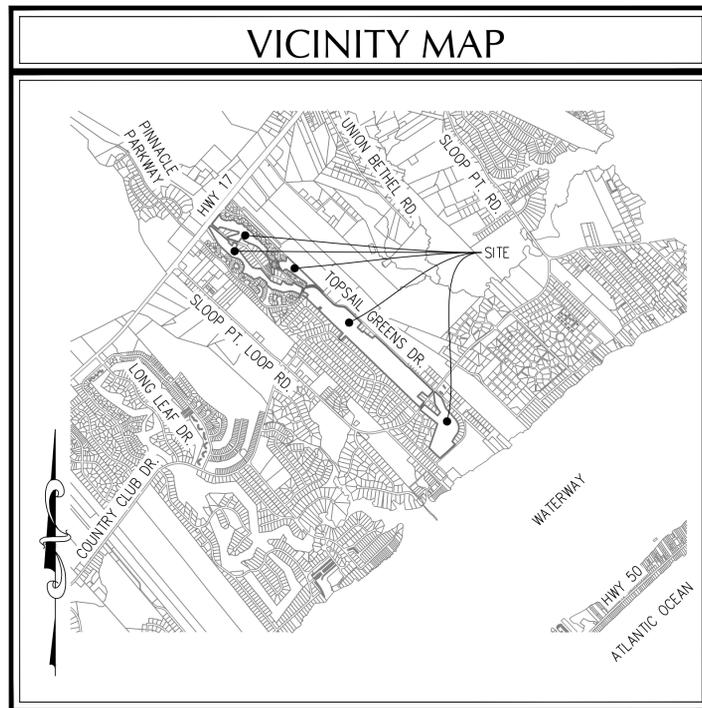
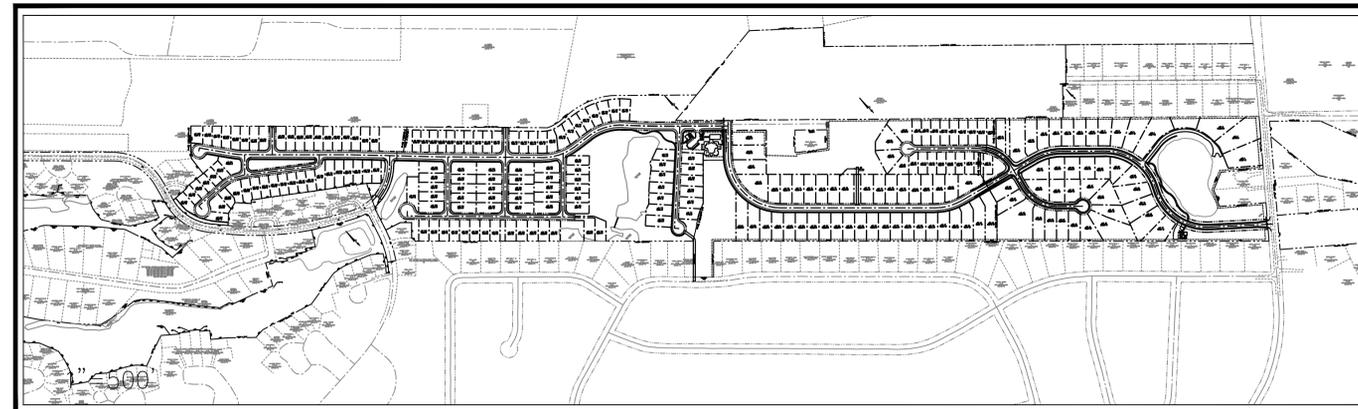


PRELIMINARY PLAT FOR WYNDWATER - PHASE 3 PENDER COUNTY, NORTH CAROLINA MARCH 2016



VICINITY MAP
(NTS)



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	---	---
PROPOSED LOT AND S.F.	x 5,000 s.f.	(A)
OPEN SPACE LABEL	[Hatched Box]	[Hatched Box]
OPEN SPACE	[Hatched Box]	[Hatched Box]
BUILDING SET BACKS	---	---
PRIVATE SANITARY SET BACKS	---	---
	STREET SIGN	[Street Sign]
	404 WETLANDS	[Wetland Symbol]
	FLOW DIRECTION	[Arrow]

DEVELOPER/OWNER

Signature Top Sail NC, LP
9337B Katy Freeway #377
Houston, Texas 77024
PHONE: (713) 822-3891

PREPARED BY:

GSP CONSULTING, PLLC
ENGINEERING
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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: _____

SITE DATA TABLE

GENERAL NOTES:

- PENDER COUNTY PARCEL NO.: PIN 4214-12-8251-0000 & 4214-04-6027-0000
- TOTAL TRACT AREA: 8,889,076 SF = 204.07 AC.±
PHASE 3 AREA: 1,891,945 SF = 43.43 AC.±
- ZONING: PLANNED DEVELOPMENT (PD)
- 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.
- THIS PROPERTY DOES NOT CONTAIN ANY A.E.C. AREAS OR IS UNDER CAMA JURISDICTION.
- THIS PROPERTY DOES CONTAIN 404 FEDERAL WETLANDS WHICH HAVE BEEN APPROVED BY THE USACE.

GENERAL NOTES:

- OWNERSHIP REFERENCE:
D.B. 4379 P.G. 330-346 PLAT # 16 PG. 73 & D.B. 4604 P.G. 1703
- PROPERTY IS LOCATED IN PENDER COUNTY AND IS ZONED PLANNED DEVELOPMENT (PD).
- A HOME OWNERS ASSOCIATION WILL BE FORMED TO GUARANTEE CONTINUAL MAINTENANCE OF THE COMMON AREAS AND OPEN SPACE.
- ALL INTERIOR ROADWAYS ARE TO BE BUILT TO NCDOT SUBDIVISION ROADS MINIMUM CONSTRUCTION STANDARDS.
- INTERIOR ROADWAYS FOR PHASE 3 ARE TO BE PUBLIC & PRIVATE. PUBLIC ROADWAYS SHALL BE DEDICATED TO NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
- A HOME OWNERS ASSOCIATION WILL BE FORMED PRIOR TO THE SALE OF ANY LOTS AND MEMBERSHIP WILL BE AUTOMATIC UPON PURCHASE.
- 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.
- BUFFERS WILL BE PROVIDED PER CURRENT PENDER COUNTY ZONING ORDINANCE.
- WETLANDS IMPACTED WILL BE MITIGATED IN ACCORDANCE WITH ANY REQUIREMENTS OF APPLICABLE STATE AND FEDERAL PERMITS.
- ALL LOTS SHALL MEET CURRENT PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE REGULATIONS.
- ALL PROPOSED OPENSACE/RECREATION AREAS ARE NON-BUILDABLE FOR ANY TYPE OF DEVELOPMENT.

SINGLE FAMILY DEVELOPMENT STANDARDS:

MINIMUM LOT DIMENSIONS:		PROPOSED BUILDING SETBACKS:	
AREA IN (S.F.)	12,000 SF (W/SEPTIC)	FRONT -	15'
	5,000 SF (W/SEWER)	REAR -	20'
MAX USABLE LOT AREA (%)	95%	SIDE -	ZERO LOT LINE
MIN LOT WIDTH (FT)	70' (W/SEPTIC)		(10' MAINTENANCE EASEMENT BETWEEN STRUCTURES)
	40' (W/SEWER)	CORNER -	10'
MIN CHORD AT ROW (CUL-DE-SAC)	30'	ANY PERIPHERAL PROPERTY LINE STRUCTURES -	AS PER NORTH CAROLINA STATE BUILDING CODE
MAX BLDG. HT. (FT)	38'		

REQUIRED OPEN SPACE:

128 LOTS * 0.03 AC/LOT =	3.84 AC±	TOTAL TRACT AREA =	43.43 AC
PROVIDED OPEN SPACE	7.54 AC±	WETLAND ACREAGE =	2.48 AC
NOTE: PROPOSED OPENSACE/RECREATION SPACE AREAS ARE NOT FOR BUILDING OR STRUCTURAL DEVELOPMENT		RIGHT OF WAY ACREAGE =	7.84 AC
		OPEN SPACE ACREAGE =	7.54 AC
		ACTIVE =	5.06 AC
		PASSIVE =	2.48 AC
		TOTAL UNITS =	128
		DEVELOPABLE LAND =	28.06 AC
		NET DENSITY =	4.56 UNITS/AC

DEVELOPMENT DATA:

PHASE 3 AREA: 1,891,945 SF =	43.43 AC±	TRIP GENERATION:	
AVERAGE LOT SIZE -	8,010 SF	128 SINGLE FAMILY HOMES:	
AREA OF LOTS PROPOSED -	1,025,217 SF = 23.54 AC±	1,225 - TOTAL DAILY TRIPS	
AREA OF ROW PROPOSED -	341,563 SF = 7.84 AC±	96 - AM PEAK HOUR	
TOTAL PROPOSED ROAD LENGTH -	7,467 LF.±	129 - PM PEAK HOUR	
		*PER ITE TRIP GENERATION MANUAL 8TH EDITION, ITE CODE 210	

PROPOSED BUA

ROADS -	232,846 S.F.
SIDEWALKS -	17,500 S.F.
AMENITIES -	14,500 S.F.
LOTS -	474,181 S.F.
TOTAL -	739,027 S.F. (39.1%)

DEVELOPMENT NOTES:

- ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE.
- 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

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 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, RESEED 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)
CENTPEDE 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. CENTPEDE 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 (KOBÉ 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.

SITE AREA DESCRIPTION	GROUND STABILIZATION	
	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) 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 HOW 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

PCU STANDARD NOTES

1. A PRECONSTRUCTION MEETING IS REQUIRED BEFORE BEGINNING WORK. THE MEETING MUST BE SCHEDULED WITH PENDER COUNTY UTILITIES (PCU) AT LEAST ONE WEEK IN ADVANCE. ATTENDEES MUST INCLUDE PCU, THE SELECTED CONTRACTOR'S SUPERINTENDENT, THE SUPPLIER, AND THE CONSULTING ENGINEER.
2. ALL MATERIALS USED SHALL CONFORM TO PENDER COUNTY UTILITIES REQUIREMENTS. NON-CONFORMING MATERIAL WILL NOT BE ACCEPTED FOR FINAL CERTIFICATION.
3. ALL PIPE SHALL BE PVC. PVC PIPE WITHIN A CASING TO BE C900 DR 18 (SEE PCU STANDARD DETAIL). ALL OTHER PVC PIPE TO BE SDR 21. THE USE OF DIP PIPE IS NOT ALLOWED. PCU MUST APPROVE THE USE OF DIP IN THE FIELD BEFORE INSTALLATION AND ONLY WHEN THERE ARE NO OTHER OPTIONS.
4. PCU STANDARD WATERLINE PIPE RESTRAINING METHOD IS MJ GRIP RINGS. AT A MINIMUM ALL FITTINGS, VALVES, ETC. MUST BE RESTRAINED. (SEE PCU STANDARD DETAIL).
5. PCU MUST INSPECT CASING INSTALLATIONS PRIOR TO BACK-FILL. PCU MUST WITNESS PRESSURE TESTS, AND WITHDRAWAL OF BACTERIOLOGICAL SAMPLES. CONTACT BOB FORAND TO SCHEDULE 910-259-0212.
6. CLOSE-OUT DOCUMENTS WHICH MUST BE RECEIVED PRIOR TO PCU SIGNING THE NC PWSS APPLICANT CERTIFICATION INCLUDE: BACTERIOLOGICAL TESTS, PRESSURE TESTS, DEED OF DEDICATION, AFFIDAVIT/RELEASE OF LIENS, WARRANTY, AND RECORD DRAWINGS (PDF & CAD).
7. AN 18 MONTH WARRANTY PERIOD APPLIES TO ALL WATERLINE CONSTRUCTION. THIS WARRANTY PERIOD DOES NOT BEGIN UNTIL FINAL APPROVAL OF THE SYSTEM HAS BEEN RECEIVED FROM NC PWSS.

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425



STANDARD NOTES
PCU WATER SYSTEMS
VERSION #1 - OCTOBER 2015



No.	Revision	Date	By

Designer	GSP	Scale	
Drawn By	GSP	Date	March 2016
License #	P-0718	Job No.	2015-0004

WYNDWATER - PHASE 3

Topsail Township Pender County North Carolina

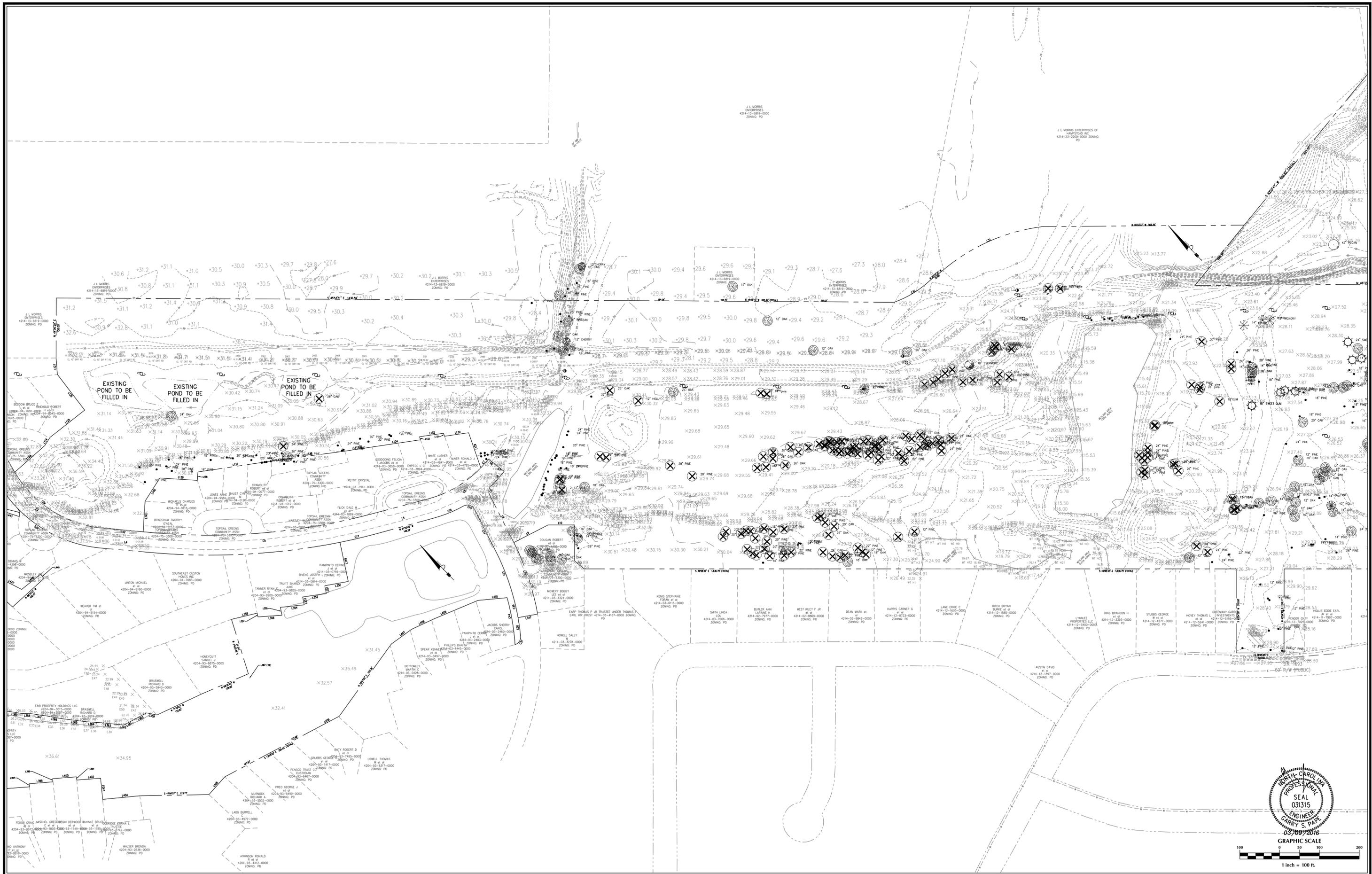
GENERAL NOTES

PREPARED FOR:
SIGNATURE TOP SAIL NC, LP
9337B Katy Freeway #377
Houston, TX 77024
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" = 100'
Drawn By	GSP	Date	March 2016
License #	P-0718	Job No.	2015-0004

