

**SITE DATA**

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

GROSS LOT AREA:	GROSS AREA 371,982 S.F.	AREA ADJUSTMENTS 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
- PROPOSED OPEN SPACE:
 

REQUIRED = 40.00% OF GROSS LOT AREA = 371,982 X 0.40 = 148,792.8 S.F.  
PROVIDED = 189,702 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.

AREA OF TREE CANOPY COVERAGE INCLUDES CURRENTLY WOODED OPEN SPACE PLUS 50' TREE CREDIT LINE AREA FOR NEW STREET TREES
- PROPOSED USE: 28,200 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
- STREET CLASSIFICATION CHART (ALL STREETS PUBLIC EXCEPT AS NOTED)
 

STREET	CLASSIFICATION	ROW (FT.)	FF (FT.)	SIDEWALK(S)	BIKE LANE
SANDERWAY	LOCAL	50	26	BOTH SIDES	NONE
PATHWAY	LOCAL	50	26	BOTH SIDES	NONE
NORTH PATHWAY	PRIVATE	37	18	ONE SIDE	NONE
- ALL CONSTRUCTED MINOR STREETS SHALL BE CONSTRUCTED USING STANDARD CURBING.

**LAND USE & ZONING NOTES:**

- 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
- OWNER: JAMES M. SANDER  
8531 WILDFLOWER LANE  
EFLAND, NORTH CAROLINA 27243
- APPLICANT: GH-2, LLC  
121 SOUTH ESTES DRIVE, SUITE 100  
CHAPEL HILL, NC 27514  
PHONE: (919) 489-9000
- PARCEL: PARCEL: 9779-14-2354  
1236 OLD HILLSBOROUGH ROAD  
TOWN OF CARRBORO  
ORANGE COUNTY, NORTH CAROLINA
- ZONING: R20
- PROPOSED USES:
 

1.110 - SINGLE FAMILY DETACHED  
BULK REQUIREMENTS (AIS SUBDIVISION)

BULK REQUIREMENTS (ARTICLE XIII)	PROPOSED
MIN. LOT AREA	6,811 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

- 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
- AFFORDABLE:
 

APPLICANT PROPOSES A PAYMENT IN LIEU FOR 4.5 AFFORDABLE DWELLING UNITS  
SECTION 15-188 REQUIREMENTS FOR SIZE LIMITED UNITS NOT APPLICABLE PER PAYMENT-IN-LIEU  
FOR AFFORDABLE HOUSING.
- FLOODPLAIN:
 

FIRM MAP #3710977900J  
PROPERTY LOCATED OUTSIDE OF 0.2% CHANCE ANNUAL FLOODPLAIN IN "X" ZONE.
- 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.
- ALL OPEN SPACE IS PRIVATE, TO BE MAINTAINED BY THE SANDERWAY SUBDIVISION HOME OWNERS  
ASSOCIATION.
- 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 PAYMENT 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.
- "CAPS" WERE REQUESTED BY CHAPEL HILL CARRBORO SCHOOL SYSTEM ON DECEMBER 20, 2016.
- 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, 919-968-2785) PRIOR TO ANY SITE DISTURBANCE. TREE PROTECTION  
FENCING MUST BE IN PLACE AT TIME OF MEETING.
- 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.
- 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.
- 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 BEDS/CATCH BASINS 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.

# 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

- 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.
- 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.
- PER SECTION 15-301, PARKING IS NOT ALLOWED WITHIN 15' OF A FIRE HYDRANT.
- PER SECTION 15-84, FOLLOWING CONDITIONAL USE PERMIT APPROVAL, CONSTRUCTION DOCUMENTS  
SHALL BE SUBMITTED AND APPROVED BEFORE COMMENCING CONSTRUCTION.
- 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.
- 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.
- 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.
- 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.

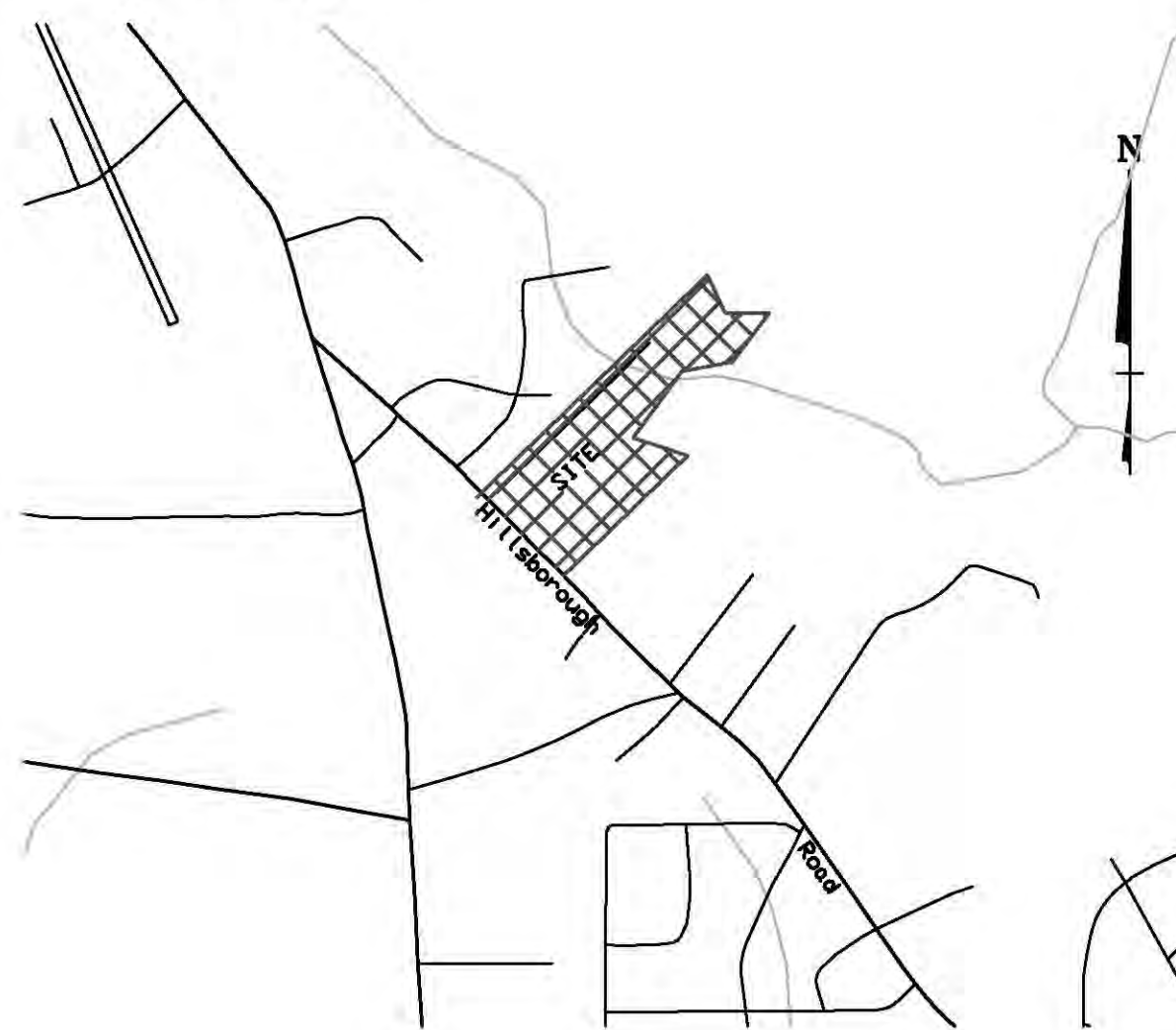
33. STRUCTURAL SUBMITTAL DRAWINGS AND SUBMITTAL CALCULATIONS FOR ALL RETAINING WALLS GREATER  
THAN 3 FEET IN HEIGHT SHALL BE PREPARED, SEALED AND SUBMITTED BY A LICENSED N.C. ENGINEER  
PRIOR TO SUBMITTAL PLAN APPROVAL OF THE WALLS.
- ALL STREET CONSTRUCTION ON THOSE PUBLIC STREETS PROPOSED FOR ACCEPTANCE 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.
- PROPOSED PHASES OF DEVELOPMENT: ONE
- 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
- 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**

- 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)
- SEE TOT LOT PLAN FOR PROVISION OF RECREATION PLAY EQUIPMENT SUITABLE FOR CHILDREN UNDER  
THE AGE OF 12.

**VICINITY MAP** NO SCALE

PIN 9779142354



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

**INDEX OF SHEETS**

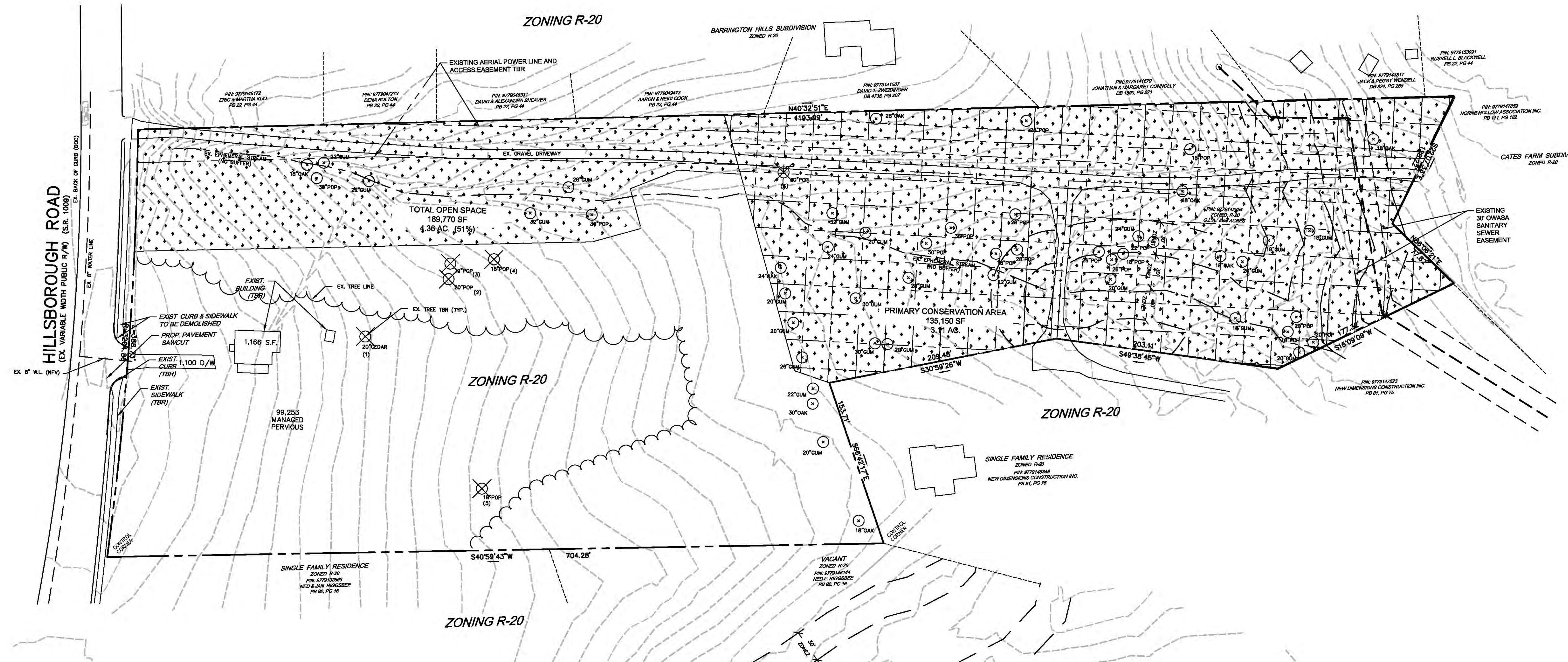
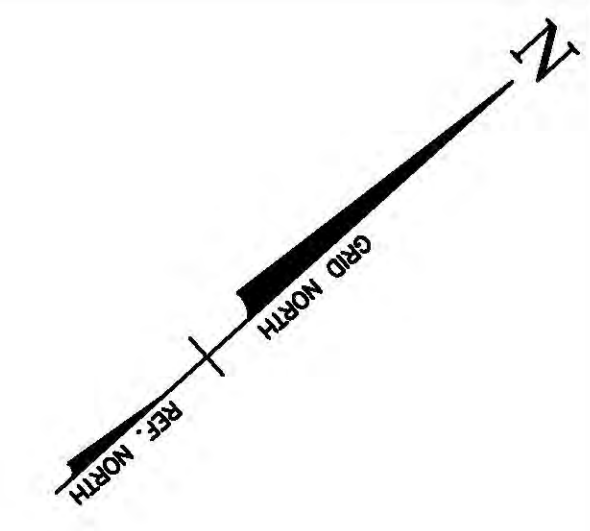
SHEET #	DESCRIPTION
C0001	COVER
C0100	EXISTING CONDITIONS
C0200	SITE PLAN
C0250	HOUSE LAYOUT
C0300	UTILITY PLAN
C0400	GRADING PLAN
C0500	STORMWATER DETAILS
C0600	LANDSCAPING PLAN
C0700	LIGHTING PLAN
C0800	WATER & SEWER DETAILS
C0900	FLOOR PLANS
C1000	EROSION CONTROL PLAN

REVISIONS		
NO.	DATE	DESCRIPTION

DATE	SEPTEMBER 10, 2016
SCALE	AS SHOWN
LICENSE	C-0254
JOB	\2017\170211\Bose 171017
SHEET NUMBER	<b>C0001</b>
OF	12 SHEETS

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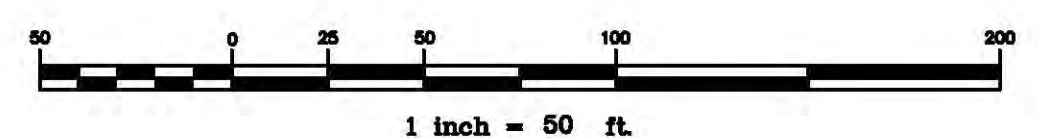




- LEGEND**
- PROPERTY LINE ———
  - R/W LINE ———
  - OVERHEAD UTILITY LINES ———
  - UNDERGROUND ELEC. LINES - - - - -
  - SANITARY SEWER LINE ———
  - BLDG. SETBACK SB
  - TREE PROTECTION AREA TPA
  - BUFFER AREA B
  - EXISTING IRON PIPE ●
  - LIGHT POLES ☆
  - UTILITY POLE ⚡
  - SEWER CLEANOUT ○
  - WATER 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.



**EXISTING CONDITIONS**

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

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

REVISIONS	
NO.	DESCRIPTION

DATE: SEPTEMBER 10, 2016  
 SCALE: 1"=50'  
 LICENSE: C-0254  
 JOB: \2017\170211\Bose 171017  
 SHEET NUMBER: **C0100**  
 OF 12 SHEETS

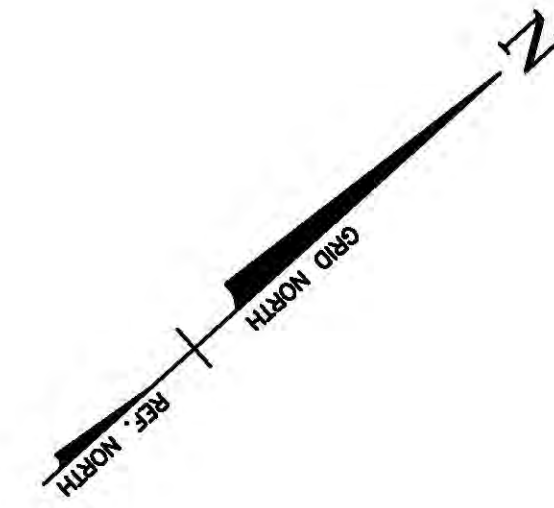












**UTILITY PLAN**

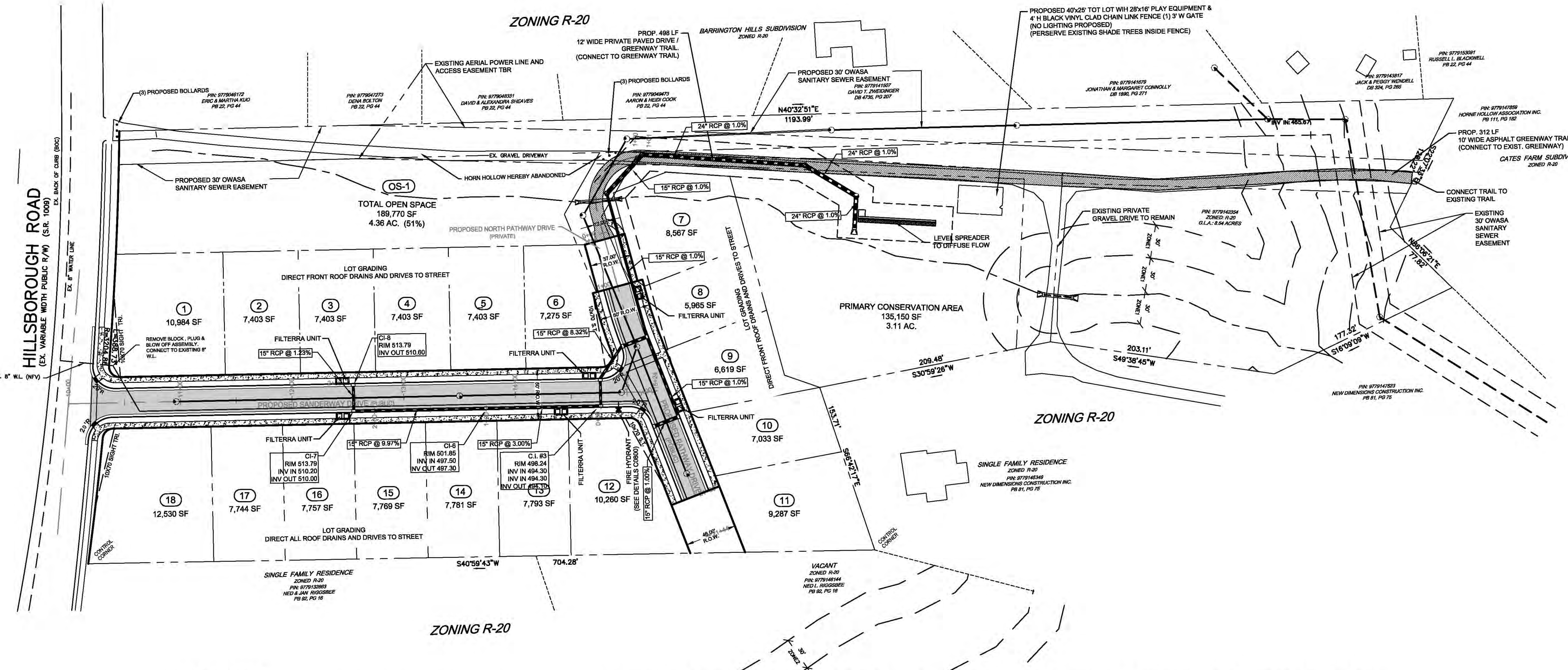
■ **UTILITY PLAN**

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REVISIONS	
NO.	DESCRIPTION

DATE	SEPTEMBER 10, 2016
SCALE	1"=50'
LICENSE	C-0254
JOB	\2017\170211\Bose 171017
SHEET NUMBER	<b>C0300</b>
OF	12 SHEETS



**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 CONTRACTOR'S 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.

**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 WASTE WATER 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 M-1 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 (DCM OR DE4) 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 FRONT 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.

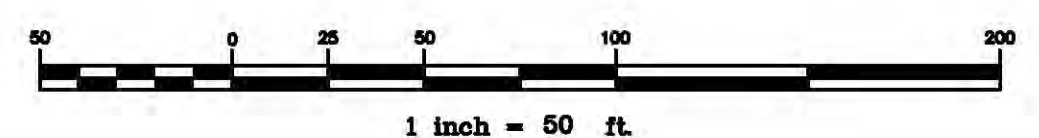
2. LOTS 7-11 WILL BE GRADED SO THAT THE FRONT ROOF DRAINS AND THE DRIVEWAY FOR THE PROPOSED HOUSE WILL BE DIRECTED TO THE RIGHT-OF-WAY FOR NUTRIENT TREATMENT. THE REAR OF THE LOTS WILL DRAIN TO THE EXISTING WOODED PORTION OF THIS PARCEL. CONVEYANCE OF ROOF RUNOFF IN A CONCENTRATED FASHION TO THE EPHEMERAL 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 ALL THE ROOF DRAINS AND THE DRIVEWAY FOR THE PROPOSED HOUSE WILL BE DIRECTED TO THE RIGHT-OF-WAY FOR NUTRIENT TREATMENT.

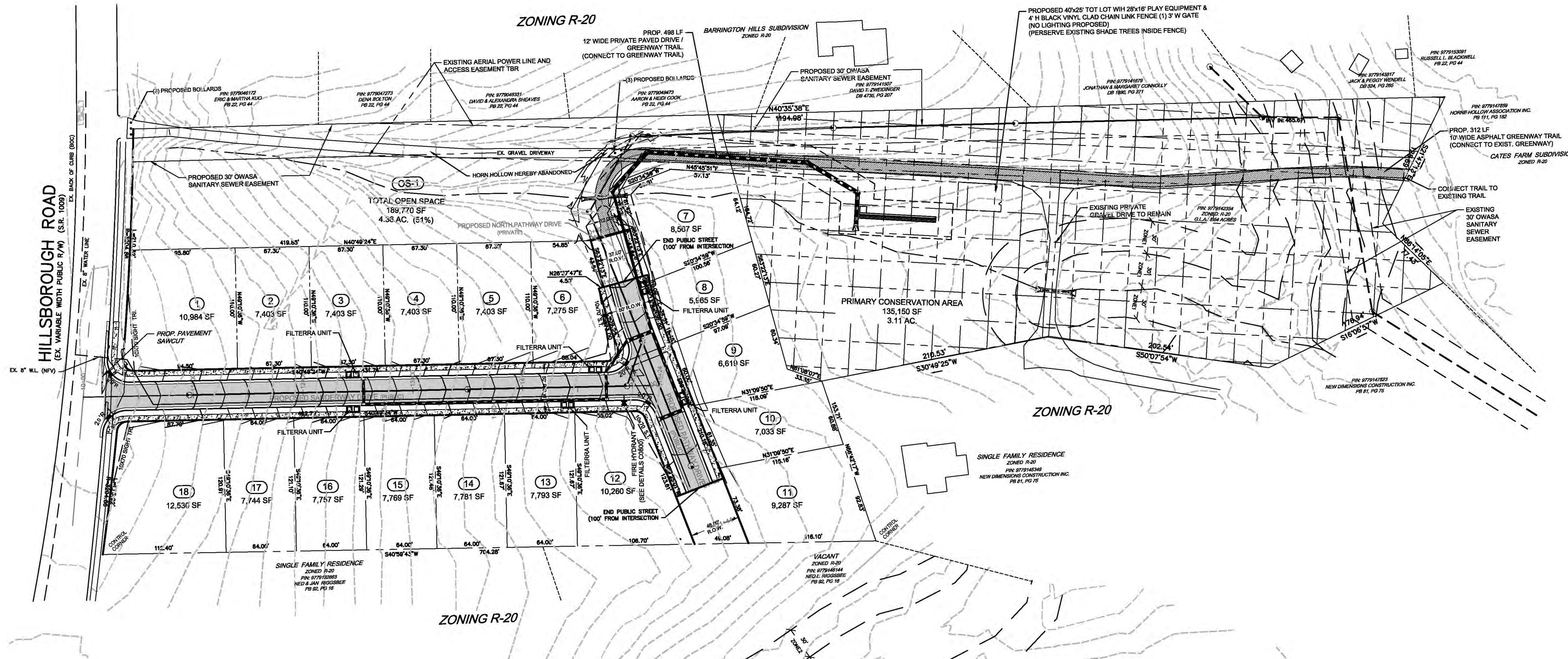
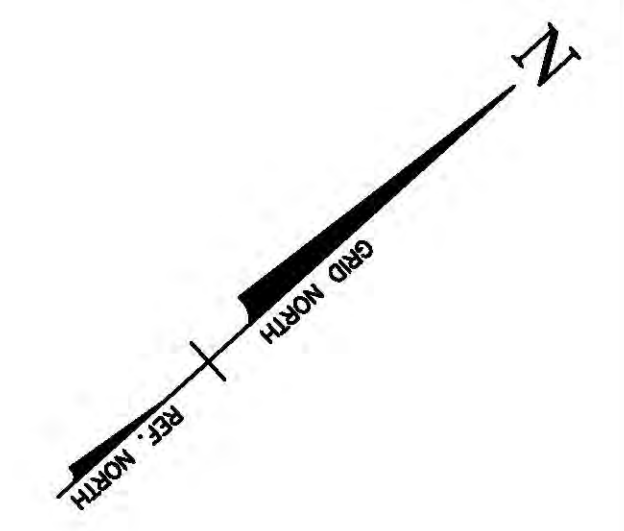
4. HOA TO MAINTAIN THE SCMS. LEGAL AGREEMENT TO BE OBTAINED FROM THE TOWN OF CARRBORO FOR MAINTENANCE ACTIVITIES IN THE PUBLIC RIGHT-OF-WAY. AGREEMENT MUST BE OBTAINED PRIOR TO ISSUANCE OF FIRST BUILDING PERMIT.

**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	⊛

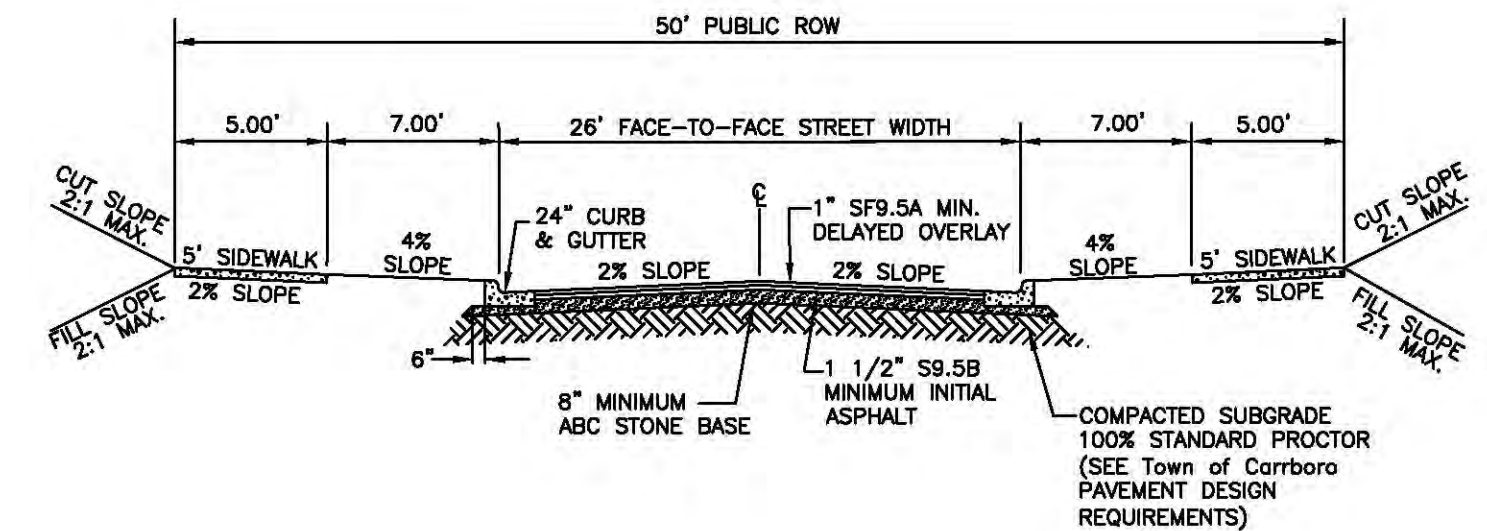




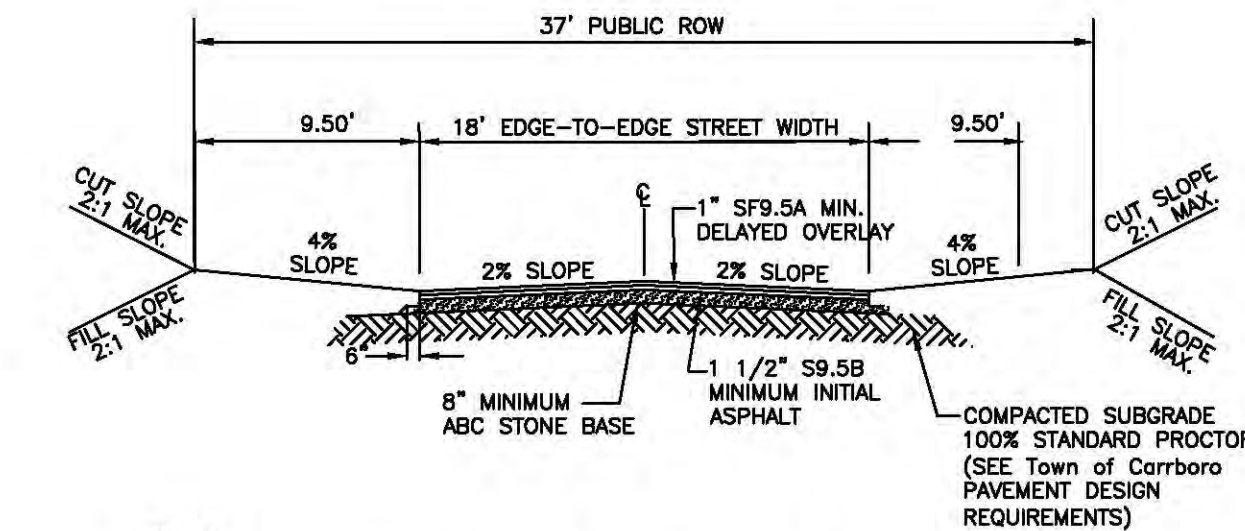


HILLSBOROUGH ROAD  
(EX. VARIABLE WIDTH PUBLIC R/W) (S.R. 1009)

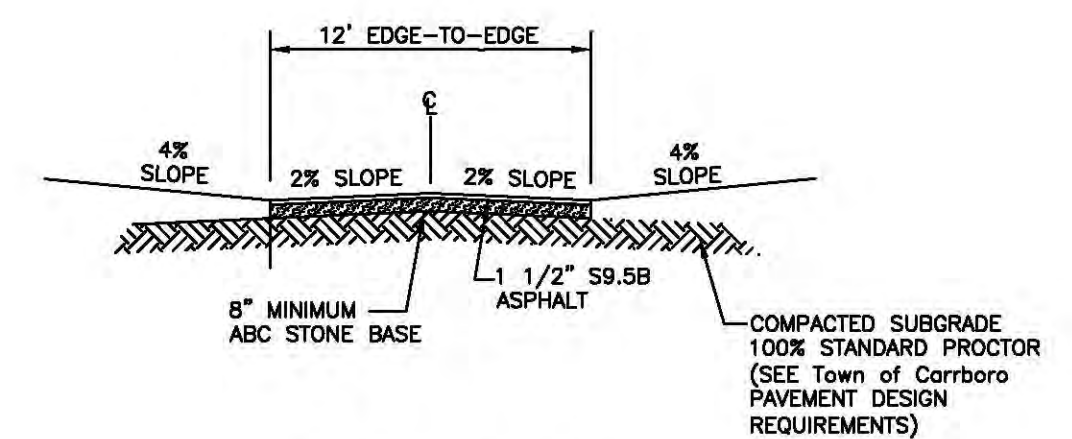
RESIDENTIAL STREET WITH CURB



PRIVATE RESIDENTIAL STREET WITH CURB



PRIVATE DRIVE



PRIVATE DRIVE RIBBON PAVEMENT

LEGEND

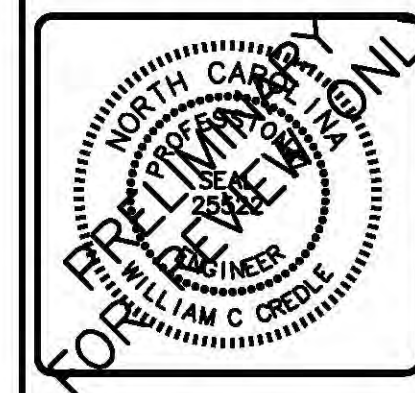
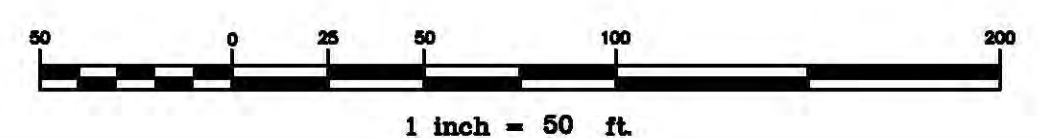
- PROPERTY LINE ———
- R/W LINE ———
- OVERHEAD UTILITY LINES ———
- UNDERGROUND ELEC. LINES - - - - -
- SANITARY SEWER LINE ———
- BLDG. SETBACK SB
- TREE PROTECTION AREA TPA
- BUFFER AREA B
- EXISTING IRON PIPE ●
- LIGHT POLES ☆
- UTILITY POLE ⚡
- SEWER CLEANOUT ○
- WATER METER □
- CURB INLET ■

- 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.

- 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 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.

SUB-COLLECTOR STREET WITH CURB

PRIVATE RESIDENTIAL STREET RIBBON PAVEMENT



**GRADING PLAN**

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

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

REVISIONS	
NO.	DESCRIPTION

DATE: SEPTEMBER 10, 2016  
SCALE: 1"=50'  
LICENSE: C-0254  
JOB: \2017\170211\Bose 171017  
SHEET NUMBER: **C0400**  
OF 12 SHEETS





**STORMWATER DETAILS**

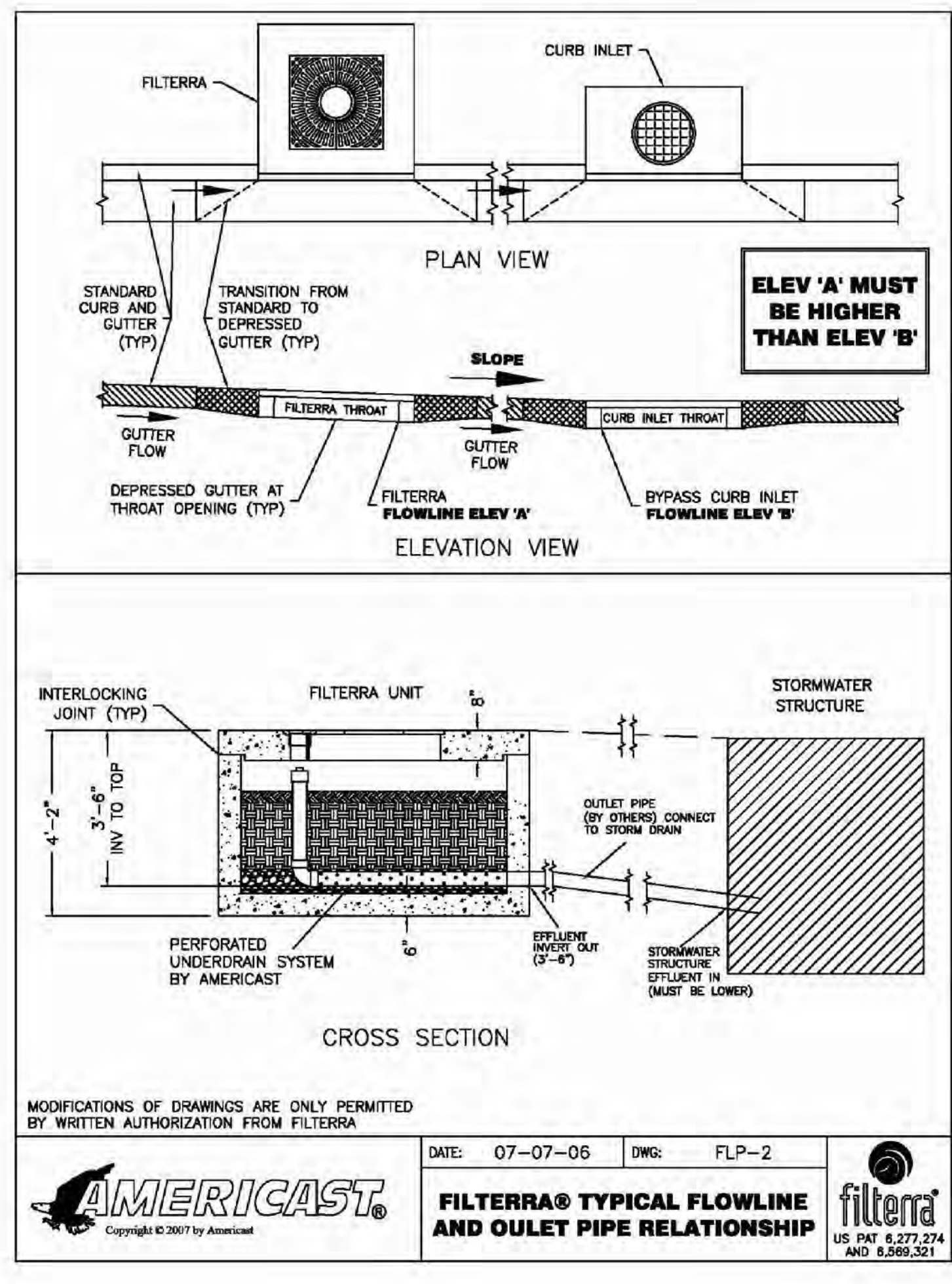
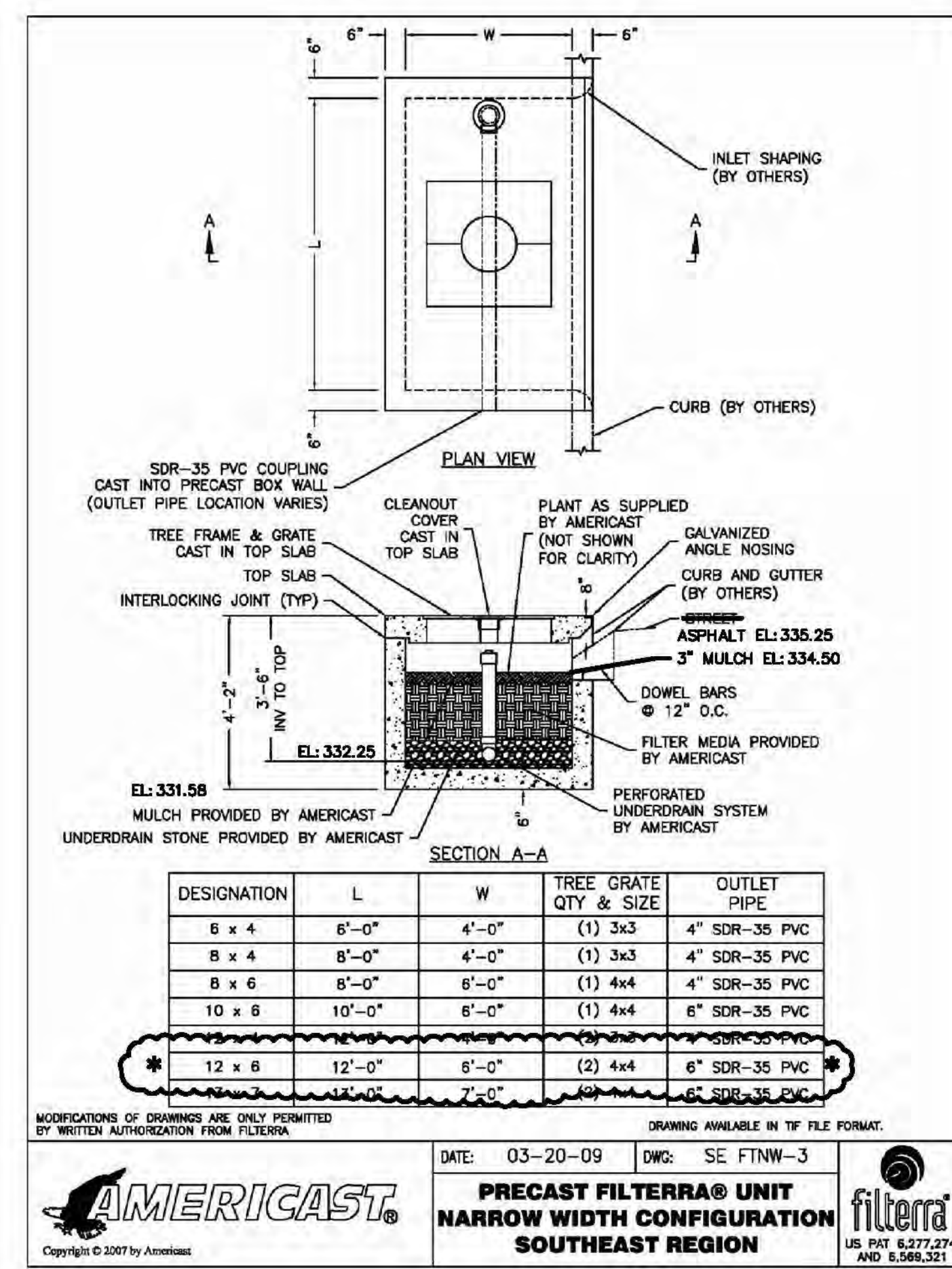
PROPERTY OF  
**GH-2, LLC**

