SECTION 32 9300 - LANDSCAPE

PART 1 - GENERAL

1.1 REFERENCE DOCUMENTS

A. REFER TO LANDSCAPE PLANS, NOTES, AND DETAILS FOR ADDITIONAL REQUIREMENTS

1.2 DESCRIPTION OF WORK

A. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO PROVIDE ALL WORK, COMPLETE IN PLACE AS SHOWN AND SPECIFIED. WORK SHOULD INCLUDE:
A. PLANTING OF TREES, SHRUBS AND GRASSES
   a. SEEDING
   b. BED PREPARATION AND FERTILIZATION
   c. WATER AND MAINTENANCE UNTIL FINAL ACCEPTANCE
   d. WORK GUARANTEE

1.3 REFERENCES

A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) Z60.1 - NURSERY STOCK
B. TEXAS STATE DEPARTMENT OF AGRICULTURE
C. TEXAS ASSOCIATION OF NURSERYMEN, GRADES AND STANDARDS

1.4 SUBMITTALS

A. PROVIDE REPRESENTATIVE QUANTITIES OF EACH SOIL, MULCH, BED MIX, GRAVEL AND STONE BEFORE INSTALLATION. SAMPLES TO BE APPROVED BY OWNER'S REPRESENTATIVE BEFORE USE.
B. SOIL AMENDMENTS AND FERTILIZERS SHOULD BE RESEARCHED AND BASED ON THE SOILS IN THE AREA.
C. BEFORE INSTALLATION, SUBMIT DOCUMENTATION THAT PLANT MATERIALS ARE AVAILABLE AND HAVE BEEN RESERVED. FOR ANY PLANT MATERIAL NOT AVAILABLE, SUBMIT REQUEST FOR SUBSTITUTION.

1.5 JOB CONDITIONS, DELIVERY, STORAGE AND HANDLING

A. GENERAL CONTRACTOR TO COMPLETE WORK BEFORE LANDSCAPE CONTRACTOR TO COMMENCE. ALL PLANTING BED AREAS SHALL BE LEFT THREE INCHES BELOW FINAL GRADE OF SIDEWALKS, DRIVES AND CURBS. ALL AREAS TO RECEIVE SOLID SOD SHALL BE LEFT ONE INCH BELOW THE FINAL GRADE OF WALKS, DRIVES AND CURBS. CONSTRUCTION DEBRIS SHALL BE REMOVED PRIOR TO LANDSCAPE CONTRACTOR BEGINNING WORK.
B. ALL PACKAGED MATERIALS SHALL BE SEALED IN CONTAINERS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. ALL MATERIALS SHALL BE PROTECTED FROM DETERIORATION IN TRANSIT AND WHILE STORED ON SITE.
C. DELIVER PLANT MATERIALS IMMEDIATELY PRIOR TO INSTALLATION. PLANT MATERIALS SHOULD BE INSTALLED ON THE SAME DAY AS DELIVERED. IF PLANTING CANNOT BE INSTALLED ON THE SAME DAY, PROVIDE ADDITIONAL PROTECTION TO MAINTAIN PLANTS IN A HEALTHY, VIGOROUS CONDITION.
D. STORE PLANT MATERIALS IN SHADE, PROTECT FROM FREEZING AND DRYING.
E. KEEP PLANT MATERIALS MOIST AND PROTECT FROM DAMAGE TO ROOT BALLS, TRUNKS AND BRANCHES.
F. PROTECT ROOT BALLS BY HEELING WITH SAWDUST OR OTHER MOISTURE RETAINING MATERIAL IF NOT PLANTED WITHIN 24 HOURS OF DELIVERY.
G. NOTIFY OWNER'S REPRESENTATIVE OF DELIVERY SCHEDULE 72 HOURS IN ADVANCE.
H. FOR BALLED AND BURLAPPED PLANTS - DIG AND PREPARE SHIPMENT IN A MANNER THAT WILL NOT DAMAGE ROOTS, BRANCHES, SHAPE, AND FUTURE DEVELOPMENT.
I. CONTAINER GROWN PLANTS - DELIVER PLANTS IN CONTAINER TO HOLD BALL SHAPE AND PROTECT ROOT MASS.
J. STORAGE OF ALL MATERIALS AND EQUIPMENT WILL BE AT THE RISK OF THE LANDSCAPE CONTRACTOR. OWNER WILL NOT BE HELD RESPONSIBLE FOR THEFT OR DAMAGE.

