NC WAKE BOATS ADDITION

CONSTRUCTION PLANS

SPECIAL USE PERMIT #BOA2310-0001
APPROVED: 12/12/23

HARNETT COUNTY, NC

PROPERTY DATA

PROJECT NAME:
NC WAKE BOATS ADDITION
HARNETT COUNTY, NORTH CAROLINA

PROJECT SCOPE:
COMMERCIAL BUILDING ADDITION

SITE LOCATION:
HOLLY SPRINGS CHURCH ROAD
BROADWAY, NORTH CAROLINA

DEVELOPER:
NC WAKE BOATS
143 HOLLY SPRINGS CHURCH ROAD
BROADWAY, NC 27505
CONTACT: MR. DAVID TURNER
PHONE: 919-928-1104

CIVIL ENGINEER:
ARNOLD LAND DESIGN, PLLC
113 YOSEMITE COURT
HOLLY SPRINGS, NORTH CAROLINA 27540
CONTACT: MR. DAVID ARNOLD, PE
PHONE: 919-630-2552

PROPERTY INFORMATION:
OWNER: SUTTON AND HAYES, LLC
DEED BOOK: 4176; PAGE: 2421
BM: 2016, PG: 24
PIN NO. 9691-54-0320.000

PROJECT ACREAGE:
86,199 SF (1.98 ACRES)

ZONING CLASSIFICATION:
RA-30

LAND USE CLASSIFICATION:
AGRICULTURAL & RURAL RESIDENTIAL

SHEET INDEX

VICINITY MAP
1"=1,000 FT

NOTES

1. WATERLINE CONSTRUCTION AND TIE-IN WILL NEED TO BE COORDINATED AND INSPECTED BY HRW CONSTRUCTION INSPECTOR CHAD EVERETT.
2. NCDOT UTILITIES MANUAL DATED 2022 SECTION 3.4.9.1 REQUIRES FIRE HYDRANTS TO BE LOCATED AT THE BACK OF DITCH. WATER METERS WILL ALSO NEED TO BE LOCATED AT THE BACK OF THE DITCH. THE WATER LINE IS LOCATED AT THE FRONT OF THE DITCH.

OWNERS CONSENT:
AS THE OWNER OF RECORD, I HEREBY FORMALLY CONSENT TO THE PROPOSED DEVELOPMENT SHOWN ON THIS SITE PLAN AND ALL REGULATIONS AND REQUIREMENTS OF THE HARNETT COUNTY ORDINANCES

OWNERS SIGNATURE — DATE: 8/5/2024

NO.	DATE	REVISION DESCRIPTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES DAVID ARNOLD
08/05/24

