SANDERWAY ARCHITECTURAL INTERGRATED SUBDIVISION

CONDITIONAL USE PERMIT (CUP)

ORANGE COUNTY, NORTH CAROLINA
TOWN OF CARRBORO

PREPARED FOR:
OWNER / DEVELOPER

GH-2, LLC

121 SOUTH ESTES DRIVE, SUITE 100, CHAPEL HILL 27514
(919) 489-9000

CREDLE ENGINEERING COMPANY, INC

ENGINEERS/PLANNERS/SURVEYORS 204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

SITE DATA

1. CURRENT LAND USE: VACANT, WOODED LOT, ABANDONED HOUSE PROPOSED USE: 1.111 – AIS SUBDIVISION
2. NUMBER OF NEW RESIDENCES PROPOSED: 18 (EIGHTEEN) SINGLE FAMILY UNITS
3. DENSITY CALCULATION:

	GROSS AREA	AREA ADJUSTMENTS
GROSS LOT AREA:	371,982 S.F.	371,982 S.F.
AREA REDUCTIONS:		
MODERATE SLOPES	13,843 S.F.	5,537.20 S.F. (40%)
EASEMENT FOR OWASA SEWER	8,105 S.F.	2,431.50 S.F. (30%)
NET LOT AREA (GROSS AREA – ADJUSTMENTS):		364,013.30 S.F.

NET LOT AREA / MIN. LOT AREA = 364,013.3 / 20,000 = 18.2 LOTS PERMITTED

4. PROPOSED OPEN SPACE:

REQUIRED = 40.00% OF GROSS LOT AREA (GLA) = 371,982 X 0.40 = 148,792.8 S.F.
PROVIDED = 189,770 S.F. (51.0%)

TREE CANOPY COVERAGE

AREA OF TREE CANOPY COVERAGE EQUALS 228,399 S.F. THIS EQUATE TO 61.4 PERCENT OF 371,982 S.F ZONING LOT.

PRIMARY CONSERVATION AREA = 135,150 S.F. (3.11 AC.) = 36.3% GLA
SECONDARY CONSERVATION AREA = 54,020 S.F. (1.24 AC) = 14.7% GLA

5. PROPOSED USE: 26.200 MAJOR SUBDIVISION CONSISTING OF 1.111 SINGLE FAMILY HOMES

SANDERWAY SUBDIVISION	PROPOSED
SINGLE FAMILY	18
DUPLEX UNITS	0
TOTAL	18
REGULAR ZONING UNITS	18
AFFORDABLE UNITS	PAY IN LIEU
BONUS UNITS	0
TOTAL	18

6. STREET CLASSIFICATION CHART (ALL STREETS PUBLIC EXCEPT AS NOTED)

STREET	CLASSIFICATION	ROW (FT.)	FF (FT.)	SIDEWALK(5')	BIKE LANE
SANDERWAY	LOCAL	50	26	BOTH SIDES	NONE
PATHWAY	LOCAL	50	26	BOTH SIDES	NONE
NORTH PATHWAY	PRIVATE	37	18	ONE SIDE	NONE

7. ALL CONSTRUCTED MINOR STREETS SHALL BE CONSTRUCTED USING STANDARD CURBING.

LAND USE & ZONING NOTES:

1. THIS PLAN REFERENCE DOCUMENTS AND INFORMATION BY:
   A.) PRELIMINARY BOUNDARY SURVEY, PREPARED BY PHILIP POST & ASSOCIATES
   401 PROVIDENCE ROAD, SUITE 200 CHAPEL HILL, NC 27514
   FIELD DATE: 02/16/2016
   B.) ORANGE COUNTY GIS
2. OWNER: JAMES M. SANDER
   6531 WILDFLOWER LANE
   EFLAND, NORTH CAROLINA 27243
3. APPLICANT: GH–2,LLC
   121 SOUTH ESTES DRIVE, SUITE 100
   CHAPEL HILL, NC 27514
   PHONE: (919) 489–9000
4. PARCEL: PARCEL: 9779–14–2354
   1236 OLD HILLSBOROUGH ROAD
   TOWN OF CARRBORO
   ORANGE COUNTY, NORTH CAROLINA
5. ZONING: R20
6. PROPOSED USES:
   1.110 – SINGLE FAMILY DETACHED
   BULK REQUIREMENTS (AIS SUBDIVISION)

BULK REQUIREMENTS (ARTICLE XIII)	
	PROPOSED
MIN LOT AREA	6,611 S.F.
MIN. LOT WIDTH	60 FT
MAX. BUILDING HEIGHT	35.0 FT
BUILDING SETBACK	
MIN. FRONT YARD SETBACK	10 FT
MIN. SIDE YARD SETBACK	5 FT
MIN. REAR YARD SETBACK	10 FT
MIN. PARENT LOT SETBACK	20 FT

7. PARKING SUMMARY :
   NUMBER OF PARKING SPACES REQUIRED [ORD. ARTICLE XVIII SECTION 15–291.G]:
   REQUIRED:
   SINGLE FAMILY DETACHED (1.100) : 2 SPACES / DWELLING UNIT PLUS 1 SPACE / ROOM RENTED
   PROPOSED:
   TOTAL PROPOSED LOT PARKING = MIN. OF 2 SPACES (9' x 18') PROVIDED ON EACH LOT
   PARKING CALCULATIONS ARE EXCLUSIVE OF GARAGES
8. AFFORDABLE:
   APPLICANT PROPOSES A PAYMENT IN LIEU FOR 4.25 AFFORDABLE DWELLING UNITS
   SECTION 15–188 REQUIREMENTS FOR SIZE LIMITED UNITS NOT APPLICABLE PER PAYMENT–IN–LIEU FOR AFFORDABLE HOUSING.
9. FLOODPLAIN:
   FIRM MAP #3710977900J
   PROPERTY LOCATED OUTSIDE OF 0.2% CHANCE ANNUAL FLOODPLAIN IN "X" ZONE..
10. ALL WATER AND SEWER EASEMENTS ARE PUBLIC FOR BENEFIT OF OWASA. STORM DRAINAGE EASEMENTS ADJACENT TO THE PUBLIC RIGHT–OF–WAY ARE PUBLIC FOR BENEFIT OF TOWN OF CARRBORO. ALL SIGHT TRIANGLE EASEMENTS WILL BE PRIVATE. GREENWAY EASEMENTS WILL BE PUBLIC. STORM EASEMENTS DESIGNATED AS PUBLIC ARE TO BE MAINTAINED BY THE TOWN OF CARRBORO.
11. ALL OPEN SPACE IS PRIVATE, TO BE MAINTAINED BY THE SANDERWAY SUBDIVISION HOME OWNERS ASSOCIATION.
12. FIRE DEPARTMENT NOTES:
    A) NO FRAMING MAY BEGIN UNTIL FIRE HYDRANTS ARE OPERATIONAL
    B) AN ALL–WEATHER 20' WIDE TRAVEL SURFACE MUST BE IN PLACE ON ROADWAY PRIOR TO RECEIVING FINAL PLAT APPROVAL OR ANY BUILDING PERMIT.
    C) ALL FIRE HYDRANTS SHALL BE IN OPERATION PRIOR TO ANY CONSTRUCTION FRAMING AND ACCESSIBLE AT ALL TIMES.
    D) THE 2–1/2 INCH DISCHARGE ON FIRE HYDRANTS SHALL BE AT LEAST 21 INCHES ABOVE FINAL GRADE.
    E) FIRE ACCESS ROAD MUST BE OF AN ALL–WEATHER SURFACE AND MAINTAINED DURING CONSTRUCTION. REQUIRE BASE PAVEMENT ASPHALT.
    F) NO BURNING IS ALLOWED ON PROPERTY. ALL BRUSH AND TRASH MUST BE HAULED FROM SITE OR MULCHED ON SITE.
    G) ANY BLASTING REQUIRES A BLASTING PERMIT FROM FIRE DEPARTMENT.
    H) THERE SHALL BE NO PARKING IN ALLEY. ALLEY MUST BE MARKED AS A FIRE LANE ACCORDING TO TOWN CODE.
    I) ANY PARKING ON STREET MUST MEET STREET WIDTH IN ACCORDANCE WITH TOWN CODE.
13. "CAPS" WERE REQUESTED BY CHAPEL HILL CARRBORO SCHOOL SYSTEM ON DECEMBER 20, 2016.
14. DEVELOPER/OWNER IS RESPONSIBLE FOR SCHEDULING AND COORDINATING AN ON–SITE PRE–CONSTRUCTION MEETING WITH ALL APPLICABLE APPROVING AGENCIES INCLUDING ORANGE COUNTY SOLID WASTE (JEFF SCOUTEN, 919–968–2788) PRIOR TO ANY SITE DISTURBANCE. TREE PROTECTION FENCING MUST BE IN PLACE AT TIME OF MEETING.
15. AT NO TIME SHALL CONSTRUCTION RELATED VEHICLES, EQUIPMENT, OR MATERIALS BE PLACED OR STORED WITHIN THE PUBLIC RIGHT–OF–WAY OF HILLSBOROUGH ROAD WITHOUT PRIOR APPROVAL FROM THE TOWN OF CARRBORO, STREET SUPERINTENDENT.
16. THE DEVELOPERS/OWNER/CONTRACTORS SHALL BE RESPONSIBLE FOR THE PROMPT REMOVAL OF ANY AND ALL MUD, SOILS, STONE AND/OR CONSTRUCTION RELATED MATERIALS DEPOSITED UPON THE SIDEWALK AND STREET SURFACES INCIDENTAL TO ON–SITE DEVELOPMENT ACTIVITIES AND DELIVERIES. THIS WOULD INCLUDE MAINTENANCE AS NEEDED FOR THE REQUIRED CONSTRUCTION DRIVE ACCESS.
17. PRIVATE STORM WATER EASEMENTS AND/OR SYSTEMS AND PRIVATE WATER QUALITY FACILITIES ARE NOT TOWN MAINTAINED AND ARE THE RESPONSIBILITY OF THE HOA . ALL DRAINAGE EASEMENTS DESIGNATED AS PRIVATE ARE TO BE MAINTAINED BY THE SANDERWAY SUBDIVISION HOMEOWNER'S ASSOCIATION. ALL OBSTRUCTIONS, OR PLANTINGS THAT EXCEED 24" IN HEIGHT AT MATURE GROWTH, BRIDGES, SHEDS, FENCES OR OTHER OBSTRUCTIONS OR ALTERATIONS OF THE STORM EASEMENT OR STORM OR WATER QUALITY SYSTEM ARE PROHIBITED WITHOUT THE EXPRESS APPROVAL OF THE TOWN OF CARRBORO ZONING ADMINISTRATOR. APPROPRIATE PRIVATE STORM DRAINAGE EASEMENTS WILL BE PLATTED AND DEDICATED ON EITHER SIDE OF STORM FACILITIES ON PRIVATE LOTS, AND PRIVATE STORM MAINTENANCE AREAS WILL BE PLATTED AND DEDICATED ON EITHER SIDE OF STORM FACILITIES LOCATED ON PRIVATE OPEN SPACE.
18. STORM DRAINAGE PIPES IN THE PUBLIC RIGHT–OF–WAY SHALL BE REINFORCED CONCRETE WITH A MINIMUM DIAMETER OF 15 INCHES. PIPES UTILIZING OTHER MATERIALS WITH A SERVICE LIFE EQUAL TO OR GREATER THAN REINFORCED CONCRETE (AS DETERMINED BY AN INDEPENDENT TESTING AGENT) MAY BE APPROVED BY THE TOWN ENGINEER.
19. FIRE LANE STRIPING WILL BE COORDINATED WITH THE CARRBORO FIRE MARSHALL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, PER CHAPTER 12 OF THE CARRBORO TOWN CODE.
20. PER SECTION 15–301, PARKING IS NOT ALLOWED WITHIN 15' OF A FIRE HYDRANT.
21. PER SECTION 15–84, FOLLOWING CONDITIONAL USE PERMIT APPROVAL, CONSTRUCTION DOCUMENTS SHALL BE SUBMITTED AND APPROVED BEFORE COMMENCING CONSTRUCTION.
22. ALL STREET LIGHTS SHALL BE CUT–OFF TYPE FIXTURES OR FIXTURES THAT DIRECT EMITTED LIGHT DOWNWARD AND ARE DEEMED AS BEING "DARK SKY FRIENDLY", AS PROVIDED BY DUKE POWER COMPANY.
23. STREET TREE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND MAY BE SHIFTED TO PROVIDE ADEQUATE ROOM FOR WATER AND SEWER SERVICES, UTILITY CONNECTIONS AND DRIVEWAYS ALSO TO ACCOMMODATE OTHER SITE CONSTRAINTS.
24. CONSTRUCTION WASTE:
    A. BY ORANGE COUNTY ORDINANCE, CLEAN WOOD WASTE, SCRAP METAL AND CORRUGATED CARDBOARD, ALL PRESENT IN CONSTRUCTION WASTE, MUST BE RECYCLED.
    B. BY ORANGE COUNTY ORDINANCE, ALL HAULERS OF CONSTRUCTION WASTE MUST BE PROPERLY LICENSED.
    C. PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITY ON THE SITE THE APPLICANT WILL HOLD A PRE–DEMOLITION / PRE–CONSTRUCTION CONFERENCE WITH THE COUNTY'S SOLID WASTE STAFF. THIS MAY BE THE SAME MEETING HELD WITH OTHER DEVELOPMENT OFFICIALS.
25. DISCLOSURE SIGNS TO BE PROVIDED PER 15–83.1 AND .2 OF THE TOWN OF CARRBORO LAND USE ORDINANCE. THESE SIGNS ARE TEMPORARY, DESIGNED TO PROMOTE FULL DISCLOSURE TO FUTURE BUYERS OF PROPOSED LOTS. A COPY OF THE APPROVED SITE PLAN MUST BE DISPLAYED IN A WEATHER–PROOF VISITOR KIOSK.

SOLID WASTE: RESIDENTIAL COLLECTION

26. CONTAINERS SHALL BE PLACED ADJACENT TO THE STREET BY 7:30 AM ON COLLECTION DAY (BUT NOT BEFORE DARK ON DAY PRIOR TO COLLECTION).
27. ALL HOUSEHOLD TRASH MUST BE PLACED INSIDE THE CONTAINER.
28. PLACE CONTAINERS AT THE STREET WITH LID OPENING TOWARDS THE STREET.
29. ALLOW 3 FEET OF CLEARANCE BETWEEN CONTAINER AND ANY OTHER ITEM, INCLUDING THE RECYCLING CONTAINER.
30. PAVEMENT MARKINGS: DEVELOPER IS RESPONSIBLE FOR FURNISHING CROSSWALKS, AND ALL OTHER REQUIRED PAVEMENT MARKINGS IN ACCORDANCE WITH NCDOT SPECIFICATIONS FOR THERMOPLASTIC MARKINGS. CONTACT STREET SUPERINTENDENT, (919) 918–7432.
31. ALL PROPOSED UTILITIES WILL BE UNDERGROUND.
32. WATER QUALITY AND DETENTION DEVICES: ALL WATER QUALITY AND DETENTION DEVICES MUST BE CERTIFIED BY THE ENGINEER OF RECORD AS CONSTRUCTED PER THE APPROVED CONSTRUCTION PLANS PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR THE SUBJECT DWELLINGS AND THE "AS–BUILT" PLANS FOR THE DEVICES MUST BE SUBMITTED TO THE TOWN OF CARRBORO.
33. STRUCTURAL SUBMITTAL DRAWINGS AND SUBMITTAL CALCULATIONS FOR ALL RETAINING WALLS GREATER THAN 3 FEET IN HEIGHT SHALL BE PREPARED, SEALED AND SUBMITTED BY A LICENSED N.C. ENGINEER PRIOR TO SUBMITTAL PLAN APPROVAL OF THE WALLS.
34. ALL STREET CONSTRUCTION ON THOSE PUBLIC STREETS PROPOSED FOR ACCEPTANCE BY THE TOWN OF CARRBORO AND ALL PUBLIC INFRASTRUCTURE LOCATED WITHIN THE PUBLIC RIGHT–OF–WAY OR LOCATED WHERE PROPERTY IS TO BE DEDICATED TO THE PUBLIC, INCLUDING POTABLE WATER AND SANITARY SEWER SYSTEMS SHALL BE CERTIFIED BY AN ENGINEER. ENGINEERING CERTIFICATION IS THE INSPECTION BY THE DEVELOPER'S ENGINEER OF THE STREET'S SUBGRADE, BASE MATERIAL, ASPHALT PAVING, SIDEWALKS AND CURB AND GUTTER, WHEN USED. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR REVIEWING ALL COMPACTION TESTS THAT ARE REQUIRED FOR STREETS TO BE DEDICATED TO THE TOWN. THE DEVELOPER'S ENGINEER SHALL CERTIFY THAT ALL WORK HAS BEEN CONSTRUCTED TO THE TOWN'S CONSTRUCTION SPECIFICATIONS. UPON COMPLETION OF CONSTRUCTION, DEVELOPER'S ENGINEER SHALL SUBMIT CERTIFIED RECORD DRAWINGS SHOWING "AS–BUILT" CONDITIONS FOR STREET PLANS AND STORM SYSTEMS, WATER AND SANITARY SEWER SYSTEMS. THE RECORD DRAWINGS SHALL BE APPROVED BY PUBLIC WORKS DEPARTMENT PRIOR TO FINAL ACCEPTANCE OF STREETS AND OTHER PUBLIC FACILITIES BY THE TOWN.
35. PROPOSED PHASES OF DEVELOPMENT: ONE
36. IF ANY UTILITY IN ANY RIGHT–OF–WAY IS INSTALLED BY A UTILITY COMPANY, THE COMPANY SHALL MAINTAIN ACCURATE AS–BUILT DRAWINGS OF THE UTILITY'S INSTALLATION AND PROVIDE A COPY OF THESE CERTIFIED ACCURATE DRAWINGS TO THE TOWN
37. THE APPLICANT SHALL PROVIDE TO THE ZONING DIVISION PRIOR TO THE RECORDATION OF THE FINAL PLAT FOR THE PROJECT OR BEFORE THE RELEASE OF A BOND IF SOME FEATURES ARE NOT YET IN PLACE AT THE TIME OF THE RECORDING OF THE FINAL PLAT, MYLARS AND DIGITAL AS–BUILTS FOR THE STORMWATER FEATURES OF THE PROJECT. DIGITAL AS–BUILTS SHALL BE IN DXF FORMAT AND SHALL INCLUDE A BASE MAP OF THE WHOLE PROJECT AND ALL SEPARATE PLAN SHEETS. AS–BUILT DXF FILES SHALL INCLUDE ALL LAYERS OR TABLES CONTAIN STORM DRAINAGE FEATURES. STORM DRAINAGE FEATURES SHALL BE CLEARLY DELINEATED IN DATE TABLES. THE DATA WILL BE TIED TO HORIZONTAL CONTROLS

RECREATION POINTS

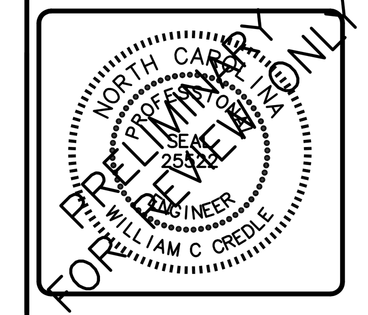
1. RECREATION POINTS EQUALS 10.39 X 18 UNITS = 187.02 POINTS REQUIRED
   8100 S.F. OF TRAIL/GREENWAY X 0.016 = 129.6 POINTS
   550 S.F. TOT LOT X 0.107 = 58.85 POINTS
   TOTAL = 188.45 POINTS (PROVIDED)
2. SEE TOT LOT PLAN FOR PROVISION OF RECREATION PLAY EQUIPMENT SUITABLE FOR CHILDREN UNDER THE AGE OF 12.