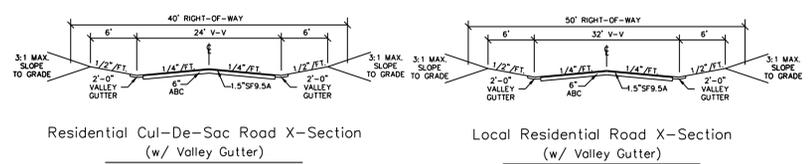
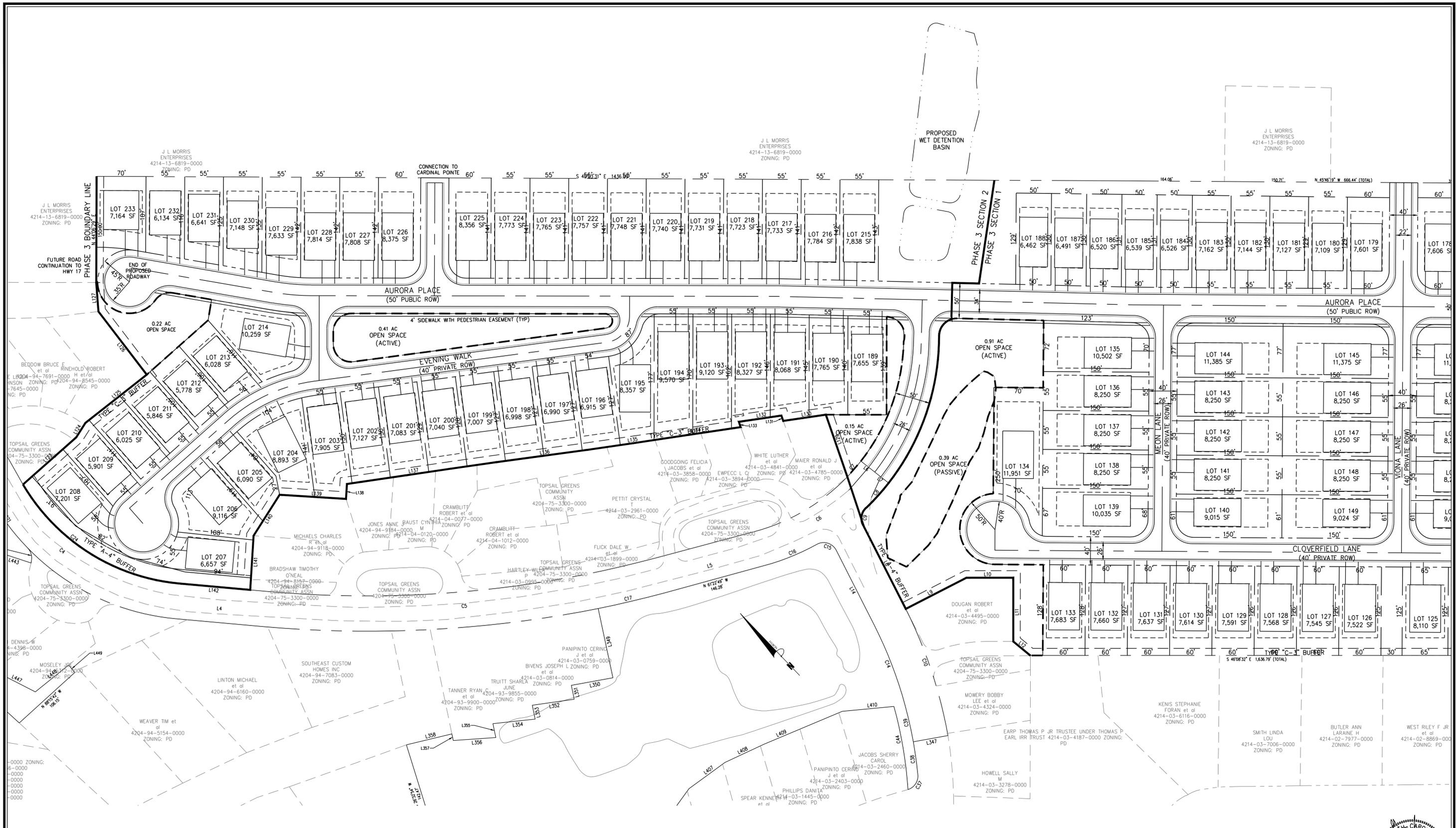
WYNDWATER - PHASE 3
EXISTING CONDITIONS
 Topsail Township Pender County North Carolina

WYNDWATER - PHASE 3
EXISTING CONDITIONS

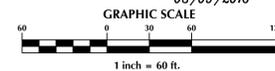
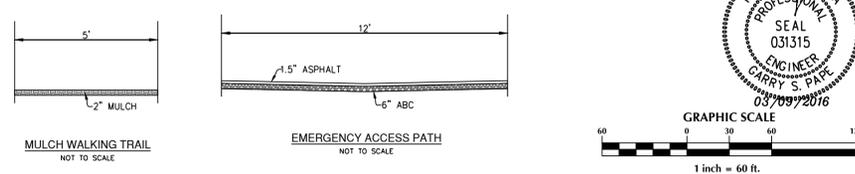
PREPARED FOR:
 SIGNATURE TOP SAIL NC, LP
 9337B Katy Freeway #377
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 713-822-3891

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

Sheet No.
C-2



- GENERAL NOTES:**
- ALL PHASE BOUNDARIES ADJACENT TO RESIDENTIAL LOTS TO HAVE A TYPE "C-3" BUFFER.
 - ALL PORTIONS OF PROPERTY HAVING FRONTAGE ALONG AN EXISTING ROADWAY TO HAVE A TYPE "A" BUFFER.
 - MAIN COLLECTOR ROAD THAT WILL CONNECT TO HWY 17 IN THE FUTURE TO BE PUBLIC ALL OTHER ONSITE ROADS TO BE PRIVATE.



No.	Revision	Date	By

Designer	GSP	Scale	1" = 60'
Drawn By	GSP	Date	March 2016
License #	P-0718	Job No.	2015-0004

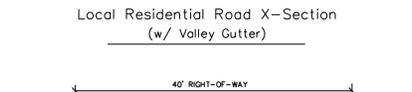
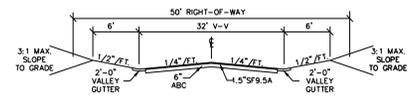
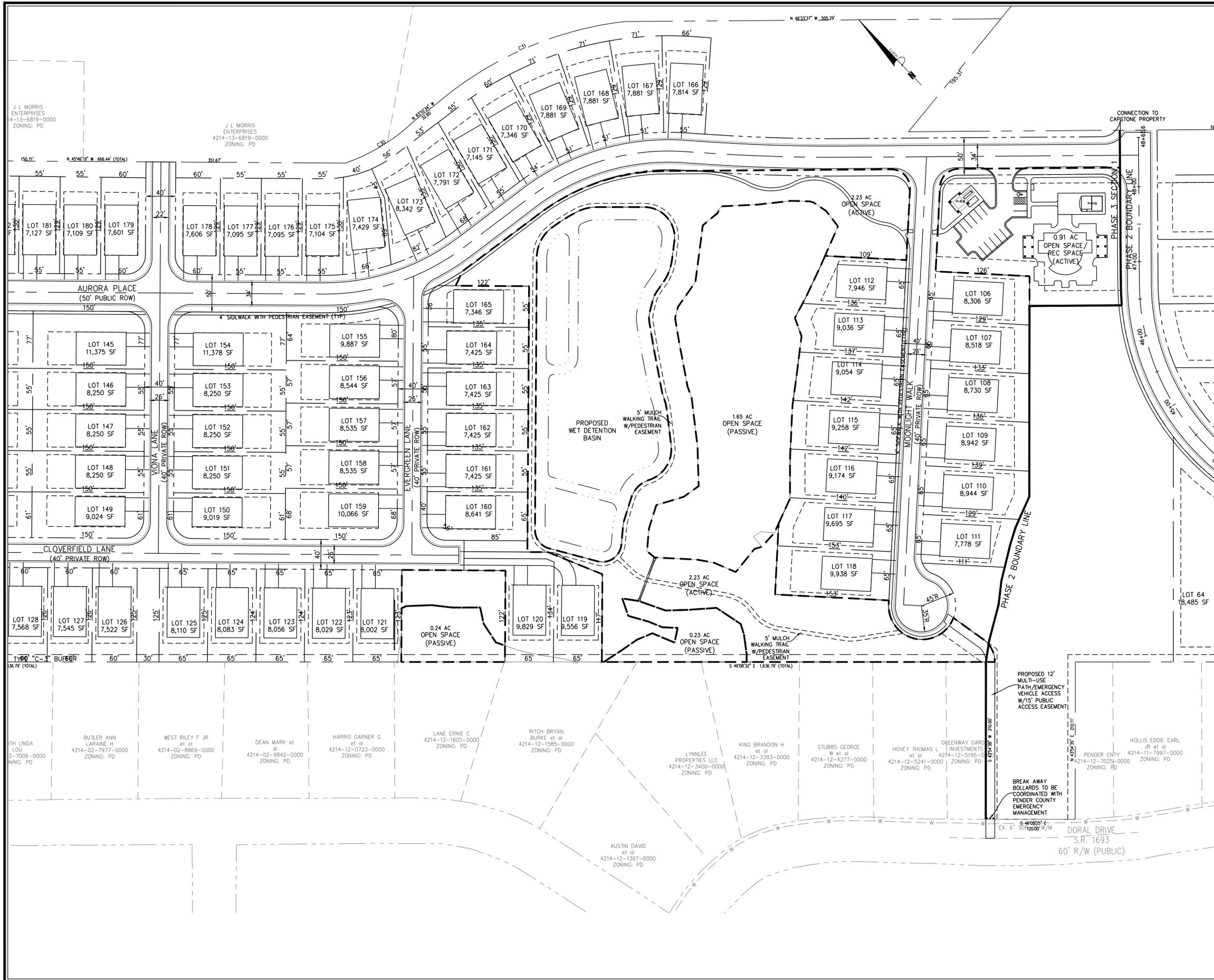
WYNDWATER - PHASE 3
 Pender County North Carolina

SITE PLAN

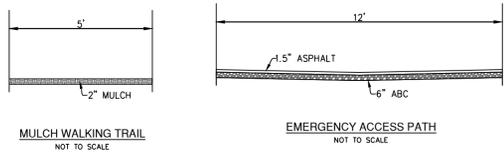
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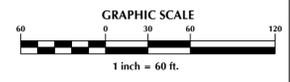
Sheet No.
C-3.1



PARKING:
 REQUIRED:
 1 SP/500 SF ENCLOSED FLOOR AREA +
 1 SP/1,000 SF OUTDOOR USE
 PROVIDED:
 2,000 SF FLOOR AREA = 4 SPACES
 11,000 SF OUTDOOR USE = 11 SPACES
 = 15 SPACES PROVIDED
 15 SPACES PROVIDED



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Designer	GSP	Scale	1" = 60'
Drawn By	GSP	Date	March 2016
License #	P-0718	Job No.	2015-0004

WYNDWATER - PHASE 3

SITE PLAN

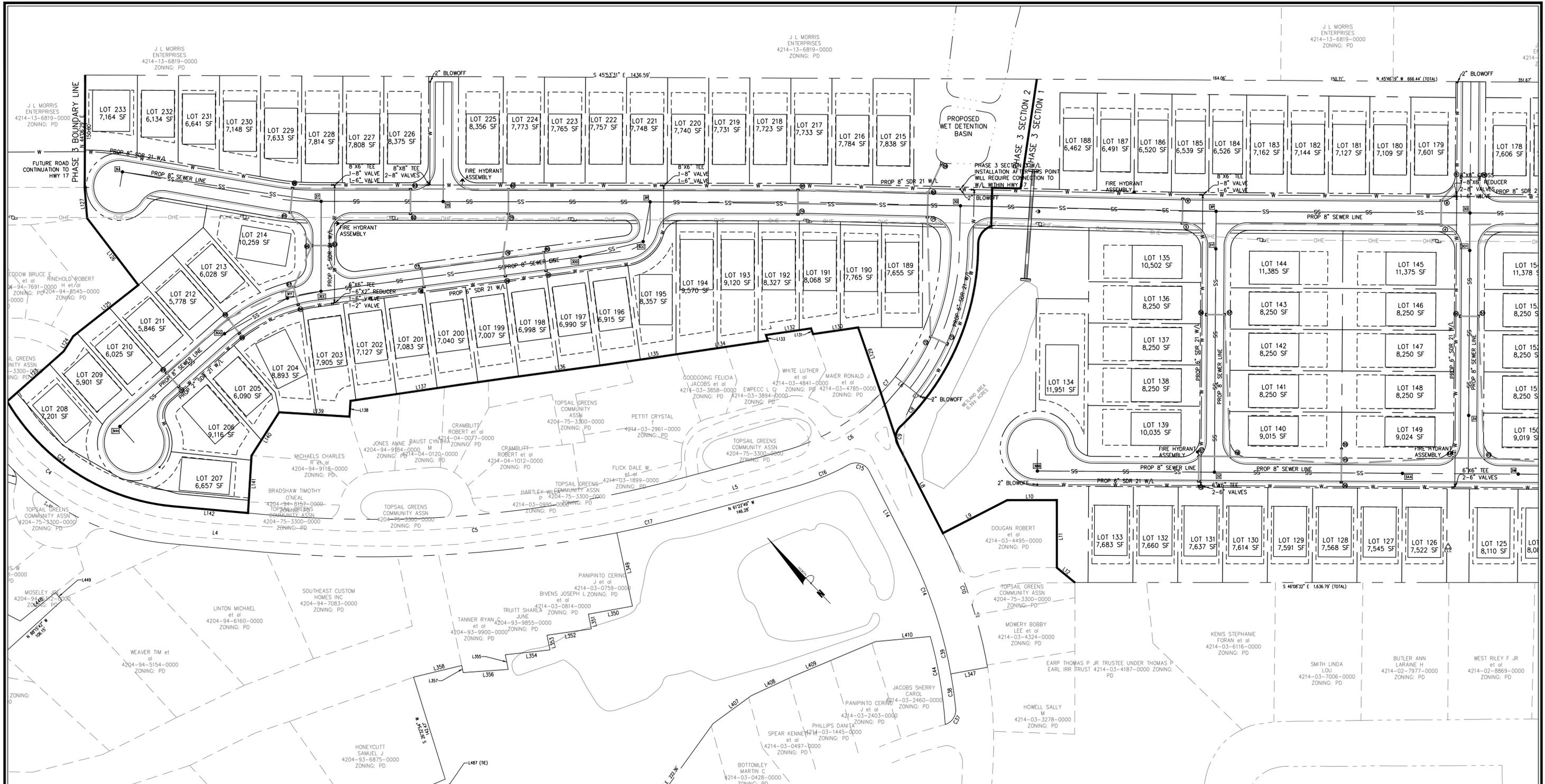
Topsail Township Pender County North Carolina

