INSTRUCTIONS FOR TEMPORARY STABILIZATION USING

VEGETATION

INSTALLATION

1. REFER TO PLANS FOR LOCATION, EXTENT, AND SPECIFICATIONS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHODS OF INSTALLATION, CONTACT THE ENGINEER, ARCHITECT, OR RESPONSIBLE PERSONNEL ON THE SITE FOR ASSISTANCE. EROSION CONTROL PERSONNEL HAVE COPIES OF INSTRUCTIONS AND MAY BE ABLE TO OFFER ASSISTANCE.

   IF THE DISTURBANCE IS NOT PROPERLY STABILIZED THE FIRST TIME SO THAT EROSION IS RESTRAINED, THE SEEDING WILL HAVE TO BE REPEATED.

2. USE THE APPLICATION RATES FOR LIME, FERTILIZER, SEED, MULCH, ETC. SPECIFIED IN THE PLAN, OR USE THE RATES BELOW FOR THE APPROPRIATE SEASON.

ALL SEASONS:

LIME: 90 POUNDS PER 1000 SQUARE FEET (2 TONS PER ACRE).
FERTILIZER: 10-10-10; 16 POUNDS PER 1000 SQUARE FEET (700 POUNDS PER ACRE).
STRAW MULCH: 80 POUNDS PER 1000 SQUARE FEET (1.5 TO 2 TONS PER ACRE); USE ENOUGH STRAW TO COVER 75% OF THE GROUND.

MARCH - MAY

RYE GRAIN: 3 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE).
OR
SPRING OATS: 3 POUNDS PER 1000 SQUARE FEET (125 POUNDS PER ACRE).

MAY - AUGUST

MILLET: 1 POUND PER 1000 SQUARE FEET (40 POUNDS PER ACRE).
OR
SORGHUM HYBRIDS: 1 POUND PER 1000 SQUARE FEET (40 POUNDS PER ACRE).

AUGUST 15 - NOVEMBER 15

OATS: BEFORE OCTOBER 1: 2.5 POUNDS PER 1000 SQUARE FEET (125 POUNDS PER ACRE).
OR
WHEAT: AFTER OCTOBER 1: 3 POUNDS PER 1000 SQUARE FEET (180 POUNDS PER ACRE).

NOVEMBER 15 - FEBRUARY

VEGETATION IS NOT AN APPROPRIATE STABILIZATION DURING THESE SEASONS; USE ANOTHER TYPE OF TEMPORARY GROUND COVER, SUCH AS MULCHING.

3. **SEEDBED PREPARATION:** REMOVE ROCKS, STUMPS, ROOTS, ETC. SINCE THEY WILL INTERFERE WITH SEEDING AND MAINTENANCE. THE SMOOTH, COMPACTED SURFACE OF CUT AND FILL SLOPES IS NOT A GOOD SEED BED; APPLY LIME AND FERTILIZER, THEN RIP THE SOIL 4-6 INCHES TO MIX THE NUTRIENTS INTO THE SOIL AND TO LOOSEN AND ROUGHEN IT TO RECEIVE THE SEED.
4. **SEEDING:** APPLY SEED AT THE RECOMMENDED RATE, AND GO OVER THE SURFACE WITH A CULTIPACKER WHERE POSSIBLE TO BRING THE SEED INTO CONTACT WITH THE SOIL.
5. **MULCHING:** THE AREA SEEDED MUST BE MULCHED TO PROTECT THE BARE SOIL UNTIL THE VEGETATION IS ESTABLISHED AND TO RETAIN MOISTURE TO PROMOTE SEED GERMINATION AND PLANT GROWTH. APPLY ENOUGH MULCH TO COVER 75% OF THE SOIL SURFACE. TO KEEP IT IN PLACE AND PREVENT WIND OR WATER FROM DISLODGING IT, THE MULCH SHOULD BE HELD IN PLACE BY TACKING IT WITH ASPHALT OR COVERING IT WITH NETTING.

MAINTENANCE

AREAS MUST BE RESEEDED AND MULCHED WHERE THE VEGETATION FAILS TO ESTABLISH ITSELF OR IS DAMAGED BY RUNOFF OR CONSTRUCTION ACTIVITY. IF THE TEMPORARY VEGETATION SHOULD FAIL FOR ANY REASON BEFORE THE PERMANENT STABILIZATION IS PROVIDED, IT MUST BE REPLACED WITH AN APPROPRIATE TYPE OF COVER SUFFICIENT TO RESTRAIN EROSION.

INSTRUCTIONS FOR PERMANENT STABILIZATION USING

VEGETATION

INSTALLATION

1. REFER TO PLANS FOR LOCATION, EXTENT, AND SPECIFICATIONS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHODS OF INSTALLATION, CONTACT THE ENGINEER, ARCHITECT, OR RESPONSIBLE PERSONNEL ON THE SITE FOR ASSISTANCE. EROSION CONTROL PERSONNEL HAVE COPIES OF INSTRUCTIONS AND MAY BE ABLE TO OFFER ASSISTANCE.

   IF THE DISTURBANCE IS NOT PROPERLY STABILIZED THE FIRST TIME SO THAT EROSION IS RESTRAINED, THE SEEDING WILL HAVE TO BE REPEATED UNTIL IT IS SUCCESSFUL.

2. USE THE APPLICATION RATES FOR LIME, FERTILIZER, SEED, MULCH, ETC. SPECIFIED IN THE PLAN, OR USE THE RATES BELOW FOR THE APPROPRIATE SEASON. IF SEEDING IS TO BE DONE IN A SEASON NOT LISTED BELOW, USE VEGETATION COMPATIBLE WITH THAT SEASON OR ANOTHER METHOD OF PERMANENT STABILIZATION.
3. TALL FESCUE:

   SEEDING DATES: FEBRUARY 15 – MAY, OR AUGUST 15 – OCTOBER 15

   LIME: 135 POUNDS PER 1000 SQUARE FEET (3 TONS PER ACRE)

   FERTILIZER: 10-10-10; 23 POUNDS PER 1000 SQUARE FEET (1000 POUNDS PER ACRE). A SPLIT APPLICATION OF 500 POUNDS PER ACRE INITIALLY AND ANOTHER 500 POUNDS IN THE SPRING OR FALL IS PREFERABLE. ADD 500 POUNDS PER ACRE SUPER PHOSPHATE WHERE THE SUBSOIL IS EXPOSED.

   SEED: 1.5 POUNDS PER 1000 SQUARE FEET (60 POUNDS PER ACRE)

   MULCH: 80 POUNDS OF SMALL GRAIN STRAW PER 1000 SQUARE FEET (APPROXIMATELY 2 BALES) OR 1.5 -2 TONS PER ACRE; USE ENOUGH STRAW TO COVER 75% OF THE GROUND.

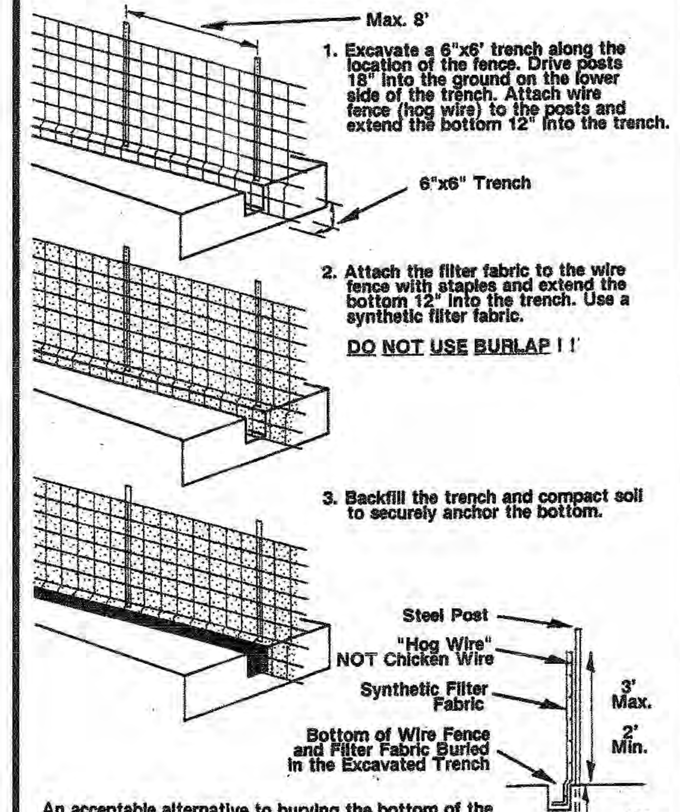
   TEMPORARY COVER: 0.5 POUNDS OF GERMAN OR BROWNTOP MILLET PER 1000 SQUARE FEET (20 POUNDS PER ACRE)

3. SEEDBED PREPARATION: REMOVE ROCKS, STUMPS, ROOTS, ETC. SINCE THEY WILL INTERFERE WITH SEEDING AND MAINTENANCE. THE SMOOTH, COMPACTED SURFACE OF CUT AND FILL SLOPES IS NOT A GOOD SEEDBED; APPLY LIME AND FERTILIZER, THEN RIP THE SOIL 4 TO 6 INCHES TO MIX THE NUTRIENTS INTO THE SOIL AND TO LOOSEN AND ROUGHEN IT TO RECEIVE THE SEED.
4. SEEDING: APPLY SEED AT THE RECOMMENDED RATE, AND GO OVER THE SURFACE WITH A CULTIPACKER WHERE POSSIBLE TO BRING THE SEED INTO CONTACT WITH THE SOIL.
5. MULCHING: THE AREA SEEDED MUST BE MULCHED TO PROTECT THE BARE SOIL UNTIL THE VEGETATION IS ESTABLISHED AND TO RETAIN MOISTURE TO PROMOTE SEED GERMINATION AND PLANT GROWTH. APPLY ENOUGH MULCH TO COVER 75% OF THE SURFACE. TO KEEP IT IN PLACE AND PREVENT WIND OR WATER FROM DISLODGING IT, THE MULCH SHOULD BE HELD IN PLACE BY TACKING IT WITH ASPHALT, CUTTING IT WITH A STRAIGHT-SET DISK, OR COVERING IT WITH NETTING.

MAINTENANCE

ANY PLACES WHERE THE VEGETATION FAILS TO ESTABLISH ITSELF OR IS DAMAGED BY RUNOFF OR CONSTRUCTION ACTIVITY MUST BE RESEEDED. WHERE THE VEGETATION FAILS TO RESTRAIN EROSION, OTHER EROSION CONTROL MEASURES MUST BE INSTALLED.

SILT FENCE



An acceptable alternative to burying the bottom of the fence is to lay 12" of the fence and fabric on the ground and cover it with 6" of washed stone, but not just soil.

Figure 1: Illustration of Silt Fence Installation.

INSTRUCTIONS FOR

SILT FENCE

INSTALLATION

1. REFER TO THE PLANS FOR LOCATION, EXTENT, AND SPECIFICATIONS. IF THERE ARE QUESTIONS OF PROBLEMS WITH THE LOCATION, EXTENT, OR METHODS OF INSTALLATION, CONTACT THE ENGINEER, ARCHITECT, OR RESPONSIBLE PERSONNEL ON THE SITE FOR ASSISTANCE. EROSION CONTROL PERSONNEL HAVE COPIES OF INSTRUCTIONS AND MAY HAVE PHOTOGRAPHS OF PROPERLY INSTALLED SILT FENCES AS AN AID TO INSTALLATION.

   IF THE SILT FENCE IS NOT INSTALLED CORRECTLY THE FIRST TIME, IT WILL HAVE TO BE REBUILT.

2. DETERMINE THE LOCATION ON THE GROUND TAKING INTO CONSIDERATION:
   * **A SILT BARRIER (PREFABRICATED SILT FENCE) CANNOT BE SUBSTITUTED! !** THE SILT FENCE MUST BE CONSTRUCTED AS DESCRIBED IN THESE INSTRUCTIONS.
   * ALLOW SUFFICIENT SPACE FOR MAINTENANCE, GRADING, FILLING, AND OTHER CONSTRUCTION ACTIVITY BETWEEN THE SILT FENCE AND THE CONSTRUCTION SITE. IF NECESSARY, HAVE SLOPE STAKES, BUILDING CORNERS, STORM DRAINS, ETC. SURVEYED BEFORE CLEARING TO GUIDE INSTALLATION. KNOW WHERE THE TOE OF FILL SLOPES WILL EXTEND SO THAT SUFFICIENT ROOM IS LEFT BETWEEN THE TOE AND SILT FENCE FOR MAINTENANCE, REPAIR, AND REMOVAL.
   * ALLOW AT LEAST:

     15 FEET BETWEEN THE FENCE AND SINGLE-STORY BUILDINGS.

     25 FEET BETWEEN THE FENCE AND MULTIPLE-STORY BUILDINGS.

     10 FEET BETWEEN THE FENCE AND THE TOE OF FILL SLOPES.
   * WHERE POSSIBLE, INSTALL THE SILT FENCE ON THE CONTOUR SO THAT RUNOFF GOES THROUGH THE SILT FENCE AND DOES NOT FLOW ALONG THE SILT FENCE AND POND AT THE LOWEST POINT. WHERE PONDING DOES OCCUR, SILT FENCE OUTLETS MAY BE NECESSARY SO THAT THE FENCE DOES NOT COLLAPSE.
3. CLEAR THE LOCATION OF THE SILT FENCE, CLEARING ONLY WHAT IS NEEDED TO PROVIDE ACCESS TO PERSONNEL AND EQUIPMENT FOR INSTALLATION. IT IS PERMISSIBLE TO PLACE THE SILT FENCE IN THE EDGE OF EXISTING TREES AS LONG AS THE OWNER ALLOWS IT AND CARE IS TAKEN TO PROTECT THESE TREES DURING INSTALLATION, MAINTENANCE, AND REMOVAL IF THE TREES ARE TO REMAIN AFTER CONSTRUCTION. DO NOT ATTACH THE FILTER FABRIC TO THE TREES, AS IT MAKES BURYING THE TOE IMPOSSIBLE.
4. EXCAVATE A 6 X 6-INCH TRENCH ALONG THE LOCATION OF THE FENCE. USING A "DITCH WITCH" IS HELPFUL.
5. ALONG THE LOWER SIDE OF THE TRENCH, PLACE STEEL FENCE POSTS NO MORE THAN 8 FEET APART AND DRIVE THEM 18 INCHES INTO THE GROUND.
6. ATTACH WIRE FENCE ("HOG WIRE" OF MINIMUM 14 GAUGE WITH MAXIMUM MESH OF 6 INCHES) TO THE UPHILL SIDE OF THE POSTS, AND PLACE 12 INCHES OF THE BOTTOM OF THE FENCE INTO THE TRENCH. DO NOT USE "CHICKEN WIRE." USE WIRE TO FASTEN THE FENCE TO THE POSTS. THE COMPLETED FENCE MUST BE AT LEAST 2 FEET HIGH AND NOT MORE THAN 3 FEET HIGH.
7. ATTACH SYNTHETIC FILTER FABRIC TO THE UPHILL SIDE OF THE WIRE FENCE WITH STAPLES A MAXIMUM 12 INCHES APART, AND PLACE 12 INCHES OF THE FABRIC INTO THE TRENCH WITH THE WIRE FENCE. USE ROLLS OF FABRIC AND CUT TO THE NECESSARY LENGTH IN ORDER TO MINIMIZE THE NUMBER OF JOINTS.
8. BACKFILL THE TRENCH AND TAMP THE FILL TO FIRMLY ANCHOR THE BOTTOM OF THE FILTER FABRIC AND WIRE FENCE TO PREVENT WATER FROM FLOWING UNDER THE FENCE; MAKE IT GO THROUGH THE FILTER FABRIC.
9. WHERE IT IS IMPOSSIBLE TO INSTALL THE SILT FENCE ON THE CONTOUR, RUNOFF WILL FLOW ALONG THE FENCE AND POND AT THE LOWEST POINT. WHERE THE TOTAL DRAINAGE AREA TO THE POINT OF PONDING IS GREATER THAN 5,000 SQUARE FEET (FOR EXAMPLE: A SQUARE 70 FEET ON A SIDE), A SILT FENCE OUTLET IS REQUIRED; WHERE THE DRAINAGE AREA IS GREATER THAN 10,000 SQUARE FEET (FOR EXAMPLE: A SQUARE 100 FEET ON A SIDE), A SEDIMENT TRAP IS NECESSARY. THE LOCATION OF THIS OUTLET MAY BE SHOWN ON THE PLAN, BUT CHECK THE INSTALLATION IN THE FIELD WHEN THE WIRE FENCE IS UP TO DETERMINE IF ADDITIONAL OUTLETS ARE NEEDED. SEE THE DETAILS OF THE SILT FENCE OUTLET FOR INSTRUCTIONS.

MAINTENANCE

MATERIALS, EQUIPMENT, AND PERSONNEL MUST BE AVAILABLE FOR MAINTENANCE AT ALL TIMES.

1. INSPECT THE SILT FENCE:
   * DURING CONSTRUCTION: TO SEE IF MACHINERY OR FALLING TREES HAVE DAMAGED THE SILT FENCE; IF DAMAGED, REPAIR IT. TO SEE THAT FILL MATERIAL HAS NOT ACCUMULATED AGAINST THE FENCE; IF IT HAS, REMOVE THE MATERIAL, REPAIR THE FENCE, AND MOVE THE FENCE OR FILL SO THAT IT DOES NOT HAPPEN AGAIN.
   * AFTER EACH RAINFALL: TO SEE THAT RUNOFF IS NOT FLOWING UNDER THE FENCE; IF IT IS, BURY THE BOTTOM OF THE FENCE CORRECTLY. TO SEE THAT RUNOFF HAS NOT TOPPED THE FENCE IN LOW POINTS; IF IT HAS, AN OUTLET MAY BE NEEDED AT THAT POINT TO PREVENT FUTURE FAILURES.
2. CLEAN OUT ACCUMULATED SEDIMENT WHEN IT REACHES A DEPTH OF ONE-HALF THE HEIGHT OF THE FILTER FABRIC. PLACE THE SEDIMENT IN A DISPOSAL AREA OR, IF APPROPRIATE, MIX IT WITH DRY SOIL ON THE SITE.

