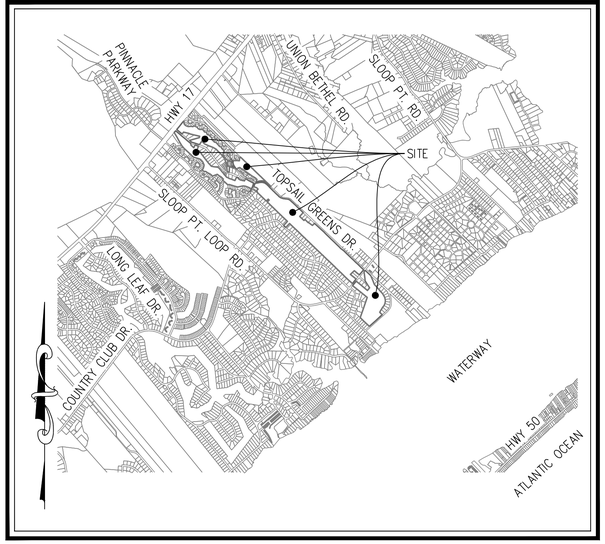
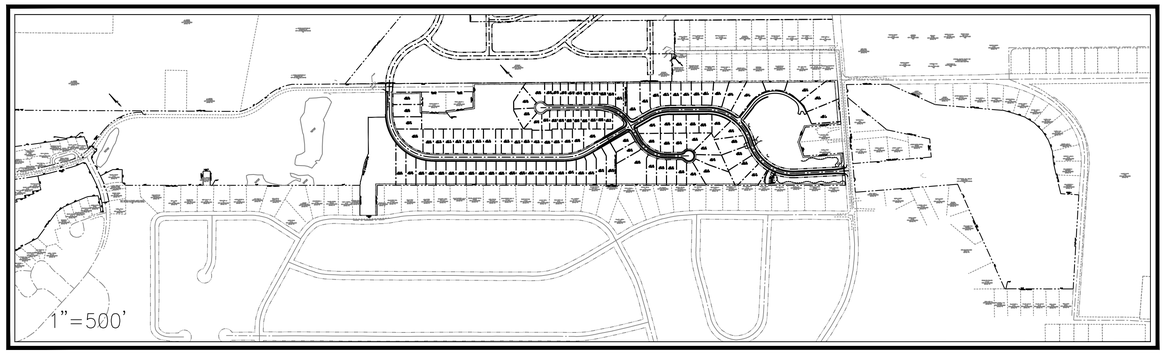
PRELIMINARY PLAT
FOR
WYNDWATER - PHASE 2B
PENDER COUNTY, NORTH CAROLINA
SEPTEMBER 2015

VICINITY MAP



VICINITY MAP
(NTS)



LEGEND

DESCRIPTION	EXISTING	PROPOSED
1' CONTOUR INTERVAL		
5' CONTOUR INTERVAL		
PROPERTY LINE		
ROADWAY CENTERLINE		
RIGHT OF WAY LIMITS		
EASEMENT LINE		
CURB & GUTTER		
SANITARY SEWER FACILITIES		
STORM SEWER FACILITIES		
WATERLINE		
FIRE HYDRANT ASSEMBLY		
WATERWAYS		N/A

	PROPOSED
PROPOSED LOT AND S.F.	X 5,000 s.f.
OPEN SPACE LABEL	Ⓐ
OPEN SPACE	
BUILDING SET BACKS	
PRIVATE SANITARY SET BACKS	
STREET SIGN	
404 WETLANDS	
FLOW DIRECTION	

DEVELOPER/OWNER

Signature Top Sail NC, Ltd.
4307 Peeble Drive
WILMINGTON, NC 28402
PHONE: (713) 822-3891

PREPARED BY:

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road, Unit C, Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659 License # P-0718

CERTIFICATE OF PRELIMINARY PLAT APPROVAL

PRELIMINARY PLAT APPROVED BY PENDER COUNTY FOR A PERIOD OF TWO (2) YEARS SUBJECT TO THE PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE REQUIREMENTS AND CONDITIONS OF APPROVAL.

PLANNING STAFF _____ DATE _____

CERTIFICATION OF SUBDIVISION

A COPY OF THIS PLAT HAS BEEN SUBMITTED. APPROVAL IS SUBJECT TO REVIEW; THIS DOES NOT CONSTITUTE APPROVAL.

PENDER COUNTY UTILITIES: _____ DATE: _____
PENDER COUNTY ENVIRONMENTAL HEALTH: _____ DATE: _____
PENDER COUNTY ADDRESSING COORDINATOR: _____ DATE: _____

INDEX OF SHEETS

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SITE DATA TABLE

GENERAL NOTES:

1. PENDER COUNTY PARCEL NO.:
   PIN 4214-12-8251-0000
2. TOTAL TRACT AREA: 6,256,131 SF = 143.62 AC.±
   PHASE 2 AREA: 986,812 SF = 22.65 AC.±
3. ZONING: PLANNED DEVELOPMENT (PD)
4. A PORTION OF THIS PROPERTY IS WITHIN A SPECIAL FLOOD HAZARD ZONE PER FEMA FLOOD INSURANCE RATE MAP #3720420400J, EFFECTIVE DATE 2/16/2007 AND FLOOD INSURANCE RATE MAP #3720421400J, EFFECTIVE DATE 2/16/2007.
5. THIS PROPERTY DOES NOT CONTAIN ANY A.E.C. AREAS OR IS UNDER CAMA JURISDICTION.
6. THIS PROPERTY DOES CONTAIN 404 FEDERAL WETLANDS WHICH HAVE BEEN APPROVED BY THE USACOE.

GENERAL NOTES:

1. OWNERSHIP REFERENCE:
   D.B. 4379 P.G 330-346 PLAT # 16 PG. 73 & D.B. 4604 P.G. 1703
2. PROPERTY IS LOCATED IN PENDER COUNTY AND IS ZONED PLANNED DEVELOPMENT (PD).
3. A HOME OWNERS ASSOCIATION WILL BE FORMED TO GUARANTEE CONTINUAL MAINTENANCE OF THE COMMON AREAS AND OPEN SPACE.
4. ALL INTERIOR ROADWAYS ARE TO BE BUILT TO NCDOT SUBDIVISION ROADS MINIMUM CONSTRUCTION STANDARDS.
5. INTERIOR ROADWAYS FOR PHASE 3 ARE TO BE PUBLIC & PRIVATE. PUBLIC ROADWAYS SHALL BE DEDICATED TO NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
6. A HOME OWNERS ASSOCIATION WILL BE FORMED PRIOR TO THE SALE OF ANY LOTS AND MEMBERSHIP WILL BE AUTOMATIC UPON PURCHASE.
7. THE DEVELOPERS HAVE THE SOLE RIGHT TO MODIFY THIS PRELIMINARY PLAN IN ACCORDANCE WITH MARKET CONDITIONS OR OTHER CONDITIONS WHICH INDICATE A CHANGE IS DESIRED OR REQUIRED. ANY AND ALL CHANGES MUST BE REVIEWED BY THE PLANNING DEPARTMENT AND IN SOME INSTANCES MAY REQUIRE PLANNING BOARD APPROVAL.
8. BUFFERS WILL BE PROVIDED PER CURRENT PENDER COUNTY ZONING ORDINANCE.
11. WETLANDS IMPACTED WILL BE MITIGATED IN ACCORDANCE WITH ANY REQUIREMENTS OF APPLICABLE STATE AND FEDERAL PERMITS.
12. ALL LOTS SHALL MEET CURRENT PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE REGULATIONS.
13. ALL PROPOSED OPENSPACE/RECREATION AREAS ARE NON-BUILDABLE FOR ANY TYPE OF DEVELOPMENT.

SINGLE FAMILY DEVELOPMENT STANDARDS:

MINIMUM LOT DIMENSIONS:

AREA IN (S.F)	12,000 SF (W/SEPTIC) 5,000 SF (W/SEWER)
MAX USABLE LOT AREA (%)	95%
MIN LOT WIDTH (FT)	70' (W/SEPTIC) 40' (W/SEWER)
MIN CHORD AT ROW (CUL-DE-SAC)	30'
MAX BLDG.. HT. (FT)	38'

PROPOSED BUILDING SETBACKS:

FRONT -	20'
REAR -	20'
SIDE -	ZERO LOT LINE (10' BETWEEN STRUCTURES)
CORNER -	15'

ANY PERIPHERAL PROPERTY LINE STRUCTURES - AS PER NORTH CAROLINA STATE BUILDING CODE

DEVELOPMENT DATA:

TOTAL TRACT AREA =	22.65 AC
WETLAND ACREAGE =	0.00 AC
RIGHT OF WAY ACREAGE =	2.89 AC
OPEN SPACE ACREAGE =	1.89 AC
ACTIVE =	0.95 AC
PASSIVE =	0.94 AC
TOTAL UNITS =	63
DEVELOPABLE LAND =	19.77 AC
NET DENSITY =	3.19 UNITS/AC

TRIP GENERATION:
63 SINGLE FAMILY HOMES:
603 - TOTAL DAILY TRIPS
47 - AM PEAK HOUR
64 - PM PEAK HOUR
*PER ITE TRIP GENERATION MANUAL 8TH EDITION, ITE CODE 210

REQUIRED OPEN SPACE:
63 LOTS * 0.03 AC/LOT = 1.89 AC±

PROVIDED OPEN SPACE
1.89 AC± PROVIDED FOR PHASE 2B
NOTE: PROPOSED OPENSPACE/RECREATION SPACE AREAS ARE NOT FOR BUILDING OR STRUCTURAL DEVELOPMENT

DEVELOPMENT DATA:

PHASE 2 AREA: 986,812 SF = 22.65 AC.±
PROPOSED DENSITY 63 UNITS = 2.8 UNITS/AC
AVERAGE LOT SIZE - 11,928 SF
AREA OF LOTS PROPOSED - 751,457 SF = 17.25 AC±
AREA OF ROW PROPOSED - 125,762 SF = 2.89 AC±
TOTAL PROPOSED ROAD LENGTH - 2,394 L.F.±

IMPERVIOUS SURFACES -
PROPOSED BUA -

ROADS -	81,389 S.F.
SIDEWALKS -	7,348 S.F.
LOTS -	263,200 S.F.
TOTAL -	351,937 S.F. (35.7%)

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PATE 05/11/2015

DEVELOPMENT NOTES:
1. ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE.
2. PROJECT SHALL COMPLY WITH ALL CITY, STATE & FEDERAL REGULATIONS.

NOTE:
ALL DESIGN AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE & THE STATE OF NORTH CAROLINA

PROJECT NAME: WYNDWATER - PHASE 2
GSP CONSULTING PROJECT #: 2014-0002

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 PENDER 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. ANYTIME 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.

GENERAL NOTES:

1. EXISTING TOPOGRAPHY, BOUNDARY AND UTILITIES, HAVE BEEN PREPARED BY FIELD SURVEYS BY ATLANTIC COAST SURVEY, PLLC (P-0822) AND OTHER AVAILABLE INFORMATION.

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.

4. 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 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 THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS OF THE MAINS BY DIGGING TEST PITS BY HAND.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL 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 AS SHOWN IN THE TABLE ON THIS SHEET 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 NCDENR DIVISION OF LAND QUALITY.

5. WATER, FERTILIZE, MOW AND MAINTAIN SPRIGGED, SODDED AND PLANTED AREAS UNTIL FINAL APPROVAL BY THE NCDENR DIVISION OF LAND QUALITY.

6. ANY BORROW MATERIAL BROUGHT ONTO SITE MUST BE FROM A LEGALLY OPERATED MINE OR OTHER APPROVED SOURCE.

7. ANY EXCESS MATERIAL REMOVED FROM SITE MUST BE HAULED TO A LEGALLY OPERATED MINE OR OTHER APPROVED SOURCE.

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. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.

2. ALL CONSTRUCTION ENTRANCES WILL BE PERIODICALLY TOP DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. ANY SEDIMENT THAT IS TRACKED INTO THE STREET WILL BE IMMEDIATELY REMOVED.

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. INSPECT INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.

5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.

6. INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.

   IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS.

   IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.

   CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS.

   FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

STABILIZATION NOTES

1. ALL DISTURBED AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS OF CEASE OF ANY PHASE OF ACTIVITY AND SLOPES WITHIN 21 CALENDAR DAYS.

PERMANENT SEEDING SCHEDULE – MIXTURE 5CP

SPECIES	RATE (LB/ACRE)
CENTIPEDE GRASS	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

WINTER AND EARLY SPRING

SPECIES	RATE (LB/ACRE)
Rye (GRAIN)	120
*ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)	50

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

SUMMER

SPECIES	RATE (LB/ACRE)
GERMAN MILLET	40

FALL

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	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.

GENERAL STORM SEWER NOTES

1. ALL STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PENDER COUNTY AND THE STATE OF NORTH CAROLINA REQUIREMENTS AS SPECIFIED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.

2. BEDDING FOR ALL STORM SEWER PIPE SHALL BE AS SPECIFIED ON THE DRAWINGS, PROJECT SPECIFICATIONS, AND MANUFACTURER SPECIFICATIONS.

3. ALL STORM SEWER PIPES TO BE HDPE ADS N-12 OR EQUIVALENT, UNLESS OTHERWISE SPECIFIED.

4. ALL STORM SEWER PIPES SHOWN AS RCP ON THE PLANS SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM C-76, UNLESS INDICATED OTHERWISE ON PLANS.

GROUND STABILIZATION		
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

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 AND DIGGING. 1-800-632-4949

NOTICE REQUIRED

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED BY CONTRACTOR 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

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
09/17/2015

No.	Revision	Date	By

Designer GSP	Scale
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

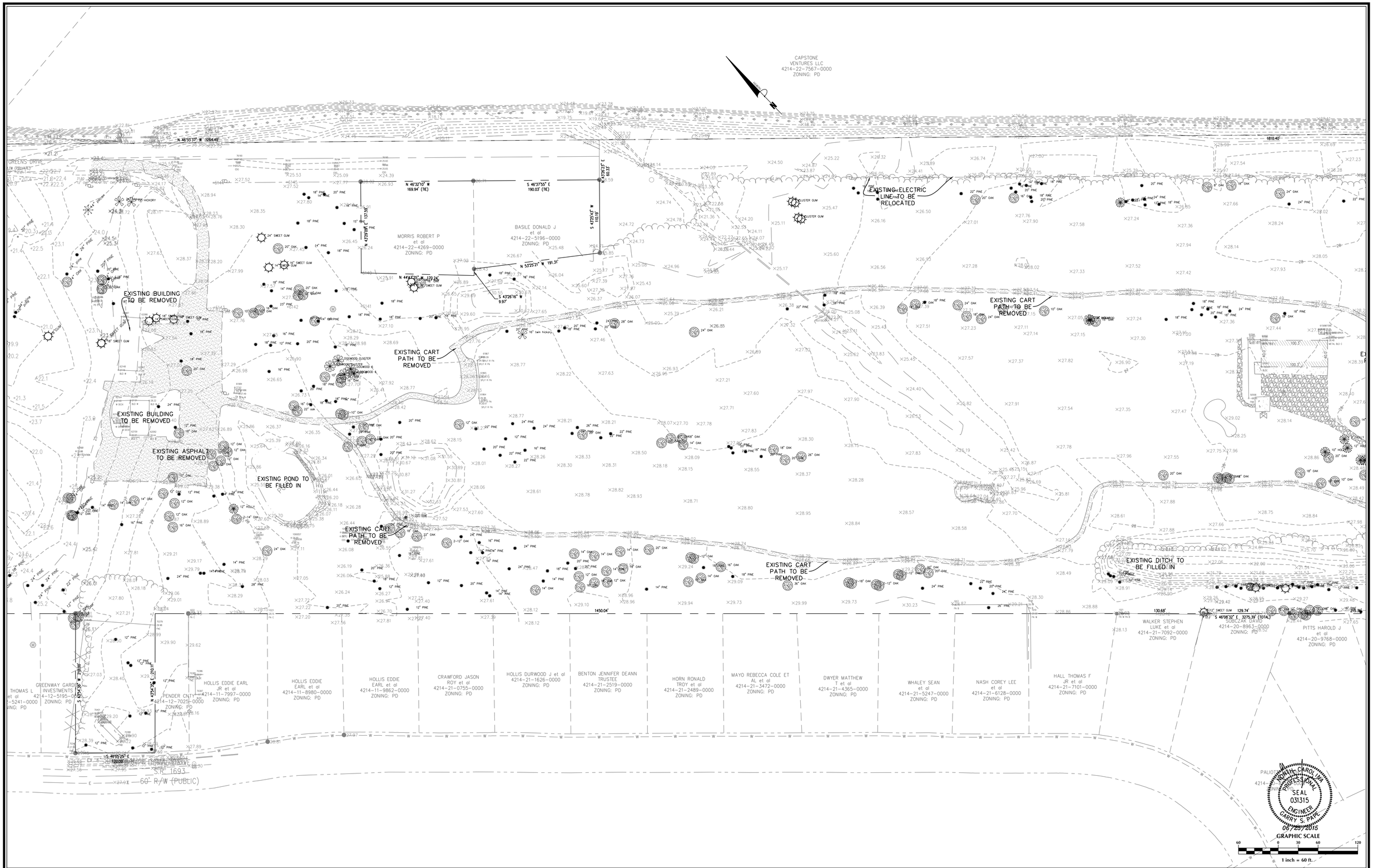
Topsail Township Pender County North Carolina

GENERAL NOTES

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
713-822-3891

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-1



No.	Revision	Date	By

Designer GSP	Scale 1" = 60'
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

Topsail Township Pender County North Carolina

EXISTING CONDITIONS

PREPARED FOR:
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4307 PEEBLE DRIVE
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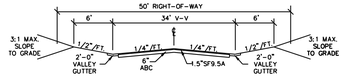
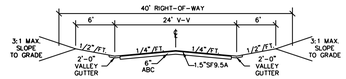
Sheet No.
C-2

SITE DETAILS

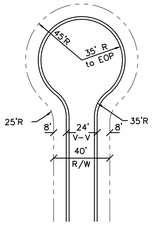
Reference N.C.D.O.T. "Minimum Construction Standards for Subdivision Roads."



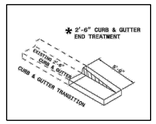
Local Residential Road X-Section
(w/ Valley Gutter)
WEST CRAFTSMAN WAY

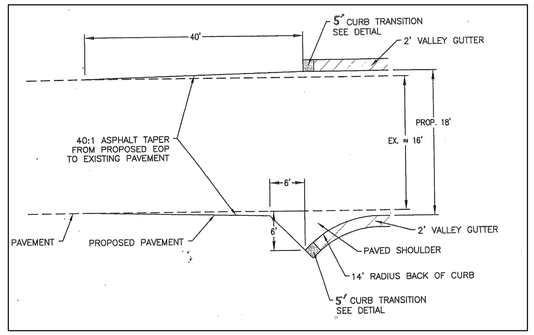


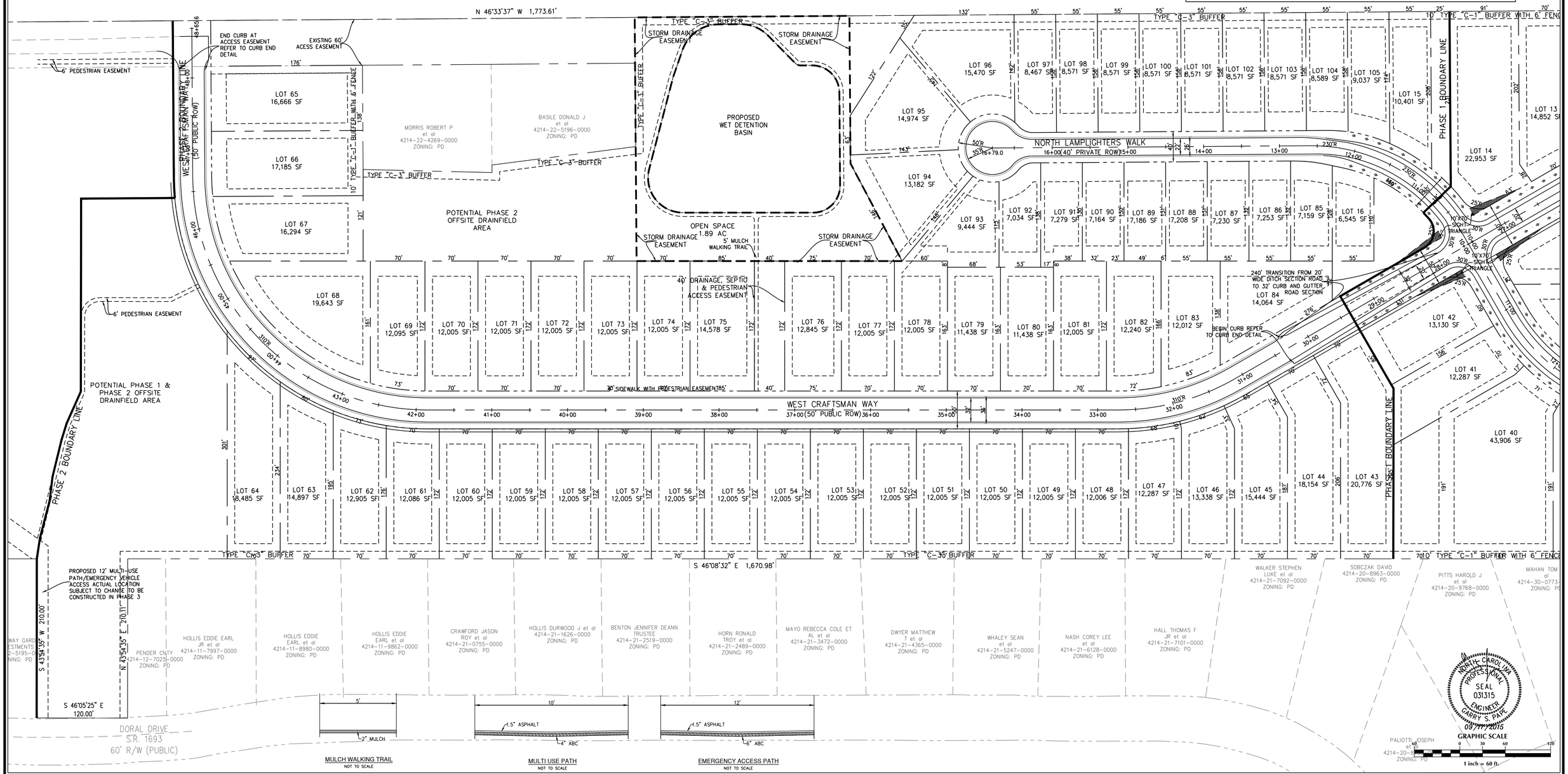
Residential Cul-De-Sac Road X-Section
(w/ Valley Gutter)
NORTH LAMPLIGHTERS WALK



Residential Cul-De-Sac







MULCH WALKING TRAIL
NOT TO SCALE

MULTI USE PATH
NOT TO SCALE

EMERGENCY ACCESS PATH
NOT TO SCALE

No.	Revision	Date	By

Designer GSP	Scale 1" = 60'
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

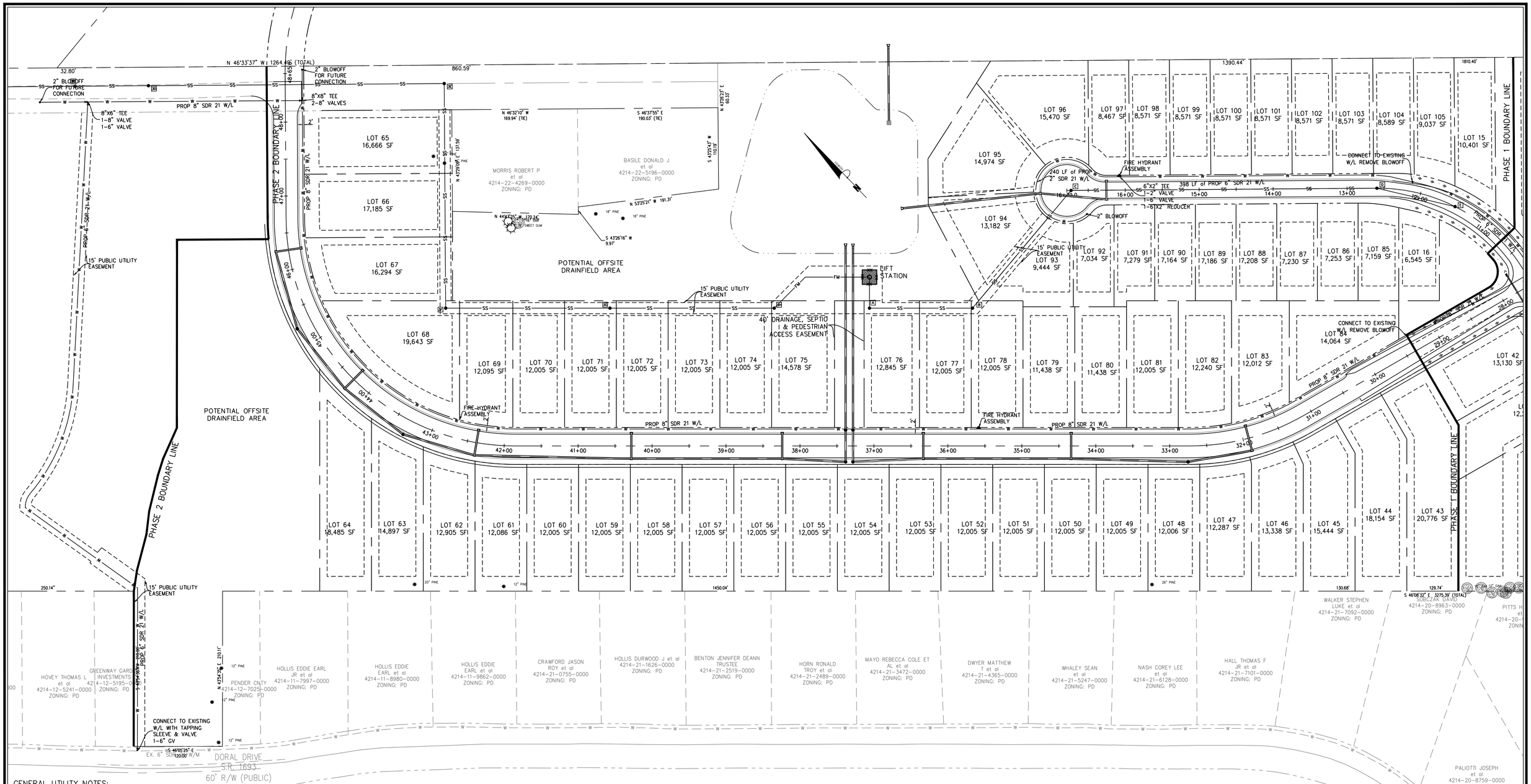
Topsail Township Pender County North Carolina

SITE PLAN

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
713-822-3891

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-3



GENERAL UTILITY NOTES:

1. WATER SERVICE SHALL BE BUILT TO PENDER COUNTY UTILITIES STANDARDS AND SPECIFICATIONS.
2. ALL UTILITIES SHALL BE UNDERGROUND.
3. WATER SERVICE TO BE A PUBLIC PIPED DISTRIBUTION SYSTEM OWNED AND OPERATED BY PENDER COUNTY.
4. SANITARY SEWAGE TO BE BY DRAINFIELDS OWNED AND OPERATED BY THE LOT OWNER.
5. A HOMEOWNERS ASSOCIATION SHALL BE FORMED TO GUARANTEE CONTINUAL MAINTENANCE OF THE COMMON AREAS AND OPEN SPACE.
6. ALL WATER AND SANITARY SEWER SYSTEMS WILL BE DESIGNED TO MEET PENDER COUNTY AND STATE REQUIREMENTS. FINAL CONSTRUCTION PLANS WILL BE SUBMITTED TO BOTH AGENCIES AND A PERMIT TO CONSTRUCT PRIOR TO UTILITY INSTALLATION.
7. ALL WATERLINES SHOWN WILL BE SIZED IN ACCORDANCE WITH APPLICABLE PENDER COUNTY AND STATE REQUIREMENTS.
8. SANITARY COMPONENTS WILL REMAIN AT MINIMUM 10' FROM ANY LOT AND/OR PROPERTY LINES.
9. ALL WATER SERVICES TO BE INSTALLED BY DEVELOPER AND INSPECTED BY PENDER COUNTY UTILITIES.
9. ALL MATERIALS SHALL CONFORM TO PENDER COUNTY UTILITIES REQUIREMENTS. NON-CONFORMING MATERIAL WILL NOT BE ACCEPTED FOR FINAL CERTIFICATION.
10. A ONE YEAR WARRANTY PERIOD APPLIES TO ALL UTILITIES CONSTRUCTION. THIS WARRANTY PERIOD DOES NOT BEGIN UNTIL NCDENR FINAL APPROVAL OF THE SYSTEM HAS BEEN RECEIVED. A WRITTEN COPY OF THE WARRANTY WILL BE REQUIRED PRIOR TO FINAL ACCEPTANCE.
11. PROPOSED WATERLINE TO BE LOCATED IN A MINIMUM OF 5' FROM BACK OF CURB.
12. RJ GRIP RINGS TO BE INSTALLED AT ALL FITTINGS.
13. ALL VALVES TO BE LOCATED OUTSIDE OF PAVEMENT.
14. ALL UTILITY CROSSINGS SHALL BE COORDINATED WITH PCU AT PRE-CONSTRUCTION MEETING PRIOR TO BEGINNING CONSTRUCTION.
15. COORDINATE HYDRANT DETAIL, TAPPING SLEEVE & FUTURE CONNECTION DETAILS WITH PCU AT PRE-CONSTRUCTION MEETING.

TOTAL LINEAR FEET PROPOSED

229' – 2" SDR-21 WATERLINE
1,276' – 6" SDR-21 WATERLINE
2,119' – 8" SDR-21 WATERLINE

GRAPHIC SCALE
60 0 30 60 120
1 inch = 60 ft.

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE 05/11/2015

No.	Revision	Date	By

Designer GSP	Scale 1" = 60'
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

Topsail Township Pender County North Carolina

UTILITY PLAN

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
713-822-3891

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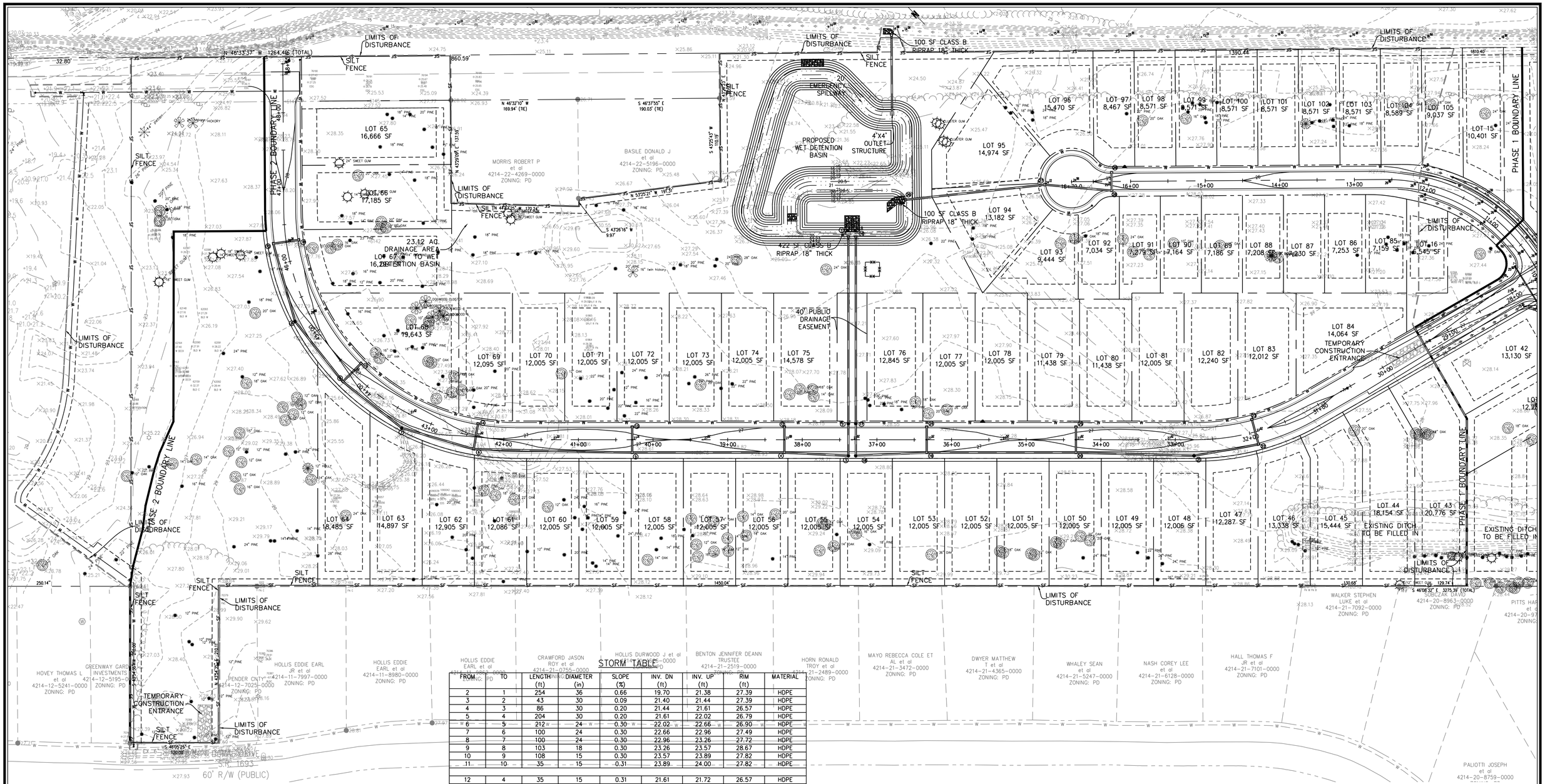
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No. C-4



STORM TABLE

FROM	TO	LENGTH (ft)	DIAMETER (in)	SLOPE (%)	INV. DN (ft)	INV. UP (ft)	RIM (ft)	MATERIAL
2	1	254	36	0.66	19.70	21.38	27.39	HDPE
3	2	43	30	0.09	21.40	21.44	27.39	HDPE
4	3	86	30	0.20	21.44	21.61	26.57	HDPE
5	4	204	30	0.20	21.61	22.02	26.79	HDPE
6	5	212	24	0.30	22.02	22.66	26.90	HDPE
7	6	100	24	0.30	22.66	22.96	27.49	HDPE
8	7	100	24	0.30	22.96	23.26	27.72	HDPE
9	8	103	18	0.30	23.26	23.57	28.67	HDPE
10	9	108	15	0.30	23.57	23.89	27.82	HDPE
11	10	35	15	0.31	23.89	24.00	27.82	HDPE
12	4	35	15	0.31	21.61	21.72	26.57	HDPE
13	5	35	15	0.31	22.02	22.13	26.79	HDPE
14	6	35	15	0.31	22.66	22.77	26.90	HDPE
15	8	35	15	0.31	23.26	23.37	27.72	HDPE
17	16	254	36	0.63	19.70	21.29	27.39	HDPE
18	17	43	30	0.30	21.31	21.44	27.39	HDPE
19	18	95	30	0.20	21.44	21.63	26.55	HDPE
20	19	200	24	0.30	21.63	22.23	26.55	HDPE
21	20	158	24	0.30	22.23	22.70	27.42	HDPE
22	21	88	15	0.30	22.70	22.96	26.55	HDPE
23	22	35	15	0.31	22.96	23.07	26.55	HDPE
24	19	35	15	0.31	21.63	21.74	26.55	HDPE
25	20	35	15	0.31	22.23	22.34	26.55	HDPE
27	26	179	24	0.30	19.96	20.50	24.58	HDPE
28	27	90	24	0.30	20.50	20.77	24.80	HDPE
29	28	25	18	0.32	20.77	20.85	24.80	HDPE

SEDIMENT BASIN CALCULATIONS

SEDIMENT TRAPPING DEVICE	DRAINAGE AREA (AC)	REQUIRED STORAGE (1,800CF/AC)	PROVIDED STORAGE (CF)	PEAK Q10 FLOW (CFS)	REQUIRED AREA (325 SF/CFS)	PROVIDED AREA (SF)	SKIMMER SIZE (in)
SEDIMENT BASIN #1	23.12 AC.	39,138	42,875	41.10	13,356	35,852	3.0

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAGE
09/17/2015

No.	Revision	Date	By

Designer GSP	Scale 1" = 60'
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

Topsail Township Pender County North Carolina

GRADING, DRAINAGE & EROSION & SEDIMENT CONTROL PLAN

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
713-822-3891

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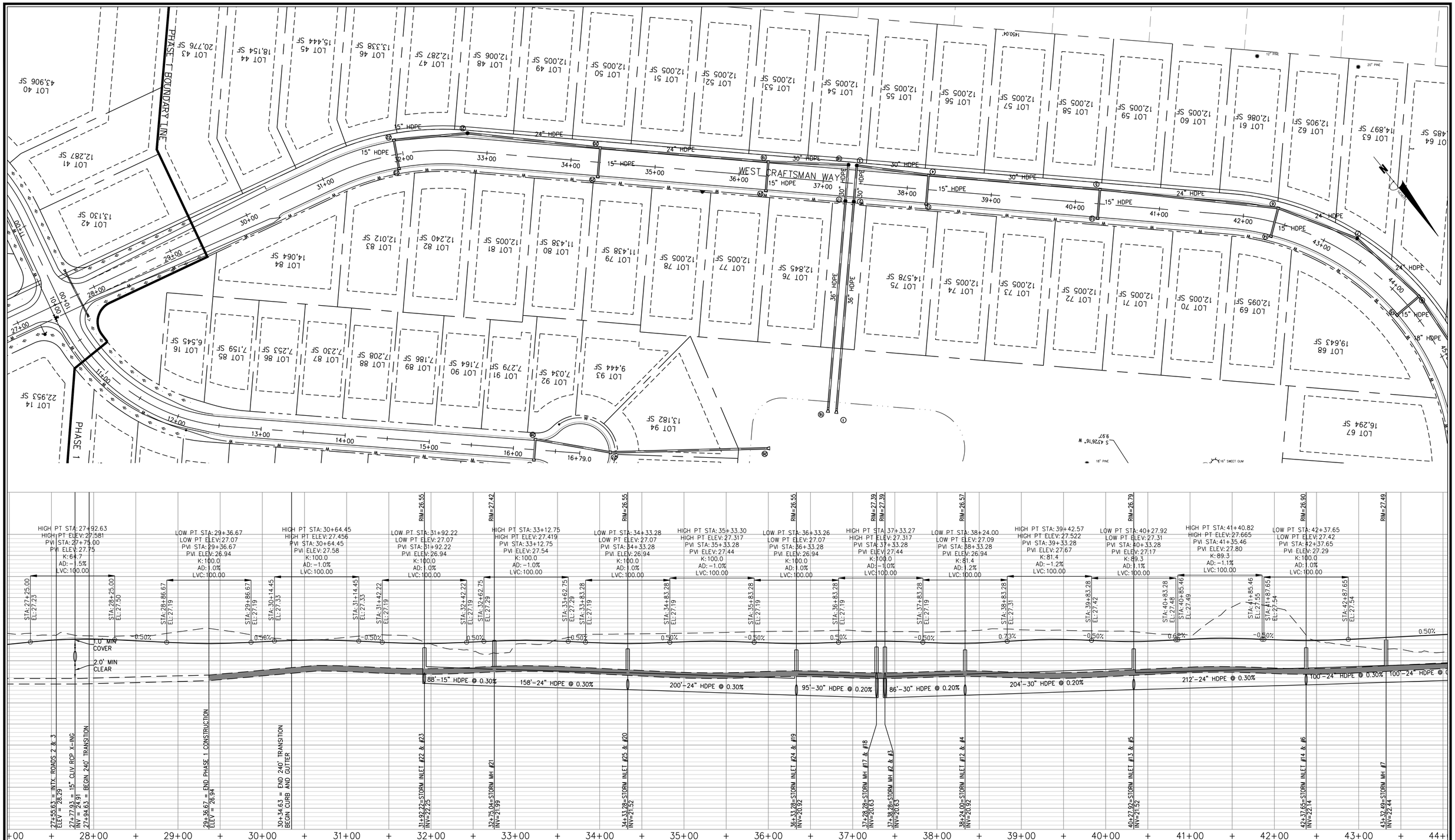
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No. C-5



GRAPHIC SCALE

50 0 25 50 100

1 inch = 50 ft.

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE 09/11/2015

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

Topsail Township Pender County North Carolina

WEST CRAFTSMAN WAY PLAN & PROFILE (PUBLIC)

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
713-822-3891

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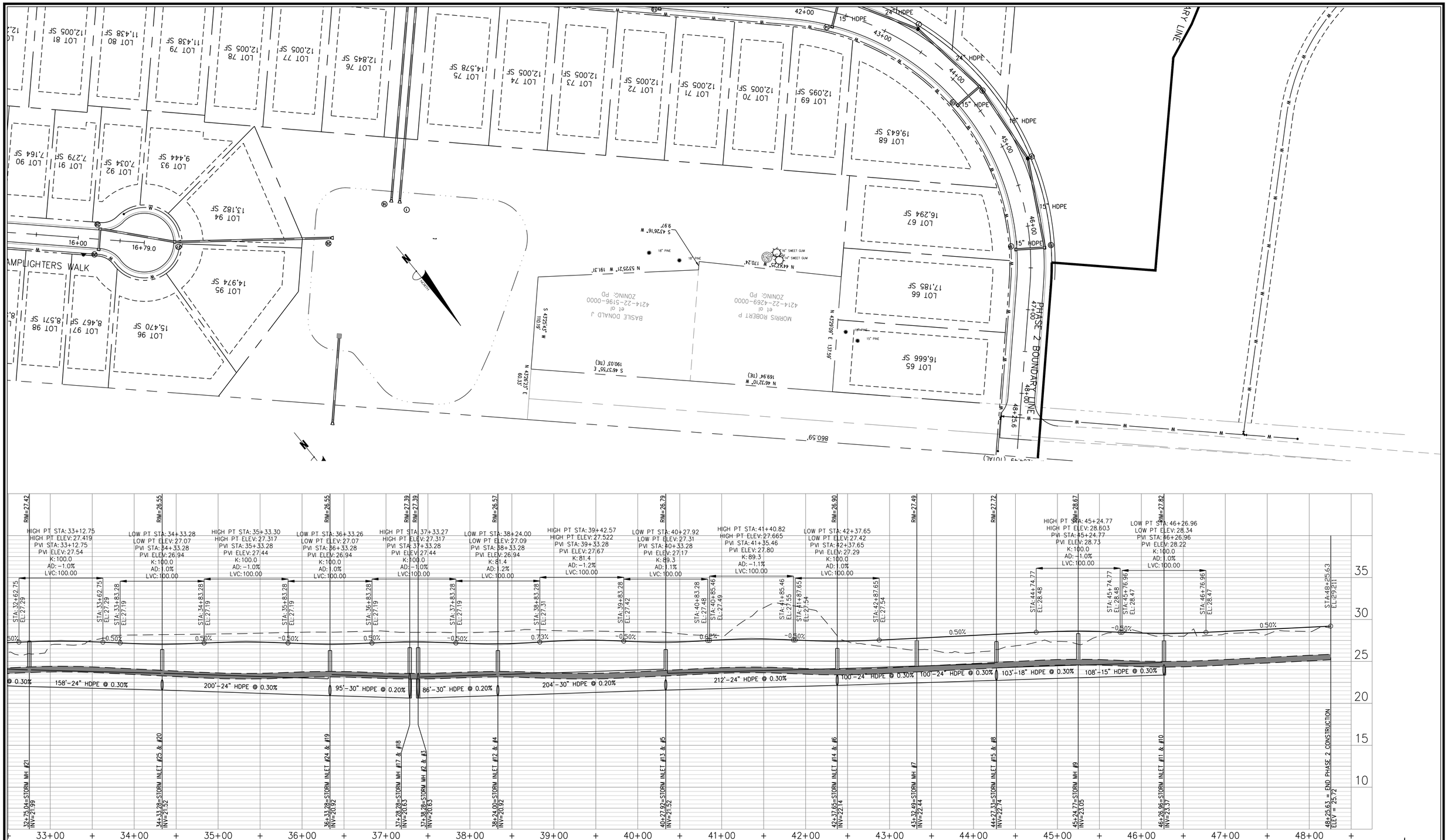
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-6



NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
03/17/2015

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

Topsail Township Pender County North Carolina

WEST CRAFTSMAN WAY PLAN & PROFILE (PUBLIC)

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
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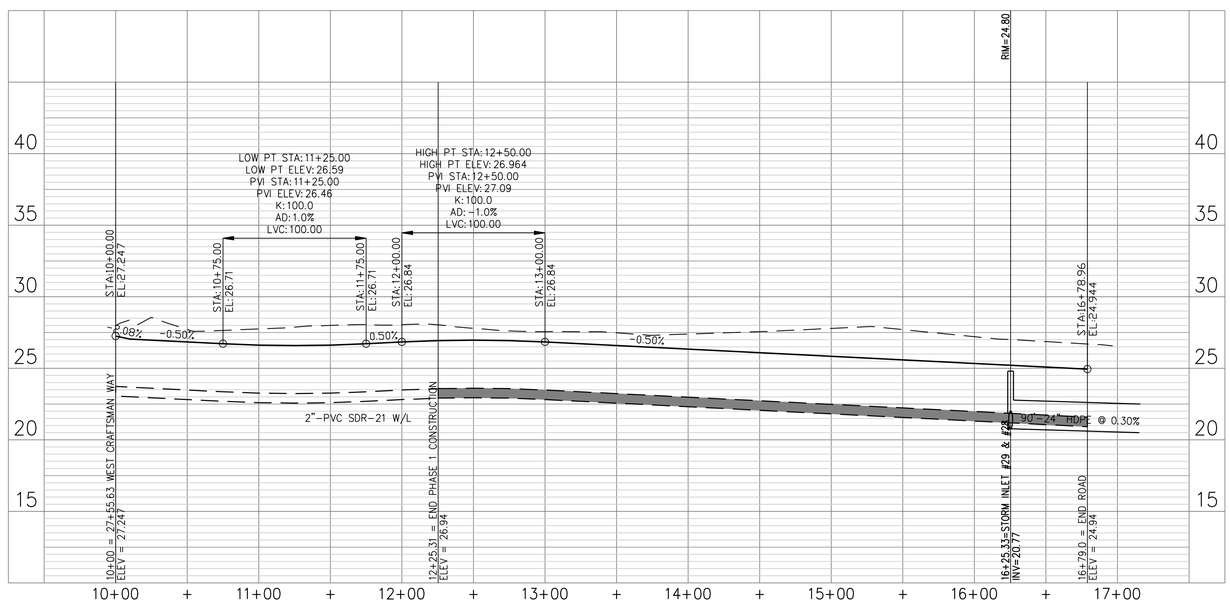
C-7



NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PAPE 08/17/2015

GRAPHIC SCALE

50 0 25 50 100

1 inch = 50 ft.

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

Topsail Township Pender County North Carolina

NORTH LAMPLIGHTERS WALK PLAN & PROFILE (PRIVATE)

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
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ENGINEERING
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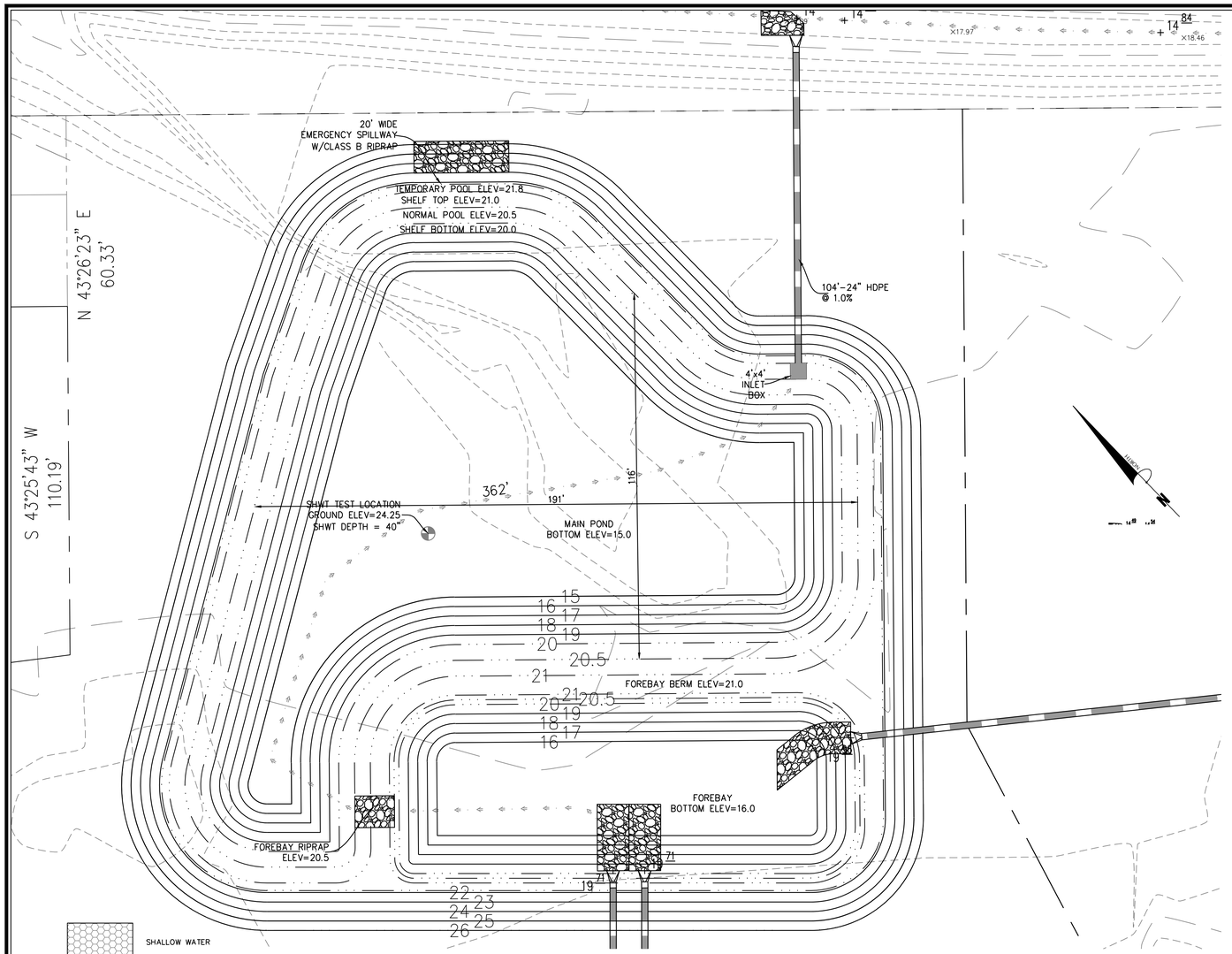
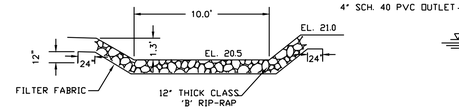
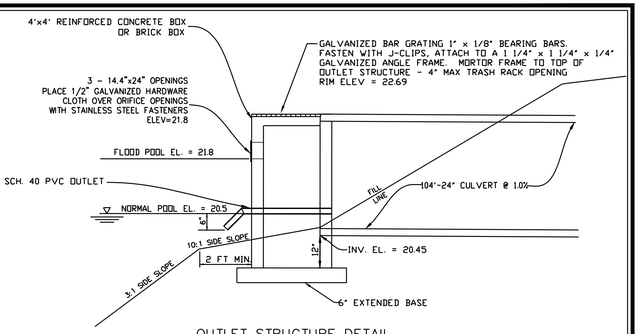
Sheet No.
C-8

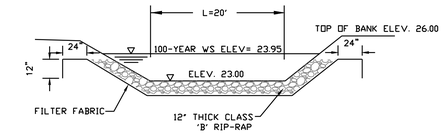




FOREBAY RIP-RAP
N.T.S.



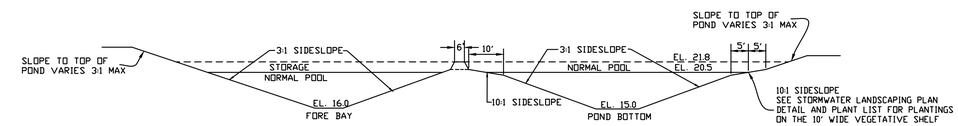
OUTLET STRUCTURE DETAIL
N.T.S.



EMERGENCY SPILLWAY
N.T.S.

NOTES:

1. DESIGN ELEVATIONS FOR WET DETENTION BASIN ARE TO AN ELEVATION OF 15.0 IN THE MAIN POND AND 16.0 IN THE FOREBAY WITH SEDIMENT STORAGE DOWN TO 14.0 IN THE MAIN POND AND 15.0 IN THE FOREBAY.
2. SEASON HIGH WATER TABLE WAS TAKEN AT A GROUND ELEVATION OF 24.25 AND ESTIMATED TO BE 40 INCHES FOR AN ELEVATION OF 20.95, WHICH IS WITHIN 6" OF THE PERMANENT POOL ELEVATION OF 20.5.
3. ALL IMPERVIOUS SITE AREA TO BE DRAINED TO PROPOSED STORM SEWER SYSTEM AND DISCHARGED TO THE WET DETENTION POND.
4. POND WILL BE PUMPED DOWN BY MECHANICAL MEANS IN CASE OF EMERGENCY.
5. PRIOR TO USE AS A WET DETENTION BASIN, SEDIMENT BASIN WILL BE MUCKED OUT.
6. POND SIDE SLOPES TO BE SODDED WITH CENTIPEDE GRASS OR EQUIVALENT.
7. ALL SLOPES ABOVE PERMANENT POOL TO BE 3:1 MAX.



NORMAL POOL ELEVATION	SHELF BOTTOM ELEVATION	POND DEPTH (FT)	SHELF BOTTOM AREA (SF)	POND BOTTOM AREA (SF)	SURFACE AREA PROVIDED (SF)	SURFACE AREA REQUIRED (SF)	AVERAGE POND DEPTH (FT)	SHWT ELEVATION (FT)
20.5	20.0	5.0	29,622	12,593	33,673	31,387	4.0	20.9

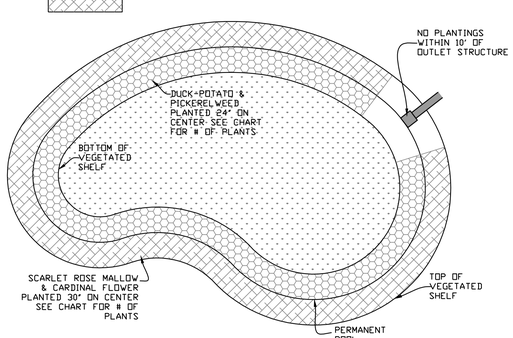
POND CROSS-SECTION
N.T.S.

SHALLOW WATER COMMUNITY (NORMAL POOL TO SHELF BOTTOM) = 3,212 S.F.
@ 1 PLANT PER 4 SF (24" O.C.) -804 PLANTS

PLANT TYPE	QTY		BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	402		Sagittaria latifolia	Duck Potato	CONT.	4" Pot		24" O.C.
	402		Pontedaria cordata	Pickerelweed	CONT.	4" Pot		24" O.C.

SHALLOW LAND COMMUNITY (NORMAL POOL TO SHELF TOP) = 3,354 S.F.
@ 1 PLANT PER 6.25 SF (30" O.C.) -536 PLANTS

PLANT TYPE	QTY		BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	268		Hibiscus coccineus	Scarlet Rose Mallow	CONT.	4" Pot		30" O.C.
	268		Lobelia cardinalis	Cardinal Flower	CONT.	4" Pot		30" O.C.



TYPICAL VEGETATED SHELF
LANDSCAPING PLAN

NOTES:

1. NO PLANTINGS WITHIN 10' OF OUTLET STRUCTURE.

2. BECAUSE MOST STORMWATER BASINS ARE EXCAVATED TO DEEP SUB-SOILS, THEY OFTEN LACK THE NUTRIENTS AND ORGANIC MATTER NEEDED TO SUPPORT VIGOROUS GROWTH OF PLANTS. ALL LANDSCAPE MATERIAL, INCLUDING GRASS, SHOULD BE PLANTED IN GOOD TOPSOIL. NATIVE UNDERLYING SOILS MAY BE SUITABLE FOR PLANTING IF AMENDED WITH 4 INCHES OF WELL-AGED COMPOST TILLED INTO THE SUBGRADE. COMPOST SHOULD MEET SPECIFICATIONS FOR GRADE A COMPOST QUALITY.

3. A MINIMUM TWO-YEAR WARRANTY PERIOD STIPULATING REQUIREMENTS FOR PLANT SURVIVAL/REPLACEMENT.

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PAPE
06/29/2016

GRAPHIC SCALE
20 0 10 20 40
1 inch = 20 ft.

No.	Revision	Date	By

Designer GSP	Scale 1" = 20'
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

Topsail Township Pender County North Carolina

WET DETENTION BASIN DETAILS

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
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Sheet No.
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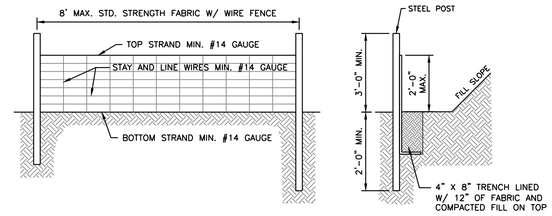
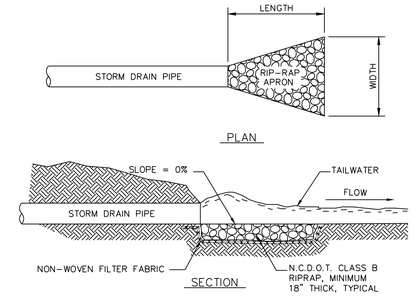


NOTES:

1. WIRE FENCE (IF USED) SHALL BE MINIMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.
2. SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFIN'S OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461 AND ALSO SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS ACCORDING TO ASTM D 4355.
3. SEE THE NC EROSION CONTROL MANUAL FOR SPECIFICATIONS INSTALLING SEDIMENT FENCE USING THE SLICING METHOD MACHINERY.

TEMPORARY SILT FENCE

NOT TO SCALE



RIPRAP LOCATIONS	LENGTH (FT.)	UPSTREAM WIDTH (FT.)	DOWNSTREAM WIDTH (FT.)
36" CULVERT	18	9	12
SWALES INTO POND	21	10	10

RIP-RAP OUTLET PROTECTION

N.T.S.

SEQUENCE OF CONSTRCUTION

1. INSTALL TEMPORARY CONSTRUCTION ENTRANCE AS SHOWN ON EROSION & SEDIMENT CONTROL PLAN.

2. INSTALL PERIMETER CONTROLS (TEMPORARY SEDIMENT BASIN, SILT FENCE, TREE PROTECTION FENCING, ETC.) AS SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN. THIS STEP NEEDS TO BE COMPLETED PRIOR TO UPSLOPE LAND DISTURBING ACTIVITIES.

3. THE EXISTING POND WILL ACT AS TEMPORARY SEDIMENT BASIN DURING CLEARING AND GRUBBING ACTIVITIES.

4. ONCE PERIMETER CONTROLS AND SEDIMENT TRAPPING MEASURES ARE INSTALLED CLEAR AND GRUB SITE WITHIN LIMITS OF DISTURBANCE. POND WILL BE PUMPED DOWN BY MECHANICAL MEANS AS NEEDED TO MUCK OUT SEDIMENT WHEN THE SEDIMENT REACHES 50% CAPACITY.

5. UPON BRINGING THE SITE TO ROUGH GRADE, STABILIZE ALL AREAS WITH TEMPORARY VEGETATION IF LEFT UNDISTURBED FOR 15 WORKING DAYS AN ALL SLOPES WITHIN 21 CALENDAR DAYS.

6. UPON BRINGING THE ROAD BEDS TO SUBGRADE ELEVATIONS, STABILIZE THE AREAS BY PLACING STONE BASE AS EARLY AS POSSIBLE.

7. FOR TEMPORARY VEGETATIVE STABILIZATION OF ALL DENUDED AREAS SEE NOTE REFERENCING THE EROSION CONTROL PROGRAM AND SPECIFICATIONS.

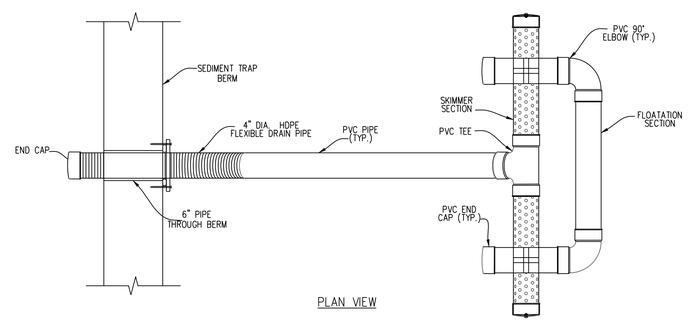
8. AFTER CONSTRUCTION OPERATIONS HAVE ENDED AND ALL DISTURBED AREAS HAVE STABILIZED, MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED. SEDIMENT FROM TEMPORARY SEDIMENT TRAPPING DEVICES SHALL BE DISPOSED OF BY SPREADING ON THE SITE OR HAULING AWAY IF NOT SUITABLE FOR FILL. ALL DENUDED AREAS ARE TO BE PERMANENTLY STABILIZED WITH PERMANENT VEGETATION.

NOTES: 1). ALL P.V.C. PIPES ARE TO BE 4" I.D., SCHEDULE 40

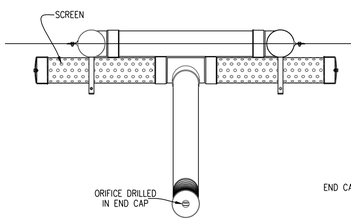
2). ALL JOINTS OF THE FLOATATION SECTION SHALL BE SOLVENT WELDED. JOINTS OF SKIMMER SECTION NEED NOT BE WATER-TIGHT.

3). 4" HDPE FLEXIBLE DRAIN PIPE IS TO BE ATTACHED TO THE POND OUTLET STRUCTURE WITH WATER-TIGHT CONNECTIONS.

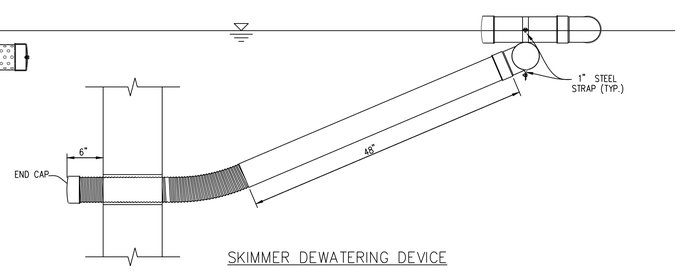
4). ORIFICE IS TO BE SIZED ACCORDING TO STORAGE VOLUME AND TO SLOWLY RELEASE 1" RUNOFF FOR AT LEAST 24-HOURS.



PLAN VIEW

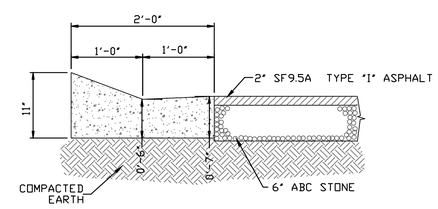


FRONT VIEW



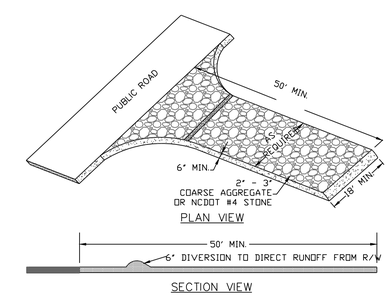
SKIMMER DEWATERING DEVICE

N.T.S.



MODIFIED VALLEY GUTTER

N.T.S.



TEMPORARY CONSTRUCTION ENTRANCE

N.T.S.

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PAPE
02/04/2015

No.	Revision	Date	By

Designer GSP	Scale NO SCALE
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2

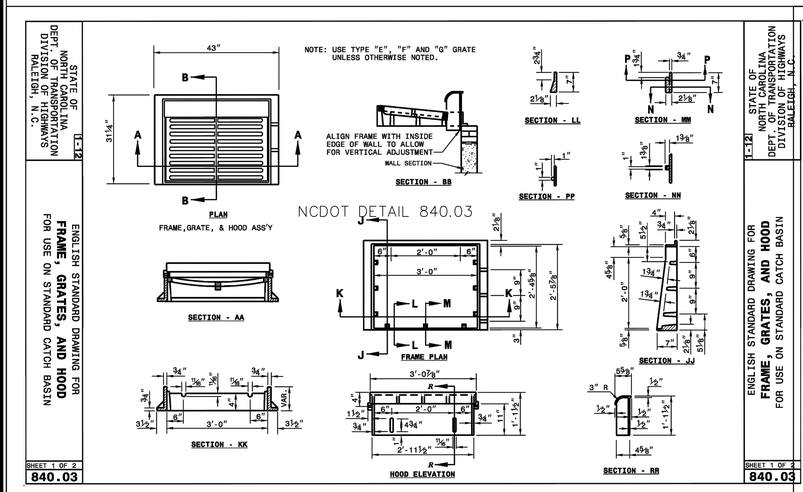
Topsail Township Pender County North Carolina

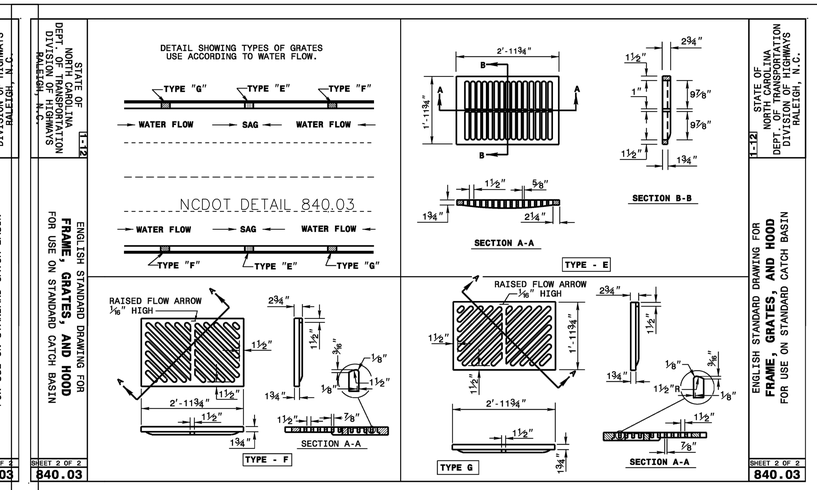
STANDARD DETAILS

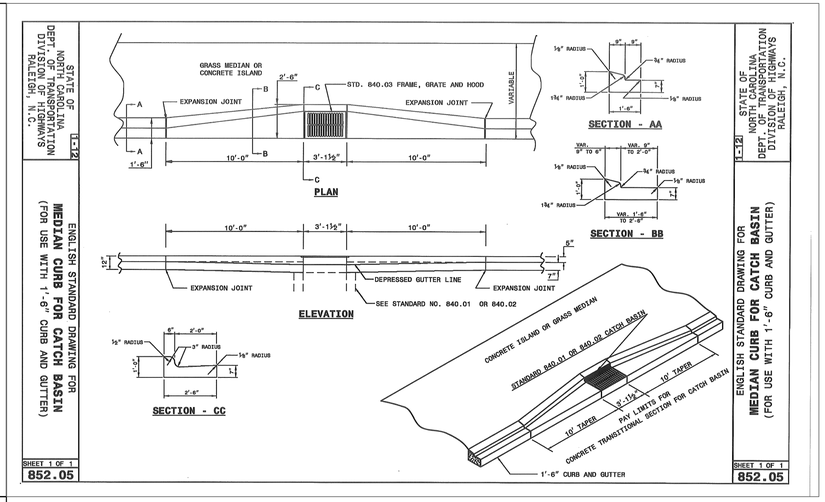
PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
713-822-3891

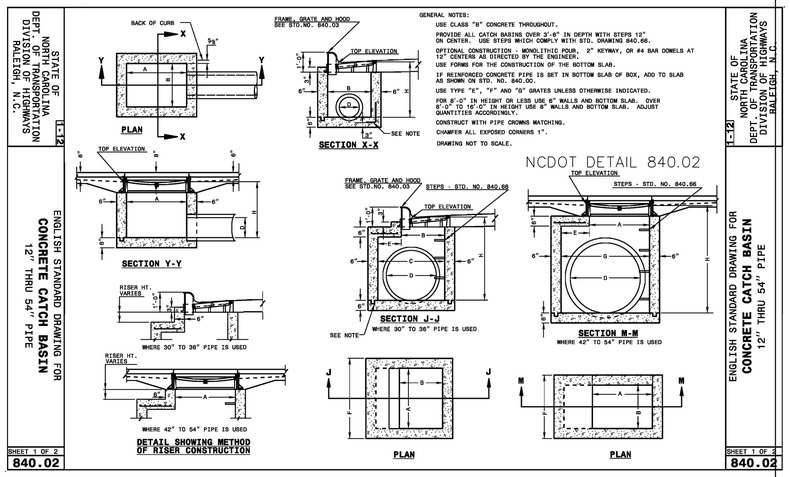
GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

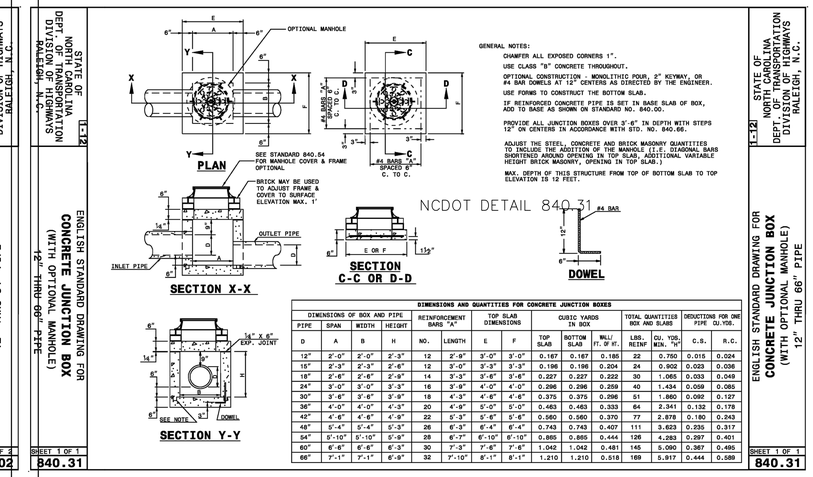
Sheet No. **C-10**





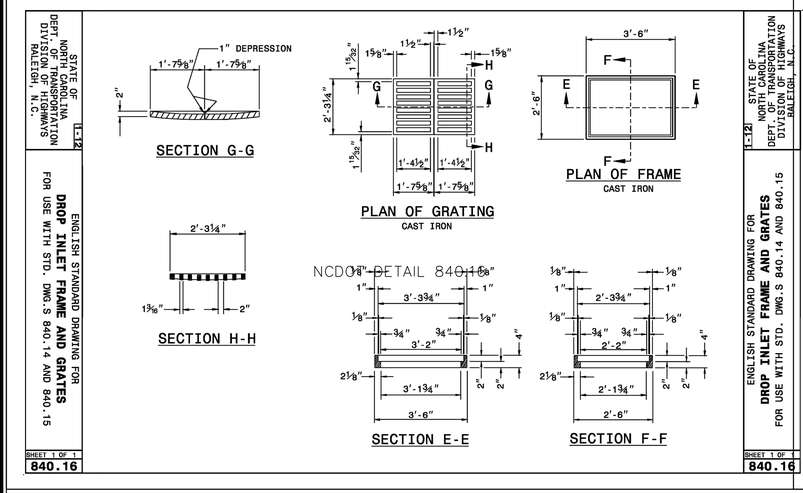


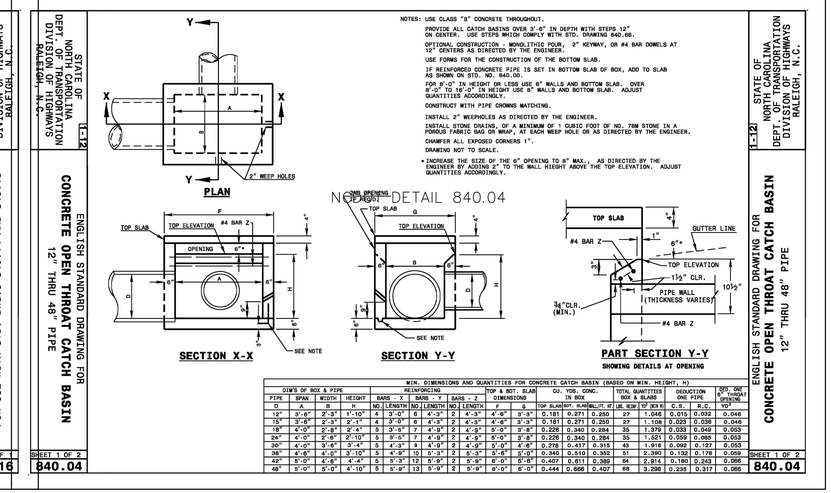




DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS			CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE D	SPAN A	WIDTH B	HEIGHT H	NO.	LENGTH	E	F	G	TOP SLAB	BOTTOM SLAB	WALL FT. OF HT.	LBS. REINF	CU. YDS. MIN. "H"	C.S.	R.C.
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"		0.167	0.167	0.185	22	0.750	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"		0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"		0.227	0.227	0.222	30	1.065	0.033	0.048
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"		0.296	0.296	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"		0.375	0.375	0.296	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"		0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"		0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"		0.743	0.743	0.407	111	3.623	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"		0.865	0.865	0.444	126	4.283	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"		1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"		1.210	1.210	0.518	169	5.917	0.444	0.589





MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H)

DIM'S OF BOX & PIPE				REINFORCING						TOP & BOT. SLAB DIMENSIONS		CU. YDS. CONC. IN BOX			TOTAL QUANTITIES BOX & SLABS		DEDUCTION ONE PIPE		DED. ONE 8" THROAT OPENING
				BARS - X			BARS - Y												
PIPE D	SPAN A	WIDTH B	HEIGHT H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	F	G	TOP SLAB	BOT. SLAB	WALL FT. OF HT.	LBS. REIN	CU. YDS. CONC.	C.S.	R.C.	YD³
12"	3'-6"	2'-3"	1'-10"	4	3'-0"	6	4'-3"	2	4'-3"	4'-6"	3'-3"	0.181	0.271	0.250	27	1.046	0.015	0.032	0.046
15"	3'-6"	2'-3"	2'-1"	4	3'-0"	6	4'-3"	2	4'-3"	4'-6"	3'-3"	0.181	0.271	0.250	27	1.108	0.023	0.036	0.046
18"	4'-0"	2'-6"	2'-4"	5	3'-3"	7	4'-9"	2	4'-9"	5'-0"	3'-6"	0.228	0.340	0.284	35	1.379	0.033	0.049	0.053
24"	4'-0"	2'-8"	2'-10"	5	3'-3"	7	4'-9"	2	4'-9"	5'-0"	3'-8"	0.228	0.340	0.284	35	1.521	0.059	0.085	0.053
30"	4'-0"	3'-6"	3'-4"	5	4'-3"	8	4'-9"	2	4'-9"	5'-0"	4'-6"	0.278	0.417	0.315	45	1.916	0.092	0.127	0.053
36"	4'-6"	4'-0"	3'-10"	5	4'-9"	10	5'-3"	2	5'-3"	5'-6"	5'-0"	0.340	0.510	0.352	51	2.390	0.132	0.178	0.059
42"	5'-0"	4'-6"	4'-4"	5	5'-3"	12	5'-9"	2	5'-9"	6'-0"	5'-6"	0.407	0.611	0.389	64	2.914	0.180	0.243	0.066
48"	5'-0"	5'-0"	4'-10"	5	5'-9"	13	5'-9"	2	5'-9"	6'-0"	6'-0"	0.444	0.666	0.407	68	3.298	0.235	0.317	0.066

No.	Revision	Date	By

Designer: GSP	Scale: NO SCALE
Drawn By: GSP	Date: May 2014
License #: P-0718	Job No.: 2014-0002

WYNDWATER - PHASE 2

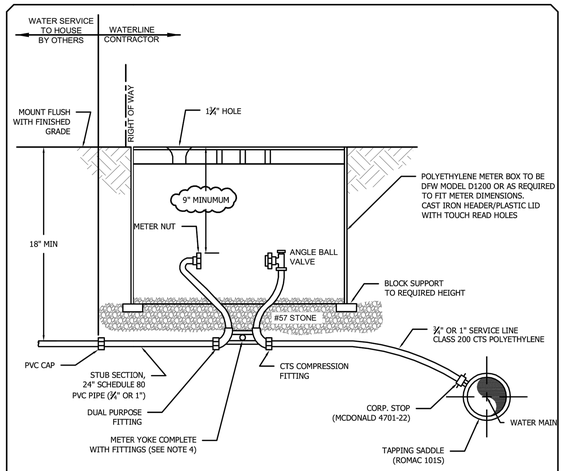
Topsail Township — Pender County — North Carolina

STANDARD DETAILS

PREPARED FOR:
SIGNATURE TOP SAIL NC, Ltd.
4307 PEEBLE DRIVE
WILMINGTON, NC 28412
713-822-3891

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No. C-10.1



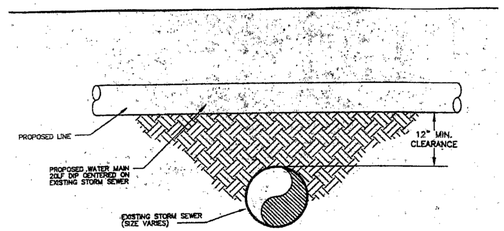
NOTE:
1. CONTRACTOR SHALL PLACE METER BOX IN NON-TRAFFIC AREA ONLY.
2. ALL TAPS TO BE MADE ON THE TOP QUARTER OF THE WATER MAIN.
3. CONTRACTOR SHALL CENTER METER YOKE IN METER BOX.
4. MCDONALD 26-702WX2D 33 (¾")
   MCDONALD 26-410WX2D 44 (1")
5. BOX TO BE ADJUSTED VERTICALLY TO ACCEPT COUNTY'S STANDARD SERVICE METER. (NEPTUNE T-10, PRO READ REGISTER, R900 MIU)
6. METER TO BE SET BY COUNTY UPON RECEIPT OF WATER SERVICE FEES, AND SATISFACTORY INSPECTION OF WATER SERVICE TO HOUSE.
7. TAPS ON WATER MAINS LARGER THAN 16" SHALL BE MADE WITH DUAL WIDE BAND, STAINLESS STEEL TAPPING SADDLES (ROMAC 202S).

STANDARD WATER SERVICE DETAIL

NOT TO SCALE

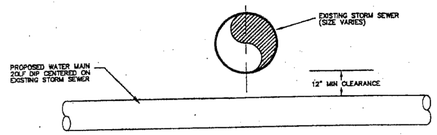
PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28525

ROCKY POINT/TOPSAIL WATER DISTRICT
WATER SERVICE (¾" - 1")
STANDARD DETAIL
VERSION #2 - FEB 2013



FOR WATER MAIN CROSSING OVER EXISTING STORM SEWER

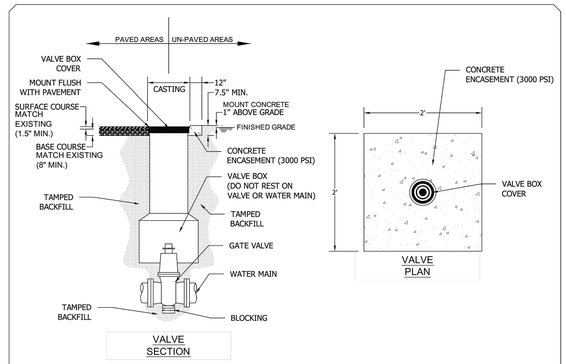
NOTE:
WATERLINE SHALL BE DUCTILE IRON PIPE AT ALL AREAS WHERE ADEQUATE COVER CANNOT BE MAINTAINED.

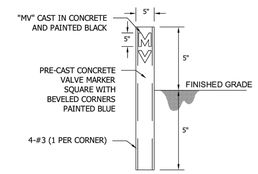


FOR WATER MAIN CROSSING UNDER EXISTING STORM SEWER

PIPE CROSSING DETAIL "C"

NOT TO SCALE





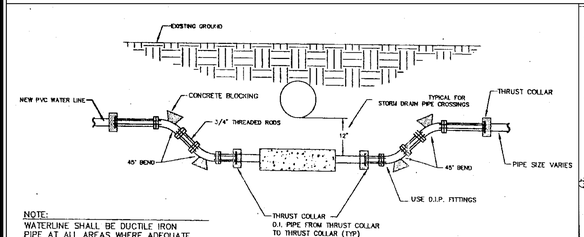
NOTE:
1. PRE-CAST CONCRETE COLLARS MAY BE USED IN LIEU OF CONCRETE ENCASEMENT (ONLY IN NON-PAVED AREAS).
2. DO NOT ALLOW VALVE BOX TO REST ON THE VALVE OR WATER MAIN.
3. A VALVE MARKER SHALL BE PLACED ON THE RIGHT OF WAY AT EACH ISOLATION VALVE.

VALVE INSTALLATION DETAIL

NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28525

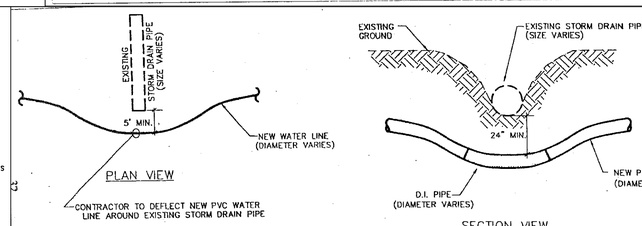
ROCKY POINT/TOPSAIL WATER DISTRICT
VALVE INSTALLATION
STANDARD DETAIL
VERSION #1 - AUGUST 2010



NOTE:
WATERLINE SHALL BE DUCTILE IRON PIPE AT ALL AREAS WHERE ADEQUATE COVER CANNOT BE MAINTAINED.

PIPE CROSSING DETAIL "A"

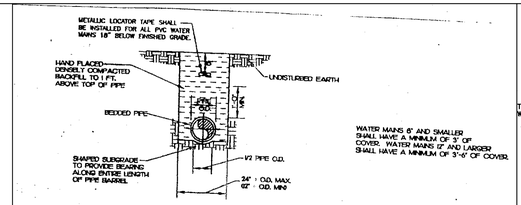
NOT TO SCALE



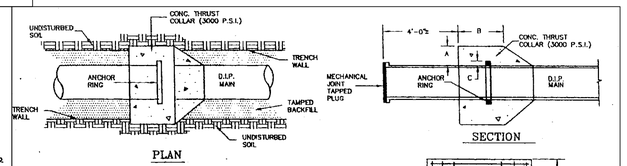
PIPE CROSSING DETAIL "B"

NOT TO SCALE

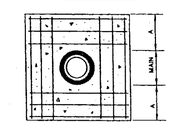
NOTE:
WATERLINE SHALL BE DUCTILE IRON PIPE AT ALL AREAS WHERE ADEQUATE COVER CANNOT BE MAINTAINED.



PIPE LAYING CONDITIONS



SCHEDULE				
PIPE DIAMETER	CONCRETE THRUST COLLAR		ANCHOR COLLAR	RINGS REQUIRED
	A	B	C	
6",8",12"	1'-0"	1'-0"	3"	ONE
16"	1'-4"	1'-0"	3"	ONE
20"	1'-4"	1-0"	3"	ONE
24"	1'-4"	1'-0"	3"	TWO
30"	1'-4"	1'-2"	4"	TWO
36"	1'-4"	1'-4"	4"	TWO

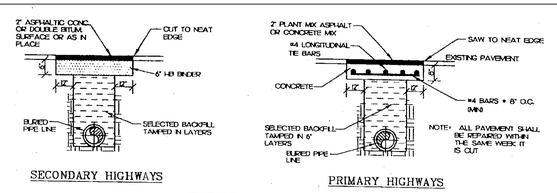


REINFORCING

NOTE:
8" TO 16" MAINS = 12-NO. 7 BARS
20" TO 36" MAINS = 12-NO. 8 BARS
BARS PLACED AS SHOWN

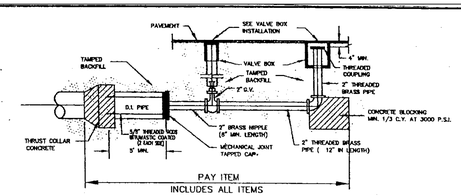
THRUST COLLAR INSTALLATION

NOT TO SCALE



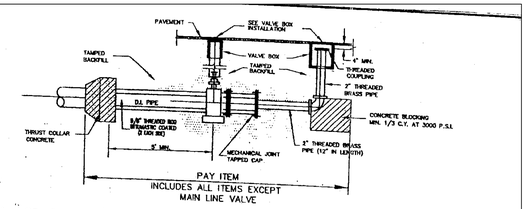
DETAILS FOR CUTTING AND REPLACING PAVEMENT

NOT TO SCALE



PERMANENT BLOW-OFF ASSEMBLY

NOT TO SCALE



TEMPORARY BLOW-OFF ASSEMBLY

NOT TO SCALE

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
02/04/2015

No.	Revision	Date	By

Designer GSP	Scale NO SCALE
Drawn By GSP	Date May 2014
License # P-0718	Job No. 2014-0002

WYNDWATER - PHASE 2
Topsail Township Pender County North Carolina

PENDER COUNTY UTILITIES DETAILS

PREPARED FOR:
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ENGINEERING
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Sheet No.
C-11