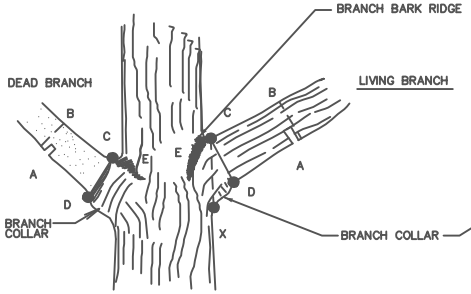
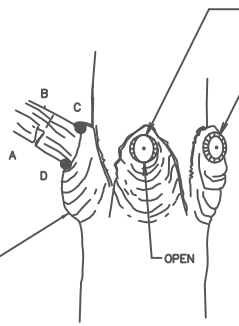


HARDWOODS



SOME CONIFERS

STEPS TO PRUNING

1.**FRIST CUT PART WAY THROUGH THE BRANCH AT POINT A.

2.**THEN CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.

3.**NOW CUT FROM POINT C TO D.

a.**IF D IS HARD TO FIND, DROP A PLUMB LINE VERTICALLY DOWN TO POINT X. THE ANGLE X-C-D SHOULD BE APPROXIMATELY EQUAL TO X-C-E.

PRUNING NOTES:

1.**LEAVE BRANCH COLLAR (C TO D)

2.**DO NOT FLUSH CUT (C TO X)

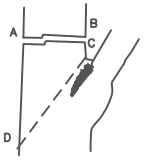
3.**DO NOT LEAVE STUBS (B TO A)

4.**BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.

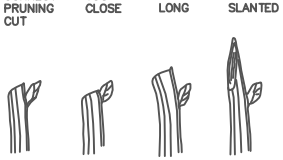
5.**AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.

6.**IMMEDIATELY PAINT OAK WOUNDS MADE IN APRIL, MAY, JUNE OR JULY WITH LATEX PAINT OR SHELLAC.

DROP CROTCH PRUNING IS USED FOR REDUCING THE HEIGHT OR LENGTH OF MAIN STEMS OR BRANCHES BY CUTTING BACK TO A LARGE LATERAL BRANCH.



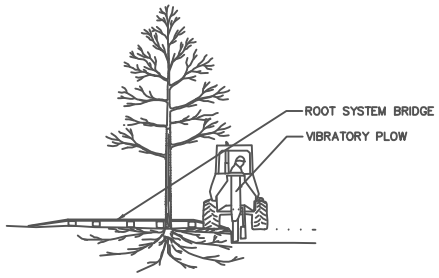
DROP CROTCH OR CUTTING BACK



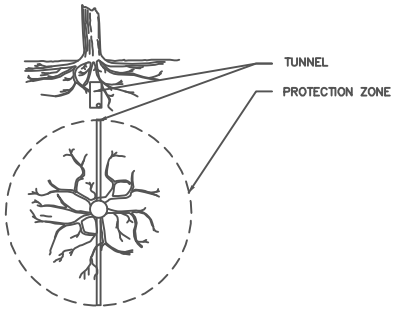
PRUNING SMALL BRANCHES

BRANCHES SMALLER THEN 2" IN DIAMETER SHOULD BE CUT JUST BEYOND A LATERAL BUD OR ANOTHER SMALL LATERAL BRANCH. THE IDEAL CUT SHOULD BE SHARP, CLEAN, AND MADE ON A SLIGHT ANGLE.

PRUNING DETAILS (Shigo Method)



ROOT SYSTEM BRIDGE AND VIBRATOROY PLOW



UTILITY INSTALLATION TUNNEL

NOTES:

1.**REDUCE COMPACTION ON ROOT SYSTEMS WHERE IT OCCURS BY DRILLING 50 mm (2") DIAM. HOLES IN THE SOIL TO A DEPTH OF 450 mm (18"). BEGIN 3' FROM THE TREE TRUNK AND CONTINUE AT 2' INTERVALS IN CONCENTRIC RINGS OUT TO THE PROTECTION ZONE.

2.**WATERING OF ROOT DAMAGED TREES WILL BE REQUIRED TO MAINTAIN ADEQUATE BUT NOT EXCESSIVE SOIL MOISTURE TO A DEPTH OF 18" WITHIN THE UNDISTURBED PORTION OF THE IMPACTED TREE DRIPLINE.

3.**A 6 INCH LAYER OF WOODCHIP MULCH PLACED OVER A TYPE III (3733) GEOTEXTILE FABRIC MAY BE USED IN LIEU OF THE ROOT SYSTEM BRIDGE.

4.**WHEN DESIGNATED IN THE PLAN OR WHEN DIRECTED BY THE ENGINEER, ALL TREE ROOTS AT THE CONSTRUCTION LIMITS SHALL BE CUT CLEANLY (TO THE MAXIMUM DEPTH NECESSARY FOR CONSTRUCTION) WITH A VIBRATORY PLOW OR OTHER APPROVED ROOT CUTTER PRIOR TO ANY EXCAVATION. ROOT ENDS EXPOSED BY EXCAVATION ACTIVITIES SHALL BE IMMEDIATELY COVERED WITH A 6" LAYER OF ADJACENT SOIL. BACKFILL, REGRADE, OR INSTALL RETAINING WALL AS DESIGNATED IN THE PLAN OR WHEN DIRECTED BY THE ENGINEER.

