

WILLOW STAKING (Aquatic Planting)

COLLECTION OF LIVE WILLOW STAKES

LIVE STAKES, WILLOW CUTTINGS, AND POLES ARE STRAIGHT BRANCHES OR SAPLINGS THAT HAVE BEEN CUT AND PRUNED FROM DORMANT LIVING PLANT MATERIAL (PLANTS THAT HAVE LOST THEIR LEAVES).

SINGLE LIVE STAKES: THE LIVE BRANCHES WHICH SHALL BE TRIMMED AND CUT TO LENGTH FOR THIS INSTALLATION SHALL BE A MINIMUM OF 2½ FEET LONG AND A MINIMUM OF ¼ INCH IN DIAMETER FOR BARE GROUND INSTALLATION, AND A MINIMUM OF ¾ FEET LONG FOR RIPRAP JOINT PLANTING. THESE UNITS SHALL BE FREE FROM ALL SIDE BRANCHES. THE TERMINAL BUD MUST REMAIN UNDAMAGED. THE "ROOT" END OF EACH CUTTING SHALL BE CUT AT A 45-DEGREE ANGLE. THIS SERVES AS AN INDICATOR OF WHICH END OF THE STAKE TO TAMP INTO THE GROUND OR RIPRAP AND ALSO FACILITATES THE TAMPING PROCESS.

HARVEST PROCEDURE

- TIMING OF HARVEST AND INSTALLATION:** ALL LIVE WILLOW STAKING, BUNDLING, AND PILING SHALL BE PERFORMED BETWEEN FEBRUARY 1 AND APRIL 1, PRIOR TO LEAVING OUT.
- SOURCE AND SPECIES OF LIVE CUT MATERIALS:** LIVE CUTTINGS SHALL BE TAKEN FROM APPROVED, EXISTING, NATURAL, NATIVE-GROWING SITES. ALL CUTTINGS SHALL BE TAKEN FROM A DORMANT PLANT. WILLOW SPECIES SHALL BE *SALIX EXIGUA* (SANDBAR WILLOW) OR APPROVED EQUIVALENT. COTTONWOOD SPECIES SHALL BE *POPULUS DELTOIDES* (PLAINS COTTONWOOD) OR EQUIVALENT. WILLOW CUTTINGS SHALL BE AT LEAST ¼ INCH IN DIAMETER, AND COTTONWOOD POLES NO LESS THAN ¼ INCH IN DIAMETER.
- CUTTING:** THE USE OF WEED WHIPS WITH METAL BLADES, LOPPERS, BRUSH CUTTERS, AND PRUNERS IS RECOMMENDED, PROVIDED THAT THEY ARE USED IN SUCH A MANNER THAT THEY LEAVE CLEAN CUTS. THE USE OF CHAIN SAWS IS NOT RECOMMENDED. LIVE PLANT MATERIALS SHALL BE CUT AND HANDLED WITH CARE TO AVOID BARK STRIPPING AND TRUNK WOOD SPLITTING. CUTS SHALL BE MADE 8 TO 10 INCHES FROM THE GROUND WHEN CUTTING FROM THE APPROVED SITES. CUTS SHALL BE MADE FLAT OR AT A BLUNT ANGLE.
ALL CUTTINGS SHOULD BE PLACED IN WATER DEEP ENOUGH TO COVER AT LEAST THE LOWER 6 INCHES OF THE CUTTING IMMEDIATELY AFTER HARVEST.
- HARVESTING SITE:** NO MORE THAN 30% OF AVAILABLE BRANCHES SHOULD BE HARVESTED AT A SITE. THE HARVESTING SITE MUST BE LEFT CLEAN AND TIDY. EXCESS WOODY DEBRIS SHOULD BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY, OR COULD BE CUT UP INTO 16-INCH LENGTHS AND EVENLY DISTRIBUTED AROUND THE SITE.
- BINDING AND STORAGE:** LIVE BRANCH CUTTINGS SHALL BE BOUND TOGETHER SECURELY WITH TWINE AT THE COLLECTION SITE, IN GROUPS, FOR EASY HANDLING AND FOR PROTECTION DURING TRANSPORT. LIVE BRANCH CUTTINGS SHALL BE GROUPED IN SUCH A MANNER THAT THEY STAY TOGETHER WHEN HANDLED. OUTSIDE STORAGE LOCATIONS SHALL BE CONTINUALLY SHADED AND PROTECTED FROM THE WIND. CUTTINGS SHALL BE HELD IN MOIST SOILS OR KEPT IN WATER UNTIL READY FOR PLANTING. CUTTINGS SHALL BE PROTECTED FROM FREEZING AND DRYING AT ALL TIMES.
- TRANSPORTATION:** DURING TRANSPORTATION, THE LIVE CUTTINGS SHALL BE PLACED ON THE TRANSPORT VEHICLES IN AN ORDERLY FASHION TO PREVENT DAMAGE AND TO FACILITATE HANDLING. THE LIVE CUTTINGS SHALL BE KEPT WET AND COVERED WITH A TARP OR BURLAP MATERIAL DURING TRANSPORTATION.
- ARRIVAL TIME:** ALL CUTTINGS SHALL ARRIVE ON THE JOB SITE WITHIN 8 HOURS OF CUTTING. UPON ARRIVAL AT THE INSTALLATION SITE, CUTTINGS SHALL BE INSPECTED FOR ACCEPTABILITY. CUTTINGS NOT INSTALLED ON THE DAY OF ARRIVAL AT THE JOB SITE SHALL BE STORED AND PROTECTED (KEPT IN WATER AND IN COLD STORAGE) UNTIL INSTALLATION. ALL CUTTINGS SHALL BE INSTALLED WITHIN 24 HOURS OF HARVESTING.
- INSPECTION AND APPROVAL:** UPON ARRIVAL AT THE CONSTRUCTION SITE, LIVE BRANCH CUTTINGS SHALL BE INSPECTED FOR ACCEPTABILITY. LIVE CUTTINGS SHALL BE COLLECTED FROM SOURCES THAT SHALL BE APPROVED PRIOR TO THE COMMENCEMENT OF CUTTING OPERATIONS.

