

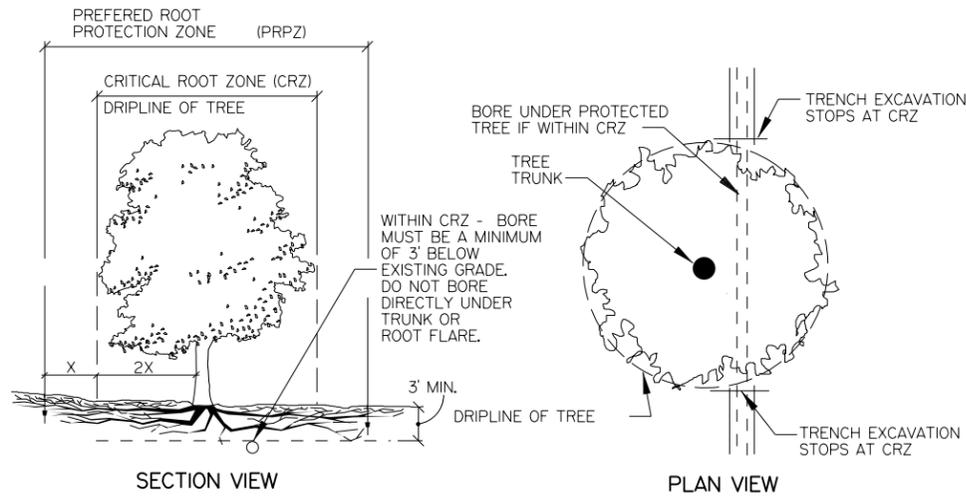
GENERAL NOTES FOR TREE PROTECTION

1. PROTECT AND INSURE THE CONTINUED GOOD HEALTH OF EXISTING TREES IDENTIFIED ON THE PLANS OR DIRECTED BY THE ENGINEER. PRESERVE ALL EXISTING VEGETATION WITHIN THE PREFERRED ROOT PROTECTION ZONE.
2. SECURE THE SERVICES OF A TREE CARE SPECIALIST TO PERFORM OR OVERSEE ANY OPERATION INVOLVING LIMB PRUNING, ROOT PRUNING, CHEMICAL APPLICATION, OR ASSESSMENT OF THE CONDITION OF TREES OR EFFECTS OF CONSTRUCTION ON TREES DESIGNATED FOR PROTECTION.
3. WITHIN THE PREFERRED ROOT PROTECTION ZONE, NONE OF THE FOLLOWING ACTIVITIES ARE ALLOWED:

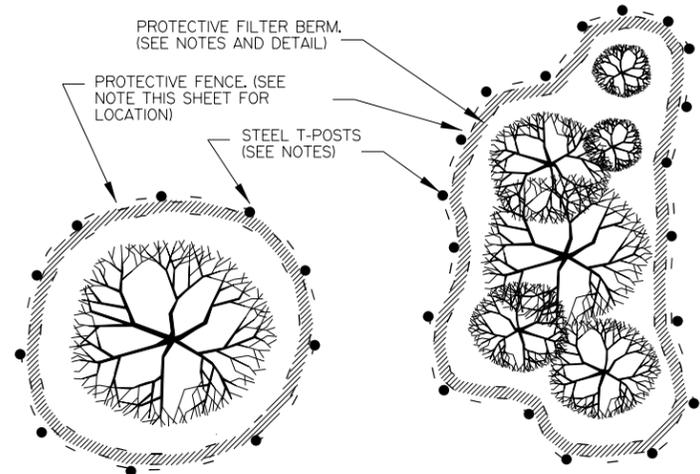
PARKING OF ANY VEHICLES; ERECTION OF ANY SHED OR STRUCTURE; STORAGE OF ANY EQUIPMENT OR MATERIALS; USE BY PEOPLE FOR ANY REASON; DUMPING OF ANY LITTER, WASTE MATERIALS, OR LIQUIDS; IMPOUNDMENT OF WATER; ADDITION OF FILL-SOIL; EXCAVATION, BORING, OR TRENCHING OF ANY TYPE

