

Sediment Basin

Specifications # 6.61 - Construction Specifications 1. Site preparations-Clear, grub and strip topsoil from areas under the

embankment to remove trees, vegetation, roots and other objectionable material. Delay clearing the pool area until the dam is complete and then remove brush, trees and other objectionable materials to facilitate sediment cleanout. 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. Keen 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 be placed before placing filli. 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.Conduit spillways-Securely attach the riser to the barrel or barrel stub to make a watertight structural connection. Secure all connections between barret sections by approved watertight assemblies. Place the barrel and riser on a firm, smooth foundation of impervious soil. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe or anti-seep collars. Place the fill material around the pipe spillway in 4-inch lavers and compact it under and around the pipe to at least the same density as the adjacent embankment. Care must be taken not to raise the pipe from firm contact with its foundation when compacting under the pipe haunches.

Place a minimum depth of 2ft, of hand-compacted backfill over the pipe spillway before crossing it with construction equipment. Anchor the riser in place by concrete or other satisfactory means to prevent flotation. In no case should the pipe conduit be installed by cutting a trench through the dam after the embankment is complete.

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 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 atl 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. Check sediment basins after periods of significant runoff. Remove sediment and

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

FILLED EXPANSION JOINT

Outlet Stabilization Structure

(OP)

Specification # 6.41 - Construction Specifications 1. Ensure that the subgrade for the filter and riprap follows the required lines and grades shown in the plan. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap

2. The riprap and gravel filter must conform to the specified grading limits

shown on the plans 3. Filter cloth, when used, must meet design requirements and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece of filter cloth over the

damaged area. All connecting joints should overlap a minimum of lift. If the damage is extensive, replace the entire filter cloth. 4. Riprap may be placed by equipment, but take care to avoid damaging the

5. The minimum thickness of the riprap should be 1.5 times the maximum stone

6. Riprap may be field stone or rough quarry stone. It should be hard, angular, highly weather-resistant and well graded 6. Construct the apron on zero grade with no overfall at the end. Make the top

of the riprap at the downstream end level with the receiving area or slightly 8. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed to fit site

conditions, place it in the upper section of the apron. 9. Immediately after construction, stabilize all disturbed areas with vegetation (Practice 6.10, Temporary Seeding, and 6.11, Permanent Seeding).

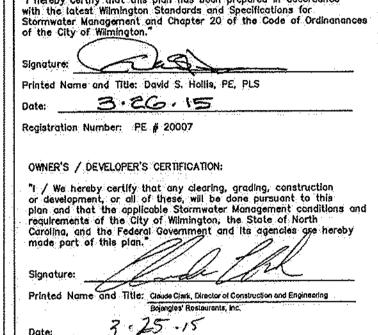
Inspect riprap outlet structures after heavy rains to see if any erosion around or below the riprap has taken place or if stones have been dislodged. Immediately make all needed repairs to prevent further damage.

NOTE WELL:

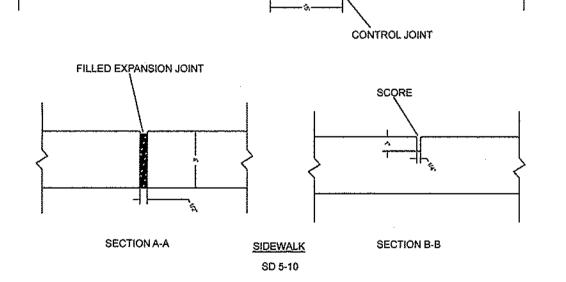
EROSION CONTROL DETAILS AND SPECIFICATIONS ARE AS PER THE "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL" OF THE STATE OF NORTH CAROLINA, DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, LATEST EDITION. PRACTICE NUMBERS REFER TO THIS MANUAL.

DETAILS SHOWN ARE TYPICAL OF INSTALLATIONS REQUIRED BY THE CITY OF WILMINGTON. THIS SHEET DOES NOT PURPORT TO SHOW ALL REQUIRED CONSTRUCTION DETAILS, BUT RATHER SERVES AS A GUIDE. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL

CITY AND STATE CODES AND CONSTRUCTION DESIGNER'S CERTIFICATION -'I hereby certify that this plan has been prepared in accordance



restore the basin to its original dimensions when sediment accumulates to one-FILLED EXPANSION JOINT



NOTES: 1. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS. 2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE

LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE. 3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB. 4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY

APRON) SHALL BE CLASS "A" - 3,000 PSI. 5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANE 6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS 7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"

8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1 9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD. CONSTRUCTION SCHEDULE -

SEE PLAN THIS SHEET and ALSO STAGING / DEMOLITION PLAN 1. Obtain approval of Plan and any necessary permits, and hold a pre-construction conference prior to commencing any work.

2. Flag work limits and stake-out building and identify trees to be removed. Phase 1 establish silt Fencing and construction entrance.

3. Phase 2, install Gravel Construction Entrances.

4. Install Silt Fencing as shown on Plan prior to clearing and grubbing site. Sediment Basin to be constructed prior to remaining site work.

5. Install utilities in roadway and drives, establish final grades and stabilize parking areas and roadways with stone base course 6. Final grade building site, install non-municipal utilities as needed, and vegetatively stabilize areas where building

construction is not imminent. 7. All erosion and sediment control Practices are to be inspected weekly and after any rainfall, and repaired as necessary.

8. Upon completion of building construction, the roadway and parking areas are to be paved and all areas permanently vegetatively stabilized. After site stabilization, temporary measures are to be removed and the Sediment Basin cleaned to its original design contours, if necessary, and riser structures orifaces opened, so as to function as a stormwater management / water quality retention pond.

MAINTENANCE PLAN -

1. All measures to be inspected weekly and after any rainfall event and needed repairs made immediately

2. Sediment Basin to be cleaned out when the level of sediment reaches as shown on individual pond plans. 3. Construction entrance to be maintained in a condition to prevent mud or sediment from leaving the construction site. Periodic

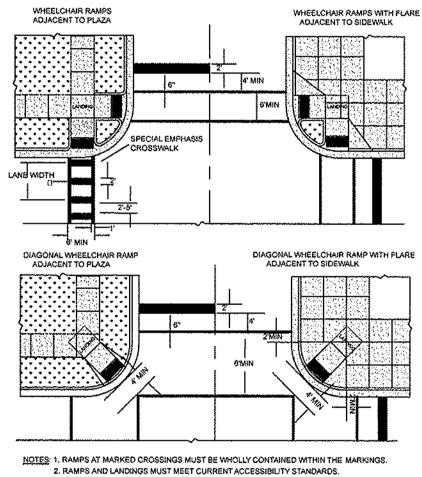
topdressing with 2"stone may be required. Remove all objectionable material spilled, washed, or tracked onto public roadways immediately 4. Sediment to be removed from behind the any Silt Fence and inlet protection devices when it becomes 0.5' deep. Fencing and inlet protection to be repaired as needed to maintain a

5. All seeded areas shall be fertilized, mulched, and re-seeded as necessary, according to specifications provided, to maintain a suitable vegetative cover.

6. Inspect rip-rap outlet structures weekly and after significant (1/2 inch or greater) rainfall events to see if any erosion around or below rip-rap has taken place, or if stones have been dislodged, Immediately make all needed repairs to prevent further damage.