INSTALLATION

- SINGLE LIVE STAKES:** LIVE STAKES SHALL BE PLANTED IN THREE ROWS STARTING 0.5 FEET ABOVE THE ORDINARY HIGH WATER LINE, AT 1 FOOT SPACING. STAKES SHALL BE INSTALLED IN A 2- FEET BY 2- FEET GRID PATTERN. LIVE STAKES SHALL BE TAMPED DIRECTLY INTO THE SOIL OR BETWEEN ROCK RIPRAP AND SHALL PROTRUDE 4 TO 8 INCHES FROM THE SOIL SURFACE. LIVE STAKES SHALL BE INSTALLED AT LEAST 12 INCHES INTO THE SOIL AND AT LEAST 6 INCHES INTO SATURATED SOIL. IN NO CASE WILL THE LIVE STAKES PROTRUDE MORE THAN 8 INCHES ABOVE THE SOIL SURFACE.
- IN THE CASE OF JOINT PLANTING IN RIPRAP, THE PROTRUDING MEASUREMENT SHALL BE TAKEN FROM THE SOIL LEVEL BETWEEN THE ROCKS AND NOT FROM THE TOP OF ROCK.
- ONLY DEAD BLOW HAMMERS OR RUBBER MALLETS SHALL BE USED TO TAMP THE LIVE STAKES INTO THE SOIL. CARE SHALL BE TAKEN TO PREVENT SPLITTING THE STAKES DUE TO IMPACT FROM THE HAMMERS. SLEDGEHAMMERS SHALL NOT BE USED TO TAMP THE LIVE STAKES INTO THE SOIL.
- IN CASES WHERE THE SOIL IS TOO HARD TO TAMP THE LIVE STAKE IN DIRECTLY, A METAL ROD OF ½- TO ¾-INCH-DIAMETER MAY BE DRIVEN IN FIRST TO PREPARE A PILOT HOLE.
- BACKFILL AROUND THE INSTALLED LIVE STAKE WITH THE ORIGINAL SOIL TO ELIMINATE AIR Voids, THEN TAMP THE GROUND LIGHTLY AROUND THE STAKE WITH A HAMMER TO HOLD IT SECURELY IN PLACE. A SLIGHT "SAUCER" SHALL BE FORMED AROUND EACH CUTTING TO CAPTURE AND HOLD PRECIPITATION. THIS SAUCER SHOULD BE FILLED WITH WATER AFTER PLANTING.
- AFTER THE STAKES ARE FULLY TAMPED INTO THE SOIL, THE TOP 1 TO 2 INCHES OF EACH LIVE STAKE SHALL BE PRUNED TO A CLEAN, NON-DAMAGED OUT.

