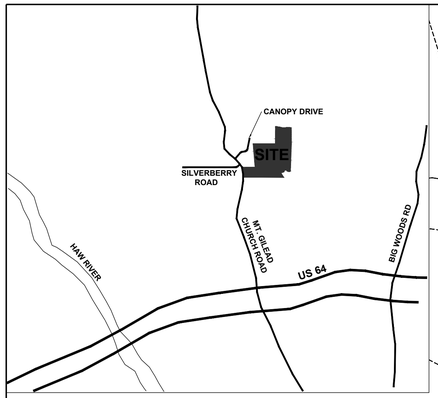
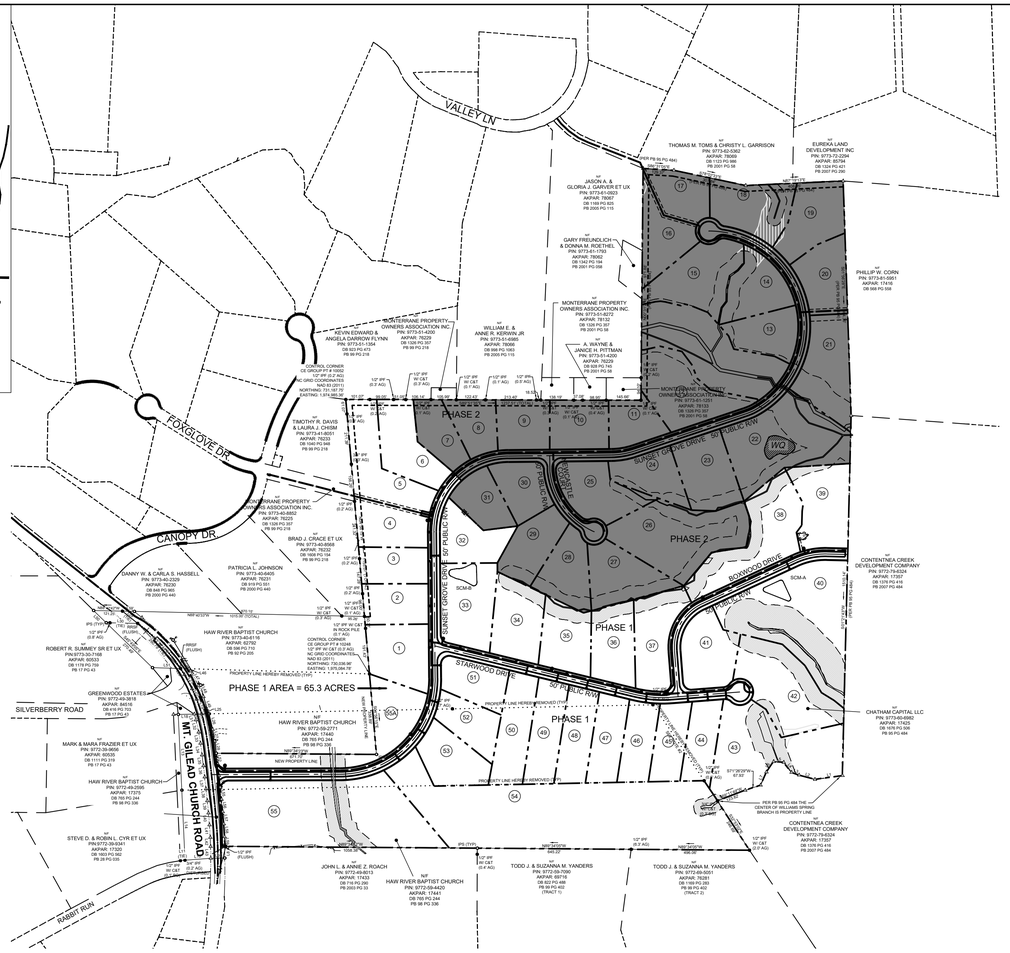


VICINITY MAP
N.T.S.

NORTH



GRAPHIC SCALE

0 150 300 450 600 1200

(IN FEET)
1 inch = 300 ft.

SHEET INDEX

C-0	COVER SHEET
C-1	NCDOT NOTES
C-2	EXISTING CONDITIONS
C-3	SITE PLAN
C-4	GRADING AND STORM DRAINAGE
C-4A	SCM-A CROSS SECTION & DETAILS
C-4B	SCM-B CROSS SECTION & DETAILS
C-5	EROSION CONTROL
C-5A	EROSION CONTROL
C-5B	EROSION CONTROL
C-5C	EROSION CONTROL
C-5D	STORMWATER CONTROL DEVICES
C-6	UTILITIES PLAN
C-7	TRAFFIC CONTROL PLAN
PP-1	PLAN & PROFILE
PP-2	PLAN & PROFILE
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PP-5	PLAN & PROFILE
PP-6	PLAN & PROFILE
PP-7	PLAN & PROFILE
D-1	DETAILS
D-2	DETAILS
D-3	DETAILS
D-4	DETAILS

SUMMARY INFORMATION

DEVELOPMENT NAME:	SUNSET GROVE SUBDIVISION - PHASE 1
CASE NUMBER:	
TRANSACTION NUMBER:	
OWNER/DEVELOPER:	CHATHAM CAPITAL, LLC 400 MARKET STREET CHAPEL HILL, NC 27516 PH: 919-414-2047
CHATHAM COUNTY PIN:	9773-60-6982 9772-59-2771 9772-59-4420
ZONING DISTRICT:	R-1, COUNTY ZONING
DEED BOOK/PAGE - DEED DATE:	1676/0506 - 2013 765/0244 - 1998
TOTAL ACREAGE:	108.8 ACRES
PROPOSED USE:	SINGLE FAMILY SUBDIVISION
PHASE 1 TOTAL ACREAGE:	65.3 ACRES
PHASE 1 LOT DATA:	
TOTAL LOTS IN PHASE 1:	30 LOTS
RESIDENTIAL DENSITY:	0.46 DU/ACRE
MIN. SQUARE FOOTAGE:	43,604 S.F.
MAX. SQUARE FOOTAGE:	369,546 S.F.

PUBLIC IMPROVEMENT QUANTITIES - PHASE 1 ONLY	
PHASE NUMBER	1
NUMBER OF LOTS	30 LOTS
LOT NUMBERS BY PHASE	1-6, 32-55
NUMBER OF UNITS	30
LIVABLE BUILDINGS	30
OPEN SPACE	NO
NUMBER OF OPEN SPACE LOTS	0
PUBLIC WATER (LF)	7772 LF
PUBLIC SEWER (LF)	0 LF
PUBLIC STREET (LF)	4388 LF
PUBLIC SIDEWALK (LF)	0 LF
EXIST. PUBLIC STREET IMPROVE. (LF)	1050 LF
NEW STREET CONSTRUCTION (LF)	4388 LF
STREET SIGNS (EA)	4 EA

FINANCIALLY RESPONSIBLE PERSON/AGENT

PERSON TO CONTACT SHOULD SEDIMENT CONTROL ISSUES ARISE DURING LAND-DISTURBING ACTIVITY.

CHATHAM CAPITAL, LLC NAME OF FIRM	SARAH O'BRIEN NAME OF CONTACT
sarah.bpropnc@gmail.com EMAIL ADDRESS	919-933-4422 PHONE NUMBER

PERSON(S) FIRM(S) FINANCIALLY RESPONSIBLE FOR THIS LAND-DISTURBING ACTIVITY.

CHATHAM CAPITAL, LLC NAME OF PERSON/FIRM	SARAH O'BRIEN NAME OF CONTACT
400 MARKET STREET, SUITE 115 MAILING ADDRESS	400 MARKET STREET, SUITE 115 STREET ADDRESS
CHAPEL HILL, NC 27516 CITY, STATE, ZIP CODE	CHAPEL HILL, NC 27516 CITY, STATE, ZIP CODE

TOTAL DISTURBED AREA - 9.99 ACRES
NOTE: TOTAL DISTURBED AREA INCLUDES
OFF PROPERTY ROADWAY AND UTILITY CONNECTIONS

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF INCONVENIENCE TO TRAFFIC.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISION OF THE MUTCD (THE MOST CURRENT EDITION).
3. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A MEETING WITH THE COUNTY'S PUBLIC WORKS DEPARTMENT AND NCDOT TRANSPORTATION OPERATIONS DIVISION TO REVIEW THE SPECIFIC COMPONENTS OF THE PLAN AND OPERATION OF THESE FACILITIES DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL OBTAIN A LANE CLOSURE PERMIT FOR ANY WORK WHICH REQUIRES THE CLOSURE OF A TRAVEL LANE FROM NCDOT AT LEAST 48 HOURS IN ADVANCE AND FOR STREET CLOSURES, AT LEAST 2 WEEKS IN ADVANCE. PROVIDE EXACT LOCATION, CROSS STREET, DATES FOR LANE CLOSURE, CONTACT PERSON AND FAX NUMBER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE COUNTY INSPECTIONS DEPARTMENT FOR COORDINATION OF WORK.
6. PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE.
7. THE CONTRACTOR SHALL REPAIR ALL DRIVEWAYS, DRIVEWAY PIPES, CURB AND GUTTER, MAILBOXES, SIGNS, LANDSCAPING, SIDEWALK AND STREET TO EXISTING CONDITION OR BETTER.

NOTES

1. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL STREETS SHOWN ON THESE PLANS SHALL HAVE THE FULL WIDTH OF THE RIGHT-OF-WAY CLEARED AND GRADED WITHIN 50 FEET OF ALL STREET INTERSECTIONS.
3. BOUNDARY SURVEY PROVIDED BY CE GROUP, DATED FEBRUARY 2016.
4. TOPOGRAPHIC MAPPING PROVIDED BY SULLIVAN SURVEYING, 1143 D EXECUTIVE CIRCLE, CARY, NC 27511 (919-469-4729), DATED FEBRUARY 2016 AND AUGMENTED BY CHATHAM COUNTY GIS. ALL BEARINGS ARE NC GRID BEARINGS, NAVD 88 DATUM UTILIZED. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
5. LOCATION OF STREET TREES AND STREET LIGHTING WILL BE FIELD COORDINATED BY THE DEVELOPER TO ELIMINATE CONFLICTS.
6. STREET LIGHTING WILL BE DETERMINED BY DUKE/PROGRESS ENERGY ACCORDING TO COUNTY SUBDIVISION STANDARDS.
7. ALL NEW UTILITY LINES MUST BE UNDERGROUND.
8. THE CONTRACTOR IS RESPONSIBLE FOR ANY CONFLICTS WITH EXISTING OR PROPOSED UTILITIES, TRAFFIC SIGNAL DEVICES, UTILITY POLES, STREET SIGNS, ETC.
9. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS/HER ACTIVITIES. CALL UTILITY LOCATING SERVICE 72 HOURS PRIOR TO DIGGING AT 1-800-632-4949.
10. ALL OPEN SPACE NOT OWNED WITHIN AN INDIVIDUAL LOT SHALL BE MAINTAINED BY THE SUBDIVISION HOMEOWNERS ASSOCIATION.
11. THE MINIMUM CORNER CLEARANCE FROM THE CURB LINE OR EDGE OF PAVEMENT OF INTERSECTING STREETS SHALL BE AT LEAST TWENTY (20) FEET FROM THE POINT OF TANGENCY OF THE RADIUS CURVATURE, OR TWENTY (20) FEET FROM THE INTERSECTION OF RIGHT OF WAY LINES, WHICHEVER IS GREATER. THE RADIUS OF THE DRIVEWAY SHALL NOT ENCROACH ON THE MINIMUM CORNER CLEARANCE.
12. WITHIN THE AREA OF A DEFINED SIGHT TRIANGLE, THERE SHALL BE NO SIGHT OBSTRUCTING OR PARTLY OBSTRUCTING WALL, FENCE, SIGN, FOLIAGE, BERMING OR PARKED VEHICLES BETWEEN THE HEIGHTS OF TWENTY-FOUR (24) INCHES AND EIGHT (8) FEET ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY IF NO CURBING EXISTS.
13. PARKING REQUIRED BY DETACHED HOMESITES WILL BE PROVIDED IN THEIR GARAGES AND ON THEIR OWN DRIVEWAYS. ON-STREET PARKING AREAS ARE NOT SPECIFICALLY PROVIDED.
14. CONTRACTOR IS RESPONSIBLE FOR LOCATION AND CONTINUAL SERVICE FOR ALL EXISTING SERVICES THAT ARE TO REMAIN ON THE PROPERTY.
15. THE CONTRACTOR SHALL VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

ACTIVITY NARRATIVE

THE DEVELOPER'S INTENT IS TO CREATE A SUBDIVISION WITHIN THIS PARCEL THAT RETAINS THE NATURAL VIEWS OF THE SITE INCLUDING BUFFER SPACE, CREEKS AND OTHER NATURAL AREAS. THE DEVELOPMENT IS AIMED AT MAINLY OVERSIZED LOTS FOR THE DEVELOPMENT OF A COMMUNITY, BUT STILL PROVIDES ISOLATION TO THOSE WISHING TO LIVE ON A VERY PRIVATE PARCEL.

B&F CONSULTING
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Raleigh, NC 27606
Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

COVER SHEET

DRAWING SCALE

AS SHOWN

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

COVER

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

GENERAL NOTES

2012 NCDOT STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES - ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - two lane pavement
225.06	Method of Grading Sight Distance at Intersections
560.01	Method of Shoulder Construction
654.01	Pavement Repairs
700.05	Tying Proposed Pavement to Existing Pavement
838.01	Concrete Endwall for Single and Double Pipe Culverts
838.45	Notes for Reinforced Concrete Endwall
840.14	Concrete Drop Inlet
840.15	Brick Drop Inlet
840.16	Drop Inlet Frame and Grates
840.19	Concrete Grated Drop Inlet Type 'D'
840.20	Frames and Wide Slot Flat Grates
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units

STD.NO.	TITLE
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class "B" Rip Rap
1101.01	Work Zone Advance Warning Signs For Facilities < 55 MPH
1101.02	Temporary Lane Closures 2-Lane, 2-Way Roadway, 1 Lane Closed
1101.02	Temporary Lane Closures - Lane Markings
1101.11	Traffic Control Design Tables - Sign Spacing
1110.01	Stationary Work Zone Signs
1135.01	Cones
1150.01	Flagging Devices
1205.01 to 1205.09	Pavement Markings
1250.01 to 1253.01	Raised Pavement Markers
1261.01 to 1262.02	Guardrail & Barrier Deliniators
1605.01	Temporary Silt Fence
1607.01	Gravel Construction Entrance
1622.01	Guide for Temporary Berms and Slope Drain
1630.02	Silt Basin Type B
1630.03	Temporary Silt Ditch
1630.05	Temporary Diversions
1631.01	Matting Installation
1632.03	Rock Inlet Sediment Trap Type C
1633.02	Temporary Rock Silt Check Type B
1640.01	Coir Fiber Baffle

EXISTING SURVEY NOTES:

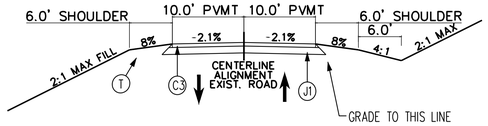
1. ALL EASEMENTS ARE CENTERED ON EXISTING STRUCTURES UNLESS OTHERWISE NOTED.
2. AREAS COMPUTED BY COORDINATE METHOD.
3. ALL DISTANCES ARE HORZIONTAL GROUND DISTANCES MEASURED IN SURVEY FEET.
4. THIS SURVEY DONE WITHOUT THE BENEFIT OF A TITLE AND IS SUBJECT TO ANY FACTS WHICH MAY BE DISCLOSED BY A FULL TITLE SEARCH.
5. ANY POINT NOTED AS "CONTROL CORNER" SHALL NOT BE DEEMED MORE OR LESS RELIABLE THAN ANY OTHER POINT SHOWN HEREON.
6. NAD 83 NC GRID COORDINATES AND MSL ELEVATIONS TAKEN FROM DATA PROVIDED BY SULLIVAN SURVEYING, DATED 2013-2014.
7. THIS MAP DOES NOT REPRESENT A BOUNDARY SURVEY AND CONFORMS TO NCGS 47-30 STANDARDS.

PROJECT NOTES:

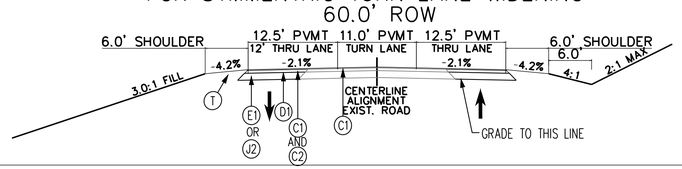
1. SAWCUT AND REMOVE EXISTING PAVEMENT (FULL DEPTH) TO PROVIDE STRAIGHT LATERAL AND LONGITUDINAL JOINTS TO TIE IN PROPOSED WIDENING WHERE REQUIRED.
2. FOR DETAILS, REFERENCE LIST OF 2012 NCDOT ROADWAY STANDARD DRAWINGS AS LISTED ON THIS SHEET.
3. MINIMUM CLEARANCE FROM CURB LINE OF INTERSECTING STREETS SHALL BE AT LEAST TWENTY (20) FEET FROM THE POINT OF TANGENCY.
4. WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTION BETWEEN TWO (2) FEET AND EIGHT (8) FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY, IF NO CURBING EXISTS.
5. THE CONTRACTOR WILL COORDINATE WITH ALL EXISTING UTILITIES TO ENSURE THAT THE PROJECT WORK HAS NO IMPACT ON EXISTING FACILITIES.

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. 1.5" MIN. ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD., IN EACH OF TWO LAYERS.
C3	PROP. 2.0" MIN. ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD., IN EACH OF TWO LAYERS.
D1	PROP. 4" MIN. ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. 2" MIN. ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. 5" MIN. ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
J1	PROP. 8" AGGREGATE BASE COURSE.
J2	PROP. 10" AGGREGATE BASE COURSE.
T	PROP. EARTH MATERIAL.

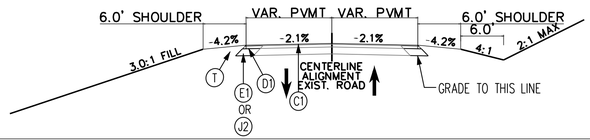
SUBDIVISION ROADWAY SECTION
50.0' PUBLIC ROW



MT. GILEAD ROADWAY SECTION
FOR SYMMENTRIC TURN LANE WIDENING
60.0' ROW



MT. GILEAD ROADWAY SECTION
FOR SYMMETRIC WIDENING TAPERS
60.0' ROW



NOTES

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2. ALL STREETS SHOWN ON THESE PLANS SHALL HAVE THE FULL WIDTH OF THE RIGHT-OF-WAY CLEARED AND GRADED WITHIN 50 FEET OF ALL STREET INTERSECTIONS.
3. BOUNDARY SURVEY PROVIDED BY CE GROUP, DATED FEBRUARY 2016.
4. TOPOGRAPHIC MAPPING PROVIDED BY SULLIVAN SURVEYING, 1143 D EXECUTIVE CIRCLE, CARY, NC 27511 (919-469-4736), DATED FEBRUARY 2016 AND AUGMENTED BY CHATHAM COUNTY GIS. ALL BEARINGS ARE NC GRID BEARINGS, NAVD 88 DATUM UTILIZED. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
5. LOCATION OF STREET TREES AND STREET LIGHTING WILL BE FIELD COORDINATED BY THE DEVELOPER TO ELIMINATE CONFLICTS.
6. STREET LIGHTING WILL BE DETERMINED BY DUKE-PROGRESS ENERGY ACCORDING TO COUNTY SUBDIVISION STANDARDS.
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10. ALL OPEN SPACE NOT OWNED WITHIN AN INDIVIDUAL LOT SHALL BE MAINTAINED BY THE SUBDIVISION HOMEOWNERS ASSOCIATION.
11. THE MINIMUM CORNER CLEARANCE FROM THE CURB LINE OR EDGE OF PAVEMENT OF INTERSECTING STREETS SHALL BE AT LEAST TWENTY (20) FEET FROM THE POINT OF TANGENCY OF THE RADIUS CURVATURE, OR TWENTY (20) FEET FROM THE INTERSECTION OF RIGHT OF WAY LINES, WHICHEVER IS GREATER. THE RADIUS OF THE DRIVEWAY SHALL NOT ENCROACH ON THE MINIMUM CORNER CLEARANCE.
12. WITHIN THE AREA OF A DEFINED SIGHT TRIANGLE, THERE SHALL BE NO SIGHT OBSTRUCTING OR PARTLY OBSTRUCTING WALL, FENCE, SIGN, FOLIAGE, BERMING OR PARKED VEHICLES BETWEEN THE HEIGHTS OF TWENTY-FOUR (24) INCHES AND EIGHT (8) FEET ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY IF NO CURBING EXISTS.
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14. CONTRACTOR IS RESPONSIBLE FOR LOCATION AND CONTINUAL SERVICE FOR ALL EXISTING SERVICES THAT ARE TO REMAIN ON THE PROPERTY.
15. THE CONTRACTOR SHALL VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
16. NCDOT APPROVAL IS REQUIRED PRIOR TO COMMENCMENT OF WORK IN THE RIGHT OF WAY ALONG MT. GILEAD CHURCH ROAD (DRIVEWAY PERMIT AND 3-PARTY).

CONSTRUCTION SEQUENCE

1. Schedule a preconstruction conference with the Chatham County Lead Erosion and Sediment Control Officer, Jeff McDermott, (919-704-0575). Obtain a land-disturbing permit.
2. Install driveway pipe across main entrance drive, then gravel construction pad, temporary diversions, silt fence, sediment basins or other measures as shown on the approved plan. Clear only as necessary to install these devices. Seed temporary diversions, berms and basins immediately after construction.
3. Call for an onsite inspection by the Lead Erosion and Sediment Control Officer to obtain a Certificate of Compliance.
4. Begin clearing and grubbing. Maintain devices as needed. Install wattles in ditch lines as indicated on the plans. Additional wattles may be required based on performance of the installation.
5. Install 36" stream culvert at entrance roadway crossing. Begin earthwork operations in conjunction with the construction of the permanent culvert.
   a. All excavation shall be performed only in dry or isolated areas of the work zone.
   b. Install upstream pump and flexible piping for pump-around. Pumps and houses shall be of sufficient size to dewater the work area.
   c. Place upstream stream plug. Place downstream plug to protect culvert installation area. Begin pumping operations for stream diversion.
   d. Place dewatering pump as appropriate to dry out the work area between plugs as needed.
   e. Ensure any pumped water is not being contaminated with sediment loss from this site. If silt laden water is noticed, all discharge from the pump-around must be run through a sediment bag or stilling basin prior to discharge into stream.
   f. Install culvert in accordance with the plans. Culvert installation should occur in dry weather when no rain is expected for the installation timeframe.
   g. Remove pumps, temporary piping and backfill area. Stabilize disturbed area with seed per NPDES stabilization chart on sheet D-2.
6. Install storm and protect inlets with block and gravel inlet controls, sediment traps or other approved measures as shown on the plan.
7. Stabilize site as areas are brought up to finish grade with vegetation, paving, ditch linings, etc. All roadside ditches will be required to have matting. Seed and mulch denuded areas per Ground Stabilization Time Frames.
8. When construction is complete call for an interim inspection by the Lead Erosion and Sediment Control Officer.
9. If site is approved, convert the two temporary skimmer basins located at SCM-A and SCM-B. Remove and dispose of any accumulated sediment in the basins.
   a. For SCM-B, ensure the capacity is available in the basin with an as-built topo of the basin and forebay. Provide an as-built survey of the riser structure, barrel, dam, and emergency spillway. If the capacity is sufficient, plant the littoral shelf and close the drain valve to start accumulating water in the basin.
   b. For SCM-A, construct the underdrain system within the gravel bed. Provide the geofabric as called out on the plans above the gravel bed and place the media.
10. Remove temporary diversions, silt fence, sediment basins, etc., and seed out or stabilize any resulting bare areas relating to the new roadway construction. All remaining permanent erosion control devices, such as velocity dissipaters, should now be installed.
11. When vegetation has become established, call for a final site inspection by the Lead Erosion and Sediment Control Officer. Obtain a Certificate of Completion.

NPDES INFORMATION

1. NPDES STABILIZATION CHART IS FOUND ON SHEET D-2.
2. NPDES SELF-INSPECTION NOTE:
   AS OF MARCH 10, 2003, ALL CONSTRUCTION SITES EQUAL TO OR GREATER THAN ONE DISTURBED ACRE ARE REQUIRED TO HAVE EROSION CONTROL BEST MANAGEMENT PRACTICES AND INSTALLED SEDIMENT CONTROL DEVICES INSPECTED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT PRODUCING GREATER THAN 0.5 INCHES OF RAINFALL, WITHIN NORMAL BUSINESS HOURS. IN NORTH CAROLINA, INSPECTIONS MUST COMPLY WITH THE NPDES PROGRAM AS WELL AS STATE WATER QUALITY AND LOCAL ORDINANCE REQUIREMENTS. THIS MEANS ADHERING, IN PART, TO THE NC GENERAL PERMIT (NCG010000) FOR CONSTRUCTION ACTIVITIES. IT IS THE RESPONSIBILITY OF THE OWNER OR OPERATOR (I. E., DEVELOPER, GENERAL CONTRACTOR OR OTHER FINANCIALLY-RESPONSIBLE PARTY) TO CONDUCT OR DELEGATE THESE INSPECTIONS. WRITTEN DOCUMENTATION OF THESE INSPECTIONS ALONG WITH A COPY OF APPROVED EROSION & SEDIMENT CONTROL PLANS MUST BE POSTED AT THE CONSTRUCTION SITE.

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License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

GENERAL NOTES

DRAWING SCALE

AS SHOWN

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-1

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. BOUNDARY SURVEY PROVIDED BY CE GROUP, DATED FEBRUARY 2016.
2. TOPOGRAPHIC MAPPING PROVIDED BY SULLIVAN SURVEYING, 1143 D EXECUTIVE CIRCLE, CARY, NC 27511 (919-469-4738), DATED FEBRUARY 2016 AND AUGMENTED BY CHATHAM COUNTY GIS. ALL BEARINGS ARE NC GRID BEARINGS, NAVD 88 DATUM UTILIZED. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
3. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS/HER ACTIVITIES. CALL UTILITY LOCATING SERVICE 72 HOURS PRIOR TO DIGGING AT 1-800-632-4949.
4. THIS SURVEY INFORMATION IS PROVIDED FOR REFERENCE ONLY, AND MAP IS RECORDED UNDER SEPARATE SEAL AT COUNTY SEAT OFFICES.
5. THE CONTRACTOR SHALL VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
6. EXISTING SOILS AND STEEP SLOPES SHOWN IN EXISTING CONDITIONS MAP ARE FROM CHATHAM COUNTY GIS WEBSITE, AS OF MARCH 21, 2016.