ALD
ARNOLD LAND DESIGN
113 YOSEMITE COURT
HOLLY SPRINGS, NC 27540
(919) 630-2552

DESIGN BY: JDA
DRAWN BY: JDA
DATE: 2024-08-05
SCALE: NTS

NC WAKE BOATS ADDITION
HARNETT COUNTY, NC
COVER SHEET

SHEET NO:
C0.0

FINAL DRAWING - RELEASED FOR CONSTRUCTION

HARNETT REGIONAL WATER REQUIRED UTILITY NOTES

WATER

A. The Fire Marshal's Office shall approve all hydrant types and locations in new subdivisions. However, Harnett Regional Water (HRW) prefers the contractors to install one of the following fire hydrants:
   1. Mueller - Super Centurion 250 A-423 model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle); 2. American Darling - Mark B-84-B model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle); 3. Waterous - Pacer B-67-250 model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle) or approved equal for standardization.
B. Fire hydrants are installed at certain elevations. Any grade change near any fire hydrant, which impedes its operation, shall become the responsibility of the Utility Contractor for correction. Corrections will be monitored by the HRW Utility Construction Inspector and the Harnett County Fire Marshal.
C. The Professional Engineer (PE) shall obtain and provide the NCDEQ "Authorization to Construct" permit to the Utility Contractor before the construction of the water line shall begin. The Utility Contractor must post a copy of the NCDEQ "Authorization to Construct" permit issued by the North Carolina Department of Environmental Quality (NCDEQ) on site prior to the start of construction. The permit must be maintained on site throughout the entire construction process of the proposed water lines that will serve this project.
D. The Utility Contractor shall notify Harnett Regional Water (HRW) and the Professional Engineer (PE) at least two days prior to construction commencing. The Utility Contractor must schedule a pre-construction conference with Mr. Chad Everette, HRW Utility Construction Inspector at least two (2) days before construction will begin and the Utility Contractor must coordinate with HRW for regular inspection visitations and acceptance of the water system(s). Construction work shall be performed only during the normal working hours of HRW which is 8:00 am – 5:00 pm Monday through Friday. Holiday and weekend work is not permitted by HRW.
E. The Professional Engineer (PE) shall provide HRW and the Utility Contractor with a set of NCDEQ approved plans marked "Released for Construction" at least two days prior to construction commencing. The Registered Land Surveyor (RLS) should stake out all lot corners and the grade stakes for the proposed finish grade for each street before the Utility Contractor begins construction of the water line(s). The grade stakes should be set with a consistent offset from the street centerline so as not to interfere with the street grading and utility construction.
F. The Utility Contractor shall provide the HRW Utility Construction Inspector with material submittals and shop drawings for all project materials prior to the construction of any water line extension(s), and associated water services in Harnett County. The materials to be used on the project must meet the established specifications of HRW and be approved by the Engineer of Record prior to construction. All substandard materials or materials not approved for use in Harnett County found on the project site must be removed immediately when notified by the HRW Utility Construction Inspector.
G. The water main(s), fire hydrants, service lines, meter setters and all associated appurtenances shall be constructed in strict in accordance with the standard specifications of the Harnett Regional Water (HRW). The Utility Contractor shall be responsible to locate the newly installed water main(s), water service lines and all associated meter setters and meter boxes for other utility companies and their contractors until the new water main(s) have been approved by the North Carolina Department of Environmental Quality, Division of Environmental Health, Public Water Supply Section (NCDEQ, DEH, PWS) and accepted by HRW.
H. Prior to acceptance, all services will be inspected to insure that they are installed at the proper depth. All meter boxes must be flush with the ground level at finish grade and the meter setters must be a minimum of 8" below the meter box lid. Meter setters shall be centered in the meter box and supported by brick, block or stone.
I. The Utility Contractor shall provide the Professional Engineer (PE) and HRW Utility Construction Inspector with a set of red line drawings identifying the complete water system installed for each project. The red line drawings should identify the materials, pipe sizes and approximate depths of the water lines as well as the gate valves, fire hydrants, meter setters, blow off assemblies and all associated appurtenances for all water line(s) constructed in Harnett County. The red line drawings should clearly identify any deviations from the NCDEQ approved plans. All change orders must be approved by HRW and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.
J. Potable water mains crossing other utilities and non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum vertical distance of twenty-four (24") inches between the potable water main and all other utilities. NCDOT requires the new water mains to be installed under the storm water lines. The potable water main shall be installed with twenty-four (24") inches of vertical separation and with ductile iron pipe when designed to be placed under a nonpotable water line such as sanitary sewer or storm sewer lines. If these separations cannot be maintained then the water main shall be installed with ductile iron pipe. Both the potable water main and the non-potable water line must be cast iron or ductile iron pipe (DIP) if the state minimum separations cannot be maintained. The ductile iron pipe must be laid so the mechanical joints are at least (10') feet from the point where the potable water main crosses the non-potable water line.
K. Potable water mains installed parallel to non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum horizontal distance of ten (10') feet between the potable water main and sanitary sewer mains, sewer laterals and services. The horizontal separation between the potable water main and any other utility or storm sewer shall not be less than five (5') feet. The potable water main must be ductile iron pipe if this horizontal separation of ten (10') feet cannot be maintained. The ductile iron pipe shall extend at least ten (10') feet beyond the point where the minimum required horizontal separation of ten (10') feet can be re-established.
L. Meter setters shall be installed in pairs on every other lot line where possible to leave adequate space for other utilities to be installed at a later time. The meter setters shall be installed at least one (1') foot inside the right-of-way and at least three (3') to five (5') feet from the property line between the lots.
M. HRW requires that meter boxes for ¾" services shall be 12" wide x 17" long ABS plastic boxes at least 18" in height with cast iron lids/covers. Meter boxes for 1" services shall be 17" wide x 21" long ABS plastic boxes at least 18" in height with plastic lids and cast iron flip covers in the center of the lids. Meter boxes for 2" services shall be 20" wide x 32" long ABS plastic boxes at least 20" in height with plastic lids and cast iron flip covers in the center of the lids.
N. Master meters must be installed in concrete vaults sized for the meter assembly and associated appurtenances so as to provide at least eighteen (18") inches of clearance between the bottom of the concrete vault and the bottom of the meter setter. The master meter must be provided test ports if the meter is not equipped with test ports from the manufacturer in accordance with the HRW established standard specifications and details. Ductile iron pipe must be used for the master meter vault piping and valve vault piping. The Utility Contractor must provide shop drawings for the meter vaults to HRW prior to ordering the concrete vaults.
O. The Utility Contractor will install polyethylene SDR-9 water service lines that cross under the pavement inside a schedule 40 PVC conduit to allow for removal and replacement in the future. Two (2) independent ¾" water service lines may be installed inside one (1) – two (2") inch schedule 40 PVC conduit or two (2) independent 1" water service lines may be installed inside one (1) – three (3") inch schedule 40 PVC conduit, but each water service shall be tapped directly to the water main. Split services are not allowed by HRW. If sidewalks are proposed, the conduit must extend past the sidewalk.
P. The water main(s), fire hydrants, gate valves, service lines, meter setters and associated appurtenances must be rated for 200 psi and hydrostatically pressure tested to 200 psi. The hydrostatic pressure test(s) must be witnessed by the HRW Utility Construction Inspector. The Utility Contractor must notify HRW when they are ready to begin filling in lines and coordinate with Harnett Regional Water to witness all pressure testing.
Q. The Utility Contractor shall conduct a pneumatic pressure test using compressed air or other inert gas on the stainless steel tapping sleeve(s) prior to making the tap on the existing water main. This pneumatic pressure test must be witnessed by the HRW Utility Construction Inspector. The Utility Contractor shall use Romac brand stainless steel tapping sleeve(s) or approved equal for all taps made in Harnett County. All new water line extensions must begin with a resilient wedge type gate valve sized equal to the diameter of the new water line extension in order to provide a means of isolation between Harnett Regional Water's existing water mains and the new water line extensions under construction.
R. All water mains will be constructed with SDR-21 PVC Pipe or Class 50 Ductile Iron Pipe rated for at least 200 psi or greater. All pipes must be protected during loading, transport, unloading, staging, and installation. PVC pipe must be protected fro extended exposure to sunlight prior to installation.
S. All water mains will be flushed and disinfected in strict accordance with the standard specifications of the Harnett Regional Water. All water samples collected for bacteria testing will be collected by the HRW Utility Construction Inspector and tested in the HRW Laboratory.
T. All fittings larger than two (2") inches diameter shall be ductile iron. HRW requires that mechanical joints be assembled with grip rings as "Megalug" fittings are not approved by Harnett Regional Water for pipe sizes smaller than twelve inches (12") diameter. PVC pipe used for water mains shall be connected by slip joint or mechanical joint with grip rings. Glued pipe joints are not allowed on PVC pipe used for water mains in Harnett County.
U. HRW requires that the Utility Contractor install tracer wire in the trench with all water lines. The tracer wire shall be 12 ga. insulated, solid copper conductor and it shall be terminated at the top of the valve boxes or manholes. No spliced wire connections shall be made underground on tracer wire installed in Harnett County. The tracer wire may be secured with duct tape to the top of the pipe before backfilling.
V. The Utility Contractor will provide Professional Engineer (PE) and the HRW Utility Construction Inspector with a set of red line field drawings to identify the installed locations of the water line(s) and all associated services. All change orders must be pre-approved by HRW and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.
W. The Utility Contractor shall spot dig to expose each utility pipe or line which may conflict with construction of proposed water line extensions well in advance to verify locations of the existing utilities. The Utility Contractor shall provide both horizontal and vertical clearances to the Professional Engineer (PE) to allow the PE to adjust the water line design in order to avoid conflicts with existing underground utilities. The Utility Contractor shall coordinate with the utility owner and be responsible for temporary relocation and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner requirements during water line installation, grading and street construction.
X. Prior to the commencement of any work within established utility easements or NCDOT right-of-ways the Utility Contractor is required to have a signed NCDOT encroachment agreement posted on site and notify all concerned utility companies in accordance with G.S. 87-102. The Utility Contractor must call the NC One Call Center at 811 or (800) 632-4949 to verify the location of existing utilities prior to the beginning of construction. Existing utilities shown in these plans are taken from maps furnished by various utility companies and have not been physically located or verified by the P.E. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.). The Utility Contractor will be responsible to repair any and all damages to the satisfaction of the related utility company.
Y. The Utility Contractor shall provide HRW with at least one (1) fire hydrant wrench and one (1) break-away flange kit for every subdivision with fire hydrants developed in Harnett County. These items must be provided to HRW before the final inspection will be scheduled by the HRW Utility Construction Inspector. In addition, the Utility Contractor shall install a 4" x 4" concrete valve marker at the edge of the right-of-way to identify the location of each gate valve installed in the new water system with the exception of the fire hydrant isolation valves. The contractor shall measure the distance from the center of the concrete marker to the center of the valve box. This distance (in linear feet) shall be stamped on the brass plate located on the top of the concrete valve marker. In lieu of installing the concrete valve markers, the Utility Contractor may provide at least two measurements from two independent permanent above ground structures to the Professional Engineer (PE) in the red lin drawings to identify the valve locations. The Professional Engineer (PE) must include these measurements in the As-Built Record Drawings submitted to HRW.
Z. The Utility Contractor will be responsible for any and all repairs due to leakage damage from poor workmanship during the one year warranty period once the water system improvements have been accepted by Harnett Regional Water. Harnett Regional Water will provide maintenance and repairs when requested and bill the Developer and/or Utility Contractor if necessary due to lack of response within 48 hours of notification of warranty work. The Utility Contractor will be responsible for any and all repairs due to damages resulting from failure to locate the new water lines and associated appurtenances for other utilities and their contractors until the water lines have been approved by NCDEQ and accepted by HRW. The final inspection of water system improvements cannot be scheduled with HRW until the streets have been paved; the rights-of-way and utility easements have been seeded and stabilized with an adequate stand of grass in place to prevent erosion issues on site.
AA. The Engineer of Record is responsible to insure that construction is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field changes to the approved plans are allowed without prior written approval by HRW. A copy of each engineer's field report is to be submitted to HRW as each such inspection is made on system improvements or testing is performed by the contractor. Water and sewer infrastructure must pass all tests required by HRW specifications and those of all applicable regulatory agencies. These tests include, but are not limited to: air test, vacuum test, mandrel test, visual test, pressure test, bacteriological test, etc. A HRW must be present during testing and all test results shall be submitted to HRW. All tests must be satisfied before the final inspection will be scheduled with the HRW Inspector. The Engineer of Record must request in writing to schedule the final inspection once all construction is complete. The Developer's Engineer of Record and the HRW Utility Construction Inspector shall prepare a written punch list of any defects or deficiencies noted during the final inspection, should any exist. Upon completion of the punch list, the Developer's Engineer of Record will schedule another inspection. In the event the number of inspections performed by the HRW exceeds two, additional fees may be assessed to the Developer.

NO.	DATE	REVISION DESCRIPTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES DAVID ARNOLD

08/05/24

ALD
ARNOLD LAND DESIGN
113 YOSEMITE COURT
HOLLY SPRINGS, NC 27540
(919) 630-2552

DESIGN BY: JDA
DRAWN BY: JDA
DATE: 2024-08-05
SCALE: NTS

NC WAKE BOATS ADDITION
HARNETT COUNTY, NC

HARNETT REGIONAL WATER UTILITY NOTES

SHEET NO:
C0.1

FINAL DRAWING - RELEASED FOR CONSTRUCTION

SURVEY NOTES

1. EXISTING PROPERTY LINES, EASEMENTS, AND SITE FEATURES TAKEN FROM SURVEY AUTOCADD FILE PREPARED BY BENTON W. DEWAR AND ASSOCIATES PROFESSIONAL LAND SURVEYOR.
2. EXISTING TOPOGRAPHY TAKEN FROM HARNETT COUNTY GIS.
3. THERE ARE NO STREAM FEATURES OR WETLANDS LOCATED ON THE PROPERTY.
4. NO CEMETERIES OR GRAVES WERE OBSERVED AS A RESULT OF SURVEY.
5. AREA COMPUTED BY COORDINATES.
6. PROPERTY SUBJECT TO BOTH ABOVE AND/OR BELOW GROUND UTILITIES AND/OR EASEMENTS.
7. THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA PER FEMA MAP #3710968001 EFFECTIVE DATE 10/3/2006 ZONE X.

DOUGLAS & MELISSA SMITH
DB 3379 PG 788

ALVIE & CORD THOMAS
DB 873 PG 22

SUTTON & HAYES LLC
DB 4176 PG 2421

CP
N 62°31'13"E 239.44'
S 38°17'49"E 285.61'
315.18'
60' INGRESS, EGRESS AND UTILITY EASEMENT
PER MAP # 2016 - 24
N 42°50'13"W 341.65'
31.57'
APPROXIMATE EP
APPROXIMATE WATERLINE
52.98'
262.96'
HOLLY SPRINGS CHURCH ROAD (NCSR 1273)
60' PUBLIC R/W
S 51°48'01"W 315.94'
30.22'
R/W

TOTAL AREA
86199 SF
1.98 Acres

AREA IN EASEMENT
17429 SF
0.40 Acres

AREA IN R/W
9315 SF
0.21 Acres

NET AREA
59455 SF
1.36 ACRES

LEGEND:
CP - COMPUTED POINT
PROP - PROPOSED
SF - SQUARE FEET
EP - EDGE OF PAVEMENT
R/W - RIGHT OF WAY
NTS - NOT TO SCALE
DB - DEED BOOK
PG - PAGE

N

20 0 10 20 40
SCALE: 1"=20'

FINAL DRAWING - RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION DESCRIPTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES DAVID ARNOLD
08/05/24