PREPARED FOR:
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 9337B Katy Freeway #377
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 713-822-3891

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Sheet No. **C-3.2**



GENERAL UTILITY NOTES:

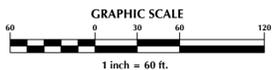
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2. ALL UTILITIES SHALL BE UNDERGROUND.
3. WATER SERVICE TO BE A PUBLIC PIPED DISTRIBUTION SYSTEM OWNED AND OPERATED BY PENDER COUNTY.
4. ALL WATER AND SANITARY SEWER SYSTEMS WILL BE DESIGNED TO MEET PENDER COUNTY, PLURIS, LLC AND STATE REQUIREMENTS. FINAL CONSTRUCTION PLANS WILL BE SUBMITTED TO ALL AGENCIES TO OBTAIN PERMITS TO CONSTRUCT PRIOR TO UTILITY INSTALLATION.
5. ALL WATERLINES SHOWN WILL BE SIZED IN ACCORDANCE WITH APPLICABLE PENDER COUNTY AND STATE REQUIREMENTS.
6. ALL WATER SERVICES TO BE INSTALLED BY DEVELOPER AND INSPECTED BY PENDER COUNTY UTILITIES.
7. ALL MATERIALS SHALL CONFORM TO PENDER COUNTY UTILITIES REQUIREMENTS. NON-CONFORMING MATERIAL WILL NOT BE ACCEPTED FOR FINAL CERTIFICATION.
8. A ONE YEAR WARRANTY PERIOD APPLIES TO ALL UTILITIES CONSTRUCTION. THIS WARRANTY PERIOD DOES NOT BEGIN UNTIL NC DENR FINAL APPROVAL OF THE SYSTEM HAS BEEN RECEIVED. A WRITTEN COPY OF THE WARRANTY WILL BE REQUIRED PRIOR TO FINAL ACCEPTANCE.
9. PROPOSED WATERLINE TO BE LOCATED IN A MINIMUM OF 5' FROM BACK OF CURB.
10. RJ GRIP RINGS TO BE INSTALLED AT ALL FITTINGS.
11. ALL VALVES TO BE LOCATED OUTSIDE OF PAVEMENT.
12. ALL UTILITY CROSSINGS SHALL BE COORDINATED WITH PCU AT PRE-CONSTRUCTION MEETING PRIOR TO BEGINNING CONSTRUCTION.
13. COORDINATE HYDRANT DETAIL, TAPPING SLEEVE & FUTURE CONNECTION DETAILS WITH PCU AT PRE-CONSTRUCTION MEETING.

GENERAL SEWER NOTES:

1. ALL WATERLINES TO HAVE MINIMUM 10' SEPARATION FROM ALL SEWER LINES, MANHOLES AND CLEANOUTS & TO HAVE 3" OF COVER AND 18" CLEARANCE WHERE WATER CROSSES OTHER UTILITY LINES
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TOTAL LINEAR FEET WATER PROPOSED

578' - 2" SDR-21 WATERLINE
 3,423' - 6" SDR-21 WATERLINE
 6,072' - 8" SDR-21 WATERLINE



No.	Revision	Date	By

Designer	GSP	Scale	1" = 60'
Drawn By	GSP	Date	March 2016
License #	P-0718	Job No.	2015-0004

WYNDWATER - PHASE 3
 Pender County
 North Carolina

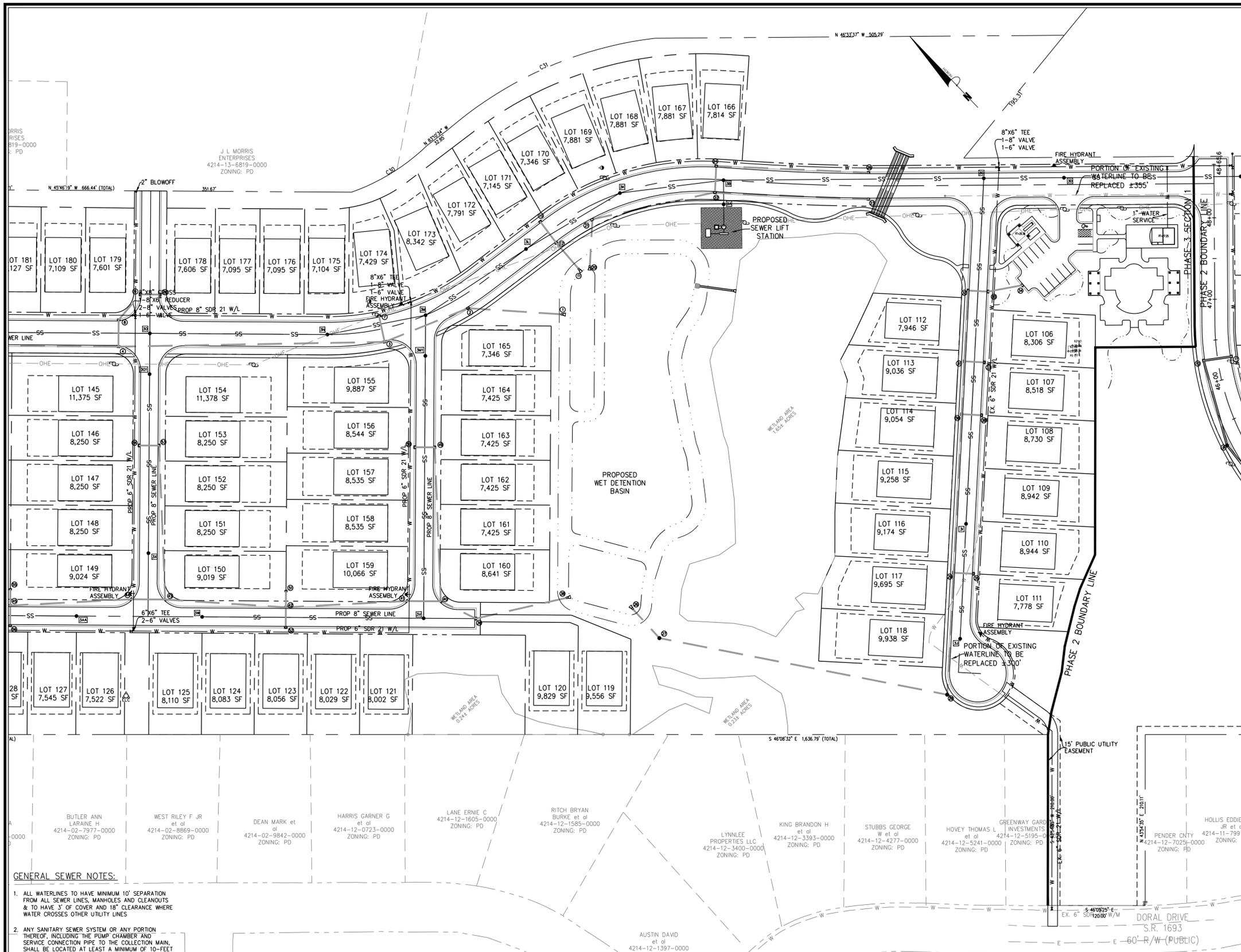
UTILITY PLAN

PREPARED FOR:
 SIGNATURE TOP SAIL NC, LP
 9337B Katy Freeway #377
 Houston, TX 77024
 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-4.1



- GENERAL UTILITY NOTES:**
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 6,072' - 8" SDR-21 WATERLINE

GRAPHIC SCALE
 1 inch = 60 ft.

Professional Engineer Seal:
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 031315
 ENGINEER
 CARR'S PAPE
 03/09/2016

No.	Revision	Date	By

Designer: GSP
 Drawn By: GSP
 License #: P-0718

Scale: 1" = 60'
 Date: March 2016
 Job No.: 2015-0004

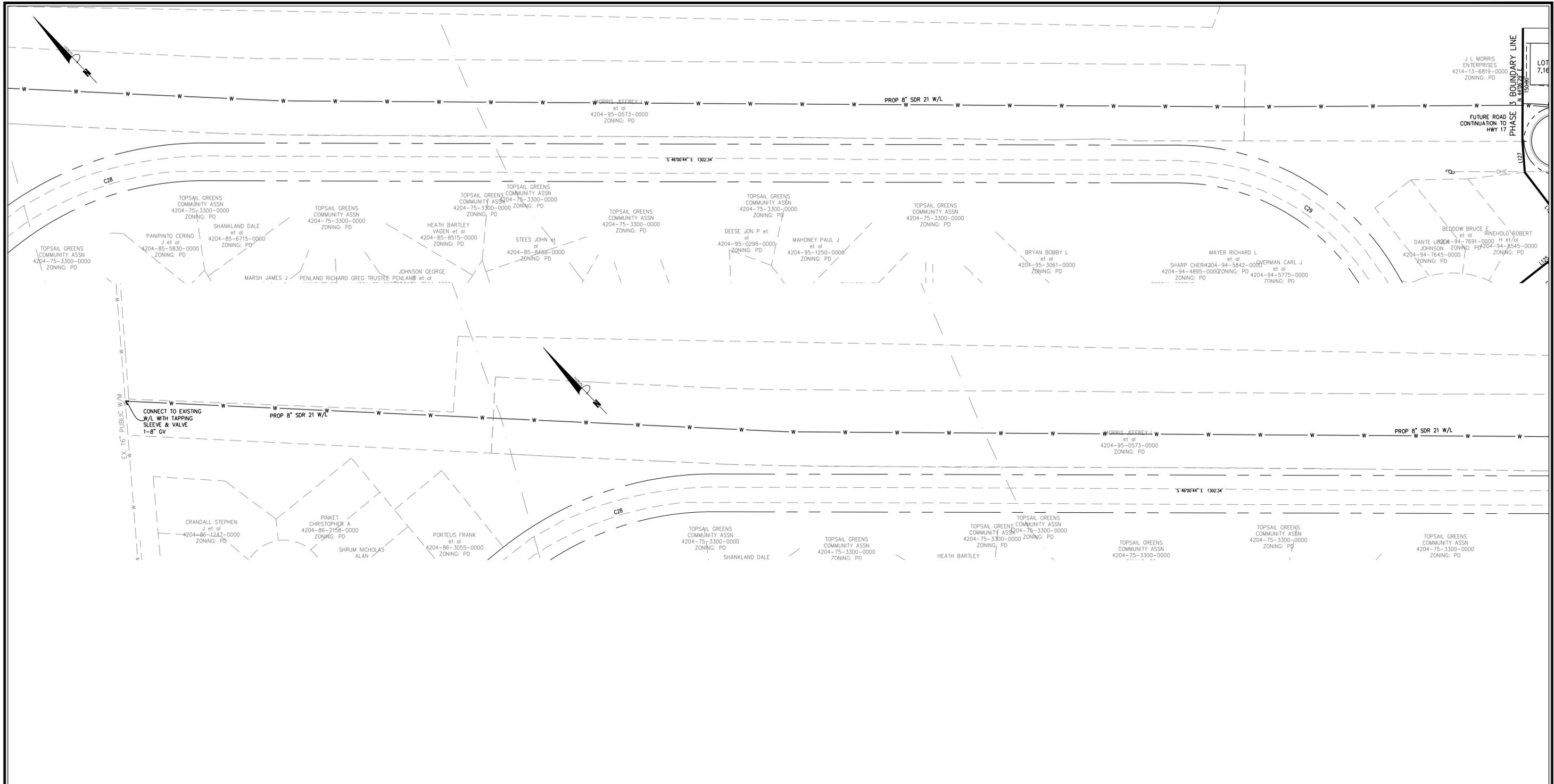
WYNDWATER - PHASE 3
 Pender County
 North Carolina

UTILITY PLAN

PREPARED FOR:
 SIGNATURE TOP SAIL NC, LP
 9337B Katy Freeway #377
 Houston, TX 77024
 713-822-3891

GSP CONSULTING, PLLC
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Sheet No.
C-4.2



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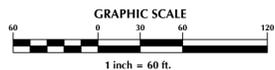
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 3,423' - 6" SDR-21 WATERLINE
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No.	Revision	Date	By

Designer	GSP	Scale	1" = 60'
Drawn By	GSP	Date	Morch 2016
License #	P-0718	Job No.	2015-0004

WYNDWATER - PHASE 3
 Pender County North Carolina

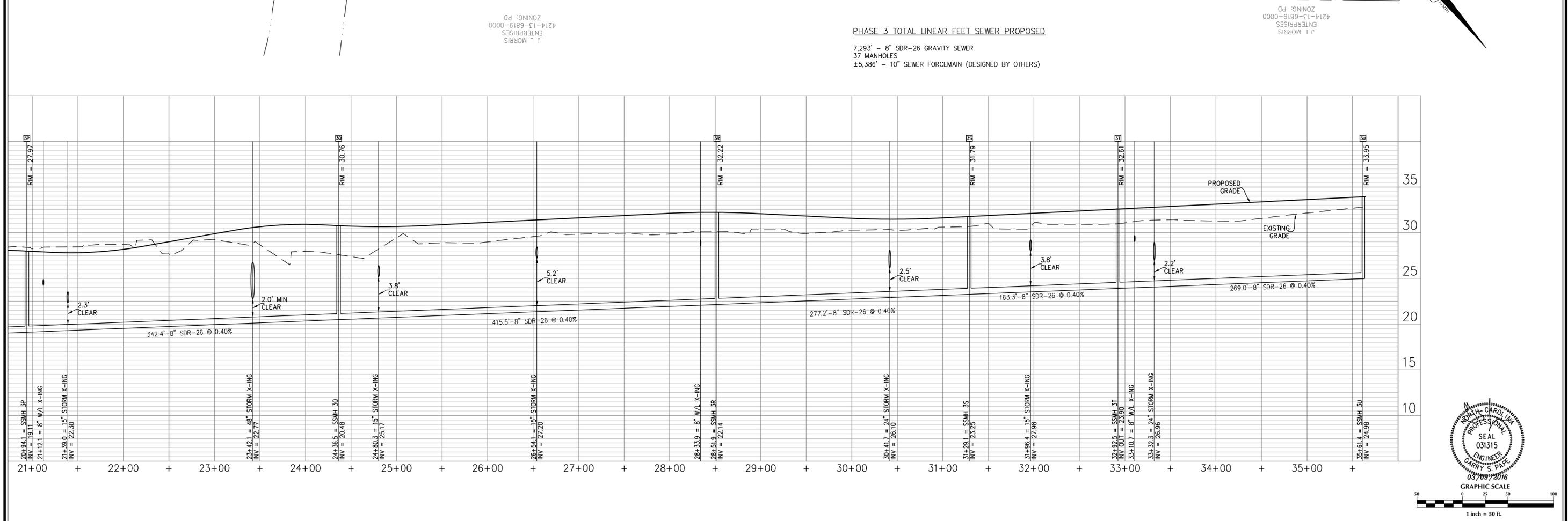
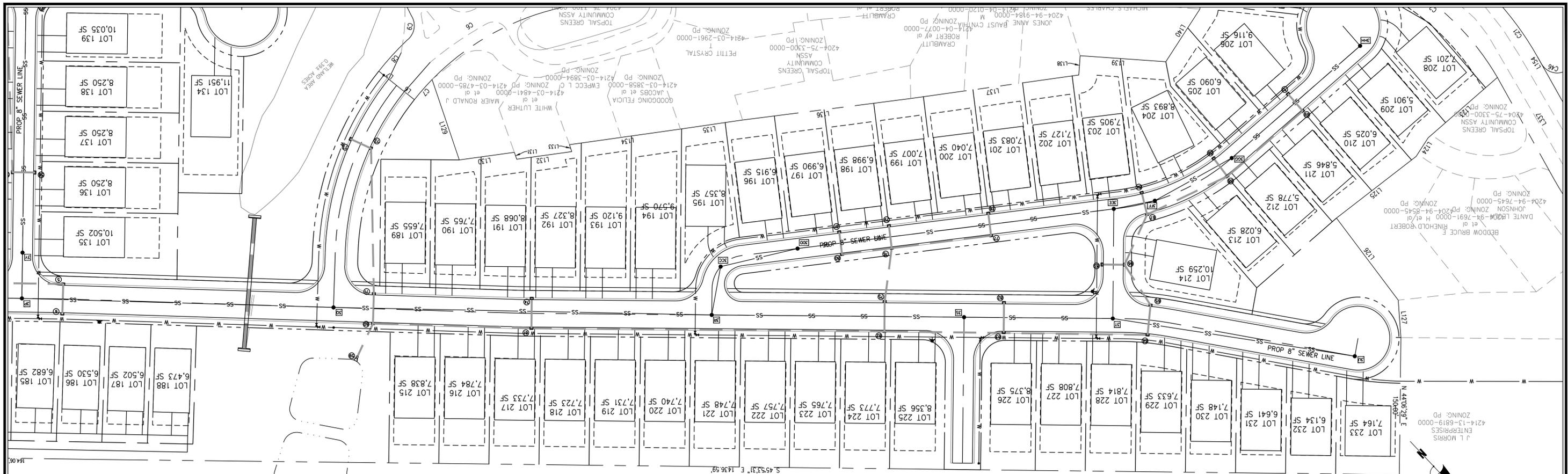
UTILITY PLAN