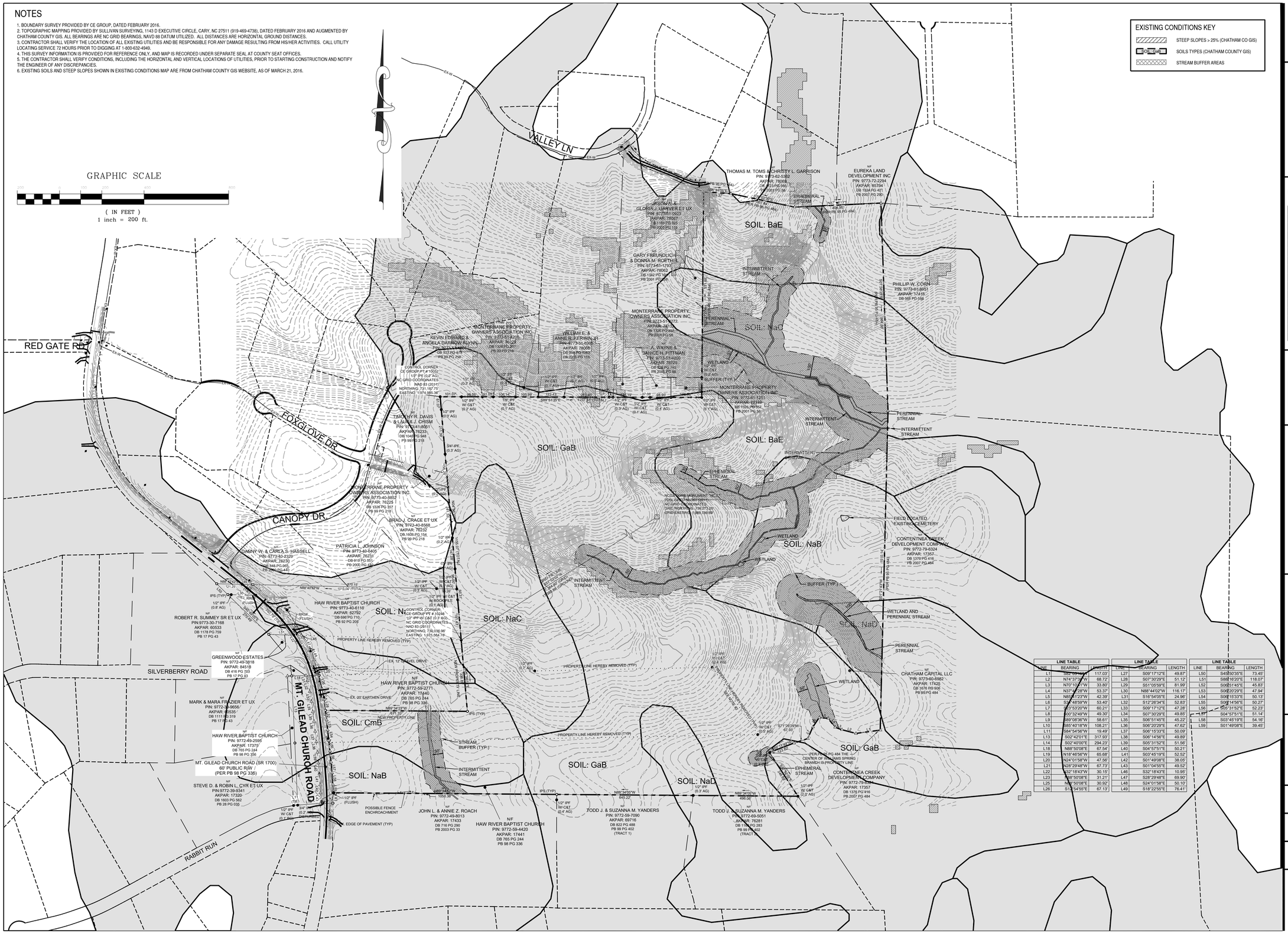
GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

EXISTING CONDITIONS KEY

- STEEP SLOPES > 25% (CHATHAM CO GIS)
- SOILS TYPES (CHATHAM COUNTY GIS)
- STREAM BUFFER AREAS



LINE TABLE		
LINE	BEARING	LENGTH
L1	S82°09'56"E	117.03'
L2	N74°37'37"W	68.72'
L3	N70°10'28"W	33.80'
L4	N37°48'28"W	53.37'
L5	N85°51'23"W	42.39'
L6	S32°48'59"W	53.40'
L7	S63°53'20"W	60.21'
L8	S00°32'49"W	49.30'
L9	S89°08'36"W	58.61'
L10	S85°40'18"W	108.21'
L11	S84°54'56"W	19.49'
L13	S02°42'01"E	317.93'
L14	S02°47'00"E	294.23'
L18	N88°50'08"E	67.54'
L19	N18°46'56"W	65.68'
L20	N24°01'58"W	47.56'
L21	N28°29'48"W	67.73'
L22	S32°18'43"W	30.15'
L23	N88°50'08"E	31.21'
L25	N88°50'08"E	30.92'
L26	S13°54'55"E	67.13'

LINE TABLE		
LINE	BEARING	LENGTH
L27	S09°17'12"E	49.87'
L28	S07°30'29"E	51.12'
L29	S51°05'59"E	81.99'
L30	N88°44'02"W	116.17'
L31	S16°54'05"E	24.96'
L32	S12°26'34"E	52.83'
L33	S09°17'12"E	47.28'
L34	S07°30'29"E	49.85'
L35	S06°51'45"E	45.22'
L36	S06°20'29"E	47.62'
L37	S06°15'33"E	50.09'
L38	S06°14'56"E	49.89'
L39	S05°31'52"E	51.56'
L40	S04°57'51"E	50.21'
L41	S03°45'19"E	52.52'
L42	S01°49'08"E	38.05'
L43	S01°04'55"E	49.52'
L46	S32°18'43"E	10.95'
L47	S28°29'48"E	69.90'
L48	S24°01'58"E	50.10'
L49	S18°22'55"E	76.41'

LINE TABLE		
LINE	BEARING	LENGTH
L50	S45°50'35"E	73.45'
L51	S88°18'20"E	118.07'
L52	S06°51'45"E	45.83'
L53	S06°20'29"E	47.94'
L54	S06°15'33"E	50.13'
L55	S06°14'56"E	50.27'
L56	S05°31'52"E	52.23'
L57	S04°57'51"E	51.14'
L58	S03°45'19"E	54.16'
L59	S01°49'08"E	39.45'

B&F CONSULTING
2805 Tobermory Lane
Raleigh, NC 27606
Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELL

SURVEY INFORMATION PROVIDED BY OTHERS
THIS DOES NOT CERTIFY SURVEY INFORMATION
ONLY THE PLACEMENT OF GIS DATA ON PLAN

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

OVERALL EXISTING CONDITIONS

DRAWING SCALE

1"=200'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-2

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

NOTES

1. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL STREETS SHOWN ON THESE PLANS SHALL HAVE THE FULL WIDTH OF THE RIGHT-OF-WAY CLEARED AND GRADED WITHIN 50 FEET OF ALL STREET INTERSECTIONS.
3. BOUNDARY SURVEY PROVIDED BY CE GROUP, DATED FEBRUARY 2016.
4. TOPOGRAPHIC MAPPING PROVIDED BY SULLIVAN SURVEYING, 1143 D EXECUTIVE CIRCLE, CARY, NC 27511 (919-469-4738); DATED FEBRUARY 2016 AND AUGMENTED BY CHATHAM COUNTY GIS. ALL BEARINGS ARE NC GRID BEARINGS, NAVD 88 DATUM UTILIZED. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
5. LOCATION OF STREET TREES AND STREET LIGHTING WILL BE FIELD COORDINATED BY THE DEVELOPER TO ELIMINATE CONFLICTS.
6. STREET LIGHTING WILL BE DETERMINED BY DUKE-PROGRESS ENERGY ACCORDING TO COUNTY SUBDIVISION STANDARDS.
7. ALL NEW UTILITY LINES MUST BE UNDERGROUND.
8. THE CONTRACTOR IS RESPONSIBLE FOR ANY CONFLICTS WITH EXISTING OR PROPOSED UTILITIES, TRAFFIC SIGNAL DEVICES, UTILITY POLES, STREET SIGNS, ETC.
9. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS/HER ACTIVITIES. CALL UTILITY LOCATING SERVICE 72 HOURS PRIOR TO DIGGING AT 1-800-632-4949.
10. ALL OPEN SPACE NOT OWNED WITHIN AN INDIVIDUAL LOT SHALL BE MAINTAINED BY THE SUBDIVISION HOMEOWNERS ASSOCIATION.
11. THE MINIMUM CORNER CLEARANCE FROM THE CURB LINE OR EDGE OF PAVEMENT OF INTERSECTING STREETS SHALL BE AT LEAST TWENTY (20) FEET FROM THE POINT OF TANGENCY OF THE RADIUS CURVATURE, OR TWENTY (20) FEET FROM THE INTERSECTION OF RIGHT OF WAY LINES, WHICHEVER IS GREATER. THE RADIUS OF THE DRIVEWAY SHALL NOT ENCROACH ON THE MINIMUM CORNER CLEARANCE.
12. WITHIN THE AREA OF A DEFINED SIGHT TRIANGLE, THERE SHALL BE NO SIGHT OBSTRUCTING OR PARTLY OBSTRUCTING WALL, FENCE, SIGN, FOLIAGE, BERMING OR PARKED VEHICLES BETWEEN THE HEIGHTS OF TWENTY-FOUR (24) INCHES AND EIGHT (8) FEET ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY IF NO CURBING EXISTS.
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TIMOTHY R. DAVIS & LAURA J. CHISM
PIN: 9773-41-8051
AKPAR: 76233
DB 1040 PG 948
PB 99 PG 218

PROPOSED 20' UTILITY EASEMENT

N/F MONTERRANE PROPERTY OWNERS ASSOCIATION INC.
PIN: 9773-40-8852
AKPAR: 76225
DB 1326 PG 357
PB 99 PG 218

N/F BRAD J. CRACE ET UX
PIN: 9773-40-8568
AKPAR: 76232
DB 1608 PG 154
PB 99 PG 218

N/F PATRICIA L. JOHNSON
PIN: 9773-40-6405
AKPAR: 76231
DB 919 PG 551
PB 2000 PG 440

N/F HAW RIVER BAPTIST CHURCH
PIN: 9773-40-6116
AKPAR: 62792
DB 596 PG 710
PB 92 PG 205

CONTROL CORNER
CE GROUP PT # 10248
1/2" IPF W/ C&T (0.3' AG)
NC GRID COORDINATES
NAD 83 (2011)
NORTHING: 730,036.96'
EASTING: 1,975,084.78'

PROPERTY LINE HEREBY REMOVED (TYP)

PHASE 1 AREA = 65.3 ACRES

EX. 12' GRAVEL DRIVE

NEW PAVEMENT WIDENING MARKINGS
EX. 20' EARTHEN DRIVE

STOP SIGN & STOP BAR

MAILBOX KIOSK IN EASEMENT

POSSIBLE FENCE ENCHROACHMENT

EX. EDGE OF PAVEMENT (TYP)

N/F JOHN L. & ANNIE Z. ROACH
PIN: 9772-49-8013
AKPAR: 17433
DB 716 PG 290
PB 2003 PG 33

N/F HAW RIVER BAPTIST CHURCH
PIN: 9772-59-4420
AKPAR: 17441
DB 765 PG 244
PB 98 PG 336

N/F HAW RIVER BAPTIST CHURCH
PIN: 9772-59-2771
AKPAR: 17440
DB 765 PG 244
PB 98 PG 336

N/F TODD J. & SUZANNA M. YANDERS
PIN: 9772-59-7090
AKPAR: 69716
DB 822 PG 488
PB 99 PG 402
(TRACT 1)

N/F TODD J. & SUZANNA M. YANDERS
PIN: 9772-69-5051
AKPAR: 76281
DB 1169 PG 283
PB 99 PG 402
(TRACT 2)

N/F CONTENTNEA CREEK DEVELOPMENT COMPANY
PIN: 9772-79-6324
AKPAR: 17357
DB 1376 PG 416
PB 2007 PG 484

N/F CHATHAM CAPITAL LLC
PIN: 9773-60-6
AKPAR: 174
DB 1676 PG 5
PB 95 PG 48

PHASE 1

PHASE 2

SUNSET GROVE DRIVE 50' PUBLIC R/W

NEWCASTLE COURT 50' PUBLIC R/W

STARWOOD DRIVE 50' PUBLIC R/W

BOXWOOD DRIVE 50' PUBLIC R/W

END OF ROAD FOR PHASE 1

EPHEMERAL STREAM

INTERMITTENT STREAM

WETLAND

PROPOSED MAINTENANCE EASEMENT

PROPOSED CEMETERY EASEMENT

FIELD LOCATED EXISTING CEMETERY

10' ACCESS EASEMENT N/F CONTENTNEA CREEK DEVELOPMENT COMPANY
PIN: 9772-79-6324
AKPAR: 17357
DB 1376 PG 416
PB 2007 PG 484

SCM-A

SCM-B

BUFFER (TYP.)

STREAM BUFFER (TYP.)

PERENNIAL STREAM

WETLAND AND PERENNIAL STREAM

PER PB 95 PG 484 THE CENTER OF WILLIAMS SPRING BRANCH IS PROPERTY LINE

PROPERTY LINE HEREBY REMOVED (TYP)

SEE NOTE #2

STOP SIGN & STOP BAR

1/2" IPF W/ C&T (0.4' AG)

1/2" IPF W/ C&T (0.3' AG)

1/2" IPF W/ C&T (0.1' AG)

1/2" IPF W/ C&T (0.2' AG)

1/2" IPF (0.3' AG)

3/4" IPF (0.3' AG)

1/2" IPF (0.7' AG)

1/2" IPF W/ C&T (0.5' AG)

3/4" IPF W/ C&T (0.3' BG)

1/2" IPF (FLUSH)

3/4" IPF (0.2' AG) DISTURBED

IPS (TYP)

IPS (TYP)

1/2" IPF W/ C&T (0.4' AG)

1/2" IPF (0.3' AG)

1/2" IPF W/ C&T (2.0' AG)

1/2" IPF W/ C&T IN ROCK PILE (0.1' AG)

S89°51'35"E 1237.51' (TOTAL)

N88°40'33"W 1015.00' (TOTAL)

N89°34'23"W 671.70'

N89°34'42"W 1058.38'

N89°34'05"W 645.22'

N89°34'05"W 496.06'

S01°21'43"W (PER PB 95 PG 484) 1510.14'

S04°56'15"E 338.89'

S71°26'29"W 67.93'

S69°11'49"W 123.82'

S32°53'02"E 246.69'

N04°56'15"W 241.32'

N/F HAW RIVER BAPTIST CHURCH
PIN: 9772-59-2771
AKPAR: 17440
DB 765 PG 244
PB 98 PG 336

NEW PROPERTY LINE

NEW PROPERTY LINE

B&F CONSULTING
2805 Tobermory Lane
Raleigh, NC 27606
Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027485 ENGINEER AMBER FARRELL

REVISIONS

NO.	DATE	DESCRIPTION
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		CHATHAM CO. EROSION
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		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

SITE PLAN PHASE 1

DRAWING SCALE

1"=100'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-3

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

GRAPHIC SCALE

(IN FEET)
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16. ALL STRUCTURAL STORMWATER BMPS SHALL BE LOCATED OUTSIDE OF THE NCDOT RIGHT OF WAY. A PERMANENT PUBLIC DRAINAGE EASEMENT SHALL BE ESTABLISHED OUTSIDE OF THE NCDOT RIGHT OF WAY FOR ACCESS. THE NCDOT ASSUMES NO RESPONSIBILITY FOR OPERATION, MAINTENANCE OR LIABILITY OF THE STRUCTURAL STORMWATER BMPS.

PHASE 2

PHASE 1

PROPOSED 20' UTILITY EASEMENT

EX-W

END OF ROAD FOR PHASE 1

INTERMITTENT STREAM

EPHEMERAL STREAM

DRAINAGE AREA SCM "B" = 7.4 ACRES

D.A.= 0.5 AC

D.A.= 5.4 AC

D.A.= 0.4 AC

D.A.= 1.4 AC

D.A.= 17.9 AC

D.A.= 1.8 AC

D.A.= 0.3 AC

D.A.= 0.04 AC

D.A.= 0.6 AC

PHASE 1 AREA = 65.3 ACRES

DRAINAGE AREA SCM "A" = 4.1 ACRES

D.A.= 0.4 AC

D.A.= 0.7 AC

D.A.= 0.2 AC

PROPOSED MAINTENANCE EASEMENT

PROPOSED CEMETERY EASEMENT FIELD LOCATED EXISTING CEMETERY 10' ACCESS EASEMENT

WETLAND

BUFFER (TYP.)

PROPOSED MAINTENANCE EASEMENT

WETLAND AND PERENNIAL STREAM

PERENNIAL STREAM

WETLAND

STREAM BUFFER (TYP.)

INTERMITTENT STREAM

EPHEMERAL STREAM

DITCH LINING KEY

- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)

GRADING/EROSION NOTES

1. REFER TO ROADWAY PLAN/PROFILES FOR DETAILED GRADING AND UTILITY INFORMATION.
2. REFER TO ROADWAY PLANS AT LARGER SCALE (C-5A THROUGH C-5C) FOR DETAILED EROSION CONTROL INFORMATION.

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NORTH CAROLINA PROFESSIONAL SEAL 027485 ENGINEER AMBER FARRELLY

REVISIONS

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		CHATHAM CO. EROSION
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		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

GRADING PLAN PHASE 1

DRAWING SCALE

1"=100'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-4

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

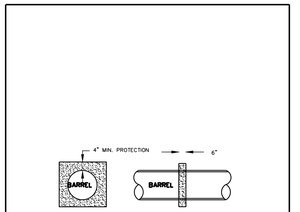
1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

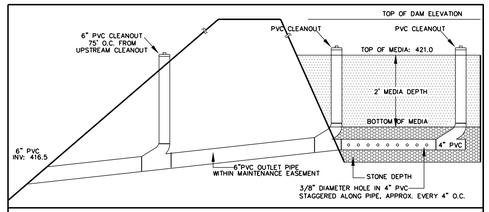
LANDSCAPING NOTES:
1. GRASS ATOP MEDIA WILL BE CENTIPEDE GRASS, APPLIED AT 50 LBS/ACRE RATE.

MAINTENANCE PROCEDURES: BIORETENTION BASIN
1. IMMEDIATELY AFTER THE BIORETENTION BASIN IS ESTABLISHED, THE GRASS ON THE MEDIA AND THE SLOPES/DAM SHOULD BE WATERED TWICE WEEKLY IF NEEDED, UNTIL THE GRASS BECOME ESTABLISHED (COMMONLY SIX WEEKS).
2. NO PORTION OF THE BASIN SHOULD BE FERTILIZED AFTER THE FIRST INITIAL FERTILIZATION THAT IS REQUIRED TO ESTABLISH THE VEGETNATION.
3. STABLE GROUNDCOVER SHOULD BE MAINTAINED IN THE DRAINAGE AREA TO REDUCE THE SEDIMENT TO THE BASIN.
4. IF THE BASIN MUST BE DRAINED FOR AN EMERGENCY OR TO PERFORM MAINTENANCE, THE FLUSHING OF SEDIMENT SHOULD BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICAL.
5. ONCE A YEAR, A DAM SAFETY EXPERT SHOULD INSPECT THE EMBANKMENT.

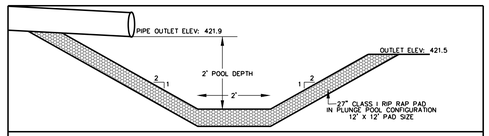


NOTES:
1. CONCRETE FOR COLLARS SHALL BE 3000 PSI (MIN.) 28 DAY STRENGTH.
2. COLLARS SHALL BE CONNECTED TO RCP BARREL WITH A WATER TIGHT JOINT.
3. COLLARS SHALL BE SPACED ALONG BARREL AT 20' O.C.
4. ANTI-SEEP COLLARS SHALL BE PLACED A MINIMUM OF 2' FROM PIPE JOINTS.

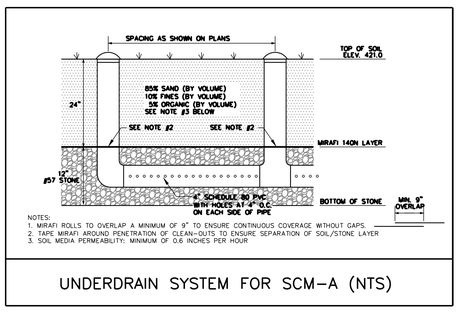
CONC. ANTI-SEEP COLLAR (NTS)



UNDERDRAIN SYSTEM OUTLET (NTS)

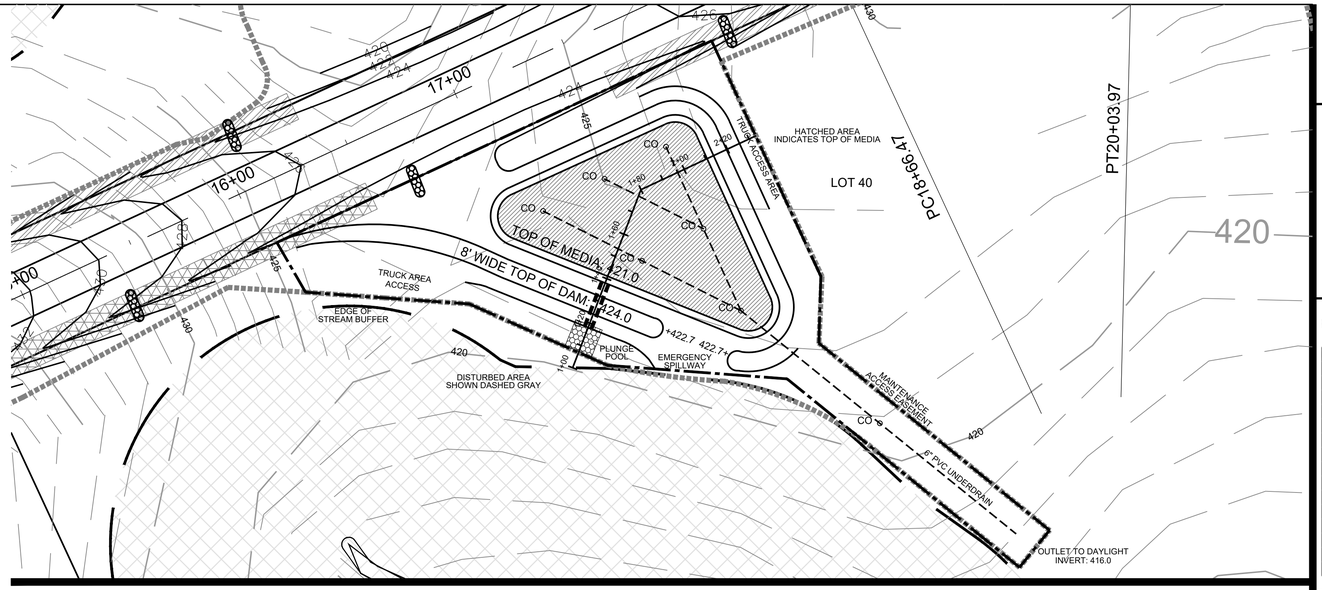


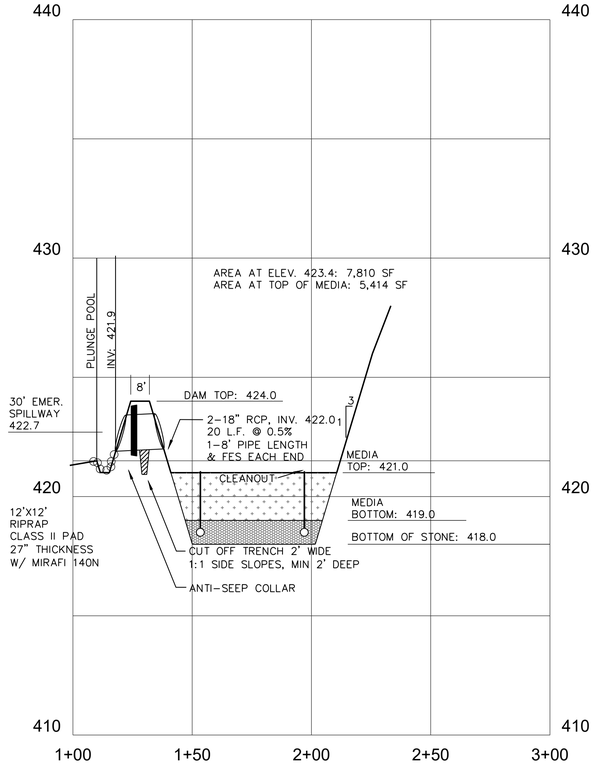
PLUNGE POOL (NTS)



NOTES:
1. MIRAFI ROLLS TO OVERLAP A MINIMUM OF 9" TO ENSURE CONTINUOUS COVERAGE WITHOUT GAPS.
2. TAPE MIRAFI AROUND PENETRATION OF CLEAN-OUTS TO ENSURE SEPARATION OF SOIL/STONE LAYER
3. SOIL MEDIA PERMEABILITY: MINIMUM OF 0.6 INCHES PER HOUR

UNDERDRAIN SYSTEM FOR SCM-A (NTS)





EROSION CONTROL LEGEND

NOTE: NOT ALL ITEMS ARE SHOWN ON EACH PLAN

- LIMITS OF DISTURBANCE
- TDD — TEMPORARY DIVERSION DITCH
- TREE PROTECTION FENCING
- SF — SILT FENCE
- TEMPORARY INLET PROTECTION
- TEMPORARY WATTLE DITCH PROTECTION
- TEMPORARY SEDIMENT BASIN
- RIP-RAP OUTLET PROTECTION
- CONSTRUCTION ENTRANCE

DITCH LINING KEY

- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)

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APPROVED BY:	RJB
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CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

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400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

SCM-A SECTION AND DETAILS

DRAWING SCALE

HORIZ: 1"=30', VERT: 1"=3'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-4A

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

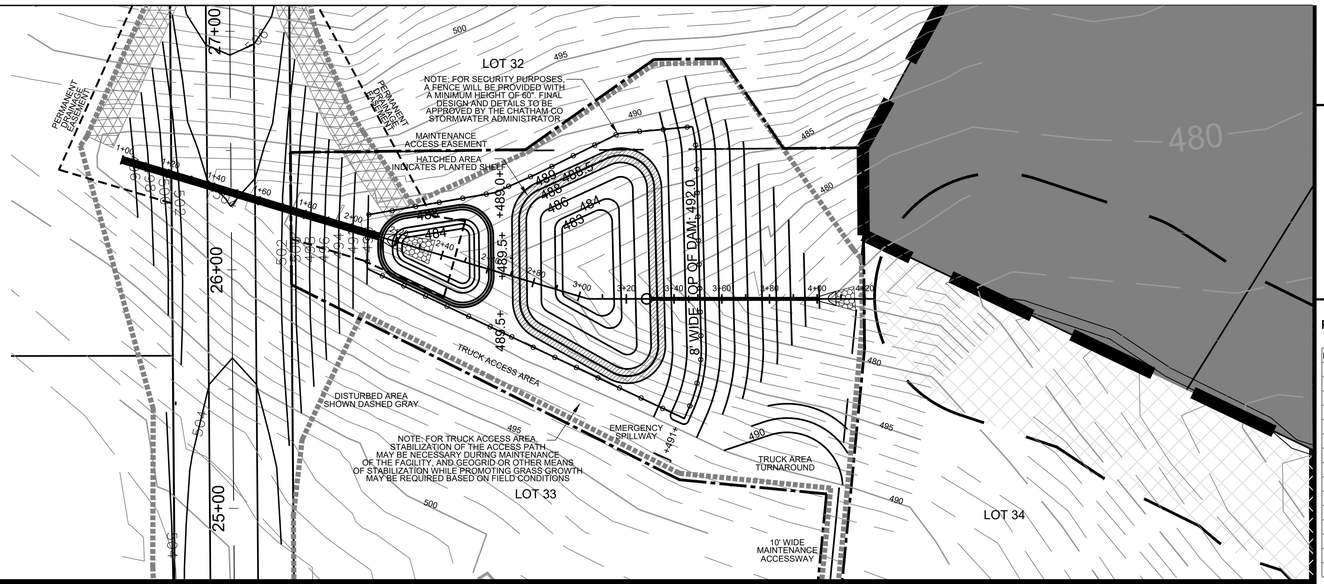
GRAPHIC SCALE

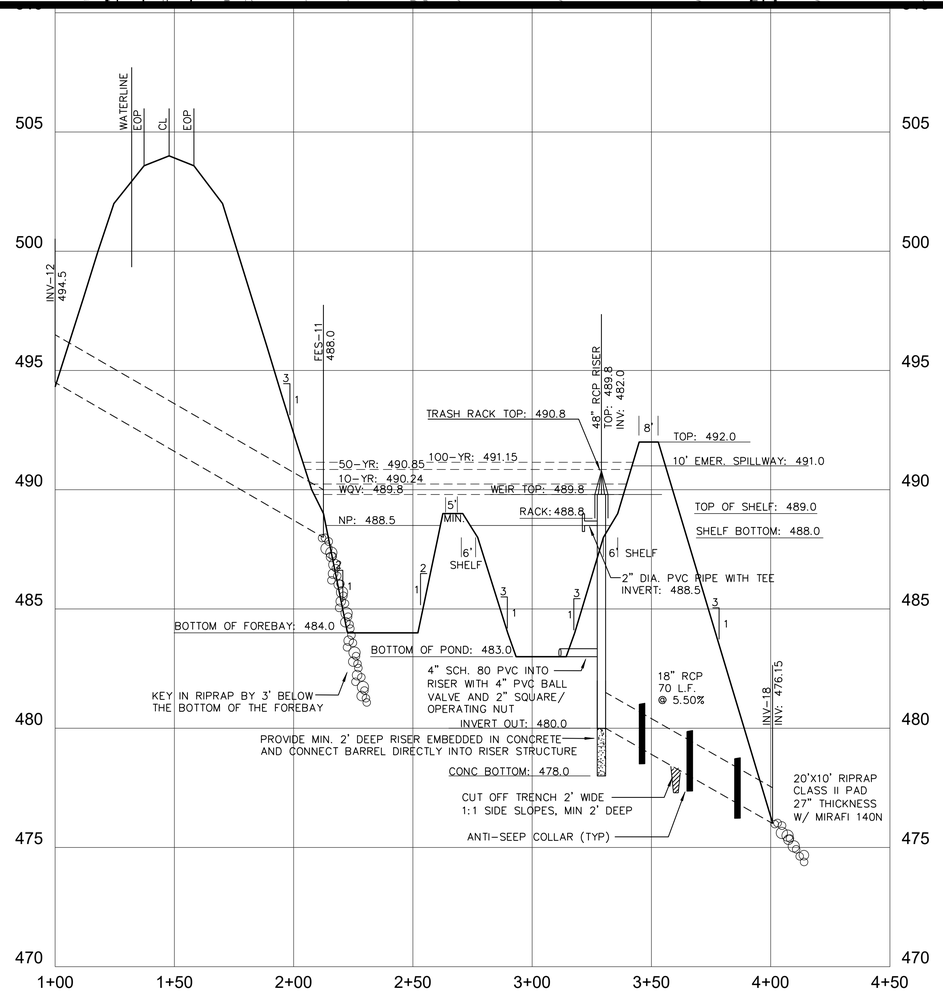
(IN FEET)
1 inch = 30 ft.

PLANT LIST - SCM#2 - LITTORAL SHELF PLANTINGS TO BE PLANTED AT MINIMUM DENSITY OF 50 PLANTS PER 200 S.F. OF SHELF AREA (TOTAL SHELF AREA OF 1517 SF = 380 PLANTS)					
PLANT TYPE	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
HERBACEOUS	Acorus subcordatum	Sweetflag	4" Pot	Cont.	36" o.c., in shallow water of shelf
HERBACEOUS	Iris virginica	Blue flag iris	4" Pot	Cont.	24" o.c., in shallow water of shelf
HERBACEOUS	Juncus effusus var. pylaei or solutus	Soft rush	4" Pot	Cont.	24" o.c.
HERBACEOUS	Pontederia cordata	Pickerelweed	4" Pot	Cont.	24" o.c., in shallow water of shelf
HERBACEOUS	Alisma subcordatum	Water plantain	4" Pot	Cont.	24" o.c.

LANDSCAPING NOTES:
1. LITTORAL SHELF PLANTINGS MUST BE PLANTED AT A MINIMUM DENSITY OF 50 PLANTS PER 200 S.F. AND SHOULD BE A MIXTURE OF AT LEAST THREE SPECIES IDENTIFIED ABOVE. OF THE THREE SPECIES, TWO MUST BE FROM BELOW THE NORMAL POOL ELEVATION AND ONE MUST BE FROM ABOVE THE NORMAL POOL ELEVATION.
2. ALL PLANT MATERIAL SHALL COME FROM LOCAL NURSERY STOCK. IF A SOURCE FOR A SPECIFIED PLANT CAN NOT BE LOCATED, LANDSCAPE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT FOR A SUITABLE SUBSTITUTION, AS APPROVED BY THE TOWN.

MAINTENANCE PROCEDURES: WET DETENTION BASIN
1. IMMEDIATELY AFTER THE WET DETENTION BASIN IS ESTABLISHED, THE PLANTS ON THE VEGETATED SHELF AND THE PERIMETER OF THE BASIN SHOULD BE WATERED TWICE WEEKLY IF NEEDED, UNTIL THE PLANTS BECOME ESTABLISHED (COMMONLY SIX WEEKS).
2. NO PORTION OF THE WET DETENTION POND SHOULD BE FERTILIZED AFTER THE FIRST INITIAL FERTILIZATION THAT IS REQUIRED TO ESTABLISH THE PLANTS ON THE VEGETATED SHELF.
3. STABLE GROUNDCOVER SHOULD BE MAINTAINED IN THE DRAINAGE AREA TO REDUCE THE SEDIMENT TO THE WET DETENTION BASIN.
4. IF THE BASIN MUST BE DRAINED FOR AN EMERGENCY OR TO PERFORM MAINTENANCE, THE FLUSHING OF SEDIMENT THROUGH THE EMERGENCY DRAIN SHOULD BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICAL.
5. ONCE A YEAR, A DAM SAFETY EXPERT SHOULD INSPECT THE EMBANKMENT.