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

REVISIONS		
NO.	DATE	DESCRIPTION

DATE	SEPTEMBER 10, 2016
SCALE	AS SHOWN
LICENSE	C-0254
JOB	2017170211/Sheet 171017
SHEET NUMBER	<b>C0500</b>
OF	12 SHEETS



**PLANTING FOR FILTERA**

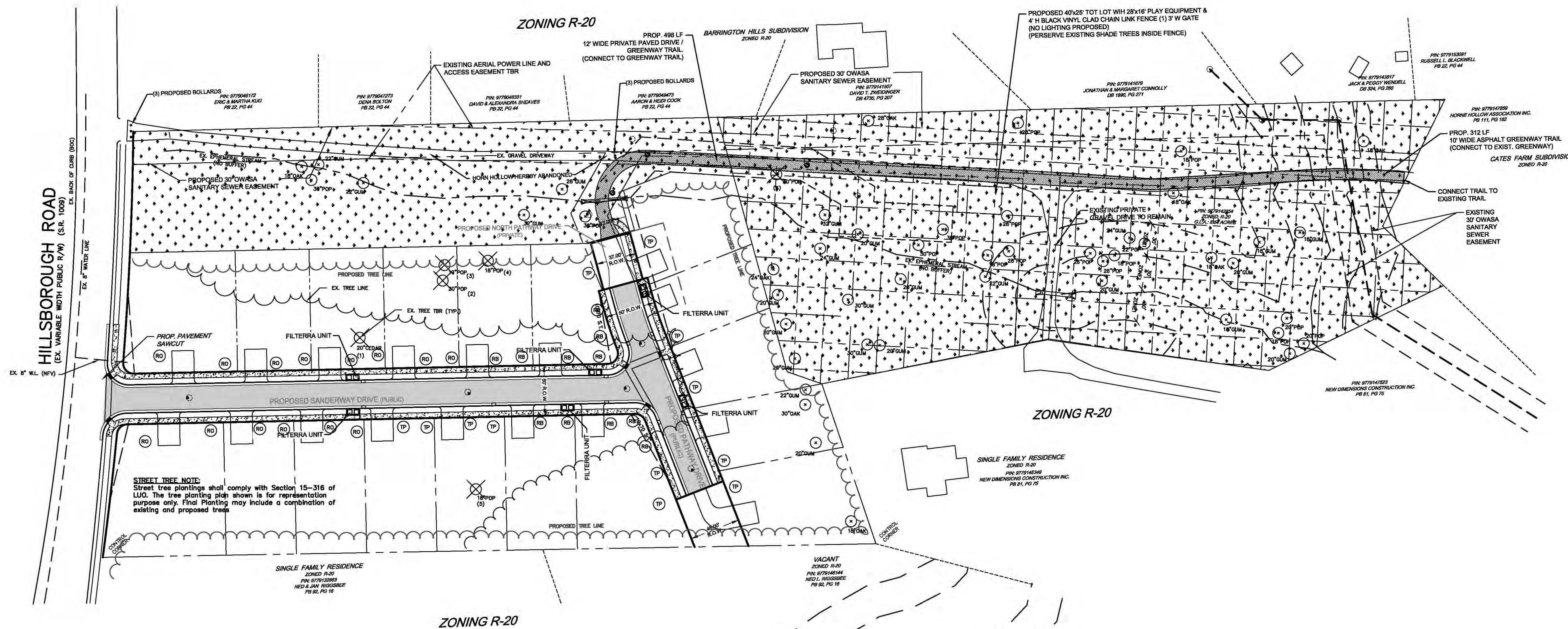
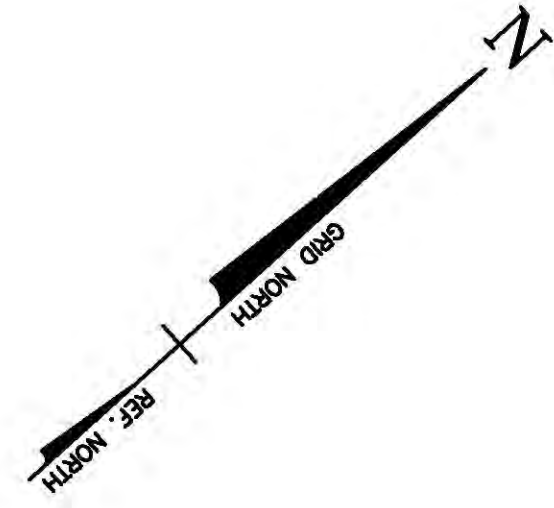
Common Name	Latin Name	Sun	Hardy Range	Height	Spread
Dogwood, Red Oak Cornus stolonifera "Stakey"		Partial Shade or Partial Sun to Full Sun	3A-7A	8' - 10'	8' - 10'

filterra®  
Plant Type: Deciduous small trees and shrubs

- 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 ⊙



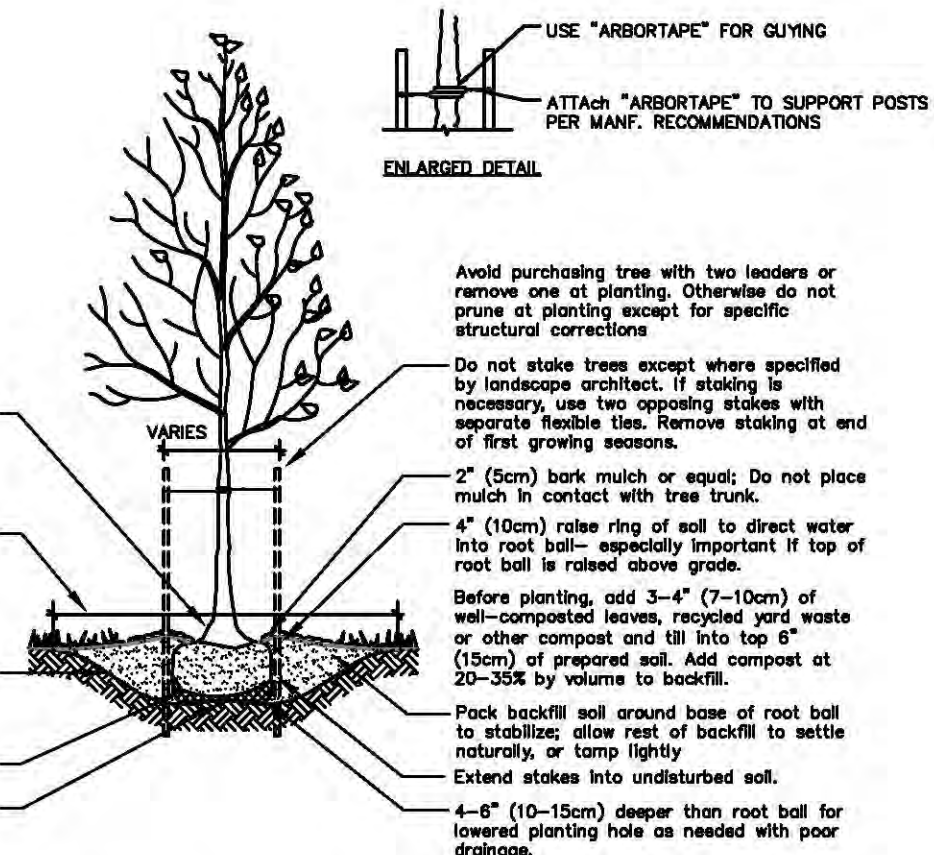
LANDSCAPING KEY					
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE
(RO)	14	Quercus rubra	RED OAK (EASTERN)	2"	CT
(RB)	11	Betula nigra "Heritage"	HERITAGE RIVER BIRCH	2"	CT
(TP)	12	Liriodendron tulipifera	TULIP POPLAR	2"	ET



**STREET TREE NOTE:**  
Street tree plantings shall comply with Section 15-316 of LUO. The tree planting plan shown is for representation purpose only. Final Planting may include a combination of existing and proposed trees.

**GENERAL LANDSCAPING NOTES:**

- All denuded areas not occupied by structures, paving or plantings shall be graded and seeded.
- All shrub and tree plantings shall be mulched with 3" clean pine straw mulch.
- 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.
- Acceptable composted organic materials for soil conditioning will be pulverized pine bark, composted animal manures, or shredded/composted leaves.
- Contractor is to verify the location of existing utilities prior to beginning landscape installation.
- 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.
- All plantings shall be thoroughly watered in on the same day as planted.
- All containerized plant material shall have the root balls scarified as needed prior to installation.
- All plant holes shall be twice the width of the actual root ball size.
- 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.
- 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.
- 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 to 1/3 the depth of the rootball, depending upon soil conditions found on the site.
- The site shall be stabilized and seeded prior to issuance of a certificate of occupancy.
- Plants selected and planting procedures shall conform to the accepted standards of established by American Association of Nurserymen, latest edition.
- Low areas shall be roled to remove sticks, rocks, building debris, trash and other foreign matter that would be a detriment to mowing.
- Limbs on trees to be maintained 8' above ground level.
- All underbrush to be back and maintained.



**TREE PLANTING DETAIL (B & B PLANTS)**

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

- Notes**
- Where several trees will be planted close together such that they will likely share root space, fill in soil amendments to a depth of 4-6" (10-15 cm) over the entire area.
  - For container-grown trees, use fingers or small hand tools to pull the roots out of the outer layer of setting soil; then cut off and pull apart any roots circling the perimeter of the container.
  - 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.
  - 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.
  - The planting process is similar for deciduous and evergreen trees.

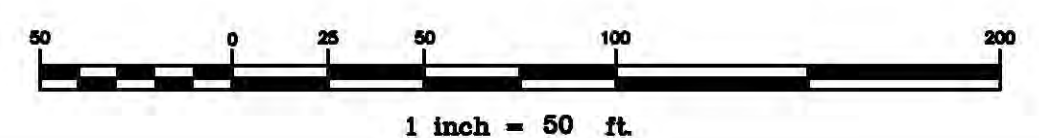
**TREE CANOPY COVERAGE:**

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

**STREET TREE CALCULATIONS:**

Street trees shall be planted in accordance with Section 15-316  
Frontage: 780 L.F. (Sanderway Drive)  
(28) Street Trees Required  
Frontage: 330 L.F. (Pathway Drive)  
(11) Street Trees Required

- LEGEND**
- PROPERTY LINE ———
  - R/W LINE ———
  - OVERHEAD UTILITY LINES ———
  - UNDERGROUND ELEC. LINES - - - - -
  - SANITARY SEWER LINE ———
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  - BUFFER AREA B
  - EXISTING IRON PIPE ●
  - LIGHT POLES ☆
  - UTILITY POLE ⚡
  - SEWER CLEANOUT ○
  - WATER METER □
  - CURB INLET ▣
  - EX. SEWER MAN HOLE ⊙



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

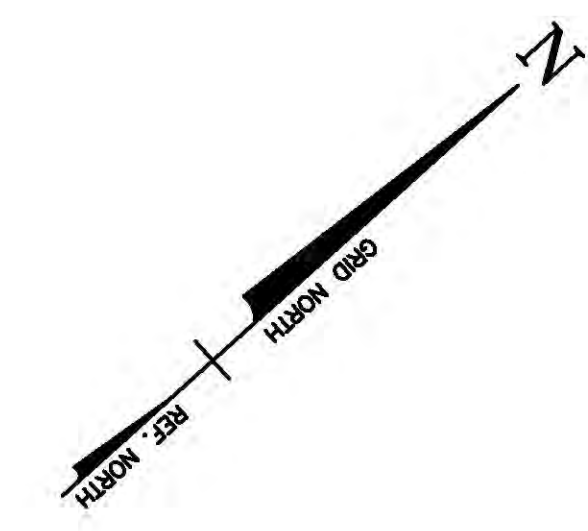
**SANDERWAY SUBDIVISION**  
PROPERTY OF  
**GH-2, LLC**  
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

**LANDSCAPING PLAN**

REVISIONS	
NO.	DESCRIPTION

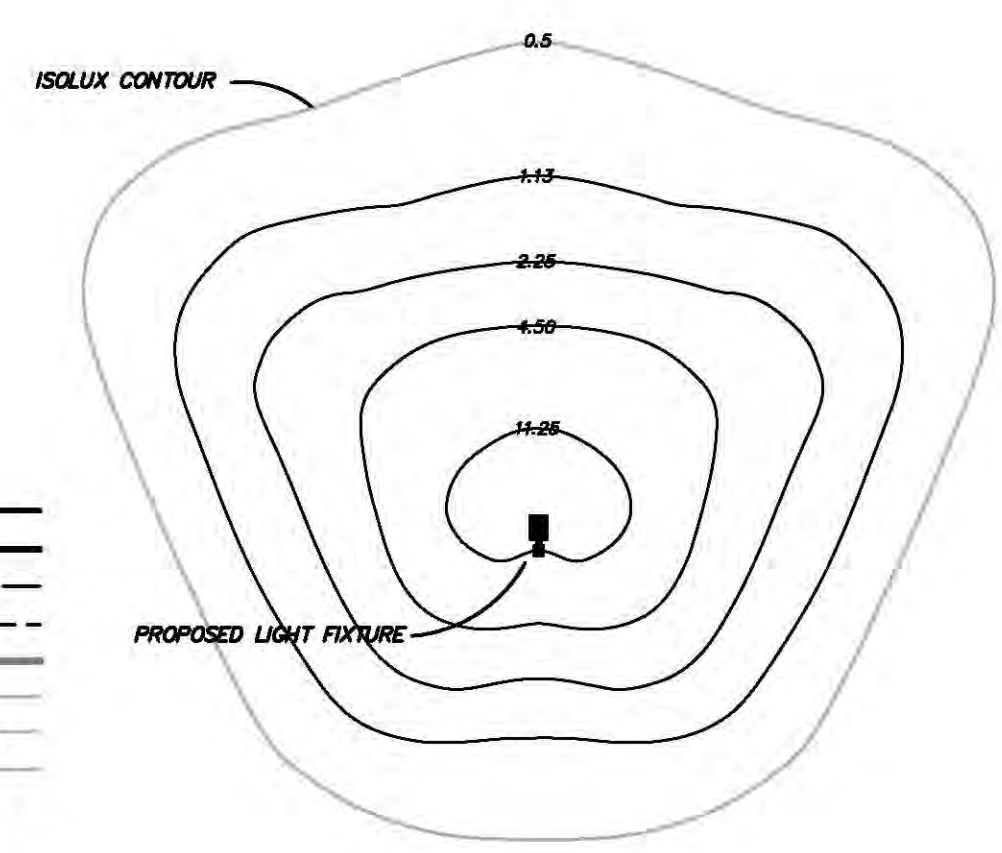
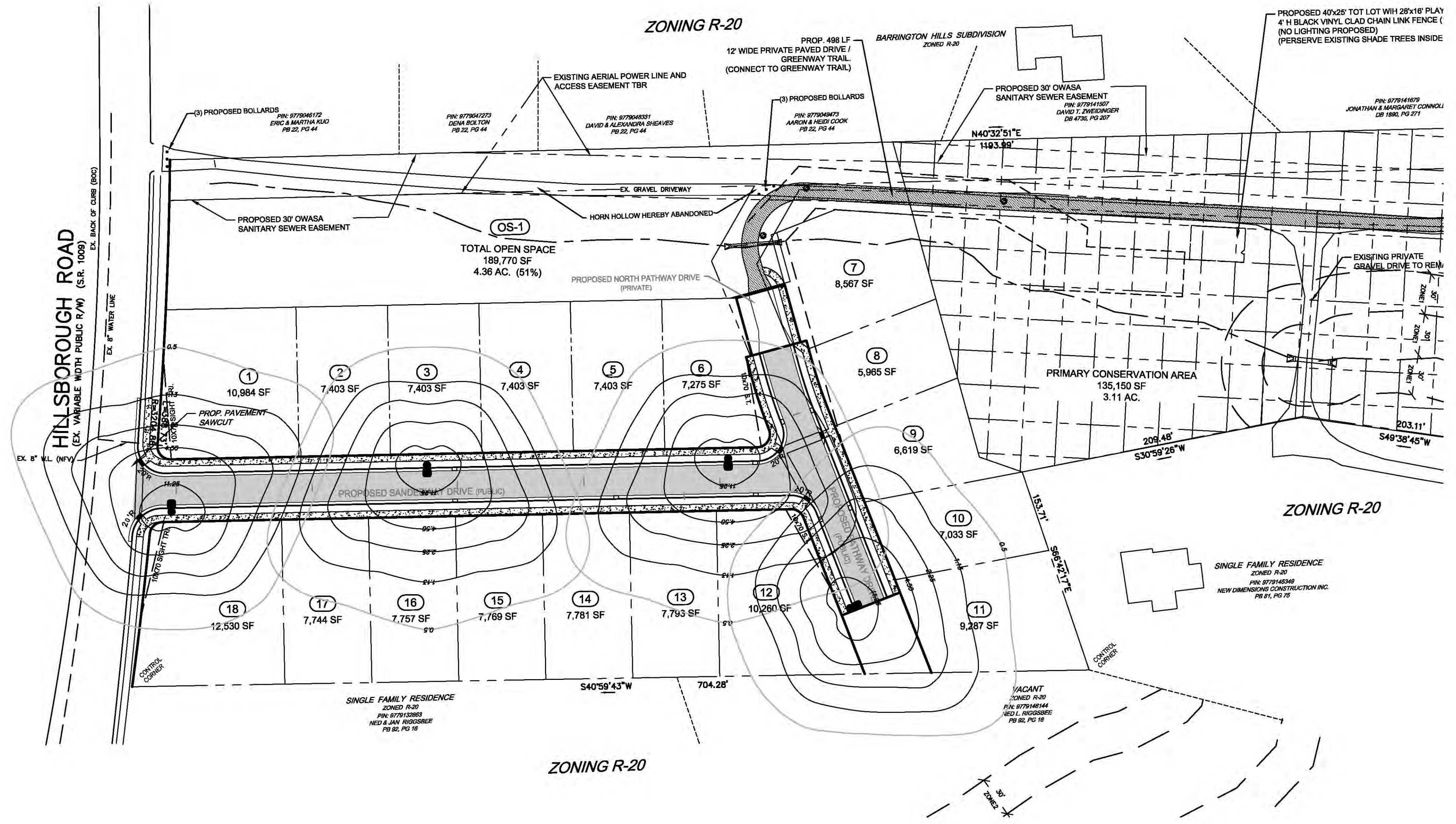
DATE: SEPTEMBER 10, 2016  
SCALE: 1"=50'  
LICENSE: C-0254  
JOB: \2017\170211\Bose 171017  
SHEET NUMBER: **C0600**  
OF 12 SHEETS





