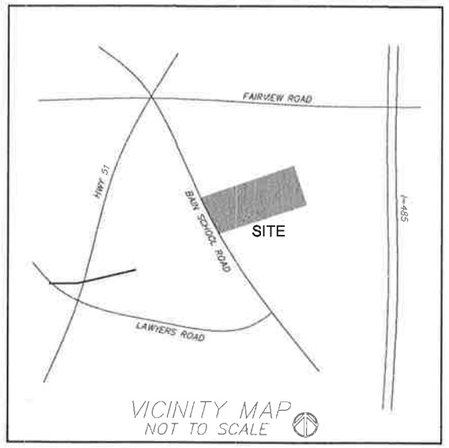
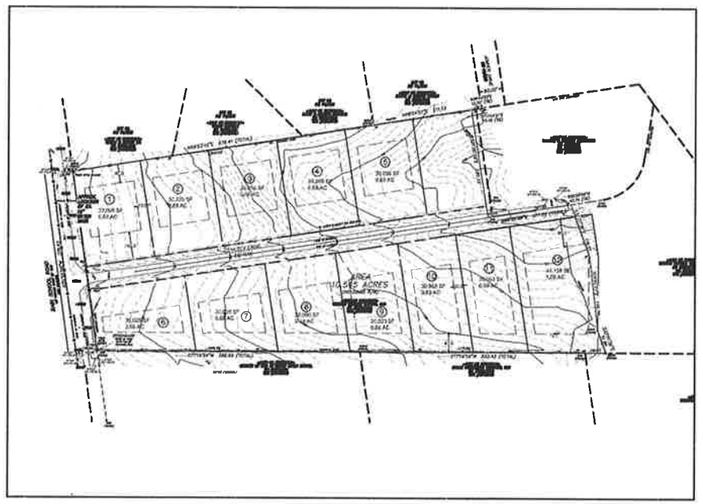


KARA AT MINT HILL

MINT HILL, NORTH CAROLINA

SITE DEVELOPMENT PLANS
FOR REVIEW BY CHARMECK AND MINT HILL

SITE INFORMATION:
Zoning: R
Size: 10.545 AC
Tax Map #: 19705101
Deedbook and Page: 28388/404
Min. Lot Size: 30,000 SF
No. of Lots Allowed: 15
No. of Lots Proposed: 12
Setbacks:
Front: 60'
Rear: 40'
Side: 20'
Water Service: CMUD
Sewer Service: Individual Septic
Gas Service: Piedmont Natural Gas
Electrical Service: Duke Energy
DISTURBED AREA: 1.38 AC



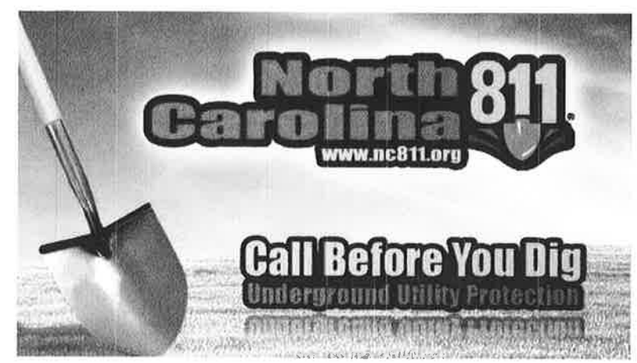
SITE MAP NOT TO SCALE

Prepared by:
John D. Champoux, RLA, LEED AP
Project Number: 14101

Prepared for:
THOMAS WINFIELD CAPITAL, LLC
12309 Bain School Road
Mint Hill, NC 28227
(916) 275-6032
Albert Thomas
thomaswinfield@att.net

AUGUST 11, 2014
Revised: AUGUST 03, 2015

NOTES:
1. THERE SHALL BE NO CLEARING, GRADING, DISTURBANCE OR CONSTRUCTION OR CONSTRUCTION RUNOFF IMPACTS TO THE OPEN SPACE AREAS EXCEPT AS ALLOWED BY CHARMECK.
2. ALL OPEN SPACE AREAS SHALL BE OWNED BY THE PROPERTY OWNERS ASSOCIATION.
3. MAXIMUM BUILDING HEIGHT: THREE (3) STORIES ABOVE GROUND LEVEL.
4. PROPOSED UTILITIES SHALL BE LOCATED UNDERGROUND. SEE CIVIL PLANS
5. ASPHALT ROADWAY CURRENTLY EXISTS.
6. STORMWATER CONTROLS: LOW IMPACT DEVELOPMENT (LID) TECHNIQUES ARE THE PREFERRED STORMWATER BEST MANAGEMENT PRACTICES (BMPs) WITHIN THE DEVELOPMENT.
7. THIS PROPERTY DOES NOT LIE WITHIN A FLOODWAY OR FLOODZONE PER THE FEMA FLOOD INSURANCE RATE MAP OF MECKLENBURG COUNTY.
8. SITE LIGHTING, IF NECESSARY, WILL BE DESIGNED AND INSTALLED BY OTHERS.



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Survey Consultant: Carolina Surveyors, Inc.
Hugh E. White, NCRLS
P.O. Box 267
Pineville, NC 28134-0267
704.889.7601

PLAN LIST:

L-00 Coversheet
L-01 General Notes
L-02 Existing Conditions Plan
L-03 Sediment and Erosion Control Plan
L-04 Layout, Stormwater and Water Quality Plan
L-05 Grading Plan
L-06 Landscape Plan
L-07 Site Details
L-08 Site Details
L-09 Sediment and Erosion Control Details
L-10 Sediment and Erosion Control Details
CMUD Utility Coversheet (for reference)
CMUD Water Plan (for reference)

GENERAL CONSTRUCTION NOTES:

1. BASE DATA AND SURVEY INFORMATION UPON WHICH THIS PLAN IS BASED HAS BEEN PROVIDED BY OTHERS. LANDSCAPE ARCHITECT ASSUMES NO LIABILITY FOR ITS ACCURACY OR COMPLETENESS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PERTINENT INFORMATION.
2. MAINTAIN SOIL EROSION MEASURES THROUGHOUT CONSTRUCTION PROCESS AND MODIFY WHERE NECESSARY.
3. ALL EASEMENTS AND SWALES ARE TO BE GRASSED IMMEDIATELY TO PREVENT EROSION.
4. ALL SOIL EROSION MEASURES WILL BE CHECKED AND REPAIRED DAILY AND IMMEDIATELY AFTER ANY RAIN EVENT OF $\frac{1}{2}$" OR MORE. ALWAYS ENSURE THAT EROSION CONTROL MEASURES AND DRAINS ARE FULLY FUNCTIONAL. MEASURES WILL BE MAINTAINED AND FULLY FUNCTIONAL THROUGHOUT THE CONSTRUCTION PROCESS AND WILL BE CHECKED BY THE LANDSCAPE ARCHITECT AT ANY TIME.
5. LANDSCAPE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ANY HAZARDOUS MATERIALS THAT MAY BE ENCOUNTERED.
6. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN AND MARK ALL PHYSICAL LOCATIONS OF ALL UTILITY LINES PRIOR TO COMMENCING WORK. CONTRACTOR IS RESPONSIBLE FOR THE COST OF REPAIRING EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
7. CONTRACTOR WILL RESTORE AND/OR REPAIR TO ORIGINAL CONDITION, AND TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT, ANY AREAS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION.
8. CONTRACTOR WILL BE RESPONSIBLE FOR VISITING THE SITE DURING HIS BID PREPARATION AND FULLY FAMILIARIZE HIMSELF WITH ALL THE ASPECTS OF THE SCOPE OF WORK AND CONDITIONS OF THE SITE.
9. CONTRACTOR WILL COORDINATE HIS WORK WITH THAT OF THE OTHER TRADES EMPLOYED BY THE OWNER AND WITH THE OWNER'S OWN FORCES.
10. CONTRACTOR WILL MAINTAIN COPIES OF THE EROSION AND SEDIMENT CONTROL PLAN AT HIS JOB OFFICE ALONG WITH CURRENT COPIES OF THE CONSTRUCTION DOCUMENTS, INCLUDING DRAWINGS, SPECIFICATIONS AND GEOTECHNICAL REPORTS.
11. CONTRACTOR SHALL MAINTAIN SITE IN WORKMAN LIKE ORDER. SOIL AND OTHER MATERIALS FROM THIS PROJECT SHALL NOT BE ALLOWED TO MIGRATE INTO OTHER AREAS, ROADWAYS, WALKWAYS AND LANDSCAPING SHALL BE MAINTAINED FREE OF OBSTACLES OR HAZARDS.
12. CONTRACTOR WILL OBTAIN ALL PERMITS AND LICENSES NECESSARY TO COMPLETE THE WORK.
13. CONTRACTOR SHALL DISPOSE OF ALL WASTE SAFELY AND LEGALLY OFF-SITE.
14. CONTRACTOR WILL BE RESPONSIBLE FOR SECURITY OF HIS MATERIALS AND EQUIPMENT.
15. CONTRACTOR WILL PROVIDE ALL NECESSARY FLAGMEN, BARRICADES, SIGNS AND WARNING DEVICES FOR THE PROTECTION OF THE PUBLIC AND OWNER.
16. NO CHANGE TO ANY ASPECT OF THESE CONTRACT DRAWINGS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND LANDSCAPE ARCHITECT.
17. ALL MEASUREMENTS ARE TO THE BACK OF CURB, EDGE OF PAVEMENT, FACE OF FLUSH HEADER CURB, CENTER LINE OF SITE WALLS OR THE FACE OF BUILDING WALLS UNLESS OTHERWISE NOTED ON THE PLANS.
18. STREETS ADJACENT TO AND DIRECTLY AFFECTED BY CONSTRUCTION TRAFFIC SHALL REMAIN FREE OF SOIL AND SILT, OTHER CONSTRUCTION DEBRIS AND TRASH. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING REASONABLE CLEANLINESS OF SAID STREETS BY WASHING DOWN WITH WATER AND REMOVING ANY OTHER TRASH, WASTE OR CONSTRUCTION DEBRIS, AND DISPOSING OF IT PROPERLY ON A DAILY BASIS.
19. NO PERSONAL VEHICLES, CONSTRUCTION EQUIPMENT OR MATERIALS SHALL BE STORED ON ADJACENT SITES WITHOUT PRIOR WRITTEN PERMISSION FROM THE PROPERTY OWNER.
20. CONTRACTOR WILL ADHERE TO THE WEIGHT LIMITS PRESCRIBED ON ALL ROADS FOR HAULING EQUIPMENT AND/OR MATERIALS TO AND FROM THE SITE. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO THE ROADS AND/OR UTILITIES DUE TO FAILURE TO COMPLY WITH THE WEIGHT LIMITS. ALL DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
21. THE TERM 'FINISHED FLOOR ELEVATION' (FFE), WHERE INDICATED, REFERS TO THE ELEVATION OF THE SPECIFIED MATERIAL FINISH.
22. SHOP DRAWINGS MUST BE CHECKED, APPROVED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMITTING TO THE LANDSCAPE ARCHITECT FOR APPROVAL. SHOP DRAWINGS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.
23. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, STATE, COUNTY AND LOCAL MUNICIPAL CODES, ORDINANCES AND REGULATIONS.
24. CONTRACTOR TO INSTALL ALL ITEMS ON THE CONSTRUCTION DOCUMENTS UNLESS OTHERWISE INDICATED AS 'NOT IN CONTRACT' (NIC).
25. CONTRACTOR TO VERIFY ALL EARTHWORK COMPLETE PRIOR TO STARTING CONSTRUCTION. IF DISCREPANCIES EXIST BETWEEN EXISTING AND PROPOSED GRADES, CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT IMMEDIATELY.
26. CONSTRUCTION SHALL FOLLOW THE SEQUENCES AND CONDITIONS ESTABLISHED ON THE PLANS AND IN THE SPECIFICATIONS.
27. IN THE CASE OF A DISCREPANCY BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL BE FOLLOWED. CONTACT LANDSCAPE ARCHITECT IMMEDIATELY.
28. GRADING LIMITS EQUALS CONSTRUCTION LIMIT.
29. VERIFY ALL LOCATIONS, ELEVATIONS AND DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
30. NOTIFY LANDSCAPE ARCHITECT AT LEAST 48 HOURS PRIOR TO ANY ROUTINE REQUIRED FIELD OBSERVATION.
31. ALL HOT-DIPPED GALVANIZED STEEL FASTENERS SHALL COMPLY WITH G-185 ASTM STANDARDS, AND CONTRACTOR SHALL SUBMIT ALL FASTENERS TO BE USED FOR APPROVAL BY LANDSCAPE ARCHITECT.

PLANTING NOTES:

1. MATERIAL LIST WAS PREPARED FOR ESTIMATING PURPOSES ONLY. CONTRACTOR SHALL MAKE OWN QUANTITY TAKEOFFS USING THE DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT IMMEDIATELY. LANDSCAPE ARCHITECT ASSUMES NO LIABILITY FOR QUANTITY DISCREPANCIES.
2. CONTRACTOR TO VERIFY THAT ALL PLANT MATERIALS ARE AVAILABLE, AS SPECIFIED, WHEN PROPOSAL IS SUBMITTED.
3. CONTRACTOR SHALL STAKE OUT ALL SHRUB BED LINES, TREE LOCATIONS AND SHRUB GROUPINGS FOR APPROVAL BY LANDSCAPE ARCHITECT BEFORE COMMENCING PLANTING OPERATIONS. NOTIFY LANDSCAPE ARCHITECT 24 HOURS PRIOR TO PLANTING.
4. ALL DISTURBED AREA IN PLANT BEDS TO RECEIVE 3" OF TRIPLE GROUND, HARDWOOD BARK MULCH, AGED A MINIMUM OF 6 MONTHS. TREES NOT LOCATED WITHIN A PLANT BED SHALL RECEIVE A 5' DIAMETER BED OF TRIPLE SHREDDED HARDWOOD BARK MULCH THAT IS 3" DEEP.
5. CONTRACTOR TO MAINTAIN ALL AREAS WITHIN THE LIMITS OF WORK FOR THE DURATION OF CONSTRUCTION.
6. IN THE PLANT SCHEDULE, PLANTS NOTED AS 'SPECIMEN' SHALL BE SELECTED BY THE LANDSCAPE ARCHITECT AND FLAGGED AT THE NURSERY. TREES NOTED AS 'MULTI-STEM' OR MULTI-TRUNK' SHALL HAVE NO LESS THAN 3 STEMS AND NO MORE THAN 5 STEMS OR TRUNKS. MULTI-STEM TREES WITH LESS THAN 3 OR MORE THAN 5 STEMS WILL BE REJECTED.
7. PRE-EMERGENT HERBICIDE SUCH AS 'RONSTAR G' OR EQUAL SHALL BE APPLIED TO PLANTING AREAS IMMEDIATELY FOLLOWING LANDSCAPE INSTALLATION, AND PRIOR TO MULCHING, ACCORDING THE MANUFACTURER'S INSTRUCTIONS.
8. CENTERS OF PLANT MATERIAL SHOULD BE LOCATED NO CLOSER THAN 2' FROM THE FOUNDATION OF ANY BUILDING. ADJUST LOCATION OF PLANT MATERIAL TO AVOID PLACEMENT IN FRONT OF GUTTER DRAINS, ETC.
9. CONTRACTOR TO VERIFY WITH LANDSCAPE ARCHITECT THAT ADEQUATE SURFACE AND PLANT PIT DRAINAGE EXISTS PRIOR TO PLANTING.
10. ALL TREES, SHRUBS AND PLANTS SHALL BE TYPICAL FOR THE SPECIES IN FORM AND COLOR; FREE FROM DAMAGE AND DISEASE AND SHALL BE U.S. NURSERY STANDARD #1 OR BETTER.
11. SPECIMEN TREES 2" CALIPER AND LARGER WILL ONLY BE ACCEPTED FROM LANDSCAPE ARCHITECT APPROVED NURSERIES. SEE NURSERY NOTES.
12. IF INSTALLED PLANTS SETTLE OR FALL OUT OF PLUMB POSITION CONTRACTOR WILL STRAIGHTEN THE PLANTS BY MAKING ADJUSTMENTS TO THE POSITION OF THE ROOTBALL AND NOT BY PUSHING OR PULLING ON THE TRUNK, OR BY TIGHTENING THE GUYWIRES. TREES SHALL BE STRAIGHTENED DURING THE DURATION OF THE PROJECT AS THEY GET OUT OF PLUMB, UNTIL THE FINAL INSPECTION OR CERTIFICATE OF OCCUPANCY IS GRANTED, WHICHEVER IS LONGER.
13. BALL DEPTHS ON SOME TREES IN A SINGLE GROUP MAY VARY. ROOTBALLS ARE TO BE SET 2"-3" ABOVE FINISHED GRADE. IF DEPTHS VARY, ALL TREES IN A GROUP SHOULD BE SET SO THAT THE BASE OF THE TRUNKS WILL APPEAR TO BE AT THE SAME RELATIVE ELEVATION ABOVE GRADE.
14. NO DECIDUOUS OR EVERGREEN TREE WILL BE ACCEPTED IF THERE IS MORE THAN ONE LEADER, UNLESS THE TREE IS DESIGNATED AS MULTI-STEM OR MULTI-TRUNK.
15. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
16. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
17. ANY AND ALL EXISTING BUFFERS ARE TO BE MAINTAINED AND PROTECTED THROUGHOUT THE DURATION OF CONSTRUCTION, UNLESS OTHERWISE NOTED ON THE PLANS. ANY DAMAGE TO PROTECTED BUFFERS WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
18. NO PLANT MATERIAL SUBSTITUTIONS WILL BE ACCEPTED WITHOUT APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
19. UPON COMPLETION OF ALL LANDSCAPING, AN INSPECTION FOR ACCEPTANCE OF THE WORK SHALL BE HELD. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND OWNER OF THE INSPECTION AT LEAST 7 BUSINESS DAYS PRIOR TO THE ANTICIPATED INSPECTION DATE.
20. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR 12 MONTHS FROM THE DATE OF ACCEPTANCE. REPLACEMENTS SHALL BE GUARANTEED FOR AN ADDITIONAL 12 MONTHS.
21. LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE CONSTRUCTION OPERATION, TO REJECT ANY AND ALL WORK WHICH, IN HIS OPINION, DO NOT MEET THE REQUIREMENTS OF THESE PLANS OR SPECIFICATIONS.
22. ALL PROPOSED TREES ARE TO BE INSTALLED EITHER COMPLETELY INSIDE OR COMPLETELY OUTSIDE OF PLANTING BEDS. PLANT BED LINES ARE NOT TO BE OBSTRUCTED (EVEN BY EXISTING TREES). BED LINES MUST MAINTAIN A MINIMUM DISTANCE OF 4'-0" FROM EXISTING TREE TRUNKS, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.
23. THE CONTRACTOR SHALL COORDINATE WITH UTILITY, LIGHTING AND IRRIGATION CONTRACTORS REGARDING THE INSTALLATION OF PLANT MATERIAL.
24. THE CONTRACTOR SHALL ENSURE THAT HIS WORK DOES NOT INTERRUPT ESTABLISHED OR PROJECTED DRAINAGE PATTERNS.
25. SEE TREE, SHRUB AND GROUNDCOVER PLANTING DETAILS AND SPECIAL PROVISIONS IN THE PLANTING SPECIFICATIONS.
26. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEEDING OR MULCHING ALL DISTURBED AREAS WITHIN THE LIMIT OF WORK TO CONTROL SOIL EROSION.
27. CONTRACTOR IS RESPONSIBLE FOR INSURING THAT ALL INSTALLED PLANT MATERIAL RECEIVES ADEQUATE AND REGULAR WATERINGS.
28. CONTRACTOR SHALL TEST SOIL PH AND CONDITIONS FOR ALL SOD AND SEEDED AREAS TO ENSURE THAT PROPER SOIL REQUIREMENTS ARE MET. PLANTING BED SOILS SHALL BE AMENDED BY CONTRACTOR AS INDICATED BY SOIL TEST AND SPECIFICATIONS TO ACHIEVE PROPER SOIL CONDITIONS PRIOR TO PLANTING.

NURSERY NOTES:

THE FOLLOWING ARE ACCEPTABLE NURSERIES FOR SPECIMEN TREES 2" CALIPER AND ABOVE, AS WELL AS CRAPE MYRTLES.
1. CHERRY LAKE TREE FARM (800)429-2171
2. SHADY GROVE NURSERIES (800)849-5723
3. SELECT TREES, INC. (800)466-7353
4. BOLD SPRINGS NURSERY (478)783-4975

TREES WILL NOT BE ACCEPTED FROM ANY OTHER NURSERIES WITHOUT PRIOR WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT. CONTACT LANDSCAPE ARCHITECT FOR UPDATED LIST OF APPROVED NURSERIES, AS QUALIFIED NURSERIES MAY BE ADDED IF NECESSARY.

UTILITY NOTES:

1. CONTRACTOR SHALL CALL EACH UTILITY COMPANY DIRECTLY TO PERFORM AN ON-SITE UTILITY LOCATING SERVICE. EACH UTILITY IS TO BE IDENTIFIED AND LOCATED BOTH AT THE GROUND PLANE AND DEPTH PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
2. COORDINATE WITH COMPANIES FOR DISCONNECTION OF ANY ACTIVE UTILITIES WITHIN THE CONSTRUCTION LIMITS AND TEMPORARILY REROUTE ANY OF THESE AS NECESSARY TO AVOID CONFLICTS AND DAMAGE DURING CONSTRUCTION.

CALL YOUR LOCAL UTILITY LOCATING SERVICE PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

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CLIENT:
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KARA AT MINT HILL

Mint Hill, North Carolina

SHEET NAME:
GENERAL NOTES

DATE:
2014-08-11

PROJECT #:
14101

REVISIONS:
2015-08-03

DRAWN BY: JC
CHECKED BY: FH, JT
SHEET #: L-01

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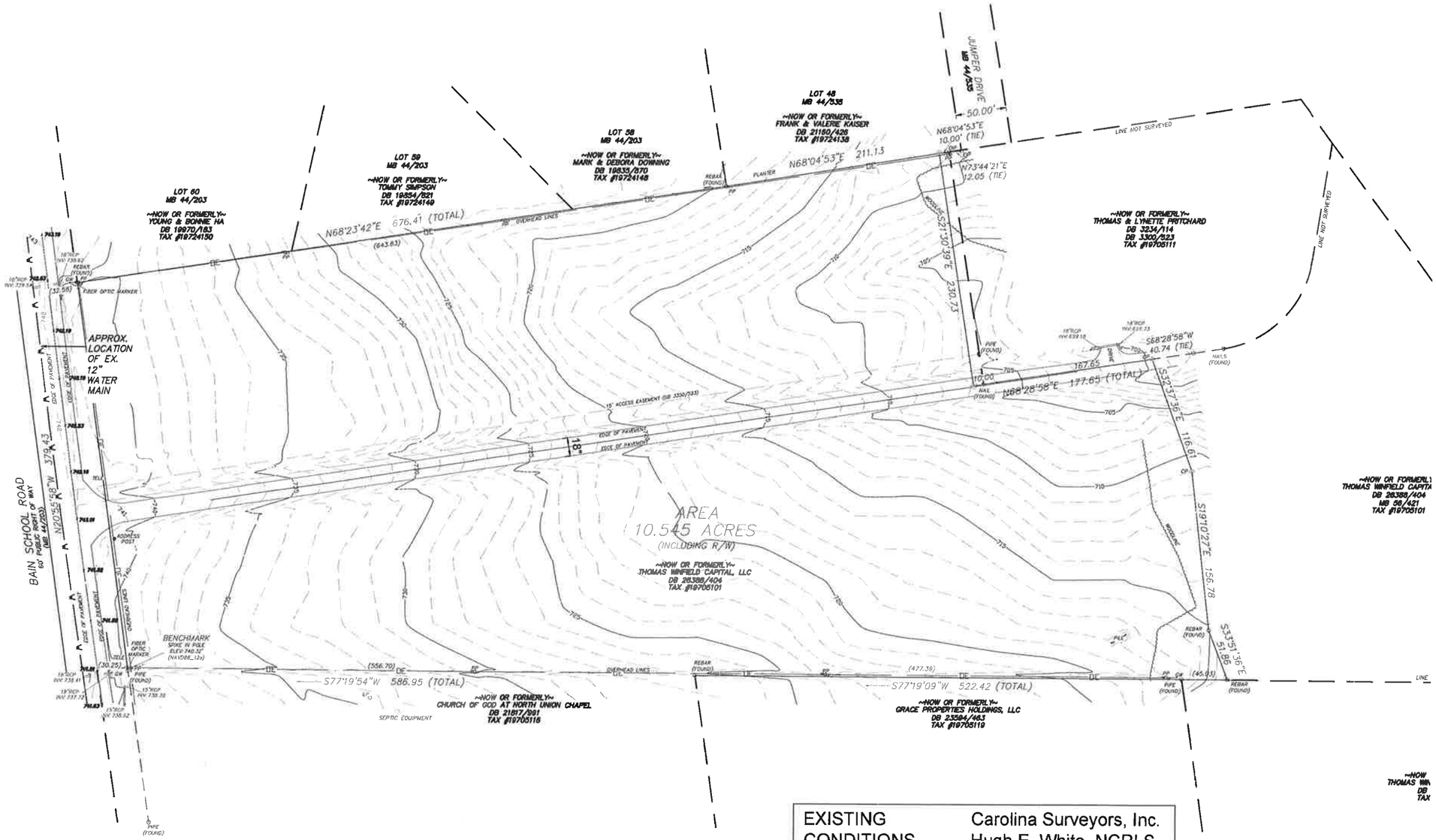

EXISTING CONDITIONS SURVEY PROVIDED BY::	Carolina Surveyors, Inc. Hugh E. White, NCRLS P.O. Box 267 Pineville, NC 28134-0267 704.889.7601

0 50 100 150

SCALE: 1"=50'

NORTH

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CLIENT:
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Albert Thomas
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KARA AT MINT HILL

Mint Hill, North Carolina

SHEET NAME:
EXISTING CONDITIONS PLAN

DATE:
06-11-2014

PROJECT #:
14101

REVISIONS:
08-03-2015

NORTH CAROLINA LANDSCAPE ARCHITECT 1312 JOHN CHAMPOUX

DRAWN BY: JC

CHECKED BY: FH, JT

SHEET #: L-02

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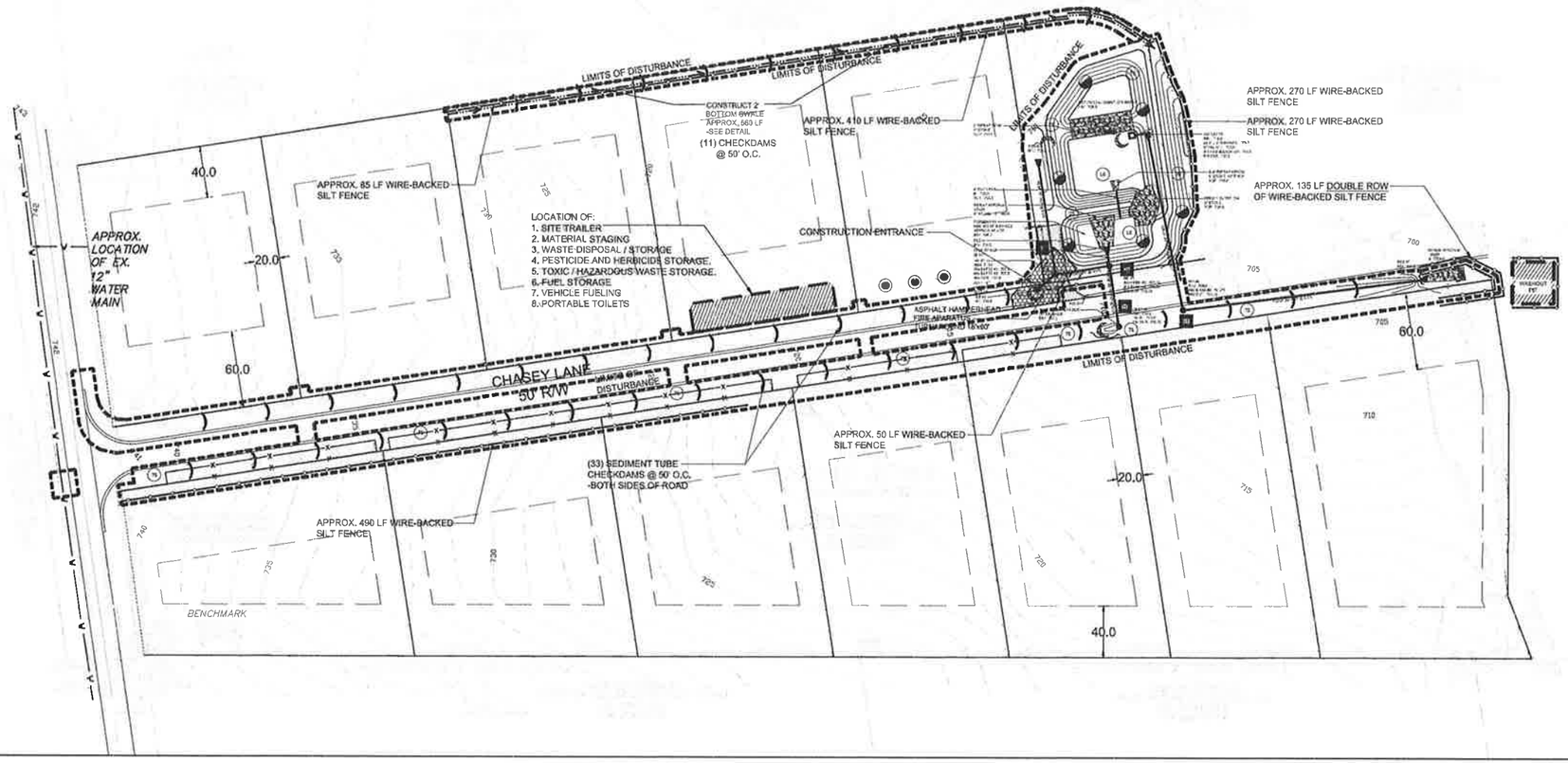

EROSION CONTROL NOTES:

1. All "Std." numbers refer to the Mecklenburg County Land Development Standards Manual.
2. On–site burial pits require an on–site demolition landfill permit from the Zoning Administrator.
3. Any grading beyond the denuded limits shown on the plan is a violation of the County Erosion Control Ordinance and is subject to a fine.
4. Grading more than one acre without an approved Erosion Control Plan is a violation of the County Erosion Control Ordinance and is subject to a fine.
5. Soil stabilization shall be required on any area of a site where land–disturbing activities have temporarily or permanently ceased according to the following schedule:
   i) All perimeter dikes, swales, ditches, perimeter slopes and all slopes steeper than 3 horizontal to 1 vertical (3:1) shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within 7 calendar days from the last land–disturbing activity.
   ii) All other disturbed areas shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within 14 calendar days from the last land disturbing activity.
6. Additional measures to control erosion and sediment may be required by a representative of the County.
7. Slopes shall be graded no steeper than 2:1. Fill slopes greater than 10' require adequate terracing [MCLDS #30.16]. Soils engineer to verify stability of slopes greater than 2:1.
8. A grading plan must be submitted for any lot grading exceeding one acre that was not previously approved.
9. Temporary driveway permit for construction entrances in NCDOT right of way must be presented at preconstruction meeting.
10. All embankments must be constructed per Section 4.0.6 Embankment Requirements in the BMP Design Manual.

ENHANCED EROSION CONTROL MEASURES:

1. Surface water draw down devices (risers or skimmers) shall be installed in all sediment basins. Forebays shall be used in conjunction with all sediment basins. Rock forebay embankments may be used in lieu of porous baffles.
2. Polyacrylamides (PAM) shall be used to reduce turbidity and suspended solids whenever a sediment trap, basin, pit, hole, or building foundation is being pumped out to remove sediment laden water. PAM is not required when any of the above is being pumped to an approved sediment basin on site. This activity must be inspected and approved by the Mecklenburg County erosion control inspector.
3. Double silt fence shall be used along wetlands, streams, lakes or other surface water bodies as well as adjacent to all S.W.I.M. or other Water Quality Buffers. High hazard sit fence with wire backing and washed stone will be installed as determined necessary by the County Engineer or field inspector.
4. The amount of uncovered area at any one time shall be limited to no more than 20 acres, unless approved by the County Engineering.
5. A 10–foot undisturbed buffer shall be provided around the outside edge of drainage features such as intermittent and perennial streams, ponds, and wetlands. Incidental drainage improvements or repairs will be permitted within the buffer as approved by county staff.
6. Installation of temporary ground cover or seeding must be performed within five (5) working days or slope drains installed after fill slopes are brought up to height.
7. Permanent terraces shall be installed on 2:1 or steeper slopes over 19 feet in height to reduce runoff velocity coming down the slopes.

DESCRIPTION	SYMBOL
SURFACE ROUGHENING	
LAND GRADING:	LG
POTENTIAL TOPSOILING:	
TEMPORARY SEEDING:	TS
SEDIMENT CONTROL:	
SEDIMENT BASIN:	
TYPE B - WIRE MESH AND STONE DROP INLET PROTECTION:	B
INLET AND OUTLET PROTECTION	
SEDIMENT TUBE (44)	
SINGLE ROW WIRE-BACKED ORANGE SILT FENCE AND TREE PROTECTION FENCE	
3" FAIRCLOTH SKIMMER	
LIMITS OF DISTURBANCE	
CONSTRUCTION ENTRANCE	

NOTES:
1. CONTRACTOR SHALL USE ORANGE SILT FENCE WHICH SHALL FUNCTION AS BOTH A SEDIMENT CONTROL DEVICE AND TREE PROTECTION FENCE.
2. SEE THE STORMWATER PLAN FOR ALL PIPING AND INLET AND OUTLET STRUCTURES. DO NOT BUILD ANY ASPECT OF THE STORMWATER PLAN FROM THIS SHEET.

DISTRUBED AREA: 1.38 AC

NOTES:
1. Contractor responsible for confirming elevations of all RIMs and Inverts and shall report all discrepancies to the Landscape Architect.
2. The ground surface (invert) of the Forebay, Sandfilter and Detention Area are one, flat, elevation.
3. All side slopes of the Forebay, Sandfilter and Detention Area are +/-3:1 unless indicated otherwise on the plans.
4. See detail sheets for installation details of catch basins and manholes.
5. Contractor responsible for confirming location of all proposed and existing utilities, maintaining proper clearances and shall report any conflicts or discrepancies to the Landscape Architect.
6. Contractor responsible for providing positive drainage on all proposed pipes.
7. Sedimentation and Erosion Control measures are to remain in place and be maintained on a daily basis until substantial completion is achieved and the site is fully stabilized.
8. All disturbed areas shall be stabilized with temporary seeding per the seeding schedule in the erosion control plan.
9. See the Landscape Plan for all plantings.
10. All stone shall be double washed.
11. See detail sheet for Sequence of Construction and Maintenance Schedule.

STANDARD NOTES:
1. If necessary, slopes, which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.
2. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
   - (a) Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
   - (b) Where construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.
3. All sediment and erosion control devices shall be inspected once every calendar week. If periodic inspection or other information indicates that a BMP has been inappropriately or incorrectly installed, the Permittee must address the necessary replacement or modification required to correct the BMP within 48 hours of identification.
4. Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove sediment before being pumped back into any waters of the State.
5. All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.
6. The contractor must take necessary action to minimize the tracking of mud onto paved roadway (s) from construction areas and the generation of dust. The contractor shall daily remove mud/soil from pavement, as may be required.
7. Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or obtain approval of an individual plan in accordance with N.C. Reg. Chapter 143-215.1 et seq. and NCG01000.
8. Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment-laden water to appropriate traps or stable outlets.
9. All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.
10. Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.
11. A copy of the SWPPP, inspections records, and rainfall data must be retained at the construction site or a nearby location easily accessible during normal business hours, from the date of commencement of construction activities to the date that final stabilization is reached.
12. Initiate stabilization measures on any exposed steep slope (3H:1V or greater) where land-disturbing activities have permanently or temporarily ceased, and will not resume for a period of 7 calendar days.
13. Minimize soil compaction and, unless infeasible, preserve topsoil.
14. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
15. Minimize the discharge of pollutants from dewatering of trenches and excavated areas. These discharges are to be routed through appropriate BMPs (sediment basin, filter bag, etc.).
16. The following discharges from sites are prohibited:
   Wastewater from washout of concrete, unless managed by an appropriate control;
   Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
   Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
   Soaps or solvents used in vehicle and equipment washing.
17. After construction activities begin, inspections must be conducted at a minimum of at least once every calendar week and must be conducted until final stabilization is reached on all areas of the construction site.
18. If existing BMPs need to be modified or if additional BMPs are necessary to comply with the requirements of this permit and/or NC's Water Quality Standards, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the SWPPP and alternative BMPs must be implemented as soon as reasonably possible.
19. A Pre-Construction Conference must be held for each construction site with an approved On-Site SWPPP prior to the implementation of construction activities. For non-linear projects that disturb 10 acres or more this conference must be held on-site unless the Department has approved otherwise.

0 50 100 150
SCALE: 1"=50'
NORTH

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KARA AT MINT HILL

Mint Hill, North Carolina

SHEET NAME:
SEDIMENT AND EROSION CONTROL PLAN
DATE:
2014-08-11

PROJECT #:
14101
REVISIONS:
2015-08-03

NORTH CAROLINA LANDSCAPE ARCHITECT 1312 JOHN CHAMPOUX

DRAWN BY: JC
CHECKED BY: FH, JT
SHEET #: L-03

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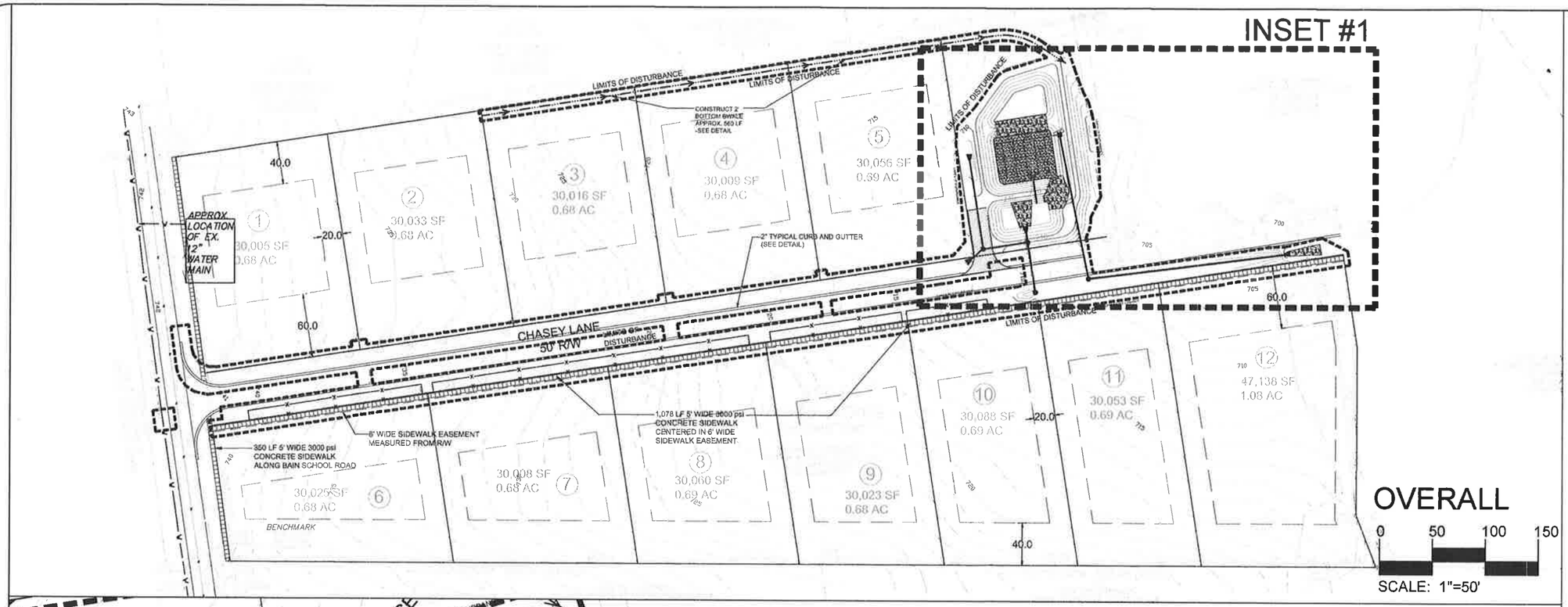

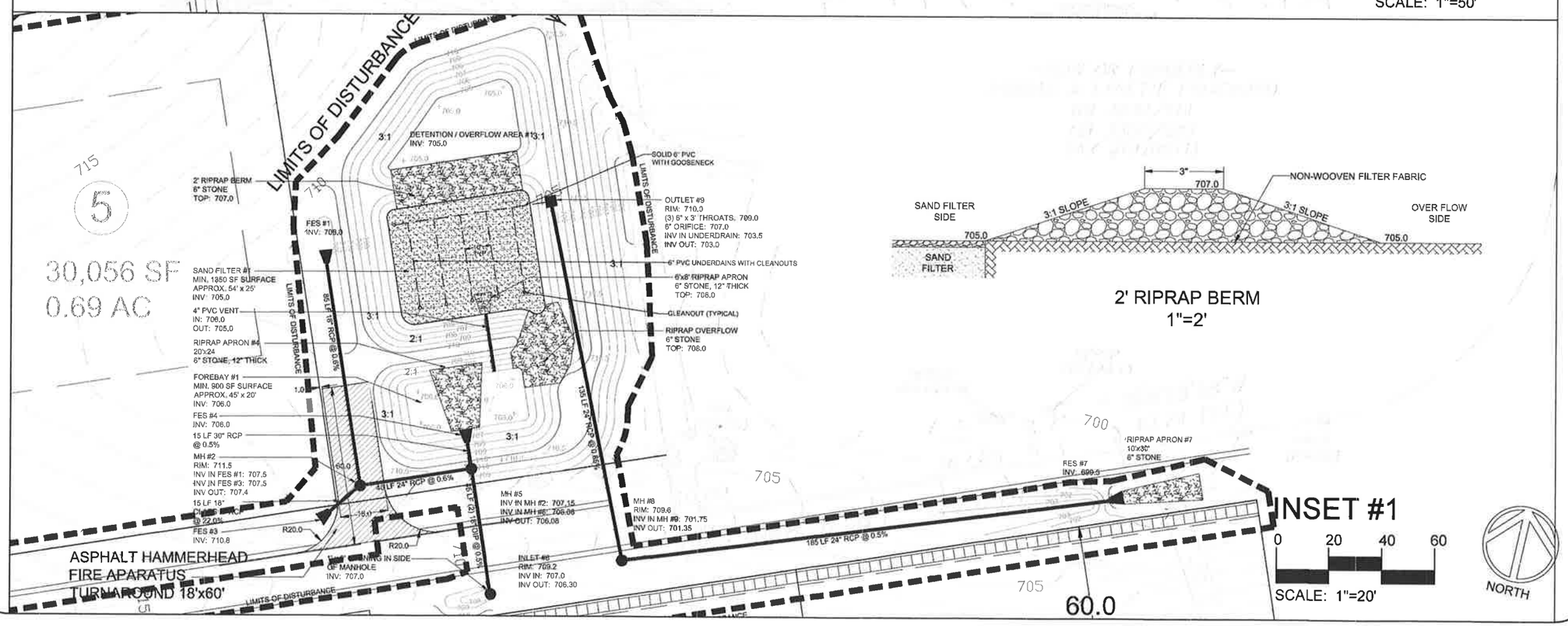

2' RIPRAP BERM
1"=2'

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KARA AT MINT HILL

Mint Hill, North Carolina

SHEET NAME:
LAYOUT, STORMWATER AND WATER QUALITY PLAN
DATE:
2014-06-11

PROJECT #:
14101
REVISIONS:
2015-08-03

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 1312 JOHN D. CHAMPOUX

DRAWN BY: JC
CHECKED BY: FH, JT
SHEET #: L-04

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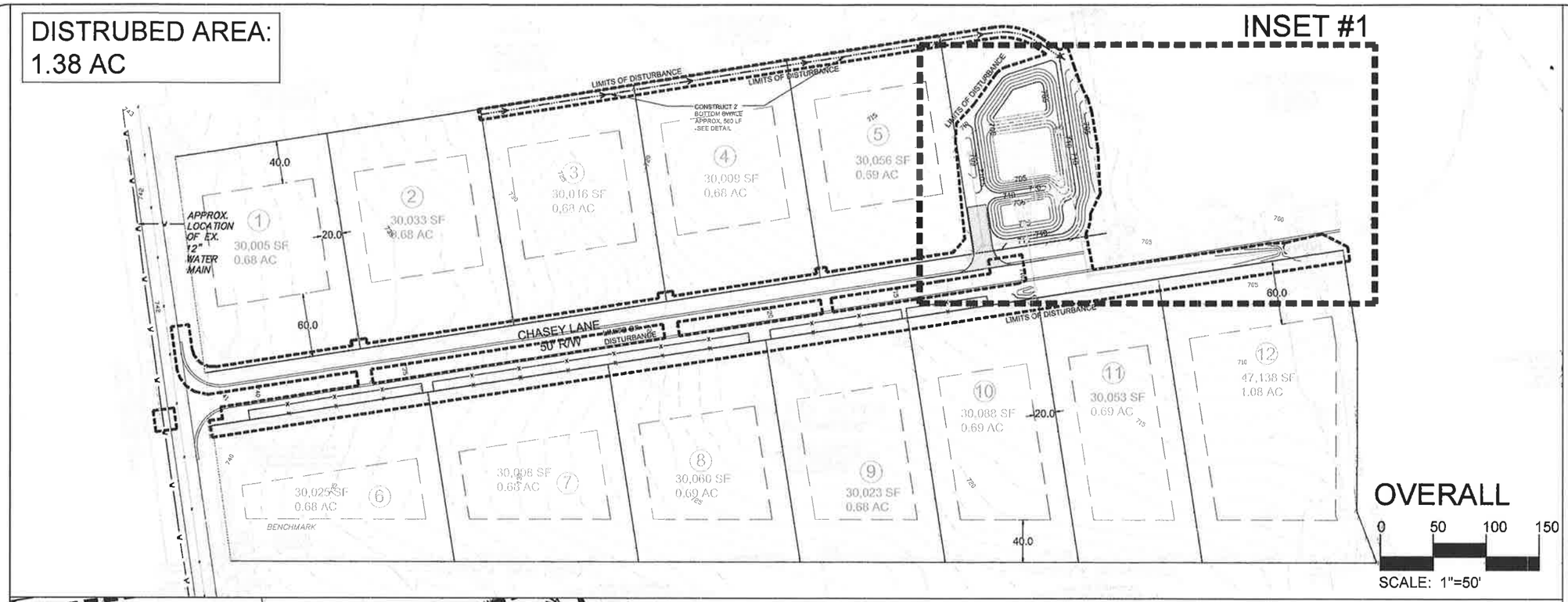
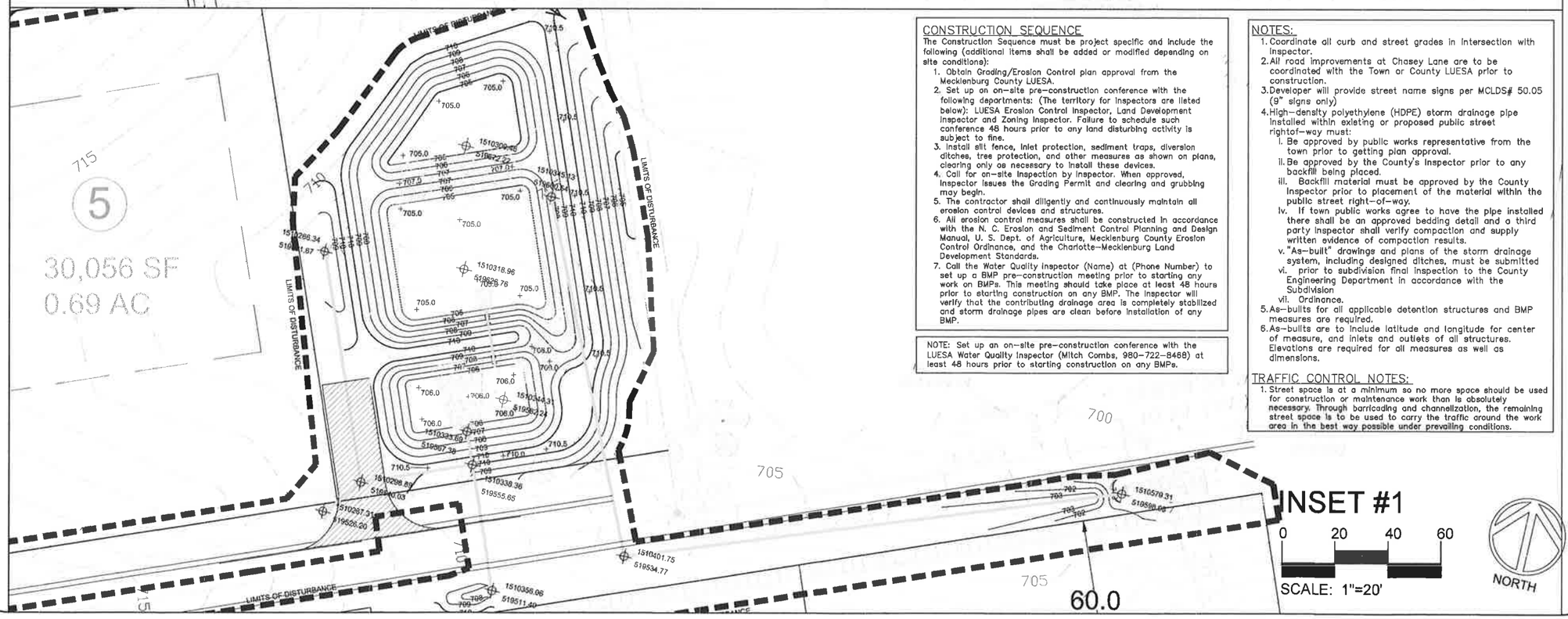
DISTRUBED AREA:
1.38 AC





CONSTRUCTION SEQUENCE

The Construction Sequence must be project specific and include the following (additional items shall be added or modified depending on site conditions):

1. Obtain Grading/Erosion Control plan approval from the Mecklenburg County LUESA.
2. Set up on on-site pre-construction conference with the following departments: (The territory for inspectors are listed below): LUESA Erosion Control Inspector, Land Development Inspector and Zoning Inspector. Failure to schedule such conference 48 hours prior to any land disturbing activity is subject to fine.
3. Install silt fence, inlet protection, sediment traps, diversion ditches, tree protection, and other measures as shown on plans, clearing only as necessary to install these devices.
4. Call for on-site inspection by inspector. When approved, inspector issues the Grading Permit and clearing and grubbing may begin.
5. The contractor shall diligently and continuously maintain all erosion control devices and structures.
6. All erosion control measures shall be constructed in accordance with the N. C. Erosion and Sediment Control Planning and Design Manual, U. S. Dept. of Agriculture, Mecklenburg County Erosion Control Ordinance, and the Charlotte-Mecklenburg Land Development Standards.
7. Call the Water Quality inspector (Name) at (Phone Number) to set up a BMP pre-construction meeting prior to starting any work on BMPs. This meeting should take place at least 48 hours prior to starting construction on any BMP. The inspector will verify that the contributing drainage area is completely stabilized and storm drainage pipes are clean before installation of any BMP.

NOTE: Set up an on-site pre-construction conference with the LUESA Water Quality Inspector (Mitch Combs, 980-722-8488) at least 48 hours prior to starting construction on any BMPs.

NOTES:

1. Coordinate all curb and street grades in intersection with inspector.
2. All road improvements at Chasey Lane are to be coordinated with the Town or County LUESA prior to construction.
3. Developer will provide street name signs per MCLDS# 50.05 (9" signs only)
4. High-density polyethylene (HDPE) storm drainage pipe installed within existing or proposed public street rightof-way must:
   i. Be approved by public works representative from the town prior to getting plan approval.
   ii. Be approved by the County's inspector prior to any backfill being placed.
   iii. Backfill material must be approved by the County inspector prior to placement of the material within the public street right-of-way.
   iv. If town public works agree to have the pipe installed there shall be an approved bedding detail and a third party inspector shall verify compaction and supply written evidence of compaction results.
   v. "As-built" drawings and plans of the storm drainage system, including designed ditches, must be submitted
   vi. prior to subdivision final inspection to the County Engineering Department in accordance with the Subdivision
   vii. Ordinance.
5. As-builts for all applicable detention structures and BMP measures are required.
6. As-builts are to include latitude and longitude for center of measure, and inlets and outlets of all structures. Elevations are required for all measures as well as dimensions.

TRAFFIC CONTROL NOTES:

1. Street space is at a minimum so no more space should be used for construction or maintenance work than is absolutely necessary. Through barricading and channelization, the remaining street space is to be used to carry the traffic around the work area in the best way possible under prevailing conditions.

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KARA AT MINT HILL

Mint Hill, North Carolina

SHEET NAME:
GRADING PLAN

DATE:
2014-08-11

PROJECT #:
14101

REVISIONS:
2015-08-03

NORTH CAROLINA PROFESSIONAL LANDSCAPE ARCHITECT 1312 JOHN CHAMPOUX

DRAWN BY: JC
CHECKED BY: FH, JT
SHEET #: L-05

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KARA AT MINT HILL

Job #: 14101
Last updated: 6/19/2014

NOTE: Materials list was prepared for estimating purposes. Contractor shall make own quantity take- off from drawings and specifications to determine quantities to his satisfaction, reporting promptly any discrepancies which may effect bidding. In the eve

	KEY	ITEM	CAL.	HEIGHT	SPREAD	ROOT COND.	NOTES
TREES and SHRUBS							
9	AMAR	*Amelanchier arborea* Serviceberry		36"-48"	36"-48"	#5	full, to ground, well-branched
30	MYCE	*Myrica cerifera var. pumila* Dwarf Wax Myrtle		18"-24"	18"-24"	#3	full, well-branched
GRASSES, SEDGES and FORBS							
65	AMIL	*Amsonia illustris* Shining Bluestar	-	12"-18"		#1	2.5' o.c.
86	ANGE	*Andropogon gerardii* Big Bluestem	-	24"-30"		#1	4' o.c.
506	ANTE	*Andropogon ternarius* Splitbeard Bluestem	-	9"-12"		quart	1.5' o.c
362	CAHI	*Carex hirsutella* Fuzzy Wuzzy Sedge		6"-9"		3.5" pot	1' o.c.
128	COLA	*Coreopsis lanceolata* Lanceleaf Coreopsis		6"-9"		3.5" pot	1.5' o.c.
78	MOFI	*Monarda fistulosa* Wild Bergamont		12"-15		quart	2' o.c.
100	TEVI	*Tephrosia virginiana* Goatsbeard		min. 7"		7" plugs	1.5' o.c
34,205 sf / 0.8 AC	FESCUE	*Tall Fescue* Pennington Signature Series (or AE)					300 lbs /AC minimum; hydroseed w/ Pennington Pro Matrix hydraulic mulch
13,470 sf / 0.31 AC	NATIVE	*Reclaim Southeast Native Grass Mix* Pennington Seed	-				50 lbs /AC minimum hand broadcast and mulch
MULCH							
50 CY	MULCH	Triple Shredded Hardwood Bark Mulch	-				3" layer in all planting areas and 4' disc (3" deep) around all existing trees

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KARA AT MINT HILL

Mint Hill, North Carolina

SHEET NAME:
LANDSCAPE PLAN

DATE:
2014-08-11

PROJECT #:
14101

REVISIONS:
2015-08-03

NORTH CAROLINA LICENSED LANDSCAPE ARCHITECT 1312 JOHN CHAMPOUX

DRAWN BY: JC
CHECKED BY: FH, JT
SHEET #: L-06

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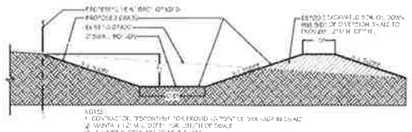
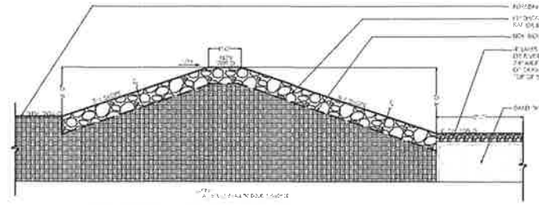
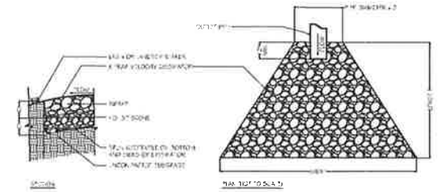


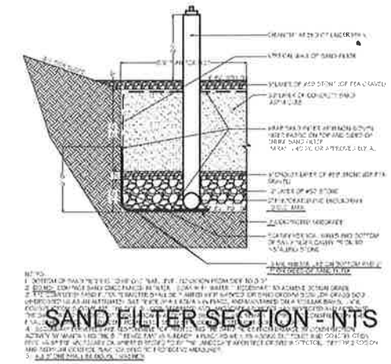
2' DIVERSION SWALE - NTS



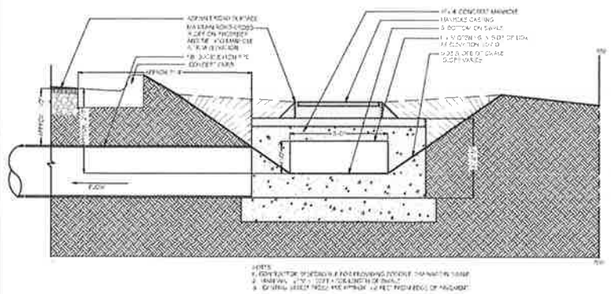
FOREBAY OUTLET - NTS



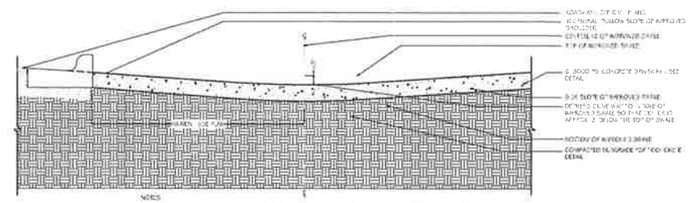
RIPRAP APRON - NTS
(RIVER COBBLES)



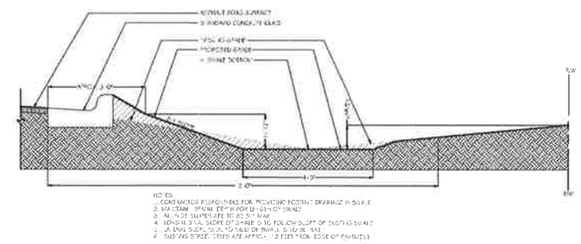
SAND FILTER SECTION - NTS



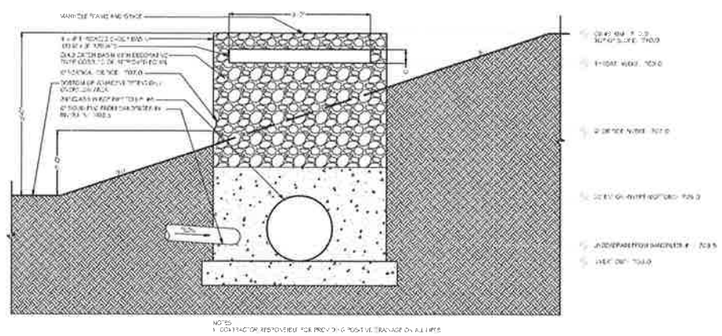
INLET NO. 6 DETAIL - NTS



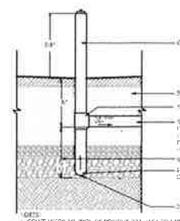
DEPRESSED DRIVEWAY - NTS



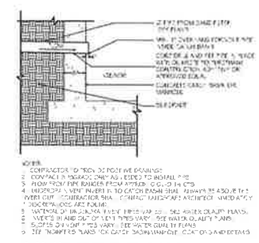
ROADSIDE SWALE - NTS



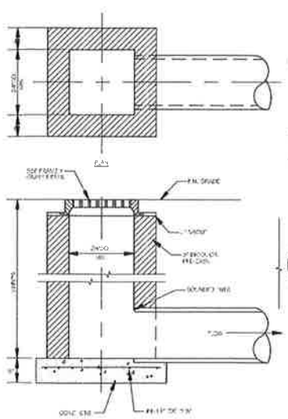
OUTLET NO. 9 DETAIL - NTS



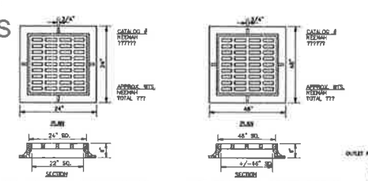
UNDERDRAIN
GOOSENECK - NTS



UNDERDRAIN
CONNECTION - NTS

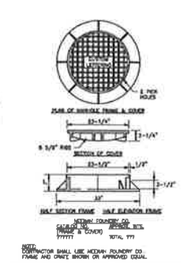


TYPICAL INLET - NTS

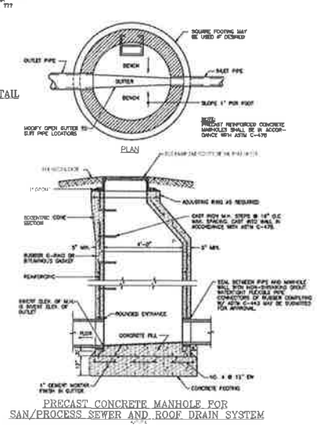


24" FRAME & GRATE DETAIL
NO SCALE

48" FRAME & GRATE DETAIL
NO SCALE

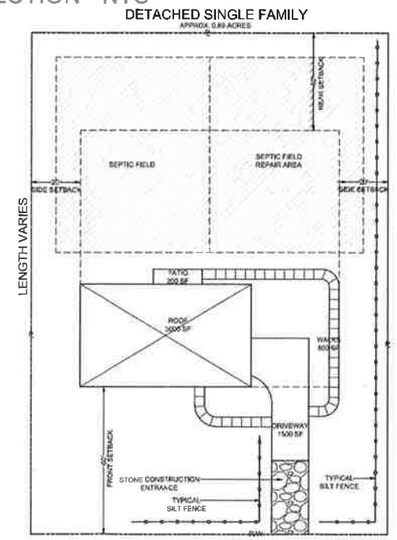


MANHOLE FRAME & COVER DETAIL
NO SCALE



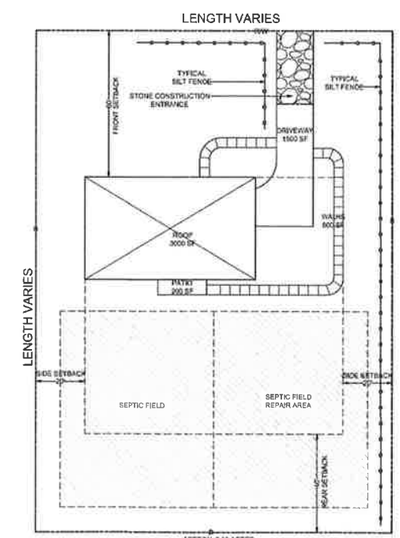
PRECAST CONCRETE MANHOLE FOR
SAN/PROCESS SEWER AND ROOF DRAIN SYSTEM

DETACHED SINGLE FAMILY



LENGTH VARIES

LENGTH VARIES



LENGTH VARIES

DETACHED SINGLE FAMILY

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KARA AT MINT HILL

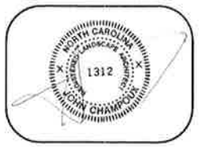
Mint Hill, North Carolina

SHEET NAME:
SITE DETAILS

DATE:
2014-08-11

PROJECT #:
14101

REVISIONS:
2015-09-03



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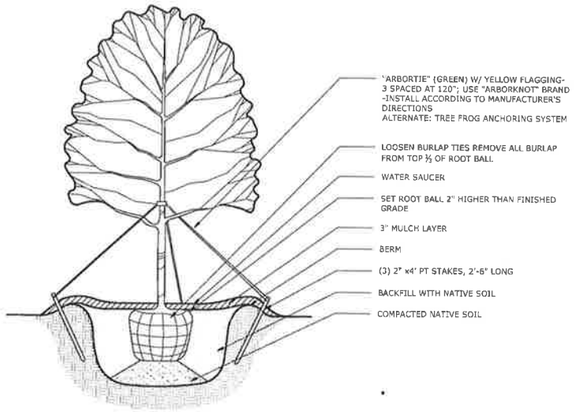
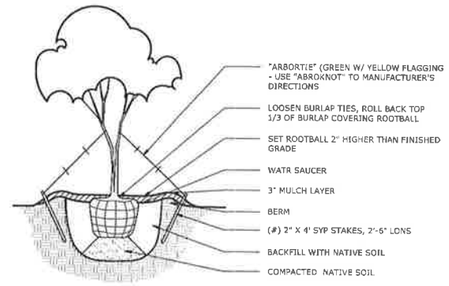
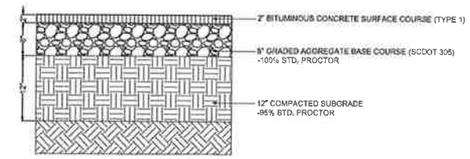


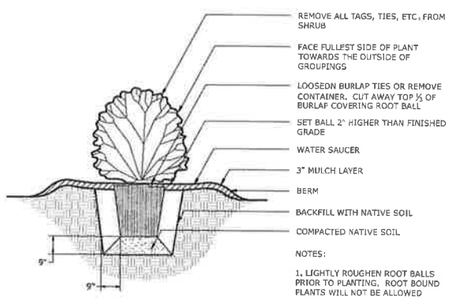
TREE PLANTING - NTS



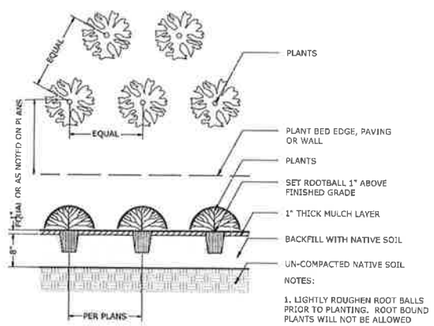
SMALL TREE PLANTING - NTS



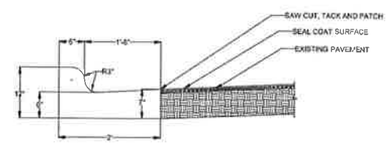
TYPICAL ASPHALT PAVING DETAIL - NTS



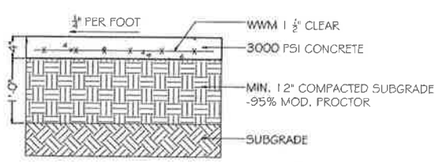
SHRUB PLANTING - NTS



GROUNDCOVER PLANTING - NTS

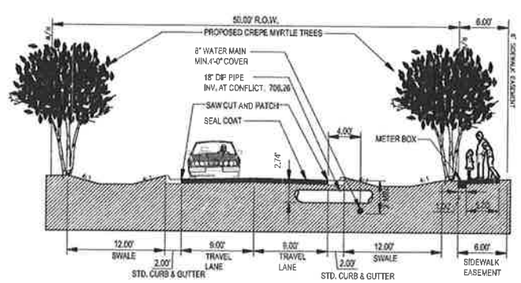


STANDARD CURB & GUTTER - NTS



NOTES:
1. SEE SPECIFICATIONS FOR SCORING, CONTROL JOINT AND EXPANSION JOINT SPACING.
2. BROOM FINISH WITH FRAMING.
3. SEE STREET CROSS SECTION FOR PLACEMENT WITHIN 6' SIDEWALK EASEMENT.

SIDEWALK DETAIL - NTS



STREET CROSS SECTION - NTS

SEQUENCE OF CONSTRUCTION

- Install sediment control devices as shown on the plan including sediment tubes in existing roadside swales.
- Grade site to elevations shown on plan. If applicable, construct curb openings, and/or remove and replace existing concrete as specified on the plan. Curb openings shall be blocked or other measures taken to prohibit drainage from entering construction area. At the end of each workday, all excavations shall be protected by construction safety fencing or temporary backfill as needed.
- Install water line per C.M.U.D. specifications.
- Install stormwater inlets, Outlets, Piping and other elements shown on the Stormwater Plan.
- Stabilize grading within Limit of Disturbance except Sandfilter.
- Once site is stabilized to 95% and sediment devices are no longer necessary, muck out silt and sediment from the Forbay, Sandfilter depression and Detention area and Install Sandfilter per the detail.
- **Wet down the successive lifts of sand in the Sandfilter to acheive compaction. DO NOT compact soil mix in the Sandfilter with anything other than this method. No static, vibrating, impact or rolling techniques are to be used, including foot traffic.**
- **Install single row of wire-backed, high porosity silt fence around Sandfilter to prevent sediment contamination.**
- **Plant vegetation.**
- Maintain erosion control and protection around the Forebay, Sandfilter and Detention Area. Remove sediment control practices or entrance blocks only after inspection and approval of the landscape architect.
- Secondary Permitees are responsible for protecting the perminent stormwater devices from sedimentation and damage from construction traffic by maintaining previously installed erosion control measures and construction fencing and installing additional silt fence on their lots.
- Contractor is responsible for repairing any damage they may have caused during the course of construction.

PERMANENT MAINTENANCE SCHEDULE

Soil
- Visually inspect and repair erosion monthly. Use small stones to stabilize erosion along drainage paths.
- Check the pH once or twice a year. Apply an alkaline product, such as limestone, if needed.

Sod/Grass
- De-thatch stands of grass at least once a year to assure the cell is not getting capped with organics that will compromise performance and prevent nutrients from reaching the roots.
- In areas of high foot traffic or where compaction is an issue, with 1/4" to 1/2" cores at least once a year. Immediately remove and dispose of soil plugs

Plants
- **Immediately after the completion of construction, water plant material for 14 consecutive days unless there is sufficient natural rainfall.**
- **When trees have taken root, or at least by 6 months, remove stakes and wires.**
- **Once a month (more frequently in the summer), visually inspect vegetation for disease or pest problems.**
- **If treatment is warranted, use the least toxic approach.**
- **Twice a year, from March 15th to April 30th and October 1st to November 30th, remove and replace all dead and diseased vegetation considered beyond treatment**
- During times of extended drought, look for physical features of stress (unrevived wilting, yellow, spotted or brown leaves, loss of leaves, etc.). Water in the early morning as needed.
- Weed regularly, if needed.
- Prune excess growth annually or more often, if desired. Trimmed materials may be recycled back in with replenished mulch or land filled if there is a concern of pollutant accumulation.

Pipes and Structures:
- Once every 2 years, or as needed, inspect structures and pipes for sediment and trash accumulation. If sediment and trash accumulation is detected, dispose of trash properly and flush lines out.

General
- After rainstorms, inspect the cell and make sure that drainage paths are clear and that ponding water dissipates over 24 hours. (Water may pond for longer times during the winter and early spring.)

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KARA AT MINT HILL

Mint Hill, North Carolina

SHEET NAME:
SITE AND LANDSCAPE DETAILS
DATE:
2014-08-11

PROJECT #:
14101
REVISIONS:
2015-08-03

NORTH CAROLINA LANDSCAPE ARCHITECT 1312 JOHN CHAMPOUX

DRAWN BY: JC
CHECKED BY: FH, JT
SHEET #: L-08

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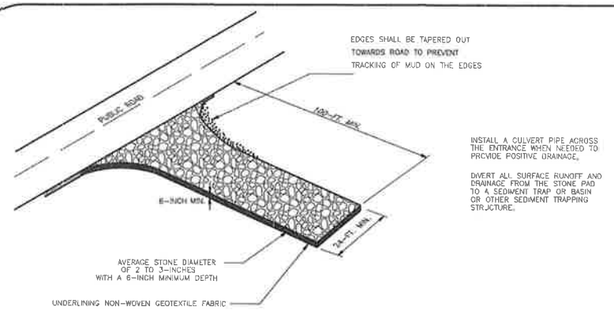


STABILIZED CONSTRUCTION ENTRANCE

When and Where to Use It

Stabilized construction entrances should be used at all points where traffic will be leaving a construction site and moving directly onto a public road.

Important Considerations

If washing is used, provisions must be made to intercept the wash water and trap the sediment before it is carried offsite. Washdown facilities shall be required as directed by SCDHEC as needed. Washdown areas in general must be established with crushed gravel and drain into a sediment trap or sediment basin. Construction entrances should be used in conjunction with the stabilization of construction roads to reduce the amount of mud picked up by vehicles.

Installation

Remove all vegetation and any objectionable material from the foundation area.

Divert all surface runoff and drainage from stones to a sediment trap or basin.

Install a non-woven geotextile fabric prior to placing any stone.

Install a culvert pipe across the entrance when needed to provide positive drainage.

The entrance shall consist of 1-inch to 3-inch D50 stone placed at a minimum depth of 6-inches.

Minimum dimensions of the entrance shall be 24-feet wide by 100-feet long, and may be modified as necessary to accommodate site constraints.

The edges of the entrance shall be tapered out towards the road to prevent tracking of mud at the edge of the entrance.

STABILIZED CONSTRUCTION ENTRANCE

Inspection and Maintenance:

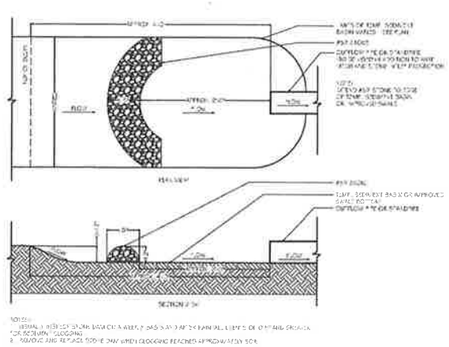
Inspect construction entrances every seven (7) calendar days and within 24-hours after each rainfall event that produces ½-inches or more of precipitation, or after heavy use. Check for mud and sediment buildup and pad integrity. Make daily inspections during periods of wet weather. Maintenance is required more frequently in wet weather conditions. Reshape the stone pad as needed for drainage and runoff control.

Wash or replace stones as needed and as directed by the inspector. The stone in the entrance should be washed or replaced whenever the entrance fails to reduce mud being carried off-site by vehicles. Frequent washing will extend the useful life of stone.

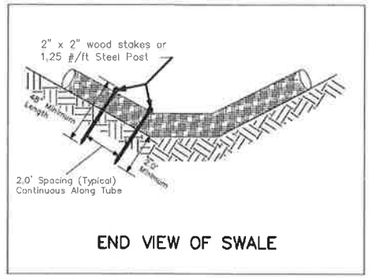
Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping. Flushing should only be used when the water can be discharged to a sediment trap or basin.

Repair any broken pavement immediately.

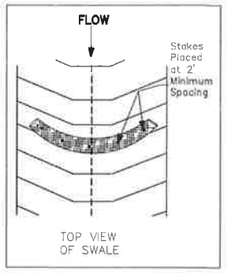
STABILIZED CONTRUCTION ENTRANCE - NTS



INLET / OUTLET PROTECTION - NTS



END VIEW OF SWALE



TOP VIEW OF SWALE

SEDIMENT TUBE

Description

Sediment tubes are elongated tubes of compacted geotextiles, curled excelsior wood, natural coconut fiber or hardwood mulch, Straw, pine needle and leaf mulch-filled sediment tubes are not permitted under this specification.

When and Where to Use It

Install sediment tubes along contours, in drainage conveyance swales, and around inlets to help reduce the effects of soil erosion by energy dissipation and retain sediment.

Materials

Sediment tubes for ditch checks and Type A Inlet Structure Filters exhibit the following properties:
Produced by a Manufacturer experienced in sediment tube manufacturing.
Composed of compacted geotextiles, curled excelsior wood, natural coconut fibers, hardwood mulch or a mix of these materials enclosed by a flexible netting material. Straw, straw fiber, straw bales, pine needles and leaf mulch are not allowed under this specification.
Utilizes outer netting that consists of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable materials. Diameter ranging from 18-inches to 24-inches.
Curled excelsior wood, or natural coconut rolled erosion control products (RECPs) that are rolled up to create a sediment tube are not allowed under this specification.

Inlet Use:
Install over bare soil, mulched areas or erosion control blankets.
Be composed of geotextiles, curled excelsior wood, natural coconut fiber or hardwood mulch enclosed by a flexible netting material. Straw, straw fiber, straw bales, pine needles and leaf mulch are not allowed.

The minimum diameter should be 18 inches.
Sediment tubes should be staked using wooden stakes (2-inch x 2-inch) or steel posts (standard "U" or "T" sections with a minimum weight of 1.25 pounds per foot) a minimum of 48-inches in length placed on 2-foot centers.

Stakes should be intertwined with the outer mesh on the downstream side and driven in the ground to a minimum depth of 1.5 feet leaving less than 1 foot of stake exposed above the sediment tube. Always refer to the Manufacturer's recommendations for the staking detail.
Install all sediment tubes insuring that no gaps exist between the soil and the bottom of the sediment tube. The ends of adjacent sediment tubes should be lapped 6-inch to prevent flow and sediment from passing through the field joint.In no situations should sediment tubes be stacked on top of one another.

Construct a trench that is 20% of the tube diameter to install the tube in.
Avoid damage to sediment tubes while installing them. If the sediment tube becomes damaged during installation, a stake should be placed on both sides of the damaged area terminating the tube segment and a new tube segment should be installed.Should be installed in swales or drainage ditches perpendicular to the flow of water. Sediment tubes should continue up the side slopes a minimum of 1 foot above the design flow depth. Sediment tubes should be spaced according to the following table.

SEDIMENT TUBE SPACING

SLOPE	MAXIMUM SEDIMENT TUBE SPACING
LESS THAN 2%	100-FEET
2%	100-FEET*
3%	75-FEET
4%	50-FEET*
5%	40-FEET
8%	30-FEET*
GREATER THAN 8%	25-FEET*

SEDIMENT TUBE

Sediment tube length selected should
minimize the number of sediment tubes needed to span the width of the drainage conveyance.
If the ditch check length (perpendicular to the water flow) is 15 feet, then one 15 foot sediment tube is preferred compared to two overlapping 10 foot sediment tubes.

Sediment tubes for ditch checks should remain in place until fully established vegetation and root systems have completely developed and can survive on their own.

Inspection and Maintenance

Check dams should be inspected every 7 calendar days and within 24-hours after each storm that produces ½-inches or more of rain to ensure continued effectiveness.

Large debris, trash, and leaves should be removed.

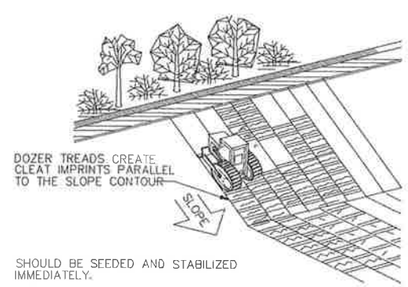
If erosion causes the edges to fail to a height equal
to or below the height of the center, repairs should be made immediately.

Remove accumulated sediment from the upstream side of the sediment tube when
the sediment has reached a height of approximately one-third of the exposed height of the tube (measured at the center).

Accumulated sediment should be removed prior to removing sediment tubes.

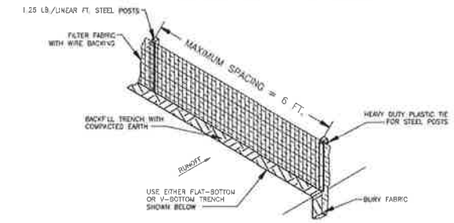
Sediment Tube removal should be completed only after the contributing drainage area has
been completely stabilized. Permanent vegetation should replace areas from which gravel, stone, sediment tubes, or other materials have been removed.

SEDIMENT TUBES - NTS

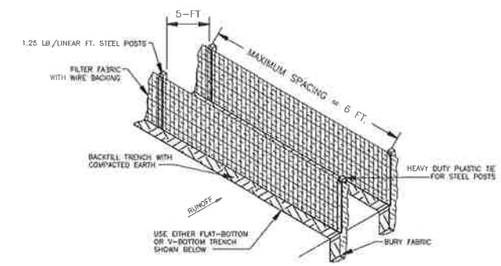


TRACKING

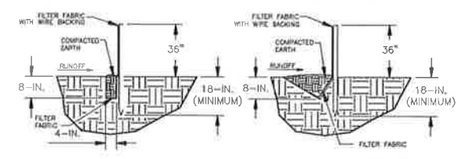
TRACKING - SURFACE ROUGHENING - NTS



SILT FENCE INSTALLATION



DOUBLE SILT FENCE INSTALLATION



FLAT-BOTTOM TRENCH DETAIL V-SHAPED TRENCH DETAIL

SILT FENCE DETAIL

Installation

Excavate a trench approximately 6-inches wide and 6-inches deep when placing fabric by hand. Place 12-inches of geotextile fabric with wire backing into the 6-inch deep trench, extending the remaining 6-inches towards the upslope side of the trench. Backfill the trench with soil or gravel and compact.Bury 12-inches of fabric into the ground when pneumatically installing silt fence with a slicing method. Purchase fabric in continuous rolls and cut to the length of the barrier to avoid joints. When joints are necessary, wrapped the fabric together at a support post with both ends fastened to the post, with a 6-inch minimum overlap. Install posts to a minimum depth of 24-inches. Install posts a minimum of 1- to 2- inches above the fabric, with no more than 3-feet of the post above the ground. Space posts to maximum 6-feet centers. Attach fabric to the steel posts using heavy-duty plastic ties that are evenly spaced and placed in a manner to prevent sagging or tearing of the fabric. In all cases, ties should be affixed in no less than 4 places. Install the fabric a minimum of 24-inches above the ground. When necessary, the height of the fence above ground may be greater than 24-inches. In tidal areas, extra silt fence height may be required. The post height will be twice the exposed post height. Post spacing willremain the same and extra height fabric will be 4-, 5-, or 6-feet tall. Locate silt fence checks every 100 feet maximum and at low points. Install the fence perpendicular to the direction of flow and place the fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.

Inspection and Maintenance

1. Inspect every seven calendar days and within 24-hours after each rainfall event that produces ½-inches or more of precipitation. Check for sediment buildup and fence integrity. Check where runoff has eroded a channel beneath the fence, or where the fence has sagged or collapsed by fence overlapping.If the fence fabric tears, begins to decompose, or in any way becomes ineffective, replace the section of fence immediately.
2. Remove sediment accumulated along the fence when it reaches 1/3 the height of the fence, especially if heavy rains are expected.
3. Remove trapped sediment from the site or stabilize it on site.
4. Remove silt fence within 30 days after final stabilization is achieved or after temporary best management practices (BMPs) are no longer needed.
5. Permanently stabilize disturbed areas resulting from fence removal.

Materials

Steel Posts

1. Use 48-inch long steel posts that meet the following minimum physical requirements:
   A. Composed of high strength steel with minimum yield strength of 50,000 psi.
   B. Have a standard "T" section with a nominal face width of 1.38-inches and nominal "T" length of 1.48-inches.
   C. Weigh 1.25 pounds per foot (± 8%).
   D. Have a soil stabilization plate with a minimum cross section area of 17-square inches attached to the steel posts.
   D. Painted with a water based baked enamel paint.

2. Use steel posts with a minimum length of 4-feet, weighing 1.25 pounds per linear foot (± 8%) with projections to aid in fastening the fabric. Except when heavy clay soils are present on site, steel posts will have a metal soil stabilization plate welded near the bottom such that when the post is driven to the proper depth, the plate will be below the ground level for added stability.
3. The soil plates should have the following characteristics:
   A. Be composed of minimum 15 gauge steel.
   B. Have a minimum cross section area of 17-square inches.
4. Use wire mesh with these minimum characteristics:

Wire Height	36" (0.91 m)
Fabric Height	36"
Wire Guage	14
Wire Weave Pattern	2" x 4" (51x102)
Wire Material	Galvanized Steel
Roll Length	100 ft (30.5 m)
Roll Weight	70 lbs (32 kg)

Geotextile Filter Fabric

1. Filter fabric is:
Composed of fibers consisting of long chain synthetic polymers composed of at least 85% by weight of polyolefins, polyesters, or polyamides. Formed into a network such that the filaments or yarns retain dimensional stability relative to each other. Free of any treatment or coating which might adversely alter its physical properties after installation. Free of defects or flaws that significantly affect its physical and/or filtering properties. Cut to a minimum width of 36 inches.

Tensile Strength (Lbs. Min.): Warp - 260; Fill - 180
Flow Rate (Gal/Min./SF): 70

2. Use only fabric appearing on SCDOT Approval Sheet #34 meeting the requirements of the most current edition of the SCDOT Standard Specifications for Highway Construction.

DO NOT PLACE SILT FENCE ACROSS CHANNELS OR USE IT AS A VELOCITY CONTROL BMP.

WIRE-BACKED SILT FENCE - NTS

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REVISIONS:
2015-08-03

DRAWN BY: JC
CHECKED BY: FH, JT
SHEET #: L-09

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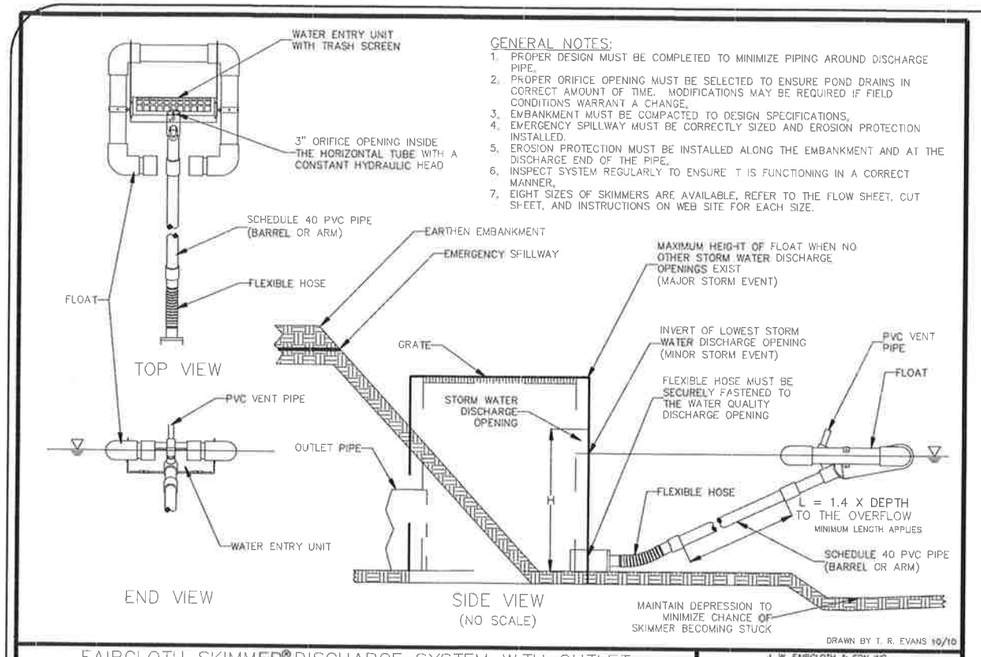

GENERAL NOTES:

1. PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
2. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
3. EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS.
4. EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
5. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
6. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.
7. EIGHT SIZES OF SKIMMERS ARE AVAILABLE. REFER TO THE FLOW SHEET, CUT SHEET, AND INSTRUCTIONS ON WEB SITE FOR EACH SIZE.

DRAWN BY T. R. EVANS 10/10

FAIRCLOTH SKIMMER® DISCHARGE SYSTEM WITH OUTLET STRUCTURE

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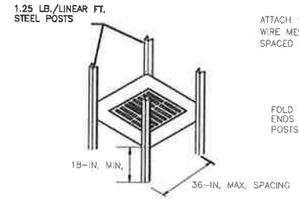
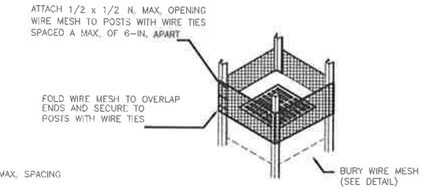
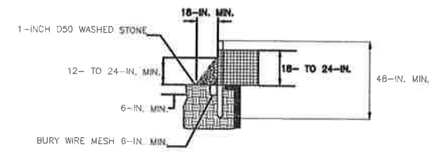


POST INSTALLATION DETAIL



WIRE MESH INSTALLATION DETAIL



STONE AND WIRE MESH INSTALLATION DETAIL

TYPE B - WIRE MESH AND STONE INLET PROTECTION

Materials
Use hardware fabric or comparable wire mesh with maximum openings of 0.5-inches x 0.5-inches as the supporting material.

Use steel posts that meet the following minimum physical requirements:
Be composed of high strength steel with minimum yield strength of 50,000 psi.
Have a standard "T" section with a nominal face width of 1.38-inches and nominal "T" length of 1.48-inches.
Weigh 1.25 pounds per foot (± 8%).
Be painted with a water-based baked enamel paint.

Use heavy-duty wire ties to attach the wire mesh material to the steel posts.

Place Aggregate No. 5 washed stone against the hardware fabric on all sides.

Installation
Excavate a trench 6-inches deep around the outside perimeter of the inlet.

Use hardware fabric or comparable wire mesh with maximum openings of 0.5-inches by 0.5-inches as the supporting material. Extended the fabric a minimum of 6-inches into the ground. Backfill the trench with soil or crushed stone and compact over the fabric.

Use steel posts with a minimum post length of 36-inches consisting of standard "T" sections with a weight of 1.25 pounds per foot (±8%).Install the wire mesh fabric above grade a minimum of 18-inches without exceeding 24-inches.

Space the steel posts a maximum of 3-feet apart around the perimeter of the inlet and drive them into the ground a minimum of 18-inches.

Use heavy-duty wire ties spaced a maximum of 6-inches apart to attach the wire mesh material to the steel posts.

Place Aggregate No. 5 washed stone to a minimum height of 12-inches, and a maximum height of 24-inches against the hardware fabric on all sides.

Inspection and Maintenance:
If the stone becomes clogged with sediment, pull the stones away from the inlet and clean or replace them.

Since cleaning of gravel at a construction site may be difficult, an alternative approach would be to use the clogged stone as fill and put fresh stone around the inlet.

Remove accumulated sediment from stone when sediment reaches ⅓ of the hieght of the structure

GRAVEL INLET PROTECTION - NTS

A. Temporary Grass Seeding Chart:

1. Grass seed shall be furnished in unopened sacks and labeled in accordance with the applicable state laws and conform to the following:

	Min. % Pure Live	Max. % weed seed by weight
For Planting March 30th - September 1st		
Fescue	95	0.5
For Planting September 1st - March 30th		
Fescue	95	0.5
Annual Rye Seed	90	0.5

A. Topsoil: Specified in section 02200.

B. Peat: Canadian sphagnum peat, brown in color, clean, low in mineral and woody content, mildly acidic, and either granulated or shredded. Water absorption capacity of 1100 to 2000 percent by weight.

C. Commercial Fertilizer: Conforming to applicable Federal and State law, uniform as to composition, dry, free-flowing and delivered to site in original unopened containers. Application rate and minimum analysis shall be as recommended by soils test report. Nitrogen shall be Urea based fertilizer.

D. Soil Conditioning Materials:

1. For pH ranges above 7.3 use AQUA-pHIX. Use to acidify soil (lower pH) as recommended by soils test report.

2. For pH ranges below 6.3 use NEUTRALIME. Use to decrease acidity of soil (raise pH) as recommended by soils test report.

E. Water: Clean, free from toxic amounts of salt, oil, acid, alkali, organic matter or other harmful to plants.

F. Hydraulic Mulch: Mulch with Flexterra FGM soil stabilization mulch applied by hydro spray application in strict accordance with manufacturer's instructions.

TEMP. SEEDING SCHEDULE - NTS

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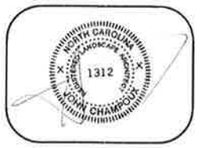

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CHECKED BY: FH, JT
SHEET #: L-10

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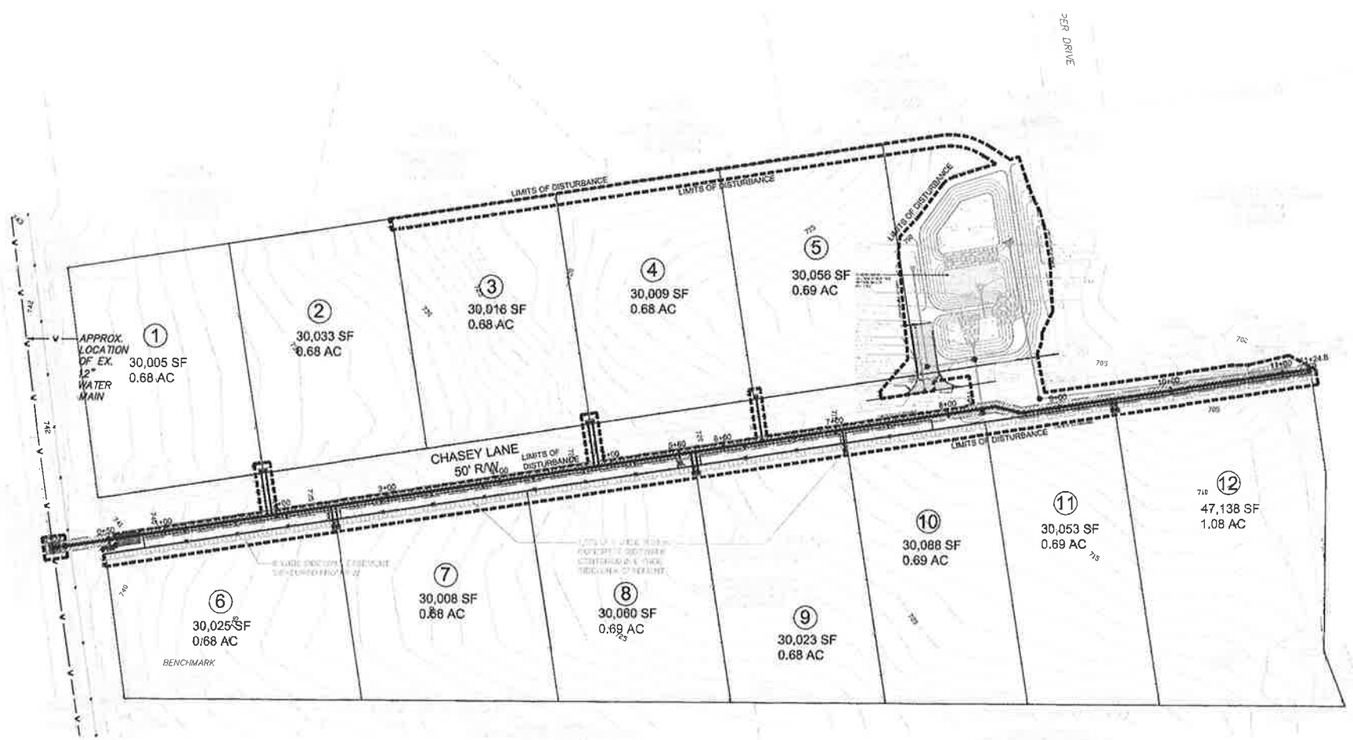
CHARLOTTE–MECKLENBURG UTILITIES
CHARLOTTE, NORTH CAROLINA

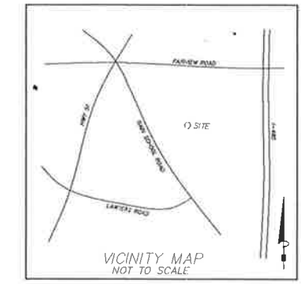
ENGINEERING DIVISION
WATER DISTRIBUTION SYSTEM IMPROVEMENTS
KARA AT MINT HILL

LEGEND

- ASPHALT DRIVEWAY (PROFILE)
- BRIDGE
- BUILDING
- CHECK DAM STD. 6.83
- CONCRETE DRIVEWAY (PROFILE)
- CURB & GUTTER
- DITCH, CREEK OR BRANCH
- EDGE OF PAVEMENT
- EXISTING FIRE HYDRANT
- EXISTING GAS MAIN
- EXISTING GAS SERVICE
- EXISTING IRON PIN
- EXISTING ℄ SANITARY SEWER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING ℄ WATER MAIN
- EXISTING WATER OR SANITARY SEWER R/W
- EXISTING WATER SERVICE
- EXISTING WATER VALVE
- FENCE (LABEL TYPE)
- GAS VALVE
- GRAVEL DRIVEWAY (PROFILE)
- GROUND (PROFILE)
- GUARD RAIL
- MARSH
- OVERHEAD ELECTRIC
- PIERS
- POWER POLE W/GUY WIRE
- PROPERTY LINE
- PROPOSED AIR RELEASE VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED ℄ SANITARY SEWER
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED ℄ WATER MAIN (MARKED EVERY 100')
- PROPOSED WATER METER LOCATION
- PROPOSED WATER OR SANITARY SEWER R/W
- PROPOSED WATER VALVE
- RAILROAD
- RIP – RAP
- ROAD/STREET RIGHT-OF-WAY
- SEDIMENT FENCE (SILT FENCE) STD. 6.62
- SIDEWALK
- STORM DRAIN WITH CATCH BASIN OR DROP INLET
- STREET SIGN
- TEMPORARY DIVERSION STD. 6.20
- TEMPORARY SEDIMENT TRAP STD. 6.60
- TEMPORARY STREAM CROSSING STD. 1
- TOWER LINE
- TREE
- UNDERGROUND CABLE
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- UNDERGROUND TELEVISION CABLE
- WATER METER



SCALE: 1"=60'



CALL NC ONECALL BEFORE YOU DIG
STOP
1-800-632-4949
AVOID UTILITY DAMAGE

CONSTRUCTION SHALL BE IN ACCORDANCE WITH CHARLOTTE MECKLENBURG UTILITY DEPARTMENT STANDARD SPECIFICATIONS.

SUMMARY OF WATER MAINS & FIRE HYDRANTS			
SIZE	LENGTH	SIZE	LENGTH
8"	1125 LF		
TOTAL NO. OF FIRE HYDRANTS: 2			
TOTAL NO. LOTS SERVED: 12			
PROJECT NAME: KARA AT MINT HILL			
JOB NO:			
DATE OF ACTIVATION:			
DATE AS BUILT:		BY:	
APPROVALS (SEALS)			
N.C.R.L.S. (AS BUILT)		N.C.P.E.	

SUMMARY OF SEWER MAINS & MANHOLES			
SIZE	LENGTH	SIZE	LENGTH
N/A	N/A		
TOTAL NO. OF MANHOLES: N/A			
TOTAL NO. LOTS SERVED: N/A			
PROJECT NAME: KARA AT MINT HILL			
–			
–			
JOB NO: –			
DATE OF ACTIVATION:			
DATE AS BUILT:		BY:	

PLANS PREPARED BY: FRANK HAHNE, PE NC LIC. NO. 027131
ADDRESS: 142 STERLING LAKE DRIVE, LEXINGTON, SC 29072
PHONE: (704)572-0266
DATE DESIGN COMPLETED: 07-13-2014

SURVEY COMPANY: CAROLINA SURVEYORS, INC.
SURVEYED BY: HUGH E. WHITE, JR. NCRLS
ADDRESS: P.O. BOX 267, PINEVILLE, NC 28134-0267
PHONE: (704)889-7601
DATE SURVEY COMPLETED: MAY 5, 2014 REVISED MAY 28, 2014

DEVELOPER: THOMAS WINFIELD CAPITAL, LLC
ADDRESS: 12309 BAIN SCHOOL ROAD, MINT HILL, NC 28227
PHONE: (916)275-6032

CONTRACTOR: TO BE DETERMINED

INSPECTOR: –
INSIDE CHARLOTTE: ( ) YES (√) NO:
TOPO NO: –

THIS PLAN IS A FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION UNLESS INITIALLED AND DATED AS APPROVED.

APPROVED: _____ / _____

DRAWING LIST:
COVERSHEET
DOMESTIC WATER PLAN AND PROFILE
DOMESTIC WATER DETAILS

GENERAL NOTES:

1) CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH CHARLOTTE-MECKLENBURG UTILITY DEPARTMENT STANDARDS AND SPECIFICATIONS.
2) ALL CONTRACTORS WORKING ON CMUD PROJECTS ARE REQUIRED TO OWN A COPY OF THE DESIGN MANUAL AND SHALL KEEP A COPY ON THE JOB SITE AT ALL TIMES
3) CONTRACTOR IS FULLY RESPONSIBLE FOR CONTACTING ALL APPROPRIATE PARTIES AND ASSURING THAT UTILITIES ARE LOCATED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CALL NC ONE CALL (PREVIOUSLY ULOCO) AT 1-800-632-4949 FOR UTILITY LOCATING SERVICE 48 HOURS PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION
4) IF THE PROPOSED WATER AND OR SEWER MAIN IS INSTALLED WITHIN 12" IN ANY DIRECTION (VERTICALLY OR HORIZONTALLY) FROM GAS MAINS, THE CONTRACTOR SHALL PIEDMONT NATURAL GAS COMPANY AT (704) 628-5988 AN INFORM THEM.
5) SANITARY SEWER LATERAL LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO RELOCATION DUE TO FIELD CONDITIONS.
6) SANITARY SEWER LATERALS ARE TO BE INSTALLED AT A DEPTH NO GREATER THAN FIVE (5) FEET WHERE PRACTICAL AT THE PROPERTY LINE UNLESS INDICATED ON THE PLANS TO BE INSTALLED AT "MINIMUM SLOPE".
7) MINIMUM COVER OF 36" FOR WATERMAINS
8) DUCTILE IRON PIPE (RED BRASS FOR 2" WATER PIPE) REQUIRED FOR BOTH WATER & SANITARY SEWER LINES IF THE FOLLOWING CLEARANCES ARE NOT MET:
   * WATER LINE CROSSING UNDER SEWER LINE (FOR ANY CLEARANCE)
   * 18" VERTICAL FOR WATER LINE INSTALLED ABOVE SEWER LINE
   * 10' HORIZONTAL SEPARATION FOR WATER LINE PARALLEL TO SEWER LINE (OR 18" VERTICAL SEPARATION IN SEPARATE DITCHES)
   * FOR WATER LINES: 12" CLEARANCE WITH STORM DRAINS, GAS MAINS, TELEPHONE DUCTS, AND UNDERGROUND CABLES
9) RECORDED PLATS ARE REQUIRED FOR ACTIVATION OF WATERMAINS. EASEMENTS ARE NOT ACCEPTABLE.

WATER NOTES:

1) ALL MATERIALS AND INSTALLATION TO MEET REQUIREMENTS OF CMUD
2) CONTRACTOR IS RESPONSIBLE FOR FURNISHING AS-BUILT INFORMATION TO ENGINEER ON SERVICES AND WATER MAINS. THIS AS-BUILT INFORMATION MUST BE CERTIFIED BY A REGISTERED LAND SURVEYOR.
3) WATER LINES SHALL CONFORM TO "TEN STATE STANDARDS".
4) CONTRACTOR SHALL NOTIFY CMUD 48 HOURS PRIOR TO STARTING WORK.
5) CONTRACTOR IS RESPONSIBLE FOR ACQUIRING NECESSARY PERMITS FROM THE ENGINEER PRIOR TO START OF CONSTRUCTION
6) ALL ELEVATIONS SHOWN ARE BASED UPON MEAN SEA LEVEL DATUM
7) PROVIDE A TEMPORARY STONE SPLASH PAD AT ALL FIRE HYDRANTS OR OTHER POINTS OF DISCHARGE DURING TESTING OF THE WATER DISTRIBUTION SYSTEM.
8) PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING ALL UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY CONSTRUCTION.
9) OTHER UTILITY CROSSINGS MAY EXIST THAT ARE NOT SHOWN ON THESE PLANS OR PROFILES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO KNOW THE LOCATION AND ELEVATION OF UTILITY CROSSINGS OF BOTH EXISTING AND PROPOSED UTILITIES.

APPLICATION FOR PERMIT FOR WATER MAIN EXTENSION

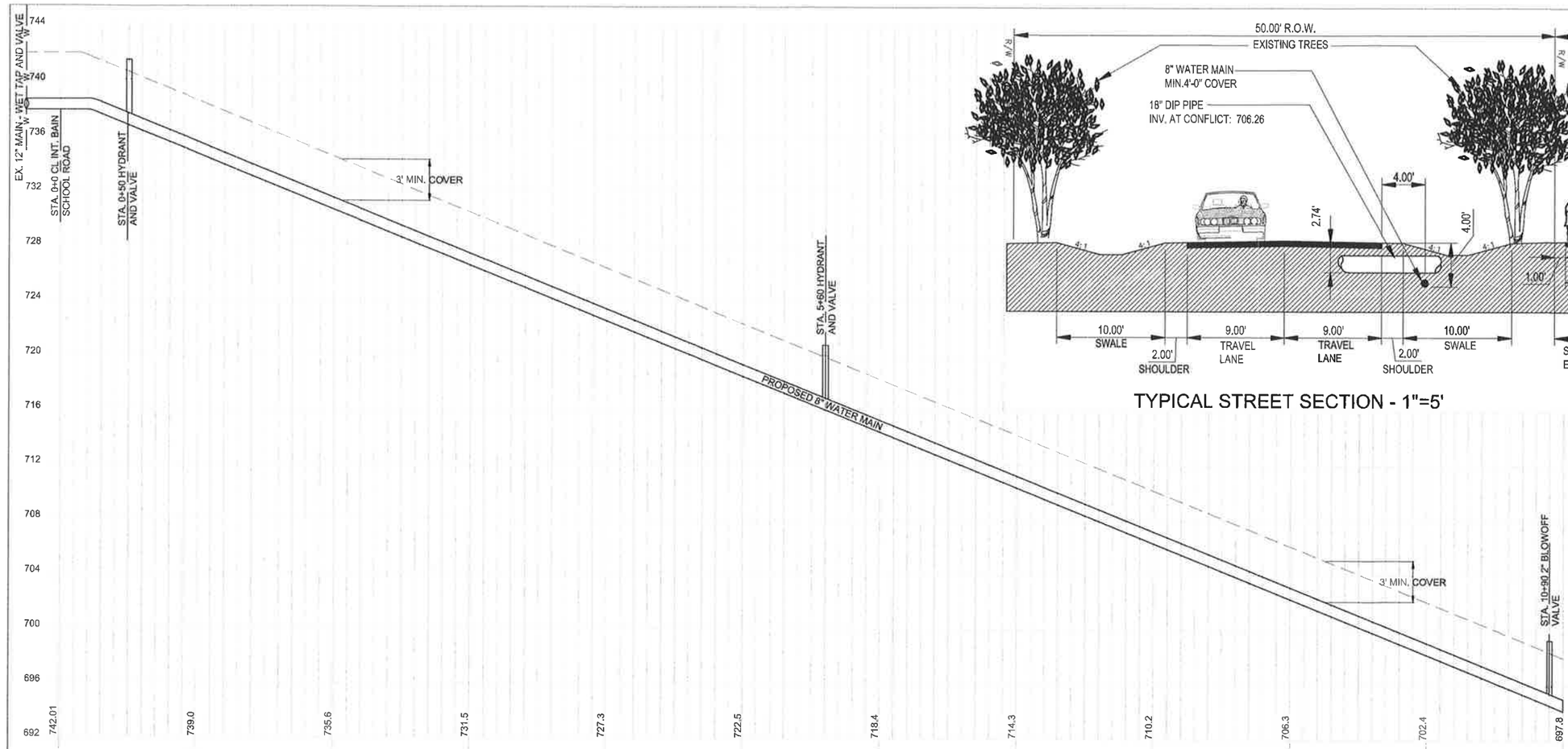
PROJECT NAME: KARA AT MINT HILL
CMU PROJECT NO.: ???????
PROJECT DESCRIPTION: APPROX. 1125 LF 8" WATER MAIN WITH 2 HYDRANTS SERVING 12 LOTS

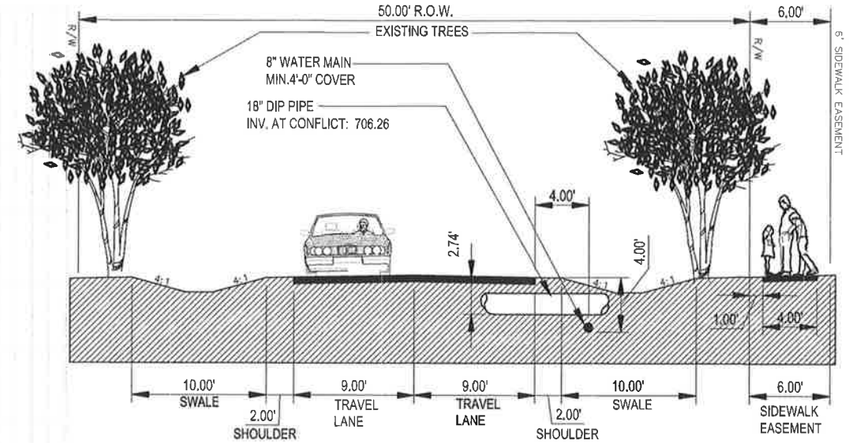
DESIGNED BY: FIRM: CONSULTANT
ENGINEER: FRANK HAHNE, PE NC LIC. NO. 027131
ADDRESS: 142 STERLING LAKE DRIVE, LEXINGTON, SC 29072
PHONE: (704)572-0266

THIS APPLICATION IS MADE UNDER AND IN FULL ACCORD WITH THE PROVISIONS OF CHAPTER 130A-317 OF THE NORTH CAROLINA GENERAL STATUTES, AND SUCH OTHER STATUTES AS RELATED TO PUBLIC WATER SYSTEMS. CMUD HAS BEEN GRANTED AUTHORITY TO ISSUE PERMITS FOR EXTENSION OF WATER MAINS PURSUANT TO 15A NCAC 18C.1801. THE APPLICANT AGREES THAT NO SIGNIFICANT CHANGE OR DEVIATION FROM THE PLANS AND SPECIFICATIONS APPROVED BY CMUD WILL BE MADE WITHOUT THE WRITTEN CONSENT AND APPROVAL OF CMUD OR ITS AUTHORIZED REPRESENTATIVE. A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NORTH CAROLINA SHALL SUBMIT A STATEMENT REFLECTING THAT ADEQUATE OBSERVATIONS DURING AND UPON COMPLETION OF CONSTRUCTION INDICATES THAT CONSTRUCTION WAS COMPLETED IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

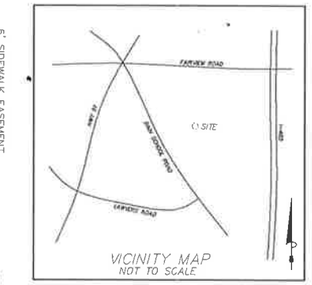
PERMIT NO. _____
APPROVED: _____ DATE _____

BARRY D. SHEARIN, PE, CHIEF ENGINEER
CHARLOTTE MECKLENBURG UTILITIES
5100 BROOKSHIRE BLVD.
CHARLOTTE, NORTH CAROLINA 28216





TYPICAL STREET SECTION - 1"=5'

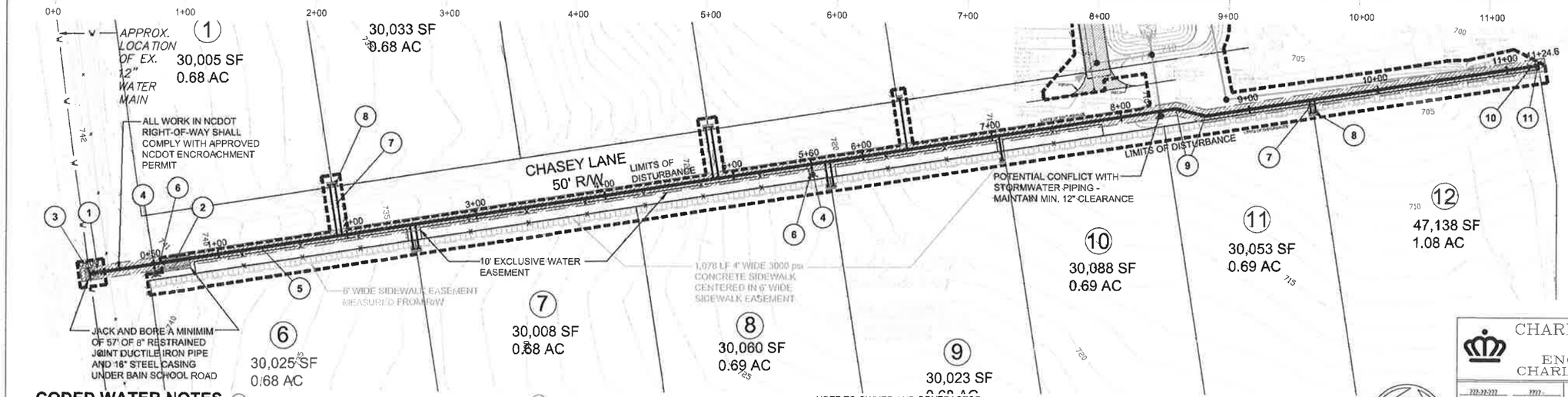


APPROVALS (SEALS)

N.C.R.L.S (AS BUILT) | N.C.P.E.

THIS PLAN IS A FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION UNLESS INITIALLED AND DATED AS APPROVED.

APPROVED: 00/00/0000



CODED WATER NOTES

1. 10' x 10' BORE RECEIVING PIT –CONTRACTOR TO DETERMINE DEPTH
2. 10' X 20' BORING PIT –CONTRACTOR TO DETERMINE DEPTH
3. 8" WET TAP WITH GATE VALVE – STD. DETAIL C
4. 6" FIRE LINE SERVICE CONNECTION – STD. DETAIL J
5. 8" WATER SERVICE (+/-1125 LF)
6. NEW FIRE HYDRANT TO BE INSTALLED ON 6" D.I.P. LEAD W/VALVE. INCLUDES 8"X8"X6" TEE. INSTALL A MINIMUM OF 3' FROM EDGE OF ASPHALT – SEE SPECIFICATIONS FOR ACCEPTABLE MANUFACTURERS – STD. DETAIL I
7. 1" WATER SERVICE AND METER BOX. SERVICE LINES TO BE LAID IN THE SAME TRENCH. METER TO BE SET BY CHARMECK UPON APPLICATION AND PAYMENT OF FEES BY THE OWNER. METER BOXES SHALL BE CAST CONCRETE WITH SOLID CAST IRON LIDS. (TYPICAL) – STD. DETAILS K-1 AND K-2
8. CONCRETE METER BOX FOR 1" WATER METER – STD. DETAIL BB
9. 8" 22-1/2° BEND WITH RESTRAINED JOINT.
10. 8" GATE VALVE IN C.I. BOX – STD. DETAIL FF
11. 8" BLOWOFF ASSEMBLY – STD. DETAILS DD AND NN

NOTE TO OWNER AND CONTRACTOR:

AT COMPLETION OF THE WATERLINE CONSTRUCTION THE PROJECT MUST BE GRANTED APPROVAL FROM AND RECEIVE AN OPERATIONAL PERMIT FROM CMUD. IT IS IMPERATIVE THAT FRANKE HAINES, PE, RECEIVE CERTIFIED RECORD DATA FROM THE CONTRACTOR'S REGISTERED LAND SURVEYOR IN A TIMELY FASHION TO ALLOW A RECORD WATER PLAN TO BE GENERATED AND SUBMITTED THROUGH CMUD. THE CONTRACTOR'S SURVEYOR SHALL PROVIDE SIGNED HARD COPIES OF THE RECORD DRAWING AND DIGITAL INFORMATION TO THE ENGINEER. THE SURVEYOR SHALL PROVIDE LOCATIONS OF ALL APPURTENANT ITEMS INCLUDING BUT NOT LIMITED TO BENDS, VALVES, TAP LOCATIONS, HYDRANTS, REDUCERS, ETC.

NORTH

No.	Date	By	Revision

CHARLOTTE–MECKLENBURG UTILITIES
ENGINEERING DIVISION
CHARLOTTE, NORTH CAROLINA

222-22-2222 Job No.	2222 File No.	PROPOSED 8" WATER MAIN TO SERVE				
Scales: PLAN 1" = 40'; PROFILE Hor. 1" = 40', Vert. 1" = 4'		KARA AT MINT HILL				
As Built	Date					
HEW Surveyed By	FH Designed By	JC Drawn By	FH Project-Engr	FH Approved By	08/04/14 Date	Sheet 2 OF 2