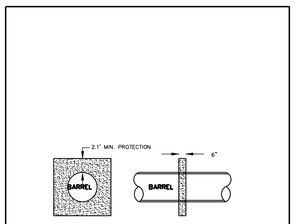
EROSION CONTROL LEGEND

NOTE: NOT ALL ITEMS ARE SHOWN ON EACH PLAN

- LIMITS OF DISTURBANCE
- TEMPORARY DIVERSION DITCH
- TREE PROTECTION FENCING
- SILT FENCE
- TEMPORARY INLET PROTECTION
- TEMPORARY WATTLE DITCH PROTECTION
- TEMPORARY SEDIMENT BASIN
- RIP-RAP OUTLET PROTECTION
- CONSTRUCTION ENTRANCE

DITCH LINING KEY

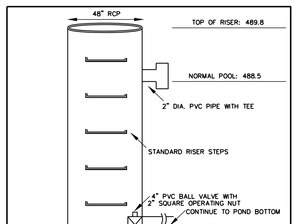
- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)



NOTES:

1. CONCRETE FOR COLLARS SHALL BE 3000 PSI (MIN.) 28 DAY STRENGTH.
2. COLLARS SHALL BE CONNECTED TO RCP BARREL WITH A WATER TIGHT JOINT.
3. COLLARS SHALL BE SPACED ALONG BARREL AT 20' O.C.
4. ANTI-SEEP COLLARS SHALL BE PLACED A MINIMUM OF 2' FROM PIPE JOINTS.

CONC. ANTI-SEEP COLLAR (NTS)



RISER WEIR AT SCM-B (NTS)

POND OUTLET STRUCTURE NOTES:
1. RCP OUTLET BARREL SHALL BE CLASS III RCP MEETING THE REQUIREMENTS OF ASTM C76. THE PIPE JOINTS SHALL BE CONFINED O-RING RUBBER GASKET JOINTS MEETING ASTM C-443 AND ASTM C-361.
2. ANY MANHOLE OUTLET RISER SHALL MEET ASTM C-478M & AASHTO M-199 MONOLITHIC BASE. THE MANHOLE JOINTS SHALL BE ASTM C-443 RUBBER GASKET JOINTS. MANHOLE JOINTS SHALL BE SECURELY ANCHORED TOGETHER TO PREVENT SEPARATION. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF THE MANHOLE SECTION ANCHORING SYSTEM.
3. OUTLET STRUCTURES SHALL BE PROVIDED WITH STEPS 1'-2" ON CENTER. STEPS SHALL BE IN ACCORDANCE WITH NCDOT STD. 840.66. TRASH RACK HATCH TO BE ALIGNED OVER STEPS.
4. CONCRETE ANTI-FLOATATION BLOCK SHALL BE INTEGRALLY ATTACHED TO RISER BASE TO PREVENT RISER/BLOCK SEPARATION, OR PRECAST AS THE EXTENDED BASE OF THE MANHOLE DURING FABRICATION. IF THE CONCRETE ANTI-FLOATATION BLOCK IS CAST SEPARATE FROM THE MANHOLE ASSEMBLY THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANCHORING THE ANTI-FLOATATION BLOCK TO THE MANHOLE RISER ASSEMBLY.

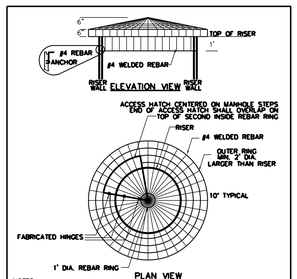
OUTLET STRUCTURE MATERIAL SPECIFICATIONS:
1. ALL POURED CONCRETE SHALL BE MINIMUM 3000 PSI (28 DAY) UNLESS OTHERWISE NOTED.

BERM SOIL AND COMPACTION SPECIFICATIONS:
1. ALL FILL SOILS FOR BERM SECTION SHALL BE CLEAN, IMPERMEABLE MATERIAL AND COMPACTED TO AT LEAST 95% STANDARD PROCTOR MAXIMUM DRY DENSITY, AT OPTIMUM MOISTURE CONTENT. NO BLASTED MATERIALS SHAL BE USED IN THE EMBANKMENT CONSTRUCTION. SOILS SHALL NOT EXHIBIT SIGNIFICANT SHRINK/SWELL OR DISPERSIVE CHARACTERISTICS. ON-SITE GEOTECHNICAL ENGINEER SHALL APPROVE THE SOILS FOR PLACEMENT WITHIN THE BERM SECTION. THE GEOTECHNICAL ENGINEER SHALL ALSO SPECIFY THE METHODS TO BE USED FOR PLACEMENT OF FILL. IF ADDITIONAL USES ARE PLANNED UPON THE BERM SECTION THE GEOTECHNICAL ENGINEER SHALL SPECIFY SOILS SUITABLE FOR THAT ADDITIONAL USE.
2. IN ALL FILL AREAS OF THE BERM, A SOILS COMPACTION TEST SHALL BE CONDUCTED EACH 2500 SQUARE FEET PER VERTICAL FOOT OF FILL.
3. NO TREES OF ANY TYPE MAY BE LOCATED ON THE BERM SECTION.
4. FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM 8" LIFT. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF THE EMBANKMENT. BEFORE PLACEMENT OF FILL FOR THE BERM SECTION, ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND THE SURFACE PROPERTY PREPARED FOR THE FILL PLACEMENT.
5. ADD 2-3" LAYER OF TOP SOIL TO ENTIRE BERM PRIOR TO SEEDING/MULCHING.

STATEMENT OF RESPONSIBILITY
ALL REQUIRED MAINTENANCE AND INSPECTIONS OF THIS FACILITY SHALL BE AS PER THE OPERATION AND MAINTENANCE AGREEMENT FOR THIS FACILITY.

GENERAL NOTES
1. POND STRUCTURES, AREA AND DAM WITH SPILLWAY ARE TO BE AS-BUILT AFTER CONSTRUCTION IS COMPLETED. ANY ASPECT OF CONSTRUCTION NOT IN COMPLIANCE WITH LATEST CONSTRUCTION PLANS WILL BE REBUILT OR REPAIRED TO DESIGN SPECIFICATIONS AT CONTRACTOR'S EXPENSE.
2. BASIN TO BE CLEANED OF SEDIMENT, GRADED TO FINAL DESIGN GRADES AND PLANTED PER THE VEGETATION PLAN AT SUCH TIME AS BASIN IS NO LONGER NEEDED AS A SEDIMENT BASIN.

GENERAL TRASH RACK NOTES



NOTES:

1. ALL REBAR TO BE #4 REBAR
2. ALL REBAR AND ANGLES TO BE GALVANIZED WITH A BITUMINOUS COATING.
3. THE HOT-DIPPED GALVANIZED 2"x2"x1/4" ANGLES SHALL BE WELDED TO THE REBAR TRASH RACK. ONCE WELDED, THE ENTIRE ASSEMBLY SHALL BE PLACED ONTO THE MANHOLE RISER WITH ANGLES SITTING DIRECTLY ON TOP OF THE RISER.
4. HATCH TO ALIGN WITH RISER STEPS.
5. HATCH TO BE CHAINED AND LOCKED. KEY TO BE HELD IN POSSESSION OF PARTY RESPONSIBLE FOR MAINTENANCE OF WETLAND.
6. ANCHOR TRASH RACK TO MANHOLE WALL WITH FOUR EQUALLY SPACED HOT-DIPPED GALVANIZED STEEL CLAMPS, EACH CLAMP ATTACHED TO MANHOLE RISER BY 4"x1/2" CONCRETE ANCHOR BOLTS, EACH CLAMP TO BE COATED WITH A BITUMINOUS COATING.

TRASH RACK AT SCM-B (NTS)

B&F CONSULTING
2805 Tobermory Lane
Raleigh, NC 27606
Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027485 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY
NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

SCM-B SECTION AND DETAILS

DRAWING SCALE

HORIZ: 1"=30', VERT: 1"=3'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-4B

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

NOTES

1. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL STREETS SHOWN ON THESE PLANS SHALL HAVE THE FULL WIDTH OF THE RIGHT-OF-WAY CLEARED AND GRADED WITHIN 50 FEET OF ALL STREET INTERSECTIONS.
3. BOUNDARY SURVEY PROVIDED BY CE GROUP, DATED FEBRUARY 2016.
4. TOPOGRAPHIC MAPPING PROVIDED BY SULLIVAN SURVEYING, 1143 D EXECUTIVE CIRCLE, CARY, NC 27511 (919-469-4738), DATED FEBRUARY 2016 AND AUGMENTED BY CHATHAM COUNTY GIS. ALL BEARINGS ARE NC GRID BEARINGS, NAVD 88 DATUM UTILIZED. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
5. LOCATION OF STREET TREES AND STREET LIGHTING WILL BE FIELD COORDINATED BY THE DEVELOPER TO ELIMINATE CONFLICTS.
6. STREET LIGHTING WILL BE DETERMINED BY DUKE-PROGRESS ENERGY ACCORDING TO COUNTY SUBDIVISION STANDARDS.
7. ALL NEW UTILITY LINES MUST BE UNDERGROUND.
8. THE CONTRACTOR IS RESPONSIBLE FOR ANY CONFLICTS WITH EXISTING OR PROPOSED UTILITIES, TRAFFIC SIGNAL DEVICES, UTILITY POLES, STREET SIGNS, ETC.
9. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS/HER ACTIVITIES. CALL UTILITY LOCATING SERVICE 72 HOURS PRIOR TO DIGGING AT 1-800-632-4949.
10. ALL OPEN SPACE NOT OWNED WITHIN AN INDIVIDUAL LOT SHALL BE MAINTAINED BY THE SUBDIVISION HOMEOWNERS ASSOCIATION.
11. THE MINIMUM CORNER CLEARANCE FROM THE CURB LINE OR EDGE OF PAVEMENT OF INTERSECTING STREETS SHALL BE AT LEAST TWENTY (20) FEET FROM THE POINT OF TANGENCY OF THE RADIUS CURVATURE, OR TWENTY (20) FEET FROM THE INTERSECTION OF RIGHT OF WAY LINES, WHICHEVER IS GREATER. THE RADIUS OF THE DRIVEWAY SHALL NOT ENCROACH ON THE MINIMUM CORNER CLEARANCE.
12. WITHIN THE AREA OF A DEFINED SIGHT TRIANGLE, THERE SHALL BE NO SIGHT OBSTRUCTING OR PARTLY OBSTRUCTING WALL, FENCE, SIGN, FOLIAGE, BERMING OR PARKED VEHICLES BETWEEN THE HEIGHTS OF TWENTY-FOUR (24) INCHES AND EIGHT (8) FEET ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY IF NO CURBING EXISTS.
13. PARKING REQUIRED BY DETACHED HOMESITES WILL BE PROVIDED IN THEIR GARAGES AND ON THEIR OWN DRIVEWAYS. ON-STREET PARKING AREAS ARE NOT SPECIFICALLY PROVIDED.
14. CONTRACTOR IS RESPONSIBLE FOR LOCATION AND CONTINUAL SERVICE FOR ALL EXISTING SERVICES THAT ARE TO REMAIN ON THE PROPERTY.
15. THE CONTRACTOR SHALL VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

PHASE 2

PHASE 1

PHASE 1 AREA = 65.3 ACRES

PROPOSED 20' UTILITY EASEMENT

END OF ROAD FOR PHASE 1

INTERMITTENT STREAM

EPHEMERAL STREAM

PROPOSED MAINTENANCE EASEMENT

PROPOSED CEMETERY EASEMENT FIELD LOCATED EXISTING CEMETERY 10' ACCESS EASEMENT

WETLAND

BUFFER (TYP.)

PERENNIAL STREAM

WETLAND AND PERENNIAL STREAM

STREAM BUFFER (TYP.)

INTERMITTENT STREAM

EPHEMERAL STREAM

Summary of Sediment and Skimmer Basins

I.D.	Type	Location	Area		Q_{25}	Surface Area		Volume		Spillway	Skimmer	Orifice	Dewatering
			Total	Disturbed		Required	Provided	Required	Provided	Width	Diameter	Diameter	Time
			(acres)	(acres)	(cfs)	(ft^2)	(ft^2)	(ft^3)	(ft^3)	(ft)	(inches)	(inches)	(days)
TS1	Skimmer	Sunset Grove Drive (appx. 16+00, lt)	3.7	0.6	8.8	2568	2592	1080	4363	10	1.5	0.75	2.4
TS2	Skimmer	Sunset Grove Drive (appx. 16+00, rt)	1.1	0.7	3.7	1073	1152	1260	1771	5	1.5	0.75	2.7
TS3	Skimmer[1]	Sunset Grove Drive (appx. Sta 26+00 rt)	7.4	1.2	17.7	5200	6200	2160	15000	SCM'B'	2.5	2.25	2.8
TS4	Skimmer	Westview (end of cul-de-sac)	4.1	1.1	10.7	3478	3528	1980	6091	10	1.5	1	2.4
TS5	Skimmer	Parkers Way (appx. Sta. 17+00 lt)	1.7	1.7	7	2275	2450	3060	4103	15	2	1	3.2
TS6	Skimmer[2]	Parkers Way (appx. Sta. 17+00 rt)	4.1	2.6	13.7	4453	6373	4680	5876	SCM'A'	1.5	1.25	3.7

Notes
(1) TS3 is located within SCM'B'; the outlet for the TS3 is the outlet works for SCM'B' with a temporary skimmer
(2) TS6 is located within SCM'A'; the outlet for the TS6 is the outlet works for SCM'A' with a temporary skimmer, and plug one 18" outlet pipe

GRADING/EROSION NOTES

1. REFER TO ROADWAY PLAN/PROFILES FOR DETAILED GRADING AND UTILITY INFORMATION.
2. REFER TO ROADWAY PLANS AT LARGER SCALE (C-5A THROUGH C-5C) FOR DETAILED EROSION CONTROL INFORMATION.

EROSION CONTROL LEGEND
NOTE: NOT ALL ITEMS ARE SHOWN ON EACH PLAN
LIMITS OF DISTURBANCE
TEMPORARY DIVERSION DITCH
TREE PROTECTION FENCING
SILT FENCE
TEMPORARY INLET PROTECTION
TEMPORARY WATTLE-DITCH PROTECTION
TEMPORARY SEDIMENT BASIN
RIP-RAP OUTLET PROTECTION
CONSTRUCTION ENTRANCE

DITCH LINING KEY
NORTH AMERICAN GREEN DS75 (NAG DS75)
NORTH AMERICAN GREEN DS150 (NAG DS150)
NORTH AMERICAN GREEN C125 (NAG C125)
NORTH AMERICAN GREEN C350 (NAG C350)

B&F CONSULTING
2805 Tobermory Lane
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Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027485 ENGINEER ANDREW FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION
PHASE 1
CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

EROSION CONTROL PLAN PHASE 1

DRAWING SCALE

1"=100'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-5

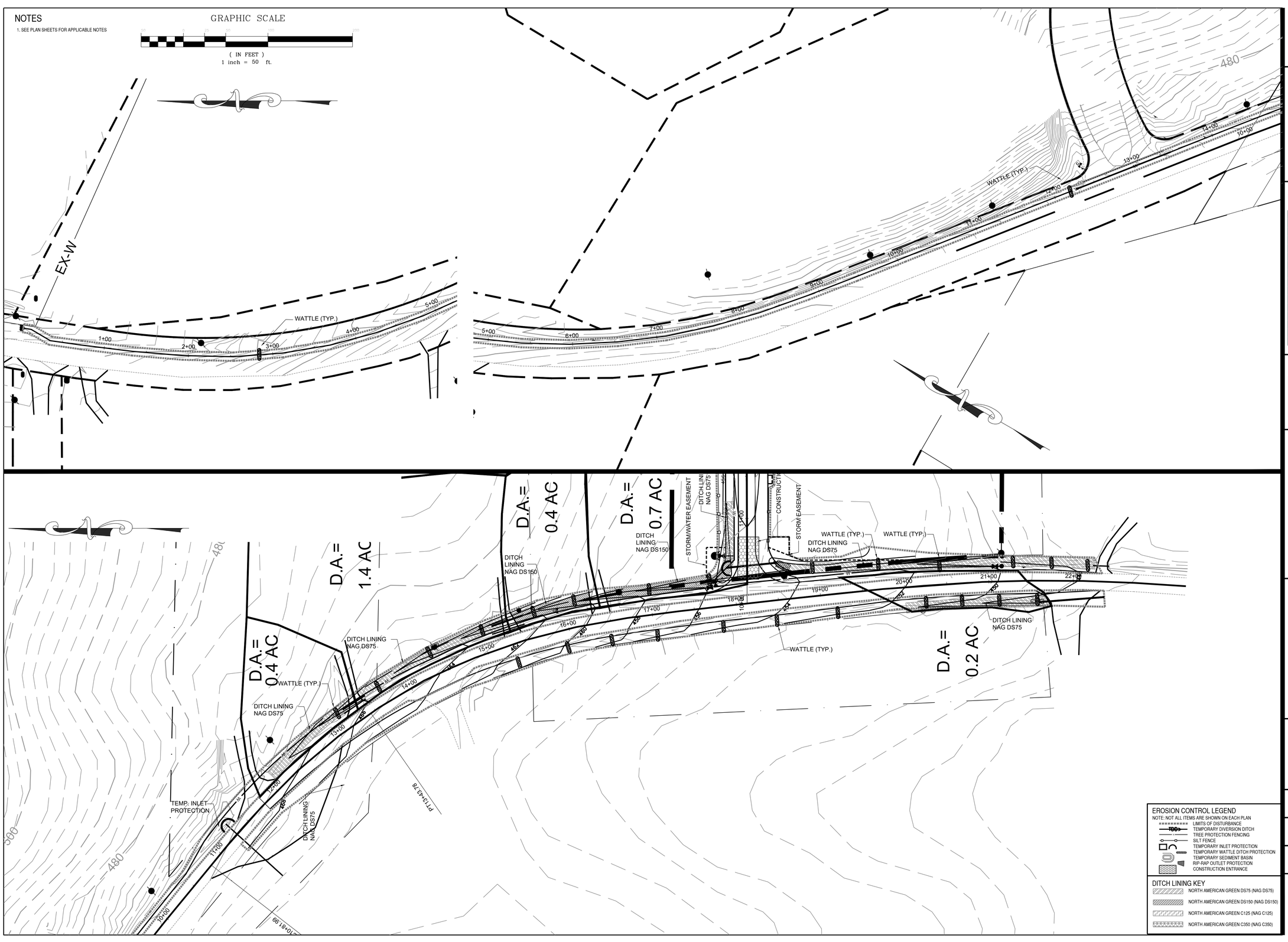
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.



EROSION CONTROL LEGEND

NOTE: NOT ALL ITEMS ARE SHOWN ON EACH PLAN

- LIMITS OF DISTURBANCE
- TEMPORARY DIVERSION DITCH
- TREE PROTECTION FENCING
- SILT FENCE
- TEMPORARY INLET PROTECTION
- TEMPORARY WATTLE DITCH PROTECTION
- TEMPORARY SEDIMENT BASIN
- RIP-RAP OUTLET PROTECTION
- CONSTRUCTION ENTRANCE

DITCH LINING KEY

- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)

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NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

EROSION CONTROL MT. GILEAD CHURCH

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

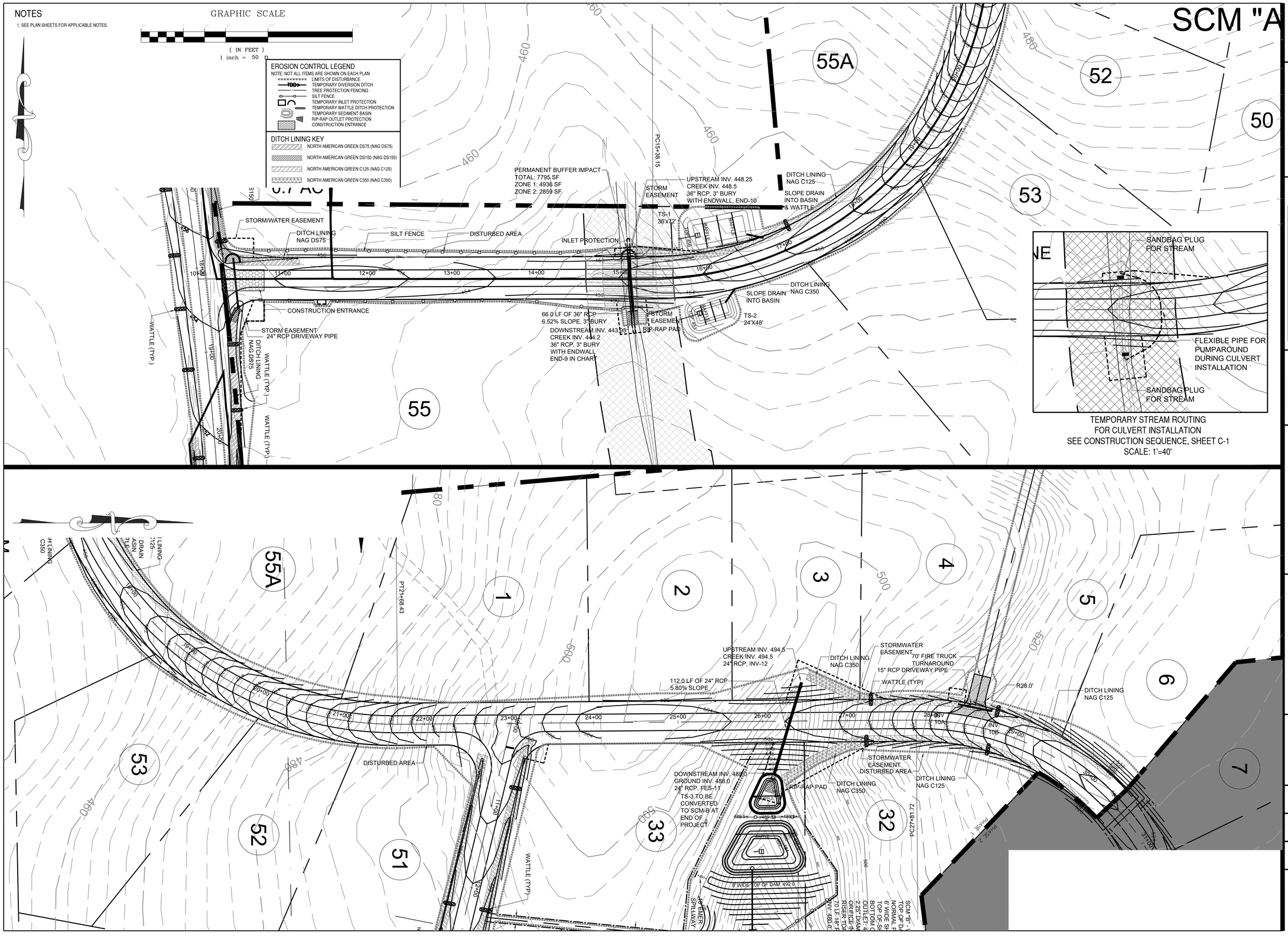
DATE

7-26-2016

SHEET NUMBER

C-5A

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION



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NORTH CAROLINA PROFESSIONAL SEAL 027445 ENGINEER AMBER FARRELLY
July 26, 2016

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC, CHATHAM CO. EROSION CONTROL, STORMWATER, AND STREET NAME CHANGES (ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

EROSION CONTROL SUNSET GROVE RD

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-5B

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

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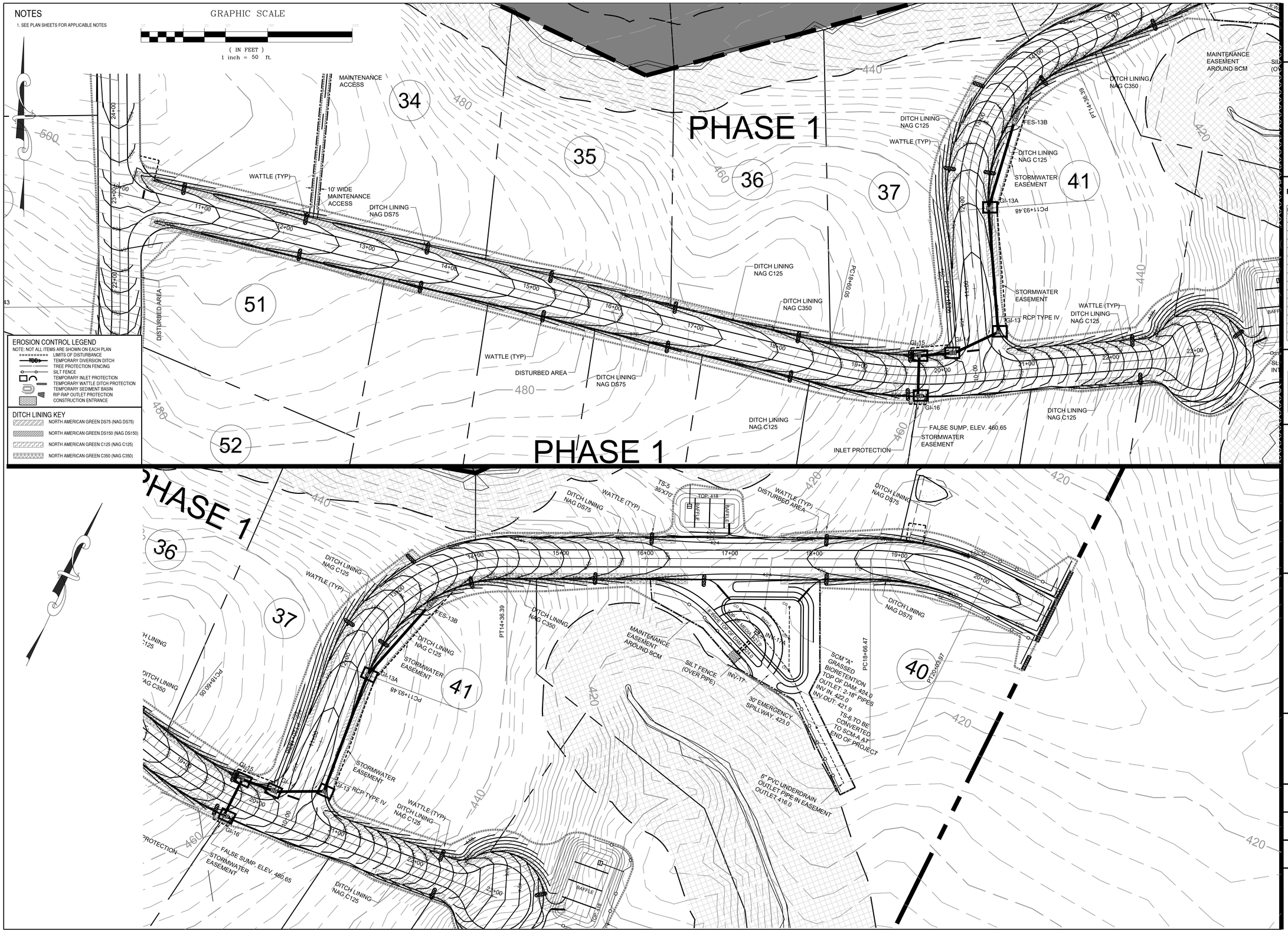
1 inch = 50 ft.