VICINITY MAP NO SCALE

PIN 9779142354

INDEX OF SHEETS

SHEET #	DESCRIPTION
C0001	COVER
C0100	EXISTING CONDITIONS
C0200	SITE PLAN
C0250	HOUSE LAYOUT
C0300	UTILITY PLAN
C0350	PLAN PROFILE
C0400	GRADING PLAN
C0500	STORMWATER DETAILS
C0600	LANDSCAPING PLAN
C0700	LIGHTING PLAN
C0800	WATER & SEWER DETAILS
C0900	FLOOR PLANS
C1000	EROSION CONTROL PLAN



CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS 204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

COVER

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH–2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS		
NO.	DATE	DESCRIPTION
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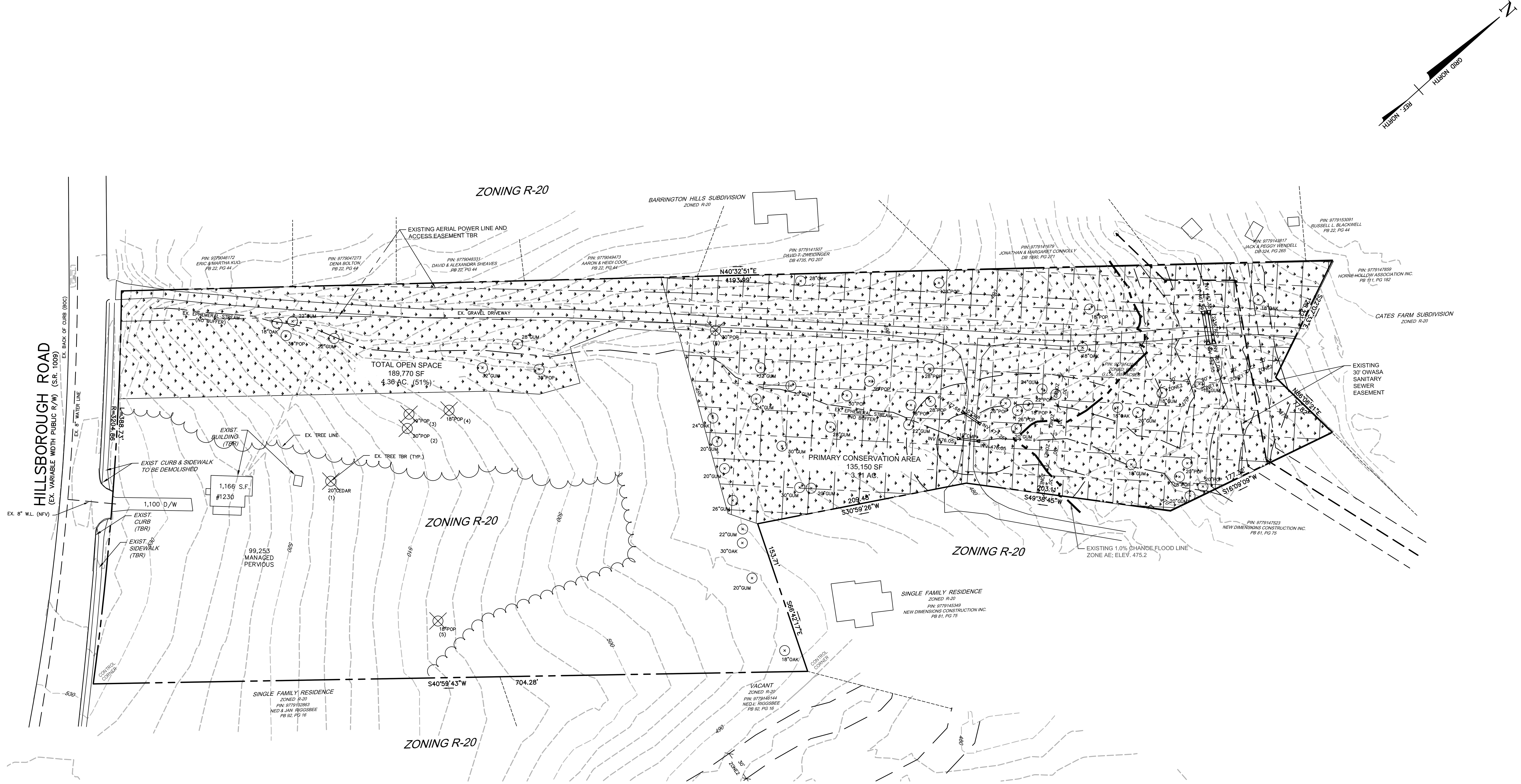
DATE	SEPTEMBER 10, 2016
SCALE	AS SHOWN
LICENSE	C–0254
JOB	\2017\170211\Base 171017
SHEET NUMBER	C0001
OF	12 SHEETS

N:\2017\170211\Base 171017 Plot Date: 09/10/17



LEGEND

- PROPERTY LINE
- R/W LINE
- OVERHEAD UTILITY LINES
- UNDERGROUND ELEC. LINES
- SANITARY SEWER LINE
- BLDG. SETBACK — SB
- TREE PROTECTION AREA — TPA
- BUFFER AREA — B
- EXISTING IRON PIPE
- LIGHT POLES
- UTILITY POLE
- SEWER CLEANOUT
- WATER METER
- CURB INLET
- EX. SEWER MAN HOLE

TREE REMOVAL CHART:

1. 20" CEDAR
2. 20" POPLAR
3. 19" POPLAR
4. 18" POPLAR
5. 30" POPLAR
6. 18" POPLAR

NOTES:

1. EXISTING TOPOGRAPHIC SURVEY AND BOUNDARY INFORMATION IS PROVIDED BY: PHILIP POST & ASSOCIATES, A DIVISION OF PENNONI. FIELD DATA WAS OBTAINED ON FEBRUARY 16, 2016
2. WATER LINE LOCATIONS WERE PROVIDED BY O.W.A.S.A. AND ARE APPROXIMATE AS SHOWN. CONTRACTOR SHALL COORDINATE LOCATION OF EXISTING SANITARY SEWER AND WATER SERVICES ACCORDINGLY.
3. SANITARY SEWER MANHOLES THAT ARE NOTED WERE FIELD SURVEYED AND OTHERS WERE TAKEN FROM O.W.A.S.A. AND ARE APPROXIMATE AS SHOWN. CONTRACTOR SHALL COORDINATE LOCATION OF EXISTING SANITARY SEWER AND WATER SERVICES ACCORDINGLY.
4. NATURAL GAS LINES WERE NOT SURVEYED AND ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXISTING LOCATION OF NATURAL GAS LINES WITH PIEDMONT NATURAL GAS ACCORDINGLY.
5. THERE ARE NO SMALLER SPECIMEN TREES OR RARE TREES FOUND ON THE SITE
6. ALL EXISTING STRUCTURES 500 SQUARE FEET AND LARGER SHALL BE ASSESSED PRIOR TO THE ISSUANCE OF A DEMOLITION PERMIT TO ENSURE COMPLIANCE WITH THE COUNTY'S REGULATED RECYCLABLE MATERIALS ORDINANCE (RRMO) AND TO ASSESS THE POTENTIAL FOR DECONSTRUCTION AND/OR THE REUSE OF SALVAGEABLE MATERIALS.
7. PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITY ON THE SITE, THE APPLICANT SHALL HOLD A PRE-DEMOLITION/PRE-CONSTRUCTION CONFERENCE WITH SOLID WASTE STAFF. THIS MAY BE THE SAME PRE- CONSTRUCTION MEETING HELD WITH OTHER DEVELOPMENT/ENFORCEMENT OFFICIALS.

50 0 25 50 100 200

1 inch = 50 ft.

NORTH CAROLINA PROFESSIONAL SEAL 25522 ENGINEER WILLIAM C CREDLE

PRELIMINARY FOR REVIEW ONLY

CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

■ EXISTING CONDITIONS

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH-2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

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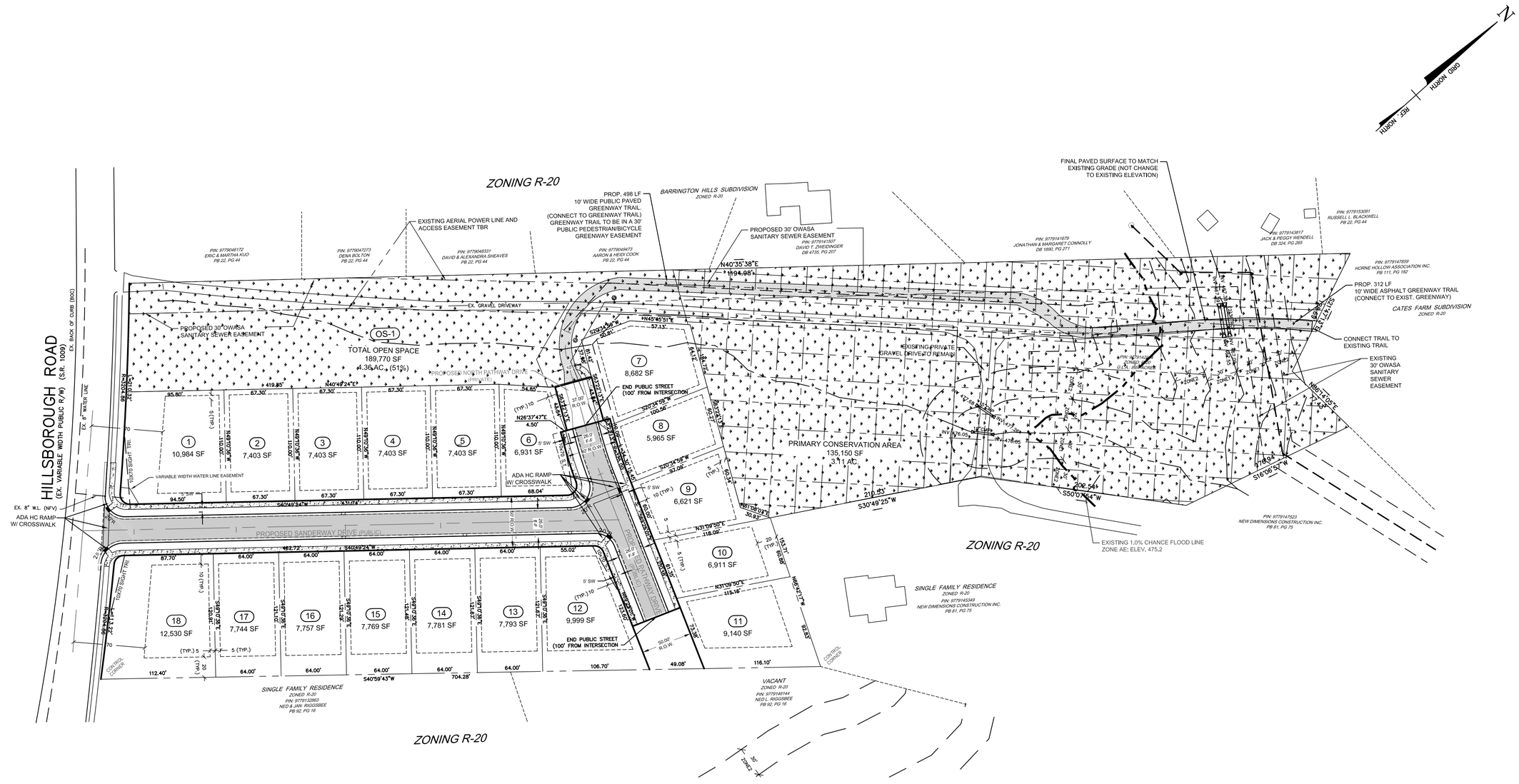
JOB \2017\170211\Base 171017
SHEET NUMBER C0100
OF 12 SHEETS

N:\2017\170211\Base 171017 Plot Date: 09/10/17



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- UTILITY POLE
- SEWER CLEANOUT
- WATER METER
- CURB INLET
- EX. SEWER MAN HOLE

50 0 25 50 100 200

1 inch = 50 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25502 WILLIAM C. CREDLE
FOR PRELIMINARY REVIEW ONLY

CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

■ SITE PLAN

SANDERWAY SUBDIVISION CUP
PROPERTY OF
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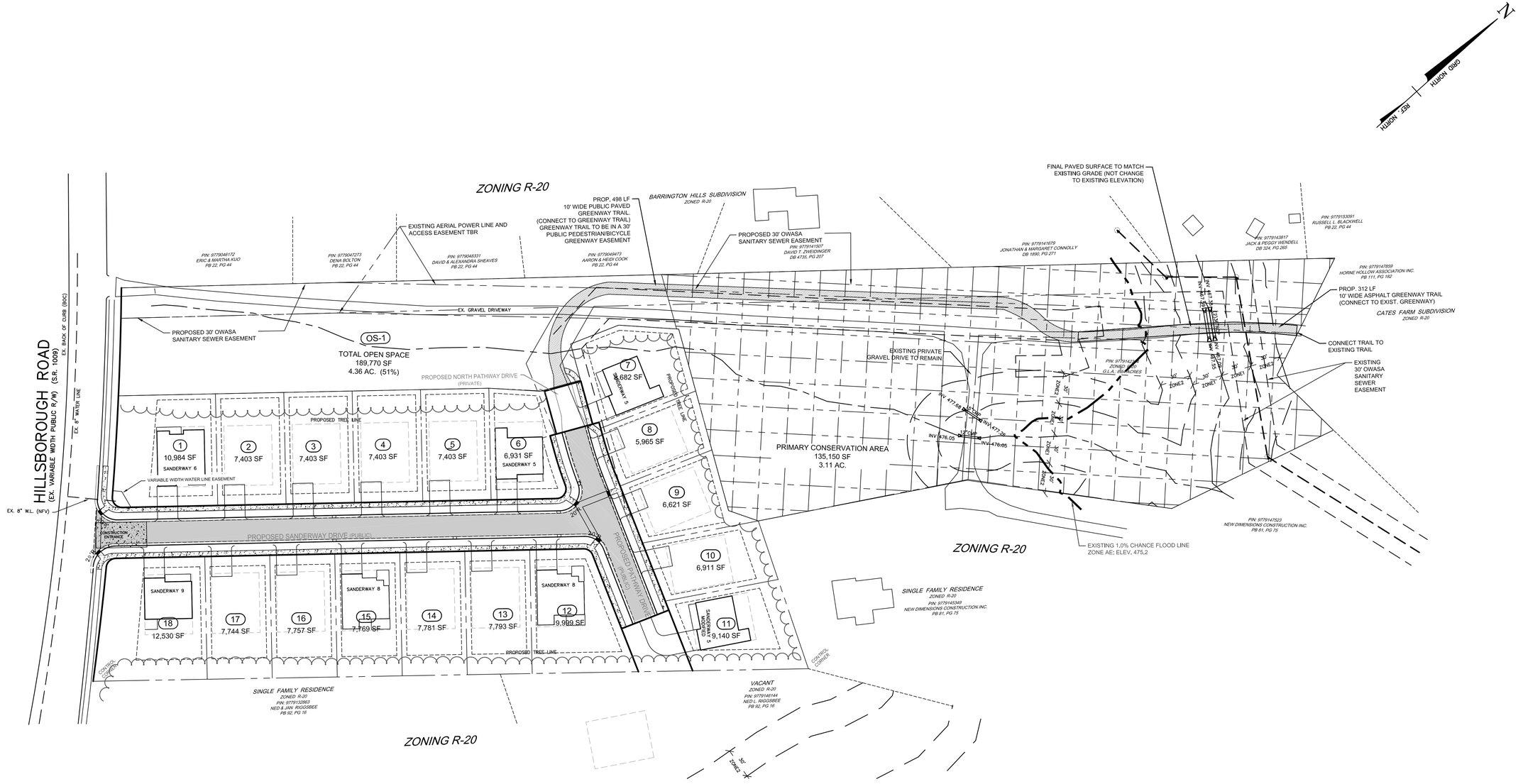

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- EX. SEWER MAN HOLE

50 0 25 50 100 200

1 inch = 50 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER 25521 WILLIAM C. CREDLE

PRELIMINARY FOR REVIEW ONLY

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204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