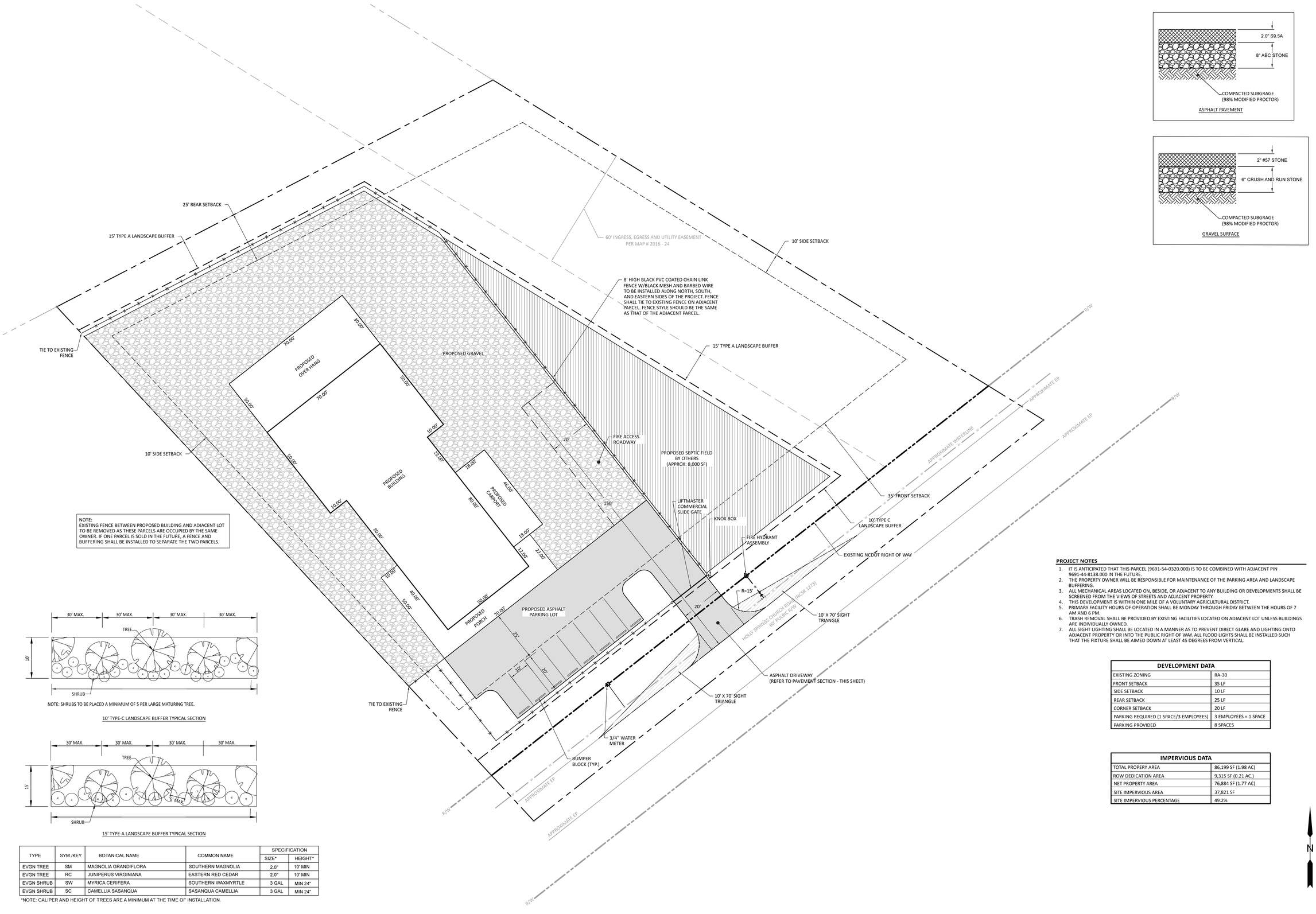
ARNOLD LAND DESIGN
113 YOSEMITE COURT
HOLLY SPRINGS, NC 27540
(919) 630-2552

DESIGN BY: JDA
DRAWN BY: JDA
DATE: 2024-08-05
SCALE: 1"=20'

NC WAKE BOATS ADDITION
HARNETT COUNTY, NC

EXISTING CONDITIONS PLAN

SHEET NO:
C1.0



NOTE:
EXISTING FENCE BETWEEN PROPOSED BUILDING AND ADJACENT LOT TO BE REMOVED AS THESE PARCELS ARE OCCUPIED BY THE SAME OWNER. IF ONE PARCEL IS SOLD IN THE FUTURE, A FENCE AND BUFFERING SHALL BE INSTALLED TO SEPARATE THE TWO PARCELS.

NOTE: SHRUBS TO BE PLACED A MINIMUM OF 5 PER LARGE MATURING TREE.

10' TYPE-C LANDSCAPE BUFFER TYPICAL SECTION

15' TYPE-A LANDSCAPE BUFFER TYPICAL SECTION

TYPE	SYM./KEY	BOTANICAL NAME	COMMON NAME	SPECIFICATION	
				SIZE*	HEIGHT*
EVGN TREE	SM	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	2.0"	10' MIN
EVGN TREE	RC	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	2.0"	10' MIN
EVGN SHRUB	SW	MYRICA CERIFERA	SOUTHERN WAXMYRTLE	3 GAL	MIN 24"
EVGN SHRUB	SC	CAMELLIA SASANQUA	SASANQUA CAMELLIA	3 GAL	MIN 24"

*NOTE: CALIPER AND HEIGHT OF TREES ARE A MINIMUM AT THE TIME OF INSTALLATION.

ASPHALT PAVEMENT

GRAVEL SURFACE

PROJECT NOTES

1. IT IS ANTICIPATED THAT THIS PARCEL (9691-54-0320.000) IS TO BE COMBINED WITH ADJACENT PIN 9691-44-8138.000 IN THE FUTURE.
2. THE PROPERTY OWNER WILL BE RESPONSIBLE FOR MAINTENANCE OF THE PARKING AREA AND LANDSCAPE BUFFERING.
3. ALL MECHANICAL AREAS LOCATED ON, BESIDE, OR ADJACENT TO ANY BUILDING OR DEVELOPMENTS SHALL BE SCREENED FROM THE VIEWS OF STREETS AND ADJACENT PROPERTY.
4. THIS DEVELOPMENT IS WITHIN ONE MILE OF A VOLUNTARY AGRICULTURAL DISTRICT.
5. PRIMARY FACILITY HOURS OF OPERATION SHALL BE MONDAY THROUGH FRIDAY BETWEEN THE HOURS OF 7 AM AND 6 PM.
6. TRASH REMOVAL SHALL BE PROVIDED BY EXISTING FACILITIES LOCATED ON ADJACENT LOT UNLESS BUILDINGS ARE INDIVIDUALLY OWNED.
7. ALL SIGHT LIGHTING SHALL BE LOCATED IN A MANNER AS TO PREVENT DIRECT GLARE AND LIGHTING ONTO ADJACENT PROPERTY OR INTO THE PUBLIC RIGHT OF WAY. ALL FLOOD LIGHTS SHALL BE INSTALLED SUCH THAT THE FIXTURE SHALL BE AIMED DOWN AT LEAST 45 DEGREES FROM VERTICAL.

DEVELOPMENT DATA	
EXISTING ZONING	RA-30
FRONT SETBACK	35 LF
SIDE SETBACK	10 LF
REAR SETBACK	25 LF
CORNER SETBACK	20 LF
PARKING REQUIRED (1 SPACE/3 EMPLOYEES)	3 EMPLOYEES = 1 SPACE
PARKING PROVIDED	8 SPACES

IMPERVIOUS DATA	
TOTAL PROPERY AREA	86,199 SF (1.98 AC)
ROW DEDICATION AREA	9,315 SF (0.21 AC.)
NET PROPERTY AREA	76,884 SF (1.77 AC)
SITE IMPERVIOUS AREA	37,821 SF
SITE IMPERVIOUS PERCENTAGE	49.2%

N

20 0 10 20 40

SCALE: 1"=20'