EROSION CONTROL LEGEND

NOTE: NOT ALL ITEMS ARE SHOWN ON EACH PLAN

- LIMITS OF DISTURBANCE
- TEMPORARY DIVERSION DITCH
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- SILT FENCE
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- TEMPORARY WATTLE DITCH PROTECTION
- TEMPORARY SEDIMENT BASIN
- RIP-RAP OUTLET PROTECTION
- CONSTRUCTION ENTRANCE

DITCH LINING KEY

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- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)

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NORTH CAROLINA PROFESSIONAL SEAL 027445 ENGINEER AMBER FARRELLY

REVISIONS

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	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

EROSION CONTROL STARWOOD DRIVE BOXWOOD DRIVE

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-5C

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

EROSION CONTROL LEGEND

NOTE: NOT ALL ITEMS ARE SHOWN ON EACH PLAN

- LIMITS OF DISTURBANCE
- TDD> TEMPORARY DIVERSION DITCH
- x TREE PROTECTION FENCING
- SILT FENCE
- TEMPORARY INLET PROTECTION
- TEMPORARY WATTLE DITCH PROTECTION
- TEMPORARY SEDIMENT BASIN
- RIP-RAP OUTLET PROTECTION
- CONSTRUCTION ENTRANCE

DITCH LINING KEY

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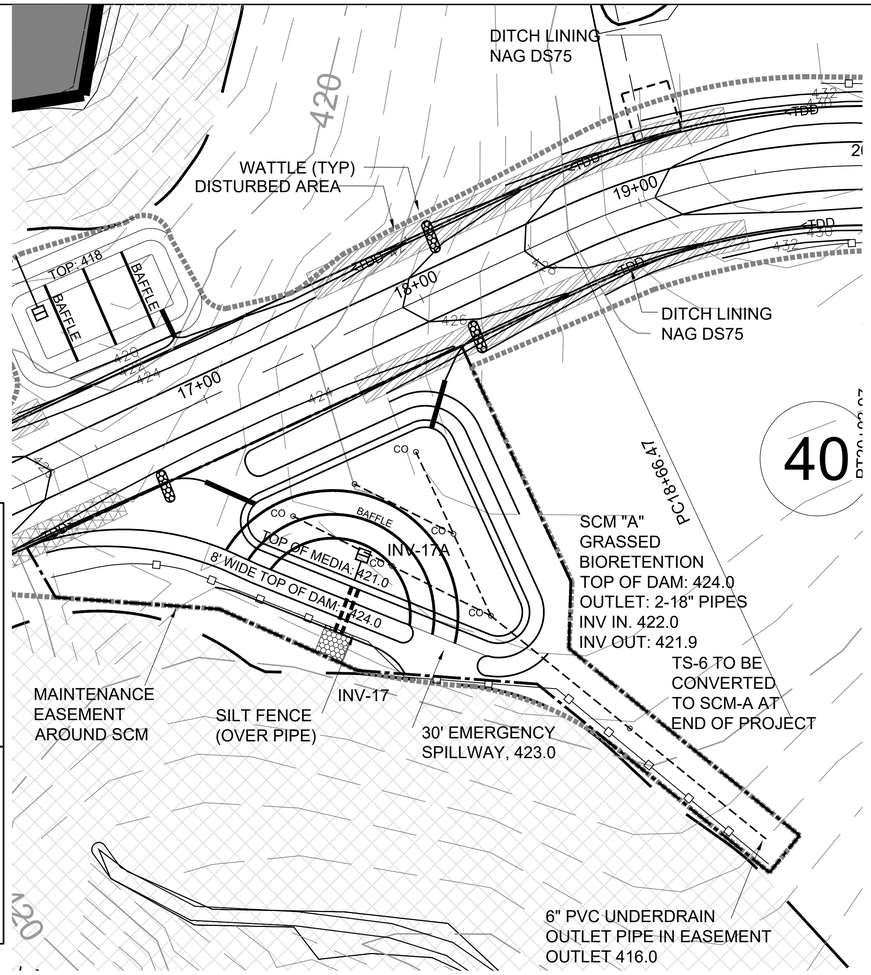
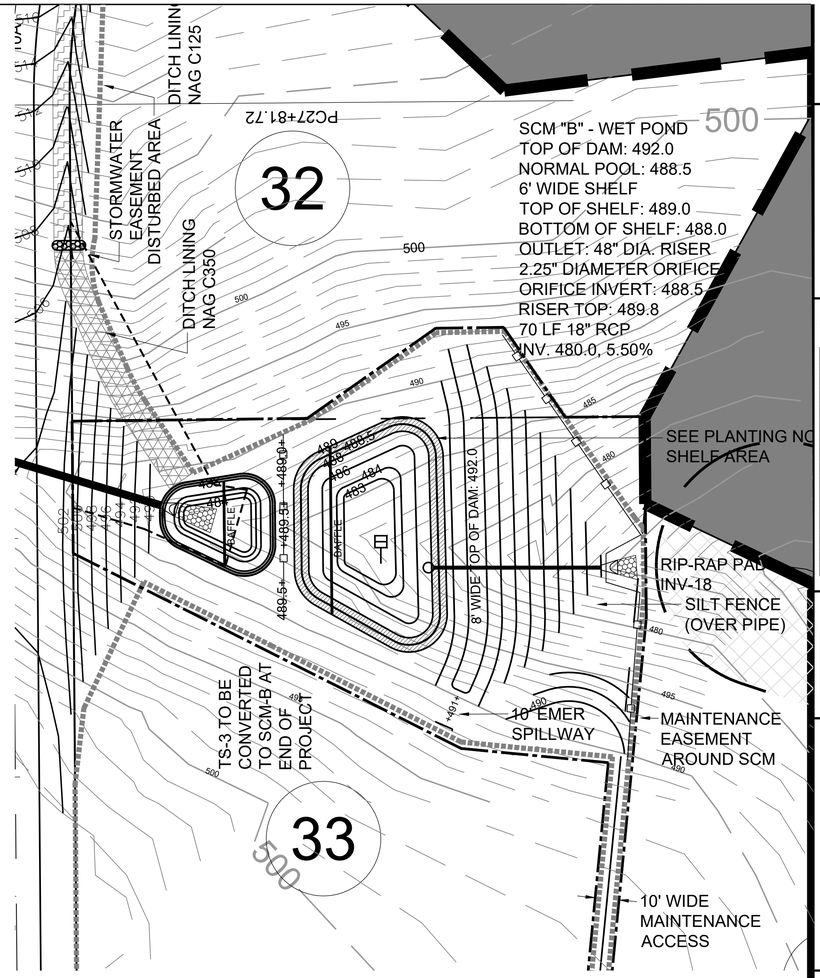
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)





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License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027445 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

STORMWATER CONTROL DEVICES

DRAWING SCALE

1"=30'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-5D

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

NOTES

1. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL STREETS SHOWN ON THESE PLANS SHALL HAVE THE FULL WIDTH OF THE RIGHT-OF-WAY CLEARED AND GRADED WITHIN 50 FEET OF ALL STREET INTERSECTIONS.
3. BOUNDARY SURVEY PROVIDED BY CE GROUP, DATED FEBRUARY 2016.
4. TOPOGRAPHIC MAPPING PROVIDED BY SULLIVAN SURVEYING, 1143 D EXECUTIVE CIRCLE, CARY, NC 27511 (919-469-4738), DATED FEBRUARY 2016 AND AUGMENTED BY CHATHAM COUNTY GIS. ALL BEARINGS ARE NC GRID BEARINGS, NAVD 88 DATUM UTILIZED. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
5. LOCATION OF STREET TREES AND STREET LIGHTING WILL BE FIELD COORDINATED BY THE DEVELOPER TO ELIMINATE CONFLICTS.
6. STREET LIGHTING WILL BE DETERMINED BY DUKE-PROGRESS ENERGY ACCORDING TO COUNTY SUBDIVISION STANDARDS.
7. ALL NEW UTILITY LINES MUST BE UNDERGROUND.
8. THE CONTRACTOR IS RESPONSIBLE FOR ANY CONFLICTS WITH EXISTING OR PROPOSED UTILITIES, TRAFFIC SIGNAL DEVICES, UTILITY POLES, STREET SIGNS, ETC.
9. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS/HER ACTIVITIES. CALL UTILITY LOCATING SERVICE 72 HOURS PRIOR TO DIGGING AT 1-800-632-4949.
10. ALL OPEN SPACE NOT OWNED WITHIN AN INDIVIDUAL LOT SHALL BE MAINTAINED BY THE SUBDIVISION HOMEOWNERS ASSOCIATION.
11. THE MINIMUM CORNER CLEARANCE FROM THE CURB LINE OR EDGE OF PAVEMENT OF INTERSECTING STREETS SHALL BE AT LEAST TWENTY (20) FEET FROM THE POINT OF TANGENCY OF THE RADIUS CURVATURE, OR TWENTY (20) FEET FROM THE INTERSECTION OF RIGHT OF WAY LINES, WHICHEVER IS GREATER. THE RADIUS OF THE DRIVEWAY SHALL NOT ENCROACH ON THE MINIMUM CORNER CLEARANCE.
12. WITHIN THE AREA OF A DEFINED SIGHT TRIANGLE, THERE SHALL BE NO SIGHT OBSTRUCTING OR PARTLY OBSTRUCTING WALL, FENCE, SIGN, FOLIAGE, BERMING OR PARKED VEHICLES BETWEEN THE HEIGHTS OF TWENTY-FOUR (24) INCHES AND EIGHT (8) FEET ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY IF NO CURBING EXISTS.
13. PARKING REQUIRED BY DETACHED HOMESITES WILL BE PROVIDED IN THEIR GARAGES AND ON THEIR OWN DRIVEWAYS. ON-STREET PARKING AREAS ARE NOT SPECIFICALLY PROVIDED.
14. CONTRACTOR IS RESPONSIBLE FOR LOCATION AND CONTINUAL SERVICE FOR ALL EXISTING SERVICES THAT ARE TO REMAIN ON THE PROPERTY.
15. THE CONTRACTOR SHALL VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

PHASE 2
PHASE 1
PHASE 1 AREA = 65.3 ACRES
EX-W
EX-W
EX-W
PROPOSED 20' UTILITY EASEMENT
8" WL
PROP. TS&V ON EX. 8" WL 1-8" GATE VALVE
8" GATE VALVE & 2" TEMP. BLOWOFF
END OF ROAD FOR PHASE 1
50' PUBLIC R/W
NEWCASTLE COURT
6" WL
SUNSET GROVE DRIVE
50' PUBLIC R/W
EPHEMERAL STREAM
INTERMITTENT STREAM
8"X8" TEE 2-8" GATE VALVES
FIRE HYDRANT & HYD. VALVE
PROPOSED MAINTENANCE EASEMENT
WETLAND
BOXWOOD DRIVE
50' PUBLIC R/W
BUFFER (TYP.)
PROPOSED CEMETERY EASEMENT
FIELD LOCATED EXISTING CEMETERY
10' ACCESS EASEMENT
8" GATE VALVE & 2" TEMP. BLOWOFF
PROPOSED MAINTENANCE EASEMENT
WETLAND AND PERENNIAL STREAM
PERENNIAL STREAM
STARWOOD DRIVE
50' PUBLIC R/W
8" WL
6" WL
2" WL
8"X8" TEE 1-8" GATE VALVE 1-8"X6" REDUCER 1-6" GATE VALVE
6" REDUCED TO 2" PVC TO END
2" GATE VALVE & 2" BLOWOFF
WETLAND
* LOT 55A IS NOT A BUILDABLE LOT
STREAM BUFFER (TYP.)
INTERMITTENT STREAM
PROPOSED WATERLINE (TYP.)
8" GATE VALVE & 2" TEMP. BLOWOFF
EPHEMERAL STREAM

UTILITY NOTES

1. REFER TO ROADWAY PLAN/PROFILES FOR DETAILED GRADING AND UTILITY INFORMATION.
2. ALL INDIVIDUAL HOUSE METERS TO BE 5/8" SIZE.

UTILITY SOILS KEY
- SUITABLE SEPTIC SOILS (PRELIM PLANS)
- RFP SOILS (PRELIM PLANS)
- STREAM BUFFER AREAS

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NORTH CAROLINA PROFESSIONAL SEAL 027485 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

UTILITY PLAN PHASE 1

DRAWING SCALE

1"=100'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-6

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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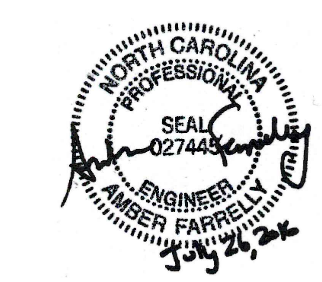


REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC, CHATHAM CO. EROSION CONTROL, STORMWATER, AND STREET NAME CHANGES (ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET
GROVE
SUBDIVISION
PHASE 1

CHATHAM COUNTY
NORTH CAROLINA

DEVELOPER

CHATHAM
CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

TRAFFIC CONTROL PLAN MT. GILEAD CHURCH

DRAWING SCALE

1"=100'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

C-7

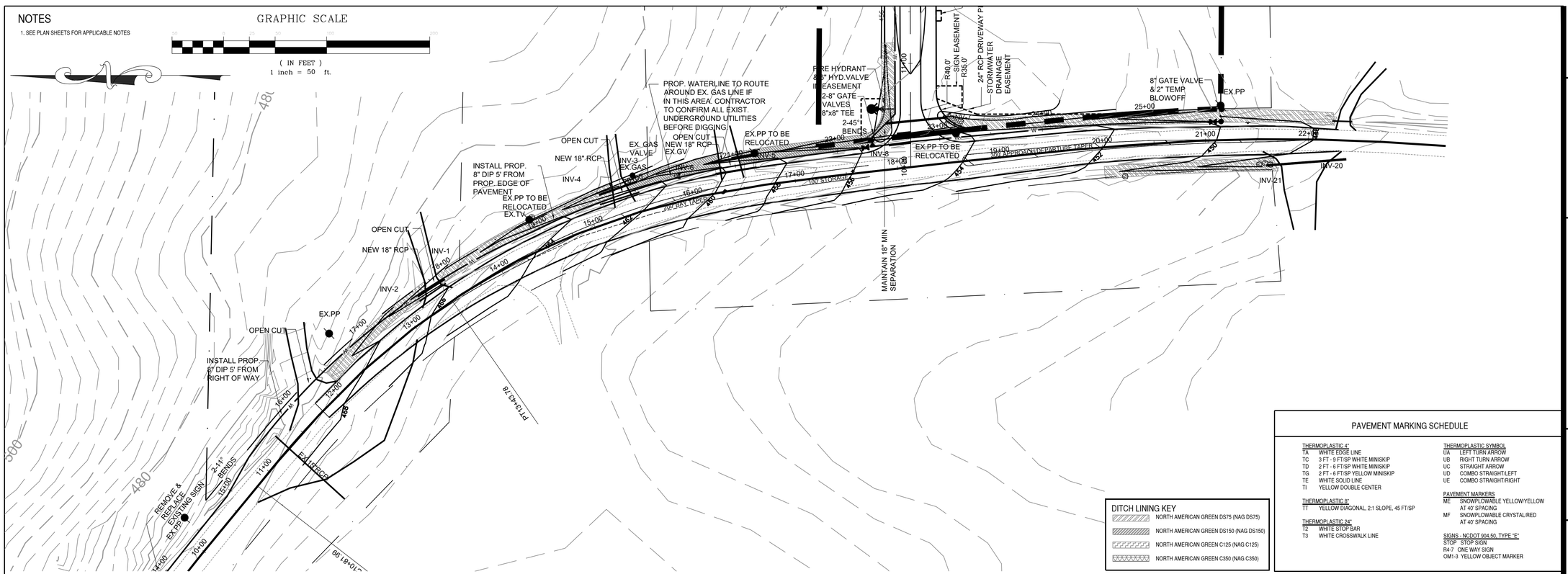
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

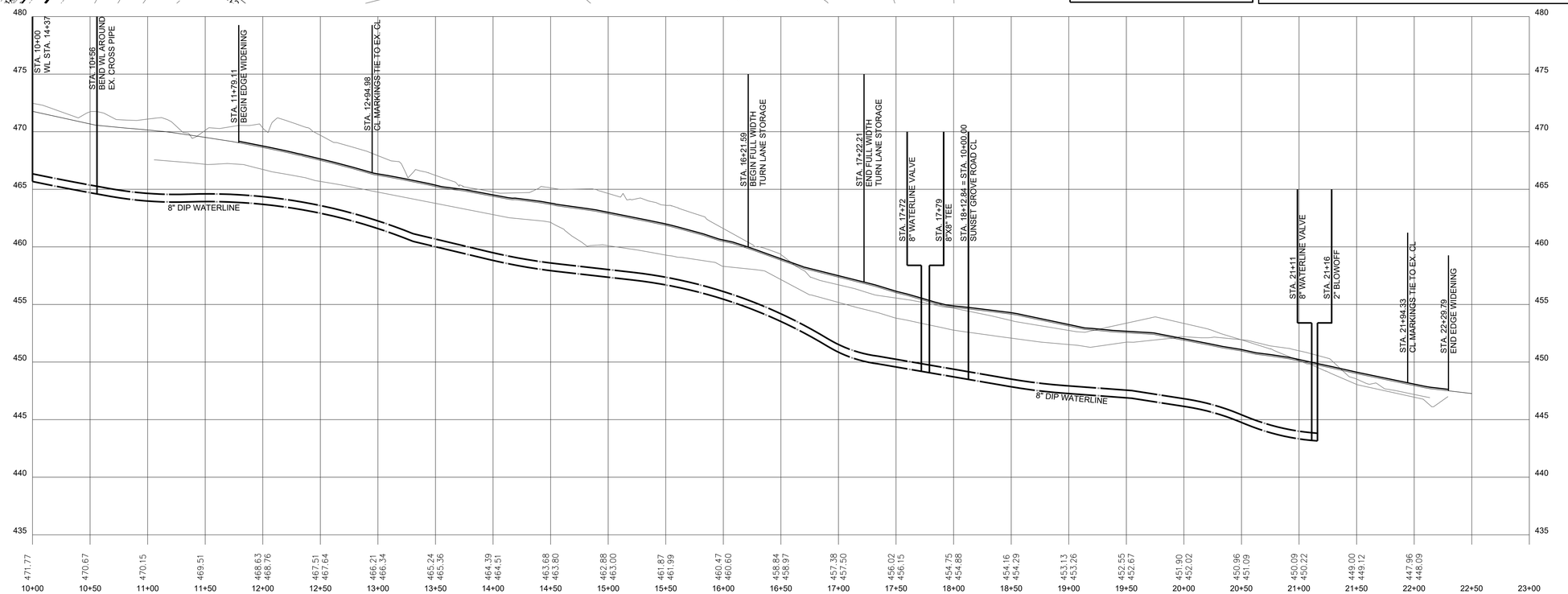
NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.





NOTES

1. REFERENCE SHEET PP-6 FOR ADDITIONAL WATERLINE PROFILE INFORMATION

DITCH LINING KEY

- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)

PAVEMENT MARKING SCHEDULE

THERMOPLASTIC 4"
- TA WHITE EDGE LINE
- TC 3 FT - 9 FT/SP WHITE MINISKIP
- TD 2 FT - 6 FT/SP WHITE MINISKIP
- TG 2 FT - 6 FT/SP YELLOW MINISKIP
- TE WHITE SOLID LINE
- TI YELLOW DOUBLE CENTER

THERMOPLASTIC 8"
- TT YELLOW DIAGONAL, 2:1 SLOPE, 45 FT/SP

THERMOPLASTIC 24"
- T2 WHITE STOP BAR
- T3 WHITE CROSSWALK LINE

THERMOPLASTIC SYMBOL
- UA LEFT TURN ARROW
- UB RIGHT TURN ARROW
- UC STRAIGHT ARROW
- UD COMBO STRAIGHT/LEFT
- UE COMBO STRAIGHT/RIGHT

PAVEMENT MARKERS
- ME SNOWPLOWABLE YELLOW/YELLOW AT 40' SPACING
- MF SNOWPLOWABLE CRYSTAL/RED AT 40' SPACING

SIGNS - NCDOT 904.50, TYPE "E"
- STOP STOP SIGN
- R4-7 ONE WAY SIGN
- OM1-3 YELLOW OBJECT MARKER

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NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY
NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

PLAN & PROFILE ROAD WIDENING MT. GILEAD CHURCH

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

PP-1

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

DITCH LINING KEY
- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)

PERMANENT BUFFER IMPACT
TOTAL: 7795 SF
ZONE 1: 4936 SF
ZONE 2: 2859 SF

55A

52

50

53

55

PC15+38.15

RIGHT OF WAY
R375.0'
R360.0'
R400.0'
R410.0'
R425.0'

FIRE HYDRANT & 6" HYDRANT VALVE

EDGE OF PAVEMENT

WATER SERVICE & RES. METER (TYP.)

MAINTAIN 18" MIN SEPARATION

8" DIP WATERLINE, 5' FROM EOP

SUNSET GROVE ROAD
20' PAVEMENT, 50' ROW

STORMWATER DRAINAGE EASEMENT

MAINTAIN 18" MIN SEPARATION

R400.0'
R410.0'
R425.0'

STORMWATER DRAINAGE EASEMENT

STREAM BUFFER 50' FROM STREAM BANK

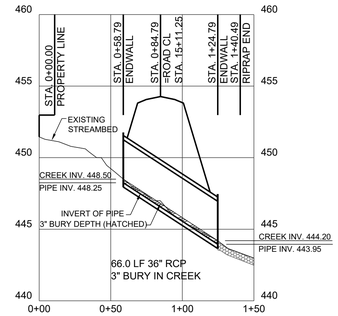
FIRE HYDRANT & 6" HYDRANT VALVE
8" DIP TEE
2-8" GATE VALVE
6"x8" REDUCER
2-45° BENDS
8" DIP WATERLINE EASEMENT

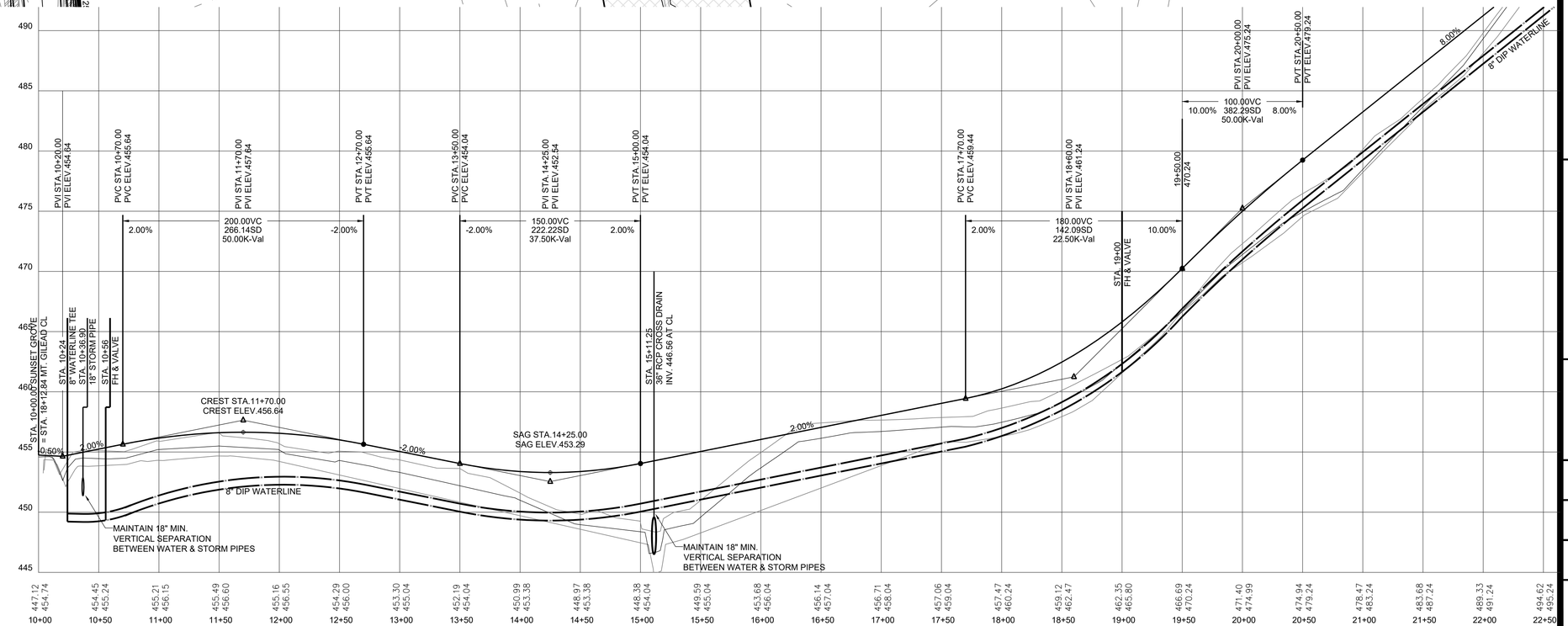
EXIST. 8" DIP WATERLINE TO BE RELOCATED

R40.0'
SIGN EASEMENT
R35.0'

MAILBOX KIOSK IN 5'X10' EASEMENT

STORMWATER DRAINAGE EASEMENT





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NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

PLAN & PROFILE SUNSET GROVE RD

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

PP-2

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

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		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY
NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

PLAN & PROFILE SUNSET GROVE RD

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

PP-3

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

PHASE 1

PHASE 1

FIRE HYDRANT & 6" HYDRANT VALVE IN EASEMENT

STOP SIGN & STOP BAR

STARWOOD DRIVE +00
20' PAVEMENT, 50' ROW

SUNSET GROVE +00
20' PAVEMENT, 50' ROW

8"x8" TEE & 2-8" GATE VALVES 2-8" GATE VALVES OUTSIDE OF PAVEMENT

8" DIP WATERLINE 5' FROM EOP

8" DIP WATERLINE 5' FROM EOP

FIRE HYDRANT & 6" HYDRANT VALVE

WATER SERVICE & RES. METER (TYP.)

RIGHT OF WAY

EDGE OF PAVEMENT

8"x8" TEE & 1-8" GATE VALVES 1-8"x6" REDUCER 1-6" GATE VALVE OUTSIDE OF PAVEMENT

FIRE HYDRANT & 6" HYDRANT VALVE

STOP SIGN & STOP BAR

BOXWOOD DRIVE 20' PAVEMENT, 50' ROW

6" HYDRANT VALVE

STORMWATER EASEMENT

6" REDUCED TO 2" PVC TO END

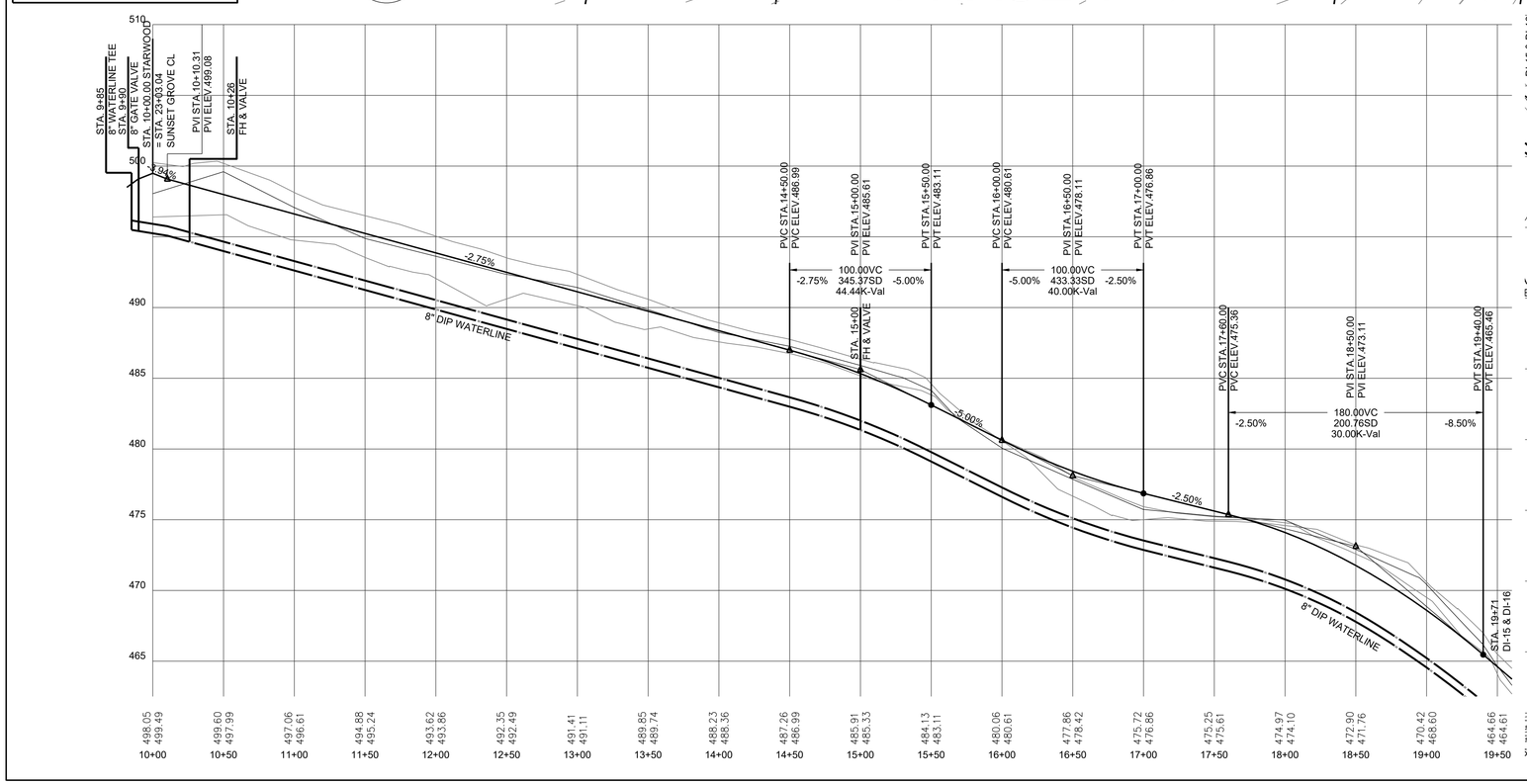
2" GATE VALVE & 2" BLOWOFF

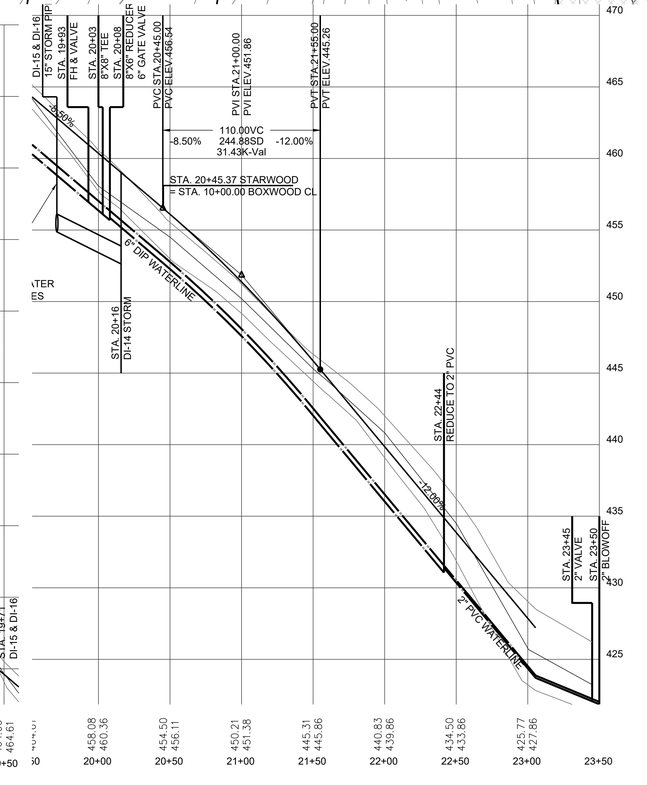
STARWOOD DRIVE 20' PAVEMENT, 50' ROW

MAINTAIN 18" MIN SEPARATION

STORMWATER EASEMENT

DITCH LINING KEY
- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)





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REVISIONS

NO.	DATE	DESCRIPTION
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		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

PLAN & PROFILE STARWOOD DRIVE

DRAWING SCALE
1"=50'