5.**IF CONSTRUCTION VEHICLES MUST PASS OVER ROOT ZONES, CONSTRUCT ROOT SYSTEM BRIDGES WITH STEEL PLATE SUPPORTED ON WOOD TIMBERS PLACED RADIALLY TO THE TREE TRUNK.

TREE PROTECTION ZONE	
TREE DIAMETER AT 4.5' ABOVE GROUND	* MINIMUM DISTANCE FROM FACE OF TREE TRUNK
0"-2"	2'
3"-4"	4'
5"-9"	6'
10"-14"	10'
15"-19"	12'
19" +	15'

*WHEN UTILITY INSTALLATIONS MUST OCCUR WITHIN THE TREE PROTECTION ZONE, AS DEFINED IN THE ABOVE CHART, THE CONTRACTOR SHALL BORE (TUNNEL) UNDER TREE ROOTS THAT ARE TO BE PRESERVED. THE CONTRACTOR SHALL BORE AT A MINIMUM DEPTH OF 24" BELOW THE GROUND SURFACE WITHIN THIS ZONE.

ROOT PROTECTION AND TRENCHING DETAILS

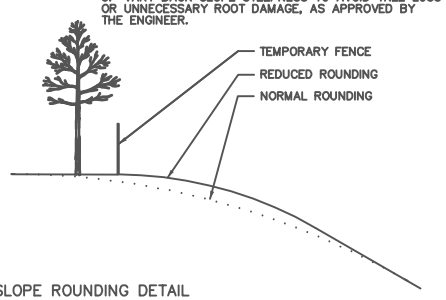
SIGNIFICANT TREES NEAR THE PROPOSED CONSTRUCTION LIMITS WILL BE IDENTIFIED IN THE PLAN OR BY THE ENGINEER AND PRESERVED BY THE CONTRACTOR.

NOTES:

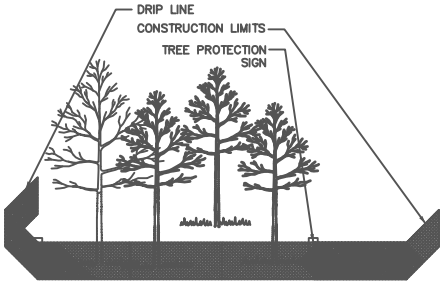
1.**PLACE THE TEMPORARY FENCE.

2.**REDUCE SLOPE ROUNDING WHERE ROOT ZONES WILL BE DISTURBED BY NORMAL SLOPE ROUNDING, AS APPROVED BY THE ENGINEER.

3.**VARY BACK SLOPE STEEPNESS TO AVOID TREE LOSS OR UNNECESSARY ROOT DAMAGE, AS APPROVED BY THE ENGINEER.

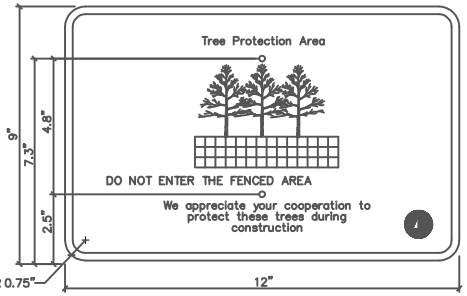


SLOPE ROUNDING DETAIL



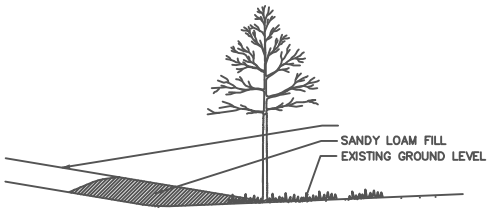
FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE OR CONSTRUCTION LIMITS AS SPECIFIED, PRIOR TO ANY CONSTRUCTION. WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE. PLACE PROTECTION SIGNS ALONG FENCE AT 20' INTERVALS.

TEMPORARY PROTECTION FENCE PLACEMENT DETAIL



FABRICATE 12" X 9"X 3/8" SIGN WITH 0.75" RADIUS CORNERS. SIGN SHALL BE WHITE WITH BLACK LETTERING. ATTACH SIGN TO POST USING 1" LENGTH WOOD SCREWS, PLACED AT 2.5" AND 7.3" RESPECTIVELY FROM THE BOTTOM EDGE OF THE SIGN.

TREE PROTECTION SIGN DETAIL



ANY FILL REQUIRED WITHIN THE DRIP LINE OF TREES SHALL BE AN UNCOMPACTED (WITH A COARSE SAND COMPONENT) SANDY LOAM TOPSOIL. EXCESSIVE FILL MAY REQUIRE INSTALLING PERFORATED PIPE WITH AT LEAST ONE DAYLIGHTED END OPENING AS AN AERATION SYSTEM.

SANDY LOAM FILL DETAIL

CITY OF CHANHASSEN	REVISED: 2-10	FILE NAME: G:\ENG\SPECS\5312	ENGINEERING DEPARTMENT	PLATE: 5312	VEGETATION PROTECTION DETAIL