, TEXAS 78109

JOB NO: 14-0418
DATE: 10/24/2015
DESIGNER: OB
CHECKED: OB
DRAWN: JYB

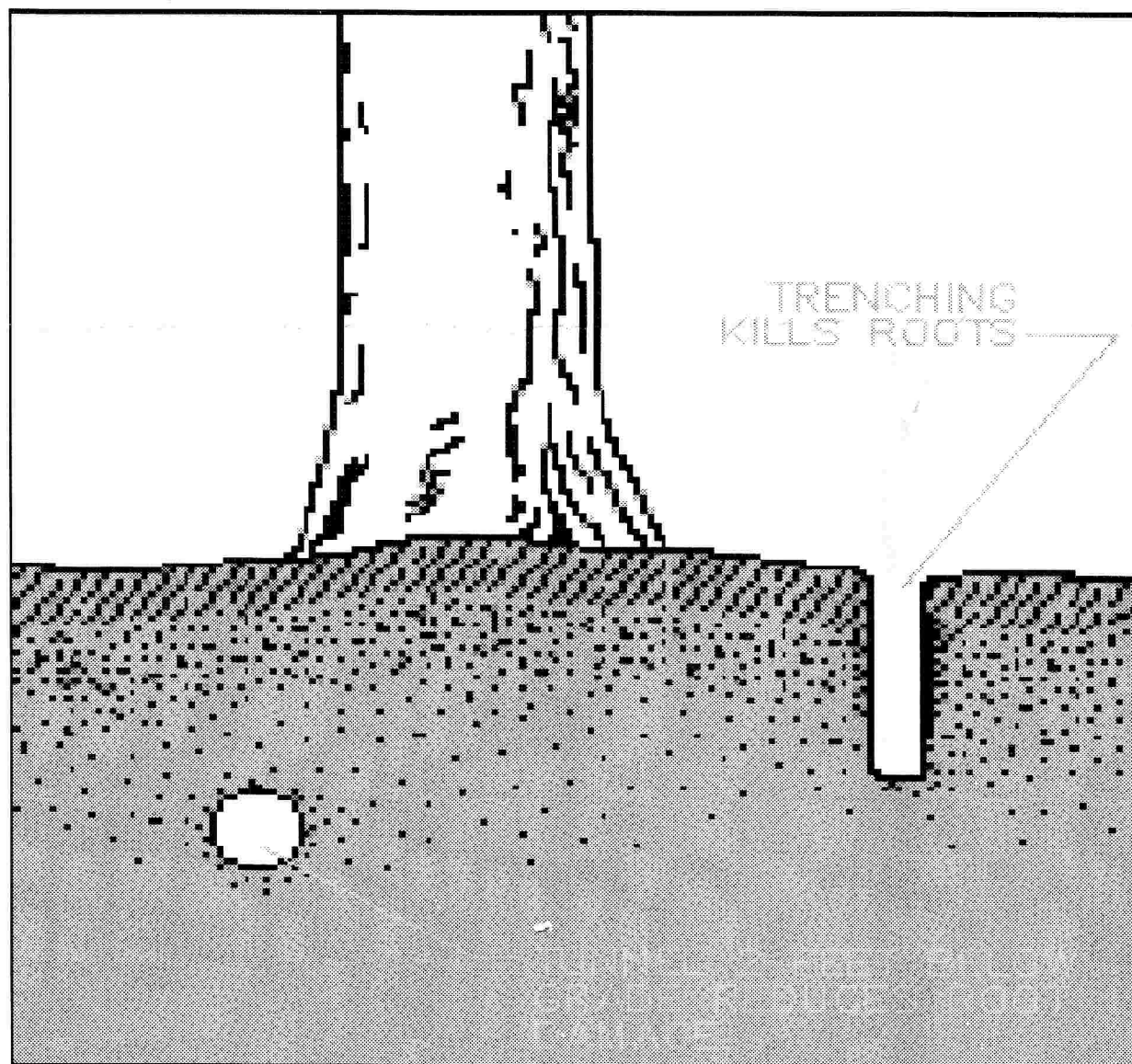
SHEET: 2 OF 2
TP902



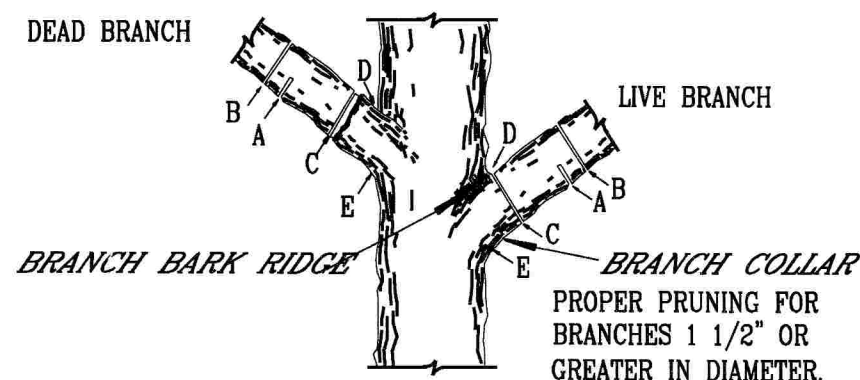
FENCING WITH SIGNS ALERT SUBCONTRACTORS AND LABORERS TO STAY OUT OF PROTECTED AREAS. IF UNABLE TO FENCE, USE 2X4's WIRED AROUND TRUNK OF TREE.



A VERTICAL UNDERGROUND BARRIER WILL HELP KEEP TREE ROOTS FROM DAMAGING CONCRETE AS THEY GROW.



PROTECTS ROOTS FROM DAMAGE WHEN LAYING UTILITY LINES BY TUNNELING RATHER THAN TRENCHING.



NOTE: DO NOT CUT FROM D TO E.

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

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

TREE PROTECTION NOTES:

- No equipment shall be operated or materials and equipment stored in the root protection zone of trees (within the drip line), including fill.
- Paint oak wounds caused from mechanical damage or pruning within 30 minutes to prevent the tree from getting the Oak Wilt Disease.

GENERAL NOTES:

Installation Posts: Installation posts shall be a minimum of 60 inches (1.5 m) long and steel "T" shaped with a minimum weight of 1.3 pounds per linear foot (6.3 kg per meter) with pointed on finish for rust protection.

Tie Wire: Wire for attaching the fabric to the t-posts shall be not less than No. 12 gauge galvanized wire. Sufficient fastening materials shall be furnished to provide for the securing of the fabric to the "T" line posts.

Used Material: Previously-used materials, meeting the above requirements and when approved by the Engineering, may be used.

Fabric shall conform to the least requirements of the ASTM A 392, Class 1 or ASTM A 491.

Protective fencing shall be erected at locations shown in the plans or as directed by the inspector and/or city Arborist or in accordance with the details shown on the plans of the drip lines of trees (Root Protection Zone) and/or landscape plant material. The protective fencing shall be erected before site work commences and shall remain in place during the entire construction phase.