PLAN SET
INFRASTUCTURE DRAWINGS

DATE
7-26-2016

SHEET NUMBER
PP-4

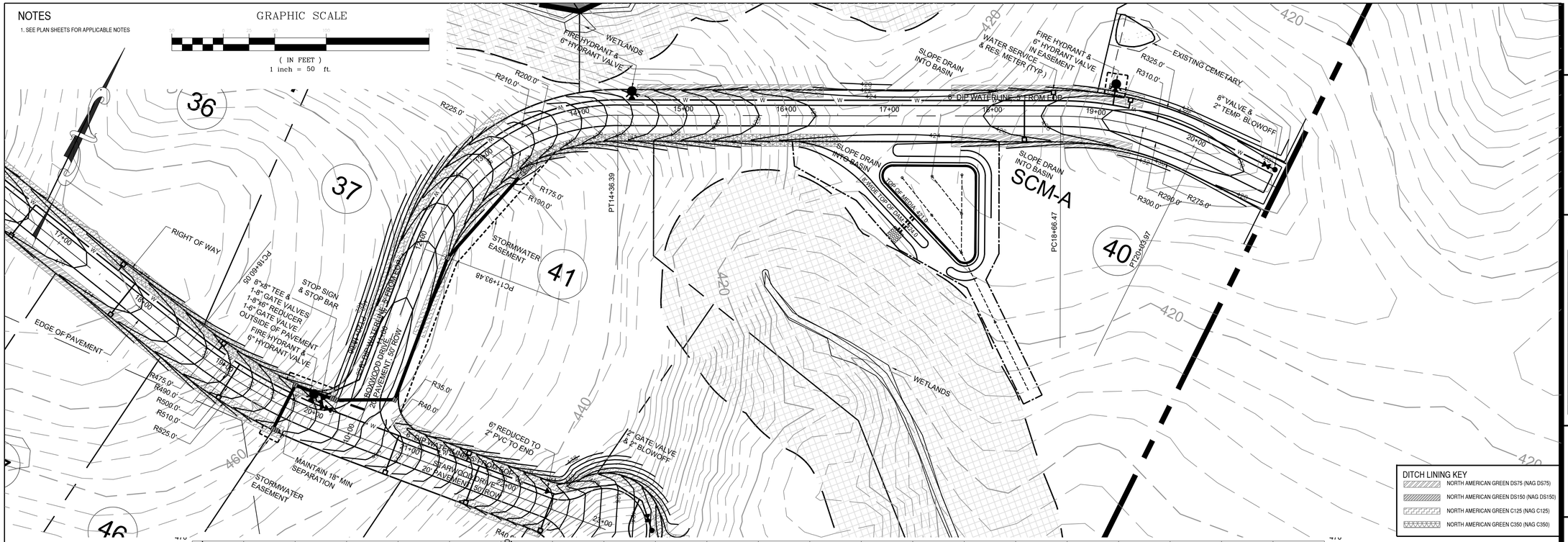
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

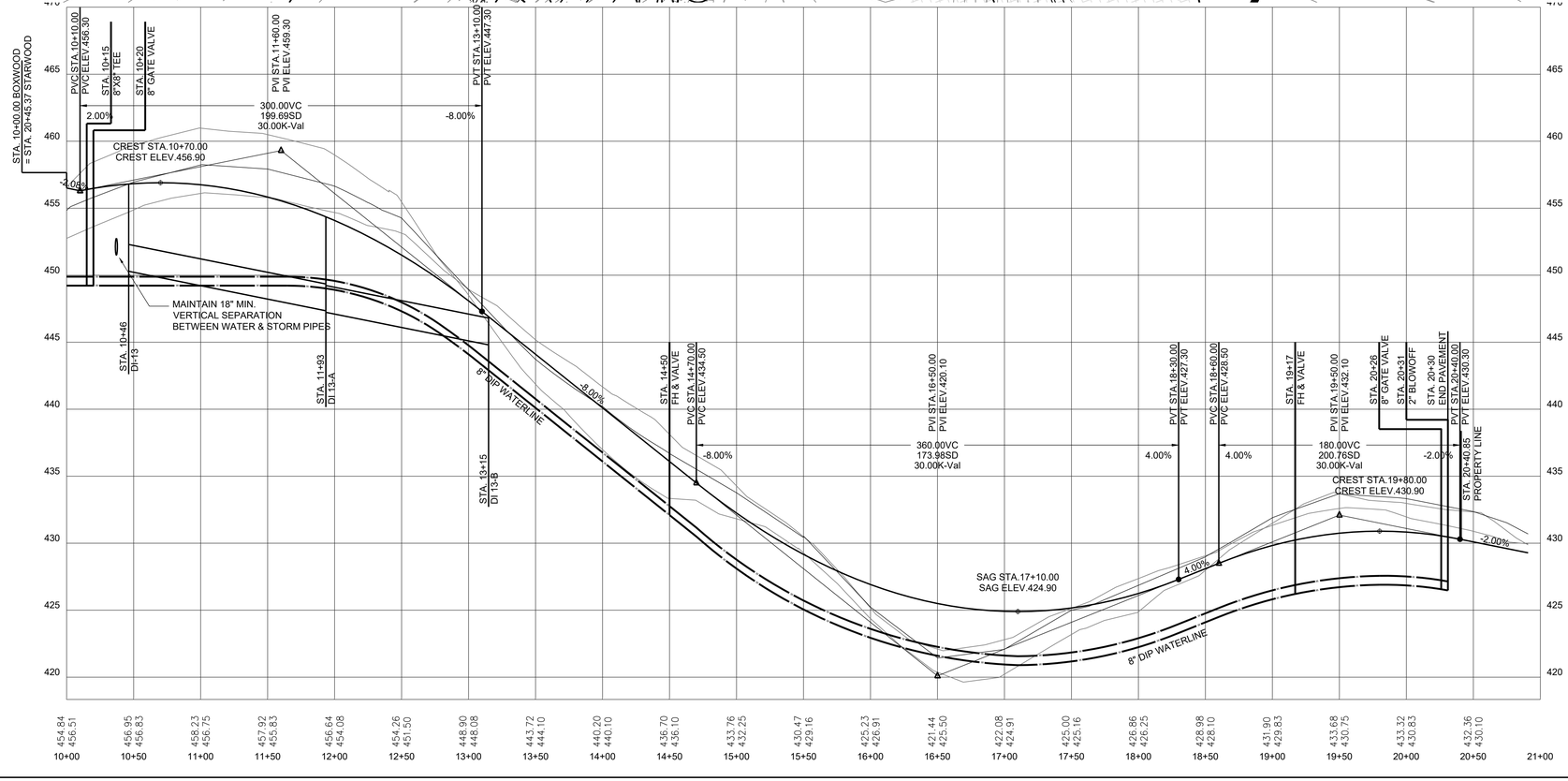
GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.



DITCH LINING KEY

- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)



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REVISIONS

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		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

PLAN & PROFILE BOXWOOD DRIVE

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

PP-5

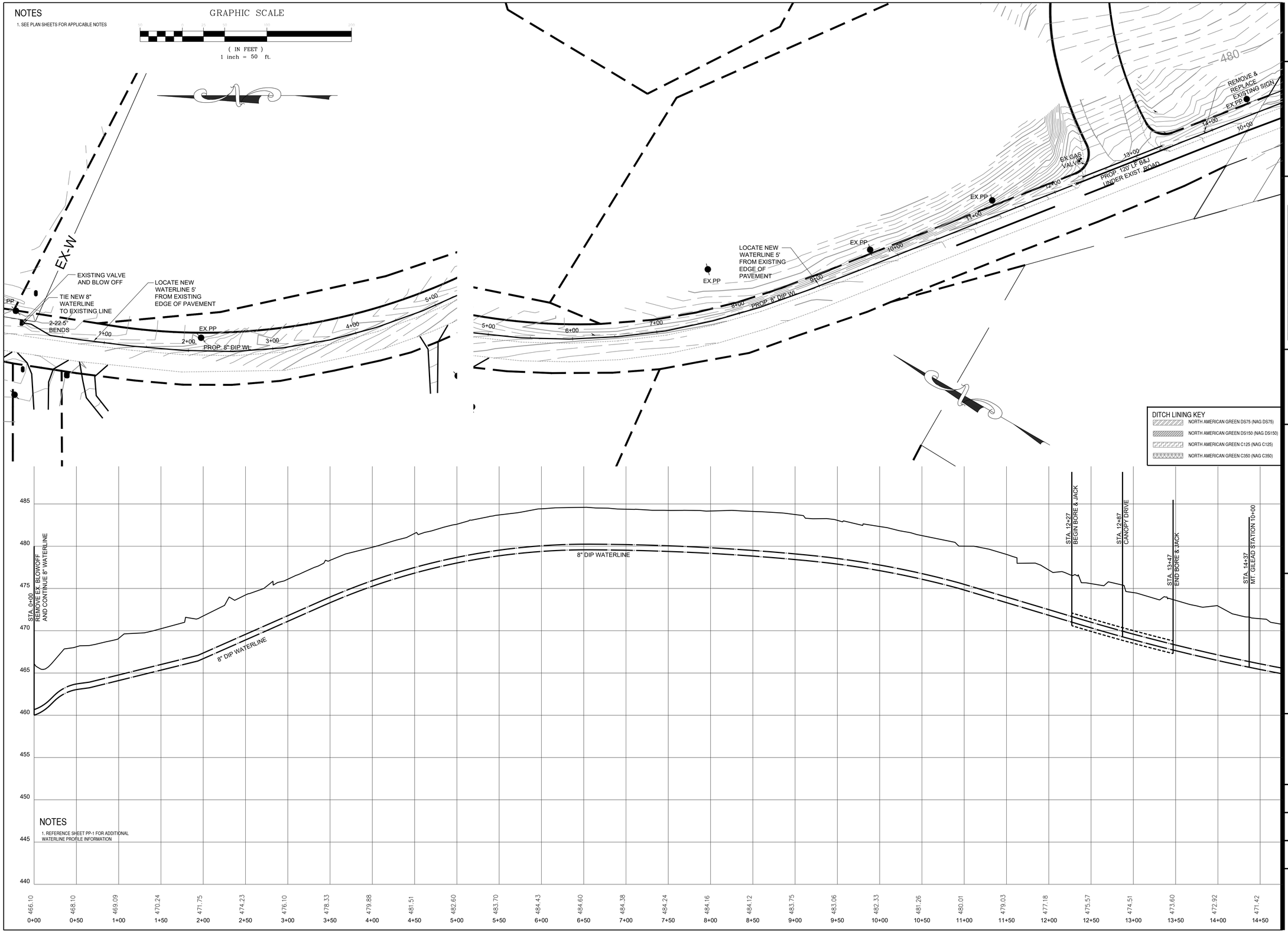
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.



NOTES

1. REFERENCE SHEET PP-1 FOR ADDITIONAL WATERLINE PROFILE INFORMATION

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Raleigh, NC 27606
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NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELLY

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PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

PLAN & PROFILE WATERLINE MT. GILEAD CHURCH

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

DATE

7-26-2016

SHEET NUMBER

PP-6

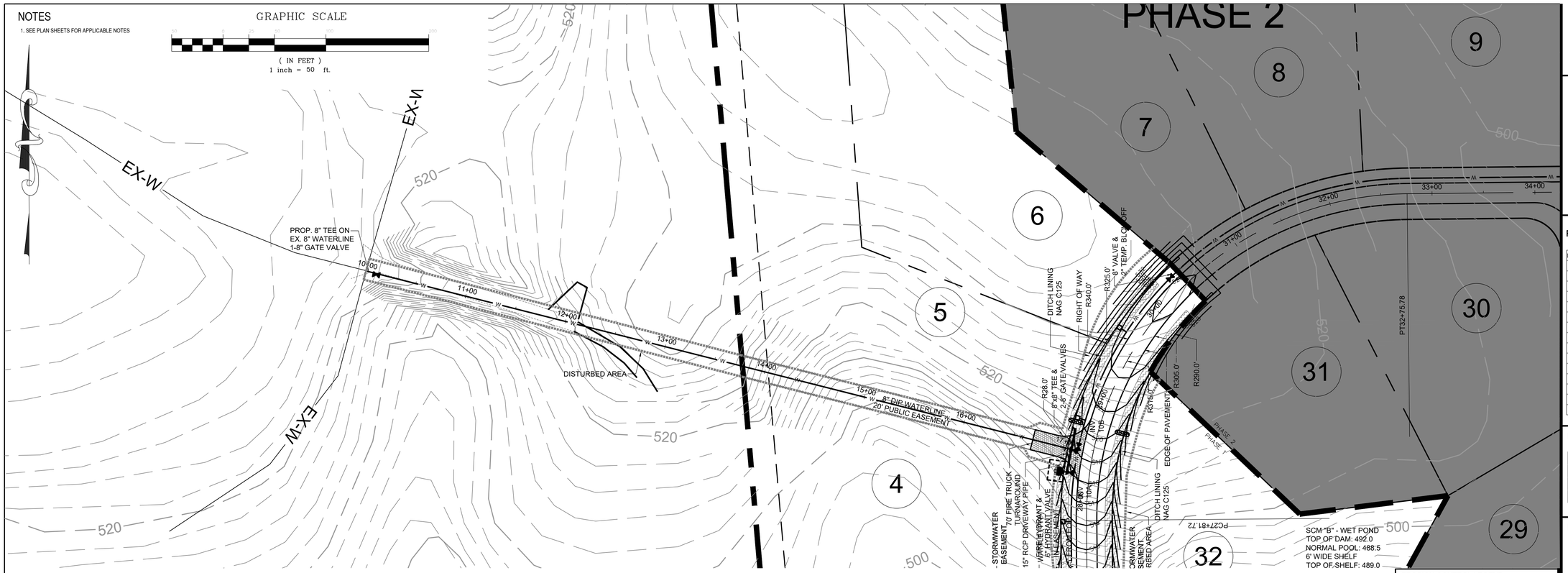
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NOTES

1. SEE PLAN SHEETS FOR APPLICABLE NOTES

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.



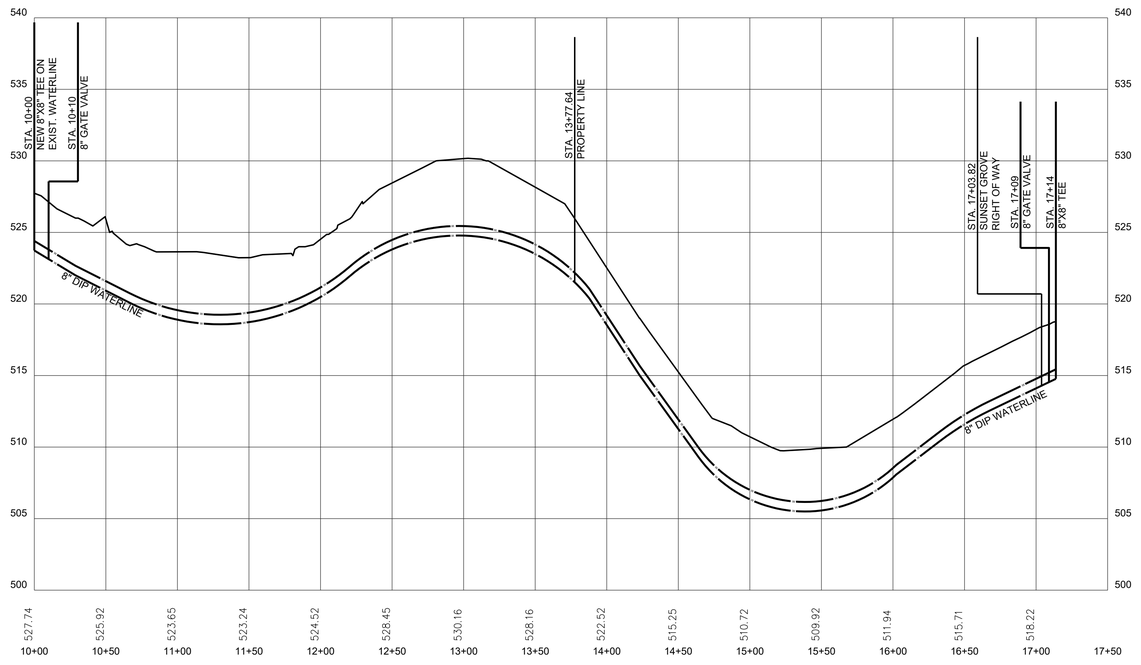
EROSION CONTROL LEGEND

NOTE: NOT ALL ITEMS ARE SHOWN ON EACH PLAN

- LIMITS OF DISTURBANCE
- TEMPORARY DIVERSION DITCH
- TREE PROTECTION FENCING
- SILT FENCE
- TEMPORARY INLET PROTECTION
- TEMPORARY WATTLE DITCH PROTECTION
- TEMPORARY SEDIMENT BASIN
- RIP-RAP OUTLET PROTECTION
- CONSTRUCTION ENTRANCE

DITCH LINING KEY

- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)



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Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELLY

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY
NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

PLAN & PROFILE WATERLINE TIE TO CANOPY DRIVE

DRAWING SCALE

1"=50'

PLAN SET

INFRASTUCTURE DRAWINGS

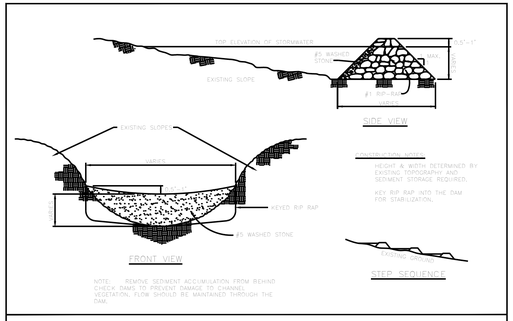
DATE

7-26-2016

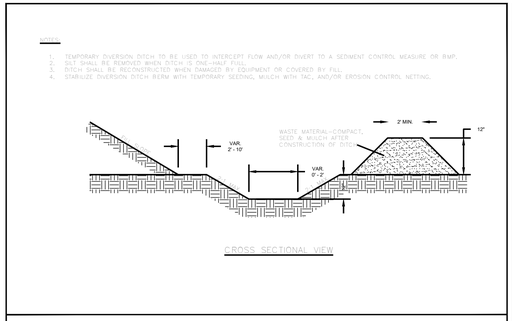
SHEET NUMBER

PP-7

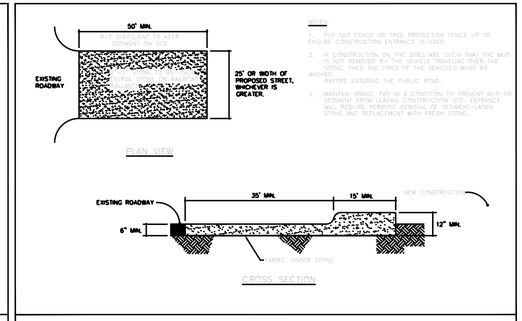
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION



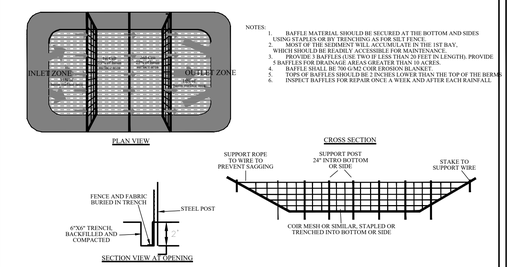
STANDARD CHECK DAM 1



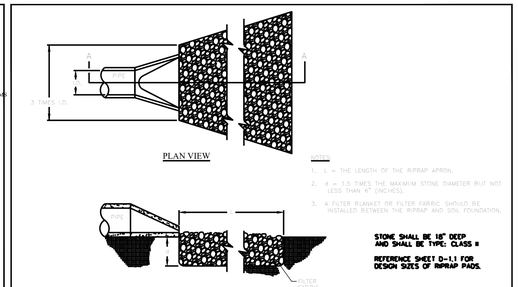
STANDARD TEMPORARY DIVERSION DITCH 3



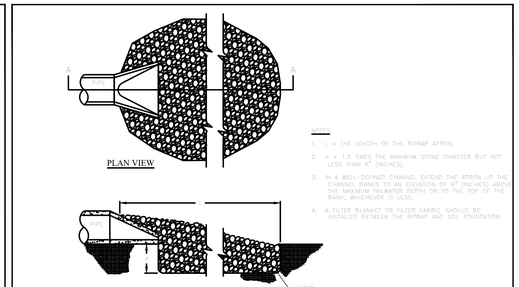
STANDARD CONSTRUCTION ENTRANCE 4



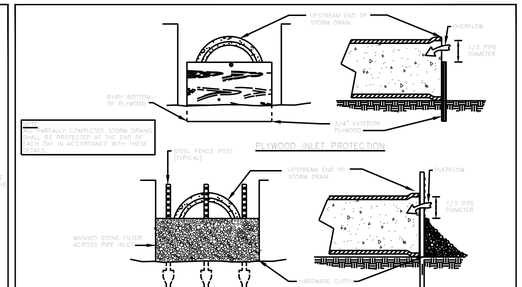
STANDARD BAFFLES DETAIL 5



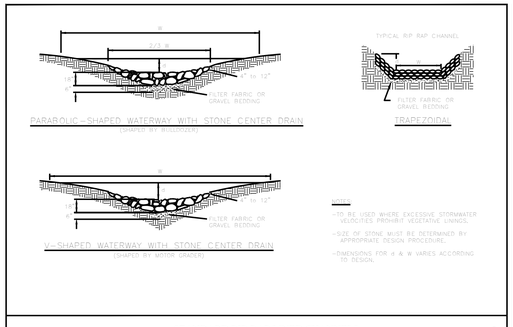
STANDARD PIPE OUTLET TO FLAT AREA
NO WELL-DEFINED CHANNEL 6



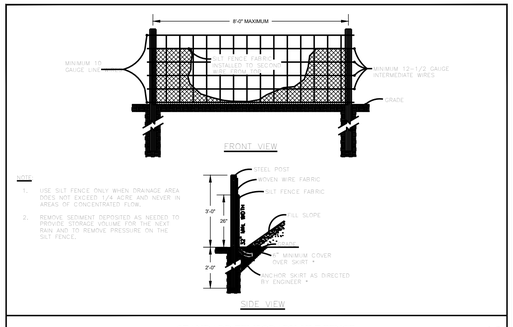
STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL 7



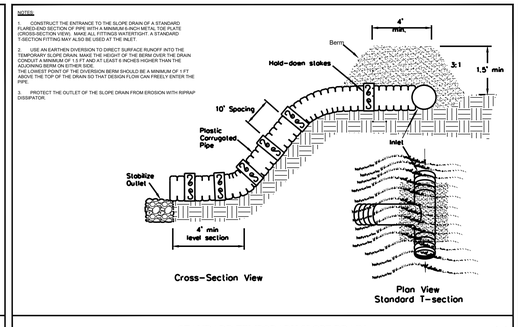
STANDARD PIPE INLET PROTECTION (PLYWOOD & STONE) 8



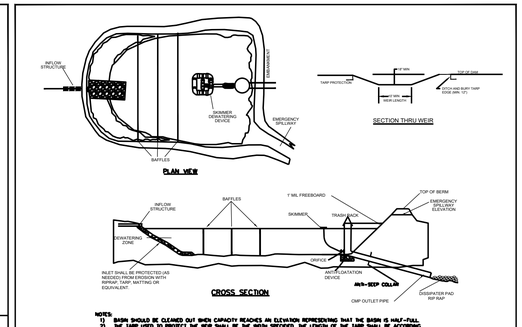
STANDARD RIP-RAP LINED CHANNELS 9



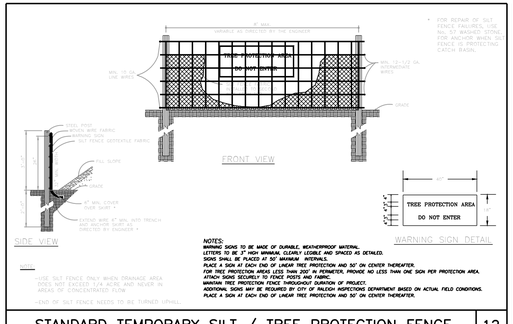
STANDARD TEMPORARY SILT FENCE 10



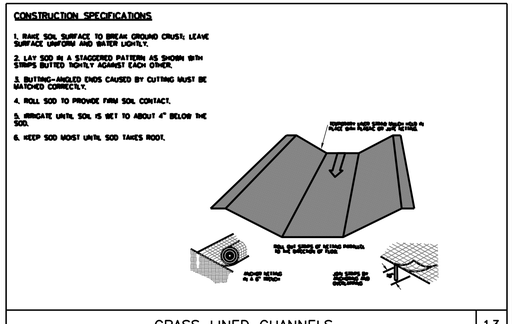
STANDARD TEMPORARY SLOPE DRAIN 11



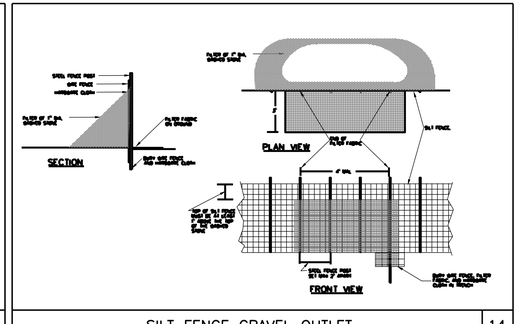
STANDARD SKIMMER ATTACHED TO PERMANENT RISER 15



STANDARD TEMPORARY SILT / TREE PROTECTION FENCE 12



GRASS LINED CHANNELS 13



SILT FENCE GRAVEL OUTLET 14

NOTES

1. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

B&F CONSULTING
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Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL SEAL 027449 ENGINEER AMBER FARRELLY July 26, 2016

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

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DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

DETAILS

DRAWING SCALE

AS SHOWN

PLAN SET

INFRASTUCTURE DRAWINGS

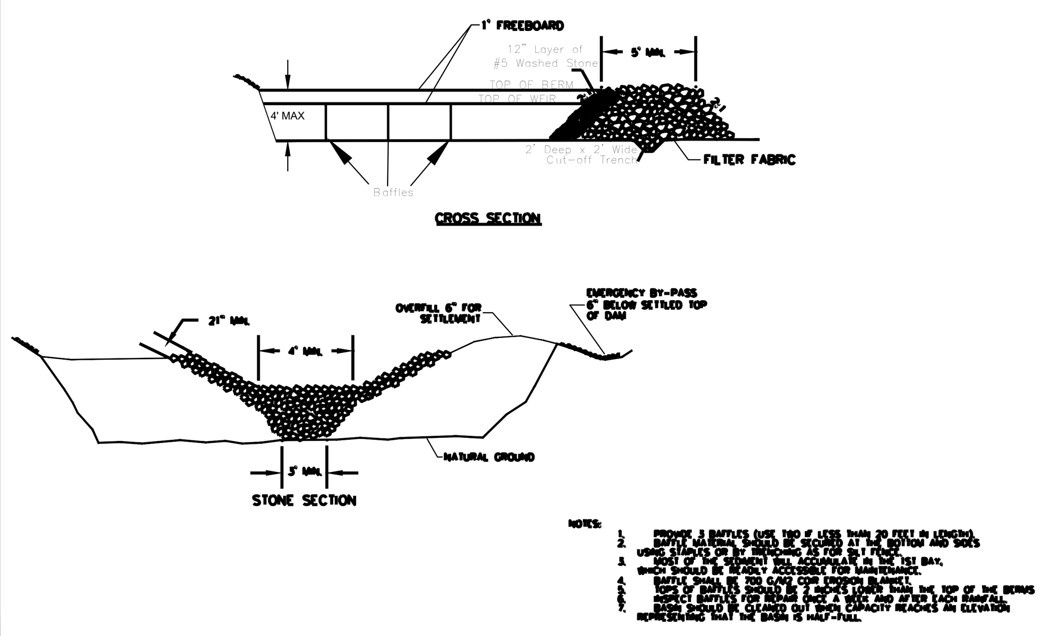
DATE

7-26-2016

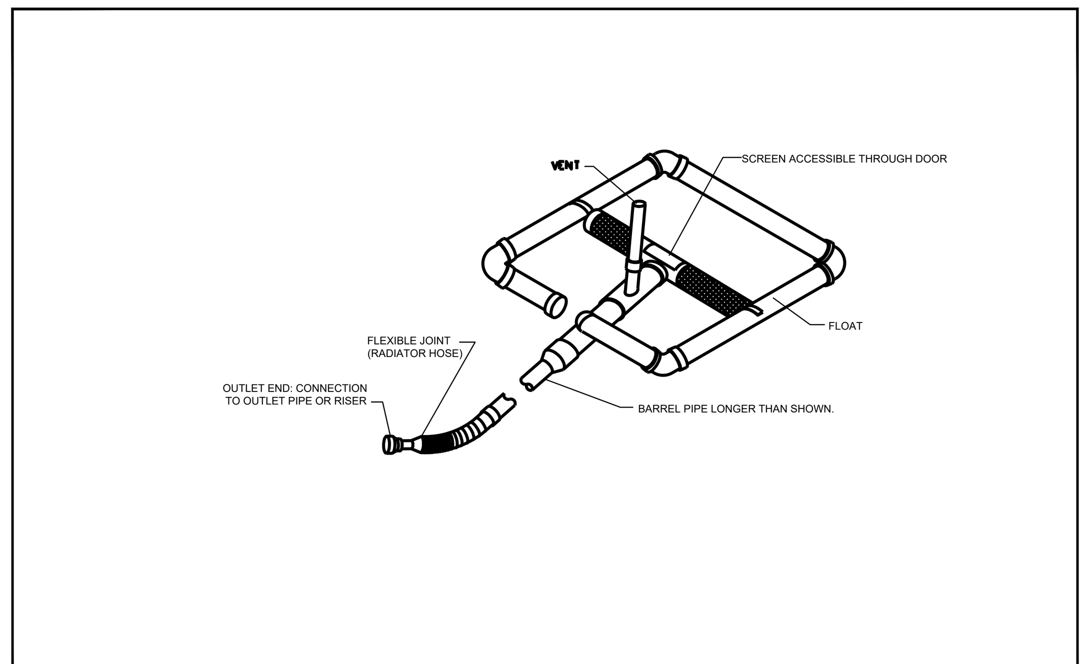
SHEET NUMBER

D-1

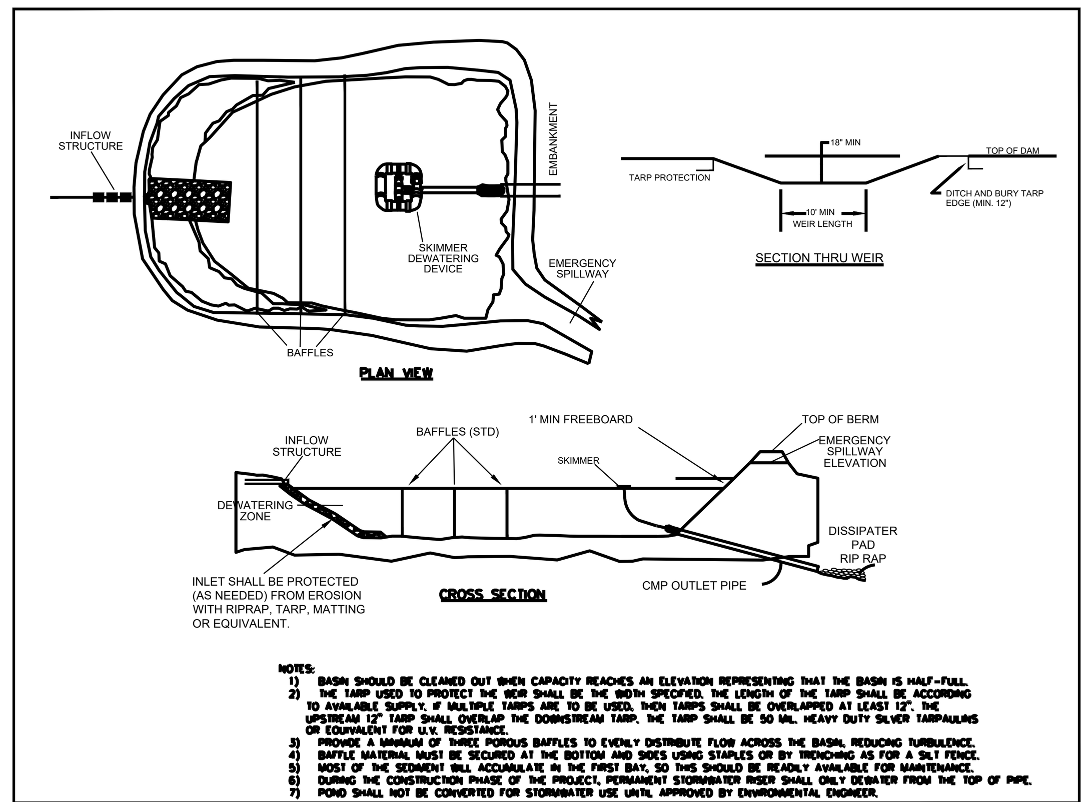
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION



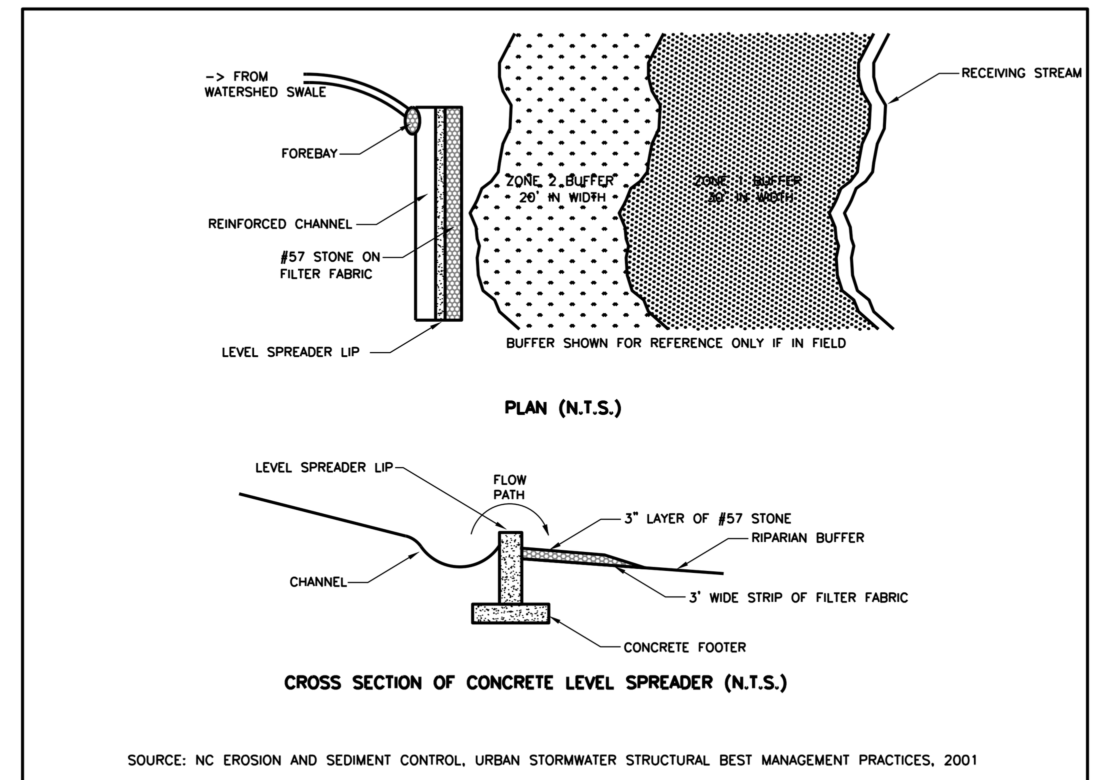
STANDARD ROCK DAM SEDIMENT BASIN 1



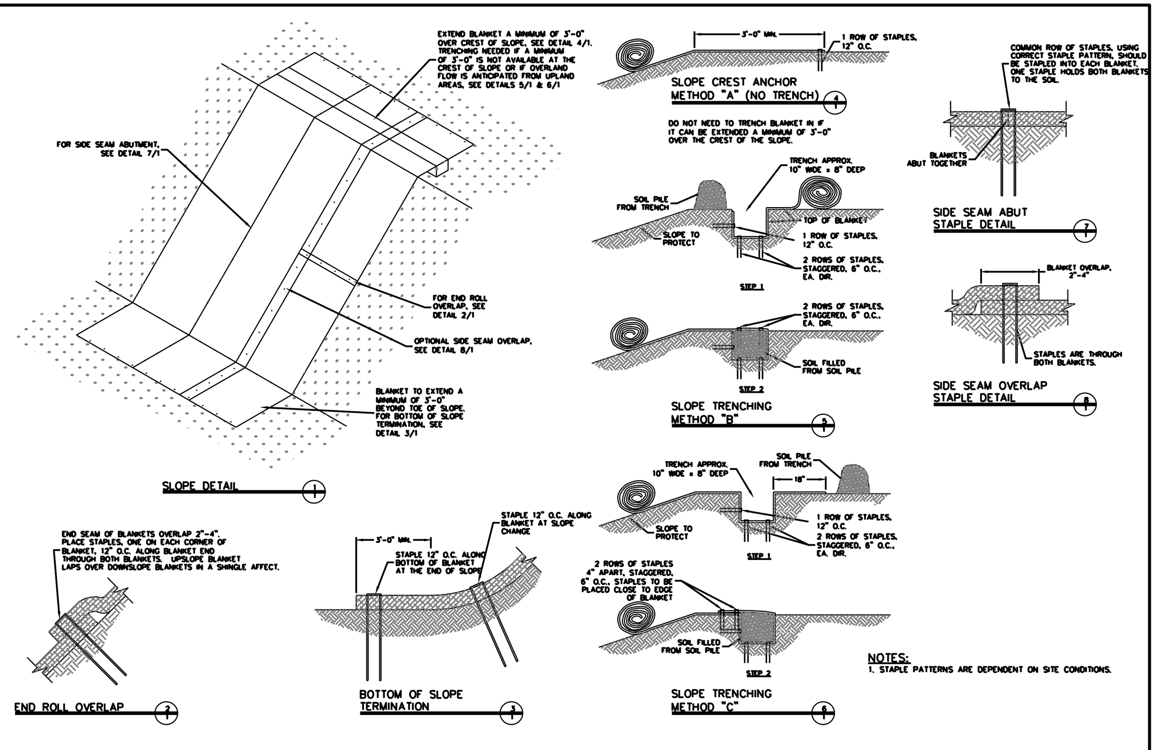
STANDARD SKIMMER DETAIL 2



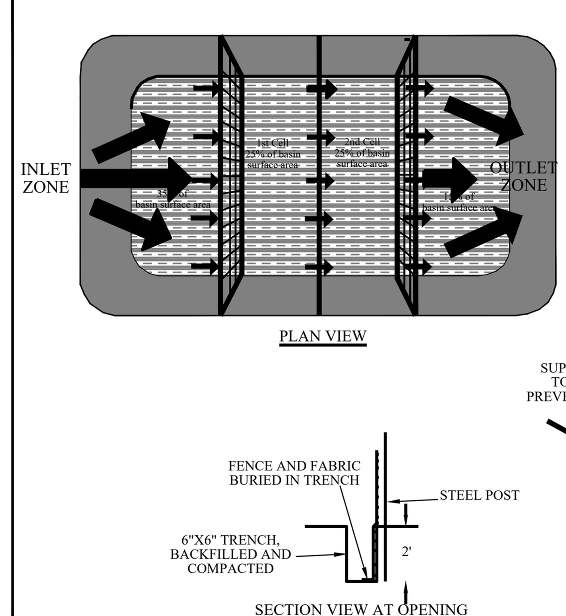
STANDARD SKIMMER BASIN 3



LEVEL FLOW SPREADER 4



EROSION CONTROL BLANKET SLOPE INSTALLATION 5



NOTES:
1. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
2. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 5 BAFFLES FOR DRAINAGE AREAS GREATER THAN 10 ACRES.
4. BAFFLE SHALL BE 700 G/M2 COIR EROSION BLANKET.
5. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS
6. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH RAINFALL

STANDARD BAFFLES DETAIL 6

PERMANENT SEEDING SCHEDULE AND PREPARATION

SEEDING SCHEDULE
(REVISED: 1-1-86)

SHOULDERS, SIDE DITCHES, SLOPES (MAX. 3:1)

DATE	TYPE	PLANTING RATE
Aug 15– Nov 1	Tall Fescue	300 lbs./acre
Nov 1 – Mar 1	Tall Fescue and	300 lbs./acre
	Abruzzi Rye	25lbs./acre
Mar 1 – Apr 15	Tall Fescue	300 lbs./acre
Apr 15 – Jun 30	Hulled Common Bermudagrass	25 lbs./acre
Jul 1 – Aug 15	Tall Fescue and	125 lbs./acre
	***Browntop Millet or	35 lbs./acre
	***Sorghum–Sudan Hybrids	30 lbs./acre

SLOPES (3:1 TO 2:1)

DATE	TYPE	PLANTING RATE
Mar 1 – June 1	Sericea Lespedeza (scarified)	50 lbs./acre
Mar 1 – Apr 15	and Tall Fescue	120 lbs./acre
Mar 1 – June 30	or add Weeping Love grass	10 lbs./acre
Mar 1 – June 30	or add Hulled Common Bermudagrass	25 lbs./acre
Jun 1 – Sept 1	Tall Fescue and	120 lbs./acre
	and Browntop Millet	35 lbs./acre
	or Sorghum–Sudan Hybrids***	30 lbs./acre
Sept 1 – Mar 1	Sericea Lespedeza (unhulled–unscarified)	70 lbs./acre
	and Tall Fescue	120 lbs./acre
Nov 1 – Mar 1	add Abruzzi Rye	25 lbs./acre

Consult Conservation Engineer or Soil Conservation Service for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those which do well under local conditions; other seeding rate combinations are possible.

***Temporary–Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12" in height before mowing, otherwise fescue may be shaded out.

SEEDBED PREPARATION

1.) Chisel compacted areas and spread topsoil 3 inches deep over adverse soil conditions, if available.
2.) Rip the entire area to 6 inches deep.
3.) Remove all loose rock, roots, and other obstructions leaving surface reasonably smooth and uniform.
4.) Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see below*).
5.) Continue tillage until a well–pulverized, firm, reasonable uniform seedbed is prepared 4 to 6 inches deep.
6.) Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding.
7.) Mulch immediately after seeding and anchor mulch.
8.) Inspect all seeding areas and make necessary repairs or reseedings within the planting season, if possible. if stand should be over 60% damage, reestablish following original lime, fertilizer and seeding rates.
9.) Consult conservation inspector on maintenance treatment and fertilization after permanent cover is established.

APPLY: Agricultural LImestone – 2 tons/acre (3 tons/acre in clay soils)
Fertilizer – 1,000 lbs/acre – 10–10–10
Superphosphate – 500 lbs./acre – 20% analysis
Mulch – 2 tons/acre – small grain straw
Anchor – Asphalt Emulsion @ 300 gals./acre

TEMPORARY SEEDING

PURPOSE

1.) To stabilize disturbed areas before final grading or in a season not suitable for permanent seeding.

MINIMUM REQUIREMENTS

1.) Seedbed Preparation: lime and fertilizer incorporated 4–6 inches, where conditions allow, steep slopes roughened by tracking.
2.) Plant selection: temporary species appropriate for season and region.
3.) Seed quality: North Carolina certified seed, testinged within the past 9 months.
4.) Mulch: effective mulch such as clean grain straw, tacked and/or tied down with netting to protect seedbed and encourage plant growth.

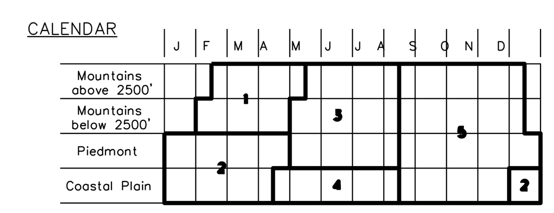
INSTALLATION

1.) Seedbed preparation: Apply soil amendments evenly and incorporate to a depth of 4–6 inches, if possible. Follow recommendations of soil tests or apply 2000 lb/acre ground agricultural limestone and 700–1000 lb/acre 10–10–10 fertilizer. Loosen surface just before broadcasting seed.
2.) Select an appropriate temporary species based on the calendar in the next figure. Avoid seeding in December or January. If necessary to seed at those times, use rye grain and a securely tacked mulch.
3.) Apply seed evenly using a cyclone seeder, rotary–spreader, drop–spreader, cultipack seeder, or hydroseeder. Hand broadcasting is not recommended because it is difficult to achieve a uniform stand.
4.) Cover broadcast seed by raking or by dragging a chain. Firm lightly with a roller or cultipacker.
5.) When drill–seeding, plant small grains no more than 1 inch deep, and grasses and legumes no more than 1/2 inch deep.
6.) Mulch all seedings to reduce erosion and encourage seedling growth. Straw mulch is comonly used on gently sloping areas. Spread evenly at a rate of 2 tons/acre and anchor securely with tackifier, asphalt or netting. Netting is the most effective method on steep slopes and in channels.

MAINTENANCE

1.) Inspect within 6 weeks of planting to see if stands are adequate. Check for damage after heavy rains. Stands should be uniform and dense. Fertilize, reseed, and mulch damaged and sparce areas immeditely. Tack or tie down mulch as necessary.
2.) Topdress fall plantings with 50 lb/acre nitrogen in February or March.

CALENDAR



PLANTING LEGEND

1	Korean Lespedeza with Rye Grain	50 lb/acre 120 lb/acre
2	Kobe Lespedeza with Rye Grain	50 lb/acre 120 lb/acre
3	German Millet or Sudangrass	40 lb/acre 50 lb/acre
4	German Millet	40 lb/acre
5	Rye Grain	120 lb/acre

SEEDING INFORMATION 7

GROUND STABILIZATION*
DWQ CONSTRUCTION GENERAL PERMIT SCHEDULE

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME 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, then 14 days are allowed
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50 feet in length
All other areas with slopes flatter than 4:1	14 days	None (except for perimeters and HWQ Zones noted above)

* Extensions of time may be approved by the permitting authority based on weather or other site–specific conditions that make compliance impractical.

NPDES GROUND STABILIZATION 8

Storm Drainage Summary - Sunset Grove Subdivision - Phase 1

Invert	Q (cfs)	Diameter (feet)	Area (sq.ft.)	V=Q/A (fps)	Type of Stone	Mirafi 140N Required?	Length of Pad (ft.)	Width of Pad (ft.)	Thickness of Pad (in)
INV-7	12.8	2.00	3.1	4.1	Class B	Yes	16.0	8.0	27
END-9	78.8	3.00	7.1	11.2	Class 1	Yes	16.0	8.0	27
FES-11	23.8	2.00	3.1	7.6	Class 1	Yes	16.0	8.0	27
FES-13B	14.3	1.50	1.8	8.1	Class B	Yes	12.0	6.0	27
INV-17	30.0	1.50	1.8	17.0	Class 1	Yes	12.0	12.0	27
INV-18	30.0	1.50	1.8	17.0	Class 1	Yes	20.0	10.0	27

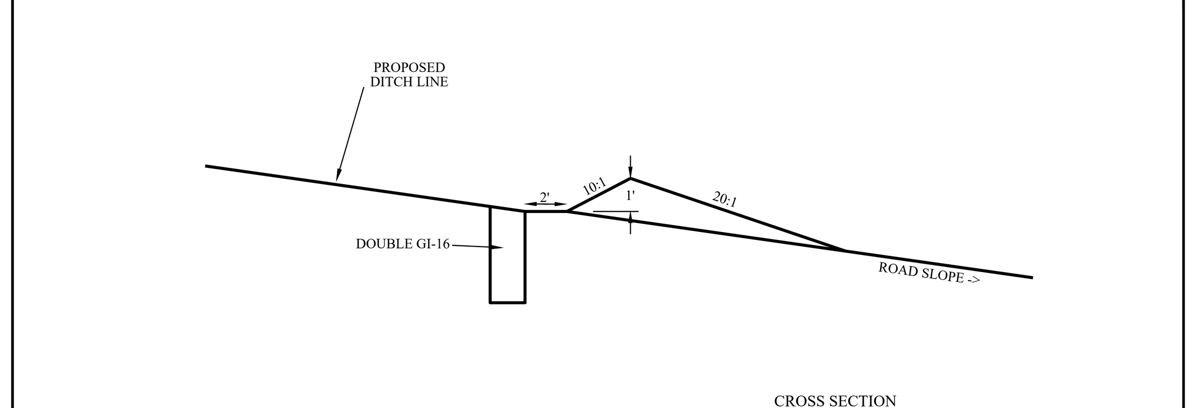
Storm Drainage Summary - Sunset Grove Subdivision - Phase 1
Summary of Pipes - 7/19/2016

From	To	Rational C	Intensity (in/hr)	Area (ac)	Q_10 (cfs)	Q (cfs)	Length (ft)	Diameter (inches)		calculated DIA. (inches)	Slope (%)	Invert (From)	Invert (To)
Mt. Gilead Road Driveway Pipes													
INV-1	INV-2	0.60	7.34	0.40	1.8	1.8	32.0	15	RCP	**8.1**	2.00%	461.11	461.75
INV-3	INV-4	0.60	7.34	1.40	6.2	7.9	40.0	15	RCP	**14.2**	2.00%	456.95	457.75
INV-5	INV-6	0.60	7.34	0.40	1.8	9.7	42.6	15	RCP	**13.9**	3.30%	454.34	455.75
INV-7	INV-8	0.60	7.34	0.70	3.1	12.8	52.9	24	RCP*	**22.0**	0.50%	450.81	451.08
INV-20	INV-21	0.60	7.34	0.20	0.9	0.9	77.0	15	RCP	**7.1**	1.00%	444.31	445.08
Subdivision Cross-Pipes													
END-9	END-10	0.60	7.34	17.90	78.8	78.8	66.0	36	RCP	**26.9**	6.52%	443.95	448.25
FES-11	INV-12	0.60	7.34	5.40	23.8	23.8	112.0	24	RCP	**17.6**	5.80%	488.00	494.50
INV-10A	INV-10B	0.60	7.34	0.50	2.2	2.2	41.4	15	RCP	**7.2**	6.00%	515.32	517.80
FES-13B	GI-13A	0.70	7.34	0.05	0.3	14.3	102.0	18	RCP	**17.7**	2.00%	445.14	447.18
GI-13A	GI-13	0.70	7.34	0.04	0.2	14.1	143.2	18	RCP	**17.6**	2.00%	447.38	450.24
GI-13	GI-14	0.70	7.34	0.30	1.5	13.9	53.3	15	RCP	**14.8**	5.00%	450.44	453.11
GI-14	GI-15	0.70	7.34	1.80	9.2	12.3	37.8	15	RCP*	**14.7**	4.00%	453.31	454.82
GI-15	GI-16	0.70	7.34	0.60	3.1	3.1	43.3	15	RCP	**9.6**	2.50%	455.07	456.15
SCM-A Outlet													
INV-17	INV-17A	0.70	7.34				20.0	18	RCP		0.50%	421.90	422.00
							(note: SCM-A has 2-18" RCP outlets)						
SCM-B Outlet													
INV-18	RISER	0.70	7.34				70.0	18	RCP		5.50%	476.15	480.00

All pipe is RCP Type III unless noted on plans. Pipes from INV-7 to INV-8 and DI-14 to DI-15 are RCP Type IV (min. 1' cover to subgrade)

Storm Drainage Summary
Summary of Structures

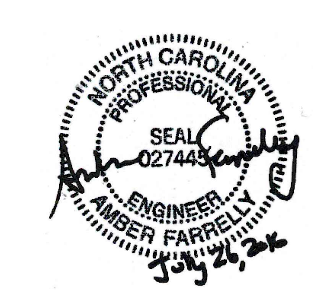
Structure	Type	Rational C	Area (ac)	Q_10 (cfs)	Reference Elevation (TOP)	Depth (ft)
INV-2	PIPE OPENING	0.60	0.40	1.8	466.00	4.3
INV-4	PIPE OPENING	0.60	1.40	6.2	462.00	4.3
INV-6	PIPE OPENING	0.60	0.40	1.8	460.00	4.3
INV-8	PIPE OPENING	0.60	0.70	3.1	455.20	4.1
INV-21	PIPE OPENING	0.60	0.20	0.9	448.00	2.9
END-10	ENDWALL	0.60	17.90	78.8	454.27	6.0
INV-12	PIPE OPENING	0.60	5.40	23.8	504.10	9.6
INV-10B	PIPE OPENING	0.60	0.50	2.2	521.00	3.2
GI-13A	GRATED INLET	0.70	0.05	0.3	452.16	5.0
GI-13	GRATED INLET	0.70	0.04	0.2	454.61	4.4
GI-14	DOUBLE GRATED INLET	0.70	0.30	1.5	456.83	3.7
GI-15	GRATED INLET	0.70	1.80	9.2	460.57	5.8
GI-16	DOUBLE GRATED INLET	0.70	0.60	3.1	460.65	4.5
INV-17A	DOUBLE 18" PIPES	0.70	0.00	0.0	424.00	2.0
RISER	4'X4' BOX RISER	0.70	0.00	0.0	489.30	9.3



FALSE SUMP DETAIL (WESTVIEW STA. 19+75) N.T.S. 9

NOTES
1. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

B&F CONSULTING
2805 Tobermory Lane
Raleigh, NC 27606
Phone No. (919) 618-0180
License No. C-2149



REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC, CHATHAM CO. EROSION CONTROL, STORMWATER, AND STREET NAME CHANGES (ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY
NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

DETAILS

DRAWING SCALE

AS SHOWN

PLAN SET

INFRASTUCTURE DRAWINGS

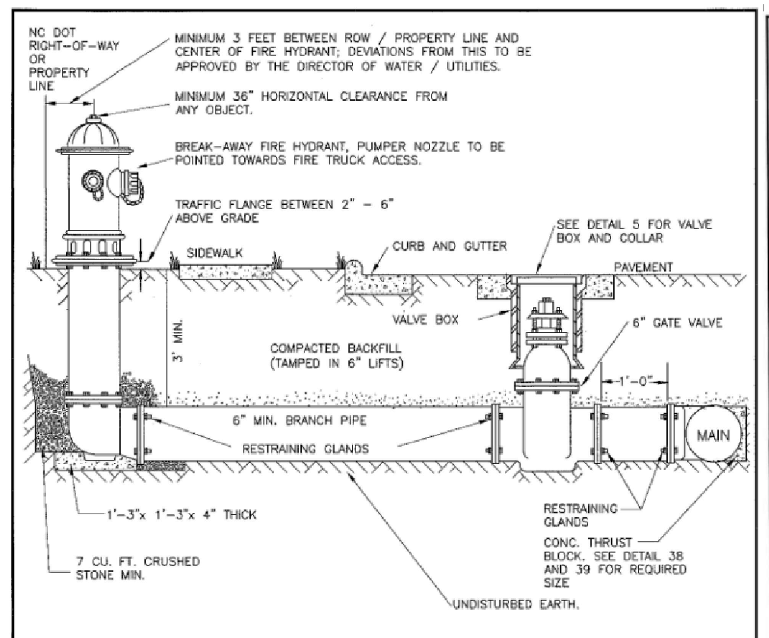
DATE

7-26-2016

SHEET NUMBER

D-2

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

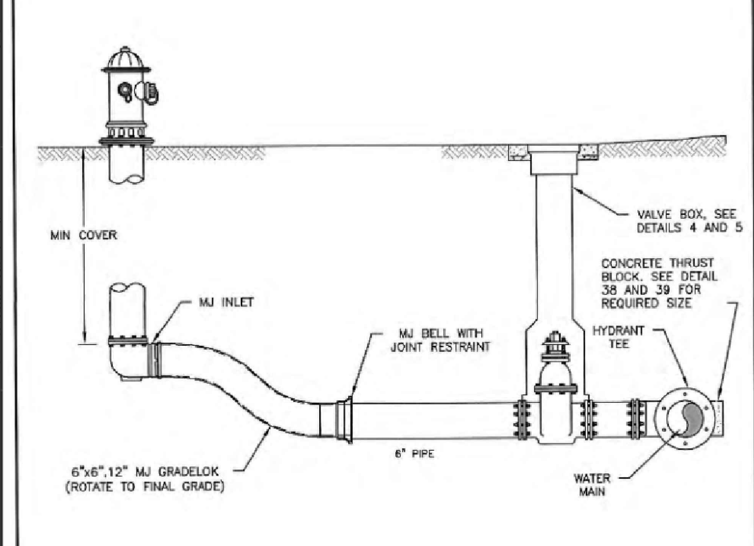


NOTES:
1. FIRE HYDRANT SHALL BE AS MANUFACTURED BY: MUELLER, AMERICAN DARLING, KENNEDY OR CLOW.
2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150
3. 6" GATE VALVE SHALL BE AWWA C500 OPEN LEFT
4. STEEL RODS AND BOLTS SHALL BE ¾" HOT DIPPED GALVANIZED
5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION
FIRE HYDRANTS TO BE LOCATED IN ROW OR 5 FOOT EASEMENT ADJACENT TO ROW

ANYTIME SITE WORK, CONSTRUCTION, ROAD WORK, OR ANY OTHER WORK CHANGES THE GRADE OF THE FIRE HYDRANT, THE PERSON RESPONSIBLE FOR THE WORK IS RESPONSIBLE FOR ADJUSTING THE FIRE HYDRANT TO STAY WITHIN COMPLIANCE.

DETAIL 1 — REVISION DATE JULY 1, 2015 — FIRE HYDRANT ASSEMBLY

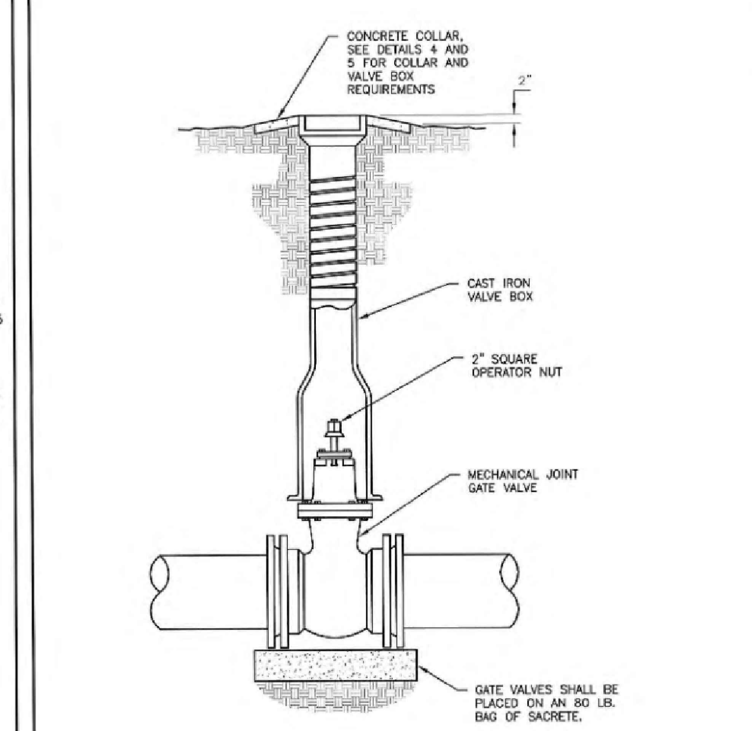
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
(919) 852-8270 (BUS) (919) 852-8282 (FAX)
CHATHAM COUNTY NORTH CAROLINA



NOTES:
1. REFER TO DETAIL 1 FOR FURTHER NOTES, PLACEMENT BACKFILL, AND OTHER RELEVANT INFORMATION.

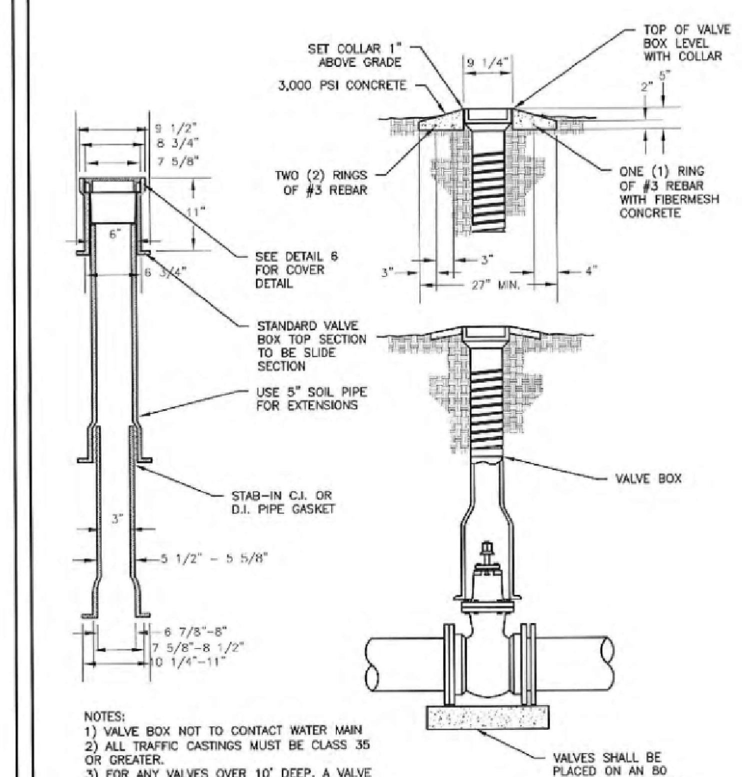
DETAIL 2 — REVISION DATE JULY 1, 2015 — TYP. FIRE HYDRANT & GATE VALVE WITH GRADELOK

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



DETAIL 3 — REVISION DATE JULY 1, 2015 — GATE VALVE ASSEMBLY

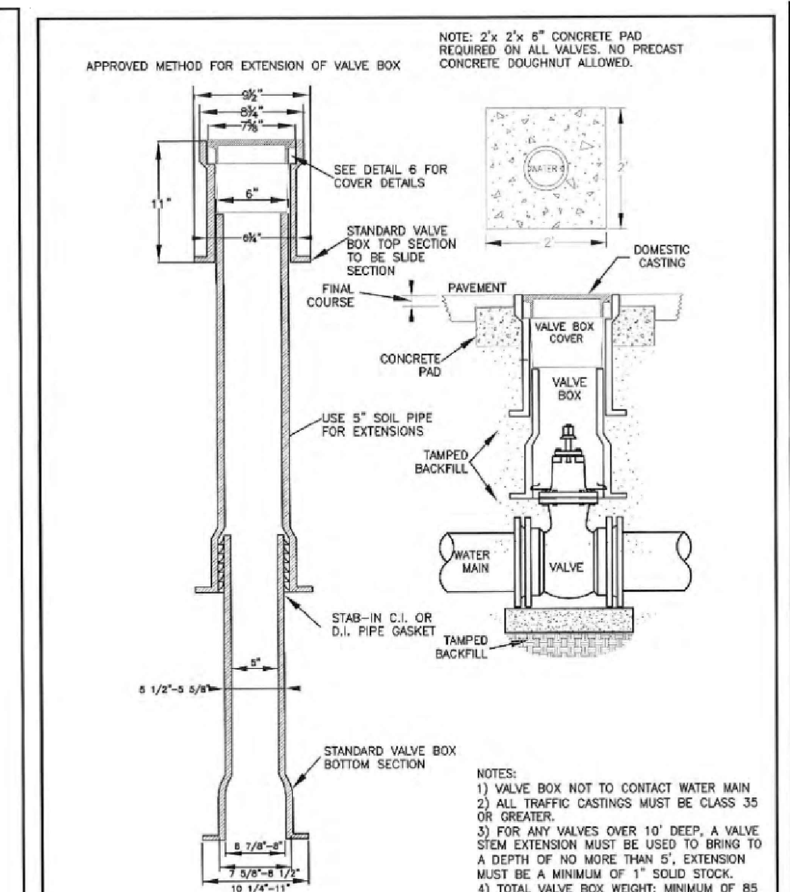
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1) VALVE BOX NOT TO CONTACT WATER MAIN
2) ALL TRAFFIC CASTINGS MUST BE CLASS 35 OR GREATER.
3) FOR ANY VALVES OVER 10' DEEP, A VALVE STEM EXTENSION MUST BE USED TO BRING TO A DEPTH OF NO MORE THAN 5'. EXTENSION MUST BE A MINIMUM OF 1" SOLID STOCK.
4) TOTAL VALVE BOX WEIGHT: MINIMUM OF 85 LBS.