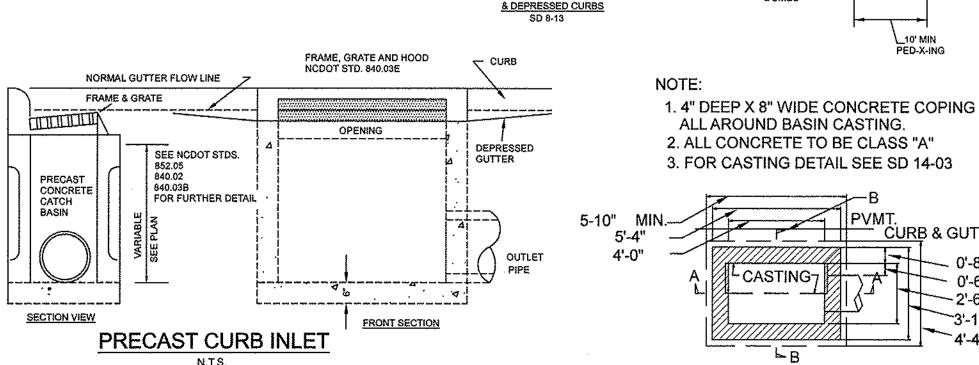
VEGETATIVE PLAN -

1. Permanent vegetation to be established in accordance with "North Carolina Erosion and Sediment Control Planning and Design Manual", Section 6.11, latest version. See next Sheet.



2. RAMPS AND LANDINGS MUST MEET CURRENT ACCESSIBILITY STANDARDS. Intersection Layout SD 8-13

LOCATION OF WHEELCHAIR RAMPS WHEN EXISTING CURB & GUTTER EDIMENT FENCE (SILT FENCE SIDEWALK IS BEYOND END OF PROPOSED CONSTRUCTION **EXISTING CURB & GUTTER** TYPICAL LOCATION OF WHEELCHAIR RAMPS WHERE RADIUS BASINS ARE ENCOUNTERED → 10' MIN PED-X-ING 8" BRICK WALLS 3/4" CEMENT PLASTER SECTION "A-A" DETECTABLE SPECIAL SITUATIONS FOR WHEELCHAIR RAMPS



HARDWARE CLOTH & GRAVEL INLET PROTECTION (Temporary)

of 4 feet apart.

As fabric, use a 19-gauge hardware cloth with 1/4 inch mesh openings, with a total height of 2 feet minimum. The sediment control stone, with a height of 16 inches, should have an outside slope of 2:1. For stakes, use steel T posts of 1.25 lb/linear foot with a minimum length of 5 ft., driven 2 ft. into the ground, maximum specing of 4 fee

1. Uniformly grade a shallow depression approaching the inlet. 2. Drive 5-foot steel posts 2 feet into the ground surrounding the inlet.

3. Surround the posts with wire mesh hardware cloth. Secure the wire mesh to the steel posts at the top, middle, and bottom. Placing a 2-foot anchoring flap of the mesh under the grayel is recommended 4. Place clean gravel (NCDOT #5 or #57 stone) on a 2:1 slope with a height

Space posts evenly around the perimeter of the inlet, a maximum

of 16 inches around the wire, and smooth to an even grade. 5. Once the contributing drainage area has been stabilized, remove the accumulated sediment, and establish final grades. 6. Compact the area properly end stabilize with groundcover.

inspect the barrier after each significant rain and make repairs at needed. Sediment to be removed from behind the any inlet protection devices when it bacomes 0.5' deep,

Remove sediment from the area as necessary to provide adequate storage

volume for the next rain. Take care not to damage or undercut the hardware cloth during sediment removal When the contributing drainage area has been adequately stabilized, remove all materials and any unstable sediment and dispose of them properly. Bring the disturbed area to the grade of the drop inlet and smooth and compact it. Appropriately stabilize all bare areas around the inlet.

Land Grading Specification # 6.02 - Construction Specifications 1.Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and

construction schedule. 2.Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas. 3. Scarify areas to be topsoited to a minimum depth of 2 inches before placing topsoil (Practice 6.04, Topsoiling). 4.Clear and grub areas to be filled to remove trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.

5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable 8.Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related

7.Do not incorporate frozen material or soft, mucky, or highly compressible materials into fill stopes 8.Do not place fill on a frozen foundation, due to possible subsidence and 9.Keep diversions and other water conveyance measures free of sediment during

10. Handle seeps or springs encountered during construction in accordance with approved methods (Practice 6.81, Subsurface Drain). 11.Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 working days or longer. 12. Ensure that topsoil stockpiles, borrow areas, and spoil areas are adequately protected from erosion with temporary and final stabilization measures, including

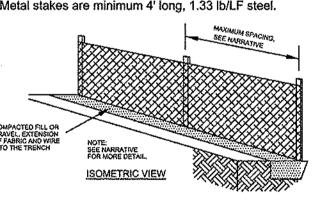
all phases of development.

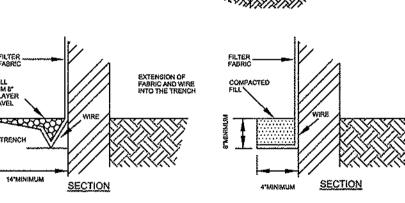
erosion and sedimentation control plan

sediment fencing and temporary seeding as necessary. Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversions and other water-disposal practices, if washouts or breaks occur, repair them immediately. Prompt maintenance of small eroded areas

Note: Metal stakes are minimum 4' long, 1.33 lb/LF steel.

before they become significant guillies is an essential part of an effective





<u>SECTION "B-B"</u>

CATCH BASIN

* IN ALL CITY ROADS AND PRIVATE DRIVEWAYS

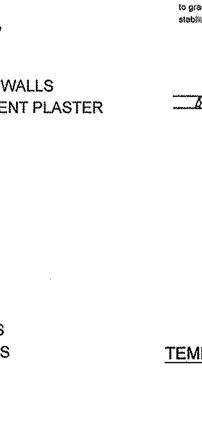


Table 6.11s - Seeding No. 4CP for: Well-Drained Sandy loams to Dry Sands, Coastal Plain; Low to Medium-Care Lawns

Seeding mixture Species - Centipedegrass - Rate - 10-20 lb/acre (seed) or 33 bu/acre (sprigs) Seeding dates - Mar. - June, (Sprigging can be done through July where water is available for irrigation.) Soil amendments - Apply time and fertilizer according to soil test, or apply 300 lb/acre 10-10-10.

Sprigging - Plant sprigs in furrows with a tractor-drown transplanter, or broadcast by hand. Furrows should be 4-6 inches deep and 2ft apart, Place sprigs about 2 ft. apart in the row with one end at or above ground level (Figure 6.11d), Broadcast at rates shown above, and press sprigs into the top 1 1/2 inches of soil with a disk set straight so that sprige are not brought back toward the

Mulch - Do not mulch Maintenance - Fertilize very sparingly- 20 lb/acre nitrogen in spring with no phosphorus. Centipedegrass cannot tolerate high pH or excess fertilizer,

Table 6.11t - Seeding No. 5CP for: Well-Drained Sandy Loams to Dry Sands: Low Maintenance Seeding mixture Species Rate (lb/acra) Pensacola Bahiagrass 50 Sericea lespedeza 30 Common Bermudagrass

Seeding notes 1. Where a nest appearance is desired, omit serices 2. Use common Bermudagrass only on isolated sites where it cannot become a pest. Bermudagrass may be replaced with 5 lb/acre centipedgrass.

Seeding dates - Apr. 1 - July 15 Soil amendments - Apply time and fertilizer according to soil tests, or apply 3,000 lb/acre ground agricultural limestone and 500 lb/acre 10-10-10 fertilizer Apply 4,000 lb/acre grain straw or equivalent cover of another suitable mulch. Anchor by tacking with asphalt, roving and netting or by crimping with a mulch

anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool. Maintenance - Refertilize the following Apr. with 50 lb/acre nitrogen. Repeat as growth requires. May be moved only once a year. Where a neat appearance is desired, omit sericea and now as often as needed.

Table 6.11v - Seeding No. 7CP for: Grass-lined Channels; Coastal Plain Seeding Mixture Species - Common Bermudagrass - Rate - 40-80 (1/2 lb/l,000 ft) Seeding dates - Coastal Plain; Apr - July Soil amendments - Apply lime and fertilizer according to soil tests, or apply 3,000 lb/acre ground agricultural limestone and 500 lb/acre 10-10-10 fertilizer. Mulch - Use jute, excelsior metting, or other effective channel lining material to cover the bottom of channels and ditches. The lining should extend above the highest calculated depth of flow. On channel side slopes above this height, and In drainages not requiring temporary linings, apply 4,000 lb/acre grain straw

and anchor straw by stapling netting over the top. Mulch and anchoring materials must be allowed to wash down slopes where they can ctog drainage devices Maintenance -A minimum of 3 weeks is required for establishment. Inspect and repair mulch frequently. Refertilize the following Apr. with 50 lb/acre

Refer to Appendix 8.02 for botanical names



German millet 10

Sediment Fence (Silt Fence) Specification 6.62 - Construction Specifications

MATERIALS 1. Use a synthetic filter fabric or a pervious sheet of polypropylene, nylon

polyester, or polyethylene yarn, which is certified by the manufacturer or supplier as conforming to the requirements shown in Table 6.62b. Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120 F.

2.Ensure that posts for sediment fences are 1.33 lb/linear ft steel with a minimum length of 4 ft. Make sure that steel posts have projections to facilitate fastening the fabric. 3. For reinforcement of standard strength filter fabric, use wire fence with a minimum 14 gauge and a maximum mesh spacing of 6 inches.

Specifications For Sediment Fence Fabric Physical Property Requirements Filtering Efficiency - 85% (mm) Tensile Strength at Stendard Strength- 30 lb/lin in (min) Extra Strength- 50 lb/lin in (mm)

Slurry Flow Rate - 0.3 gat/sq ft/min (min) CONSTRUCTION Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics. 2. Ensure that the height of the sediment fence does not exceed 18 inches above the ground surface. (Higher fences may impound volumes of water sufficient to cause failure of the structure.)

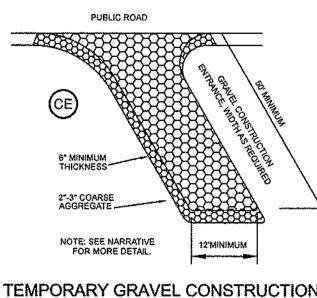
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with overlap to the next post. 4. Support standard strength filter fabric by wire mesh fastened securely to the up slope side of the posts using heavy duty wire staples at least 1 inch long. or tie wires. Extend the wire mesh support to the bottom of the trench. 5. When a wire mesh support fence is used, space posts a maximum of 8 ft apart. Support posts should be driven securely into the ground to a minimum of 18

6,Extra strength filter fabric with 6ft post spacing does not require wire mesh support fence. Staple or wire the filter fabric directly to posts. 7. Excavate a trench approximately 4 inches wide and 8 inches deep along the proposed line of posts and upslope from the barrier (figure 6.62a). 8.Backfill the trench with compacted soil or gravel placed over the filter

9.Do not attach filter fabric to existing trees.

Inspect sediment fences at least once a week and after each rainfall, Make any Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly. Replace burlep every 60 days. Sediment to be removed from behind the any Silt Fence when it becomes 0.5' deep Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining

the fence during deanout Remove all fencing materiels and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been property



ENTRANCE/EXIT DETAIL

REV. NO.

Permanent Seeding

Establishment of vegetation should not be attempted on sites that are unsuitable due to inappropriate soit texture (Table 6.11a), poor drainage, concentrated overland flow, or steepness of slope until measures have been taken to correct these problems, To maintain a good stand of vegetation, the soil must meet certain minimum

- Enough fine-grained (slit and day) material to maintain adequate moisture and nutrient supply (available water capacity of at least .05 inches water to I inch of soil). - Sufficient pore space to permit root penetration. - Sufficient depth of soil to provide an adequate root zone. The depth to rock or impermeable layers such as hardpans should be 12 inches or more, except on slopes steeper than 2:1 where the addition of soil is not feasible - A favorable pH range for plant growth, usually 6.0-6.5. - Freedom from large roots, branches, stones, large clods of earth, or trash of any kind. Clods and stones may be left on slopes steeper than 3:1 if they are to be hydroseeded.

requirements as a growth medium. The existing soil should have those criteria;

If any of the above criteria are not met-l.e., if the existing soil is too coarse, dense, shallow or acidic to foster vegetation-special amendments are required. The soil conditioners described below may be beneficial or, preferably, topsoil may be applied in accordance with Practice 6.04, Topsoiling.

Soil Conditioners in order to improve the structure or drainage characteristics of a soli, the following material may be added. These amendments should only be necessary where solls have limitations that make them poor for plant growth or for fine turf establishment (see Chapter 3, Vegetative Consideration

Peat-Appropriate types are sphagnum moss peat, hypnum moss peat, reedsedge peat,

or peal humus, all from fresh-water sources. Peat should be shredded and conditioned in storage plies for at least 6 months after excavation. Sand-clean and free of toxic materials Vermiculite-horticultural grade and free of toxic substances Rotted manure-stable or cattle manure not containing undue amounts of straw or other bedding materials. Thoroughly rotted sawdust- free of stones and debris. Add 6 lb. Of nitrogen to each cubic yard.

Sludge-Treated sewage and industrial sludges are available in various forms:

these should be used only in accordance with local, State and Federal

in Appendix 8.02.

Species Selection Use the key to Permanent Seeding Mixtures (Table 8.11b) to select the most appropriate seeding mixture based on the general site and maintenance factors A listing of species, including scientific names and characteristics, is given

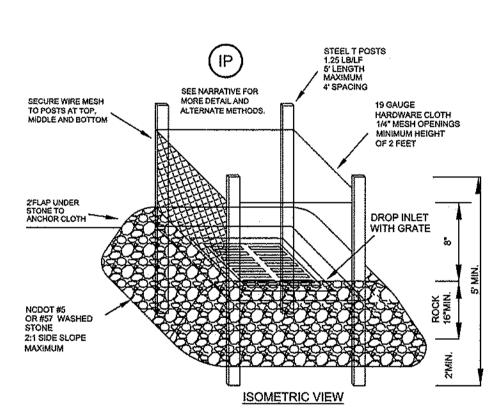
Seedbed Preparation install necessary mechanical erosion and sedimentation control practices before seeding, and complete grading according to the approved plan. Lime and fertilizer needs should be determined by soil tests. Soil testing is performed free of charge by the North Carolina Department of Agriculture soil testing laboratory. Directions, sample cartons, and information sheets are available through county agricultural extension offices or from NCDA. Becaus the NCDA soil testing tab requires 1-6 weeks for sample turn-around, sampling must be planned well in advance of final grading. Testing is also done by commercial laboratories.

When soit test are not available, follow rates suggested on the individual specification sheet for the seeding mix chosen (Tables 6.11c through 6.11v). Applications rates usually fall Into the following ranges: - Ground agricultural limestone Light-textured, sandy soils: 1-1 1/2 tons/acre Heavy textured, clayey solls 2-3 (ons/acre

Grasses 800-1200 lb/acre of 10-10-10 (or the equivalent) Grass-legume mixtures: 800-1200 lb/acre of 5-10-10 (or the equivalent) Apply lime and fertilizer eventy and incorporate into the top 4-6 inches of soil by disking or other suitable means. Operate machinery on the contour. When using a hydroseeder, apply time and fertilizer to a rough, toose surface.

Roughen surfaces according to Practice 6.03, Surface Roughening. Complete seedbed preparation by breaking up large clods and raking into a smooth, uniform surface (slope less than 3:1) Fill in or level depressions than can collect water. Broadcast seed into a freshly loosened seedbed that has not been sealed by rainfall.

Note Well: See Landscaping Plan for additional specifications. Landscaping Plan by others.



HARDWARE CLOTH & GRAVEL INLET PROTECTION PRACTICE 6.51

City streets, a \$325 permit

shall be required from the

City prior to occupancy

and/or project acceptance.