1.6 SEQUENCING

A. INSTALL TREES, SHRUBS, AND LINER STOCK PLANT MATERIALS PRIOR TO INSTALLATION OF LAWN/SOLID SOD.

1.7 WARRANTIES/GUARANTEE

A. FURNISH WRITTEN WARRANTY THAT PLANT MATERIALS WILL BE IN A HEALTHY, VIGOROUS GROWING CONDITION FOR ONE YEAR (TWELVE MONTHS) AFTER FINAL ACCEPTANCE. DAMAGE DUE TO ACTS OF GOD, VANDALISM, OR NEGLIGENCE BY OWNER IS EXCLUDED.
B. REPLACE DEAD, UNHEALTHY, AND UNSIGHTLY PLANT MATERIAL WITHIN WARRANTY PERIOD UPON NOTIFICATION BY OWNER OR OWNER'S REPRESENTATIVE. PLANTS USED FOR REPLACEMENT SHALL BE OF THE SAME SIZE AND KIND AS THOSE ORIGINALLY PLANTED OR SPECIFIED.
C. THE OWNER AGREES THAT FOR THE ONE YEAR WARRANTY PERIOD TO BE EFFECTIVE, HE WILL WATER PLANTS AT LEAST TWICE A WEEK DURING DRY PERIODS.
D. NOTIFY OWNER OR OWNER'S REPRESENTATIVE SEVEN DAYS PRIOR TO THE EXPIRATION OF THE WARRANTY PERIOD.
   a. REMOVE DEAD, UNHEALTHY AND UNSIGHTLY PLANTS
   b. REMOVE GUYING AND STAKING MATERIALS.

1.8 MAINTENANCE

A. MAINTAIN PLANT LIFE AND PLANTING BEDS IMMEDIATELY AFTER PLACEMENT AND FOR MINIMUM 30 DAYS AFTER FINAL ACCEPTANCE.
B. REPLACE DEAD OR DYING PLANTS WITH PLANTS OF SAME SIZE AND SPECIES AS SPECIFIED.
C. REMOVE TRASH, DEBRIS, AND LITTER. WATER, PRUNE, FERTILIZE, WEED AND APPLY HERBICIDES AND FUNGICIDES AS REQUIRED.
D. REMOVE CLIPPINGS AND DEBRIS FROM SITE PROMPTLY.
E. COORDINATE WITH OPERATION OF IRRIGATION SYSTEM TO ENSURE THAT PLANTS ARE ADEQUATELY WATERS. HAND WATER AREAS NOT RECEIVING ADEQUATE WATER FROM AN IRRIGATION SYSTEM.
F. RESET SETTLED PLANTS
G. REAPPLY MULCH TO BARE AND THIN AREAS.

1.9 QUALITY ASSURANCE

A. COMPLY WITH ALL FEDERAL, STATE, COUNTY AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK.
B. EMPLOY PERSONNEL EXPERIENCED AND FAMILIAR WITH THE REQUIRED WORK AND SUPERVISION BY A FOREMAN.
C. DO NOT MAKE PLANT MATERIAL SUBSTITUTIONS. IF THE LANDSCAPE MATERIAL SPECIFIED IS NOT READILY AVAILABLE, SUBMIT PROOF TO LANDSCAPE ARCHITECT ALONG WITH THE PROPOSED MATERIAL TO BE USED IN LIEU OF THE SPECIFIED PLANT.
D. ALL TREES SHALL BE MEASURED BY DIAMETER BREAST HEIGHT (DBH). DO NOT TRIM OR PRUNE TREES AND SHRUBS TO MEET THE REQUIREMENTS.
E. OWNER'S REPRESENTATIVE SHALL INSPECT ALL PLANT MATERIAL AND RETAINS THE RIGHT TO INSPECT MATERIALS UPON ARRIVAL TO THE SITE AND DURING INSTALLATION. THE OWNER'S REPRESENTATIVE MAY ALSO REJECT ANY MATERIALS HE FEELS TO BE UNSATISFACTORY OR DEFECTIVE DURING THE WORK PROCESS. ALL PLANTS DAMAGED IN TRANSIT OR AT THE JOB SITE SHALL BE REJECTED.

PART 2 - PRODUCTS

2.1 PLANT MATERIALS

A. ALL PLANTS SHALL BE CERTIFIED IN ACCORDANCE THE AMERICAN STANDARD FOR NURSERY STOCK.
B. PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED, EXCEPT THE PLANTS LARGER THAN THOSE SPECIFIED MAY BE USED. USE OF LARGER PLANTS SHALL NOT INCREASE THE CONTRACT PRICE.
C. WHERE MATERIALS ARE PLANTED IN MASSES, PROVIDE PLANTS OF UNIFORM SIZE.
D. PLANTS SHALL BE GROWN IN CLIMATIC CONDITIONS SIMILAR TO THOSE AT THE INSTALLATION LOCATION.
E. SHALL BE FREE OF DISEASE, INSECT INFESTATION, DEFECTS INCLUDING WEAK OR BROKEN LIMBS, CROTCHES, AND DAMAGED TRUNKS, ROOTS OR LEAVES, SUN SCALD, FRESH BARK ABRASIONS, EXCESSIVE ABRASIONS, OBJECTIONABLE DISFIGUREMENT, INSECT EGGS AND LARVAE.
F. ALL PLANTS SHALL EXHIBIT NORMAL GROWTH HABITS, VIGOROUS, HEALTHY, FULL, WELL BRANCHES, WELL ROOTED, PROPORTIONATE AND SYMMETRICAL.
G. TREE TRUNKS TO BE STURDY, EXHIBIT HARDENED SYSTEMS AND VIGOROUS AND FIBROUS ROOT SYSTEMS, NOT ROOT OR POT BOUND.
H. TREES WITH DAMAGED OR CROOKED LEADERS, BARK ABRASIONS, SUNSCALD, DISFIGURING KNOTS, ORINSECT DAMAGE WILL BE REJECTED.
I. PLANT SCHEDULE ON DRAWING IS FOR CONTRACTOR'S INFORMATION ONLY AND NO GUARANTEE IS EXPRESSED OR IMPLIED THAT QUANTITIES THEREIN ARE CORRECT. THE CONTRACTOR SHALL ENSURE THAT ALL PLANT MATERIALS SHOWN ON THE DRAWINGS ARE INCLUDED IN HIS OR HER BID.

2.2 ACCESSORIES/MISCELLANEOUS MATERIALS

A. MULCH - DOUBLE SHREDDED HARDWOOD MULCH, PARTIALLY DECOMPOSED BY LIVING EARTH TECHNOLOGIES OR APPROVED SUBSTITUTE. MULCH SHOULD BE FREE OF STICKS, STONES, CLAY, GROWTH AND GERMINATION INHIBITING INGREDIENTS.
B. FERTILIZER - COMMERCIAL FERTILIZER CONTAINING 10-20-10 OR SIMILAR ANALYSIS.
C. SOIL PREPARATION - SHALL BE FERTILE, LOAMY SOIL, ORGANIC MATTER SHALL ENCOMPASS BETWEEN 3% AND 10% OF THE TOTAL DRY WEIGHT. SOIL SHALL BE FREE FROM SUBSOIL, REFUSE, ROOTS, HEAVY OR STIFF CLAY, STONES LARGER THAN 1", NOXIOUS WEEDS, STICKS , BRUSH, LITTER AND OTHER SUBSTANCES. IT SHOULD BE SUITABLE FOR THE GERMINATION OF SEEDS AND THE SUPPORT OF VEGETATIVE GROWTH. THE PH VALUE SHOULD BE BETWEEN 4 AND 7.

APPROXIMATE PARTICLE DISTRIBUTION FOR TOPSOIL

CLAY	BETWEEN 15% AND 25%
SILT	BETWEEN 15% AND 25%
SAND	LESS THAN 50%
GRAVEL	LESS THAN 10%

D. EXISTING TOPSOIL - MAY BE USED IF IT MEETS THE REQUIREMENTS FOR THE IMPORTED TOPSOIL OR IF APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. TOPSOIL SHALL NOT BE STRIPPED, TRANSPORTED OR GRADED IF MOISTURE CONTENT EXCEEDS FIELD CAPACITY. TOPSOIL STOCKPILES SHALL BE PROTECTED FROM EROSION OR CONTAMINATION.
E. STEEL EDGING - SHALL BE 3/16" X 4" X 16" DARK GREEN LANDSCAPE EDGING.
F. TREE STAKING - TREE STAKING SOLUTIONS OR APPROVED SUBSTITUDE; REFER TO DETAILS.
G. FILTER FABRIC - MIRAFI 1405 BY MIRAFI INC. OR APPROVED SUBSTITUTE.
H. SAND - UNIFORMLY GRADED, WASHED, CLEAN, BANK RUN SAND.
I. DECOMPOSED GRANITE - BASE MATERIAL OF NATURAL MATERIAL MIX OF GRANITE AGGREGATE NOT TO EXCEED 1/8" IN DIAMETER.
J. RIVER ROCK - LOCALLY AVAILABLE RIVER ROCK BETWEEN 2"-4" IN DIAMETER.

PART 3 - EXECUTION

3.1 PREPARATION

A. IF WEEDS ARE GROWING IN PLANTING AREAS, APPLY HERBICIDE RECOMMENDED BY MANUFACTURER AND APPLIED BY AN APPROVED LICENSED APPLICATOR. ALLOW WEEDS TO DIE, AND THEN GRUB OUT ROOTS TO A MINIMUM OF 1/2 INCH DEPTH.
B. PREPARE NEW PLANTING BEDS BY TILLING EXISTING SOIL TO A DEPTH OF SIX INCHES PRIOR TO PLACING COMPOST AND FERTILIZER. ADD SIX INCHES OF COMPOSE AND TILL INTO A DEPTH OF SIX INCHES OF THE TOPSOIL.
C. POSITION TREES AND SHRUBS AS DESIGNED ON PLAN. OBTAIN OWNER'S REPRESENTATIVE'S APPROVAL PRIOR TO PROCEEDING.
D. ALL PLANTING AREAS SHALL RECEIVE A MINIMUM OF 2 INCH LAYER OF MULCH.

3.2 EXCAVATING

A. EXCAVATE PITS FOR PLANTING. TREE PITS SHALL BE LARGE ENOUGH TO PERMIT THE HANDLING OF THE ROOT BALL WITHOUT DAMAGE TO THE ROOTS. TREES SHALL BE PLANTED AT A DEPTH THAT WHEN SETTLED, THE CROWN OF THE PLANT SHALL BEAR THE SAME RELATIONSHIP TO THE FINISH GRADE AS IT DID TO THE SOIL SURFACE IN ORIGINAL PLACE OF GROWTH.
B. TREE PITS PERCOLATION TEST: FILL PIT WITH WATER AND ALLOW TO STAND FOR 24 HOURS. IF PIT DOES NOT DRAIN, THE TREE NEEDS TO BE MOVED TO ANOTHER LOCATION OR HAVE DRAINAGE ADDED.
C. SHRUB AND TREE PITS SHALL BE NO LESS THAN 24" WIDER THAN THE ROOT BALL AND 6" DEEPER THAN ITS VERTICAL DIMENSION. HOLES SHOULD BE ROUGH, NOT SMOOTH OR GLAZED.

3.3 PLANTING

A. REMOVE CONTAINERS WITHOUT DAMAGE TO ROOTS.
B. REMOVE BOTTOM OF PLANT BOXES PRIOR TO PLACING PLANTS. REMOVE SIDES AFTER PLACEMENT AND PARTIAL BACKFILLING.
C. REMOVE UPPER THIRD OF BURLAP FROM BALLED AND BURLAPPED TREES AFTER PLACEMENT.
D. PLACE PLANT UPRIGHT AND PLUMB IN CENTER OF HOLE. ORIENT PLANTS FOR BEST APPEARANCE.
E. SET PLANTS WITH TOP OF ROOT BALLS FLUSH WITH ADJACENT GRADE AFTER COMPACTION. ADJUST PLANT HEIGHT IF SETTLEMENT OCCURS AFTER BACKFILLING.
F. BACKFILL HOLES IMMEDIATELY AFTER PLANT IS PLACED USING BACKFILL MIX. BACKFILL TO ONE HALF DEPTH, FILL HOLE WITH WATER AND LIGHTLY TAMP SOIL TO REMOVE VOIDS AND AIR POCKETS.
G. TRIM PLANTS TO REMOVE DEAD AND INJURED BRANCHES ONLY. BRACE PLANTS OVER 65 GALLONS IN SIZE.
H. MULCH TO THE TOP OF THE ROOT BALL. DO NOT PLANT GRASS ALL THE WAY TO TRUNK OF THE TREE. MULCH WITH AT LEAST 2" OF SPECIFIED MULCH.
I. DO NOT WRAP TREES.
J. DO NOT OVER PRUNE.
E. BLOCKS OF SOD SHOULD BE LAID JOINT TO JOINT AFTER FERTILIZING THE GROUND FIRST. ROLL GRASS AREAS TO ACHIEVE A SMOOTH, EVEN SURFACE. THE JOINTS BETWEEN BLOCKS SHOULD BE FILLED WITH TOPSOIL AND THEN WATERED THOROUGHLY.