DETAIL 4 — REVISION DATE JULY 1, 2015 — VALVE BOX AND COLLAR NOT IN PAVEMENT

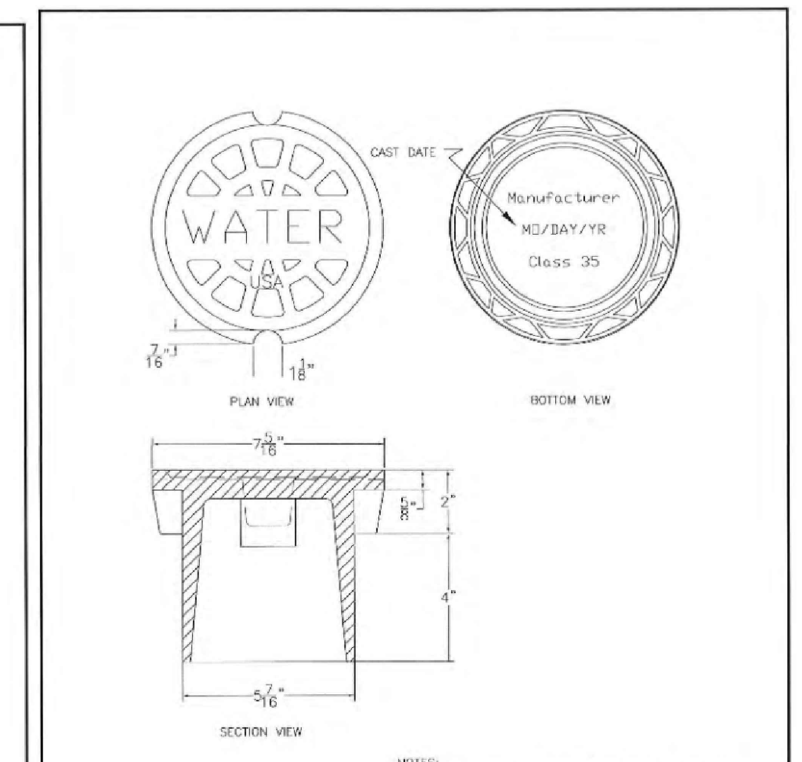
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1) VALVE BOX NOT TO CONTACT WATER MAIN
2) ALL TRAFFIC CASTINGS MUST BE CLASS 35 OR GREATER.
3) FOR ANY VALVES OVER 10' DEEP, A VALVE STEM EXTENSION MUST BE USED TO BRING TO A DEPTH OF NO MORE THAN 5'. EXTENSION MUST BE A MINIMUM OF 1" SOLID STOCK.
4) TOTAL VALVE BOX WEIGHT: MINIMUM OF 85 LBS.

DETAIL 5 — REVISION DATE JULY 1, 2015 — VALVE BOX AND COLLAR IN PAVEMENT

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

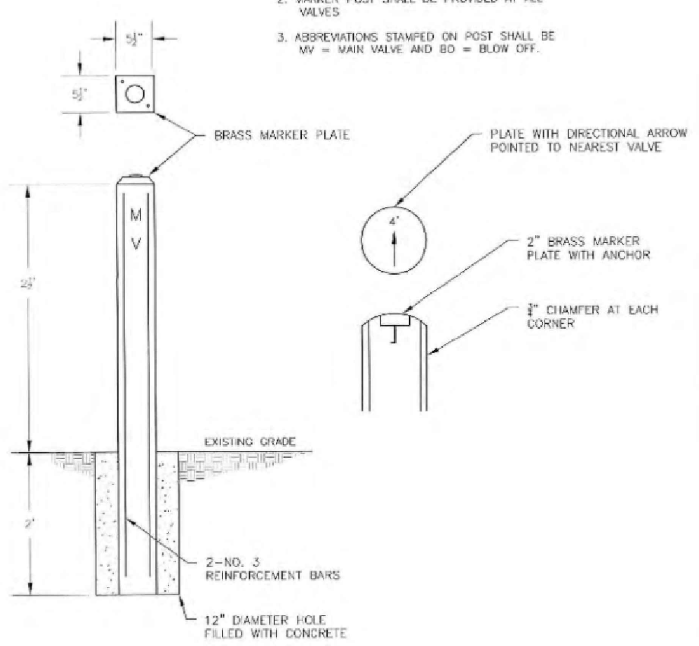


NOTES:
1. "WATER" LETTERING MUST BE 1" RAISED (RECESSED FLUSH)
2. VALVE COVER SHALL BE DOMESTICALLY CAST.
3. COVER MUST HAVE A MINIMUM WEIGHT OF 25 POUNDS.
4. COVER MUST BE CLASS 35 OR GREATER.
5. COVER MUST MEET OR EXCEED AASHTO H-20 LOAD REQUIREMENTS.

DETAIL 6 — REVISION DATE JULY 1, 2015 — VALVE BOX COVER

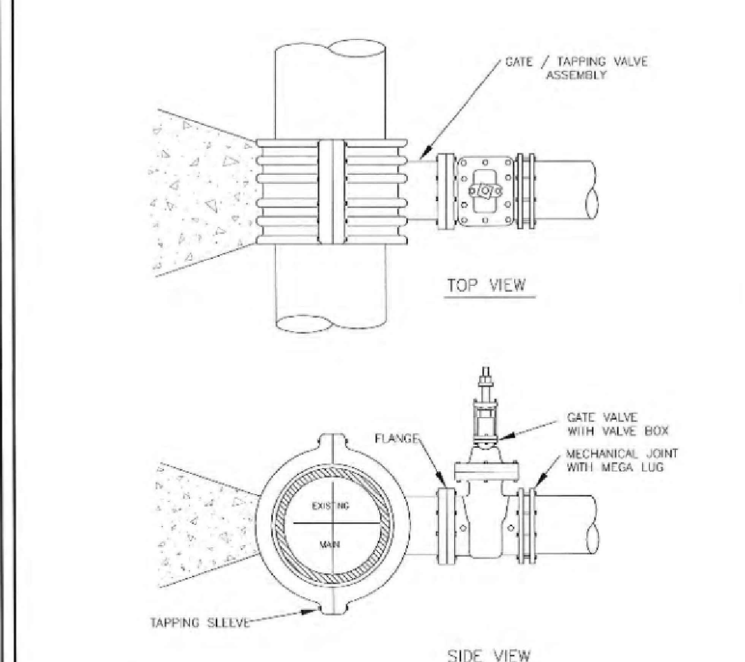
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

NOTES:
1. MARKER POST SHALL BE INSTALLED AT THE EDGE OF THE DOT RIGHT-OF-WAY OR PROPERTY LINE.
2. MARKER POST SHALL BE PROVIDED AT ALL VALVES.
3. ABBREVIATIONS STAMPED ON POST SHALL BE MV = MAIN VALVE AND BO = BLOW OFF.



DETAIL 7 — REVISION DATE JULY 1, 2015 — VALVE MARKER POST

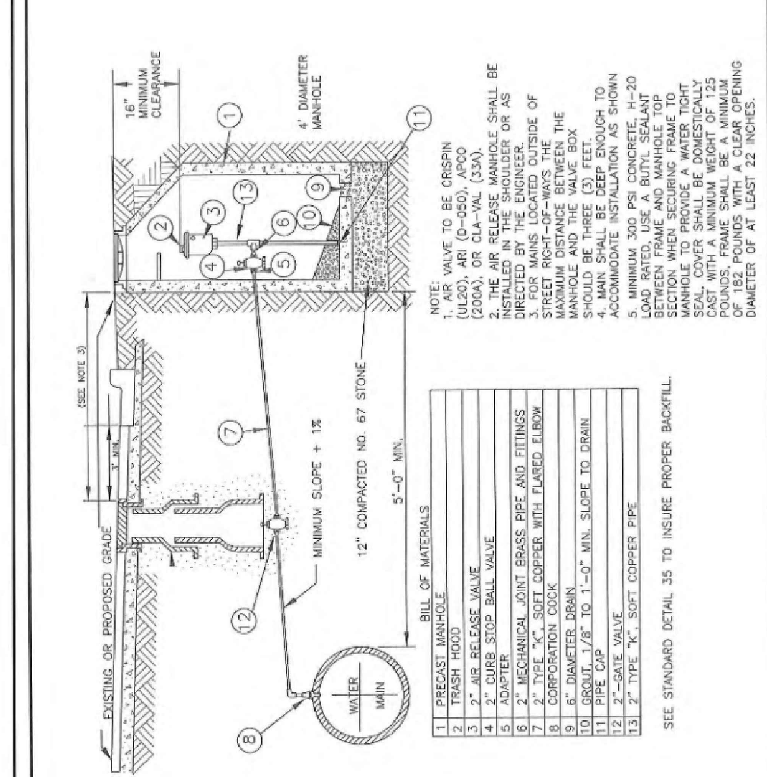
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. 3000 PSI SOLID CONCRETE SHALL BE USED AS FOOTING FOR DUCTILE IRON PIPE.
3. SEE STANDARD REACTION BLOCK TABLES, DETAILS 38 AND 39 FOR AREA OF CONCRETE REQUIRED.

DETAIL 8 — REVISION DATE JULY 1, 2015 — 4" - 24" TAPPING SLEEVE ASSEMBLY

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



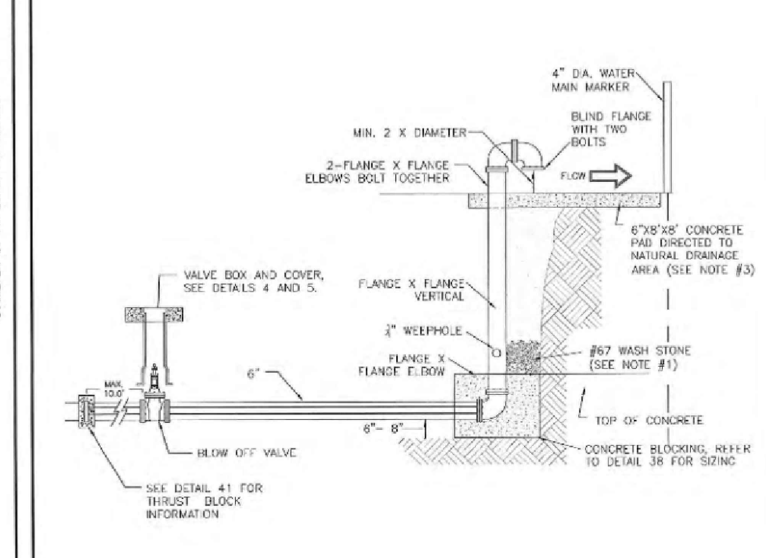
NOTE:
1. AIR VALVE TO BE CRISPIN (UL20), ARI (D-050), APCO (200A), OR CLA-VAL (33A).
2. THE AIR RELEASE MANHOLE SHALL BE INSTALLED IN THE SHOULDER OR AS DIRECTED BY THE ENGINEER.
3. FOR MAINS LOCATED OUTSIDE OF STREET RIGHT-OF-WAYS THE MAXIMUM DISTANCE BETWEEN THE MANHOLE AND THE VALVE BOX SHOULD BE THREE (3) FEET.
4. MAIN SHALL BE DEEP ENOUGH TO ACCOMMODATE INSTALLATION AS SHOWN
5. MINIMUM 300 PSI CONCRETE, H-20 LOAD RATED. USE A BUTYL SEALANT BETWEEN FRAME AND MANHOLE TOP SECTION WHEN SECURING FRAME. TOP SEAL COVER SHALL BE DOMESTICALLY CAST WITH A MINIMUM WEIGHT OF 125 POUNDS, FRAME SHALL BE A MINIMUM OF 182 POUNDS WITH A CLEAR OPENING DIAMETER OF AT LEAST 22 INCHES.

BILL OF MATERIALS	
1	PRECAST MANHOLE
2	TRASH HOOD
3	2" AIR RELEASE VALVE
4	2" CURB STOP BALL VALVE
5	ADAPTER
6	2" MECHANICAL JOINT BRASS PIPE AND FITTINGS
7	2" TYPE "K" SOFT COPPER WITH FLARED ELBOW
8	CORPORATION COCK
9	6" DIAMETER DRAIN
10	GROUT, 1/8" TO 1'-0" MIN. SLOPE TO DRAIN
11	PIPE CAP
12	2" GATE VALVE
13	2" TYPE "K" SOFT COPPER PIPE

SEE STANDARD DETAIL 35 TO INSURE PROPER BACKFILL.

DETAIL 11 — REVISION DATE FEB. 23, 2016 — STANDARD WATER AIR RELEASE VALVE

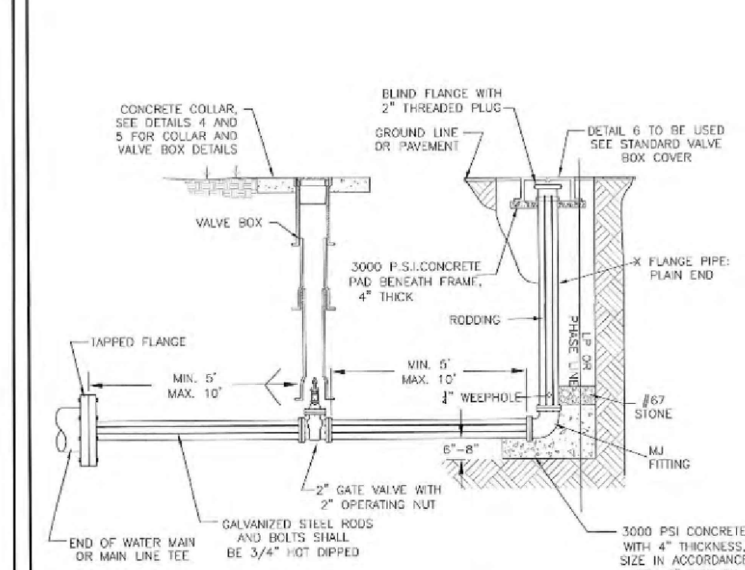
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1. DRILL 1/4" WEEP HOLE FOR STACK DRAINAGE INTO STONE.
2. DOUBLE 3/4" BRIDLE RODS ON BOTH SIDES.
3. A RIP-RAP SWALE FROM FROM CONCRETE SPLASH PAD TO POSITIVE DRAINAGE AREA IS REQUIRED.
4. BOTTOM 90° ELBOW SHALL HAVE BLIND FLANGE ATTACHED WITH TWO BOLTS.
5. INSTALL WATER MAIN MARKER AT R/W OR P/L TO LOCATE MAIN.
6. 3/4" RODS AND BOLTS TO BE HOT DIPPED GALVANIZED.
7. END PIPE SIZE 6" MIN. OR AS APPROVED BY WATER/UTILITIES DEPARTMENT.

DETAIL 12 — REVISION DATE JULY 1, 2015 — PERMANENT WATER MAIN BLOW-OFF ASSEMBLY

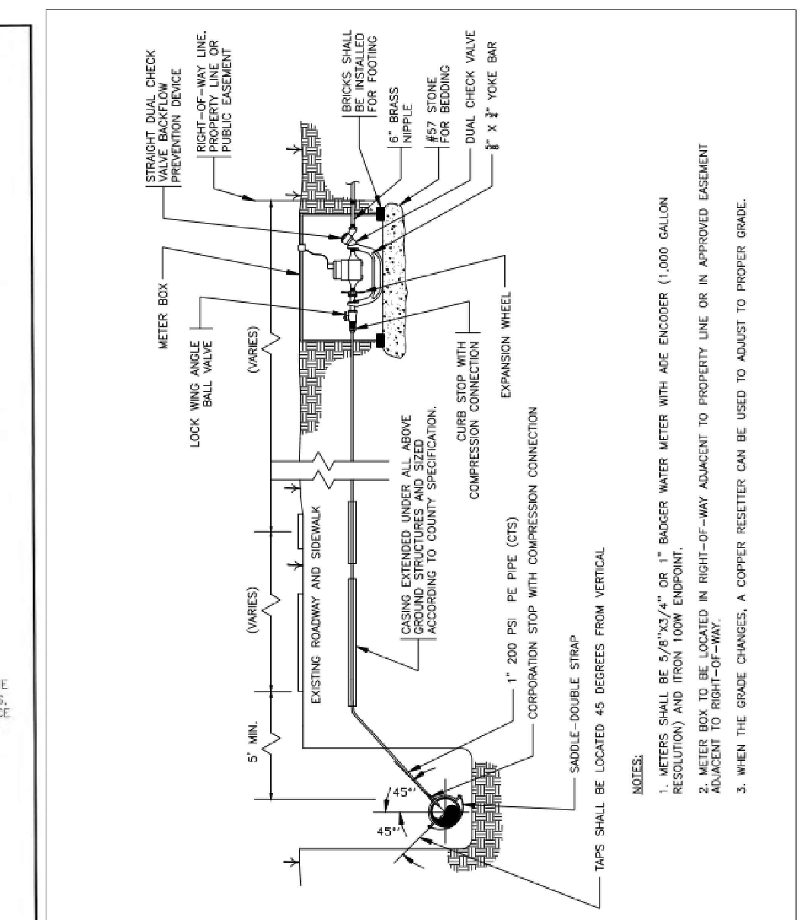
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1) NO ROD COUPLINGS ALLOWED

DETAIL 13 — REVISION DATE JULY 1, 2015 — 2" BLOW-OFF ASSEMBLY AT END OF WATER MAIN

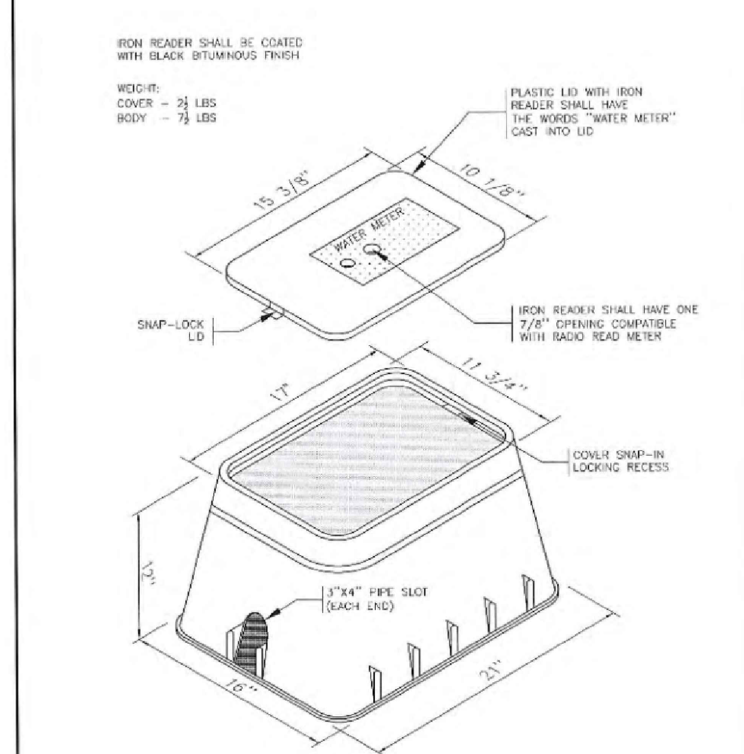
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1. METERS SHALL BE 5/8"X3/4" OR 1" BADGER WATER METER WITH ADE ENCODER (1,000 GALLON RESOLUTION) AND ITRON 100W ENDPOINT.
2. METER BOX TO BE LOCATED IN RIGHT-OF-WAY ADJACENT TO PROPERTY LINE OR IN APPROVED EASEMENT ADJACENT TO RIGHT-OF-WAY.
3. WHEN THE GRADE CHANGES, A COPPER RESETTER CAN BE USED TO ADJUST TO PROPER GRADE.

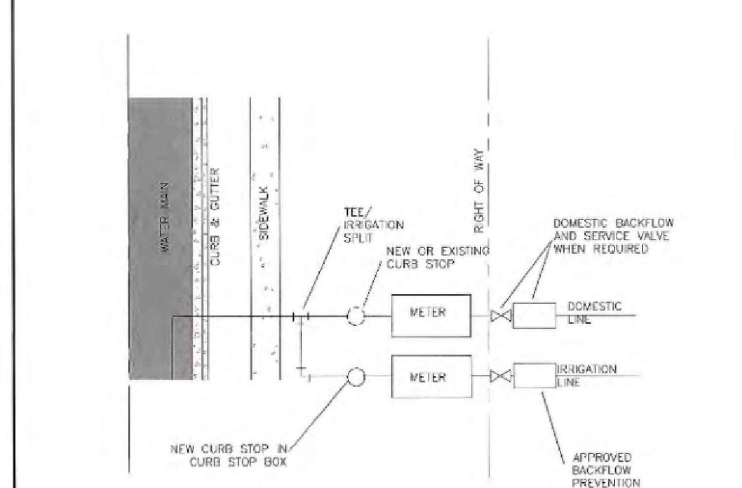
DETAIL 16 — REVISION DATE: NOVEMBER 16, 2015 — ⅝" X ¾" - 1" METER SERVICE CONNECTION

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



DETAIL 17 — REVISION DATE JULY 1, 2015 — WATER METER BOX

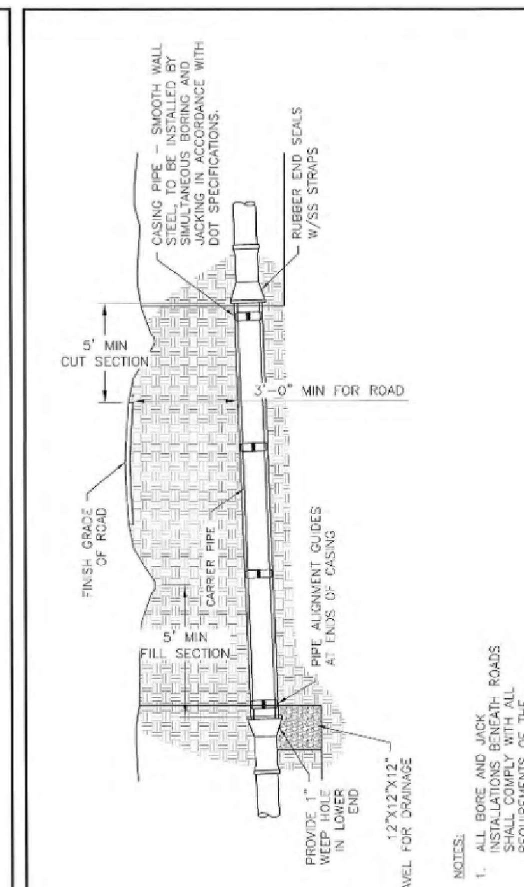
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
2. THE BACKFLOW SHALL BE INSTALLED NO MORE THAN 10' FROM THE METER IN A VISIBLE LOCATION.
3. BACKFLOW RISER/STANDPIPE SHALL BE OF COPPER OR BRASS.
4. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
5. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

DETAIL 23 — REVISION DATE JULY 1, 2015 — IRRIGATION TAP ON NEW AND EXISTING SERVICES

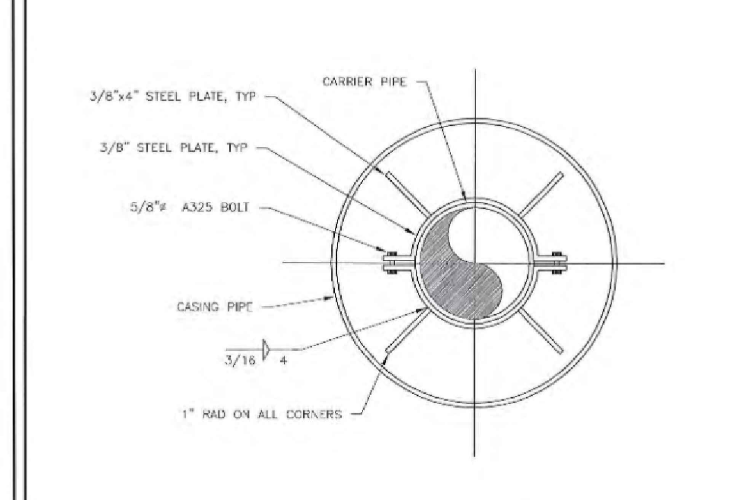
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1. ALL BORE AND JACK INSTALLATIONS BENEATH ROADS SHALL COMPLY WITH ALL REQUIREMENTS OF THE "POLICIES AND PROCEDURES FOR ACCOMMODATING UTILITIES ON HIGHWAY RIGHTS-OF-WAY" AS PREPARED BY NCDOT.
2. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE "POLICIES AND PROCEDURES FOR ACCOMMODATING UTILITIES ON HIGH-WAY RIGHTS-OF-WAY" AS PREPARED BY N.C.D.O.T.
3. SEE SPECIFICATION SECTION 7 FOR REQUIRED CASING PIPE SIZE AND WALL THICKNESS.

DETAIL 32 — REVISION DATE JULY 1, 2015 — BORING AND SPIDER ASSEMBLY

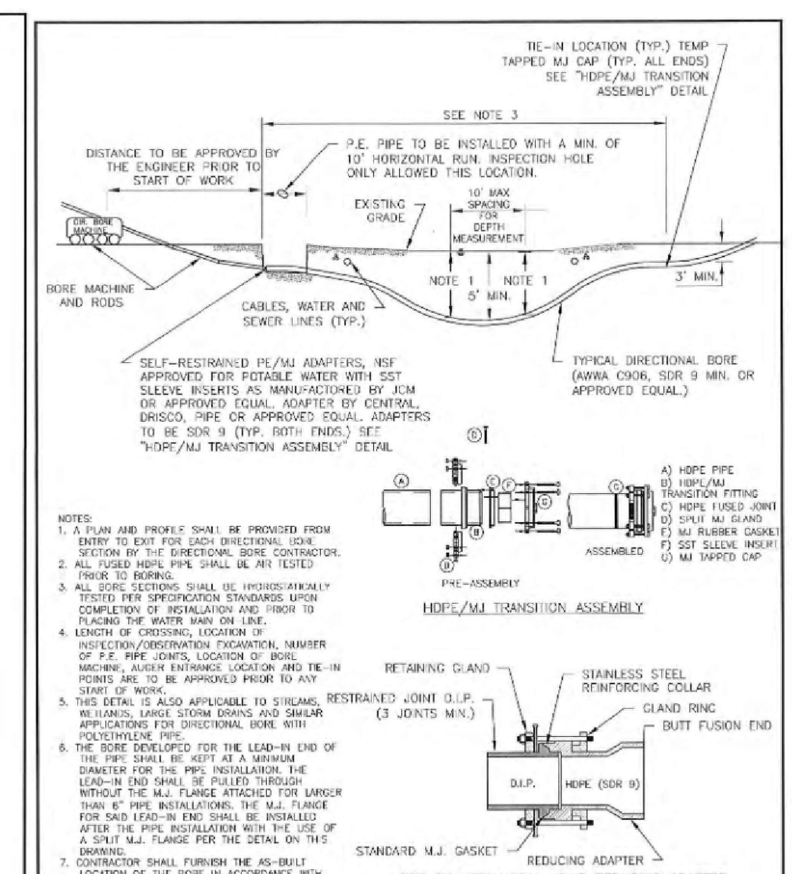
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTE:
USE A MINIMUM OF TWO CASING SPACERS PER PIPE JOINT ONE FOURTH OF THE PIPE JOINT LENGTH IN FROM BOTH THE BELL AND SPIGOT ENDS.