■ HOUSE LAYOUT

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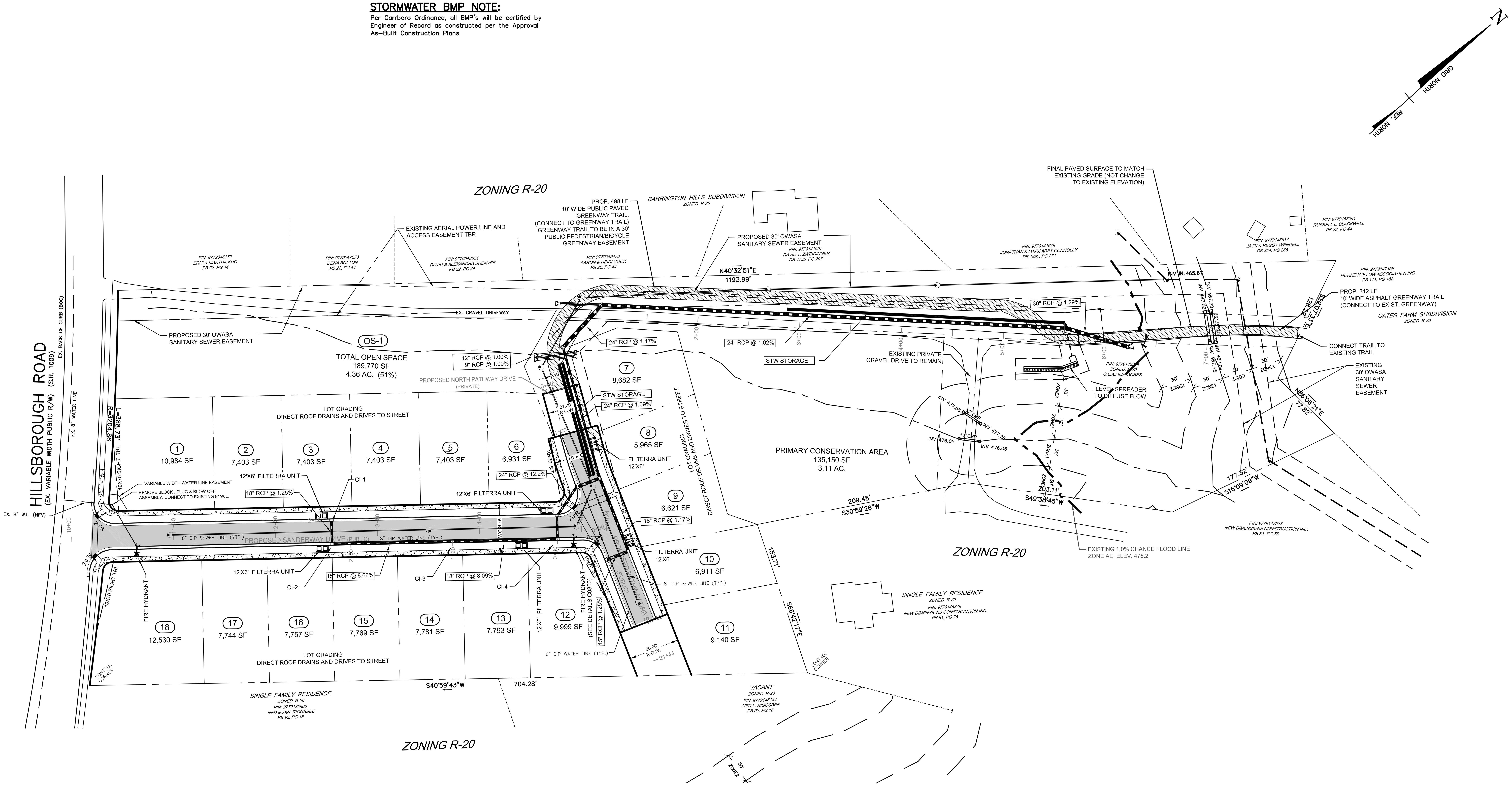
JOB \2017\170211\Base 171017
SHEET NUMBER
C0250
OF 12 SHEETS

N:\2017\170211\Base 171017 Plot Date: 09/10/17

STORMWATER BMP NOTE:

Per Carrboro Ordinance, all BMP's will be certified by Engineer of Record as constructed per the Approval As-Built Construction Plans



GENERAL NOTES:

THE GENERAL CONTRACTOR SHALL CONFIRM ALL NEW UTILITY TAP LOCATIONS WITH THE TOWN OF CARRBORO.
IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THE ACTUAL LOCATION AND AVAILABILITY OF ALL EXISTING AND PROPOSED UTILITIES IN THE FIELD PRIOR TO GROUND BREAKING.
EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. WATER LINES, STORM DRAINAGE AND SANITARY SEWER FACILITIES NOTED AS "EXISTING" ARE BASED ON A FIELD SURVEY.
THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
IT SHALL BE THE CONTRACTORS FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO STARTING CONSTRUCTION.
ALL SANITARY SEWER AND STORM DRAIN PIPING 8" IN DIAMETER OR SMALLER SHALL BE Sch. 40 PVC WITH ADHESIVE "WELDED" JOINTS, UNLESS SPECIFIED OTHERWISE HEREIN.
MINIMUM SLOPES ON SANITARY SEWER SERVICES:
4" – 1/4" /FT.
6" – 1/8" /FT.
MAXIMUM DISTANCE BETWEEN CLEANOUTS = 75'
ALL SEWER LINES SHALL HAVE A FINAL COVER DEPTH OF 4'–0" IN NON–TRAFFIC AREAS AND 5'–0" MINIMUM IN TRAFFIC AREAS UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS.
PROPOSED MANHOLES SHOULD BE FIELD VERIFIED FOR INVERTS.
ALL WATER LINES SHALL HAVE A FINAL COVER DEPTH OF 3'–0" IN NON–TRAFFIC AREAS AND 4'–0" MINIMUM IN TRAFFIC AREAS UNLESS SPECIFICALLY NOTED OTHERWISE
WATER SERVICE SHALL BE TYPE 'K' COPPER FROM THE MAIN THROUGH THE METER, THEN CHANGE TO PVC Sch. 40 TO THE BUILDING.
SOFT COPPER TUBING WITH WROUGHT COPPER FITTINGS HAVING SILVER SOLDER JOINTS. SOLDERS CONTAINING LEAD SHALL NOT BE USED FOR ANY PURPOSE
THE CONTRACTOR WILL INSTALL THE WATER METER AND DRILL AND TAP THE EXISTING MAIN LINE FOR DOMESTIC LINES. BACKFLOW DEVICES AND PIPES TO BE INSTALLED PER LOCAL SPECIFICATIONS AND STANDARDS.
ALL PIPING SHALL BE TESTED AS REQUIRED BY THE PLUMBING CODE, DEHNR, TOWN OF CARRBORO. PROVIDE WRITTEN REPORT ON RESULTS OF TEST TO THE ENGINEER.
UTILITY SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH TOWN OF CARRBORO STANDARDS AND SPECIFICATIONS, LATEST REVISIONS.
CONTRACTOR SHALL REPLACE/RESTORE EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER OF THE IMPROVEMENTS.
A DIELECTRIC COUPLING SHALL BE USED WHERE PIPING OF DIFFERENT MATERIALS ARE CONNECTED TOGETHER.

LEGEND

- PROPERTY LINE
- R/W LINE
- OVERHEAD UTILITY LINES
- UNDERGROUND ELEC. LINES
- SANITARY SEWER LINE
- BLDG. SETBACK — SB
- TREE PROTECTION AREA — TPA
- BUFFER AREA — B
- EXISTING IRON PIPE
- LIGHT POLES
- UTILITY POLE
- SEWER CLEANOUT
- WATER METER
- CURB INLET
- EX. SEWER MAN HOLE
- PRO. FIRE HYDRANT

PROTECTION OF POTABLE WATER SUPPLIES AND STORM SEWERS:

A. CROSS–CONNECTIONS PROHIBITED
THERE SHALL BE NO PHYSICAL CONNECTIONS BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND A SEWER, OR APPURTENANCE THERETO WHIch WOULD PERMIT THE PASSAGE OF ANY WASTEWATER OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME INTO CONTACT WITH ANY PART OF A SEWER MANHOLE.

B. RELATION TO WATER MAINS AND STORM SEWERS
1. A DISTANCE OF 100 FEET SHALL BE MAINTAINED BETWEEN ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE INCLUDING ANY WS–I WATERS OR CLASS I OR CLASS II IMPOUNDED RESERVOIRS USED AS A SOURCE OF DRINKING WATER. IF THIS MINIMUM SEPARATION CAN NOT BE MAINTAINED, FERROUS SEWER PIPE WITH JOINTS EQUIVALENT TO PUBLIC WATER SUPPLY DESIGN STANDARDS AND PRESSURE TESTED TO 150 PSI TO ASSURE WATERTIGHTNESS, SHALL BE USED. THE MINIMUM SEPARATION SHALL HOWEVER NOT BE LESS THAN 25 FEET FROM A PRIVATE WELL OR 50 FEET FROM A PUBLIC WATER SUPPLY WELL.
2. ALL EXISTING WATERWORKS UNITS, SUch AS BASINS, WELLS, OR OTHER TREATMENT UNITS, WITHIN 200 FEET OF THE PROPOSED SEWER SHALL BE SHOWN ON THE ENGINEERING PLANS.

C. RELATION TO WATER MAINS AND STORM SEWERS
1. HORIZONTAL AND VERTICAL SEPARATION
A. SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A 10 FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY (DEM OR DEH) MAY ALLOW DEVIATION ON A CASE–BY–CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUch DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATER MAIN, PROVIDED THAT THE WATER MAIN IS IN A SEPARATE TRENch OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 IN ABOVE THE TOP OF THE SEWER.
B. IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE OR ANYTIME THE SEWER IS OVER THE WATER MAIN, BOTH THE WATER MAIN AND SEWER MUST BE CONSTRUCTED OF FERROUS PIPE COMPLYING WITH PUBLIC WATER SUPPLY DESIGN STANDARDS AND BE PRESSURE TESTED TO 150 PSI TO ASSURE WATERTIGHTNESS BEFORE BACKFILLING.
C. A 12 INch VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR FERROUS PIPE SPECIFIED.
2. CROSSINGS
A. SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INchES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.
B. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, ONE OF THE FOLLOWING METHODS MUST BE SPECIFIED:
I. THE SEWER SHALL BE DESIGNED AND CONSTRUCTED OF FERROUS PIPE AND SHALL BE PRESSURE TESTED AT 150 PSI TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING, OR
II. EITHER THE WATER MAIN OR THE SEWER LINE MAY BE ENCASED IN A WATERTIGHTNESS CARRIER PIPE WHIch EXTENDS 10 FEET ON BOTH SIDES OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATER MAIN. THE CARRIER PIPE SHALL BE OF MATERIALS APPROVED BY THE REGULATORY AGENCY FOR USE IN WATER MAIN CONSTRUCTION.

STORMWATER MANAGEMENT AS DIFFUSE FLOW ON LOTS:

1. LOTS 1–6 WILL BE GRADED SO THAT THE ALL ROOF DRAINS AND THE DRIVEWAY FOR THE PROPOSED HOUSE WILL BE DIRECTED TO THE RIGHT–OF–WAT FOR NUTRIENT TREATMENT. THE REAR OF THE LOTS WILL DRAIN TO THE EXISTING WOODED PORTION OF THIS PARCEL. CONVEYANCE OF ROOF RUNOFF IN A CONCENTRATED FASHION TO THE EPHEMERAL STREAM IS NOT PERMISSIBLE–THE NATURAL BUFFERING CAPACITY OF DIFFUSE FLOW THROUGH THE FORESTED OPEN SPACE SHOULD BE UTILIZED.
2. LOTS 7–11 WILL BE GRADED SO THAT THE ROOF DRAINS AND THE DRIVEWAY FOR THE PROPOSED HOUSE WILL BE DIRECTED TO THE RIGHT–OF–WAY FOR NUTRIENT TREATMENT. THE REAR OF THE LOTS WILL DRAIN TO THE EXISTING WOODED PORTION OF THIS PARCEL. CONVEYANCE OF ROOF RUNOFF IN A CONCENTRATED FASHION TO THE EPHEMERAL STREAM IS NOT PERMISSIBLE–THE NATURAL BUFFERING CAPACITY OF DIFFUSE FLOW THROUGH THE FORESTED OPEN SPACE SHOULD BE UTILIZED
3. LOTS 12–18 WILL BE GRADED SO THAT THE ROOF DRAINS AND THE DRIVEWAY FOR THE PROPOSED HOUSE WILL BE DIRECTED TO THE RIGHT–OF–WAT FOR NUTRIENT TREATMENT.
4. HOA TO MAINTAIN THE SCMS. LEGAL AGREEMENT TO BE OBTAINED FROM THE TOWN OF CARRBORO FOR MAINTENANCE ACTIVITIES IN THE PUBLIC RIGHT–OF–WAY. AGREEMENT MUST BE OBTAINED PRIOR TO ISSUANCE OF FIRST BUILDING PERMIT

50 0 25 50 100 200
1 inch = 50 ft.

CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

NORTH CAROLINA PROFESSIONAL SEAL 25522 ENGINEER WILLIAM C CREDLE
PRELIMINARY FOR REVIEW ONLY

■ UTILITY PLAN

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH–2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS		
NO.	DATE	DESCRIPTION
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△		
△		
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DATE	SEPTEMBER 10, 2016
SCALE	1"=50'
LICENSE	C–0254
JOB	\2017\170211\Base 171017
SHEET NUMBER	C0300
OF	12 SHEETS

N:\2017\170211\Base 171017 Plot Date: 09/10/17

1. LATERAL SEPARATION OF SEWERS AND WATER MAINS: Water mains shall be laid at least 10 ft. laterally from existing or proposed sewers, unless local conditions or barriers prevent a 10 ft. lateral separation in which case:

   A. The water main is laid in a separate trench, with the elevation of the bottom of the water main at least 18 in. above the top of the sewer, or

   B. The water main is laid in the same trench as the sewer with the water main located at one side on a bench of undisturbed earth, and the elevation of the bottom of the water main at least 18 in. above the top of the sewer.

2. CROSSING A WATER MAIN OVER A SEWER: Whenever it is necessary for a water main to cross over a sewer, the water main shall be laid at such an elevation that the bottom of the water main is at least 18 in. above the top of the sewer, unless local conditions or barriers prevent an 18 in. vertical separation, in which case both the water main and sewer shall be constructed of ductile iron pipe and with joints that are equivalent to water main standards for a distance of 10 ft. on each side of the point of crossing.

3. CROSSING A WATER MAIN UNDER A SEWER: Whenever it is necessary for a water main to cross under a sewer, both the water main and the sewer shall be constructed of ferrous materials and with joints equivalent to water main standards for a distance of 10 ft. on each side of the point of crossing. A section of water main pipe shall be centered at the point of crossing.

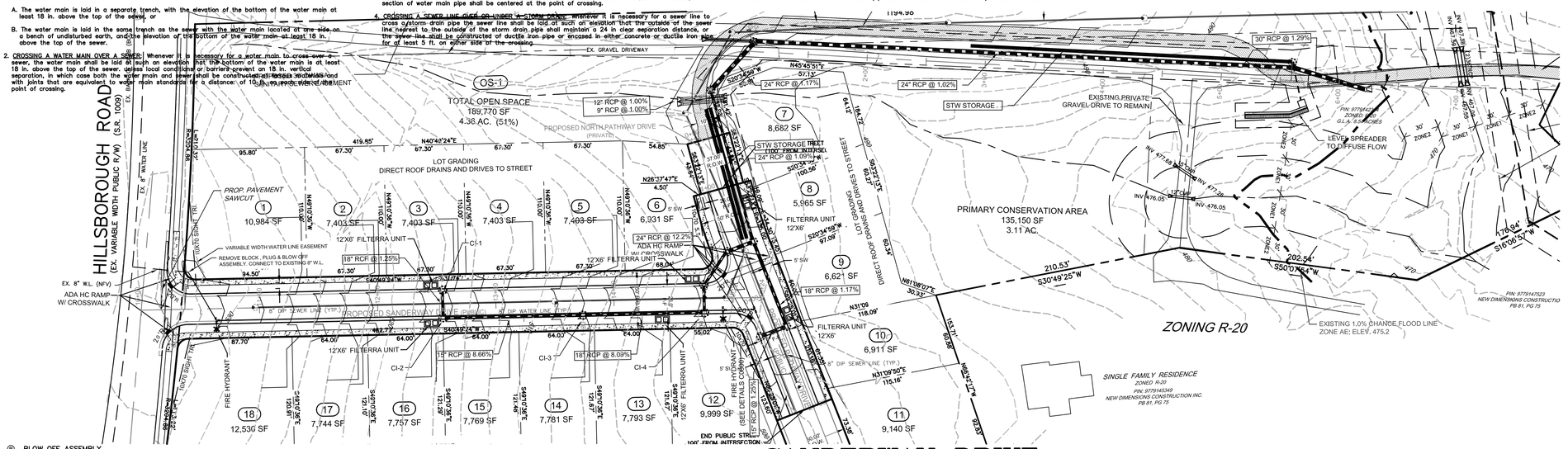
4. CROSSING A SEWER LINE OVER OR UNDER A STORM DRAIN: Whenever it is necessary for a sewer line to cross a storm drain pipe the sewer line shall be laid at such an elevation that the outside of the sewer line nearest to the outside of the storm drain pipe shall maintain a 24 in clear separation distance, or the sewer line shall be constructed of ductile iron pipe or encased in either concrete or ductile iron pipe for at least 5 ft. on either side of the crossing.

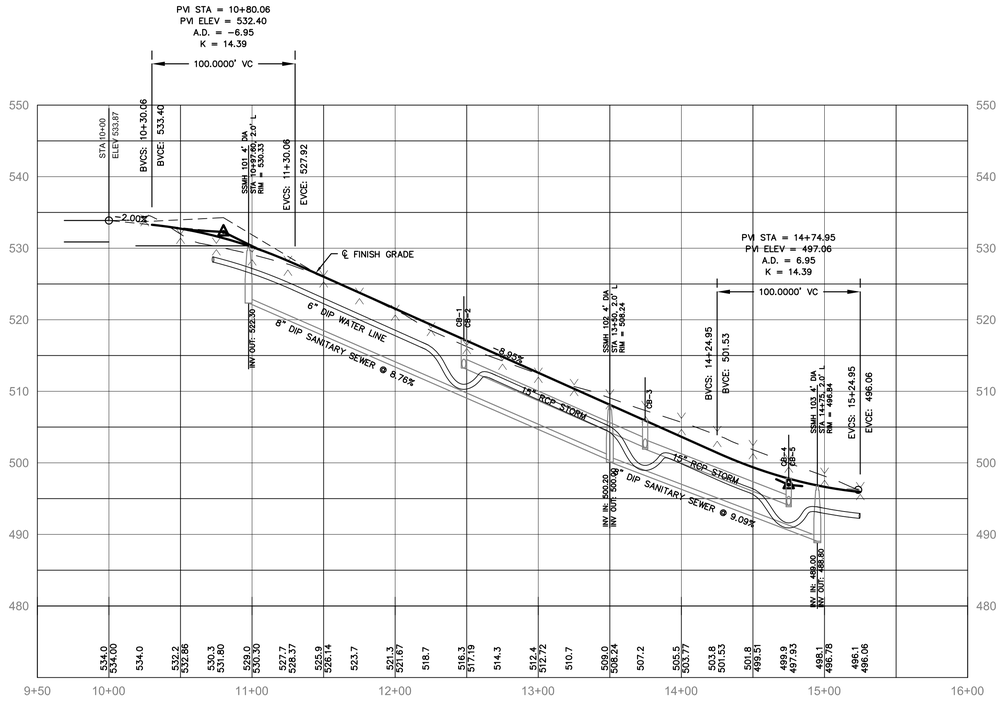
5. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER/OVER A STORM DRAINAGE PIPE: The water main and storm drainage pipe shall be laid at such elevation that the outside of the water main nearest to the outside of the storm drain pipe shall maintain a 12 in clear separation distance.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST TOWN OF CARRBORO & OWASA STANDARDS SPECIFICATIONS.