   DO NOT DISPOSE OF SEDIMENT IN A MANNER THAT WILL CREATE AN EROSION HAZARD. DO NOT ERECT A NEW SILT FENCE ON TOP OF ACCUMULATED SEDIMENT BEHIND THE FENCE.
3. IF SILT FENCE OUTLETS ARE USED, REMOVE AND REPLACE THE STONE FILTER WITH CLEAN, WASHED STONE WHEN THE FILTER BECOMES CLOGGED. DISPOSE OF ANY CONTAMINATED STONE PROPERLY.
4. REPAIR ANY BREAKS OR ROTTEN PLACES IN THE FILTER FABRIC.
5. IF THE FENCE IS SAGGING BETWEEN POSTS, INSTALL ADDITIONAL POSTS.
6. WHEN MAKING REPAIRS, ALWAYS RESTORE THE SILT FENCE TO ITS ORIGINAL DESIGN CONFIGURATION.

REMOVAL

1. WHEN GRADING IN THE DRAINAGE AREA ABOVE THE SILT FENCE HAS BEEN FINISHED AND DISTURBED AREAS SUFFICIENTLY STABILIZED TO RESTRAIN EROSION, THE SILT FENCE AND ANY OUTLETS MUST BE REMOVED.
2. REMOVE ANY ACCUMULATED SEDIMENT AND DISPOSE OF IT PROPERLY.
3. REMOVE POSTS, FENCE, AND FABRIC; DISPOSE OF THEM PROPERLY.
4. STABILIZE THE DISTURBED AREA WHERE THE FENCE WAS LOCATED.

SILT FENCE OUTLET

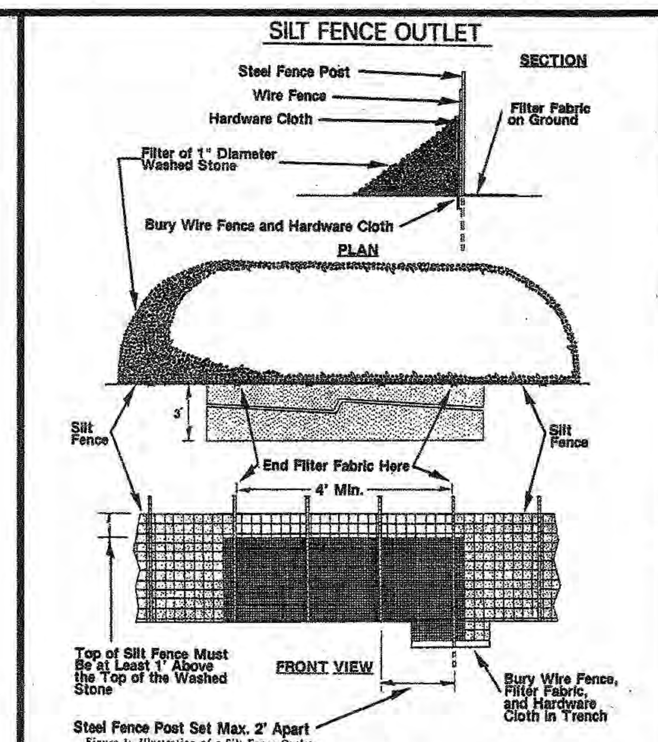


Figure 1: Illustration of a Silt Fence Outlet.

INSTRUCTIONS FOR

SILT FENCE OUTLET

INSTALLATION

1. REFER TO THE PLANS FOR LOCATIONS AND SPECIFICATIONS. DURING INSTALLATION OF THE SILT BARRIER OR SILT FENCE, INSPECT THE INSTALLATION TO DETERMINE IF OUTLETS ARE NEEDED ACCORDING TO THE CRITERIA SET FORTH IN THE SPECIFICATIONS FOR THE BARRIER AND FENCE. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER, ARCHITECT, OR RESPONSIBLE PERSONNEL ON THE SITE FOR ASSISTANCE. EROSION CONTROL PERSONNEL HAVE COPIES OF INSTRUCTIONS AND MAY HAVE PHOTOGRAPHS OF PROPERLY INSTALLED OUTLETS AS AN AID TO INSTALLATION.

   IF THE SILT FENCE OUTLET IS NOT INSTALLED CORRECTLY THE FIRST TIME, IT WILL HAVE TO BE REBUILT.

2. DETERMINE THE EXACT LOCATION OF THE OUTLET BEFORE COMPLETING INSTALLATION OF THE SILT BARRIER OR SILT FENCE, TAKING INTO CONSIDERATION:
   * INSTALL THE OUTLET AT THE LOWEST POINT(S) IN THE BARRIER OR FENCE WHERE WATER WILL POND.
   * INSTALL THE OUTLET WHERE IT IS ACCESSIBLE FOR INSTALLATION, MAINTENANCE, AND REMOVAL.
   * ALLOW AT LEAST:

     15 FEET BETWEEN THE BARRIER OR FENCE AND SINGLE-STORY BUILDINGS.

     25 FEET FOR FORK LIFTS BETWEEN THE BARRIER OR FENCE AND MULTIPLE-STORY BUILDINGS.

     10 FEET BETWEEN THE BARRIER OR FENCE AND THE TOE OF FILL SLOPES.
   * PLACE THE OUTLET SO THAT WATER FLOWING THROUGH IT WILL NOT CREATE AN EROSION HAZARD BELOW: AVOID STEEP SLOPES BELOW THE OUTLET AND AREAS WITHOUT PROTECTIVE VEGETATION. USE SLOPE DRAINS IF NECESSARY.
   * DETERMINE THE LOCATION OF THE OUTLET: FOR A SILT BARRIER, WHEN THE TRENCH IS DUG TO BURY THE BOTTOM OF THE FABRIC BECAUSE THE BARRIER WILL BE OMITTED AT THE OUTLET; FOR A SILT FENCE, WHEN THE WIRE FENCE IS IN PLACE BECAUSE THE FILTER FABRIC WILL BE OMITTED AT THE OUTLET.
3. REFER TO THE ILLUSTRATIONS OF THE OUTLET IN THE PLAN.
4. CLEAR STUMPS AND ROOTS FROM THE LOCATION OF THE OUTLET. CLEAR ADEQUATE ACCESS FOR THE EQUIPMENT NEEDED FOR INSTALLATION, MAINTENANCE, AND REMOVAL.
5. FOR A SILT BARRIER:
   * JUST BELOW THE GAP IN THE BARRIER, PLACE A LAYER OF FILTER FABRIC ON THE GROUND TO PROTECT THE SOIL FROM EROSION BY OUTFLOW FROM THE OUTLET; PLACE 6 INCHES OF THE UPPER EDGE IN THE TRENCH. STAKE THE REMAINING EDGES OF THE FABRIC TO HOLD IT IN PLACE.
   * ALONG THE GAP WHERE THE OUTLET WILL GO, PLACE STEEL FENCE POSTS FOR STRENGTH. THE POSTS MUST BE A MAXIMUM OF 2 FEET APART AND DRIVEN INTO SOLID GROUND AT LEAST 18 INCHES.
   * PLACE HARDWARE CLOTH [WELDED GALVANIZED SCREEN WITH SQUARE 1/4 - 1/2-INCH HOLES] ON THE UPHILL SIDE OF THE POSTS TO HOLD THE WASHED STONE IN PLACE. PUT 6 INCHES OF THE BOTTOM OF THE CLOTH IN THE TRENCH AND FASTEN IT TO THE POSTS WITH LENGTHS OF WIRE.
   * BURY THE BOTTOM OF THE HARDWARE CLOTH AND THE UPPER EDGE OF THE FILTER FABRIC BELOW THE OUTLET IN THE TRENCH AND COMPACT THE FILL.
   * PLACE A FILTER OF 1-INCH DIAMETER WASHED STONE ON THE UPHILL SIDE OF THE OUTLET. PILE THE STONE UP TO THE TOP OF THE HARDWARE CLOTH AND OVER THE JOINT BETWEEN THE OUTLET AND THE BARRIER.
6. FOR A SILT FENCE:
   * JUST BELOW THE GAP IN THE FENCE, PLACE A LAYER OF FILTER FABRIC ON THE GROUND TO PROTECT THE SOIL FROM EROSION BY OUTFLOW FROM THE OUTLET; PLACE 6 INCHES OF THE UPPER EDGE IN THE TRENCH. STAKE THE OTHER EDGES OF THE FABRIC TO HOLD IT IN PLACE.
   * ALONG THE GAP WHERE THE OUTLET WILL GO, PLACE ADDITIONAL STEEL FENCE POSTS FOR STRENGTH. THE POSTS MUST BE A MAXIMUM OF 2 FEET APART AND DRIVEN INTO SOLID GROUND AT LEAST 18 INCHES.
   * PLACE HARDWARE CLOTH [WELDED GALVANIZED SCREEN WITH SQUARE 1/4 - 1/2-INCH HOLES] ON THE UPHILL SIDE OF THE POSTS TO HOLD THE WASHED STONE IN PLACE. PUT 6 INCHES OF THE BOTTOM OF THE CLOTH IN THE TRENCH AND FASTEN IT TO THE POSTS WITH LENGTHS OF WIRE.
   * BURY THE BOTTOM OF THE HARDWARE CLOTH, THE UPPER EDGE OF THE FILTER FABRIC BELOW THE OUTLET, AND THE WIRE FENCE IN THE TRENCH AND COMPACT THE FILL.
   * PLACE A FILTER OF 1-INCH DIAMETER WASHED STONE ON THE UPHILL SIDE OF THE OUTLET. PILE THE STONE UP TO THE TOP OF THE HARDWARE CLOTH AND OVER THE JOINT BETWEEN THE OUTLET AND THE SILT FENCE.

MAINTENANCE

MATERIALS, EQUIPMENT, AND PERSONNEL MUST BE AVAILABLE FOR MAINTENANCE AT ALL TIME.

1. INSPECT THE SILT FENCE OUTLET:
   * DURING CONSTRUCTION: TO DETERMINE IF MACHINERY, FALLING TREES, ETC. HAVE DAMAGED THE BARRIER, FENCE, OR OUTLET; IF DAMAGED, MAKE REPAIRS. TO SEE THAT FILL MATERIAL HAS NOT ACCUMULATED AGAINST THE OUTLET, BLOCKING OUTFLOW; IF IT HAS, REMOVE THE MATERIAL, REPAIR THE DAMAGE, AND MOVE THE FENCE OR FILL SO THAT IT DOES NOT HAPPEN AGAIN.
   * AFTER EACH RAINFALL: TO DETERMINE IF RUNOFF FLOWING THROUGH THE OUTLET HAS CAUSED DAMAGE BY UNDERMINING THE FENCE OR OUTLET, OR IF ACCUMULATED WATER HAS COLLAPSED THE OUTLET; IF IT HAS, MAKE REPAIRS OR INSTALL A SEDIMENT TRAP IF NECESSARY TO PREVENT FUTURE FAILURES.
2. CLEAN OUT ACCUMULATED SEDIMENT WHEN IT REACHES A DEPTH OF ONE-HALF THE HEIGHT OF THE OUTLET. PLACE THE SEDIMENT IN A DISPOSAL AREA, OR MIX IT WITH DRY SOIL ON THE SITE IF APPROPRIATE.

   DO NOT DISPOSE OF SEDIMENT IN A MANNER THAT WILL CREATE AN EROSION HAZARD.
3. WHEN THE STONE FILTER BECOMES CLOGGED, PREVENTING FLOW THROUGH THE FILTER, REMOVE THE CONTAMINATED STONE, DISPOSE OF IT PROPERLY, AND REPLACE IT WITH CLEAN WASHED STONE.
4. REPAIR THE OUTLET IF DAMAGED BY USE OR DURING MAINTENANCE. REBUILD IT TO THE ORIGINAL CONFIGURATION.

REMOVAL

1. WHEN GRADING IN THE DRAINAGE AREA ABOVE THE OUTLET HAS BEEN COMPLETED AND THE DISTURBED AREA SUFFICIENTLY STABILIZED TO RESTRAIN EROSION, THE OUTLET MUST BE REMOVED.
2. CLEAN OUT ACCUMULATED SEDIMENT AND DISPOSE OF IT PROPERLY.
3. REMOVE POSTS, FENCE, FABRIC, WIRE, AND WASHED STONE; DISPOSE OF THEM PROPERLY.
4. GRADE THE LOCATION AS NECESSARY.
5. STABILIZE THE DISTURBED AREA WHERE THE OUTLET WAS LOCATED.

GRAVEL CONSTRUCTION EXIT

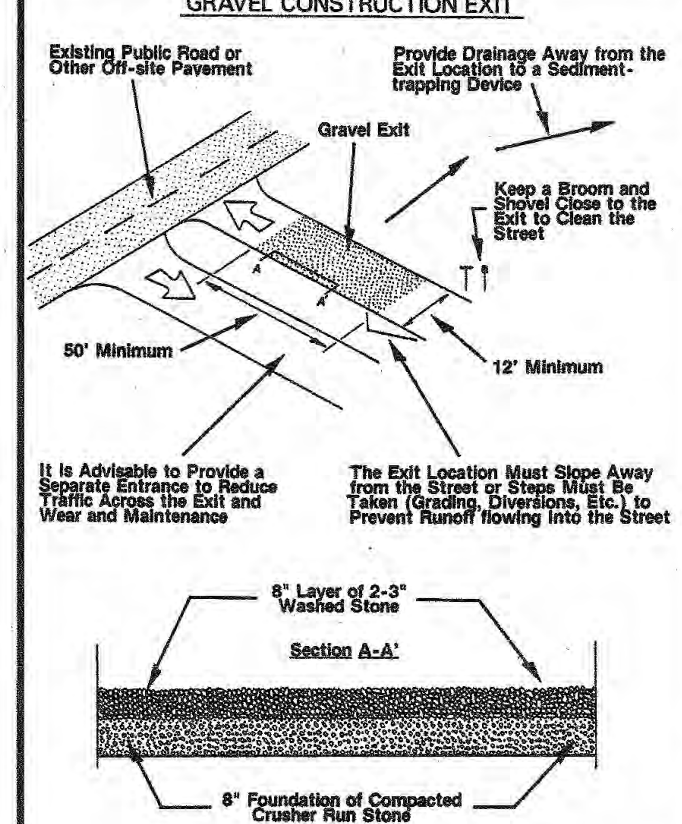


Figure 1: Illustration of a Gravel Construction Exit.

INSTRUCTIONS FOR

GRAVEL CONSTRUCTION EXIT

INSTALLATION

1. REFER TO PLANS FOR LOCATION AND SPECIFICATIONS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION OR METHODS OF INSTALLATION CONTACT THE ENGINEER, ARCHITECT, OR RESPONSIBLE PERSONNEL ON THE SITE FOR ASSISTANCE. EROSION CONTROL PERSONNEL HAVE COPIES OF INSTRUCTIONS AND PHOTOGRAPHS OF PROPERLY INSTALLED EXITS AS AN AID TO INSTALLATION.

   IF THE CONSTRUCTION EXIT IS NOT INSTALLED CORRECTLY THE FIRST TIME, IT WILL HAVE TO BE REBUILT.

2. DETERMINE THE LOCATION ON THE GROUND, TAKING INTO CONSIDERATION:
   * THE CONSTRUCTION EXIT MUST BE IN PLACE DURING ALL PHASES OF CONSTRUCTION; IF THE LOCATION IS TO BE GRADED, THE EXIT MUST BE INSTALLED FOR THE INITIAL WORK, REMOVED TO ALLOW GRADING OF THE LOCATION, AND REPLACED IMMEDIATELY AFTER GRADING SO THAT IT IS IN PLACE AND FUNCTIONING AT ALL TIMES.
   * IF THE SITE WILL HAVE A LARGE NUMBER OF VEHICLES USING THE EXIT, IT IS ADVISABLE TO HAVE A DIVIDED ENTRANCE THAT DIRECTS ENTERING TRAFFIC THROUGH A SEPARATE TRAVELWAY PARALLEL TO THE GRAVEL CONSTRUCTION EXIT IN ORDER TO REDUCE THE NUMBER OF TRIPS OVER THE STONE, INCREASING THE LIFE OF THE GRAVEL, AND REDUCING MAINTENANCE. REFER TO THE ILLUSTRATION FOR DETAILS.
   * RUNOFF AND SEDIMENT FROM THE SITE MUST BE DIRECTED AWAY FROM THE EXIT SO THAT IT DOES NOT FLOW INTO THE STREET OR OTHER OFF-SITE AREA; CHOOSE A LOCATION FOR THE EXIT THAT WILL MAKE IT EASY TO DIVERT THE RUNOFF TO SEDIMENT-TRAPPING DEVICES.
   * IF THE GRAVEL CONSTRUCTION EXIT DOES NOT FUNCTION TO KEEP MUD AND DUST ON-SITE, THEN ANY SOIL OR DEBRIS TRACKED FROM THE SITE MUST BE PHYSICALLY REMOVED FROM THESE AREAS BY FIRST USING A SHOVEL AND BROOM AND THEN WASHING THE PAVEMENT.
   * **IF THE PERSON RESPONSIBLE FOR THE DISTURBANCE FAILS TO TAKE INITIATIVE TO KEEP SOIL AND DEBRIS ON THE SITE ENFORCEMENT ACTION MAY BE TAKEN AGAINST THE SITE AND THE GRADING PERMIT REVOKED AND/OR A STOP WORK ORDER ISSUED.**
3. CLEAR THE LOCATION OF THE EXIT, REMOVING STUMPS, ROOTS, AND OTHER VEGETATION IN ORDER TO PROVIDE A FIRM FOUNDATION SO THAT THE STONE IS NOT PRESSED INTO SOFT GROUND. CLEAR ENOUGH WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY WHAT IS NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION CONTROL DEVICES ARE IN PLACE.