PREPARED FOR:
 SIGNATURE TOP SAIL NC, LP
 9337B Katy Freeway #377
 Houston, TX 77024
 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-4.3



No.	Revision	Date	By

Designer: GSP
 Drawn By: GSP
 License #: P-0718
 Date: Morch 2016
 Job No.: 2015-0004

WYNDWATER - PHASE 3
 Pender County
 North Carolina

UTILITY PLAN

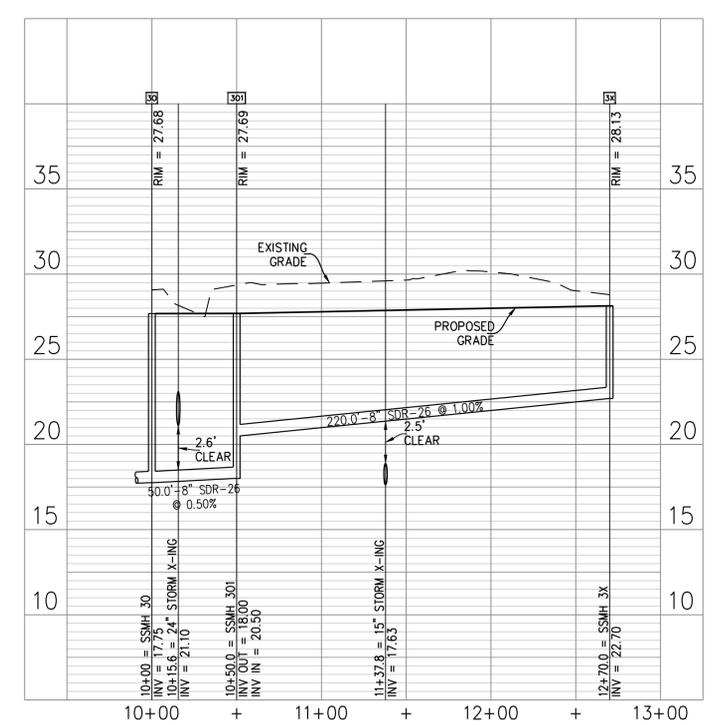
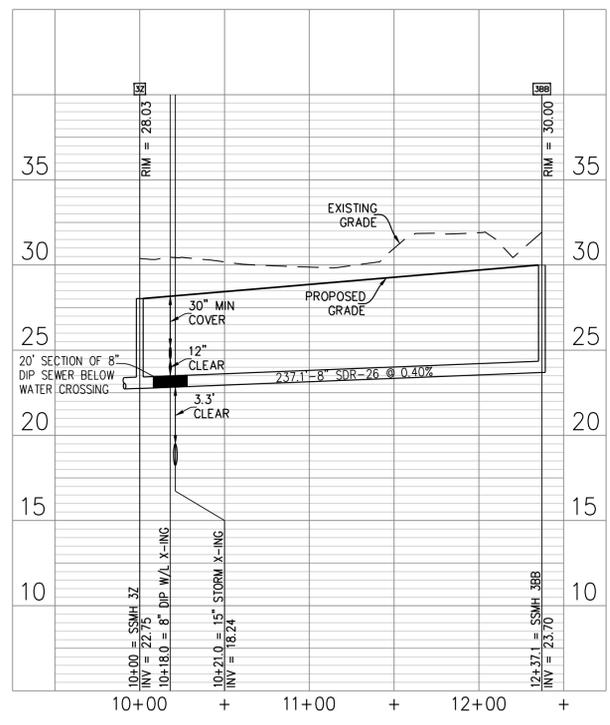
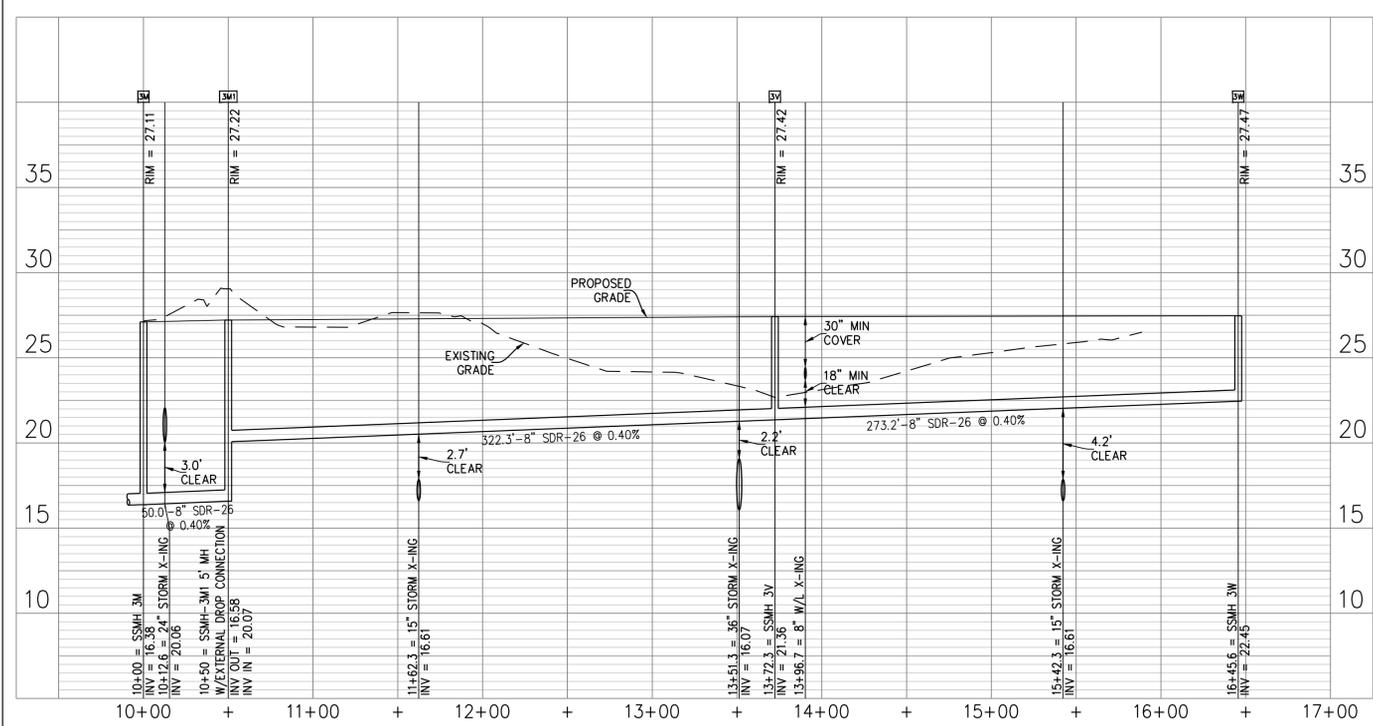
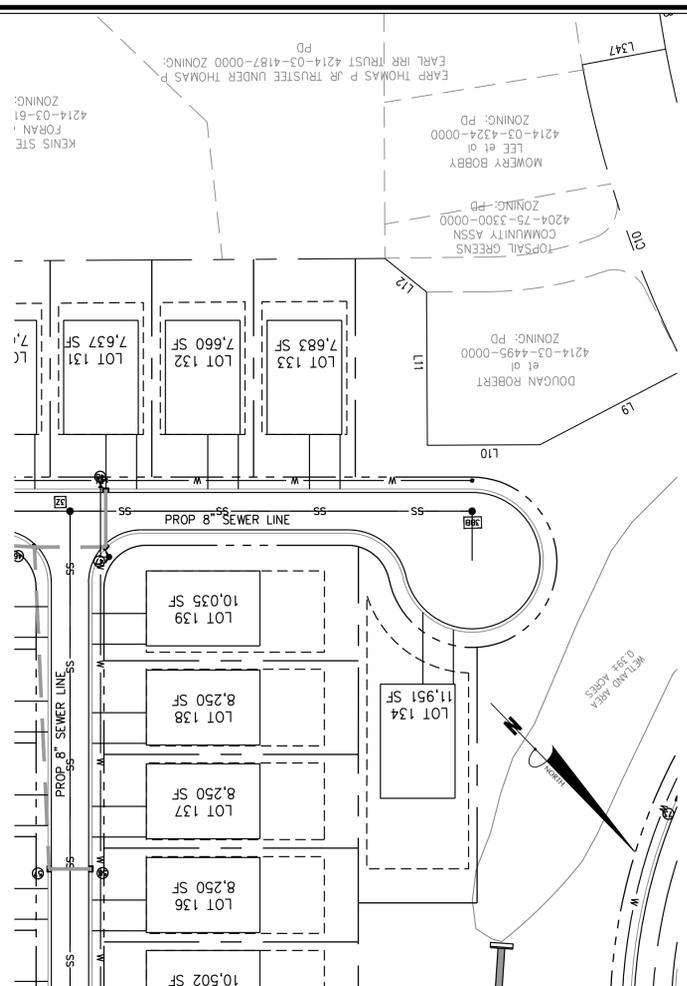
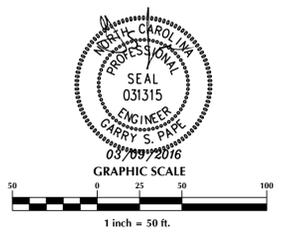
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 ENGINEERING
 6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-4.5



PHASE 3 TOTAL LINEAR FEET SEWER PROPOSED
 7,293' - 8" SDR-26 GRAVITY SEWER
 37 MANHOLES
 ±5,386' - 10" SEWER FORCEMAIN (DESIGNED BY OTHERS)



No.	Revision	Date	By

Designer: GSP
 Drawn By: GSP
 License #: P-0718
 Date: March 2016
 Job No.: 2015-0004