DEFINITIONS

1. DRIPLINE - THE LINE ON THE GROUND DIRECTLY BELOW THE OUTER TIPS OR ENDS OF THE TREE LIMBS.
2. CRITICAL ROOT ZONE (CRZ) - THE GROUND AREA EXTENDING OUT FROM THE TREE TRUNK TO THE DRIPLINE.
3. PREFERRED ROOT PROTECTION ZONE (PRPZ) - THE GROUND AREA EXTENDING OUT FROM THE TREE TRUNK A DISTANCE EQUAL TO ONE AND ONE HALF OF THE DISTANCE FROM THE TRUNK TO THE DRIPLINE.
4. TREE CARE SPECIALIST - CERTIFIED ARBORIST OR PROFESSIONAL URBAN FORESTER.
5. O.C. - ON CENTER



TRENCHING PAST TREES



PLAN VIEW OF FENCING LAYOUT

CONSTRUCTION METHODS

1. PRIOR TO THE START OF CONSTRUCTION, MARK ALL TREES OR OTHER FEATURES INDICATED ON THE PLANS TO BE PROTECTED WITH YELLOW FLAGGING FOR APPROVAL BY THE ENGINEER.
2. PRIOR TO CONSTRUCTION, PRUNE PROTECTED TREES AS FOLLOWS:
 - A. REMOVE ANY DISEASED OR DEAD LIMBS AND CORRECT ANY PREVIOUS IMPROPER PRUNING
 - B. REMOVE LIMBS FOR NECESSARY EQUIPMENT ACCESS (AS APPROVED BY THE ENGINEER).
 - C. REMOVE LIMBS THAT WILL BE WITHIN TWENTY FEET (20) VERTICAL CLEARANCE OF VEHICLE TRAVEL LANES.
 - D. REMOVE LIMBS THAT WILL BE WITHIN TEN FEET (10) VERTICAL CLEARANCE OF PEDESTRIAN AREAS.
3. PERFORM PRUNING USING ONLY TOOLS SPECIFICALLY DESIGNED FOR THE JOB AND IN ACCORDANCE WITH ANSI A300 PRUNING STANDARD. PRUNED MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR AND WILL BE DISPOSED OF OFF-SITE.
4. ERECT PROTECTIVE FENCING AT ALL TREES, GROUPS OF TREES, OR OTHER FEATURES AS SHOWN ON THE PLANS, OR DESIGNATED BY THE ENGINEER, OR OTHERWISE INDICATED FOR PROTECTION.
5. ERECT PROTECTIVE FENCING FOR TREES AT THE EDGE OF THE PRPZ. PLACE FENCING IN OTHER LOCATIONS ONLY WITH THE APPROVAL OF THE ENGINEER. THE FENCE MATERIAL SHALL BE CHAIN-LINK FENCE.
 - A. CHAIN-LINK FENCING SHALL BE SIX-FOOT (6) IN HEIGHT AND SUPPORTED BY EIGHT-FOOT (8) STEEL T-POSTS SPACED SIX FEET (6) O.C., DRIVEN A MINIMUM OF 20" INTO EXISTING GRADE.
 - B. THE FENCING SHALL BE CONTINUOUS BETWEEN POSTS AND SHALL BE FIRMLY ATTACHED TO THE POSTS WITH A MINIMUM OF 4 WIRE TIES.
6. PREPARE SIGNS WITH THE FOLLOWING WORDING, AND INSTALL AT A MINIMUM OF 50' ON CENTER ALONG THE PROTECTIVE FENCING:

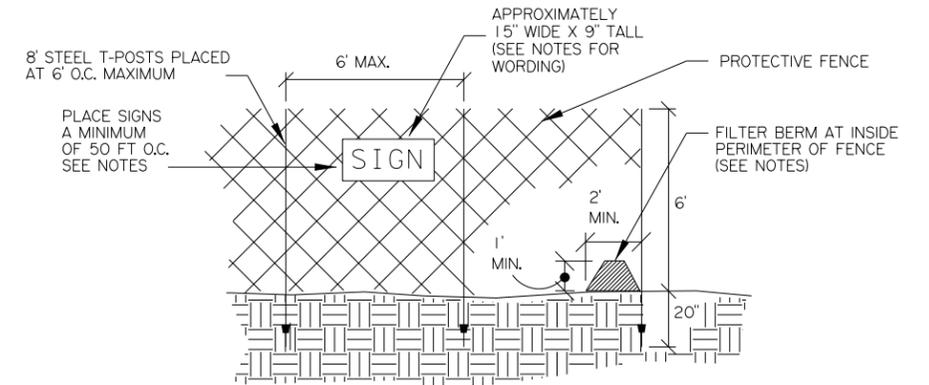
PROTECTED AREA
DO NOT ENTER
THIS FENCE MAY NOT BE REMOVED OR MODIFIED WITHOUT THE PERMISSION OF THE ENGINEER
CONTACT (PHONE NUMBER)
7. IF IT BECOMES NECESSARY TO LOCATE THE PROTECTIVE FENCING WITHIN SIX FEET (6) OF THE TRUNK OF A TREE, SECURE WOOD PLANKING TO THE TRUNK. THE PLANKING SHALL BE NOMINAL 2X4 DIMENSION LUMBER SECURED WITH A ROPE, BAND, OR STRAP OF SUFFICIENT DURABILITY TO REMAIN IN PLACE FOR THE DURATION OF THE PROJECT. INSTALL PLANKS TO A HEIGHT OF TEN FEET (10) OR TO THE LOWEST MAJOR BRANCHES WHICHEVER IS LOWEST. DO NOT USE NAILS, SCREWS, OR ANY OTHER DAMAGING ATTACHMENTS UNDER ANY CIRCUMSTANCES.
8. ERECT A FILTER BERM COMPOSED OF WOOD CHIPS TO THE DIMENSIONS AND LOCATION SHOWN IN THE DETAILS. USE WOOD CHIPS LESS THAN OR EQUAL TO 5 IN. IN LENGTH WITH 95% PASSING A 2-IN. SCREEN AND LESS THAN 30% PASSING A 1-IN. SCREEN.
9. IMMEDIATELY REMOVE ANY CONCRETE, LIME OR OTHER CHEMICALS ACCIDENTALLY SPILLED WITHIN THE PROTECTED ROOT ZONE. IMMEDIATELY TREAT FOR ACCIDENTAL DAMAGE TO ANY TREE AS DIRECTED BY THE ENGINEER. SECURE THE SERVICES OF A TREE CARE SPECIALIST TO ASSESS AND/OR TREAT FOR THE DAMAGE.
10. MAINTAIN ALL TREE PROTECTION MATERIALS THROUGHOUT ENTIRE LENGTH OF PROJECT. REPAIR ANY DAMAGED TREE PROTECTION MATERIALS IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. ADDITIONAL COMPOST OR MULCH MATERIALS MAY BE REQUIRED.
11. NO TRENCHING, EXCAVATING, FILLING, OR COMPACTION IS ALLOWED WITHIN THE CRITICAL ROOT ZONE EXCEPT AS SPECIFICALLY IDENTIFIED IN THE PLANS OR APPROVED BY THE ENGINEER.
12. IF ROOT REMOVAL OR EXCAVATION IS UNAVOIDABLE WITHIN THE PREFERRED ROOT PROTECTION ZONE, HAND-DIG TO EXPOSE MAJOR TREE ROOTS OF ONE-INCH (1") DIAMETER OR GREATER. ONCE EXPOSED, PRUNE ROOTS WITH SHARP, CLEAN TOOLS DESIGNED FOR THAT PURPOSE. BACKFILL EXPOSED ROOT ENDS AS SOON AS POSSIBLE OR COVERED WITH SIX INCHES (6") SHREDDED HARDWOOD MULCH WITHIN THE SAME DAY OF EXCAVATION.
13. PRUNE ANY ROOTS EXPOSED BY CONSTRUCTION FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOPSOIL AS SOON AS POSSIBLE. IF EXPOSED ROOTS ARE NOT TO BE BACKFILLED WITHIN TWO DAYS, COVER THEM WITH A MINIMUM OF SIX INCHES (6") OF SHREDDED HARDWOOD MULCH.
14. SHOULD ACCESS ACROSS THE CRITICAL ROOT ZONE BE NECESSARY, OPEN ONLY THAT PORTION NEEDED FOR ACCESS AND THE COMPLETION OF THE TASK. INSTALL SIX INCHES (6") OF SHREDDED HARDWOOD BARK IN ACCESS AREAS BEFORE ANY WHEELED OR TRACKED VEHICLES ENTER THE CRITICAL ROOT ZONE. REPLACE PROTECTIVE FENCING TO ITS ORIGINAL POSITIONS AS SOON AS POSSIBLE AFTER THE CONSTRUCTION TASK IS COMPLETED AND REMOVE THE BARK MULCH LAYER AND STOCKPILE OUTSIDE THE CRITICAL ROOT ZONE.
15. FOR PROPOSED UNDERGROUND UTILITIES SHOWN ELSEWHERE IN THE PLANS THAT CROSS THE CRITICAL ROOT ZONE, BORE AT A MINIMUM OF THREE FEET (3) BELOW EXISTING GRADE. TRENCH FOR BORE SHALL NOT INTRUDE INTO CRITICAL ROOT ZONE.

