

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

JOSH STEIN GOVERNOR J. R. "JOEY" HOPKINS Secretary

March 13, 2025

COUNTY: Wake

SUBJECT: Application for Driveway Entrance onto US 401 BUS Permit Number D051-092-24-00153

FLM Engineering, Inc. PO Box 91727 Raleigh, NC 27675

Dear Sir or Madam,

Attached for your file is a copy of the Driveway Permit which you requested.

This permit is approved with the understanding the applicant is responsible for the proper construction of the above drive in accordance with the permit application, approved plans and the attached Standard and Special Provisions.

APPROVAL FOR CONSTRUCTION

A PERFORMANCE AND INDEMNITY BOND IN THE VALUE OF \$5,000.00 IS REQUIRED

Should you have any questions, please contact our office, at (919) 814-6115.

Sincerely,

Daniel T. Boulware

Daniel T. Boulware, P.E. District Engineer

DTB/jpn Attachment

cc: Rebecca Gallas, P. E., Division Engineer Town of Rolesville

Telephone: (919) 814-6115 Fax: (919) 715-5778 Customer Service: 1-877-368-4968 *Location:* 4009 DISTRICT DRIVE RALEIGH, NC 27607

Website: www.ncdot.gov

Driveway Permit Special Provisions

- 1. NCDOT reserves the right to further restrict this access at the expense of the encroaching party if/when accident history exists, operational issues occur, the execution and/or operation of said permit is found to be a hazard to the general public, or at the discretion of the District Engineer.
- 2. An executed copy of the agreement, provisions and approved plans shall be present at the construction site at all times. If safety or traffic conditions warrant such an action, NCDOT reserves the right to further limit, restrict or suspend operations within the right of way.
- 3. Current and future state projects take precedence over this driveway.
- 4. This project is within the limits of an upcoming LAPP Project U-6241. Coordination with the Town of Rolesville will be required prior to beginning work to assure the following:

- Landscaping plans adjacent to existing sidewalk parallel with Main Street are reviewed by the Town of Rolesville and align with the proposed work under U-6241.

- Sidewalk installation shall be discussed and coordinated with the Town of Rolesville to assure coordination with the improvements proposed under U-6241.

-US 401 (Main Street) will be resurfaced and the striping pattern changed under the U-6241 LAPP Project. Any/All pavement cuts and waterline/sewerline tie in work shall be completed prior to the resurfacing of Main Street.

5. Notify Town of Rolesville prior to beginning work.

6. Traffic shall be maintained at all times.

All lanes of traffic are to be open during the hours of 6:00 A.M. to 9:00 A.M. and from 4:00 P.M. to 7:00 P.M. Monday through Friday, during any time of inclement weather, or as directed by the District Engineer. If the location of work calls for a rolling roadblock on Interstates and divided highway US routes, the restriction is to work only on Sunday from 1:00 A.M. to 10:00 A.M, and only after explicit approval by the District Engineer.

Any violation of these hours will result in ceasing any further construction by the Encroaching Party or their contractor and liquidated damages in the amount of \$2,000.00 per hour or any portion there of will be assessed by the District Engineers Office. Nighttime and weekend operations will NOT be allowed unless written approval is received from the District Engineer.

If nighttime or weekend work is allowed or required, all signs must be retro-reflective, and a work zone lighting plan must be submitted for approval prior to construction. Two-way traffic shall be maintained at all times unless designated by the District Engineer. Traffic shall not be rerouted or detoured without the prior written approval from the District Engineer.

If the construction is within 1000 feet of a school location or on a designated bus route, the construction shall be coordinated with the school start and end times to avoid traffic delays.

Work requiring lane or shoulder closures shall not be performed on both sides of the road simultaneously within the same area. Any work requiring equipment or personnel within 5 feet of the edge of any travel lane of an undivided facility and within 10 feet of the edge of any travel lane of a divided facility shall require a lane closure with appropriate tapers per current NCDOT Roadway Standard Drawings or MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

Sidewalk closures shall be installed as necessary. Pedestrian traffic shall be detoured around these closures and shall be signed appropriately and in accordance with The American with Disabilities Act Accessibility Guidelines. The encroaching party must adhere to the guidelines for accommodating pedestrians in encroachment work zones as described in the NCDOT Pedestrian Work Zone Accommodations Training found at

https://www.youtube.com/watch?v=AOuYa5IW3dg&feature=youtube. Refer to the Standard Provisions to determine when all lane closures are prohibited around public holidays.

- 7. Sight distance shall be free and clear of any debris, foliage and/or earth material for a minimum distance of 350 feet on US 401 BUS (South Main Street). Vegetation removal and/or grading may be necessary to achieve the required sight distance. If the sight distance requirement is not achieved, NCDOT reserves the right to deny/close/restrict this/these accesses.
- **8.** A \$5,000.00 Performance and Indemnity Bond shall be executed and posted with the District Office at 4009 District Drive, Raleigh, North Carolina 27607, prior to beginning any work on the Right of Way. When the required roadway improvements have been completed, and upon written request by the Permittee to the District Office, the bond will be released if all work is found to be satisfactory,
- **9.** Approval is for the following driveway accesses as shown on the attached plans received in the District Office:

1.) Approval is for one full-access driveway on US 401 BUS (South Maint Street), located approximately 900 feet southwest of the intersection with SR 2052 (Rogers Road), as shown on the attached plans.

2.) Approval is for one full-access driveway on US 401 BUS (South Main Street), located approximately 700 feet southwest of the intersection with SR 2052 (Rogers Road), as shown on the attached plans. This access will be restricted to a right-in/right-out only driveway by LAPP U-6241.

10. All curb and gutter constructed in the right of way shall be 30 inch standard. Any curb and gutter removed shall be removed in full sections at existing joints.

A compacted base shall be prepared prior to placement of curb and gutter; consisting of a minimum 10 inches of Aggregate Base Course or a minimum 5 inches of Asphalt Concrete Base Course, type B25.0C.

Placement and compaction shall adhere to NCDOT Standards and Specifications. The addition/replacement of curb and gutter next to an existing asphalt roadway shall be constructed as follows:

 The Permittee shall contact the District Office at (919) 814-6115 for inspection of forms or grade line prior to placing concrete for curb and gutter. Please provide 48 hours notification for inspections. All storm drainage grates and frames shall be on site at the time of the inspection.
 The edges of the existing asphalt shall be saw-cut to provide a straight and uniform edge for concrete to be placed along.

3) Mill a minimum 1.5-inch by 1.5-foot section at the edge of pavement along the proposed curb and gutter.

4) The contractor shall use an appropriate method to provide a straight, uniform front edge of concrete where tying to the ultimate top of pavement. This office recommends using a 2x4 laid flat along the milled surface at the edge of pavement. Concrete curb and gutter shall be constructed per NCDOT Standards and Specifications.

5) Once the concrete is poured and set, a minimum 1.5-inch lift of surface asphalt, type S9.5C, shall be placed in the milled section. It is the sole responsibility of the contractor to ensure that the proposed curb and gutter is placed at the correct height to provide proper drainage in addition to a smooth tie-in once asphalt is placed.

Additional milling may be required to repair any damages done to the existing asphalt during construction. For any questions feel free to contact the District Engineers Office, at (919) 814-6115.

- 11. Approval of the driveway permit does not constitute review and approval of streets for NCDOT maintenance. If addition of streets to the state system is desired, plans for review and a petition for addition shall be submitted to the District Engineer's office. For further information, contact Mr. Daniel Boulware, P.E., District Engineer, at (919) 814-6115.
- **12.** Any further subdivision of this lot will require review and approval from the District Engineer's Office. Roadway improvements may be required at that time based on District Office Review.
- **13.** All disturbed areas are to be fully restored to current NCDOT minimum roadway standards or as directed by the Division Engineer or their representative. Disturbed areas within NCDOT Right-of-Way include, but not limited to, any excavation areas, pavement removal, drainage or other features.

The roadway shall be kept free of dirt and debris at all times.

14. Curb cuts and ramps for disabled persons shall be constructed in accordance with the current NCDOT "Standard for Wheelchair Ramp Curb Cuts" and the Americans With Disabilities Act (ADA) Accessibility Guidelines For Buildings and Facilities. NCDOT shall not maintain the proposed sidewalks.

Driveway Permit Standard Provisions

- 1. This agreement only covers work within NCDOT Right-of-Way. The encroacher is responsible for verifying all right of way. NCDOT does not guarantee the right of way on this road. If the right of way was not obtained by the fee simple method, it is the responsibility of the encroacher to obtain permission from the underlying property owner/owners. NCDOT shall not be held responsible for any claim for damages brought about by any property owner by reason of this installation.
- 2. Please note that approval of the permit does not constitute review or approval of utilities by NCDOT. Plans and a completed agreement shall be submitted to the District Engineer's office for review and approval.
- **3.** NCDOT reserves the right to further restrict this access at the expense of the encroaching party if/when accident history exists, operational issues occur, the execution and/or operation of said permit is found to be a hazard to the general public, or at the discretion of the District Engineer.
- 4. An executed copy of this agreement, provisions, and approved plans, as well as all other permits currently approved by NCDOT for this site, shall be present at the construction site at all times. If safety or traffic conditions warrant such an action, NCDOT reserves the right to further limit, restrict or suspend operations within the right of way, or at the discretion of the District Engineer.
- 5. No lane closures shall be permitted between the hours of 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM, Monday through Friday unless otherwise specified in the Special Provisions of this agreement. No night time or weekend work allowed unless by explicit instruction from the District Office.
- 6. All materials and construction shall be in accordance with NCDOT standards and specifications, including but not limited to, the NCDOT Standard Specifications for Roads and Structures 2024, the NCDOT Roadway Standards Drawings, and NCDOT Policies and Procedures for Accommodating Utilities on Highway Rights of Way.
- 7. The Encroacher shall notify the public, including all adjacent property owners and businesses, a minimum of 2 weeks prior to beginning work.
- 8. The Encroaching party or their contractor shall provide three (3) business days advance phone call at (919) 814-6115 to the District Engineer's office. Failure to provide notification prior to beginning construction is subject to the Division Engineer's discretion to cease construction activity for this agreement. NCDOT reserves the right to cease any construction or maintenance work associated with this installation by the encroaching party until the construction or maintenance meets the satisfaction of the Division Engineer or their representative.
- 9. Retaining walls or other vertical structures shall not be permitted inside NCDOT right of way.
- 10. It shall be the responsibility of the encroaching party to determine the location of utilities within the project area. NCGS § 87-115 through § 87-130 of the Underground Utility Safety and Damage Prevention Act requires underground utilities to be located by calling 811 prior to construction. The encroaching party shall be responsible for notifying other utility owners and providing protection and safeguards to prevent damage or interruption to existing facilities and maintain access to them. The encroaching party shall be responsible for making arrangements to adjust or relocate any utilities that conflict with the proposed work.
- 11. This approval and associated plans and supporting documents shall not be interpreted to allow any design change or change in the intent of the design by the Owner, Design Engineer, or any of their representatives. Any revisions or changes to these approved plans or intent for construction must be obtained in writing from the District Engineer's office or their representative prior to construction or during construction if an issue arises during construction to warrant changes.

- **12.** All Right of Way and easements necessary for construction and maintenance shall be dedicated to NCDOT with proof of dedication furnished to the District Engineer prior to beginning work.
- **13.** Encroaching party shall be responsible for obtaining all necessary permanent and/or temporary construction, drainage, utility, and/or sight distance easements.
- 14. This agreement does not authorize installations within nor encroachment onto railroad rights of way. Permits for installations within railroad right of way must be obtained from the railroad and are the responsibility of the encroaching party.
- **15.** At the end of each working day, equipment shall be parked outside of the clear recovery zone in order to avoid any obstruction to the travelling public. This clear recovery zone is measure from the edge of the nearest travel lane.

Ingress and egress shall be maintained to all businesses and dwellings at all times.

No lane closures shall be permitted between the hours of 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM, Monday through Friday unless otherwise specified in the Special Provisions of this agreement.

No parking or material storage shall be allowed along the shoulders of any NCDOT roadways.

The encroacher shall provide traffic control devices, lane closures, road closures, positive protection and/or any other warning or positive protection devices necessary for the safety of road users during construction and any subsequent maintenance. This shall be performed in conformance with the latest NCDOT Roadway Standard Drawings and Standard Specifications for Roads and Structures and Amendments or Supplements thereto. When there is no guidance provided in the Roadway Standard Drawings or Specifications, comply with the Manual on Uniform Traffic Control Devices for Streets and Highways and Amendments or Supplements thereto. No work shall be performed in the Right of Way unless this requirement is satisfied. NCDOT reserves the right to require a written traffic control plan for project operations.

Sidewalk closures shall be installed as necessary. Pedestrian traffic shall be detoured around these closures and shall be signed appropriately and in accordance with The American with Disabilities Act Accessibility Guidelines.

Two-way traffic shall be maintained at all times.

Work shall not be performed on both sides of the road simultaneously within the same area.

16. WORK ZONE TRAFFIC CONTROL QUALIFICATIONS AND TRAINING PROGRAM

All personnel performing any activity inside the highway right of way are required to be familiar with the NCDOT Maintenance / Utility Traffic Control Guidelines (MUTCG). No specific training course or test is required for qualification in the Maintenance /Utility Traffic Control Guidelines (MUTCG).

All flagging, spotting, or operating Automated Flagger Assist Devices (AFAD) inside the highway right of way requires qualified and trained Work Zone Flaggers. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

All personnel involved with the installation of Work Zone Traffic Control devices inside the highway right of way are required to be qualified and trained Work Zone Installers. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

All personnel in charge of overseeing work zone Temporary Traffic Control operations and installations inside the highway right of way are required to be qualified and trained Work Zone Supervisors. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves. For questions and/or additional information regarding this training program please refer to https://connect.ncdot.gov/projects/WZTC/Pages/Training.aspx or call the NCDOT Work Zone Traffic Control Section (919) 814-5000.

The party of the second part shall employ traffic control measures that are in accordance with the prevailing federal, state, local, and NCDOT policies, standards, and procedures. These policies, standards, and procedures include, but are not limited to the following:

Manual on Uniform Traffic Control Devices (MUTCD) – North Carolina has adopted the MUTCD to provide basic principles and guidelines for traffic control device design, application, installation, and maintenance. North Carolina uses the MUTCD as a minimum requirement where higher supplemental standards specific to North Carolina are not established. Use fundamental principles and best practices of MUTCD (Part 6, Temporary Traffic Control).

NCDOT Maintenance / Utility Traffic Control Guidelines – This document enhances the fundamental principles and best practices established in MUTCD Part 6, Temporary Traffic Control, incorporating NCDOT-specific standards and details. It also covers important safety knowledge for a wide range of work zone job responsibilities.

If the Traffic Control Supervisor determines that portable concrete barrier (PCB) is required to shield a hazard within the clear zone, then PCB shall be designed and sealed by a licensed North Carolina Professional Engineer. PCB plans and design calculations shall be submitted to the District Engineer for review and approval prior to installation.

Ingress and egress shall be maintained to all businesses and dwellings affected by the project. Special attention shall be paid to police, EMS and fire stations, fire hydrants, secondary schools, and hospitals.

- 17. Excavated areas adjacent to pavement having more than a 2 inch drop shall be made safe with a 6:1 or flatter slope and shall be designated by appropriate delineation during periods of construction inactivity, including, but not limited to, night and weekend hours.
- **18.** Current and future state projects take precedence over this agreement.

- **19.** No access to the job site, parking or material storage shall be allowed along or from the Control of Access Roadway.
- **20.** The installation within the Control of Access fence shall not adversely affect the design, construction, maintenance, stability, traffic safety or operation of the controlled access highway, and the utility must be serviced without access from the through-traffic roadways or ramps.
- **21.** The resetting of the Control of Access fence shall be in accordance with the applicable NCDOT standard and as directed by the Division Engineer or their representative.
- 22. The encroaching party shall comply with all applicable local, state and federal environmental regulations, and shall obtain all necessary state and federal environmental permits, including but not limited to, those related to sediment control, storm water, wetland, streams, endangered species, and historical sites.
- **23.** All earth areas disturbed shall be regraded and reseeded in accordance with NCDOT Standards and Specifications.
- 24. All proposed landscaping and plantings located within the NCDOT right of way shall be approved by the Division Roadside Environmental Engineer at (919) 816-9290.

In the event these plants require relocation or removal for highway construction, reconstruction, or maintenance of safety, such removal or relocation will be done immediately by the permittee upon notification by the NCDOT entirely at the expense of the permittee.

- **25.** Existing drainage patterns shall be maintained at all times throughout the proposed construction. The encroacher shall keep the roadway clean of dirt and debris at all times throughout the duration of the project.
- **26.** The applicant is responsible for complying with the Neuse and Tar-Pamlico Riparian Buffer Rule as regulated by the NCDWQ. The Rule regulates activity within a 50-foot buffer along perennial streams, intermittent streams and ponds.
- 27. All erosion control devices and measures shall be constructed, installed, maintained, and removed by the Encroacher in accordance with all applicable Federal, State, and Local laws, regulations, ordinances, and policies. All earth areas shall be regraded and seeded in accordance with NCDOT Standards Specifications for Roads and Structures.

28. All erosion control devices and measures shall be constructed, installed, maintained, and removed by the Encroacher in accordance with all applicable Federal, State, and Local laws, regulations, ordinances, and policies. Permanent vegetation shall be established on all disturbed areas in accordance with the recommendations of the Division Roadside Environmental Engineer. All areas disturbed (shoulders, ditches, removed accesses, etc.) shall be graded and seeded in accordance with the latest NCDOT Standards Specifications for Roads and Structures and within 15 calendar days with an approved NCDOT seed mixture (all lawn type areas shall be maintained and reseeded as such). Seeding rates per acre shall be applied according to the Division Roadside Environmental Engineer. Any plant or vegetation in the NCDOT planted sites that is destroyed or damaged as a result of this agreement shall be replaced with plants of like kind or similar shape.

No trees within NCDOT right of way shall be cut without authorization from the Division Roadside Environmental Engineer. An inventory of trees measuring greater than 4 caliper inches (measured 6" above the ground) is required when trees within C/A right of way will be impacted by the project installation. Mitigation is required and will be determined by the Division Roadside Environmental Engineer's Office.

The applicant is responsible for identifying project impacts to waters of the United States (wetlands, intermittent streams, perennial streams and ponds) located within the NCDOT right-of-way. The discharge of dredged or fill material into waters of the United States requires authorization from the United States Army Corps of Engineers (USACE) and certification from the North Carolina Division of Water Quality (NCDWQ). The applicant is required to obtain pertinent permits or certification from these regulatory agencies if construction of the project impacts waters of the United States within the NCDOT right-of-way. The applicant is responsible for complying with any river or stream Riparian Buffer Rule as regulated by the NCDWQ. The Rule regulates activity within a 50-foot buffer along perennial streams, intermittent streams and ponds. Additional information can be obtained by contacting the NCDWQ or the USACE.

The contractor shall perform all monitoring and record keeping and any required maintenance of erosion and sediment control measures to maintain compliance with stormwater regulations.

- **29.** Any existing driveways, pavement, sidewalk, curb and gutter or drainage structures that are damaged during construction shall be repaired to their original condition.
- **30.** All temporary and final pavement markings, reflective pavement markings and signage are the responsibility of the Encroacher. All final pavement markings shall be thermoplastic. Any pavement markings that are damaged or obliterated shall be restored at no cost to the department
- **31.** All traffic control, asphalt mixes, structures, construction, workmanship and construction methods, and materials shall be in compliance with the most-recent versions of the following resources: ASTM Standards, Manual on Uniform Traffic Control Devices, NCDOT Utilities Accommodations Manual, NCDOT Standard Specifications for Roads and Structures, NCDOT Roadway Standard Drawings, NCDOT Asphalt Quality Management System manual, and the approved plans.
- 32. Prior approval for any blasting must be obtained from the District Engineer or their representative.
- **33.** Guardrail shall be installed where warranted and in accordance with the guidelines shown in the 2024 Highway Design Branch Roadway Standard Drawings.

Guardrail removed or damaged during construction shall be replaced or repaired to their original condition at no cost to NCDOT.

- 34. All material to a depth of 8 inches below the finished surface of the subgrade shall be compacted to a density equal to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T99 as modified by the Department. The subgrade shall be compacted at a moisture content which is approximately that required to produce the maximum density indicated by the above test method. The contractor shall dry or add moisture to the subgrade when required to provide a uniformly compacted and acceptable subgrade. The option to backfill any trenches with dirt or either #57 stone or #78 stone with consolidation with a plate tamp and without a conventional density test may be pursued with the written consent of the District Engineer. If this option is exercised, then roadway ABC stone and asphalt repair as required will also be specified by the District Engineer.
- **35.** All excavations inside the theoretical 1:1 slope from the existing edge of pavement to the bottom of the nearest excavation wall should be made in accordance with the following conditions. Traffic should be moved to a travel lane outside the limits of a theoretical one-to-one slope from the bottom of the nearest trench wall to the pavement surface. Active excavation shoring, such as sheet piling, shall be installed. The design of the shoring shall include the effects of traffic loads. The shoring system shall be designed and sealed by an engineer registered in North Carolina. Trench boxes shall not be accepted as shoring. The trench backfill material should meet the Statewide Borrow Criteria.
- **36.** Trenching, bore pits and/or other excavations shall not be left open or unsafe overnight. The Contractor shall comply with all OSHA requirements and provide a competent person on site to supervise excavation at all times.
- 37. Excavated material shall not be placed on the roadway at any time.
- **38.** Any pavement damaged because of settlement of the pavement or damaged by equipment used to perform work, shall be re-surfaced to the satisfaction of the District Engineer. This may include the removal of pavement and a 50' mechanical overlay. All pavement work and pavement markings (temporary and final) are the responsibility of the Encroaching Party.
- **39.** When paving beyond utility installation is involved, a Roadway certification report sealed by a Professional Engineer shall be submitted to the District Engineer's office indicating the following:
 - Pavement thickness by type
 - Pavement density, core and/or test locations
 - Base thickness
 - Base density
 - Subgrade density

Test frequency and method shall be in conformance with the NCDOT Materials and Tests Manual. Test must be performed by a Certified Technician including name and Certification number on report. **40.** Pavement cuts shall be repaired the same day the cuts are made unless an asphalt patch cannot be accomplished the same day due to material availability or time restrictions. When the asphalt patch is not feasible, the following apply:

a. The pavement cut shall be filled to the surface with ABC stone or Flowable Fill per NCDOT's Standards and Specifications.

b. Once the cut is filled, a minimum ³/₄-inch steel plate shall be placed and pinned to prevent moving. Plates shall be designed large enough to span a minimum of 1-foot on all sides on the pavement cut.
c. When flowable fill is used, it shall cure for 24 hours prior to any asphalt material placement. Flowable fill bleed water shall not be present during paving operations. Paving shall not cause damage (shoving, distortion, pumping, etc.) to the flowable fill.

d. Install and leave "BUMP AHEAD" signs according to MUTCD until the steel plate has been removed. Once the flowable fill has cured, remove the steel plate, and mill/fill according to the directions of the District Engineer.

e. All pavement cuts must be sealed with NCDOT approved sealant to prevent future pavement separation or cracking.

- **41.** Roadway certification reports sealed by a Professional Engineer shall be submitted to the North Carolina Department of Transportation at 4009 District Drive, Raleigh, North Carolina, indicating the following:
 - * Pavement thickness by type
 - * Pavement density, core and/or test locations
 - * Base thickness
 - * Base density
- **42.** "Potholing" (or "daylighting") pavement cores to expose existing utilities shall be made with a circular minimum 6" to maximum 18" diameter "test" hole to a maximum depth of 12 inches. Pavement core locations shall not be placed in the wheel path whenever possible. Vacuum excavation shall be utilized to expose underground utilities below pavement subgrade. Displaced dirt and rock debris must be suctioned away from the excavation area through a large hose to a vacuum truck and disposed by the encroaching party. Avoid using mechanized equipment in the proximity of all exposed underground utility lines. Pavement cores shall be repaired within the same working day. The pavement core shall be retained and evaluated for reuse to fill the core hole.
- 43. The paving of this roadway shall be in accordance with the latest version of NCDOT Standard Specifications, Sections 610, 1012 and 1020. The Contractor shall follow all procedures of the latest Quality Management System (QMS) Asphalt Manual for asphalt pavement Maintenance Version (see https://connect.ncdot.gov/resources/Materials/MaterialsResources/Forms/Default.aspx) to find the most recent version. The Contractor must adhere to all testing requirements and quality control requirements specified. The Contractor shall contact the NCDOT Division QA Supervisor prior to producing plant mix and make the Supervisor aware that the mix is being produced for a future NCDOT road. Contact the District Engineer to determine the NCDOT Division QA Supervisor. Only NCDOT approved mix designs will be acceptable. A Quality Control Plan shall be submitted (as Directed by the District Engineer) to the District Engineer's Office prior to asphalt production utilizing form QMS-MV1. Failing mixes and/or densities are subject to penalties including monetary payments or removal and replacement. To minimize traffic queuing in construction areas, the possibility of traffic detours may be considered when working on high traffic routes even if traffic control is used. The District Engineer may require traffic detours.
- **44.** The encroaching party shall notify the District Engineer or their representative immediately in the event any drainage structure is blocked, disturbed or damaged. All drainage structures disturbed, damaged or blocked shall be restored to its original condition as directed by the District Engineer or their representative.

- **45.** Excavation within 1000 feet of a signalized intersection will require notification by the encroaching party to the Division Traffic Engineer at telephone number (919) 536-4000 no less than one week prior to beginning work. All traffic signal or detection cables must be located prior to excavation. Cost to replace or repair NCDOT signs, signals, pavement markings or associated equipment and facilities shall be the responsibility of the encroaching party.
- **46.** Approval may be rescinded upon failure to follow any of the provisions in this permit and may be considered a violation of the agreement.
- 47. All Traffic signs moved shall be reinstalled as soon as possible to meet NCDOT specifications.
- **48.** No commercial advertising shall be allowed within NCDOT Right of Way.
- **49.** The Encroaching Party and/or their Contractor shall comply with all OSHA requirements. If OSHA visits the work area associated with this project, the District Office shall be notified by the encroaching party immediately if any violations are cited.
- **50.** Right of Way monuments disturbed during construction shall be referenced by a registered Land Surveyor and reset after construction.
- **51.** If the approved method of construction is unsuccessful and other means are required, prior approval must be obtained through the District Engineer before construction may continue.
- **52.** Any guardrail removed or damaged during construction shall be replaced or repaired to its original condition, meeting current NCDOT standards or as directed by the Division Engineer or their representative.
- **53.** All Traffic signs moved during construction shall be reinstalled as soon as possible to the satisfaction of the Division Traffic Engineer or their representative.
- **54.** A minimum of 5 feet clearance is required for utility installations beneath or near drainage pipes, headwalls, and a minimum of two-foot clearance below the flowline of streams. If directional drilling, a minimum ten-foot clearance distance is required from drainage structures and a minimum of 5 feet below flowline of streams.

At points where the utility is placed under existing storm drainage, the trench will be backfilled with excavatable flowable fill up to the outside diameter of the existing pipe.

- **55.** Prior to beginning work, it is the requirement of the Encroaching Party to contact the appropriate Utility Companies involved and make arrangements to adjust or relocate any utilities that conflict with the proposed work.
- **56.** All driveways disturbed during construction shall be returned to a state comparable with the condition of the driveways prior to construction.

