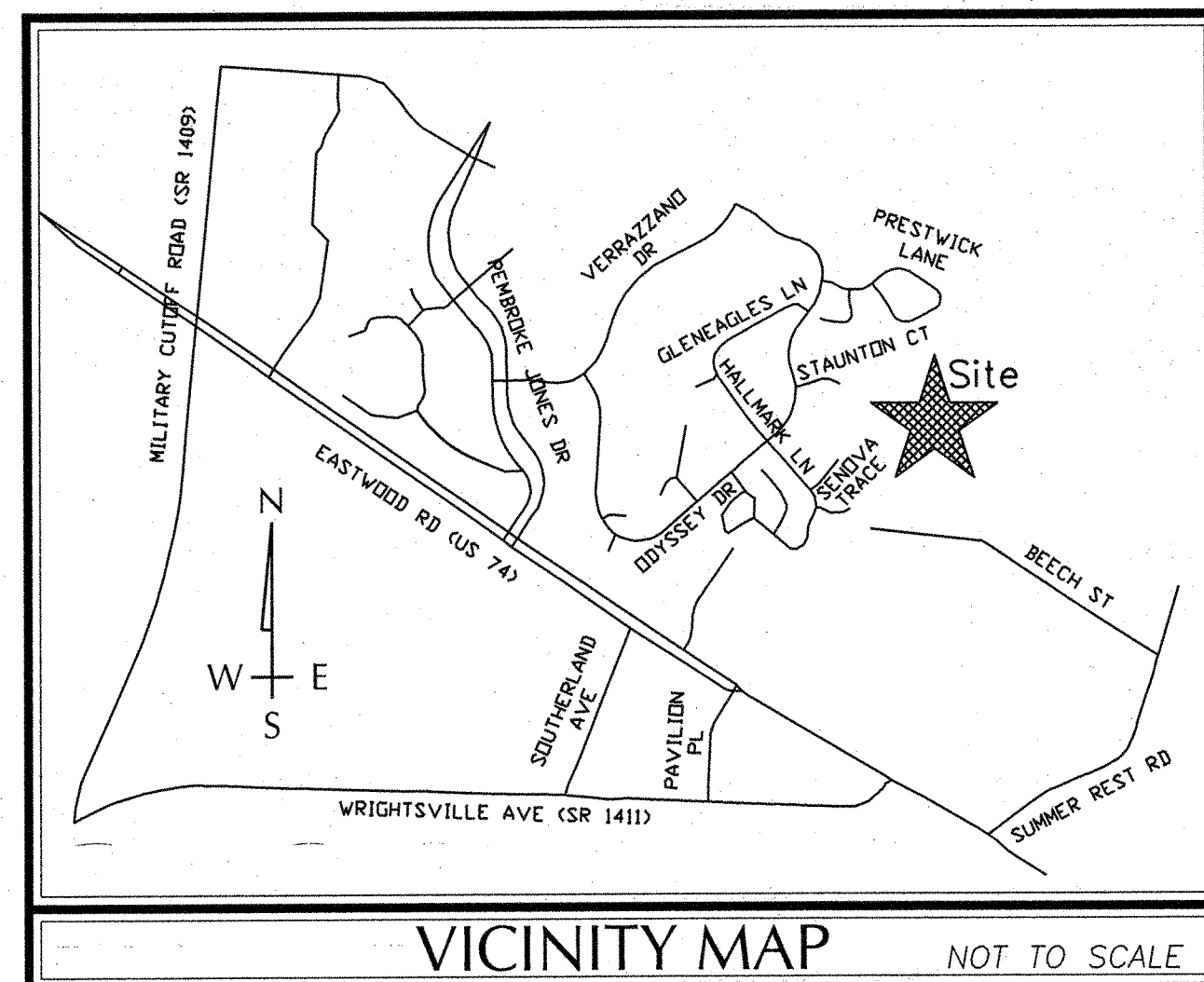


# SITE DEVELOPMENT FOR BATTERY PARK AT LANDFALL

JUNE 28, 2007  
WILMINGTON, NORTH CAROLINA  
(REVISED JUNE 2013)



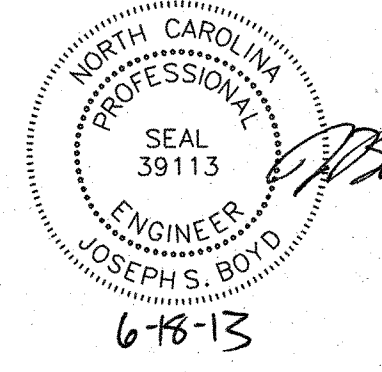
LEGEND		
DESCRIPTION	EXISTING	PROPOSED
PROPERTY BOUNDARY	---	---
RIGHT OF WAY	---	---
EASEMENT	---	---
STREAM	---	---
MINOR CONTOURS	-----8-----	-----8-----
MAJOR CONTOURS	-----10-----	-----10-----
GAS LINE	---G---G---	---G---G---
WATER LINE	---W---W---	---W---W---
SANITARY SEWER LINE	---SS---SS---	---SS---SS---
SANITARY SEWER MANHOLE	⊙	⊙
STORM DRAINAGE PIPE		
STORM DRAINAGE STRUCTURE	○ □	● ■
SILT FENCE	—SF—SF—	—SF—SF—
TREE PROTECTION FENCE	—TPF—TPF—	—TPF—TPF—
FIRE HYDRANT ASSEMBLY	⊕	⊕
TOTAL WETLANDS (SWAMP-FOREST RESOURCE) (5.69 ACRES±)	⊘	⊘

**OWNER / DEVELOPER**

DTS HOLDINGS, L.L.C.  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
TEL. 910.540.1924

**WITHERS & RAVENEL**  
ENGINEERS | PLANNERS | SURVEYORS

1410 Commonwealth Drive, Unit 101 Wilmington, North Carolina 28403  
www.withersravenel.com / License No. C-0832  
Tel: 910-256-9277 Fax: 910-256-2584



THIS PLAN SET WAS DESIGNED AND LAST SIGNED BY DEREK M. ROBERTS (PE LICENSE # 032990) ON 9/12/08. THIS REVISED SET IS ONLY PER REVISIONS BY THE GOVERNING AGENCIES AND VARIOUS SITE EDITS.

Approved Construction Plan

Name: *gabriel* Date: 6-8-13  
Planning: *[Signature]* 6-6-13  
Traffic: *[Signature]* 6-6-13  
Fire: *[Signature]* 6-7-13

STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE: *[Signature]* PERMIT # 2013017  
SIGNED: *[Signature]*

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

INDEX OF SHEETS	
SHT C-0	COVER SHEET
SHT C-1	EXISTING CONDITIONS PLAN
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SHT C-6	OVERALL DRAINAGE PLAN
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SHT C-9	SANITARY SEWER MISC. PLAN AND PROFILES
SHT C-10	LANDSCAPE PLAN
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SHT C-12	EROSION CONTROL (CONT.) AND BORE DETAILS
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SHT C-14	STANDARD SANITARY SEWER DETAILS FOR CFPUA (CONT.)
SHT C-15	STANDARD SANITARY SEWER DETAILS FOR CFPUA (CONT.)
SHT C-16	STANDARD SANITARY SEWER DETAILS FOR CFPUA (CONT.)
SHT C-17	STANDARD WATER SYSTEM DETAILS FOR CFPUA
SHT C-18	STANDARD WATER SYSTEM DETAILS FOR CFPUA (CONT.)

SITE DATA TABLE	
<b>DEVELOPMENT DATA:</b>	
1. TOTAL TRACT AREA -	14.45 ACRES
MINUS CLASS IV SOILS -	0.82 ACRES
(C.O.D. IMPACT AREAS)	
MINUS NATURAL WATER FEATURES -	-0-
(NOT APPLICABLE)	
TOTAL DEVELOPMENT AREA -	13.63 ACRES
2. PERMITTED DENSITY @ 1.9 UNITS/ACRE = 25 UNITS PROPOSED - 24 = 1.7 UNITS/ACRE	
3. RECREATION AREA - (@ 0.30 ACRE/UNIT) 24 UNITS = 0.72 ACRES REQUIRED 321,616 S.F. (7.38 ACRES) PASSIVE AREAS PROVIDED 15,949 S.F. (0.37 ACRE) ACTIVE AREAS PROVIDED ** TOTAL 7.75 ACRES PROVIDED. **	
4. SITE AREAS -	
AREA OF LOTS -	5.08 ACRES
AREA OF R/W -	1.16 ACRES
COMMON AREAS -	8.21 ACRES
TOTAL TRACT AREA -	14.45 ACRES
5. AVERAGE LOT SIZE -	9,220 S.F.
6. MINIMUM LOT SIZE -	4,831 S.F.
7. IMPERVIOUS SURFACES -	
ROADS	23,900 S.F.
SIDEWALKS	4,300 S.F.
LOTS (VARIES/LOT)	90,770 S.F.
TOTAL	118,970 S.F. (2.74 ACRES)
<b>GENERAL NOTES:</b>	
1. NEW HANOVER COUNTY PARCEL NOS.: 3157(12) - 75 - 8570	
2. TOTAL TRACT AREA: 14.45 AC.±	
3. ZONING DISTRICT: R-20 (PERFORMANCE) 20' PERIMETER SETBACKS 10' BETWEEN UNITS	
4. CAMA LAND CLASSIFICATION: WATERSHED RESOURCE PROTECTION & CONSERVATION	
5. OWNERSHIP REFERENCE: D.B. 4432-891/M.B. 34/219 LINDA JEAN WILSON 1529 RADIAN ROAD WILMINGTON, NC 28405	
6. ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE, NEW HANOVER AND STATE OF NORTH CAROLINA REGULATIONS.	
7. FLOOD NOTE: BY GRAPHIC PLOTTING, A PORTION OF THIS PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD ZONE AE (ELEV. 10') PER FIRM COMMUNITY PANEL 370171 3157 J, EFFECTIVE APRIL 3, 2006.	
8. THE SITE DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE APPROVED PRELIMINARY PLAT (SRB-05-0906), APPROVED MAY 2, 2007.	



COORDINATION NOTES:

- 1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL WORK IS TO BE IN ACCORDANCE WITH THE CITY OF WILMINGTON, CAPE FEAR PUBLIC UTILITY AUTHORITY, NEW HANOVER COUNTY, AND THE STATE OF NORTH CAROLINA.
3. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
4. ANY TIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
5. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY OF WILMINGTON INSPECTOR AND NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO THE MEETING. AT A MINIMUM, THE CONTRACTOR, CITY INSPECTOR, AND ENGINEER SHALL ATTEND THIS MEETING.

GENERAL NOTES:

- 1. THE TOPOGRAPHY AND UTILITIES HAVE BEEN PROVIDED BY WITHERS & RAVENEL. THE BOUNDARY AND WETLAND SURVEY HAVE BEEN PROVIDED BY HOBBS SURVEYING COMPANY, INC. THE TREE SURVEY HAS BEEN PROVIDED BY HANOVER DESIGN SERVICES, PA.
2. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
3. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC.
4. CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE DOT.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
7. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 1 (800) 632-4949 AND ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
8. CONTRACTOR SHALL REMOVE ASPHALT, AGGREGATE BASE COURSE, AND CONCRETE CURB & GUTTER WITHIN LIMITS OF DEMOLITION AS SHOWN ON PLAN.

DEMOLITION NOTES:

- 1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES; ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE SOILS ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. EXISTING UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
7. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
8. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVER HEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
9. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
10. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
11. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS OF THE MAINS BY DIGGING TEST PITS BY HAND.

CONSTRUCTION NOTES:

- 1. THE CONSTRUCTION RELEASE BY THE CITY OF WILMINGTON WILL ADDRESS INFRASTRUCTURE PHASING REQUIREMENTS AND APPLICANT IS ENCOURAGED TO CONTACT THE WILMINGTON FIRE DEPARTMENT FOR GUIDANCE.

EROSION AND SEDIMENT CONTROL NOTES

EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES:

- 1. CLEAR AND REMOVE FROM SITE ALL TREES, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN DESIGNATED CLEARING LIMITS.
2. PLANT GRASS OVER ALL GRADED AREAS WITHIN 21 CALENDAR DAYS OF CEASE OF ANY GRADING ACTIVITY.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION MEASURES
4. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETED, CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL INSPECTION AND APPROVAL BY THE NEW HANOVER COUNTY ENGINEERING DEPARTMENT.
5. WATER, FERTILIZE, MOW AND MAINTAIN SPRIGGED, SODDED AND PLANTED AREAS UNTIL FINAL APPROVAL BY NEW HANOVER COUNTY.
6. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

MAINTENANCE PLAN

- 1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBSCURABLE MATERIAL SPILLED WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.
3. SEDIMENT WILL BE REMOVED BEHIND THE SEDIMENT FENCE WHEN IT BECOMES 0.5 FEET DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. SILT FENCE STAKES WILL BE SPACED 6 FEET APART UNLESS A WIRE BACKING IS USED WITH 8 FOOT STAKE SPACING.
4. SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS WHEN THE DESIGNED STORAGE REPLACE WHEN THE SEDIMENT POOL NO LONGER DRAINS OR WHEN THE ROCK IS DISLOGGED. BARRIERS WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE.
5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.
6. SEDIMENT WILL BE REMOVED FROM AROUND TEMPORARY ROCK CHECK DAMS ONCE A WEEK AND AFTER EVERY RAIN EVENT.

STABILIZATION NOTES

- 1. SLOPES LEFT EXPOSED WILL, WITHIN 21 CALENDAR DAYS OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH GROUND COVER, DEVICES, OR STRUCTURES TO RESTRAIN EROSION.
2. ALL OTHER DISTURBED AREAS SHALL BE PLANTED OR OTHERWISE PROVIDED PERMANENT GROUND COVER WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT WHICHEVER PERIOD IS SHORTER.

PERMANENT SEEDING SCHEDULE -- MIXTURE 5CP

Table with columns: Seeding Mixture, SPECIES, RATE (LB/ACRE). Rows include CENTIPEDE GRASS with a rate of 10-20.

Seeding Dates MARCH - JUNE

Soil Amendments APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 300 LB/ACRE 10-10-10 FERTILIZER.

Mulch DO NOT MULCH.

Maintenance FERTILIZE VERY SPARINGLY LB/ACRE NITROGEN IN SPRING WITH NO PHOSPHORUS. CENTIPEDE GRASS CANNOT TOLERATE HIGH PH OR EXCESS FERTILIZER.

TEMPORARY SEEDING-LATE WINTER/EARLY SPRING

Table with columns: Seeding Mixture, SPECIES, RATE (LB/ACRE). Rows include WINTER AND EARLY SPRING with rates for Rye (GRAIN) at 120 and ANNUAL LESPEDEZA at 50.

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

Table with columns: SPECIES, RATE (LB/ACRE). Rows include SUMMER with a rate for GERMAN MILLET at 40.

Table with columns: SPECIES, RATE (LB/ACRE). Rows include FALL with a rate for RYE (GRAIN) at 120.

Seeding dates COASTAL PLAIN - DEC.1-APR. 15 - LATE WINTER AND EARLY SPRING APRIL 15 - AUG. 15 - SUMMER AUG. 15 - DEC. 30 - FALL

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

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

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

GENERAL GRADING NOTES

- 1. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF SUCH UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF THE DITCHING OPERATION BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF THE TRENCHING OPERATIONS SO AS TO AVOID AND PREVENT DAMAGE TO THE EXISTING UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING BUT NOT LIMITED TO REPAIRS AND LOSS SERVICE REVENUE. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
2. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
3. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAG MEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE NCDOT.
4. ALL MATERIAL CLEARED AND GRUBBED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK, SUCH AS TREES, VEGETATION, FENCING, ETC... SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE OR BURNED IF PROPER PERMITS ARE RECEIVED.

SITE NOTES

- 1. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
2. THE GENERAL CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND R.O.W.'S PUBLIC OR PRIVATE, PRIOR TO WORKING IN THESE AREAS.
3. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
4. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
5. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
6. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
7. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
8. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
9. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENT SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER.
10. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL TOLL FREE 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NONSUBSCRIBING UTILITIES.
11. ALL PERMITS RELATIVE TO PROJECT MUST BE OBTAINED, PRIOR TO CONSTRUCTION
12. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND APPLICABLE STATE, COUNTY, AND LOCAL CODES.
13. FOR BUILDING DIMENSIONS, SEE ARCHITECTURAL DRAWINGS.
14. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED.
15. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
16. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
17. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
18. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.

GRADING & STORMWATER MANAGEMENT NOTES:

- 1. STORMWATER MANAGEMENT WILL MEET BOTH THE STATE OR NORTH CAROLINA AND CITY OF WILMINGTON REQUIREMENTS. PROJECT HAS BEEN DESIGNED TO MEET THE "LOW-DENSITY" STANDARDS WITH MAXIMUM IMPERVIOUS SURFACES OF 25%. WHERE ROOFTOP RUNOFF DOES NOT DRAIN TO THE STREETS IT WILL BE DIRECTED BY GUTTERS AND DOWNSPOUTS TO INDIVIDUAL INFILTRATION TRENCHES ON EACH LOT. STREET RUNOFF WILL BE DIRECTED FROM CURB FLUMES THROUGH MINIMUM 100' GRASSED SWALES, AND INTO WETLANDS FOR BIO-RETENTION AND INFILTRATION.
2. TREE PRESERVATION / REMOVAL PERMIT IS REQUIRED PRIOR TO CLEARING AND LAND DISTURBANCE.
3. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.
4. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.

EXISTING UTILITY NOTES:

- 1. 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.
2. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.

UTILITY CONTACTS:

- 1. CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING. 1-800-632-4949.

NOTICE REQUIRED:

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED BY CONTRACT PRIOR TO THE BEGINNING OF ANY CONSTRUCTION IN THE VICINITY OF SAID UTILITIES.

CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO ANY EXCAVATION OR DEMOLITION.

CONTACT "CAROLINA ONE CALL" AT 1-800-632-4949

EMERGENCY DIAL 911 POLICE - FIRE - RESCUE

UTILITY NOTES:

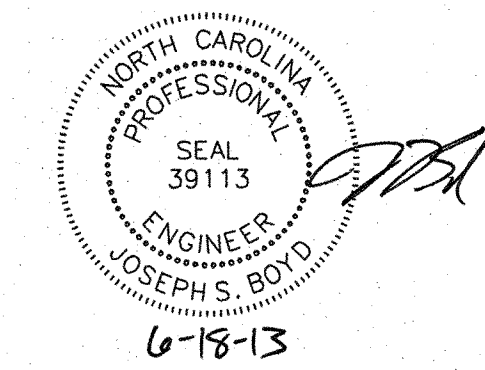
- 1. EXISTING WATER AND SANITARY SEWER SERVICES ARE CURRENTLY AVAILABLE TO THE SITE FROM PUBLIC SYSTEMS. WATER SERVICE AND SANITARY SEWER SERVICE WILL BE PROVIDED BY CAPE FEAR PUBLIC UTILITY AUTHORITY.
2. ALL UTILITY SERVICES, SUCH AS ELECTRIC POWER, CATV, GAS, AND TELEPHONE SHALL BE INSTALLED UNDERGROUND.
3. PROJECT SHALL COMPLY WITH CAPE FEAR PUBLIC UTILITY AUTHORITY CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND N.C.D.E.N.R. HAS ISSUED THEIR "FINAL APPROVAL". CALL 332-6560 FOR INFORMATION.
4. ALL COMMERCIAL WATER SERVICES AND ANY IRRIGATION SYSTEMS SUPPLIED BY C.F.P.U.A. WATER SHALL HAVE A BACKFLOW PREVENTION DEVICE ACCEPTABLE TO THE CITY AND APPROVED BY USFCVCCOR OR ASSE. CALL 332-6560 FOR INFORMATION.
5. WATER AND SEWER SERVICES CAN NOT BE ACTIVATED ON NEW MAINS UNTIL THE ENGINEER'S CERTIFICATION AND AS-BUILTS ARE RECEIVED AND "FINAL APPROVAL" ISSUED BY THE PUBLIC WATER SUPPLY SECTION OF NCDENR, AND "FINAL ENGINEERING CERTIFICATION" ISSUED BY DIVISION OF WATER QUALITY SECTION OF N.C.D.E.N.R.
6. IF CONTRACTOR DESIRES WATER FOR CONSTRUCTION, HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
7. WHEN PVC WATER MAINS AND SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED COPPER WIRE INSTALLED AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS. THIS WIRE IS TO BE ACCESSIBLE IN ALL VALVE AND METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OR EXISTING UTILITIES DURING CONSTRUCTION. DAMAGED ITEMS SHALL BE REPAIRED TO AT LEAST THE QUALITY OR WORKMANSHIP FOUND IN THE ORIGINAL ITEM.
9. SOLID WASTE DISPOSAL TO BE SERVED BY CITY, AND PROVIDED BY INDIVIDUAL WASTE BINS FOR EACH LOT.

FIRE & LINE SAFETY NOTES:

- 1. LANDSCAPING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
2. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
3. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING(S).
4. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
5. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.

TRAFFIC NOTES:

- 1. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD STANDARDS.
2. ANY BROKEN OR MISSING SIDEWALK PANELS AND/OR CURBING SHALL BE REPLACED.
3. A LANDSCAPING PLAN, INDICATING THE LOCATION OR REQUIRED STREET TREES SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT. PLAN SHALL ADHERE TO SD 15-17.



Approved Construction Plan form with fields for Name (Joseph S. Boyd), Date (6/18/13), Planning, Traffic, and Fire signatures and dates.

STORMWATER MANAGEMENT PLAN APPROVED form from the City of Wilmington Engineering Department, dated 6/18/13, signed by J. Boyd.

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

ADDRESS: 1909 ODYSSEY DRIVE

Revision table with columns: No., Revision, Date, By, Designer, LJT, Scale, N/A.

Table with columns: Designer, LJT, Scale, N/A, Drawn By, TMG/LJT, Date, 06/28/07, Checked By, Job No., 03100242.

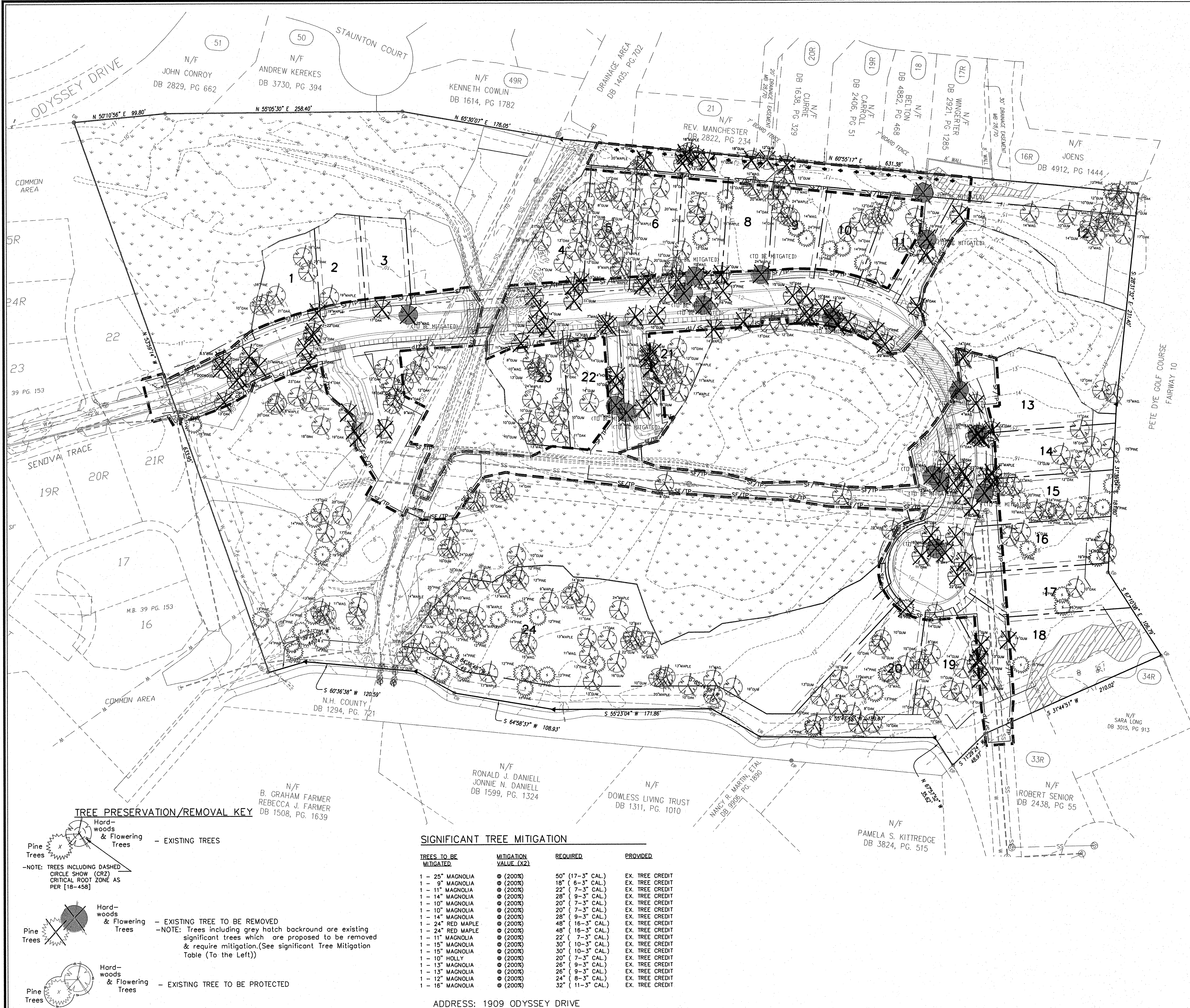
BATTERY PARK AT LANDFALL CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

GENERAL NOTES

PREPARED FOR: DTS HOLDINGS, LLC 9 NORTH RIDGE LANE WRIGHTSVILLE BEACH, NC 28480 910-540-1924

WITHERS & RAVENEL ENGINEERS | PLANNERS | SURVEYORS 7040 Wrightsville Ave., Suite 101, Wilmington, North Carolina 28403

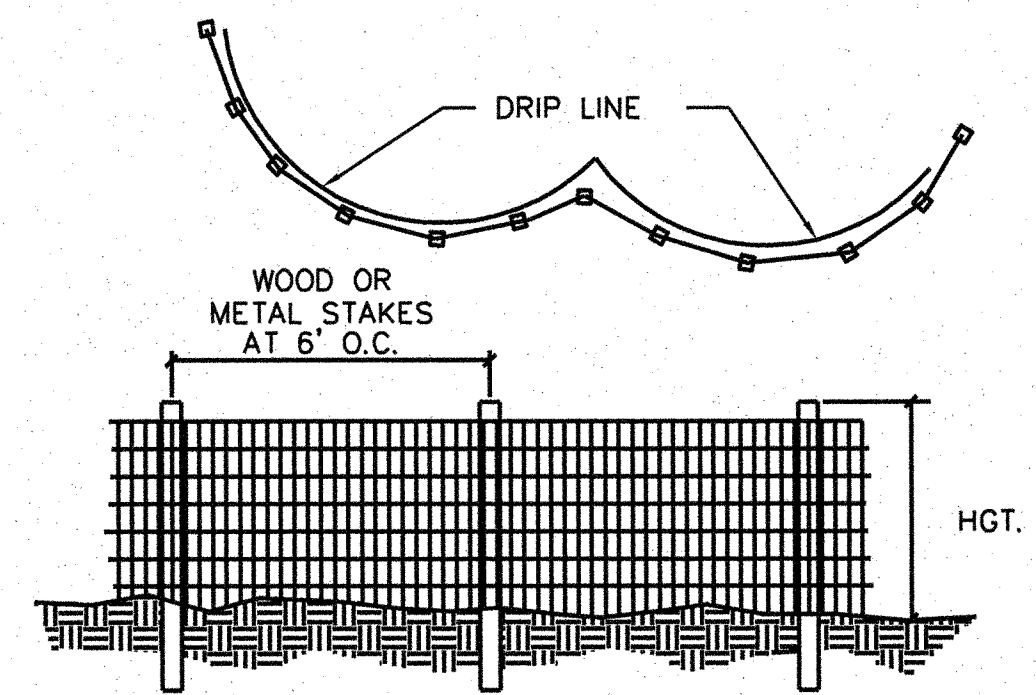




- GENERAL NOTES:**
- NEW HANOVER COUNTY PARCEL NOS.: 3157(12) - 75 - 8570
  - TOTAL TRACT AREA: 14.45 AC.±  
 TOTAL TRACT AREA - MINUS CLASS IV SOILS - 14.45 ACRES  
 MINUS NATURAL WATER FEATURES - 0.82 ACRES  
 (C.O.D. IMPACT AREAS) - 0-0  
 MINUS NATURAL WATER FEATURES - (NOT APPLICABLE) - 0-0  
 TOTAL DEVELOPMENT AREA - 13.63 ACRES
  - ZONING DISTRICT: R-20 (PERFORMANCE)  
 20' PERIMETER SETBACKS  
 10' BETWEEN UNITS
  - CAMA LAND CLASSIFICATION: WATERSHED RESOURCE PROTECTION & CONSERVATION
  - OWNERSHIP REFERENCE: D.B. 4432-891/M.B. 34/219  
 LINDA JEAN WILSON  
 1529 RADIAN ROAD  
 WILMINGTON, NC 28405
  - ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE AND STATE OF NORTH CAROLINA REGULATIONS.
  - FLOOD NOTE: BY GRAPHIC PLOTTING, A PORTION OF THIS PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD ZONE AE (ELEV. 10) PER FIRM COMMUNITY PANEL 370171 3157 J, EFFECTIVE APRIL 3, 2006.

- TREE PROTECTION NOTES:**
- No land disturbance including tree removal is to occur outside the limits of disturbance shown on the plans. [18-457(b)]
  - Tree protection fencing is to be properly maintained throughout the duration of the project. [18-458]
  - Land clearing and construction contractors shall receive adequate instruction on tree protection requirements and methods. [18-457(d)]
  - Any trees and/or areas designated to be protected must be properly barricaded with fencing and protected throughout construction to insure that no clearing or grading or staging of materials will occur in those areas. [18-458]
  - No equipment is allowed on the site until all tree protection fencing and silt fencing has been installed and approved. [18-458]
  - Regulated and significant trees in the street yard [18-456(c)] and any trees in any required buffers [18-456(d)] area required to be retained.

ALL SIGNIFICANT TREES FOUND WITHIN THE CLEARING LIMITS WILL BE MITIGATED PER CITY OF WILMINGTON ZONING ORDINANCE BY PRESERVATION OF OPEN SPACE AND/OR TREE CREDITS.



NOTE: PRIOR TO ANY LAND DISTURBING ACTIVITIES, TREE PROTECTION FENCES SHALL BE INSTALLED ALONG THE DRIP LINES OF ALL EXISTING TREES LABELLED AS TO BE RETAINED; NO STORAGE OF MATERIALS, FILL, ETC. AND NO PEDESTRIAN OR VEHICULAR TRAFFIC SHALL BE ALLOWED INSIDE OF THE FENCES DURING CONSTRUCTION.

TREE PROTECTION FENCE DETAIL

Approved Construction Plan

Name: gamm Date: 6/13

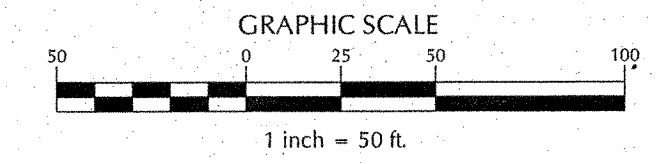
Planning: gamm 6/13

Traffic: W. H. H. H. 6/13

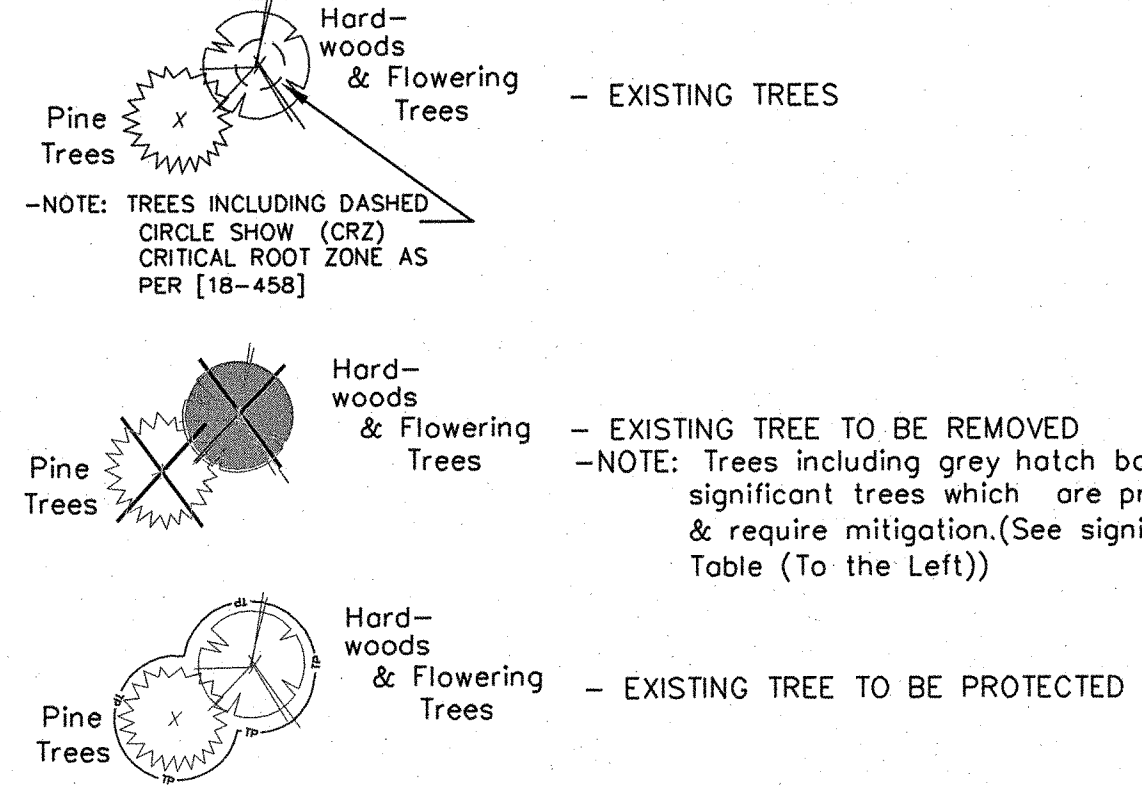
Fire: CL-809 6/13

STORMWATER MANAGEMENT PLAN  
 APPROVED  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE: 6/13 PERMIT # 2013017  
 SIGNED: [Signature]

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



**TREE PRESERVATION/REMOVAL KEY**



**SIGNIFICANT TREE MITIGATION**

TREES TO BE MITIGATED	MITIGATION VALUE (X2)	REQUIRED	PROVIDED
1 - 25" MAGNOLIA	● (200%)	50" (17'-3" CAL.)	EX. TREE CREDIT
1 - 9" MAGNOLIA	● (200%)	18" (6'-3" CAL.)	EX. TREE CREDIT
1 - 11" MAGNOLIA	● (200%)	22" (7'-3" CAL.)	EX. TREE CREDIT
1 - 14" MAGNOLIA	● (200%)	28" (9'-3" CAL.)	EX. TREE CREDIT
1 - 10" MAGNOLIA	● (200%)	20" (7'-3" CAL.)	EX. TREE CREDIT
1 - 10" MAGNOLIA	● (200%)	20" (7'-3" CAL.)	EX. TREE CREDIT
1 - 14" MAGNOLIA	● (200%)	28" (9'-3" CAL.)	EX. TREE CREDIT
1 - 24" RED MAPLE	● (200%)	48" (16'-3" CAL.)	EX. TREE CREDIT
1 - 24" RED MAPLE	● (200%)	48" (16'-3" CAL.)	EX. TREE CREDIT
1 - 11" MAGNOLIA	● (200%)	22" (7'-3" CAL.)	EX. TREE CREDIT
1 - 15" MAGNOLIA	● (200%)	30" (10'-3" CAL.)	EX. TREE CREDIT
1 - 15" MAGNOLIA	● (200%)	30" (10'-3" CAL.)	EX. TREE CREDIT
1 - 10" HOLLY	● (200%)	20" (7'-3" CAL.)	EX. TREE CREDIT
1 - 13" MAGNOLIA	● (200%)	26" (9'-3" CAL.)	EX. TREE CREDIT
1 - 13" MAGNOLIA	● (200%)	26" (9'-3" CAL.)	EX. TREE CREDIT
1 - 12" MAGNOLIA	● (200%)	24" (8'-3" CAL.)	EX. TREE CREDIT
1 - 16" MAGNOLIA	● (200%)	32" (11'-3" CAL.)	EX. TREE CREDIT

ADDRESS: 1909 ODYSSEY DRIVE

No.	Revision	Date	By
1	NHC & COW COMMENTS	4/04/08	LJT
2	REVISED OWNER & UPDATED PLAN	1/24/13	JSB

Designer	LJT	Scale	1"=50'
Drawn By	TMG/LJT	Date	06/28/07
Checked By	MNH	Job No.	03100242

**BATTERY PARK AT LANDFALL**

CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

**TREE PRESERVATION PLAN**

PREPARED FOR:  
 DTS HOLDINGS, LLC  
 9 NORTH RIDGE LANE  
 WRIGHTSVILLE BEACH, NC 28480  
 910-540-1924

**WITHERS & RAVENEL**  
 ENGINEERS | PLANNERS | SURVEYORS

7040 Wrightsville Ave, Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2384 www.wITHERSRV.COM

Sheet No.  
**C-3**

W:\10-10-2008\100242-Battery Park at Landfall\CAD\Updated Construction Plans\Sheet\C-3 TREE PRESERVATION PLAN.dwg, Jun 8, 2013, 1:07:01, JOSEPH



**SITE DATA TABLE**

**DEVELOPMENT DATA:**

- TOTAL TRACT AREA - 14.45 ACRES  
MINUS CLASS IV SOILS - 0.82 ACRES  
(C.O.D. IMPACT AREAS)  
MINUS NATURAL WATER FEATURES - 0-0  
(NOT APPLICABLE)  
TOTAL DEVELOPMENT AREA - 13.63 ACRES
- PERMITTED DENSITY @ 1.9 UNITS/ACRE = 25  
UNITS PROPOSED - 24 = 1.7 UNITS/ACRE
- RECREATION AREA - (@ 0.30 ACRE/UNIT)  
24 UNITS = 0.72 ACRES REQUIRED  
321,616 S.F. (7.38 ACRES) PASSIVE AREAS PROVIDED  
15,949 S.F. (0.37 ACRE) ACTIVE AREAS PROVIDED  
\*\* TOTAL 7.75 ACRES PROVIDED. \*\*
- SITE AREAS -  
AREA OF LOTS - 5.08 ACRES  
AREA OF R/W - 1.16 ACRES  
COMMON AREAS - 8.21 ACRES  
TOTAL TRACT AREA - 14.45 ACRES
- AVERAGE LOT SIZE - 9,220 S.F.
- MINIMUM LOT SIZE - 4,831 S.F.
- IMPERVIOUS SURFACES -  
ROADS - 23,900 S.F.  
SIDEWALKS - 4,300 S.F.  
LOTS (VARIES/LOT) - 90,770 S.F.  
TOTAL - 118,970 S.F. (2.74 ACRES)

- GENERAL NOTES:**
- NEW HANOVER COUNTY PARCEL NOS.: 3157(12) - 75 - 8570
  - TOTAL TRACT AREA: 14.45 AC.±
  - ZONING DISTRICT: R-20 (PERFORMANCE)  
20' PERIMETER SETBACKS  
10' BETWEEN UNITS
  - CAMA LAND CLASSIFICATION: WATERSHED RESOURCE PROTECTION & CONSERVATION
  - OWNERSHIP REFERENCE: D.B. 4432-891/M.B. 34/219  
LINDA JEAN WILSON  
1529 RADIAN ROAD  
WILMINGTON, NC 28405
  - ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE, NEW HANOVER AND STATE OF NORTH CAROLINA REGULATIONS.
  - FLOOD NOTE: BY GRAPHIC PLOTTING, A PORTION OF THIS PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD ZONE AE (ELEV. 10) PER FIRM COMMUNITY PANEL 370171 3157 J, EFFECTIVE APRIL 3, 2006.
  - THE SITE DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE APPROVED PRELIMINARY PLAT (SRB-05-0906), APPROVED MAY 2, 2007.

- NOTES:**
- THE DRIVEWAY THAT WILL SERVE THE PROPOSED LOT 24 SHALL BE 16 FEET IN WIDTH AND CLEAR OF TREE LIMBS TO ENSURE PASSAGE OF EMERGENCY VEHICLES. DRIVEWAY WIDTH CAN BE REDUCED IF NFPA 13D HOME SPRINKLER SYSTEM IS INSTALLED TO MEET CITY OF WILMINGTON FIRE DEPARTMENT STANDARDS. TIMBER VEHICULAR BRIDGES WILL BE PROVIDED BY THE OWNER TO CROSS EXISTING WETLANDS IF NECESSARY.
  - PROPOSED BRIDGES ON SENOVA TRACE SHALL ACCOMMODATE PEDESTRIAN TRAFFIC IN ADDITION TO THE REQUIRED VEHICULAR TRAVEL LANES.
  - ANY BRIDGE THAT IS USED TO CROSS WET AREAS SHALL BE DESIGNED TO ADEQUATELY SUPPORT FIRE EQUIPMENT HAVING WEIGHTS EXCEEDING 36 TONS.
  - ENGINEERED PLANS ARE TO BE SUBMITTED FOR REVIEW AND APPROVAL IN ORDER TO OBTAIN NEW HANOVER COUNTY APPROVAL FOR A BUILDING PERMIT ISSUANCE.

- WETLAND NOTES:**
- TIMBER VEHICULAR BRIDGES ARE NOT IMPACTING EXISTING WETLANDS.
  - NO EXISTING WETLANDS WILL BE IMPACTED FOR THE ACCESS OF LOT 24.
  - TEMPORARY WETLAND IMPACT "A" IS FOR THE REMOVAL OF EXISTING STORM CULVERTS AND TO STABILIZE THE AREA AS AN OPEN CHANNEL. TEMPORARY WETLAND IMPACT "B" AND "E" IS FOR THE CONSTRUCTION OF A 12" WATERMAIN. TEMPORARY WETLAND IMPACT "C" IS FOR THE CONNECTION AND CONSTRUCTION OF AN 8" SANITARY SEWER MAIN. TEMPORARY WETLAND IMPACT "D" IS FOR THE REMOVAL AND REPLACEMENT OF THE EXISTING STORM CULVERT. THE TEMPORARY WETLAND IMPACTS ARE AS FOLLOWS:

TEMPORARY WETLAND IMPACT "A"	0.006 ACRE
TEMPORARY WETLAND IMPACT "C"	0.005 ACRE
TEMPORARY WETLAND IMPACT "D"	0.004 ACRE
TEMPORARY WETLAND IMPACT "E"	0.038 ACRE
TOTAL	0.053 ACRE

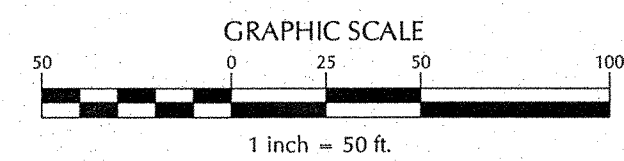
EXISTING WETLANDS = 6.23 ACRES

TOTAL TEMPORARY WETLAND IMPACTS = 0.053 ACRES

25' CONSERVATION RESOURCE SETBACK (C.R.S.) BUFFER AREA IMPACTS (0.48± ACRES)

**CURVE TABLE**

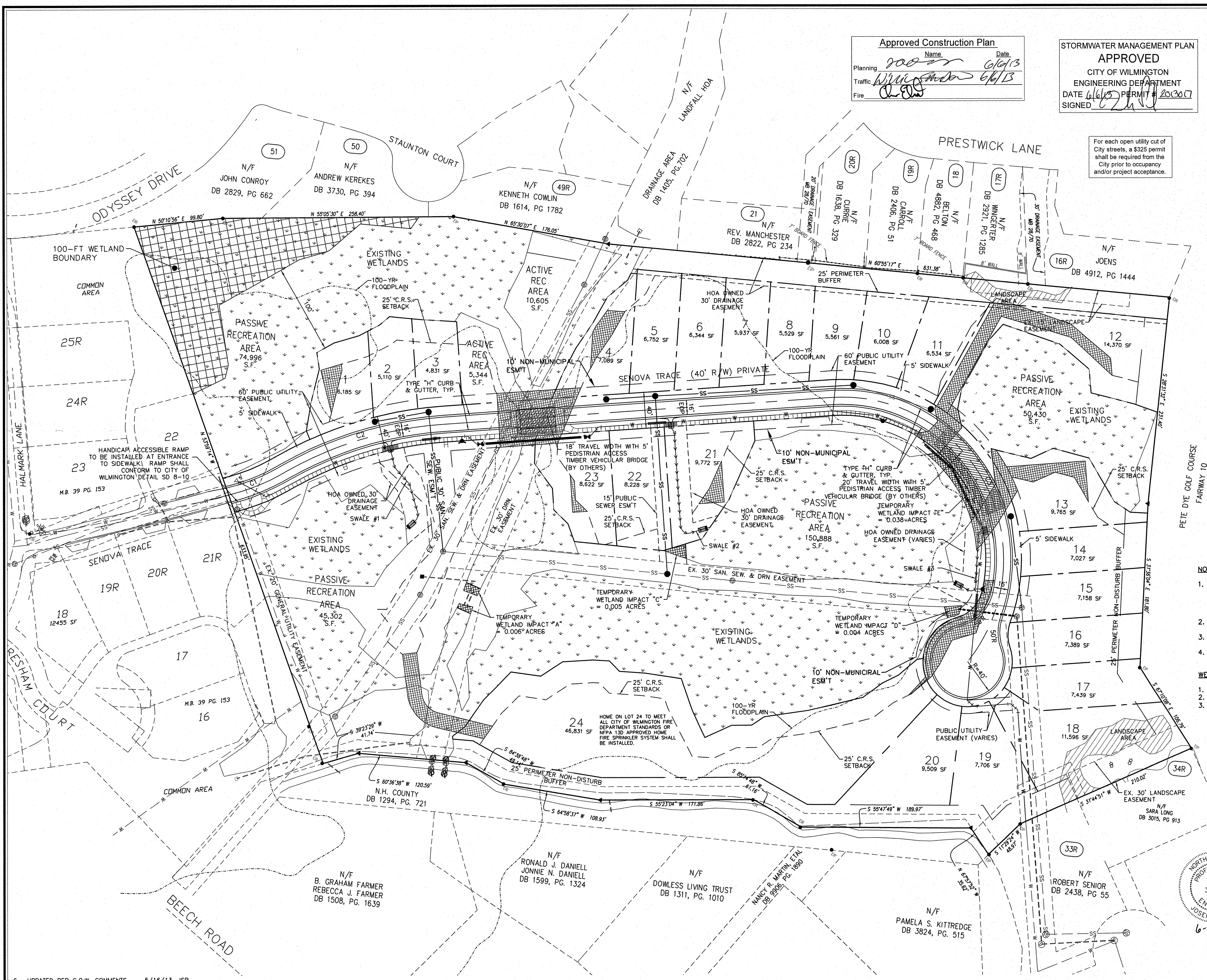
CURVE	LENGTH	RADIUS
C1	57.49	220.00
C2	184.98	420.00
C3	417.94	180.00



**Approved Construction Plan**  
Name: [Signature] Date: 6/6/13  
Planning: [Signature] Date: 6/6/13  
Traffic: [Signature] Date: 6/6/13  
Fire: [Signature]

**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/13 PERMIT # 200307  
SIGNED [Signature]

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



6 UPDATED PER C.O.W. COMMENTS 5/16/13 JSB  
7 UPDATED PER WATERLINE REVISION 6/3/13 JSB

ADDRESS: 1909 ODYSSEY DRIVE

No.	Revision	Date	By
1	NHC & COW COMMENTS	2/08/08	LJT
2	NHC & COW COMMENTS	4/04/08	LJT
3	REVISE ESM1 AND WETLAND IMPACTS	6/27/08	LJT
4	COW COMMENTS	7/24/08	LJT
5	REVISED OWNER & UPDATED PLAN	1/24/13	JSB

Designer: LJT Scale: 1"=50'  
Drawn By: TMC/LJT Date: 06/28/07  
Checked By: MNH Job No.: 03100242

**BATTERY PARK AT LANDFALL**  
CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

**SITE PLAN**

PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
910-540-1924

**WITHERS & RAVENEL**  
ENGINEERS | PLANNERS | SURVEYORS  
7040 Wrightsville Ave., Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.wITHERSRAVENEL.com

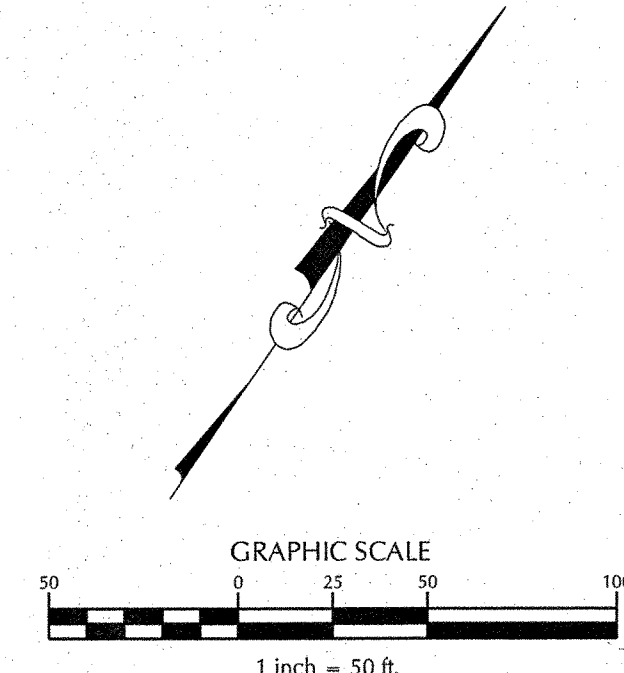
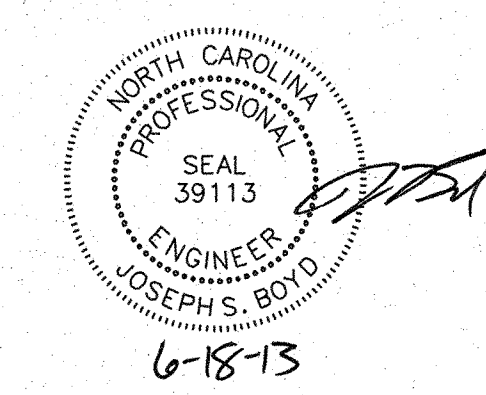
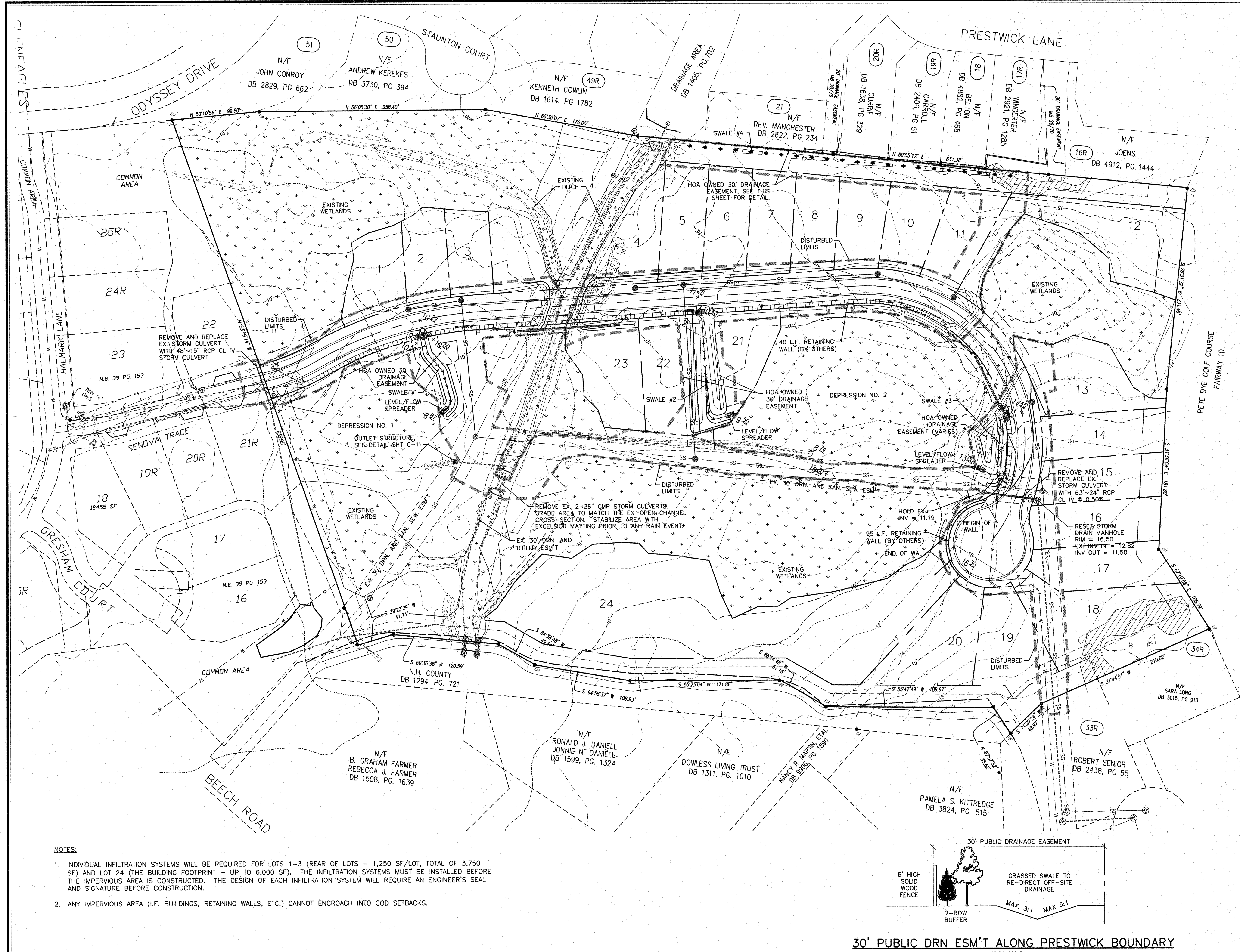
Sheet No. C-4



STORMWATER MANAGEMENT PLAN  
**APPROVED**  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE 6/16/13 PERMIT # 201307  
 SIGNED [Signature]

Approved Construction Plan  
 Name: [Name] Date: 6-13  
 Planning: [Signature] 6-13  
 Public Utilities: [Signature] 6/13  
 Traffic: [Signature] 6/13  
 Fire: [Signature] 6/13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



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No.	Revision	Date	By
1	NHC & COW COMMENTS	2/08/08	LJT
2	NHC & COW COMMENTS	4/04/08	LJT
3	COW COMMENTS	7/24/08	LJT
4	UPDATED OWNER & REVISED PLAN	1/24/13	JSB

Designer	LJT	Scale	1"=50'
Drawn By	TMG/LJT	Date	06/28/07
Checked By	MNH	Job No.	03100242

**BATTERY PARK AT LANDFALL**  
 CITY OF WILMINGTON    NEW HANOVER    NORTH CAROLINA

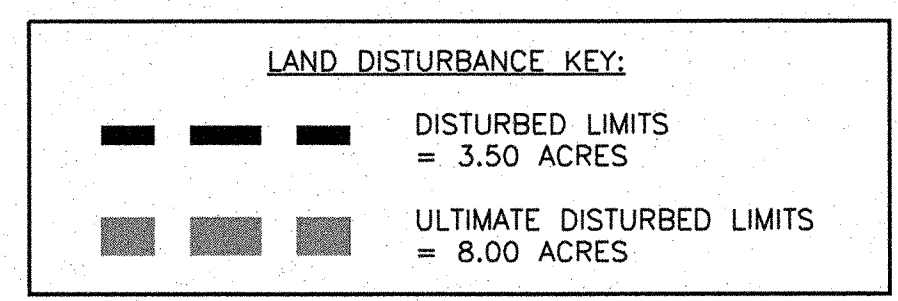
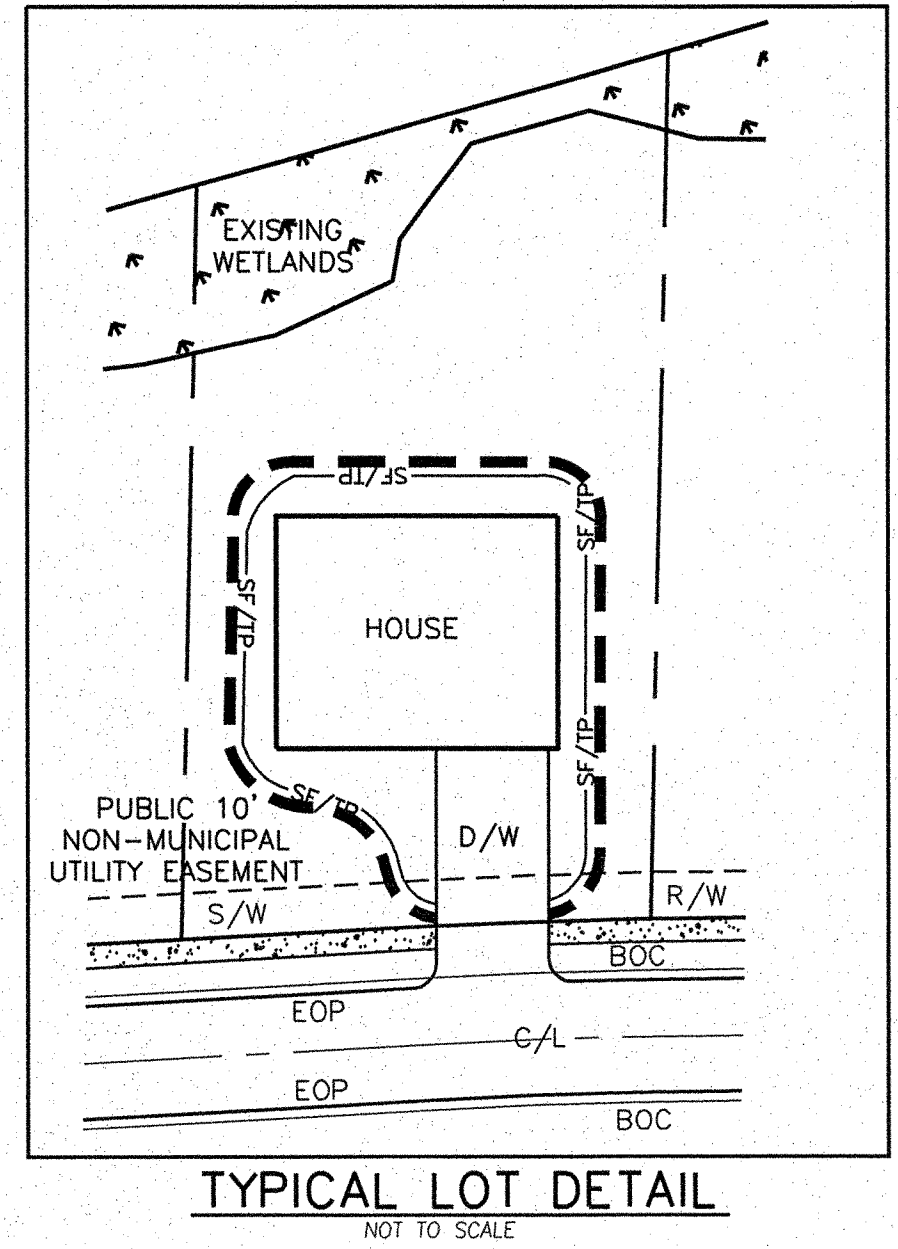
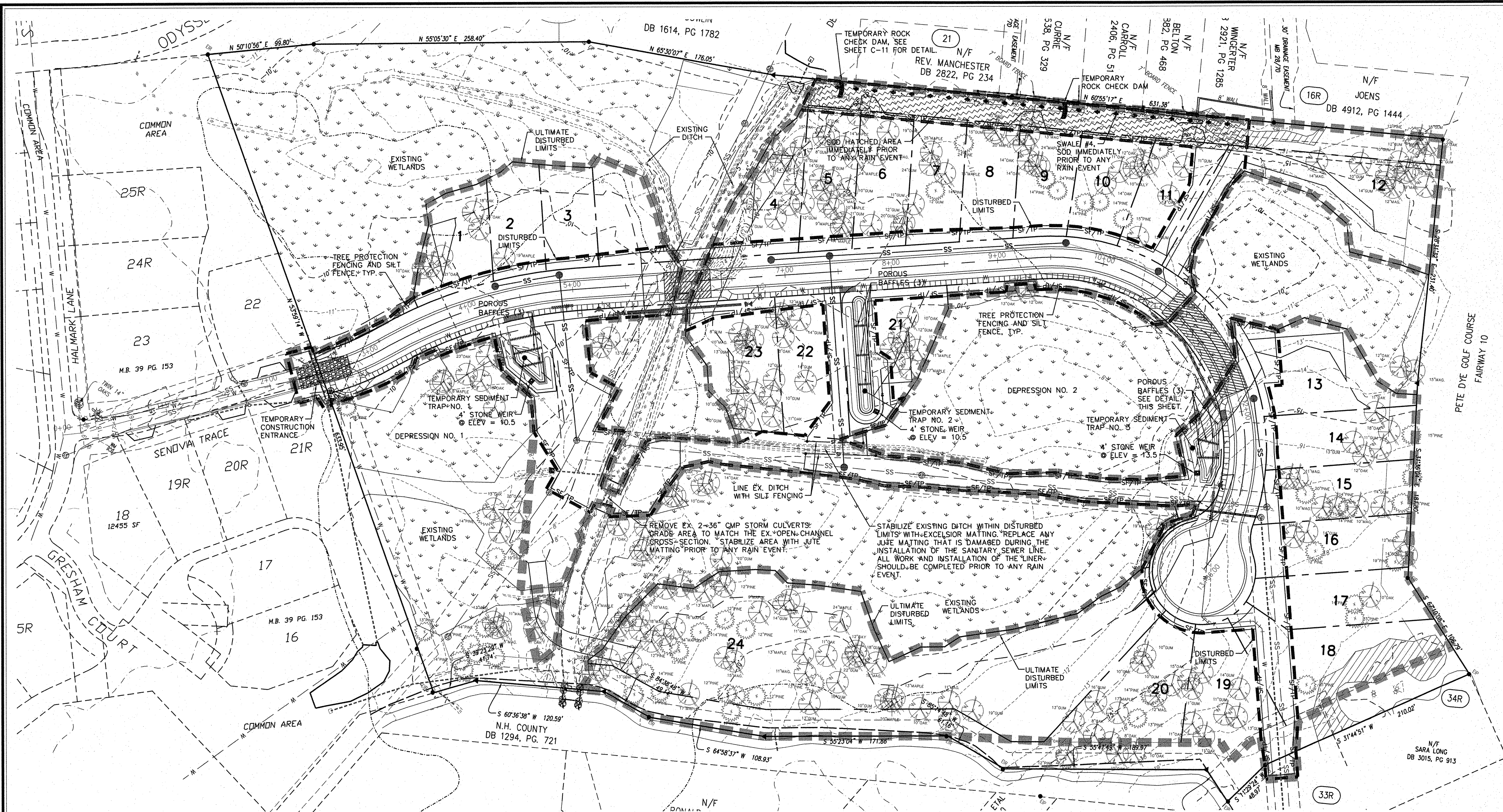
**GRADING AND DRAINAGE PLAN**

PREPARED FOR:  
 DTS HOLDINGS, LLC  
 9 NORTH RIDGE LANE  
 WRIGHTSVILLE BEACH, NC 28480  
 910-540-1924

**WITHERS & RAVENEL**  
 ENGINEERS | PLANNERS | SURVEYORS  
 7040 Wrightsville Ave, Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.wITHERSRAVENEL.COM

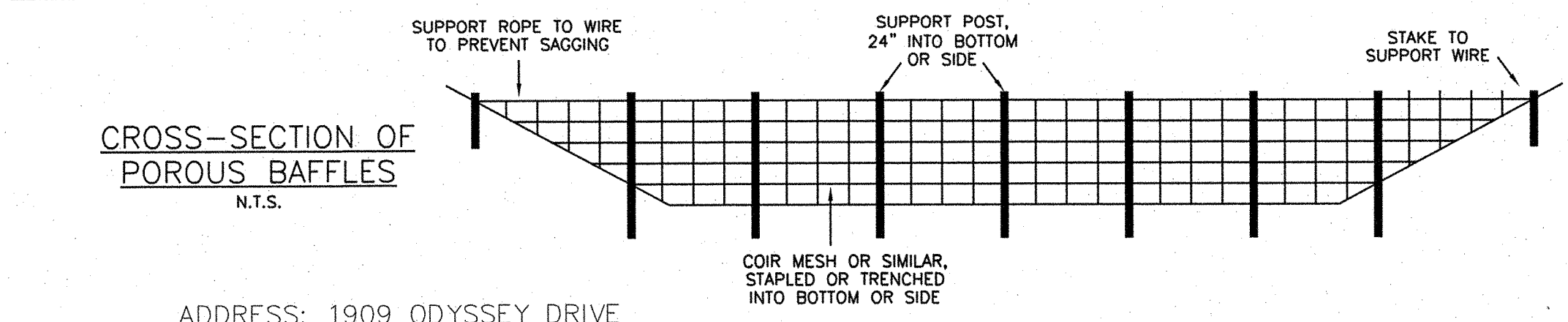
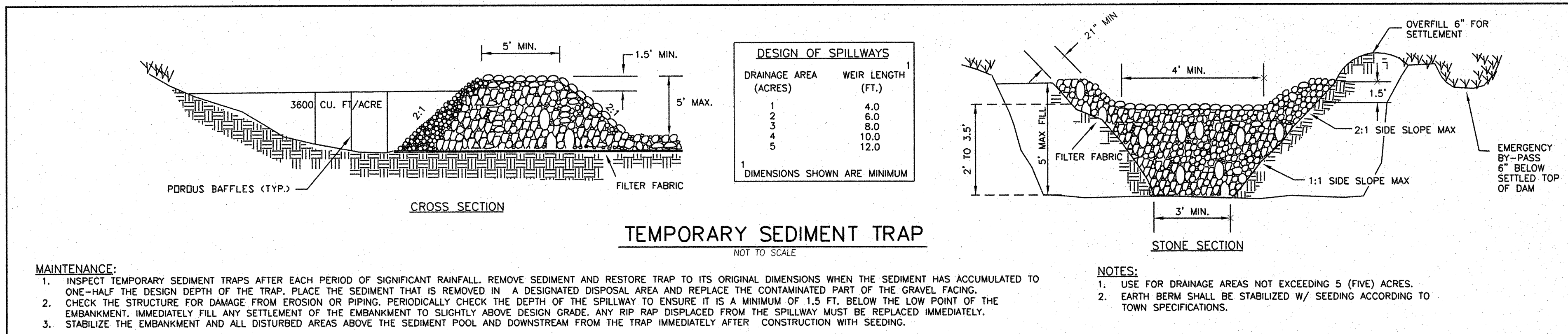
Sheet No.  
**C-5.0**





Approved Const. Plan  
 Name: [Signature]  
 Date: 6-6-13  
 Public Utilities: [Signature]  
 Title: [Signature]  
 Date: 6-6-13

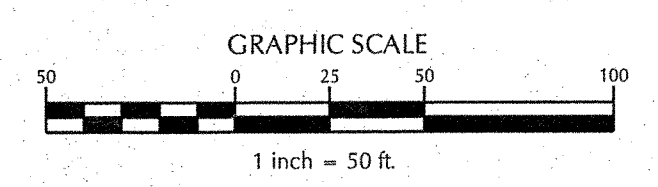
- NOTES:**
- IF AN INDIVIDUAL, THAT IS NOT AFFILIATED WITH THE DEVELOPER WORKING ON OTHER LOTS IN THE SUBDIVISION, DISTURBS LESS THAN A CUMULATIVE ACRE, THEY WOULD NOT NEED AN ADDITIONAL LAND DISTURBING PERMIT. HOWEVER, BY LAW THEY STILL NEED TO PROVIDE EROSION CONTROL FOR THE AREA THEY DISTURB. ALTHOUGH IF MORE THAN A CUMULATIVE ACRE IS DISTURBED, A LAND DISTURBING PERMIT IS THEN REQUIRED. SEE TYPICAL LOT DETAIL ON THIS SHEET.
  - THE DEVELOPER, OR ANYONE AFFILIATED WITH HIM IS REQUIRED TO SUBMIT FOR A REVISION TO THE EXISTING LAND DISTURBING PERMIT IF THEY DISTURB ANYTHING OUTSIDE THE ORIGINAL DISTURBED LIMITS.
- EROSION CONTROL PLAN SEQUENCE OF CONSTRUCTION:**
- INSTALL TEMPORARY CONSTRUCTION ENTRANCE AS SHOWN ON EROSION CONTROL PLAN.
  - INSTALL PERIMETER CONTROLS (SILT FENCE AND TREE PROTECTION FENCING) AS SHOWN ON THE EROSION CONTROL PLAN. THIS STEP NEEDS TO BE COMPLETED PRIOR TO UPSLOPE LAND DISTURBING ACTIVITIES.
  - CONSTRUCT TEMPORARY SEDIMENT TRAPS AND SWALE #4 WITH SOD AND CHECK DAMS AS SHOWN ON THE EROSION CONTROL PLAN.
  - ONCE PERIMETER CONTROLS, SWALE #4, AND SEDIMENT TRAPS ARE INSTALLED CLEARING AND GRUBBING ACTIVITIES MAY BEGIN WITHIN THE DISTURBED LIMITS.
  - UPON BRINGING THE SITE TO ROUGH GRADE, STABILIZE ALL AREAS WITH TEMPORARY VEGETATION IF LEFT UNDISTURBED FOR 21 DAYS. SEE SHEET C-2 FOR TEMPORARY SEEDING REQUIREMENTS.
  - UPON BRINGING THE ROAD TO SUBGRADE ELEVATIONS, STABILIZE THE AREAS BY PLACING STONE BASE AS EARLY AS POSSIBLE.
  - AFTER CONSTRUCTION OPERATIONS HAVE ENDED, ALL DENUDED AREAS ARE TO BE PERMANENTLY STABILIZED WITH PERMANENT VEGETATION AND REMAINING SEDIMENT CONTROLS SHALL BE REMOVED.



**TEMPORARY SEDIMENT TRAP TABLE**

DAM NUMBER	DENUDED AREA (AC)	DRAINAGE AREA (AC)	RUNOFF COEFFICIENT	SYSTEM INTENSITY (IN/HR)	10-YEAR PEAK FLOW (CFS)	WEIR LENGTH (FT)	AREA REQUIRED (SF)	AREA PROVIDED (SF)	VOLUME REQUIRED (CF)	VOLUME PROVIDED (CF)	BOTTOM ELEVATION (FT)	TOP OF BERM ELEVATION (FT)
ST#1	0.35	0.35	0.30	6.43	0.68	4	294	1,302	1,260	1,309	8.0	11.0
ST#2	0.44	0.44	0.30	6.43	0.85	4	369	1,526	1,584	2,363	8.0	11.0
ST#3	0.30	0.30	0.30	6.43	0.58	4	252	817	1,080	1,305	11.0	14.0

North Carolina Professional Engineer Seal 39113  
 ENGINEER JOSEPH S. BOID  
 6-18-13



W:\01-00-00\100245-Battery Park at Landfall\CAD\Updated Construction Plans\Sheet C-5.1 EROSION.dwg - June 5, 2013 - 10:07 AM - JSEPH

No.	Revision	Date	By	Designer	LJT	Scale
1	NHC & COW COMMENTS	4/04/08	LJT			1"=50'
2	NHC COMMENTS (SOD HATCH)	5/12/08	LJT			
3	NHC PRECON MEETING COMMENTS	1/24/13	JSB			

Drawn By	TMG/LJT	Date	06/28/07
Checked By	MNH	Job No.	03100242

**BATTERY PARK AT LANDFALL**  
 CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

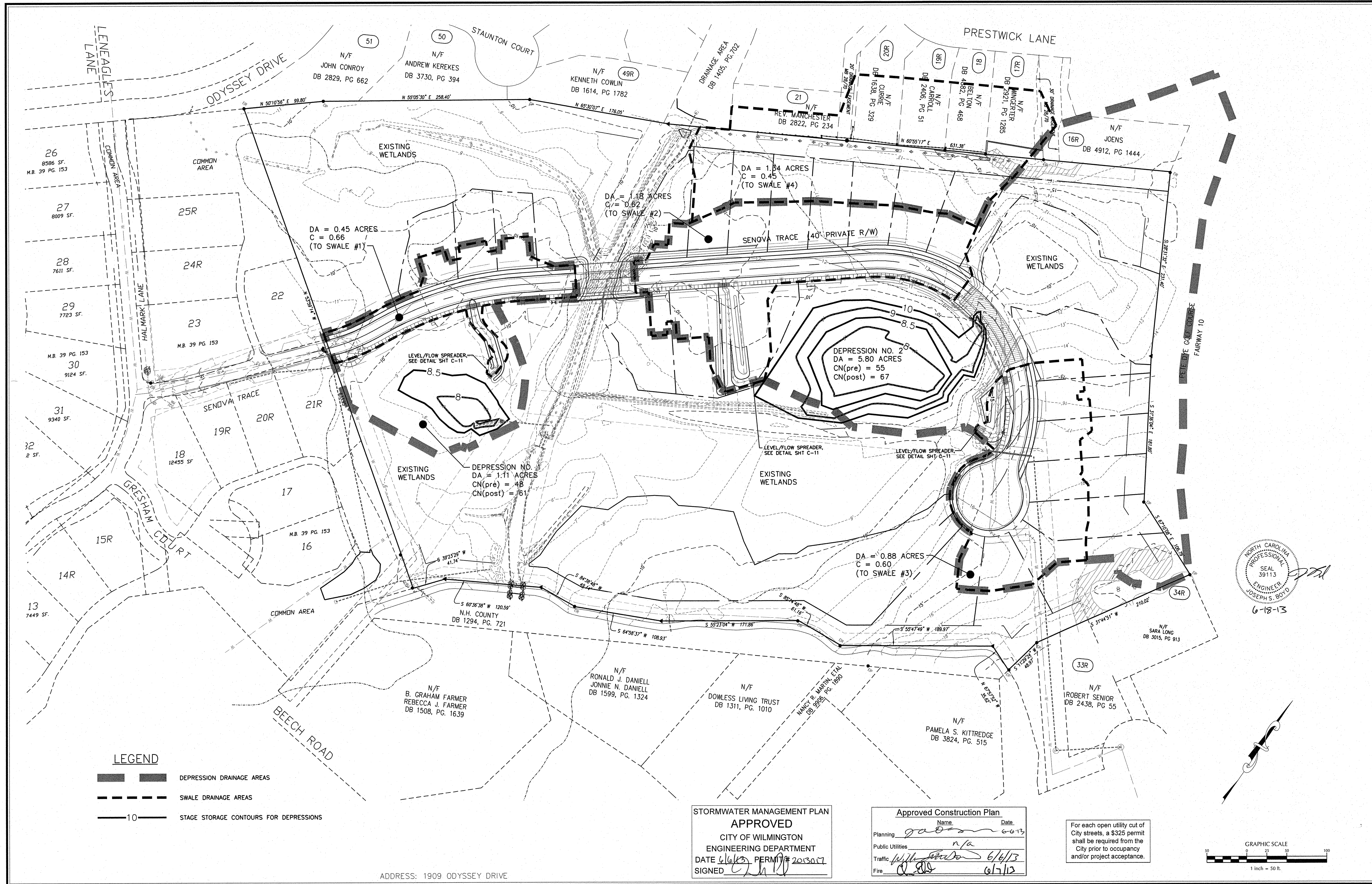
**EROSION CONTROL PLAN**

PREPARED FOR:  
 DTS HOLDINGS, LLC  
 9 NORTH RIDGE LANE  
 WRIGHTSVILLE BEACH, NC 28480  
 910-540-1924

**WITHERS & RAVENEL**  
 ENGINEERS | PLANNERS | SURVEYORS  
 7040 Wrightsville Ave, Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.wITHERSRAVENEL.com

Sheet No.  
**C-5.1**





NORTH CAROLINA  
PROFESSIONAL  
SEAL  
39113  
ENGINEER  
JOSEPH S. BOYD  
6-18-13

**LEGEND**

— 10 — DEPRESSION DRAINAGE AREAS

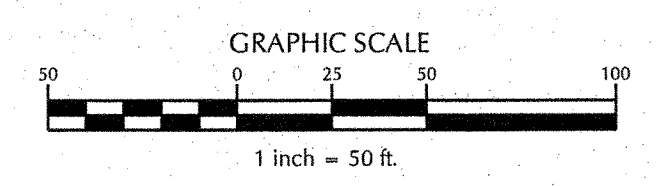
--- SWALE DRAINAGE AREAS

— 10 — STAGE STORAGE CONTOURS FOR DEPRESSIONS

STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/13 PERMIT # 2013017  
SIGNED [Signature]

Approved Construction Plan  
Name: [Signature] Date: 6/13/13  
Planning: [Signature] 6/13/13  
Public Utilities: n/a  
Traffic: [Signature] 6/13/13  
Fire: [Signature] 6/13/13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



ADDRESS: 1909 ODYSSEY DRIVE

No.	Revision	Date	By
1	NCDWQ COMMENTS	8/31/07	LJT
2	NHC & COW COMMENTS	2/08/08	LJT
3	UPDATED OWNER & REVISED PLAN	1/24/13	JSB

Designer	LJT	Scale	1"=50'
Drawn By	TMG/LJT	Date	06/28/07
Checked By	MNH	Job No.	03100242

**BATTERY PARK AT LANDFALL**  
CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

**OVERALL DRAINAGE PLAN**

PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
910-540-1924

**WITHERS & RAVENEL**  
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Sheet No.  
**C-6**

W:\D\10-294\100242-Battery Park at Landfall\CAD\Uploaded Construction Plans\Sheet C-6.DWG, 06/18/13 10:55:58 AM

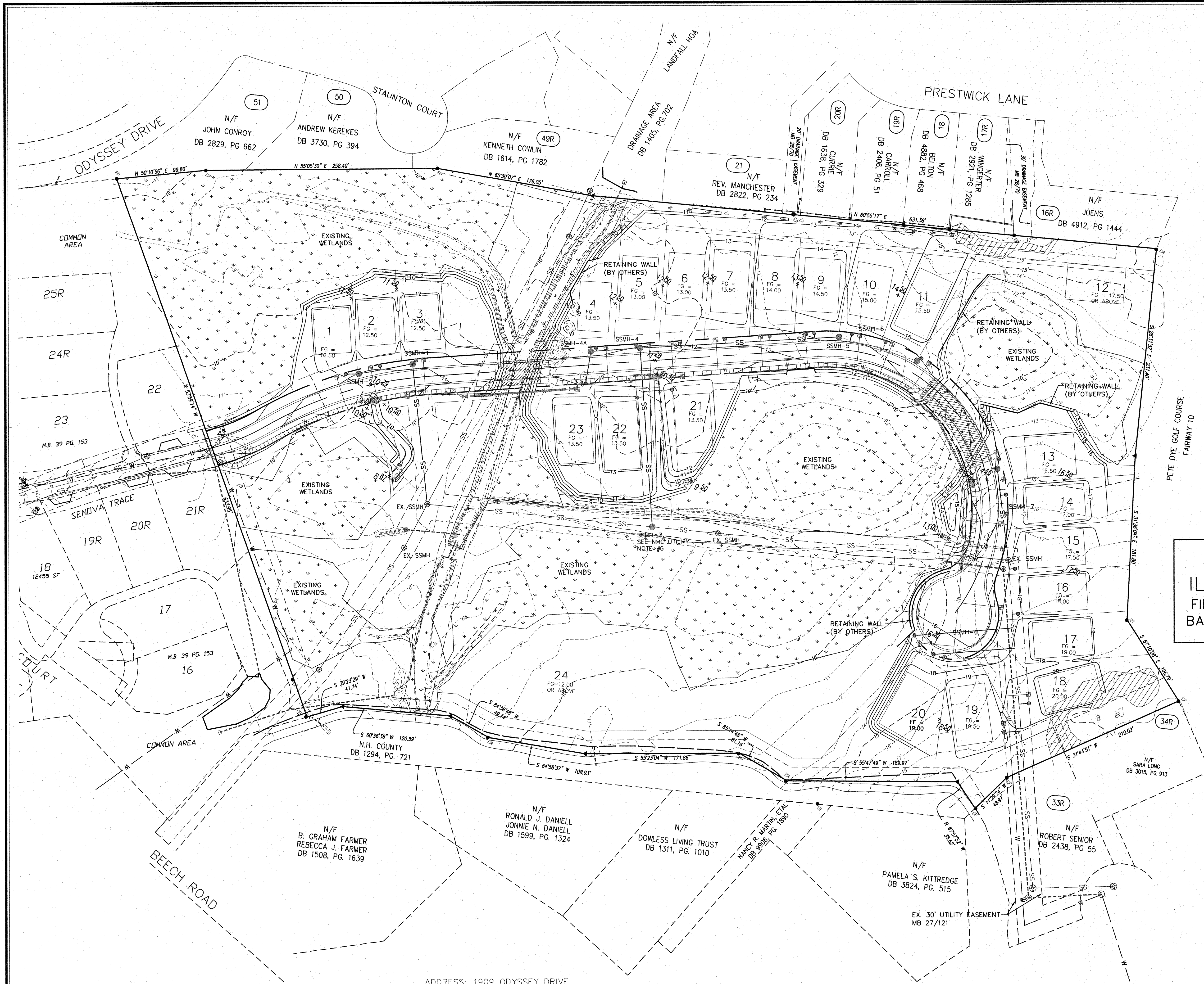
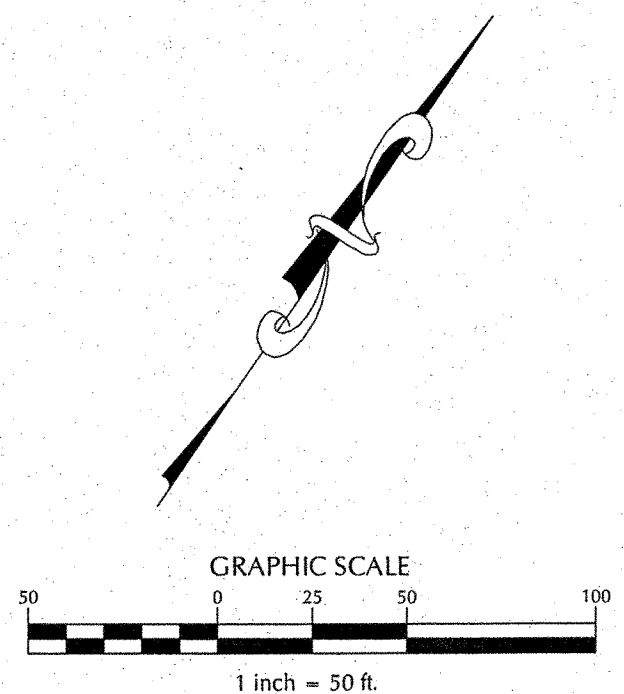
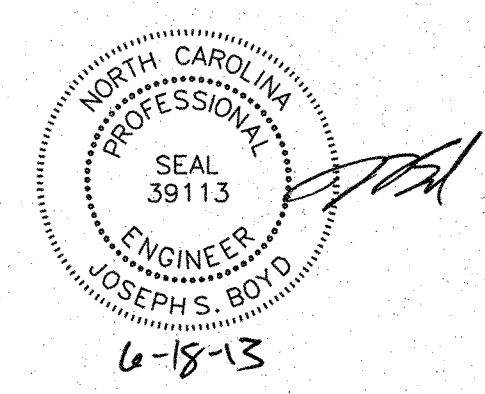


**NEW HANOVER COUNTY UTILITY NOTES:**

- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT ALL MANHOLES IN TRAFFIC AREAS.
- SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE @ ROW LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR TO MAIN OR MUST ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
- ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
- 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN.
- NO FLEXIBLE COUPLINGS SHALL BE USED.
- WATERTIGHT FRAME AND NON-VENTED COVER REQUIRED. THE FOLLOWING ARE APPROVED FOR USE:
  - U.S. FOUNDRY 725 RING AND L<sub>J</sub>-SSG COVER
  - EAST JORDAN IRON WORKS 7" FRAME AND COVER ASSEMBLY (IN TRAFFIC AREAS) PRODUCT #202701, 4" FRAME PRODUCT #202611 - COVER PRODUCT #202722
  - U.S. FOUNDRY 710 RING AND L<sub>J</sub>-SSG COVER (IN TRAFFIC AREAS)
  - CAPITAL FOUNDRY OF VIRGINIA, ITEM MH-3000-WT RING & COVER.

OVERLOT GRADING IS FOR ILLUSTRATIVE PURPOSES ONLY  
FINAL GRADING SHALL BE ON A LOT BY LOT BASIS PER CITY OF WILMINGTON REGULATIONS.

Approved Const. Plan  
Name: Handwritten  
Planning: Handwritten 6-12-13  
Public Utilities: Handwritten  
Traffic: Handwritten 6-12-13  
Fire: Handwritten 6-12-13



ADDRESS: 1909 ODYSSEY DRIVE

No.	Revision	Date	By	Designer	LJT	Scale
1	NHC & COW COMMENTS	2/08/08	LJT			1"=50'
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4	NCDWQ-SEWER COMMENTS	9/12/08	LJT			
5	UPDATED OWNER & REVISED PLAN	1/24/13	JSB			

**BATTERY PARK AT LANDFALL**  
CITY OF WILMINGTON    NEW HANOVER    NORTH CAROLINA

**PRELIMINARY GRADING PLAN**  
(FOR NHC SEWER REVIEW ONLY)

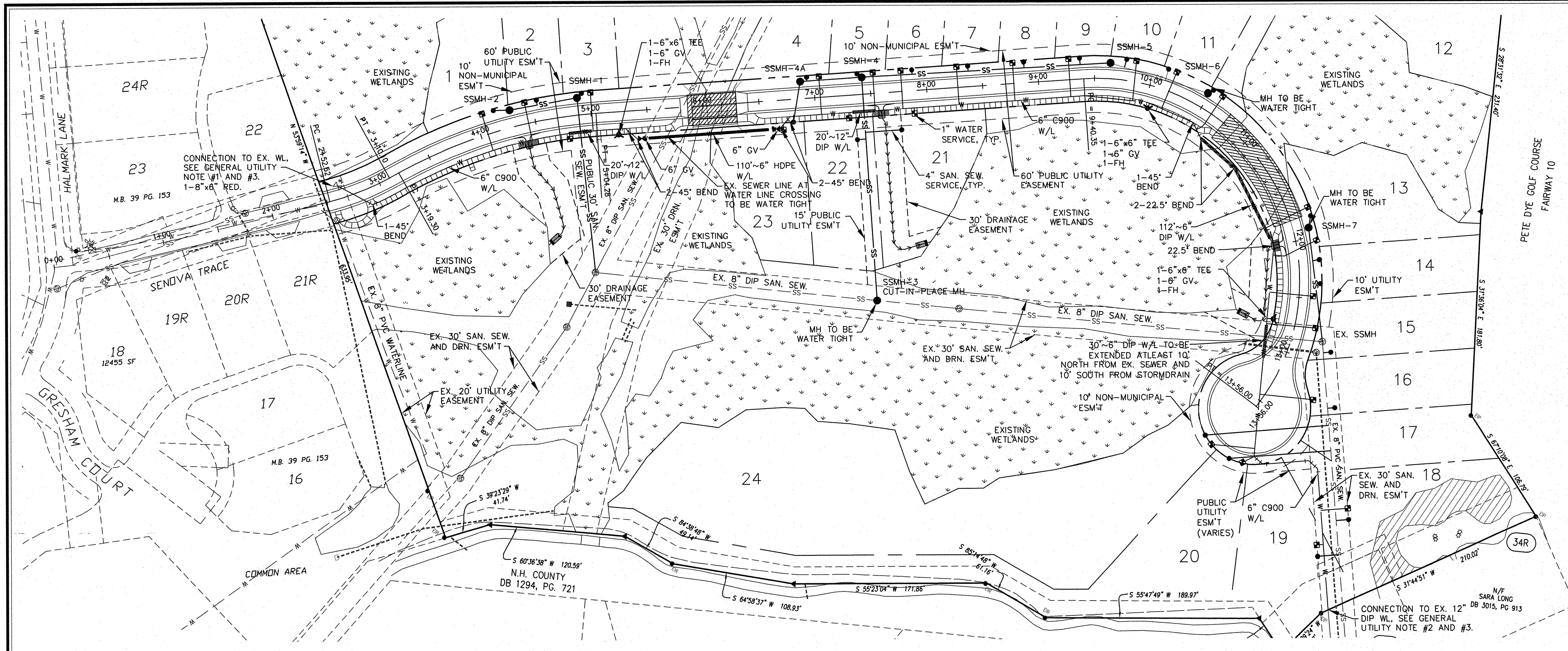
PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
910-540-1924

**WITHERS & RAVENEL**  
ENGINEERS | PLANNERS | SURVEYORS  
7040 Wrightsville Ave, Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.wITHERSRAVENEL.COM

Sheet No. **C-7**

W:\10\10-024\10024-Battery Park at Landfall\CAD\Updated Construction Plans\Drawings\10-7 PRELIM GRADING PLAN.dwg - June 5, 2013 - BDTW - J050504





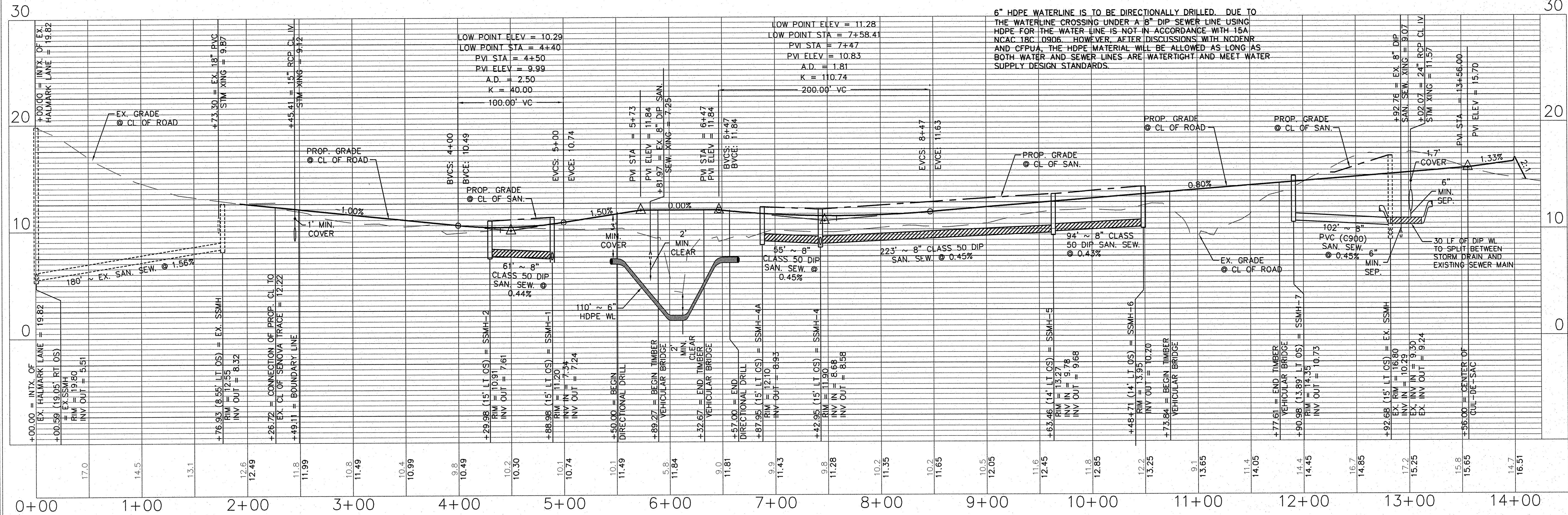
- WATER AND SEWER UTILITY NOTES:**
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO DEMOLITION & CONSTRUCTION, AND NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES.
  - WATER AND SEWER WILL BE PROVIDED BY THE CAPE FEAR PUBLIC UTILITY AUTHORITY.
  - PROJECT SHALL COMPLY WITH CITY OF WILMINGTON CROSS CONNECTION REQUIREMENTS. WATER METER(S) CANNOT BE SET AND ACTIVATED ON NEW MAINS UNTIL ALL REQUIREMENTS ARE MET AND NCDENR HAS ISSUED THEIR "FINAL APPROVAL". CALL 343-3910 FOR INFORMATION.
  - IF THE CONTRACTOR DESIRES CITY WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
  - ALL COMMERCIAL WATER SERVICES AND ANY IRRIGATION SYSTEMS SUPPLIED BY CITY WATER SHALL HAVE BACKFLOW PREVENTION DEVICE ACCEPTABLE TO THE CITY AND APPROVED BY USFC/CC/HR OR ASSE. CALL 343-3910 FOR INFORMATION.
  - WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATIONS OF FACILITIES.
  - ALL WATER MAINS & SERVICES SHALL HAVE A MINIMUM OF 3-FOOT COVER.
  - WATER AND SEWER SERVICES CANNOT BE ACTIVATED UNTIL ENGINEER'S CERTIFICATION AND AS-BUILTS ARE RECEIVED AND "FINAL APPROVAL" ISSUED BY PUBLIC WATER SUPPLY SECTION OF NCDENR AND "FINAL ENGINEERING CERTIFICATION" ISSUED BY DIVISION OF WATER QUALITY OF NCDENR.
  - ALL PROPOSED WATER APPARATUS WITHIN THE RIGHT-OF-WAY SHALL BE PUBLIC AND MAINTAINED BY THE CITY OF WILMINGTON, EVERYTHING OUTSIDE THE RIGHT-OF-WAY SHALL BE PRIVATE AND MAINTAINED BY THE DEVELOPER.

- GENERAL UTILITY NOTES:**
- CONTRACTOR TO FIELD VERIFY EXISTING WATERLINE SIZES AND EXISTING VALVE FOR CONNECTION TO THE PROPOSED 8" WL. ASSUME TO CONNECT TO EXISTING 8" GATE VALVE.
  - CONTRACTOR TO FIELD VERIFY EXISTING 12" WATERLINE LOCATION BEFORE CONNECTION.
  - CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY IF DISCREPANCIES ARE FOUND IN THE FIELD ONCE THE EXISTING WATERMAINS ARE UNCOVERED.
  - USE VERTICAL BENDS ON WATERLINE TO AVOID CONFLICTS WITH OTHER UTILITIES IF NECESSARY. SEE SHEET C-9 FOR VERTICAL BEND DETAIL.

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:**
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  - NO FLEXIBLE COUPLINGS SHALL BE USED.
  - ALL STAINLESS STEEL FASTENERS SHALL BE 316.

**WATER LINE DIRECTIONAL DRILL SPECIAL PROVISION:**

6" HDPE WATERLINE IS TO BE DIRECTIONALLY DRILLED, DUE TO THE WATERLINE CROSSING UNDER A 8" DIP SEWER LINE USING HDPE FOR THE WATER LINE IS NOT IN ACCORDANCE WITH 15A NCAC 18C.0906. HOWEVER, AFTER DISCUSSIONS WITH NCDENR AND CFWA, THE HDPE MATERIAL WILL BE ALLOWED AS LONG AS BOTH WATER AND SEWER LINES ARE WATER-TIGHT AND MEET WATER SUPPLY DESIGN STANDARDS.

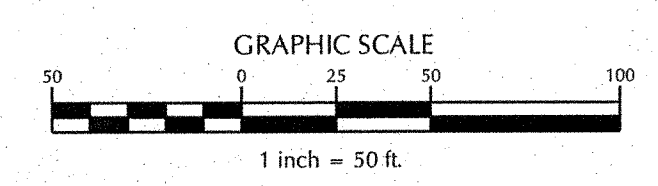


**STORMWATER MANAGEMENT PLAN APPROVED**  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE 6/6/13 PERMIT# 2013017  
 SIGNED [Signature]

**Approved Construction Plan**  
 Name Date  
 Planning [Signature] 6-6-13  
 Public Utilities [Signature] n/a  
 Traffic [Signature] 6/6/13  
 Fire [Signature] 6/7/13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

**SEAL 39113**  
 ENGINEER  
 JOSEPH BOYD  
 6-18-13



6 NCDW-SSEWER COMMENTS 9/12/08 LJT  
 7 CFWA COMMENTS & IFC 6/3/13 JSB

ADDRESS: 1909 ODYSSEY DRIVE

No.	Revision	Date	By
1	NHC & COW COMMENTS	2/08/08	LJT
2	NHC & COW COMMENTS	4/04/08	LJT
3	MODIFY UTILITY NOTES	5/02/08	LJT
4	NHC COMMENTS	6/27/08	LJT
5	COW COMMENTS	7/24/08	LJT

**BATTERY PARK AT LANDFALL**  
 CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

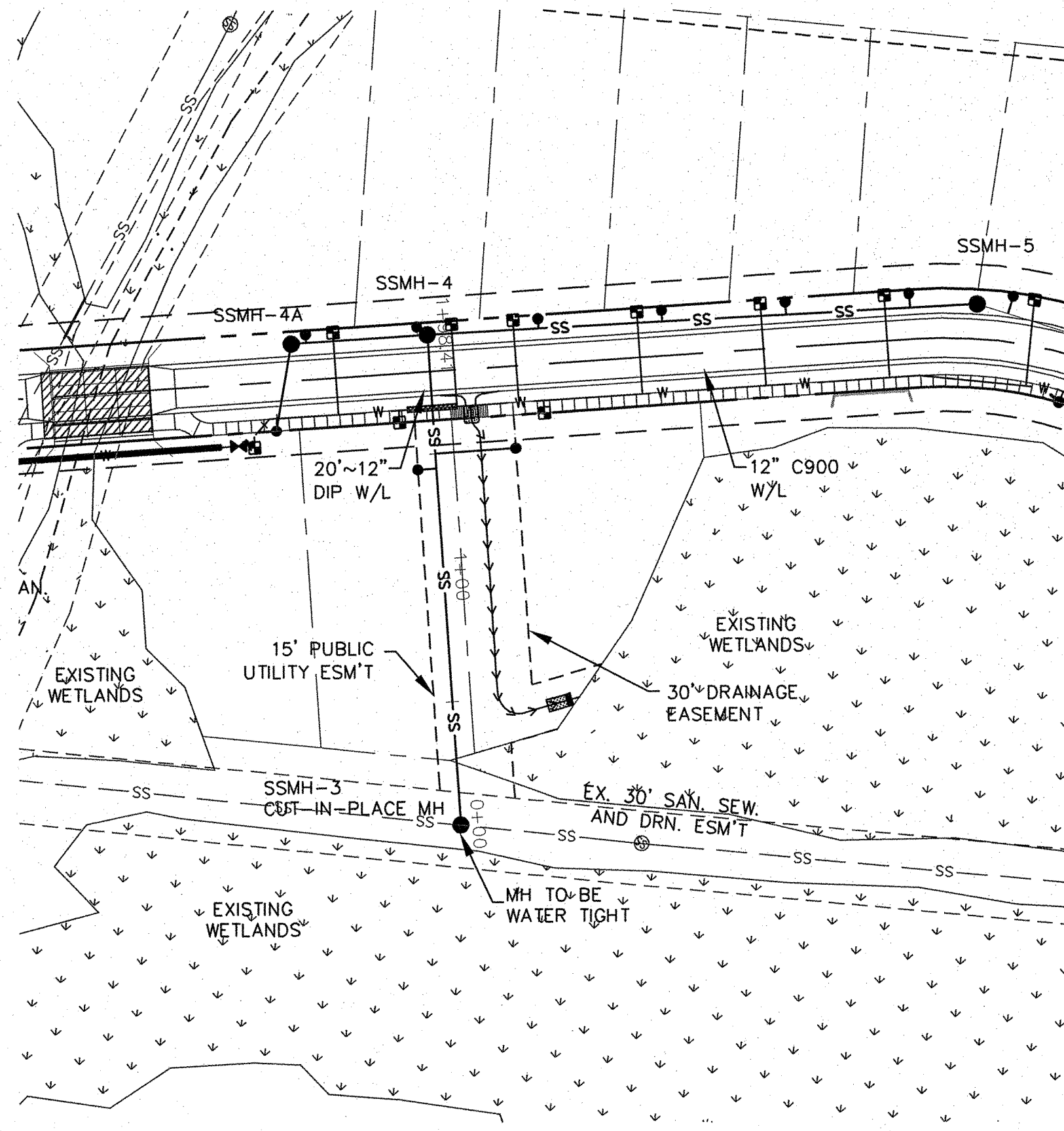
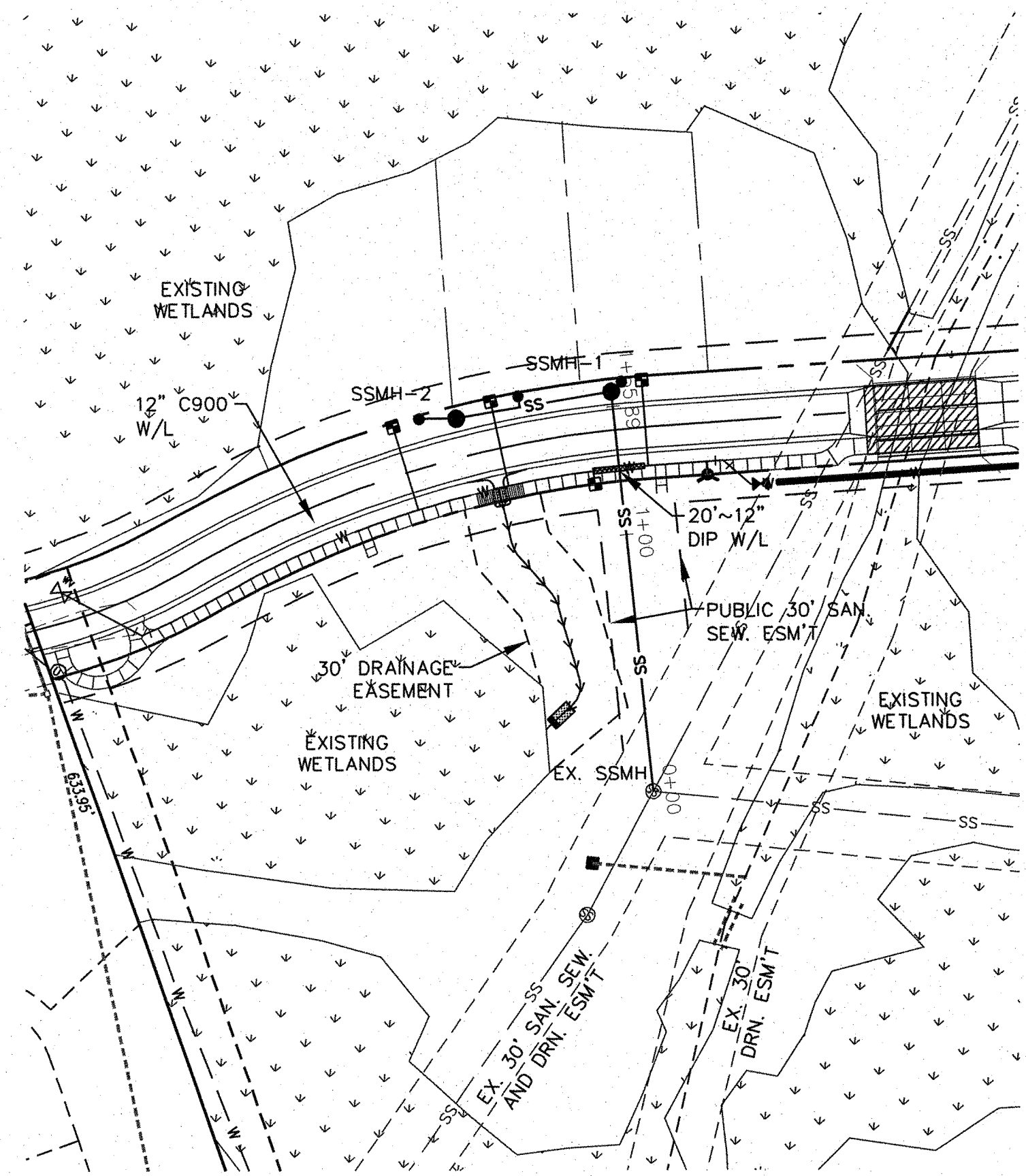
**SENNOVA TRACE PLAN AND PROFILE AND UTILITY PLAN**

PREPARED FOR:  
 DTS HOLDINGS, LLC  
 9 NORTH RIDGE LANE  
 WRIGHTSVILLE BEACH, NC 28480  
 910-540-1924

**WITHERS & RAVENEL**  
 ENGINEERS | PLANNERS | SURVEYORS  
 7040 Wrightsville Ave, Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.wITHERSRAVENEL.com

Sheet No. **C-8**





**WATER AND SEWER UTILITY NOTES:**

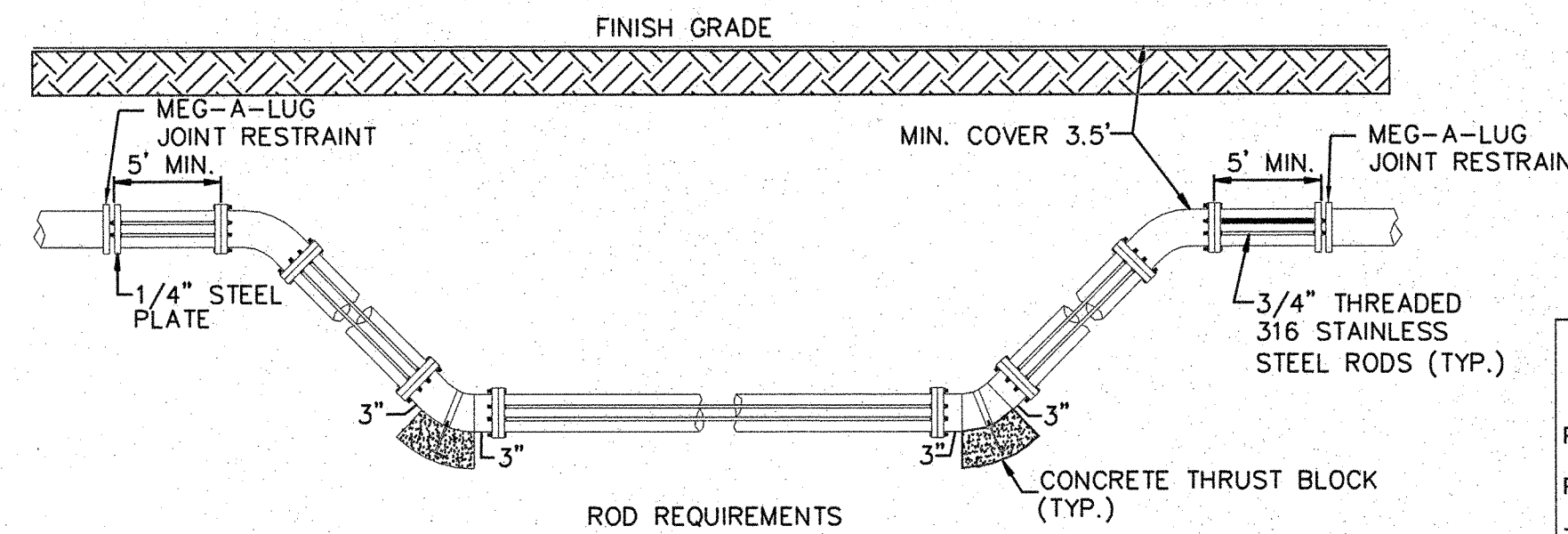
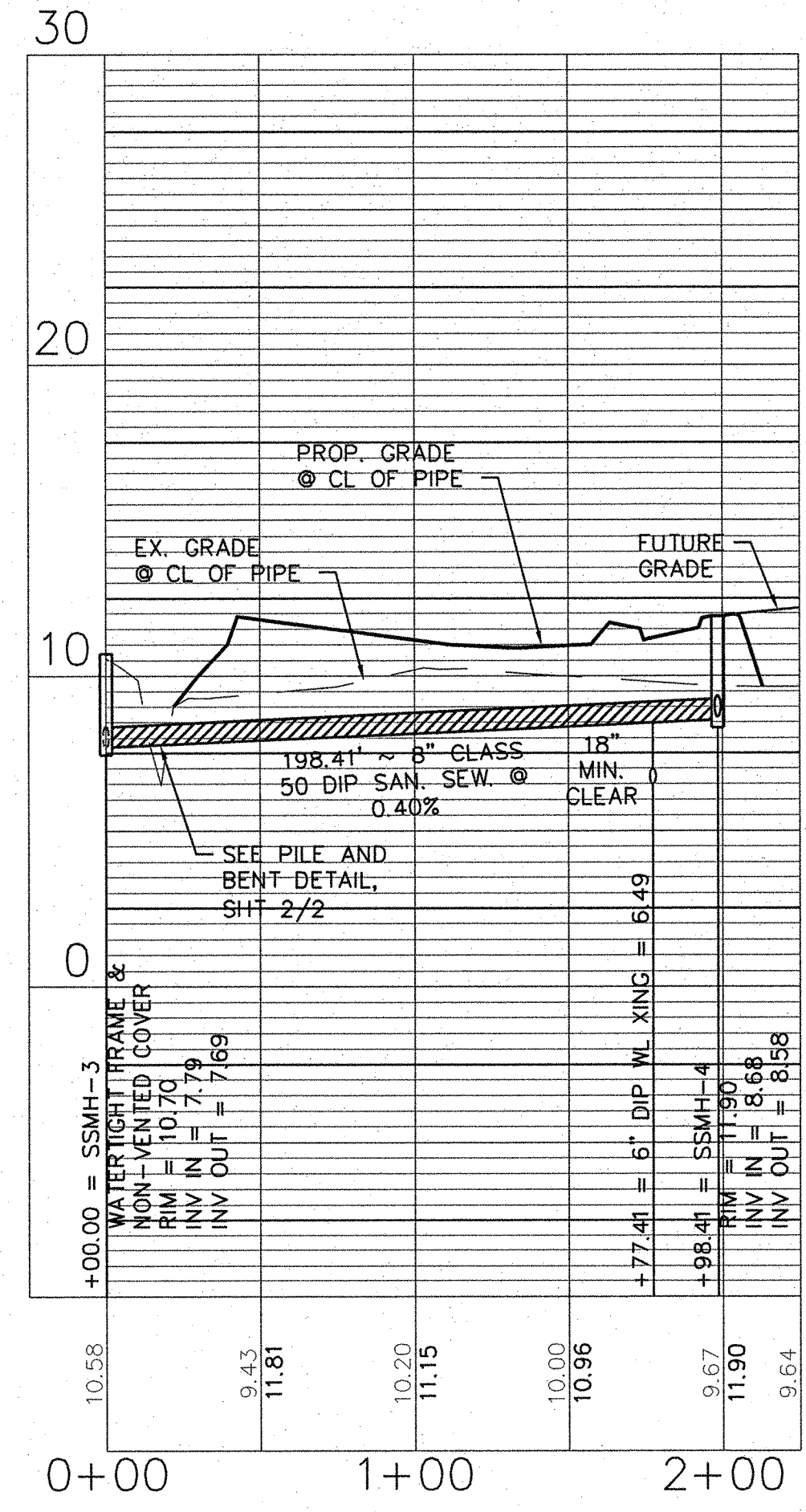
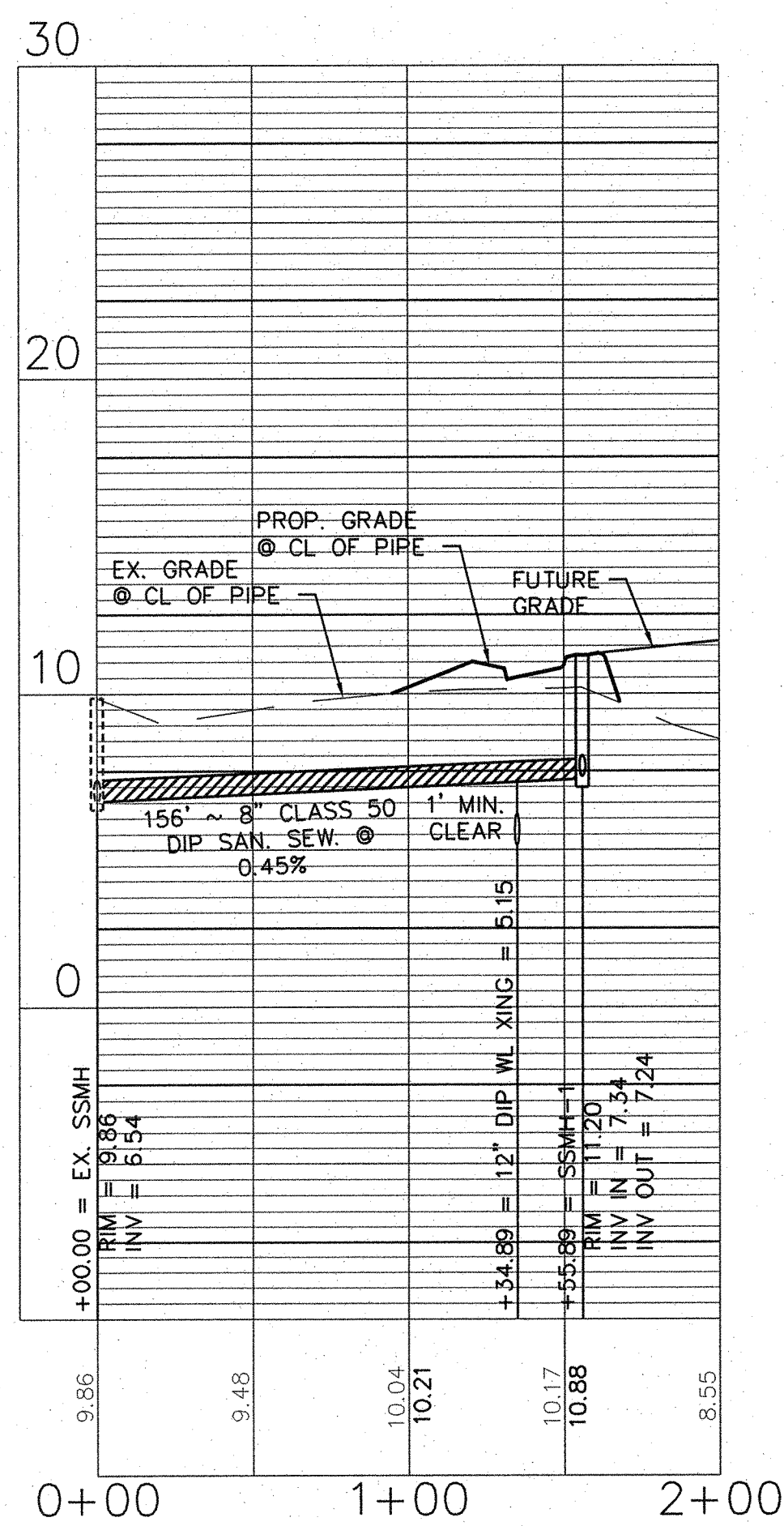
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4. USE VERTICAL BENDS ON WATERLINE TO AVOID CONFLICTS WITH OTHER UTILITIES IF NECESSARY. SEE SHEET C-9 FOR VERTICAL BEND DETAIL.



SIZE OF 45 DEGREE BEND	STATIC THRUST IN POUNDS	NUMBER OF RODS REQUIRED
6"	4,328	2
8"	7,694	2
12"	17,312	2
16"	30,779	4
20"	48,091	6
24"	69,252	8

- NOTES:**
1. ONCE INSTALLED AND TIGHT, THE SS-316 STEEL RODS AND BOLTS SHALL BE COATED WITH 2 COATS OF BITUMINOUS BASE PAINT.
  2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
  3. TYPICAL MIN. CLEARANCE BETWEEN CONCRETE AND END OF BOLT MUST BE 3".
  4. APPROVED OFFSETS CAN BE USED IN THIS APPLICATION.

**STANDARD VERTICAL BEND**  
SD 4-11  
NOT TO SCALE

**GENERAL UTILITY NOTE:**

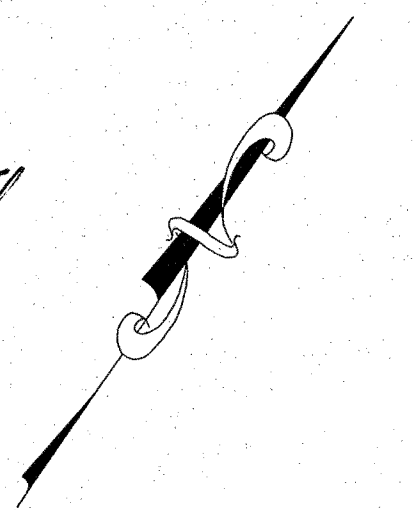
1. USE VERTICAL BENDS ON WATERLINE TO AVOID CONFLICTS WITH OTHER UTILITIES IF NECESSARY. SEE ABOVE FOR VERTICAL BEND DETAIL.

**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/13 PERMIT # 2013017  
SIGNED [Signature]

**Approved Construction Plan**  
Name: [Signature] Date: 6-6-13  
Planning: [Signature] 6-6-13  
Public Utilities: n/a  
Traffic: [Signature] 6/6/13  
Fire: [Signature] 6/7/13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

NORTH CAROLINA PROFESSIONAL SEAL 39113  
ENGINEER JOSEPH S. BOYD  
6-18-13



ADDRESS: 1909 ODYSSEY DRIVE

No.	Revision	Date	By	Designer	LJT	Scale
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3	NCDWQ-SEWER COMMENTS	9/12/08	LJT			
4	CFPUA COMMENTS & IFC	6/3/13	JSB			

**BATTERY PARK AT LANDFALL**  
CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

**SANITARY SEWER MISC. PLAN AND PROFILES**

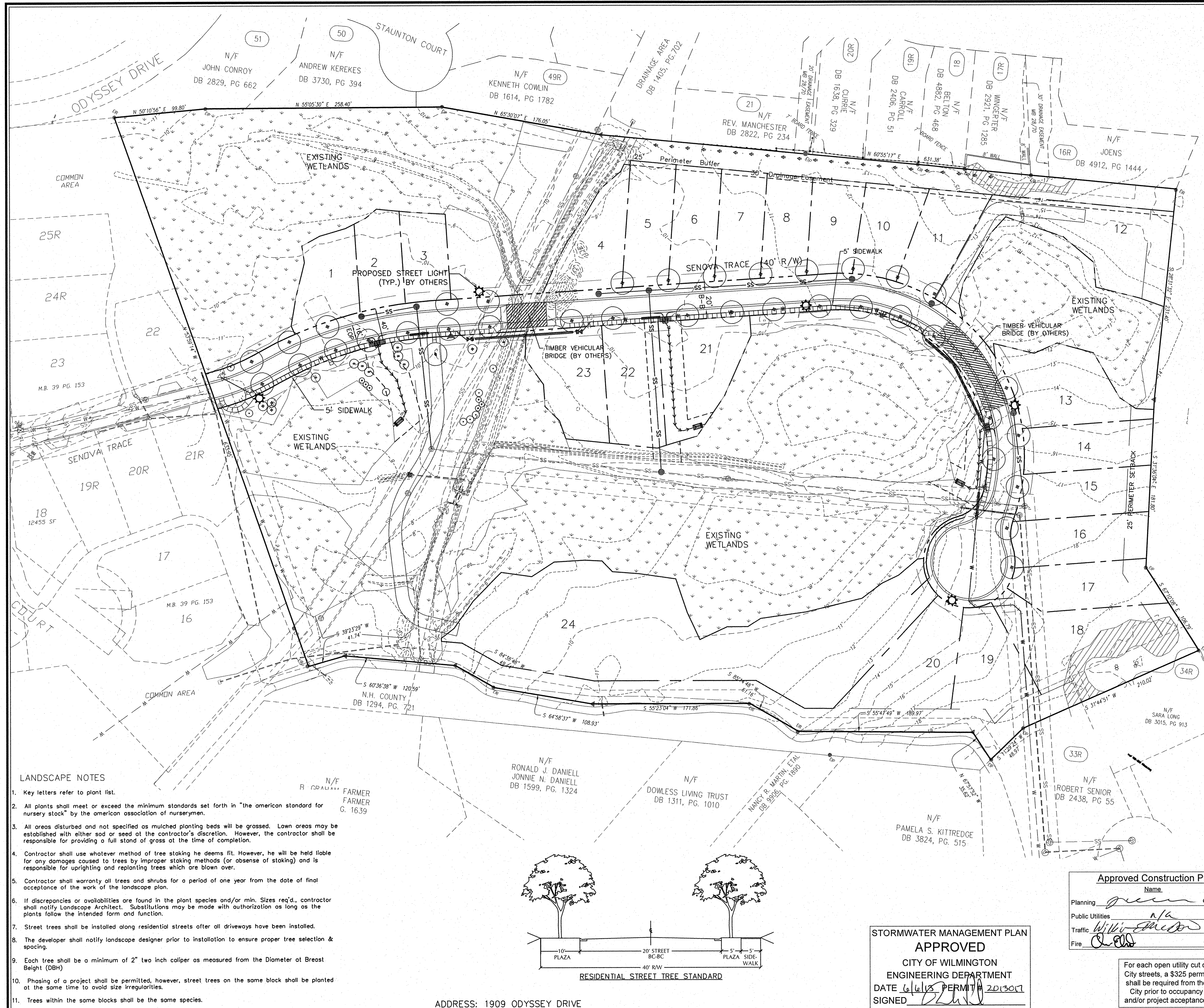
PREPARED FOR:  
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910-540-1924

**WITHERS & RAVENEL**  
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Sheet No.  
**C-9**

W:\10-10240\10242-0000\Drawings\Plan\Drawings\C-9 Sanitary Misc. P&P.dwg - June 5, 2013 - 8:07:02 AM





- GENERAL NOTES:**
- NEW HANOVER COUNTY PARCEL NOS.: 3157(12) - 75 - 8570
  - TOTAL TRACT AREA: 14.45 AC.±
  - TOTAL TRACT AREA - MINUS CLASS IV SOILS - (C.O.D. IMPACT AREAS) - MINUS NATURAL WATER FEATURES - (NOT APPLICABLE) - TOTAL DEVELOPMENT AREA - 13.63 ACRES
  - ZONING DISTRICT: R-20 (PERFORMANCE) 20' PERIMETER SETBACKS 10' BETWEEN UNITS
  - CAMA LAND CLASSIFICATION: WATERSHED RESOURCE PROTECTION & CONSERVATION
  - OWNERSHIP REFERENCE: D.B. 4432-891/M.B. 34/219 LINDA JEAN WILSON 1529 RADIAN ROAD WILMINGTON, NC 28405
  - ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE AND STATE OF NORTH CAROLINA REGULATIONS.
  - FLOOD NOTE: BY GRAPHIC PLOTTING, A PORTION OF THIS PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD ZONE AE (ELEV. 10) PER FIRM COMMUNITY PANEL 370171 3157 J, EFFECTIVE APRIL 3, 2006.

**PLANTING LEGEND**

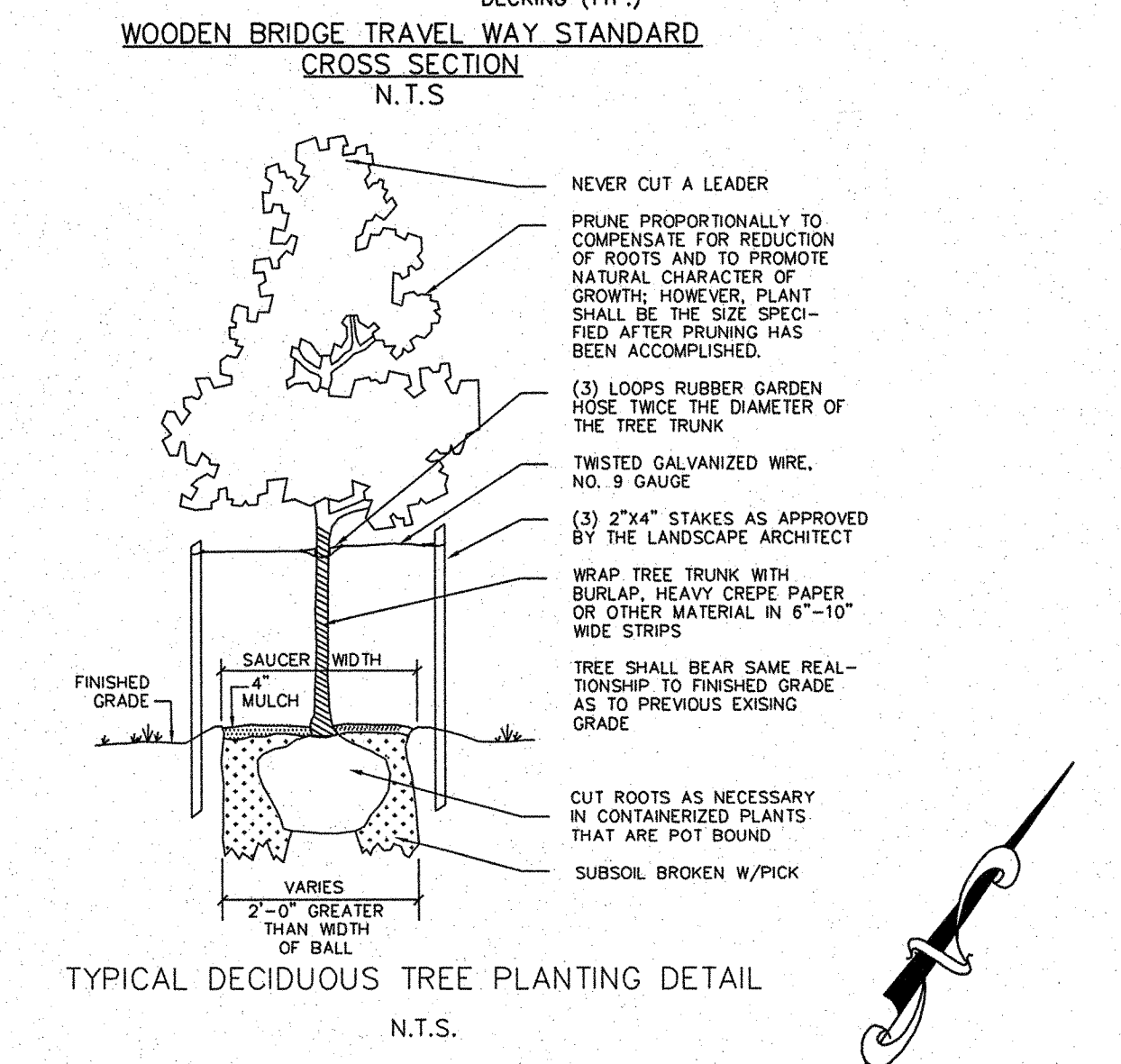
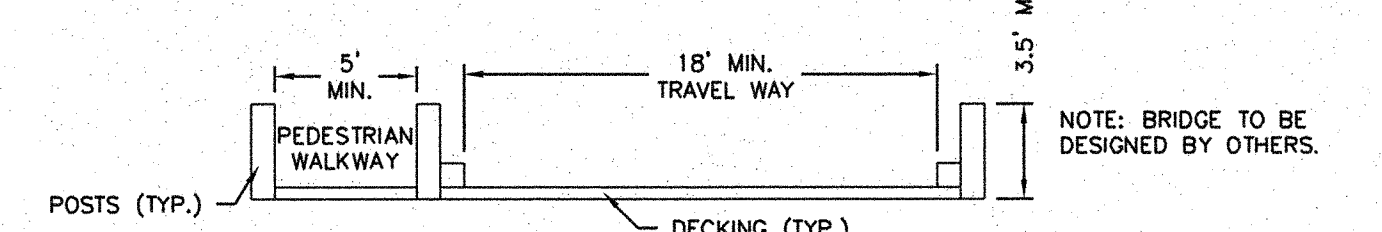
TREES			
SYMBOL	BOTANICAL / COMMON NAME	SIZE / SPACING	QUANTITY
⊙	ILEX C. 'BURFORDII' BURFORD HOLLY (TREE FORM)	B&B 8'-10'	8
⊕	MAGNOLIA G. 'D.D. BLANCHARD' SOUTHERN MAGNOLIA	B&B 7'-8'	4
⊙	MYRICA CERIFERA (TREE FORM) WAX MYRTLE	5'-6'	6
⊕	PRUNUS X YEDOENSIS 'AKEBONO' AKEBONO YOSHINO CHERRY	2.2.5' 25 GAL	8
⊕	QUERCUS VIRGINIANA LIVE OAK	B&B - 4" CAL 10'-12'	0
⊕	QUERCUS VIRGINIANA LIVE OAK	100 GAL - 5" CAL 12'-14'	1
⊕	ULMUS PARVIFLORA 'ELMER II' ALLEE CHINESE ELM	3" CAL	36

- CITY REQUIREMENTS:**
- All plantings shall be curbed or otherwise physically protected from vehicular traffic.
  - The owner is responsible for maintaining all required plant material and planting areas in good health and appearance. Any dead, unhealthy or missing plants must be replaced within 60 days with vegetation which conforms to the initial planting rates and standards.
  - Existing trees in the sight distance triangle should be limbed up to accommodate the code regarding sight distance triangles.
  - Prior to any clearing, grading, or construction activity, tree protection fencing will be installed around protected trees or groves of trees and no construction workers, tools, materials, or vehicles are permitted within the tree protection fencing.

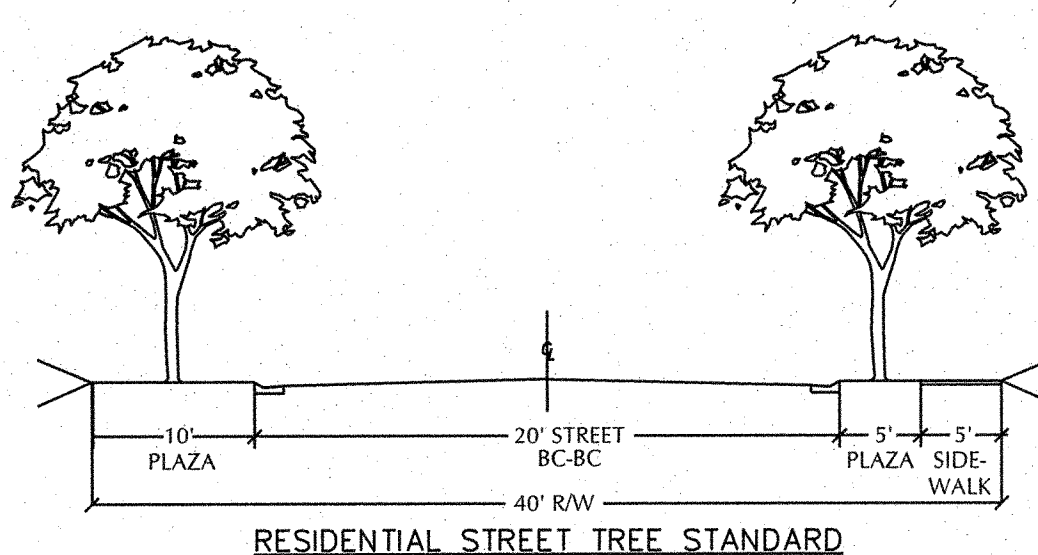
**STREET TREE SPACING**

RECOMMENDED STREET TREE SPACING ACCORDING TO PLAZA WIDTHS

PLAZA WIDTH	TREE SPACING
4'-6"	25'-35'
6'-8"	35'-40'
> 8"	50'



- LANDSCAPE NOTES**
- Key letters refer to plant list.
  - All plants shall meet or exceed the minimum standards set forth in "the american standard for nursery stock" by the american association of nurserymen.
  - All areas disturbed and not specified as mulched planting beds will be grassed. Lawn areas may be established with either sod or seed at the contractor's discretion. However, the contractor shall be responsible for providing a full stand of grass at the time of completion.
  - Contractor shall use whatever method of tree staking he deems fit. However, he will be held liable for any damages caused to trees by improper staking methods (or absence of staking) and is responsible for uprighting and replanting trees which are blown over.
  - Contractor shall warranty all trees and shrubs for a period of one year from the date of final acceptance of the work of the landscape plan.
  - If discrepancies or ovalibilities are found in the plant species and/or min. sizes req'd, contractor shall notify Landscape Architect. Substitutions may be made with authorization as long as the plants follow the intended form and function.
  - Street trees shall be installed along residential streets after all driveways have been installed.
  - The developer shall notify landscape designer prior to installation to ensure proper tree selection & spacing.
  - Each tree shall be a minimum of 2" two inch caliper as measured from the Diameter at Breast Height (DBH)
  - Phasing of a project shall be permitted, however, street trees on the same block shall be planted at the same time to avoid size irregularities.
  - Trees within the same blocks shall be the same species.



**STORMWATER MANAGEMENT PLAN APPROVED**

**CITY OF WILMINGTON ENGINEERING DEPARTMENT**

DATE 6/6/13 PERMIT # 2013007

SIGNED [Signature]

**Approved Construction Plan**

Name: [Signature] Date: 6-6-13

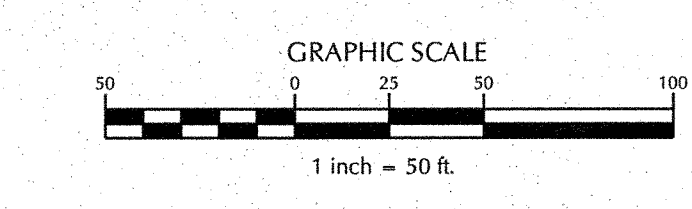
Planning: [Signature]

Public Utilities: n/a

Traffic: [Signature] 6/6/13

File: [Signature] 6/1/12

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



ADDRESS: 1909 ODYSSEY DRIVE

No.	Revision	Date	By
1	NHC & COW COMMENTS	4/04/08	LJT
2	UPDATED OWNER & REVISED PLAN	1/24/13	JSB
3	UPDATED TREES	4/08/13	JSB

Designer	LJT	Scale	1"=50'
Drawn By	TMG/LJT	Date	06/28/07
Checked By	MNH	Job No.	03100242

**BATTERY PARK AT LANDFALL**

CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

**LANDSCAPE PLAN**

PREPARED FOR: DTS HOLDINGS, LLC 9 NORTH RIDGE LANE WRIGHTSVILLE BEACH, NC 28480 910-540-1924

**WITHERS & RAVENEL**

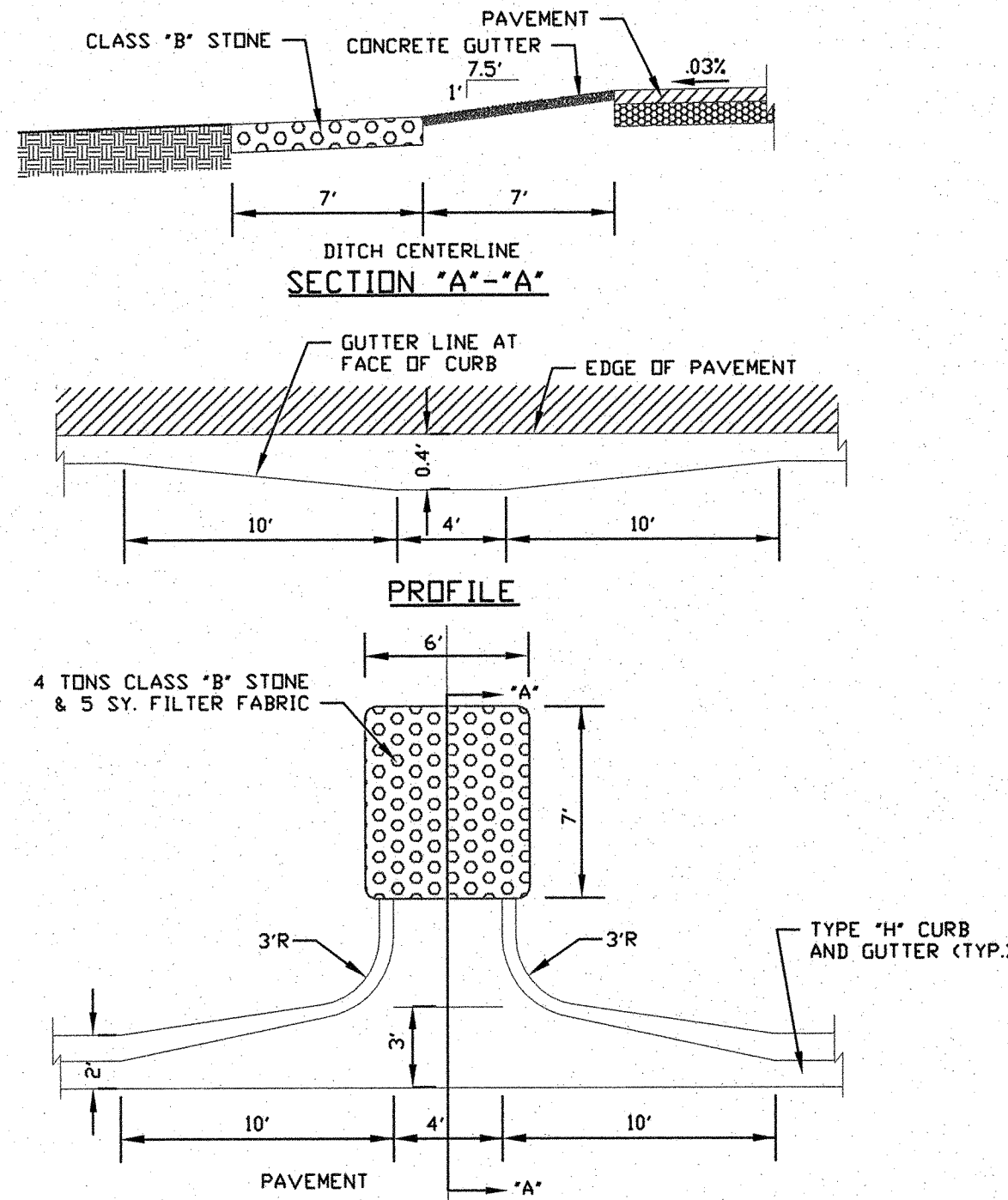
ENGINEERS | PLANNERS | SURVEYORS

7040 Wrightsville Ave, Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.withersravenel.com

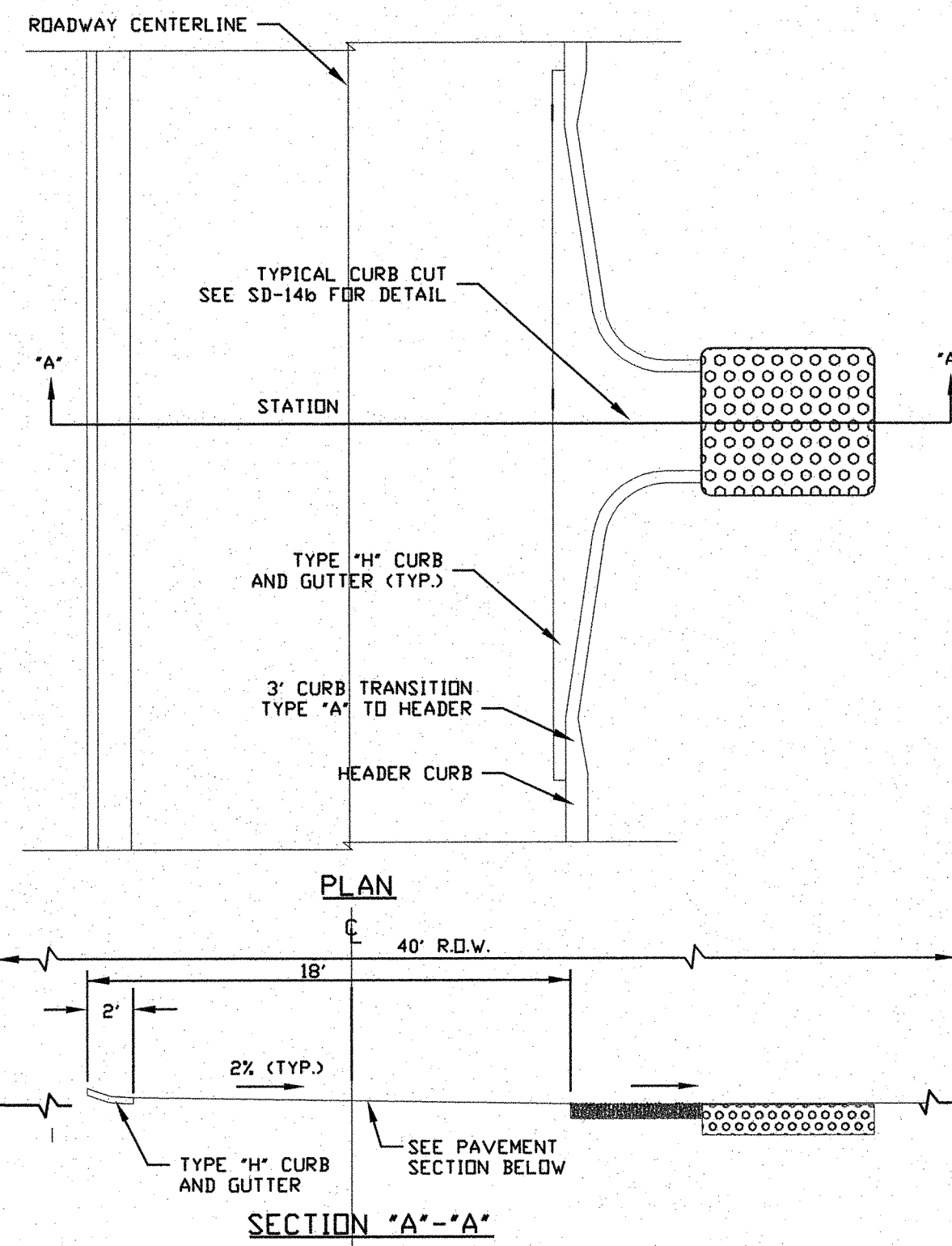
Sheet No. **C-10**

W:\10\10-1024\1024-001\1024-001.dwg - 10 LANDSCAPE PLAN.dwg - June 5, 2013 - 8:01 AM - JDS/PH

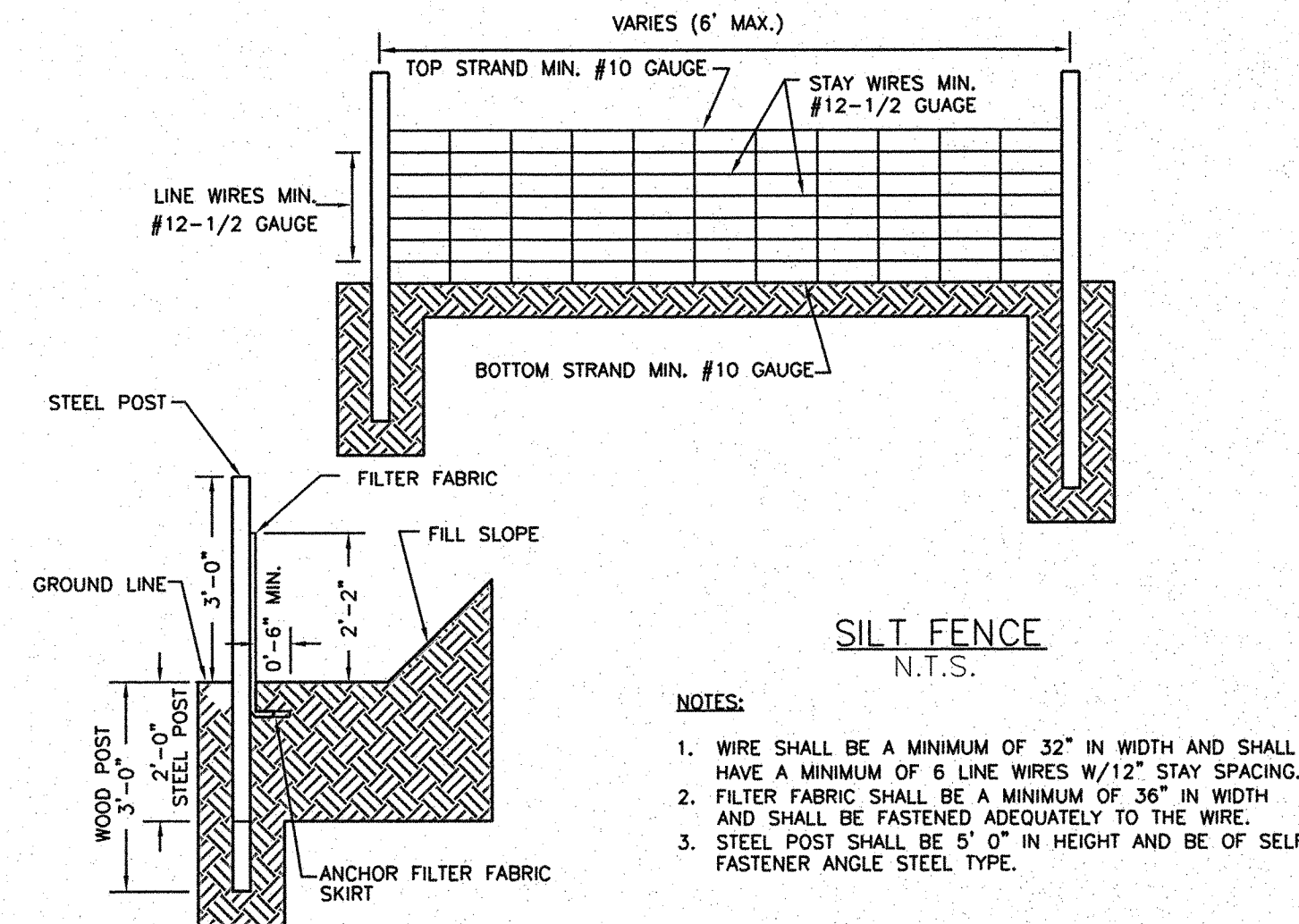




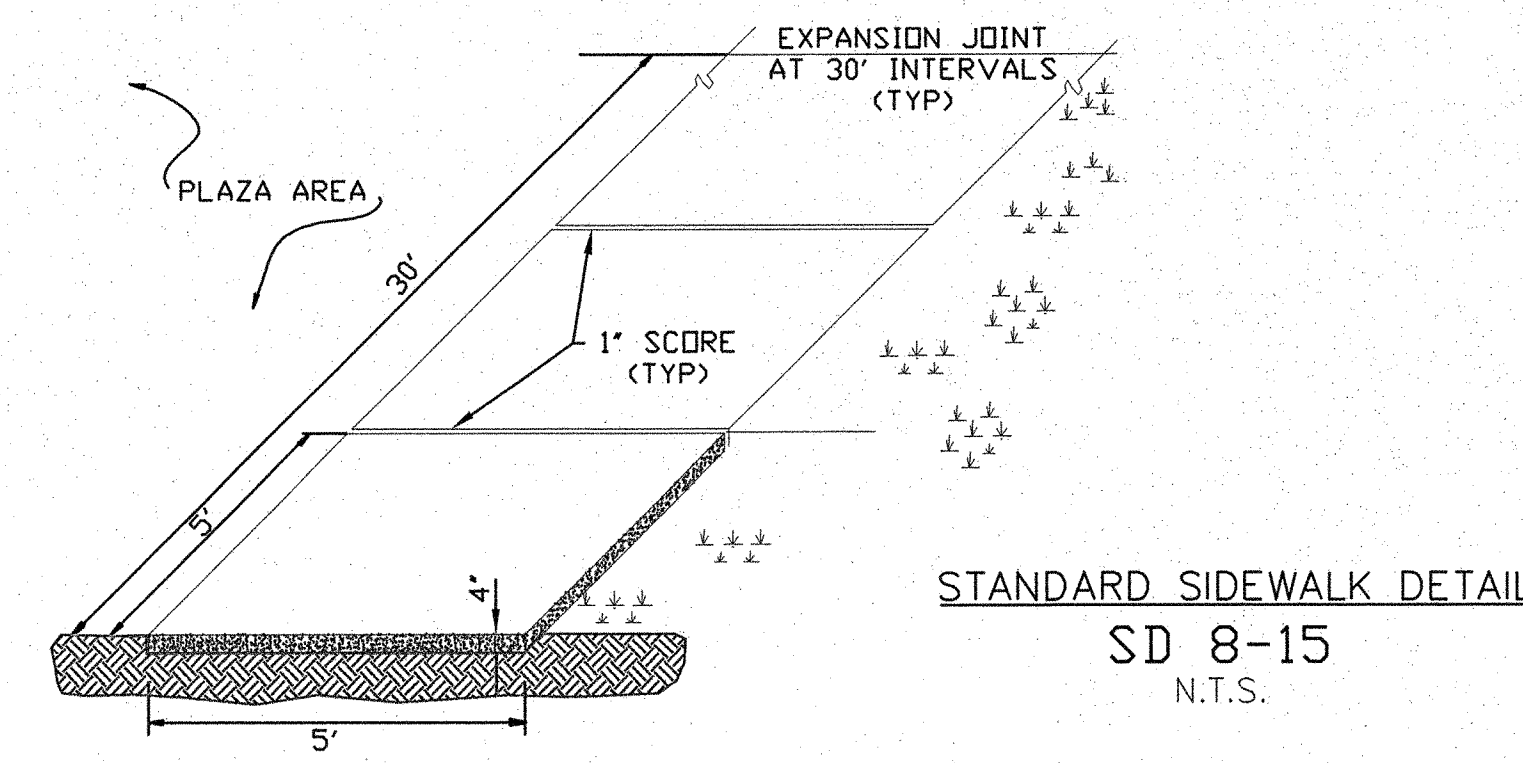
**STREET DETAILS CURB CUT**  
SD 1-14b  
NOT TO SCALE



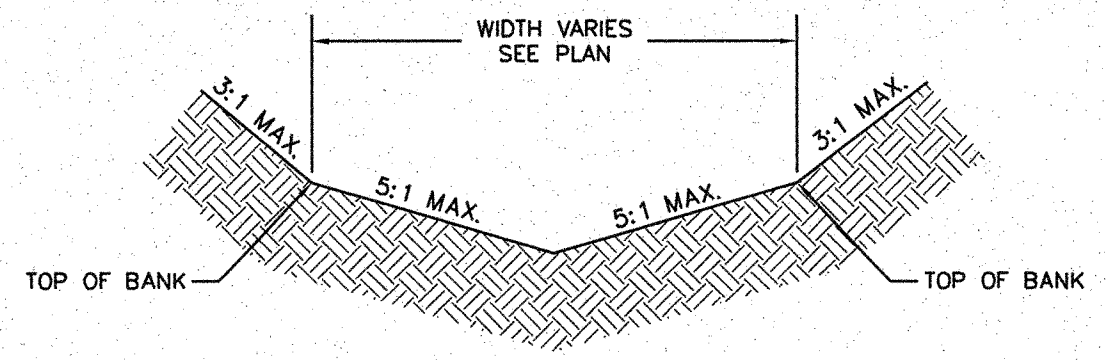
**STREET DETAILS CURB CUT LAYOUT**  
SD 1-14c  
NOT TO SCALE



**SILT FENCE**  
N.T.S.

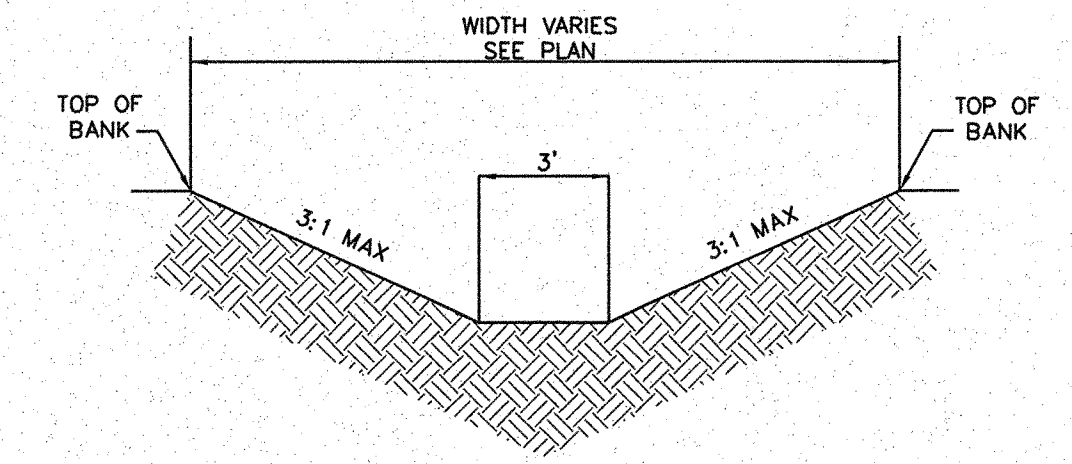


**STANDARD SIDEWALK DETAIL**  
SD 8-15  
N.T.S.



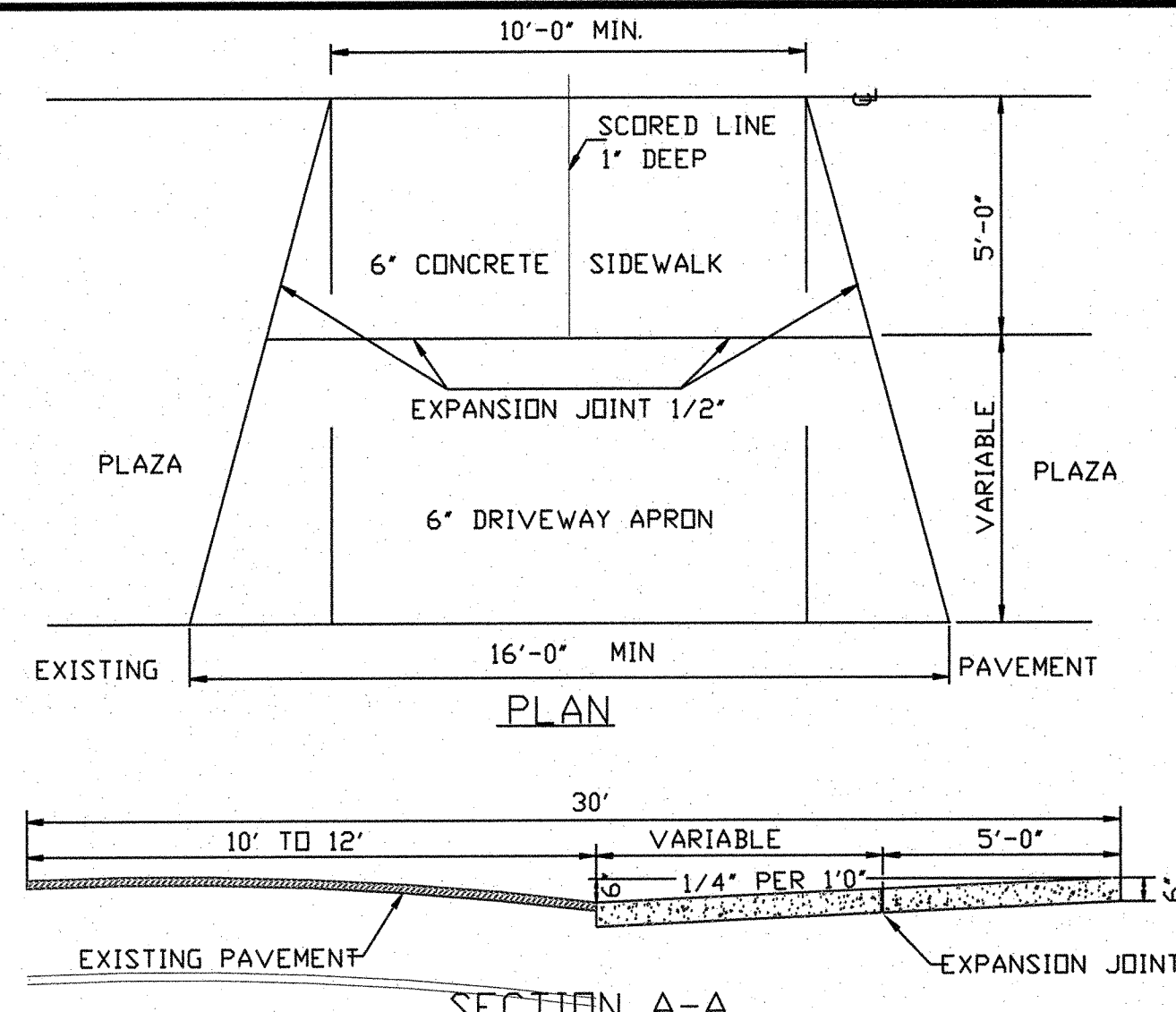
**TRIANGULAR CROSS SECTION DETAIL**  
NOT TO SCALE

NOTE: THE 5:1 MAXIMUM CROSS SLOPE MUST BE MAINTAINED FROM THE NORMAL DEPTH TO THE BOTTOM OF THE DITCH.

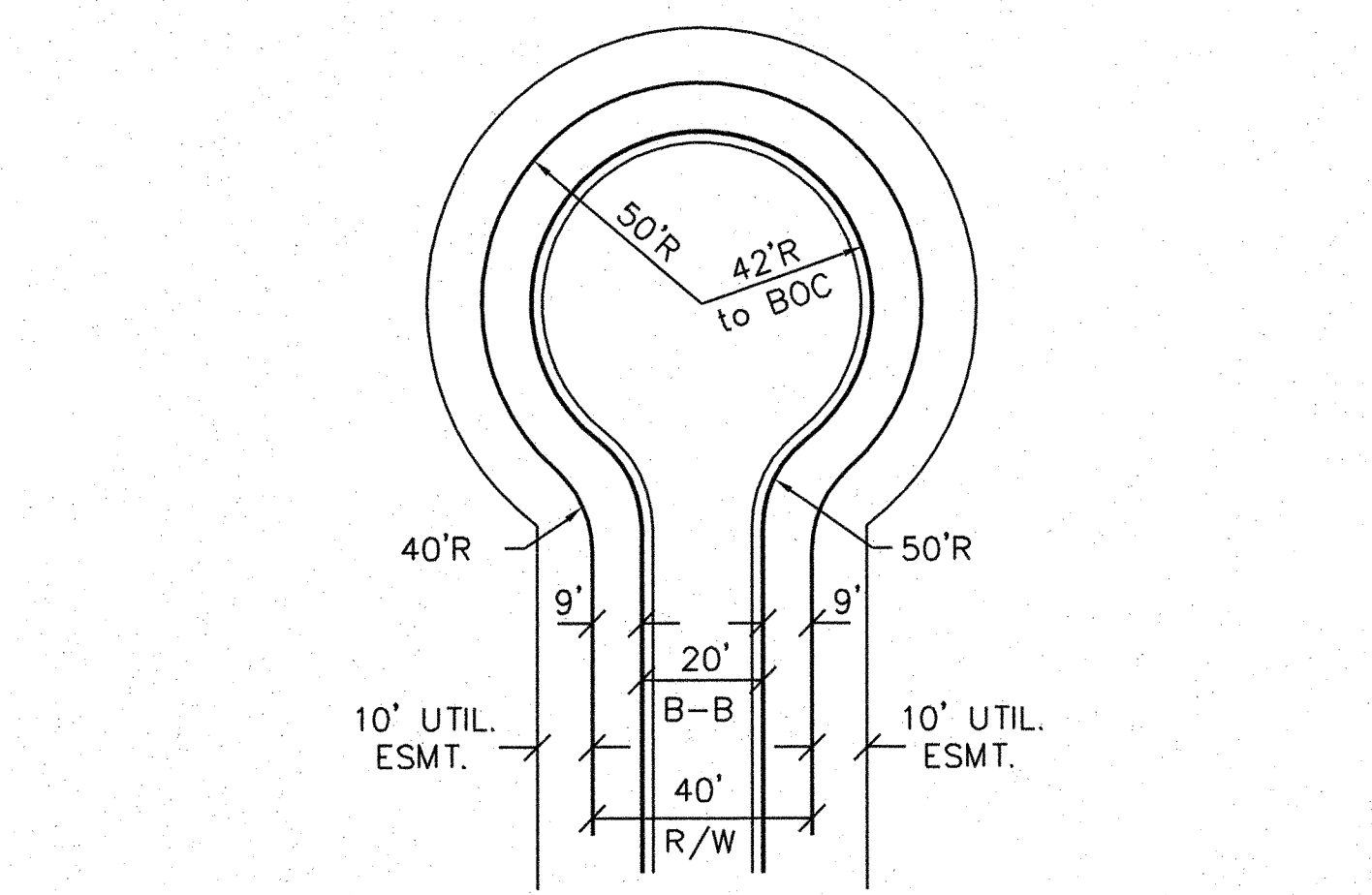


**TRAPEZOIDAL CROSS SECTION DETAIL**  
NOT TO SCALE

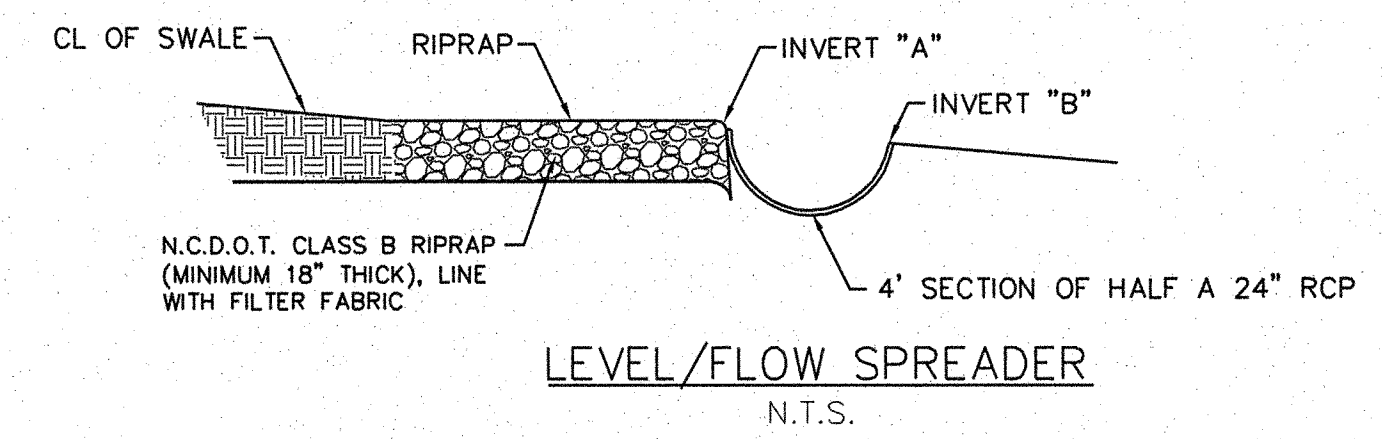
SWALE CALCULATIONS										
SWALE	DRAINAGE AREA	STARTING ELEV.	ENDING ELEV.	LENGTH	AVERAGE SLOPE	CROSS SLOPE	DITCH TYPE	TEMPORARY LINER	SWALE LINER	
1	0.45	9.19	8.87	104	0.31%	5:1	TRIANGULAR	NONE	GRASS	
2	1.18	10.40	9.50	158	0.57%	5:1	TRIANGULAR	EXCELSIOR MATTING	GRASS	
3	0.88	13.35	13.00	100	0.35%	5:1	TRIANGULAR	NONE	GRASS	
4	1.34	17.00	10.00	418	1.7%	3:1	TRAPEZOIDAL	SOD	SOD	
5	0.76	19.70	13.80	297	2.0%	3:1	TRAPEZOIDAL	EXCELSIOR MATTING	BERMUDA OR EQUIVALENT	
6	1.30	19.70	14.00	365	1.8%	3:1	TRAPEZOIDAL	EXCELSIOR MATTING	BERMUDA OR EQUIVALENT	



**RESIDENTIAL DRIVEWAY STREETS WITH NO CURB**  
SD 8-05  
NOT TO SCALE

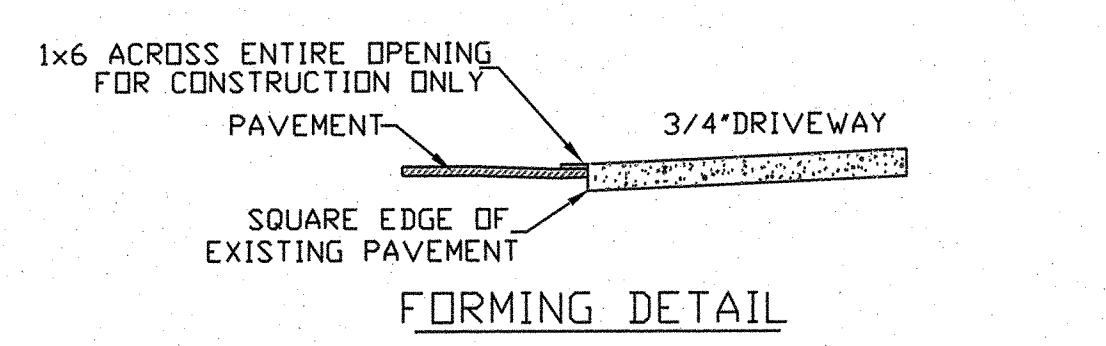


**TEMPORARY ROCK CHECK DAM**  
NOT TO SCALE

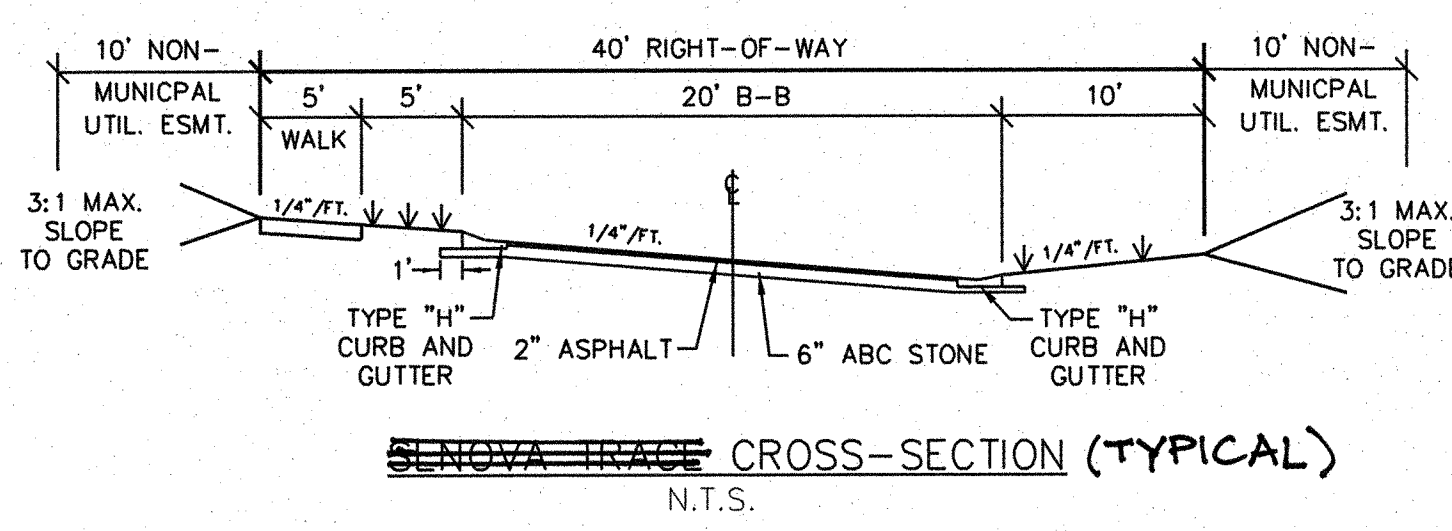


NOTES:  
1. ENSURE THAT THE SPREADER LIP IS LEVEL FOR UNIFORM SPREADING OF STORM RUNOFF.  
2. CONSTRUCT THE LEVEL SPREADER ON UNDISTURBED SOIL (NOT ON FILL).

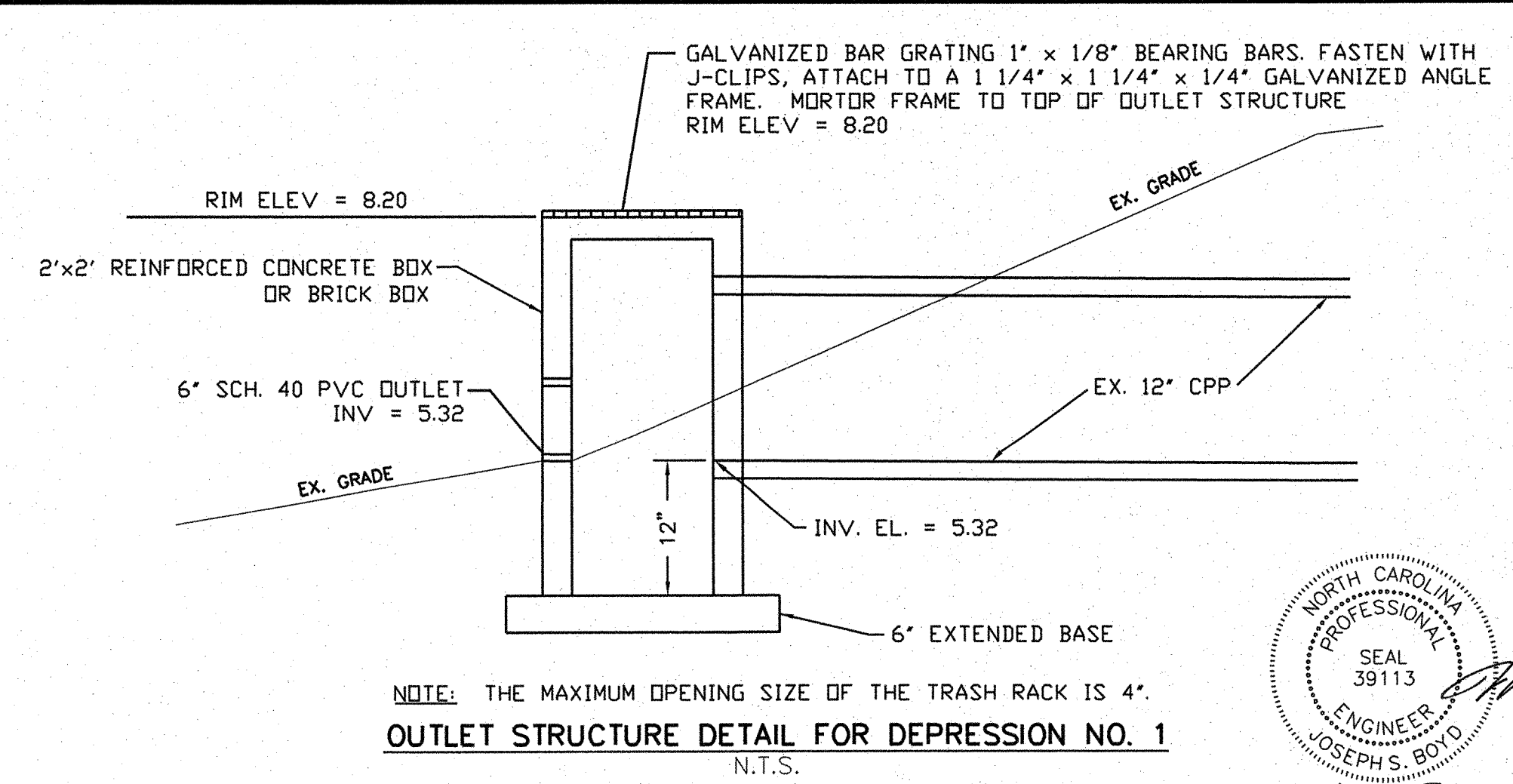
SWALE NO.	RIP-RAP SCHEDULE			LEVEL/FLOW SPREADER	
	LENGTH (FT.)	UPSTREAM WIDTH (FT.)	DOWNSTREAM WIDTH (FT.)	INVERT "A"	INVERT "B"
1	5.0	4.0	4.0	8.78	8.88
2	5.0	4.0	4.0	9.62	9.52
3	5.0	4.0	4.0	13.11	13.01



**CONSTRUCTION JOINT**  
N.T.S.



**TYPE "H" CURB AND GUTTER**  
SD 7-04  
N.T.S.

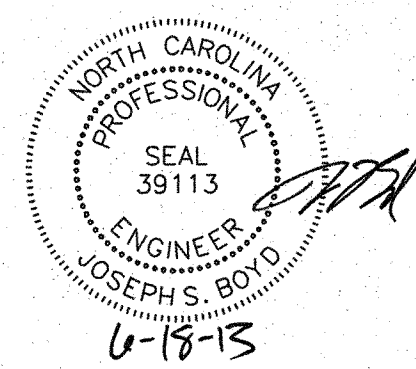


**OUTLET STRUCTURE DETAIL FOR DEPRESSION NO. 1**  
N.T.S.

**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/13 PERMIT # 2013017  
SIGNED [Signature]

**Approved Construction Plan**  
Name: [Name] Date: 6-6-13  
Planning: [Signature] 6-6-13  
Public Utilities: N/A  
Traffic: [Signature] 6/6/13  
Fire: [Signature] 6/7/13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



W:\10-10-04\100242-Battery Park at Landfall\CAD\Updated Construction Plans\Sheet\11-C-18-DETAILS.dwg - June 5, 2013 - 10:05 AM - JSDPH

No.	Revision	Date	By	Designer	LJT	Scale	N/A
1	NCDWO COMMENTS	8/31/07	LJT				
2	NHC & COW COMMENTS	4/04/08	LJT				

**BATTERY PARK AT LANDFALL**  
CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

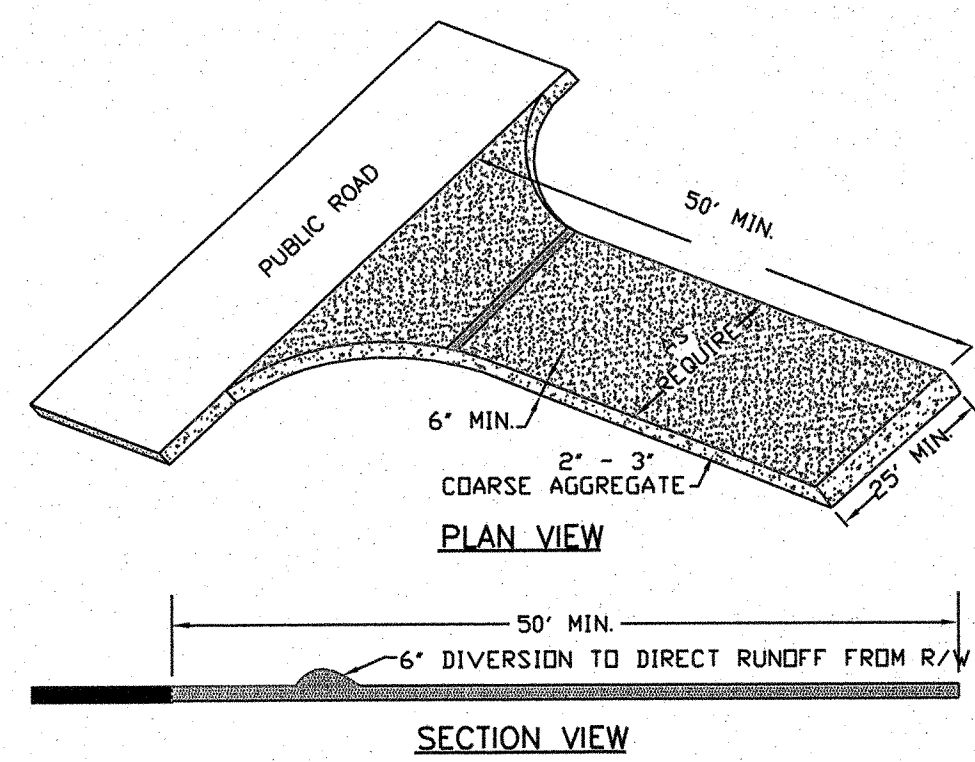
**TYPICAL, DRAINAGE, AND EROSION CONTROL DETAILS**

PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
910-540-1924

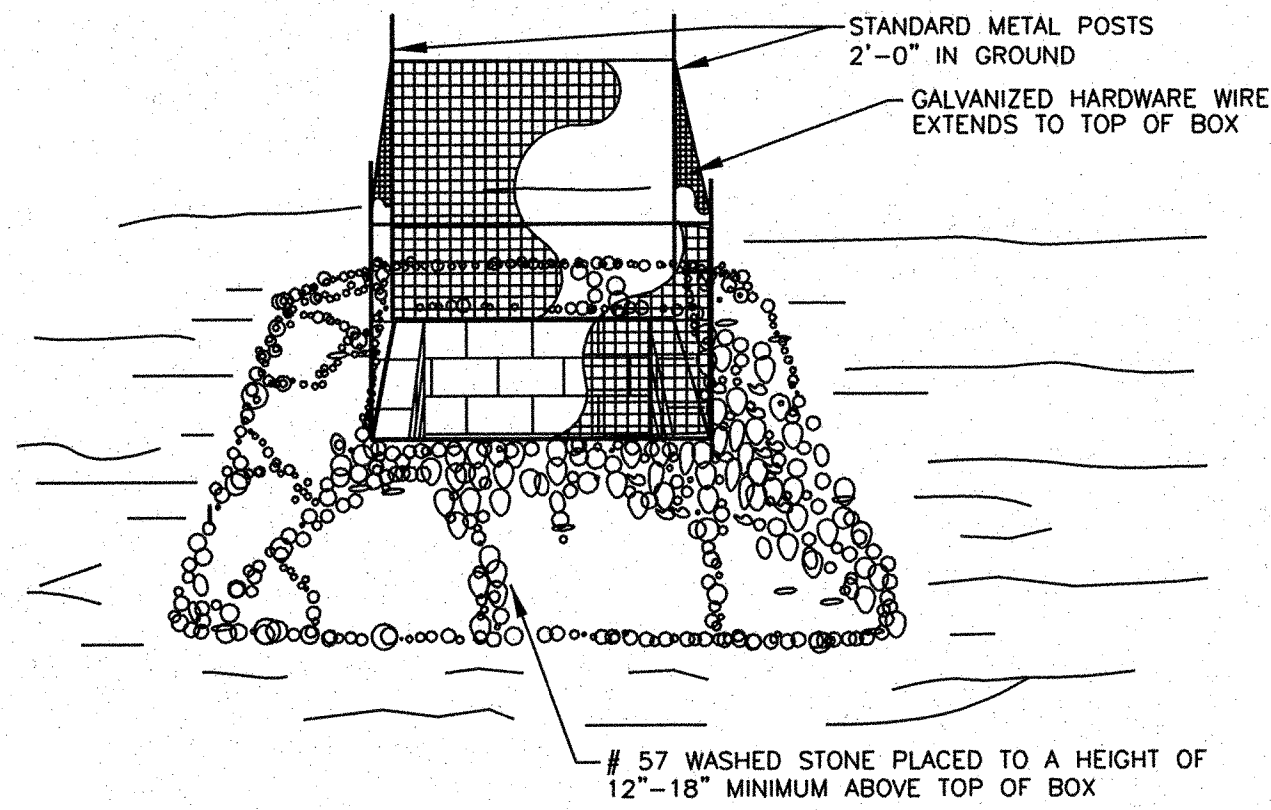
**WITHERS & RAVENEL**  
ENGINEERS | PLANNERS | SURVEYORS  
7040 Wrightsville Ave., Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.wITHERSRAVENEL.com

Sheet No. **C-11**

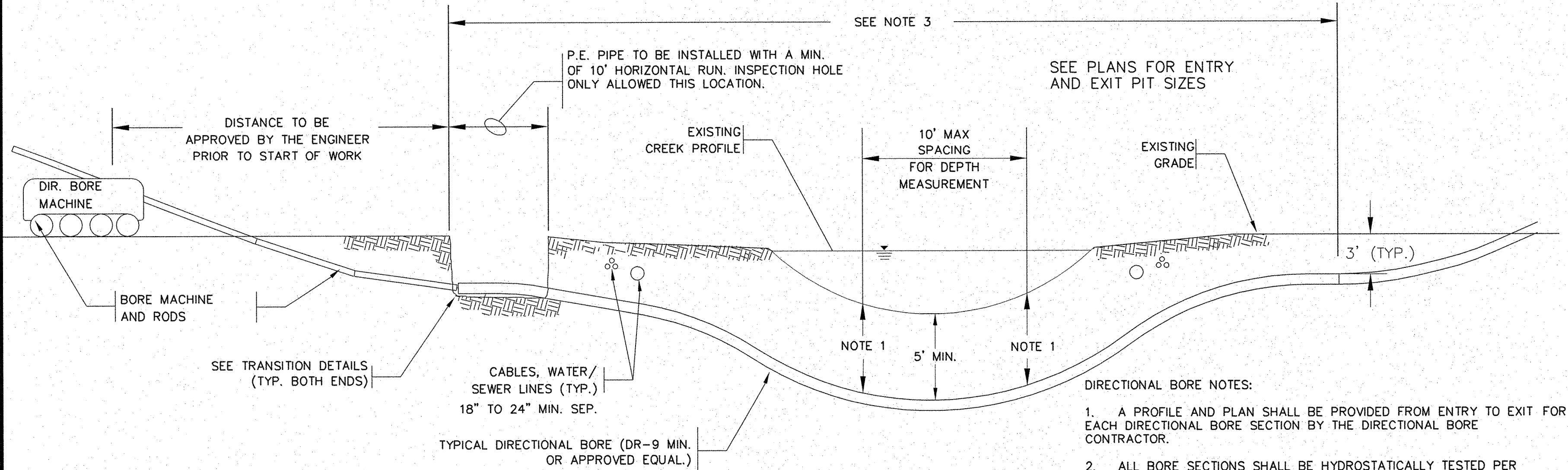




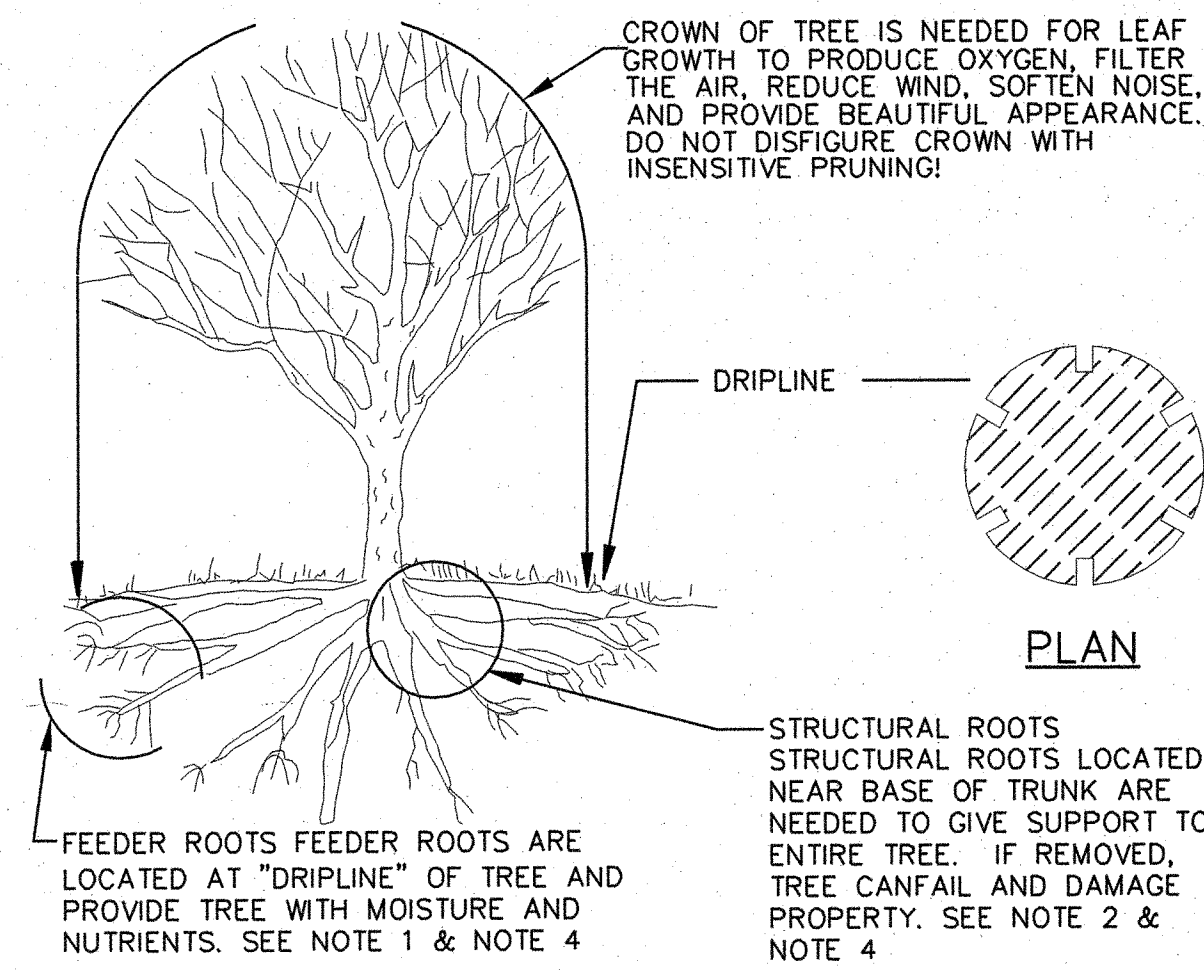
TEMPORARY CONSTRUCTION ENTRANCE  
N.T.S.



STANDARD CATCH BASIN/YARD INLET PROTECTION  
N.T.S.



TYPICAL DIRECTIONAL BORE FOR POLYETHYLENE (PE) PIPE  
N.T.S.

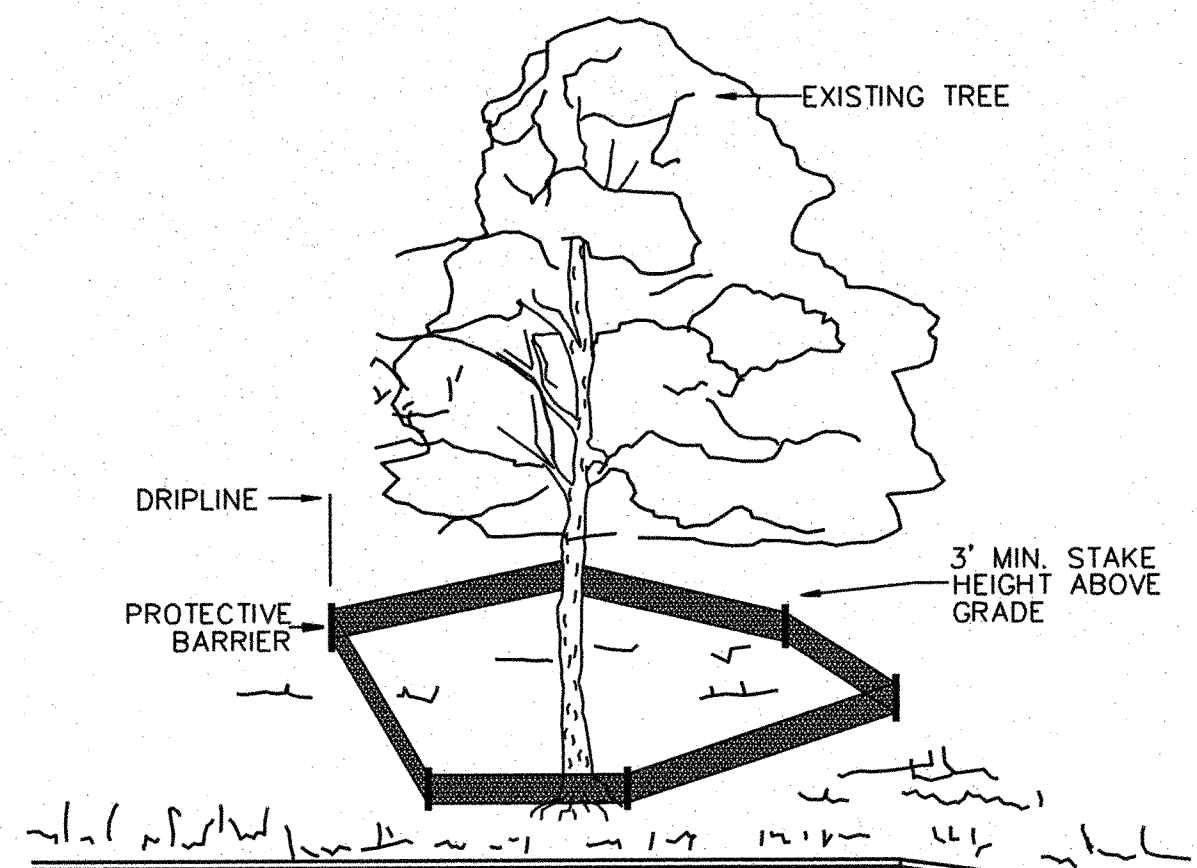


TREE PROTECTION DURING CONSTRUCTION

- DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO HEAVY MATERIALS SHALL BE STORED BENEATH TREES. RESULTS OF COMPACTATION CAUSE WATER AND AIR NOT TO REACH THE ROOTS AND THE TREE WILL DIE. THESE "FEEDING ROOTS" OCCUR WELL AWAY FROM THE BASE OF THE TREE TO THE EDGE OF THE OVERHEAD BRANCH CANOPY. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. A PROTECTIVE BARRIER SHOULD PREVENT DAMAGE FROM OCCURRING DURING CONSTRUCTION.
- NO CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK. THESE ARE ESSENTIAL IN SUPPORTING THE TREE AND HOLDING IT UPRIGHT IN HIGH WINDS. REMOVAL OF THESE ROOTS ALONG ONE SIDE IS OFTEN DONE BECAUSE OF A WALK, PAVING OR BUILDING WHICH IS BEING CONSTRUCTED.
- AVOID CUT AND FILL WITHIN DIAMETER OF TREE CROWN DURING EXCAVATION.

METHOD OF TREE PROTECTION DURING CONSTRUCTION

SD 15-09  
N.T.S.

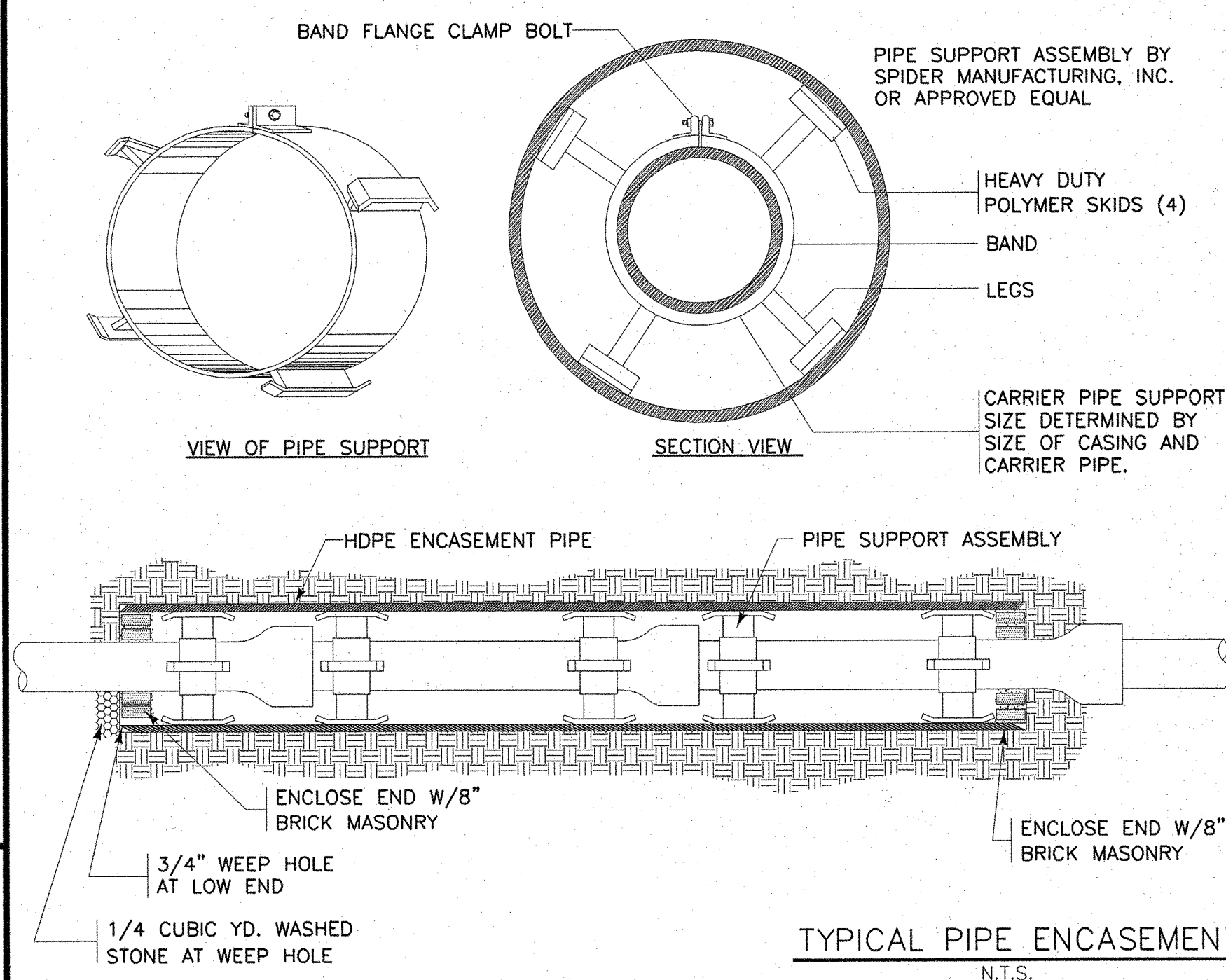


NOTE:

TREES TO BE SAVED WILL BE CLEARLY MARKED PRIOR TO CONSTRUCTION AND A PROTECTIVE BARRIER IS TO BE INSTALLED AT THE DRIPLINE.  
DRIPLINE - THE AREA OF SOIL DIRECTLY BENEATH THE TREE EXTENDING OUT TO THE TIPS OF THE OUTERMOST BRANCHES.

METHOD OF TREE PROTECTION DURING CONSTRUCTION

SD 15-08  
N.T.S.



TYPICAL PIPE ENCASEMENT  
N.T.S.

PIPE CASING SCHEDULE

CARRIER PIPE	CASING PIPE
6"	12"
8"	16"
10"	18"
12"	20"
14"	22"
16"	24"
18"	30"

NOTES:

- CASING PIPE JOINTS SHALL BE CONTINUOUS WELDED WITHOUT DEFLECTION.
- SEE PIPELINE PROFILE FOR LIMITS OF CASING PIPE. SEE PLANS FOR CASING PIPE DIMENSIONS AND SPECIFICATIONS FOR OTHER DETAILS.
- COMPLETED CASING PIPE INTERIOR SHALL BE SWABBED WITH LUBRICANT PRIOR TO CARRIER INSTALLATION.
- CARRIER PIPE SHALL BE PULLED THROUGH CASING PIPE.
- CARRIER PIPE SHALL BE SUCCESSFULLY PRESSURE TESTED PRIOR TO FILLING ANNULAR SPACE BETWEEN IT AND THE CASING.

Approved Construction Plan

Name: *Queen* Date: *6-6-13*

Planning: *Queen*

Public Utilities: *n/a*

Traffic: *W. S. S. 6/6/13*

Fire: *W. S. S. 6/6/13*

STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE *6/6/13* PERMIT # *2013017*  
SIGNED: *W. S. S.*

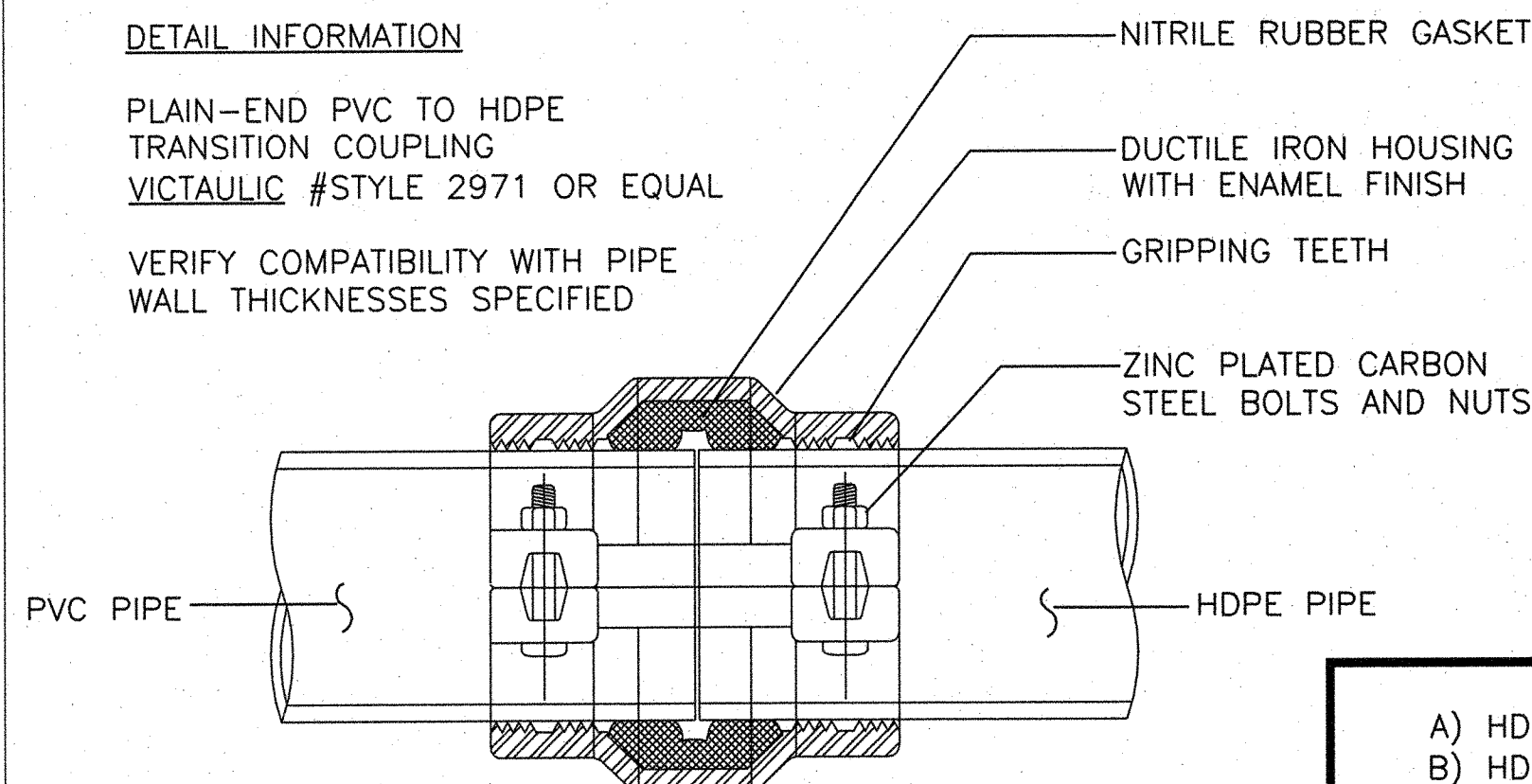
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

NORTH CAROLINA PROFESSIONAL SEAL 39113 ENGINEER JOSEPH S. BOYD 6-15-13

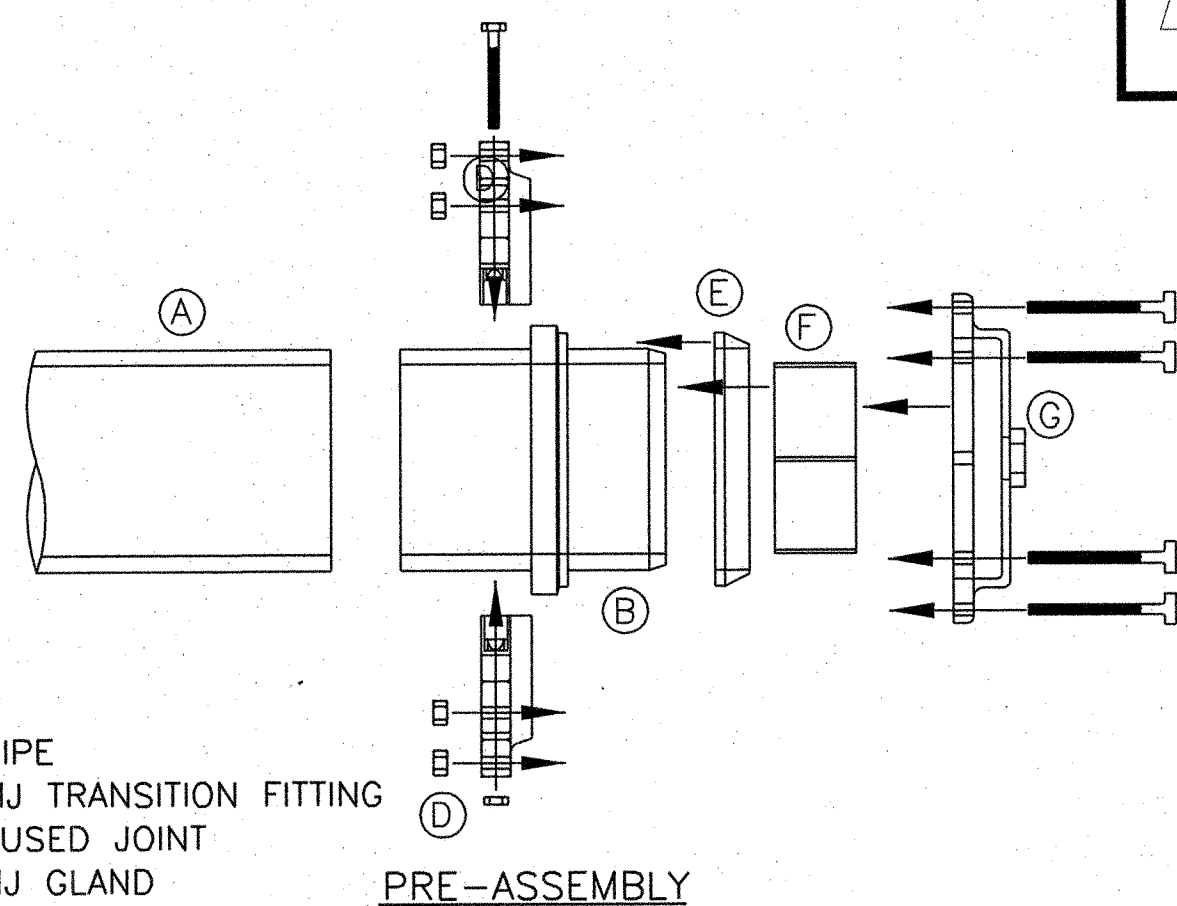
DETAIL INFORMATION

PLAIN-END PVC TO HDPE TRANSITION COUPLING  
VICTAULIC #STYLE 2971 OR EQUAL

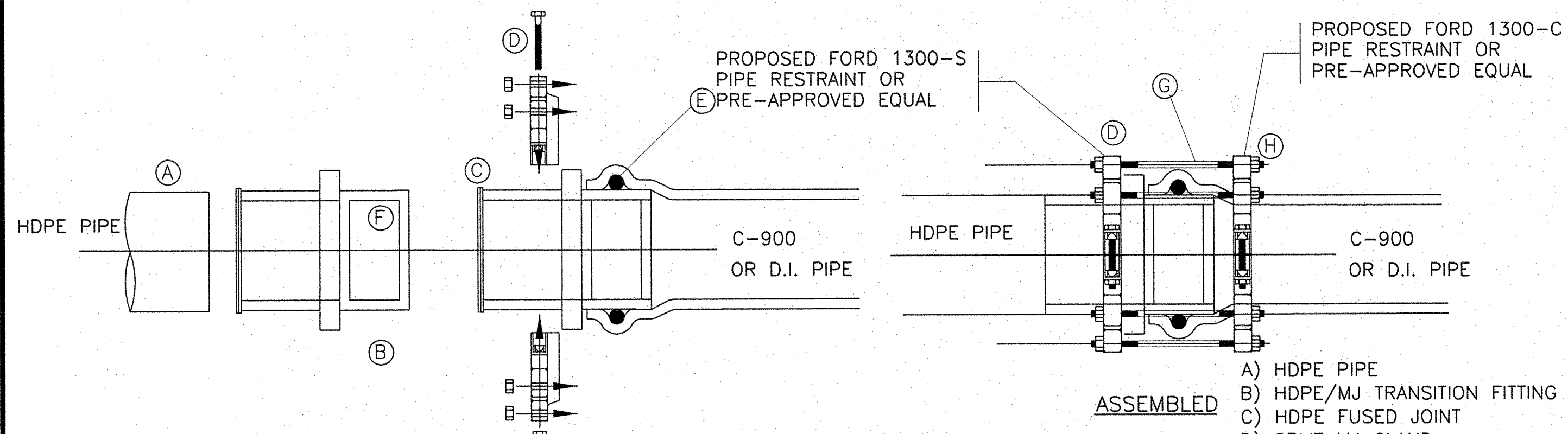
VERIFY COMPATIBILITY WITH PIPE WALL THICKNESSES SPECIFIED



HDPE/PVC TRANSITION COUPLING  
N.T.S.



HDPE/MJ CAPPING ASSEMBLY  
N.T.S.



HDPE/D.I. TRANSITION ASSEMBLY  
N.T.S.

No.	Revision	Date	By
1	CFPUA DETAILS UPDATE	1/16/13	JSB

Designer	LJT	Scale	N/A
Drawn By	TMG/LJT	Date	06/28/07
Checked By	MNH	Job No.	03100242

BATTERY PARK AT LANDFALL  
CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

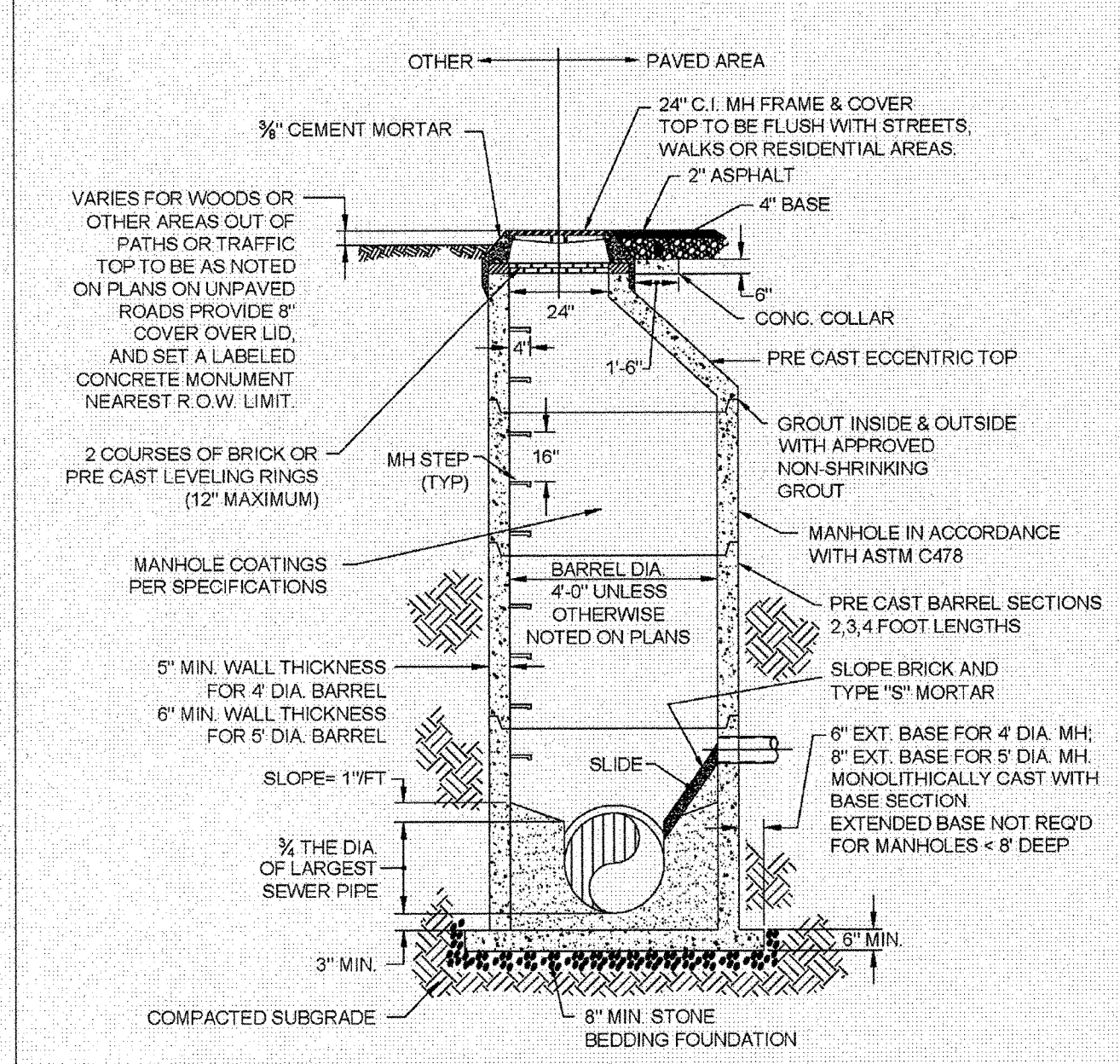
EROSION CONTROL (CONT.)  
& BORE DETAILS

PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
910-540-1924

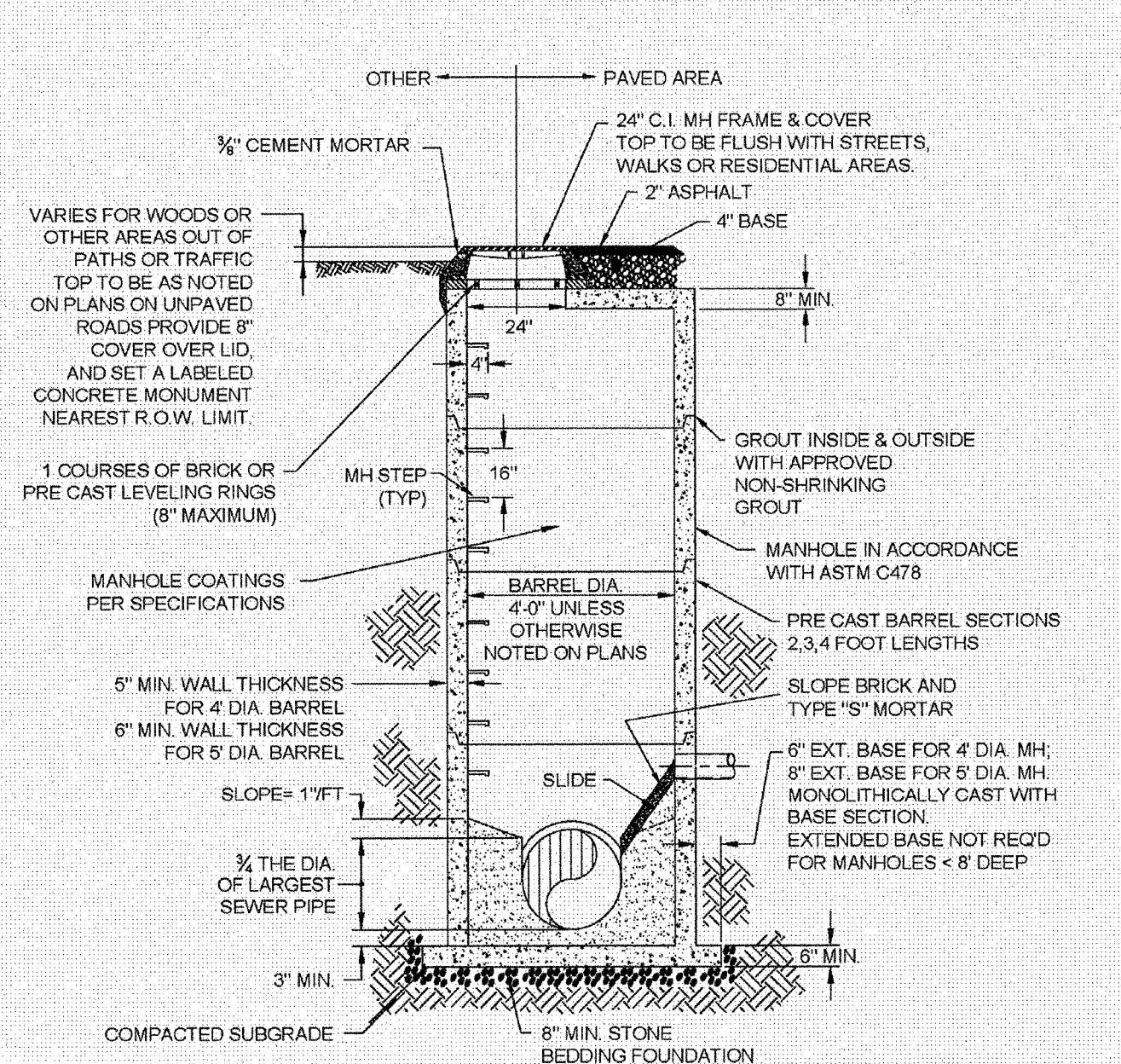
WITHERS & RAVENEL  
ENGINEERS | PLANNERS | SURVEYORS  
7040 Wrightsville Ave., Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.withersravenel.com

Sheet No.  
C-12

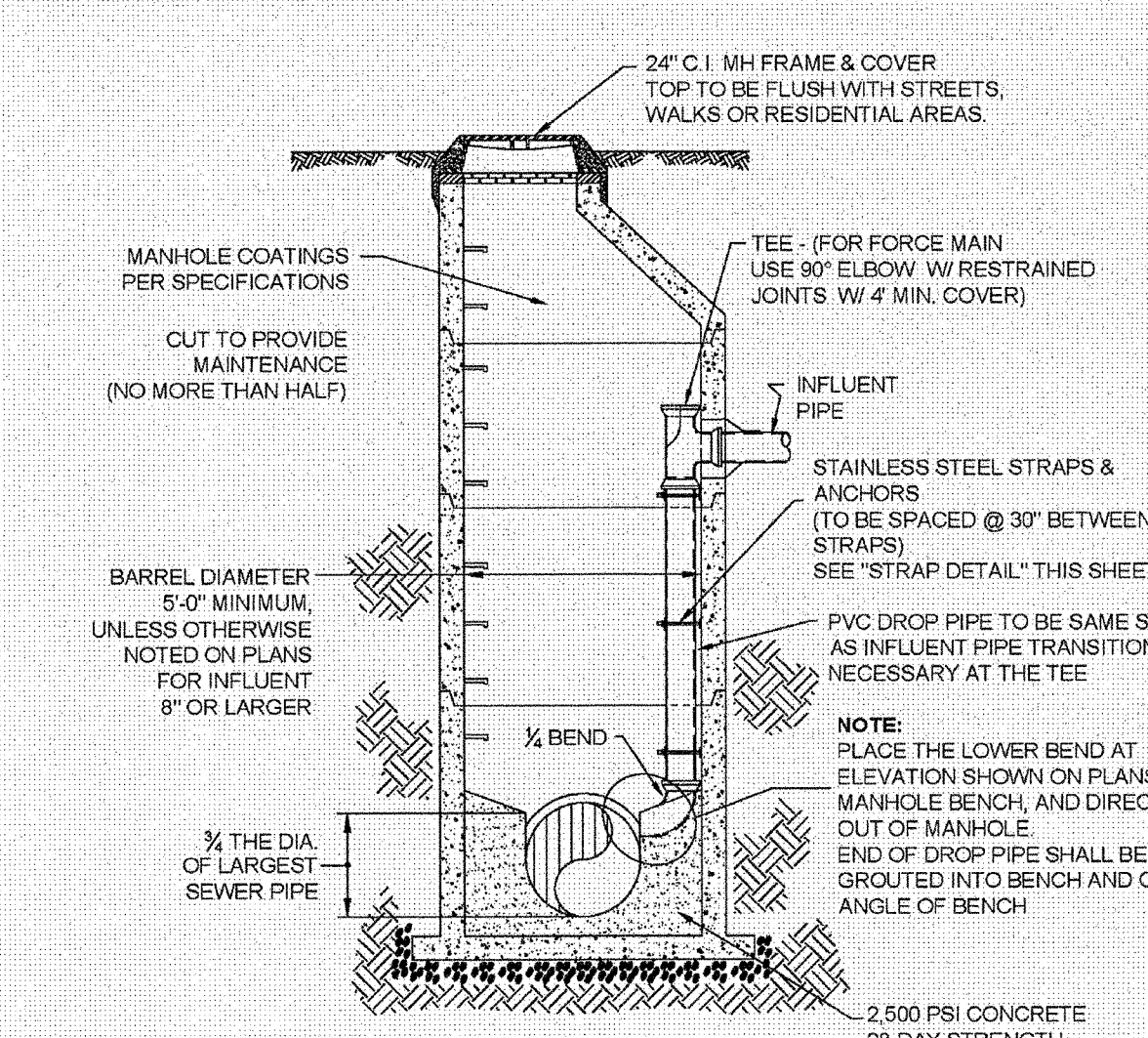




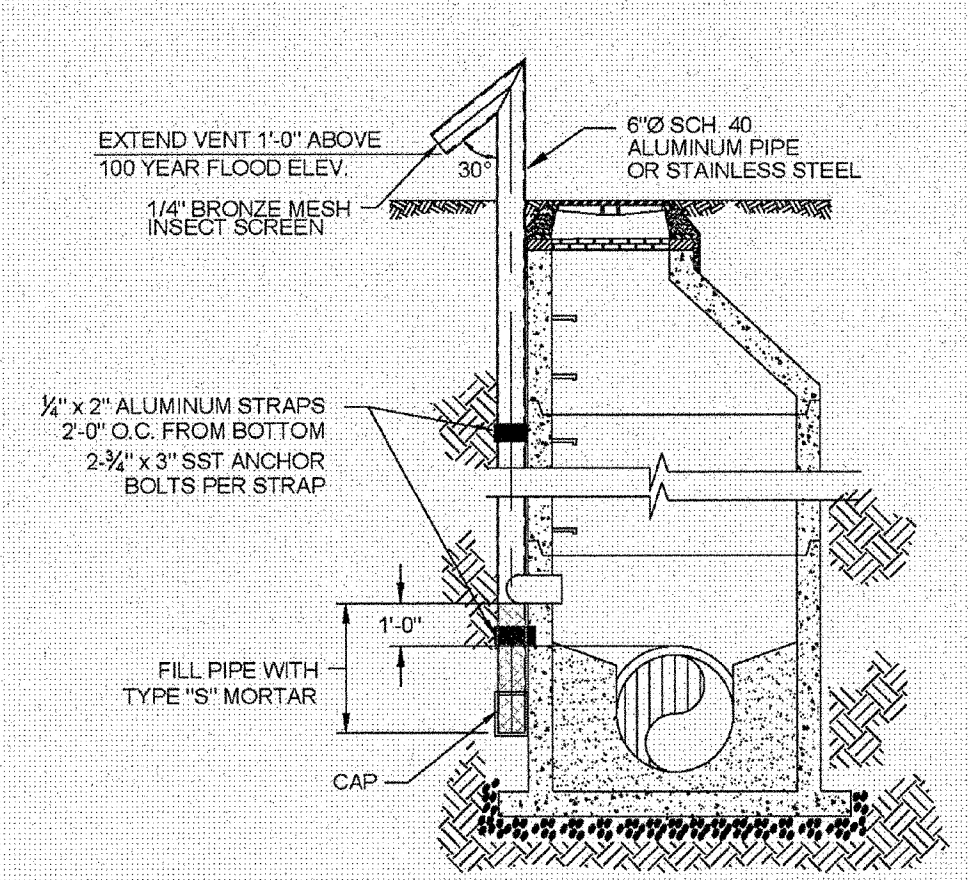
**PRECAST CONCRETE OFFSET MANHOLE TYPICAL**  
(LESS THAN 30° DROP)  
NOT TO SCALE



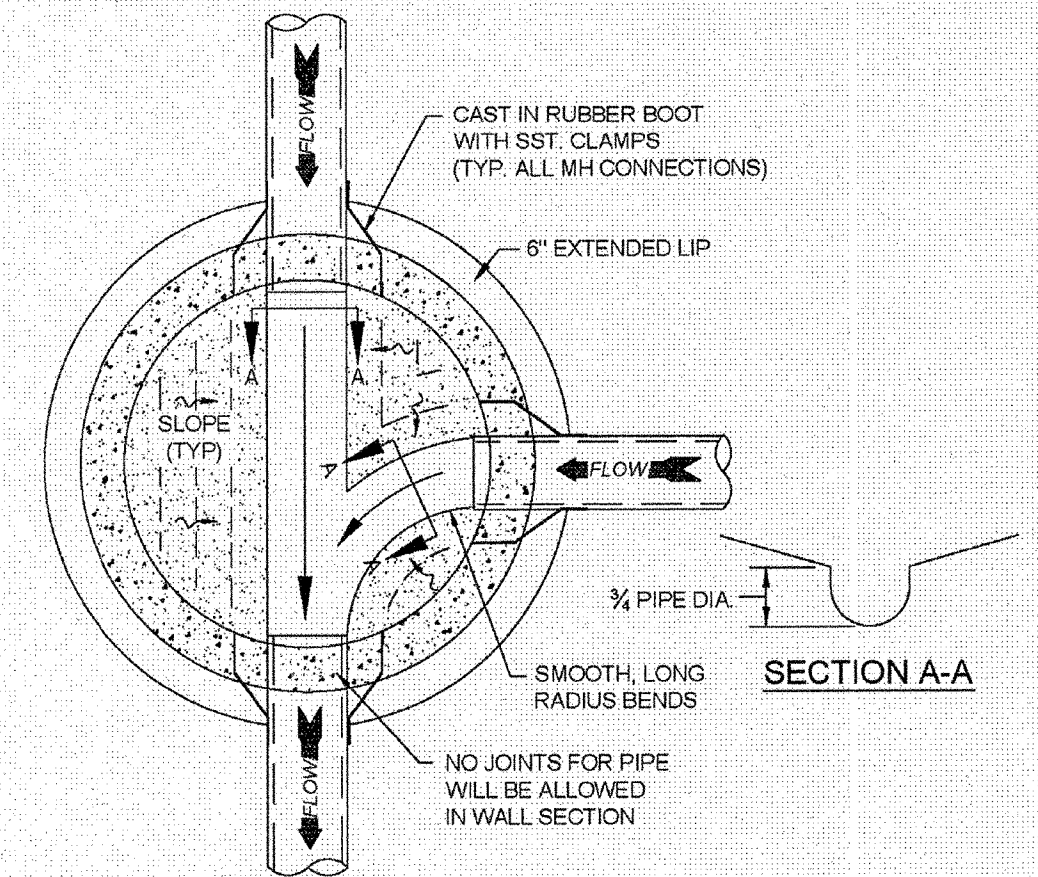
**PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL**  
(LESS THAN 30° DROP)  
NOT TO SCALE



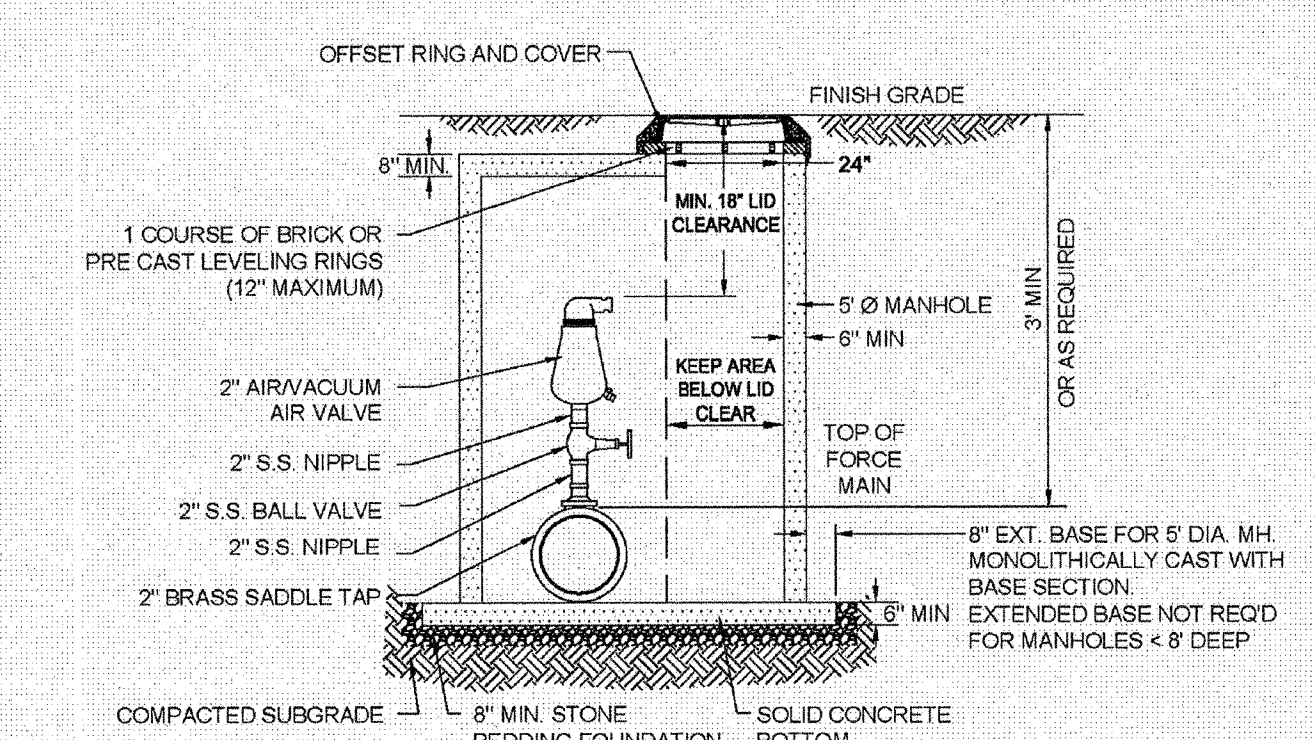
**DROP MANHOLE**  
(MORE THAN 30° DROP)  
NOT TO SCALE



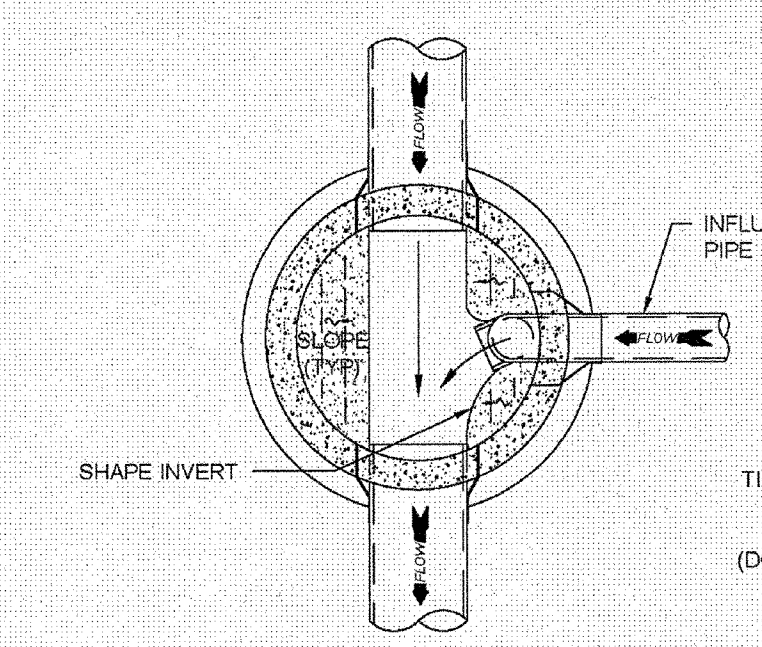
**STANDARD VENT MANHOLE**  
NOT TO SCALE



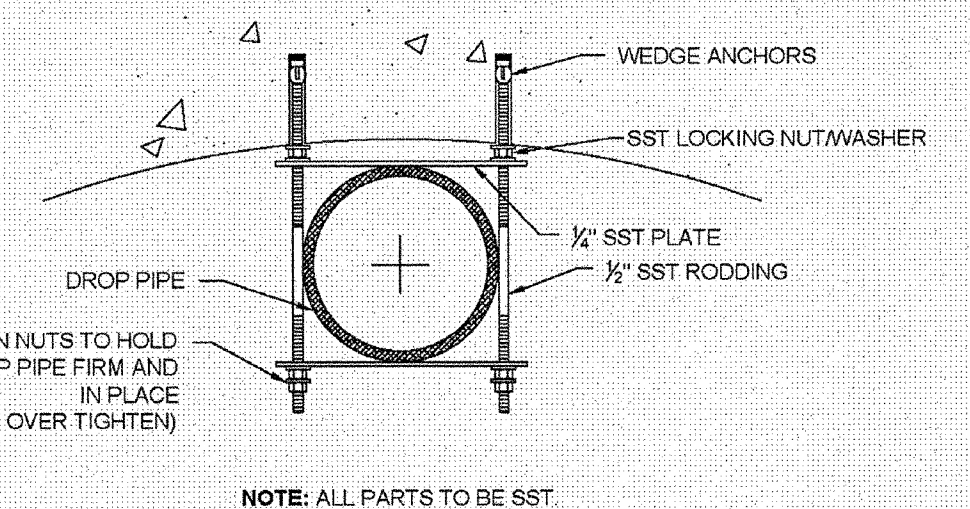
**MANHOLE FLOOR PLAN**  
NOT TO SCALE



**AIR / VACUUM AND AIR RELEASE COMBINATION VALVE**  
NOT TO SCALE



**DROP MANHOLE FLOOR PLAN**  
NOT TO SCALE



**STRAP DETAIL**  
NOT TO SCALE

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
  - SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
  - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP. WITH PROTECTO 401 CERAMIC EPOXY LINING.
  - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
  - NO FLEXIBLE COUPLINGS SHALL BE USED.
  - ALL STAINLESS STEEL FASTENERS SHALL BE 316.

**STANDARD SEWER NOTES**  
(REQUIRED ON ALL SEWER PLAN AND PROFILE SHEETS)

**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/16/13 PERMIT # 2013007  
SIGNED [Signature]

**Approved Construction Plan**

Name	Date
Planning [Signature]	6/16/13
Public Utilities [Signature]	6/16/13
Traffic [Signature]	6/16/13
Fire [Signature]	6/16/13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

ADDRESS: 1909 ODYSSEY DRIVE

**GENERAL NOTES:**

- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
- THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
- THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
- THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND INSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**CFPUA SANITARY SEWER**

**STANDARD DETAILS**

DATE: 1/9/12  
SCALE: N/A  
DRAWN BY: CFP/JA  
CHECKED BY: CFP/JA  
PROJECT NO.:  
SHEET NO: SSD-1

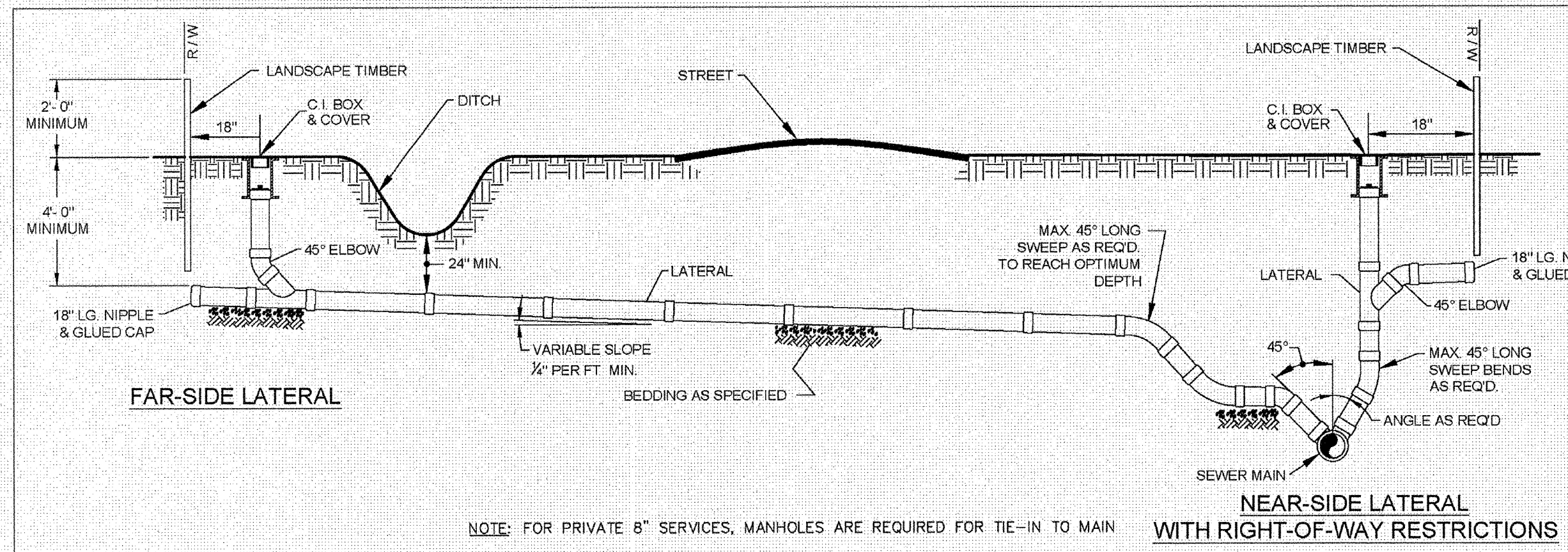
**CAPE FEAR PUBLIC UTILITY AUTHORITY**  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6500

Stewardship. Sustainability. Service.

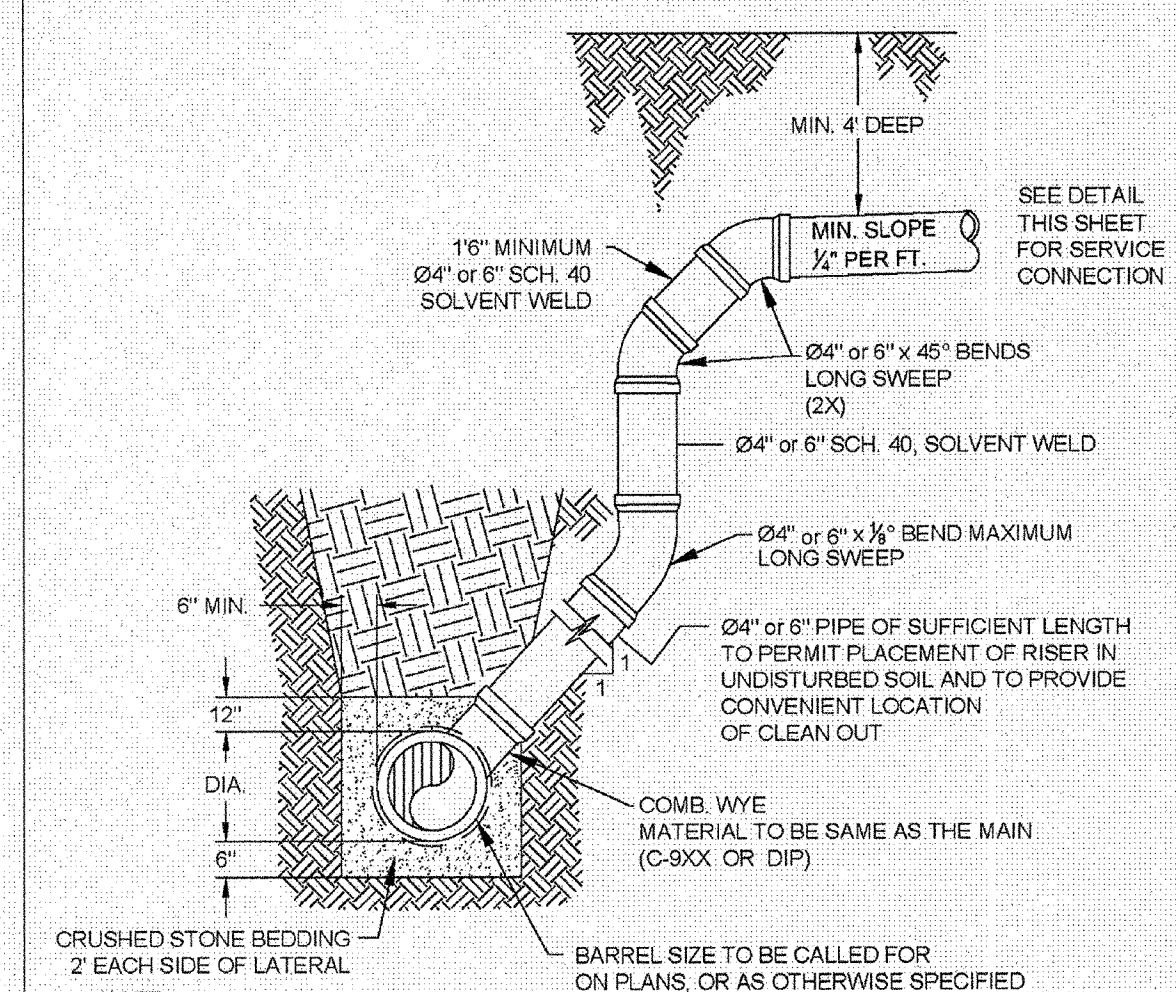
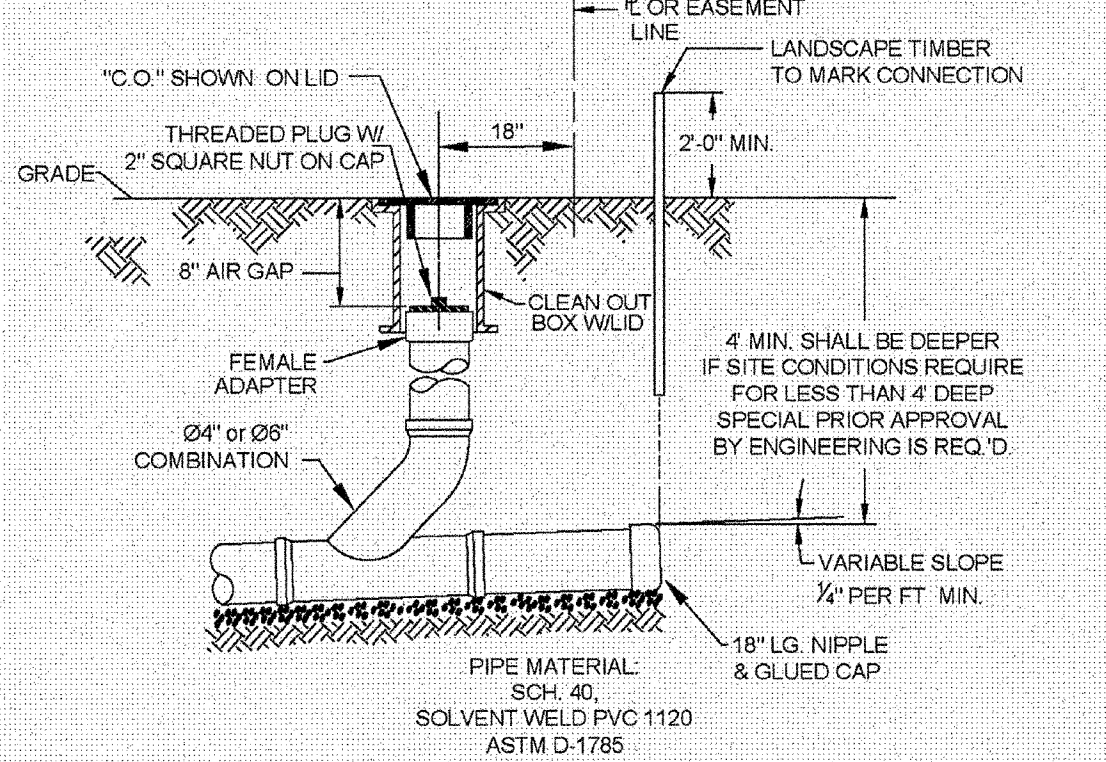
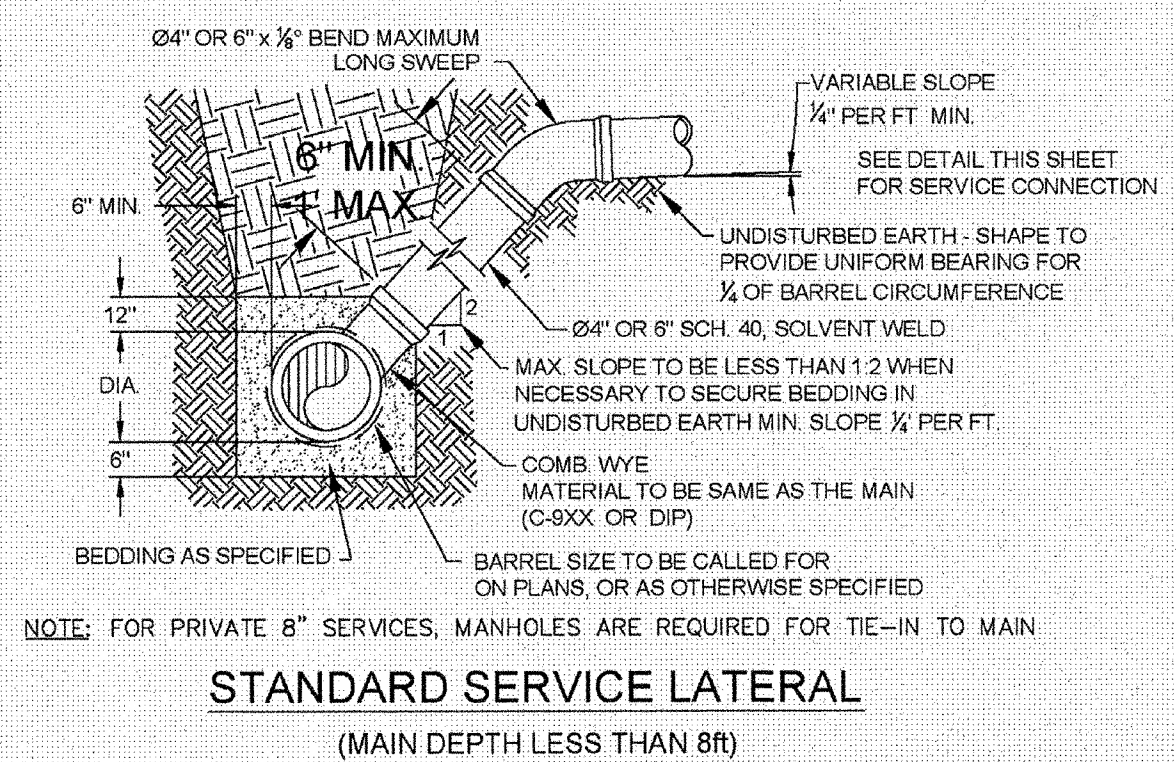
REV.	DESCRIPTION:	DATE:
1	AIR / VACUUM AND AIR RELEASE COMBINATION VALVE REVISED	10/26/12
2	STANDARD SEWER NOTE #6 REVISED	12/10/12

W:\10-0240\100240-Battery Park at Landfall\CAD\Updated Construction Plans\Sheet\1-C-18-DETAILS.dwg - June 5, 2013 - BDTD, JSD/PH

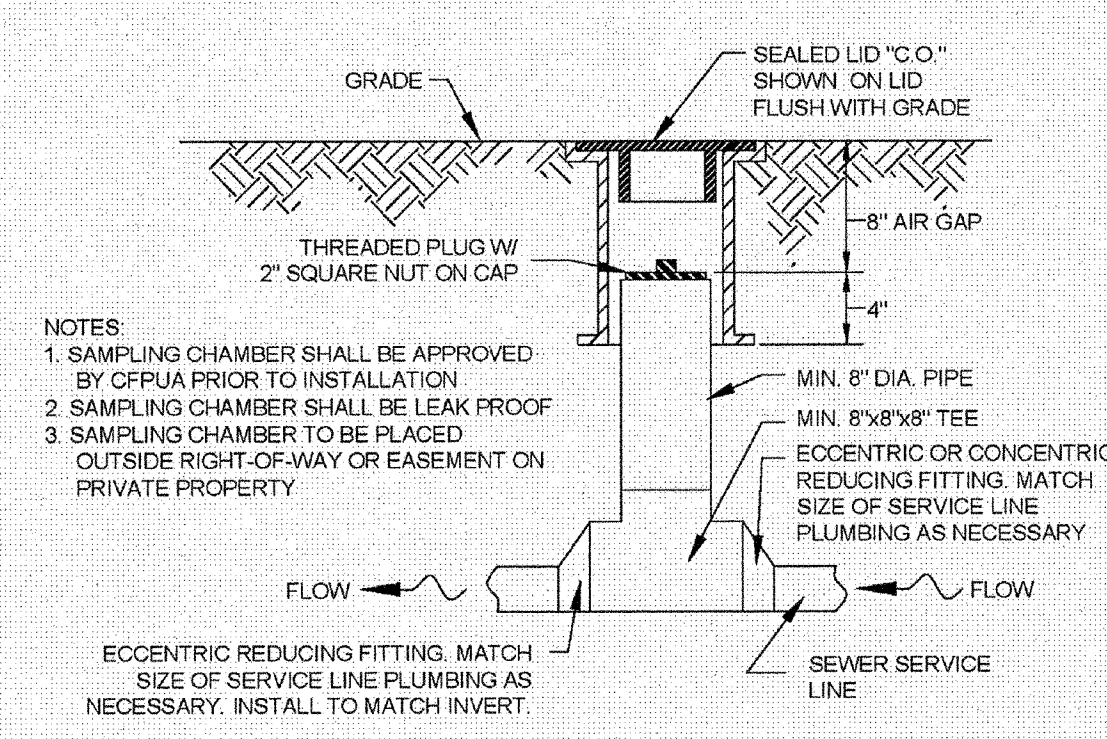




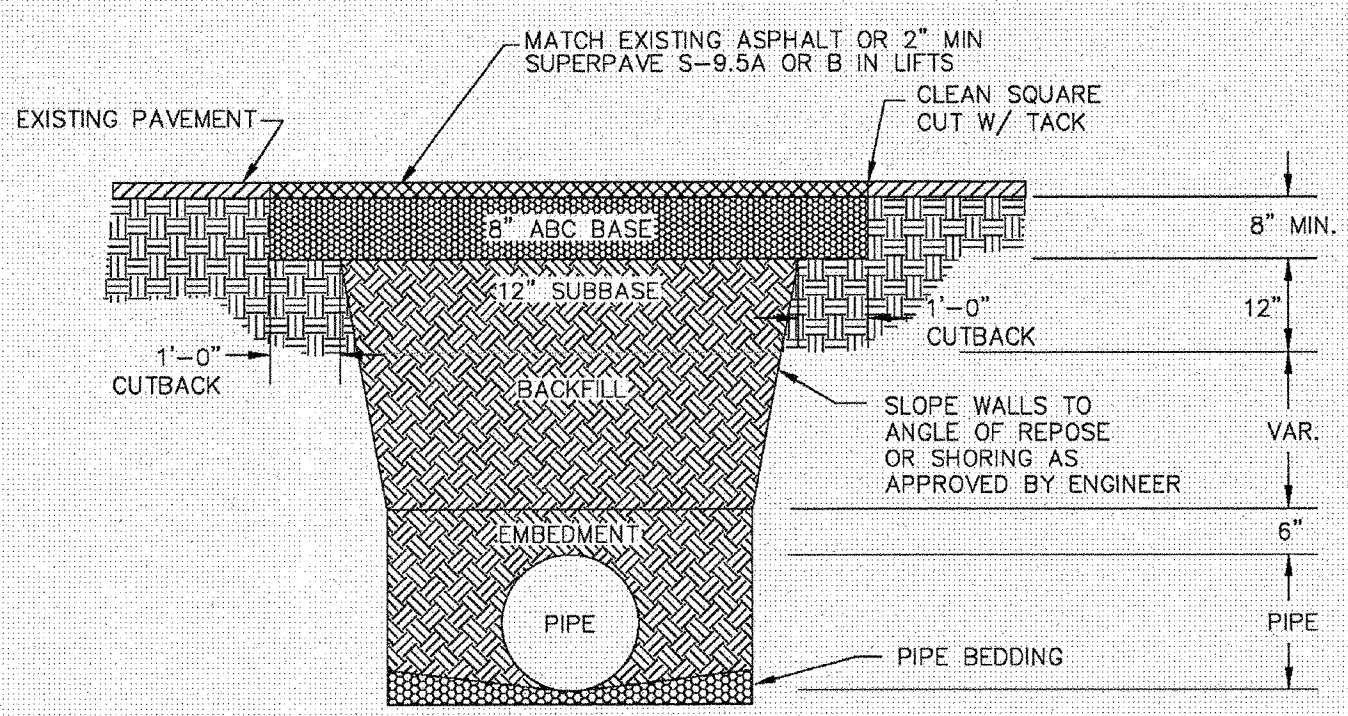
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN



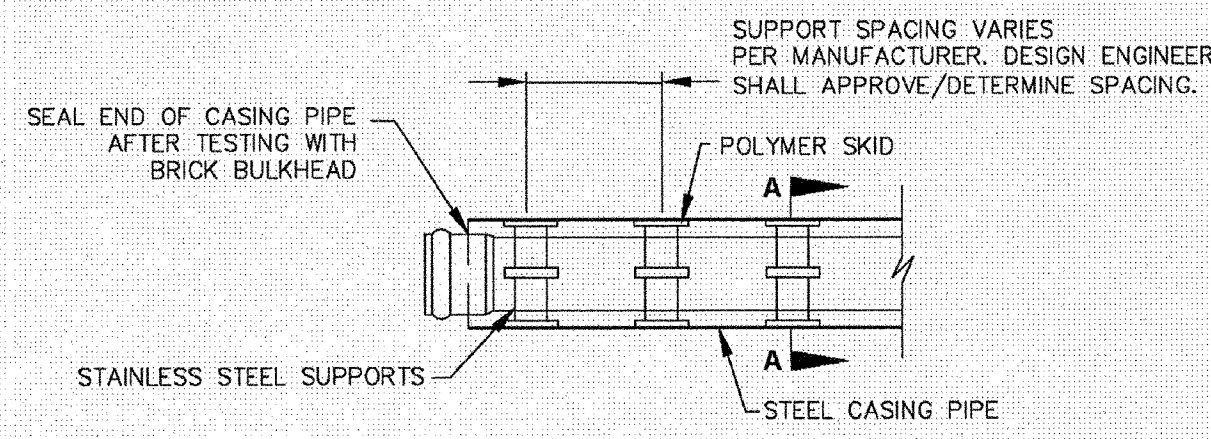
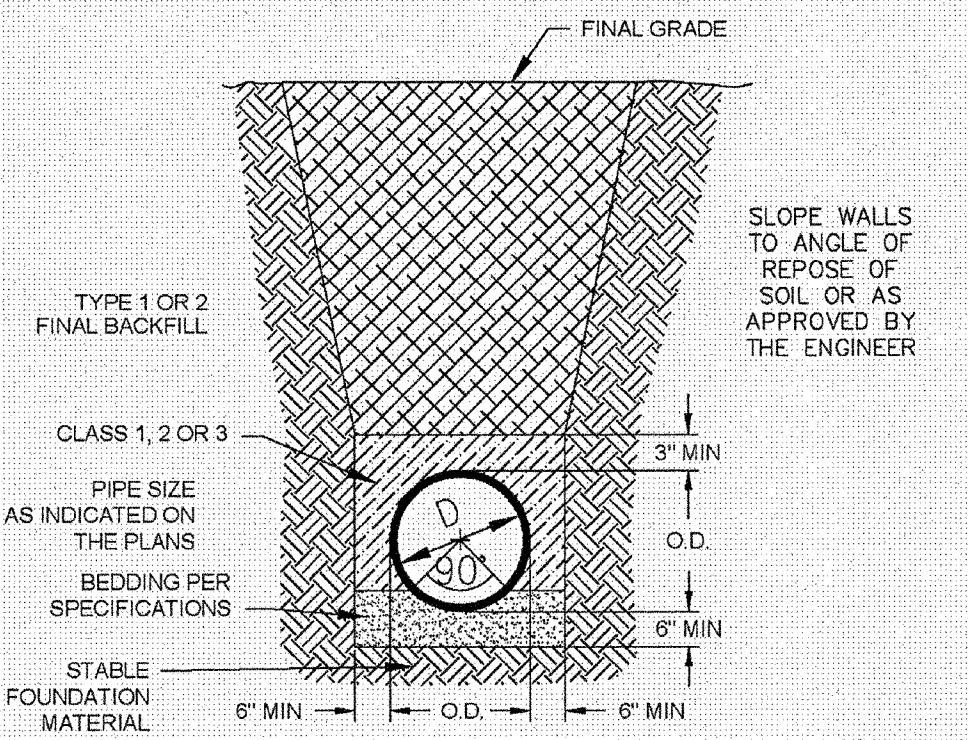
NOTE: SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN



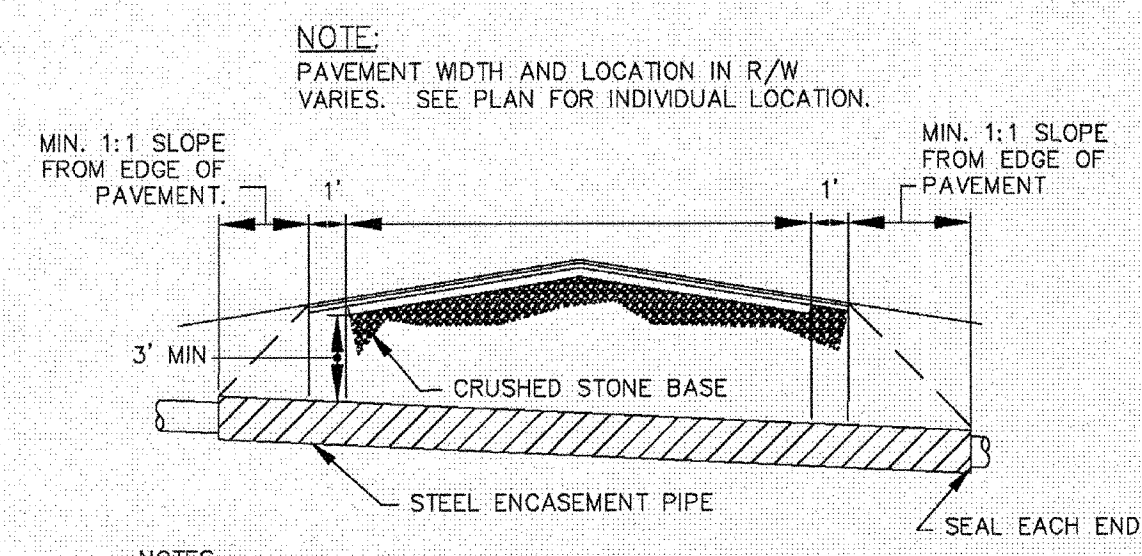
NOTES:  
1. SAMPLING CHAMBER SHALL BE APPROVED BY CFPUA PRIOR TO INSTALLATION  
2. SAMPLING CHAMBER SHALL BE LEAK PROOF  
3. SAMPLING CHAMBER SHALL BE PLACED OUTSIDE RIGHT-OF-WAY OR EASEMENT ON PRIVATE PROPERTY



NOTES:  
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.  
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC.)  
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.  
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS  
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.  
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.  
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.  
8. 1'-0" CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.



NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.



NOTES:  
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.  
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING

**GENERAL NOTES:**  
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.  
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.  
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.  
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.  
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND INSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS)

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/13 PERMIT # 2013017  
SIGNED [Signature]

**Approved Construction Plan**  
Name Date  
Planning [Signature] 6-6-13  
Public Utilities [Signature]  
Traffic [Signature] 6/6/13  
Fire [Signature] 6/7/13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

**CFPUA SANITARY SEWER**

**STANDARD DETAILS**

CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE: 1/9/12  
SCALE: N/A  
DRAWN BY: CFPJA  
CHECKED BY: CFPJA  
PROJECT NO.:  
SHEET NO: SSD-2

REV.	DESCRIPTION:	DATE:
1	SAMPLING CHAMBER REVISED	10/26/12

ADDRESS: 1909 ODYSSEY DRIVE

No.	Revision	Date	By

Designer	LJT	Scale	N/A
Drawn By	TMG/LJT	Date	06/28/07
Checked By	MNH	Job No.	03100242

**BATTERY PARK AT LANDFALL**  
CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

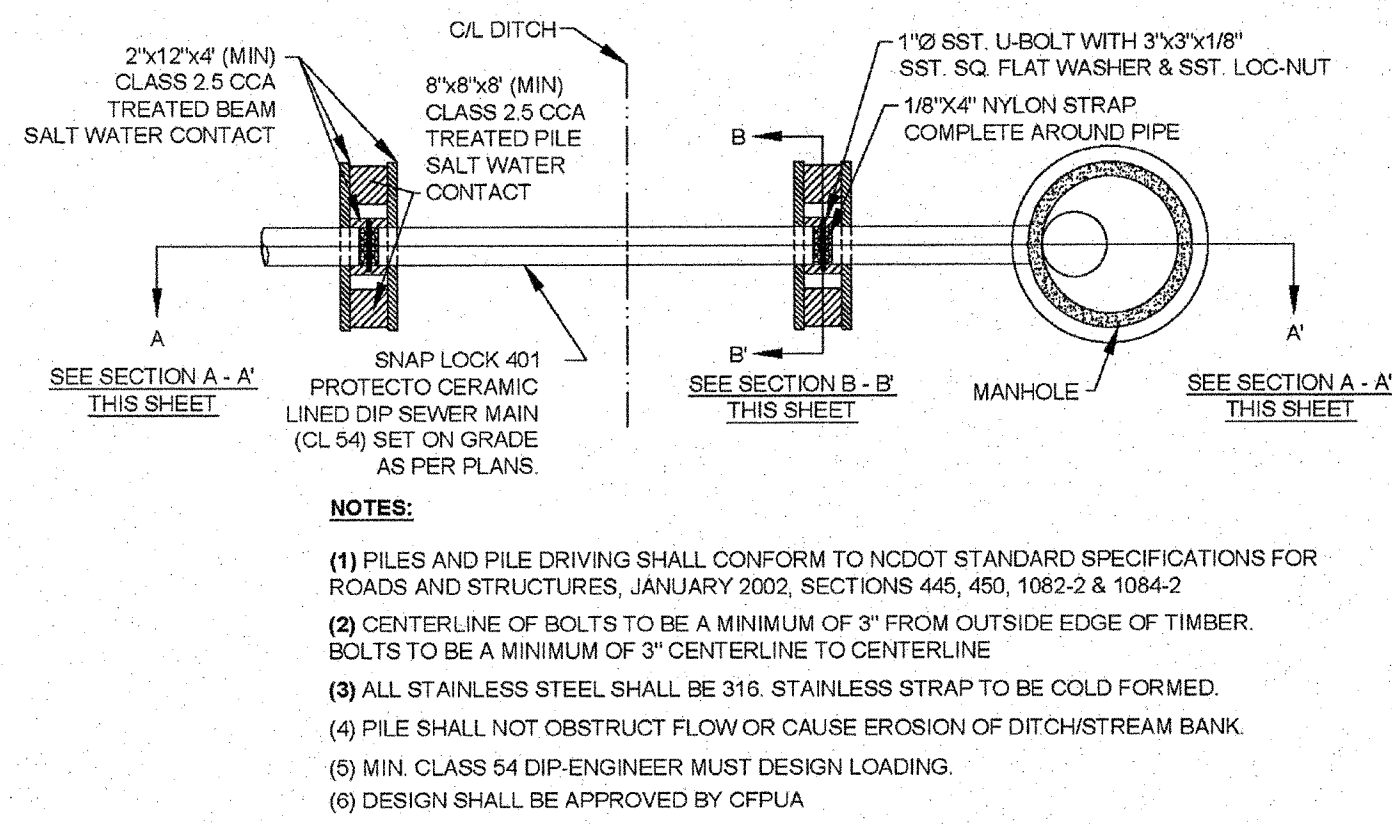
**STANDARD SANITARY SEWER DETAILS FOR CFPUA (CONT.)**

PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
910-540-1924

**WITHERS & RAVENEL**  
ENGINEERS | PLANNERS | SURVEYORS  
7040 Wrightsville Ave, Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.wITHERS&RAVENEL.com

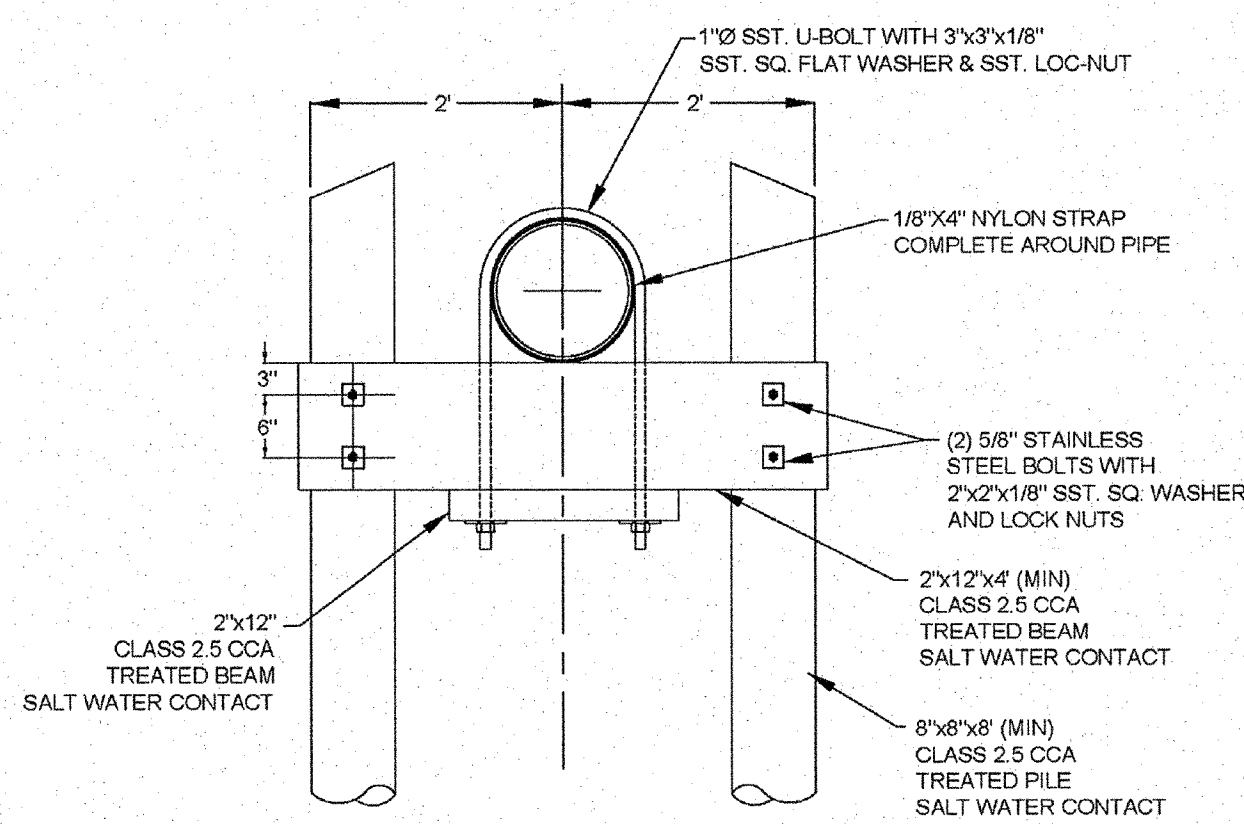
Sheet No. C-14



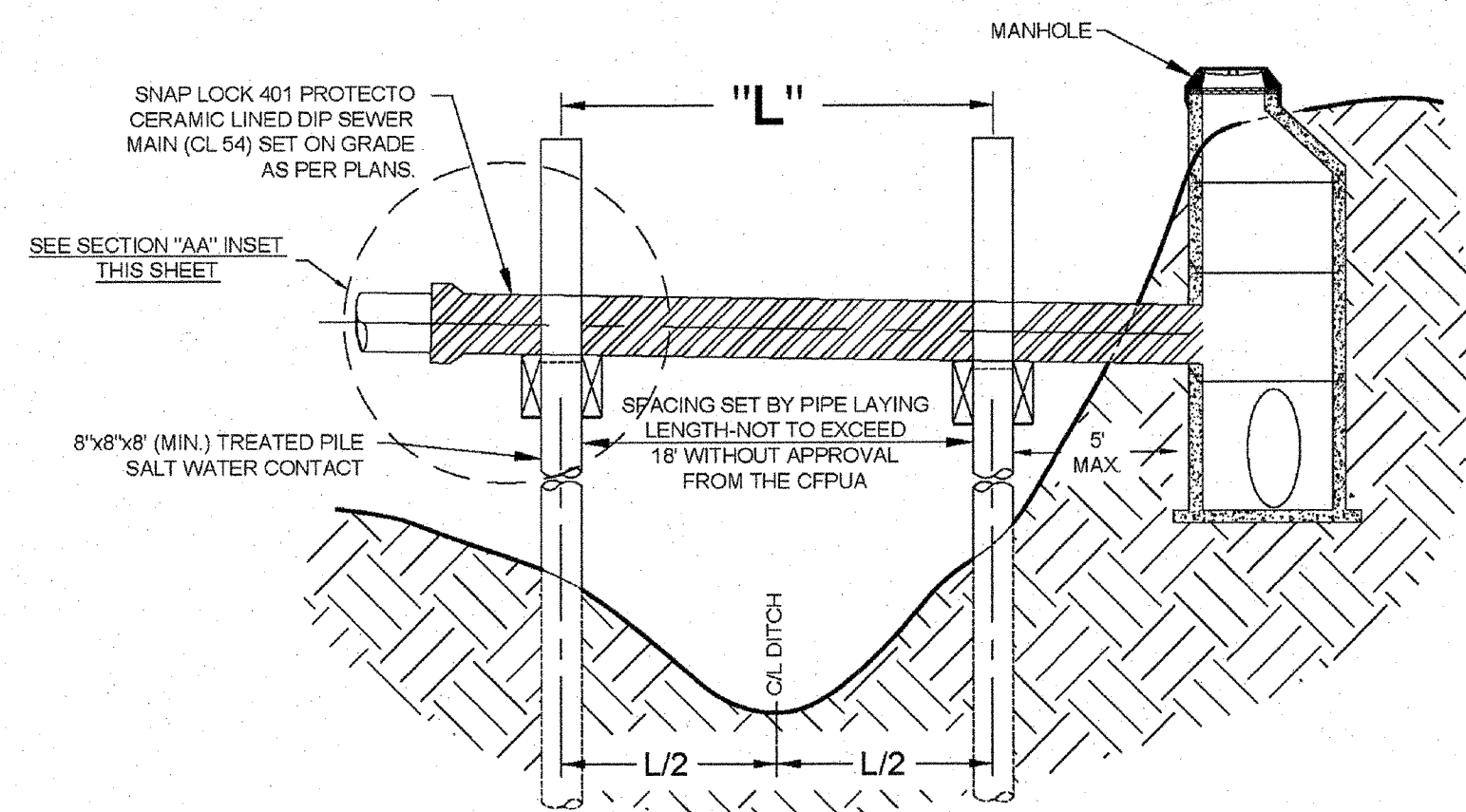


**PILE AND BENT**  
NOT TO SCALE

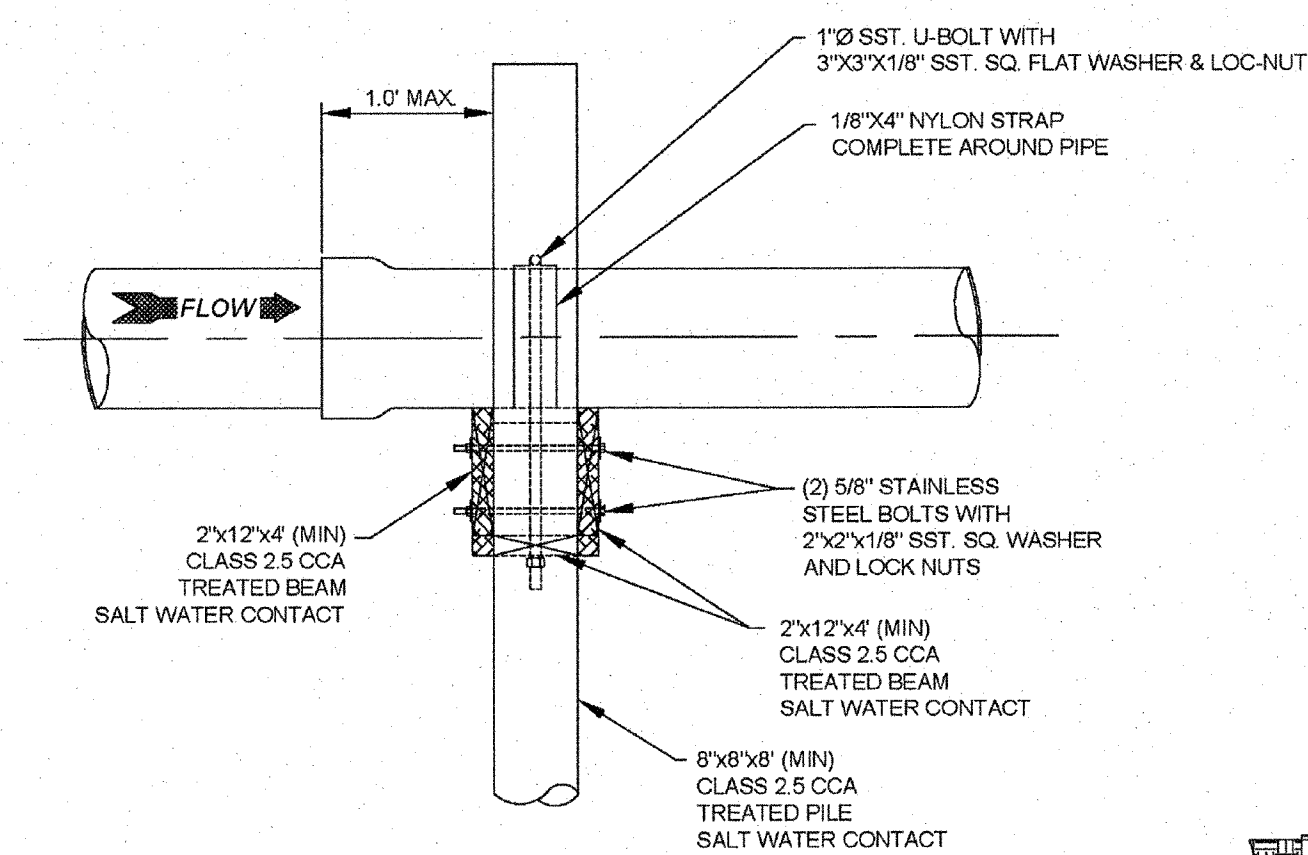
- NOTES:**
- (1) PILES AND PILE DRIVING SHALL CONFORM TO NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2002, SECTIONS 445, 450, 1062-2 & 1064-2
  - (2) CENTERLINE OF BOLTS TO BE A MINIMUM OF 3" FROM OUTSIDE EDGE OF TIMBER. BOLTS TO BE A MINIMUM OF 3" CENTERLINE TO CENTERLINE
  - (3) ALL STAINLESS STEEL SHALL BE 316. STAINLESS STRAP TO BE COLD FORMED.
  - (4) PILE SHALL NOT OBSTRUCT FLOW OR CAUSE EROSION OF DITCH/STREAM BANK.
  - (5) MIN. CLASS 54 DIP-ENGINEER MUST DESIGN LOADING.
  - (6) DESIGN SHALL BE APPROVED BY CFPUA.



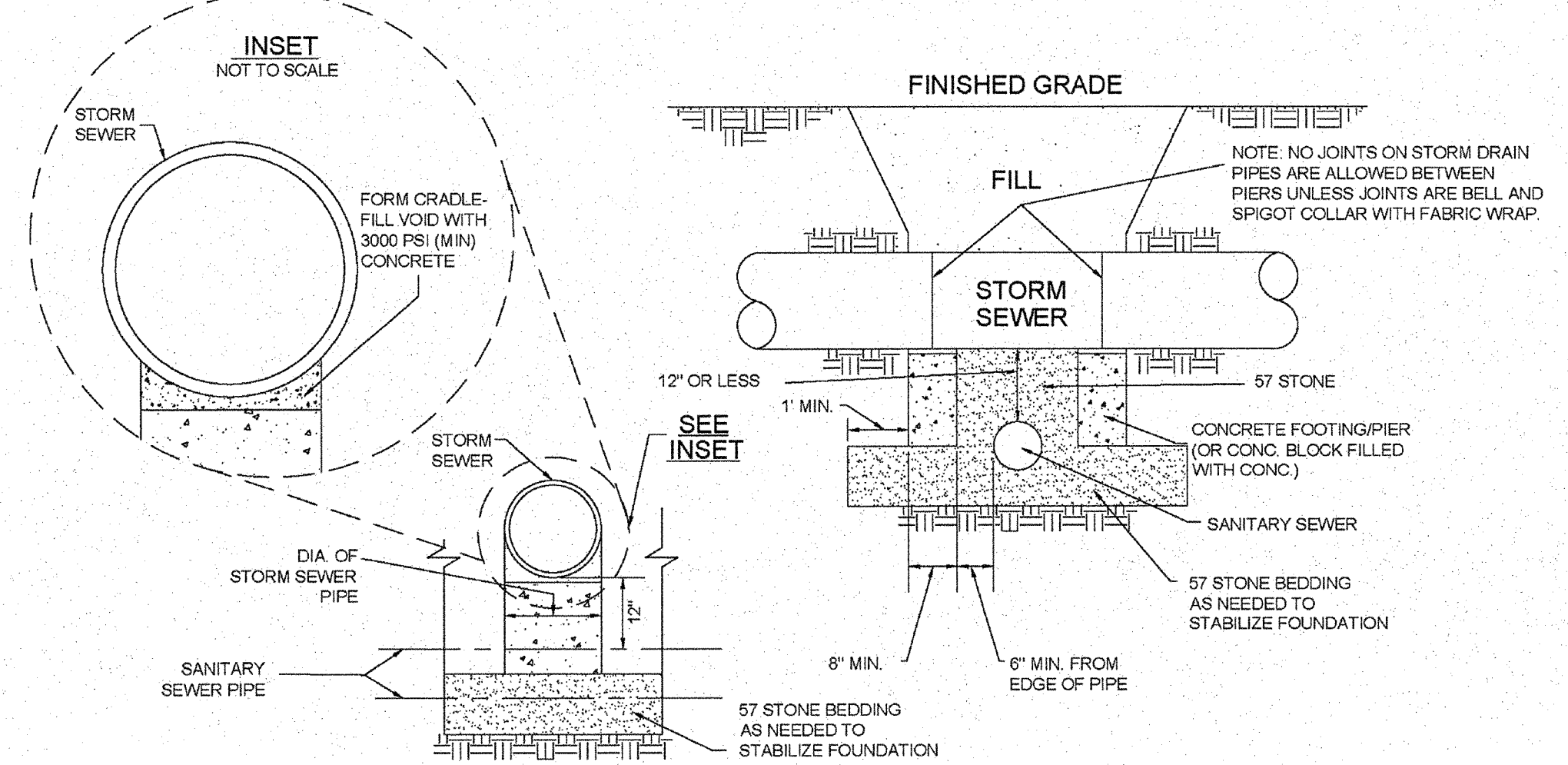
**PILE AND BENT SECTION B - B'**  
NOT TO SCALE



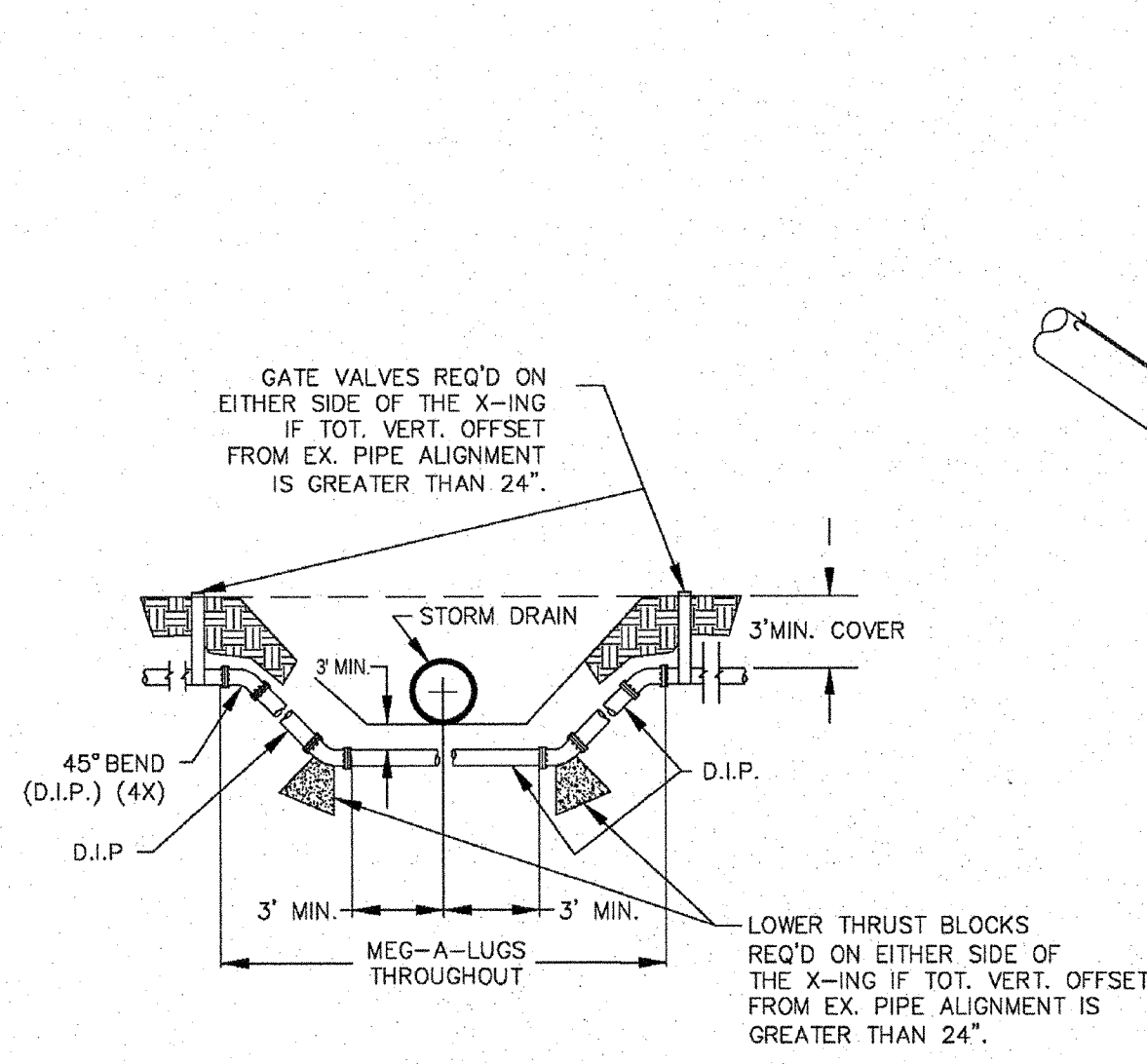
**PILE AND BENT SECTION A - A' INSET**  
NOT TO SCALE



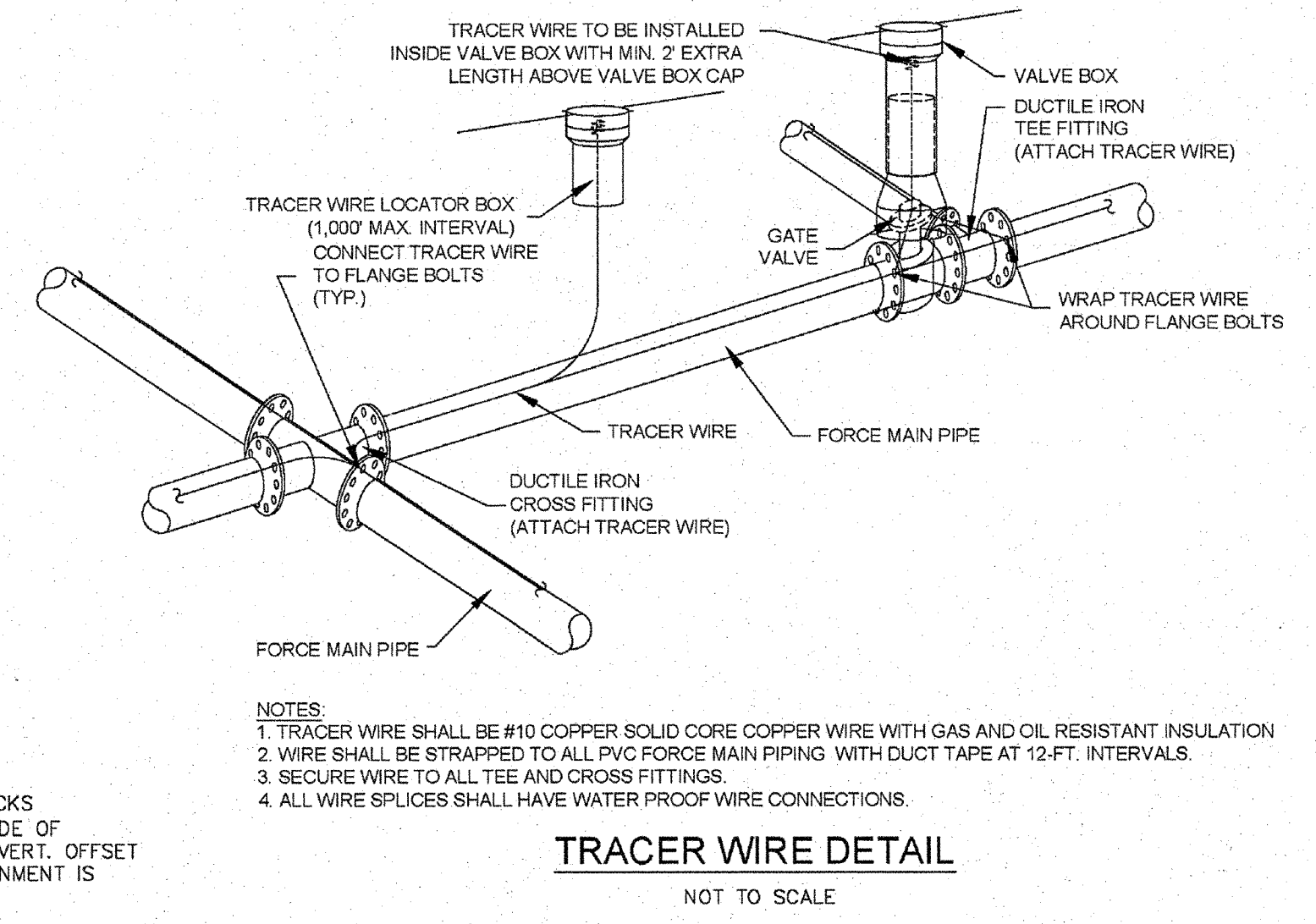
**PILE AND BENT SECTION A - A' INSET**  
NOT TO SCALE



**STRUCTURAL BRIDGING DETAIL FOR STORMWATER OVER GRAVITY SEWER INSTALLATIONS WITH LESS THAN 12" SEPARATION**  
NOT TO SCALE



**FORCE MAIN DITCH & STORM DRAIN CROSSING**  
NOT TO SCALE



**TRACER WIRE DETAIL**  
NOT TO SCALE

- GENERAL NOTES:**
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
  2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
  3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
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  5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND INSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/13 PERMIT # 2013017  
SIGNED [Signature]

Approved Construction Plan	
Name	Date
Planning [Signature]	6-6-13
Public Utilities [Signature]	6/6/13
Traffic [Signature]	6/6/13
Fire [Signature]	6/10

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

ADDRESS: 1909 ODYSSEY DRIVE

REV:	DESCRIPTION:	DATE:

<b>CFPUA SANITARY SEWER</b>		DATE: 1/8/12
<b>STANDARD DETAILS</b>		SCALE: N/A
		DRAWN BY: CFPUA
		CHECKED BY: CFPUA
CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560		PROJECT NO.:
Stewardship. Sustainability. Service.		SHEET NO.: SSD-3

No.	Revision	Date	By

Designer	LJT	Scale	N/A
Drawn By	TMG/LJT	Date	06/28/07
Checked By	MNH	Job No.	03100242

**BATTERY PARK AT LANDFALL**  
CITY OF WILMINGTON    NEW HANOVER    NORTH CAROLINA

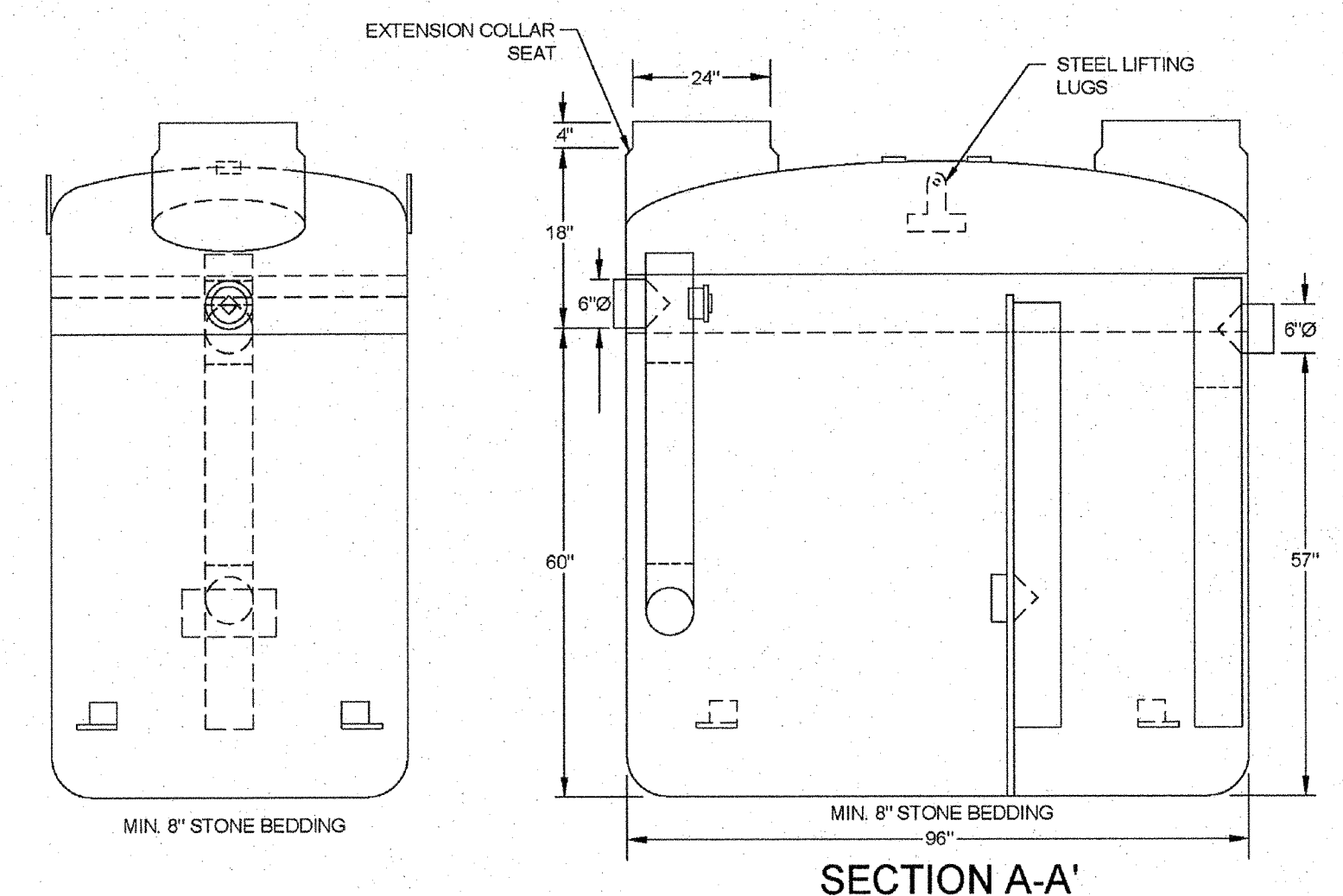
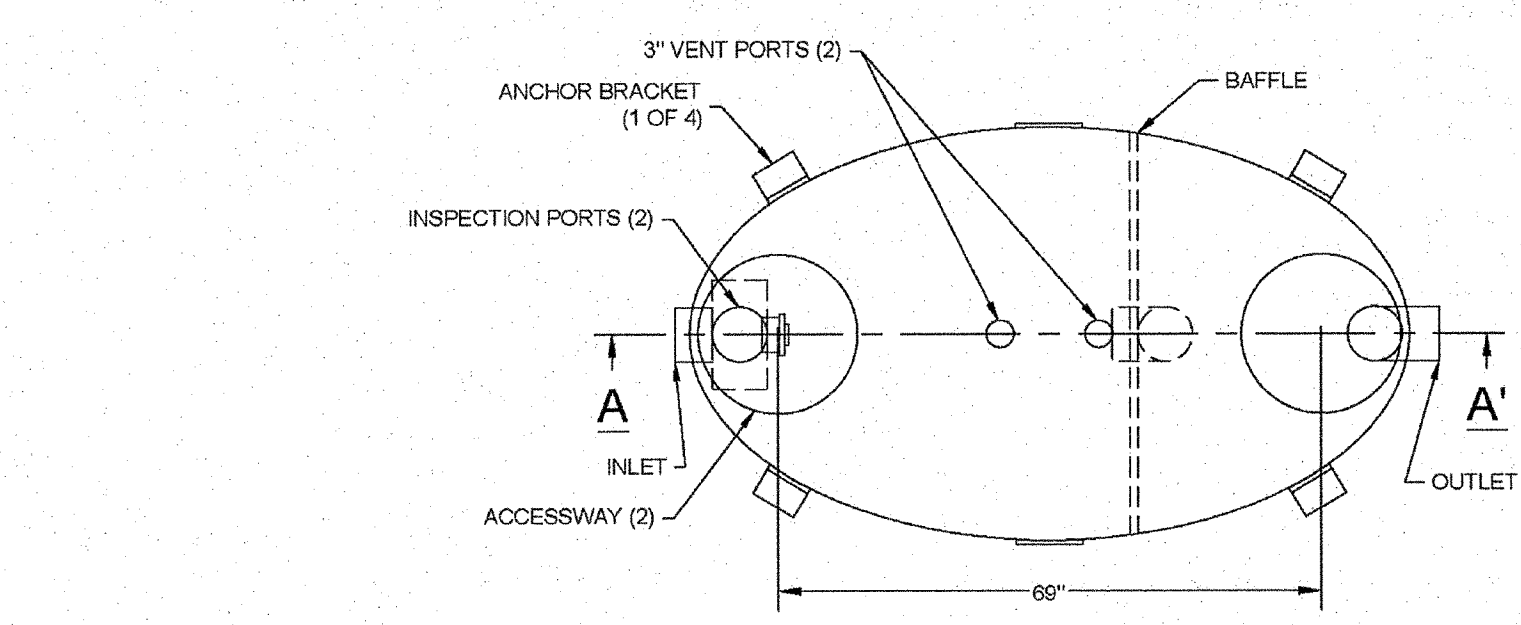
**STANDARD SANITARY SEWER DETAILS FOR CFPUA (CONT.)**

PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28400  
910-540-1924

**WITHERS & RAVENEL**  
ENGINEERS | PLANNERS | SURVEYORS  
7040 Wrightsville Ave., Suite 101, Wilmington, North Carolina 28403 | tel: 910-256-9277 | fax: 910-256-2584 | www.wITHERSRAVENEL.com

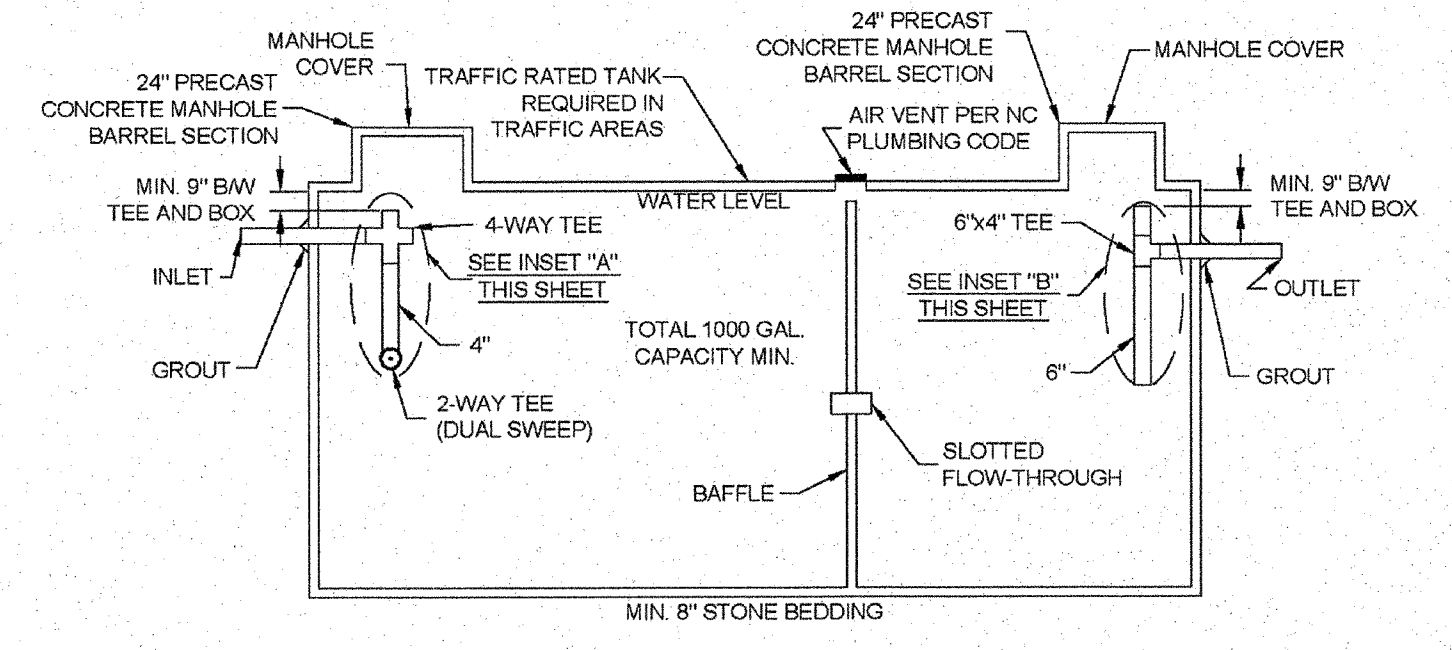
Sheet No. **C-15**



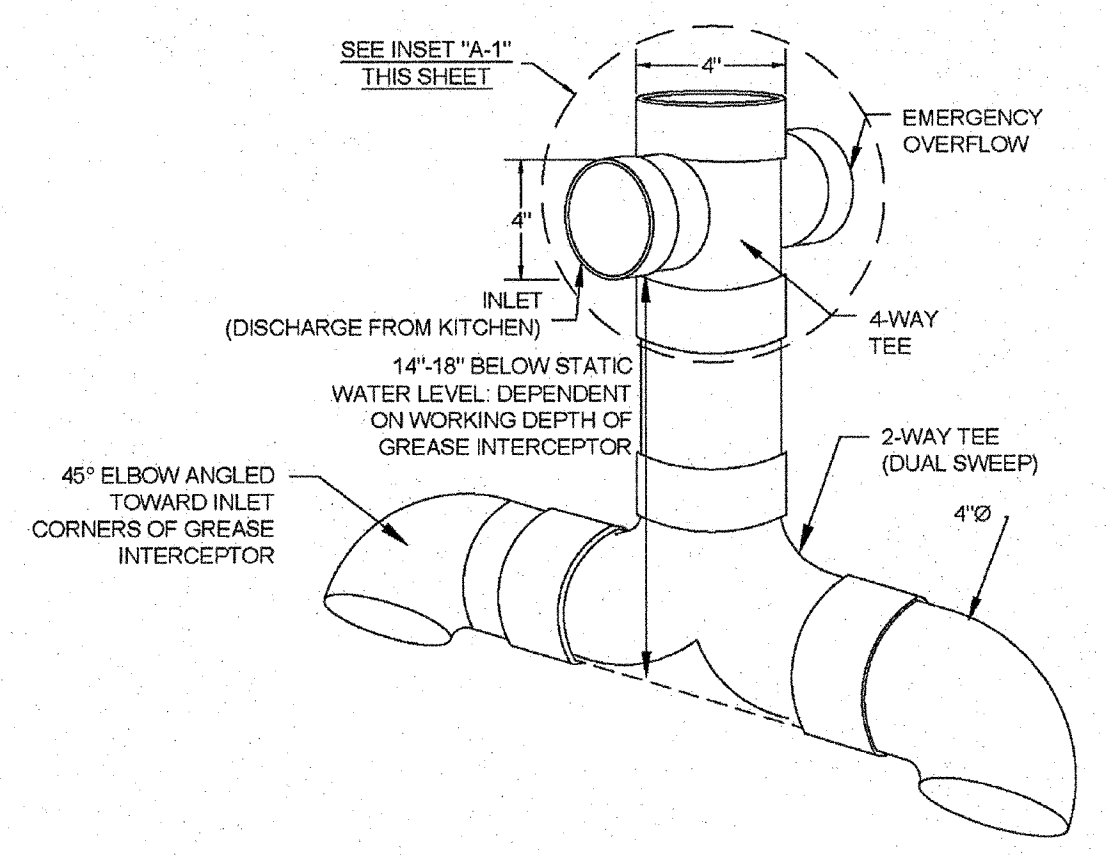


**FIBERGLASS GREASE INTERCEPTOR**  
NOT TO SCALE

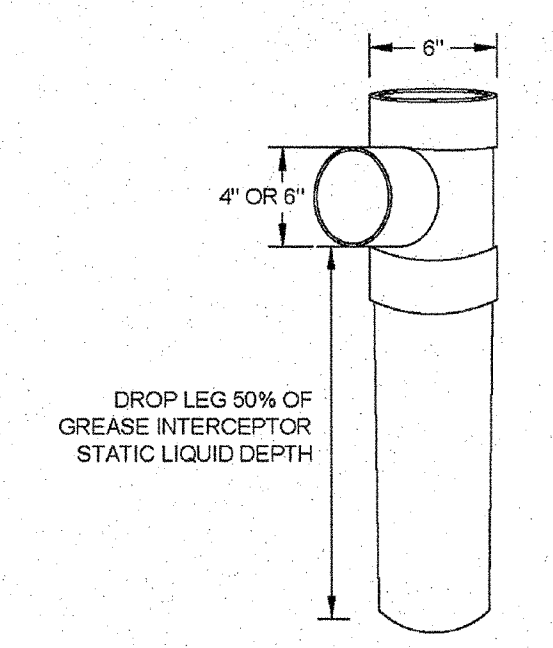
NOTES:  
 1. FOR GRAVITY APPLICATIONS ONLY  
 2. MIN. THICKNESS: 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS  
 3. STANDARD PIPE STUBS ARE SOCKET SDR 35 PVC  
 4. EXTENSION COLLARS SHALL BE CALKED WITH SIKAFLEX OR EQUIVALENT FOR WATERTIGHT SEAL  
 5. FOLLOW MANUFACTURE'S SPECS FOR TRAFFIC OR PEDESTRIAN LOADING



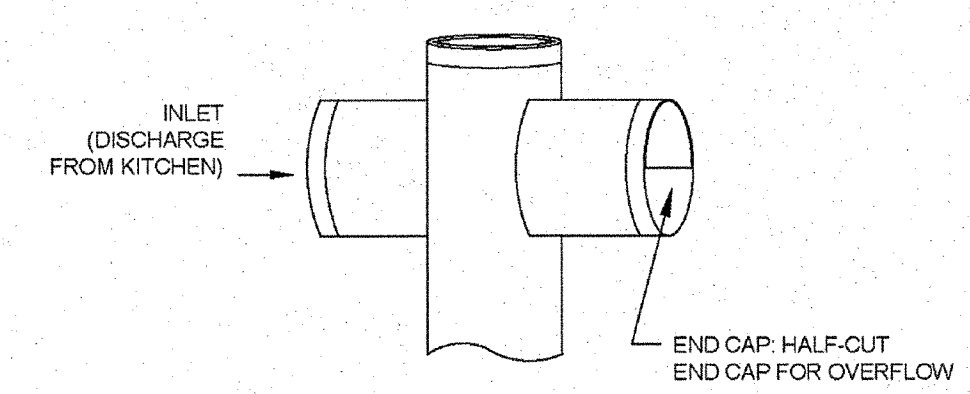
**CONCRETE GREASE INTERCEPTOR**  
NOT TO SCALE



**GREASE INTERCEPTOR INSET "A" 4" SANITARY TEE**  
NOT TO SCALE



**GREASE INTERCEPTOR INSET "B" 6" X 6" X 4" OUTLET SANITARY TEE**  
NOT TO SCALE



**GREASE INTERCEPTOR INSET "A-1" EMERGENCY OVERFLOW CLOSE-UP**  
NOT TO SCALE

- GENERAL NOTES:**
- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
  - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
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**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/13 PERMIT # 2013017  
SIGNED [Signature]

**Approved Construction Plan**

Name	Date
Planning [Signature]	6-6-13
Public Utilities [Signature]	6-6-13
Traffic [Signature]	6-7-13
Fire [Signature]	6-7-13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

ADDRESS: 1909 ODYSSEY DRIVE

**CFPUA SANITARY SEWER**

**STANDARD DETAILS**

CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

Stewardship: Sustainability Service

DATE: 1/20/12  
SCALE: N/A  
DRAWN BY: CFPLJA  
CHECKED BY: CFPLJA  
PROJECT NO.:  
SHEET NO: SSD-4

REV:	DESCRIPTION:	DATE:

No.	Revision	Date	By	Designer	LJT	Scale	N/A

**BATTERY PARK AT LANDFALL**  
CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

**STANDARD SANITARY SEWER DETAILS FOR CFPUA (CONT.)**

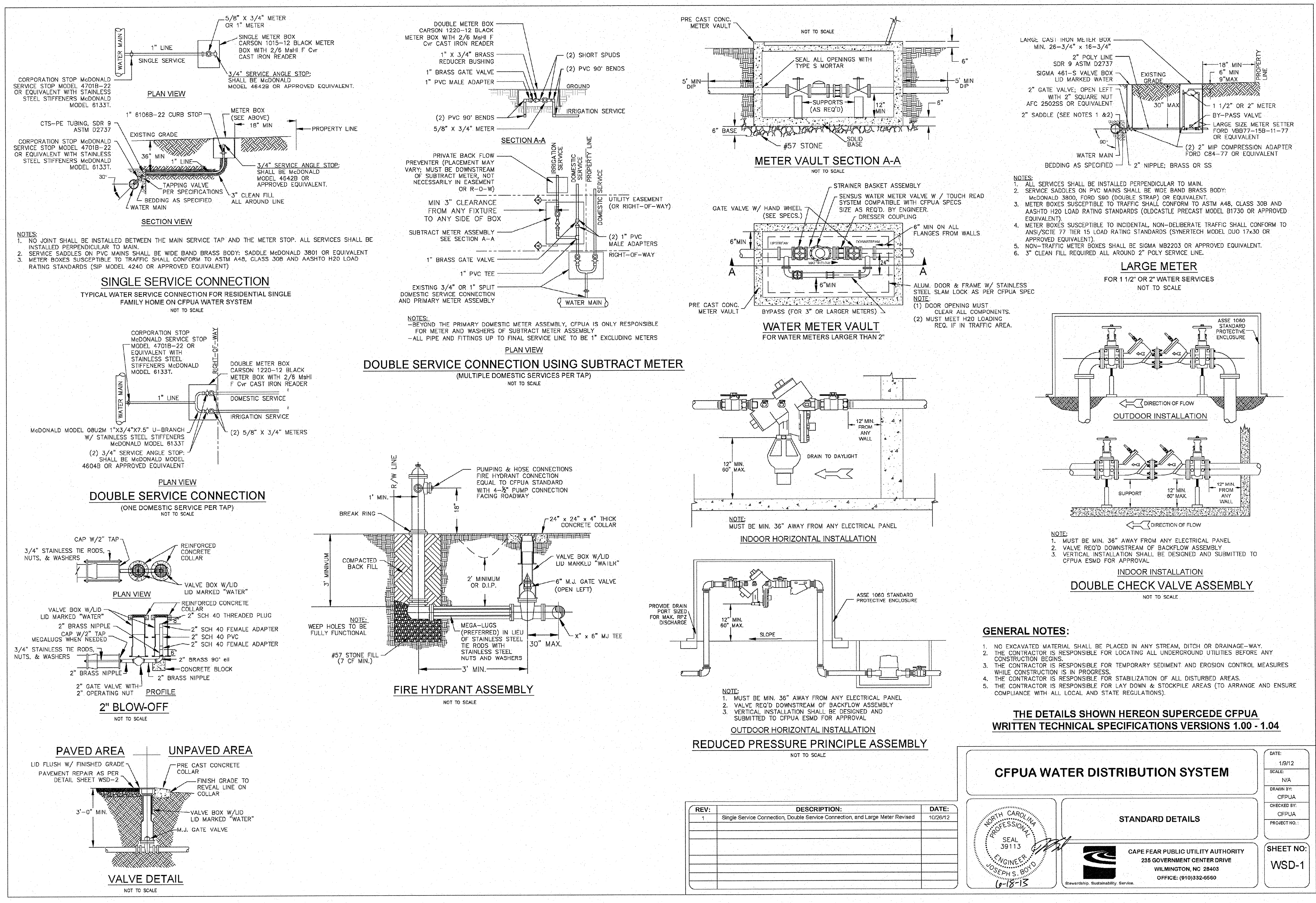
PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
910-540-1924

**WITHERS & RAVENEL**  
ENGINEERS | PLANNERS | SURVEYORS  
7040 Wrightsville Ave, Suite 101, Wilmington, North Carolina 28403 tel: 910-256-9277 fax: 910-256-2584 www.withersravenel.com

Sheet No. C-16

W:\1\10-0045\100242-Battery Park at Landfall\000 Updated Construction Plans\Details\C-11-C-18 DETAIL.dwg - June 5, 2013 - 10:10 AM





**NOTES:**  
1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.  
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY; SADDLE McDONALD 3801 OR EQUIVALENT.  
3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4240 OR APPROVED EQUIVALENT)

**NOTES:**  
-BEYOND THE PRIMARY DOMESTIC METER ASSEMBLY, CFPWA IS ONLY RESPONSIBLE FOR METER AND WASHERS OF SUBTRACT METER ASSEMBLY  
-ALL PIPE AND FITTINGS UP TO FINAL SERVICE LINE TO BE 1" EXCLUDING METERS

**NOTES:**  
1. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.  
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY; McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.  
3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).  
4. METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANSI/SCTE 77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17x30 OR APPROVED EQUIVALENT).  
5. NON-TRAFFIC METER BOXES SHALL BE SIGMA MB2203 OR APPROVED EQUIVALENT.  
6. 3" CLEAN FILL REQUIRED ALL AROUND 2" POLY SERVICE LINE.

**NOTES:**  
1. MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL  
2. VALVE REQ'D DOWNSTREAM OF BACKFLOW ASSEMBLY  
3. VERTICAL INSTALLATION SHALL BE DESIGNED AND SUBMITTED TO CFPWA ESDM FOR APPROVAL

**GENERAL NOTES:**  
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.  
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.  
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.  
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.  
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**THE DETAILS SHOWN HEREON SUPERCEDE CFPWA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

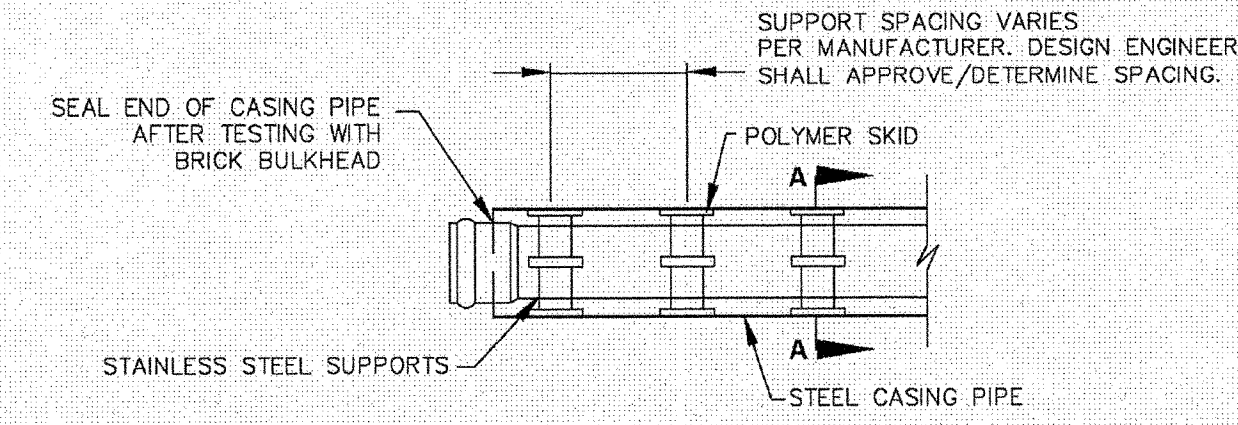
**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/15 PERMIT # 201307  
SIGNED [Signature]

**Approved Construction Plan**  
Name [Signature] Date 6-6-15  
Planning [Signature] 6-6-15  
Public Utilities [Signature] 6-6-15  
Traffic [Signature] 6-6-15  
Fire [Signature] 6-7-15

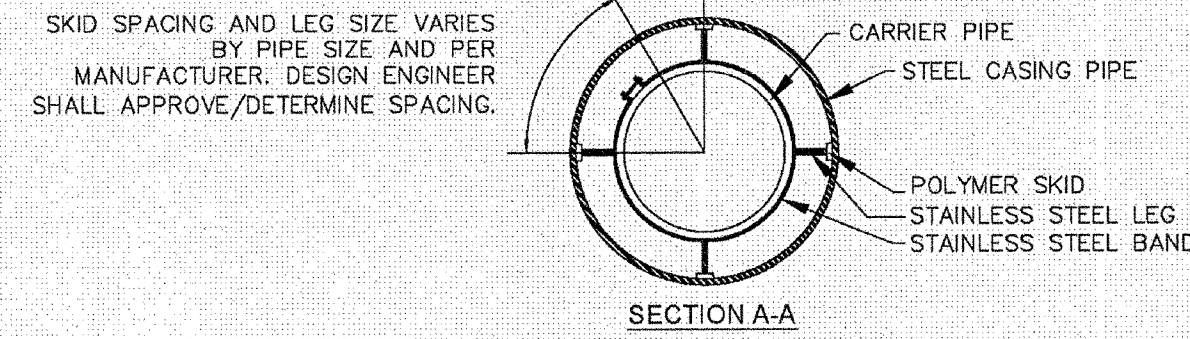
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

ADDRESS: 1909 ODYSSEY DRIVE



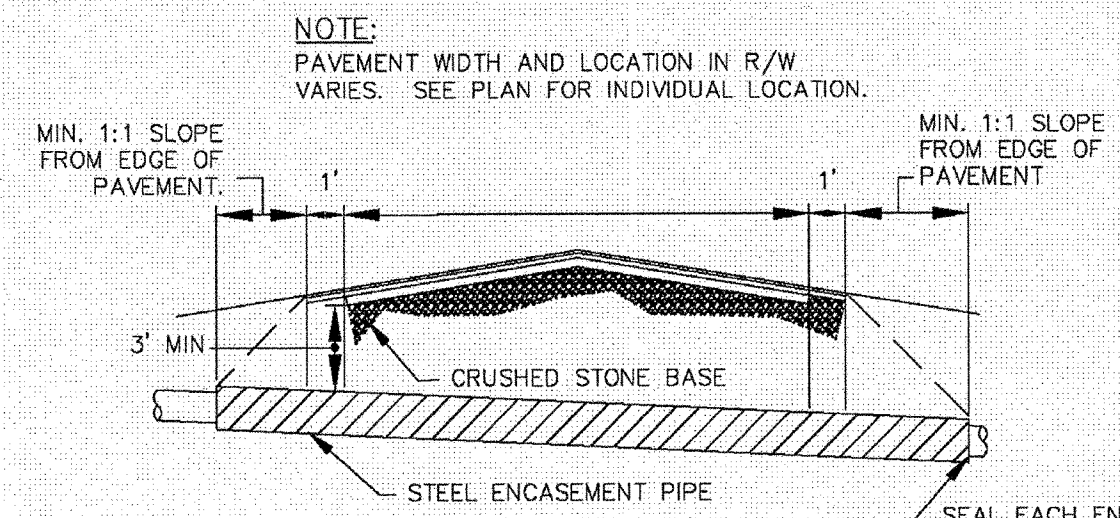


NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.



PIPE CASING SUPPORT DETAIL

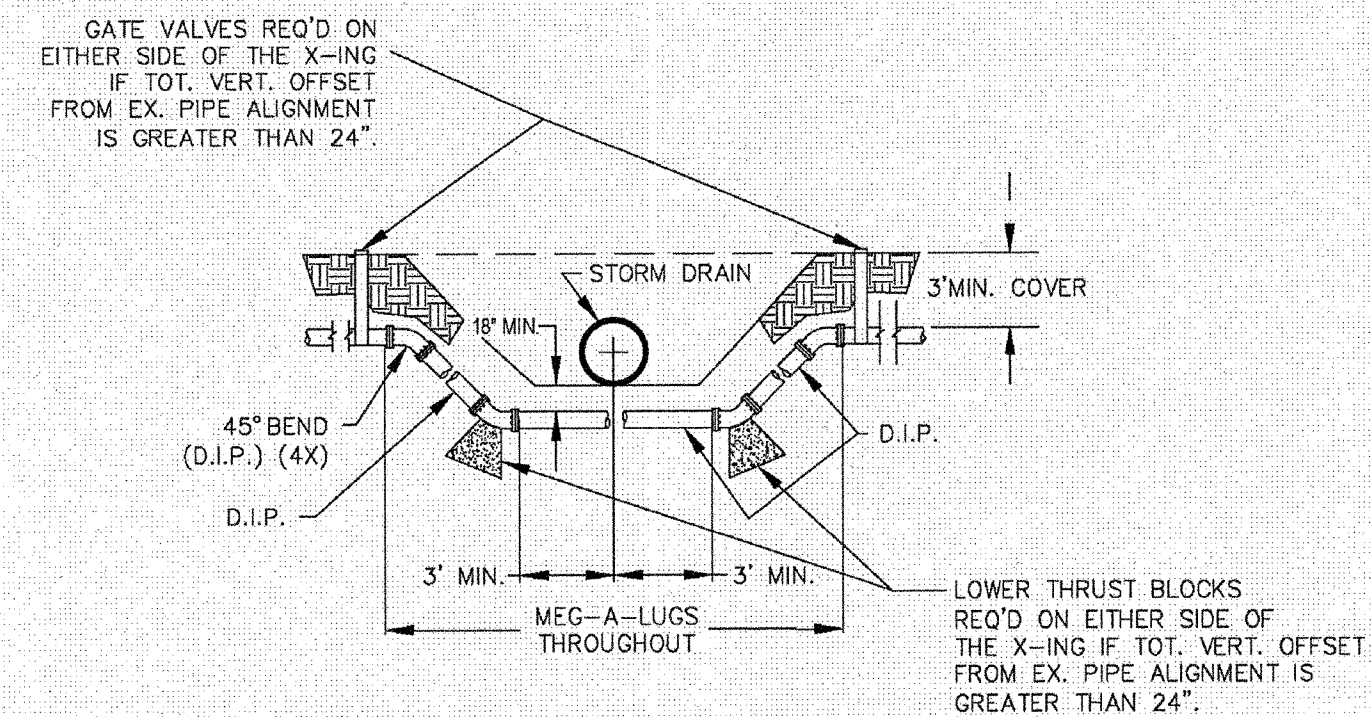
NOT TO SCALE



NOTES:  
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.  
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING

TYPICAL BORING/JACKING DETAIL

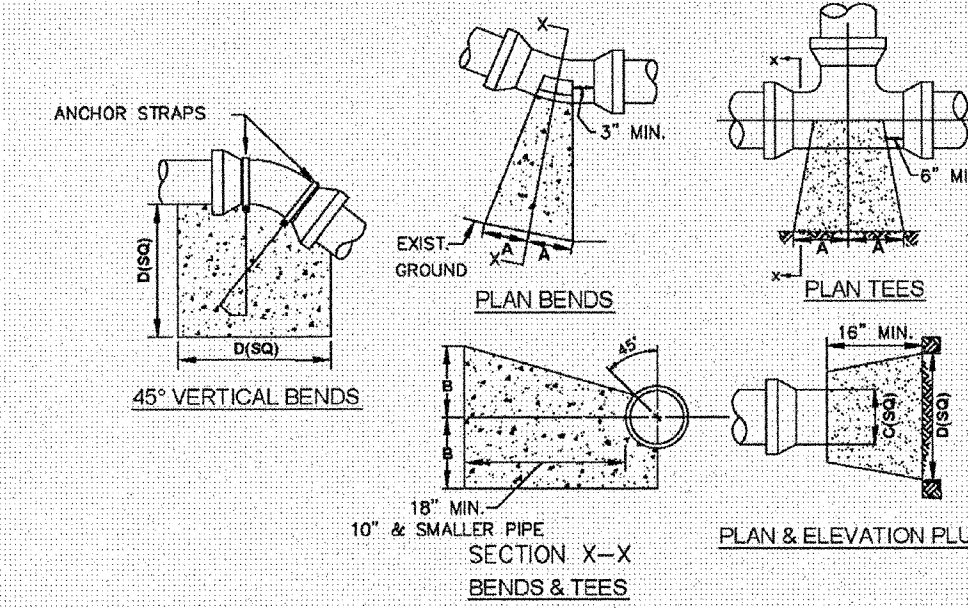
NOT TO SCALE



NOTE: USE D.I.P. (CL50 OR BETTER)

WATER MAIN DITCH & STORM DRAIN CROSSING

NOT TO SCALE

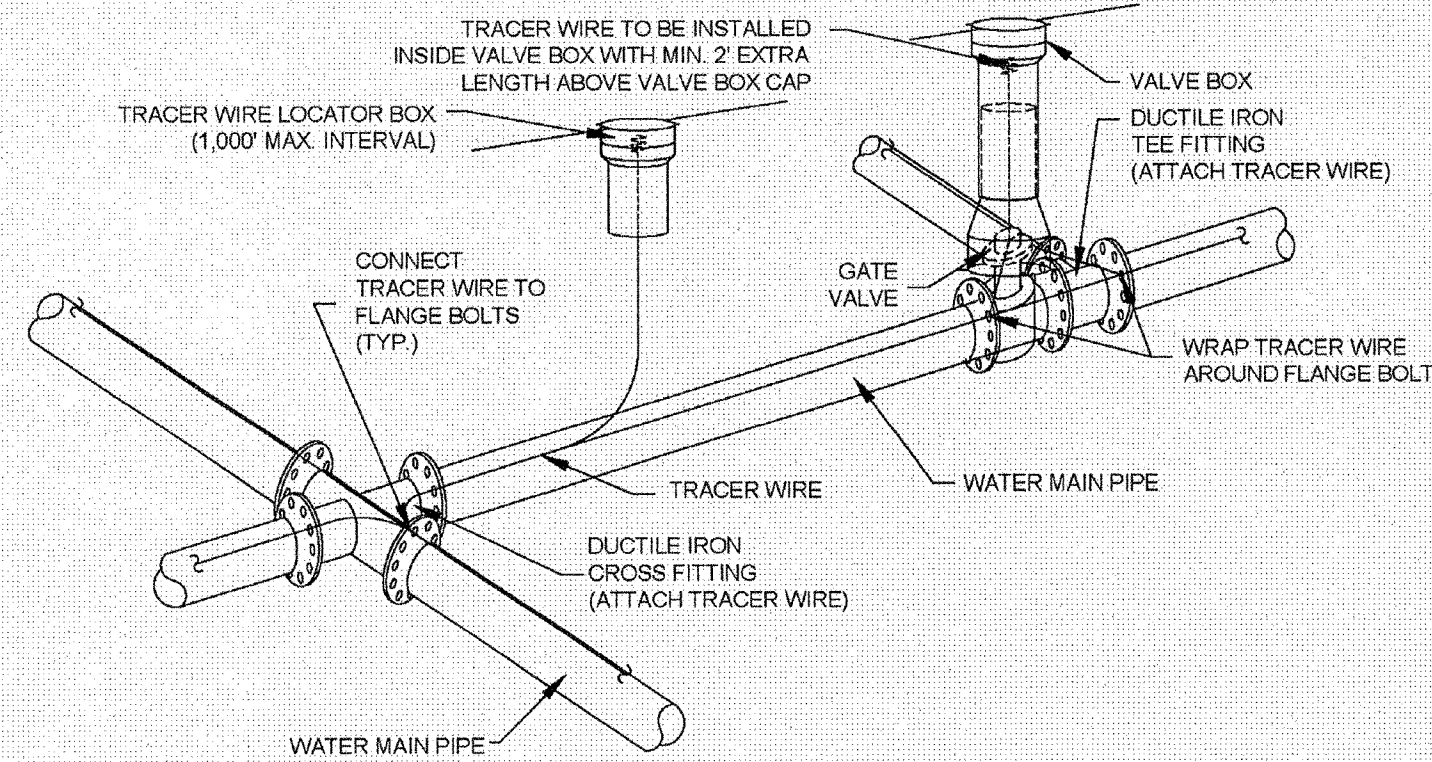


SIZE	90° BENDS		45° BENDS		22 1/2° BENDS		TEES/PLUGS		45° VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	26"	18"	17"	16"	16"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

NOTES:  
1. BASED ON 180 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.  
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.  
3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.

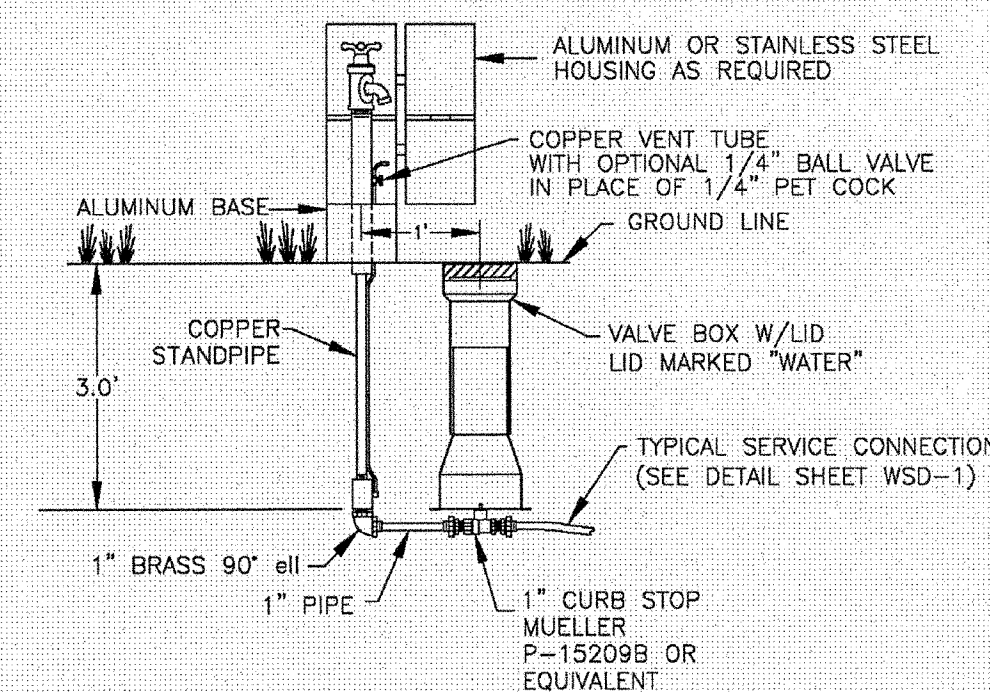
THRUST BLOCK DETAIL

NOT TO SCALE



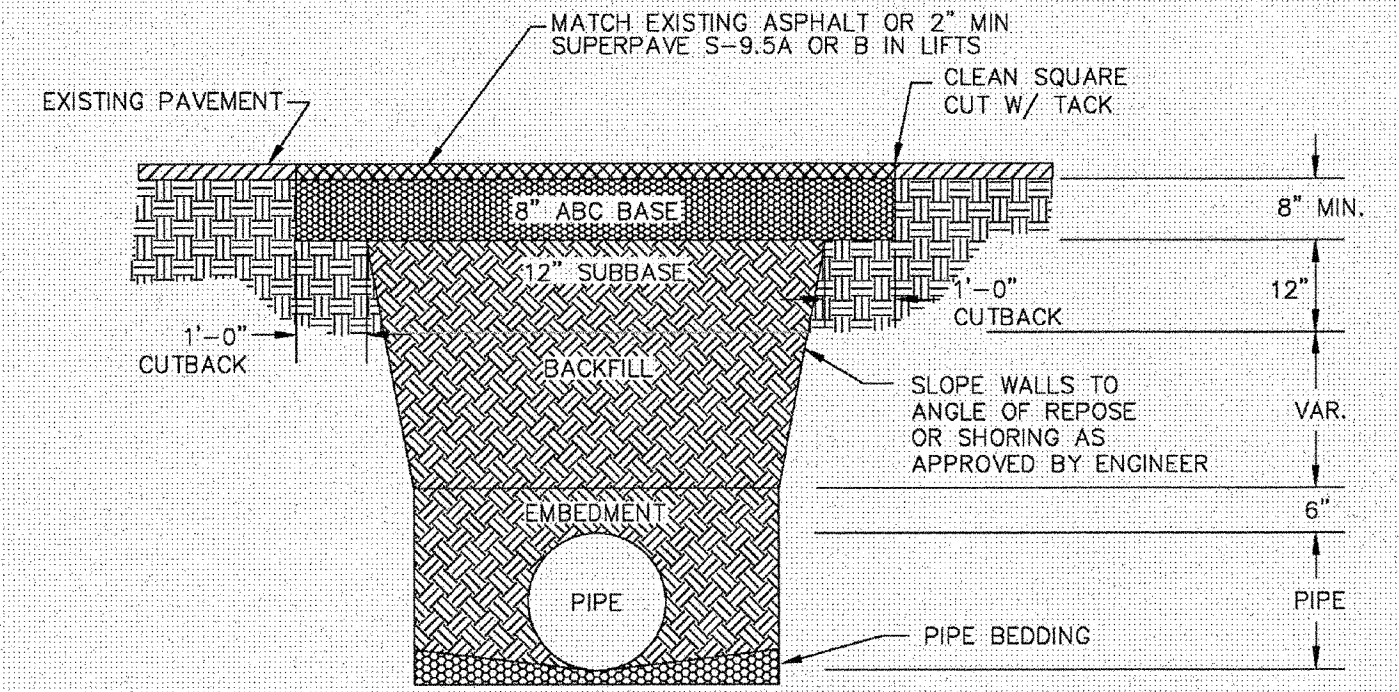
NOTES:  
1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.  
2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12-FT. INTERVALS.  
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS.  
4. ALL WIRE SPLICES SHALL HAVE WATER PROOF WIRE CONNECTIONS.

TRACER WIRE DETAIL



SAMPLING STATION

NOT TO SCALE

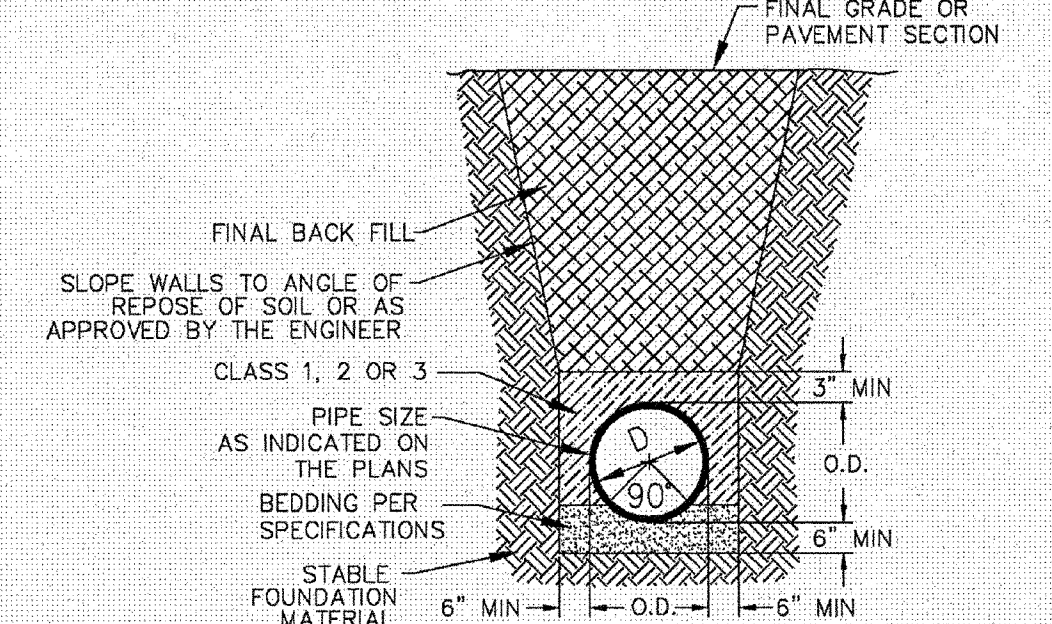


NOTES:  
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.  
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC.)  
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.  
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS.  
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.  
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.  
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.  
8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

PAVEMENT REPAIR WHERE PIPE INSTALLED

(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

NOT TO SCALE



CL 50 DUCTILE IRON DR 18 PVC PIPE TRENCH DETAIL

NOT TO SCALE

GENERAL NOTES:

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THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

STORMWATER MANAGEMENT PLAN APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 6/6/13 PERMIT # 2013017  
SIGNED [Signature]

Approved Construction Plan	
Name	Date
Planning: [Signature]	6-6-13
Public Utilities: [Signature]	6-6-13
Traffic: [Signature]	6-7-13
Fire: [Signature]	6-7-13

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

ADDRESS: 1909 ODYSSEY DRIVE

REV:	DESCRIPTION:	DATE:

CFPUA WATER DISTRIBUTION SYSTEM

DATE: 1/9/12  
SCALE: N/A  
DRAWN BY: CFPUA  
CHECKED BY: CFPUA  
PROJECT NO.: [Blank]

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

SHEET NO.: WSD-2

Professional Engineer Seal: NORTH CAROLINA PROFESSIONAL ENGINEER JOSEPH S. BOYD 6-18-13

No.	Revision	Date	By

Designer: LJT	Scale: N/A
Drawn By: TMG/LJT	Date: 06/28/07
Checked By: MNH	Job No: 03100242

BATTERY PARK AT LANDFALL  
CITY OF WILMINGTON NEW HANOVER NORTH CAROLINA

STANDARD WATER SYSTEM  
DETAILS FOR CFPUA (CONT.)

PREPARED FOR:  
DTS HOLDINGS, LLC  
9 NORTH RIDGE LANE  
WRIGHTSVILLE BEACH, NC 28480  
910-540-1924

WITHERS & RAVENEL  
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