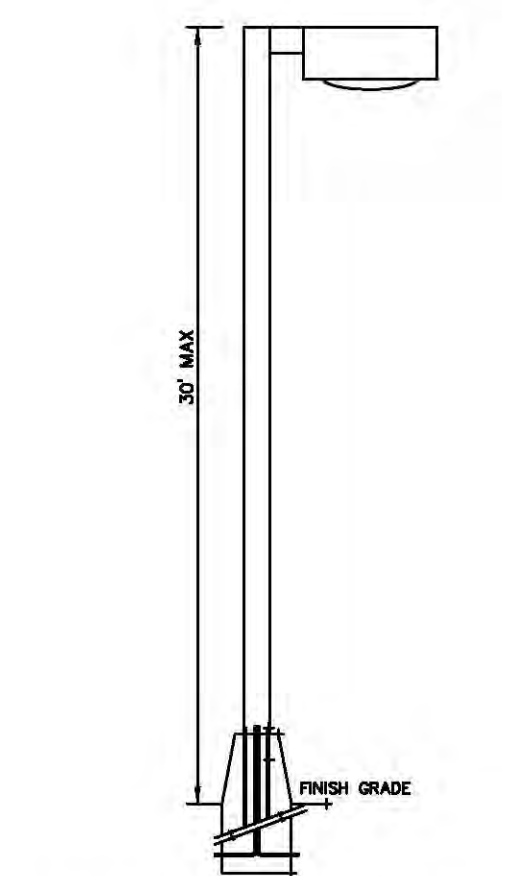
**NOTES**

**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 fixtures, 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.

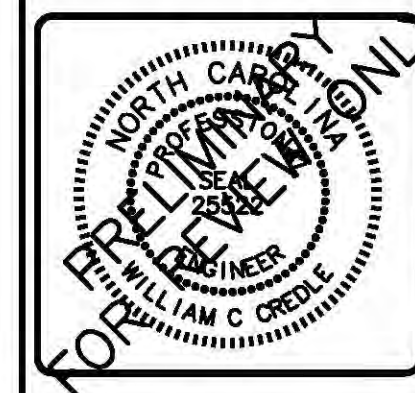
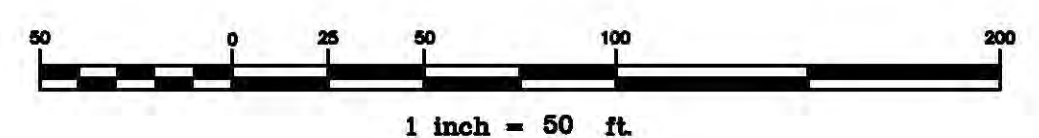


- LEGEND**
- PROPERTY LINE ———
  - R/W LINE ———
  - OVERHEAD UTILITY LINES - - - - -
  - UNDERGROUND ELEC. LINES - - - - -
  - SANITARY SEWER LINE - - - - -
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  - SEWER CLEANOUT ○
  - WATER METER □
  - CURB INLET ▣
  - EX. SEWER MAN HOLE ⊙

**POLE LIGHT** NTS  
 AREA LIGHTING FIXTURES SHALL BE "H" HANDED STYLE AS PROVIDED BY LUMARK MODEL # HR-5, 18" H - 52" - 400-WATT OR EQUAL. LUMINAIRES SHALL BE METAL HALIDE, 400 WATT LAMPS OR EQUIVALENT LED.  
 NUMBER OF SINGLE FIXTURE, FOUR (4)  
 LUMINAIRES: 400 WATT METAL HALIDE, 25 FOOT MOUNTING HEIGHT OR EQUIVALENT LED



LIGHT FIXTURE DETAIL NTS



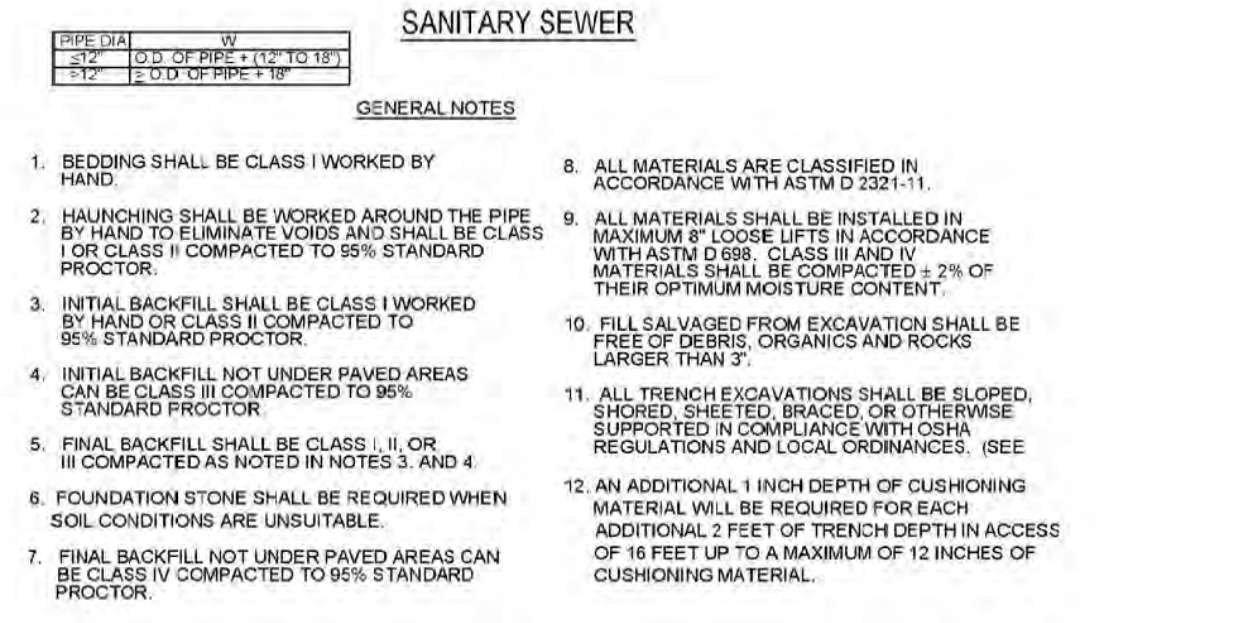
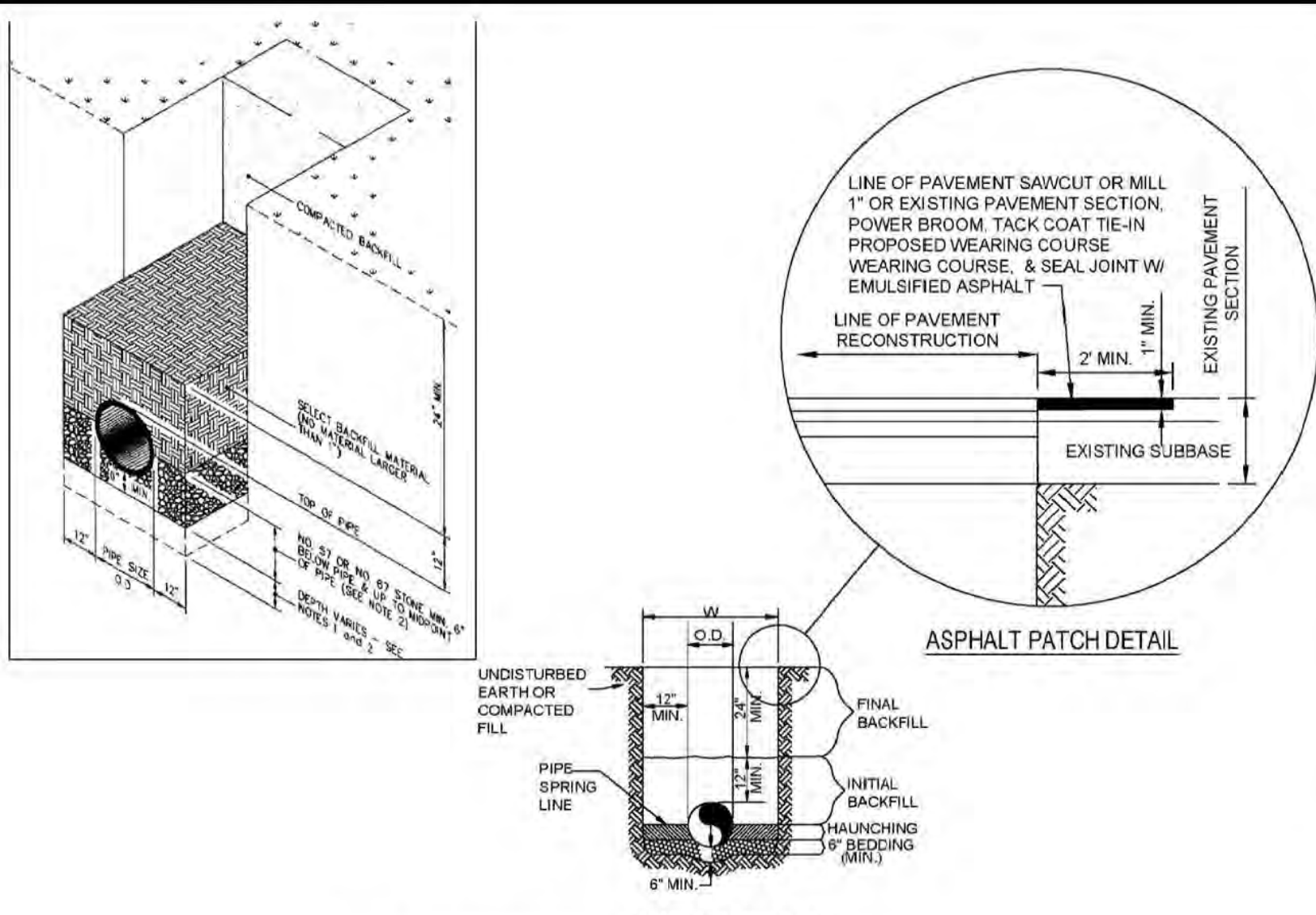
**CREDE ENGINEERING COMPANY, INC**  
 ENGINEERS/PLANNERS/SURVEYORS  
 204 E. MARKHAM AVE, DURHAM, N.C. 27701 (919) 682-2006 PH (919) 682-2005 FX  
**SANDERWAY SUBDIVISION**  
 PROPERTY OF  
**GH-2, LLC**  
 121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

**REVISIONS**

NO.	DATE	DESCRIPTION

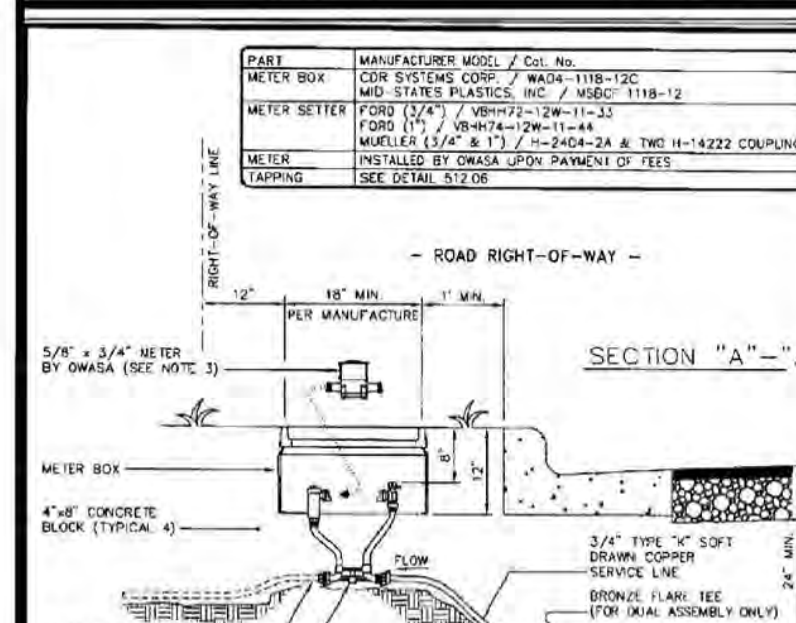
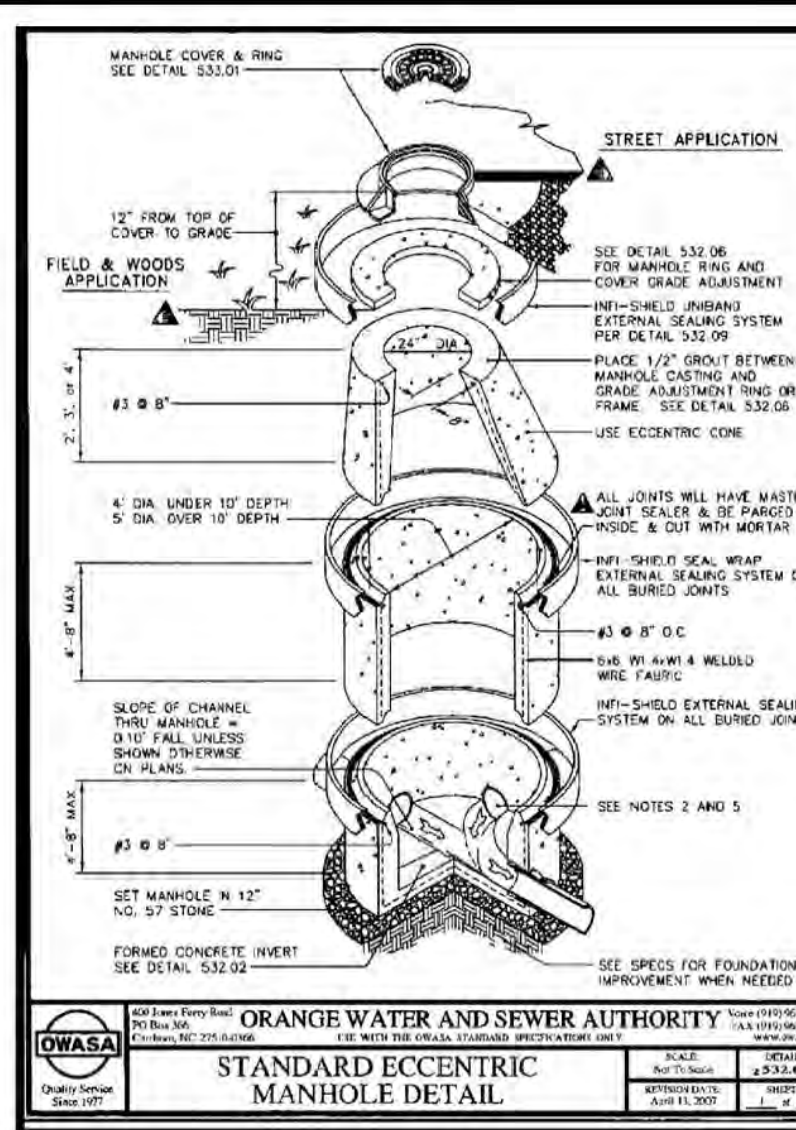
DATE: SEPTEMBER 10, 2016  
 SCALE: 1"=50'  
 LICENSE: C-0254  
 JOB: \2017\170211\Bose 171017  
 SHEET NUMBER: **C0700**  
 OF 12 SHEETS





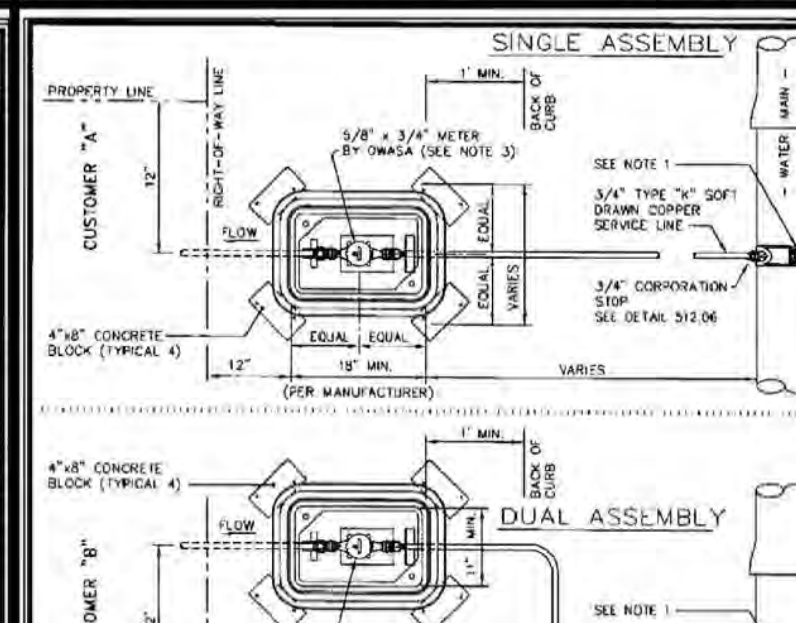
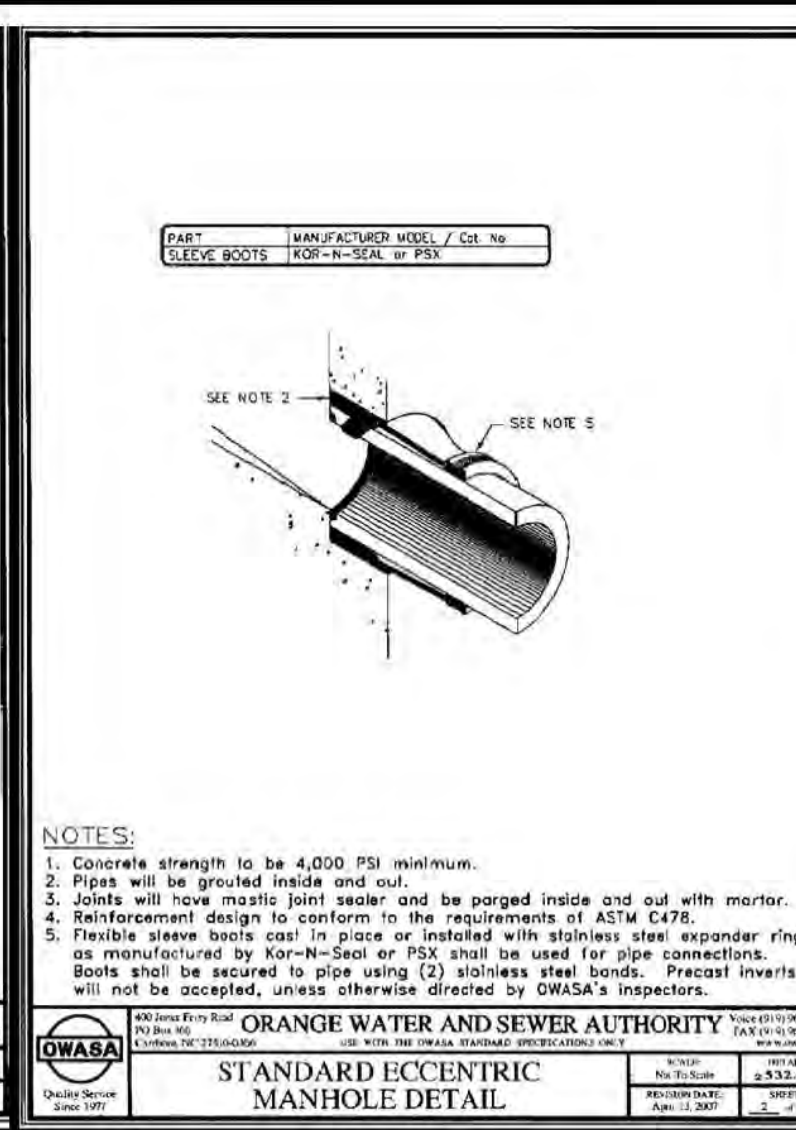
UTILITY TRENCH AND BEDDING DETAIL  
NOT TO SCALE

- 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 90% STANDARD PROCTOR.
  4. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS II COMPACTED TO 80% STANDARD PROCTOR.
  5. FINAL BACKFILL SHALL BE CLASS 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 85% STANDARD PROCTOR.
  8. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-11.
  9. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 6" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 1557-11. CLASS II AND IV MATERIALS SHALL BE COMPACTED 2" OF THEIR MINIMUM MOISTURE CONTENT.
  10. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 6".
  11. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED AS NOTED IN NOTES 3, 4 AND 4.
  12. AN ADDITIONAL 1" 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.



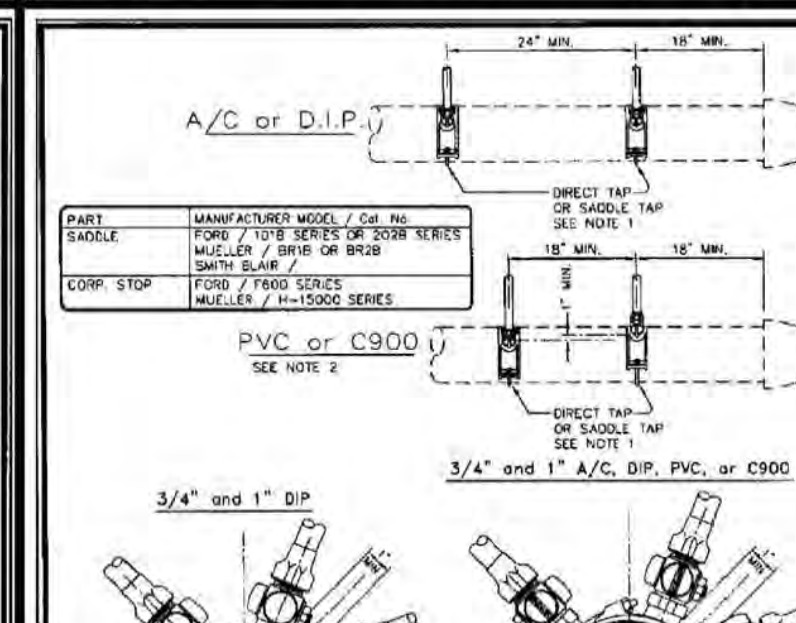
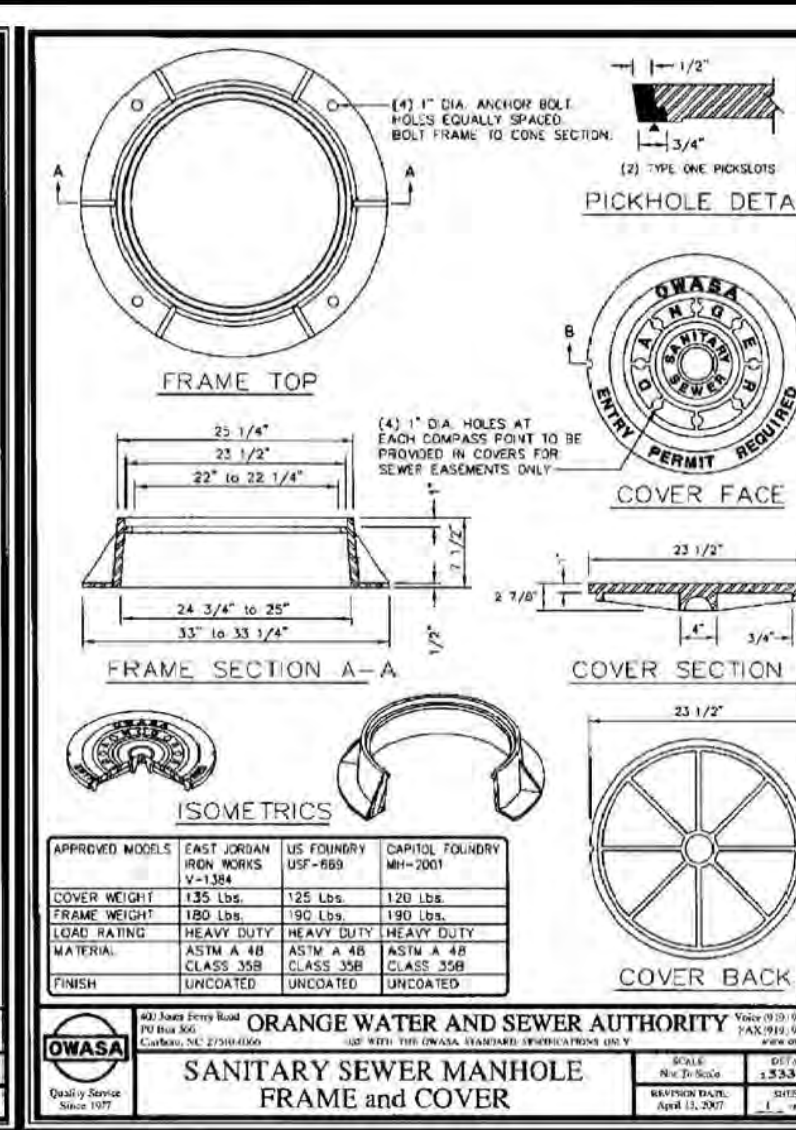
3/4" SINGLE & 1" DUAL SERVICE INSTALLATION

- NOTES:**
1. All bronze saddles shall be used on all service connections. Direct taps shall be made only as directed by an OWASA representative. See tapping detail S12.06.
  2. Omitted.
  3. Installation is for sub-out meter, meter shall be purchased from OWASA. (All options expense)
  4. Meter must be installed across meter connections.
  5. Substitution requires approval by OWASA's Director of Engineering.



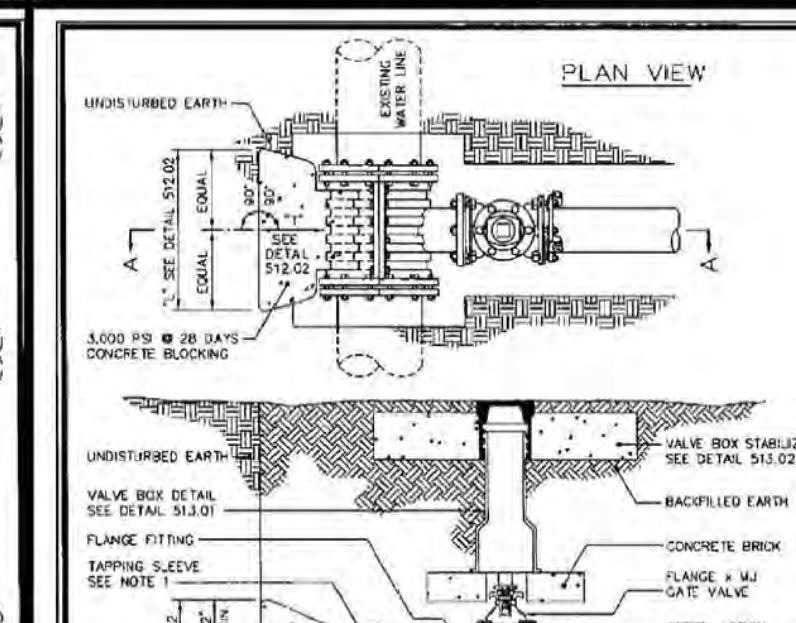
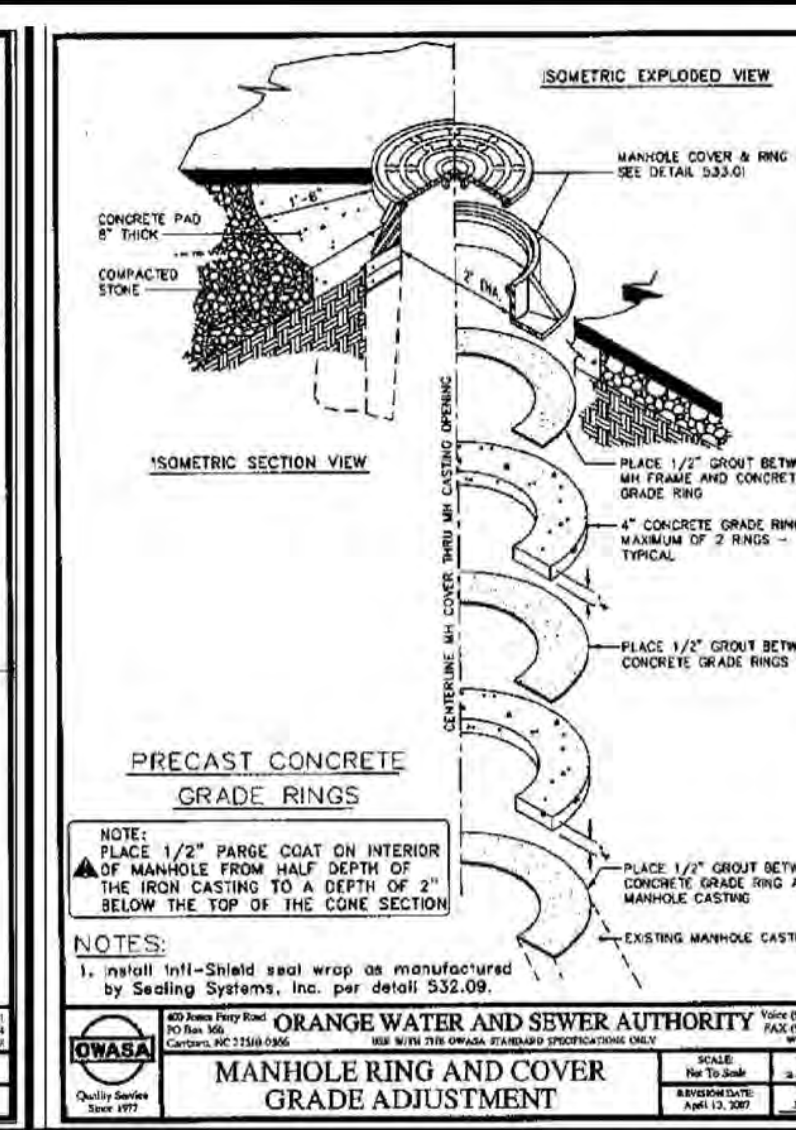
3/4" SINGLE & 1" DUAL SERVICE INSTALLATION

- NOTES:**
1. All bronze saddles (single or double stop 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 of 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.



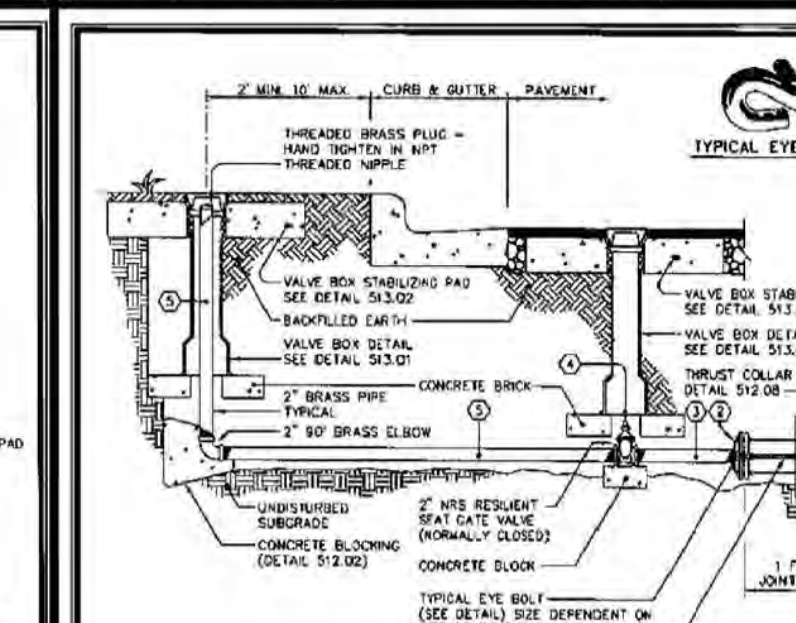
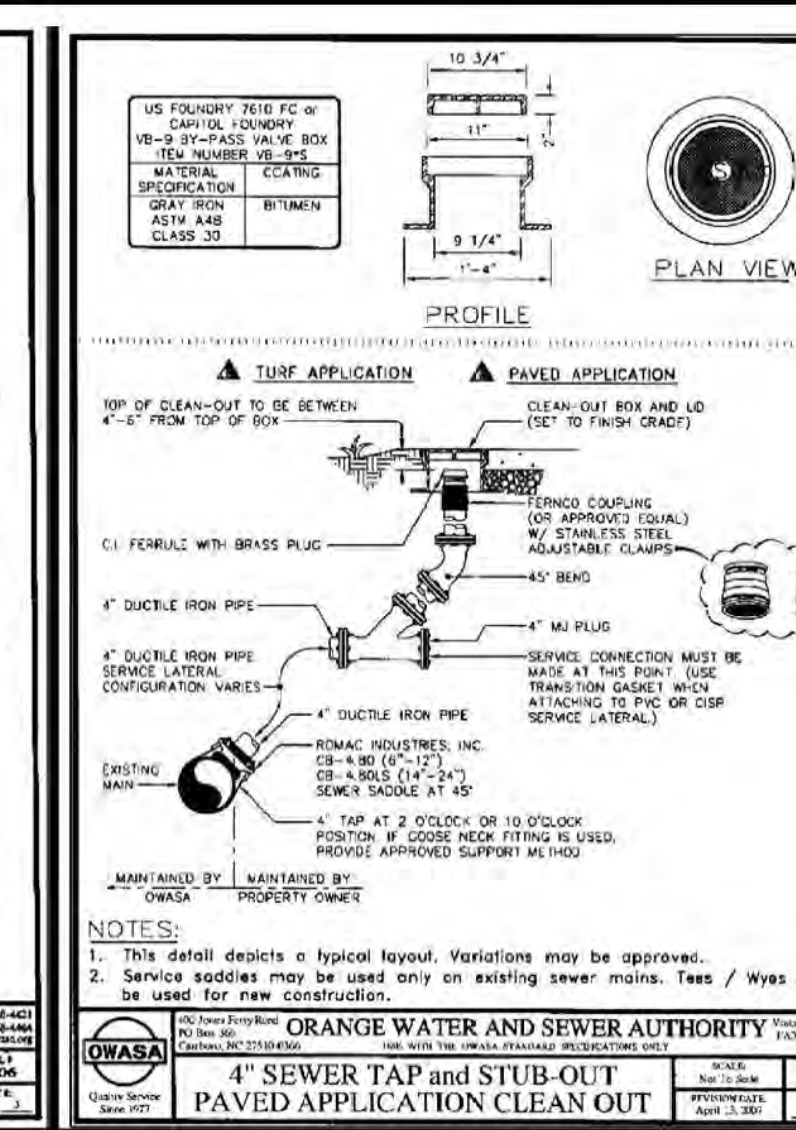
STANDARD 3/4" and 1" WATER TAPPING DETAIL

- NOTES:**
1. All bronze saddles (single or double stop 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 of 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.