APPLICATION IDENTIFICATION	N.C. DEPARTMENT OF TRANSPORTATION
Driveway Date of Permit No. Application	STREET AND DRIVEWAY ACCESS
County: Wake	PERMIT APPLICATION
Development Name: Pine Glo	
LOCATION OF PROPE	ERTY:
Route/Road: US Hwy 401 (S Main St)	
Exact Distance 700 LF, 900 LF I Miles N S E W	
From the Intersection of Route No. <u>US Hwy 401</u> and Route No.	SR 2052 Toward SR 2051
Property Will Be Used For: Residential /Subdivision Commercial Educ	cational Facilities 🔲 TND 🗌 Emergency Services 🔲 Other
Property: is not within	Rolesville City Zoning Area.
AGREEMENT	
 I, the undersigned property owner, request access and permission to of-way at the above location. 	o construct driveway(s) or street(s) on public right-
 Street and Driveway Access to North Carolina Highways" as adopte Transportation. I agree that no signs or objects will be placed on or over the public r I agree that the driveway(s) or street(s) will be constructed as showr I agree that that driveway(s) or street(s) as used in this agreement in speed change lanes as deemed necessary. I agree that if any future improvements to the roadway become nece located on public right-of-way will be considered the property of the will not be entitled to reimbursement or have any claim for present e I agree that this permit becomes void if construction of driveway(s) or specified by the "Policy on Street and Driveway Access to North Car I agree to pay a \$50 construction inspection fee. Make checks paya application is denied. I agree to provide during and following construction proper signs, sig the protection of traffic in conformance with the current "Manual on U Highways" and Amendments or Supplements thereto. Information a obtained from the District Engineer. 	ight-of-way other than those approved by NCDOT. In on the attached plans. Include any approach tapers, storage lanes or essary, the portion of driveway(s) or street(s) North Carolina Department of Transportation, and I expenditures for driveway or street construction. For street(s) is not completed within the time rolina Highways". Table to NCDOT. This fee will be reimbursed if affe manner so as not to interfere with or endanger gnal lights, flaggers and other warning devices for Uniform Traffic Control Devices for Streets and as to the above rules and regulations may be
 for damage that may arise by reason of this construction. I agree that the North Carolina Department of Transportation will ass be caused to such facilities, within the highway right-of-way limits, in I agree to provide a Performance and Indemnity Bond in the amount construction proposed on the State Highway system. The granting of this permit is subject to the regulatory powers of the law and as set forth in the N.C. Policy on Driveways and shall not be I agree that the entire cost of constructing and maintaining an appro and conditions of this permit will be borne by the property owner, the assignees. I AGREE TO NOTIFY THE DISTRICT ENGINEER WHEN THE PRO COMPLETED. 	n carrying out its construction. t specified by the Division of Highways for any NC Department of Transportation as provided by e construed as a contract access point. oved private street or driveway access connection e applicant, and their grantees, successors, and

中学家	SIC	GNATURES (OF APPLICA	
COMPANY SIGNATURE ADDRESS	1021 Forestville Rd, Ste 200 Wake Forest, NC 27587 Phone No.	ert Shaar 610.295.3699	NAME SIGNATURE ADDRESS	WITNESS Anne Claser 1021 Forestville Rol Ste 200 Walke Porest NC 27587
COMPANY SIGNATURE ADDRESS	AUTHORIZED AGENT FLM Engineering Inc. PO Box 91727 Raleigh, NC 27675 Phone No.	919.610.1051	NAME SIGNATURE ADDRESS	WITNESS JON FAMOR POBOX 91727 Raleigh, NC 27675
	RECEIVED BY DISTRICT ENGINEER	Series States		
	Danisl T. Boulware		3/1	4/25
Ł	SIGNATURE			DATE
APPLICATION	APPROVED BY LOCAL GOVERNMENTAL	AUTHORITY (whe	n required)	
	Jeredith Stuber SIGNATURE		ning Directo דודLE	or March 12, 2025 DATE
10	APPROVED BY NCDOT anisl T. Boulware SIGNATURE	Wake Dis	strict Engine	eer 3/14/25
	SIGNATURE		TITLE	DATE
COMMENTS	:			

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riveway 1: SR USY dBUS Speed Li	mit <u>35</u>		132	TOIBUS	ΝŅ
ad Name MAIN ST			1952	1018	
isting Cross Section:	140	X	* JUS		
<u>}</u> Lanes	<u>40</u> Feet	7	1 100 1		
No / Striped / Concrete) Median	Feet		000		
PAUED SHLOR	<u></u> Feet		F M-		
otal Paved Width	48 Feet	SD =1.47*V*t	Design	Time	SD
oposed Cross Section:		t=(f)+ lanes*.5	Speed (V)	Captornal	30
Lanes	Feet	Left Turn (6.5)			470
No / Striped / Concrete / Planted) Mediar	Feet	Right Turn		6.5	382
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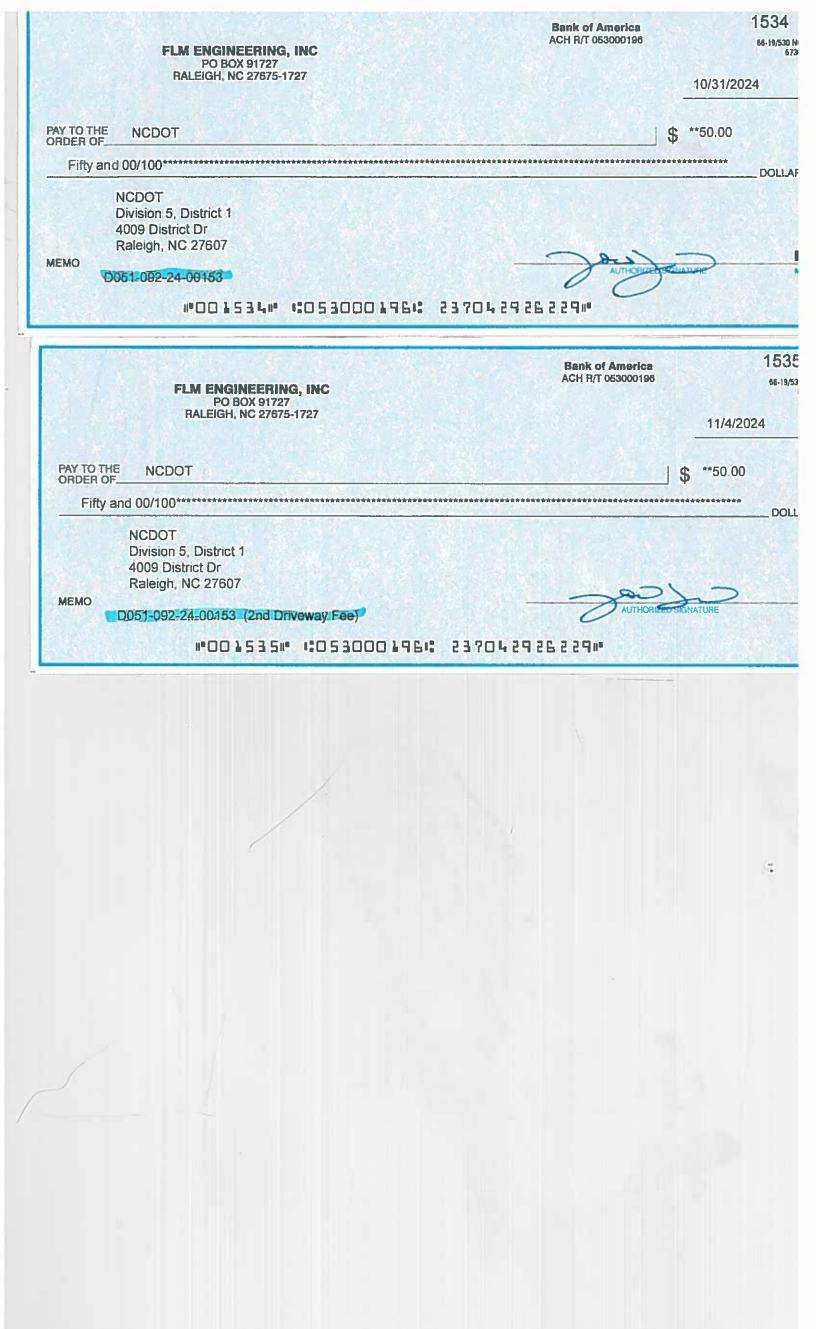
red Sight Distance: 38	<u>2</u> L	ooking Left	(Right Turn)	470	Looking	Right	(Left [†]	Turi
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 Required Sight Distance:
 38^{2} Looking Left (Right Turn)
 470 Looking Right (Left Turn)

 Ditch (Yes / No) Depth:
 Crosslines (Nes / No) Size:
 12^{11} Location:
 25^{11} NE
 Pavement Condition:
 FATR

Notes: _____

Driveway 3: SR Speed Lin	nit	w at the set			
Road Name					· · · · · · · · · · · · · · · · · · ·
Existing Cross Section:	1				
Lanes	Feet				
(No / Striped / Concrete) Median	Feet				
	Feet				
Total Paved Width	Feet	날 나는 동안이			
Proposed Cross Section:					
Lanes	Feet	SD =1.47*V*t	Design	Time	SD
(No / Striped / Concrete / Planted) Median			Speed (V)	Gap (t)	
	Feet	Left Turn (6.5)			
Total Paved Width	Feet	Right Turn (5.5)		6.5	
		Measured from	n 18' beh	ind EO	
Proposed Access: Right In	Right Out	Left In 🗆 Lef	t Out		
Sight Distance: Looking Le	eft (Right Turn)	Looking Right (L	eft Turn)		
Required Sight Distance: Looking Le					
Ditch (Yes / No) Depth: Crosslines (Yes / N				nt Con	dition
			Paveille	nt Con	union:
Notes:					
	a				
Driveway 4: SR Speed Lim					
Road Name					1
Existing Cross Section:	Fact				
(No / Striped / Concrete) Median	Feet				
(no / super / concrete / median	Feet				
Total Paved Width	Feet				
Proposed Cross Section:					
Lanes	Feet		1	-	
(No / Striped / Concrete) Median	Feet	SD =1.47*V*t t=(f)+ lanes*.5	Design Speed (V)	Time	SD
	Feet	Left Turn (6.5)	Sheen (A)	Cap (t)	
Total Paved Width	Feet	Right Turn (5.5)		6.5	
		Measured from	n 18' behi		
		L			
Proposed Access: Right In	Right Out	Left In 📃 Left	t Out		
Sight Distance: Looking Le	eft (Right Turn)	Looking Right (L	eft Turn)		
Required Sight Distance: Looking Le	eft (Right Turn)	Looking Right (L	eft Turn)		
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			_ ravenie	ni com	
Notes:					
Nome TAGR ATCHALCON		PA			. 1. 1.
Name: JACOB NICHOLSON Si	gnature:	wc .	Dat	:e: _(112124
Name:Si	ignature:		Dat	e:	



VERIFICATION OF COMPLIANCE WITH ENVIRONMENTAL REGULATIONS

(Check Appropriate Box)

Permits from the N.C. Department of Environment and Natural Resources and the U.S. Army Corp of Engineers are not required for this project. However, all applicable federal and state regulations have been followed.

The required permits from the N.C. Department of Environment and Natural Resources and the U.S. Army Corp of Engineers have been obtained for this project. Copies of permits and Completion Certificates are attached.

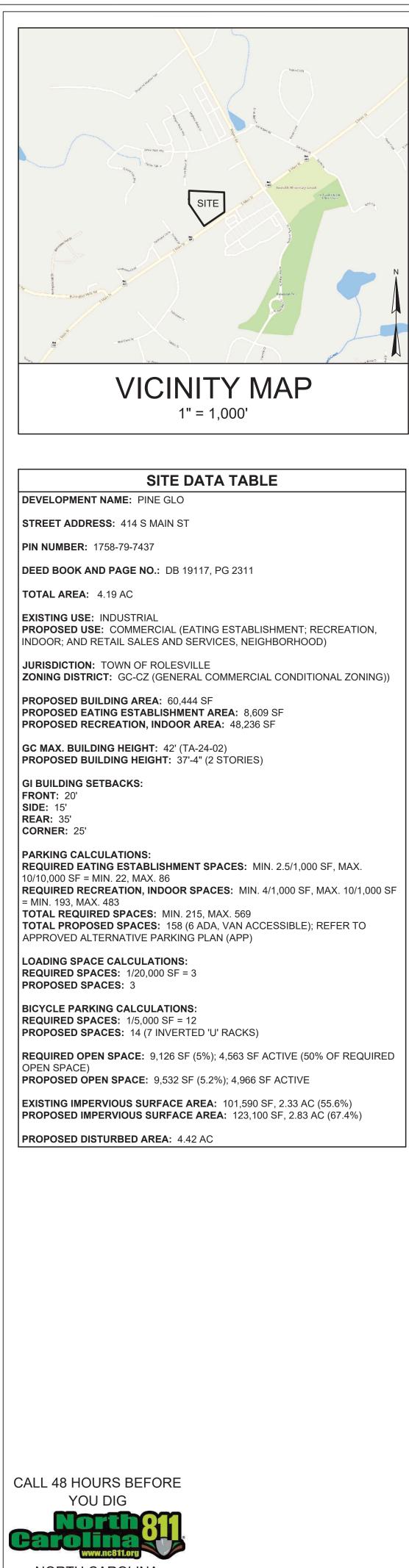


All applicable NPDES Stormwater Permit requirements have been met for this project. (The applicant should contact the N.C. Division of Water Quality in Raleigh to determine if a stormwater permit is required.)

The project is in compliance with all applicable sedimentation and erosion control laws and regulations.

Project Name:	Pine Glo		
Township:	N/A	County:	Wake
Project Engineer:	FLM Engineering, Inc.	Phone No.:	919.610.1051
Project Contact:	Jon Frazier, PE		SMILLIN,
			TH CARO
Applicant's Name:	Jon Frazier		P.E.SSEAL
Date Submitted:	05/23/24		033775 5/23/24 g
			AND FRAD

Form VCER-1 June 1, 2006



OPTIMAL GLO LLC CONTACT: ROBERT SHAAR 1021 FORESTVILLE RD, STE 200 WAKE FOREST, NC 27587 610.295.3699 SHAAR@MYOPTIMALEQUITY.COM



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SITE DEVELOPMENT PLAN FOR

PINE GLO

NOTES

AN ALTERNATIVE PARKIN ROLESVILLE BOARD OF

414 S MAIN ST ROLESVILLE, WAKE COUNTY, **NORTH CAROLINA 27571** PIN: 1758-79-7437

SHEET	TITLE
C-1	COVE
C-2	CALC
C-3	EXIST
C-4	SITE I
C-5	UTILI
C-6	GRAD
C-7	SCM I
C-8	EROS
C-9	EROS
C-10	EROS
C-11	LAND
C-12	LIGHT
24-0239A	DUKE
C-14	SITE I
C-15	STOR
C-16	EROS
C-17	EROS
C-18	WATE
C-19	NCG0
C-20	NCG0
A1.1	FIRST
A1.2	SECO
A1.3	DIAGE
A2.2	BUILD
-	REND

OWNER/DEVELOPER:

ENGINEER OF RECORD:

FLM ENGINEERING, INC CONTACT: JON FRAZIER, PE PO BOX 91727 RALEIGH, NC 27675 919.610.1051 JFRAZIER@FLMENGINEERING.COM



SDP-24-05 / Site Development Pla 414 S Main St / Pine Glo APPROVED Date: February 16, 2025 MeredithStruber

Town of Rolesville Planning Depar

	POST OF RALEIGH, NOF PHONE	FICE BOX 91727 RTH CAROLINA 27675 919.610.1051 NSE NUMBER C-4222	
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-	1 TRC COMM		BY FLM
	2 TRC COMM		
IG PLAN (APP) FOR THIS SITE WAS APPROVED BY THE TOWN OF COMMISSIONERS ON JANUARY 7, 2025.	3 TRC COMM	/IENTS 1/2/2025	FLM
	4 NCDOT COM 5 SIGNATUR		
RULATIONS			
ING CONDITIONS & DEMOLITION PLAN			
PLAN			
ING & DRAINAGE PLAN DETAILS			
ION & SEDIMENT CONTROL PLAN - PHASE 1	ORIGINAL P	LAN SIZE: 24" X 36"	
ION & SEDIMENT CONTROL PLAN - PHASE 2 ION & SEDIMENT CONTROL PLAN - PHASE 3			
SCAPING PLAN ING PLAN			
ENERGY PHOTOMETRIC PLAN			
DETAILS M DRAINAGE DETAILS			
ION & SEDIMENT CONTROL DETAILS ION & SEDIMENT CONTROL DETAILS			
R & SEWER DETAILS 1 SELF-INSPECTION, RECORDKEEPING & REPORTING			
1 GROUND STABILIZATION & MATERIAL HANDLING			
FLOOR PLAN ND FLOOR PLAN			
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		0 L IF IT IS NOT 1 INCH (1"
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EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT		LOPMENT PLA P-24-05	N
APPROVED	PI	NE GLO	
EROSION CONTROL SEC-	414 S	S MAIN ST LLE, NC 27571	
STORMWATER MGMT. SWF-		LL, NO 21011	
FLOOD STUDY \Box SWF-			
DATE	OPTIM	AL GLO LLC	
Kevin Zelava Digitally signed by Kevin Zelaya DN: C=US, E=kevin zelaya@wake.gov, O=Wake County, OU=Watershed Management, CM=Kevin Zelaya			
EFFECTIVE: 08/23/17	DATE:	06-03-2024	
in / CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION	SCALE:	AS SHOWN	
ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A	DESIGNED BY: APPROVED BY:	FLM FLM	
COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS	PROJECT NO.:	24028	
tment APPROVAL. Timothy Beasley CITY OF RALEIGH DEVELOPMENT APPROVAL	C	OVER	
RALEIGH WATER REVIEW OFFICER		~ / _ \	
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF	()-1	
ROLESVILLE, CITY OF RALEIGH AND WAKE COUNTY STANDARDS AND SPECIFICATIONS		T 1 OF 30	

								P	IPE TABLE									
STRUCTUR	RENUMBER		Cc	I	Α	Α	Тс	Q	Q									
FROM	то	NO. OF BOXES	RUNOFF COEFFICIENT	10-YEAR INTENSITY (in/hr)	DRAINAGE AREA (sf)	DRAINAGE AREA (ac)	TIME OF CONCENTRATION (min)	FLOW (cfs)	TOTAL FLOW (cfs)	SLOPE (ft/ft)	Dtheo (in)	SIZE (in)	Vfull (ft/sec)	PIPE LENGTH (ft)*	UPPER INVERT (ft)	LOWER INVERT (ft)	TOP ELEVATION (ft)	PIPE MATERIAL
YI-1	EX. JB	-	0.90	7.19	9500	0.22	5.0	1.41	1.41	0.0068	9.1	12	4.1	176.00	415.40	414.20	418.30	HDPE
JB-2	JB-4	-	0.90	7.19	22200	0.51	5.0	3.30	3.30	0.0050	13.3	15	4.0	260.00	414.50	413.20	419.50	HDPE
YI-3	JB-4	-	0.90	7.19	10500	0.24	5.0	1.56	4.86	0.0142	12.6	15	6.8	109.00	414.75	413.20	418.10	HDPE
JB-4	FES-5	-	0.90	7.19	0	0.00	5.0	0.00	4.86	0.0500	10.0	18	14.4	4.00	413.20	413.00	419.50	HDPE
YI-6	YI-8	-	0.90	7.19	9800	0.22	5.0	1.46	1.46	0.0059	9.5	15	4.4	85.00	415.40	414.90	418.20	HDPE
YI-7	YI-8	-	0.90	7.19	4400	0.10	5.0	0.65	0.65	0.0079	6.6	15	5.1	63.00	415.40	414.90	418.30	HDPE
YI-8	YI-9	-	0.90	7.19	6200	0.14	5.0	0.92	3.03	0.0056	12.6	18	4.8	72.00	414.90	414.50	418.30	HDPE
YI-9	YI-13	-	0.90	7.19	6500	0.15	5.0	0.97	4.00	0.0058	13.9	18	4.9	69.00	414.50	414.10	418.30	HDPE
YI-10	YI-11	-	0.90	7.19	4000	0.09	5.0	0.59	0.59	0.0053	6.9	15	4.1	38.00	415.40	415.20	418.30	HDPE
YI-11	YI-12	-	0.90	7.19	4200	0.10	5.0	0.62	1.22	0.0053	9.0	15	4.2	75.00	415.20	414.80	418.30	HDPE
YI-12	YI-13	-	0.90	7.19	6800	0.16	5.0	1.01	2.23	0.0050	11.4	15	4.0	60.00	414.80	414.50	418.10	HDPE
YI-13	YI-16	-	0.90	7.19	5400	0.12	5.0	0.80	7.03	0.0053	17.4	18	4.7	75.00	413.70	413.30	418.30	HDPE
JB-14	JB-15A	-	0.90	7.19	28300	0.65	5.0	4.20	4.20	0.0152	11.8	15	7.0	184.00	416.40	413.60	419.70	HDPE
YI-15	JB-15A	-	0.90	7.19	8800	0.20	5.0	1.31	1.31	0.0058	9.1	12	3.7	86.00	414.10	413.60	418.00	HDPE
JB-15A	YI-16	-	0.90	7.19	0	0.00	5.0	0.00	5.51	0.0075	14.9	18	5.6	40.00	413.60	413.30	418.00	HDPE
YI-16	FES-17	-	0.90	7.19	6700	0.15	5.0	1.00	13.53	0.0065	21.4	24	6.3	46.00	413.30	413.00	418.20	HDPE

*LENGTHS ARE OF THE PIPE ONLY, CENTER OF STRUCTURE TO CENTER OF STRUCTURE, AND DO NOT INCLUDE FLARED END SECTIONS OR OTHER END TREATMENT

					SKIN		IMENT BA	ASIN DESI	GN CALCUL	ATIONS						
	SKIMMER SEDIMENT BASIN DESIGN										DIMENT BASI	N EFFICIENCY			SKIMMER**	
BASIN NUMBER	BASIN TYPE	DRAINAGE AREA (ac)	DISTURBED AREA (ac)	REQUIRED VOLUME 1800 CF/AC (cf)	DEPTH* (ft)	WIDTH (ft)	LENGTH (ft)	VOLUME PROVIDED (cf)	WEIGHTED RUNOFF COEFFICIENT	10-YEAR RAINFALL INTENSITY (in/hr)	FLOW Q (cfs)	REQUIRED SURFACE AREA 435 SF/CFS (sf)	AREA PROVIDED (sf)	SIZE (in)	ORIFICE RADIUS (in)	ORIFICE DIAMETER (in)
SK-1***	PERMANENT RISER BASIN	2.13	1.98	3834	3	-	-	20504	0.50	7.19	7.66	2489	8719	1.5	0.7	1.3
*050711500																

*DEPTH FROM BOTTOM TO RISER TOP

SKIMMER SIZED PER SIZING CALCULATOR AT WWW.FAIRCLOTHSKIMMER.COM FOR REQUIRED VOLUME AT A DRAWDOWN RATE OF 72 HOURS *SK-1 VOLUME AND SURFACE AREA PER HYDROCAD MODEL DUE TO IRREGULAR SHAPE

	TEMPORARY DIVERSION DITCH DESIGN																
DITCH NUMBER	RUNOFF COEFFICIENT	10-YEAR RAINFALL INTENSITY (in/hr)	DRAINAGE AREA (acres)	Q (cfs)	LENGTH (ft)	CHANNEL SECTION	BOTTOM WIDTH (ft)	LEFT SIDE SLOPE, Z:1 (ft)	RIGHT SIDE SLOPE, Z:1 (ft)	CHANNEL DEPTH (ft)	CHANNEL SLOPE (ft/ft)	NORMAL DEPTH (ft)	FREEBOARD (ft)	SHEAR STRESS (lb/ft2)	VELOCITY (fps)	MANNING'S n VALUE	TEMPORARY LINER
TD-1	0.50	7.19	0.98	3.52	200.00	TRIANGULAR	-	2.00	2.00	1.50	0.005	0.98	0.52	0.31	1.83	0.033	STRAW W/ NET

	BOUYANCY	CALCULA	FIONS	
	STORMWA		AND	
	RE DIMENSIONS			
	JTLET STRUCTURE =	416.00	ft	
BOTTOM =		413.00	ft	
HEIGHT OF		3.00	ft	
ASSUME 6'	' WALL THICKNESS			
WEIGHT C	ALCULATIONS			
Vbase =	0' x 0' x 0' =		0.00	cf
Wbase =	0 cf x 150 lb/cf =		0.00	lbs
Vsump =	4' x 4' x 2' =		32.00	cf
Wsump =	32 cf x 150 lb/cf =		4800.00	lbs
Wstruc =	[(5 x 5 x 3)-(4 x 4 x 2.5)] ;	x 150 lb/cf =	5250.00	lbs
TOTAL WE	IGHT =		10050.00	lbs
BOUYANC	Y CALCULATIONS			
Bbase =	0 cf x 62.4 lb/cf =		0.00	lbs
Bstruc =	(5 x 5 x 3) x 62.4 lb/cf		4680.00	lbs
TOTAL BOU	JYANCY =		4680.00	lbs
FACTOR O	F SAFETY =		2.15	

CALL 48 HOURS BEFORE YOU DIG



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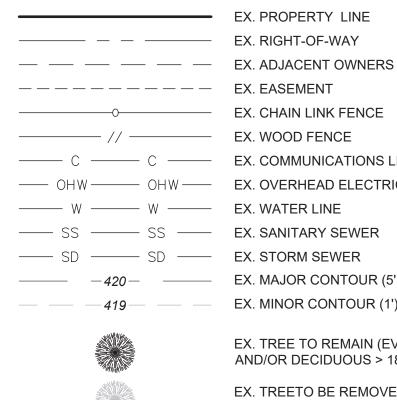
	ENGINEERING							
	POST OFFICE BOX 91727 RALEIGH, NORTH CAROLINA 27675 PHONE: 919.610.1051 FIRM NC LICENSE NUMBER C-4222							
	CAROLINA CAROLINA CAROLINA CONSCIENCE CONSCI							
		REVIS	ION HISTO	RY				
	REV	DESCRIP		DATE	BY			
	#	TRC COM	MENTS	7/29/2024	FLM			
	2	TRC COM		10/29/2024	FLM			
	3	TRC COM	MENTS	1/2/2025	FLM			
	4		MENTS	1/23/2025	FLM			
	5	SIGNATUF	RESET	2/17/2025	FLM			
		ORIGINAL P	LAN SIZE: 2	24" X 36"				
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		ROLESVI	LLE, NC	27571				
	OPTIMAL GLO LLC							
		DATE: SCALE:		6-03-2024 S SHOWN				
	DESIGNED BY: FLM							
	APPROVED BY: FLM							
	PROJECT NO.: 24028							
		CALC	ULATIC	NS				
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ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH AND WAKE COUNTY STANDARDS AND SPECIFICATIONS

NOTES

- 1. BOUNDARY AND TOPOGRAPHIC SURVEY BY CMP PROFESSIONAL LAND SURVEYORS.
- 2. THERE ARE NO FLOOD PRONE AREAS PRESENT PER FEMA FIRM PANEL NO. 3720175800K, EFFECTIVE 07/19/22.
- 3. TREE SURVEY BY SOIL & ENVIRONMENTAL CONSULTANTS, PA (S&EC).
- 4. THE UTILITIES SHOWN ARE NOT GUARANTEED TO BE A REPRESENTATION OF ALL UTILITIES WITHIN THE PROJECT EXTENT.
- 5. THE CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL-CENTER AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
- 6. THE CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS OF ALL UTILITIES PRIOR TO BEGINNING WORK AND SHALL USE CARE WHEN OPERATING AROUND EXISTING UTILITIES.
- 7. THE CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR THE REPAIR OF ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.

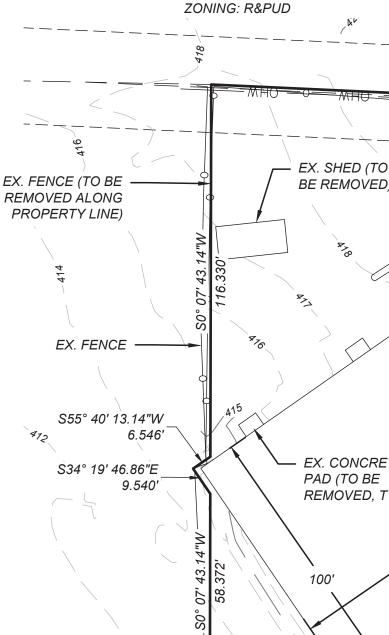
LEGEND



EX. PROPERTY LINE EX. RIGHT-OF-WAY EX. CHAIN LINK FENCE C C C EX. COMMUNICATIONS LINE ----- OHW ----- EX. OVERHEAD ELECTRIC LINE EX. MAJOR CONTOUR (5') EX. MINOR CONTOUR (1') EX. TREE TO REMAIN (EVERGREEN > 20" AND/OR DECIDUOUS > 18" DBH)

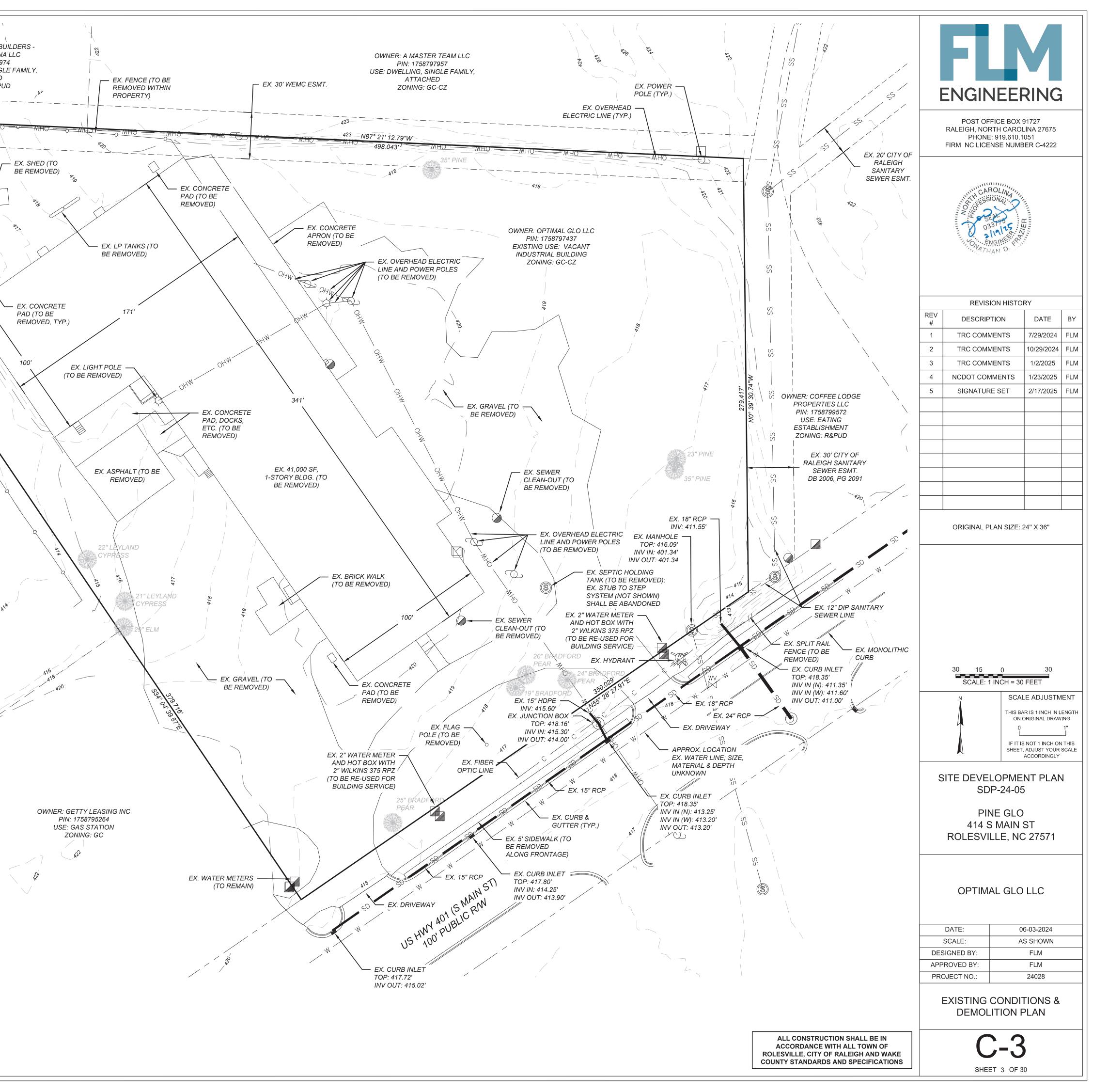


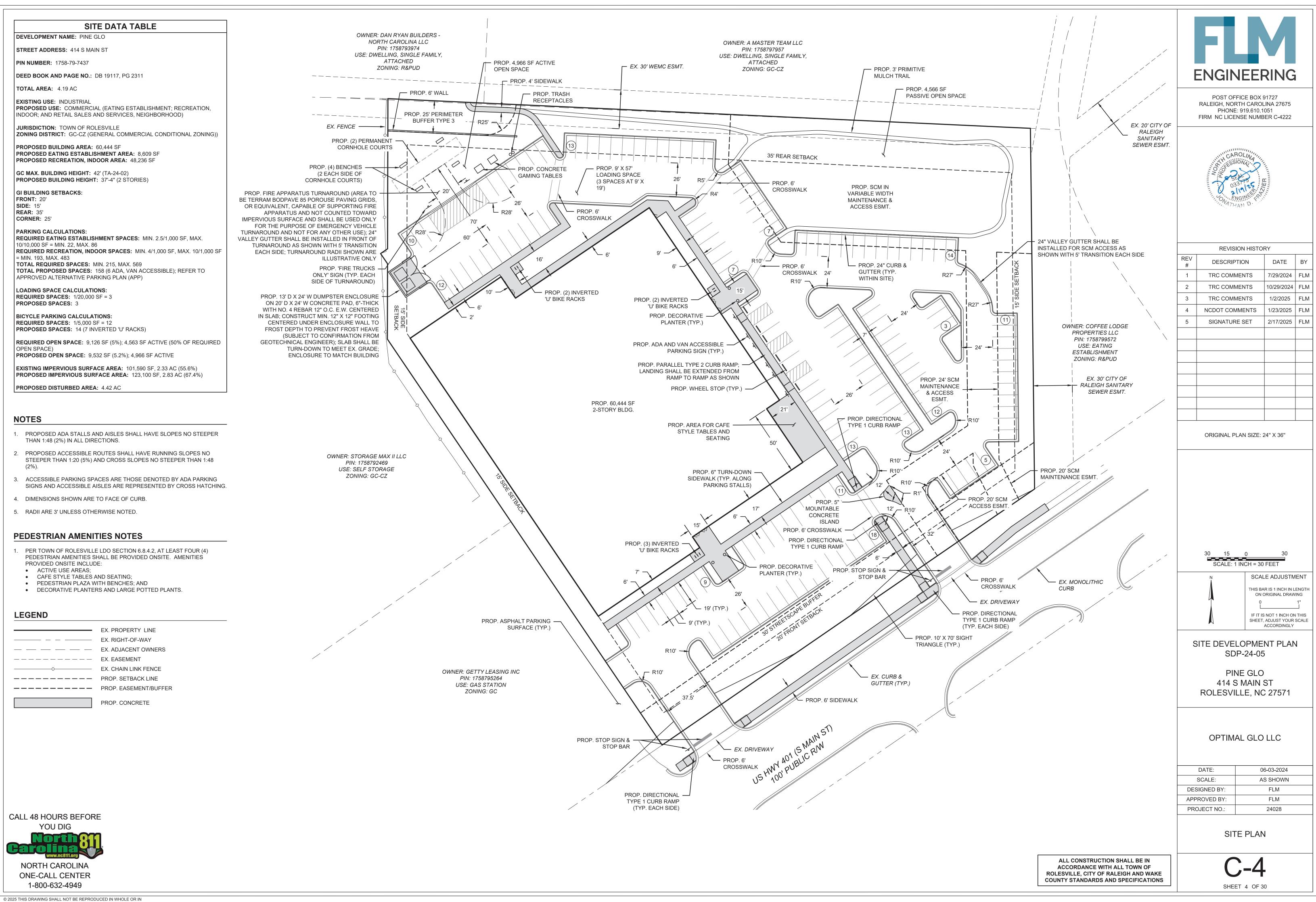
OWNER: DAN RYAN BUILDERS -NORTH CAROLINA LLC PIN: 1758793974 USE: DWELLING, SINGLE FAMILY, ATTACHED



OWNER: STORAGE MAX II LLC PIN: 1758792469 USE: SELF STORAGE ZONING: GC-CZ







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CITY OF RALEIGH STANDARD UTILITY NOTES (AS APPLICABLE)

- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION).
- UTILITY SEPARATION REQUIREMENTS:

 A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE
- LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLICWELL.
 B. WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
- C. WHERE IT ISIMPOSSIBLE TO OBTAIN PROPERSEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
- D. 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER
 E. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED,
- SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W- 41 & S-49).
 F. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
- 4. DEVELOPER SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO OWNER FOR ANY WORK REQUIRED WITHIN AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVERSING PRIVATE PROPERTY.
- 5. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24-HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.
- 6. SEWER BYPASS PUMPING A BYPASS PLAN SEALED BY AN NC PROFESSIONAL ENGINEER SHALL BE PROVIDED TO RALEIGH WATER PRIOR TO PUMPING OPERATIONS FOR APPROVAL. THE OPERATIONS AND EQUIPMENT SHALL COMPLY WITH THE PUBLIC UTILITIES HANDBOOK.
- 7. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
- 8. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
- 9. INSTALL ¾" COPPER* WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
- 10. INSTALL 4" PVC* SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
- 11. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAMMANHOLE.
- 12. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
- NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
- 14. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE RW FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A UC AND/OR BUILDING PERMIT. CONTACT (919) 996-4516 OR FOG@RALEIGHNC.GOV FOR MORE INFORMATION.
- 15. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON THE DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA.
- 16. THE DEVICES SHALL MEET THE AMERICAN SOCIETY OF SANITARY ENGINEERING (SAAE) STANDARDS AND BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST.
- 17. THE DEVICE AND INSTALLATION SHALL MEE THE GUIDELINES OF APPENDIX A GUIDELINES AND REQUIREMENTS FOR THE CROSS CONNECTION PROGRAM IN RALEIGH'S SERVICE AREA.
- 18. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH, INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT CROSS.CONNECTION@RALEIGHNC.GOV FOR MORE INFORMATION.
- 19. NOTICE FOR PROJECTS THAT INVOLVE AN OVERSIZED MAIN OR URBAN MAIN REPLACEMENT. ANY CITY REIMBURSEMENT GREATER THAN \$250,000.00 MUST UNDERGO THE PUBLIC BIDDING PROCESS.

NOTES

- 1. ALL WATER AND SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
- 2. THE UTILITIES SHOWN ARE NOT GUARANTEED TO BE A REPRESENTATION OF ALL UTILITIES WITHIN THE PROJECT EXTENT.
- THE CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL-CENTER AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
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- 5. THE CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR THE REPAIR OF ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.

OWNER: DAN RYAN BUILDERS -NORTH CAROLINA LLC PIN: 1758793974 USE: DWELLING, SINGLE FAMILY, ATTACHED ZONING: R&PUD

EX. FENCE -----

PROP. 13' D X 24' W DUMPSTER ENCLOSURE ON 20' D X 24' W CONCRETE PAD, 6"-THICK WITH NO. 4 REBAR 12" O.C. E.W. CENTERED IN SLAB; CONSTRUCT MIN. 12" X 12" FOOTING CENTERED UNDER ENCLOSURE WALL TO FROST DEPTH TO PREVENT FROST HEAVE (SUBJECT TO CONFIRMATION FROM GEOTECHNICAL ENGINEER); SLAB SHALL BE TURN-DOWN TO MEET EX. GRADE; ENCLOSURE TO MATCH BUILDING

> OWNER: STORAGE MAX II LLC PIN: 1758792469 USE: SELF STORAGE ZONING: GC-CZ

LEGEND

──── C ──── C ──── ─── OHW ─── OHW ─── ─── W ──── W ──── ─── SS ─── SS ─── ── SD ─── SD ───
W W SS SS

EX. PROPERTY LINE EX. RIGHT-OF-WAY EX. ADJACENT OWNERS EX. EASEMENT EX. CHAIN LINK FENCE EX. COMMUNICATIONS LINE EX. OVERHEAD ELECTRIC LINE EX. WATER LINE EX. WATER LINE EX. SANITARY SEWER EX. STORM SEWER PROP. SETBACK LINE PROP. EASEMENT/BUFFER

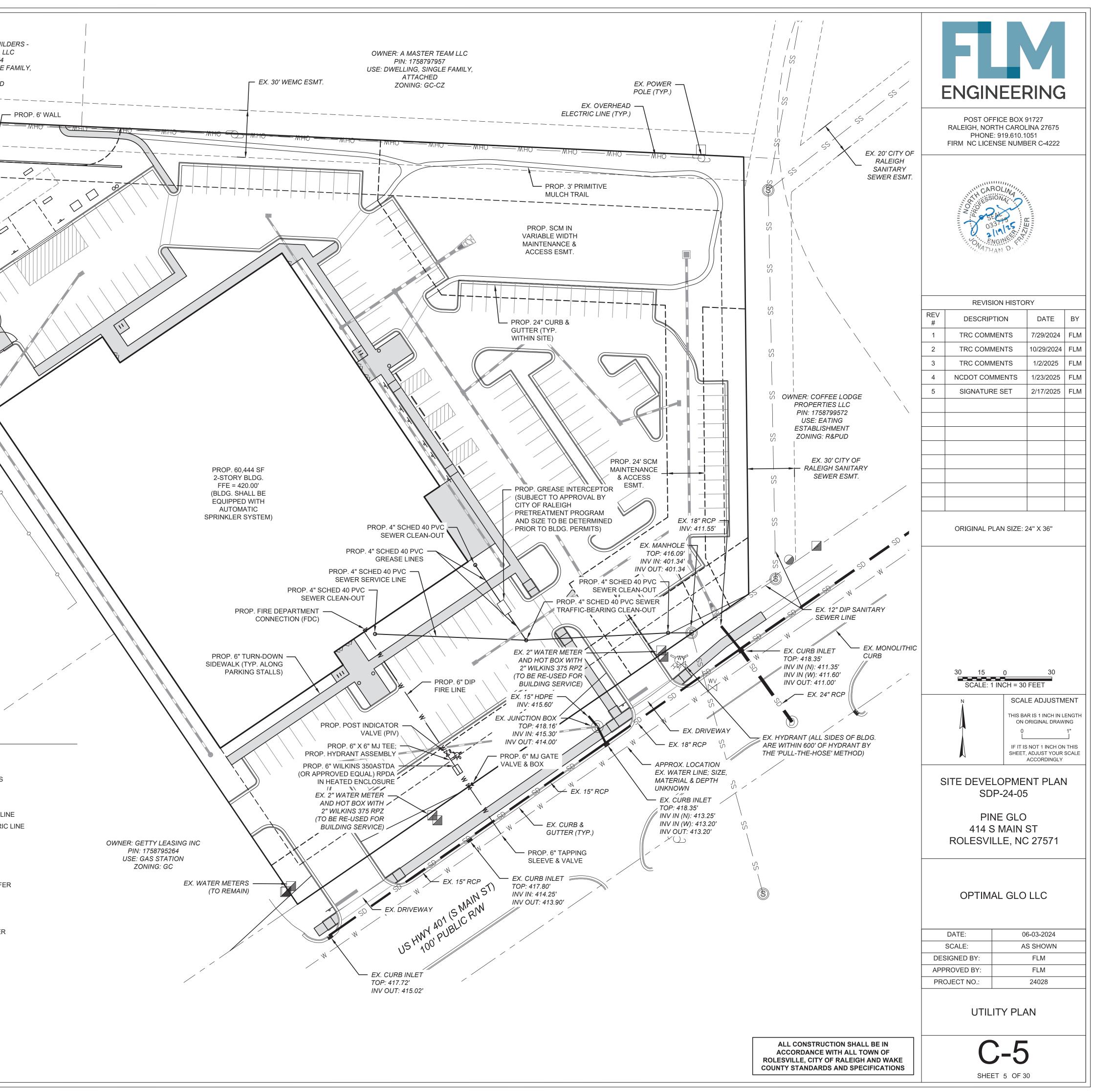
PROP. CONCRETE

PROP. WATER LINE PROP. SANITARY SEWER PROP. STORM SEWER

CALL 48 HOURS BEFORE YOU DIG

1-800-632-4949

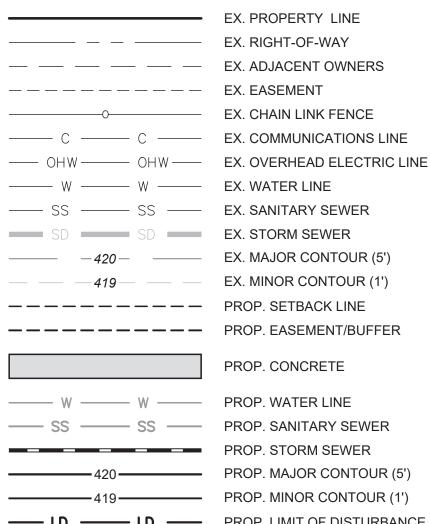
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NOTES

- 1. PROPOSED CONTOURS REPRESENT FINISHED GRADE ELEVATIONS.
- 2. CUT AND FILL SLOPES ARE 3H:1V UNLESS OTHERWISE NOTED.
- 3. PROPOSED ADA STALLS AND AISLES SHALL HAVE SLOPES NO STEEPER THAN 1:48 (2%) IN ALL DIRECTIONS.
- 4. PROPOSED ACCESSIBLE ROUTES SHALL HAVE RUNNING SLOPES NO STEEPER THAN 1:20 (5%) AND CROSS SLOPES NO STEEPER THAN 1:48 (2%).
- 5. REFER TO SHEET C-2 FOR STORM DRAINAGE CALCULATIONS.
- 6. ROOF DRAINS SHALL BE COORDINATED WITH BUILDING PLANS AND SHALL BE CONNECTED TO DOWNSPOUTS WITH APPROPRIATE BEND FITTINGS AND CONNECTED TO THE STORM DRAINAGE SYSTEM VIA CURRENT NC PLUMBING CODE, CHAPTER 11 "STORM DRAINAGE" COMPLIANT FIXTURES, MATERIALS, ETC.
- 7. THE UTILITIES SHOWN ARE NOT GUARANTEED TO BE A REPRESENTATION OF ALL UTILITIES WITHIN THE PROJECT EXTENT.
- 8. THE CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL-CENTER AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
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LEGEND



- EX. PROPERTY LINE EX. RIGHT-OF-WAY EX. ADJACENT OWNERS EX. CHAIN LINK FENCE — W — EX. WATER LINE EX. STORM SEWER EX. MAJOR CONTOUR (5') EX. MINOR CONTOUR (1') PROP. CONCRETE PROP. WATER LINE
- PROP. SANITARY SEWER PROP. STORM SEWER PROP. MAJOR CONTOUR (5') PROP. MINOR CONTOUR (1')

+ 0.4%

86

<u>417.</u> 417.

1+00 1+25

- EX. GRADE

STATION

SW DRIVEWAY PROFILE

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

PROP.

CROSSWALK

1 1%

PROP. GRADE

420-

415

ទាន

419. 419.

0+00

ELEVATION

LOCATION



- FES = FLARED END SECTION
- JB = JUNCTION BOX
- YI = YARD INLET
- TC = TOP OF CURB BC = BOTTOM OF CURB

OWNER: DAN RYAN BUILDERS -NORTH CAROLINA LLC PIN: 1758793974 USE: DWELLING, SINGLE FAMILY, ATTACHED

ZONING: R&PUD 24" VALLEY GUTTER SHALL -**BE INSTALLED 5'** TRANSITION EACH SIDE

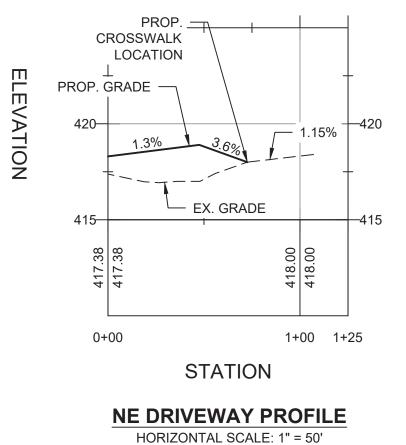
EX. FENCE

PROP. 2H:1V SLOPE

PROP. 13' D X 24' W DUMPSTER ENCLOSURE ON 20' D X 24' W CONCRETE PAD, 6"-THICK WITH NO. 4 REBAR 12" O.C. E.W. CENTERED IN SLAB; CONSTRUCT MIN. 12" X 12" FOOTING CENTERED UNDER ENCLOSURE WALL TO FROST DEPTH TO PREVENT FROST HEAVE (SUBJECT TO CONFIRMATION FROM GEOTECHNICAL ENGINEER); SLAB SHALL BE TURN-DOWN TO MEET EX. GRADE; FES-5 ENCLOSURE TO MATCH BUILDING

> PROP. 2H:1V SLOPE

OWNER: STORAGE MAX II LLC PIN: 1758792469 USE: SELF STORAGE ZONING: GC-CZ



VERTICAL SCALE: 1" = 5'

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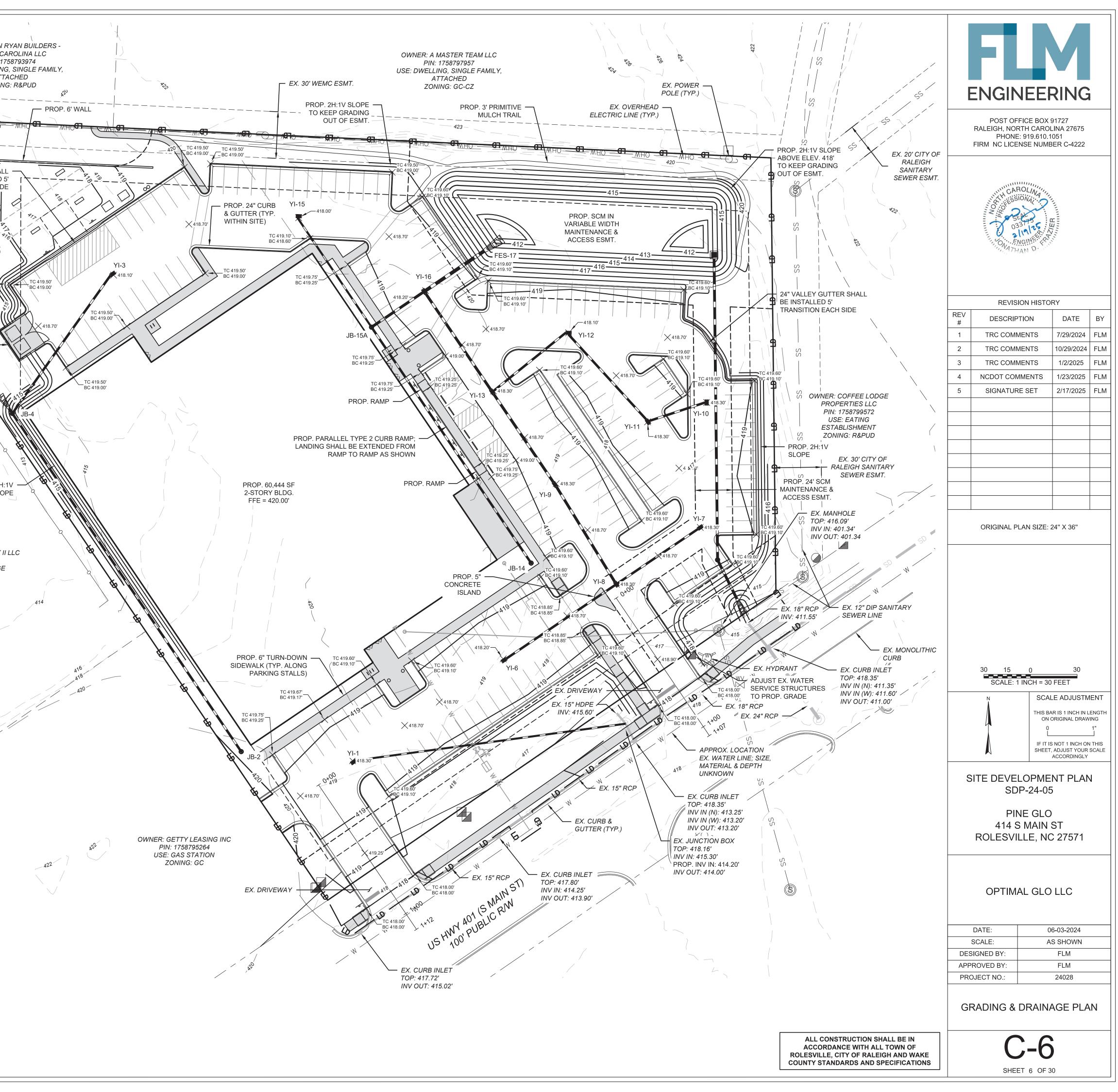
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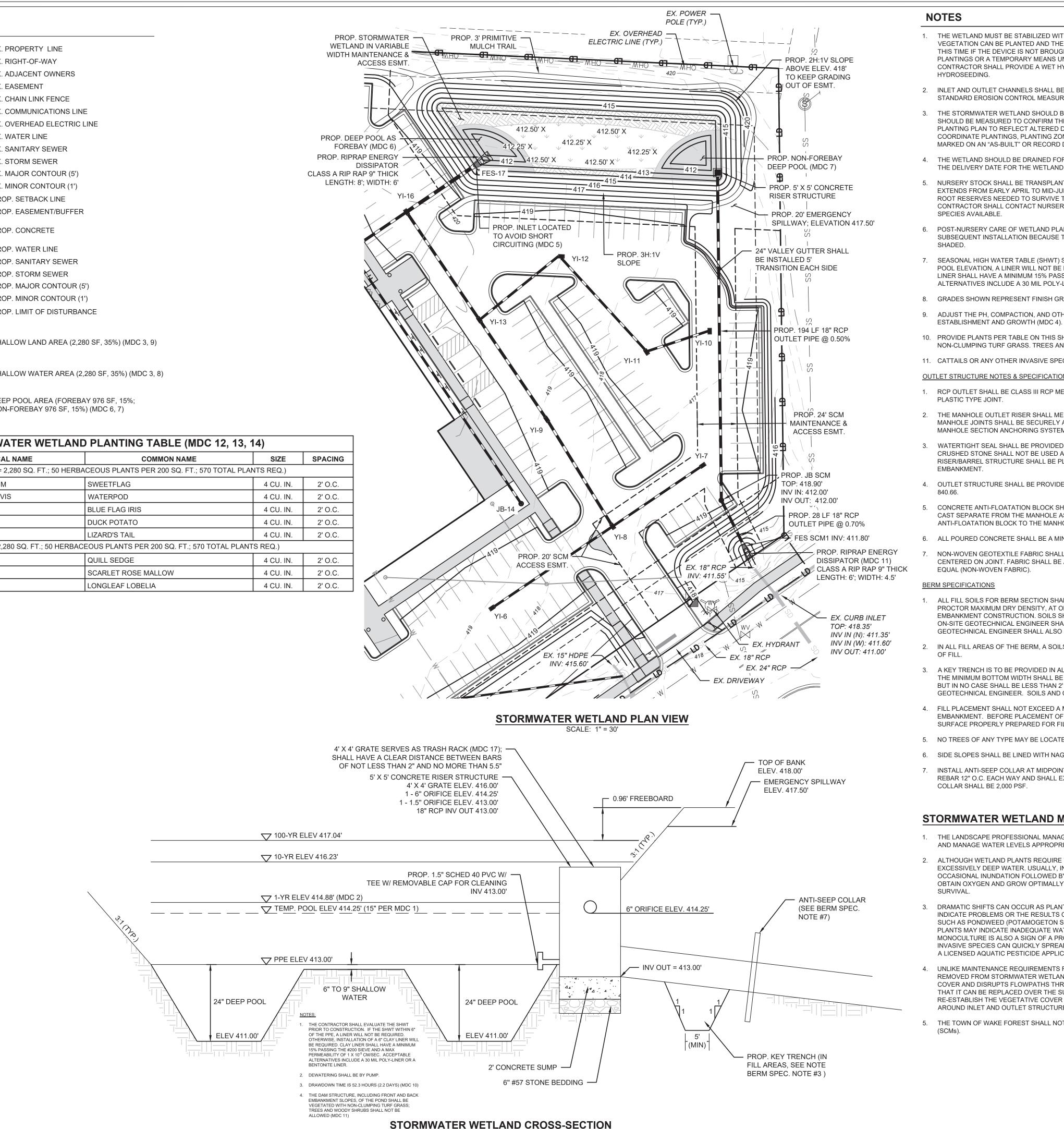
ONE-CALL CENTER

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	EX. PROPERTY LINE	PROP. STORMWAT WETLAND IN VARIAE
	EX. RIGHT-OF-WAY	WIDTH MAINTENANC
		ACCESS ESI
	 EX. ADJACENT OWNERS EX. EASEMENT 	
	EX. CHAIN LINK FENCE	Į į
— C — C -		
	EX. WATER LINE	PROP. DEEP POOL AS FOREBAY (MDC 6)
	EX. SANITARY SEWER	PROP. RIPRAP ENERGY
SD SD		
	EX. MAJOR CONTOUR (5')	CLASS A RIP RAP 9" THICK LENGTH: 8'; WIDTH: 6'
— 419— —		
	PROP. SETBACK LINE	/
	PROP. EASEMENT/BUFFER	
	PROP. CONCRETE	
— W — — W -		
- SS —— SS		
		E b
420	PROP. MAJOR CONTOUR (5')	
419	PROP. MINOR CONTOUR (1')	
– LD —— LD	PROP. LIMIT OF DISTURBANCE	
	SHALLOW LAND AREA (2,280 SF, 35%) (MDC 3, 9)	
	SHALLOW WATER AREA (2,280 SF, 35%) (MDC 3, 8)	
	DEEP POOL AREA (FOREBAY 976 SF, 15%; NON-FOREBAY 976 SF, 15%) (MDC 6, 7)	

STORMWATER WETLAND PLANTING TABLE (MDC 12, 13, 14)					
QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	
SHALLOW WA	ATER PLANTINGS (AREA = 2,280 SQ. FT.; 50 HERBA	ACEOUS PLANTS PER 200 SQ. FT.; 570 TOTAL PLA	NTS REQ.)		
114	ACORUS SUBCORDATUM	SWEETFLAG	4 CU. IN.	2' O.C.	
114	HYDROLEA QUADRIVALVIS	WATERPOD	4 CU. IN.	2' O.C.	
114	IRIS VIRGINICA	BLUE FLAG IRIS	4 CU. IN.	2' O.C.	
114	SAGITTARIA LATIFOLIA	DUCK POTATO	4 CU. IN.	2' O.C.	
114	SAURURUS CERNUUS	LIZARD'S TAIL	4 CU. IN.	2' O.C.	
SHALLOW LAND PLANTINGS (AREA = 2,280 SQ. FT.; 50 HERBACEOUS PLANTS PER 200 SQ. FT.; 570 TOTAL PLANTS REQ.)					
190	CAREX TENERA	QUILL SEDGE	4 CU. IN.	2' O.C.	
190	HIBISCUS COCCINEUS	SCARLET ROSE MALLOW	4 CU. IN.	2' O.C.	
190	LOBELIA ELONGATA	LONGLEAF LOBELIA	4 CU. IN.	2' O.C.	



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STORMWATER WETLAND CROSS-SECTION NOT TO SCALE

- EQUAL (NON-WOVEN FABRIC). BERM SPECIFICATIONS
- OF FILL.
- SURFACE PROPERLY PREPARED FOR FILL PLACEMENT.

- COLLAR SHALL BE 2,000 PSF.

STORMWATER WETLAND MAINTENANCE NOTES

- SURVIVAL.
- AROUND INLET AND OUTLET STRUCTURES.
- (SCMs).

THE WETLAND MUST BE STABILIZED WITHIN 14 DAYS OF CONSTRUCTION. CONSTRUCTION SHALL BE SEQUENCED SO THAT VEGETATION CAN BE PLANTED AND THE WETLAND BROUGHT ONLINE WITHIN 14 DAYS. PLANTS MAY NEED TO BE WATERED DURING THIS TIME IF THE DEVICE IS NOT BROUGHT ONLINE THE SAME DAY. STABILIZATION MAY BE IN THE FORM OF FINAL VEGETATION PLANTINGS OR A TEMPORARY MEANS UNTIL THE VEGETATION BECOMES ESTABLISHED. IF USING A TEMPORARY MEANS, CONTRACTOR SHALL PROVIDE A WET HYDROSEED MIX. CONTRACTOR SHALL SCARIFY THE SOIL TO A HALF-INCH PRIOR TO

2. INLET AND OUTLET CHANNELS SHALL BE PROTECTED FROM SCOUR THAT MAY OCCUR DURING PERIODS OF HIGH FLOW. STANDARD EROSION CONTROL MEASURES SHOULD BE USED.

3. THE STORMWATER WETLAND SHOULD BE STAKED AT THE ONSET OF THE PLANTING SEASON. WATER DEPTHS IN THE WETLAND SHOULD BE MEASURED TO CONFIRM THE ORIGINAL PLANTING ZONES. AT THIS TIME, IT MAY BE NECESSARY TO MODIFY THE PLANTING PLAN TO REFLECT ALTERED DEPTHS OR THE AVAILABILITY OF WETLAND PLANT STOCK. CONTRACTOR SHALL COORDINATE PLANTINGS, PLANTING ZONES AND WATER DEPTHS WITH THE ENGINEER. SURVEYED PLANTING ZONES SHOULD BE MARKED ON AN "AS-BUILT" OR RECORD DESIGN PLAN AND LOCATED IN THE FIELD USING STAKES OR FLAGS.

4. THE WETLAND SHOULD BE DRAINED FOR NO MORE THAN 3 DAYS PRIOR TO THE PLANTING DATE (WHICH SHOULD COINCIDE WITH THE DELIVERY DATE FOR THE WETLAND PLANT STOCK) TO PRESERVE SOIL MOISTURE AND WORKABILITY.

5. NURSERY STOCK SHALL BE TRANSPLANTED FROM LOCAL AQUATIC PLANT NURSERIES. THE OPTIMAL PERIOD FOR TRANSPLANTING EXTENDS FROM EARLY APRIL TO MID-JUNE SO THAT THE WETLAND PLANTS WILL HAVE A FULL GROWING SEASON TO BUILD THE ROOT RESERVES NEEDED TO SURVIVE THE WINTER. HOWEVER, SOME SPECIES MAY BE PLANTED SUCCESSFULLY IN EARLY FALL. CONTRACTOR SHALL CONTACT NURSERY WELL IN ADVANCE OF CONSTRUCTION TO ENSURE THAT THEY WILL HAVE THE DESIRED

6. POST-NURSERY CARE OF WETLAND PLANTS IS VERY IMPORTANT IN THE INTERVAL BETWEEN DELIVERY OF THE PLANTS AND THEIR SUBSEQUENT INSTALLATION BECAUSE THEY ARE PRONE TO DESICCATION. STOCK SHOULD BE FREQUENTLY WATERED AND

SEASONAL HIGH WATER TABLE (SHWT) SHALL BE EVALUATED PRIOR TO CONSTRUCTION. IF SHWT IS WITHIN 6" OF PERMANENT POOL ELEVATION, A LINER WILL NOT BE REQUIRED. OTHERWISE, INSTALLATION OF A 6" CLAY LINER WILL BE REQUIRED. CLAY LINER SHALL HAVE A MINIMUM 15% PASSING THE #200 SIEVE AND A MAX PERMEABILITY OF 1 X 10⁻⁵ CM/SEC. ACCEPTABLE ALTERNATIVES INCLUDE A 30 MIL POLY-LINER OR A BENTONITE LINER.

8. GRADES SHOWN REPRESENT FINISH GRADE ELEVATIONS. TO ACHIEVE FINISH GRADE ELEVATIONS, INSTALL 4" OF TOPSOIL. 9. ADJUST THE PH, COMPACTION, AND OTHER ATTRIBUTES OF THE FIRST 12" DEPTH OF THE SOIL IF NECESSARY TO PROMOTE PLANT

10. PROVIDE PLANTS PER TABLE ON THIS SHEET. DAM STRUCTURE AND PERIMETER FILL SLOPES SHALL BE PLANTED WITH NON-CLUMPING TURF GRASS. TREES AND WOODY SHRUBS NOT ALLOWED (MDC 15).

11. CATTAILS OR ANY OTHER INVASIVE SPECIES SHALL NOT BE PLANTED IN WETLAND (MDC 16).

OUTLET STRUCTURE NOTES & SPECIFICATIONS

1. RCP OUTLET SHALL BE CLASS III RCP MEETING REQUIREMENTS OF ASTM C76. THE PIPE JOINTS SHALL BE MORTAR OR FLEXIBLE

2. THE MANHOLE OUTLET RISER SHALL MEET ASTM C-913. THE MANHOLE JOINTS SHALL BE ASTM C-443 RUBBER GASKET JOINTS. MANHOLE JOINTS SHALL BE SECURELY ANCHORED TO PREVENT SEPARATION. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF THE MANHOLE SECTION ANCHORING SYSTEM.

3. WATERTIGHT SEAL SHALL BE PROVIDED AT RISER/BARREL INTERFACE. PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE SHALL NOT BE USED AS BACKFILL AROUND THE PIPE OR ANTI-SEEP COLLAR. FILL MATERIAL AROUND THE RISER/BARREL STRUCTURE SHALL BE PLACED IN 4" LAYERS AND COMPACTED TO THE SAME DENSITY AS THE ADJACENT

4. OUTLET STRUCTURE SHALL BE PROVIDED WITH STEPS 1'-2" ON CENTER. STEPS SHALL BE IN ACCORDANCE WITH NCDOT STD.

5. CONCRETE ANTI-FLOATATION BLOCK SHALL BE PRECAST DURING FABRICATION. IF THE CONCRETE ANTI-FLOATATION BLOCK IS CAST SEPARATE FROM THE MANHOLE ASSEMBLY THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANCHORING THE ANTI-FLOATATION BLOCK TO THE MANHOLE RISER ASSEMBLY.

6. ALL POURED CONCRETE SHALL BE A MINIMUM 3,000 PSI (28 DAY) UNLESS OTHERWISE NOTED.

NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED AROUND EACH JOINT OF THE RCP OUTLET BARREL IN 2' WIDE STRIPS CENTERED ON JOINT. FABRIC SHALL BE AMOCO STYLE 4553 POLYPROPYLENE NON-WOVEN NEEDLE PUNCHED OR APPROVED

1. ALL FILL SOILS FOR BERM SECTION SHALL BE CLEAN, IMPERMEABLE MATERIAL AND COMPACTED TO AT LEAST 98% STANDARD PROCTOR MAXIMUM DRY DENSITY, AT OPTIMUM MOISTURE CONTENT. NO BLASTED MATERIALS SHALL BE USED IN THE EMBANKMENT CONSTRUCTION. SOILS SHALL NOT EXHIBIT SIGNIFICANT SHRINK/SWELL OR DISPERSIVE CHARACTERISTICS. THE ON-SITE GEOTECHNICAL ENGINEER SHALL APPROVE THE SOILS FOR PLACEMENT WITHIN THE BERM SECTION. THE GEOTECHNICAL ENGINEER SHALL ALSO SPECIFY THE METHODS TO BE USED FOR PLACEMENT OF FILL.

2. IN ALL FILL AREAS OF THE BERM, A SOILS COMPACTION TEST SHALL BE CONDUCTED EACH 2.500 SQUARE FEET PER VERTICAL CUT

A KEY TRENCH IS TO BE PROVIDED IN ALL FILL AREAS. TRENCH TO EXTEND A MINIMUM OF TWO FEET BELOW EXISTING GRADE. THE MINIMUM BOTTOM WIDTH SHALL BE WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT, BUT IN NO CASE SHALL BE LESS THAN 2' WIDE. CONTRACTOR SHALL CONFIRM KEY TRENCH DEPTH AND WIDTH WITH THE ON-SITE GEOTECHNICAL ENGINEER. SOILS AND COMPACTION FOR KEY TRENCH SHALL MEET ALL REQUIREMENTS OF #1 ABOVE.

4. FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM OF 8" LIFTS. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF EMBANKMENT. BEFORE PLACEMENT OF FILL FOR THE BERM SECTION, ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND THE

5. NO TREES OF ANY TYPE MAY BE LOCATED ON THE BERM SECTION.

6. SIDE SLOPES SHALL BE LINED WITH NAG S75, OR APPROVED EQUAL

7. INSTALL ANTI-SEEP COLLAR AT MIDPOINT OF OUTLET PIPE. CONCRETE SHALL BE 3,000 PSI (28 DAYS) AND REINFORCED WITH #4 REBAR 12" O.C. EACH WAY AND SHALL EXTEND AT LEAST 8" AROUND ALL SIDES OF PIPE. MINIMUM BEARING CAPACITY BENEATH

1. THE LANDSCAPE PROFESSIONAL MANAGING THE WETLAND MUST UNDERSTAND THE BIOLOGICAL REQUIREMENTS OF THE PLANTS AND MANAGE WATER LEVELS APPROPRIATELY TO PROVIDE FOR THEIR NEEDS.

ALTHOUGH WETLAND PLANTS REQUIRE WATER FOR GROWTH AND REPRODUCTION, THEY CAN BE KILLED BY DROWNING IN EXCESSIVELY DEEP WATER. USUALLY, INITIAL GROWTH IS BEST WITH TRANSPLANTED PLANTS IN WET, WELL-AERATED SOIL. OCCASIONAL INUNDATION FOLLOWED BY EXPOSURE TO AIR OF THE MAJORITY OF THE VEGETATION ENABLES THE PLANTS TO OBTAIN OXYGEN AND GROW OPTIMALLY. CONVERSELY, FREQUENT SOIL SATURATION IS IMPORTANT FOR WETLAND PLANT

DRAMATIC SHIFTS CAN OCCUR AS PLANT SUCCESSION PROCEEDS. THE PLANT COMMUNITY REFLECTS MANAGEMENT AND CAN INDICATE PROBLEMS OR THE RESULTS OF IMPROVEMENTS. FOR EXAMPLE, A REQUIREMENT OF SUBMERGED AQUATIC PLANTS, SUCH AS PONDWEED (POTAMOGETON SPP.), IS LIGHT PENETRATION INTO THE WATER COLUMN. THE DISAPPEARANCE OF THESE PLANTS MAY INDICATE INADEQUATE WATER CLARITY. THE APPEARANCE OF INVASIVE SPECIES OR DEVELOPMENT OF A MONOCULTURE IS ALSO A SIGN OF A PROBLEM WITH THE AQUATIC/SOIL/VEGETATIVE REQUIREMENTS. FOR INSTANCE, MANY INVASIVE SPECIES CAN QUICKLY SPREAD AND TAKE OVER A WETLAND. IF CATTAILS BECOME INVASIVE, THEY CAN BE REMOVED BY A LICENSED AQUATIC PESTICIDE APPLICATOR BY WIPING AQUATIC GLYPHOSATE, A SYSTEMIC HERBICIDE, ON THE CATTAILS.

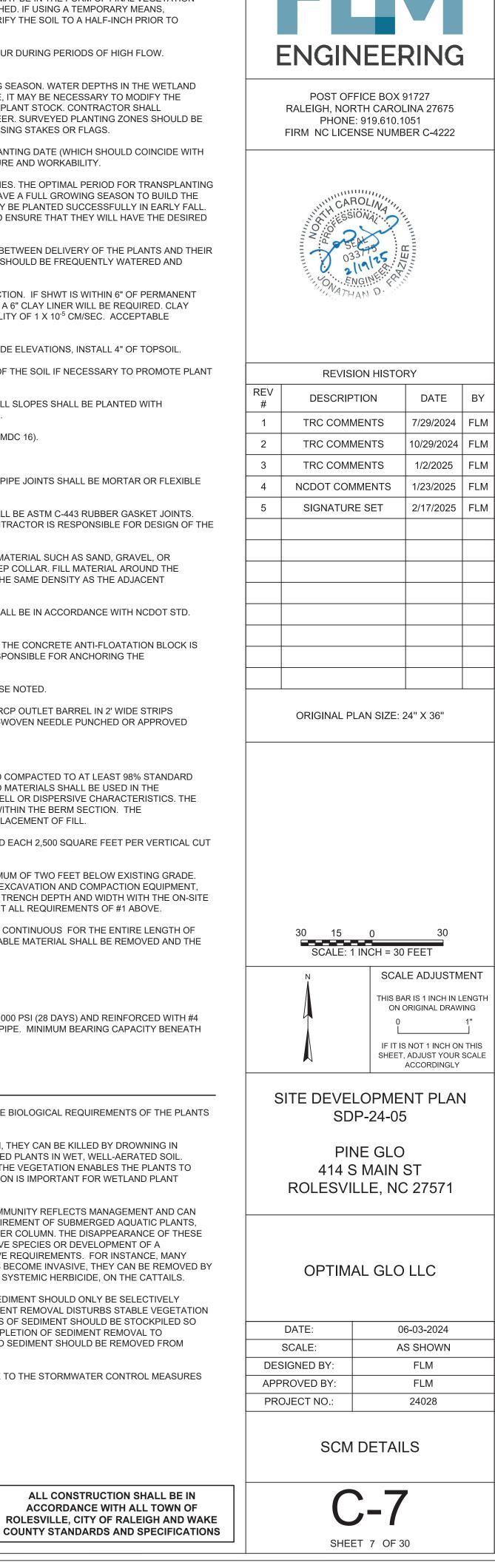
UNLIKE MAINTENANCE REQUIREMENTS FOR WET OR DRY STORMWATER PONDS, SEDIMENT SHOULD ONLY BE SELECTIVELY REMOVED FROM STORMWATER WETLANDS, PRIMARILY FROM THE FOREBAY.SEDIMENT REMOVAL DISTURBS STABLE VEGETATION COVER AND DISRUPTS FLOWPATHS THROUGH THE WETLAND. THE TOP FEW INCHES OF SEDIMENT SHOULD BE STOCKPILED SO THAT IT CAN BE REPLACED OVER THE SURFACE OF THE WETLAND AFTER THE COMPLETION OF SEDIMENT REMOVAL TO RE-ESTABLISH THE VEGETATIVE COVER USING ITS OWN SEED BANK. ACCUMULATED SEDIMENT SHOULD BE REMOVED FROM

5. THE TOWN OF WAKE FOREST SHALL NOT BE RESPONSIBLE FOR ANY MAINTENANCE TO THE STORMWATER CONTROL MEASURES

ALL CONSTRUCTION SHALL BE IN

ACCORDANCE WITH ALL TOWN OF

ROLESVILLE, CITY OF RALEIGH AND WAKE



WAKE COUNTY CONSTRUCTION SEQUENCE

SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT. OBTAIN A LAND-DISTURBING PERMIT.

PHASE 1

- 2. INSTALL GRAVEL CONSTRUCTION PADS, TEMPORARY DIVERSION, SILT FENCE, SKIMMER SEDIMENT BASIN OR OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS AND BASIN IMMEDIATELY AFTER CONSTRUCTION.
- 3. CALL WAKE COUNTY FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT TO OBTAIN A CERTIFICATE OF COMPLIANCE.
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EROSION CONTROL NOTES

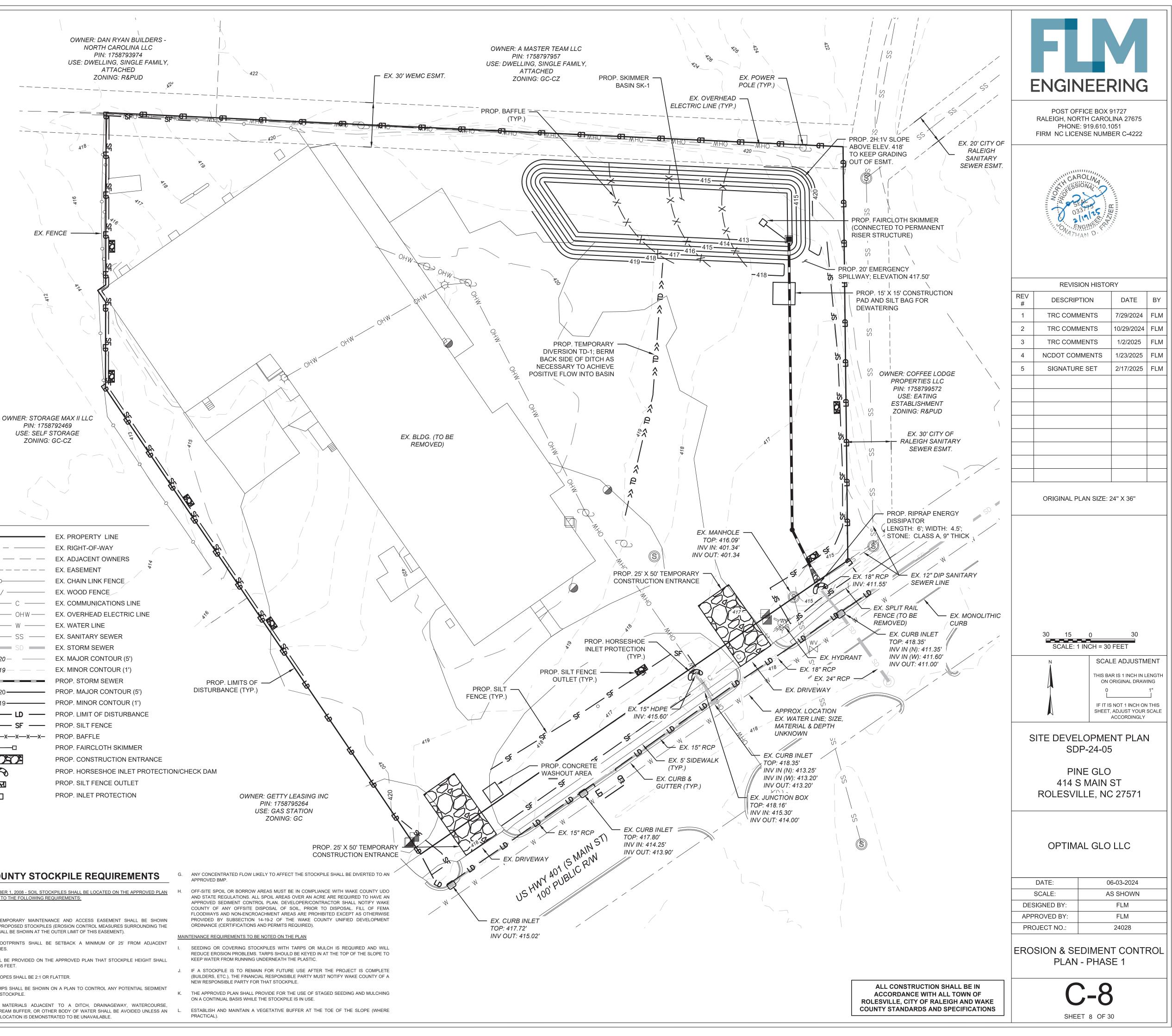
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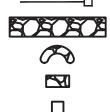


PIN: 1758793974 ATTACHED



LEGEND

	EX. PROPERTY LINE
	EX. RIGHT-OF-WAY
	EX. ADJACENT OWNERS
	EX. EASEMENT
	EX. CHAIN LINK FENCE
//	EX. WOOD FENCE
C C	EX. COMMUNICATIONS LIN
—— OHW —— OHW ——	EX. OVERHEAD ELECTRIC
——— W ——— W ———	EX. WATER LINE
— SS — SS —	EX. SANITARY SEWER
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-x-x-x-x-x-x-x-xxx	PROP. BAFFLE
	PROP. FAIRCLOTH SKIMME



WAKE COUNTY STOCKPILE REQUIREMENTS

EFFECTIVE SEPTEMBER 1, 2008 - SOIL STOCKPILES SHALL BE LOCATED ON THE APPROVED PLAN AND SHALL ADHERE TO THE FOLLOWING REQUIREMENTS: DESIGN CRITERIA

- A. A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT).
- B. STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
- C. A NOTE SHALL BE PROVIDED ON THE APPROVED PLAN THAT STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
- D. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
- APPROVED BMPS SHALL BE SHOWN ON A PLAN TO CONTROL ANY POTENTIAL SEDIMENT LOSS FROM A STOCKPILE.
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ONE-CALL CENTER 1-800-632-4949

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	ATTACHED ZONING: R&PUD
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OWNER: STORA	
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— — 419 — —	EX. MINOR CONTOUR (1')
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	PROP. EASEMENT/BUFFER
	PROP. CONCRETE
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	PROP. MAJOR CONTOUR (5')
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	PROP. SILT FENCE PROP. BAFFLE PROP. FAIRCLOTH SKIMMER PROP. CONSTRUCTION ENTRA

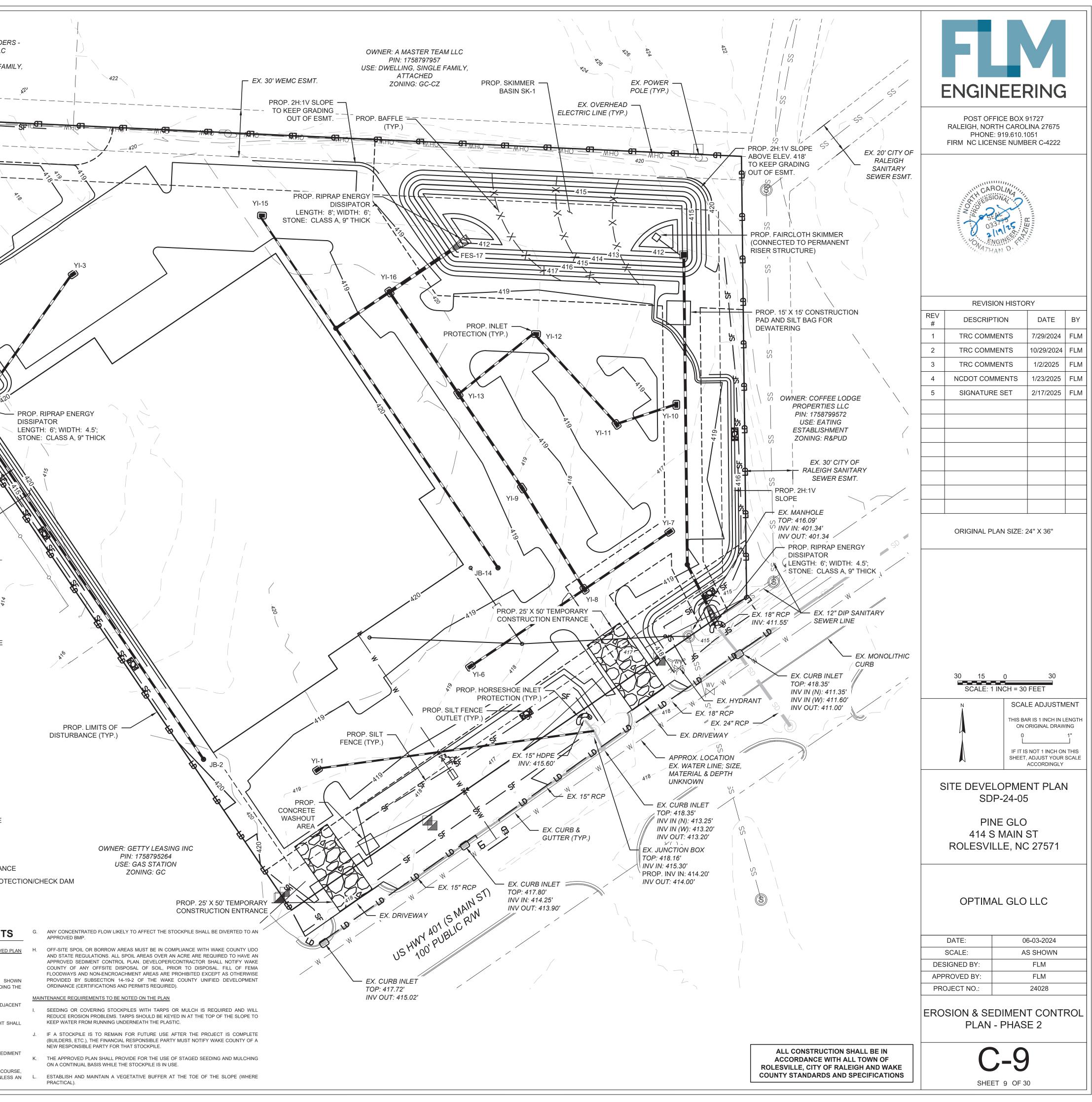
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ONE-CALL CENTER 1-800-632-4949

	(
	OWNER: DAN RYAN BUILD
	NORTH CAROLINA LL
	PIN: 1758793974
	USE: DWELLING, SINGLE F.
	ATTACHED
	ZONING: R&PUD
_	

118

EX. FENCE

PROP. 2H:1V SLOPE

PROP. 13' D X 24' W DUMPSTER ENCLOSURE ON 20' D X 24' W CONCRETE PAD, 6"-THICK WITH NO. 4 REBAR 12" O.C. E.W. CENTERED IN SLAB; CONSTRUCT MIN. 12" X 12" FOOTING CENTERED UNDER ENCLOSURE WALL TO FROST DEPTH TO PREVENT FROST HEAVE (SUBJECT TO CONFIRMATION FROM GEOTECHNICAL ENGINEER); SLAB SHALL BE TURN-DOWN TO MEET EX. GRADE; ENCLOSURE TO MATCH BUILDING

> OWNER: STORAGE MAX II LLC PIN: 1758792469 USE: SELF STORAGE ZONING: GC-CZ

> > PROP. 2H:1V SLOPE

PROP. NAG S75 (OR EQUIVALENT) SLOPE MATTING (TYP.); SLOPES TO BE STABILIZED WITHIN 7 DAYS

LEGEND

	EX. PROPERTY LINE
	EX. RIGHT-OF-WAY
	EX. ADJACENT OWNERS
	EX. EASEMENT
0	EX. CHAIN LINK FENCE
C C	EX. COMMUNICATIONS LINE
— OHW — OHW —	EX. OVERHEAD ELECTRIC LINE
— W — W —	EX. WATER LINE
— SS — SS —	EX. SAŃITARY SEWER
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— ss —— ss —	PROP. SANITARY SEWER
	PROP. STORM SEWER
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— LD —— LD ——	PROP. LIMIT OF DISTURBANCE
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\sim	PROP. HORSESHOE INLET PROT
	PROP. SILT FENCE OUTLET
	PROP. INLET PROTECTION

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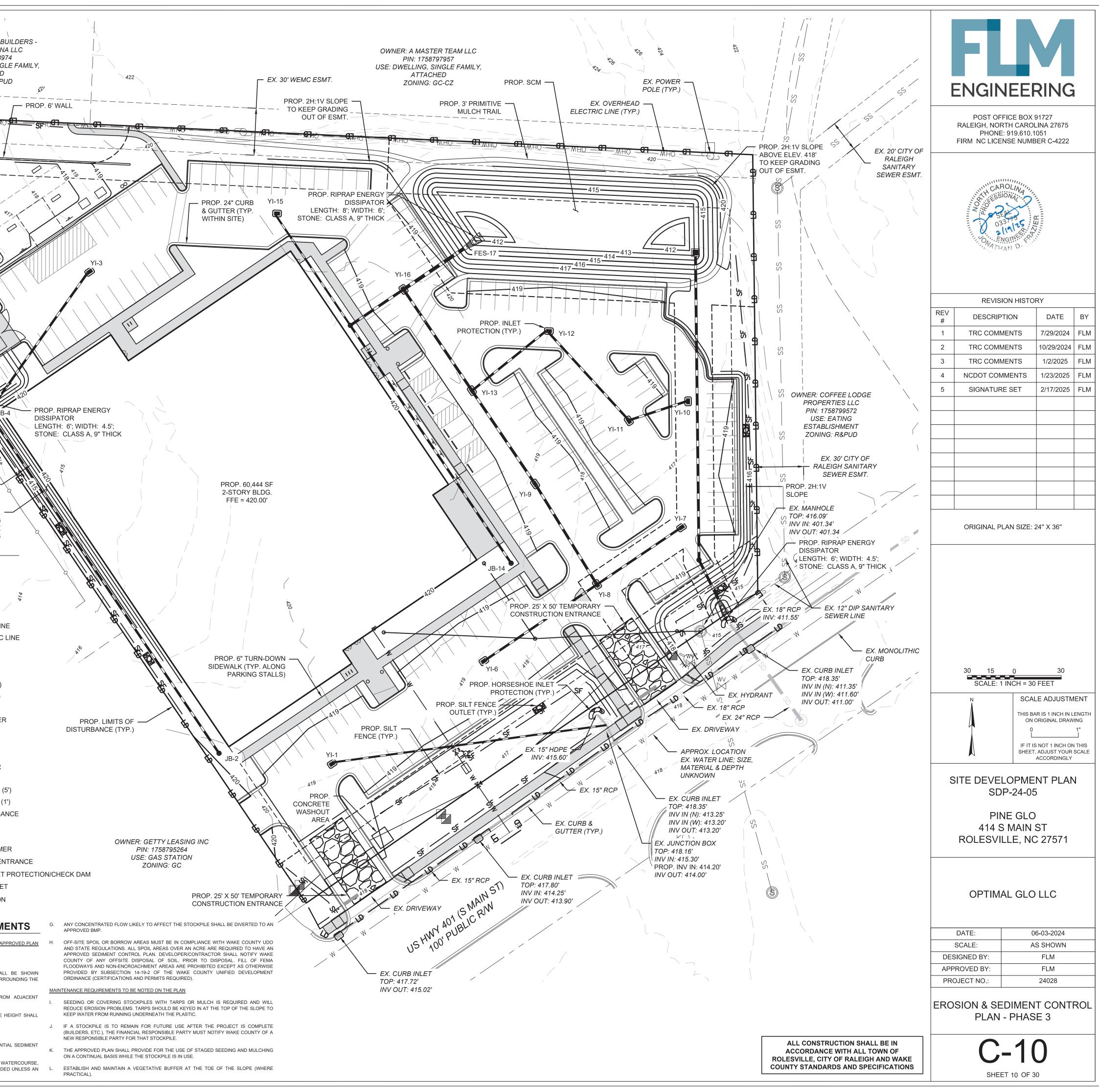
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NOTES

- ALL NEW PLANTINGS SHALL MEET THE REQUIREMENTS OF THE TOWN OF ROLESVILLE LAND **DEVELOPMENT ORDINANCE (LDO) SECTION 6.2.**
- 2. ALL DISTURBED AREAS NOT OCCUPIED BY STRUCTURES, PAVING OR PLANTINGS SHALL BE GRADED AND SEEDED AS INDICATED IN SPECIFICATIONS.
- 3. ALL TREE PLANTINGS SHALL BE MULCHED WITH 4" CLEAN, PINE STRAW MULCH.
- 4. ALL PLANT BEDS TO BE EDGED WITH TYPICAL "V-CHANNEL" EDGE
- 5. A MINIMUM OF FOUR INDIVIDUAL SOIL SAMPLES SHALL BE TAKEN THROUGHOUT THE SITE FOR OVERALL SOIL ANALYSIS.
- 6. CONTRACTOR TO UTILIZE ALL ONSITE TOPSOIL. CONTRACTOR SHALL SUPPLY ADDITIONAL TOPSOIL AT NO ADDITIONAL COST TO OWNER IF EXISTING TOPSOIL IS NOT SUFFICIENT TO MEET THE NEEDS OF THIS PROJECT.
- ALL PLANTING AREAS TO RECEIVE 1 CY OF SOIL CONDITIONER FOR EACH 75 SF OF PLANT BED AREA. ACCEPTABLE SOIL CONDITIONERS SHALL BE PULVERIZED PINE BARK, PEAT MOSS OR SHREDDED/COMPOSTED LEAVES.
- 8. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES BEFORE BEGINNING OF GRADING AND LANDSCAPE INSTALLATION.
- 9. CONTRACTOR TO VERIFY QUANTITIES OF PLANTINGS AS SHOWN. PLANTINGS INDICATED ON PLANS SHALL PREVAIL OVER QUANTITIES INDICATED IN PLANT LIST IF DISCREPANCIES ARISE.
- 10. ALL PLANTS ARE TO BE THOROUGHLY "WATERED IN" THE SAME DAY AS PLANTED.
- 11. THE PLANT HOLE WIDTH SHALL BE A MINIMUM THREE TIMES THE DIAMETER OF THE ROOT BALL. 12. REMOVE ALL STRAPPING AND TWINE FROM ROOT BALL. REMOVE WIRE BASKET AND BURLAP FROM TOP 1/3 OF ROOT BALL BEFORE BACKFILLING AROUND BALL IS COMPLETED.
- 13. ALL TREES WHICH ARE SMOOTH BARKED AT THE TIME OF PLANTING AND HAVE MORE THAN 2' OF ALL TREE WRAPPING SHALL EXTEND FROM THE TOP OF THE BACKFILL TO THE LOWERMOST TREE BRANCHES.
- 14. ALL TREES, WHEN PLANTED, SHALL HAVE THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE GRADING PLAN.
- 15. LANDSCAPING SHOWN MEETS QUANTITY REQUIREMENTS. ALL INSTALLATION AND MAINTENANCE SHALL BE PER TOWN OF ROLESVILLE LDO.
- 16. ALL ADDITIONAL LANDSCAPING SHALL BE PER OWNER.

LANDSCAPING REQUIREMENTS

PERIMETER BUFFERS

75 LF PERIMETER BUFFER TYPE 3 ALONG PIN 1758793974 4 CANOPY TREES PER 100 LF 2 UNDERSTORY TREES PER 100 LF 60 SHRUBS PER 100 LF

CANOPY TREES REQUIRED: 3 CANOPY TREES PROVIDED: 4

UNDERSTORY TREES REQUIRED: 2 UNDERSTORY TREES PROVIDED: 2

SHRUBS REQUIRED: 45 SHRUBS PROVIDED: 60

STREETSCAPE BUFFER

STREET TREES SHALL BE PLACED AT 40' O.C.

CANOPY TREES PROVIDED: 8

PARKING LANDSCAPING

- ALL PARKING SPACES SHALL BE WITHIN 60' FROM THE TRUNK OF A
- CANOPY TREE PARKING PERIMETER SHALL CONSIST OF A SINGLE CONTINUOUS ROW OF SHRUBS NO GREATER THAN 3' ON-CENTER AND WITHIN 5' OF THE PARKING LOT EDGE

CANOPY TREES PROVIDED: 25 SHRUBS PROVIDED: 240

OWNER: DAN RYAN BUILD
NORTH CAROLINA LL
PIN: 1758793974
USE: DWELLING, SINGLE F
ATTACHED

ZONING: R&PUD

EX. FENCE

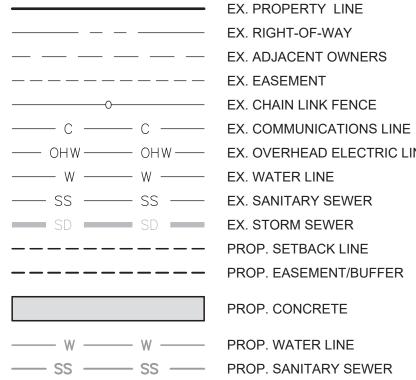
PROP. 4,966 SF ACTIVE

OPEN SPACE

PROP. 13' D X 24' W DUMPSTER ENCLOSURE ON 20' D X 24' W CONCRETE PAD, 6"-THICK WITH NO. 4 REBAR 12" O.C. E.W. CENTERED IN SLAB; CONSTRUCT MIN. 12" X 12" FOOTING CENTERED UNDER ENCLOSURE WALL TO FROST DEPTH TO PREVENT FROST HEAVE (SUBJECT TO CONFIRMATION FROM GEOTECHNICAL ENGINEER); SLAB SHALL BE TURN-DOWN TO MEET EX. GRADE; ENCLOSURE TO MATCH BUILDING

> OWNER: STORAGE MAX II LLC PIN: 1758792469 **JSE: SELF STORAGE** ZONING: GC-CZ

LEGEND



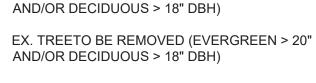
PROP. STORM SEWER **CALL 48 HOURS BEFORE** YOU DIG

EX. CHAIN LINK FENCE ----- OHW ------ OHW ----- EX. OVERHEAD ELECTRIC LINE

PROP. WATER LINE

PROP. CONCRETE





EX. TREE TO REMAIN (EVERGREEN > 20"

PROP. CANOPY TREE (BN)

PROP. CANOPY TREE (AR)

PROP. UNDERSTORY TREE (CC)

PROP. SHRUB (RV)

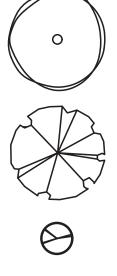
PROP. SHRUB (KL)

PROP. SHRUB (RC)

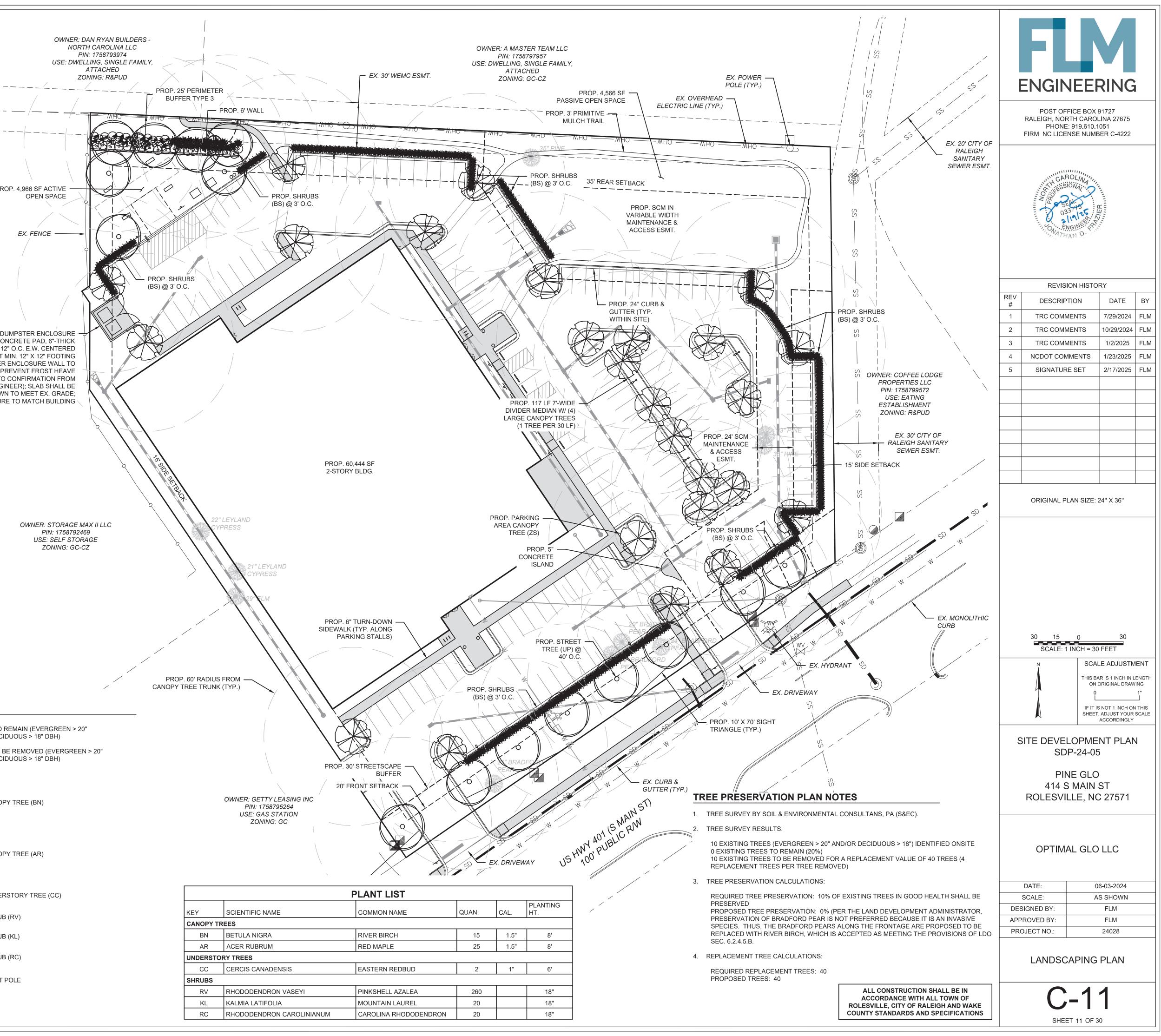
PROP. LIGHT POLE

NORTH CAROLINA **ONE-CALL CENTER** 1-800-632-4949

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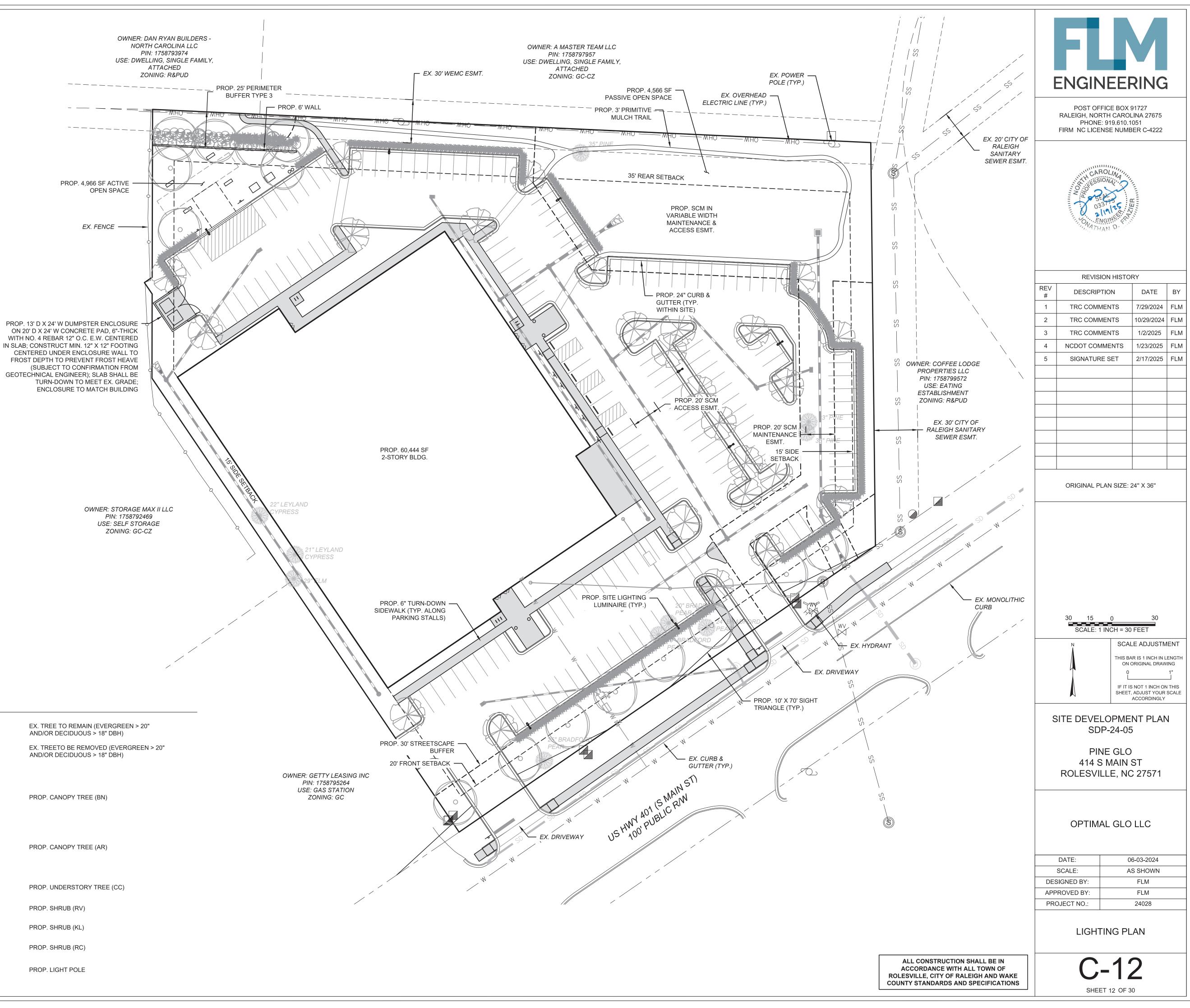
E



LIGHTING NOTES

- 1. REFER TO PHOTOMETRIC PLAN, 24-0239A, BY DUKE ENERGY FOR FOOTCANDLE ILLUMINATION AND FIXTURE DETAILS.
- 2. THIS SHEET DOES NOT PROVIDE ELECTRICAL CONNECTIONS FOR FIXTURES SHOWN. SITE DEVELOPERS (OWNERS, BUILDERS, AND GENERAL CONTRACTORS) ARE RESPONSIBLE FOR COORDINATING WITH ELECTRICAL CONTRACTOR OR POWER COMPANY FOR POWER CONNECTIONS FOR ALL FIXTURES.
- 3. ALL SITE LIGHTING SHALL CONFORM TO THE REQUIREMENTS OF THE TOWN OF ROLESVILLE LDO.
- 4. ALL LIGHTING FIXTURES SHALL BE CONSTRUCTED AND DESIGNED TO PREVENT LIGHT FROM EMITTING UPWARDS TOWARD THE DARK NIGHT SKY.
- 5. ALL FIXTURES, EXCEPT FOR STREETLIGHTING FIXTURES, INCLUDING SECURITY LIGHTING, MUST BE CUTOFF FIXTURES. CUTOFF FIXTURES SHALL PROJECT ALL ITS LIGHT IN A DOWNWARD MOTION.
- 6. CANOPY LIGHTING FIXTURES SHALL BE DESIGNED TO BE COMPLETELY RECESSED WITHIN THE CANOPY.
- 7. ALL FIXTURES MUST BE INCORPORATED INTO THE BUILDING OR SITE AS AN INTEGRATED DESIGN ELEMENT THROUGH THE USE OF COMMON OR COMPLEMENTARY STYLE, MATERIAL, AND COLOR.
- 8. WOOD LIGHT POLES ARE PROHIBITED IN RESIDENTIAL SUBDIVISIONS.
- 9. INTERIOR FIXTURES USED TO LIGHT THE INTERIOR OF PARKING GARAGES MUST BE SHIELDED TO PREVENT LIGHT SPILLING FROM THE GARAGE.
- 10. LIGHT FIXTURES ON THE TOP DECK OF A PARKING GARAGE MAY NOT EXCEED FIFTEEN (15) FEET IN HEIGHT AND MUST BE SHIELDED TO PREVENT LIGHT SPILLING FROM THE BOUNDARY OF THE GARAGE DECK. ROOFTOP LIGHTING OF PARKING GARAGES MUST BE SETBACK A MINIMUM FIFTEEN (15) FEET FROM THE PERIMETER OF THE ROOFTOP PARKING STRUCTURE.
- 11. LIGHTING FOR PERMITTED ROOFTOP USES (SUCH AS A RESTAURANT OR LOUNGE) SHALL BE PEDESTRIAN IN SCALE AND NOT EXCEED TWELVE (12) FEET IN HEIGHT (THIS DOES NOT INCLUDE ANY FAA MANDATED LIGHTING). ROOFTOP LIGHTING FIXTURES USED FOR PERMITTED ROOFTOP USES SHALL BE LOCATED TOWARD THE CENTER OF THE ROOFTOP, AWAY FROM ITS EDGES AND NOT FACE OUTWARD. SAFETY LIGHTING MAY BE UTILIZED ALONG WALLS OR RAILS. ALL LIGHTING SHALL BE DESIGNED TO EFFECTIVELY ELIMINATE GLARE, SHIELDED TO PREVENT LIGHT SPILLING OVER THE SIDE OF THE BUILDING, AND SHALL BE TURNED OFF WHEN THE ROOFTOP AREA IS NOT IN USE.
- 12. WALKWAYS, BIKEWAYS, PARKS AND TRAIL LIGHTING, AND PEDESTRIAN FACILITIES SUCH AS BUILDING CONNECTIONS SHALL BE LIT AT A MAXIMUM 0.2
- 13. WALL PACKS ON BUILDINGS MAY BE USED AT ENTRANCES TO A BUILDING OR TO LIGHT POTENTIALLY UNSAFE AREAS. THEY SHOULD NOT BE INTENDED TO DRAW ATTENTION TO THE BUILDING OR PROVIDE GENERAL BUILDING OR SITE LIGHTING. WALL PACKS SHALL BE FULLY SHIELDED, CUTOFF TYPE FIXTURES WITH CONCEALED LIGHT SOURCES. THE LIGHTING MUST BE DIRECTED DOWNWARD.
- 14. LOADING/UNLOADING DOCKS SHALL ONLY BE ILLUMINATED BY FIXTURES WHICH FEATURE FULL CUTOFF DESIGN AND SHALL BE AFFIXED TO AN OUTSIDE BUILDING WALL OR POLE.
- 15. ALL OUTDOOR LIGHTING FIXTURES NOT MOUNTED ON BUILDINGS (I.E. GROUND BASED) SHALL BE LOCATED A MINIMUM OF TEN (10) FEET FROM A PROPERTY LINE OR RIGHT-OF-WAY LINE AND SHOULD BE NO CLOSER THAN TWO (2) FEET FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER. UNDERGROUNDING SERVICE IS ENCOURAGED.
- 16. LIGHT FIXTURES SHALL NOT EXCEED THIRTY (30) FEET IN HEIGHT IN VEHICLE USE AREAS (SUCH AS RIGHTS-OF-WAY AND PARKING AREAS). ADDITIONAL STANDARDS FOR PARKING AREAS ARE DEFINED IN LDO SECTION 6.6.J. PARKING AREA LIGHTING STANDARDS.
- 17. LIGHT FIXTURES SHALL BE TWELVE (12) TO FIFTEEN (15) FEET IN HEIGHT IN NONVEHICULAR PEDESTRIAN AREAS (SUCH AS SIDEWALKS).
- 18. PARKING AREA LIGHTING STANDARDS. LIGHTING IS REQUIRED WITHIN PARKING AREAS. THE HEIGHT OF LIGHT FIXTURES WITHIN A PARKING AREA SHALL COMPLY WITH THE FOLLOWING STANDARDS:
- PARKING AREA LIGHTING FIXTURES SHALL BE REQUIRED TO STAGGER THE HEIGHTS OF LIGHT FIXTURES SO THAT THE TALLEST FIXTURES ARE IN THE CENTER OF THE PARKING LOT, AND THE LOWEST HEIGHTS ARE AT THE PERIMETER OF THE PARKING LOT.
- LIGHT FIXTURES HEIGHT SHALL NOT EXCEED THIRTY (30) FEET WITHIN THE CENTER OF A PARKING AREA AND SHALL DECREASE HEIGHT TO TWELVE (12) TO FIFTEEN (15) FEET AT THE BOUNDARY OF THE PARKING AREA.
- TO AVOID CONFLICT IN LAYOUT, PARKING LOT LIGHTING MUST BE COORDINATED WITH PARKING AREA LANDSCAPING.
- LIGHTING DESIGN SHALL BE COORDINATED WITH THE LANDSCAPE PLAN TO ENSURE THAT VEGETATION GROWTH WILL NOT SUBSTANTIALLY IMPAIR THE INTENDED ILLUMINATION.

PIN: 1758793974



LEGEND

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NORTH	CAROLINA	

. PROPERTY LINE . RIGHT-OF-WAY . ADJACENT OWNERS . EASEMENT . CHAIN LINK FENCE . COMMUNICATIONS LINE . OVERHEAD ELECTRIC LINE . WATER LINE . SANITARY SEWER . STORM SEWER ROP. CONCRETE ROP. SETBACK LINE

ROP. EASEMENT/BUFFER ROP. WATER LINE ROP. SANITARY SEWER ROP. STORM SEWER



-0

EX. TREE TO REMAIN (EVERGREEN > 20" AND/OR DECIDUOUS > 18" DBH) EX. TREETO BE REMOVED (EVERGREEN > 20"

PROP. CANOPY TREE (BN)

PROP. CANOPY TREE (AR)

PROP. UNDERSTORY TREE (CC)

PROP. SHRUB (RV)

PROP. SHRUB (KL)

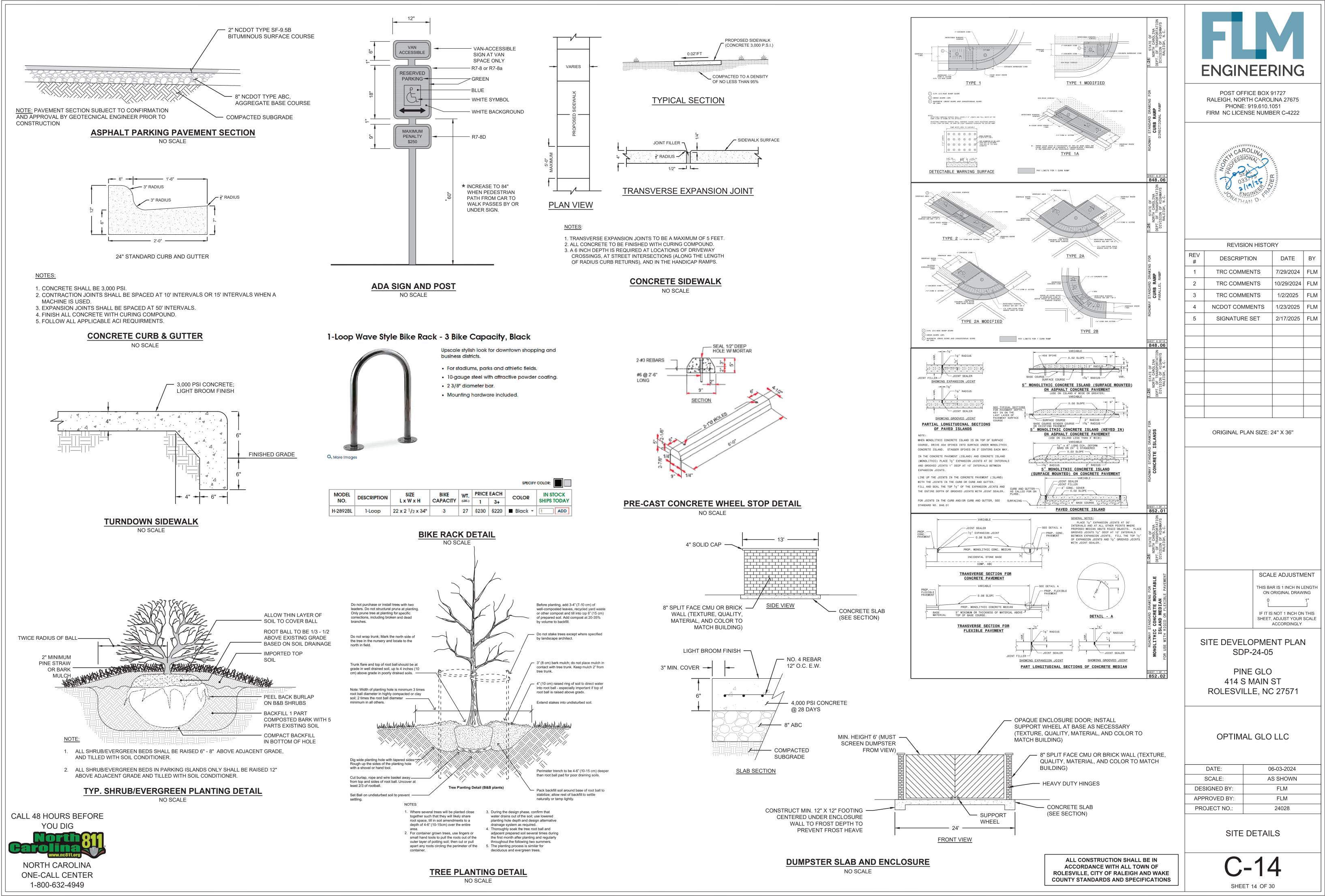
PROP. SHRUB (RC)

PROP. LIGHT POLE

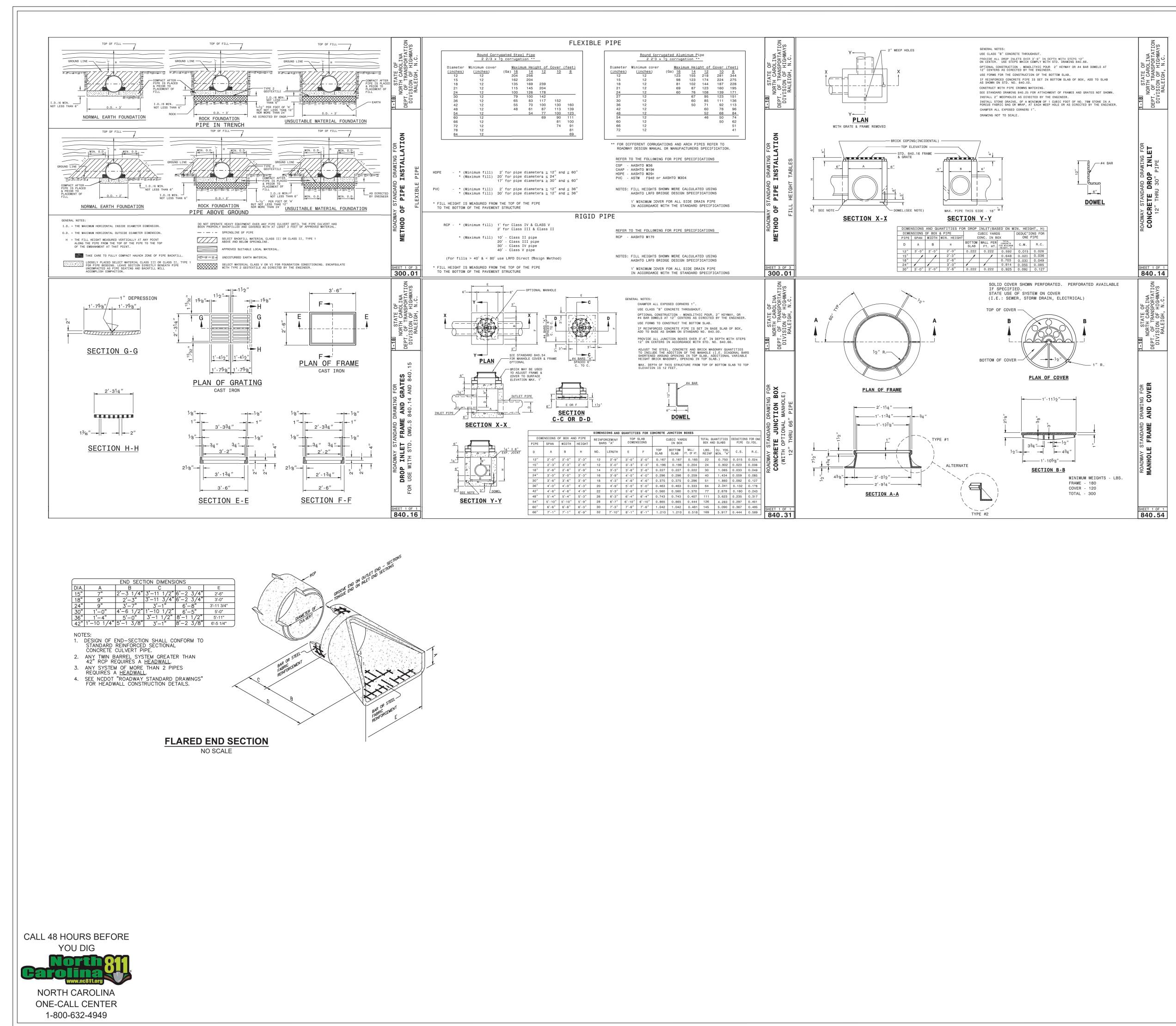
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ONE-CALL CENTER

1-800-632-4949



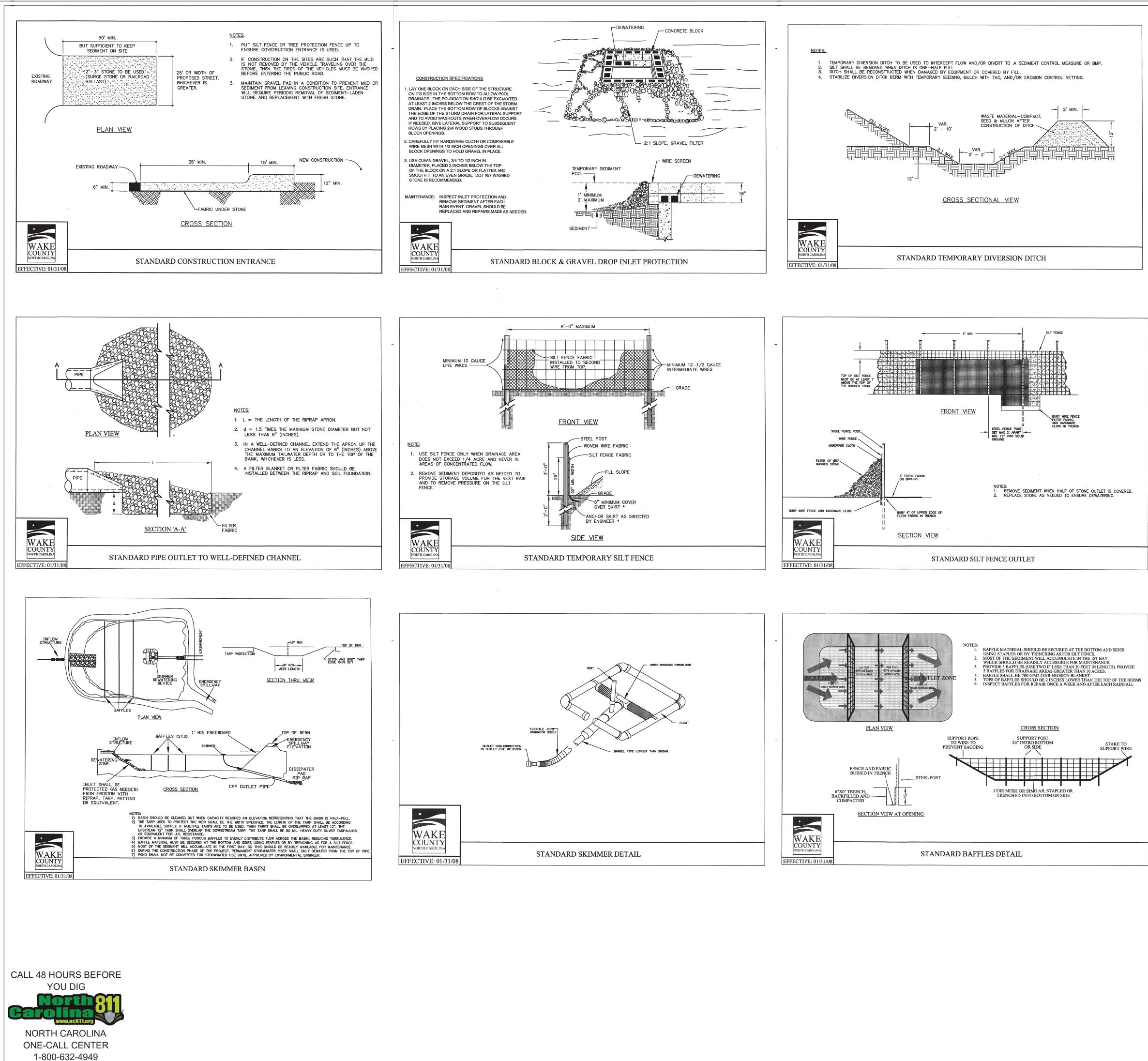
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	F						
ENGINEERING							
	RALEIGH, NOF PHONE	: 919.610.1	.INA 27675 051				
	FIRM NC LICENSE NUMBER C-4222						
	REVIS	ION HISTOR	RY				
REV	DESCRIP	TION	DATE	BY			
#	TRC COM		7/29/2024	FLM			
2	TRC COM		10/29/2024	FLM			
3	TRC COM		1/2/2025	FLM			
4			1/23/2025	FLM			
5	SIGNATUR		2/17/2025	FLM			
				=			
	ORIGINAL P	LAN SIZE: 2	24" X 36"				
SCALE ADJUSTMENT THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING 0 1" IF IT IS NOT 1 INCH ON THIS SHEET, ADJUST YOUR SCALE ACCORDINGLY SITE DEVELOPMENT PLAN SDP-24-05 PINE GLO 414 S MAIN ST ROLESVILLE, NC 27571							
OPTIMAL GLO LLC							
	DATE:		6-03-2024				
	SCALE: AS SHOWN						
	DESIGNED BY: FLM APPROVED BY: FLM						
APPROVED BY: FLM PROJECT NO.: 24028							
STORM DRAINAGE DETAILS							
C-15 SHEET 15 OF 30							

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH AND WAKE COUNTY STANDARDS AND SPECIFICATIONS

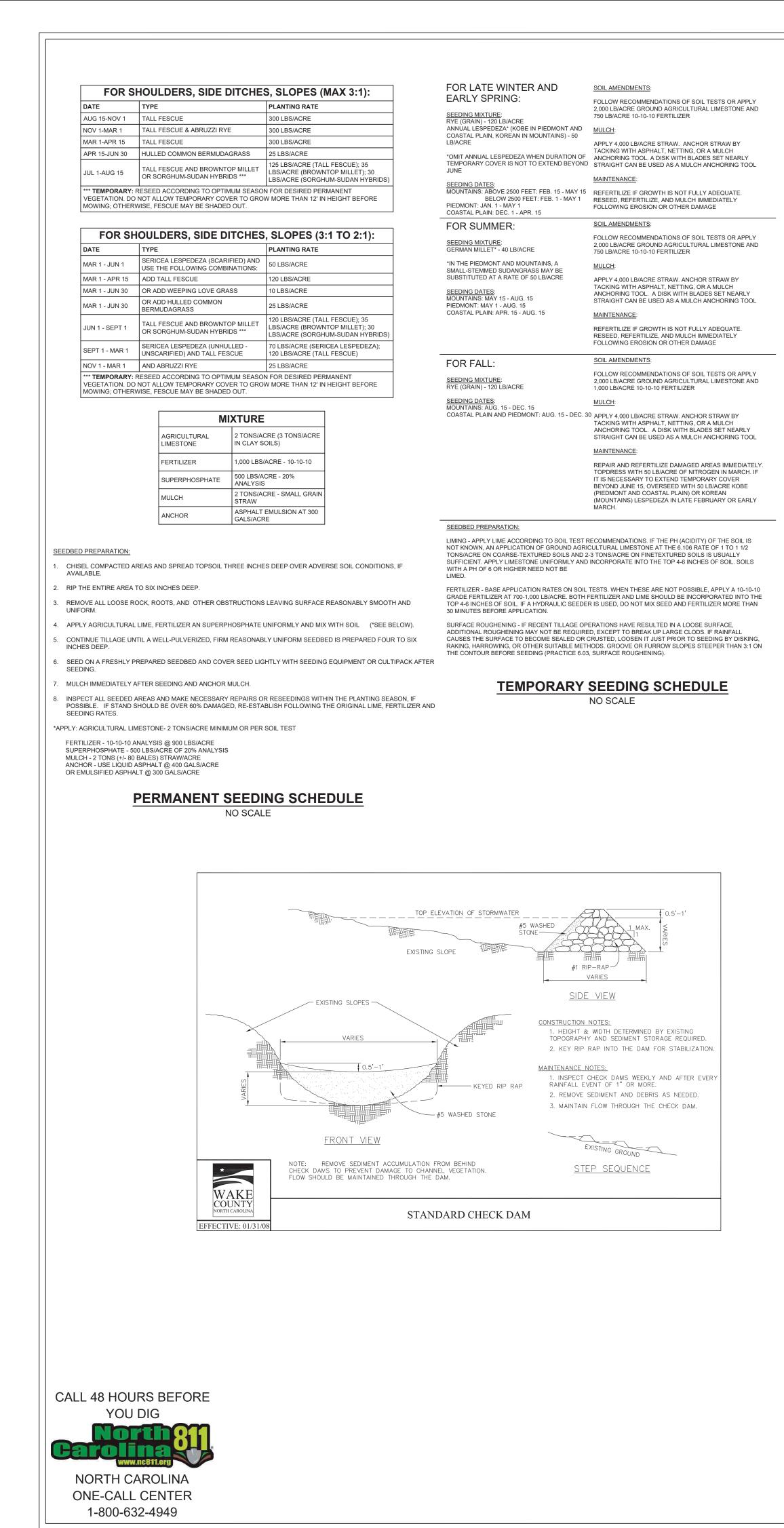


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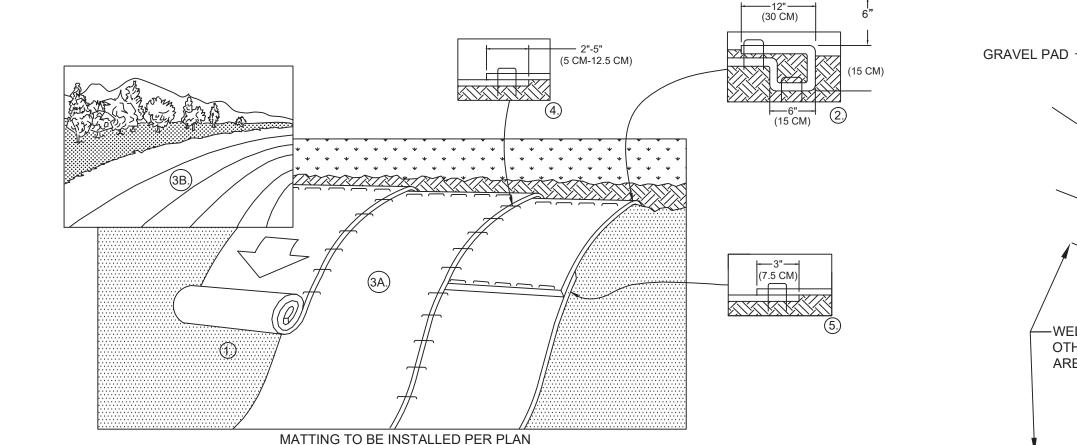
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		POST OFFICE BOX 91727 RALEIGH, NORTH CAROLINA 27675 PHONE: 919.610.1051 FIRM NC LICENSE NUMBER C-4222					
	REV	REVISION					
	#	DESCRIPTIO		DATE	BY		
	1			7/29/2024	FLM		
	2	TRC COMME		10/29/2024 1/2/2025	FLM FLM		
	4	NCDOT COMM		1/23/2025	FLM		
	5	SIGNATURE	SET	2/17/2025	FLM		
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		OPTIMAL GLO LLC					
		DATE:	0	6-03-2024			
		SCALE:	A	S SHOWN			
		SIGNED BY: PROVED BY:		FLM FLM			
	PR	OJECT NO.: SION & SED		24028	ROL		
ALL CONSTRUCTION SHALL BE I ACCORDANCE WITH ALL TOWN O	DF F		DETAILS				
ROLESVILLE, CITY OF RALEIGH AND COUNTY STANDARDS AND SPECIFICA							

STAKE TO

SUPPORT WIRE



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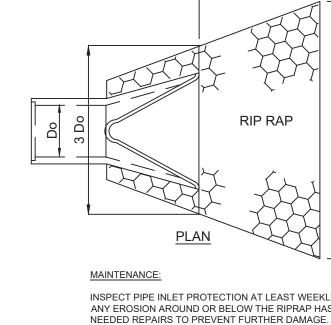


NOTES:

- 1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN. 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
- 3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN. 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
- 5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS. DETAIL AND LANGUAGE PROVIDED BY NORTH AMERICAN GREEN REV. 1/2004

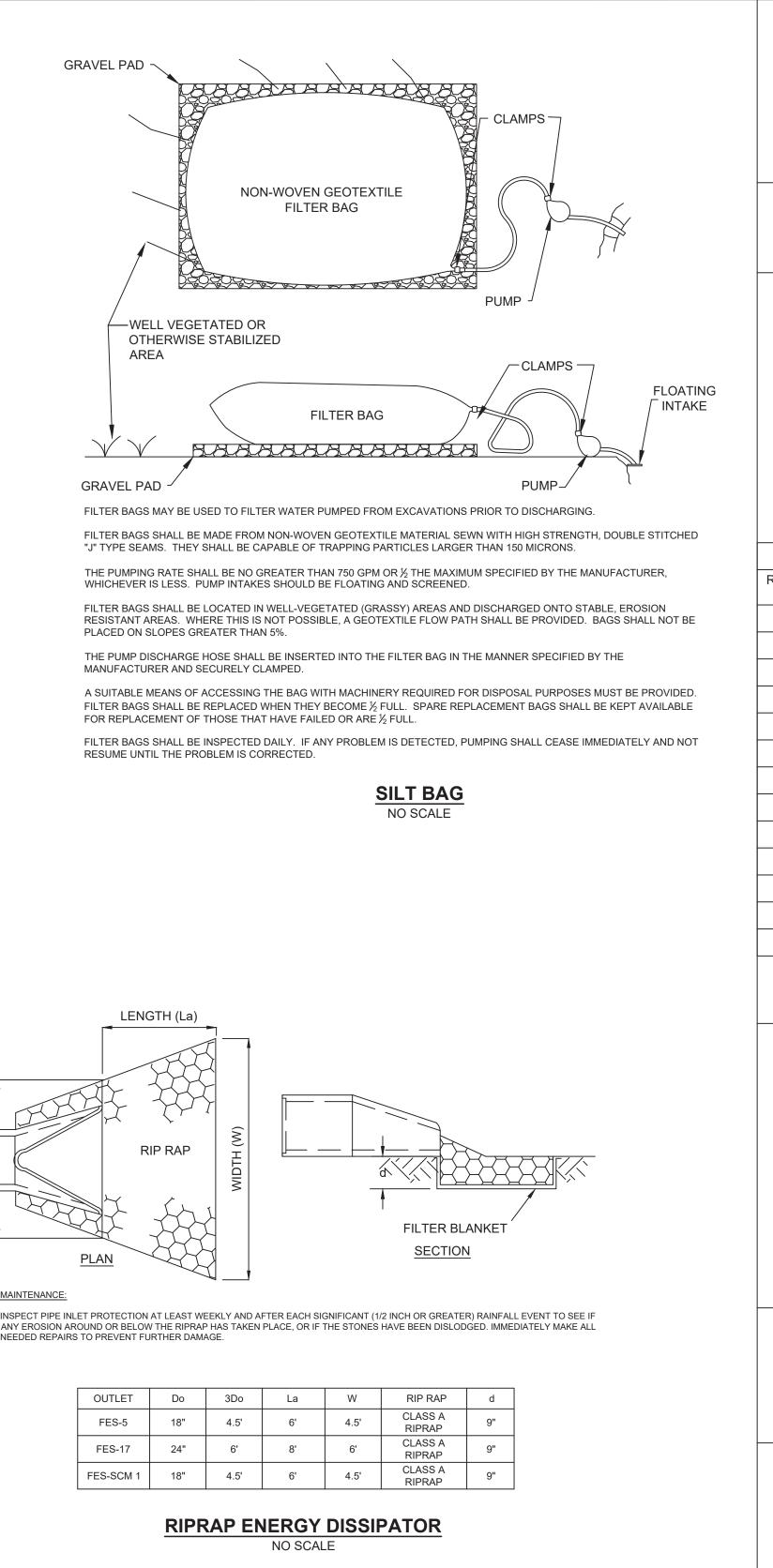
SLOPE INSTALLATION NO SCALE

	ROLLED EROSIC	AA IN CONTROL							
Specific	ation Shee	t – EroNe	t™ S75® Erosio	n Control Blan	ket				
DESCRIPTIO	DN			Index Property	Test M	ethod	Typical		
	2		shall be a machine- unctional longevity	Thickness	ASTM D	5525	0.50 in. (12.7 mm)		
		•	nay vary depending	Resiliency	ECTC Gui		78.8% 301%		
	conditions, soil, ge shall be of consisten			Water Absorbency	ASTM D1		9.76 oz/sy		
	ver the entire area o		· · ·	Mass/Unit Area	ASTM DE		(332 g/sm)		
	ne top side with a lig	, , ,	5	Swell	ECTC Gui		15%		
	e netting having an			Smolder Resistance	ECTC Gui		Yes		
	h. The blanket shall vith degradable thre	2		Stiffness	ASTM D1		6.31 oz-in		
	2		uter edges (approxi-	Light Penetration	ASTM DE	567	6.0% 122.4 lbs/ft		
	ches [5-12.5 cm] fro	-		Tensile Strength - MD	ASTM DE	5818	(1.81 kN/m)		
adjacent mat	S.			Elongation - MD	ASTM DE	5818	36.1%		
The S75 shall	meet Type 2.C spec	ification require	ments established by	Tensile Strength - TD	ASTM DE	5818	79.2 lbs/ft (1.17 kN/m)		
	ontrol Technology (d Federal Highway	Elongation - TD	ASTM DE	5818	26.8%		
Administratio	on's (FHWA) FP-03	Section 713.17		Biomass Improvement	ASTM D7		301%		
	Mater	ial Content							
Matrix	100% Straw Fiber		0.5 lbs/sq yd	Design	Permissible	Shear S	tress		
			(0.27 kg/sm)	Unvegetated Shear Stre	55	1.55 psf	(74 Pa)		
Netting	Top side only, light photodegradable	weight	1.5 lb/1000 sq ft (0.73 kg/100 sm)	Unvegetated Velocity	5.00 fps (1.52 m/s)				
Thread Degradable				Slope Design Data: C Factors					
Standard Roll Sizes					Slope	(5)			
Width	6.67 ft (2.03 m)	8.0 ft (2.4 m)	16 ft (4.87 m)	Slope Length (L)	≤ 3:1	3:1 - 2:1	≥ 2:1		
				≤ 20 ft (6 m)	0.029	N/A	N/A		
Length	108 ft (32.92 m)	112 ft (34.14 m)	108 ft (32.92 m)	20-50 ft	0.11	N/A	N/A		
Weight ± 10%	40 lbs (18.14 kg)	50 lbs (22.68 kg)	96 lbs (43.54 kg)	≥ 50 ft (15.2 m)	0.19	N/A	N/A		
Area	80 sq yd (66.9 sm) 100 sq yd (83.61 sm)	192 sq yd (165.5 sm)	NTPEP Large-Scale Slope Testing ASTM D6459 - C-factor = 0.012					
				Roughn	ess Coeffici	ents – U	nveg.		
				Flow Depth		Mannir	ng's n		
				≤ 0.50 ft (0.15 m)		0.0	55		
				0.50 - 2.0 ft		0.055-	0.021		
				≥ 2.0 ft (0.60 m)		0.0	21		
Tensar International Corporation 2500 Northwinds Parkway Suite 500 Alpharetta, GA 30009			Tensar International Corpora hereunder shall conform to merchantability and fitness does not meet specification will replace the product at n	the specification state for a particular purpos is on this page and Ten to cost to the customer	ed herein. Any o se, are hereby es nsar is notified p r. This product	other warranty including xecuted. If the product prior to installation, Tensar specification supersedes			
NORTH AMERICAN GREEN® 800-TENSAR-1 tensarcorp.com			NSAR-1	all prior specifications for the product described above and is not applicable to any products shipped prior to January 1, 2012. ©2013. Tensari International Corporation EC_RMX_MPDS_ES75					





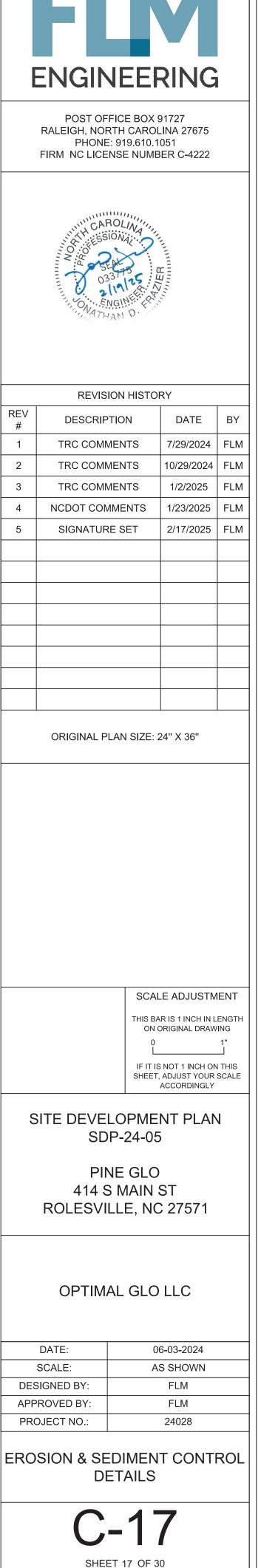
SLOPE MATTING NO SCALE

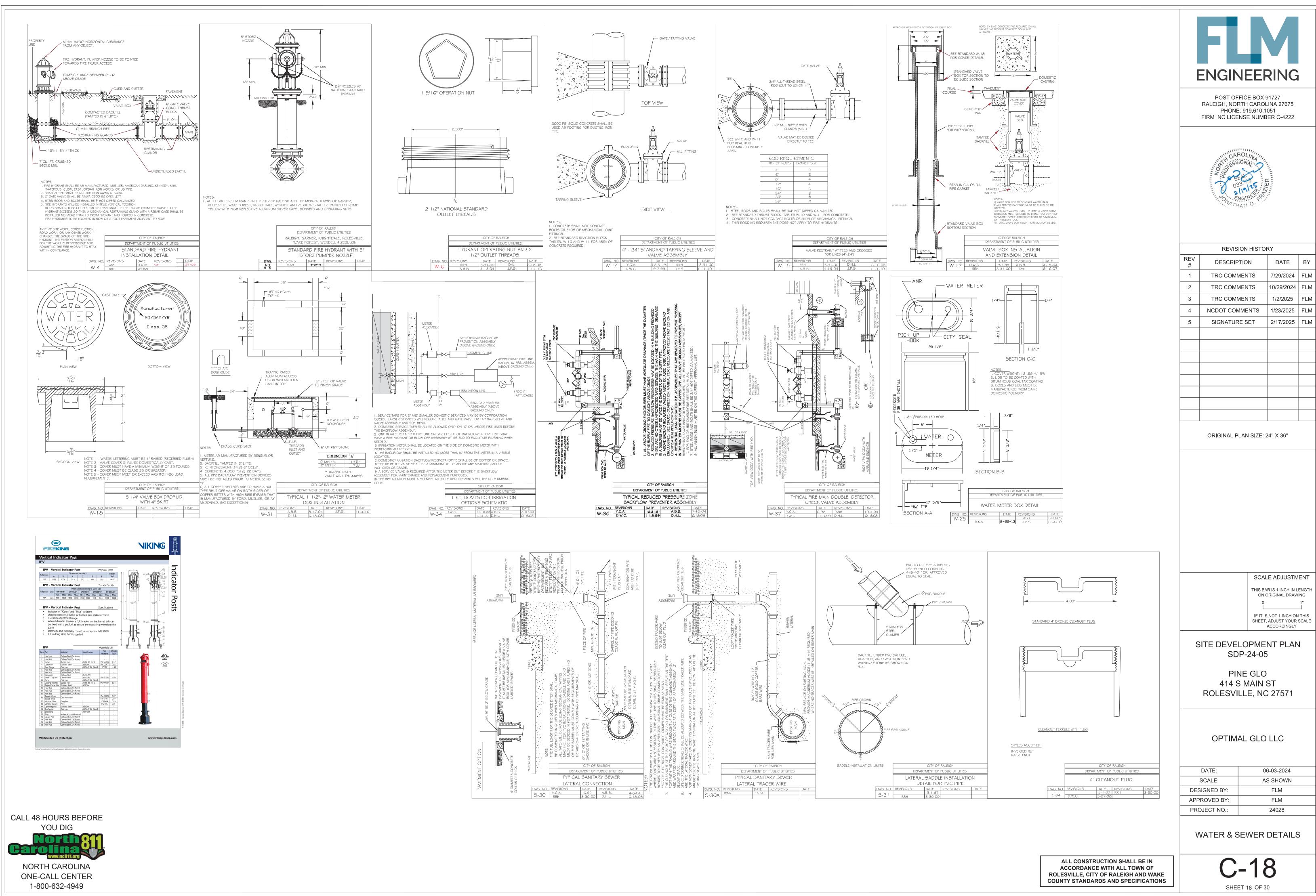


ALL CONSTRUCTION SHALL BE IN

ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH AND WAKE

COUNTY STANDARDS AND SPECIFICATIONS





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below. When a personnel to be which it is safe t	are required duri dverse weather ou in jeopardy, the in to perform the ins	ng normal business hours in accordance with the table r site conditions would cause the safety of the inspection nspection may be delayed until the next business day on spection. In addition, when a storm event of equal to or ide of normal business hours, the self-inspection shall be	SECTION B: 1. E&SC Pla The appr approved The follo inspectio
•	hall be noted in th	nent of the next business day. Any time when inspections e Inspection Record.	(a) Each E
Inspect	Frequency (during normal business hours)	Inspection records must include:	and does r
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un- attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device	(b) A phas
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain	 approved by the Division. 1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating 	(c) Ground
(3) Stormwater discharge	event ≥ 1.0 inch in 24 hours At least once per 7 calendar days	 properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken. 1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 	in accorda
outfalls (SDOs)	and within 24 hours of a rain event \geq 1.0 inch in 24 hours	 Name of the person performing the inspection, Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, Indication of visible sediment leaving the site, 	(d) The m requireme have been (e) Corre
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain	 6. Description, evidence, and date of corrective actions taken. If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 	to E&SC m
(5) Streams or	event ≥ 1.0 inch in 24 hours At least once per	 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases. If the stream or wetland has increased visible sedimentation or a 	2. Addition In addition site and a Division p
wetlands onsite or offsite (where accessible)	7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	 stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit. 	this requ (a) This
(6) Ground stabilization measures	After each phase of grading	 The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). Documentation that the required ground stabilization measures have been provided within the required 	(b) Reco reco Divis elect show
NOTE: The rai	n inspection reset	timeframe or an assurance that they will be provided as soon as possible. The required 7 calendar day inspection requirement.	3. Documer All data u of three y
for maintenance Non-surface with (a) The E&SC shall not o (b) The non-s (c) Dewaterin properly s (d) Vegetateo (e) Velocity d	e or close out unle hdrawals from sec plan authority ha commence until th surface withdrawa ng discharges are t sited, designed and d, upland areas of lissipation devices	DRAW DOWN OF SEDIMENT E ceive runoff from drainage areas of one acre or more shall of ass this is infeasible. The circumstances in which it is not fea- diment basins shall be allowed only when all of the following s been provided with documentation of the non-surface with the E&SC plan authority has approved these items, all has been reported as an anticipated bypass in accordance treated with controls to minimize discharges of pollutants for d maintained dewatering tanks, weir tanks, and filtration sy the sites or a properly designed stone pad is used to the ex- such as check dams, sediment traps, and riprap are provide e dewatering treatment devices described in Item (c) above	use outlet struct sible to withdra g criteria have b thdrawal and the with Part III, See rom stormwater stems, tent feasible at t
		NCG01 SELF-INS	

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ONE-CALL CENTER

1-800-632-4949

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

DKEEPING nentation

SC plan as well as any approved deviation shall be kept on the site. The blan must be kept up-to-date throughout the coverage under this permit. ems pertaining to the E&SC plan shall be kept on site and available for imes during normal business hours.

Document **Documentation Requirements** sure has been installed Initial and date each E&SC measure on a copy icantly deviate from the of the approved E&SC plan or complete, date ons and relative elevations and sign an inspection report that lists each E&SC measure shown on the approved E&SC oved E&SC plan. plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation. ling has been completed. Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase. Initial and date a copy of the approved E&SC located and installed the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications. Complete, date and sign an inspection report. nce and repair I E&SC measures ons have been taken Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

nentation to be Kept on Site

E&SC plan documents above, the following items shall be kept on the e for inspectors at all times during normal business hours, unless the a site-specific exemption based on unique site conditions that make not practical:

Permit as well as the Certificate of Coverage, after it is received.

nspections made during the previous twelve months. The permittee shall equired observations on the Inspection Record Form provided by the similar inspection form that includes all the required elements. Use of /-available records in lieu of the required paper copies will be allowed if ovide equal access and utility as the hard-copy records.

o be Retained for Three Years

omplete the e-NOI and all inspection records shall be maintained for a period er project completion and made available upon request. [40 CFR 122.41]

ICE OR CLOSE OUT

t withdraw water from the surface when these devices need to be drawn down from the surface shall be rare (for example, times with extended cold weather).

c time periods or conditions in which it will occur. The non-surface withdrawal

tem (2)(c) and (d) of this permit, emoved from the sediment basin. Examples of appropriate controls include

et of the dewatering treatment devices described in Item (c) above,

s of all dewatering devices, and

ner that does not cause deposition of sediment into waters of the United States.

, RECORDKEEPING AND REPORTING

EFFE

PART III SELF-INSPECTION, RECORDKEEPING AND

SECTION C: REPORTING

1.	Occu	rrence	s t	hat	Must	t I	be l	Re	port	ted	
	-	•••						~			

- Permittees shall report the following occurrences:
- (a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:

- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned
- They cause sheen on surface waters (regardless of vo
- They are within 100 feet of surface waters (regardles
- (c) Releases of hazardous substances in excess of reportab of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 1 (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- (d) Anticipated bypasses and unanticipated bypasses.
- (e) Noncompliance with the conditions of this permit that environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that mi the appropriate Division regional office within the timefram other requirements listed below. Occurrences outside norr reported to the Department's Environmental Emergency Ce 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Oth
(a) Visible sediment deposition in a stream or wetland	 Within 24 hours, an oral or electronic notificat Within 7 calendar days, a report that contains sediment and actions taken to address the cau Division staff may waive the requirement for a case-by-case basis. If the stream is named on the NC 303(d) list as related causes, the permittee may be required monitoring, inspections or apply more stringer determine that additional requirements are new with the federal or state impaired-waters concernent.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• Within 24 hours, an oral or electronic notificat shall include information about the date, time, location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• A report at least ten days before the date of t The report shall include an evaluation of the a effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	 Within 24 hours, an oral or electronic notificat Within 7 calendar days, a report that includes quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(I)(7)]	 Within 24 hours, an oral or electronic notificat Within 7 calendar days, a report that contains noncompliance, and its causes; the period of n including exact dates and times, and if the non been corrected, the anticipated time noncomp continue; and steps taken or planned to reduc prevent reoccurrence of the noncompliance. [- Division staff may waive the requirement for a case-by-case basis.

TING						
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			POST OFFI ALEIGH, NORT PHONE: S IRM NC LICEN	H CAROL 919.610.10	.INA 27675 051	
hours, under Section 311 tion 102 of CERCLA			CARC CARC CARC O SED O SED O SED O SED	DLINA NAL NAL		
lth or the		REV #	REVISIO DESCRIPTI TRC COMME		RY DATE 7/29/2024	BY
he shall contact dance with the urs may also be at (800)		2 3 4 5	TRC COMME TRC COMME NCDOT COMM SIGNATURE	ENTS IENTS	10/29/2024 1/2/2025 1/23/2025 2/17/2025	FLM FLM FLM
cription of the che deposition.						
ed for sediment- Form additional ices if staff						
ce			ORIGINAL PLA	AN SIZE: 2	24" X 36"	
<i>ible</i> . and						
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of the						
kpected to e, and .41(l)(6). port on a				THIS BA ON C 0	E ADJUSTM R IS 1 INCH IN LE DRIGINAL DRAWI	ENGTH ING 1"
		SI		SHEET,	ADJUST YOUR S ACCORDINGLY	SCALE
1/19		F		E GLO MAIN \$	ST	
		OPTIMAL GLO LLC				
			ATE:		6-03-2024	
			CALE: GNED BY:	Ā	S SHOWN	
			OVED BY:		FLM 24028	
		NC	CG01 SELF		ECTION,	
	ALL CONSTRUCTIO		C-	.10	C	
	ROLESVILLE, CITY OF R				J	

COUNTY STANDARDS AND SPECIFICATIONS

SHEET 19 OF 30

_	BILIZATION		has 6. Brin
R	equired Ground Stat	bilization Timeframes	to a
Site Area Description	many calendar days after ceasing land disturbance	Timeframe variations	LITTER, BU
(a) Perimeter dikes, swales, ditches, and perimeter slopes		None	2. Prov rece 3. Loca
(b) High Quality Water (HQW) Zones	7	None	wate 4. Loca
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed	from 5. Cove prov
(d) Slopes 3:1 to 4:1	14	 -7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed 	6. Anch 7. Emp cont 8. Dispo 9. On b
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope	PAINT AN 1. Do r 2. Loca wate
ground stabilization shall b practicable but in no case activity. Temporary groun	be converted to pern longer than 90 calen nd stabilization shall k	uction activities, any areas with temporary nanent ground stabilization as soon as dar days after the last land disturbing be maintained in a manner to render the I permanent ground stabilization is achieved.	3. Con 4. Con 5. Prev cons
 construction, select Apply flocculants at Apply flocculants at <i>PAMS/Flocculants</i> a Provide ponding are offsite. Store flocculants in 	bilization vered with straw or ers oducts with or seed aw or other mulch • IS) AND FLOCCULAN hat are appropriate for ing from the <i>NC DWH</i> c or before the inlets the concentrations so and in accordance with ea for containment of leak-proof container econdary containmer	or the soils being exposed during R List of Approved PAMS/Flocculants. to Erosion and Sediment Control Measures. specified in the NC DWR List of Approved th the manufacturer's instructions. f treated Stormwater before discharging	Content of the second of the s
or surrounded by se			STABII

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VEHICLE MAINTENANCE

- nicles and equipment to prevent discharge of fluids.
- pans under any stored equipment.
- and repair as soon as feasible, or remove leaking equipment from the
- pent fluids, store in separate containers and properly dispose as vaste (recycle when possible).
- king vehicles and construction equipment from service until the problem rected.
- uels, lubricants, coolants, hydraulic fluids and other petroleum products g or disposal center that handles these materials.

MATERIAL AND LAND CLEARING WASTE

- ^r burn waste. Place litter and debris in approved waste containers. ficient number and size of waste containers (e.g dumpster, trash site to contain construction and domestic wastes.
- containers at least 50 feet away from storm drain inlets and surface s no other alternatives are reasonably available.
- containers on areas that do not receive substantial amounts of runoff areas and does not drain directly to a storm drain, stream or wetland. containers at the end of each workday and before storm events or ndary containment. Repair or replace damaged waste containers. htweight items in waste containers during times of high winds. containers as needed to prevent overflow. Clean up immediately if erflow.
- off-site at an approved disposal facility.
- days, clean up and dispose of waste in designated waste containers.

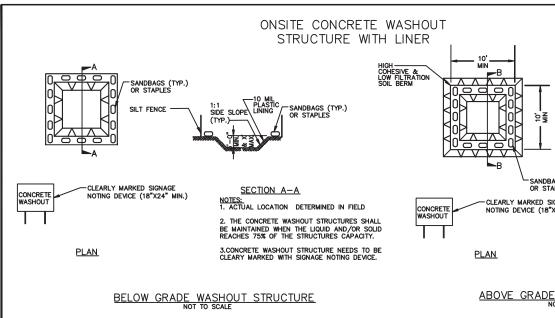
LIQUID WASTE

- paint and other liquid waste into storm drains, streams or wetlands. washouts at least 50 feet away from storm drain inlets and surface s no other alternatives are reasonably available.
- d wastes in a controlled area.
- t must be labeled, sized and placed appropriately for the needs of site. discharge of soaps, solvents, detergents and other liquid wastes from sites.

- ole toilets on level ground, at least 50 feet away from storm drains, vetlands unless there is no alternative reasonably available. If 50 foot attainable, provide relocation of portable toilet behind silt fence or place ad and surround with sand bags.
- ng or anchoring of portable toilets during periods of high winds or in high eas.
- able toilets for leaking and properly dispose of any leaked material. nsed sanitary waste hauler to remove leaking portable toilets and replace operating unit.

LE MANAGEMENT

- ile locations on plans. Locate earthen-material stockpile areas at least *r* from storm drain inlets, sediment basins, perimeter sediment controls waters unless it can be shown no other alternatives are reasonably
- (pile with silt fence installed along toe of slope with a minimum offset of the toe of stockpile.
- le stone access point when feasible.
- kpile within the timeframes provided on this sheet and in accordance proved plan and any additional requirements. Soil stabilization is defined physical or chemical coverage techniques that will restrain accelerated isturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

- 1. Do not discharge concrete or cement slurry from the site.
- 2. Dispose of, or recycle settled, hardened concrete residue in and state solid waste regulations and at an approved facilit
- 3. Manage washout from mortar mixers in accordance with th addition place the mixer and associated materials on imper lot perimeter silt fence.
- 4. Install temporary concrete washouts per local requirement alternate method or product is to be used, contact your ap review and approval. If local standard details are not availa types of temporary concrete washouts provided on this def
- 5. Do not use concrete washouts for dewatering or storing de sections. Stormwater accumulated within the washout ma discharged to the storm drain system or receiving surface v be pumped out and removed from project.
- 6. Locate washouts at least 50 feet from storm drain inlets an can be shown that no other alternatives are reasonably ava install protection of storm drain inlet(s) closest to the wash spills or overflow.
- 7. Locate washouts in an easily accessible area, on level groun entrance pad in front of the washout. Additional controls i approving authority.
- 8. Install at least one sign directing concrete trucks to the was limits. Post signage on the washout itself to identify this lo
- 9. Remove leavings from the washout when at approximately overflow events. Replace the tarp, sand bags or other tem components when no longer functional. When utilizing alte products, follow manufacturer's instructions.
- 10. At the completion of the concrete work, remove remaining in an approved disposal facility. Fill pit, if applicable, and st caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

- 1. Store and apply herbicides, pesticides and rodenticides in a restrictions.
- 2. Store herbicides, pesticides and rodenticides in their origina label, which lists directions for use, ingredients and first aid accidental poisoning.
- 3. Do not store herbicides, pesticides and rodenticides in area possible or where they may spill or leak into wells, stormwa or surface water. If a spill occurs, clean area immediately.
- 4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

- Create designated hazardous waste collection areas on-site.
- 2. Place hazardous waste containers under cover or in seconda
- 3. Do not store hazardous chemicals, drums or bagged materia

ATION AND MATERIALS HANDLING

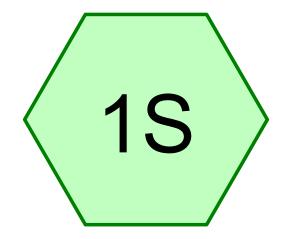
EFFECT

- SANDBAGS (TYP.) OR STAPLES HIGH PLASTIC LINING PLASTIC LINING -1:1 SIDE SLOPP		E	ENGIN		RING	
BAGS (TYP.) $I = ACTUAL LOCATION DETERMINED IN FIELD$ SIGNAGE			POST OFF RALEIGH, NOR PHONE: FIRM NC LICEN	TH CAROI 919.610.1	_INA 27675 051	
n accordance with local ty.			CAR CAR SSIC ON SSIC ON SSIC ON SSIC ON SSIC ON SSIC ON SSIC ON SSIC ON SSIC ON SSIC ON SSIC ON SSIC			
he above item and in rvious barrier and within						
ts, where applicable. If an oproval authority for able, use one of the two		REV #	REVISIO DESCRIPT TRC COMM		RY DATE 7/29/2024	BY
etail. efective curb or sidewalk ay not be pumped into or waters. Liquid waste must		2 3 4	TRC COMM TRC COMM NCDOT COMI	ENTS MENTS	10/29/2024 1/2/2025 1/23/2025	FLM FLM FLM
nd surface waters unless it ailable. At a minimum, hout which could receive		5	SIGNATURE	SET	2/17/2025	FLM
nd and install a stone may be required by the						
shout within the project ocation. y 75% capacity to limit porary structural						
ternative or proprietary g leavings and dispose of tabilize any disturbance			ORIGINAL PL	AN SIZE: :	24" X 36" 	
accordance with label nal containers with the d steps in case of						
as where flooding is ater drains, ground water				THIS BA ON 0 L IF IT IS SHEET	LE ADJUSTM	ENGTH /ING 1" N THIS
e. ary containment. als directly on the ground.		S	ITE DEVEL SDF			J
TIVE: 04/01/19				e glo Main Le, no	ST	
			OPTIMA	IL GLO	LLC	
			DATE: SCALE:		6-03-2024 S SHOWN	
		DES APP	BIGNED BY: ROVED BY: DJECT NO.:		FLM FLM 24028	
		NCO	601 GROUN & MATERI			ION
	ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH AND WAKE COUNTY STANDARDS AND SPECIFICATIONS		C	-20	C	

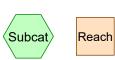
SHEET 20 OF 30

	DA-1 DISCHARGE POINT SUMMARY										
STORM EVENT	PRE-DEVELOPMENT PEAK RATE OF RUNOFF (CFS)	POST-DEVELOPMENT PEAK RATE OF RUNOFF (CFS)	DIFFERENCE								
1-YEAR, 24-HOUR	6.78	0.88	-87.02%								
2-YEAR, 24-HOUR	8.94	1.54	-82.77%								
5-YEAR, 24-HOUR	12.27	2.27	-81.50%								
10-YEAR, 24-HOUR	14.90	3.04	-79.60%								
25-YEAR, 24-HOUR	18.51	7.87	-57.48%								
50-YEAR, 24-HOUR	21.36	12.09	-43.40%								





DA1 Pre-development





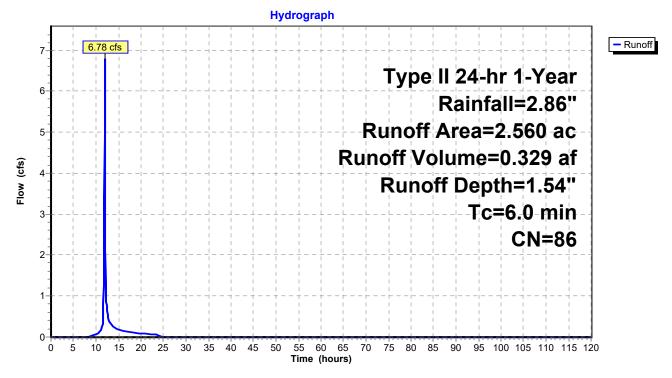
Link

Drainage Diagram for Pine Glo Stormwater Model Prepared by FLM Engineering, Inc., Printed 1/23/2025 HydroCAD® 8.50 s/n 002245 © 2007 HydroCAD Software Solutions LLC

Runoff = 6.78 cfs @ 11.97 hrs, Volume= 0.329 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.86"

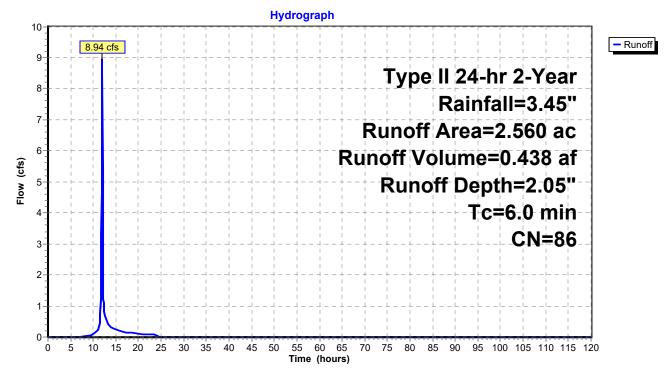
Area	(ac)	CN	Desc	ription		
1.	430	77	Brus	h, Fair, HS	SG D	
0.	.070	70	Brus	h, Fair, HS	SG C	
1.	.060	98	Pave	d parking	& roofs	
2.	560	86	Weig	hted Aver	age	
1.	500		Perv	ious Area		
1.	.060		Impe	rvious Are	a	
Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,



Runoff = 8.94 cfs @ 11.97 hrs, Volume= 0.438 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.45"

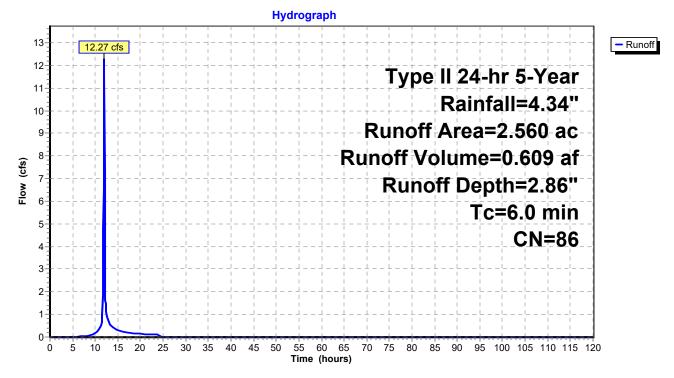
Area	(ac)	CN	Desc	cription		
1.	430	77	Brus	h, Fair, HS	SG D	
0.	070	70	Brus	h, Fair, HS	SG C	
1.	060	98	Pave	ed parking	& roofs	
2.	560	86	Weig	hted Aver	age	
1.	500		Perv	ious Area		
1.	060		Impe	ervious Are	a	
Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,



Runoff = 12.27 cfs @ 11.97 hrs, Volume= 0.609 af, Depth= 2.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 5-Year Rainfall=4.34"

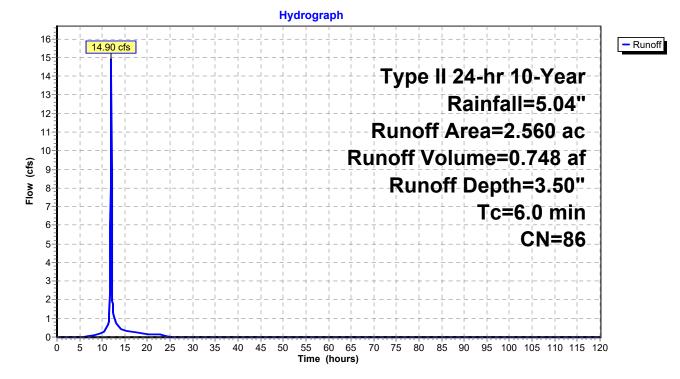
Area	(ac)	CN	Desc	cription		
1.	430	77	Brus	h, Fair, HS	SG D	
0.	.070	70	Brus	h, Fair, HS	SG C	
1.	.060	98	Pave	ed parking	& roofs	
2.	560	86	Weig	hted Aver	age	
1.	500		Perv	ious Area		
1.	.060		Impe	ervious Are	a	
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,



Runoff = 14.90 cfs @ 11.97 hrs, Volume= 0.748 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.04"

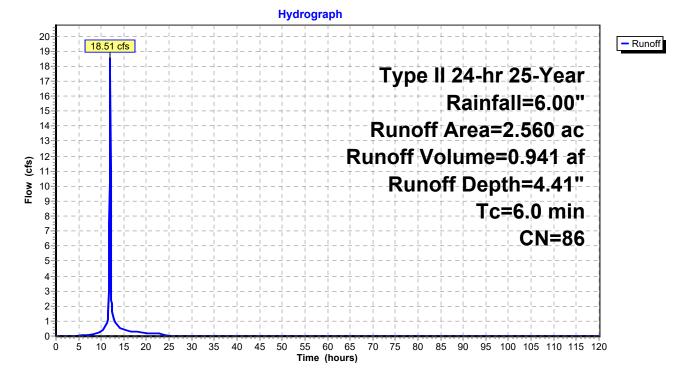
Area	(ac)	CN	Desc	ription		
1.	430	77	Brus	h, Fair, HS	SG D	
0.	.070	70	Brus	h, Fair, HS	SG C	
1.	.060	98	Pave	ed parking	& roofs	
2.	560	86	Weig	hted Aver	age	
1.	500		Perv	ious Area	-	
1.	.060		Impe	rvious Are	a	
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,



Runoff = 18.51 cfs @ 11.97 hrs, Volume= 0.941 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 25-Year Rainfall=6.00"

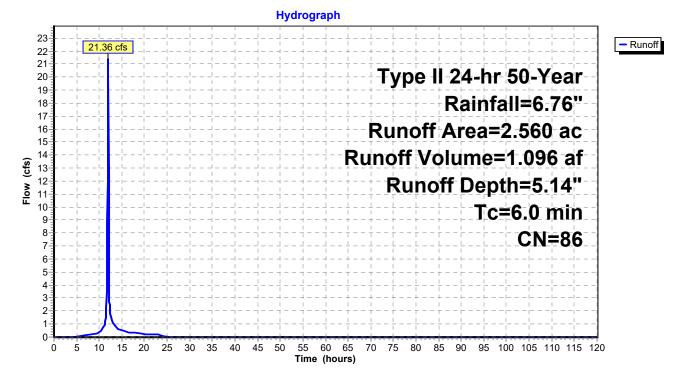
Area	(ac)	CN	Desc	ription		
1.	430	77	Brus	h, Fair, HS	SG D	
0.	.070	70	Brus	h, Fair, HS	SG C	
1.	.060	98	Pave	d parking	& roofs	
2.	560	86	Weig	hted Aver	age	
1.	500		Perv	ious Area		
1.	.060		Impe	rvious Are	ea	
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,

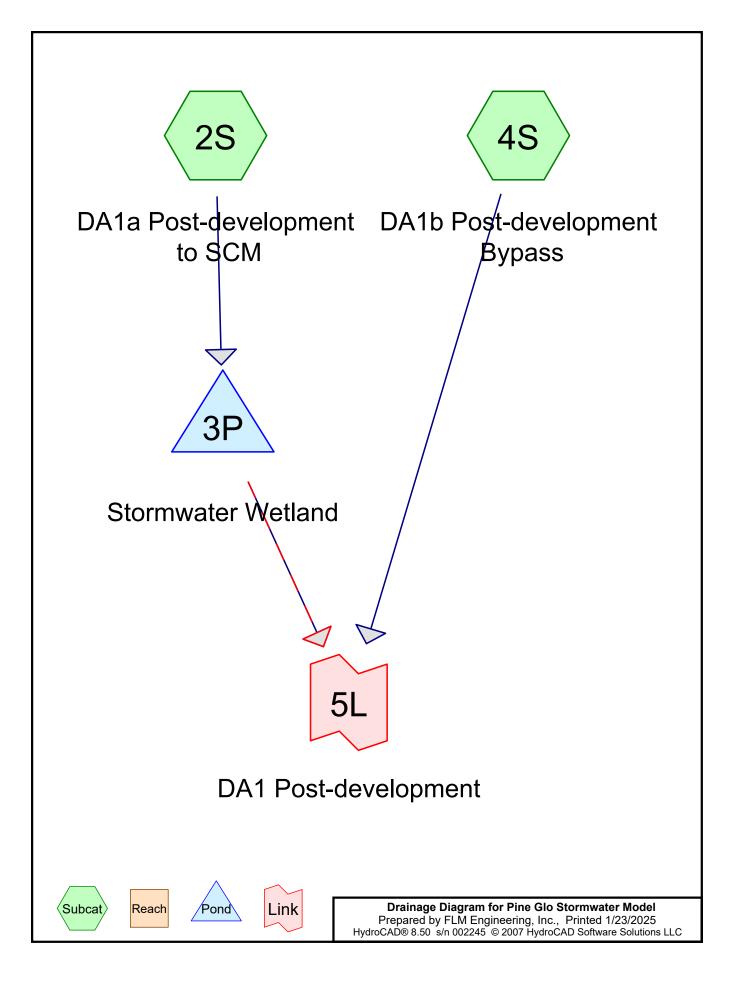


Runoff = 21.36 cfs @ 11.96 hrs, Volume= 1.096 af, Depth= 5.14"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=6.76"

Area	(ac)	CN	Desc	ription		
1.	430	77	Brus	h, Fair, HS	SG D	
0.	.070	70	Brus	h, Fair, HS	SG C	
1.	.060	98	Pave	d parking	& roofs	
2.	560	86	Weig	hted Aver	age	
1.	500		Perv	ious Area		
1.	.060		Impe	rvious Are	ea	
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,





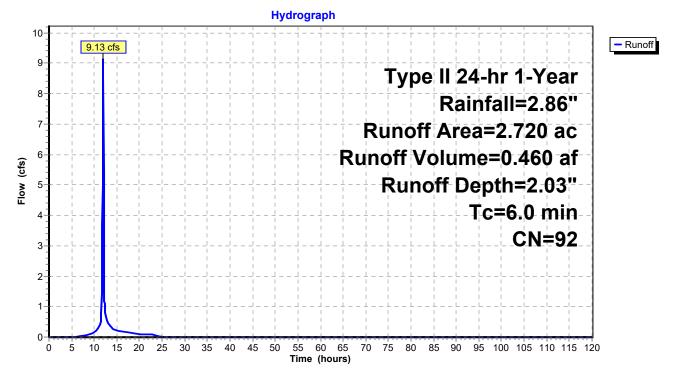
Summary for Subcatchment 2S: DA1a Post-development to SCM

Runoff = 9.13 cfs @ 11.97 hrs, Volume= 0.460 af, Depth= 2.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.86"

Area	(ac)	CN	Desc	ription		
0.	760	80	>75%	6 Grass co	over, Good	I, HSG D
0.	.070	70	Brus	h, Fair, HS	SG C	
1.	.890	98	Pave	d parking	& roofs	
2.	720	92	Weig	hted Aver	age	
0.	.830		Perv	ious Area		
1.	.890		Impe	rvious Are	a	
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,

Subcatchment 2S: DA1a Post-development to SCM



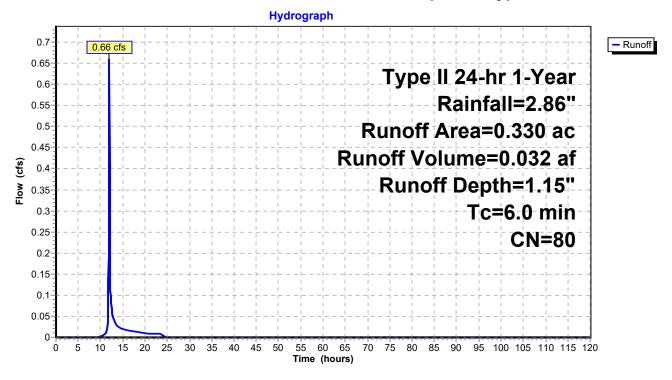
Summary for Subcatchment 4S: DA1b Post-development Bypass

Runoff = 0.66 cfs @ 11.98 hrs, Volume= 0.032 af, Depth= 1.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.86"

Area	(ac)	CN	Desc	ription			
0	.290	77	Brus	h, Fair, HS	SG D		
0	.040	98	Pave	d parking	& roofs		
0	.330	80	Weig	hted Aver	age		
0	0.290 Pervious Area						
0	.040		Impe	rvious Are	a		
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
6.0	((14/14)	((0.0)	Direct Entry,	

Subcatchment 4S: DA1b Post-development Bypass



Summary for Pond 3P: Stormwater Wetland

Inflow Area =	2.720 ac, 69.49% Impervious, Inflow De	epth = 2.03" for 1-Year event
Inflow =	9.13 cfs @ 11.97 hrs, Volume=	0.460 af
Outflow =	0.66 cfs @ 12.58 hrs, Volume=	0.459 af, Atten= 93%, Lag= 36.7 min
Primary =	0.66 cfs @ 12.58 hrs, Volume=	0.459 af
Secondary =	0.00 cfs $\overline{@}$ 0.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Peak Elev= 414.88' @ 12.58 hrs Surf.Area= 7,278 sf Storage= 11,515 cf

Plug-Flow detention time= 853.9 min calculated for 0.459 af (100% of inflow) Center-of-Mass det. time= 853.1 min (1,651.8 - 798.8)

Volume	Invert	Avail.St	orage	Storage Description	on	
#1	413.00'	40,	633 cf	Custom Stage Da	ata (Irregular) Listed	below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.0 414.0 415.0 416.0 416.0 417.0 418.0	20 20 20 20 20 20 20	5,044 6,213 7,437 8,720 10,058 11,453	379.9 399.0 417.9 436.7 455.6 474.4	0 5,618 6,816 8,070 9,381 10,748	0 5,618 12,434 20,504 29,885 40,633	5,044 6,290 7,585 8,933 10,347 11,814
Device	Routing	Inver	t Outle	et Devices		
#1	Primary	413.00			Ivert RCP, groove S= 0.0052 '/' Cc= 0	end projecting, Ke= 0.200
#2 #3 #4 #5	Device 1 Device 1 Device 1 Secondary	413.00 414.25 416.00 417.50	1.5" 6.0" 4.00 20.0 Head	Vert. Orifice C= 0 Vert. Orifice C= 0 'W x 4.00' H Vert. 'long x 11.5' brea d (feet) 0.20 0.40).600).600	l Rectangular Weir 20 1.40 1.60

Primary OutFlow Max=0.66 cfs @ 12.58 hrs HW=414.87' (Free Discharge)

-1=Culvert (Passes 0.66 cfs of 8.26 cfs potential flow)

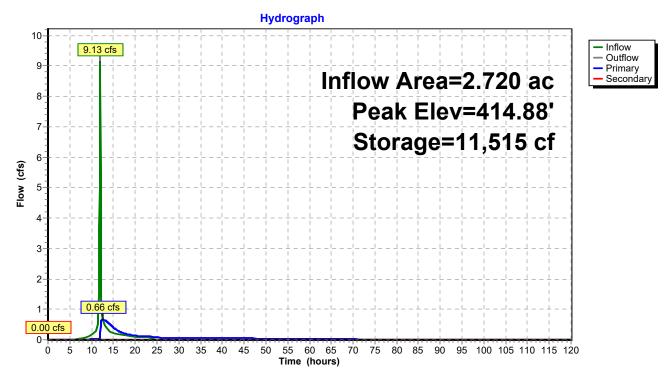
2=Orifice (Orifice Controls 0.08 cfs @ 6.48 fps)

-3=Orifice (Orifice Controls 0.58 cfs @ 2.95 fps)

-4=Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=413.00' (Free Discharge) 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: Stormwater Wetland



Summary for Link 5L: DA1 Post-development

Inflow Area =	3.050 ac, 63.28% Impervious, Inflow I	Depth > 1.93" for 1-Year event
Inflow =	0.88 cfs @ 12.03 hrs, Volume=	0.491 af
Primary =	0.88 cfs @ 12.03 hrs, Volume=	0.491 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Hydrograph 0.95 - Inflow 0.88 cfs 0.9 Primary 0.85 Inflow Area=3.050 ac 0.8 0.75 0.7 0.65 0.6 (cfs) 0.55 0.5 Flow 0.45 0.4 0.35 0.3 0.25 0.2 0.15 0.1 0.05 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 Ó Time (hours)

Link 5L: DA1 Post-development

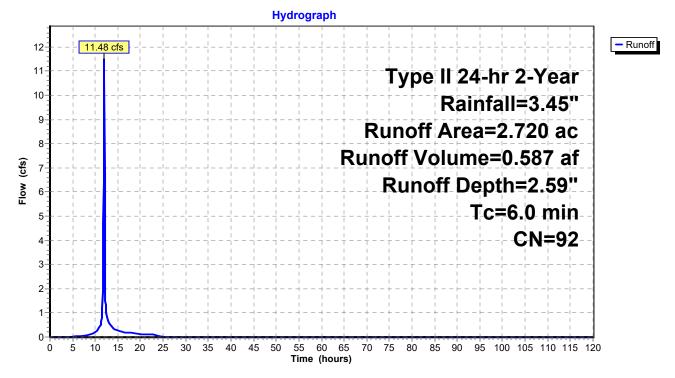
Summary for Subcatchment 2S: DA1a Post-development to SCM

Runoff = 11.48 cfs @ 11.96 hrs, Volume= 0.587 af, Depth= 2.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.45"

Area	(ac)	CN	Desc	ription		
0.	760	80	>75%	6 Grass co	over, Good	I, HSG D
0.	.070	70		h, Fair, HS		
1.	.890	98	Pave	d parking	& roofs	
2.	720	92	Weig	hted Aver	age	
0.	.830		Perv	ious Area		
1.	.890		Impe	rvious Are	a	
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,

Subcatchment 2S: DA1a Post-development to SCM



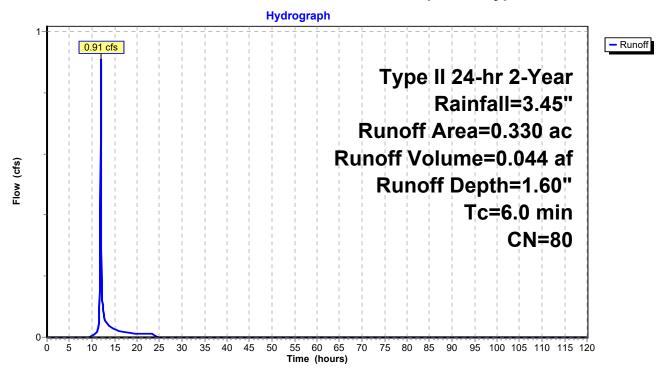
Summary for Subcatchment 4S: DA1b Post-development Bypass

Runoff = 0.91 cfs @ 11.97 hrs, Volume= 0.044 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.45"

Area	(ac)	CN	Desc	ription		
0.	.290	77	Brus	h, Fair, HS	SG D	
0.	.040	98	Pave	ed parking	& roofs	
0.	.330	80	Weig	hted Aver	age	
0.	.290		Perv	ious Area	-	
0.	.040		Impe	rvious Are	ea	
Тс	Lengt	th S	Slope	Velocity	Capacity	Description
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
6.0						Direct Entry,

Subcatchment 4S: DA1b Post-development Bypass



Summary for Pond 3P: Stormwater Wetland

Inflow Area =	2.720 ac, 69.49% Impervious, Inflow	Depth = 2.59" for 2-Year event
Inflow =	11.48 cfs @ 11.96 hrs, Volume=	0.587 af
Outflow =	0.93 cfs @12.51 hrs, Volume=	0.586 af, Atten= 92%, Lag= 32.8 min
Primary =	0.93 cfs @12.51 hrs, Volume=	0.586 af
Secondary =	0.00 cfs $\overline{@}$ 0.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Peak Elev= 415.29' @ 12.51 hrs Surf.Area= 7,793 sf Storage= 14,608 cf

Plug-Flow detention time= 709.8 min calculated for 0.586 af (100% of inflow) Center-of-Mass det. time= 711.1 min (1,503.0 - 791.9)

Volume	Invert	Avail.St	orage	Storage Description	on			
#1	413.00'	40,	633 cf	Custom Stage Da	ata (Irregular)Listed	l below (Recalc)		
Elevatio (fee		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)		
413.0 414.0 415.0 415.0 416.0 417.0 418.0	20 20 20 20 20 20 20	(34-17) 5,044 6,213 7,437 8,720 10,058 11,453	379.9 399.0 417.9 436.7 455.6 474.4	0 5,618 6,816 8,070 9,381 10,748	0 5,618 12,434 20,504 29,885 40,633	5,044 6,290 7,585 8,933 10,347 11,814		
Device	Routing	Inver		et Devices	,	.,		
#1	Primary			18.0" x 194.0' long Culvert RCP, groove end projecting, Ke= 0.200 Outlet Invert= 412.00' S= 0.0052 '/' Cc= 0.900 n= 0.013				
#2 #3 #4 #5	Device 1 Device 1 Device 1 Secondary	413.00 414.25 416.00 417.50	' 1.5" ' 6.0" ' 4.00 ' 20.0 Head	Vert. Orifice C= 0 Vert. Orifice C= 0 'W x 4.00' H Vert. 'long x 11.5' brea d (feet) 0.20 0.40	.600 .600 Grate C= 0.600	l Rectangular Weir 20 1.40 1.60		

Primary OutFlow Max=0.93 cfs @ 12.51 hrs HW=415.29' (Free Discharge)

-1=Culvert (Passes 0.93 cfs of 8.70 cfs potential flow)

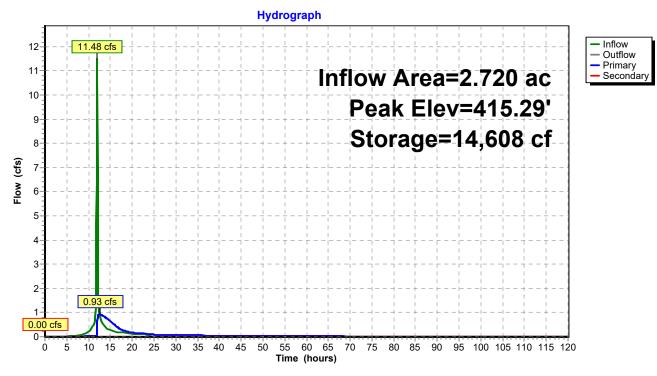
2=Orifice (Orifice Controls 0.09 cfs @ 7.18 fps)

-3=Orifice (Orifice Controls 0.84 cfs @ 4.27 fps)

-4=Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=413.00' (Free Discharge) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Stormwater Wetland

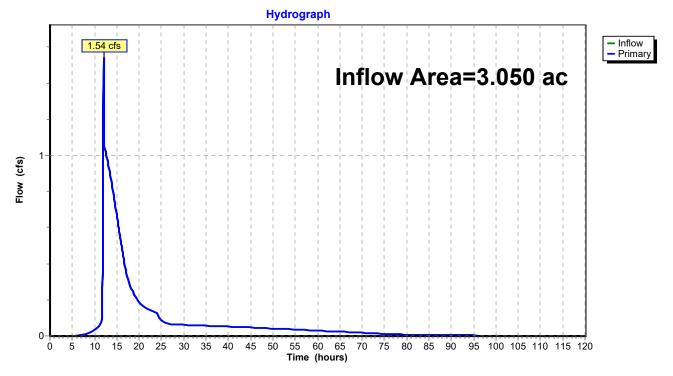


Summary for Link 5L: DA1 Post-development

Inflow Area	a =	3.050 ac, 63.28% Impervious, Inflow Depth > 2.48" for 2-Year even	nt
Inflow	=	1.54 cfs @ 12.01 hrs, Volume= 0.630 af	
Primary	=	I.54 cfs @ 12.01 hrs, Volume= 0.630 af, Atten= 0%, Lag= 0.0	0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Link 5L: DA1 Post-development



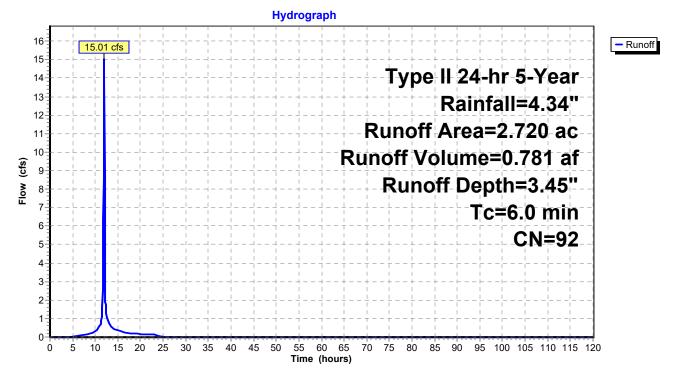
Summary for Subcatchment 2S: DA1a Post-development to SCM

Runoff = 15.01 cfs @ 11.96 hrs, Volume= 0.781 af, Depth= 3.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 5-Year Rainfall=4.34"

Area	(ac)	CN	Desc	ription		
0.	760	80	>75%	6 Grass co	over, Good	1, HSG D
0.	070	70	Brus	h, Fair, HS	SG C	
1.	890	98	Pave	ed parking	& roofs	
2.	720	92	Weig	hted Aver	age	
0.	830		Perv	ious Area		
1.	890		Impe	rvious Are	ea	
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,

Subcatchment 2S: DA1a Post-development to SCM



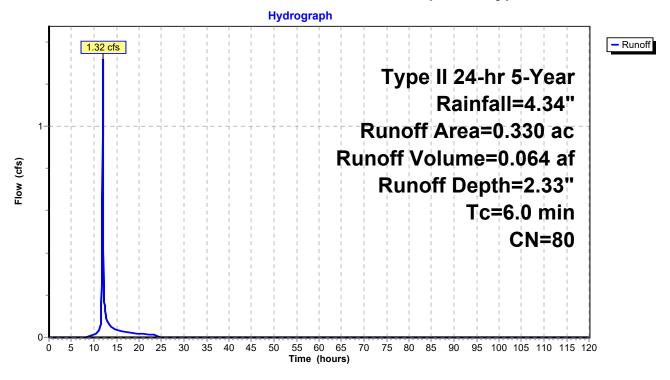
Summary for Subcatchment 4S: DA1b Post-development Bypass

Runoff = 1.32 cfs @ 11.97 hrs, Volume= 0.064 af, Depth= 2.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 5-Year Rainfall=4.34"

	Area	(ac)	CN	Desc	ription			_
	0.	290	77	Brus	h, Fair, HS	SG D		_
_	0.	040	98	Pave	ed parking	& roofs		_
	0.	330	80	Weig	hted Aver	age		
	0.	290		Perv	ious Area	-		
	0.	040		Impe	rvious Are	a		
_	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	_
	6.0						Direct Entry,	

Subcatchment 4S: DA1b Post-development Bypass



Summary for Pond 3P: Stormwater Wetland

Inflow Area =	2.720 ac, 69.49% Impervious, Inflow	Depth = 3.45" for 5-Year event
Inflow =	15.01 cfs @ 11.96 hrs, Volume=	0.781 af
Outflow =	1.22 cfs @ 12.50 hrs, Volume=	0.781 af, Atten= 92%, Lag= 32.3 min
Primary =	1.22 cfs @ 12.50 hrs, Volume=	0.781 af
Secondary =	0.00 cfs @ 0.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Peak Elev= 415.90' @ 12.50 hrs Surf.Area= 8,584 sf Storage= 19,620 cf

Plug-Flow detention time= 588.2 min calculated for 0.780 af (100% of inflow) Center-of-Mass det. time= 589.7 min (1,373.7 - 784.0)

Invert	Avail.S	torage	Storage Description	on			
413.00'	40,	633 cf	Custom Stage Da	ata (Irregular) Listed	l below (Recalc)		
n Si	urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area		
t)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)		
0	5,044	379.9	0	0	5,044		
0	6,213	399.0	5,618	5,618	6,290		
0	7,437	417.9	6,816	12,434	7,585		
0	8,720	436.7	8,070	20,504	8,933		
0	10,058	455.6	9,381	29,885	10,347		
0	11,453	474.4	10,748	40,633	11,814		
Routing	Inver	t Outle	et Devices				
Primary	413.00)' 18.0	" x 194.0' long Cu	Ivert RCP, groove	end projecting, Ke= 0.200		
-		Outle	et Invert= 412.00'	S= 0.0052 '/' Cc= (0.900 n= 0.013		
Device 1	413.00	-	1.5" Vert. Orifice C= 0.600				
Device 1	414.25	5' 6.0"	6.0" Vert. Orifice C= 0.600				
Device 1	416.00						
Secondary	417.50						
		Coef	f. (English) 2.55 2.	.60 2.70 2.67 2.67	2.67 2.66 2.64		
	413.00' n Si 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	413.00' 40, n Surf.Area t) (sq-ft) 0 5,044 0 6,213 0 7,437 0 8,720 0 10,058 0 11,453 Routing Inver Primary 413.00 Device 1 413.00 Device 1 414.25 Device 1 416.00	413.00' 40,633 cf n Surf.Area Perim. t) (sq-ft) (feet) 0 5,044 379.9 0 6,213 399.0 0 7,437 417.9 0 8,720 436.7 0 10,058 455.6 0 11,453 474.4 Routing Invert Outletee Primary 413.00' 18.0 Outletee Device 1 413.00' 1.5" Device 6.0" Device 1 416.00' 4.00 Secondary 417.50' 20.0	413.00' 40,633 cf Custom Stage Date n Surf.Area Perim. Inc.Store t) (sq-ft) (feet) (cubic-feet) 0 5,044 379.9 0 0 6,213 399.0 5,618 0 7,437 417.9 6,816 0 8,720 436.7 8,070 0 10,058 455.6 9,381 0 11,453 474.4 10,748 Routing Invert Outlet Devices Primary 413.00' 18.0'' x 194.0' long Cu Device 1 413.00' 1.5'' Vert. Orifice C= 0 Device 1 416.00' 4.00' W x 4.00' H Vert. Secondary 417.50' 20.0' long x 11.5' brea Head (feet) 0.20 0.40	413.00' 40,633 cf Custom Stage Data (Irregular)Listed n Surf.Area Perim. Inc.Store Cum.Store t) (sq-ft) (feet) (cubic-feet) (cubic-feet) 0 5,044 379.9 0 0 0 6,213 399.0 5,618 5,618 0 7,437 417.9 6,816 12,434 0 8,720 436.7 8,070 20,504 0 10,058 455.6 9,381 29,885 0 11,453 474.4 10,748 40,633 Routing Invert Outlet Devices Primary 413.00' 18.0" x 194.0' long Culvert RCP, groove Outlet Invert= 412.00' S= 0.0052 '/' Cc= 0 Device 1 413.00' 1.5" Vert. Orifice C= 0.600 Device 1 414.25' 6.0" Vert. Orifice C= 0.600 Device 1 416.00' 4.00' W x 4.00' H Vert. Grate C= 0.600		

Primary OutFlow Max=1.22 cfs @ 12.50 hrs HW=415.90' (Free Discharge)

-1=Culvert (Passes 1.22 cfs of 10.08 cfs potential flow)

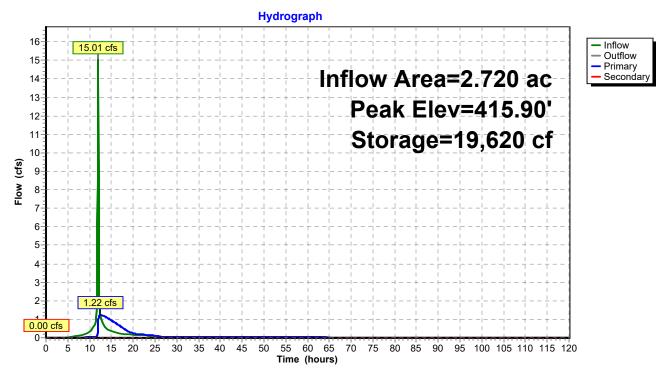
2=Orifice (Orifice Controls 0.10 cfs @ 8.11 fps)

-3=Orifice (Orifice Controls 1.12 cfs @ 5.69 fps)

-4=Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=413.00' (Free Discharge) 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

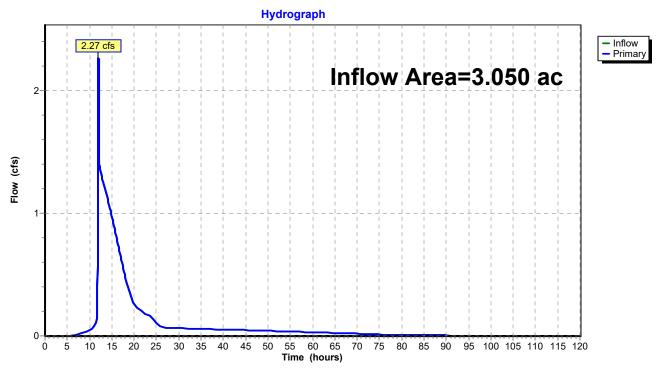
Pond 3P: Stormwater Wetland



Summary for Link 5L: DA1 Post-development

Inflow Area =	3.050 ac, 63.28% Impervious, In	nflow Depth > 3.32" for 5-Year event
Inflow =	2.27 cfs @ 11.99 hrs, Volume=	0.845 af
Primary =	2.27 cfs @ 11.99 hrs, Volume=	0.845 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs



Link 5L: DA1 Post-development

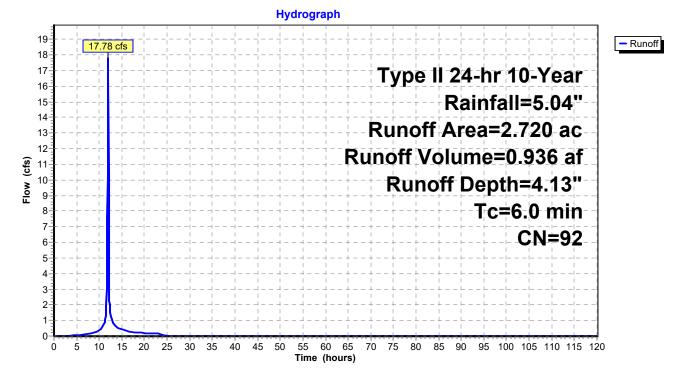
Summary for Subcatchment 2S: DA1a Post-development to SCM

Runoff = 17.78 cfs @ 11.96 hrs, Volume= 0.936 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.04"

Area (ac)	CN	Desc	ription			
0.7	760	80	>75%	6 Grass co	over, Good	d, HSG D	
0.0	070	70	Brus	h, Fair, HS	SG C		
1.8	390	98	Pave	d parking	& roofs		
2.7	2.720 92 Weighted Average						
0.8	0.830 Pervious Area						
1.8	1.890 Impervious Area						
	Lengt		Slope	Velocity	Capacity	Description	
<u>(min)</u>	(feet	t)	(ft/ft)	(ft/sec)	(cfs)		
6.0						Direct Entry,	

Subcatchment 2S: DA1a Post-development to SCM



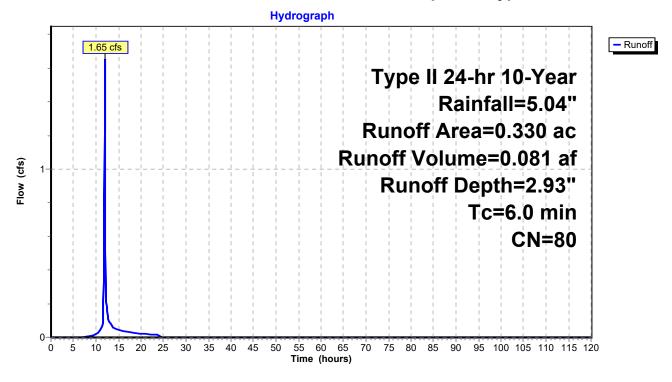
Summary for Subcatchment 4S: DA1b Post-development Bypass

Runoff = 1.65 cfs @ 11.97 hrs, Volume= 0.081 af, Depth= 2.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.04"

Area	(ac)	CN	Desc	Description							
0.	290	77	Brus	h, Fair, HS	SG D						
0.	.040	98	Pave	d parking	& roofs						
0.	330	80	Weig	hted Aver	age						
0.	290		Perv	ious Area	•						
0.	0.040 Impervious Area										
Тс	Lengt	ih S	Slope	Velocity	Capacity	Description					
(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)						
6.0						Direct Entry,					

Subcatchment 4S: DA1b Post-development Bypass



Summary for Pond 3P: Stormwater Wetland

Inflow Area =	2.720 ac, 69.49% Impervious, Inflow	Depth = 4.13" for 10-Year event
Inflow =	17.78 cfs @ 11.96 hrs, Volume=	0.936 af
Outflow =	2.75 cfs @ 12.19 hrs, Volume=	0.935 af, Atten= 85%, Lag= 13.6 min
Primary =	2.75 cfs @ 12.19 hrs, Volume=	0.935 af
Secondary =	0.00 cfs @ 0.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Peak Elev= 416.23' @ 12.19 hrs Surf.Area= 9,016 sf Storage= 22,524 cf

Plug-Flow detention time= 519.8 min calculated for 0.935 af (100% of inflow) Center-of-Mass det. time= 519.3 min (1,298.4 - 779.1)

Volume	olume Invert Avail.Storage		orage	e Storage Description				
#1	413.00'	40,	633 cf	Custom Stage Data (Irregular) Listed below (Recalc)				
Elevatio	an Si	urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area		
(fee		(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)		
			/	· · · · ·		· · · ·		
413.0		5,044	379.9	0	0	5,044		
414.(00	6,213	399.0	5,618	5,618	6,290		
415.0	00	7,437	417.9	6,816	12,434	7,585		
416.0	00	8,720	436.7	8,070	20,504	8,933		
417.0	00	10,058	455.6	9,381	29,885	10,347		
418.0		11,453	474.4	10,748	40,633	11,814		
		,		,	,	,		
Device	Routing	Inver	t Outle	et Devices				
#1	Primary	413.00	' 18.0	" x 194.0' long Cu	Ivert RCP, groove	end projecting, Ke= 0.200		
	,				S= 0.0052 '/' Cc= 0			
#2	Device 1	413.00	' 1.5"	Vert. Orifice C= 0	.600			
#3	Device 1	414.25	6.0"	Vert. Orifice C= 0	.600			
#4 Device 1		416.00	4.00	4.00' W x 4.00' H Vert. Grate C= 0.600				
#5	Secondary			long x 11.5' brea	dth Broad-Crested	Rectangular Weir		
				0	0.60 0.80 1.00 1.2	0		
					60 2.70 2.67 2.67			
			000	. (English) 2.00 2.	00 2.10 2.01 2.01	2.01 2.00 2.04		

Primary OutFlow Max=2.74 cfs @ 12.19 hrs HW=416.23' (Free Discharge)

-1=Culvert (Passes 2.74 cfs of 10.75 cfs potential flow)

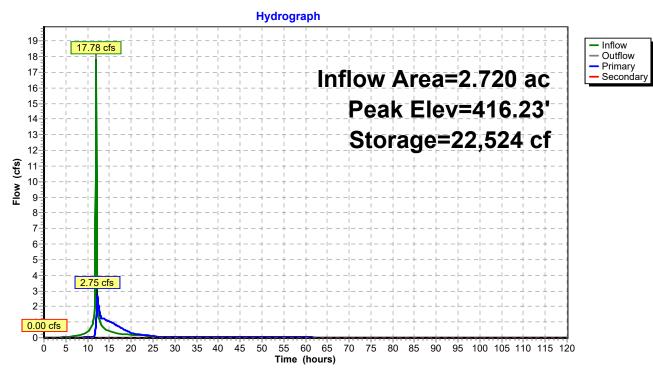
2=Orifice (Orifice Controls 0.11 cfs @ 8.57 fps)

-3=Orifice (Orifice Controls 1.24 cfs @ 6.33 fps)

-4=Grate (Orifice Controls 1.39 cfs @ 1.53 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=413.00' (Free Discharge) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

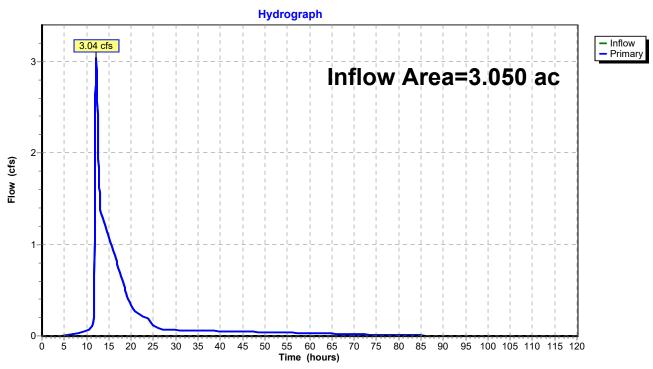
Pond 3P: Stormwater Wetland



Summary for Link 5L: DA1 Post-development

Inflow Are	a =	3.050 ac, 63.28% Impervious, Inflow Depth > 4.00" for 10-Year event
Inflow	=	3.04 cfs @ 12.16 hrs, Volume= 1.016 af
Primary	=	3.04 cfs @ 12.16 hrs, Volume= 1.016 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs



Link 5L: DA1 Post-development

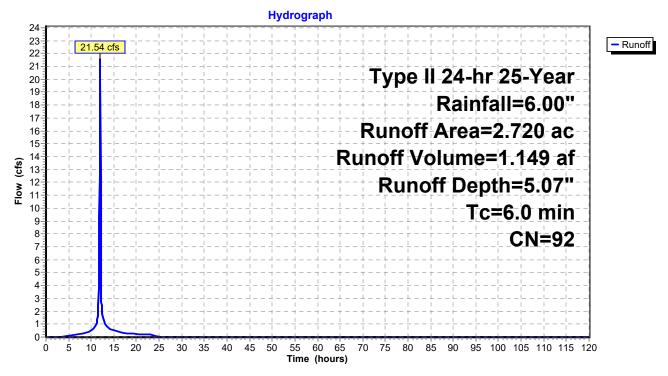
Summary for Subcatchment 2S: DA1a Post-development to SCM

Runoff = 21.54 cfs @ 11.96 hrs, Volume= 1.149 af, Depth= 5.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 25-Year Rainfall=6.00"

Area	(ac)	CN	Desc	Description						
0.	.760	80	>75%	6 Grass co	over, Good	I, HSG D				
0.	.070	70	Brus	h, Fair, HS	SG C					
1.	.890	98	Pave	d parking	& roofs					
2.	.720	92	Weig	hted Aver	age					
0.	.830		Perv	ious Area						
1.	.890		Impe	rvious Are	ea					
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
6.0						Direct Entry,				

Subcatchment 2S: DA1a Post-development to SCM



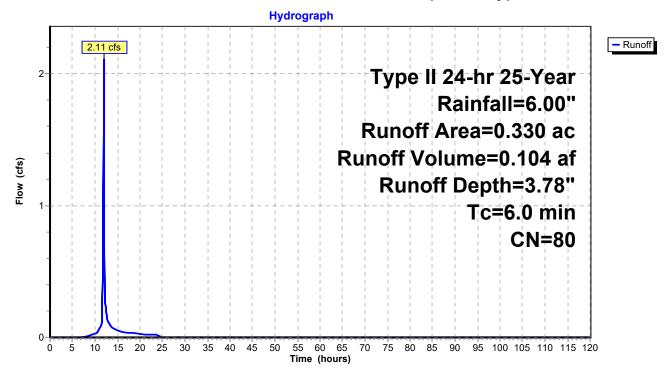
Summary for Subcatchment 4S: DA1b Post-development Bypass

Runoff = 2.11 cfs @ 11.97 hrs, Volume= 0.104 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 25-Year Rainfall=6.00"

Area	(ac)	CN	Desc	Description						
0.	.290	77	Brus	h, Fair, HS	SG D					
0.	.040	98	Pave	ed parking	& roofs					
0	.330	80	Weig	hted Aver	age					
0.	.290		Perv	ious Area	-					
0.	0.040 Impervious Area				ea					
Tc	Leng		Slope	Velocity	Capacity	Description				
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
6.0						Direct Entry,				

Subcatchment 4S: DA1b Post-development Bypass



Summary for Pond 3P: Stormwater Wetland

Inflow Area =	2.720 ac, 69.49% Impervious, Inflow	Depth = 5.07" for 25-Year event
Inflow =	21.54 cfs @ 11.96 hrs, Volume=	1.149 af
Outflow =	7.16 cfs @ 12.10 hrs, Volume=	1.148 af, Atten= 67%, Lag= 8.5 min
Primary =	7.16 cfs @ 12.10 hrs, Volume=	1.148 af
Secondary =	0.00 cfs $\overline{@}$ 0.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Peak Elev= 416.58' @ 12.10 hrs Surf.Area= 9,486 sf Storage= 25,791 cf

Plug-Flow detention time= 443.0 min calculated for 1.148 af (100% of inflow) Center-of-Mass det. time= 442.6 min (1,216.3 - 773.7)

Volume	Invert Avail.Storage		Storage	e Storage Description				
#1	#1 413.00' 40,65		,633 cf	cf Custom Stage Data (Irregular)Listed below (Recalc)				
Elevati	on S	urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area		
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)		
413.	00	5,044	379.9	0	0	5,044		
414.	00	6,213	399.0	5,618	5,618	6,290		
415.	00	7,437	417.9	6,816	12,434	7,585		
416.	00	8,720	436.7	8,070	20,504	8,933		
417.	00	10,058	455.6	9,381	29,885	10,347		
418.	00	11,453	474.4	10,748	40,633	11,814		
Device	Routing	Inve	rt Outle	et Devices				
#1	Primary	413.0	D' 18.0	" x 194.0' long Cu	Ivert RCP, groove	end projecting, Ke=	0.200	
	-		Outle	et Invert= 412.00'	S= 0.0052 '/' Cc=	0.900 n= 0.013		
#2	Device 1	413.0	D' 1.5"	Vert. Orifice C= C).600			
#3	Device 1	414.2	5' 6.0"	6.0" Vert. Orifice C= 0.600				
#4	#4 Device 1		4.00	' W x 4.00' H Vert.	Grate C= 0.600			
#5	Secondary	/ 417.5		0		d Rectangular Weir		
					0.60 0.80 1.00 1.			
			Coef	f. (English) 2.55 2	.60 2.70 2.67 2.67	7 2.67 2.66 2.64		

Primary OutFlow Max=7.12 cfs @ 12.10 hrs HW=416.58' (Free Discharge)

-1=Culvert (Passes 7.12 cfs of 11.42 cfs potential flow)

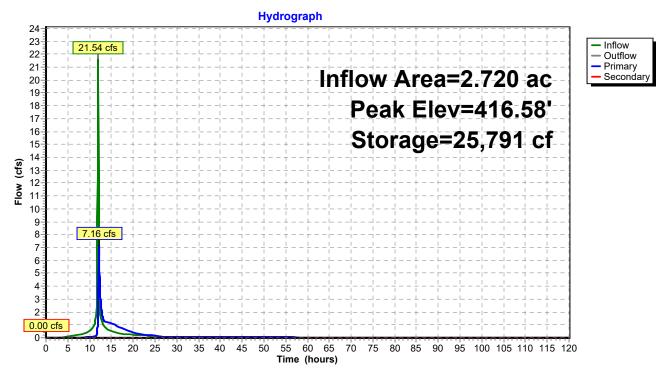
2=Orifice (Orifice Controls 0.11 cfs @ 9.03 fps)

-3=Orifice (Orifice Controls 1.36 cfs @ 6.94 fps)

-4=Grate (Orifice Controls 5.64 cfs @ 2.44 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=413.00' (Free Discharge) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

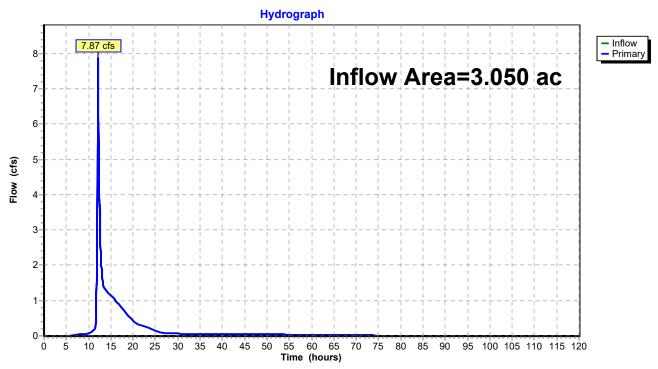
Pond 3P: Stormwater Wetland



Summary for Link 5L: DA1 Post-development

Inflow Are	a =	3.050 ac, 63.28% Impervious, Inflow Depth = 4.93" for 25-Year event
Inflow	=	7.87 cfs @ 12.08 hrs, Volume= 1.252 af
Primary	=	7.87 cfs @ 12.08 hrs, Volume= 1.252 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs



Link 5L: DA1 Post-development

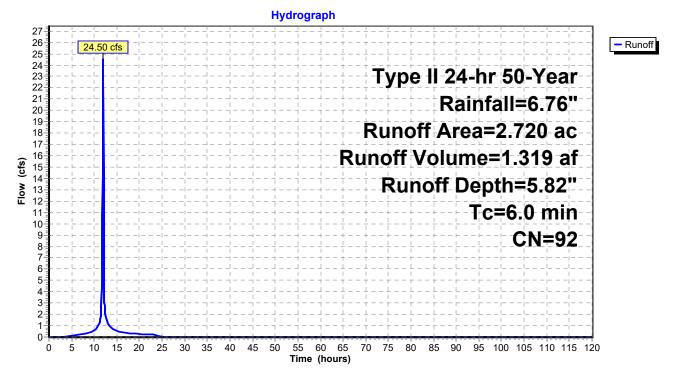
Summary for Subcatchment 2S: DA1a Post-development to SCM

Runoff = 24.50 cfs @ 11.96 hrs, Volume= 1.319 af, Depth= 5.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=6.76"

Area	(ac)	CN	Desc	ription				
0.	760	80	>75%	6 Grass co	over, Good	d, HSG D		
0.	.070	70		h, Fair, HS				
1.	.890	98	Pave	ed parking	& roofs			
2.	2.720 92 Weighted Average							
0.	.830		Perv	ious Area				
1.	.890		Impe	ervious Are	a			
Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	•		
6.0	(100	-()	(1011)	(11/360)	(013)	Direct Entry,		
0.0						Direct Litti y,		

Subcatchment 2S: DA1a Post-development to SCM



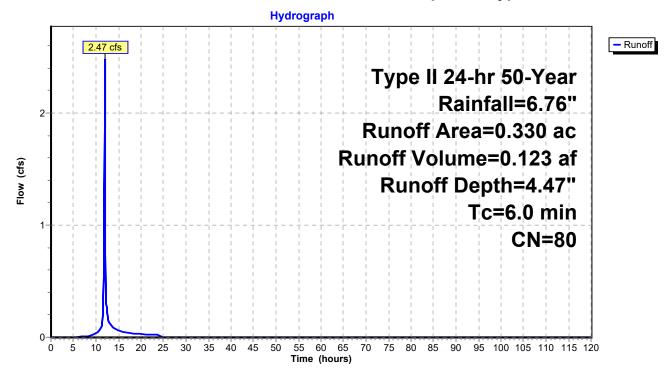
Summary for Subcatchment 4S: DA1b Post-development Bypass

Runoff = 2.47 cfs @ 11.97 hrs, Volume= 0.123 af, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=6.76"

	Area	(ac)	CN	Desc	Description						
	0.	290	77	Brus	h, Fair, HS	SG D					
_	0.	040	98	Pave	ed parking	& roofs					
	0.330 80 Weighted Average										
	0.	290		Perv	ious Area	-					
	0.040 Impervious Area					ea					
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	<i>/</i> /	(166	51)	(1011)	(11/300)	(015)	Direct Entry				
	6.0						Direct Entry,				

Subcatchment 4S: DA1b Post-development Bypass



Summary for Pond 3P: Stormwater Wetland

Inflow Area =	2.720 ac, 69.49% Impervious, Inflow D	epth = 5.82" for 50-Year event
Inflow =	24.50 cfs @ 11.96 hrs, Volume=	1.319 af
Outflow =	10.72 cfs @ 12.08 hrs, Volume=	1.318 af, Atten= 56%, Lag= 6.8 min
Primary =	10.72 cfs @ 12.08 hrs, Volume=	1.318 af
Secondary =	0.00 cfs $\overline{@}$ 0.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs Peak Elev= 416.80' @ 12.08 hrs Surf.Area= 9,782 sf Storage= 27,892 cf

Plug-Flow detention time= 396.5 min calculated for 1.318 af (100% of inflow) Center-of-Mass det. time= 398.3 min (1,168.5 - 770.2)

Volume	Invert	Avail.S	Storage	Storage Description	on	
#1	413.00'	40	,633 cf	Custom Stage Da	ata (Irregular) Liste	ed below (Recalc)
Elevatio		urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area
					-	
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
413.0	00	5,044	379.9	0	0	5,044
414.(00	6,213	399.0	5,618	5,618	6,290
415.0	00	7,437	417.9	6,816	12,434	7,585
416.0		8,720	436.7	8,070	20,504	8,933
417.0		10,058	455.6	9,381	29,885	10,347
418.0		11,453	474.4	10,748	40,633	11,814
410.0	50	11,400	4/4.4	10,740	40,000	11,014
Device	Routing	Inve	rt Outle	et Devices		
#1	Primary	413.0	רי 18 0	" x 194 0' long Ci	Ivert RCP groove	e end projecting, Ke= 0.200
π I	1 minary	+10.0			S= 0.0052 '/' Cc=	
#0	Davias 1	112.0	-			0.900 11- 0.013
#2	Device 1	413.0		Vert. Orifice C= (
#3	Device 1	414.2		Vert. Orifice C= (
#4	Device 1	416.0	D' 4.00	' W x 4.00' H Vert.	Grate C= 0.600	
#5	Secondary	417.5	D' 20.0	long x 11.5 brea	adth Broad-Creste	d Rectangular Weir
			Head	d (feet) 0.20 0.40	0.60 0.80 1.00 1	.20 1.40 1.60
					.60 2.70 2.67 2.6	
			2.50			

Primary OutFlow Max=10.55 cfs @ 12.08 hrs HW=416.79' (Free Discharge)

-**1=Culvert** (Passes 10.55 cfs of 11.80 cfs potential flow)

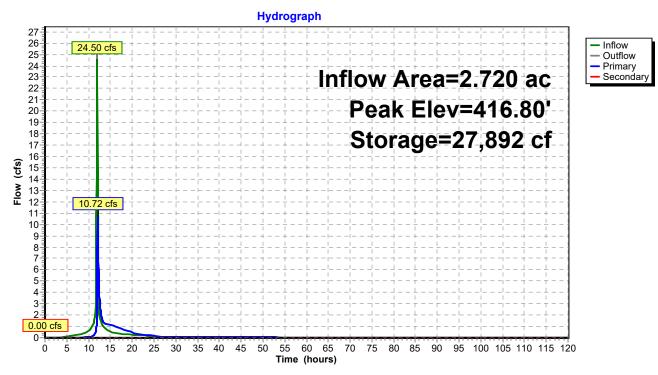
2=Orifice (Orifice Controls 0.11 cfs @ 9.30 fps)

-3=Orifice (Orifice Controls 1.43 cfs @ 7.29 fps)

-4=Grate (Orifice Controls 9.00 cfs @ 2.85 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=413.00' (Free Discharge) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

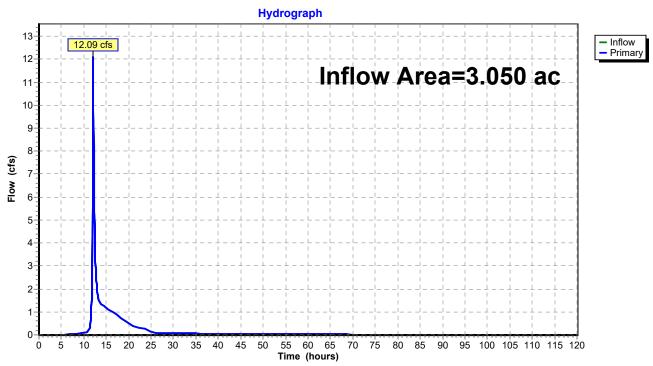
Pond 3P: Stormwater Wetland



Summary for Link 5L: DA1 Post-development

Inflow Area =	3.050 ac, 63.28% Impervious,	Inflow Depth = 5.67" for 50-Year event
Inflow =	12.09 cfs @ 12.06 hrs, Volume	= 1.441 af
Primary =	12.09 cfs @ 12.06 hrs, Volume	= 1.441 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs



Link 5L: DA1 Post-development