REVISIONS

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Temporary Gravel Construction Entrance/Exit dication # 6.06 - Construction Specification

locations subject to seepage or high water table.

1. Clear the entrance and exit area of all vegetation, roots and other objectionable material and property grade it. 2. Place the gravel to the specific grade and dimensions shown on the plans and 3. Provide drainage to carry water to a sediment trap or other suitable outlet. 4. Use geotextile fabrics because they improve stability of the foundation in

Maintain the gravel pad in a condition to prevent much or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone. After each rainfall. Inspect any structure used to trap sediment and clean it out as necessary, immediately remove all objectionable materials spilled washed, or tracked onto public roadways,

Temporary Seeding Specification # 6.10 - Specifications

6:03, Surface Roughening).

-excessively hot or dry weather

Complete grading before preparing seedbeds and install all necessary erosion control practices, such as dikes, waterways and basins. Minimize steep stopes because they make seedbed preparation difficult and increase the erosion hazard. If soils become compacted during grading, toosen them to a depth of 6-8 inches using a ripper, harrow, or chisel plow.

Seedbed Preparation Good seedbed preparation is essential to successful plant establishment. A good seedbed is well-pulverized, loose and uniform. Where hydroseeding methods are

used, the surface may be left with a more irregular surface of large clods and Liming - Apply lime according to soil test recommendations. If the pH (addity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1 1/2 tons/acre on coarse-textured solls and 2-3 tons/acres on fine-textured soits is usually sufficient. Apply limestone uniformly and

Incorporate Into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be itmed. Fertilizer- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb./acre. Both fertilizer and time should be incorporated into the top 4-6 inches of soil. If a hydraulic

seeder is used, do not mix seed and fertilizer more than 30 minutes before Surface roughening- if recent tillage operations have resulted in a loose surface, additional roughening may not be required except to break up large clods. If reinfell causes the surface to become sealed or crusted, loosen it just prior to seeding by disking, raking, harrowing, or other suitable methods, Groove or furrow slopes steeper than 3:1 on the contour before seeding (Practice

Select an appropriate species or species mixture from Table 6.10a, for seeding in late winter and early spring, Table 6.10b for summer, and Table 6.10c for

Evenly apply seed using a cyclone seeder (broadcast), drill, cultipacker seeder, or hydroseeder. Use seeding rates given in Table 6.10a-6.10c. Broadcast seeding and hyrosceding are appropriate for steep slopes where equipment cannot be driven. Hand broadcasting is not recommended because of the difficulty in achieving a uniform distribution. Small grains should be planted no more than 1 inch deep, and grasses and legumes no more than 1/2 inch. Broadcast seed must be covered by raking or chain dragging, and then lightly firmed with a roller or

cultipacker. Hydroseeded mixtures should include a wood fiber (cellulose) mulch.

The use of appropriate mulch will help ensure establishment under normal conditions and is essential to seeding success under harsh site condition (Practice 6.14, Mulching). Hersh site conditions include: -seeding in fall for winter cover (wood fiber mulches are not considered adequate for this use), -slopes steeper than 3:1,

-adverse solls(shallow, rocky, or high in day or sand), and areas receiving concentrated flow If the area to be mulched is subject to concentrated waterflow, as in channels, enchor mulch with netting (Practice 6.14, Mulching).

Table 6.10a - Temporary Seeding Recommendation for Late Winter and Early Spring Species- Rye(grain), Annual lespedeza (Kobe in Pledmont and Coastal Plain Omit annual lespedeza when duration of temporary cover is not to extend beyond

Seeding dates-Coastal Plain - Dec. 1 - Apr. 15. Soil amendments- Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer. Mulch-Apply 4,000lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool Maintenance - Refertilize if growth is not fully adequate. Reseed, refertilize

and mulch immediately following erosion or other damage. Table 6.10b - Temporary Seeding Recommendations for Summer Seeding mixture

Species-German millet Rate(lb/acre)- 40 Seeding dates-Coastal Plain-Apr. 15-Aug. 15 Soil amendments-Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/agre 10-10-10 fertilizer. Mulch -Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch enchoring tool. Maintenance-Refertilize if growth is not fully adequate. Reseed, refertilize

and mulch immediately following erosion or other damage. Table 6.10c - Temporary Seeding Recommendation for Fall Seeding mixture Species-Rye(grain) Rate(lb/acre) - 120 Seeding dates - Coastal Plain and Pladmont-Aug 15 - Dec. 30

Soil emendments - Follow soil tests or apply 2,000 lb./acre ground agriculturel limestone and I,000 lb/acre 10-10-10 fertilizer. Mulch- Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt. netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool Maintenance- Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March, if it is necessary to extend temporary cover

beyond June 15, overseed with 50 th/acre Kobe (Pledmont and Coastal Plain)

Approved Construction Pla	an STORMWATER MANAGEMENT
<u>Name</u> Dat	t <u>e</u> PLAN
Planning	APPROVED
	CITY OF WILMINGTON
Traffic	ENGINEERING DEPARTMENT
Fire	DATE
	PERMIT#
	SIGNED
For each open utility cut of	

DETAILS, SPECIFICATIONS and NOTES **BOJANGLES'** 520 South College Rd LOCATED IN CITY OF WILMINGTON

20007

DATE

HARNETT TOWNSHIP NEW HANOVER COUNTY, NORTH CAROLINA

DEVELOPER: BOJANGLES' RESTAURANTS INC. 9432 SOUTHERN PINE BLVD. CHARLOTTE, NC 28273 phone:704-940-8669

HANOVER DESIGN SERVICES, P.A. LAND SURVEYORS, ENGINEERS & LAND PLANNERS

1123 FLORAL PARKWAY VILMINGTON, N.C. 28403 PHONE: (910) 343-8002

Sheet No:

F: ALL\PROJECT FOLDERS\BOJANGLES\LAKESIDE PARK\12503 SHT4.DWG

CITY OF WILMINGTON

3-12-15

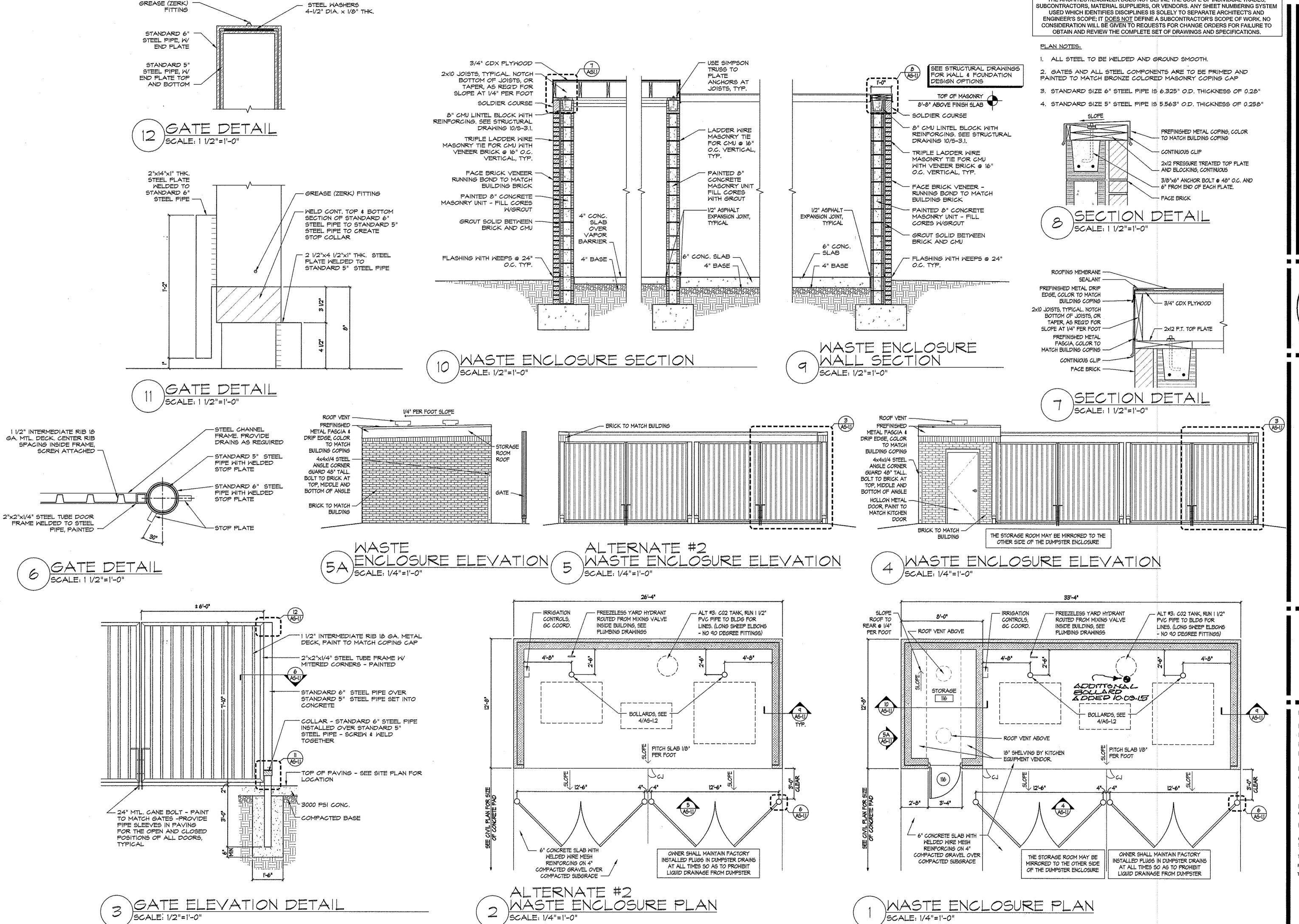
1"= 20'

DSH

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12354SHT4

Project No:

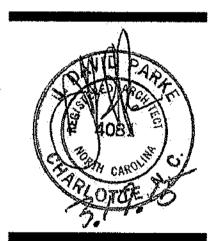


THE ARCHITECT/ENGINEER DOES NOT DEFINE THE SCOPE OF INDIVIDUAL TRADES. UBCONTRACTORS, MATERIAL SUPPLIERS, OR VENDORS. ANY SHEET NUMBERING SYSTEM



CERT. NO.

AROLINA 0 NEAR UNIVE WILMINGTON, NO COLLEG ANGLES BOJ,

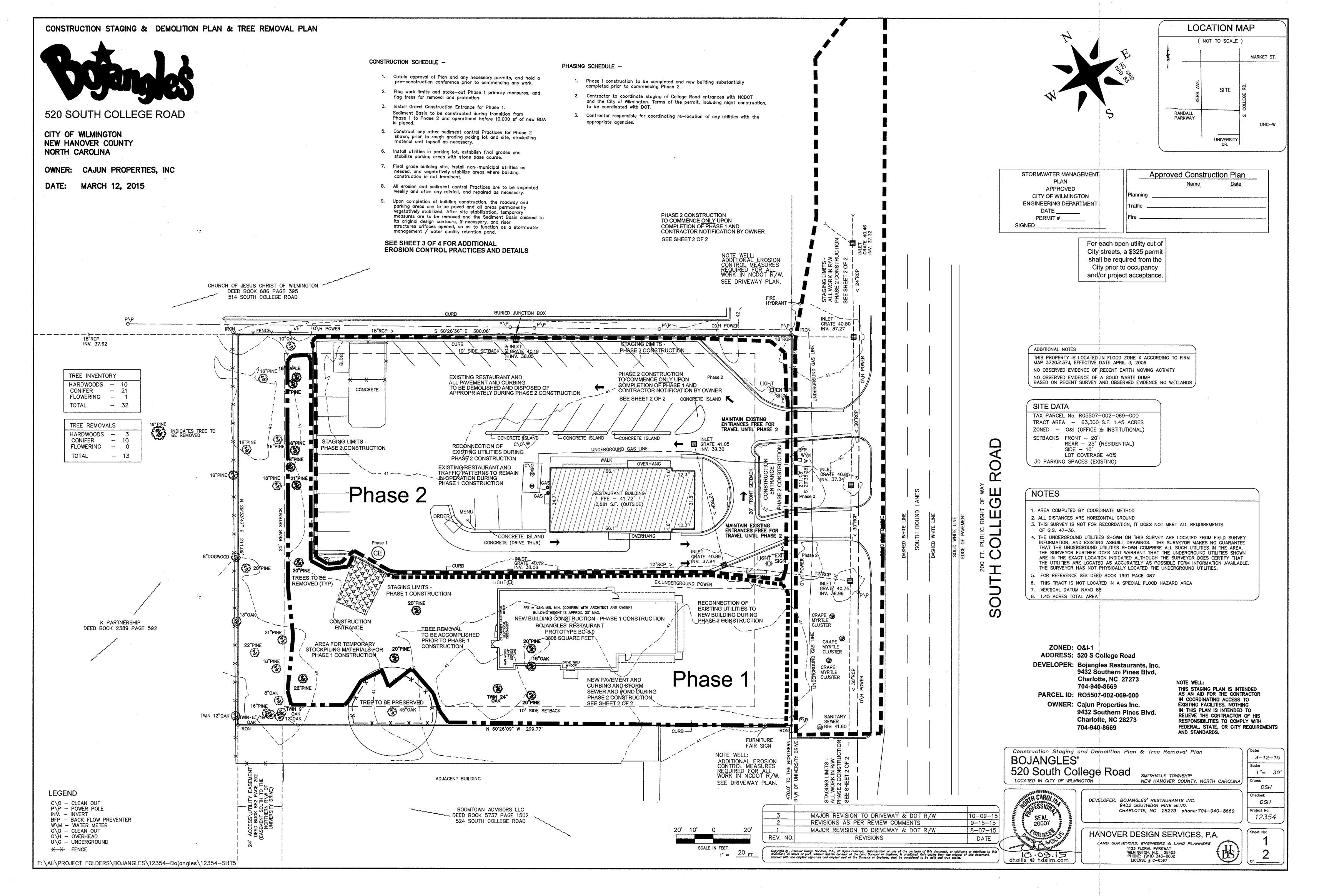


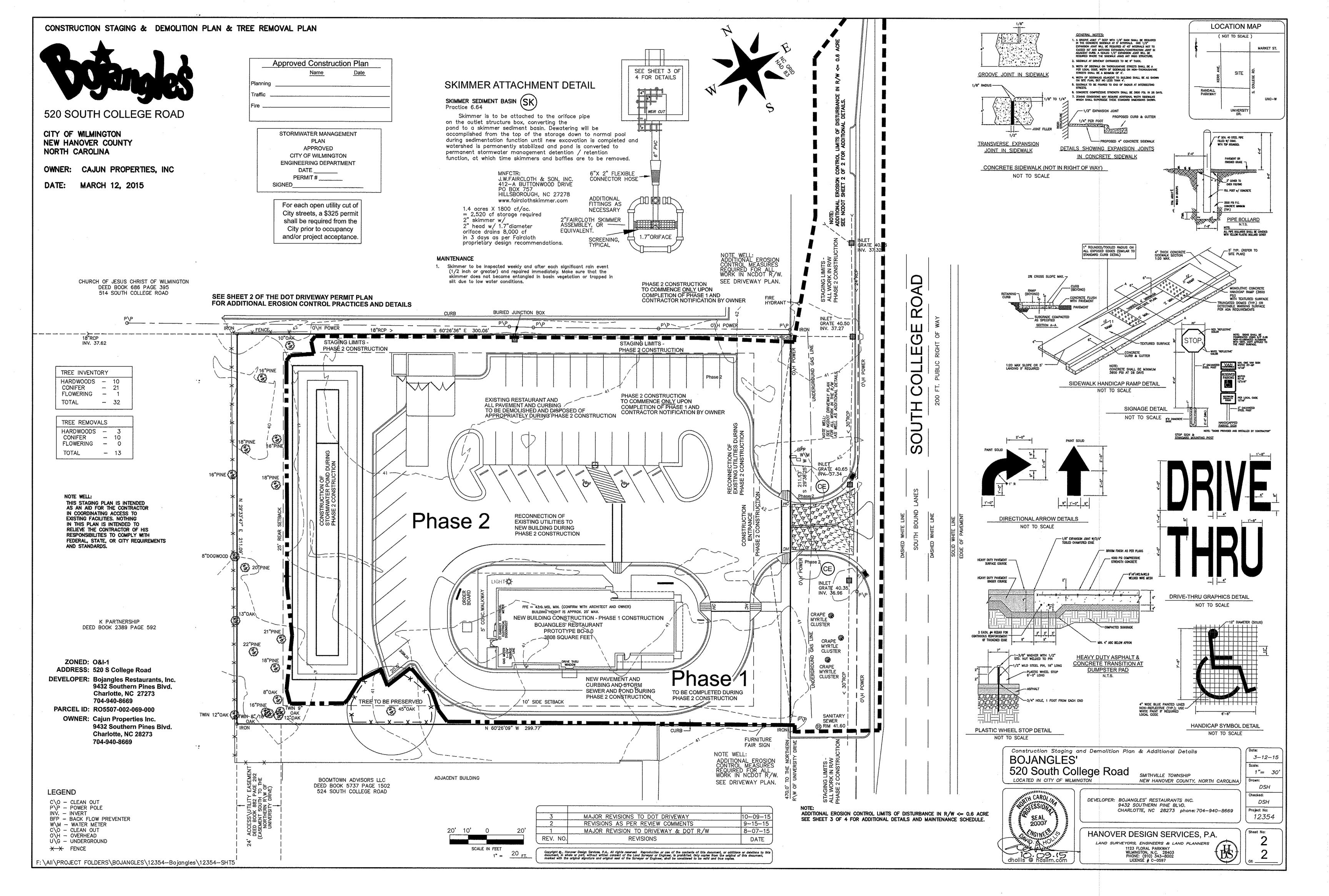
ISSUE DATE: 03-19-15 REVISION 1: -10,09.15 REVISION 2: ____ REVISION 3: --REVISION 4: == PROJECT #: 15-129-00

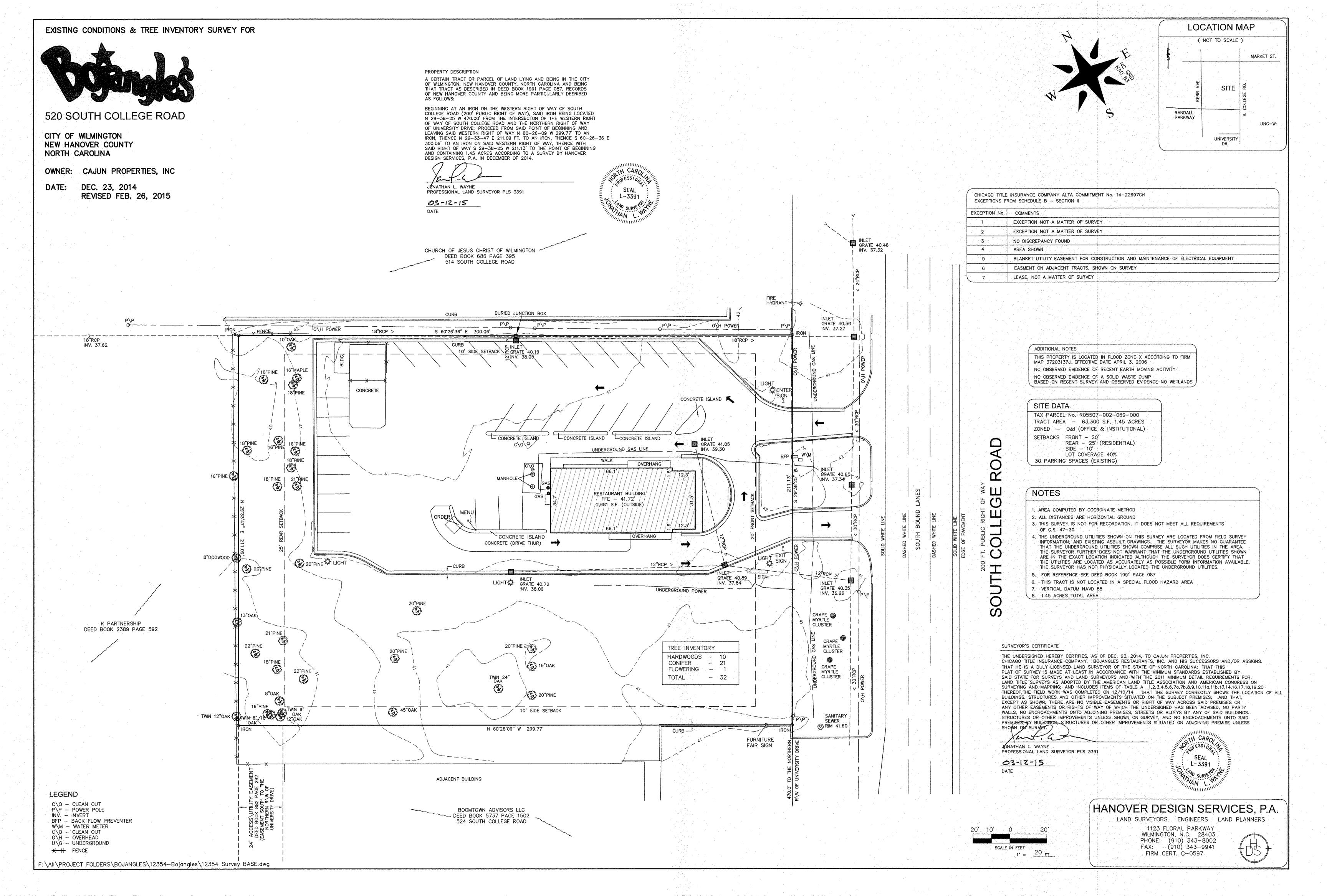
CONTENT: SITE DETAILS

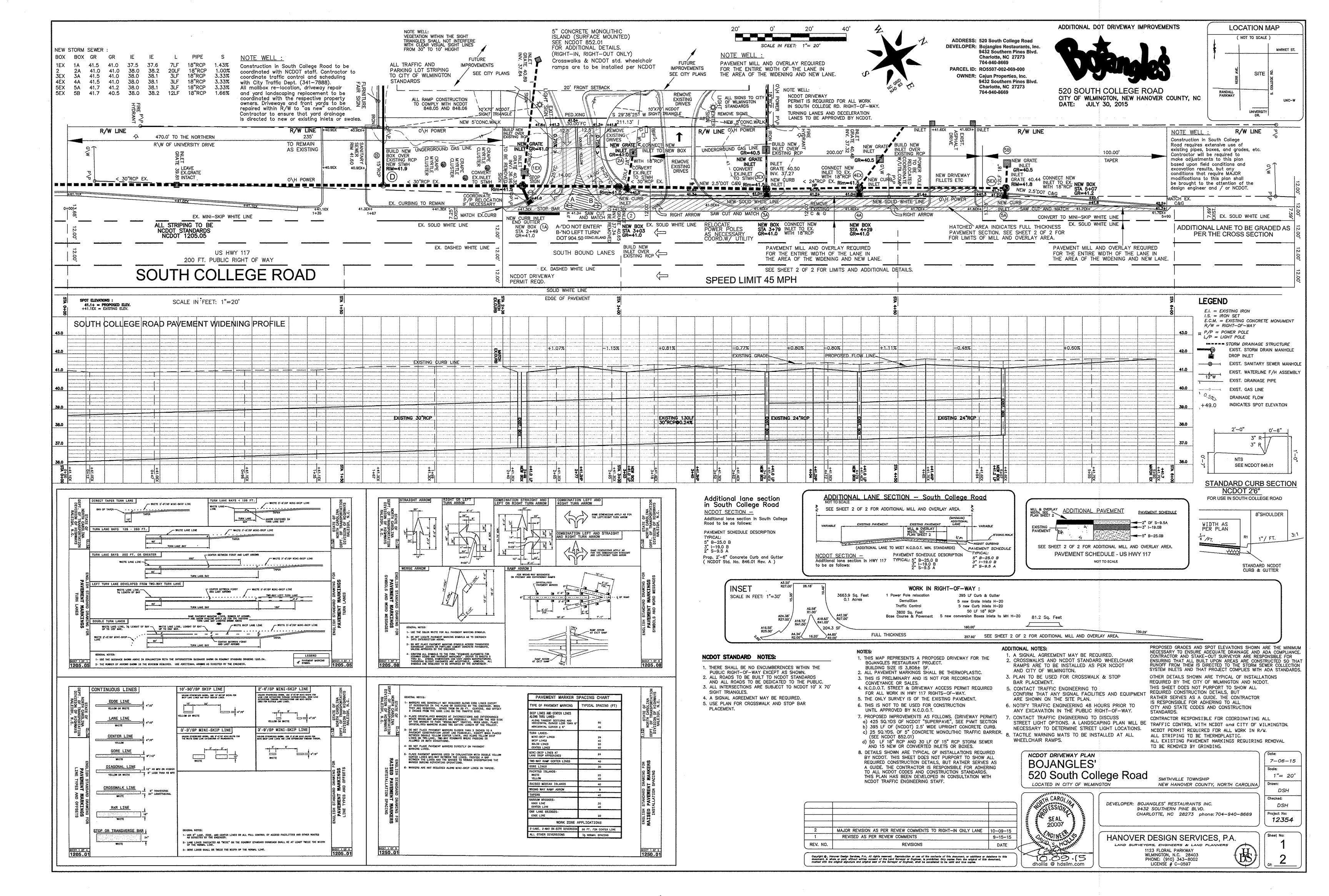
PROJECT ARCHITECT: JDP DRAWN BY: WCH

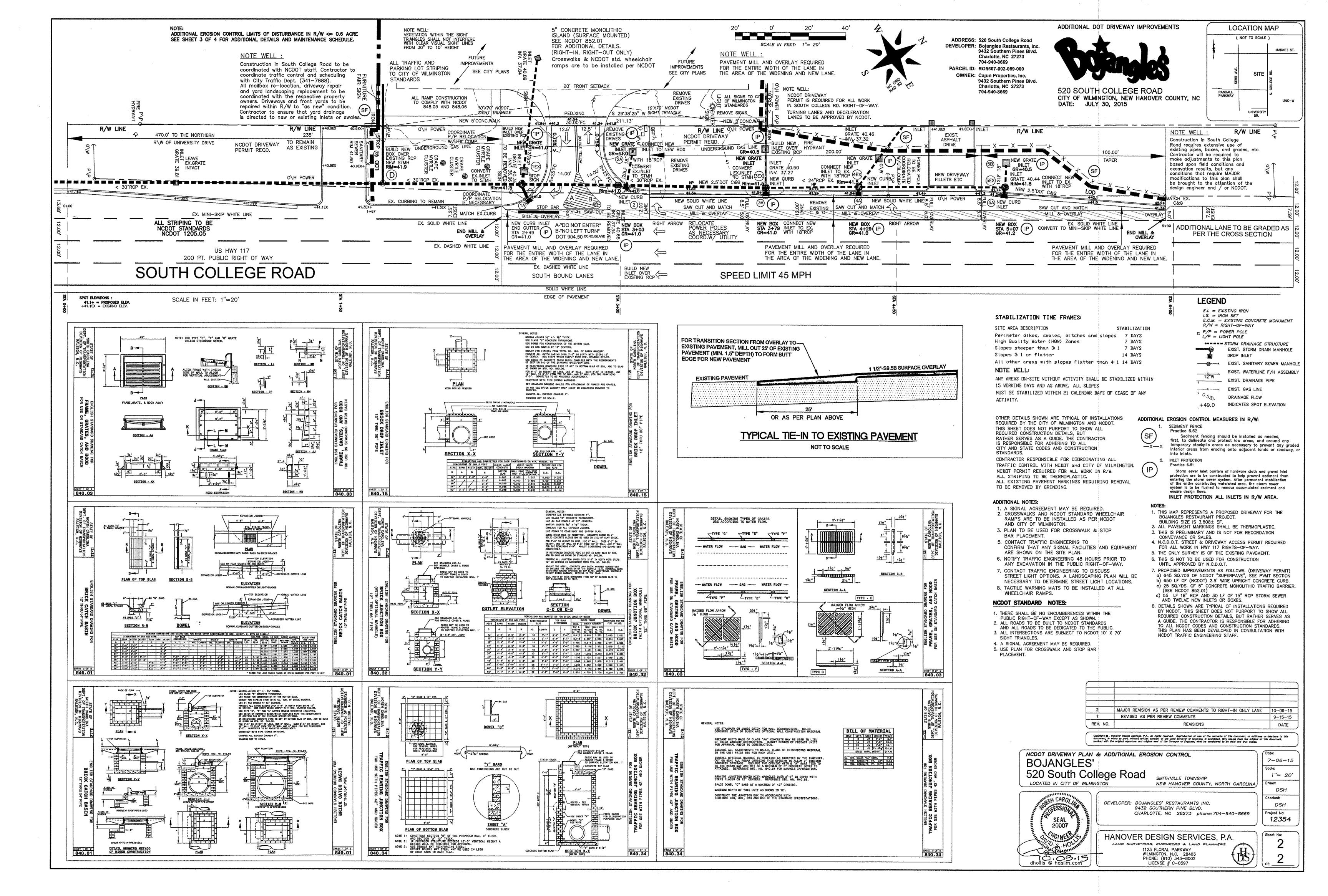
CADD FILE NAME: P:\15-129\CD\ASO1-1 SITE DETAILS THIS DRAWING AND THE DESIGN SHOW ARE THE PROPERTY OF BOJANGLES RESTAURANT'S INC. THE REPRODUCTION, OR USE OF THIS DRAWING WITHOUT THEIR WRITTEN CONSENT IS PROHIBITED, ANY INFRINGEMENT IS SUBJECT TO LEGAL ACTION.

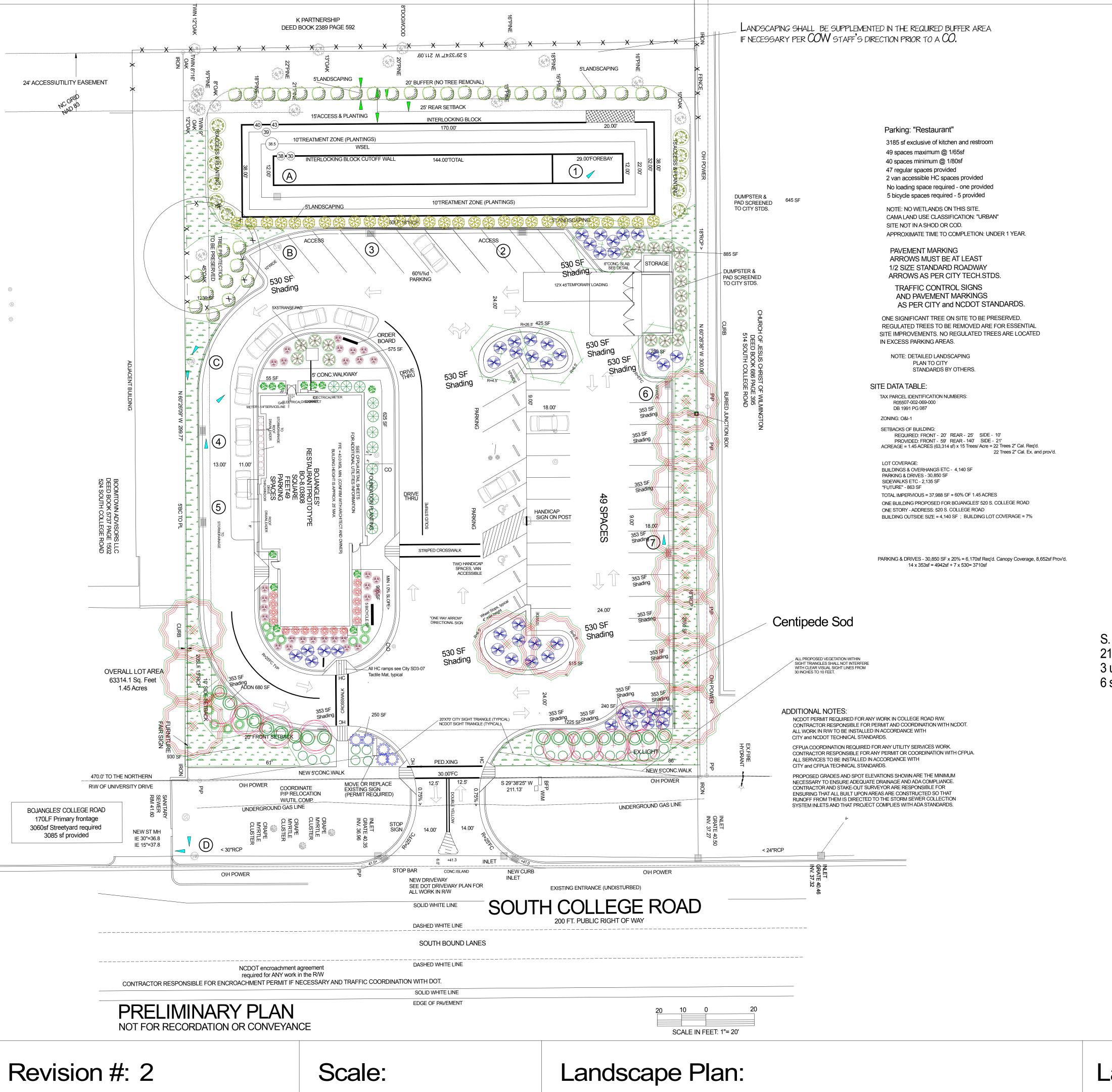


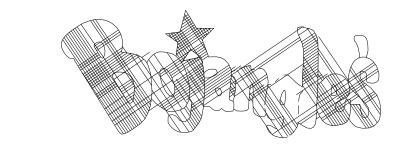












LANDSCAPING SHALL BE COMPLETE BEFORE ISSUANCE OF A C.O.

A rain/freeze sensor shall be used if there is an irrigation system.

Using the creative standard of the code 50% of the streetyards shall be planted AS CALLED OUT.

	Legend			
	Common Name	Size	Qty	
+	Allee Elm	2.5"Cal.,10'ht.	4	
	Boxwood Hedge, Wintergreen	3 Gal.	16	12"Ht.
\bigoplus	Pittosporum Compacta	3 Gal.	12	12"Ht.
	Camellia Sasanqua Yuletide	3 Gal.	11	12"Ht.
+	Crape Myrtle Tuscarora	2.5"Cal.,8'Ht.	(§) 34	
	Azalea Formosa	3 Gal.	34	18"Ht.
	Japanese Yew	7 Gal.	29	36"Ht.
	Juniper Parsoni	3 Gal.	\25g	12"Ht.
X	Ligustrum, Variegated	7 Gal.	13	33"Ht.
	Nandina Gulfstream	3 Gal.	9	18"Ht.
	European Hornbeam	3"Cal.,10'ht.	13	
	Drift Rose	3 Gal.	5	Groundcover
	Breeze Grass	3 Gal.	29	12"Ht.
	Knockout Rose, Dbl. Red	3 Gal.	11	18"Ht.
0	Dwarf Yaupon Holly	3 Gal.	21	12"Ht.
	Wax Myrtle	3 Gal.	11	30"Ht.
	Needlepoint Holly	7 Gal.	18	36"Ht.

S. College Rd. Primary Streetyard:	per Creative Code:	Provided
211lf - 25lf Drwy. = 186 x 18'w = 3348sf Req'd. landscape	1674sf	
3 understory trees per 600sf = 17 trees	9	9
6 shrubs per 600sf = 33 shrubs	17	43

Centipede Sod Brown-Dyed Mulch Wetlands Plants, 6 rows, 2'oc, 3 varieties 4" pot 1089

Quantities listed are for convenience only. Landscape Contractor responsible for actual quantities.

PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED The areas within the triangular sight distance TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION of all obstructions between 30" and 10'.

Date Drawn: 3-30-15 Revision #1 8-12-15

shall be maintained free

All planted and retained living material required to meet the provisions of the City of Wilmington Land Development Code, shall be perpetually protected and maintained to professionally accepted standards by joint and several responsibility of the owner, tenant and respective agents of the property on which the material is located.

Revision# 2 Revision#3

Date: 9/14/2015

1" = 20'

Landscape Design by: James Freeman - NCLC# 71 Freeman Landscape, Inc.

Hanover Design Services, P.A.

Land Surveyors, Engineers, Land Planners



MEMORANDUM

To: Jeff Walton, Development Services, City of Wilmington, Project Manager Beth Wetherill, New Hanover County Engineering

Allen Hancock, NCDOT

Re: Bojangles' 520 South College Road Response to review comments

From: David S. Hollis, PE, PLS, Hanover Design Services PA

Date: 10-09-15

Copy: Lee Bakely, Bojangles' Restaurants Inc. Greg Wayne, PLS, Hanover Design Services PA

In response to the review comments, please find the attached revised site plans:

City comments -

Jeff Walton:

• Thanks for the tree permit. My understanding is that the developer will pay the \$5,600 tree mitigation fee directly prior to CO.

Bill McDow:

- The DOT driveway plan has been extensively modified to reflect a right-in only lane in coordination with DOT staff.
- I added a bollard to the dumpster plan as requested, although this design has been used successfully in Bojangles' dumpsters all over the State without that addition.
- I added 2' to the parking space you were concerned with.

Rob Gordon:

- I revised the application to reflect the plan BUA amounts (attached).
- I used another font on the pipe schedule to get better column line-up.
- Changed the invert on 4 as indicated.
- Noted that the drawdown pipe to be extended and anchored as we discussed.
- The existing grades on our lot didn't drain the area of your concern on the adjacent Furniture Fair lot prior to our putting the drive-thru lane in, although you are correct that we will be some 1.6' higher than current. This area is pretty flat but drains to the rear, and relief should be in that direction before any impacts on buildings occur. I am copying the developer on your concerns.

Page 2

New Hanover County Engineering -

Beth Wetherill:

 I believe we addressed your concerns with the last submittal, but I'm copying you on the major change to the driveway. I changed LOD as indicated but am still reporting 0.6 acre or less.

NCDOT -

Allen Hancock:

I believe I have modified the driveway plans as per our phone discussion, and I hope this
revised plan will allow you to finish processing the driveway permit. Let me know what
else I can do to assist you in your efforts.

I trust that this response and the attached revised plans and drawings will allow you to complete the review process. Thanks.

12354-rev2memo.doc