   IF THE SOIL AT THE LOCATION IS SOFT IT IS ADVISABLE TO PLACE A 6 TO 8 INCH LAYER OF CRUSHER RUN STONE DOWN FIRST TO PROVIDE A FIRM FOUNDATION AND PREVENT THE WASHED STONE BEING PRESSED INTO THE GROUND.
4. AT THE LOCATION OF THE EXIT, PLACE AN 8-INCH LAYER OF WASHED STONE 2 TO 3 INCHES IN DIAMETER AT LEAST 50 FEET LONG AND AS WIDE AS THE FULL WIDTH OF THE EXIT OR AT LEAST 10 FEET WIDE. FLARE THE END OF THE STONE WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES REMAIN ON STONE AND DO NOT TRAVEL OVER UNPROTECTED SOIL.
5. A SQUARE-EDGED SHOVEL AND BROOM WITH STIFF BRISTLES MUST BE PROVIDED AT THE EXIT FOR REMOVING ANY MUD THAT MAY BE TRACKED INTO THE STREET.

USE

1. AS VEHICLES LEAVING THE SITE DRIVE ACROSS THE WASHED STONE THE ABRASIVE ACTION OF THE WASHED STONE SHOULD REMOVE SEDIMENT FROM THE TIRES. IT MAY BE NECESSARY TO USE A SHOVEL TO REMOVE MUD TRAPPED BETWEEN DUAL WHEELS.
2. ANY SOIL TRACKED FROM THE SITE MUST BE REMOVED IMMEDIATELY. A SHOVEL AND BROOM MUST BE USED TO REMOVE AS MUCH SOIL AS POSSIBLE BEFORE WASHING THE PAVEMENT.

MAINTENANCE

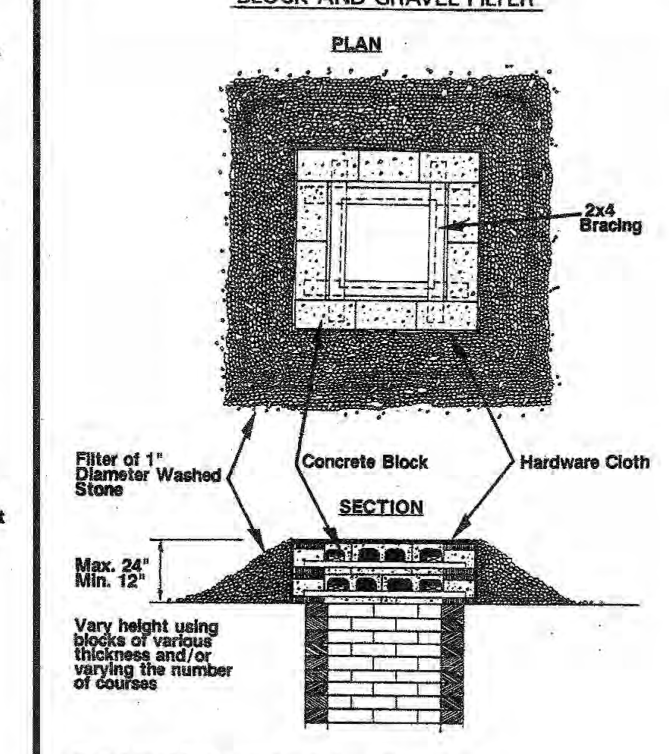
MATERIALS, EQUIPMENT, AND PERSONNEL MUST BE AVAILABLE FOR MAINTENANCE AT ALL TIMES.

1. WHEN THE STONE IN THE EXIT BECOMES CONTAMINATED WITH SOIL AND ITS FUNCTION IS REDUCED TO WHERE SEDIMENT IS BEING TRACKED INTO THE STREET, A 4-INCH LAYER OF CLEAN STONE MUST BE ADDED.
2. DIVERSIONS USED TO DIRECT RUNOFF AWAY FROM THE EXIT TO SEDIMENT-TRAPPING DEVICES MUST BE MAINTAINED ACCORDING TO SPECIFICATIONS FOR THOSE DEVICES.
3. THE GRAVEL CONSTRUCTION EXIT MUST BE MAINTAINED SO THAT MUD AND DUST ARE KEPT ON-SITE. PROBLEMS MUST BE ANTICIPATED AND PREVENTIVE MAINTENANCE MUST BE PERFORMED.

REMOVAL

1. WHEN THE GRAVEL CONSTRUCTION EXIT IS NO LONGER NEEDED, WHEN THE TRAVELWAYS HAVE BEEN STABILIZED AND THE POTENTIAL FOR TRACKING SOIL AND DEBRIS INTO THE STREET HAS BEEN REMOVED, THE GRAVEL CONSTRUCTION EXIT MAY BE REMOVED.
2. THE STONE AND ANY SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF WHERE THEY WILL NOT CREATE AN EROSION HAZARD.

BLOCK AND GRAVEL FILTER



Height must be adjusted so that overflow enters the inlet and does not bypass it.

Figure 1: Illustration of a Block and Gravel Filter.

INSTRUCTIONS FOR STORM DRAIN INLET PROTECTION USING A

BLOCK AND GRAVEL FILTER

INSTALLATION

1. REFER TO THE PLANS FOR LOCATIONS AND SPECIFICATIONS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION OR METHODS OF INSTALLATION, CONTACT THE ENGINEER, ARCHITECT, OR RESPONSIBLE PERSONNEL ON THE SITE FOR ASSISTANCE. EROSION CONTROL PERSONNEL HAVE COPIES OF INSTRUCTIONS AND MAY HAVE PHOTOGRAPHS OF PROPERLY INSTALLED BLOCK AND GRAVEL FILTERS AS AN AID TO INSTALLATION.

   IF THE INLET PROTECTION IS NOT INSTALLED CORRECTLY THE FIRST TIME, IT WILL HAVE TO BE REBUILT.

2. DETERMINE THE LOCATION ON THE GROUND, TAKING INTO CONSIDERATION:
   * DIVERSIONS AND/OR BERMS MUST BE USED TO FORCE RUNOFF THROUGH THE FILTER INTO THE INLET SO THAT IT DOES NOT BY-PASS THE INLET AND CAUSE PROBLEMS ELSEWHERE.
   * IF THE INLET IS TO BE RAISED IN STAGES AS THE FILL IS BROUGHT UP AROUND IT, THE FILTER MUST BE REMOVED FOR GRADING AND REPLACED IMMEDIATELY SO THAT THE INLET IS ALWAYS PROTECTED FROM THE ENTRY OF UNFILTERED RUNOFF.
3. REFER TO ILLUSTRATIONS IN THE PLAN TO ASSIST INSTALLATION.
4. PLACE CONCRETE BLOCKS AROUND THE OPENING OF THE INLET WITH THE HOLES IN THE BLOCK PARALLEL TO THE GROUND SO THAT WATER CAN FLOW THROUGH THE HOLES. VARY THE NUMBER OF COURSES TO BUILD THE FILTER TO THE REQUIRED HEIGHT. IT MUST BE AT LEAST 12 INCHES HIGH.
5. INSTALL 2 X 4'S AS SHOWN IN THE ILLUSTRATION FOR REINFORCEMENT.
6. WRAP HARDWARE CLOTH AROUND THE OUTSIDE OF THE BLOCKS AND ON THE GROUND. HARDWARE CLOTH IS WELDED, GALVANIZED WIRE FABRIC WITH 1/4 - 1/2-INCH SQUARE HOLES.
7. PILE CLEAN WASHED STONE (1-INCH DIAMETER) AROUND THE OUTSIDE OF THE BLOCKS AND ON TOP OF THE HARDWARE CLOTH.
8. WHERE POSSIBLE, DIG A SMALL PIT AROUND THE FILTER TO STORE SEDIMENT.
9. IT IS ADVISABLE TO PLACE GUARD STAKES AROUND THE FILTER TO ALERT MACHINERY OPERATORS OF ITS LOCATION AND PREVENT DAMAGE TO IT.
10. DIVERSIONS AND/OR BERMS MUST BE USED TO DIRECT RUNOFF TO THE FILTER AND INTO THE INLET. RUNOFF MUST NOT BE ALLOWED TO BY-PASS THE INLET AS IT WILL CREATE PROBLEMS DOWNHILL. REFER TO SPECIFIC DETAILS IN THE PLAN.

MAINTENANCE

MATERIALS, EQUIPMENT, AND PERSONNEL MUST BE AVAILABLE FOR MAINTENANCE AT ALL TIMES.

1. INSPECT THE BLOCK AND GRAVEL FILTER:
   * DURING CONSTRUCTION: TO SEE IF MACHINERY OR CONSTRUCTION ACTIVITY HAVE DAMAGED THE FILTER; IF DAMAGED, REPAIR IT. TO SEE IF CONSTRUCTION TRAFFIC HAS DAMAGED OR REDUCED THE CAPACITY OF THE BERMS AND DIVERSIONS DIRECTING RUNOFF TO THE FILTER; IF SO, MAKE REPAIRS.
   * AFTER EACH RAINFALL: TO SEE IF RUNOFF IS BY-PASSING THE INLET OR TOPPING THE BERMS OR DIVERSIONS BELOW THE FILTER; IF SO, INCREASE THEIR CAPACITY TO PREVENT IT.
2. WHEN THE STONE FILTER BECOMES COVERED WITH SEDIMENT AND CLOGGED SO THAT RUNOFF CANNOT FLOW THROUGH IT, THE CONTAMINATED STONE MUST BE REMOVED, DISPOSED OF PROPERLY, AND REPLACED WITH CLEAN WASHED STONE.

   DO NOT DISPOSE OF SEDIMENT IN A MANNER THAT WILL CREATE AN EROSION HAZARD.
3. IF THE FILTER IS DAMAGED, IF THE BLOCKS ARE DISLOCATED OR BROKEN, OR IF THE REINFORCEMENT IS DAMAGED, REBUILD THE FILTER TO ITS ORIGINAL DESIGN CONFIGURATION.

REMOVAL

1. WHEN GRADING IN THE DRAINAGE AREA ABOVE THE INLET HAS BEEN FINISHED AND THE DISTURBED AREAS STABILIZED, THE BLOCK AND GRAVEL FILTER MUST BE REMOVED.
2. REMOVE ANY ACCUMULATED SEDIMENT AND DISPOSE OF IT PROPERLY.
3. REMOVE THE STONE, HARDWARE CLOTH, BLOCK, AND 2 X 4'S, AND DISPOSE OF THEM PROPERLY.
4. STABILIZE THE DISTURBED AREA AS REQUIRED.

DIVERSION DIKE

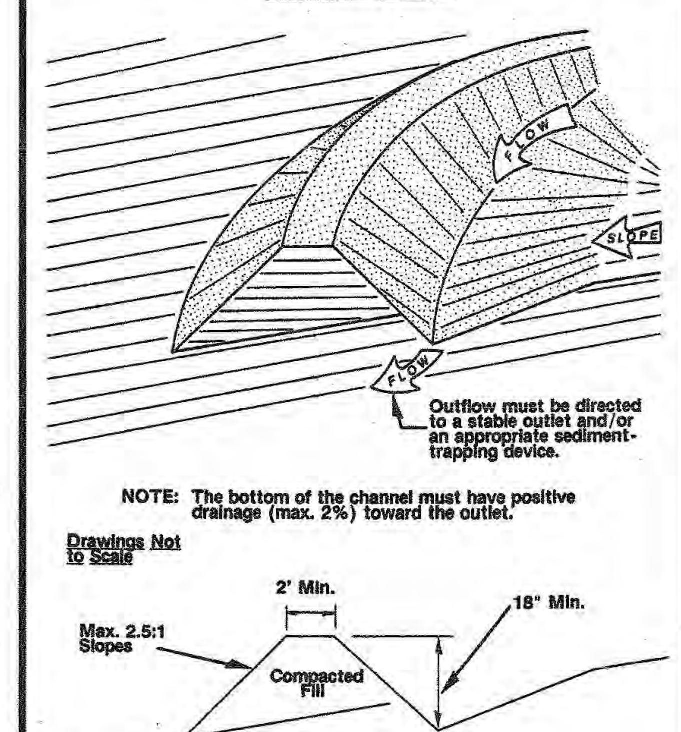


Figure 1: Illustration of a Diversion Dike.

INSTRUCTIONS FOR

DIVERSION DIKE

INSTALLATION

1. REFER TO PLANS FOR LOCATION, EXTENT, AND SPECIFICATIONS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHODS OF INSTALLATION, CONTACT THE ENGINEER, ARCHITECT, OR RESPONSIBLE PERSONNEL ON THE SITE FOR ASSISTANCE. EROSION CONTROL PERSONNEL HAVE COPIES OF INSTRUCTIONS AND MAY HAVE PHOTOGRAPHS OF PROPERLY INSTALLED DIVERSIONS AS AN AID TO INSTALLATION.

   IF THE DIVERSION DIKE IS NOT INSTALLED CORRECTLY THE FIRST TIME IT WILL HAVE TO BE REPLACED.

2. DETERMINE THE LOCATION ON THE GROUND TAKING INTO CONSIDERATION:
   * CONSIDER THE LOCATIONS OF THE SEDIMENT-TRAPPING DEVICES (SEDIMENT TRAP OR POND) WHEN LOCATING AND BUILDING THE DIVERSION. THE DIVERSION MUST DRAIN TO THE DEVICES.
   * THE DIVERSION MUST HAVE POSITIVE DRAINAGE TO THE SEDIMENT-TRAPPING DEVICES. THE MAXIMUM GRADE IS 2%.
   * ALLOW SUFFICIENT SPACE FOR MAINTENANCE AND REMOVAL BETWEEN THE TOE OF THE FILL SLOPE AND THE DIVERSION. IF NECESSARY, HAVE SLOPES STAKES, BUILDING CORNERS, STORM DRAINS, ETC. SURVEYED BEFORE CLEARING TO GUIDE INSTALLATION.
3. CLEAR THE LOCATION FOR THE DIVERSION, CLEARING ONLY WHAT IS NEEDED TO PROVIDE ACCESS FOR PERSONNEL AND EQUIPMENT FOR INSTALLATION. DO NOT CLEAR THE DRAINAGE AREA ABOVE UNTIL THE DIVERSION AND SEDIMENT-TRAPPING DEVICES ARE IN PLACE.
4. REMOVE ROOTS, STUMPS, AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY. **DO NOT USE DEBRIS TO BUILD THE DIKE.**
5. GRADE THE CHANNEL AND BUILD THE RIDGE; COMPACT THE FILL. THE SIDES OF THE CHANNEL AND THE BACK OF THE RIDGE MUST BE NO STEEPER THAN A 3:1 SLOPE. THE COMPLETED DIVERSION MUST BE AT LEAST 18 INCHES DEEP, MEASURED FROM THE BOTTOM OF THE CHANNEL TO THE TOP OF THE RIDGE.
6. CHECK THE BOTTOM OF THE CHANNEL TO ENSURE POSITIVE DRAINAGE IN THE DESIRED DIRECTION.

MAINTENANCE

MATERIALS, EQUIPMENT, AND PERSONNEL MUST BE AVAILABLE FOR MAINTENANCE AT ALL TIMES.

1. INSPECT THE DIVERSION DIKE:
   * DURING CONSTRUCTION: TO SEE IF MACHINERY, FALLING TREES, ETC. HAVE DAMAGED THE DIKE; IF DAMAGED, MAKE REPAIRS. TO SEE THAT FILL MATERIAL HAS NOT BLOCKED THE CHANNEL; IF IT HAS, REMOVE THE FILL TO CLEAR IT.
   * AFTER EACH RAINFALL: TO SEE THAT RUNOFF IS FLOWING TO THE SEDIMENT-TRAPPING DEVICES; IF NOT, CHANGE THE GRADE SO THAT IT WILL.
2. IF SEDIMENT ACCUMULATES IN THE CHANNEL, REMOVE IT SO THAT ITS CAPACITY IS NOT REDUCED, CAUSING IT TO FAIL.

   DO NOT DISPOSE OF THE SEDIMENT IN A MANNER THAT WILL CREATE AN EROSION HAZARD.
3. REPAIR ANY PLACES IN THE RIDGE THAT ARE WEAKENED AND WHICH THREATEN TO CAUSE FAILURE OF THE DIVERSION.

REMOVAL

1. WHEN THE GRADING ABOVE THE DIVERSION IS FINISHED AND THE AREA IS STABILIZED, IT MUST BE REMOVED.
2. REMOVE ACCUMULATED SEDIMENT AND DISPOSE OF IT PROPERLY.
3. GRADE THE AREA AND SMOOTH IT OUT IN PREPARATION FOR STABILIZATION.
4. STABILIZE THE AREA AS SPECIFIED IN THE PLAN.

SEDIMENT POND

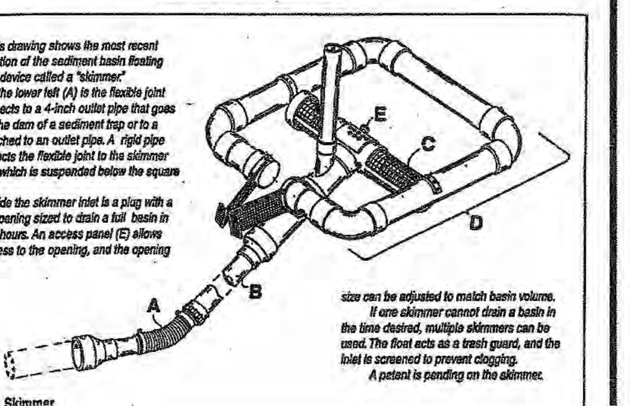


Figure 1. Skimmer

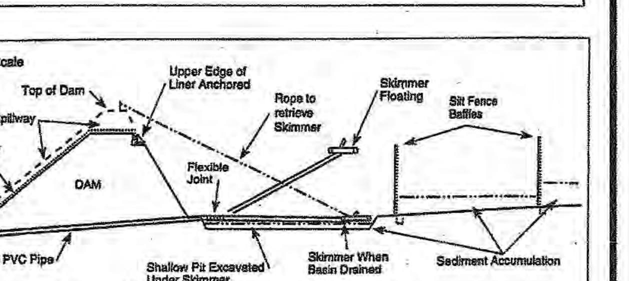


Figure 2. Skimmer basin

Figure 6.61b Section through embankment and basin controls.