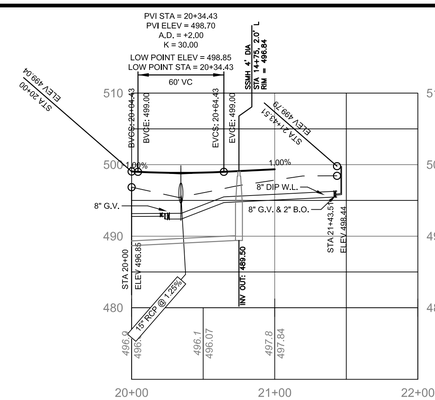
THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES TO VERIFY LOCATIONS, DEPTHS, AND ELEVATIONS PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES. ANY DIFFERENCES SHALL BE REPORTED TO THE OWNER, ENGINEER, AND/OR ARCHITECT.

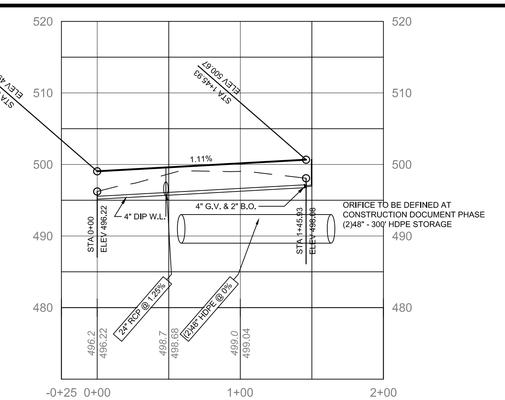
SIDEWALKS WILL BE CONSTRUCTED AT THE TIME OF THE DEVELOPMENT OF EACH LOT.

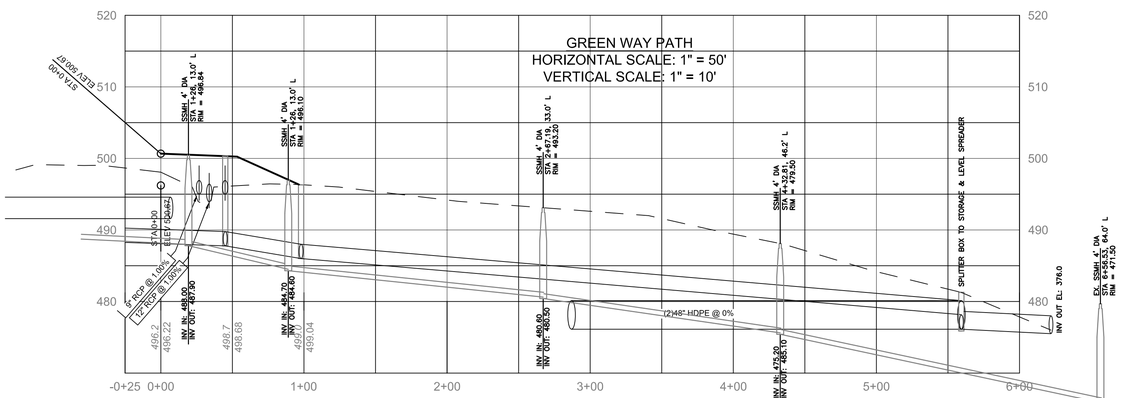




SANDERWAY DRIVE CL PROFILE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'







REVISIONS		
NO.	DATE	DESCRIPTION
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DATE 05/29/18
SCALE: HOR. 1"=50' VER. 1"=10'
DRAWN WEC
JOB \2012\120097case 130215

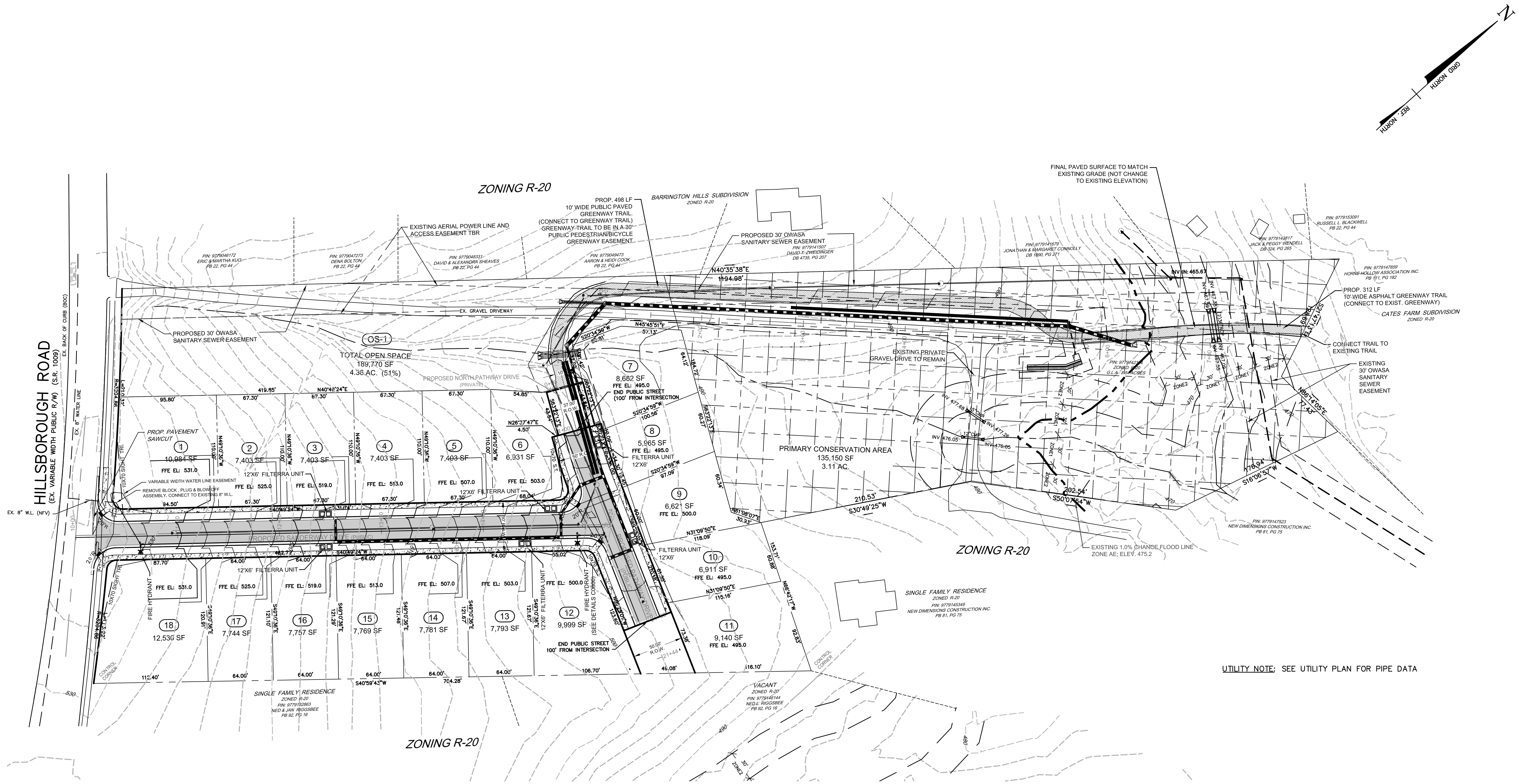
CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS 204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH–2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25551 WILLIAM C CREDLE
PRELIMINARY FOR REVIEW PURPOSES ONLY

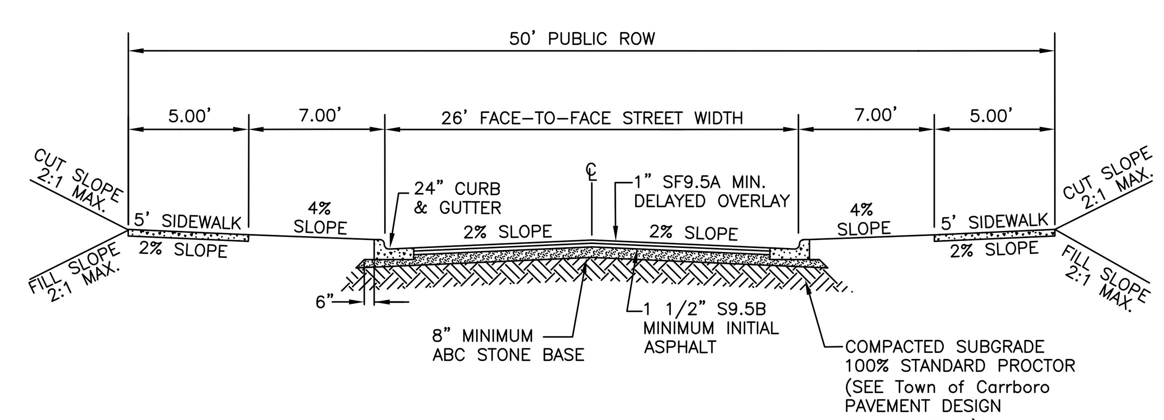
■ PLAN PROFILE
SANDERWAY DRIVE
STA. 10+00 TO STA. 16+00

SHEET NUMBER
C0350
OF 12 SHEETS



UTILITY NOTE: SEE UTILITY PLAN FOR PIPE DATA

RESIDENTIAL STREET WITH CURB

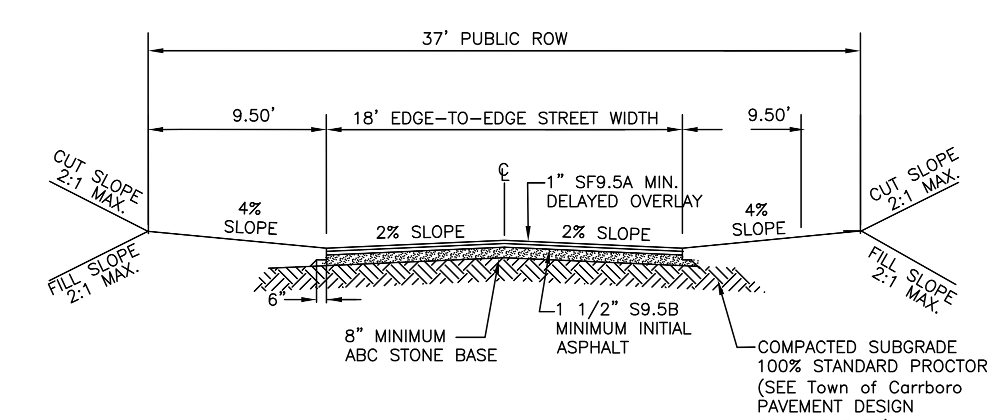


NOTES:

1. TYPE OF STREET SECTION SHALL BE CHOSEN ACCORDING TO THE TABLE OF MINIMUM DESIGN REQUIREMENTS FOR PUBLIC AND PRIVATE RESIDENTIAL STREETS IN SECTION 9 OF THE REFERENCE GUIDE FOR DEVELOPMENT.
2. PAVEMENT DESIGN SHOWN IS MINIMUM, THE ENGINEER SHALL EVALUATE EXISTING CONDITIONS AND PAVEMENT CONDITIONS TO DETERMINE THE NEW PAVEMENT DESIGN.
3. FOR DELAYED OVERLAY SEE TOWN OF CARRBORO SPECIFICATIONS.

SUB-COLLECTOR STREET
WITH CURB

PRIVATE RESIDENTIAL STREET WITH CURB

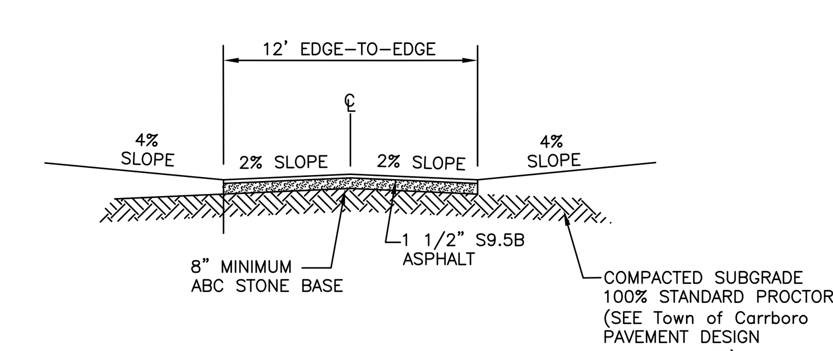


NOTES:

1. TYPE OF STREET SECTION SHALL BE CHOSEN ACCORDING TO THE TABLE OF MINIMUM DESIGN REQUIREMENTS FOR PUBLIC AND PRIVATE RESIDENTIAL STREETS IN SECTION 9 OF THE REFERENCE GUIDE FOR DEVELOPMENT.
2. PAVEMENT DESIGN SHOWN IS MINIMUM, THE ENGINEER SHALL EVALUATE EXISITNG CONDITIONS AND PAVEMENT CONDITIONS TO DETERMINE THE NEW PAVEMENT DESIGN.
3. FOR A 30" ROLL CURB SECTION THE STREET WIDTH SHALL BE 25' BACK-TO-BACK AND THE VERGE WIDTH SHALL BE 2.5'.
4. FOR DELAYED OVERLAY SEE TOWN OF CARRBORO SPECIFICATIONS.

PRIVATE RESIDENTIAL STREET
RIBBON PAVEMENT

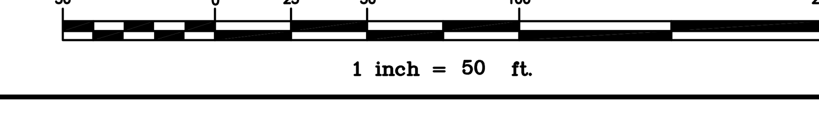
PRIVATE DRIVE

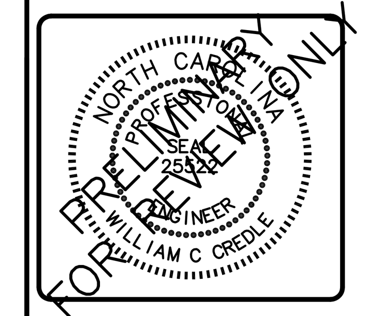


PRIVATE DRIVE
RIBBON PAVEMENT

LEGEND

- PROPERTY LINE
- R/W LINE
- OVERHEAD UTILITY LINES
- UNDERGROUND ELEC. LINES
- SANITARY SEWER LINE
- BLDG. SETBACK — SB
- TREE PROTECTION AREA — TPA
- BUFFER AREA — B
- EXISTING IRON PIPE
- LIGHT POLES
- UTILITY POLE
- SEWER CLEANOUT
- WATER METER
- CURB INLET





CREDLE ENGINEERING COMPANY, INC

ENGINEERS/PLANNERS/SURVEYORS

204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

■ GRADING PLAN

SANDERWAY SUBDIVISION CUP

PROPERTY OF

GH-2, LLC

121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS		
NO.	DATE	DESCRIPTION
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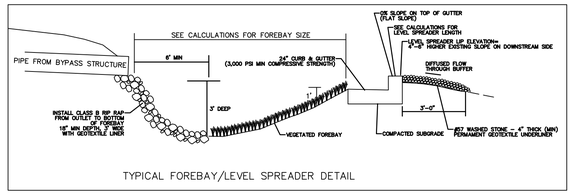
DATE	SEPTEMBER 10, 2016
SCALE	1"=50'
LICENSE	C-0254
JOB	\2017\170211\Base 171017
SHEET NUMBER	C0400
OF	12 SHEETS

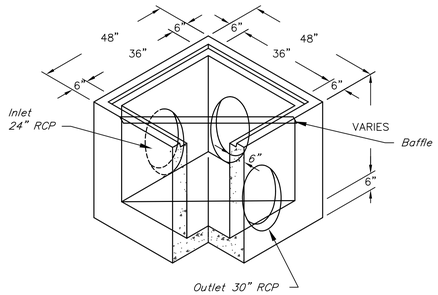
N:\2017\170211\Base 171017 Plot Date: 09/10/17



TYPICAL FOREBAY/LEVEL SPREADER DETAIL

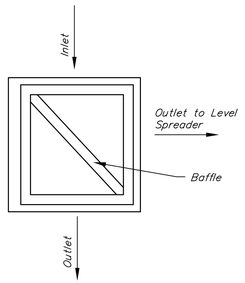
■ LEVEL SPREADER DETAIL

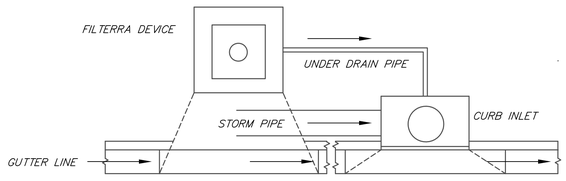
SIZE TO BE DETERMINED AT CONSTRUCTION PLANS



■ SPLITTER BOX DETAIL

SIZE TO BE DETERMINED AT CONSTRUCTION PLANS





■ FILTERRA SETBACK DESIGN

■ PLANTING FOR FILTERRA

Filterra® Plants for Hardy Zone 7

Common Name / Latin Name	Sun	Hardy Range	Height	Spread
Plant Type: Deciduous small trees and shrubs				
Dogwood, Red Osier Cornus stolonifera "Bailey"	Partial Shade or Partial Sun to Full Sun	3A–7A	8' – 10'	8' – 10'

LEGEND

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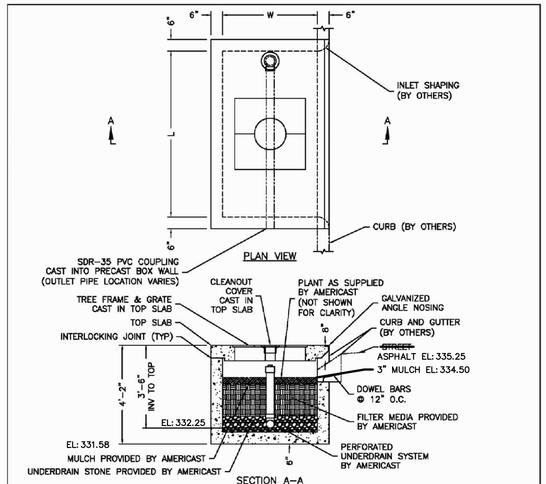
- LIGHT POLES
- UTILITY POLE
- SEWER CLEANOUT
- WATER METER
- CURB INLET
- EX. SEWER MAN HOLE



DESIGNATION	L	W	TREE GRATE QTY & SIZE	OUTLET PIPE
6 x 4	6'–0"	4'–0"	(1) 3x3	4" SDR–35 PVC
8 x 4	8'–0"	4'–0"	(1) 3x3	4" SDR–35 PVC
8 x 6	8'–0"	6'–0"	(1) 4x4	4" SDR–35 PVC
10 x 6	10'–0"	6'–0"	(1) 4x4	6" SDR–35 PVC
~~12 x 6~~	~~12'–0"~~	~~6'–0"~~	~~(2) 3x3~~	~~4" SDR–35 PVC~~
* 12 x 6	12'–0"	6'–0"	(2) 4x4	6" SDR–35 PVC *
~~12 x 7~~	~~12'–0"~~	~~7'–0"~~	~~(2) 4x4~~	~~6" SDR–35 PVC~~

MODIFICATIONS OF DRAWINGS ARE ONLY PERMITTED BY WRITTEN AUTHORIZATION FROM FILTERRA

DRAWING AVAILABLE IN TIF FILE FORMAT.