The installation posts will be placed every 6 feet (2 m) around the drip line or RPZ and embedded to 18 inches (457 mm) deep. Fabric attachment shall be attached to the installation posts by the use of sufficient wire ties to securely fasten the fabric to the "T" posts as to hold the fabric in a stable and upright position.

CONSTRUCTION METHODS:

Protective lumber shall not be directly nailed to the tree, but held securely in place with heavy gauge wire wrapped over the lumber and around the tree at a minimum of 2 locations as shown above. The gap between the boards is to be 4 inches or less.

Mulch the RPZ to a level of 6 inches.

Do not clear, fill or grade in the RPZ of any tree.

Do not store, stockpile or dump any job material, soil or rubbish under the tree branches.

Do not park or store any equipment or supplies under the spread of the tree branches.

Do not set up any construction operations under the spread of the tree branches. (e.g. pipe cutting and threading, mortar mixing, painting or lumber cutting)

Nothing is to be nailed or attached to the trees, including temporary signs, markers, switches, wires, bracing, etc.

Do not permit runoff from waste materials including solvents, concrete washouts, asphalt tack coats (MC-30 oil), etc. to enter the RPZ. Barriers are to be provided to prevent such runoff substances from entering the RPZ whenever necessary, including in an area where rain or surface water could carry such materials to the root system of the tree.

MEASUREMENT:

Root Protective fencing shall be measured by the linear foot of accepted work, complete in place including repairs, for the duration of the construction activity.

Tree Trunk Protection shall be measured per linear foot of tree trunk circumference, of accepted work, complete in place including repairs for the duration of construction activity.

PAYMENT:

Tree and Landscape protective Fencing will be paid for at the unit price bid per linear foot (meter), which price shall be full compensation for furnishing and placing all materials, manipulation, labor, tools, equipment, and incidentals necessary to complete the work.

PENALTY:

Repair and Replacement of trees scheduled to remain and damaged by construction operations or lack of adequate protection during construction operations shall be at the contractor's expense, the contract sum will be reduced by the value of the tree as determined by using the accepted International Society of Arboriculture formula.

BID ITEMS:

Item 801.1: Root Protection Fencing - per linear foot (meter)

Item 801.2: Tree Trunk Protection - per linear foot of tree trunk Circumference (meter)

TREE PRUNING

The purpose of this specification is to describe a procedure for maintaining preserved trees before, during and after construction and for furnishing all materials, water, labor, tools, equipment and supplies required as specified by this item or as indicated on the plans.

Reference standards:

The contractor shall comply with the applicable provisions and recommendations of the publication listed below and these shall be utilized as reference standards, and form a part of this specification to the extent indicated by reference:

American National Standard Institute - ANSI A300-1995

MATERIALS:

- Tree pruning paint: Any latex, oil or asphalt base wound dressing.
- Mulch: Shredded wood residue with particle size not more than 6 inches (150 mm) in length.

CONSTRUCTION METHODS:

All pruning shall adhere to the standard practices in the American National Standard Institute, ANSI A300-1995. Pruning will be performed before construction to remove dead wood and minor branches to improve the level of safety within the project area. Also pruning will occur to repair any minor damage to branches due to construction activity, and improve the health of the trees to better tolerate the stresses endured during construction activities.

Removal of limbs which are 6 inches in diameter or greater is prohibited without consent of the City Arborist. Occasional branch, up to 1/4 inch diameter, which is dead, dying, diseased may remain when it is not practical to remove it.

Oak wounds must be painted with wound paint within 30 minutes to prevent infection from the Oak Wilt fungal organism.

Wood and debris shall become property of the contractor and shall be shredded and used on site for mulch or removed from the site. Cost of disposal to be paid by the contractor.

QUALITY ASSURANCE:

All tree pruning work shall be performed by a single firm specializing in tree pruning work, with a minimum of 3 years experience in the acceptable performance of similar work to that specified. Pruning is to be performed by personnel who, by training and on the job experience, are familiar with the techniques and hazards of this work.

All pruning shall adhere to the standard practices in the American National Standard Institute, ANSI A300-1995. Pruning shall consist of minor branch removal to improve the level of safety within the project area and to repair any minor damage to branches due to construction activity.

MEASUREMENT:

Tree pruning will be measured by number of trees and type of pruning required: crown cleaning, crown reduction, crown raising, etc.

Mulch will be measured by the cubic yard (cubic meter) based on the number and size of tree.

PAYMENT:

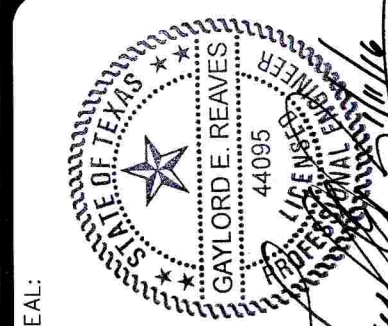
Tree maintenance will be paid for at the unit number and size of trees, which price shall be full compensation for furnishing and placing all materials, manipulation, labor, tools, equipment, and incidentals necessary to complete the work.

BID ITEMS:

Item 802.1: Tree Pruning - per tree

Item 802.2: Mulch - cubic yard (cubic meter)

REVISIONS			
NO.	DESCRIPTION	DATE	APPR.



F.M. 1516 SELF STORAGE
TREE STAND DELINEATION PLAN
PLAT NO. 140551
5050 F.M. 1516
CONVERSE, TEXAS 78109

SHEET TITLE:
JOB NO: 14-0418
DATE: 10/24/2015
DESIGNER: OB
CHECKED: OB
DRAWN: JYB

SHEET: 3_OF_3
TP903