3.4 STEEL EDGING

A. STEEL EDGING SHALL BE INSTALLED AND ALIGNED AS INDICATED ON PLANS. OWNER'S REPRESENTATIVE TO APPROVE THE STAKED OR PAINTED LOCATION OF STEEL EDGE PRIOR TO INSTALLATION.
B. ALL STEEL EDGING SHALL BE FREE OF BENDS OR KINKS.
C. TOP OF EDGING SHALL BE 1/2" MAXIMUM HEIGHT ABOVE FINAL FINISHED GRADE.
D. STAKES ARE TO BE INSTALLED ON THE PLANTING BED SIDE OF THE EDGING, NOT THE GRASS SIDE.
E. STEEL EDGING SHALL NOT BE INSTALLED ALONG SIDEWALKS OR CURBS.
F. EDGING SHOULD BE CUT AT A 45 DEGREE ANGLE WHERE IT MEETS SIDEWALKS OR CURBS.

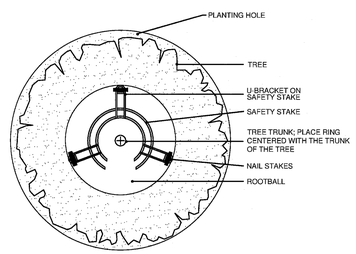
3.5 CLEANUP

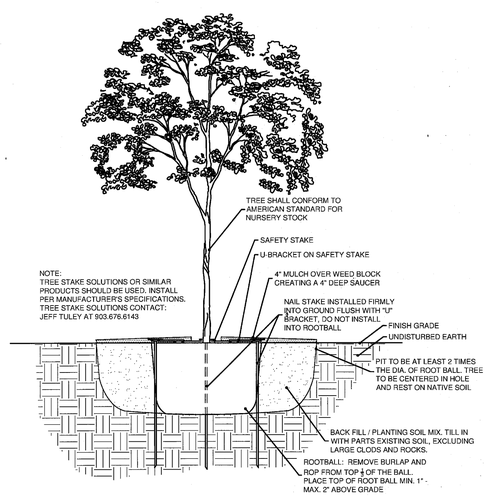
A. REMOVE CONTAINERS, TRASH, RUBBISH AND EXCESS SOILS FROM SITE AS WORK PROGRESSES.
B. REPAIR RUTS, HOLES AND SCARES IN GROUND SURFACES.
C. PREMISES SHALL BE KEPT NEAT AT ALL TIMES AND ORGANIZED.
D. ALL PAVED AREAS SHOULD BE CLEANED AT THE END OF EACH WORK DAY.

3.6 ACCEPTANCE

A. ENSURE THAT WORK IS COMPLETE AND PLANT MATERIALS ARE IN VIGOROUS AND HEALTHY GROWING CONDITION.

END OF SECTION





1 TREE PLANTING
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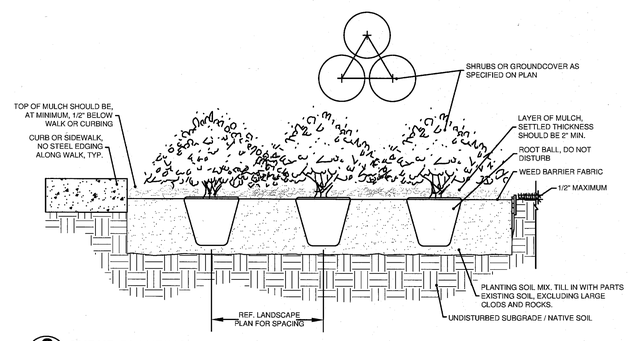

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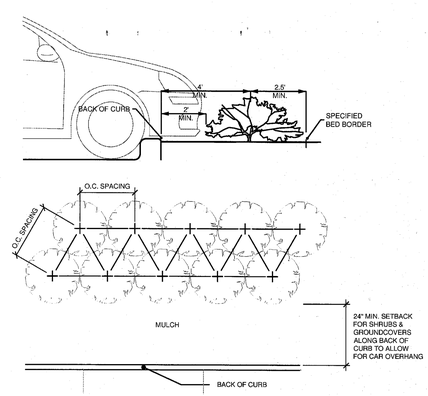

3 SHRUB SPACING AND PLANTING AT B.O.C.
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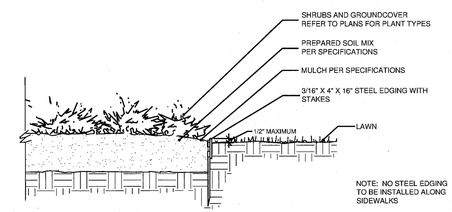

4 STEEL EDGING DETAIL
N.T.S.

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Revisions:

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