DETAIL 33 — REVISION DATE JULY 1, 2015 — BORING PIPE ALIGNMENT GUIDE

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



NOTES:
1. A PLAN AND PROFILE SHALL BE PROVIDED FROM ENTRY TO EXIT FOR EACH DIRECTIONAL BORE SECTION BY THE DIRECTIONAL BORE CONTRACTOR.
2. ALL FUSED HDPE PIPE SHALL BE AIR TESTED PRIOR TO BORING.
3. ALL BORE SECTIONS SHALL BE HYDROSTATICALLY TESTED PER SPECIFICATION STANDARDS UPON COMPLETION OF INSTALLATION AND PRIOR TO PLACING THE WATER MAIN ON-LINE.
4. LENGTH OF CROSSING, LOCATION OF INSPECTION/OBSERVATION EXCAVATION, NUMBER OF P.E. PIPE JOINTS, LOCATION OF BORE MACHINE, AUGER ENTRANCE LOCATION AND TIE-IN POINTS ARE TO BE APPROVED PRIOR TO ANY START OF WORK.
5. THIS DETAIL IS ALSO APPLICABLE TO STREAMS, WETLANDS, LARGE STORM DRAINS AND SIMILAR APPLICATIONS FOR DIRECTIONAL BORE WITH POLYETHYLENE PIPE.
6. THE BORE DEVELOPED FOR THE LEAD-IN END OF THE PIPE SHALL BE KEPT AT A MINIMUM DIAMETER FOR THE PIPE INSTALLATION. THE LEAD-IN END SHALL BE PULLED THROUGH WITHOUT THE M.J. FLANGE ATTACHED FOR LARGER THAN 6" PIPE INSTALLATIONS. THE M.J. FLANGE FOR SAID LEAD-IN END SHALL BE INSTALLED AFTER THE PIPE INSTALLATION WITH THE USE OF A SPLIT M.J. FLANGE PER THE DETAIL ON THIS DRAWING.
7. CONTRACTOR SHALL FURNISH THE AS-BUILT LOCATION OF THE BORE IN ACCORDANCE WITH THE SPECIFICATIONS FOR DIRECTIONAL BORING.

DETAIL 34 — REVISION DATE JULY 1, 2015 — DIRECTIONAL BORE

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

NOTES

1. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

B & F CONSULTING
2805 Tobermory Lane
Raleigh, NC 27606
Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027445 AMBER FARRELLY — July 26, 2016

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC,
		CHATHAM CO. EROSION
		CONTROL, STORMWATER,
		AND STREET NAME CHANGES
		(ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

DETAILS

DRAWING SCALE

AS SHOWN

PLAN SET

INFRASTUCTURE DRAWINGS

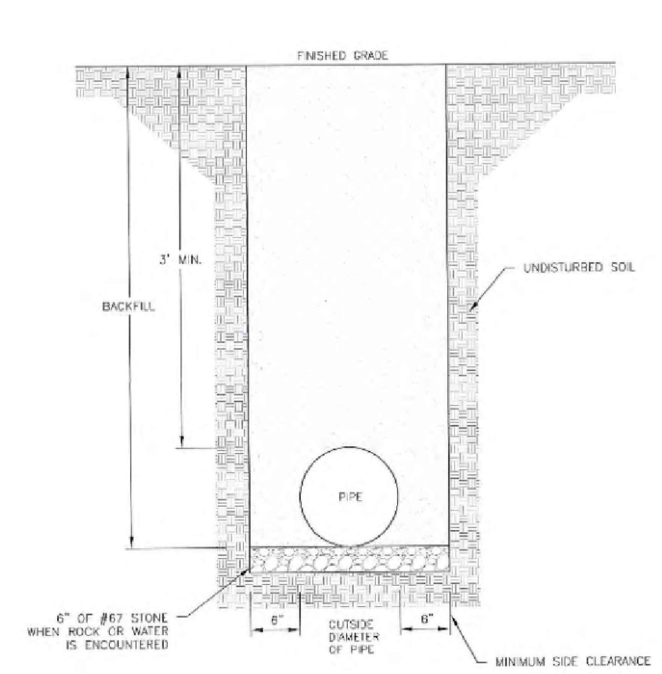
DATE

7-26-2016

SHEET NUMBER

D-3

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

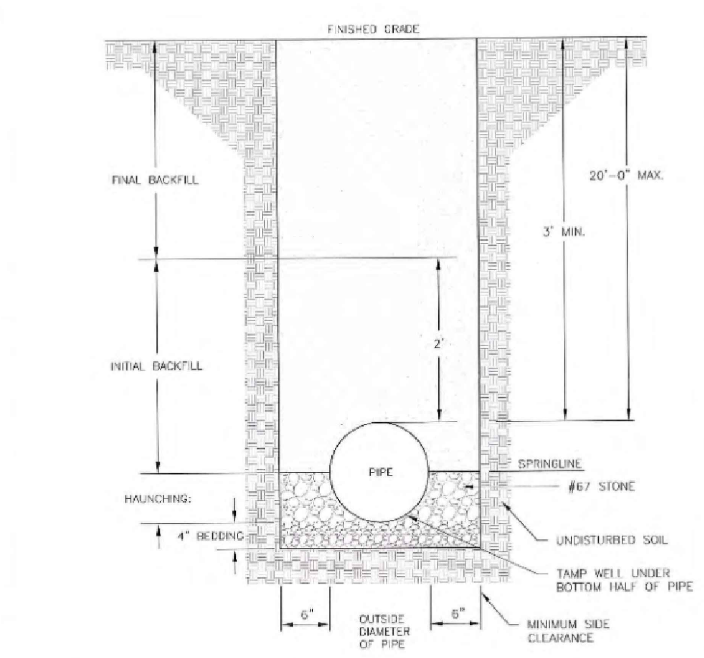


NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 2" OR LARGER IN DIAMETER TO BE USED IN BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS.
5. ACHIEVE 95% COMPACTION IN BACKFILL.

DETAIL 35 — REVISION DATE JULY 1, 2015

DUCTILE IRON PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
(919) 852-8270 (BUS) (919) 852-8282 (FAX)
CHATHAM COUNTY



NOTES:
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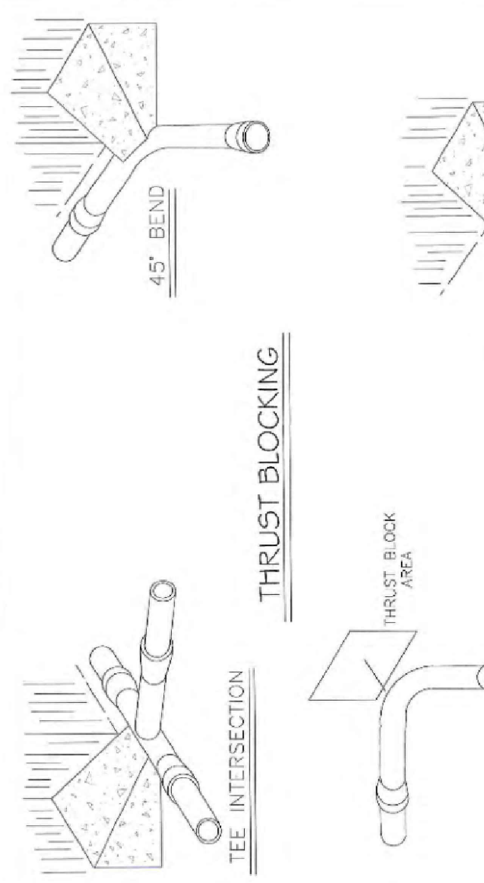
2. NO ROCKS OR BOULDERS 2" OR LARGER IN DIAMETER TO BE USED IN BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS.
5. ACHIEVE 95% COMPACTION IN BACKFILL.

DETAIL 36 — REVISION DATE JULY 1, 2015

PVC PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
(919) 852-8270 (BUS) (919) 852-8282 (FAX)
CHATHAM COUNTY



NOTES:
1. CONCRETE SHALL BE 3000 PSI
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
3. TRENCHES SHALL CONFORM TO DETAILS 35 AND 36, AS APPROPRIATE.
4. SEE STANDARD THRUST BLOCK TABLES, DETAILS 38 AND 39, FOR AREA OF CONCRETE REQUIRED.
5. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.

DETAIL 37 — REVISION DATE JULY 1, 2015

STANDARD THRUST BLOCKING VIEWS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
(919) 852-8270 (BUS) (919) 852-8282 (FAX)
CHATHAM COUNTY

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 200 P.S.I.
ALL AREAS GIVEN IN SQUARE FEET.

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DRY CLAY 4000 LBS/FT²	SOFT CLAY 2000 LBS/FT²	GRAVEL / COARSE SAND 1600 LBS/FT²	DRY CLAY — ALWAYS DRY 8000 LBS/FT²	SAND, COMPACT FIRM 8000 LBS/FT²	SAND — CLEAN DRY 4000 LBS/FT²	QUICKSAND — VERY POOR SOIL 1000 LBS/FT²	ROCK — POOR 10,000 LBS/FT²
6"									
11 1/4°	1,108	1	1	1	1	1	1	2	1
22 1/2°	2,207	1	2	2	1	1	1	3	1
45°	4,328	2	3	3	1	1	2	5	1
90°	7,996	2	4	5	1	1	2	8	1
PLUG	5,655	2	3	4	1	1	2	6	1
8"									
11 1/4°	1,970	1	1	2	1	1	1	2	1
22 1/2°	3,922	1	2	3	1	1	1	4	1
45°	7,694	2	4	5	1	1	2	8	1
90°	14,215	4	8	9	2	2	4	15	2
PLUG	10,053	3	5	6	2	2	3	10	1
12"									
11 1/4°	4,433	2	3	3	1	1	2	5	1
22 1/2°	8,826	3	5	6	2	2	3	9	1
45°	17,312	5	9	11	3	3	5	18	2
90°	31,983	8	16	19	4	4	8	32	4
PLUG	22,619	6	12	14	3	3	6	23	3
16"									
11 1/4°	7,881	2	4	5	1	1	2	8	1
22 1/2°	15,691	4	8	10	2	2	4	16	2
45°	30,779	8	15	19	4	4	8	31	4
90°	56,861	15	29	35	8	8	15	57	6
PLUG	40,213	10	21	25	5	5	10	41	5

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
USE 6" — 90 DEGREE BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

DETAIL 38 — REVISION DATE JULY 1, 2015

CONCRETE THRUST BLOCKING QUANTITY TABLE, 6" - 16" PIPE

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
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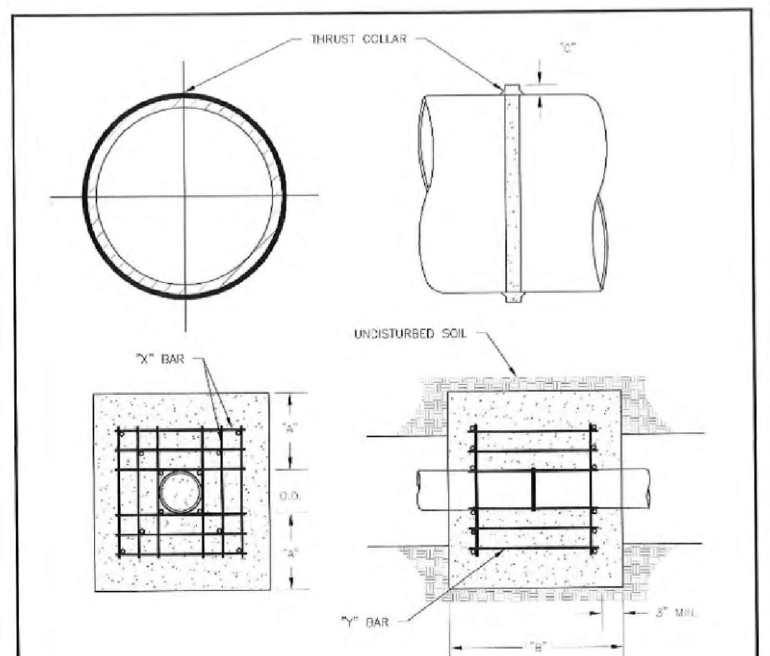
CHATHAM COUNTY



NOTES:
1. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12
48" & GREATER	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X-24, Y-12

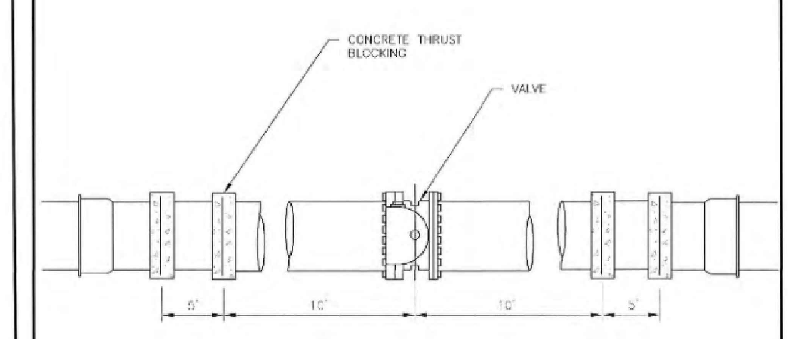
THRUST COLLAR AND THRUST SCHEDULE

I.D. PIPE	"A"	"B"	"C-6"-16"	20"-24"	30"-36"	48"
6" - 36"	1'-4"	1'-7"	2"	3"	4"	
48" & GREATER	1'-8"	1'-9"				6"

DETAIL 40 — REVISION DATE JULY 1, 2015

CONCRETE THRUST BLOCKING FOR WATER MAINS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
(919) 852-8270 (BUS) (919) 852-8282 (FAX)
CHATHAM COUNTY

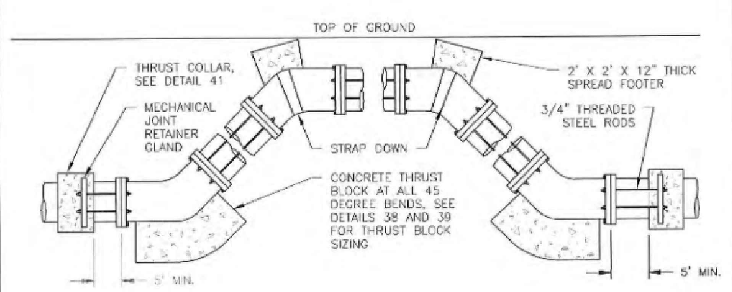


NOTE:
1. 16" OR SMALLER MAIN — 1 THRUST BLOCK REQUIRED
2. GREATER THAN 16" — 2 THRUST BLOCKS REQUIRED

DETAIL 41 — REVISION DATE JULY 1, 2015

CONCRETE THRUST BLOCKING FOR VALVES AND DEAD ENDS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
(919) 852-8270 (BUS) (919) 852-8282 (FAX)
CHATHAM COUNTY



ROD REQUIREMENTS

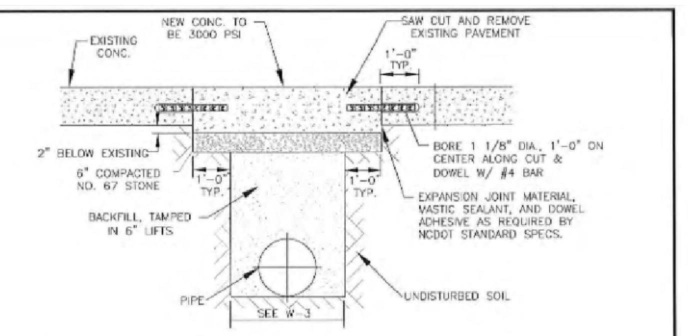
SIZE OF 45 DEGREE BEND	STATIC THRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,328	2
8"	7,694	4
12"	17,312	4
16"	30,779	8
24"	69,252	8

NOTES:
1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
3. RESTRAINED MECHANICAL GLANDS TO BE USED AT ALL FITTINGS.
4. MUST USE DUCTILE IRON EYE BOLTS WHERE NECESSARY.
5. ADD MECHANICAL JOINT RETAINER GLANDS THROUGHOUT ASSEMBLY.
6. 3' MINIMUM COVER MUST BE MAINTAINED ON ALL WATER MAINS

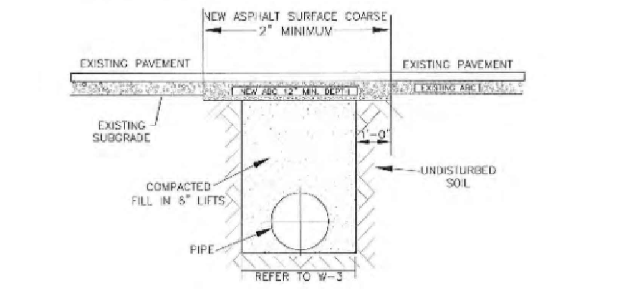
DETAIL 43 — REVISION DATE JULY 1, 2015

VERTICAL BEND ASSEMBLY

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
(919) 852-8270 (BUS) (919) 852-8282 (FAX)
CHATHAM COUNTY



NOTES FOR ASPHALT AND CONCRETE:
1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAW CUT MACHINE.
2. SUBGRADE MATERIAL SHALL BE COMPACTED TO A DENSITY OF 95% IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
3. THE FINAL 8" (CONCRETE) OR 12" (ASPHALT) OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY OF 100% IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT.



NOTES FOR ASPHALT ONLY:
1. THE ENTIRE THICKNESS/VERTICAL EDGE OF CUT SHALL BE TACKED.
2. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED OR A MINIMUM 3" THICK.
3. THE ASPHALT SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
4. NO HAND PATCHING ALLOWED.
5. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

DETAIL 44 — REVISION DATE JULY 1, 2015

CONCRETE AND ASPHALT OPEN CUT AND PATCH

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
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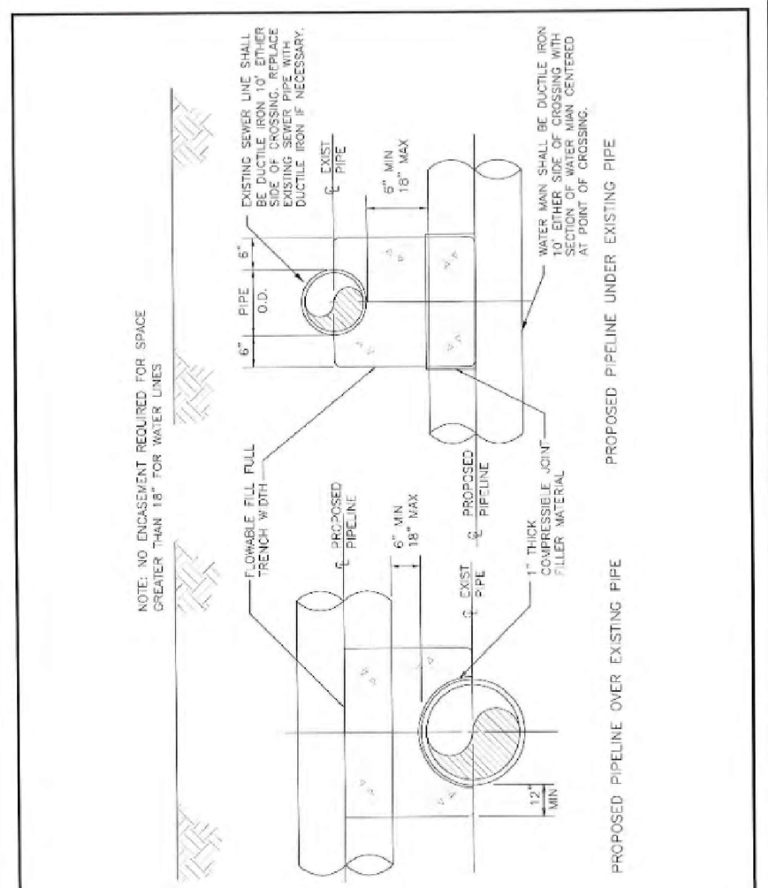
CHATHAM COUNTY



DETAIL 45 — REVISION DATE JULY 1, 2015

WATER AND SEWER CROSSING

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
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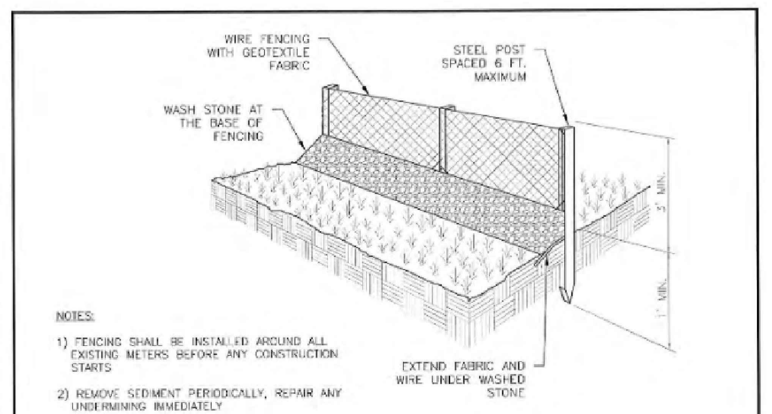
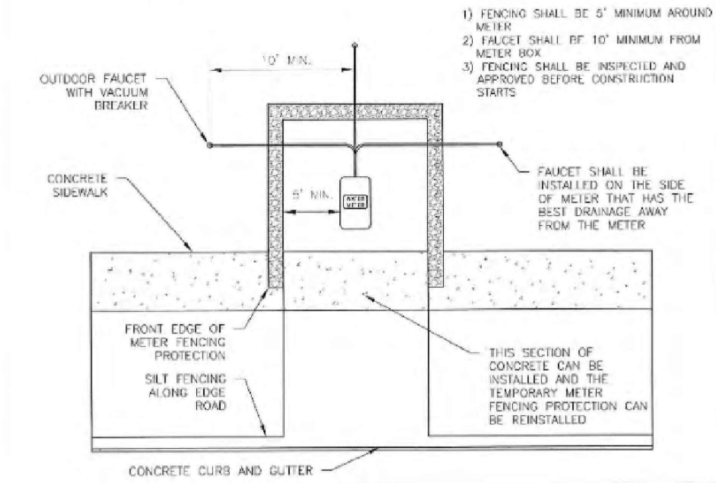
CHATHAM COUNTY



NOTES:
1) FENCING SHALL BE INSTALLED AROUND ALL EXISTING METERS BEFORE ANY CONSTRUCTION STARTS
2) REMOVE SEDIMENT PERIODICALLY, REPAIR ANY UNDERMINING IMMEDIATELY

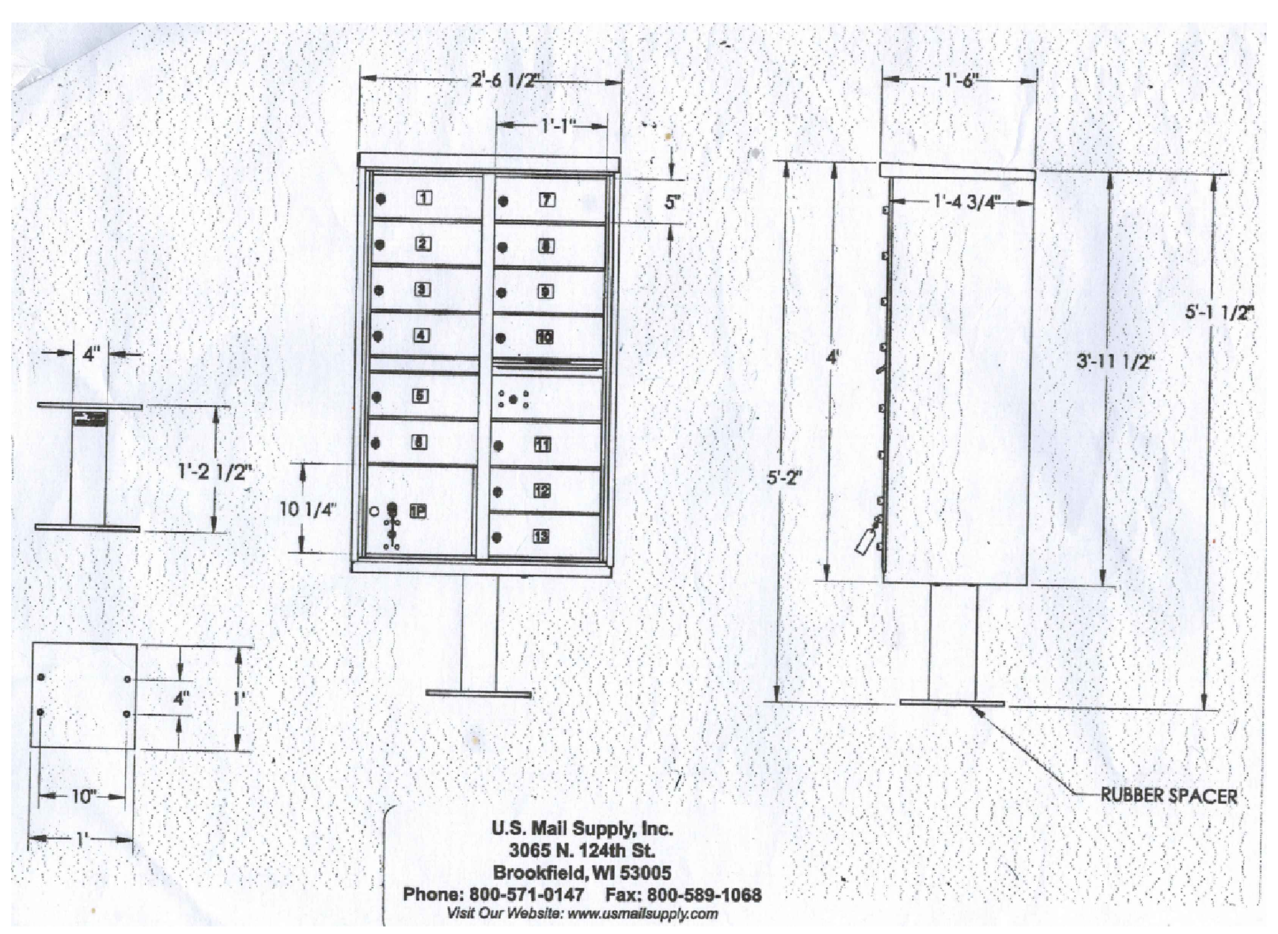
NOTES:
1) FENCING SHALL BE 5' MINIMUM AROUND METER
2) FAUCET SHALL BE 10' MINIMUM FROM METER BOX
3) FENCING SHALL BE INSPECTED AND APPROVED BEFORE CONSTRUCTION STARTS



DETAIL 47 — REVISION DATE JULY 1, 2015

TEMPORARY METER FENCING PROTECTION

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910 PITTSBORO, NC 27312
964 EAST STREET, SUITE 205 PITTSBORO, NC 27312
(919) 852-8270 (BUS) (919) 852-8282 (FAX)
CHATHAM COUNTY



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

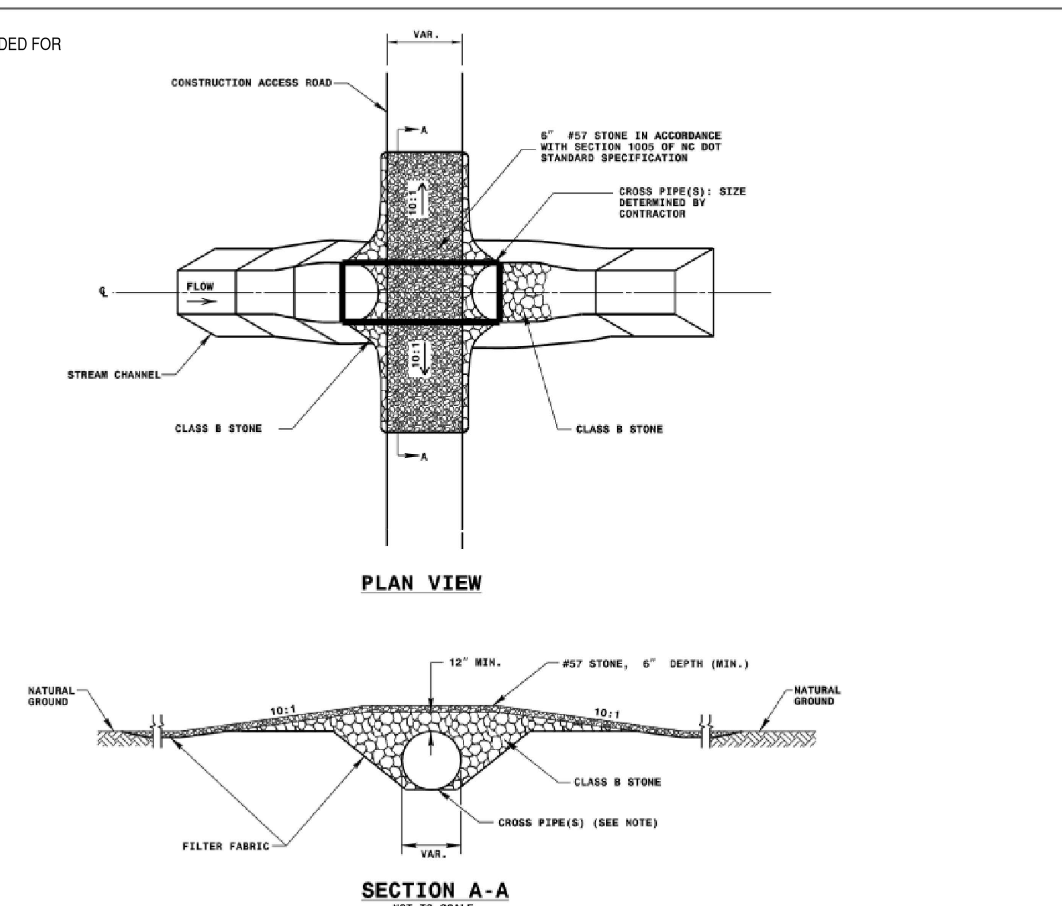
1-12

ENGLISH STANDARD DRAWING FOR **TEMPORARY STREAM CROSSING**

SHEET 1 OF 1

1645.01

THIS DETAIL IS ONLY TO BE USED IF NEEDED FOR SITE ACCESS ALONG ENTRANCE DRIVE PRIOR TO CULVERT INSTALLATION



NOTE: PIPE(S) FOR TEMPORARY STREAM CROSSING SHALL BE DESIGNED TO PASS THE PEAK OR BANKFULL FLOW, WHICHEVER IS LESS, FROM A 2-YEAR PEAK STORM, WITHOUT OVER TOPPING.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **TEMPORARY STREAM CROSSING**

SHEET 1 OF 1

1645.01

NOTES
1. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

B & F CONSULTING
2805 Tobermory Lane
Raleigh, NC 27606
Phone No. (919) 618-0180
License No. C-2149

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027445 AMBER FARRELLY — July 26, 2016

REVISIONS

NO.	DATE	DESCRIPTION
	7/26/16	NCDOT HYDRAULIC, CHATHAM CO. EROSION CONTROL, STORMWATER, AND STREET NAME CHANGES (ORIGINAL SEAL 4/25/2016)

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

PROJECT NAME

SUNSET GROVE SUBDIVISION PHASE 1

CHATHAM COUNTY NORTH CAROLINA

DEVELOPER

CHATHAM CAPITAL LLC

400 MARKET STREET
CHAPEL HILL, NC 27516

SHEET NAME

DETAILS

DRAWING SCALE
AS SHOWN

PLAN SET
INFRASTUCTURE DRAWINGS

DATE
7-26-2016

SHEET NUMBER
D-4

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION