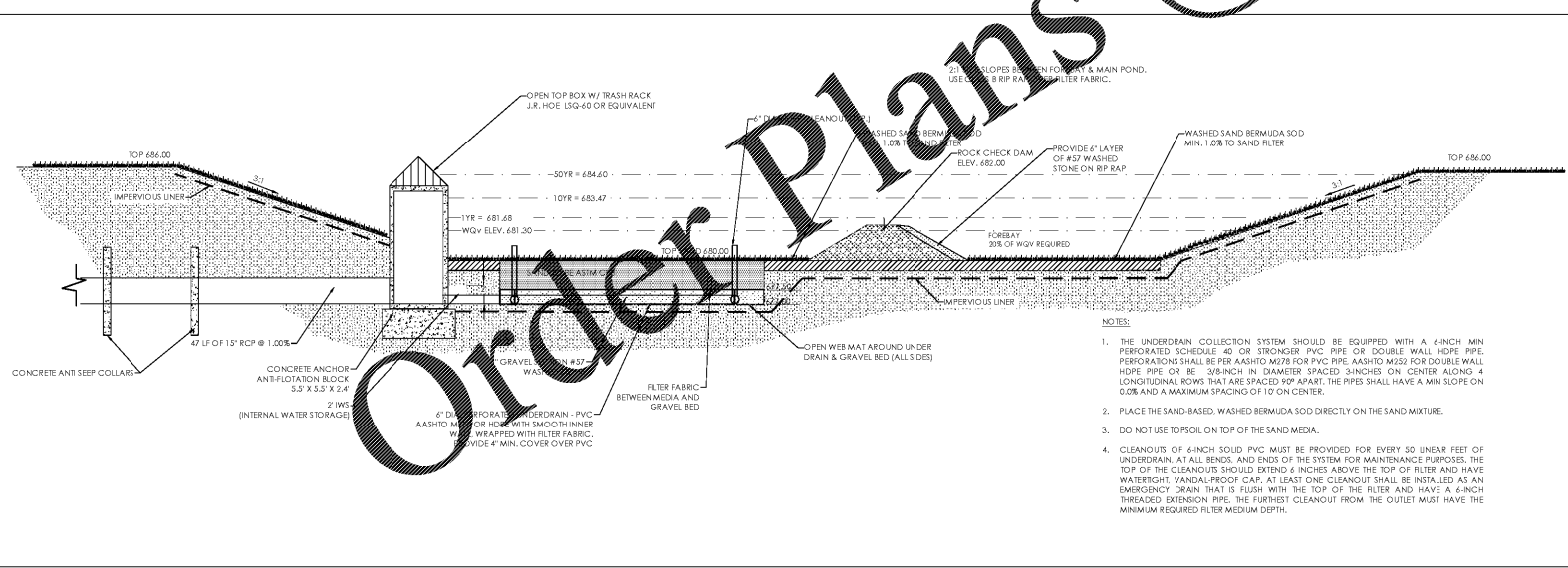
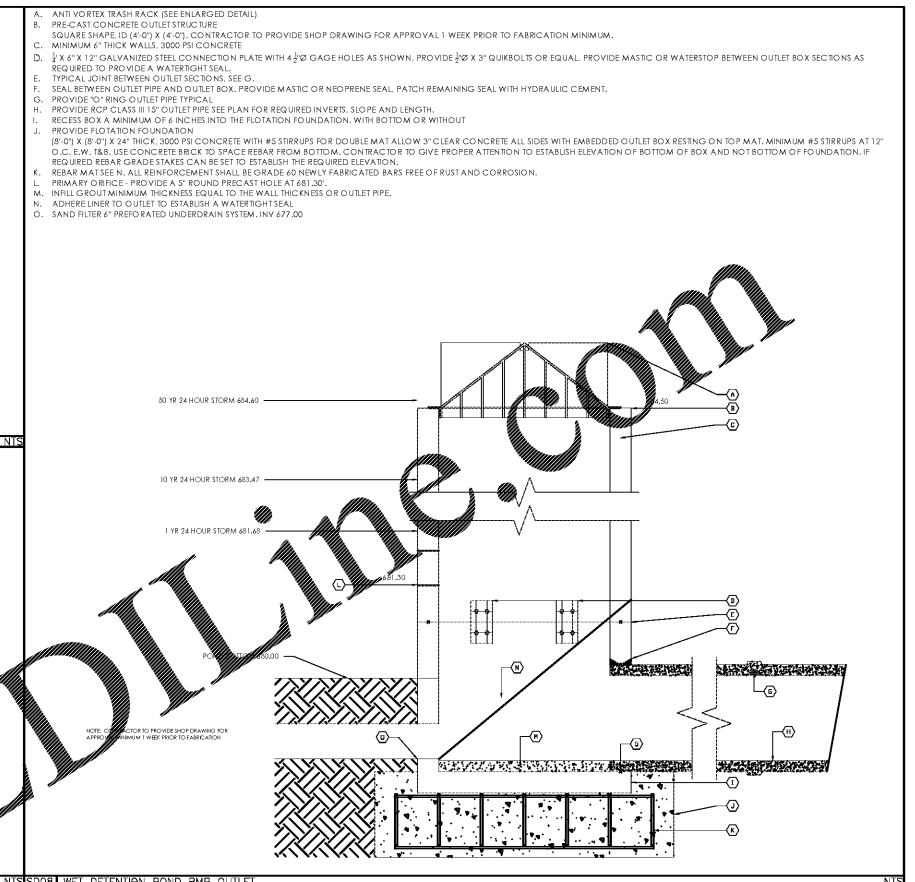
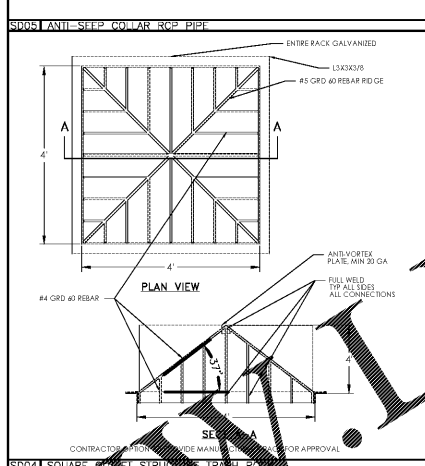
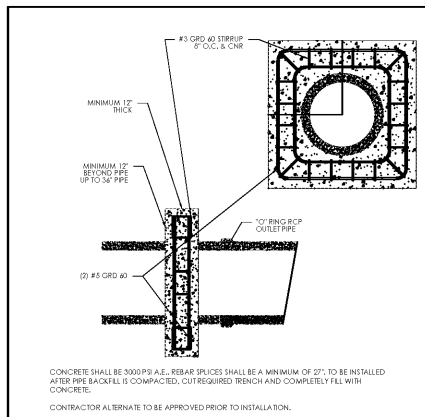