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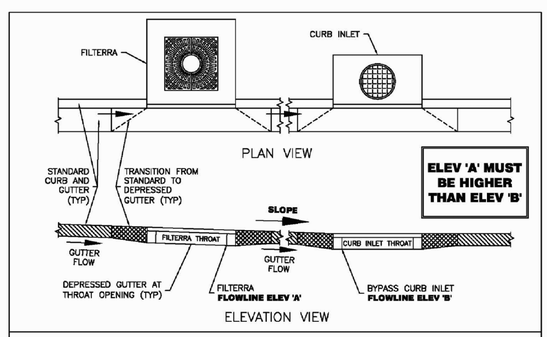
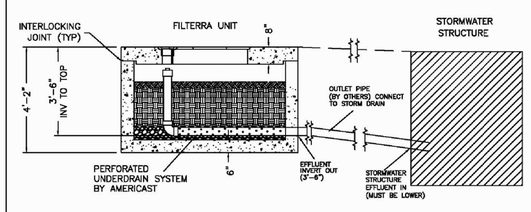
DATE: 03–20–09 | DWG: SE FTNW–3

PRECAST FILTERRA® UNIT NARROW WIDTH CONFIGURATION SOUTHEAST REGION

filterra® US PAT 6,277,274 AND 6,569,321





MODIFICATIONS OF DRAWINGS ARE ONLY PERMITTED BY WRITTEN AUTHORIZATION FROM FILTERRA

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DATE: 07–07–06 | DWG: FLP–2

FILTERRA® TYPICAL FLOWLINE AND OULET PIPE RELATIONSHIP

filterra® US PAT 6,277,274 AND 6,569,321

CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25502 WILLIAM C CREDLE — PRELIMINARY FOR REVIEW ONLY — NOT FOR CONSTRUCTION

■ STORMWATER DETAILS

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH–2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS		
NO.	DATE	DESCRIPTION
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DATE: SEPTEMBER 10, 2016
SCALE: AS SHOWN
LICENSE: C–0254
JOB: \2017\170211\Base 170117
SHEET NUMBER: C0500
OF 12 SHEETS

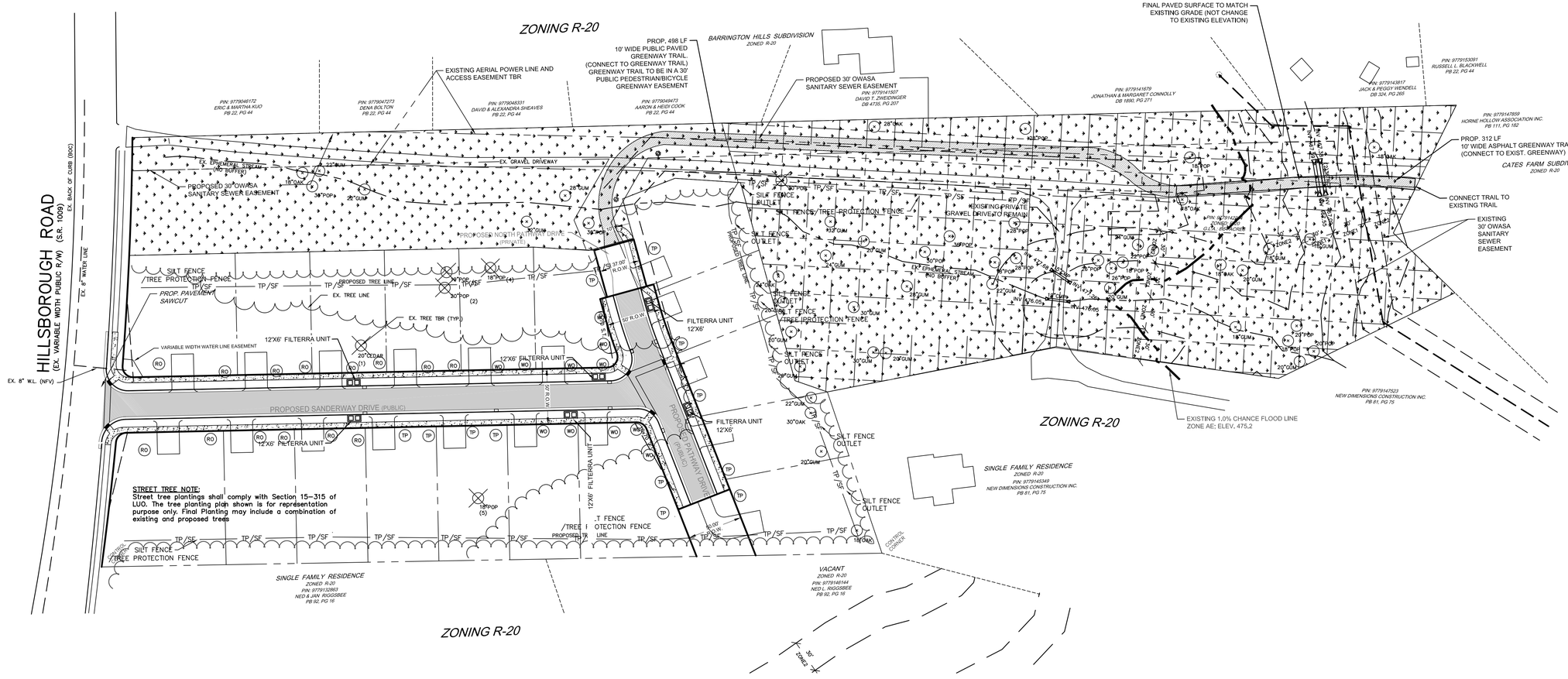
P:\2017\170211\Base 170117 Plot Date: 09/19/17

LANDSCAPING KEY

SYMBOL	QUANITY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE	SPACING
RO	14	Quercus rubra	RED OAK (EASTERN)	2"	CT	AS SHOWN
WO	11	Quercus bicolor	WHITE OAK	2"	CT	AS SHOWN
TP	12	Liriodendron tulipifera	TULIP POPLAR	2"	ET	AS SHOWN

NOTE:

TREES SHALL BE PLANTED AS INDICATED ON PLAN WITH REFERENCE TO DRIVEWAYS AND SHALL NOT BE PLACED UNIFORMLY, BUT IN AN IRREGULAR PATTERN WITH A MINIMUM OF ONE 12" DIAMETER TREE (WHEN FULLY MATURE) EVERY 100 FEET.



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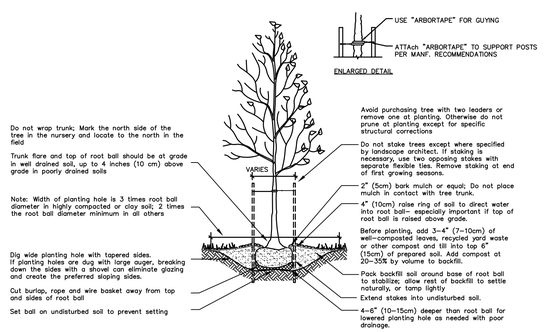
- UTILITY POLE
- SEWER CLEANOUT
- WATER METER
- CURB INLET
- EX. SEWER MAN HOLE

GENERAL LANDSCAPING NOTES:

1. All denuded areas not occupied by structures, paving or plantings shall be graded and seeded.
2. All shrub and tree plantings shall be mulched with 3" clean pinestraw mulch.
3. Contractor to utilize onsite topsoil. Contractor will supply additional soils, as specified on the planting detail, for backfilling holes, beds and building water berms. Soil shall be composed of a minimum of 50% topsoil and 25% composted organic material.
4. Acceptable composted organic materials for soil conditioning will be pulverized pine bark, composted animal manures, or shredded/composted leaves.
5. Contractor is to verify the location of existing utilities prior to beginning landscape installation.
6. Contractor is to verify the quantities of plant materials as shown on the plan. Plantings indicated on the plan shall prevail over any quantities indicated in any plant lists or other written documents should irregularities arise.
7. All plantings shall be thoroughly watered in on the same day as planted.
8. All containerized plant material shall have the root balls scarified as needed prior to installation.
9. All plant holes shall be twice the width of the actual root ball size.
10. Remove burlap and all rope constraints from the top of the root ball and from around the trunk of the tree prior to backfilling holes.
11. All trees that are smooth barked at the time of planting and greater than 2" in diameter shall have the trunks wrapped from the top of the backfill up to the first branches with tree wrap.
12. All trees shall be planted at a depth no lower than the original grades that the tree was grown in the nursery. Tree ball may be elevated out of the ground up to 1/3 the depth of the rootball, depending upon soil conditions found on the site.
13. The site shall be stabilized and seeded prior to issuance of a certificate of occupancy.
14. Plants selected and planting procedures shall conform to the accepted standards of established by American Association of Nurserymen, latest edition.
15. Lawn areas shall be raked to remove sticks, rocks, building debris, trash and other foreign matter that would be a detriment to mowing.
16. Limbs on trees to be maintained 6' above ground level.
17. All underbrush to be back and maintained.



TREE PLANTING DETAIL (B & B PLANTS)

Adapted from "Architectural Graphic Standards" 1998 and Watson & Himelick "Principles and Practices of Planting Trees and Shrubs" 1997.

Notes

1. Where several trees will be planted close together such that they will likely share root space, till in soil amendments to a depth of 4-6" (10-15 cm) over the entire area.
2. For container-grown trees, use fingers or small hand tools to pull the roots out of the outer layer of potting soil; then cut of pull apart any roots circle the perimeter of the container.
3. During the design phase, confirm that the water drains out of the soil; use lowered planting hole depth and design alternative drainage system as required.
4. Thoroughly soak the tree root ball and adjacent prepare soil several times during the first month after planting and regularly throughout the following two summers.
5. The planting process is similar for deciduous and evergreen trees.

TREE CANOPY COVERAGE:

1. AREA OF TREE CANOPY COVERAGE EQUALS 228,399 S.F. THIS EQUATE TO 61.4 PERCENT OF 371,982 S.F. ZONING LOT.
2. AREA OF TREE CANOPY COVERAGE INCLUDES CURRENTLY WOODED OPEN SPACE PER SECTION 15-316 OF THE LUO

STREET TREE NOTE:
Street tree plantings shall comply with Section 15-315 of LUO. The tree planting plan shown is for representation purpose only. Final Planting may include a combination of existing and proposed trees

50 0 25 50 100 200

1 inch = 50 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25652 WILLIAM C. CREDLE — FOR PRELIMINARY REVIEW ONLY

CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2906 PH (919) 682-2065 FX

■ LANDSCAPING PLAN

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH-2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS		
NO.	DATE	DESCRIPTION
△		
△		
△		
△		
△		
△		

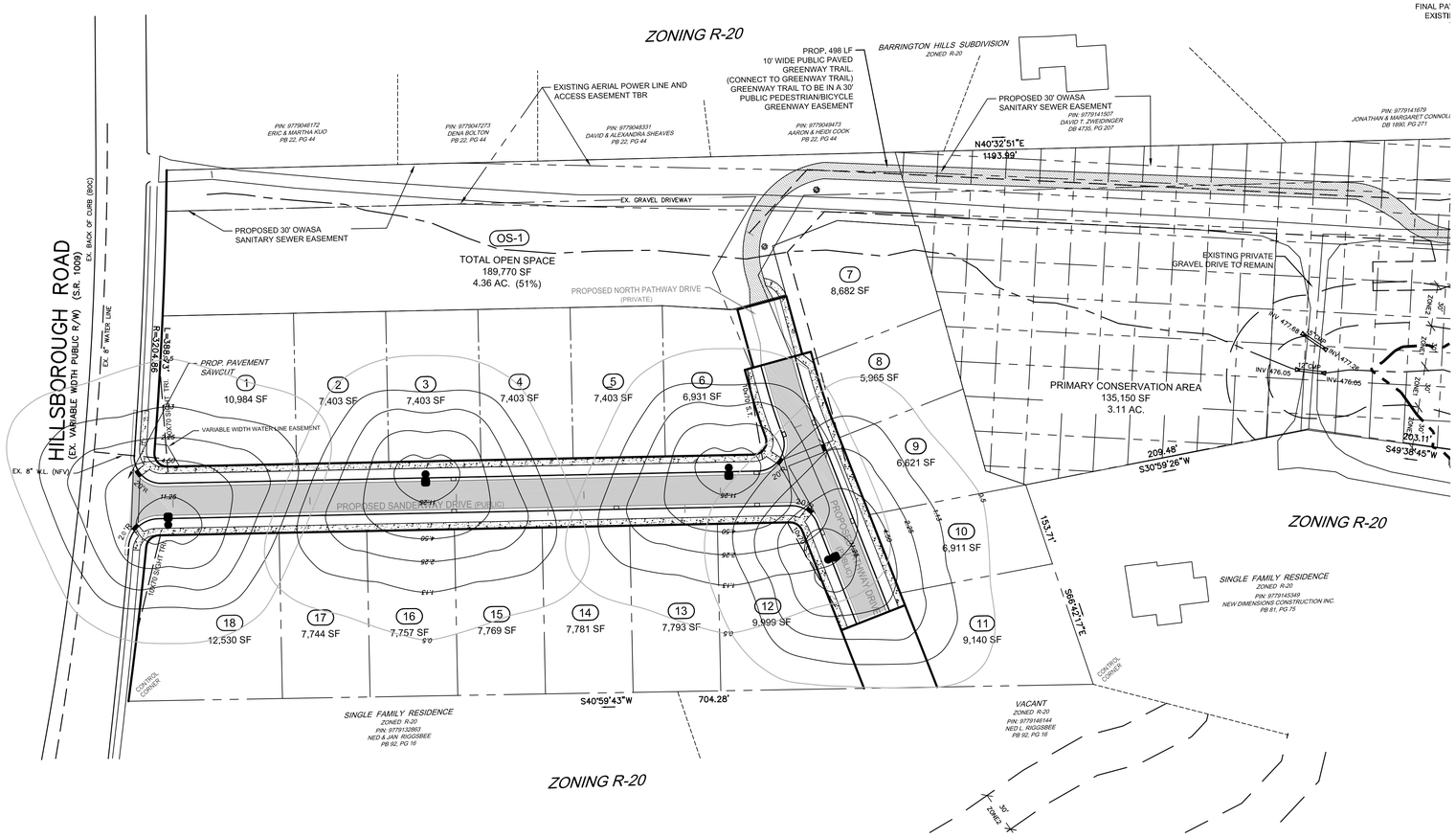
DATE	SEPTEMBER 10, 2016
SCALE	1"=50'
LICENSE	C-0254
JOB	\2017\170211\Base 171017
SHEET NUMBER	C0600
OF	12 SHEETS

N:\2017\170211\Base 171017 - Plot Date: 09/10/17

NOTES

GENERAL NOTES

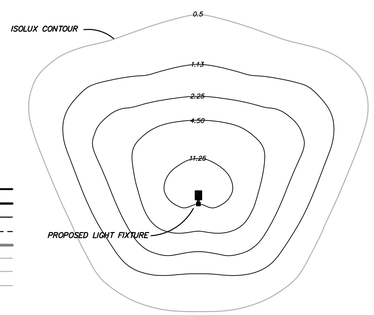
Site lighting cannot exceed 1/2 foot candle at a residential property line, 5 foot candle at a commercial or right-of-way line and must not cause glare beyond the property line. This must be verified by field survey (by use of photometric survey) prior to the certificate of compliance being issued. Methods to accomplish this may include, but not be limited to, horizontal lamps, shielding of lamps, reduction in number of fixture, Reduction of wattage of bulbs, etc. all of this information, including details, will be required on building plans prior to issuance of the building permit.