POST CONSTRUCTION

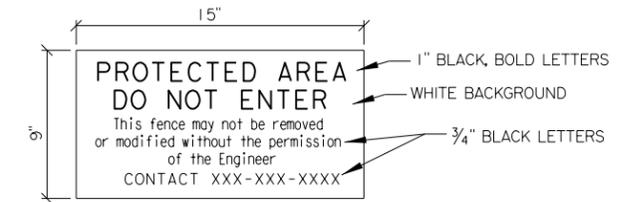
1. UPON THE COMPLETION OF CONSTRUCTION ACTIVITIES, CONDUCT A FINAL ASSESSMENT BY A TREE CARE SPECIALIST TO DETERMINE THE HEALTH AND CONDITION OF THE TREES. THE SPECIALIST SHOULD PROVIDE RECOMMENDATIONS FOR THE FOLLOWING INSPECTION ITEMS FOR NEEDED POST-CONSTRUCTION MEASURES:
 - A. DAMAGE TO ANY PART OF THE TREE
 - B. CHANGES IN SOILS STRUCTURE SUCH AS COMPACTION, FILLS, EROSION, OR LOSS OF ORGANIC MATTER

IMPLEMENT THE RECOMMENDATIONS MADE BY THE TREE CARE SPECIALIST AS DIRECTED. AT A MINIMUM, PERFORM THE FOLLOWING:

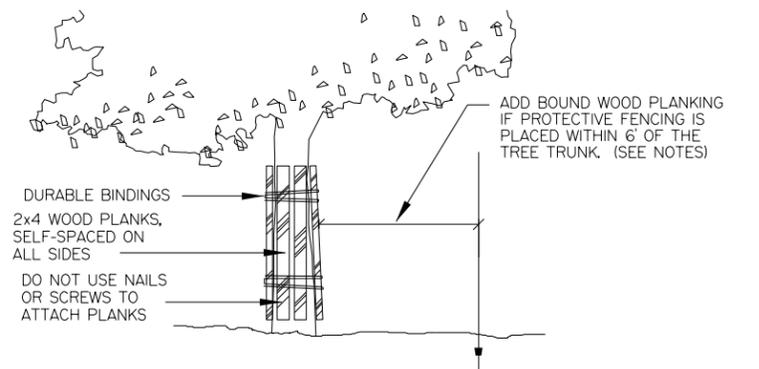
 - A. REMOVE TREES THAT MAY HAVE DIED DURING CONSTRUCTION
 - B. REMOVE ANY FILL SOIL FROM ROOT ZONES
 - C. REPAIR AREAS DAMAGED DURING CONSTRUCTION
2. AFTER ALL CONSTRUCTION ACTIVITIES HAVE CEASED, REMOVE ALL TREE PROTECTION MATERIALS FROM THE PROJECT SITE. MULCH MAY BE SPREAD OVER THE SITE IN A TWO-INCH THICK MAXIMUM LAYER.



PROTECTIVE FENCE AND SIGN PLACEMENT



SIGNAGE FOR PROTECTED AREAS



WOOD PLANKING INSTALLATION

THIS WORK AND ALL ASSOCIATED MATERIALS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE SUBSIDIARY TO ITEM 100 - PREPARING RIGHT OF WAY.

NOT TO SCALE

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San Antonio District

TREE PROTECTION

San Antonio District Standard

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| STATE DISTRICT | FEDERAL REGION | FEDERAL AID PROJECT | SHEET |
| SAT | 6 | | |
| COUNTY | CONTROL | SECTION | JOB |
| | | | HIGHWAY |

ORIGINAL DRAWING DATE: 12-18-18

REVISIONS