Construction Specifications

1. Site preparations—Clear, grub, and strip topsoil from areas under the embankment to remove trees, vegetation, roots, and other objectionable material. To facilitate sediment cleanout and restoration, clear the pool area of all brush, trees, and other objectionable materials. Stockpile all topsoil or soil containing organic matter for use on the outer shell of the embankment to facilitate vegetative establishment. Place temporary sediment control measures below the basin as needed.
2. Cut-off trench—Excavate a cut-off trench along the centerline of the earth fill embankment. Cut the trench to stable soil material, but in no case make it less than 2 ft deep. The cut-off trench must extend into both abutments to at least the elevation of the riser crest. Make the minimum bottom width wide enough to permit operation of excavation and compaction equipment but in no case less than 2 ft. Make side slopes of the trench no steeper than 1:1. Compaction requirements are the same as those for the embankment. Keep the trench dry during backfilling and compaction operations.
3. Embankment—Take fill material from the approved areas shown on the plans. It should be clean mineral soil, free of roots, woody vegetation, rocks, and other objectionable material. Scarify areas on which fill is to be placed before placing fill. The fill material must contain sufficient moisture so it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Place fill material in 6 to 8-inch continuous layers over the entire length of the fill area and then compact it. Compaction may be obtained by routing the construction hauling equipment over the fill so that the entire surface of each layer is traversed by at least one wheel or tread track of the heavy equipment, or a compactor may be used. Construct the embankment to an elevation 10% higher than the design height to allow for settling.
4. Skimmer installation–Install floating skimmer as shown in the section above.
5. Emergency spillway—Install the emergency spillway in undisturbed soil. The achievement of planned elevations, grade, design width, and entrance and exit channel slopes are critical to the successful operation of the emergency spillway.
6. Inlets—Discharge water into the basin in a manner to prevent erosion. Use diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency (*References: Runoff Control Measures* and *Outlet Protection*).
7. Erosion control—Construct the structure so that the disturbed area is minimized. Divert surface water away from bare areas. Complete the embankment before the area is cleared. Stabilize the emergency spillway embankment and all other disturbed areas above the crest of the principal spillway immediately after construction (*References: Surface Stabilization*).
8. Safety—Sediment basins may attract children and can be dangerous. Avoid steep side slopes, and fence and mark basins with warning signs if trespassing is likely. Follow all state and local requirements.

Maintenance

Check sediment basins after periods of significant runoff. Remove sediment and restore the basin to its original dimensions when sediment accumulates to one-half the design depth.

Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Make all necessary repairs immediately. Remove all trash and other debris from the riser and pool area.

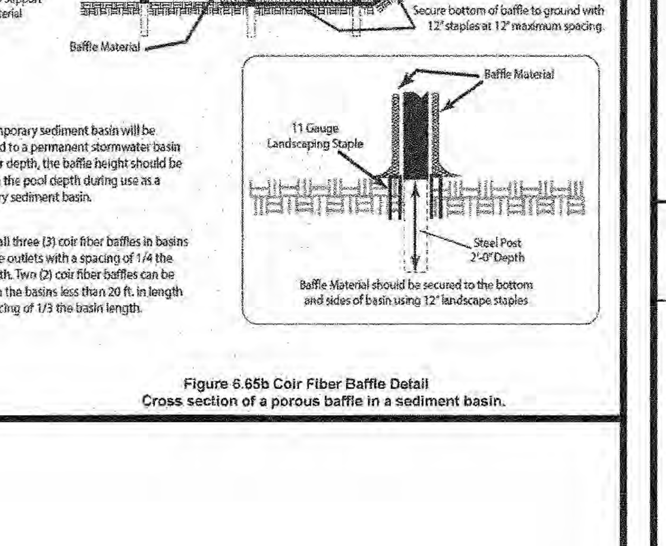
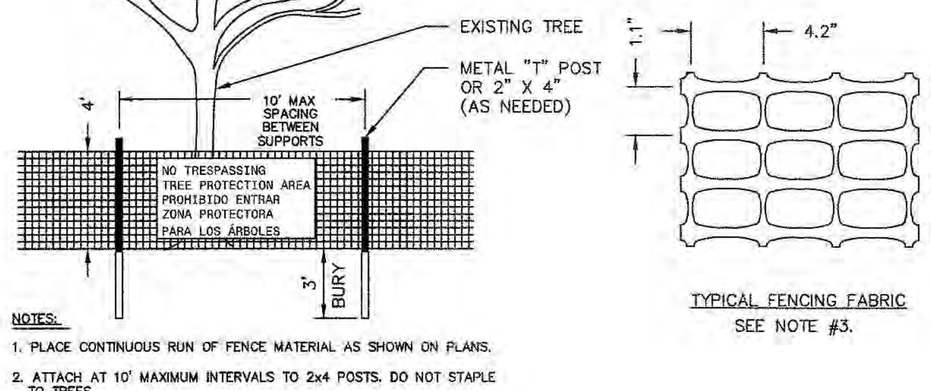


Figure 6.65b Coir Fiber Baffle Detail
Cross section of a porous baffle in a sediment basin.



TYPICAL FENCING FABRIC
SEE NOTE #3.

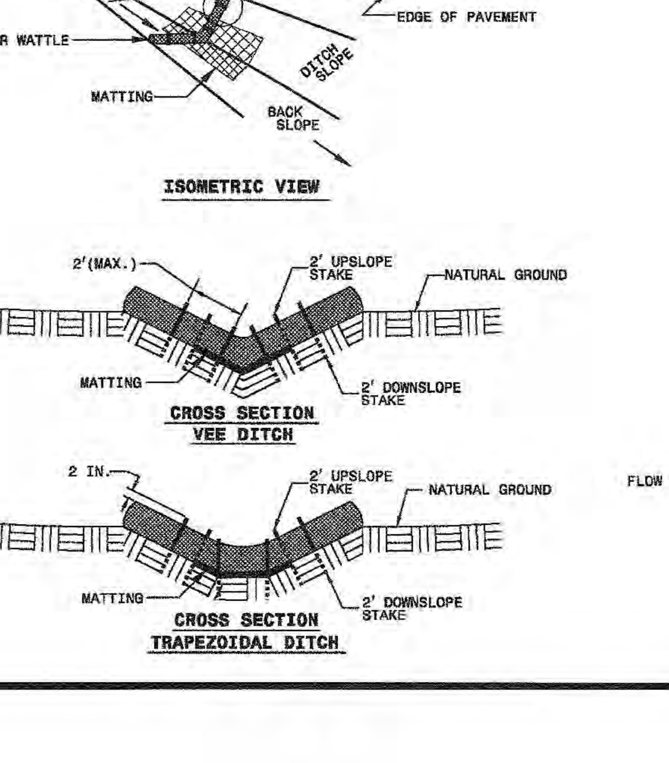
NOTES:

1. PLACE CONTINUOUS RUN OF FENCE MATERIAL AS SHOWN ON PLANS.
2. ATTACH AT 10' MAXIMUM INTERVALS TO 2x4 POSTS. DO NOT STAPLE TO TREES.
3. FENCE MATERIAL SHALL BE 'TENSAR' HIGH STRENGTH POLYMER GEOGRID FABRIC BY TENSAR CORPORATION, MORROW, GEORGIA, OR EQUAL, BRIGHT ORANGE COLOR.
4. AT 100' O.C., PLACE SIGNS IN ENGLISH AND SPANISH: "NO TRESPASSING – TREE PROTECTION AREA" and "PROHIBIDO ENTRAR – ZONA PROTECTORA PARA LOS ARBOLES"
5. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE PROJECT MANAGER AND THE TOWN'S LANDSCAPE ARCHITECT BEFORE ANY SITE WORK BEGINS.
6. ANY TREE ROOTS EXPOSED BY CONSTRUCTION SHALL BE SEVERED CLEANLY WITH A PRUNING TOOL.
7. THE SOIL WITHIN THE PROTECTED AREA AROUND EXISTING TREES SHALL NOT BE DRIVEN UPON AFTER FENCE REMOVAL FOR THE PURPOSE OF INSTALLING LANDSCAPING.

TREE PROTECTION FENCE

NOT TO SCALE

COIR FIBER WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

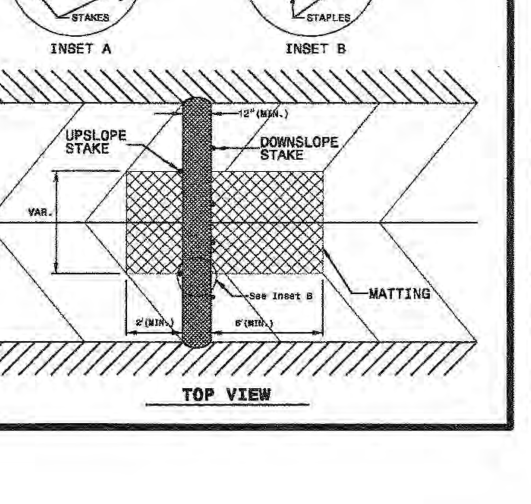
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



PHILIP POST & ASSOCIATES
A Division of Pennoni
Firm License F-1267
PENNONI ASSOCIATES INC.
401 Providence Road #200
Chapel Hill, NC 27514
T 919.929.1173 F 919.493.6548

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

NORTH CAROLINA PROFESSIONAL SEAL 030517 ENGINEER TIMOTHY A. SMITH
12-8-16

HILLSTONE CHAPEL HILL
1730 FORDHAM BLVD.
CHAPEL HILL, NORTH CAROLINA 27514

EROSION AND SEDIMENTATION CONTROL DETAILS

LEON CAPITAL GROUP
5970 FAIRVIEW ROAD, SUITE 450
CHARLOTTE, NORTH CAROLINA 28210

DATE	NO.	REVISIONS	BY

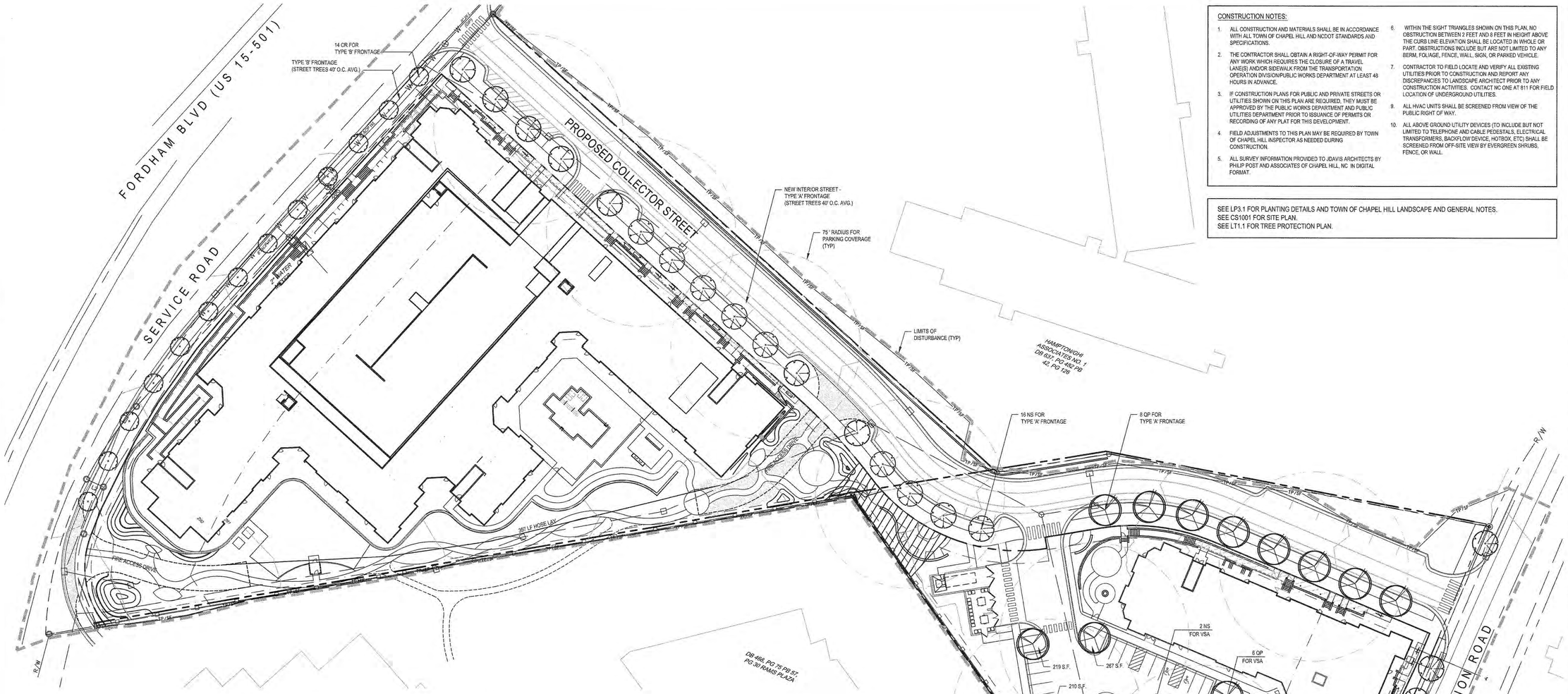
ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON THE EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

PROJECT	LCGR1602
DATE	DECEMBER 7, 2016
DRAWING SCALE	AS SHOWN
DRAWN BY	WRA
APPROVED BY	TAS

CS8501

SHEET 21 OF 21

P:\Projects\LCGRCOM\LCGR1602-Apartment Site\DESIGN_PUBLISH\CS8501.dwg PLOTTED: 12/8/2016 8:14 AM, BY: William Akin PLOTSTYLE: Pennoni NCS.stb PROJECT STATUS: DESIGN DEVELOPMENT



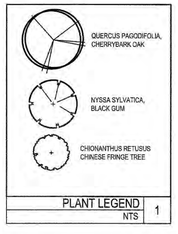
CONSTRUCTION NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH ALL TOWN OF CHAPEL HILL AND NCDOT STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY PERMIT FOR ANY WORK WHICH REQUIRES THE CLOSURE OF A TRAVEL LANE(S) AND/OR SIDEWALK FROM THE TRANSPORTATION OPERATION DIVISION/PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS IN ADVANCE.
3. IF CONSTRUCTION PLANS FOR PUBLIC AND PRIVATE STREETS OR UTILITIES SHOWN ON THIS PLAN ARE REQUIRED, THEY MUST BE APPROVED BY THE PUBLIC WORKS DEPARTMENT AND PUBLIC UTILITIES DEPARTMENT PRIOR TO ISSUANCE OF PERMITS OR RECORDING OF ANY PLAT FOR THIS DEVELOPMENT.
4. FIELD ADJUSTMENTS TO THIS PLAN MAY BE REQUIRED BY TOWN OF CHAPEL HILL INSPECTOR AS NEEDED DURING CONSTRUCTION.
5. ALL SURVEY INFORMATION PROVIDED TO JDAVIS ARCHITECTS BY PHILIP POST AND ASSOCIATES OF CHAPEL HILL, NC IN DIGITAL FORMAT.
6. WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTION BETWEEN 2 FEET AND 8 FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION SHALL BE LOCATED IN WHOLE OR PART. OBSTRUCTIONS INCLUDE BUT ARE NOT LIMITED TO ANY BERM, FOLIAGE, FENCE, WALL, SIGN, OR PARKED VEHICLE.
7. CONTRACTOR TO FIELD LOCATE AND VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT PRIOR TO ANY CONSTRUCTION ACTIVITIES. CONTACT NC ONE AT 811 FOR FIELD LOCATION OF UNDERGROUND UTILITIES.
9. ALL HVAC UNITS SHALL BE SCREENED FROM VIEW OF THE PUBLIC RIGHT OF WAY.
10. ALL ABOVE GROUND UTILITY DEVICES (TO INCLUDE BUT NOT LIMITED TO TELEPHONE AND CABLE PEDESTALS, ELECTRICAL TRANSFORMERS, BACKFLOW DEVICE, HOTBOX, ETC) SHALL BE SCREENED FROM OFF-SITE VIEW BY EVERGREEN SHRUBS, FENCE, OR WALL.

SEE LP3.1 FOR PLANTING DETAILS AND TOWN OF CHAPEL HILL LANDSCAPE AND GENERAL NOTES.
SEE CS1001 FOR SITE PLAN.
SEE LT1.1 FOR TREE PROTECTION PLAN.

PLANT LIST - THIS SHEET ONLY

QTY	SYM	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	SPREAD	ROOT	REMARKS
TREES								
14	CR	Chionanthus retusus	Chinese Fringe Tree		5' MIN		15 Gallon	Street Tree
27	NS	Nyssa sylvatica	Black Gum	2" MIN	12' MIN		B&B	Street Tree, VSA
14	QP	Quercus pagodifolia	Cherrybark Oak	2" MIN	12' MIN		B&B	Street Tree, VSA



Town of Chapel Hill Ephesus/Fordham Form District zoning requirements
Project: Hillstone Chapel Hill
Date: 11.22.2016

Type 'A' Frontage					
Street name					Propsed Collector Street
Length of right of way frontage					947 LF
Plantings required: lg trees	1 EA	/	40 Lft	=	23.7 EA
Plantings provided: lg trees					24 EA
Type 'B' Frontage					
Street name					Legion Road
Length of right of way frontage					250 LF
Plantings required: lg trees	1 EA	/	40 LF	=	6.3 EA
Plantings provided: lg trees					7 EA
Street name					Fordham Blvd Service Road
Length of right of way frontage					537 LF
Plantings required: Sm trees	1 EA	/	40 LF	=	13.4 EA
Plantings provided: Sm trees					14 EA
Vehicular Surface Area					
No parking space shall be more than 75' from shade tree trunk					

Know what's **below.** **Call** before you dig.