PERMANENT SEEDING

PERMANENT SEEDING NOTES

PERMANENT SEEDING SHALL BE INSTALLED PER THE CITY OF WICHITA STANDARD SPECIFICATIONS FOR PERMANENT SEEDING.

NATIVE BLEND SEEDING NOTES

- NATIVE BLEND SEEDING SHALL BE INSTALLED AT THE COMPLETION OF CONSTRUCTION ACTIVITIES IN COORDINATION WITH PERMANENT EROSION CONTROL BMPs, AS DEFINED IN THE NOTES IN THIS SECTION, WITHIN THE PLANS AND SPECIFICATIONS.

- NATIVE BLEND SEEDING SHALL BE A WARM SEASON GRASS MIX SEED CONTAINING LOCALLY AVAILABLE VARIETIES, AS SPECIFIED BELOW.

EL RENO SIDE OATS GRAMA	7# PLS/ ACRE
BLAZE LITTLE BLUESTEM	4# PLS/ ACRE
COVINGTON BLUE GRAMA	5# PLS/ ACRE
CODY OR TEXOKA BUFFALO GRASS	8# PLS/ ACRE

APPLY PURE NITROGEN FERTILIZER AT A RATE OF 2 LBS/ 1000 SF.

- NATIVE BLEND SEEDING SHALL BE DONE OCTOBER 15- JUNE 1.

- WARM SEASON GRASS MIX SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED. LANDSCAPE CONTRACTOR SHALL PROVIDE LANDSCAPE ARCHITECT WITH DEALER'S GUARANTEED STATEMENT OF COMPOSITION OF MIXTURE AND PERCENTAGE OF PURITY AND GERMINATION OF SEED USED.

- SEEDING PROCESS: BEGINNING AS EARLY AS POSSIBLE, TILL ENTIRE AREA TO BE SEEDED TO DESTROY EXISTING VEGETATION AND LEAVE A FIRM, FRIABLE SEEDBED. TILL AREA TO BE SEEDED IN TWO SUCCESSIVE SHALLOW TILLINGS, APPROXIMATELY TWO WEEKS APART TO REMOVE ALL DEAD PLANT MATERIAL AND NEW GROWTH WEEDS. DO NOT TILL DURING WET WEATHER WHEN RUTTING MAY BE A PROBLEM.

- LANDSCAPE CONTRACTOR TO DRILL WARM SEASON GRASS MIX SEED WITH A DRILL SPECIFICALLY SUITED FOR SEEDING NATIVE PRAIRIE GRASSES. PLANT SEED NO DEEPER THAN ½" BELOW SURFACE.

- PROTECT SEEDED AREAS FROM EROSION BY SPREADING WEED-FREE STRAW MULCH TO FORM A CONTINUOUS BLANKET 1-1/2" LOOSE DEPTH AND CRIMP IN TO SOIL BY SUITABLE METHODS.

- HAY MULCH SHALL BE THE REQUIRED MULCHING MATERIAL FOR PERMANENT SEEDING, UNLESS SPECIFIED OTHERWISE, ON THE PLANS OR DIRECTED BY THE ENGINEER. AFTER SEEDING OPERATIONS ARE COMPLETE, THE MULCH SHALL BE SPACED UNIFORMLY BY HAND, MANURE SPREADER, OR OTHER SUITABLE EQUIPMENT. THE MULCH SHALL BE ANCHORED TO THE SOIL BY A V-TYPE WHEEL LAND PACKER, A DISK HARROW SET TO CUT SLIGHTLY, OR OTHER SUITABLE EQUIPMENT WHICH WILL SECURE THE MULCH FIRMLY INTO THE GROUND 2 INCHES OR MORE TO FORM A SOIL-BINDING MULCH AND PREVENT LOSS OR BUNCHING BY WIND. SPACING BETWEEN DISKS SHALL NOT EXCEED 8 INCHES. APPLY HAY MULCH AT THE RATE OF 2 TONS PER ACRE OR 90 LBS. PER 1000 SQ. FT.

TEMPORARY SEEDING

- TEMPORARY SEEDING SHALL BE INSTALLED AS TEMPORARY COVER AFTER GRADING AND/OR CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED IN AN AREA OF THE PROJECT. TEMPORARY SEED SHALL BE INSTALLED WHEN:

- CONSTRUCTION ACTIVITY WILL CEASE FOR AT LEAST 14 DAYS; OR
- WITHIN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY IN THAT AREA; OR,
- WHEN PERMANENT SEEDING CANNOT TAKE PLACE WITHIN THE SPECIFIED PLANTING WINDOW.