FINAL DRAWING - RELEASED FOR CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES DAVID ARNOLD

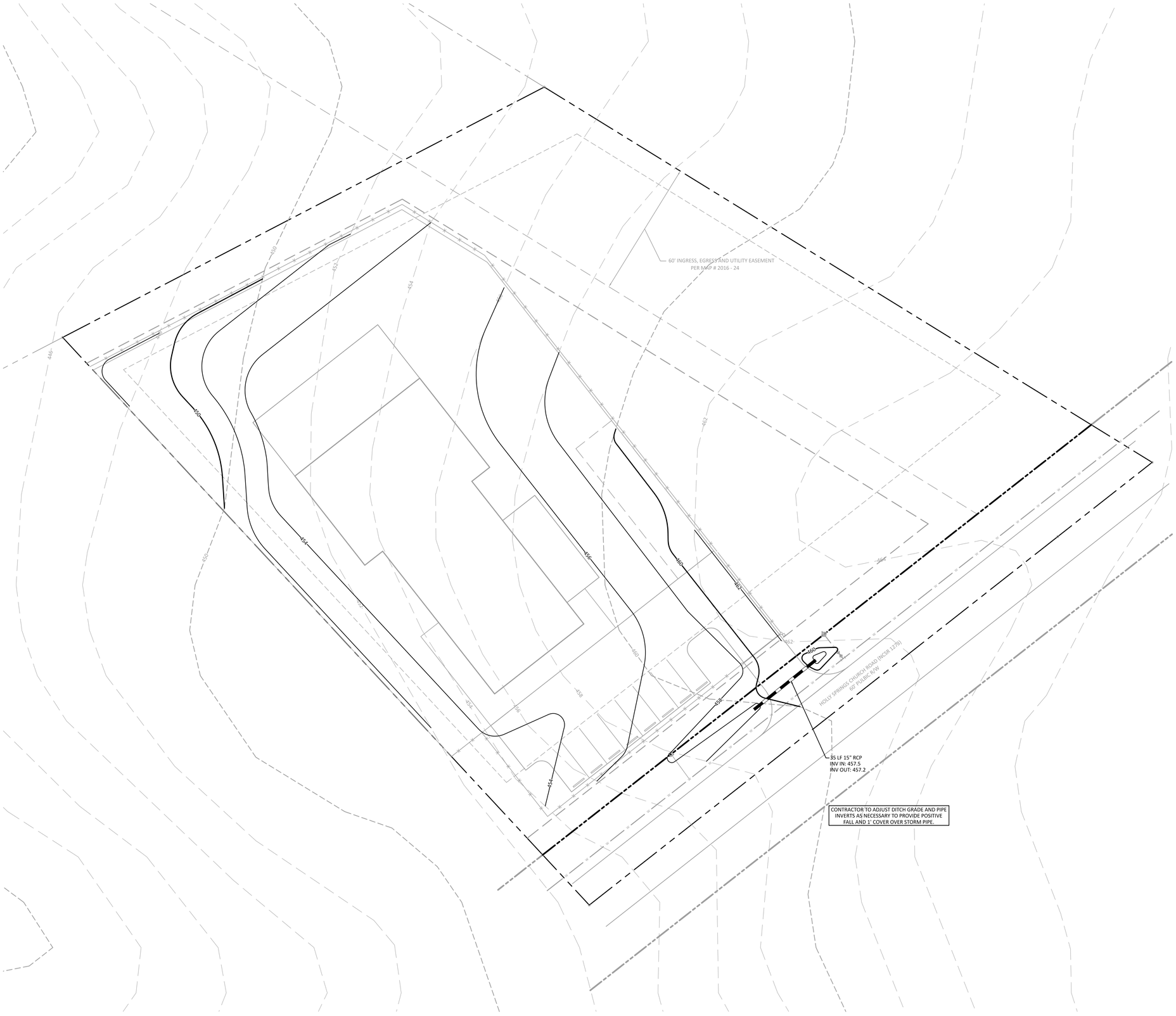
08/05/24

ALD
ARNOLD LAND DESIGN
113 YOSEMITE COURT
HOLLY SPRINGS, NC 27540
(919) 830-2352

DESIGN BY: JDA
DRAWN BY: JDA
DATE: 2024-08-05
SCALE: 1"=20'

NC WAKE BOATS ADDITION
HARNETT COUNTY, NC
SITE AND UTILITY PLAN

SHEET NO:
C2.0



GRADING NOTES

1. PROPOSED CONTOURS REPRESENT APPROXIMATE ELEVATIONS AT A POINT. PROPOSED SPOT ELEVATIONS SUPERCEED CONTOUR INFORMATION.
2. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS AND SHALL MAINTAIN ADEQUATE DRAINAGE DURING CONSTRUCTION.
3. ALL GRADING, BACKFILLING, EXCAVATION, ETC. SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS SET FORTH BY THE LOCAL GOVERNING AUTHORITY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR COORDINATING ALL CONSTRUCTION ACTIVITIES WITH SAID AUTHORITY.
4. CONTRACTOR IS TO CONTACT NORTH CAROLINA "ONE CALL" AT 811 FOR UNDERGROUND UTILITY LOCATION 48 HOURS PRIOR TO ANY DIGGING.
5. CONTRACTOR SHALL LOCATE AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
6. ANY AND ALL DISTURBED AREAS SHALL BE FINE GRADED, SEEDED WITH PERMANENT GRASS SEEDING MIX AND STRAWED PRIOR TO DEMOBILIZATION FROM THE SITE.
7. SLOPES STEEPER THAN 3H:1V SHOULD BE EVALUATED AND DESIGNED BY A GEOTECHNICAL ENGINEER

STORM DRAINAGE NOTES

1. ALL STORM DRAINAGE PIPES SHALL BE CLASS III REINFORCED CONCRETE PIPE (RCP) UNLESS NOTED OTHERWISE.
2. ALL CONCRETE SHALL MEET A MINIMUM 3000 PSI COMPRESSIVE STRENGTH.
3. ALL PIPE JOINTS SHALL BE MADE WITH PREFORMED JOINT SEALER WHICH CONFORMS TO AASHTO SPECIFICATION M-198 FOR TYPE B FLEXIBLE PLASTIC GASKETS UNLESS OTHERWISE NOTED.
4. ALL BACKFILL SHALL BE NON-PLASTIC IN NATURE, FREE FROM ROOTS, VEGETATIVE MATTER, WASTE, CONSTRUCTION MATERIAL OR OTHER OBJECTIONABLE MATERIAL. SUITABLE SOILS SHALL BE CAPABLE OF COMPACTED BY MECHANICAL MEANS AND SHALL HAVE NO TENDENCY TO FLOW OR BEHAVE IN A PLASTIC MANNER UNDER TAMPING BLOWS OR PROOF ROLLING.
5. MATERIALS DEEMED AS UNSUITABLE FOR BACKFILL PURPOSES SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL.
6. BACKFILLING OF TRENCHES SHALL BE PERFORMED IMMEDIATELY AFTER PIPE IS LAID. THE FILL AROUND AND ABOVE THE PIPE SHALL BE COMPACTED IN ACCORDANCE WITH THE PERMITTING AUTHORITY'S AND MANUFACTURER'S SPECIFICATIONS AND/OR THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
7. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO RISE IN UNBACKFILLED TRENCHES AFTER PIPE HAS BEEN PLACED.

NO.	DATE	REVISION DESCRIPTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES DAVID ARNOLD
08/05/24

ALD
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HOLLY SPRINGS, NC 27540
(919) 630-2552

DESIGN BY: JDA
DRAWN BY: JDA
DATE: 2024-08-05
SCALE: 1"=20'

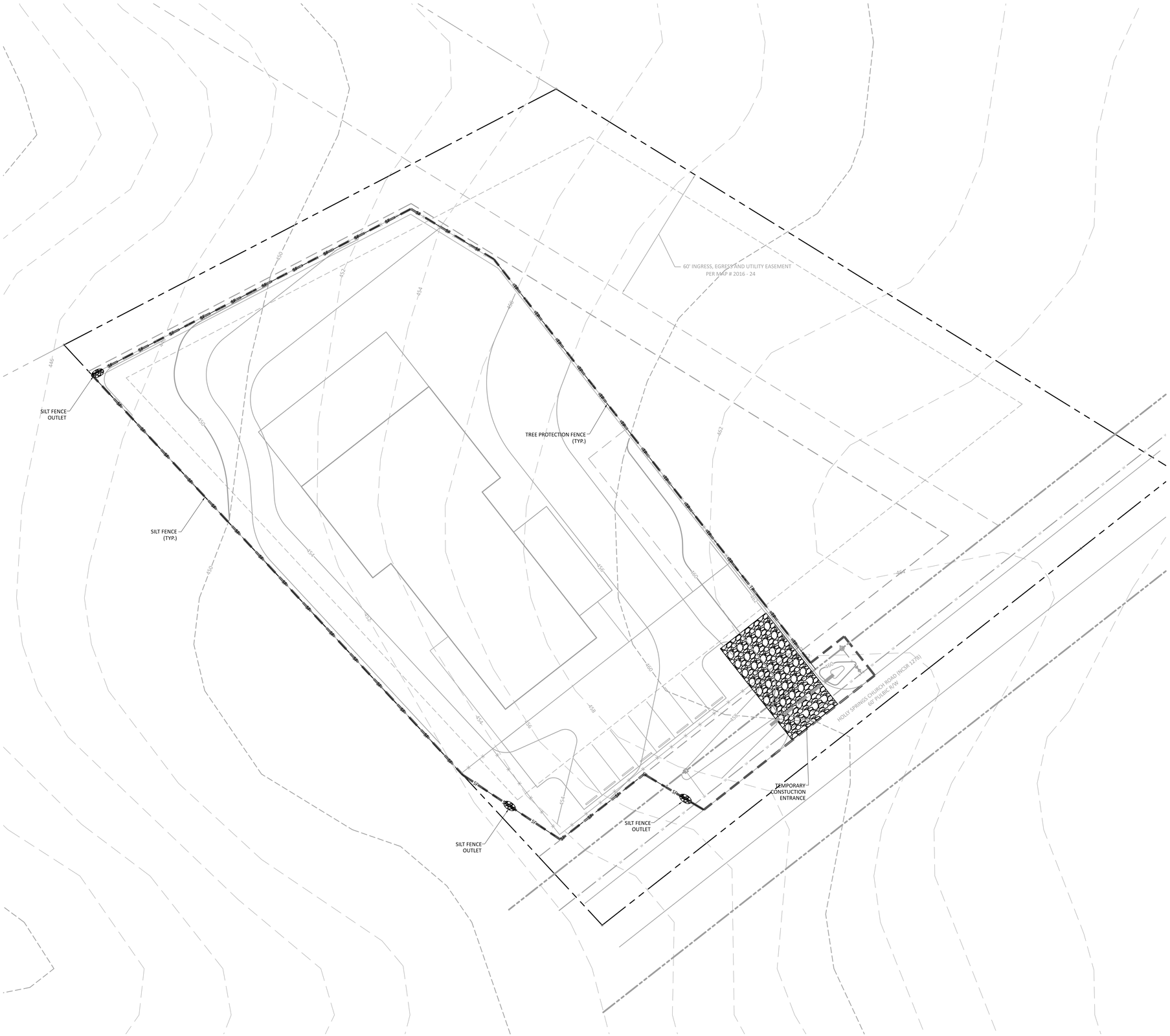
NC WAKE BOATS ADDITION

HARNETT COUNTY, NC

GRADING AND DRAINAGE PLAN

SHEET NO:
C3.0

FINAL DRAWING - RELEASED FOR CONSTRUCTION



GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. ALL GRADING, BACKFILLING, EXCAVATION, ETC. SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS SET FORTH BY THE LOCAL GOVERNING AUTHORITY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR COORDINATING ALL CONSTRUCTION ACTIVITIES WITH SAID AUTHORITY.
2. REFER TO THE DETAILS IN THESE PLANS FOR INSTALLATION AND MAINTENANCE REQUIREMENTS FOR THE EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN.
3. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED AND APPROVED FOR REMOVAL.
4. ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIALS AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM.
5. ANY AND ALL DISTURBED AREAS SHALL BE FINE GRADED, SEEDED WITH PERMANENT GRASS SEEDING MIX AND STRAWED PRIOR TO DEMOBILIZATION FROM THE SITE.

TOTAL DISTURBED AREA: 0.99 ACRES

SILT FENCE OUTLETS ARE SHOWN IN THEIR APPROXIMATE LOCATION. SILT FENCE OUTLETS SHOULD BE ADJUSTED AS NECESSARY TO THE LOW POINTS ALONG THE SILT FENCE ENCOUNTERED IN THE FIELD.

SOIL STABILIZATION SHALL BE ACHIEVED ON ANY AREA OF A SITE WHERE LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED ACCORDING TO THE FOLLOWING SCHEDULE:

1. 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.
2. 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.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT NCDEMLR EROSION CONTROL SPECIFICATIONS AND DETAILS

EROSION CONTROL PLAN LEGEND

LIMITS OF DISTURBANCE

SILT FENCE — SF — SF — SF —

SILT FENCE OUTLET

TREE PROTECTION FENCE — TP — TP — TP —

CONSTRUCTION ENTRANCE

811 Know what's **below.** **Call** before you dig.
1-800-632-4949

N

20 0 10 20 40
SCALE: 1"=20'

FINAL DRAWING - RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION DESCRIPTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES DAVID ARNOLD
08/05/24

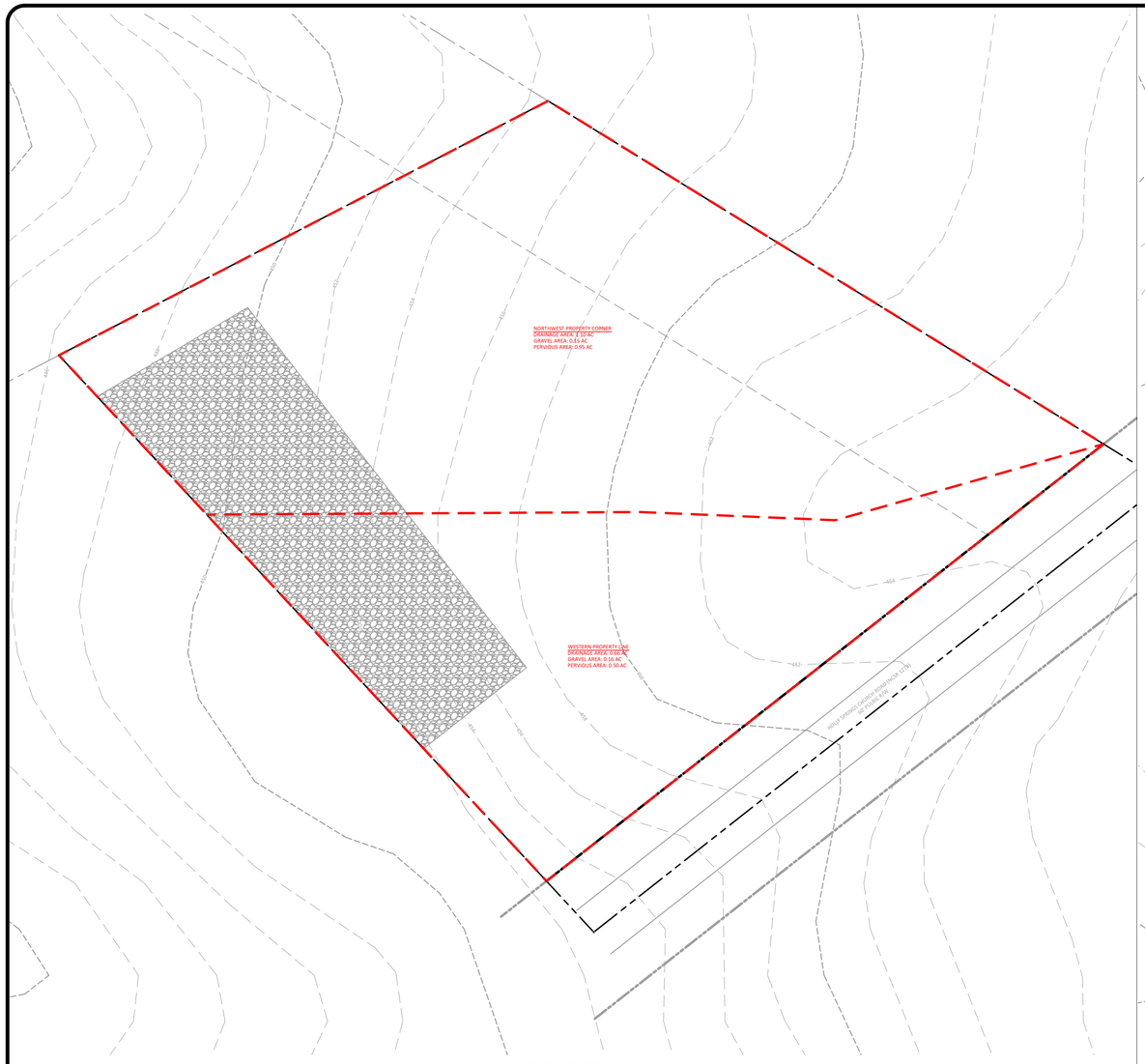
ALD
ARNOLD LAND DESIGN
113 YOSEMITE COURT
HOLLY SPRINGS, NC 27540
(919) 630-2552

DESIGN BY: JDA
DRAWN BY: JDA
DATE: 2024-08-05
SCALE: 1"=20'

NC WAKE BOATS ADDITION
HARNETT COUNTY, NC

EROSION CONTROL PLAN

SHEET NO:
C4.0

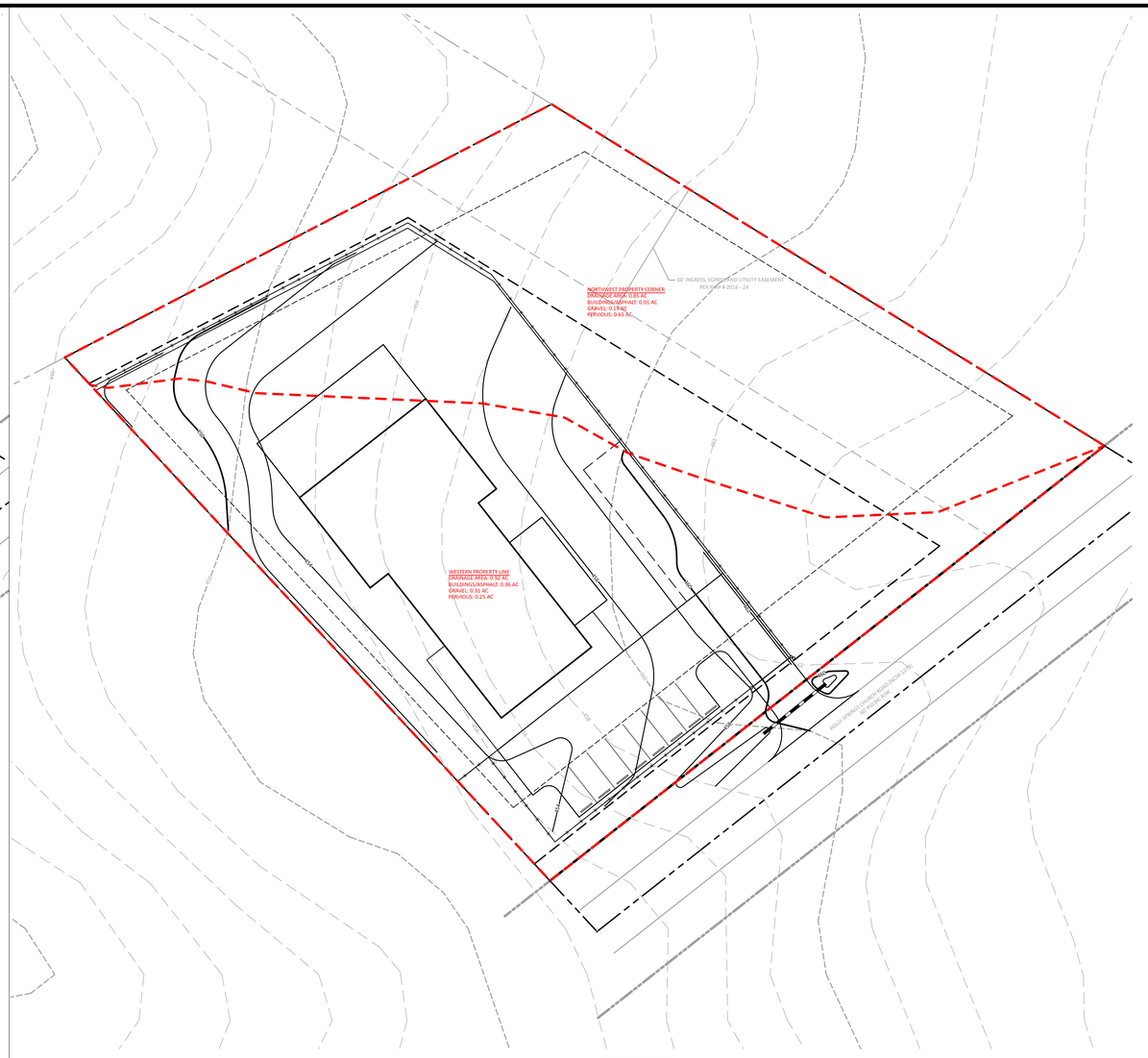


PRE-DEVELOPMENT

NORTHWEST PROPERTY CORNER
Q10-PRE: 5.55 CFS
Q10-POST: 4.43 CFS

Q25-PRE: 7.37 CFS
Q25-POST: 5.85 CFS

*FLOWS HAVE BEEN REDUCED FROM PRE-DEVELOPMENT LEVELS



PRE-DEVELOPMENT

WESTERN PROPERTY LINE
Q10-PRE: 3.43 CFS
Q10-POST: 6.06 CFS

Q25-PRE: 4.53 CFS
Q25-POST: 7.60 CFS

*Q10 HAS BEEN INCREASED BY 32% AND Q25 HAS BEEN INCREASED BY 25%, HOWEVER FLOW DISCHARGES ONTO SAME PROPERTY OWNER AND THEREFORE DOES NOT HAVE A NEGATIVE IMPACT ON AN ADJACENT PROPERTY OWNER. ONCE DISCHARGING FROM THE PROPERTY TO THE WEST, RUNOFF DISCHARGES INTO AN EXISTING CHANNEL. NO NEGATIVE IMPACT TO ADJACENT PROPERTIES IS ANTICIPATED. ADDITIONALLY ALL RUNOFF IS VIA SHEET FLOW AND HAS NOT BEEN CHANNELIZED TO HELP PREVENT ANY EROSION.

N

20 0 10 20 40

SCALE: 1"=20'

FINAL DRAWING - RELEASED FOR CONSTRUCTION

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08/05/24

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DESIGN BY:	DRAWN BY:
JDA	JDA
DATE: 2024-08-05	SCALE: 1"=20'

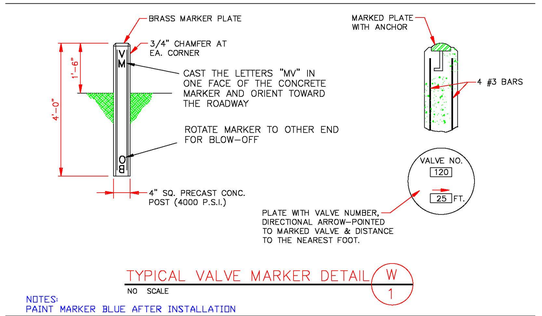
NC WAKE BOATS ADDITION

HARNETT COUNTY, NC

STORMWATER MANAGEMENT ANALYSIS

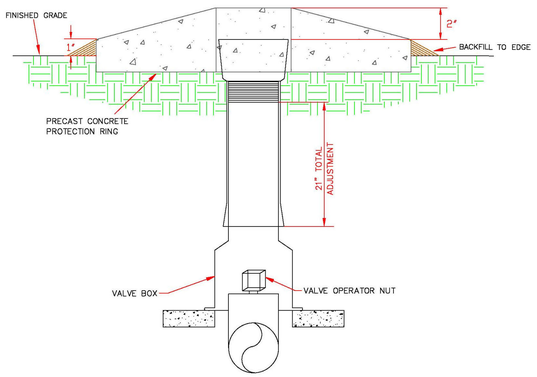
SHEET NO:

C5.0

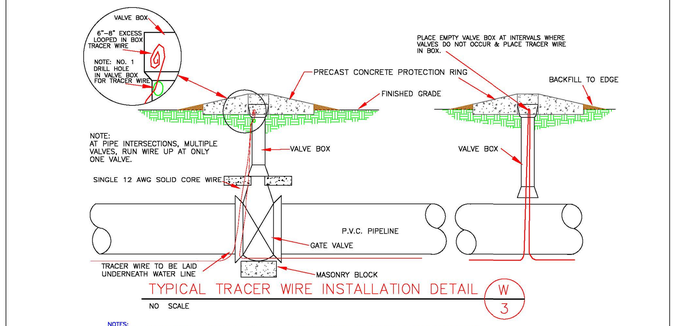


TYPICAL VALVE MARKER DETAIL W-1
NO SCALE

NOTES:
PAINT MARKER BLUE AFTER INSTALLATION

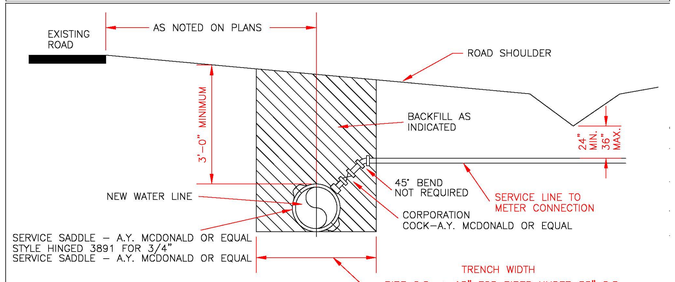


TYPICAL VALVE BOX DETAIL W-2
NO SCALE



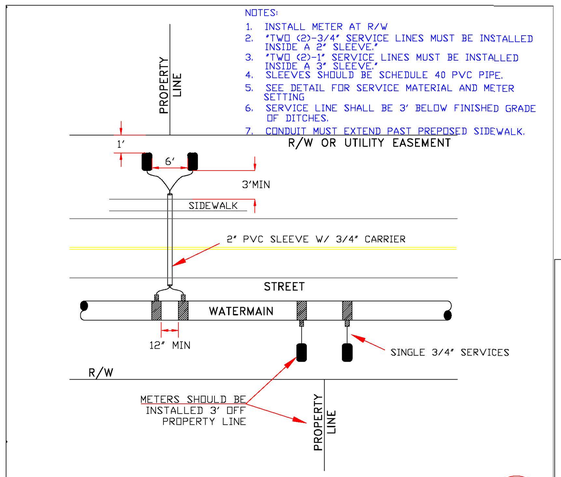
TYPICAL TRACER WIRE INSTALLATION DETAIL W-3
NO SCALE

NOTES:
1. DRILL HOLE IN VALVE BOX TO INSERT TRACER WIRE,BRING UP TO INSIDE AND ROLL UP AT LEAST 6"-8" EXCESS
2. PLACE TRACER WIRE IN VALVE BOX AT 1,000' INTERVALS OR AS NOTED ON THE PLANS, TYPICAL.
3. DO NOT SPLICE WIRE WHEN BEGINNING A NEW SPOOL. INSTEAD INSTALL A VALVE BOX AND ATTACH EACH WIRE WITH A BRASS SCREW TO THE VALVE BOX.

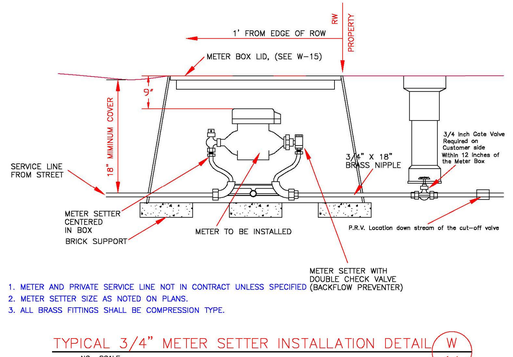


NOTE:
1. "SERVICE CONNECTION" IN PROPOSAL TO INCLUDE SERVICE SADDLE, 45° BEND, CORPORATION COCK AND ALL LABOR INVOLVED IN MAKING A COMPLETE SERVICE CONNECTION.
2. SERVICE PIPING TO BE 3/4" SDR-9 PE TUBING
3. ALL BRASS FITTINGS SHALL BE COMPRESSION TYPE

TYPICAL WATER SERVICE CONNECTION USING TAPPING SADDLE DETAIL W-13
NO SCALE

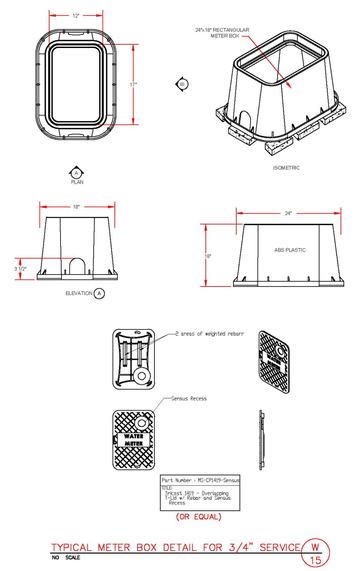


TYPICAL DOMESTIC WATER SERVICE INSTALLATION DETAIL W-12
NO SCALE

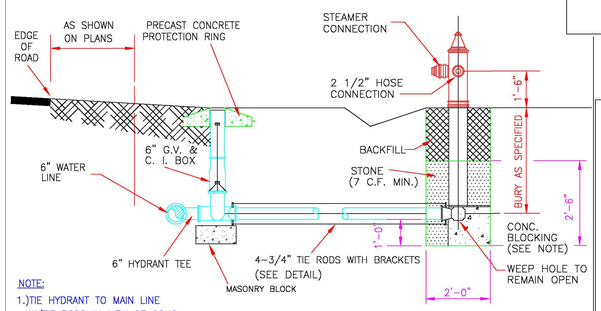


1. METER AND PRIVATE SERVICE LINE NOT IN CONTRACT UNLESS SPECIFIED
2. METER SETTER SIZE AS NOTED ON PLANS.
3. ALL BRASS FITTINGS SHALL BE COMPRESSION TYPE.

TYPICAL 3/4" METER SETTER INSTALLATION DETAIL W-14
NO SCALE

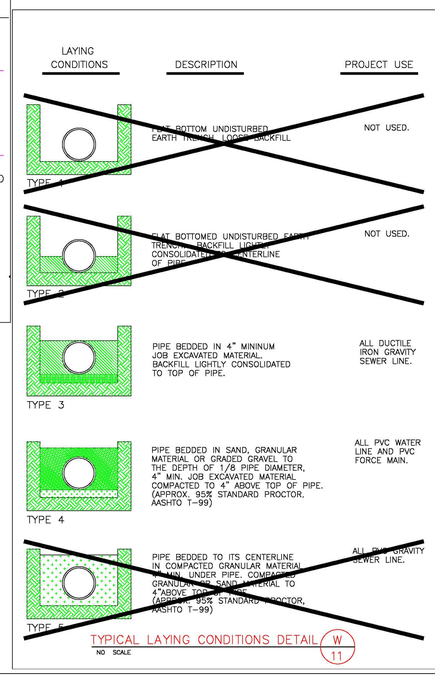


TYPICAL METER BOX DETAIL FOR 3/4" SERVICE W-15
NO SCALE

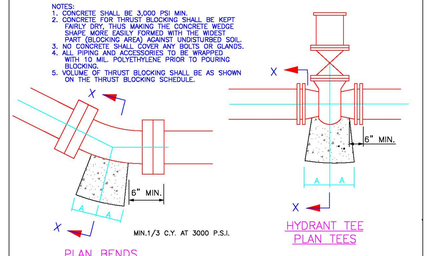


NOTE:
1.)TIE HYDRANT TO MAIN LINE W/TIE RODS IN LIEW OF CONC. BLOCKING IN SANDY SOIL.
2.)MECHANICAL JOINTS USED WITH GRIP RINGS

TYPICAL FIRE HYDRANT INSTALLATION DETAIL W-6
NO SCALE



TYPICAL LAYING CONDITIONS DETAIL W-11
NO SCALE



PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	8"	9"	10"	16"
6"	10"	12"	8"	10"	8"	8"	8"	8"	10"	10"	12"	18"
8"	15"	13"	10"	10"	8"	8"	8"	8"	10"	12"	12"	24"
10"	18"	14"	10"	12"	6"	10"	6"	10"	11"	14"	14"	25"
12"	20"	18"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
14"	22"	18"	14"	16"	10"	14"	10"	14"	16"	18"	18"	34"
16"	26"	20"	16"	18"	12"	16"	12"	16"	18"	20"	20"	36"

TYPICAL THRUST BLOCK DETAIL W-7
NO SCALE

REVISION DESCRIPTION | DATE | NO.

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113 YOSEMITE COURT
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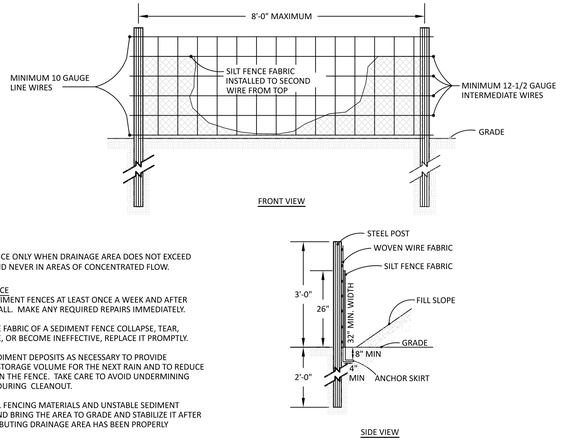
(919) 630-2552

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES D. ARNOLD
08/05/24

DESIGN BY: JDA | DRAWN BY: JDA
DATE: 2024-08-05 | SCALE: NTS

NC WAKE BOATS ADDITION
HARNETT COUNTY, NC
UTILITY DETAILS

SHEET NO:
D1



NOTE:
USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.

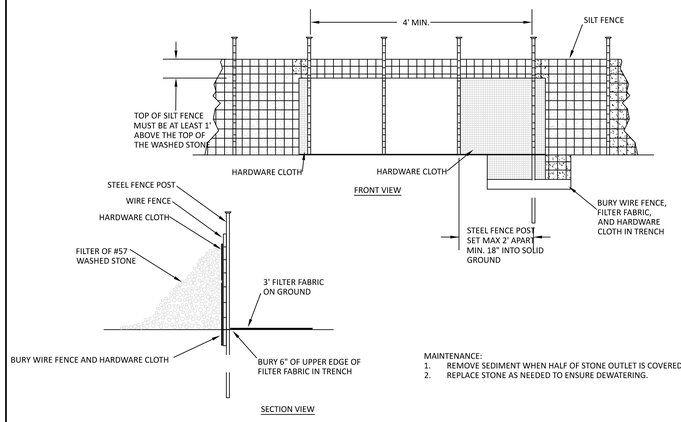
MAINTENANCE
INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

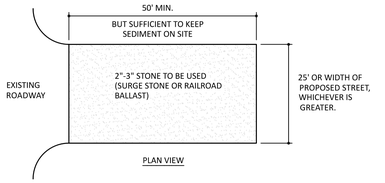
REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

STANDARD TEMPORARY SILT FENCE



MAINTENANCE:
1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.

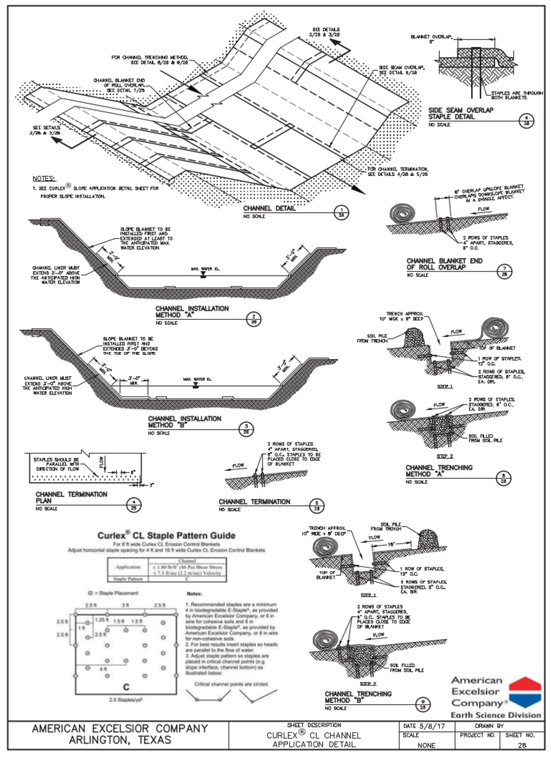
STANDARD SILT FENCE OUTLET



NOTES:
1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
3. MAINTAIN GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING CONSTRUCTION SITE. ENTRANCE WILL REQUIRE PERIODIC REMOVAL OF SEDIMENT-LADEN STONE AND REPLACEMENT WITH FRESH STONE.

MAINTENANCE
MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH TWO-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

STANDARD CONSTRUCTION ENTRANCE



EROSION CONTROL LINER MAINTENANCE

1. INSPECT EROSION CONTROL LINERS AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL (1/2 INCH OR MORE). MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. IF EROSION CONTROL LINER HAS BECOME DISPLACED, RE-ESTABLISH PER ORIGINAL INSTALLATION. ADD ADDITIONAL STALES AS NECESSARY TO PREVENT FUTURE DISPLACEMENT.
3. IF EROSION CONTROL LINER IS BEYOND REPAIR, REPLACE ANY DAMAGED SECTIONS OF LINER TO ORIGINAL SPECIFICATIONS.
4. REMOVE SEDIMENT ACCUMULATED AS NEEDED TO PREVENT DAMAGE TO VEGETATION.

REVISION DESCRIPTION | DATE | NO.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES D. DAVID ARNOLD
08/05/24

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HOLLY SPRINGS, NC 27540
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DESIGN BY: JDA
DRAWN BY: JDA
DATE: 2024-08-05
SCALE: NTS

NC WAKE BOATS ADDITION
HARNETT COUNTY, NC

EROSION CONTROL DETAILS

SHEET NO:
D2

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(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
(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
(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

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

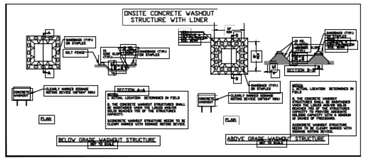
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA Environmental Quality



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(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 (anc 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 approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	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 properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	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, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a 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.
(6) Ground stabilization measures	After each phase of grading	1. 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). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC 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.
(b) A phase of grading 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.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	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.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

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 up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (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 may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes [After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill cr release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include ar evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the 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(l)(7)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

SEEDING SPECIFICATIONS

COMPLETE GRADING BEFORE PREPARING SEEDBEDS, AND INSTALL ALL NECESSARY EROSION CONTROL PRACTICES SUCH AS, DIKES, WATERWAYS, AND BASINS. MINIMIZE STEEP SLOPES BECAUSE THEY MAKE SEEDBED PREPARATION DIFFICULT AND INCREASE THE EROSION HAZARD. IF SOILS BECOME COMPACTED DURING GRADING, LOOSEN THEM TO A DEPTH OF 6-8 INCHES USING A RIPPER, HARROW, OR CHISEL PLOW.

SEEDBED PREPARATION
GOOD SEEDBED PREPARATION IS ESSENTIAL TO SUCCESSFUL PLANT ESTABLISHMENT. A GOOD SEEDBED IS WELL-PULVERIZED, LOOSE, AND UNIFORM. WHERE HYDROSEEDING METHODS ARE USED, THE SURFACE MAY BE LEFT WITH A MORE IRREGULAR SURFACE OF LARGE CLODS AND STONES.
- LIMING—APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE PH (ACIDITY) OF THE SOIL IS NOT KNOWN, AN APPLICATION OF GROUND AGRICULTURAL LIMESTONE AT THE RATE OF 1 TO 1 1/2 TONS/ACRE ON COARSE-TEXTURED SOILS AND 2-3 TONS/ACRE ON FINETEXTURED SOILS IS USUALLY SUFFICIENT. APPLY LIMESTONE UNIFORMLY AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. SOILS WITH A PH OF 6 OR HIGHER NEED NOT BE LIMED.
- FERTILIZER—BASE APPLICATION RATES ON SOIL TESTS. WHEN THESE ARE NOT POSSIBLE, APPLY A 10-10-10 GRADE FERTILIZER AT 700-1,000 LB/ACRE. BOTH FERTILIZER AND LIME SHOULD BE INCORPORATED INTO THE TOP 4-6 INCHES OF SOIL. IF A HYDRAULIC SEEDER IS USED, DO NOT MIX SEED AND FERTILIZER MORE THAN 30 MINUTES BEFORE APPLICATION.
- SURFACE ROUGHENING—IF RECENT TILLAGE OPERATIONS HAVE RESULTED IN A LOOSE SURFACE, ADDITIONAL ROUGHENING MAY NOT BE REQUIRED, EXCEPT TO BREAK UP LARGE CLODS. IF RAINFALL CAUSES THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING, OR OTHER SUITABLE METHODS. GROOVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING (PRACTICE 6.03, SURFACE ROUGHENING).

PLANT SELECTION
SELECT AN APPROPRIATE SPECIES OR SPECIES MIXTURE FROM TABLE 6.10A FOR SEEDING IN LATE WINTER AND EARLY SPRING, TABLE 6.10B FOR SUMMER, AND TABLE 6.10C FOR FALL. IN THE MOUNTAINS, DECEMBER AND JANUARY SEEDINGS HAVE POOR CHANCES OF SUCCESS. WHEN IT IS NECESSARY TO PLANT AT THESE TIMES, USE RECOMMENDATIONS FOR FALL AND A SECURELY TACKED MULCH.

SEEDING
EVENLY APPLY SEED USING A CYCLONE SEEDER (BROADCAST), DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. USE SEEDING RATES GIVEN IN TABLES 6.10A-6.10C. BROADCAST SEEDING AND HYDROSEEDING ARE APPROPRIATE FOR STEEP SLOPES WHERE EQUIPMENT CANNOT BE DRIVEN. HAND BROADCASTING IS NOT RECOMMENDED BECAUSE OF THE DIFFICULTY IN ACHIEVING A UNIFORM DISTRIBUTION. SMALL GRAINS SHOULD BE PLANTED NO MORE THAN 1 INCH DEEP, AND GRASSES AND LEGUMES NO MORE THAN 1/2 INCH. BROADCAST SEED MUST BE COVERED BY RAKING OR CHAIN DRAGGING, AND THEN LIGHTLY FIRMED WITH A ROLLER OR CULTIPACKER. HYDROSEEDED MIXTURES SHOULD INCLUDE A WOOD FIBER (CELLULOSE) MULCH.

MULCHING
THE USE OF AN APPROPRIATE MULCH WILL HELP ENSURE ESTABLISHMENT UNDER NORMAL CONDITIONS, AND IS ESSENTIAL TO SEEDING SUCCESS UNDER HARSH SITE CONDITIONS (PRACTICE 6.14, MULCHING). HARSH SITE CONDITIONS INCLUDE:
- SEEDING IN FALL FOR WINTER COVER (WOOD FIBER MULCHES ARE NOT CONSIDERED ADEQUATE FOR THIS USE),
- SLOPES STEEPER THAN 3:1,
- EXCESSIVELY HOT OR DRY WEATHER,
- ADVERSE SOILS (SHALLOW, ROCKY, OR HIGH IN CLAY OR SAND), AND
- AREAS RECEIVING CONCENTRATED FLOW.

IF THE AREA TO BE MULCHED IS SUBJECT TO CONCENTRATED WATERFLOW, AS IN CHANNELS, ANCHOR MULCH WITH NETTING (PRACTICE 6.14, MULCHING).

FROM: DEMLR EC MANUAL SECTION 6.10 REVISED 5/13

SEEDING MAINTENANCE

RESEED AND MULCH AREAS WHERE SEEDLING EMERGENCE IS POOR, OR WHERE EROSION OCCURS, AS SOON AS POSSIBLE. DO NOT MOW. PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE.

FROM: DEMLR EC MANUAL SECTION 6.10 REVISED 5/13

TEMP. SEEDING FOR LATE WINTER/EARLY SPRING

SEEDING MIXTURE
- RYE (GRAIN) @ 120 LB/ACRE
- ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS) @ 50 LB/ACRE
- OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

SEEDING DATES
- MOUNTAINS—ABOVE 2500 FEET: FEB. 15 - MAY 15 BELOW 2500 FEET: FEB. 1- MAY 1
- PIEDMONT—JAN. 1 - MAY 1
- COASTAL PLAIN—DEC. 1 - APR. 15

SOIL AMENDMENTS
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

FROM: DEMLR EC MANUAL SECTION 6.10 REVISED 5/13

TEMP. SEEDING FOR SUMMER

SEEDING MIXTURE
- GERMAN MILLET @ 40 LB/ACRE
- IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LB/ACRE.

SEEDING DATES
- MOUNTAINS—MAY 15 - AUG. 15
- PIEDMONT—MAY 1 - AUG. 15
- COASTAL PLAIN—APR. 15 - AUG. 15

SOIL AMENDMENTS
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

FROM: DEMLR EC MANUAL SECTION 6.10 REVISED 5/13

TEMP. SEEDING FOR FALL

SEEDING MIXTURE
- RYE (GRAIN) @ 120 LB/ACRE

SEEDING DATES
- MOUNTAINS—AUG. 15 - DEC. 15
- COASTAL PLAIN AND PIEDMONT—AUG. 15 - DEC. 30

SOIL AMENDMENTS
FOLLOW SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTENT TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH

FROM: DEMLR EC MANUAL SECTION 6.10 REVISED 5/13

SOIL STABILIZATION SHALL BE ACHIEVED ON ANY AREA OF A SITE WHERE LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED ACCORDING TO THE FOLLOWING SCHEDULE:

1. 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.
2. 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.

GROUND STABILIZATION		
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME EXCEPTIONS
• PERIMETER DIKES, SWALES, DITCHES, AND SLOPES	7 DAYS	NONE
• HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
• SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1 14 DAYS ARE ALLOWED
• SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
• ALL OTHER AREA WITH SLOPE FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

* "EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE." (SECTION II. B (2)(b))

NO.	DATE	REVISION DESCRIPTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036865 JAMES D. ARNOLD

08/05/24

ALD
ARNOLD LAND DESIGN
113 YOSEMITE COURT
HOLLY SPRINGS, NC 27540
(919) 630-2552

DESIGN BY: JDA | DRAWN BY: JDA
DATE: 2024-08-05 | SCALE: NTS

NC WAKE BOATS ADDITION
HARNETT COUNTY, NC

EROSION CONTROL DETAILS

SHEET NO:
D3

FINAL DRAWING - RELEASED FOR CONSTRUCTION