P.B. 71, PG 74

40' 20' 0 40' 80'
SCALE: 1" = 40'

CODE COMPLIANT LANDSCAPE PLAN

JDAVIS
510 South Wilmington St. | Raleigh, NC 27601 | tel 919.835.1500
1518 Walnut St. Suite 1308 | Philadelphia, PA 19102 | tel 215.545.0121

LEON Capital Group

Leon Capital Group
Hillstone Chapel Hill
1730 Fordham Blvd
Town of Chapel Hill, North Carolina 27514

NORTH CAROLINA ARCHITECT 10755 JOHN R. MOORE

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

		DATE
PROJECT:	16025	03.03.2016
ISSUE:	FDC APPLICATION	12.02.2016
REVISIONS:		
DRAWN BY:	CHK	
CHECKED BY:	PM	
CONTENT:	CODE COMPLIANT LANDSCAPE PLAN	

LP1.1

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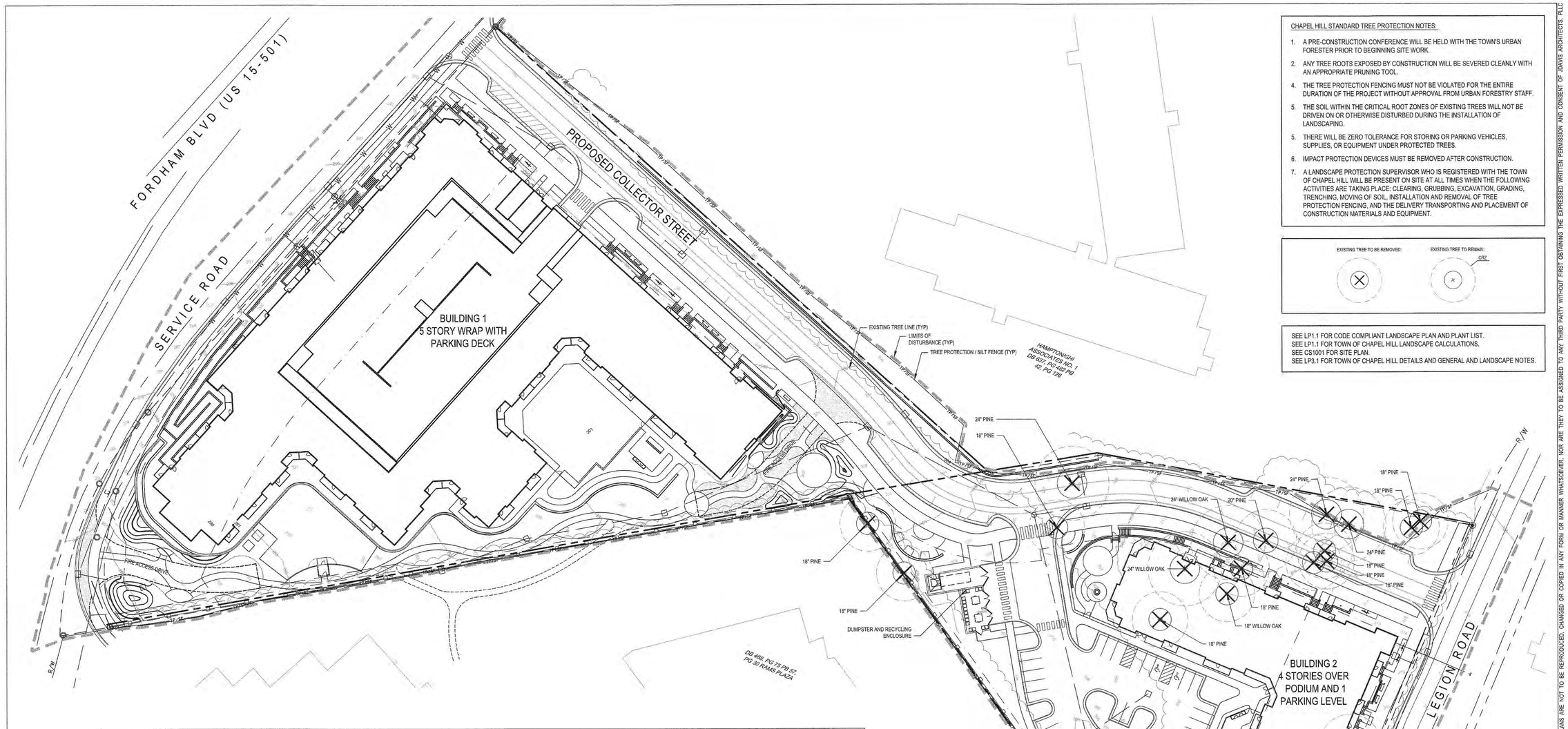


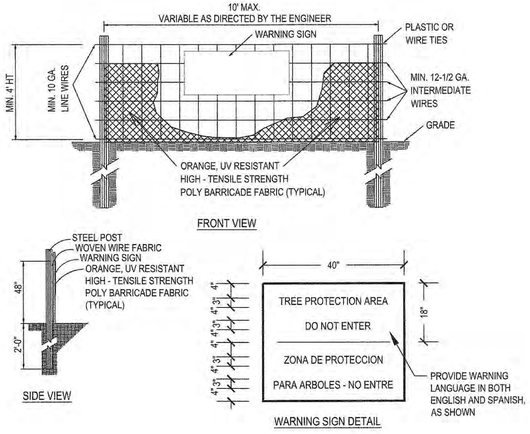
CHAPEL HILL STANDARD TREE PROTECTION NOTES:

1. A PRE-CONSTRUCTION CONFERENCE WILL BE HELD WITH THE TOWN'S URBAN FORESTER PRIOR TO BEGINNING SITE WORK.
2. ANY TREE ROOTS EXPOSED BY CONSTRUCTION WILL BE SEVERED CLEANLY WITH AN APPROPRIATE PRUNING TOOL.
4. THE TREE PROTECTION FENCING MUST NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
5. THE SOIL WITHIN THE CRITICAL ROOT ZONES OF EXISTING TREES WILL NOT BE DRIVEN ON OR OTHERWISE DISTURBED DURING THE INSTALLATION OF LANDSCAPING.
5. THERE WILL BE ZERO TOLERANCE FOR STORING OR PARKING VEHICLES, SUPPLIES, OR EQUIPMENT UNDER PROTECTED TREES.
6. IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION.
7. A LANDSCAPE PROTECTION SUPERVISOR WHO IS REGISTERED WITH THE TOWN OF CHAPEL HILL WILL BE PRESENT ON SITE AT ALL TIMES WHEN THE FOLLOWING ACTIVITIES ARE TAKING PLACE: CLEARING, GRUBBING, EXCAVATION, GRADING, TRENCHING, MOVING OF SOIL, INSTALLATION AND REMOVAL OF TREE PROTECTION FENCING, AND THE DELIVERY TRANSPORTING AND PLACEMENT OF CONSTRUCTION MATERIALS AND EQUIPMENT.

SEE LP1.1 FOR CODE COMPLIANT LANDSCAPE PLAN AND PLANT LIST.
SEE LP1.1 FOR TOWN OF CHAPEL HILL LANDSCAPE CALCULATIONS.
SEE CS1001 FOR SITE PLAN.
SEE LP3.1 FOR TOWN OF CHAPEL HILL DETAILS AND GENERAL AND LANDSCAPE NOTES.

TREE PROTECTION FENCE NOTES:

1. TO PROPERLY PROTECT AND ENSURE THE HEALTH OF EXISTING TREES TO REMAIN, PROTECTIVE FENCING SHOULD BE INSTALLED TO PROTECT NO LESS THAN 75% OF A TREE'S CRITICAL ROOT ZONE.
2. WHEN ERECTING FENCING NEAR TREES THAT ARE NOT INDIVIDUALLY IDENTIFIED ON THE LANDSCAPE PROTECTION PLAN, THE FENCING LOCATION SHOULD BE SHIFTED, WHERE POSSIBLE, OR A TREE REMOVED IF ITS CRITICAL ROOT ZONE IS NOT ADEQUATELY PROTECTED.
3. TREE PROTECTION FENCING MUST BE INSTALLED A MINIMUM OF TEN FEET FROM THE TRUNK OF ANY PROTECTED TREE OR DRIP LINE, WHICHEVER IS GREATER. FOR ANY TREE GREATER THAN TEN INCHES DBH, THIS DISTANCE SHALL BE INCREASED ONE FOOT FOR EVERY ONE INCH IN DBH.
4. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS SHOWN.
5. SIGNS SHALL BE PLACED AT 200' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 200' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
7. SEE ADDITIONAL TOWN OF CHAPEL HILL TREE PROTECTION NOTES THIS SHEET.



TREE PROTECTION FENCE
SCALE: NTS
1

TREE PROTECTION PLAN

P.B. 71, PG 74

SCALE: 1" = 40'

Know what's below. Call before you dig.

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		DATE
PROJECT:	16025	03.03.2016
ISSUE:	FDC APPLICATION	12.02.2016
REVISIONS:		
DRAWN BY:	CHK	
CHECKED BY:	PM	
CONTENT:	TREE PROTECTION PLAN	

LP2.1

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GENERAL NOTES:

1. ALL CONSTRUCTION MUST BE PERFORMED WITH CURRENT TOWN OF CHAPEL HILL STANDARDS, SPECIFICATIONS AND DETAILS.
2. IF INFRASTRUCTURE PLAN FOR PUBLIC AND PRIVATE STREETS OR UTILITIES SHOWN ON THIS PLAN ARE REQUIRED, THEY MUST BE APPROVED BY THE PUBLIC WORKS DEPARTMENT AND PUBLIC UTILITIES DEPARTMENT PRIOR TO ISSUANCE OF PERMITS OR RECORDING OF ANY PLAT FOR THIS DEVELOPMENT.
3. ACCESS ROUTE FOR EMERGENCY VEHICLES SHALL PROVIDE AN INSIDE TURNING RADIUS OF 28' MINIMUM.
4. TRASH AND CARDBOARD DUMPSTER(S) ENCLOSURE SHALL MATCH MATERIAL AND/OR COLOR OF THE PRINCIPAL BUILDING.
5. CONTRACTOR TO FIELD LOCATE AND VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT PRIOR TO ANY CONSTRUCTION ACTIVITIES. CONTACT NC ONE AT 811 FOR FIELD LOCATION OF UNDERGROUND UTILITIES.
6. SLOPE IN HANDICAP PARKING AREAS NOT TO EXCEED 2 % IN ALL DIRECTIONS AS PER ADA STANDARDS.
7. PROVIDE SIGNAGE AND STRIPPING OF HANDICAP SPACES AS PER ADA STANDARDS.
8. ALL RETAINING WALLS GREATER THAN 30" IN HEIGHT TO INCLUDE HANDRAIL.
9. ALL EXTERIOR LIGHTING WILL BE DESIGNED TO PREVENT OFF-SITE GLARE.
10. THE SITE SHALL BE STABILIZED AND SEEDED PRIOR TO THE ISSUANCE OF CERTIFICATE OF OCCUPANCY.
11. WHERE EXISTING OR PROPOSED VEGETATION FAILS TO FUNCTION ADEQUATELY AS REQUIRED, THE TOWN OF CHAPEL HILL RESERVES THE RIGHT TO REQUIRE SUPPLEMENTAL PLANTINGS IN ADDITION TO THOSE SHOWN ON THE PLANTING PLAN BASED ON ACTUAL FIELD CONDITIONS.
12. ALL TREE PROTECTION FENCING SHALL BE MAINTAINED UNTIL ALL SITE WORK IS COMPLETED. THE FENCING SHALL BE REMOVED PRIOR TO THE FINAL SITE INSPECTION FOR THE CERTIFICATE OF OCCUPANCY (CO).

TOWN OF CHAPEL HILL N O T E S

1. THE TECHNICAL SPECIFICATIONS INCLUDED IN THESE DRAWINGS ENUMERATE THE PROJECT CONDITIONS, REQUIRED SUBMITTALS, PROCEDURES AND PROTOCOLS, QUALITY CONTROL, MATERIALS AND PRODUCTS, METHODS FOR EXECUTION OF THE WORK, MAINTENANCE, AND WARRANTIES ASSOCIATED WITH THE CONTRACT WORK. PERFORMED WORK NOT MEETING THE REQUIRED SPECIFICATIONS MAY BE FOUND TO BE UNACCEPTABLE AND WILL BE SUBSEQUENTLY REJECTED. CONTRACTOR WILL BE RESPONSIBLE FOR THE MEANS AND COSTS ASSOCIATED WITH ALL REPLACEMENT, REPAIR, OR ALTERATIONS NECESSARY TO PERFORM THE WORK IN ACCORDANCE WITH THE SPECIFICATIONS.
2. CONTRACTOR SHOULD NOTE THE REQUIRED STANDARDS FOR NURSERY STOCK INCLUDED IN THE TECHNICAL SPECIFICATIONS. IN ADDITION, THE STANDARDS SHOULD BE REVIEWED BY THE CONTRACTOR'S SUPPLIERS TO ENSURE PLANT MATERIALS CONFORM TO THE REQUIRED STANDARDS.
3. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL PLANT QUANTITIES. DISCREPANCIES IN PLANT QUANTITIES SHOULD BE ADDRESSED TO THE LANDSCAPE ARCHITECT FOR CONFIRMATION OR CLARIFICATION.
4. NO PARKING SPACE MAY BE FARTHER THAN 75 FEET FROM THE TRUNK OF A TREE.
5. TREE PLANTING ZONES MUST BE INSTALLED USING STRUCTURAL SOILS, AS DESCRIBED IN THE DESIGN MANUAL.
6. ALL MECHANICAL EQUIPMENT, WASTE DISPOSAL FACILITIES, AND VEHICULAR USE AREA (DRIVES AND PARKING) SHALL BE SCREENED FROM PUBLIC VIEW BY EVERGREEN SHRUBS, FENCE OF WALL. PLANTING SHALL ALLOW FOR A MINIMUM OF 5' CLEARANCE AROUND THE STRUCTURE TO ALLOW FOR ACCESS. ADDITIONALLY, ANY SIDE OF THE STRUCTURE HAVING A DOOR OR LOCK, THE PLANTING SHALL ALLOW FOR A 10' CLEARANCE. THE AMOUNT OF CLEARANCE SHALL ACCOUNT FOR THE SIZE OF PLANT MATERIAL AT MATURITY.
7. ALL SHRUBS INSTALLED AS VEHICULAR USE SCREENING WILL BE MAINTAINED AS A CONTINUOUS HEDGE AT A MINIMUM HEIGHT OF 36 INCHES.
8. ALL IRRIGATION SYSTEM PLANS ARE SUBMITTED THROUGH THE BUILDING PERMIT PROCESS AND ARE EVALUATED SEPARATELY FROM AND IN ADDITION TO SITE PLAN AND BUILDING REVIEWS.
9. THE CONTRACTOR IS EXPECTED TO ACCURATELY LOCATE THE EDGES BETWEEN PLANTING BEDS AND TURF GRASS AREAS AS WELL AS THE SPECIFIED PLANTINGS. CONSULT THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
10. SPECIFIC REQUIREMENTS FOR TURF GRASS SOD, COMPOST, AND OTHER SOIL AMENDMENTS INCLUDING REQUIRED SOIL TESTING IS SHOWN IN THE TECHNICAL SPECIFICATIONS.
11. GRADE ALL LANDSCAPE AREAS TO ENSURE POSITIVE DRAINAGE. THE LANDSCAPE ARCHITECT SHOULD BE NOTIFIED OF AREAS WITH INADEQUATE DRAINAGE PRIOR TO INSTALLATION OF LANDSCAPING.
12. THIS PLAN DEPICTS PLANTINGS REQUIRED BY THE TOWN CHAPEL HILL.
13. LOCATION OF PLANT MATERIAL TO BE REVIEWED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
14. ALL CONSTRUCTION TO CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWN OF CHAPEL HILL.
15. ALL PLANTING BEDS ARE TO BE MULCHED TO A MINIMUM DEPTH OF 3" WITH FINE TEXTURED ORGANIC MULCH (NO PINE STRAW) .
16. ALL PLANTS TO BE COMPACT, UNIFORM AND WELL GROWN.
17. ALL CONFLICTS BETWEEN PROPOSED LANDSCAPE, UTILITIES AND STORMWATER WILL BE RESOLVED PRIOR TO APPLICATION FOR BUILDING PERMITS. UTILITY AND STORMWATER PLANS DEPICTED IN THIS SUBMITTAL ARE PRELIMINARY AND ARE SUBJECT TO CHANGE WITH THE DEVELOPMENT OF CONSTRUCTION DOCUMENTS.
18. PLANTS IN ROWS OR GROUPINGS SHALL BE MATCHED WITH RESPECT TO SIZE AND FORM.
19. AT INSTALLATION AND CONTINUOUSLY DURING THE MAINTENANCE CONTRACT, ALL PROPOSED SHRUBS SHOWN AS SQUARE IN FORM ON THE DRAWINGS SHOULD BE PRUNED INTO BOX-SHAPED PLANTS.
20. PLANTS SPECIFIED FOR MASS PLANTINGS TO BE SPACED APART AS SPECIFIED AND PLACED IN TRIANGULATED PATTERNS UNLESS OTHERWISE SHOWN.
21. DO NOT MAKE PLANT SUBSTITUTIONS. FOLLOW SPECIFIED PROTOCOLS IN REQUESTING SUBSTITUTIONS.
22. ESTABLISH AND MAINTAIN TOP OF GRADE 2 INCHES BELOW ADJACENT CURBS, WALKWAYS, AND OTHER HARDSCAPE AREAS TO ALLOW FOR INSTALLATION OF SOD OR MULCH.
23. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.
24. ALL SITE LANDSCAPE AREAS ARE TO BE EITHER PLANTED, SODDED, SEEDED, OR MULCHED IN ACCORDANCE WITH THE SPECIFICATIONS. NO DENUDED ON-SITE AREAS ARE ACCEPTABLE.
25. TREE STAKING AND GUYING SHALL BE REMOVED AFTER ONE FULL GROWING SEASON. SEE TREE PROTECTION FENCE DETAIL AND NOTES FOR ADDITIONAL INFORMATION.
26. ALL PLANTS AND TURF GRASS SOD SHALL BE WARRANTED DURING INSTALLATION AND THROUGHOUT THE REQUIRED MAINTENANCE PERIOD UNTIL FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT. SPECIFIC REQUIREMENTS TO BE AS INDICATED IN THE TECHNICAL SPECIFICATIONS.
27. LANDSCAPE RESTRICTIONS WITHIN DUKE ENERGY EASEMENT:
    - 27.1. NO TREES IN EXCESS OF 12' MATURE HEIGHT ARE PERMITTED IN EASEMENT WHERE OVERHEAD POWER LINES ARE PRESENT. SEE PLAN FOR LOCATION OF THIS CONDITION. VEGETATION THAT IS NOT IN COMPLIANCE IS SUBJECT TO REMOVAL WITHOUT NOTICE.
    - 27.2. NO VEGETATION SHALL INTERFERE WITH THE ACCESS TO OR THE SAFE, RELIABLE OPERATION AND MAINTENANCE OF DUKE FACILITIES.
28. WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTION BETWEEN 2 FEET AND 8 FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION SHALL BE LOCATED IN WHOLE OR PART. OBSTRUCTIONS INCLUDE BUT ARE NOT LIMITED TO ANY BERM, FOLIAGE, FENCE, WALL, SIGN, OR PARKED VEHICLE. SHRUBS SHALL BE MAINTAINED AT 30" IN HEIGHT AND TREES SHALL BE LIMBED TO A HEIGHT OF 8' AS THEY MATURE WHILE ENSURING THEIR NATURAL SHAPE IS KEPT.