**SAND FILTER PLAN**  
1" = 20'



- CALL ULOCD BEFORE YOU DIG
- CONTRACTOR IS FULLY RESPONSIBLE FOR CONTACTING APPROPRIATE PARTIES AND ASSURING THAT EXISTING UTILITIES ARE LOCATED PRIOR TO BEGINNING CONSTRUCTION.
  - CONTRACTOR IS RESPONSIBLE FOR PLACING BARRICADES USING FLAGMEN, ETC., AS NECESSARY TO INSURE SAFETY TO THE PUBLIC.
  - ALL PAVEMENT CUTS, CONCRETE OR ASPHALT, ARE TO BE REPLACED ACCORDING TO STANDARDS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
  - SHORING WILL BE ACCORDING TO OSHA TRENCHING STANDARDS PART 1926 SUBPART P, OR AS AMENDED.



**NOTE: DRAINAGE AREA MUST BE STABILIZED BEFORE FILTRATION CONTROLS AND FILTER MEDIA ARE INSTALLED**

**NOTICE TO CONTRACTOR**  
PROVIDE AN UPDATED OUTLET STRUCTURE DETAIL CUT SHEET FROM THE ENGINEER TO THE WATER QUALITY INSPECTOR PRIOR TO CONSTRUCTION. THE UPDATED CUT SHEET SHALL BE PROVIDED ON THE BMP AS-BUILT SUBMITTAL.