ZONING R-20

LEGEND

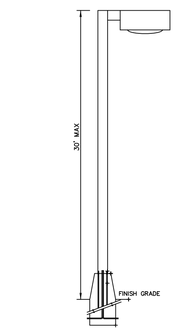
- PROPERTY LINE
- R/W LINE
- OVERHEAD UTILITY LINES
- UNDERGROUND ELEC. LINES
- SANITARY SEWER LINE
- BLDG. SETBACK — SB
- TREE PROTECTION AREA — TPA
- BUFFER AREA — B
- EXISTING IRON PIPE
- LIGHT POLES
- UTILITY POLE
- SEWER CLEANOUT
- WATER METER
- CURB INLET
- EX. SEWER MAN HOLE



POLE LIGHT NTS

AREA LIGHTING FIXTURES SHALL BE "HR HAMMER" STYLE AS PROVIDED BY LUMARK MODEL # HR-6, MPHR – R2-400-MT OR EQUAL LUMINARIES SHALL BE METAL HALIDE 400 WATT LAMPS OR EQUIVALENT LED

NUMBER OF SINGLE FIXTURE: FOUR (4)
LUMINARIES: 400 WATT METAL HALIDE, 25 FOOT MOUNTING HEIGHT OR EQUIVALENT LED



LIGHT FIXTURE DETAIL NTS

50 0 25 50 100 200

1 inch = 50 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25514 WILLIAM C CREDLE
FOR PRELIMINARY REVIEW ONLY

CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2906 PH (919) 682-2905 FX

LIGHTING PLAN

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH-2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS		
NO.	DATE	DESCRIPTION
△		
△		
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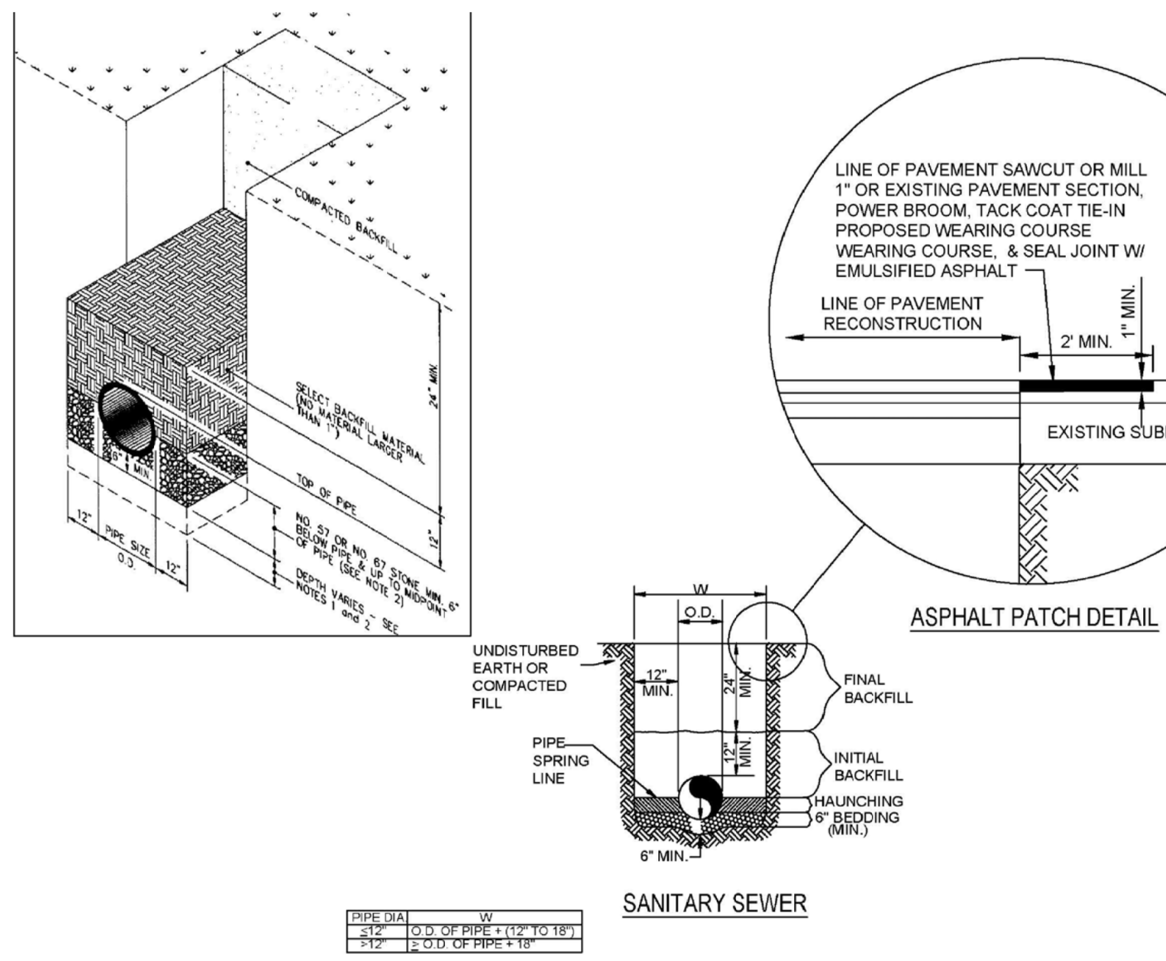
DATE: SEPTEMBER 10, 2016
SCALE: 1"=50'
LICENSE: C-0254
JOB: \2017\170211\Base 171017
SHEET NUMBER: C0700
OF 12 SHEETS

N:\2017\170211\Base 171017 Print Date: 09/10/17



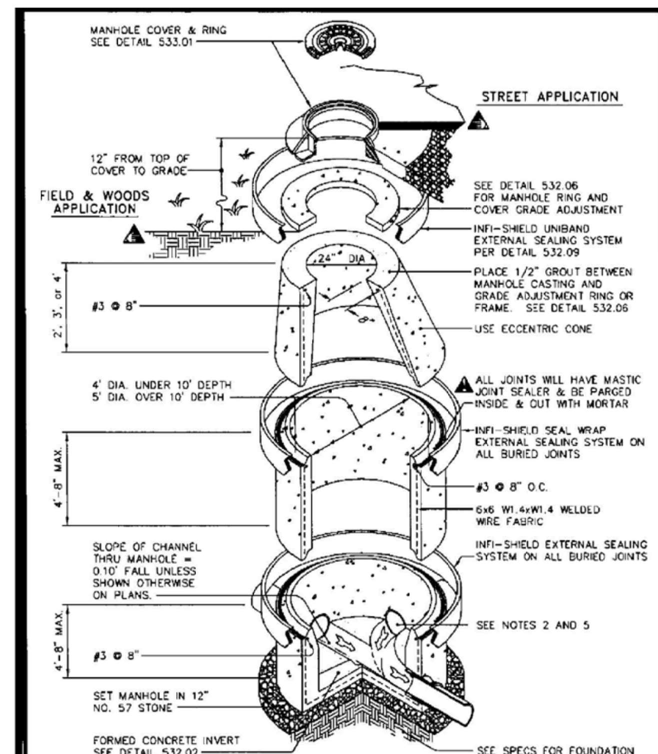
PIPE DIA	W
≤12"	O.D. OF PIPE + (12" TO 18")
>12"	≥ O.D. OF PIPE + 18"

GENERAL NOTES

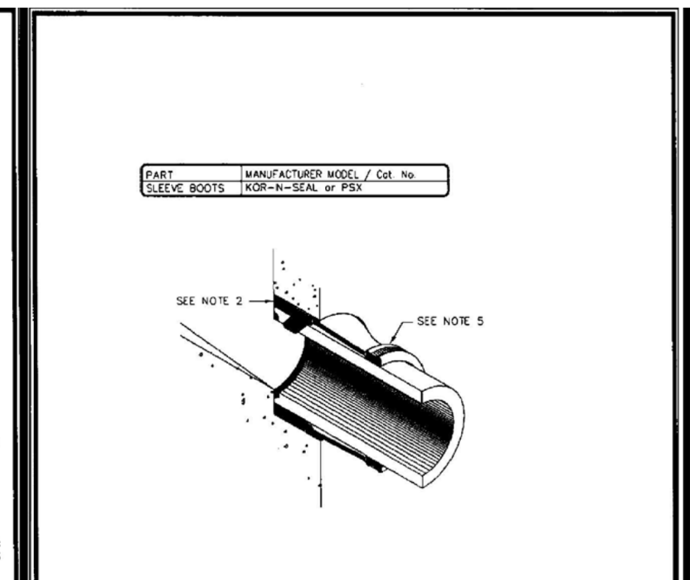
1. BEDDING SHALL BE CLASS I WORKED BY HAND.
2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I OR CLASS II COMPACTED TO 95% STANDARD PROCTOR.
3. INITIAL BACKFILL SHALL BE CLASS I WORKED BY HAND OR CLASS II COMPACTED TO 95% STANDARD PROCTOR.
4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 95% STANDARD PROCTOR.
5. FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3. AND 4.
6. FOUNDATION STONE SHALL BE REQUIRED WHEN SOIL CONDITIONS ARE UNSUITABLE.
7. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV COMPACTED TO 95% STANDARD PROCTOR.
8. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-11.
9. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV MATERIALS SHALL BE COMPACTED ± 2% OF THEIR OPTIMUM MOISTURE CONTENT.
10. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
11. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE
12. AN ADDITIONAL 1 INCH DEPTH OF CUSHIONING MATERIAL WILL BE REQUIRED FOR EACH ADDITIONAL 2 FEET OF TRENCH DEPTH IN ACCESS OF 16 FEET UP TO A MAXIMUM OF 12 INCHES OF CUSHIONING MATERIAL.

UTILITY TRENCH AND BEDDING DETAIL

NOT TO SCALE



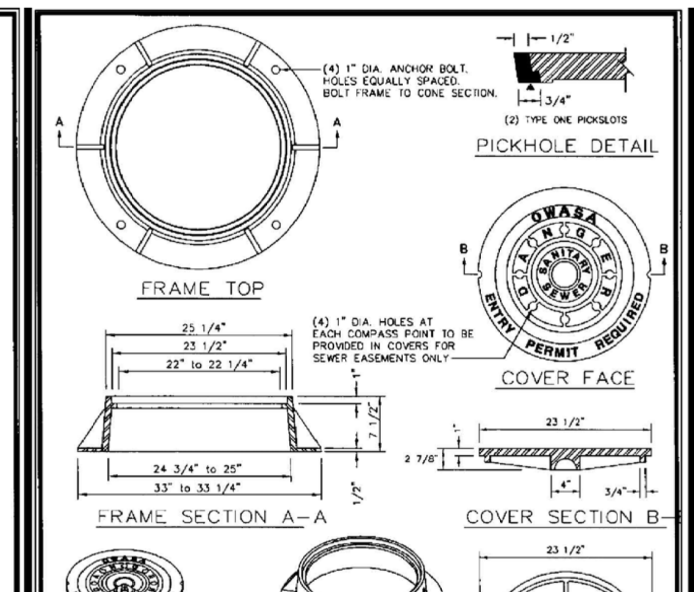
ORANGE WATER AND SEWER AUTHORITY — STANDARD ECCENTRIC MANHOLE DETAIL — Not To Scale — Detail # 532.01 — Revision Date: April 13, 2007 — Sheet 1 of 2



PART	MANUFACTURER MODEL / Cat. No.
SLEEVE BOOTS	KOR-N-SEAL or PSX

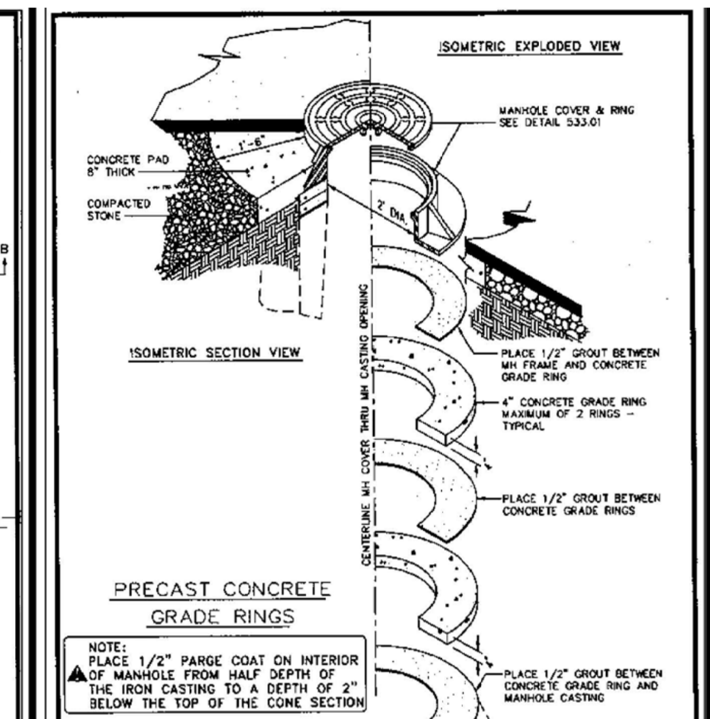
NOTES:
1. Concrete strength to be 4,000 PSI minimum.
2. Pipes will be grouted inside and out.
3. Joints will have mastic joint sealer and be parged inside and out with mortar.
4. Reinforcement design to conform to the requirements of ASTM C478.
5. Flexible sleeve boots cast in place or installed with stainless steel expander rings as manufactured by Kor-N-Seal or PSX shall be used for pipe connections. Boots shall be secured to pipe using (2) stainless steel bands. Precast inverts will not be accepted, unless otherwise directed by OWASA's inspectors.

ORANGE WATER AND SEWER AUTHORITY — STANDARD ECCENTRIC MANHOLE DETAIL — Not To Scale — Detail # 532.01 — Revision Date: April 13, 2007 — Sheet 2 of 2



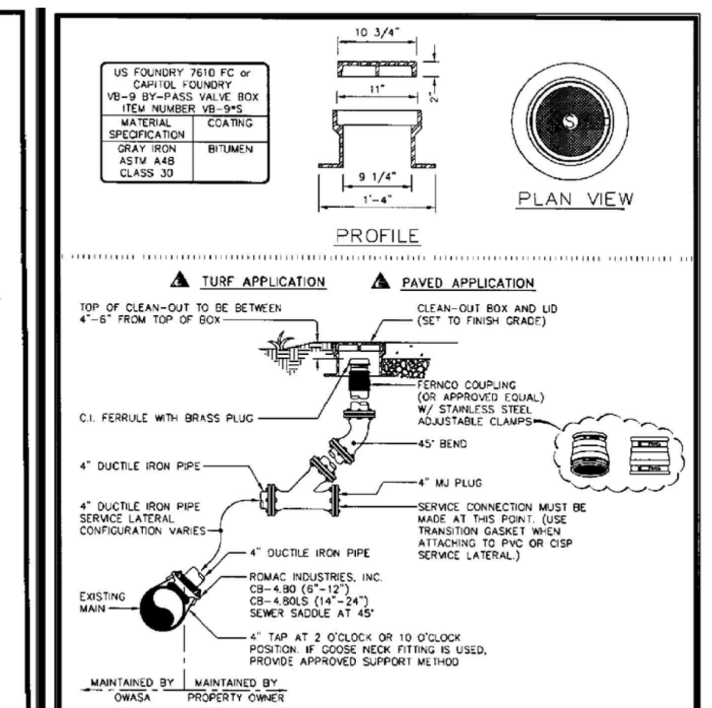
APPROVED MODELS	EAST JORDAN IRON WORKS V-1384	US FOUNDRY USF-669	CAPITOL FOUNDRY MH-2001
COVER WEIGHT	135 Lbs.	125 Lbs.	120 Lbs.
FRAME WEIGHT	180 Lbs.	190 Lbs.	190 Lbs.
LOAD RATING	HEAVY DUTY	HEAVY DUTY	HEAVY DUTY
MATERIAL	ASTM A 48 CLASS 35B	ASTM A 48 CLASS 35B	ASTM A 48 CLASS 35B
FINISH	UNCOATED	UNCOATED	UNCOATED

ORANGE WATER AND SEWER AUTHORITY — SANITARY SEWER MANHOLE FRAME and COVER — Not To Scale — Detail # 533.01 — Revision Date: April 13, 2007 — Sheet 1 of 1



NOTES:
1. Install Infi-Shield seal wrap as manufactured by Sealing Systems, Inc. per detail 532.09.

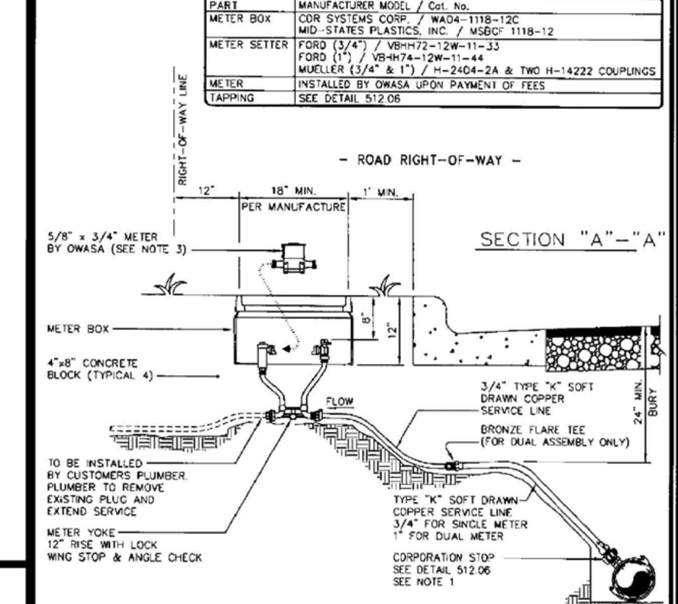
ORANGE WATER AND SEWER AUTHORITY — MANHOLE RING AND COVER GRADE ADJUSTMENT — Not To Scale — Detail # 532.06 — Revision Date: April 13, 2007 — Sheet 3 of 3



NOTES:
1. This detail depicts a typical layout. Variations may be approved.
2. Service saddles may be used only on existing sewer mains. Tees / Wyes shall be used for new construction.

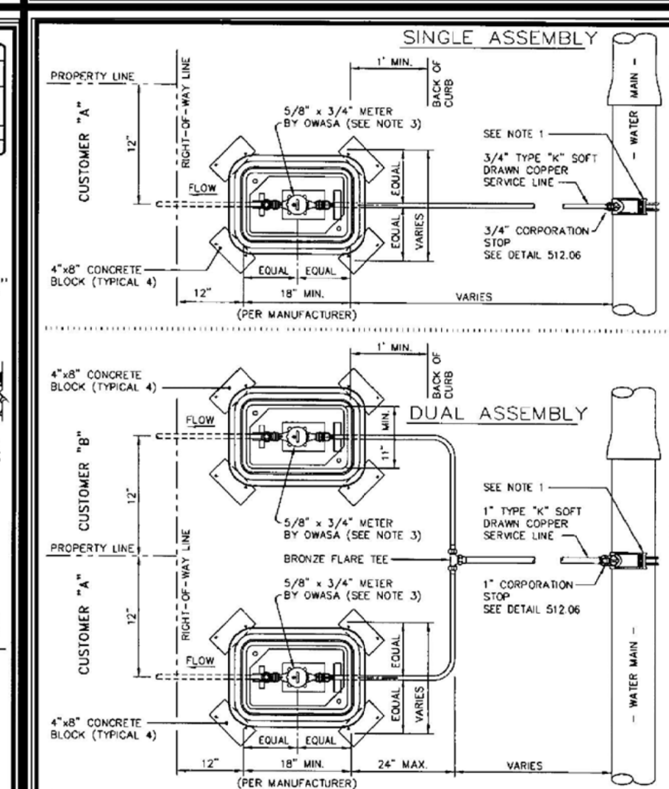
ORANGE WATER AND SEWER AUTHORITY — 4" SEWER TAP and STUB-OUT PAVED APPLICATION CLEAN OUT — Not To Scale — Detail # 534.01 — Revision Date: April 13, 2007 — Sheet 1 of 1

PART	MANUFACTURER MODEL / Cat. No.
METER BOX	CDR SYSTEMS CORP. / WAD4-1118-12C; MID-STATES PLASTICS, INC. / MSBCF 1118-12
METER SETTER	FORD (3/4") / VBHH72-12W-11-33; FORD (1") / VBHH74-12W-11-44; MUELLER (3/4" & 1") / H-2404-2A & TWO H-14222 COUPLINGS
METER	INSTALLED BY OWASA UPON PAYMENT OF FEES
TAPPING	SEE DETAIL 512.06



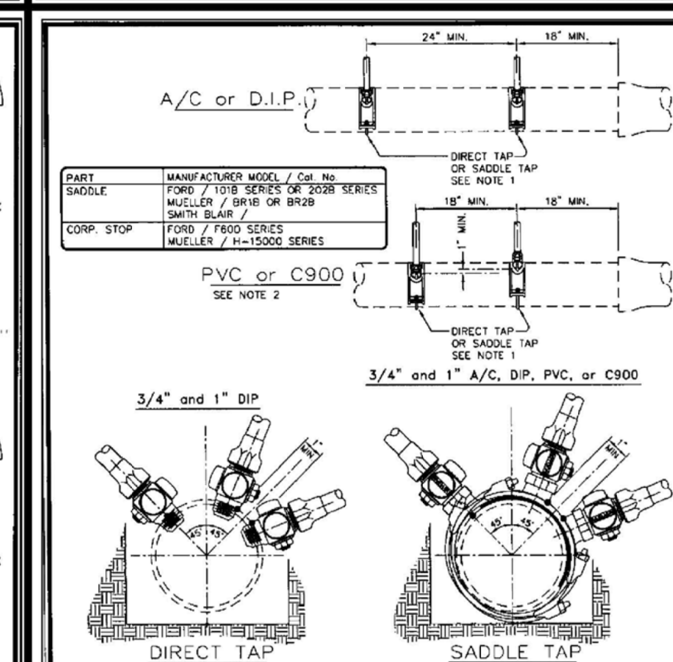
NOTES:
1. Bronze service saddles shall be used on all service connections. Direct taps shall be made only as directed by an OWASA representative. See tapping detail 512.06.
2. Omitted
3. If installation is for stub-out meter, meter should be purchased from OWASA. (At applicants expense)
4. Meter must be level across meter connections.
5. Substitution requires approval by OWASA's Director of Engineering.