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LANDSCAPE MAINTENANCE STATEMENT:

THE OWNERS OF THE PROPERTY AND THEIR AGENTS, HEIRS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE INSTALLATION, PRESERVATION AND MAINTENANCE OF ALL PLANTING AND PHYSICAL FEATURES SHOWN ON THIS PLAN. THE OWNERS SHALL BE RESPONSIBLE FOR ANNUAL MAINTENANCE OF THE VEGETATION TO INCLUDE BUT NOT BE LIMITED TO:

a. FERTILIZATION (OPTIONAL): FERTILIZE LAWNS TWICE PER YEAR (FEB. 15- MARCH 15 AND AGAIN SEPT. 1-OCT. 31) ACCORDING TO SOIL TEST. FERTILIZE WARM SEASON GRASSES ONCE DURING GROWING SEASON PER SOIL TEST.
b. PRUNING WITHIN LIMITS OF NEW PLANTING AREAS SHALL BE LIMITED TO THE REMOVAL OF DEAD WOOD OR BRANCHES FOR TREES OR FOR SIGHT DISTANCES/ SAFETY REASONS. THE ANSI A300 STANDARDS SHOULD BE FOLLOWED. THE PRUNING OF SHRUBS SHALL BE LIMITED TO THAT WHICH IS NECESSARY TO MAINTAIN THE NATURAL SHAPE OF THE PLANT EXCEPT FOR SHEARED HEDGES.
c. STREET TREES SHALL HAVE THEIR LIMBS PRUNED OVER SIDEWALKS TO APPROXIMATELY 7 FEET ABOVE GRADE WHEN REASONABLY MATURE.
d. PEST CONTROL (OPTIONAL): PRE-EMERGENT WEED CONTROL FOR LAWNS AND SHRUB BEDS MAY BE APPLIED IN FEBRUARY. CHEMICAL TREATMENT FOR INSECT INFESTATION AND DISEASE MAY BE APPLIED AND SHALL BE SPECIFIC TO THE PROBLEM.
e. FINE TEXTURED ORGANIC MULCH SHALL BE MAINTAINED AT A DEPTH OF 2-3" IN PLANT BEDS. MULCH WILL BE REAPPLIED EVERY TWO YEARS MINIMUM.
f. SLOPE STABILIZATION. ALL DISTURBED AREAS SHALL BE STABILIZED FROM SOIL EROSION IMMEDIATELY UPON PLANTING AND SHALL BE PERMANENTLY MAINTAINED. SLOPES GREATER THAN THREE TO ONE SHALL NOT BE STABILIZED WITH TURF GRASS AND SHALL REQUIRE THE PLANTING OF GROUNDCOVER TO STABILIZE ANY DISTURBED SOIL.
g. THE OWNER IS RESPONSIBLE FOR MAINTAINING ALL REQUIRED PLANT MATERIAL IN GOOD HEALTH FOR THE DURATION OF THE USE OF THE PROPERTY. ANY DEAD, UNHEALTHY OR MISSING PLANTS MUST BE REPLACED WITH LOCALLY ADAPTED VEGETATION, WHICH CONFORMS TO THE INITIAL PLANTING STANDARDS OF THIS UDO AND THE TOWN OF GARNER PLANTING MANUAL CONTAINED IN APPENDIX E.
h. CARE SHALL BE TAKEN TO PROTECT THE ROOT ZONES FROM EXCESSIVE DISTURBANCE FROM EQUIPMENT, CONSTRUCTION AND RELATED MATERIALS, ETC.

MATERIAL REQUIREMENTS:

SOIL MIX NOTES:

1. ALL TOPSOIL MIXES USED FOR FINISH GRADING AND PLANTER APPLICATIONS SHOULD BE THE SITE'S ORIGINAL TOPSOIL AND SHOULD BE TESTED BY N.C. DEPARTMENT OF AGRICULTURE TO DETERMINE THEIR SUITABILITY FOR LANDSCAPE USE.
2. ALL TOPSOIL MIXES SHOULD CONTAIN A MINIMUM 2% ORGANIC MATTER; RANGE IN pH FROM 5.0 - 6.5; AND BE FREE OF HERBICIDE AND PESTICIDE RESIDUES PRIOR TO THE ADDITION OF AMENDMENTS.
3. ALL TOPSOIL MIXES SHOULD B E AMENDED AS RECOMMENDED BY SOIL TEST RESULTS, AND BE LOOSE AND FRIABLE AT THE TIME OF PLANTING.
4. SOIL DUG FROM THE PLANTING PIT SHOULD BE USED FOR BACKFILLING IN ORDER TO AVOID CREATING SOIL INTERFACES AT THE EDGE OF THE PLANTING PIT. THE BACKFILL MAY BE AMENDED TO CONTAIN A MAXIMUM OF 10% ADDED ORGANIC MATTER. THE BACKFILL SHOULD BE LOOSE AND FRIABLE AT THE TIME OF PLANTING.

MULCH:

1. MULCH SHOULD CONSIST OF PINE BARK, LEAF MOLD OR WELL AGED WOOD CHIPS OR A COMBINATION OF THESE THREE COMPONENTS. ON SLOPED SITES WHERE PINE BARK MY FLOAT, WELL AGED WOOD CHIPS SHOULD BE USED.

SOIL PREPARATION:

1. EXISTING COMPACTED TOPSOILS THAT ARE TO RECEIVE PLANTS OR SEED AND SUBSOILS THAT ARE TO BE OVERLAID WITH TOPSOIL SHOULD BE TILLED TO A MINIMUM DEPTH OF 6".
2. ALL AREAS THAT ARE TO BE PLANTED WITH TURF, SHRUBS OR TREES SHOULD RECEIVE A MINIMUM OF 6" OF TOPSOIL OVER FINISHED SUBGRADE.
3. WITHIN THE CRITICAL ROOT ZONES OF RARE AND SPECIMEN TREES, NO REMAINING SOIL SHOULD BE DISTURBED AND, PROVIDED THAT NO CHANGE IN GRADE OCCURS AT THE TREE'S TRUNK, NO MORE THAN 6" OF TOPSOIL SHOULD BE PLACED OVER THE CRITICAL ROOT ZONE.

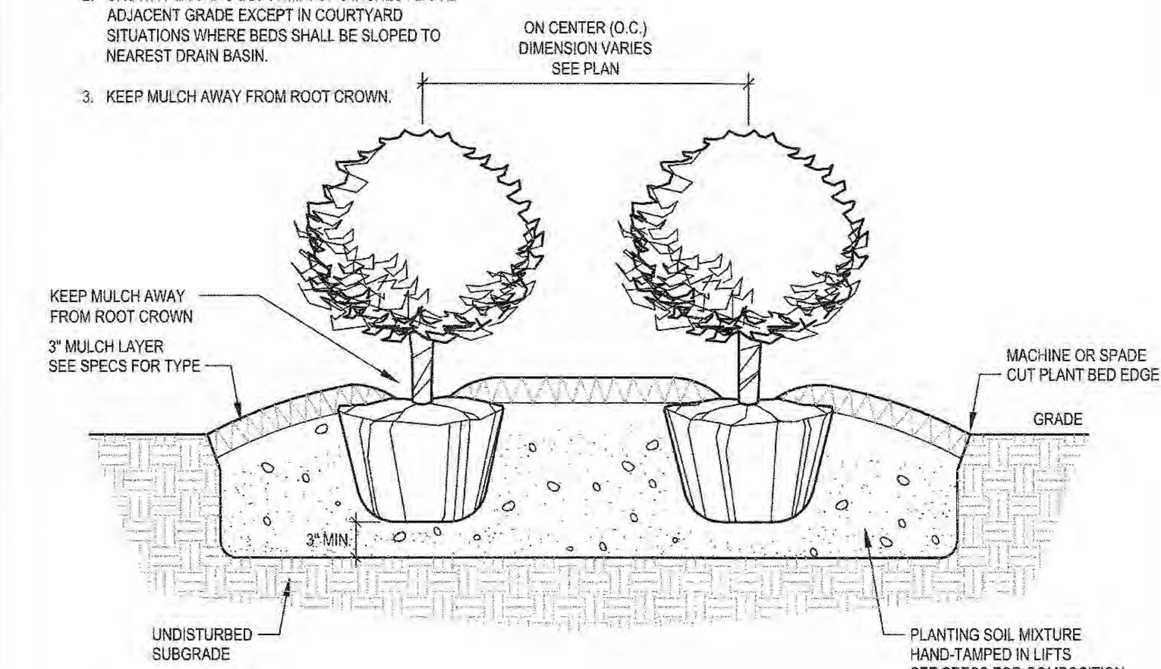
PLANTING REQUIREMENTS:

1. TREES AND SHRUBS SHOULD BE PLANTED PRIOR TO MAY 15 AND AFTER SEPTEMBER 15. DELAYED PLANTINGS OF REQUIRED BUFFERS AND/OR OTHER LANDSCAPING CAN BE ACCOMMODATED WITH THE ACCEPTANCE OF A LETTER OF CREDIT SUBMITTED TO AND APPROVED BY THE TOWN PLANNING DEPARTMENT.
2. DIGGING AND PLANTING OPERATIONS SHOULD BE PERFORMED ONLY WHEN THE SOIL TEMPERATURE AT EACH PLANTING AREA AND OF ALL BACKFILL MATERIALS IS ABOVE 32 DEGREES F.
3. FOLLOWING A PERIOD OF PRECIPITATION, PLANTING OPERATIONS SHOULD RESUME ONLY WHEN THE FULL DEPTH OF THE PLANTING PITS HAS SATISFACTORILY DRAINED.
4. SHADE AND WATER SHOULD BE PROVIDED TO ALL DELIVERED MATERIAL DURING DRY WEATHER AND B&B MATERIALS SHOULD BE MULCHED IF THEY ARE TO REMAIN UNPLANTED FOR OVER 24 HOURS.
5. ALL PLANTING PITS SHOULD BE EXCAVATED TO A DEPTH EQUAL TO OR SLIGHTLY LESS THAN THE HEIGHT OF THE PLANTING BALL. THE SIDES OF THE PLANTING PITS SHOULD BE LOOSENED AND ROUGHENED TO FACILITATE THE MOVEMENT OF ROOTS INTO THE SURROUNDING SOIL
6. THE TOP OF THE PLANT ROOT BALL SHOULD BE SET SO THAT IT WILL BE LEVEL WITH THE FINISHED GRADE AFTER SETTLEMENT. GENERALLY, LARGE PLANTS SHOULD BE INSTALLED FROM 3" – 4" ABOVE GRADE TO ALLOW FOR SETTLEMENT. ALL PLANT MATERIAL GREATER THAN 3 FEET IN HEIGHT SHOULD BE SET PLUMB REGARDLESS OF THE. SLOPE OF FINISHED GRADE. PLANTS SMALLER THAN 3 FEET IN HEIGHT MAY BE SET PERPENDICULAR TO FINISHED GRADE ON SLOPING SITES.
7. FOR CONTAINER GROWN PLANTS, CAREFULLY REMOVE THE CONTAINER AND CUT ANY CONTAINER-BOUND CIRCLING ROOTS. FOR BALLED-AND-BURLAPPED PLANTS, CUT BURLAP AWAY FROM THE TOP OF THE ROOT BALL FOR PLANTS IN WIRE BASKETS, SET PLANT IN PLANTING PIT; THEN CUT AND REMOVE WIRE THAT WILL REMAIN EXPOSED AFTER BACKFILLING ALONG WITH THE BURLAP FROM THE TOP OF THE ROOT BALL.
8. PLACE AND TAMP BACKFILL AROUND ROOT BALL IN 6-TO 8-INCH LAYERS UP TO THE LEVEL OF THE FINISHED GRADE. AVOID BRUISING OR BREAKING ROOTS WHEN TAMPING THE SOIL. REMOVE ALL PROTECTIVE WRAPPING FROM TRUNKS AND BRANCHES AND THOROUGHLY SETTLE PLANTINGS WITH WATER. PLACE A MINIMUM OF 3 INCHES OF MULCH OVER PLANT BALL AND PIT AREA, TAKING CARE TO KEEP MATERIAL A MINIMUM OF 2 INCHES FROM THE TRUNK OF TREE.

SEE LP1.1 FOR CODE COMPLIANT LANDSCAPE PLAN AND PLANT LIST.
SEE LP1.1 FOR TOWN OF CHAPEL HILL LANDSCAPE CALCULATIONS.
SEE CS1001 FOR SITE PLAN.
SEE LT1.1 FOR TREE PROTECTION PLAN.

MASS PLANTING NOTES

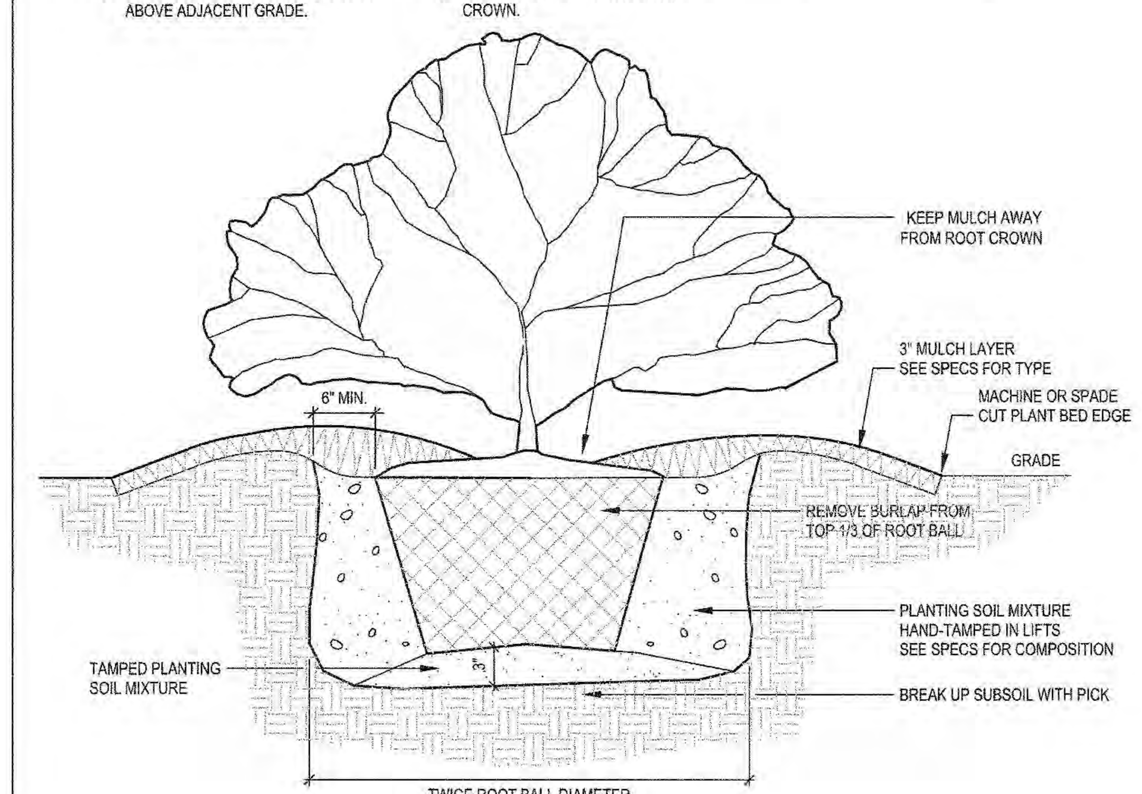
1. PRUNE CROWDED, BROKEN, OR STRAY BRANCHES. CUT FLUSH, LEAVING CAMBIUM EDGE CLEAN.
2. CROWN PLANTING BED A MIN. OF 3 INCHES ABOVE ADJACENT GRADE EXCEPT IN COURTYARD SITUATIONS WHERE BEDS SHALL BE SLOPED TO NEAREST DRAIN BASIN.
3. KEEP MULCH AWAY FROM ROOT CROWN.