- BMP CONSTRUCTION SEQUENCE NOTES**
- CALL THE WATER QUALITY INSPECTOR TO SET UP A BMP PRE-CONSTRUCTION MEETING PRIOR TO STARTING ANY WORK ON BMPs. THIS MEETING SHOULD TAKE PLACE AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION ON ANY BMP AND SHALL INCLUDE THE DESIGN ENGINEER TO ENSURE ENGINEER INSPECTIONS ARE PERFORMED AT KEY BMP INSTALLATION PHASES.
  - THE DESIGN ENGINEER MUST VERIFY AND CERTIFY THE DRAINAGE AREA IS PROPERLY STABILIZED; MEASURES ARE IN PLACE TO PREVENT SEDIMENTATION INTO THE BMP, THE STORM DRAINS, INLETS AND PAVEMENT HAVE BEEN PROPERLY CLEANED PRIOR TO COMMENCEMENT OF BMP CONSTRUCTION.
  - ADDITIONAL MEASURES TO ENSURE PROPER CONSTRUCTION AND OPERATION OF THE BMP, MAY BE REQUIRED BY THE WATER QUALITY INSPECTOR.

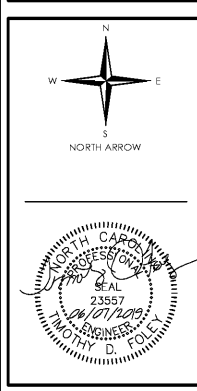
- SAND FILTER NOTES**
- AVOID DISTURBING THE PROPOSED SAND FILTER AREA UNTIL AFTER THE INITIAL ROUGH GRADING AND TEMPORARY STABILIZATION HAS BEEN PERFORMED.
  - EXCAVATE THE SAND FILTER TO THE DESIGN DIMENSIONS.
  - THE UNDERDRAIN SYSTEM SHALL BE EQUIPPED WITH 4-INCH MINIMUM PERFORATED SCHEDULE 40 OR STRONGER PVC PIPE, AASHTO M252 FOR DOUBLE WALL HDPE OR BE 3/4" IN DIAMETER SPACED 3 INCHES ON CENTER ALONG A LONGITUDINAL ROWS THAT ARE SPACED 90" APART. THE UNDERDRAIN PIPES SHALL BE INSTALLED AT 0% SLOPE.
  - SOIL AND GRAVEL COVER OVER THE UNDERDRAIN SHALL BE AT LEAST 3.0 FEET IN DEPTH.
  - GRAVEL BED MATERIALS (STONE) SIZE SHALL NOT BE GREATER THAN 3/8" IN DIAMETER, (BLUE STONE, DOUBLE WASHED, #57).
  - FILTER FABRIC MUST MEET A MINIMUM PERMEABILITY RATE OF 75 GALS/CONCRETE/SQUARE FOOT AND SHALL NOT IMPED THE INFILTRATION RATE OF THE SOIL. MEDIUM, NON-WOVEN FABRIC IS REQUIRED. INSTALLATION REQUIRES AT LEAST 1 FOOT OVERLAP AT THE ENDS AND STRIKING IN PLACE DURING CONSTRUCTION AT THE TUNED SURFACES.
  - SOIL PREPARATION TO BE IN ACCORDANCE WITH CITY OF BELMONT STANDARDS MANUAL.

- SAND FILTER MAINTENANCE**
- THE OWNER AND ALL SUBSEQUENT OWNERS OF THE PROPERTY SHALL ACCEPT RESPONSIBILITY AND MAINTENANCE OF ALL ON SITE SAND FILTER AND BMP FACILITIES. THE OWNER WILL PROVIDE MAINTENANCE TO THE FACILITIES AS DESCRIBED IN THE PROJECT OPERATIONS AND MAINTENANCE MANUAL AS WELL AS THE CITY OF BELMONT STORMWATER ORDINANCE AND THE CITY OF BELMONT STANDARDS MANUAL.
  - BMP SHALL BE PERIODICALLY INSPECTED BY THE OWNER OR OWNERS REPRESENTATIVE AS DESCRIBED IN THE MAINTENANCE MANUAL AND SCHEDULE TO IDENTIFY MAINTENANCE AND REPAIR NEEDS, AND TO ENSURE COMPLIANCE WITH THE REQUIREMENTS OF THE MAINTENANCE SCHEDULE. ANY IDENTIFIED MAINTENANCE AND/OR REPAIR NEEDS SHALL BE ADDRESSED IN A TIMELY MANNER. RECORDS SHALL BE MAINTAINED BY THE OWNER AND REVIEWED BY COUNTY PERSONNEL WHEN REQUESTED.
- INSPECTION NOTES**
- INSPECTIONS SHALL BE CONDUCTED AS PRESCRIBED BY THE MAINTENANCE COVENANT. ADDITIONAL INSPECTIONS MAY BE CONDUCTED BY CITY OF BELMONT ON ANY REASONABLE BASIS, INCLUDING BUT NOT LIMITED TO: ROUTINE INSPECTIONS; RANDOM INSPECTIONS; INSPECTIONS BASED UPON COMPLAINTS OR OTHER NOTICE OF POSSIBLE VIOLATIONS; INSPECTIONS OF DRAINAGE BASINS OR AREAS IDENTIFIED AS HIGHER THAN TYPICAL SOURCES OF SEDIMENT OR OTHER CONTAMINANTS OR POLLUTANTS; INSPECTIONS OF BUSINESSES OR INDUSTRIES OF A TYPE ASSOCIATED WITH HIGHER THAN USUAL DISCHARGES OR POLLUTANTS OR WITH DISCHARGES OF A TYPE WHICH ARE MORE LIKELY THAN THE TYPICAL DISCHARGE TO CAUSE VIOLATIONS OF STATE AND FEDERAL WATER QUALITY STANDARDS OR THE NPDES STORM WATER PERMIT; AND JOINT INSPECTIONS WITH OTHER AGENCIES UNDER ENVIRONMENTAL AND SAFETY LAWS. INSPECTIONS MAY INCLUDE BUT ARE NOT LIMITED TO: REVIEWING MAINTENANCE AND REPAIR RECORDS; SAMPLING DISCHARGES, SURFACE WATER, GROUNDWATER, AND MATERIAL OR WATER IN BMPs; EVALUATING THE CONDITION OF THE BMPs AND STORMWATER MANAGEMENT PRACTICES.
  - RIGHT-OF-WAY ENTRY FOR INSPECTION. WHEN ANY NEW BMP IS INSTALLED, THE PROPERTY OWNER SHALL GRANT TO CITY OF BELMONT THE RIGHT TO ENTER THE PROPERTY AT REASONABLE TIMES AND IN A REASONABLE MANNER FOR THE PURPOSES OF INSPECTION. THIS INCLUDES THE RIGHT TO ENTER A PROPERTY WHEN THE CITY OF BELMONT HAS A REASONABLE BASIS TO BELIEVE THAT A VIOLATION OF THIS REGULATION IS OCCURRING OR HAS OCCURRED, AND TO ENTER WHEN NECESSARY FOR ABATEMENT OF PUBLIC NUISANCE OR CORRECTION OF A VIOLATION OF THIS REGULATION.

- STORM DRAINAGE AS-BUILT REQUIREMENTS**
- THE CONTRACTOR SHALL FURNISH AN AS-BUILT SURVEY OF THE STORM DRAINAGE AND BIOTRETION BASIN IN PRINTED HARD COPY AND CAD FILE FORMAT, SIGNED AND SEALED BY A LAND SURVEYOR LICENSED IN NORTH CAROLINA. THE CAD FILE SHALL BE BASED ON NC GRID, NAV 1983 (TIED TO STATE PLANE COORDINATE SYSTEM). ELEVATIONS SHALL BE TIED TO NAVD83.
  - THE AS-BUILT SURVEY SHALL PROVIDE THE FOLLOWING INFORMATION: STORM DRAINAGE PIPE LOCATIONS WITH SIZE, LENGTH, AND MATERIAL; STORM DRAINAGE INLET, OUTLET, AND CLEAN OUT STRUCTURE LOCATIONS WITH RIM AND INVERT ELEVATIONS AT EACH PIPE, WITH INVERT AND TOP OF WEIR ELEVATION FOR ANY INTERNAL BAFFLE WALLS INSIDE OF STRUCTURE; FINISHED GRADE CONTOURS OF BIOTRETION BASIN AT 1 FOOT INTERVALS, WITH SQUARE FOOTAGE OF THE BASIN; INSIDE DIMENSIONS OF INLET AND OUTLET STRUCTURES WITHIN THE BASIN AT 25 FOOT INTERVALS MAXIMUM.
  - THE AS-BUILT SURVEY SHALL BE SUBMITTED TO THE DESIGN ENGINEER AT LEAST 45 DAYS PRIOR TO THE ANTICIPATED DATE OF COMPLETION OF OCCUPANCY.

- GEOTECHNICAL SPECIFICATION FOR DAM CONSTRUCTION**
- A MINIMUM OF ONE (1) IN-PLACE DENSITY TEST SHOULD BE PERFORMED IN ACCORDANCE WITH ASTM D-1556 FOR EACH 2500 SF OF LIFT AREA WITH A MINIMUM OF TWO (2) 15" PER LIFT. IMPROPER COMPACTION AREA RESULT IN PREMATURE DETERIORATION OF THE EMBANKMENT AREA AND/OR DIFFERENTIAL SETTLEMENT OF FOUNDATIONS. SEE GEOTECHNICAL REPORT FOR MORE DETAILED SPECIFICATIONS RELATING TO SELECTION AND PLACEMENT OF STRUCTURAL FILL.
  - FILL PLACED WITHIN THE CONSTRUCTED DAM EMBANKMENTS SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR). ALL FILL PLACED WITHIN THE UPPER ONE (1) FOOT OF THE RISER FOUNDATION AND THE SPILLWAY SUBGRADE SHOULD BE COMPACTED TO A MINIMUM OF 98 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR). ALL FILL MATERIAL SHOULD BE PLACED AND MECHANICALLY COMPACTED IN UNIFORM LIFTS NOT EXCEEDING NINE (9) INCHES IN LOOSE THICKNESS. THE MOISTURE CONTENT OF ALL FILL AT THE TIME OF THE PLACEMENT SHOULD BE WITHIN +3 PERCENT OF THE OPTIMUM MOISTURE CONTENT AS ESTABLISHED BY THE STANDARD PROCTOR TEST. SEE GEOTECHNICAL REPORT FOR MORE DETAILED SPECIFICATIONS RELATING TO THE SELECTION AND PLACEMENT OF STRUCTURAL FILL.
  - ALL FILL TO BE UTILIZED AT THE SITE SHOULD BE SELECTED ON THE BASIS OF ITS PLASTICITY CHARACTERISTICS AND LABORATORY COMPACTION TESTS. ON-SITE SOILS WHICH ARE FOUND TO CONTAIN DELETERIOUS MATERIAL, INCLUDING ORGANICS AND TOPSOIL, SHOULD NOT BE USED AS STRUCTURAL FILL FOR THE SUPPORT OF STRUCTURES OR PAVEMENT. THE CORE MATERIAL SHOULD HAVE A USCS CLASSIFICATION OF MH, CH, CL, OR ML. PRIOR TO EXCAVATION THE CONTRACTOR SHOULD HAVE THE CORE TRENCH MATERIAL TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER. THIS TESTING SHOULD INCLUDE DOUBLE HYDROMETER TESTING TO ENSURE THAT THE SOILS ARE NOT DISPERSIVE IN NATURE.
  - CONTRACTOR TO COORDINATE CONSTRUCTION OF DAMS WITH A GEOTECHNICAL FIRM EXPERIENCED IN FIELD TESTING SERVICES FOR EARLY DAM CONSTRUCTION. SPECIFICATIONS GIVEN ON THESE PLANS ARE RECOMMENDATIONS ONLY. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL SPECIFICATIONS.
  - ALL FILL MATERIAL USED FOR CONSTRUCTION OF DAM CORE AND EMBANKMENTS TO BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.

**HensonFoley**  
Landscape Architecture | Civil Engineering | Surveying  
8712 Linholm Dr. Suite 202A, Huntersville, NC 28078  
p: 704.875.1615f | 704.875.0959 | www.hensonfoley.com  
NC LANDSCAPE ARCHITECTURE BOARD LICENSE # C-248  
NC ENGINEERING BOARD LICENSE # C-399  
NC SURVEYING BOARD LICENSE # 17-380



**HOME2 SUITES BELMONT**  
3595444233, 3595444234, 3595444234, 3595441343, 3595440335  
HAWLEY AVE, BELMONT, NORTH CAROLINA 28012

**REVISIONS:**

REV1 - ISSUE FOR BID 2019-06-07

C13 - BMP DETAILS DWG  
PROJECT NUMBER: 210790  
DATE: 03/12/2019 DRAWN BY: JDC

**C15 OF 15**