ORANGE WATER AND SEWER AUTHORITY — 3/4" SINGLE & 1" DUAL SERVICE INSTALLATION — Not To Scale — Detail # 515.01 — Revision Date: April 13, 2007 — Sheet 1 of 2



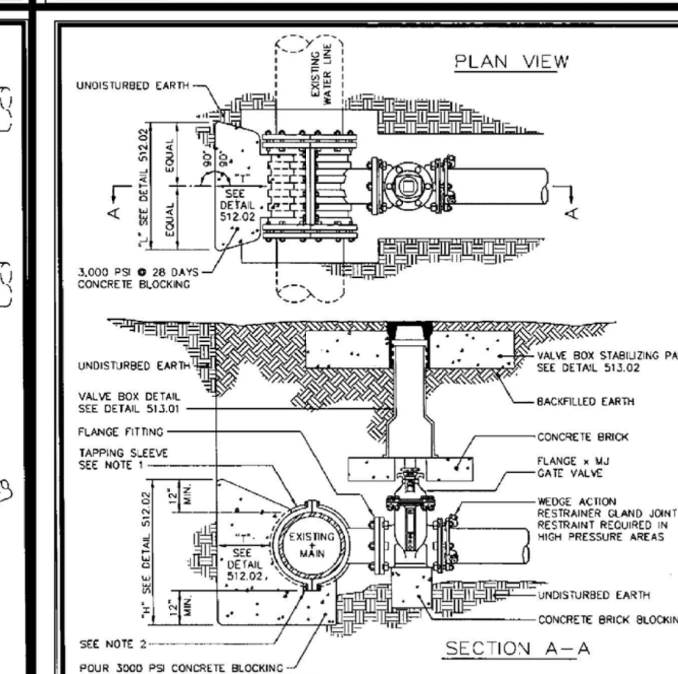
ORANGE WATER AND SEWER AUTHORITY — 3/4" SINGLE & 1" DUAL SERVICE INSTALLATION — Not To Scale — Detail # 515.01 — Revision Date: April 13, 2007 — Sheet 2 of 2

PART	MANUFACTURER MODEL / Cat. No.
SADDLE	FORD / 101B SERIES OR 202B SERIES; MUELLER / BR1B OR BR2B; SMITH BLAIR /
CORP. STOP	FORD / F600 SERIES; MUELLER / H-15000 SERIES



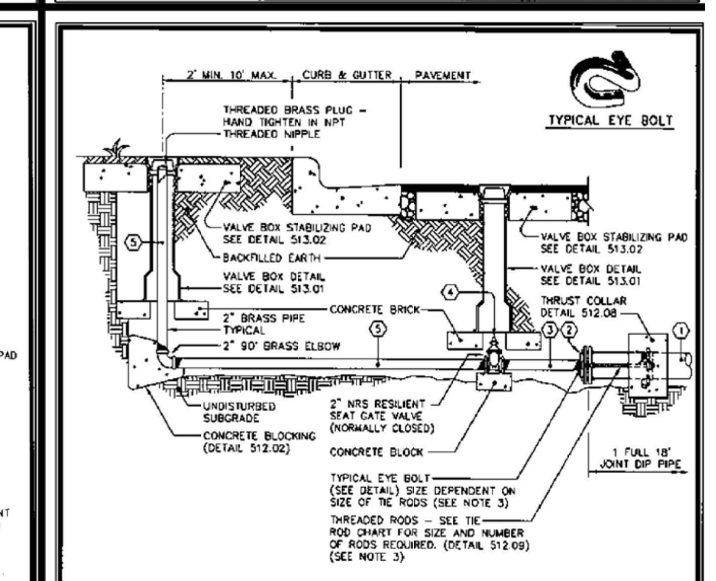
NOTES:
1. All bronze saddle (Single or double strap for 3/4" and 1")
2. If 2 taps are made on each side of the main there shall be a minimum of 18" horizontal separation. Multiple taps on the same side shall have a minimum 18" horizontal separation and staggered a minimum of 1" vertically to prevent damage to the main.
3. Bronze service saddles shall be used on all service connections. Direct taps shall be made only as directed by an OWASA representative.

ORANGE WATER AND SEWER AUTHORITY — STANDARD 3/4" and 1" WATER TAPPING DETAIL — Not To Scale — Detail # 512.06 — Revision Date: April 13, 2007 — Sheet 1 of 1



NOTES:
1. Concrete blocking is to be formed to ensure accesibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.
4. Taps onto in-service mains by OWASA personnel only.

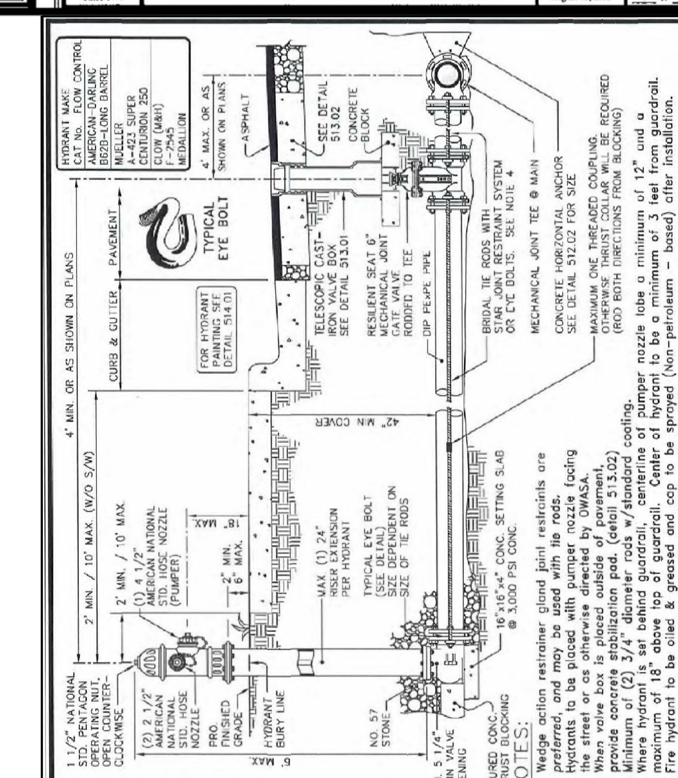
ORANGE WATER AND SEWER AUTHORITY — 4" to 12" STANDARD TAPPING SLEEVE and VALVE ASSEMBLY — Not To Scale — Detail # 512.04 — Revision Date: August 15, 2003 — Sheet 1 of 1



① MAIN	② MJ PLUG	③ NIPPLE	④ GATE VALVE	⑤ BLOW-OFF ASSEMBLY
4"	4" TAPPED FOR 2"	2" x 6"L BRASS	2" NRS	2" BRASS
6"	6" TAPPED FOR 2"	2" x 6"L BRASS	2" NRS	2" BRASS
8"	8" TAPPED FOR 2"	2" x 6"L BRASS	2" NRS	2" BRASS

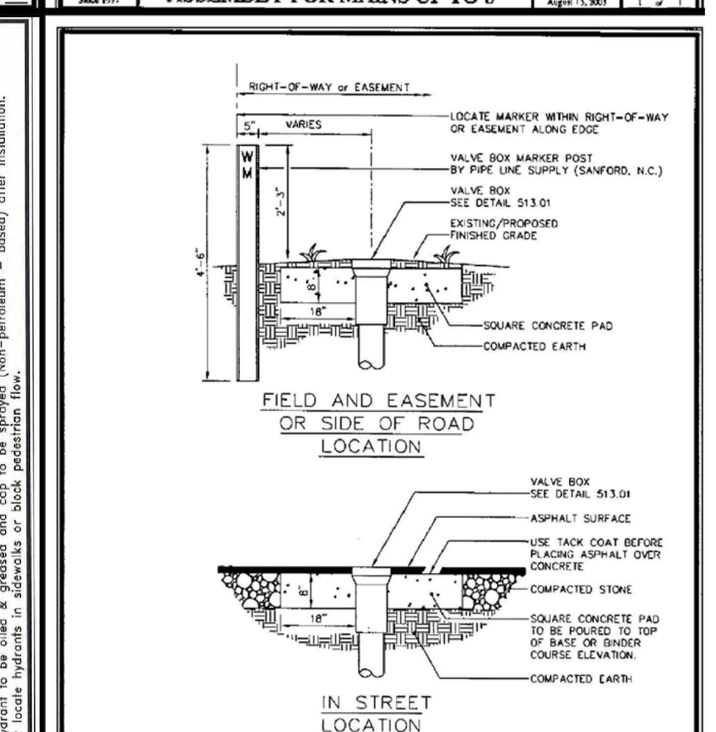
NOTES:
1. No discharge from blow-off should go directly into a creek. OWASA must dechlorinate discharge before it enters a body of water.
2. Provide erosion and sedementation control for discharge.
3. In lieu of rodded fittings, contractor may use a wedge action restrained gland joint restraint on fittings.

ORANGE WATER AND SEWER AUTHORITY — PERMANENT 2" BLOW-OFF ASSEMBLY FOR MAINS UP TO 8" — Not To Scale — Detail # 514.04 — Revision Date: August 15, 2003 — Sheet 1 of 1



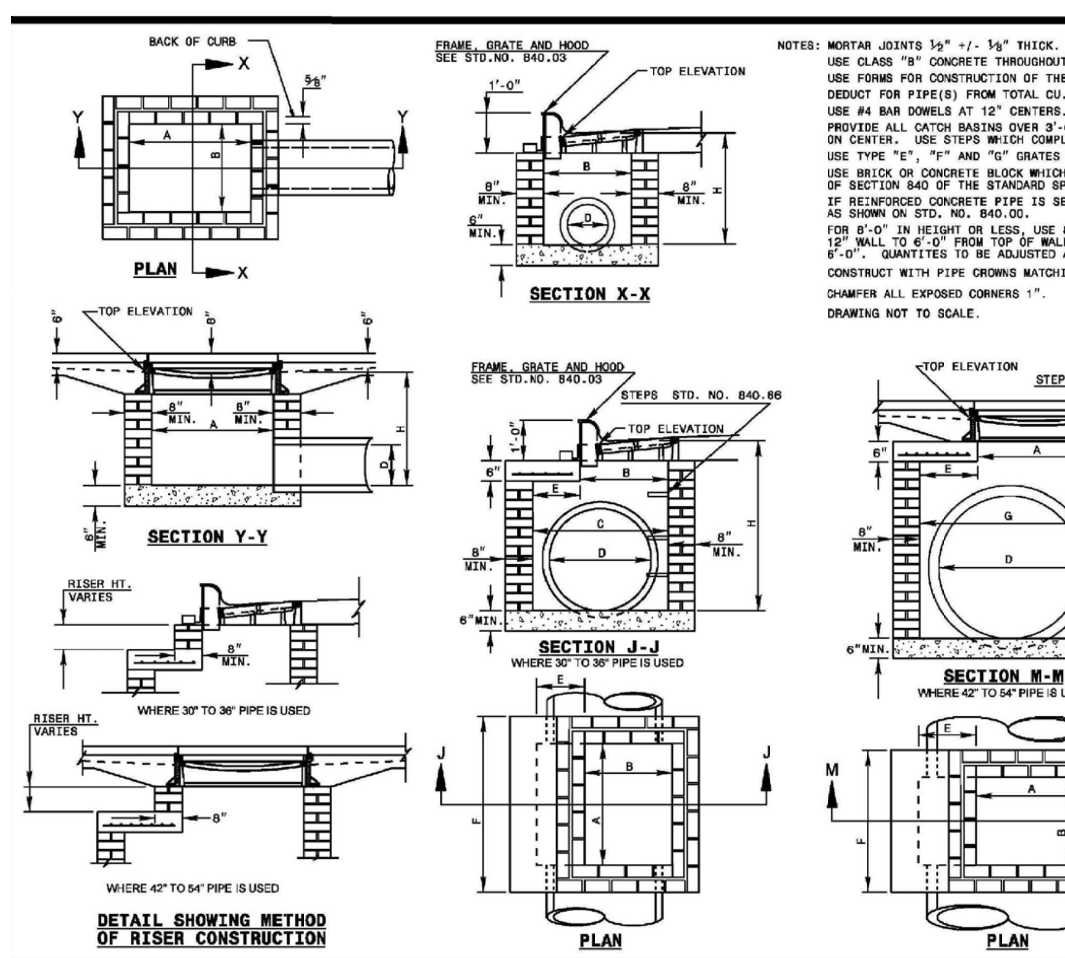
NOTES:
1. Wedge action restrainer gland joint restraints are preferred, and may be used with tie rods.
2. Hydrants to be placed with pumper nozzle facing the street or as otherwise directed by OWASA.
3. When valve box is placed outside of pavement, provide concrete stabilization pad. (detail 513.02)
4. Minimum of (2) 3/4" diameter rods w/standard coating.
5. Where hydrant is set behind guardrail, centerline of pumper nozzle tobe a minimum of 12" and a maximum of 18" above top of guardrail. Center of hydrant to be a minimum of 3 feet from guardrail.
6. Fire hydrant to be oiled & greased and cap to be sprayed (Non-petroleum - based) after installation.
7. Do not locate hydrants in sidewalks or block pedestrian flow.

ORANGE WATER AND SEWER AUTHORITY — TYPICAL RODDED FIRE HYDRANT STREETS with CURB & GUTTER — Not To Scale — Detail # 514.03 — Revision Date: August 15, 2003 — Sheet 1 of 2



NOTES:
1. Concrete to be minimum 3,000 PSI @ 28 days.

ORANGE WATER AND SEWER AUTHORITY — VALVE BOX STABILIZING PAD DETAILS — Not To Scale — Detail # 513.02 — Revision Date: August 15, 2003 — Sheet 1 of 1

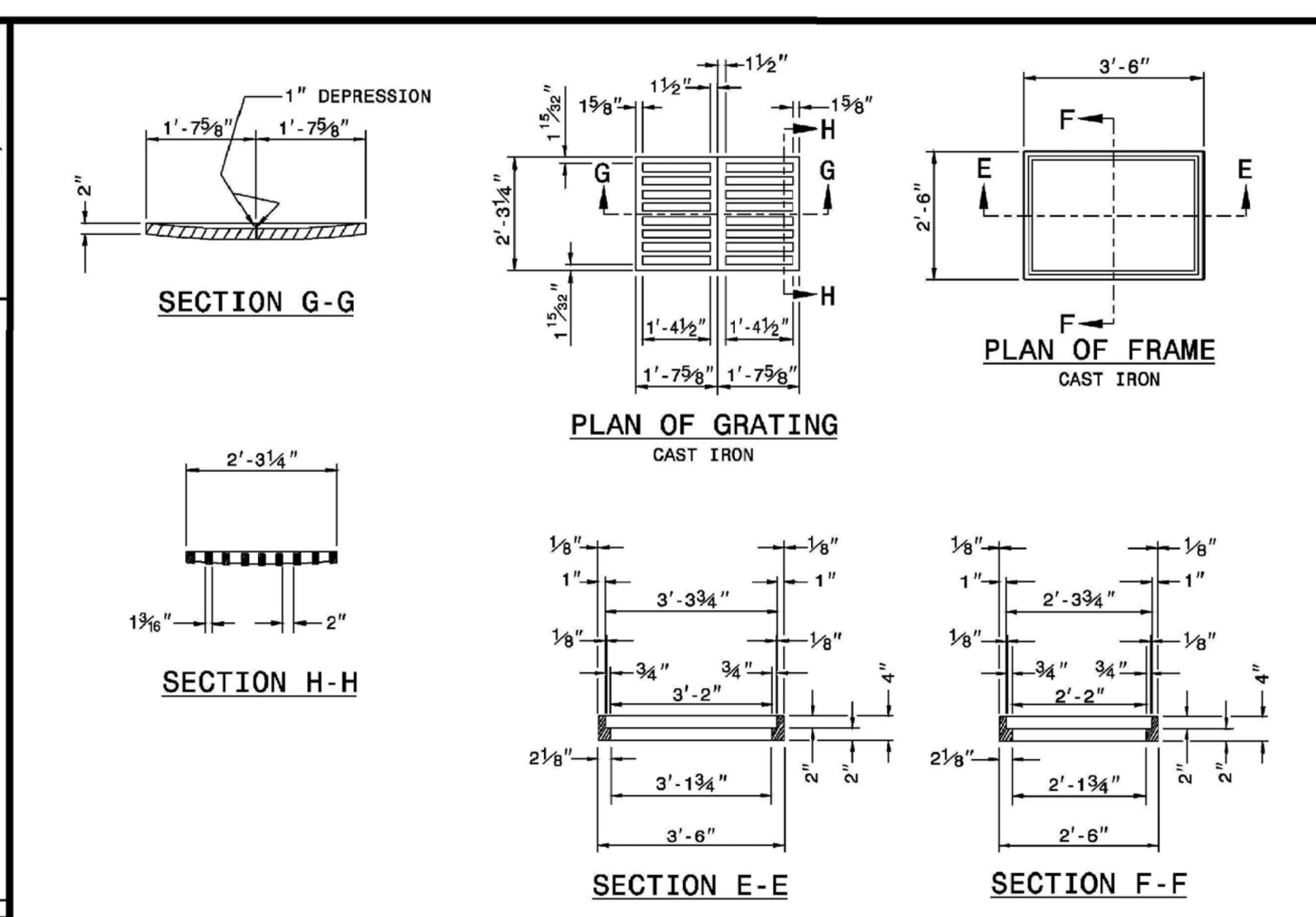


NOTES: MORTAR JOINTS ½" +/- ⅛" THICK.
USE CLASS "B" CONCRETE THROUGHOUT.
USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY.
USE #4 BAR DOWELS AT 12" CENTERS.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
FOR 8'-0" IN HEIGHT OR LESS, USE 8" WALL. OVER 8'-0" IN HEIGHT, USE 12" WALL TO 6'-0" FROM TOP OF WALL AND 8" WALL FOR THE REMAINING 6'-0". QUANTITES TO BE ADJUSTED ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. — 1-12