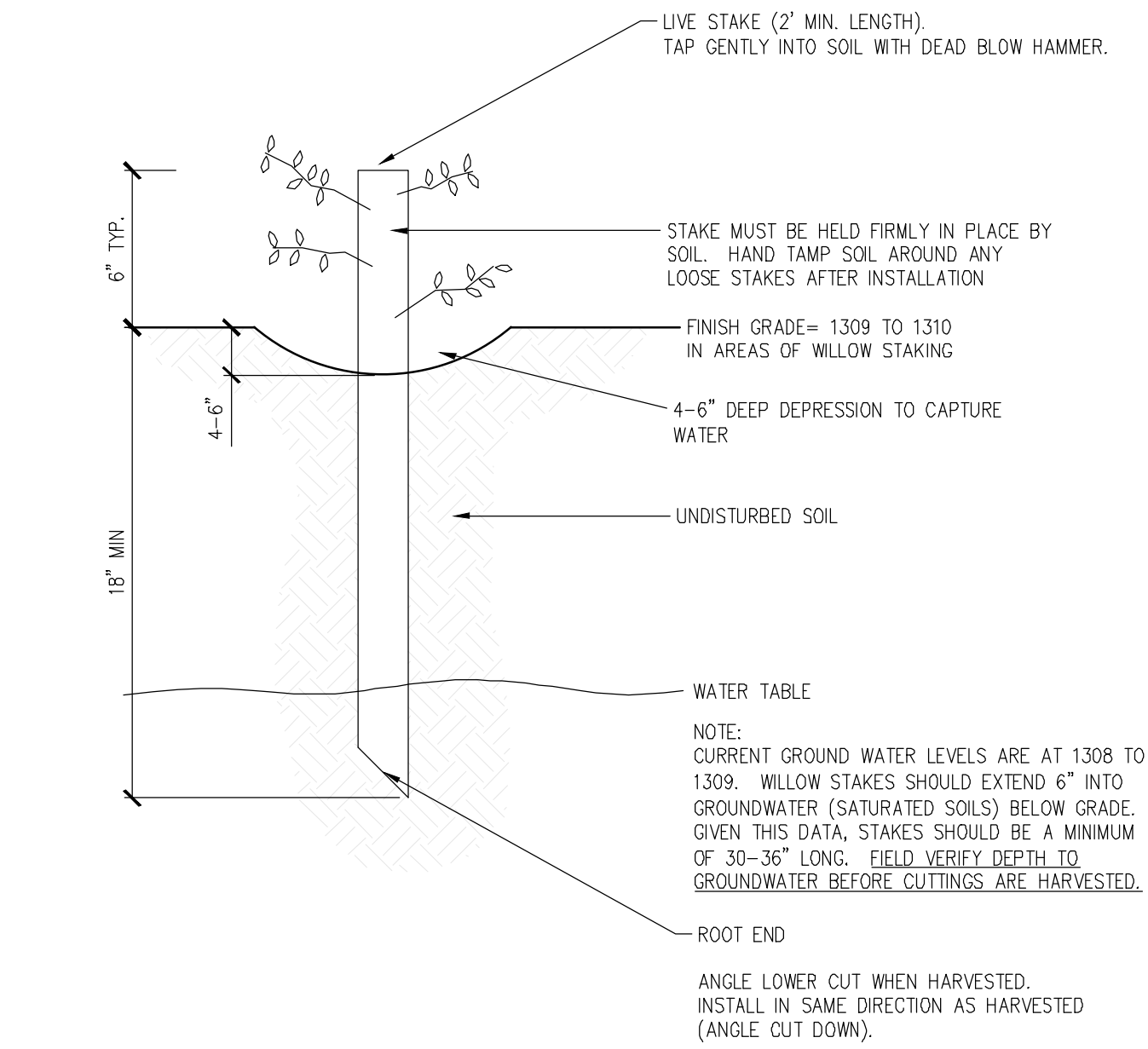
- TEMPORARY SEEDING SHALL BE PLACED VIA APPROPRIATE SEED DRILL. THE TEMPORARY SEED MIX IS AS FOLLOWS:

ANNUAL RYE 20#/ ACRE

- TEMPORARY SEED MAY BE PLACED ANY TIME DURING CONSTRUCTION.