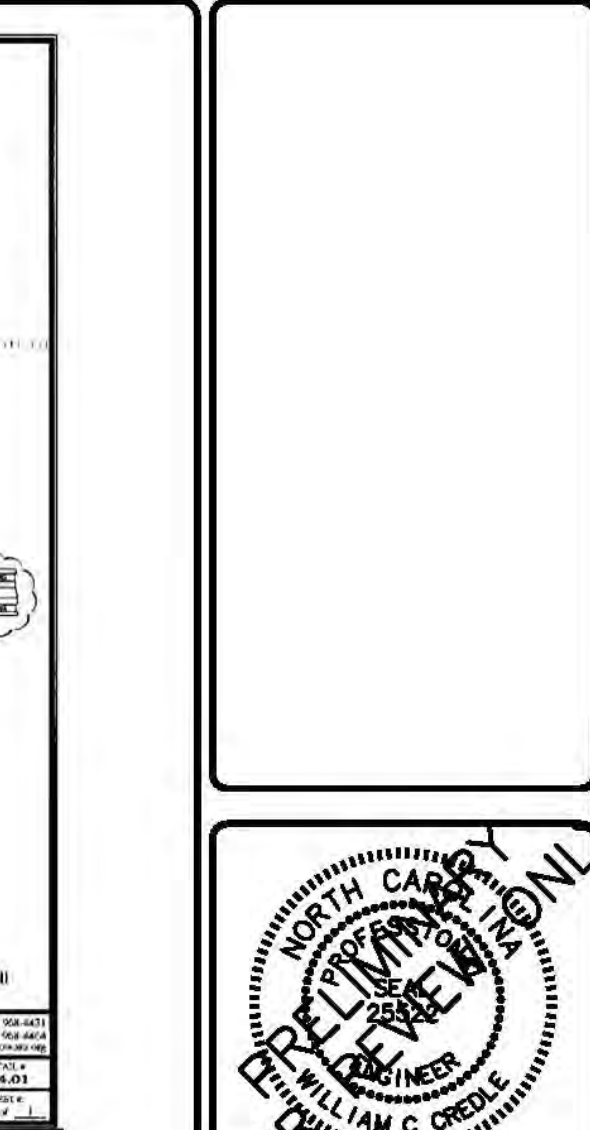
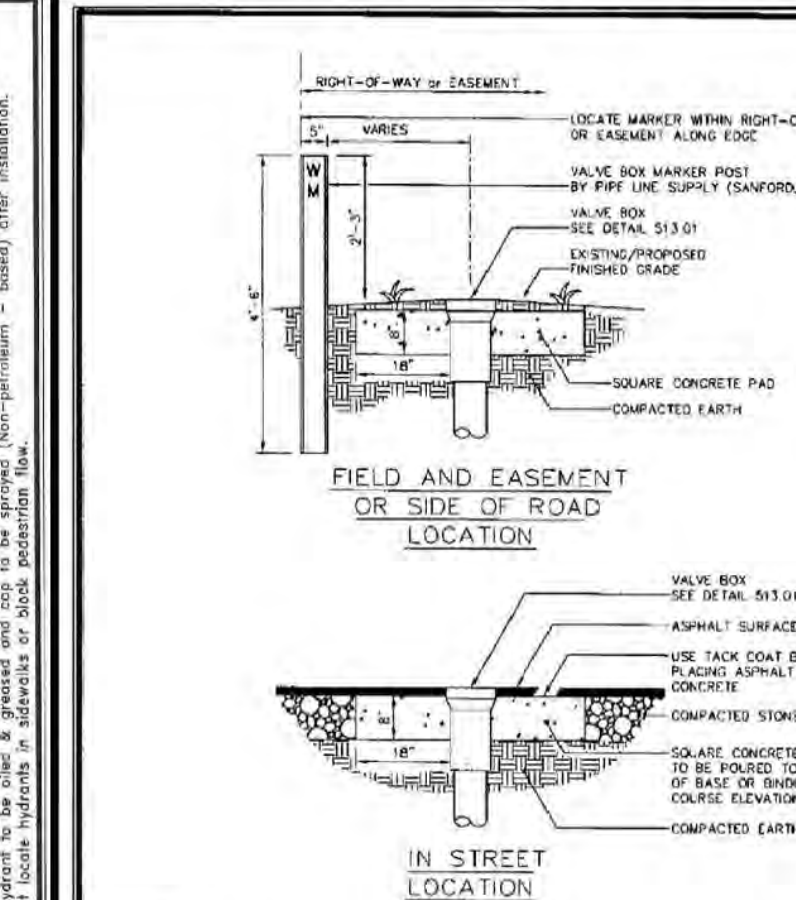
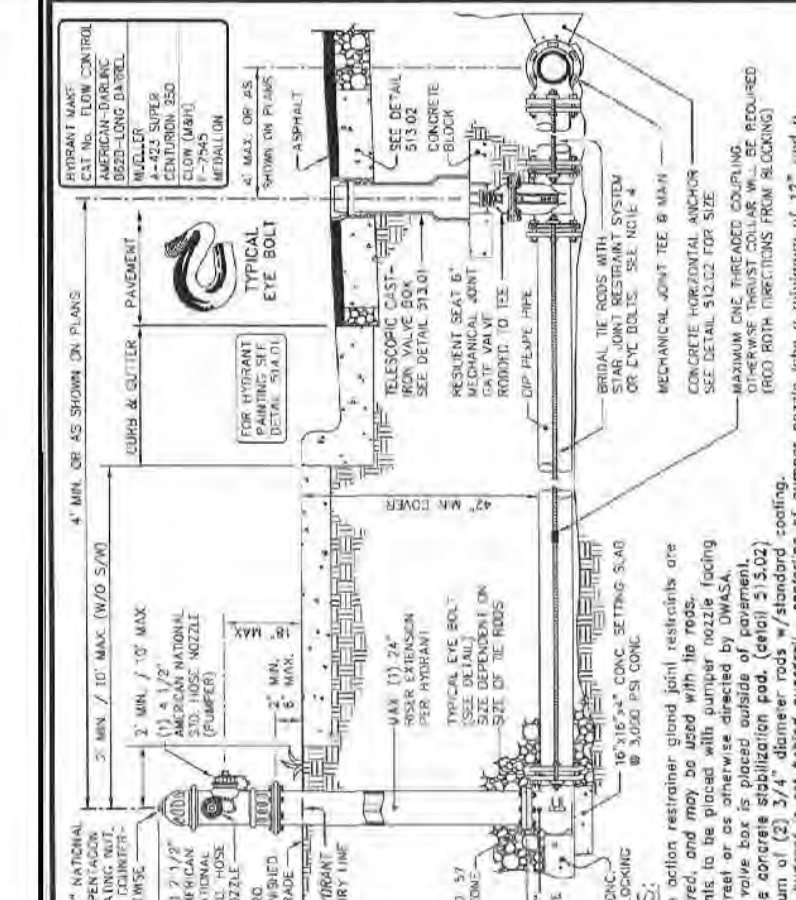
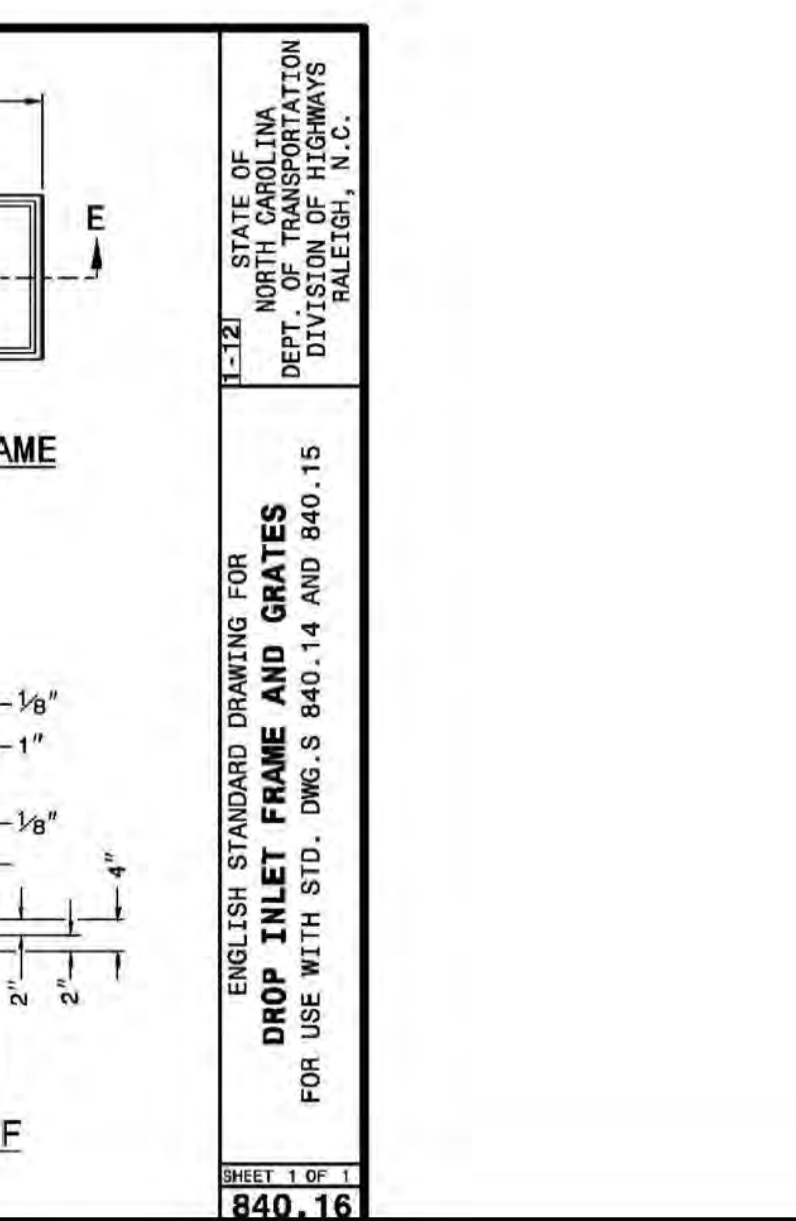
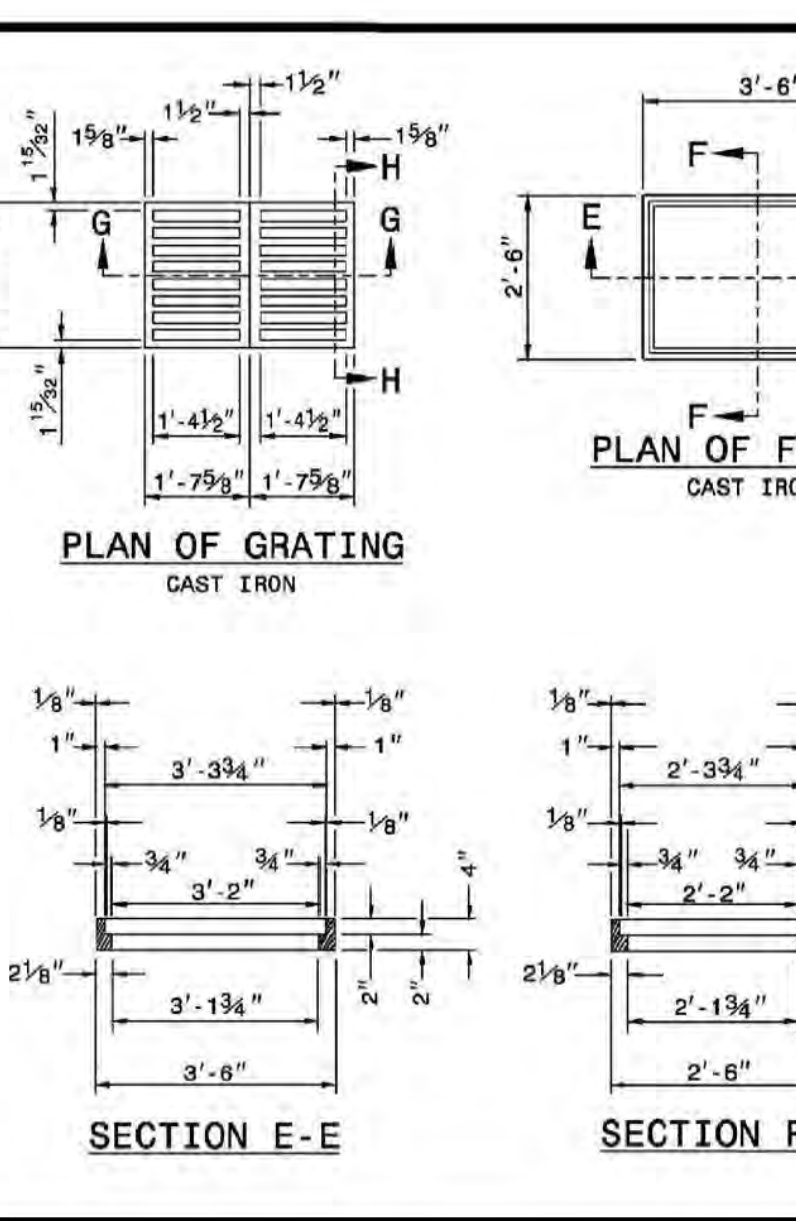
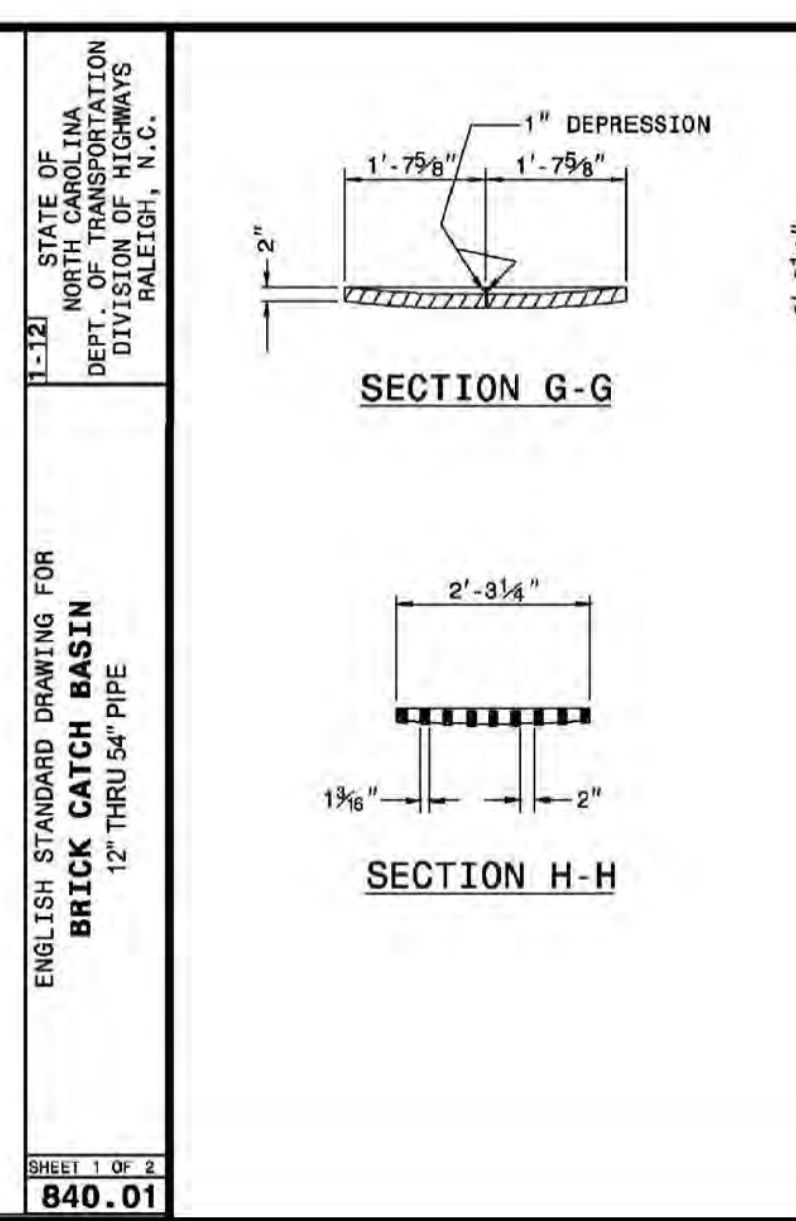
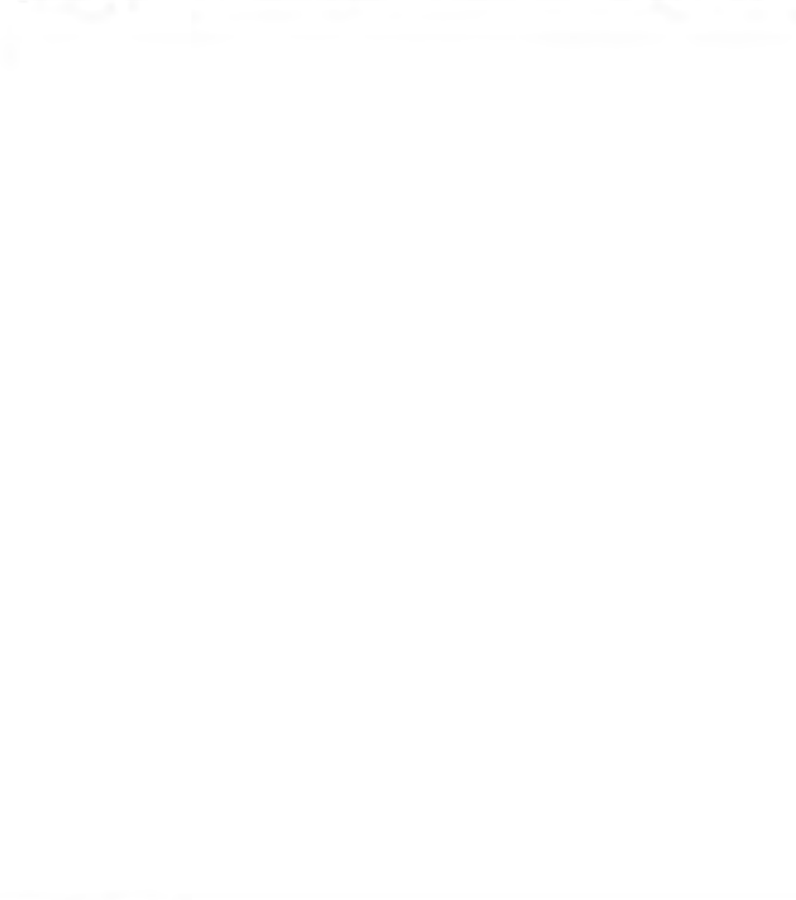
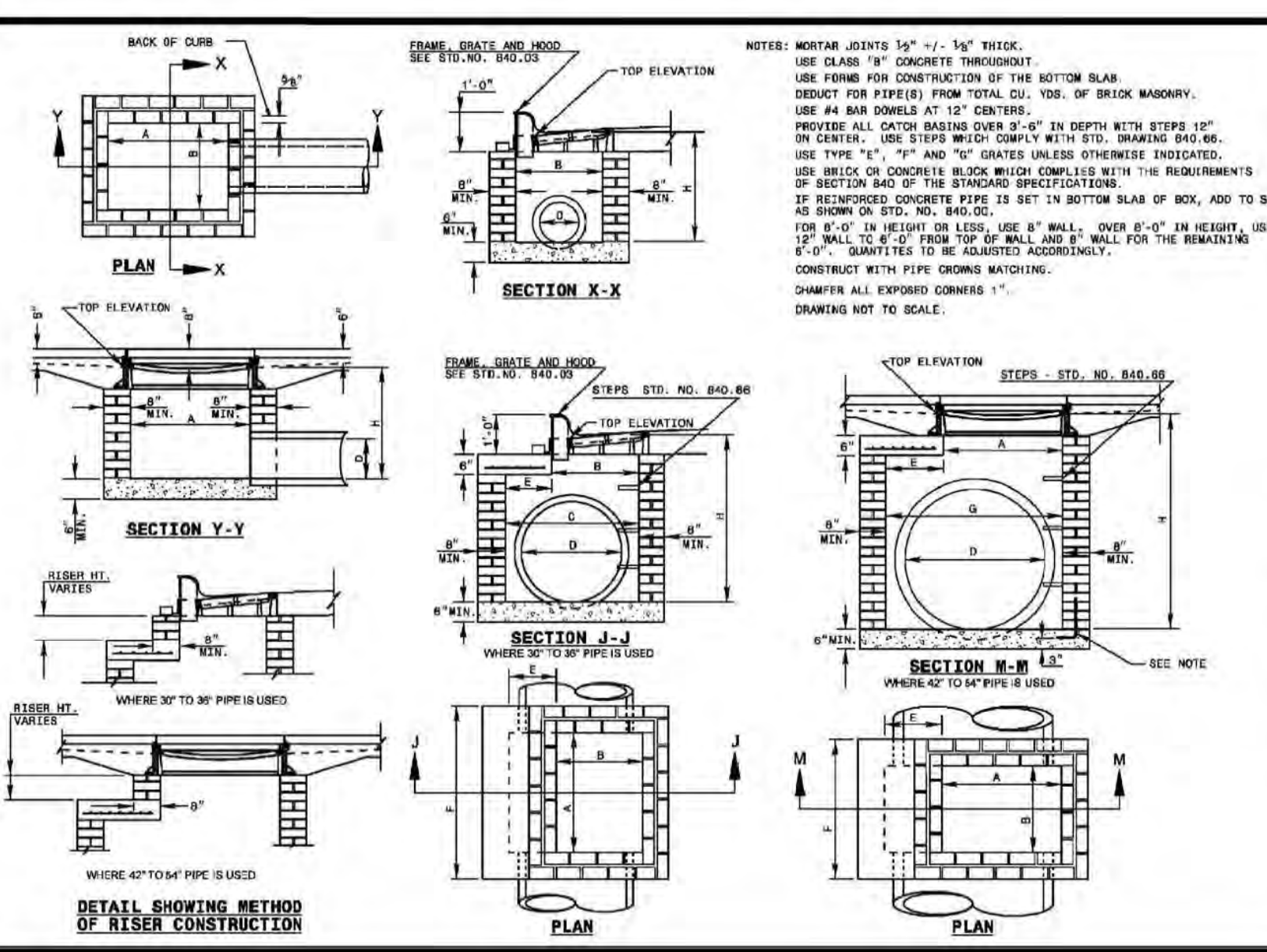
4" STANDARD TAPPING SLEEVE and VALVE ASSEMBLY

- NOTES:**
1. Concrete bedding is to be formed to ensure accessibility to fittings and located against underdrainage apron.
  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 into in-service mains by OWASA personnel only.



PERMANENT 2" BLOW-OFF ASSEMBLY FOR MAINS UP TO 8"

- NOTES:**
1. No discharge from blow-off should go directly into a creek.
  2. OWASA must determine discharge before it enters a body of water.
  3. In lieu of rodless fittings, contractor may use a wedge roller retained gland joint restraint on fittings.



**WATER & SEWER DETAILS**

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

**CREDLE ENGINEERING COMPANY, INC.**  
ENGINEERS/PLANNERS/SURVEYORS

**SANDERWAY SUBDIVISION**  
PROPERTY OF  
**GH-2, LLC**

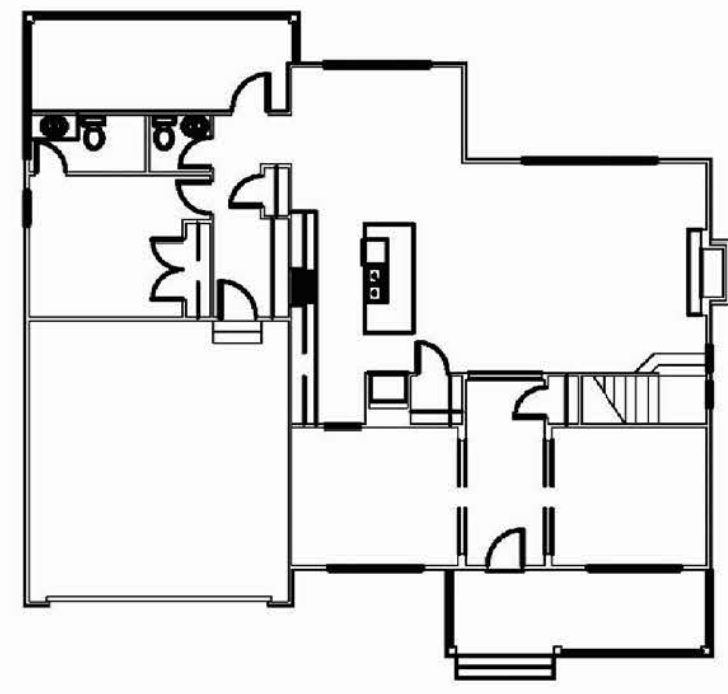
121 SOUTH ESTES DRIVE, STE 100, CHAPEL HILL, N.C. 27514

REVISIONS	
NO.	DESCRIPTION

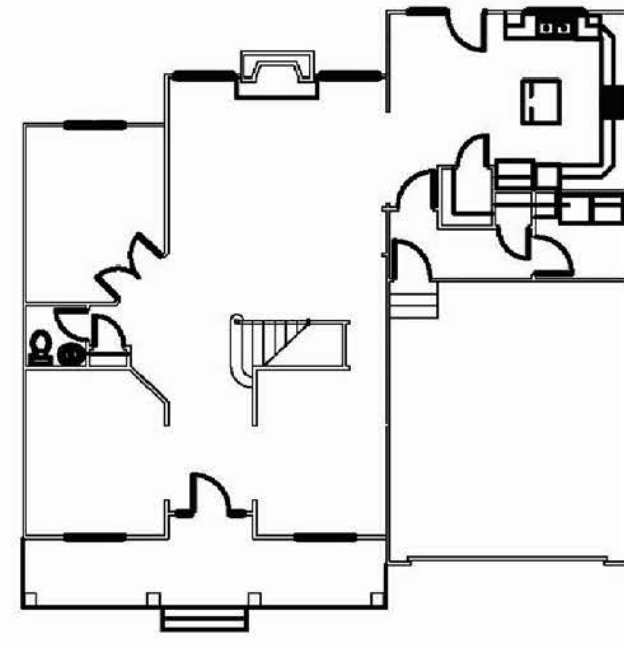
DATE: SEPTEMBER 10, 2017  
SCALE: AS SHOWN  
LICENSE: C-0254  
JOB: 201717021/Phase 17017  
SHEET NUMBER: **C0800**  
OF 12 SHEETS

**PRELIMINARY  
NOT FOR CONSTRUCTION**

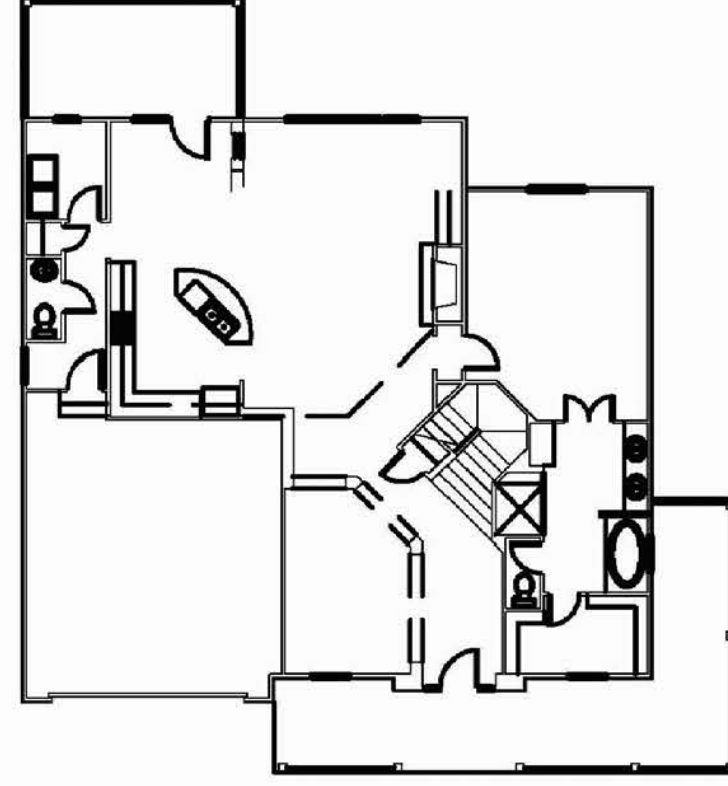




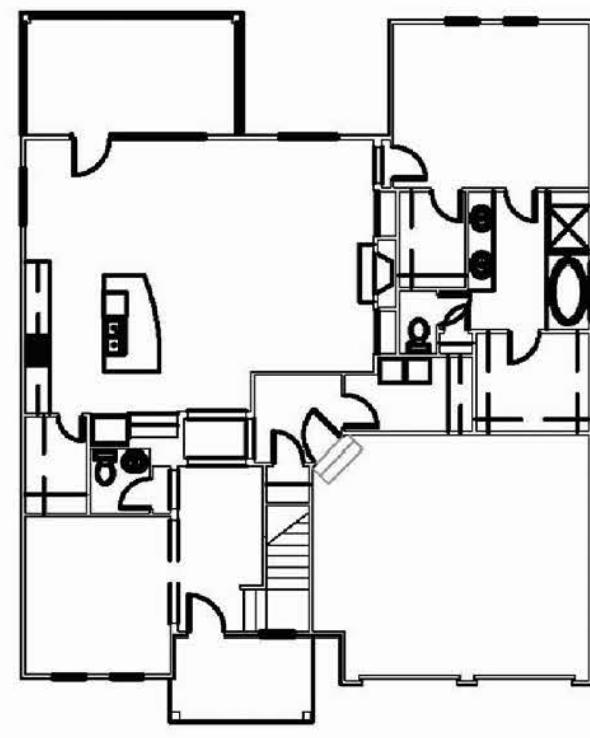
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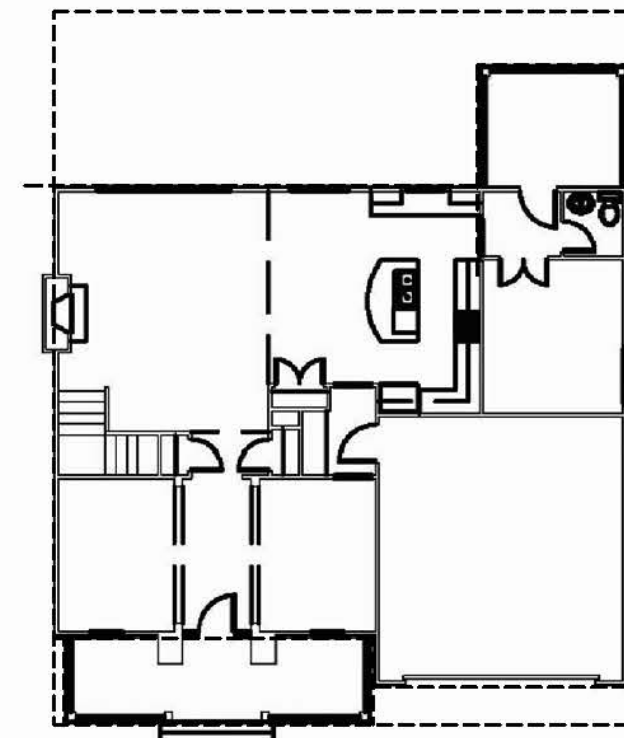
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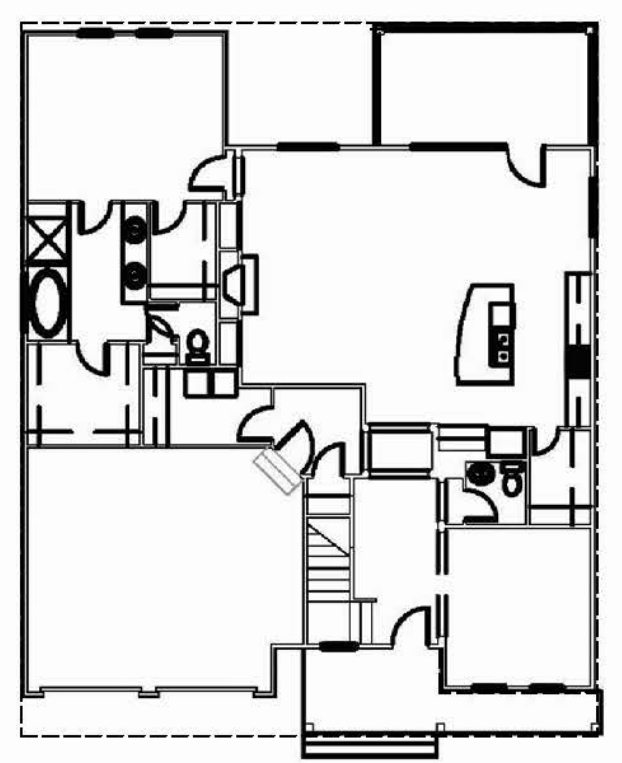
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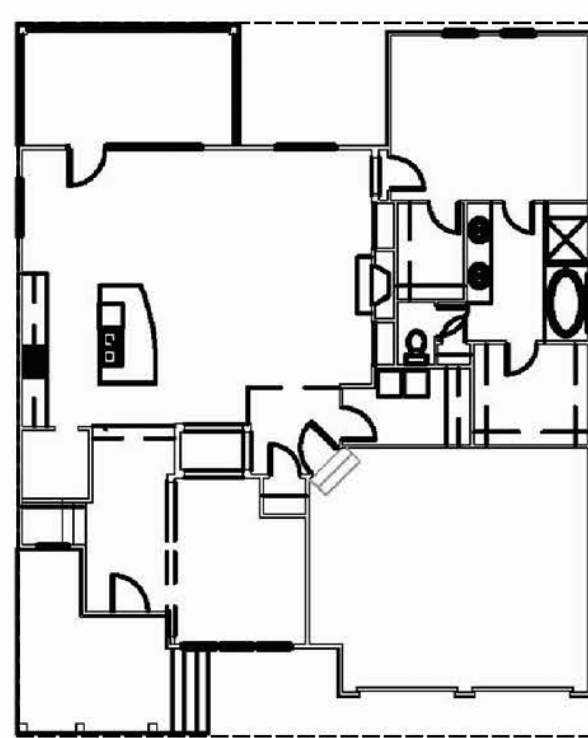
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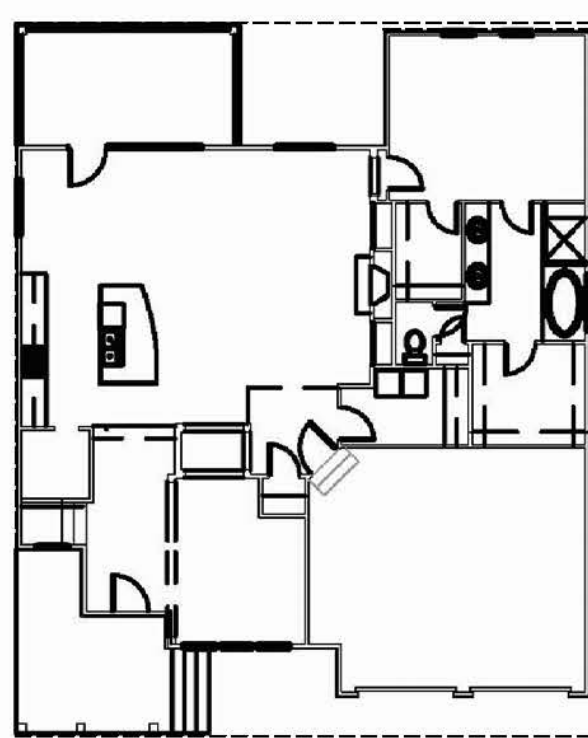
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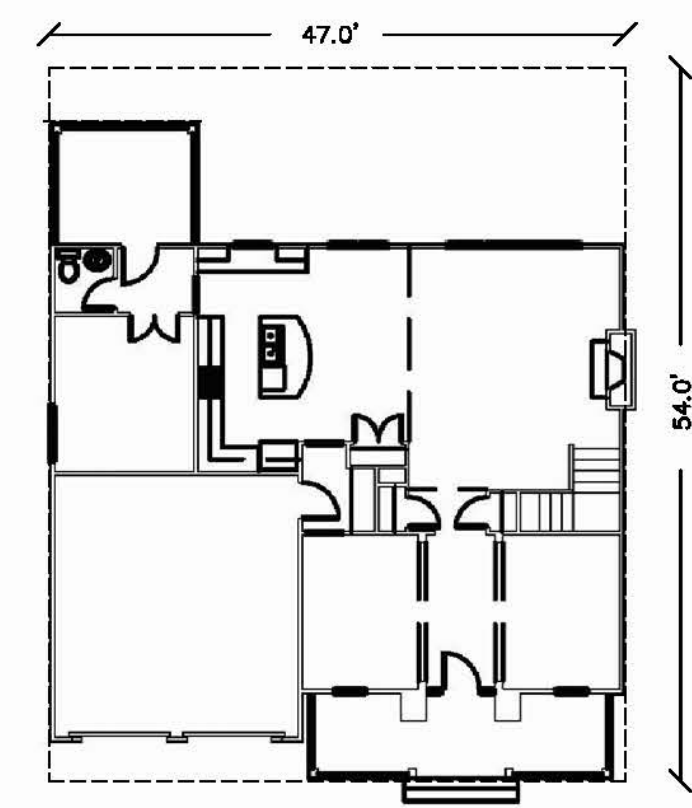
1 SANDERWAY 6



1 SANDERWAY 7



1 SANDERWAY 8



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.



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

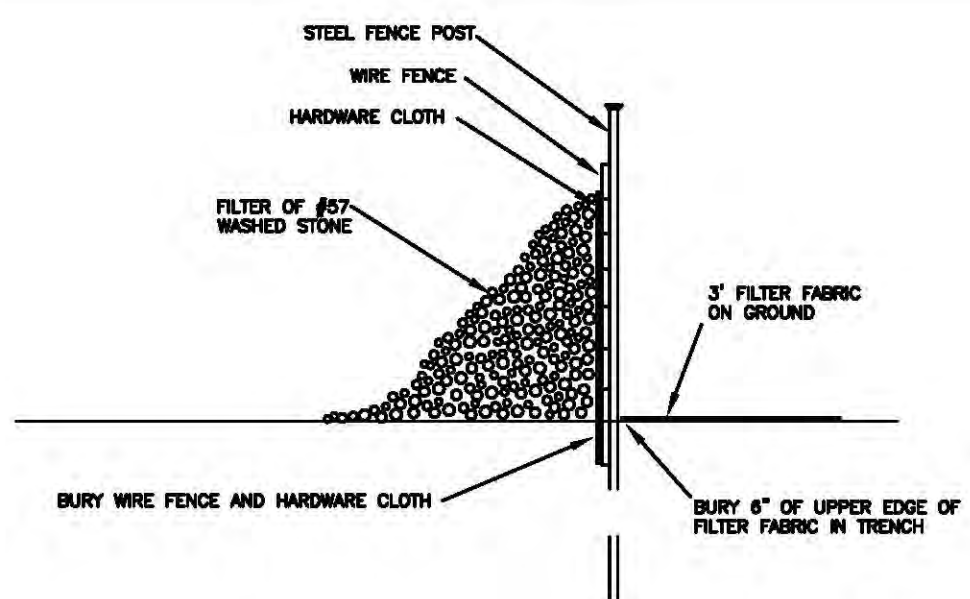
■ FLOOR PLANS

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

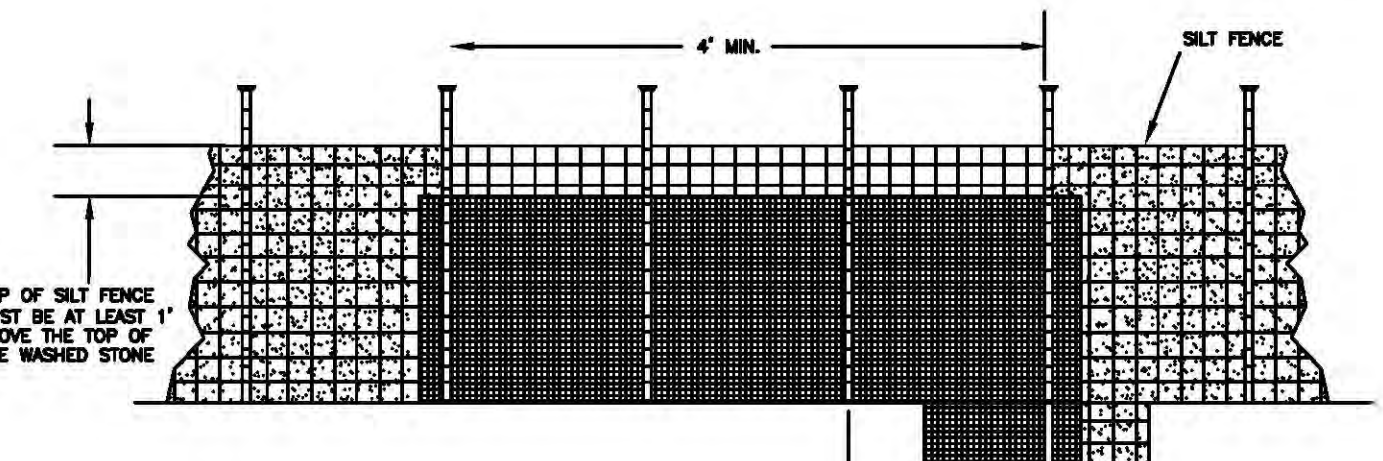
REVISIONS		
NO.	DATE	DESCRIPTION

DATE SEPTEMBER 10, 2016  
 SCALE AS SHOWN  
 LICENSE C-0254  
 JOB \2017\17021\Bose 171017  
 SHEET NUMBER  
**C0900**  
 OF 12 SHEETS





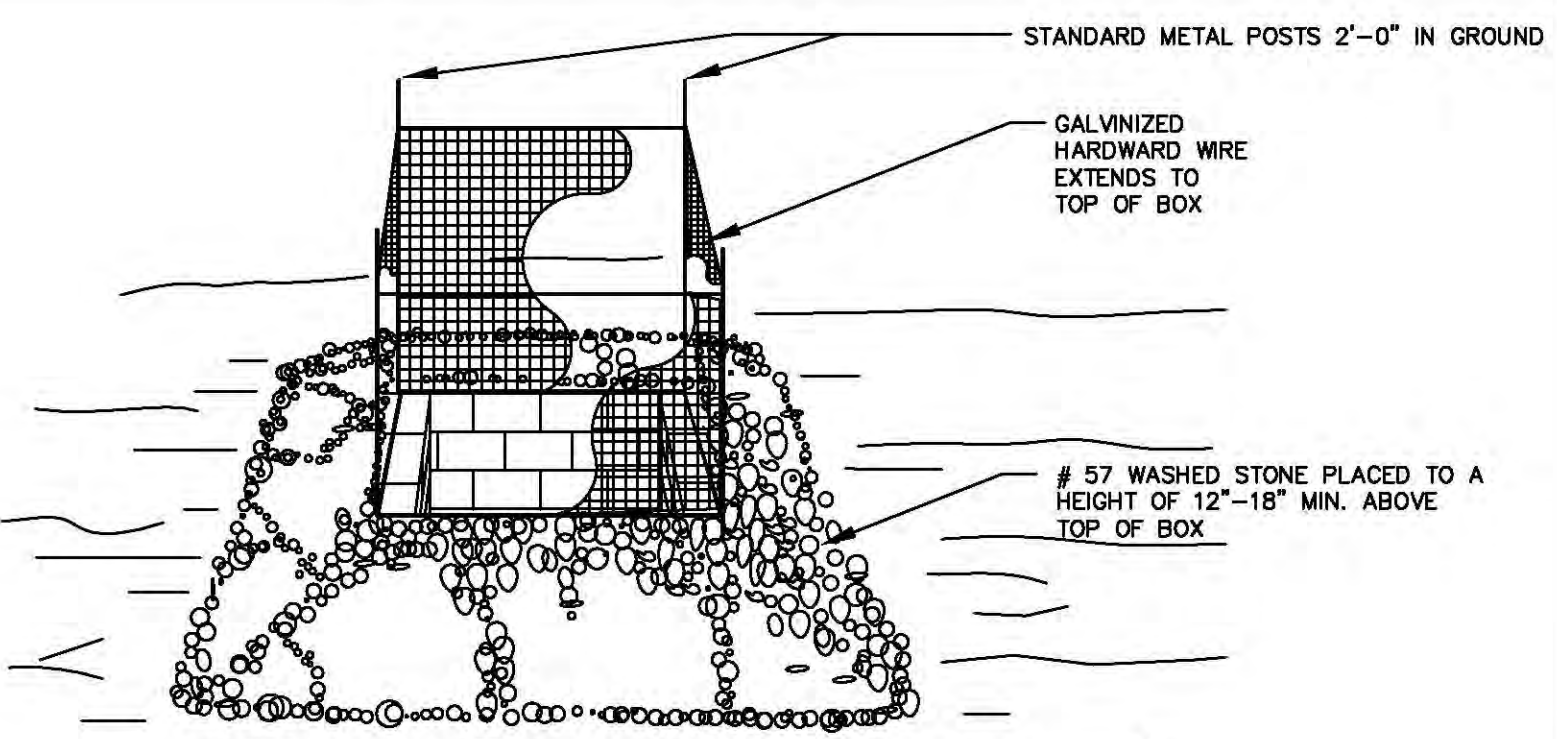
SECTION VIEW



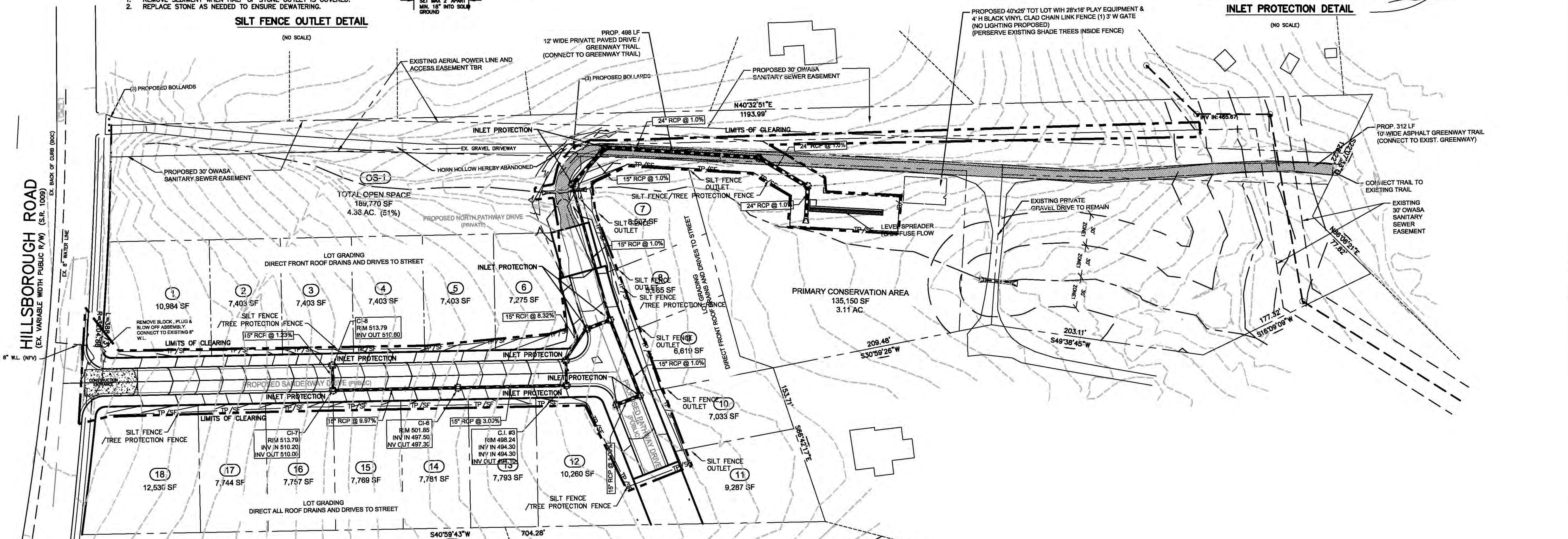
FRONT VIEW

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

SILT FENCE OUTLET DETAIL

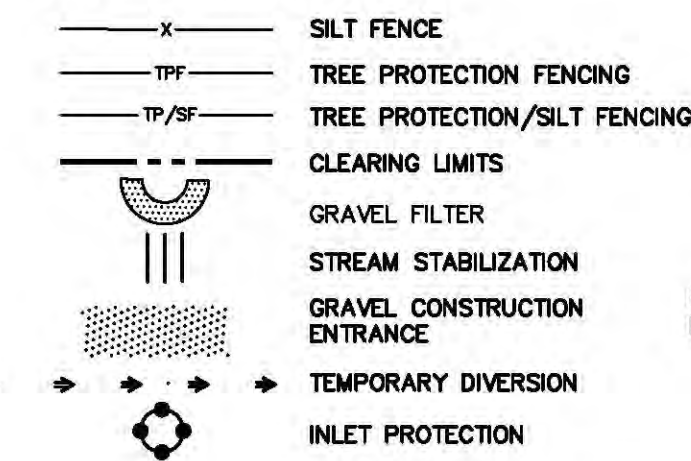


INLET PROTECTION DETAIL

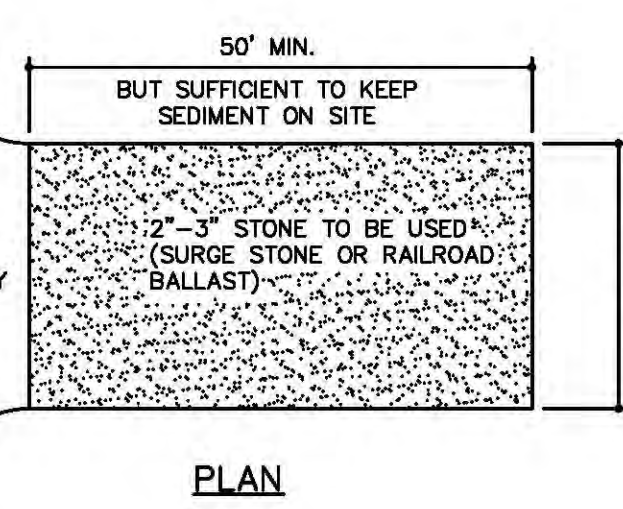
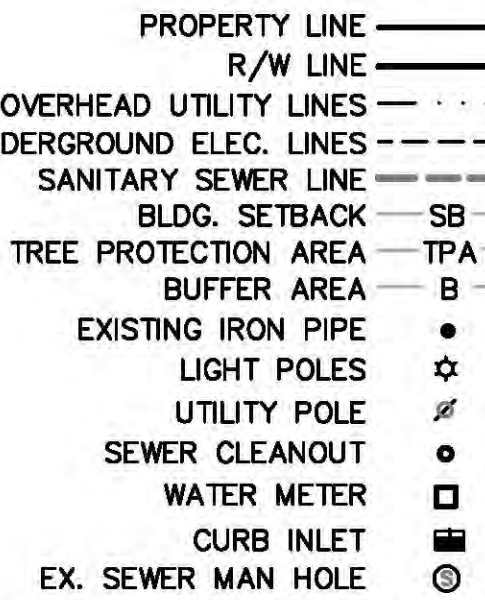


HILLSBOROUGH ROAD  
 (EX. VARIABLE WIDTH PUBLIC R/W) (S.R. 1009)

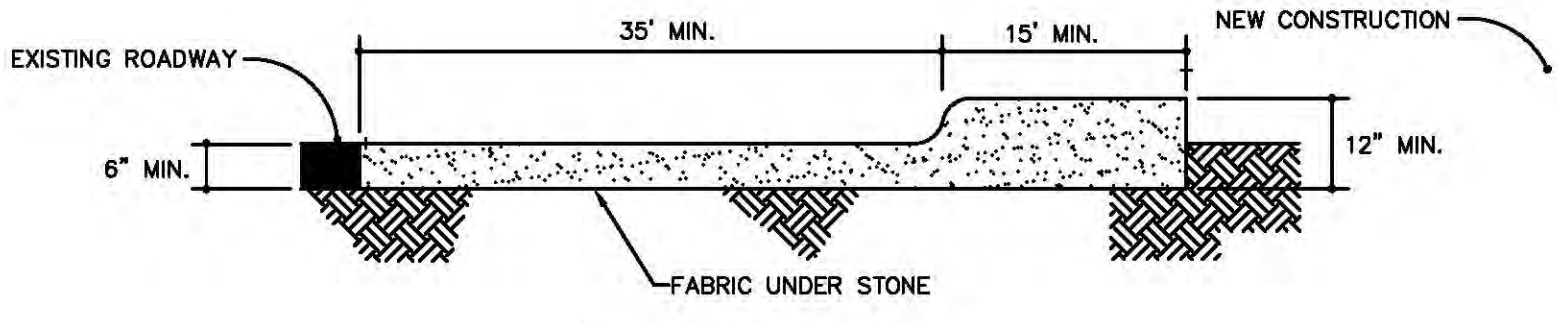
EROSION CONTROL KEY



LEGEND



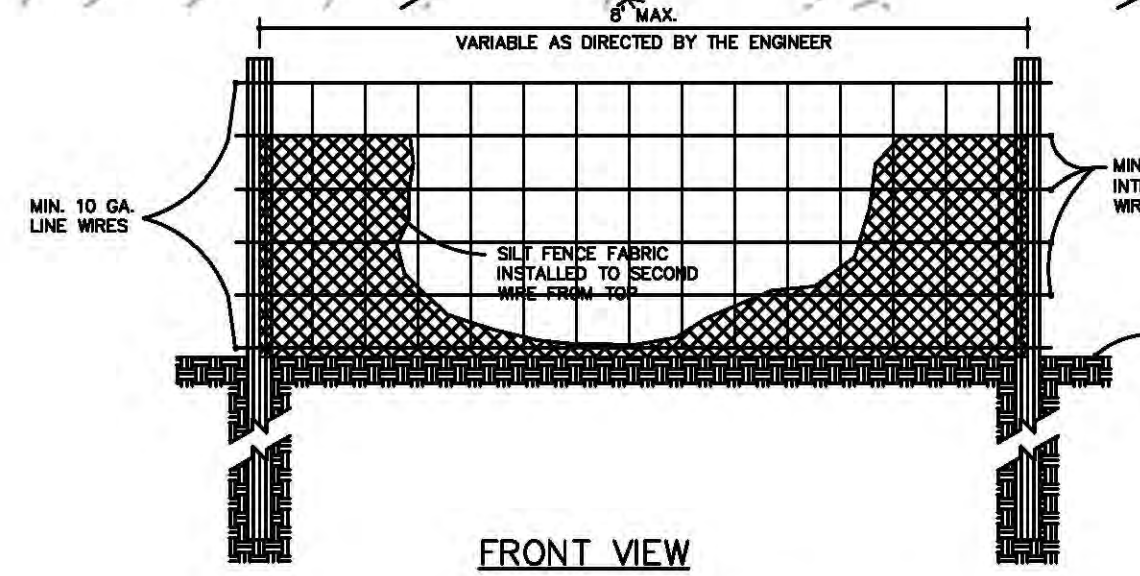
PLAN



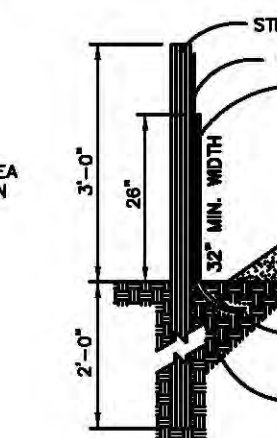
CROSS SECTION

CONSTRUCTION ENTRANCE

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.

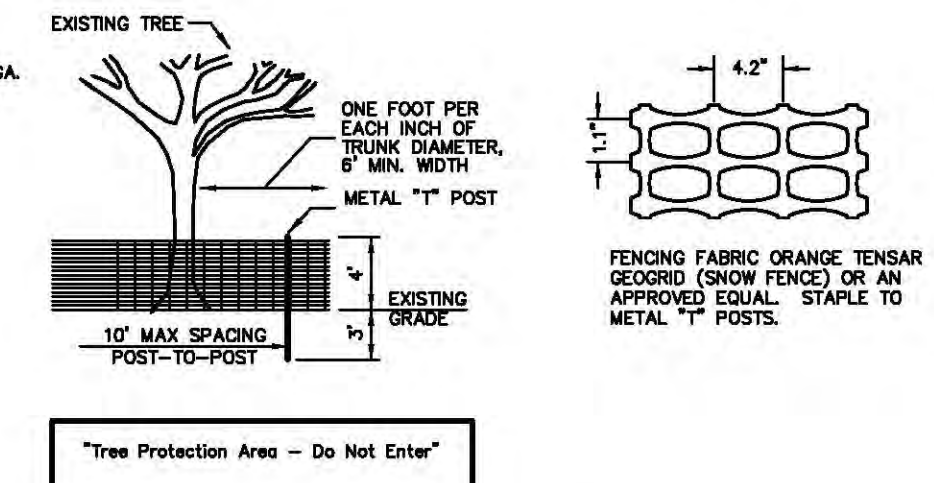


FRONT VIEW



SIDE VIEW

STANDARD TEMPORARY SILT FENCE



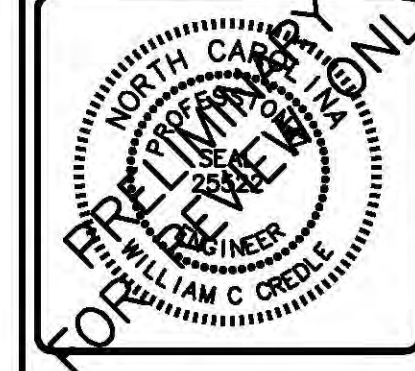
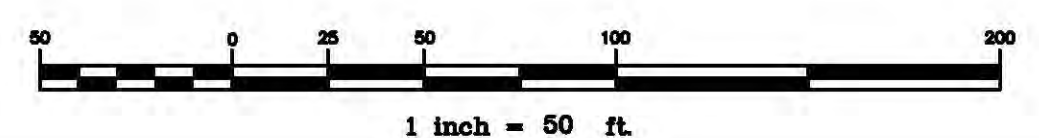
TREE PROTECTION FENCE DETAIL

NOTE:  
 PROTECTION OF EXISTING VEGETATION: At the start of grading involving the lowering of existing grade around a tree or striping of topsoil, a sleeve, always, vertical cut shall be made at the edge of the tree row 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 tree 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

- ALL LAND DISTURBING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH ORANGE COUNTY SOIL EROSION AND SEDIMENTATION CONTROL STANDARDS AND PRACTICES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SEDIMENTATION AND EROSION CONTROL DEVICES SHOWN ON THE APPROVED PLAN.
- 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.
- SLOPES SHALL BE NO STEEPER THAN 2:1, PREFERABLY FLATTER, FOR VEGETATIVE COVER.
- 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 AFTER EVERY RAINFALL EVENT.
- DRAINAGE CHANNELS MUST BE CLEAN OF SEDIMENT AND STABILIZED BEFORE THE PROJECT IS RELEASED BY ORANGE COUNTY.
- 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.
- 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.
- 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



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  
 SANDERWAY SUBDIVISION  
 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\Bose 171017
SHEET NUMBER	C1000
OF	12 SHEETS