CONTAINER PLANT INSTALLATION 2
SCALE: NTS

SHRUB PLANTING NOTES

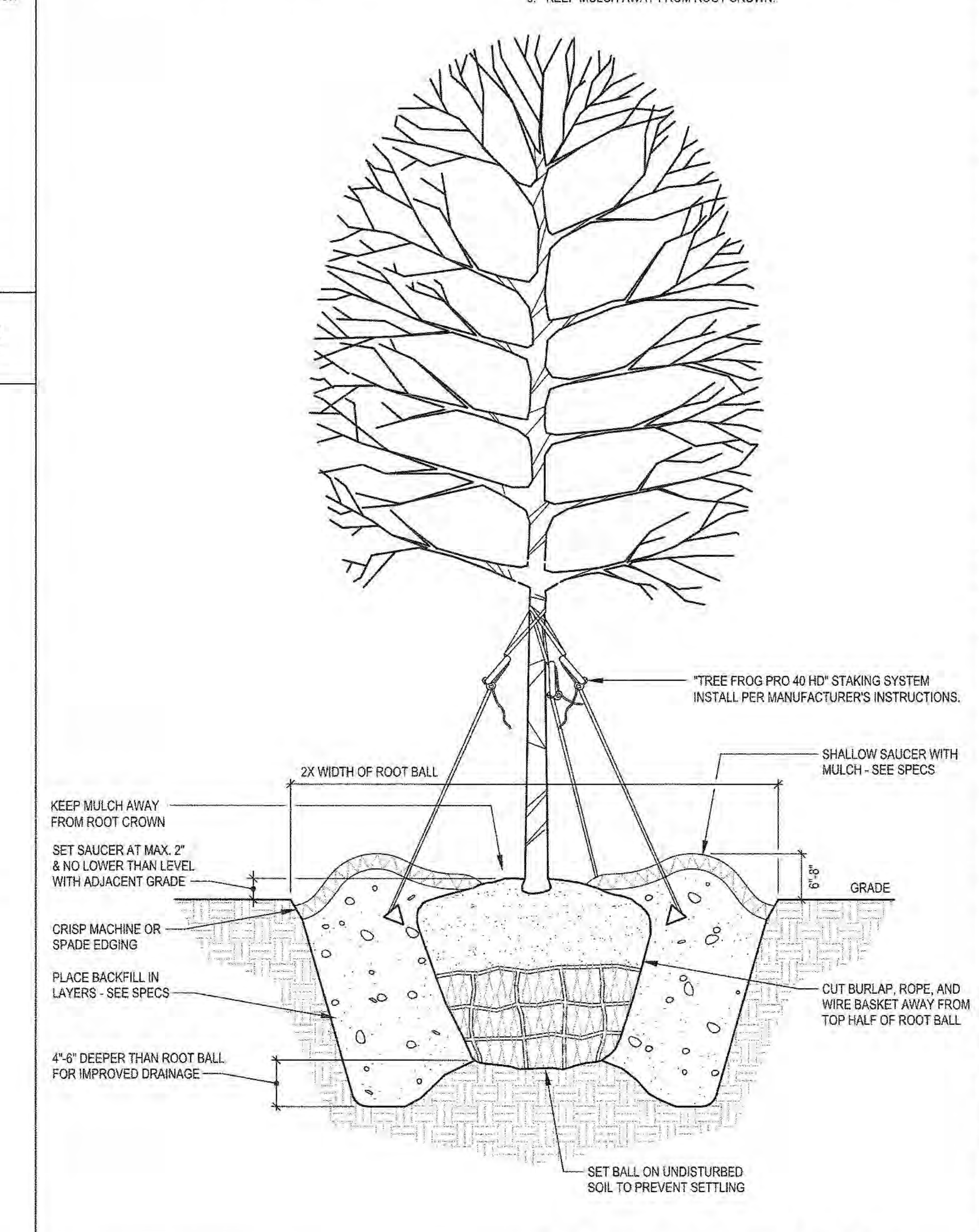
1. IF PLANTING HOLES ARE DUG WITH A LARGE AUGER, BREAK DOWN THE SIDES WITH A SHOVEL TO ELIMINATE GLAZING AND CREATE THE SLOPING SIDE PROFILE SHOWN ON THE DETAIL.
2. SET SHRUB 2 INCHES HIGHER THAN ABOVE ADJACENT GRADE.
3. SYNTHETIC BURLAP SHALL BE REMOVED ENTIRELY FROM ROOT BALL.
4. PROVIDE 2 INCH DEEP SAUCER AROUND SHRUB.
5. KEEP MULCH AWAY FROM ROOT CROWN.
6. THOROUGHLY SOAK THE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE MAINTENANCE PERIOD.



B&B SHRUB INSTALLATION 3
SCALE: NTS

TREE PLANTING NOTES

1. MATCH PLANTING PROCEDURE FOR EVERGREEN TREES.
2. DO NOT PRUNE TREE AT PLANTING EXCEPT FOR SPECIFIC STRUCTURAL CORRECTIONS.
3. IF TREES ARE PLANTED CLOSE TOGETHER SUCH THAT THEY WILL LIKELY SHARE ROOT SPACE, TILL IN SOIL AMENDMENTS TO A DEPTH OF 4" TO 6" OVER THE ENTIRE BED AREA.
4. FOR CONTAINER-GROWN TREES, EXTRACT THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL, THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
5. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE MAINTENANCE PERIOD.
6. IF PLANTING HOLES ARE DUG WITH A LARGE AUGER, BREAK DOWN THE SIDES WITH A SHOVEL TO ELIMINATE GLAZING AND CREATE THE SLOPING SIDE PROFILE SHOWN ON THE DETAIL.
7. IN MEDIAN ISLANDS, SET PLANT MATERIAL AS CLOSE TO FINISHED GRADE AS POSSIBLE..
8. SYNTHETIC BURLAP SHALL BE REMOVED ENTIRELY FROM ROOT BALL.
9. KEEP MULCH AWAY FROM ROOT CROWN.



TREE INSTALLATION 1
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510 South Wilmington St. | Raleigh, NC 27601 | tel 919.835.1500
1518 Walnut St. Suite 1308 | Philadelphia, PA 19102 | tel 215.545.0121

LEON Capital Group

Leon Capital Group
Hillstone Chapel Hill
1730 Fordham Blvd
Town of Chapel Hill, North Carolina 27514

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CONTENT:	LANDSCAPE DETAILS AND NOTES	

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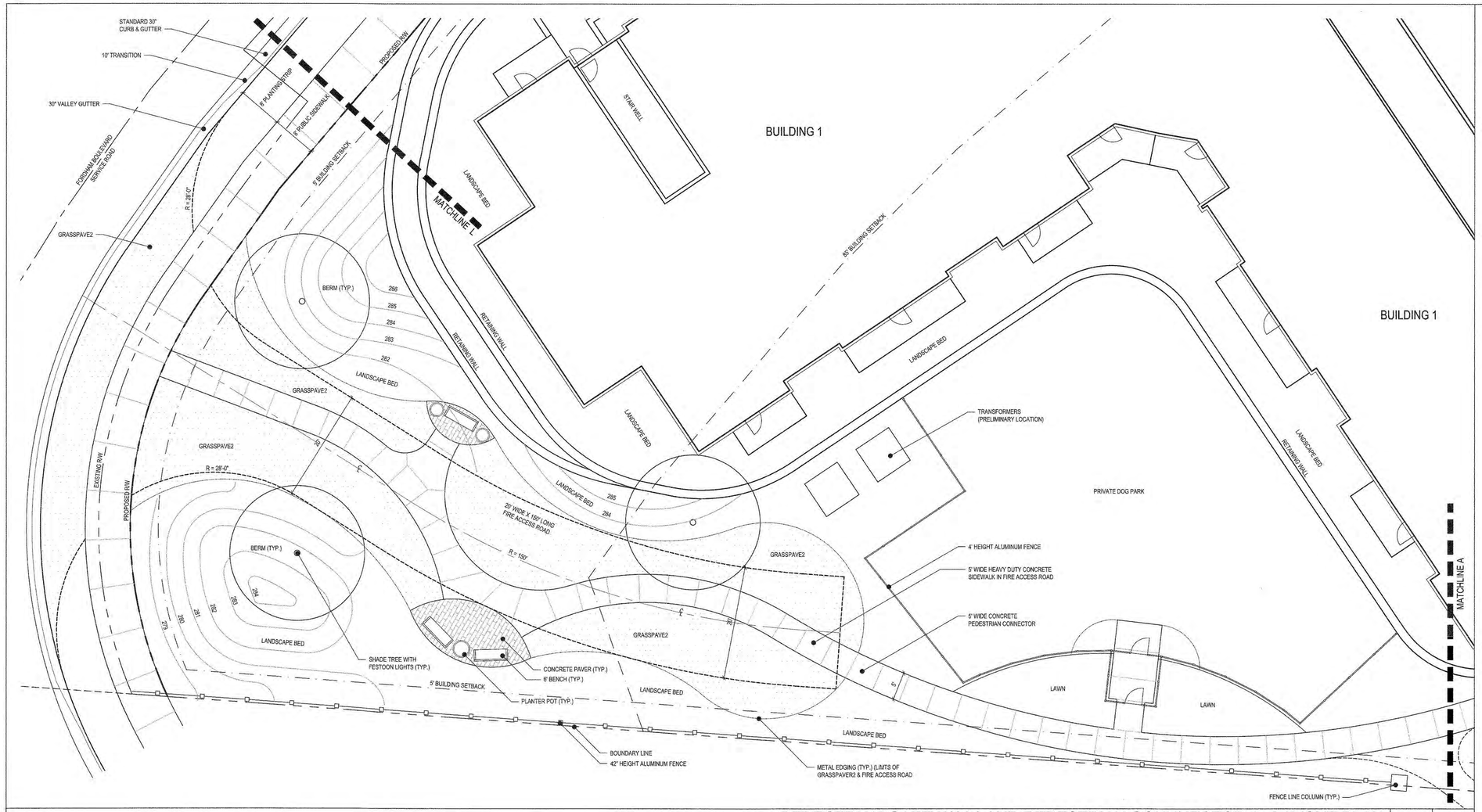
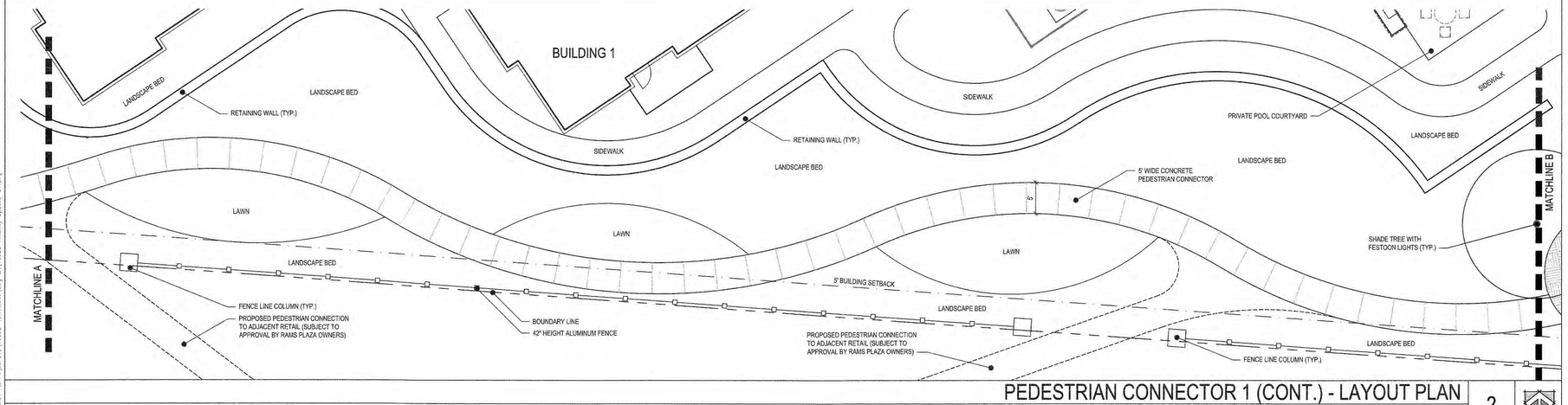


PEDESTRIAN GATEWAY 1 AND PEDESTRIAN CONNNECTOR 1 - LAYOUT PLAN

SCALE: 1" = 10'

1



PEDESTRIAN CONNECTOR 1 (CONT.) - LAYOUT PLAN

SCALE: 1" = 10'

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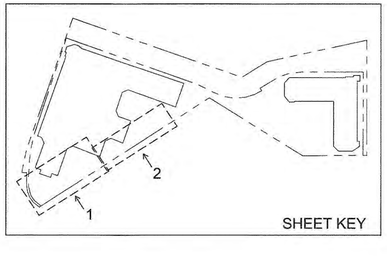

SHEET KEY

PEDESTRIAN GATEWAY 1 & PEDESTRIAN CONNECTOR 1 LAYOUT PLAN

PB. 71, PG. 74

10' 5' 0 10' 20'

SCALE: 1" = 10'

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1518 Walnut St. Suite 1308 | Philadelphia, PA 19102 | tel 215.545.0121

LEON Capital Group

Leon Capital Group
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1730 Fordham Blvd.
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CONTENT:	PEDESTRIAN GATEWAY 1 & PEDESTRIAN CONNECTOR 1 LAYOUT PLAN	

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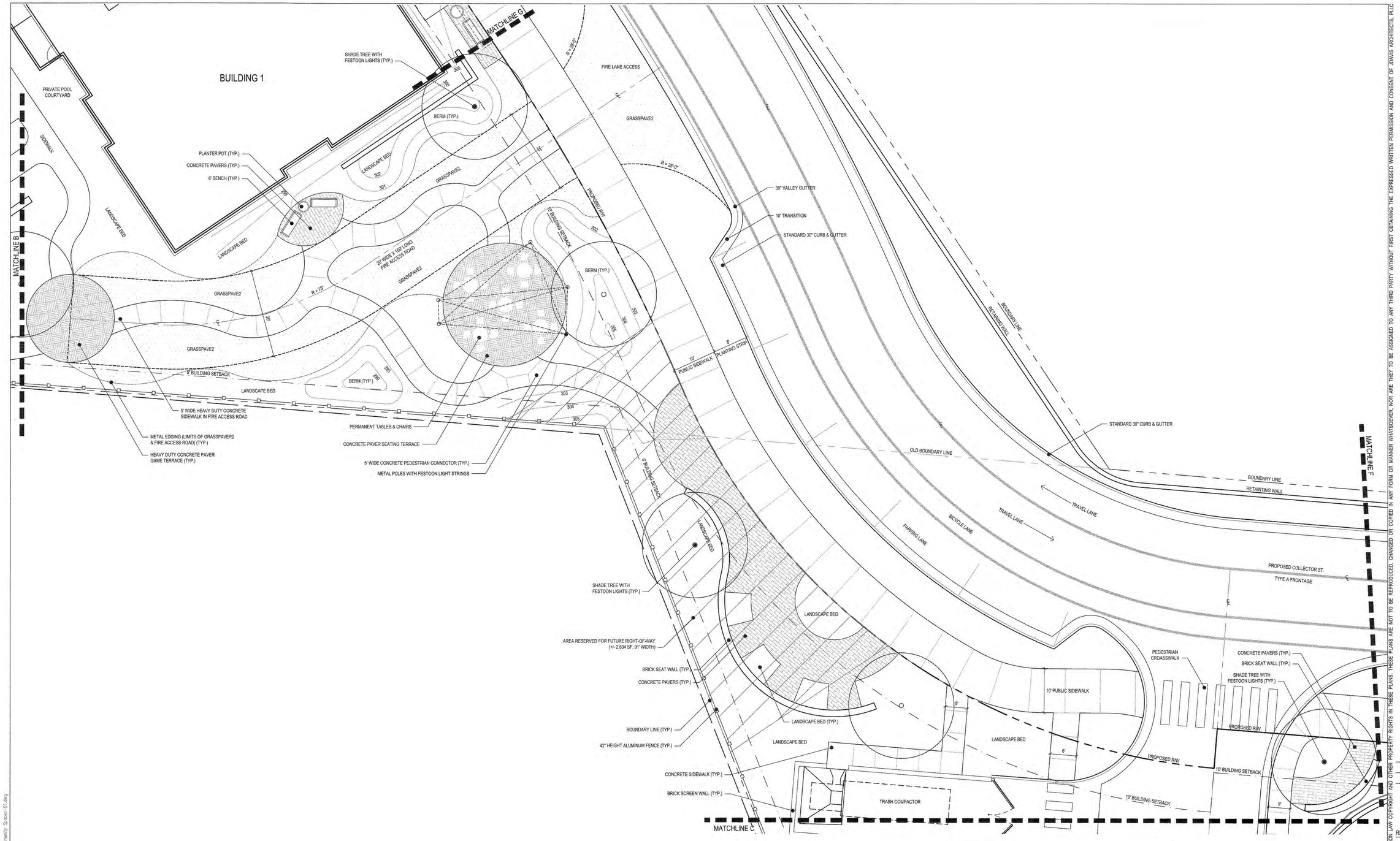

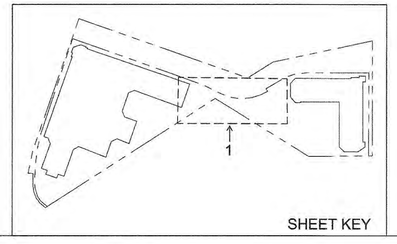

SHEET KEY

PEDESTRIAN PLAZA LAYOUT PLAN

P.B. 71, PG. 74

10' 5' 0 10' 20'

SCALE: 1" = 10'

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1730 Fordham Blvd.
Town of Chapel Hill, North Carolina 27514

NORTH CAROLINA LANDSCAPE ARCHITECT 0755 PAUL R. MEDER
12.02.2016

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

		DATE
PROJECT:	16025	03.03.2016
ISSUE:	FDP APPLIC	12.02.16
REVISIONS:		
DRAWN BY:	YGM/JMH	
CHECKED BY:	PRM	
CONTENT:	PEDESTRIAN PLAZA LAYOUT PLAN	

LA5.04

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12/6/2016 3:48 PM P:\Land16\16025-Volvo_Site\dwg-LA\16025-Amenity Spaces-01.dwg

BUILDING 2

BUILDING 2

PRIVATE AMENITY TERRACE

PRIVATE GRILL STATION

MATCHLINE F

MATCHLINE C

MATCHLINE D

PROPOSED PIN

10' BUILDING SETBACK

CONCRETE ENCLOSURE APRON

PEDESTRIAN CROSSWALK (TYP.)

TREE ISLAND (TYP.)

STANDARD 30" CURB & GUTTER

TREE ISLAND (TYP.)

SHADE TREE WITH FESTOON LIGHTS (TYP.)

GARAGE ENTRANCE

TRASH COMPACTOR

LANDSCAPE BED

LANDSCAPE BED

5' BUILDING SETBACK

SCREEN PLANTING ALONG BOUNDARY LINE

BRICK COIMPACTOR ENCLOSURE

BRICK RECYCLING ENCLOSURE

5' BUILDING SETBACK

6' WIDE CONCRETE PEDESTRIAN CONNECTOR

SHADE TREE WITH FESTOON LIGHTS (TYP.)

42" HEIGHT ALUMINUM FENCE

BOUNDARY LINE

SCREEN PLANTING ALONG BOUNDARY LINE

SHEET KEY

1

PEDESTRIAN CONNECTOR 2 LAYOUT PLAN

P.B. 71, PG. 74

10' 5' 0 10' 20'

SCALE: 1" = 10'

12/6/2016 3:05 PM P:\Land\16\16025-Volvo_Site\dwg-LA\16025-Volvo_Site\dwg-LA\16025-Amenity Spaces-01.dwg

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610 South Wilmington St | Raleigh, NC 27601 | tel 919.835.1500
1519 Walnut St, Suite 1300 | Philadelphia, PA 19102 | tel 215.545.0727

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Leon Capital Group
Hillstone Chapel Hill
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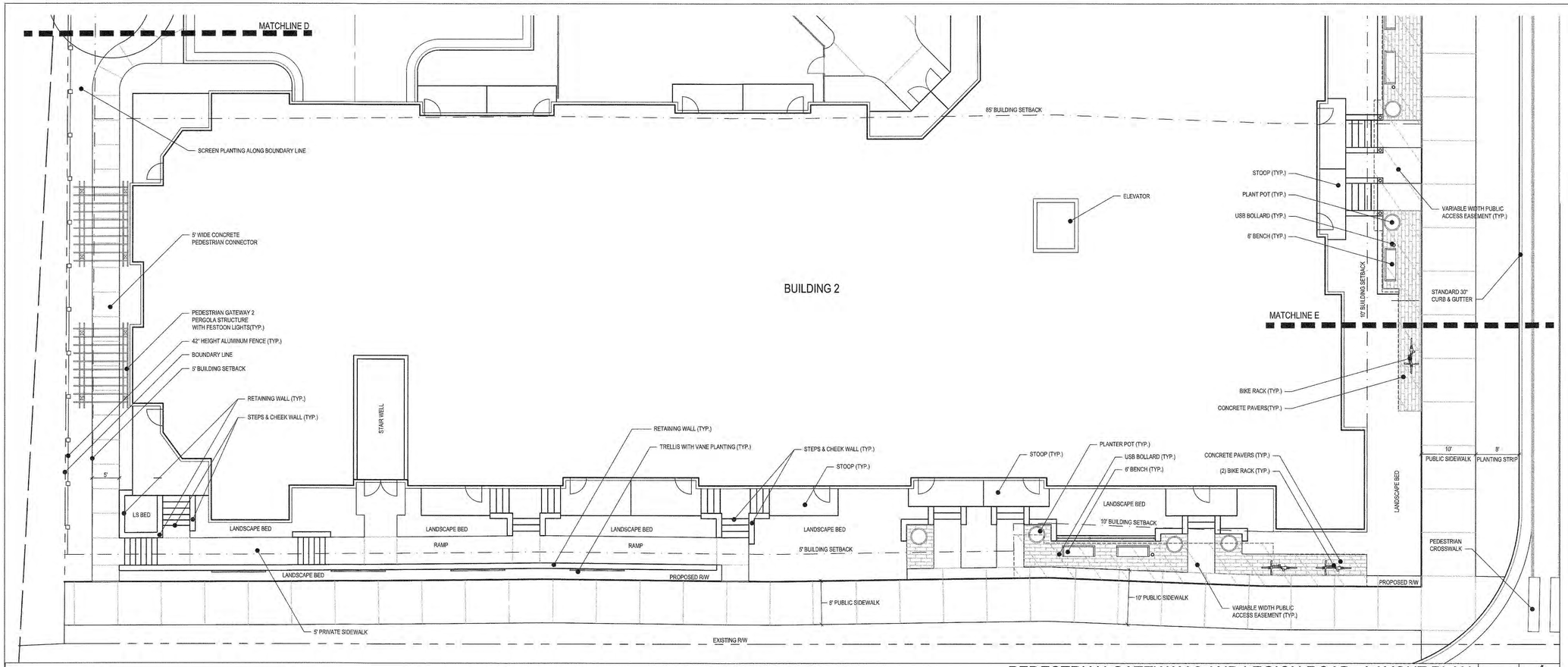
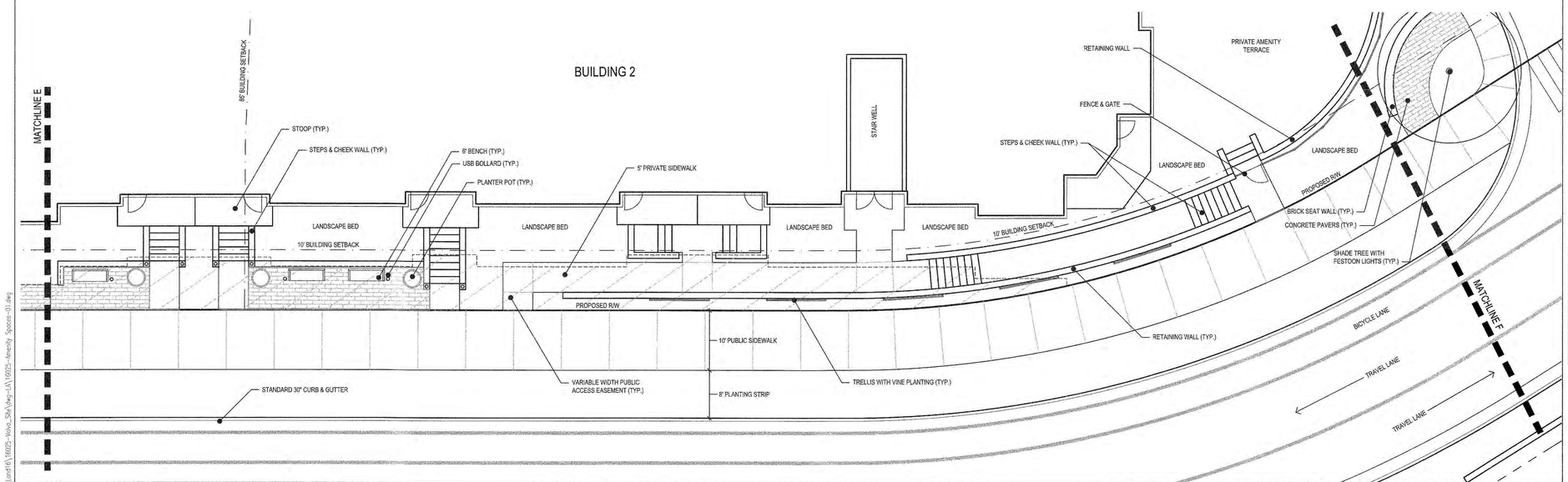
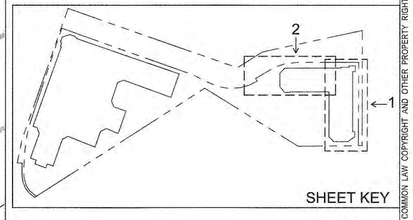
LA5.07



PEDESTRIAN GATEWAY 2 AND LEGION ROAD - LAYOUT PLAN
SCALE: 1" = 10'
1



COLLECTOR STREET EAST - LAYOUT PLAN
SCALE: 1" = 10'
2



SHEET KEY

PEDESTRIAN GATEWAY 2, LEGION ROAD & COLLECTOR STREET EAST LAYOUT PLAN
P.B. 71, PG. 74

10' 5' 0 10' 20'
SCALE: 1" = 10'

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LA5.10

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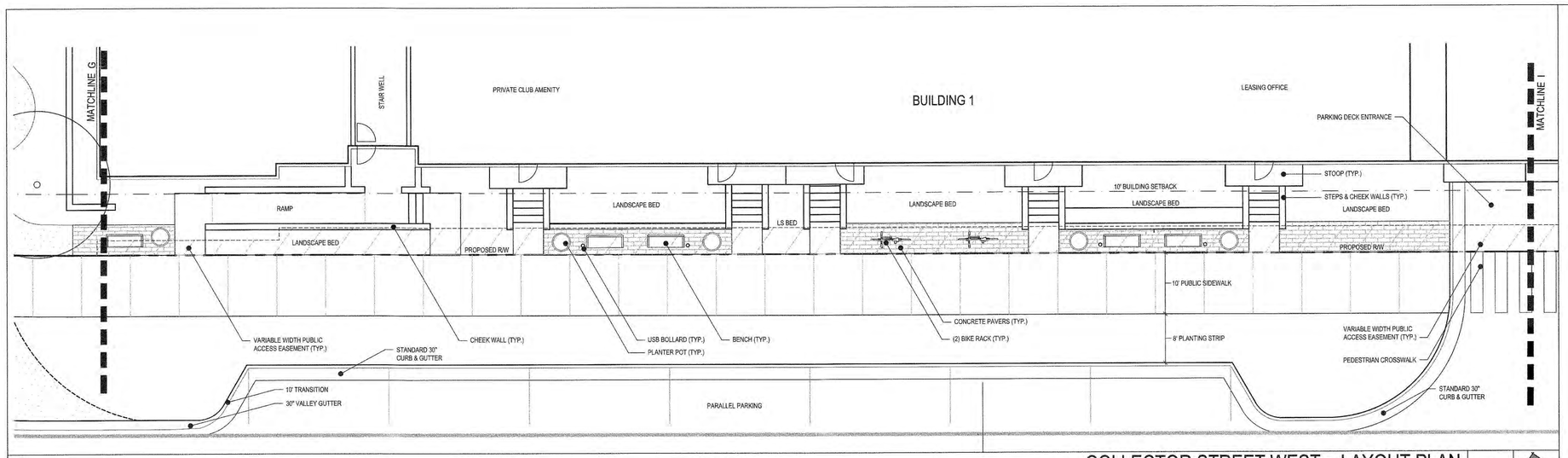
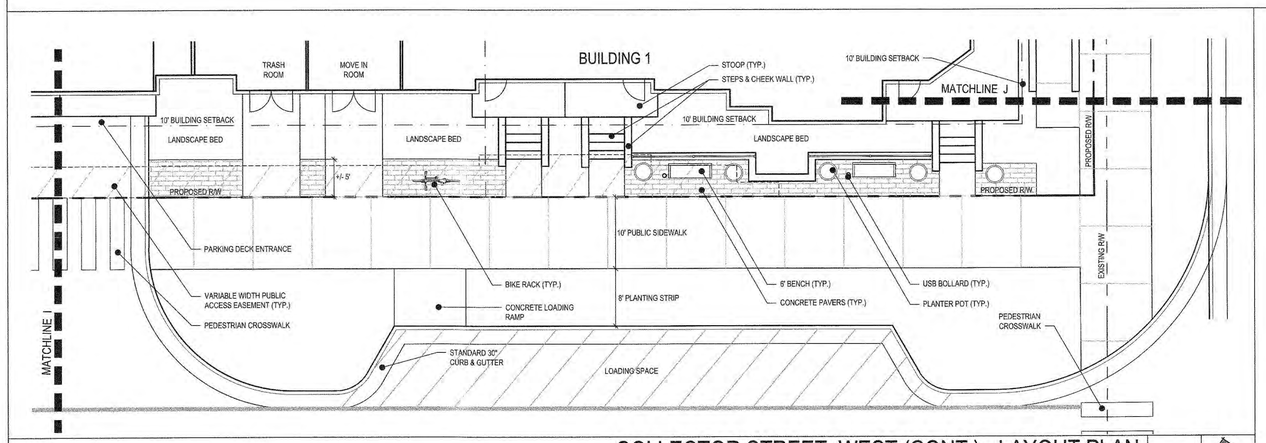
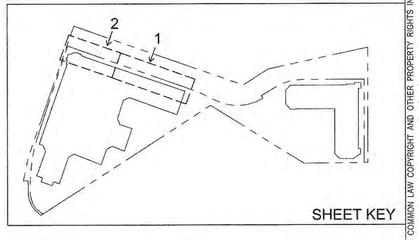


COLLECTOR STREET WEST - LAYOUT PLAN
SCALE: 1" = 10'
1



COLLECTOR STREET WEST (CONT.) - LAYOUT PLAN
SCALE: 1" = 10'
2



SHEET KEY

CONNECTOR STREET WEST
LAYOUT PLAN
P.B. 71, PG. 74

10' 5' 0 10' 20'
SCALE: 1" = 10'

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LA5.13

12/2/2016 9:01 AM P:\Land\16\16025-Volvo_Site\dwg-LA\16025-Volvo_Site\dwg-LA\16025-Amenity Spaces-01.dwg
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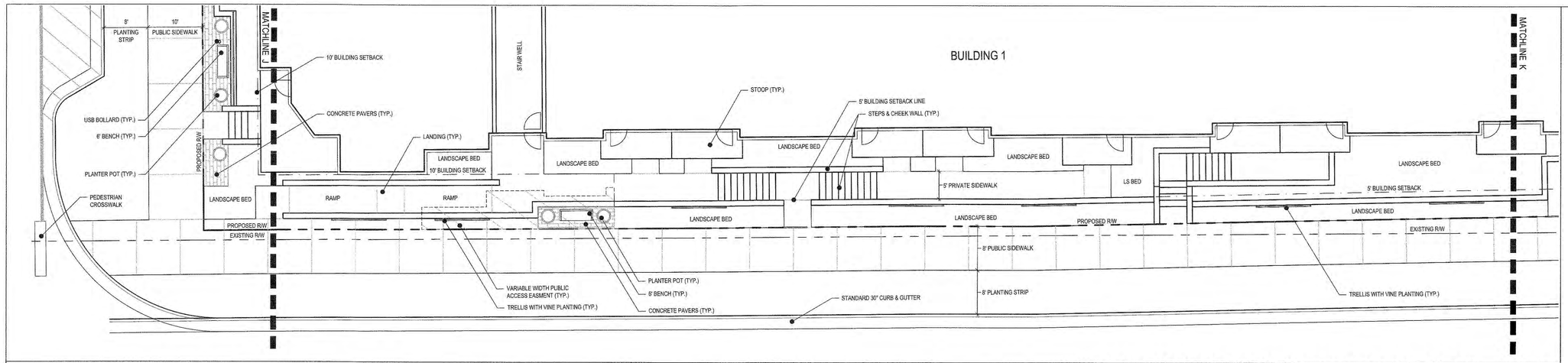
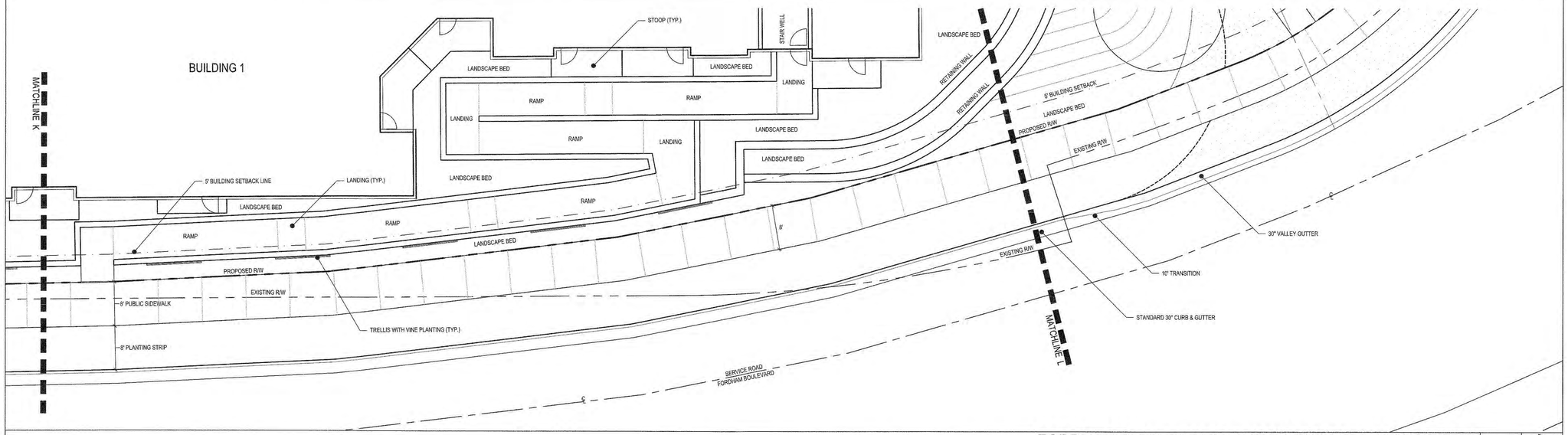


FORDHAM BLVD. SERVICE ROAD - LAYOUT PLAN

SCALE: 1" = 10'

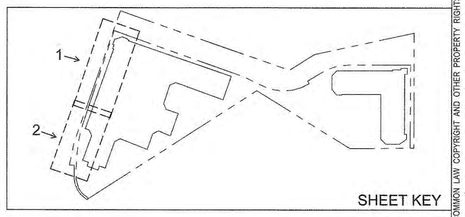
1



FORDHAM BLVD. SERVICE ROAD (CONT.) - LAYOUT PLAN

SCALE: 1" = 10'

2



SHEET KEY

FORDHAM BLVD. SERVICE ROAD
LAYOUT PLAN

P.B. 71, PG. 74

10' 5' 0 10' 20'

SCALE: 1" = 10'

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LA5.16

12/2/2016 9:12 AM P:\Land16\16025-Volvo_Site\dwg-LA\16025-Amenity Spaces-01.dwg, LA5.16, 12/2/2016 9:12:47 AM, L1