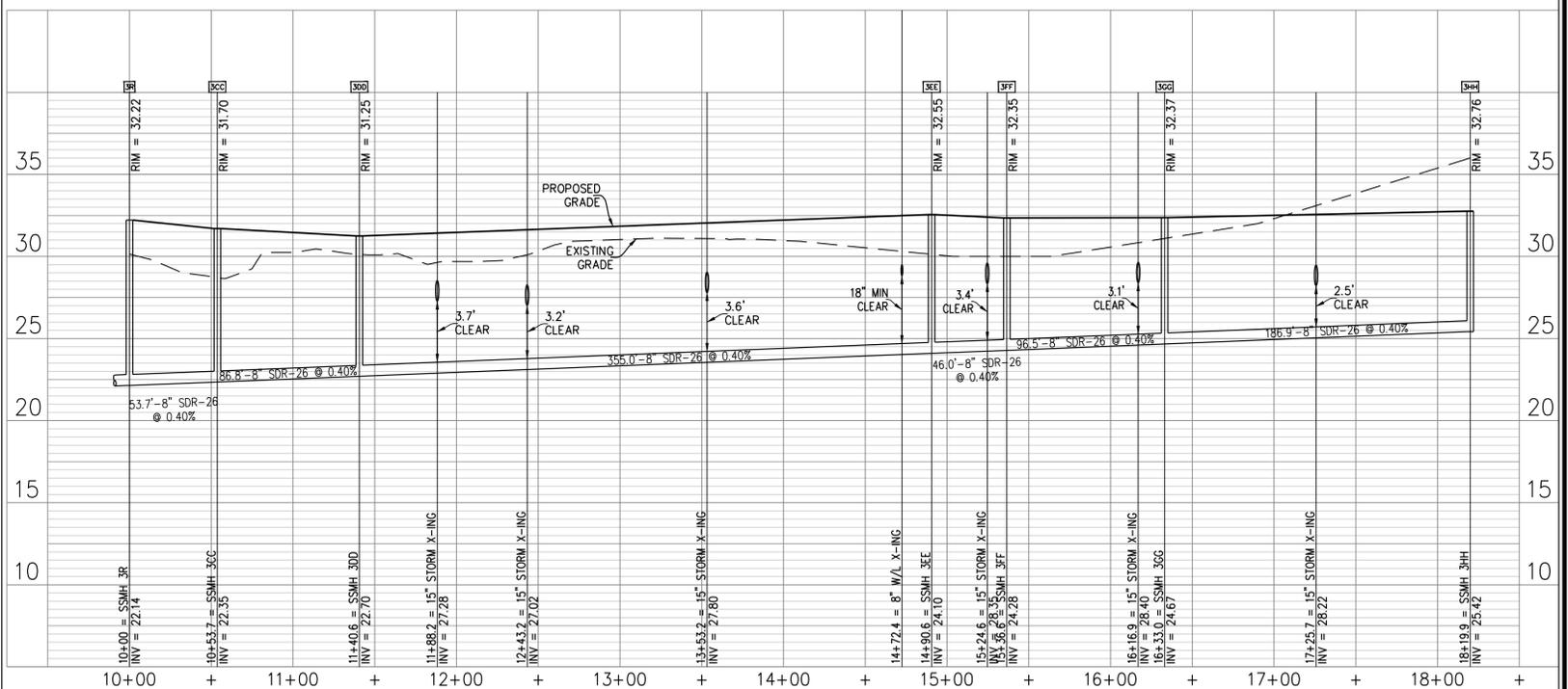
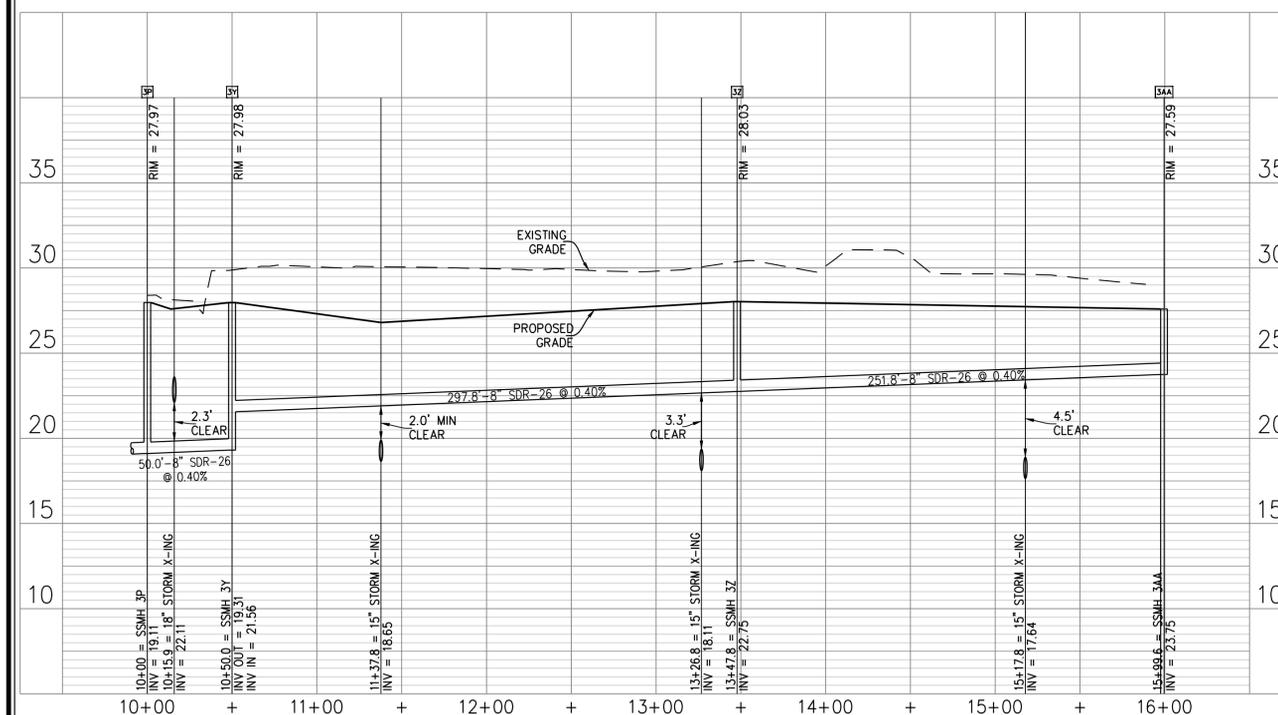
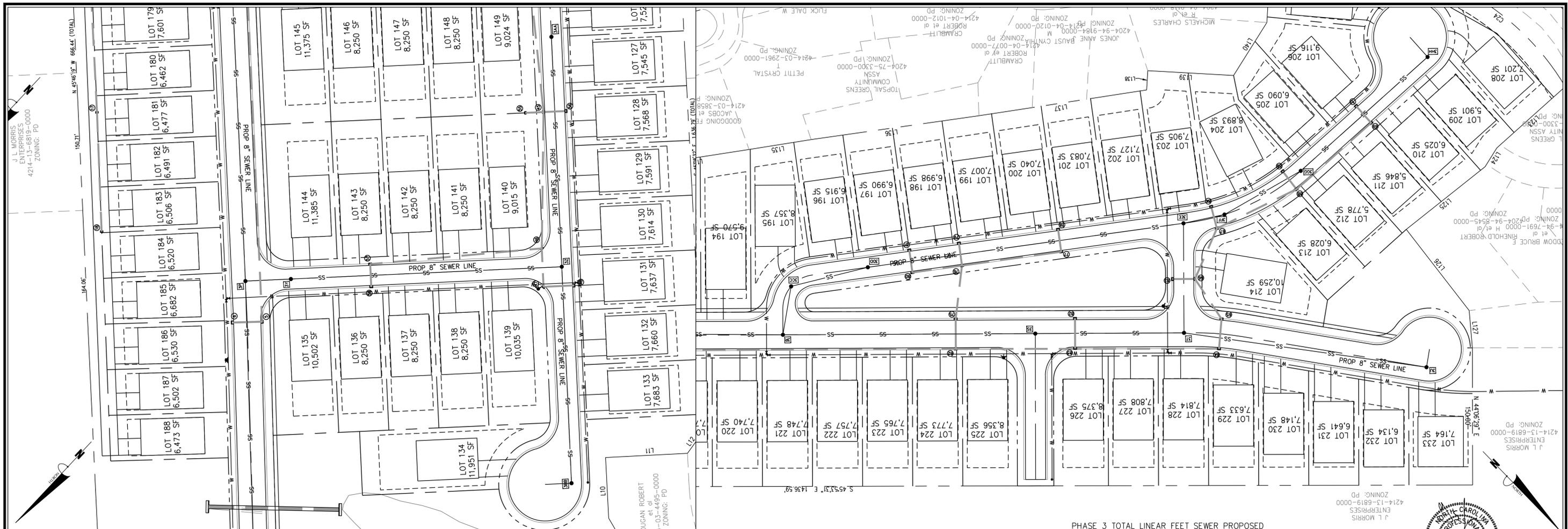
WYNDWATER - PHASE 3
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Sheet No.
C-4.6



No.	Revision	Date	By

Designer: GSP
 Drawn By: GSP
 License #: P-0718

Scale: 1" = 50'
 Date: March 2016
 Job No.: 2015-0004

WYNDWATER - PHASE 3
 Pender County
 North Carolina

UTILITY PLAN

PREPARED FOR:
 SIGNATURE TOP SAIL NC, LP
 9337B Katy Freeway #377
 Houston, TX 77024
 713-822-3891

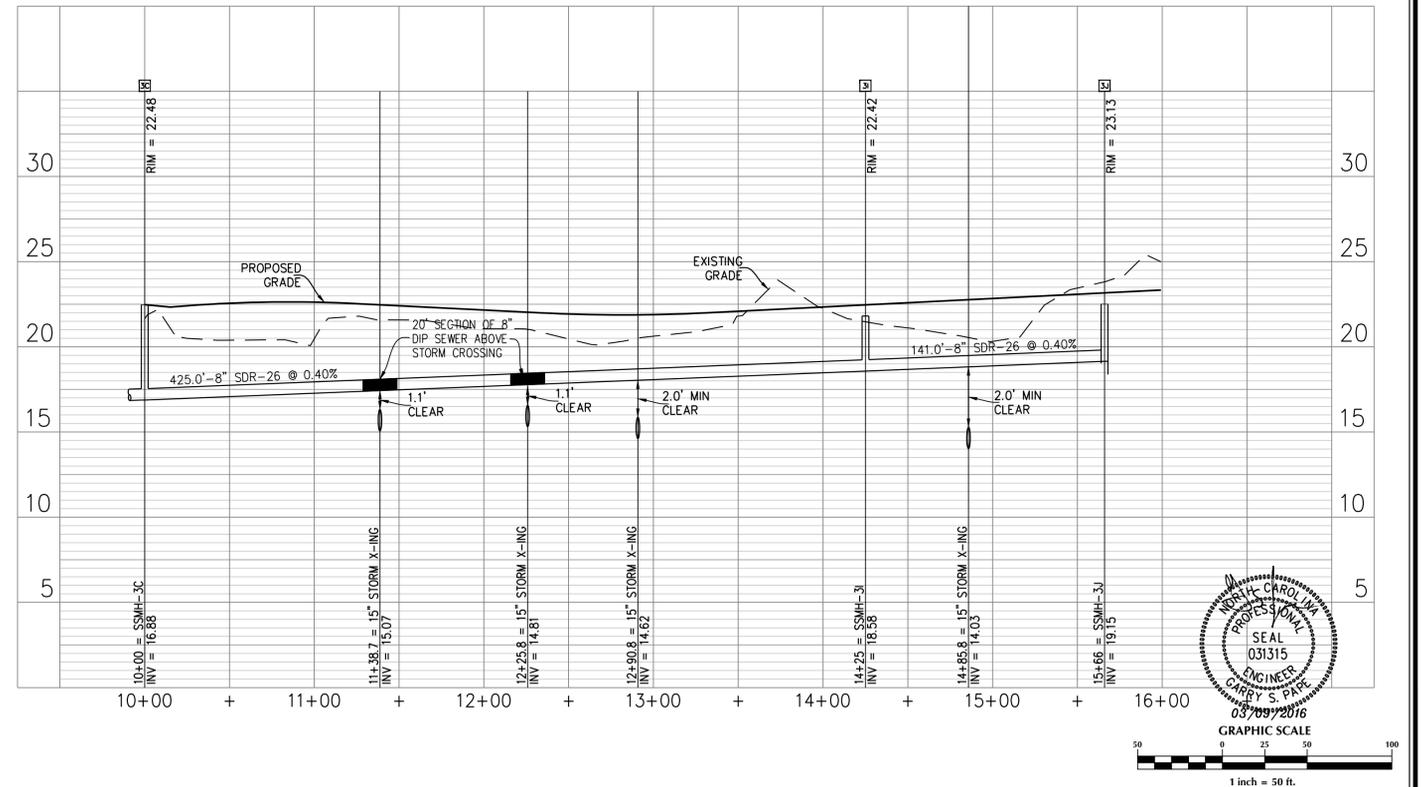
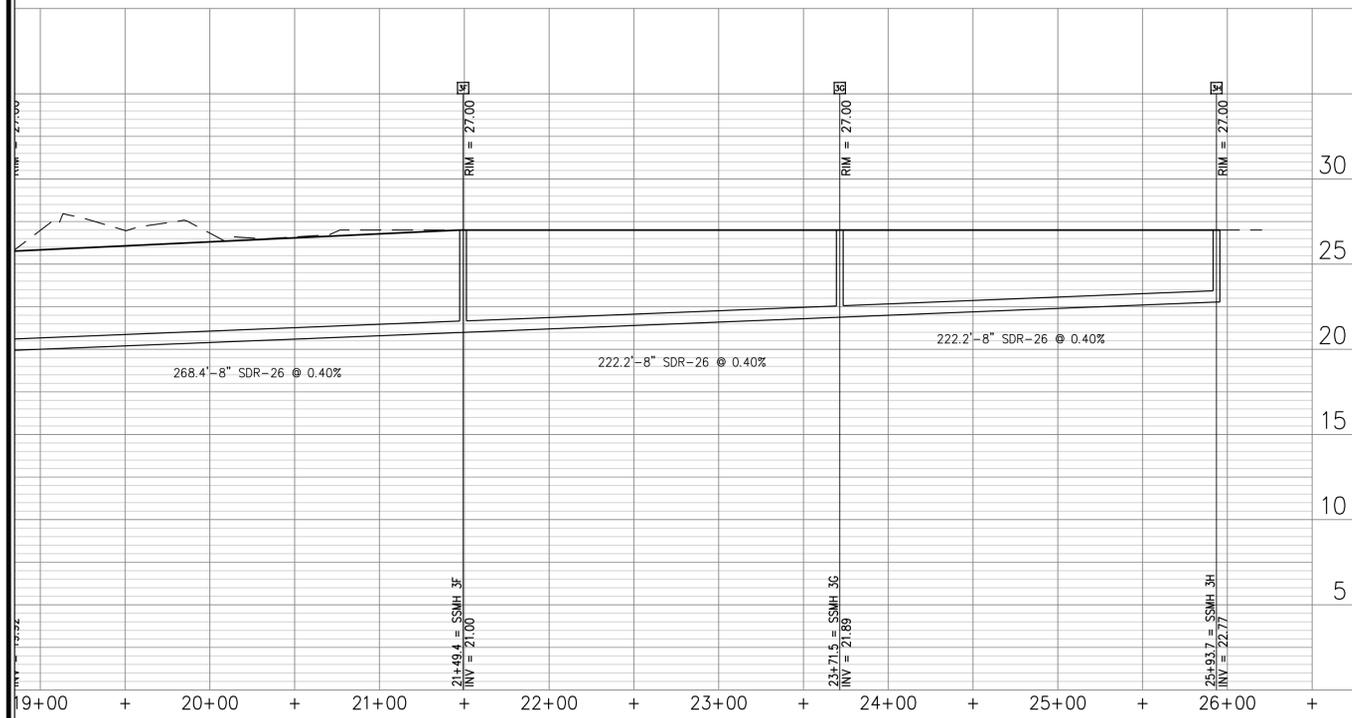
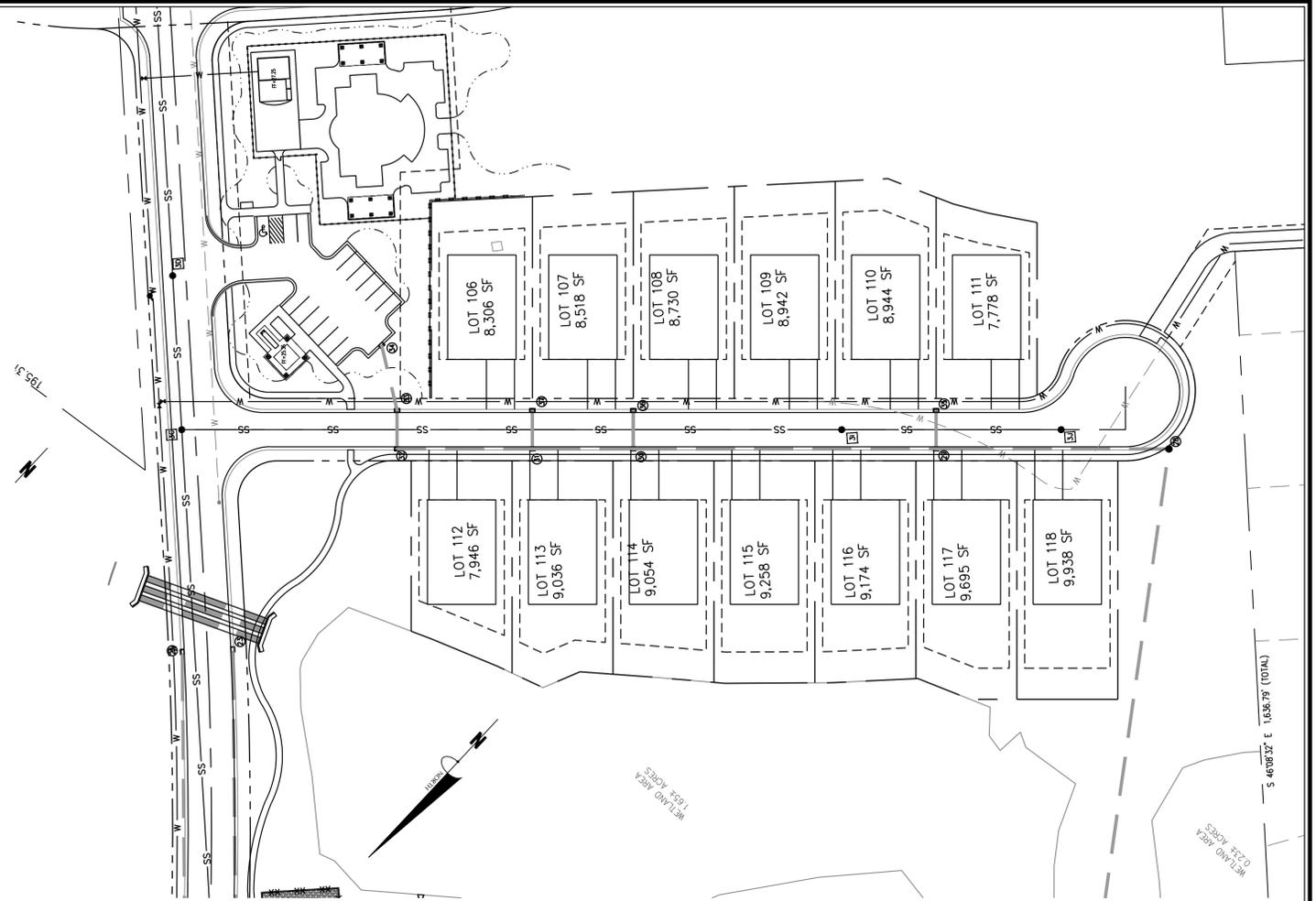
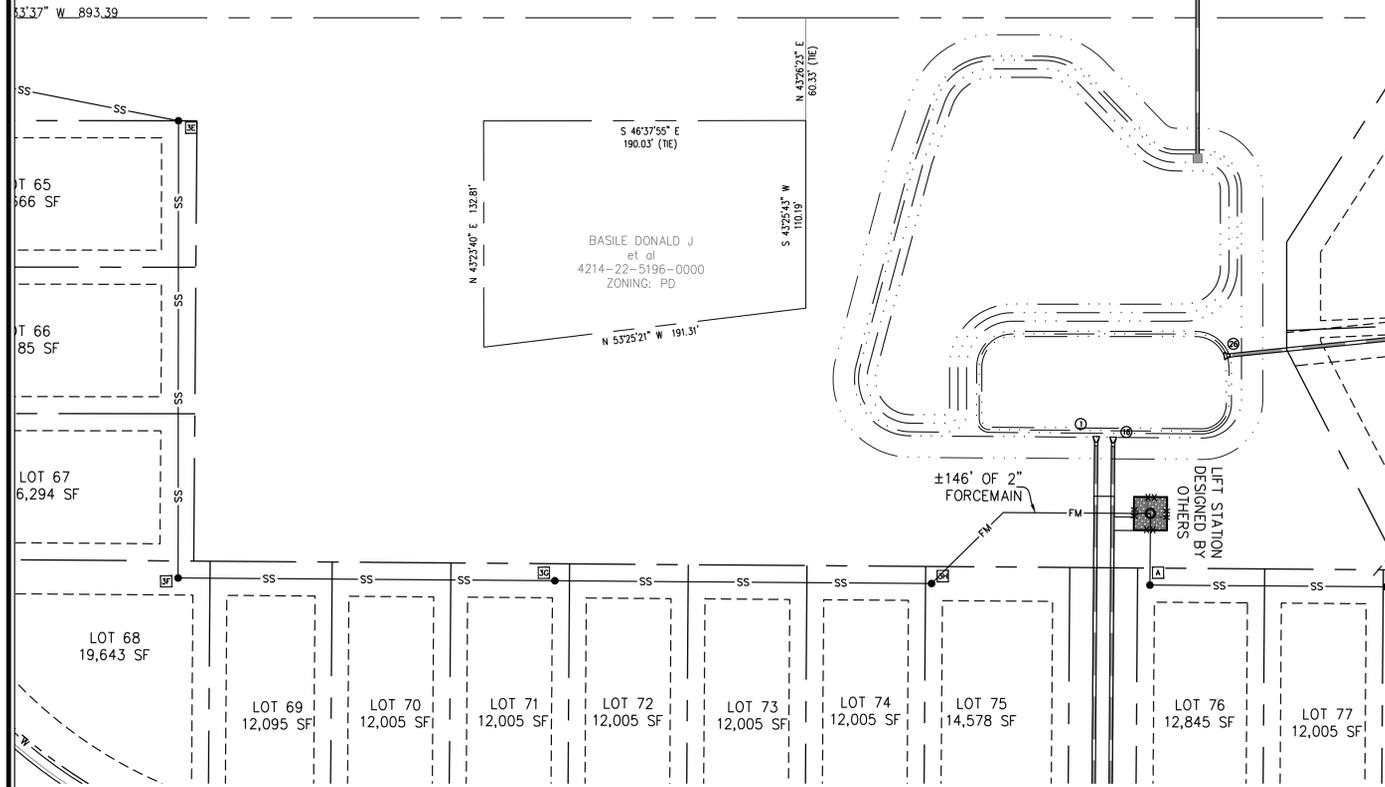
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Sheet No.
C-4.7

PHASE 3 TOTAL LINEAR FEET SEWER PROPOSED

7,293' - 8" SDR-26 GRAVITY SEWER
 37 MANHOLES
 ±5,386' - 10" SEWER FORCEMAIN (DESIGNED BY OTHERS)

VENTURES LLC
 4214-22-7567-00C
 ZONING: PD



No.	Revision	Date	By

Designer	GSP	Scale	1" = 50'
Drawn By	GSP	Date	Morch 2016
License #	P-0718	Job No.	2015-0004

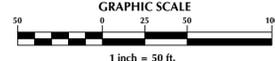
WYNDWATER - PHASE 3
 Pender County
 North Carolina

UTILITY PLAN

PREPARED FOR:
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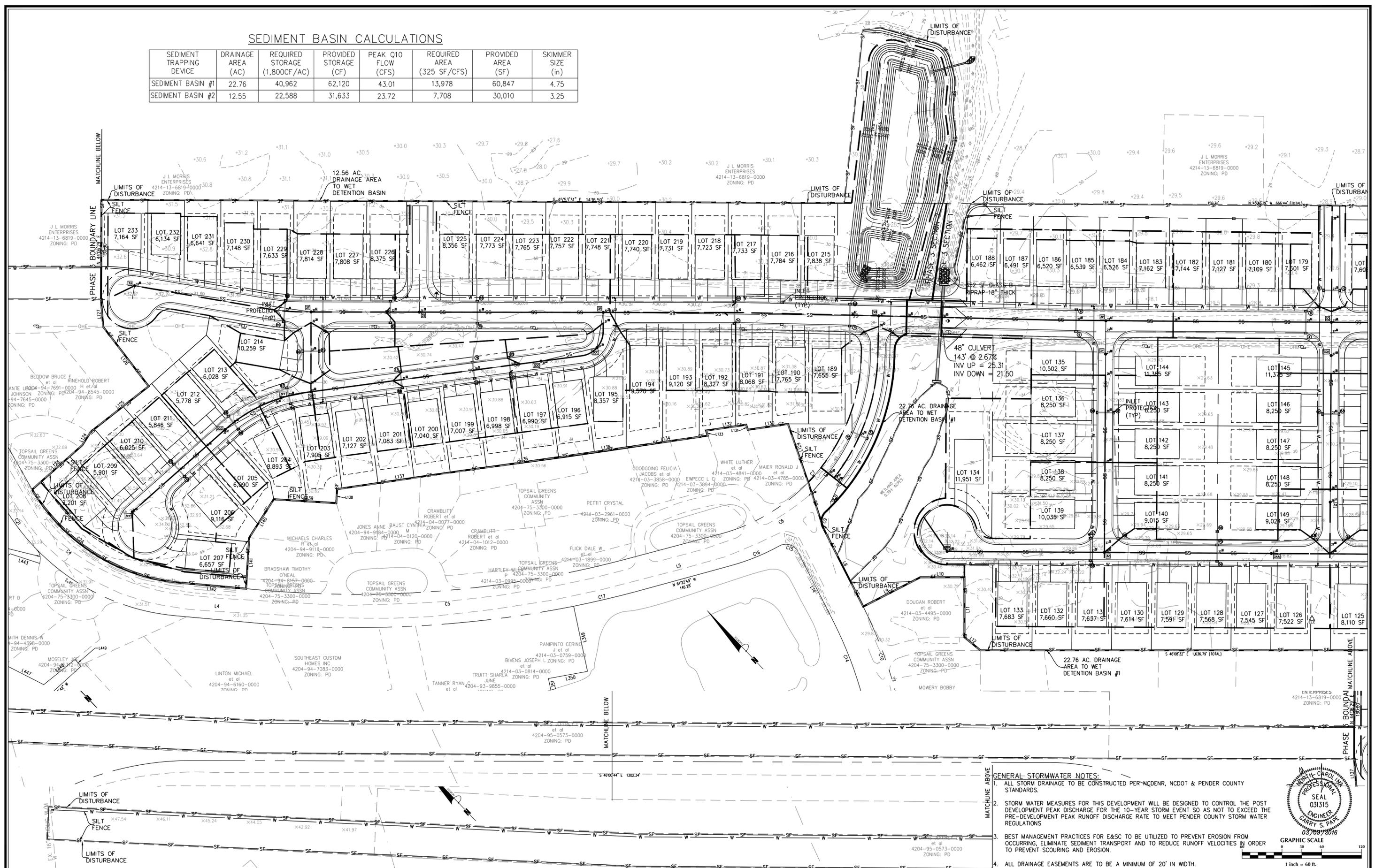
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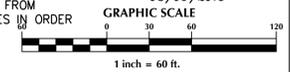
SEDIMENT BASIN CALCULATIONS

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	22.76	40,962	62,120	43.01	13,978	60,847	4.75
SEDIMENT BASIN #2	12.55	22,588	31,633	23.72	7,708	30,010	3.25



GENERAL STORMWATER NOTES:

- ALL STORM DRAINAGE TO BE CONSTRUCTED PER NCDENR, NCDOT & PENDER COUNTY STANDARDS.
- STORM WATER MEASURES FOR THIS DEVELOPMENT WILL BE DESIGNED TO CONTROL THE POST DEVELOPMENT PEAK DISCHARGE FOR THE 10-YEAR STORM EVENT SO AS NOT TO EXCEED THE PRE-DEVELOPMENT PEAK RUNOFF DISCHARGE RATE TO MEET PENDER COUNTY STORM WATER REGULATIONS.
- BEST MANAGEMENT PRACTICES FOR E&S TO BE UTILIZED TO PREVENT EROSION FROM OCCURRING, ELIMINATE SEDIMENT TRANSPORT AND TO REDUCE RUNOFF VELOCITIES IN ORDER TO PREVENT SCOURING AND EROSION.
- ALL DRAINAGE EASEMENTS ARE TO BE A MINIMUM OF 20' IN WIDTH.



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 License #: P-0718
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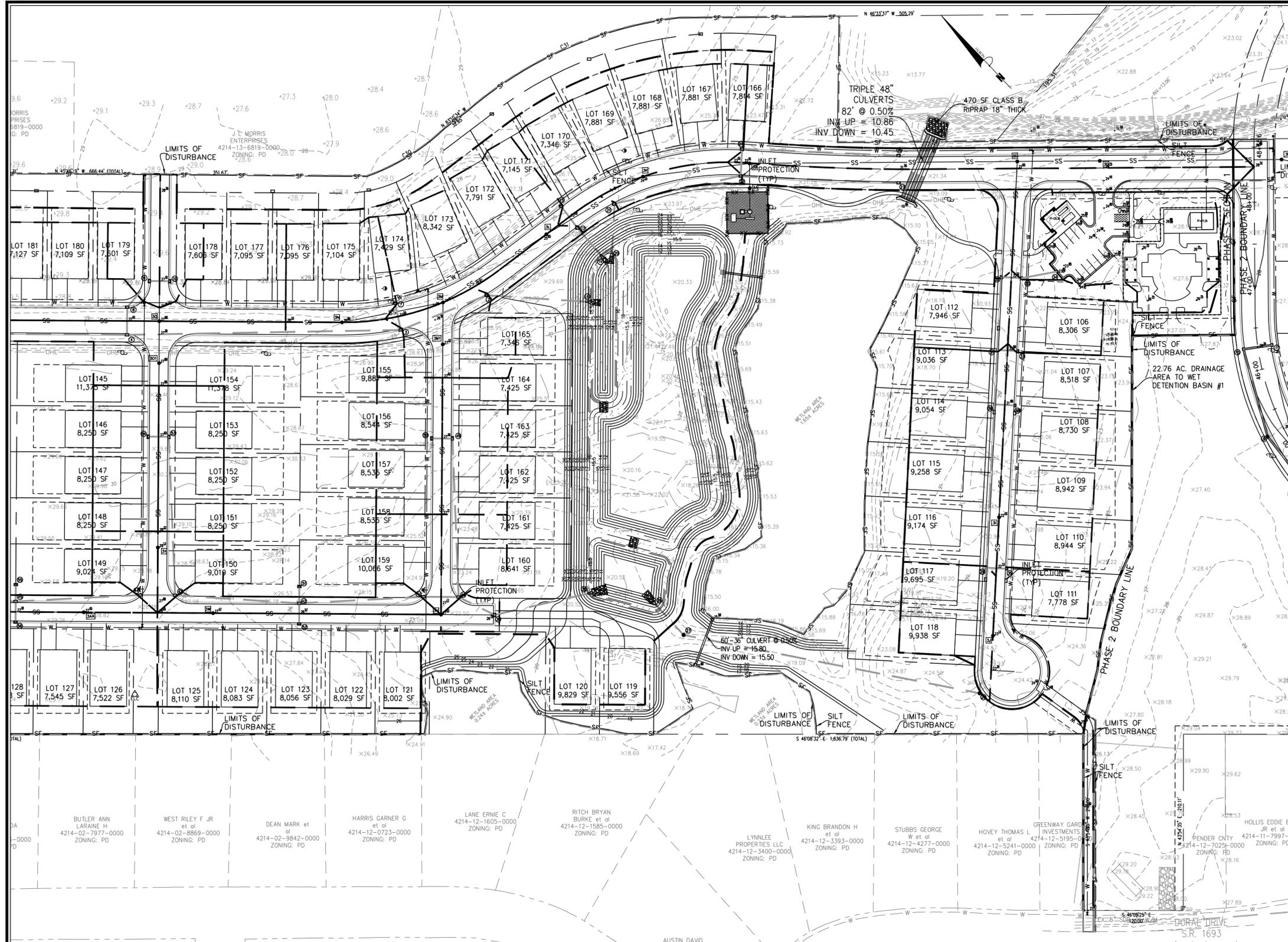
WYNDWATER - PHASE 3
 Pender County
 North Carolina

GRADING, DRAINAGE & EROSION & SEDIMENT CONTROL PLAN

PREPARED FOR:
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Sheet No. **C-5.1**



STORM TABLE

FROM	TO	LENGTH (ft)	DIAMETER (in)	SLOPE (%)	INV. DN (ft)	INV. UP (ft)	RIM (ft)	MATERIAL
2	1	131	24	2.00%	16.00	18.62	26.17	HDPE
3	2	111	24	1.00%	19.06	20.17	27.05	HDPE
4	3	328	24	0.30%	20.17	21.15	27.11	HDPE
5	4	347	18	0.30%	21.15	22.19	27.30	HDPE
6	5	33	15	0.30%	22.19	22.29	27.30	HDPE
7	3	33	15	0.30%	20.17	20.27	27.05	HDPE
8	4	33	18	0.30%	21.15	21.25	27.11	HDPE
9	8	41	15	0.30%	21.25	21.38	27.48	HDPE
10	9	25	15	0.30%	21.38	21.45	27.48	HDPE
12	11	47	24	3.00%	15.50	16.92	24.79	HDPE
13	12	33	24	0.30%	18.30	18.40	24.79	HDPE
21	20	56	18	0.30%	15.33	15.50	24.22	HDPE
22	21	152	18	0.30%	15.50	15.95	22.51	HDPE
23	22	186	15	0.30%	17.34	17.90	21.06	HDPE
24	22	30	15	0.30%	17.40	17.49	22.51	HDPE
25	24	185	15	0.30%	17.49	18.05	21.06	HDPE
27	26	53	30	0.30%	12.00	12.16	20.00	HDPE
28	27	362	30	0.30%	12.16	13.25	23.70	HDPE
29	28	150	24	0.50%	13.25	14.00	22.31	HDPE
30	29	195	24	0.30%	14.00	14.58	21.46	HDPE
31	30	65	24	0.30%	14.58	14.78	21.66	HDPE
32	31	87	15	0.30%	14.78	15.04	22.10	HDPE
33	32	25	15	0.30%	15.04	15.11	22.10	HDPE
34	33	43	15	0.30%	15.11	15.24	23.66	HDPE
35	29	25	15	0.30%	14.00	14.07	22.31	HDPE
36	30	25	15	0.30%	14.58	14.65	21.46	HDPE
37	31	25	15	0.30%	14.78	14.85	21.66	HDPE
39	38	120	36	0.30%	15.50	15.86	26.60	HDPE
40	39	48	36	0.30%	15.86	16.00	26.75	HDPE
41	40	42	36	0.30%	16.00	16.13	26.75	HDPE
42	41	149	36	0.30%	16.13	16.58	26.15	HDPE
43	42	149	30	0.30%	16.58	17.03	27.38	HDPE
44	43	42	30	0.30%	17.03	17.15	27.38	HDPE
45	44	149	30	0.30%	17.15	17.60	26.76	HDPE
46	45	149	24	0.30%	17.60	18.05	27.36	HDPE
47	46	42	15	0.30%	18.05	18.17	27.36	HDPE
48	47	33	15	0.30%	18.17	18.27	27.36	HDPE
49	40	189	15	0.30%	16.00	16.57	26.84	HDPE
50	49	25	15	0.30%	16.57	16.65	26.84	HDPE
51	42	20	18	0.30%	16.58	16.64	26.32	HDPE
52	42	25	15	0.30%	16.58	16.65	26.15	HDPE
53	43	189	15	0.30%	17.03	17.59	27.23	HDPE
54	53	25	15	0.30%	17.59	17.67	27.23	HDPE
55	45	20	18	0.30%	17.60	17.66	26.93	HDPE
56	45	25	15	0.30%	17.60	17.67	26.76	HDPE
57	46	189	15	0.30%	18.05	18.61	27.60	HDPE
58	57	25	15	0.30%	18.61	18.69	27.60	HDPE
60	59	40	36	0.30%	24.00	24.12	30.17	HDPE
61	60	174	36	0.30%	24.12	24.64	30.92	HDPE
62	61	368	36	0.30%	24.64	25.81	30.98	HDPE
63	62	126	36	0.30%	26.06	26.43	31.48	HDPE
64	63	163	30	0.30%	26.43	26.92	32.31	HDPE
65	64	33	24	0.30%	28.92	27.02	32.31	HDPE
66	65	53	24	0.30%	27.02	27.18	31.64	HDPE
67	66	60	24	0.30%	27.18	27.36	31.87	HDPE
68	67	97	24	0.30%	27.56	27.85	31.87	HDPE
69	68	109	18	0.30%	27.85	28.18	31.87	HDPE
70	69	25	15	0.30%	28.18	28.25	31.87	HDPE
71	60	33	15	0.30%	25.12	25.22	30.17	HDPE
72	71	159	15	0.30%	25.22	25.69	29.17	HDPE
73	72	25	15	0.30%	25.69	25.77	29.17	HDPE
74	61	33	15	0.30%	27.14	27.24	30.92	HDPE
75	62	33	24	0.30%	26.06	26.15	30.98	HDPE
76	75	59	24	0.30%	26.15	26.33	30.32	HDPE
77	76	110	15	0.30%	27.43	27.76	31.13	HDPE
78	77	25	15	0.30%	27.76	27.83	31.13	HDPE
79	76	25	15	0.30%	26.98	27.05	30.32	HDPE
80	76	55	15	0.30%	27.08	27.25	30.60	HDPE
81	80	25	15	0.30%	27.25	27.32	30.60	HDPE
82	63	33	15	0.30%	27.93	28.03	31.48	HDPE
83	66	25	15	0.30%	28.18	28.25	31.64	HDPE
84	67	25	15	0.30%	28.31	28.38	31.87	HDPE
85	68	25	15	0.30%	28.35	28.43	31.87	HDPE

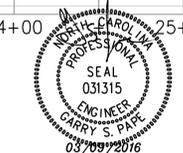
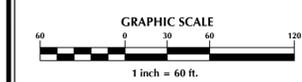
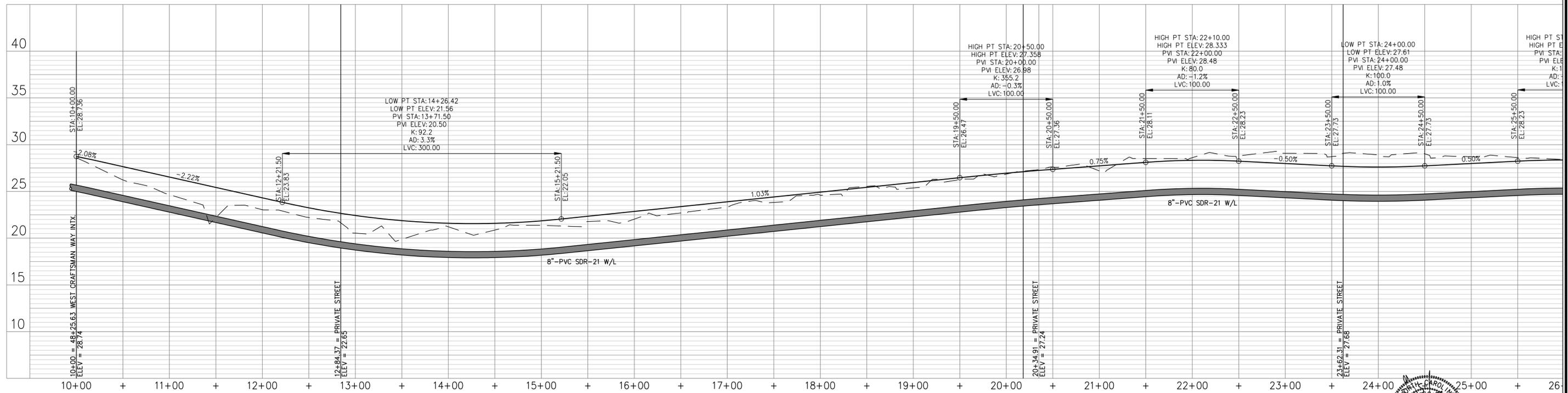
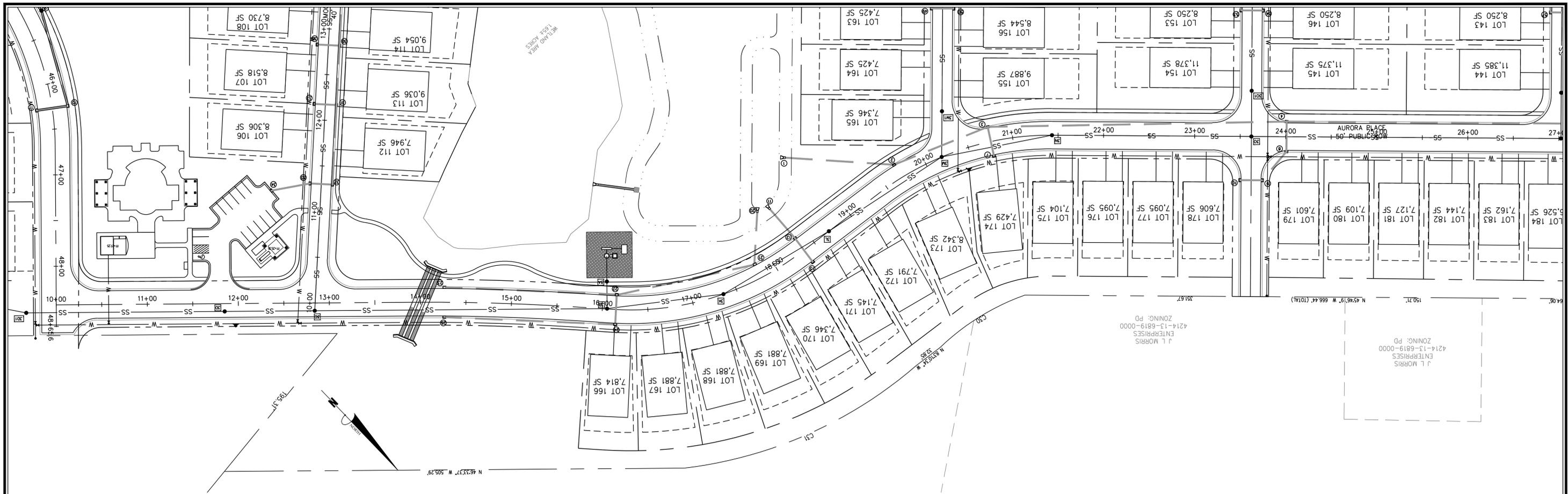
GENERAL STORMWATER NOTES:

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- BEST MANAGEMENT PRACTICES FOR E&SC TO BE UTILIZED TO PREVENT EROSION FROM OCCURRING, ELIMINATE SEDIMENT TRANSPORT AND TO REDUCE RUNOFF VELOCITIES IN ORDER TO PREVENT SCOURING AND EROSION.
- ALL DRAINAGE EASEMENTS ARE TO BE A MINIMUM OF 20' IN WIDTH.

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	22.76	40,962	62,120	43.01	13,978	60,847	4.75
SEDIMENT BASIN #2	12.55	22,588	31,633	23.72	7,708	30,010	3.25

GRAPHIC SCALE
1 inch = 60 ft.



No.	Revision	Date	By

Designer	GSP	Scale	1" = 60'
Drawn By	GSP	Date	Morch 2016
License #	P-0718	Job No.	2015-0004

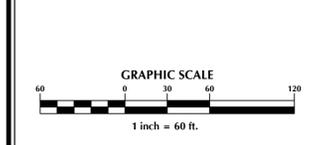
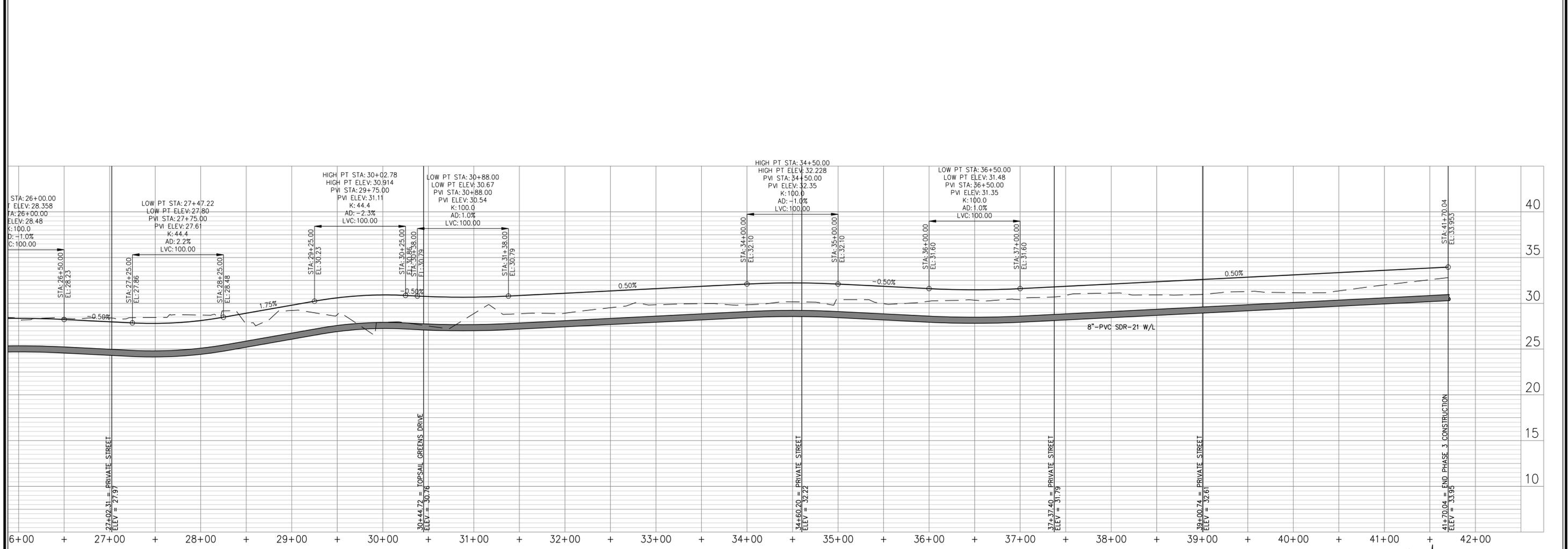
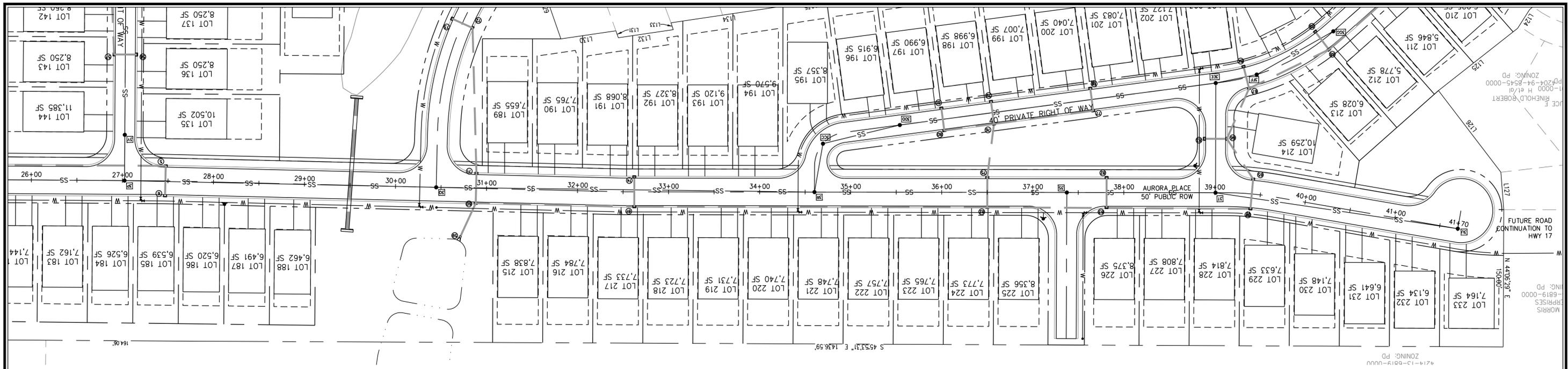
WYNDWATER - PHASE 3
Topsail Township Pender County North Carolina

**AURORA PLACE
PLAN & PROFILE**

PREPARED FOR:
SIGNATURE TOP SAIL NC, LP
9337B Katy Freeway #377
Houston, TX 77024
713-822-3891