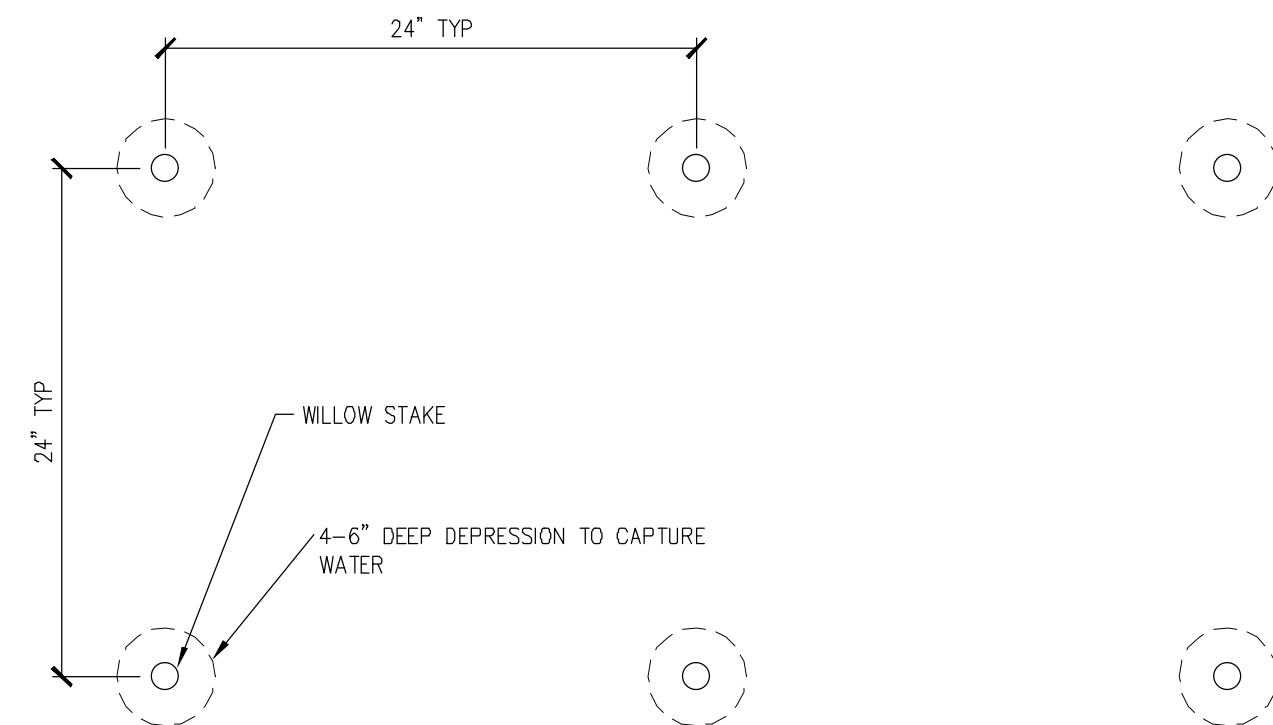
- PROTECT SEEDED AREAS FROM EROSION BY SPREADING WEED-FREE STRAW MULCH TO FORM A CONTINUOUS BLANKET 1-1/2" LOOSE DEPTH AND CRIMP IN TO SOIL BY SUITABLE METHODS. EROSION CONTROL BLANKET IS ALSO AN ACCEPTABLE STABILIZATION METHOD. REFER TO NOTE #9 UNDER "PERMANENT SEEDING" FOR ACCEPTABLE BLANKETS. STABILIZATION SHALL TAKE PLACE WITHIN 7 DAYS OF SEEDING (21 DAYS AFTER LAST CONSTRUCTION ACTIVITY/ CESSATION OF CONSTRUCTION).

- DO NOT SEED OR WORK SOIL WHEN THERE IS STANDING OR RUNNING WATER PRESENT IN DISTURBED AREAS.



1 WILLOW STAKING ON FLAT PLANES

Not to Scale



2 WILLOW STAKING PATTERN

Not to Scale

Bellechase 3rd Addition
NE Pond Outlet Revegetation Notes/ Details
WICHITA, KANSAS



ENGINEERING | SURVEYING | LANDSCAPE ARCHITECTURE | GOVERNMENT
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PROJECT NUMBER 472-85078	RS JOB NO. 4057E	DWG. SCALE 20	SHEET 26A
DRAWING FILE Engg Base (NE Pond Reveg)			of 45

DATE
06/17/13
DESIGN
BDT
DRAWN
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REVIEW