ENGLISH STANDARD DRAWING FOR **BRICK CATCH BASIN** 12" THRU 54" PIPE

SHEET 1 OF 2 — 840.01

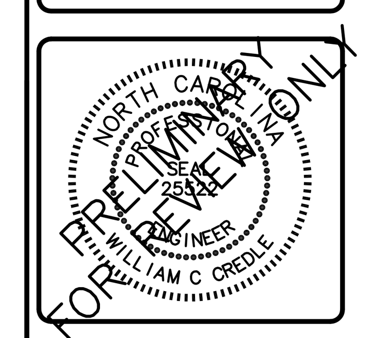


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. — 1-12

ENGLISH STANDARD DRAWING FOR **DROP INLET FRAME AND GRATES** FOR USE WITH STD. DWG.S 840.14 AND 840.15

SHEET 1 OF 1 — 840.16

PRELIMINARY
NOT FOR CONSTRUCTION



CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

■ WATER & SEWER DETAILS

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH-2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS		
NO.	DATE	DESCRIPTION
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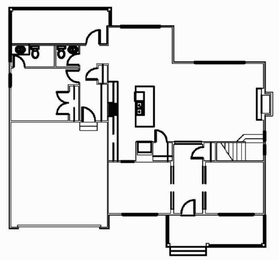
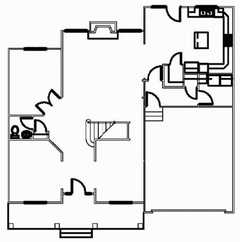
DATE: SEPTEMBER 10, 2017
SCALE: AS SHOWN
LICENSE: C-0254
JOB: \2017\170211\Base 171017
SHEET NUMBER: C0800
OF 12 SHEETS

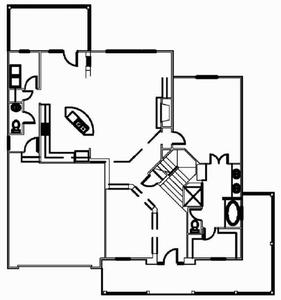
N:\2017\170211\Base 171017 Plot Date: 09/10/17



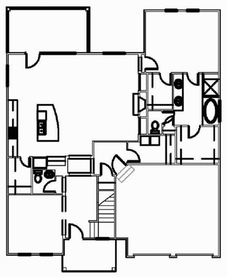
1 SANDERWAY 1



1 SANDERWAY 2



1 SANDERWAY 3



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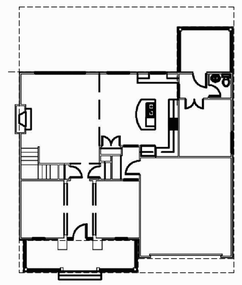

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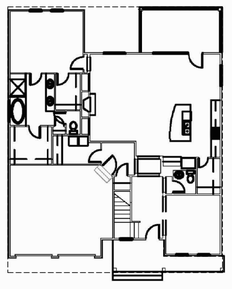

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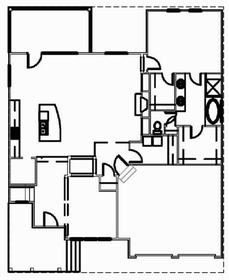

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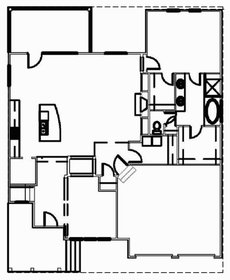

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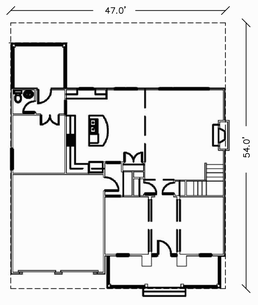

1 SANDERWAY 9

NOTE:

THESE PLANS AND ELEVATIONS ARE CONCEPTUAL ONLY AND ARE INTENDED TO CONVEY BASIC CONFORMANCE WITH CARRBORO ARCHITECTURALLY INTEGRATED SUBDIVISION DESIGN REQUIREMENTS. THE CONDITIONAL USE PERMIT IS FOR A SUBDIVISION AND CREATION OF LOTS ONLY. IT IS NOT THE INTENT OF THIS PERMIT APPLICATION TO IMPLY THAT ANY BUILDER OR HOUSE PLAN HAS BEEN SELECTED FOR ANY SPECIFIC LOT.

PRELIMINARY FOR REVIEW ONLY

NORTH CAROLINA PROFESSIONAL SEAL 25541 ENGINEER WILLIAM C CREDLE

CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX

■ FLOOR PLANS

SANDERWAY SUBDIVISION CUP
PROPERTY OF
GH-2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS

NO.	DATE	DESCRIPTION
△		
△		
△		
△		
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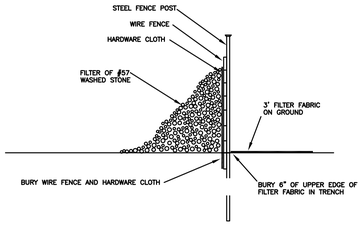
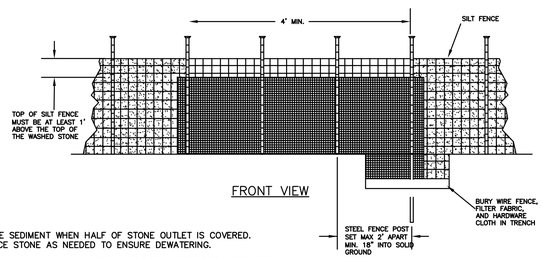
△		

DATE SEPTEMBER 10, 2016
SCALE AS SHOWN
LICENSE C-0254
JOB \2017\170211\Base 171017
SHEET NUMBER
C0900
OF 12 SHEETS

N:\2017\170211\Base 171017 Plot Date: 09/10/17



SECTION VIEW

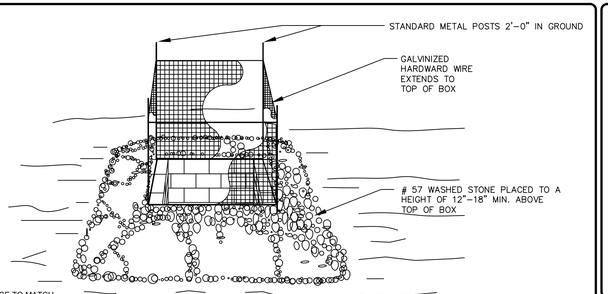


FRONT VIEW

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

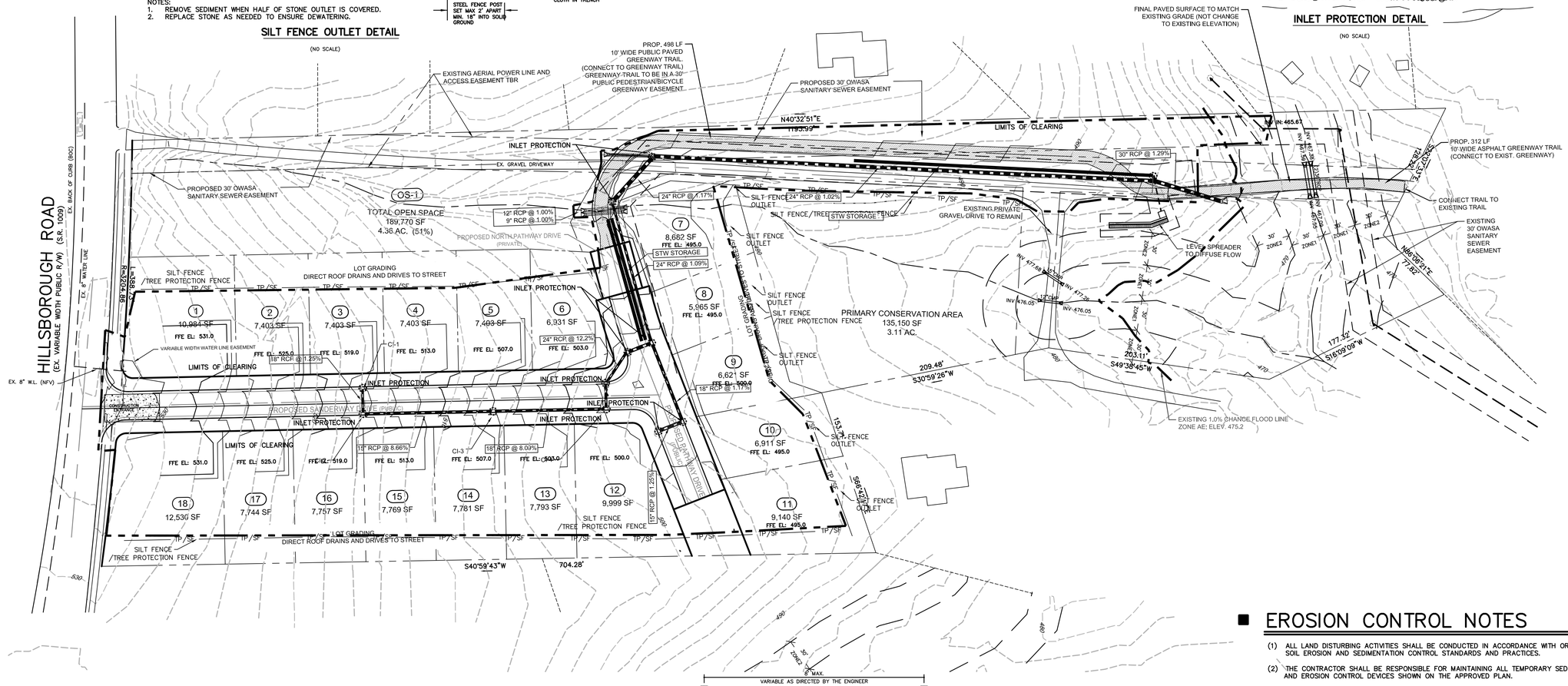
SILT FENCE OUTLET DETAIL

(NO SCALE)



INLET PROTECTION DETAIL

(NO SCALE)

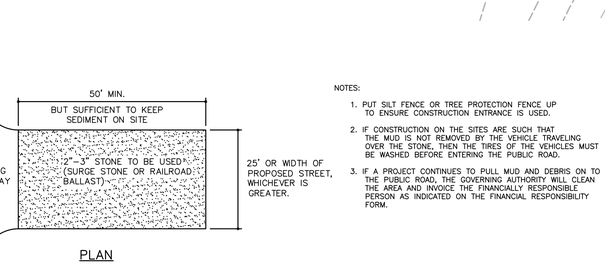


EROSION CONTROL KEY

- SILT FENCE (X)
- TREE PROTECTION FENCING (TPF)
- TREE PROTECTION/SILT FENCING (TP/SF)
- CLEARING LIMITS
- GRAVEL FILTER
- STREAM STABILIZATION
- GRAVEL CONSTRUCTION ENTRANCE
- TEMPORARY DIVERSION
- INLET PROTECTION

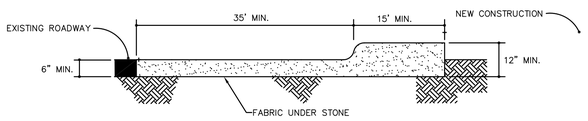
LEGEND

- PROPERTY LINE
- R/W LINE
- OVERHEAD UTILITY LINES
- UNDERGROUND ELEC. LINES
- SANITARY SEWER LINE
- BLDG. SETBACK (SB)
- TREE PROTECTION AREA (TPA)
- BUFFER AREA (B)
- EXISTING IRON PIPE
- LIGHT POLES
- UTILITY POLE
- SEWER CLEANOUT
- WATER METER
- CURB INLET
- EX. SEWER MAN HOLE



PLAN

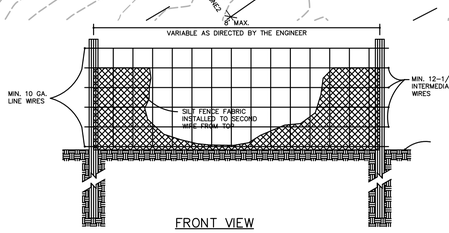
NOTES:
1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
3. IF A PROJECT CONTINUES TO PULL MUD AND DEBRIS ON TO THE PUBLIC ROAD, THE GOVERNING AUTHORITY WILL CLEAN THE AREA AND INVOICE THE FINANCIALLY RESPONSIBLE PERSON AS INDICATED ON THE FINANCIAL RESPONSIBILITY FORM.



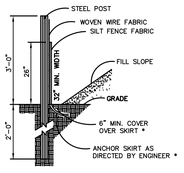
CROSS SECTION

CONSTRUCTION ENTRANCE

(NO SCALE)



FRONT VIEW



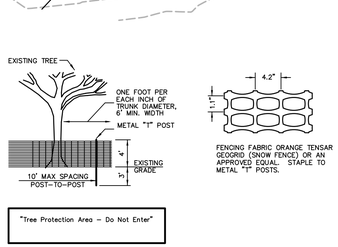
-USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW

* FOR REPAIR OF SILT FENCE FAILURES, USE No. 57 WASHED STONE, FOR ANCHOR WHEN SILT FENCE IS PROTECTING CATCH BASIN.

SIDE VIEW

STANDARD TEMPORARY SILT FENCE

(NO SCALE)



FENCING FABRIC ORANGE TENSAR GEOGRID (SNOW FENCE) OR AN APPROVED EQUAL. STAPLE TO METAL "T" POSTS.

"Tree Protection Area – Do Not Enter"

TREE PROTECTION FENCE MUST HAVE A "TREE PROTECTION AREA – DO NOT ENTER" SIGN ON IT BY ORDINANCE. THE SIGNS SHOULD BE PLACED ONE FACING EACH DIRECTION AND NO MORE THAN 50 FEET APART.

1. SEE PLANS FOR LOCATION OF ALL TREE PROTECTION FENCES. DO NOT ATTACH FENCE MATERIAL TO TREES.
2. TREE PROTECTION FENCING FABRIC TO BE PLACED AT THE DRIP LINE OR ROOT ZONE PROTECTION AREA PERIMETER, WHICHEVER IS LARGER OF THE TREES THAT ARE TO BE PROTECTED.
3. "TENSAR" HIGH STRENGTH POLYMER GEOGRID FABRIC BY TENSAR CORPORATION MORROW, GEORGIA.
4. REMOVE ALL FENCING UPON COMPLETION OF PROJECT.

TREE PROTECTION FENCE DETAIL

(NO SCALE)

NOTE:
PROTECTION OF EXISTING VEGETATION: At the start of grading involving the lowering of existing grade around a tree or stripping of topsoil, a clean, sharp, vertical cut shall be made at the edge of the tree save area at the same time as other erosion control measures are installed. The tree protection fencing shall be installed on the side of the cut farthest away from the tree trunk and shall remain in place until all construction in the vicinity of the trees is complete. No storage of materials, fill, or equipment and no trespassing shall be allowed within the boundary of the protected area.

EROSION CONTROL NOTES

(1) ALL LAND DISTURBING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH ORANGE COUNTY SOIL EROSION AND SEDIMENTATION CONTROL STANDARDS AND PRACTICES.

(2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SEDIMENTATION AND EROSION CONTROL DEVICES SHOWN ON THE APPROVED PLAN.

(3) ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 15 WORKING DAYS FOLLOWING COMPLETION OF GRADING. PERMANENT SEEDING, MULCHING AND GROUND COVER SHALL BE APPLIED TO THE SITE WITHIN 15 WORKING DAYS, OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION.

(4) SLOPES SHALL BE NO STEEPER THAN 2:1, PREFERABLY FLATTER, FOR VEGETATIVE COVER.

(5) THE CONTRACTOR SHALL FAITHFULLY MAINTAIN ALL SEDIMENTATION CONTROL DEVICES AND TAKE ANY PRECAUTIONARY MEASURES TO ENSURE THAT SILT DOES NOT ENTER ANY NATURAL STREAM CHANNEL LOCATED WITHIN THE SITE. ALL MEASURES ARE TO BE CHECKED/MAINTAINED WEEKLY AND AFETR EVERY RAINFALL EVENT.

(6) DRAINAGE CHANNELS MUST BE CLEAN OF SEDIMENT AND STABILIZED BEFORE THE PROJECT IS RELEASED BY ORANGE COUNTY.

(7) TEMPORARY SILT FENCE MAY BE REQUIRED TO BE INSTALLED IN AREAS WHERE SEDIMENT BASINS HAVE BEEN REMOVED, GRADED, AND SEEDED. THE SILT FENCE SHALL REMAIN IN PLACE UNTIL GRASS IS ESTABLISHED.

(8) THERE ARE NO DESIGNATED AREAS FOR BORROW OR WASTE ON THIS PLAN. EXCESS TOPSOIL OR OTHER WASTE MATERIAL SHALL BE HAULED OFF-SITE. NO BORROW, WASTE, OR OTHER GRADING ACTIVITY SHALL OCCUR OUTSIDE THE DESIGNATED LIMITS OF CONSTRUCTION.

(9) FLOOD HAZARD REGULATIONS: THERE SHALL BE NO FILLING OR THE ERECTION OF PERMANENT STRUCTURES IN THE AREAS OF ORANGE COUNTY FLOOD HAZARD SOILS OR FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) 100 YEAR FLOOD ZONES UNTIL A FLOOD STUDY IS APPROVED BY ORANGE COUNTY AND/OR FEMA.

DENUDED AREA = 1.45 ACRES

50 0 25 50 100 200

1 inch = 50 ft.

CREDLE ENGINEERING COMPANY, INC
ENGINEERS/PLANNERS/SURVEYORS
204 E. MARKHAM AVE. DURHAM, N.C. 27701 (919) 682-2906 PH (919) 682-2905 FX

PROPERTY OF
GH-2, LLC
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25502 WILLIAM C CREDLE
FOR PRELIMINARY REVIEW ONLY

EROSION CONTROL PLAN

REVISIONS		
NO.	DATE	DESCRIPTION
△		
△		
△		
△		
△		
△		

DATE: SEPTEMBER 10, 2016
SCALE: 1"=50'
LICENSE: C-0254
JOB: \2017\170211\Base 171017
SHEET NUMBER: C1000
OF 12 SHEETS

N:\2017\170211\Base 171017 - Plot Date: 09/15/17