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C-6



No.	Revision	Date	By

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Drawn By	GSP	Date	Morch 2016
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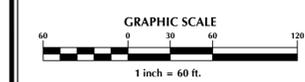
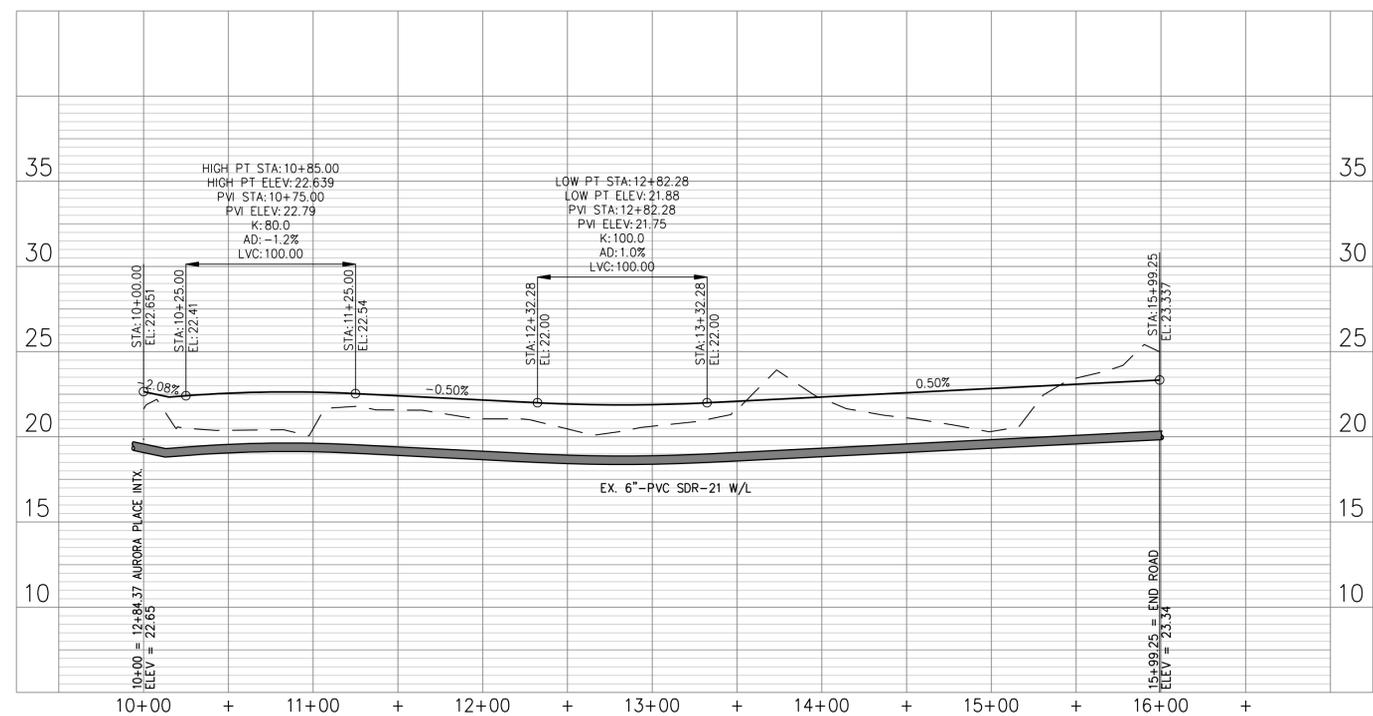
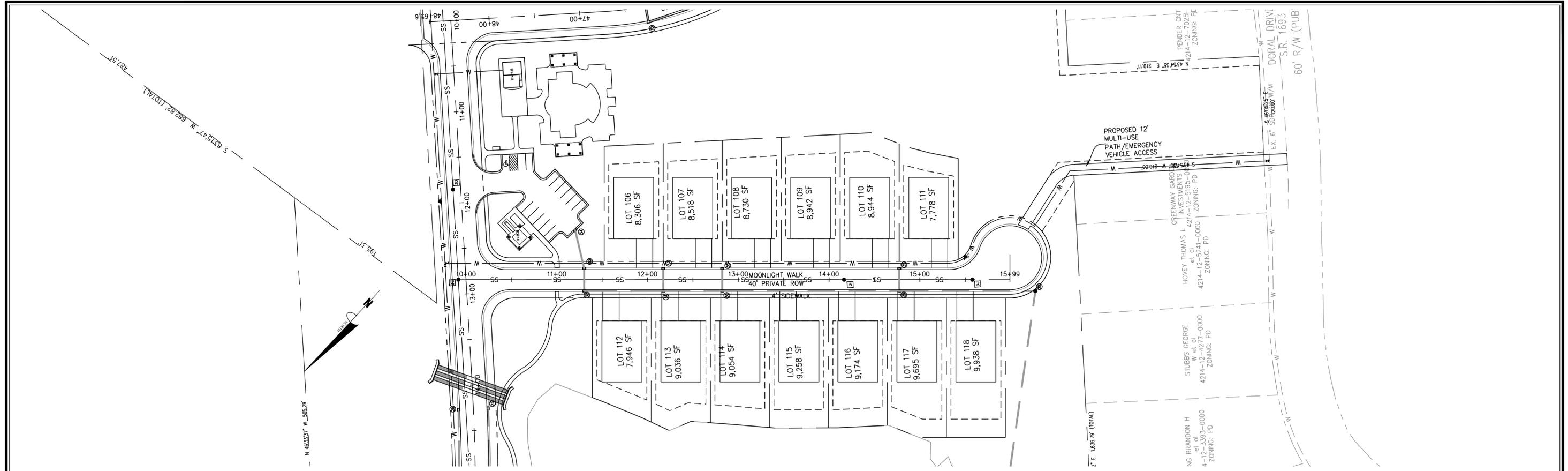
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**AURORA PLACE
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No.	Revision	Date	By

Designer	GSP	Scale	1" = 60'
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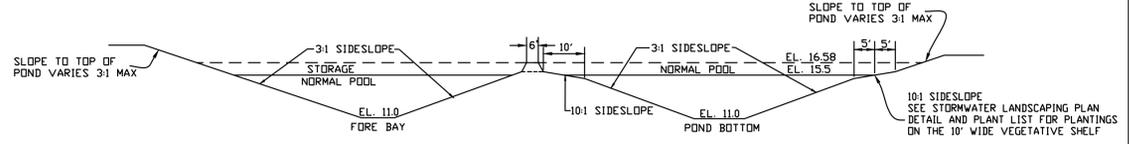
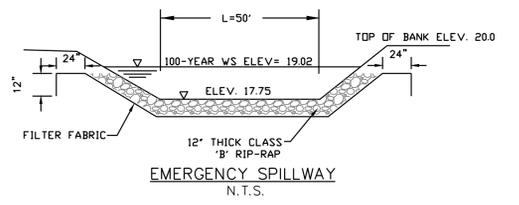
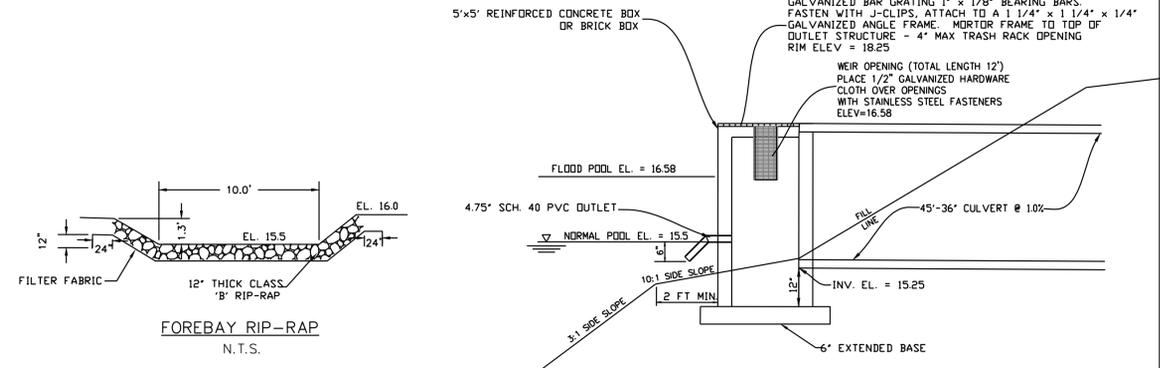
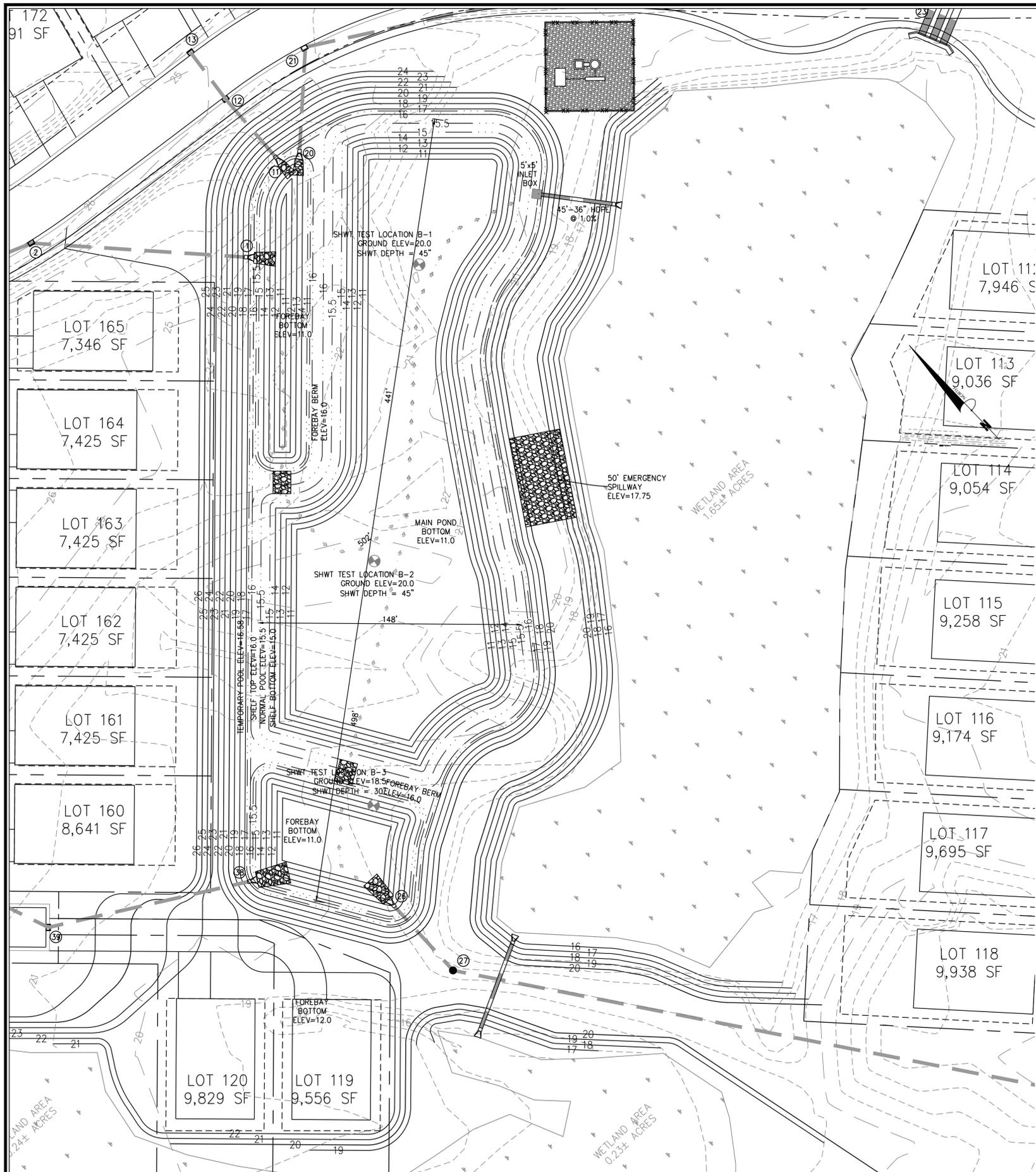
WYNDWATER - PHASE 3
Topsail Township Pender County North Carolina

**MOONLIGHT WALK (PRIVATE)
PLAN & PROFILE**

PREPARED FOR:
SIGNATURE TOP SAIL NC, LP
9337B Katy Freeway #377
Houston, TX 77024
713-822-3891

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Sheet No.
C-8



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)
15.5	14.5	4.0	44,959	27,188	50,705	48,923	3.5	16.0

POND CROSS-SECTION
N.T.S.

SHALLOW WATER COMMUNITY (NORMAL POOL TO SHELF BOTTOM) = 4,597 S.F.
@ 1 PLANT PER 4 SF (24" O.C.) = 1,150 PLANTS

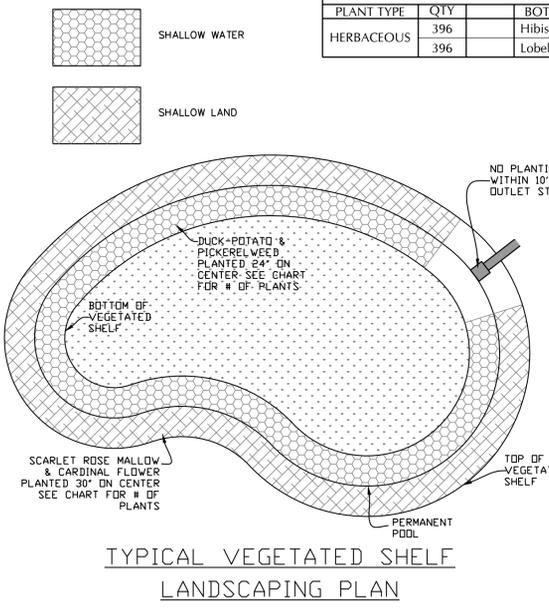
PLANT TYPE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	575	Sagittaria latifolia	Duck Potato	CONT.	4" Pot		24" O.C.
	575	Pontederia cordata	Pickerselweed	CONT.	4" Pot		24" O.C.

SHALLOW LAND COMMUNITY (NORMAL POOL TO SHELF TOP) = 4,754 S.F.
@ 1 PLANT PER 6.25 SF (30" O.C.) = 792 PLANTS

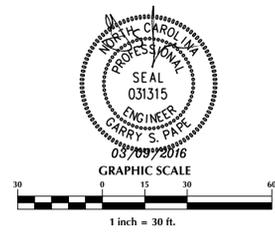
PLANT TYPE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	396	Hibiscus coccineus	Scarlet Rose Mallow	CONT.	4" Pot		30" O.C.
	396	Lobelia cardinalis	Cardinal Flower	CONT.	4" Pot		30" O.C.

NOTES:

- NO PLANTINGS WITHIN 10' OF OUTLET STRUCTURE.
- 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.
- A MINIMUM TWO-YEAR WARRANTY PERIOD STIPULATING REQUIREMENTS FOR PLANT SURVIVAL/REPLACEMENT.



TYPICAL VEGETATED SHELF
LANDSCAPING PLAN



No.	Revision	Date	By	Designer	Scale
				GSP	1" = 30'
				GSP	Morch 2016
				P-0718	2015-0004

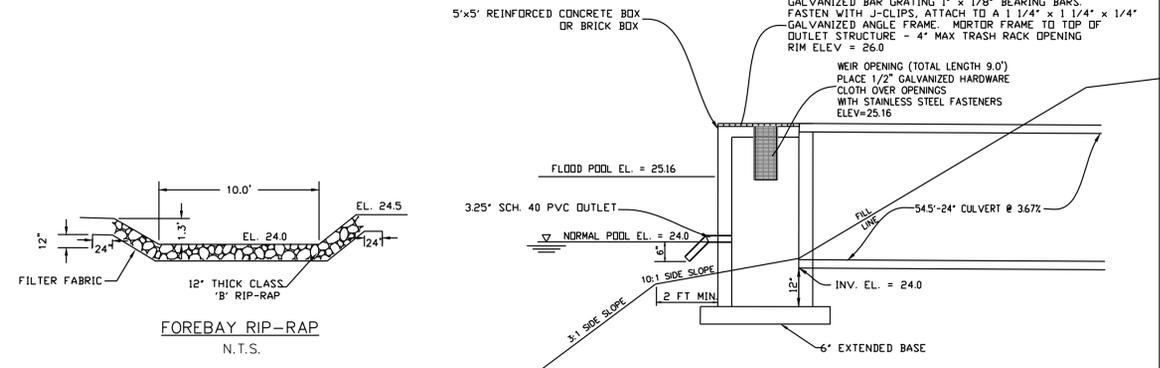
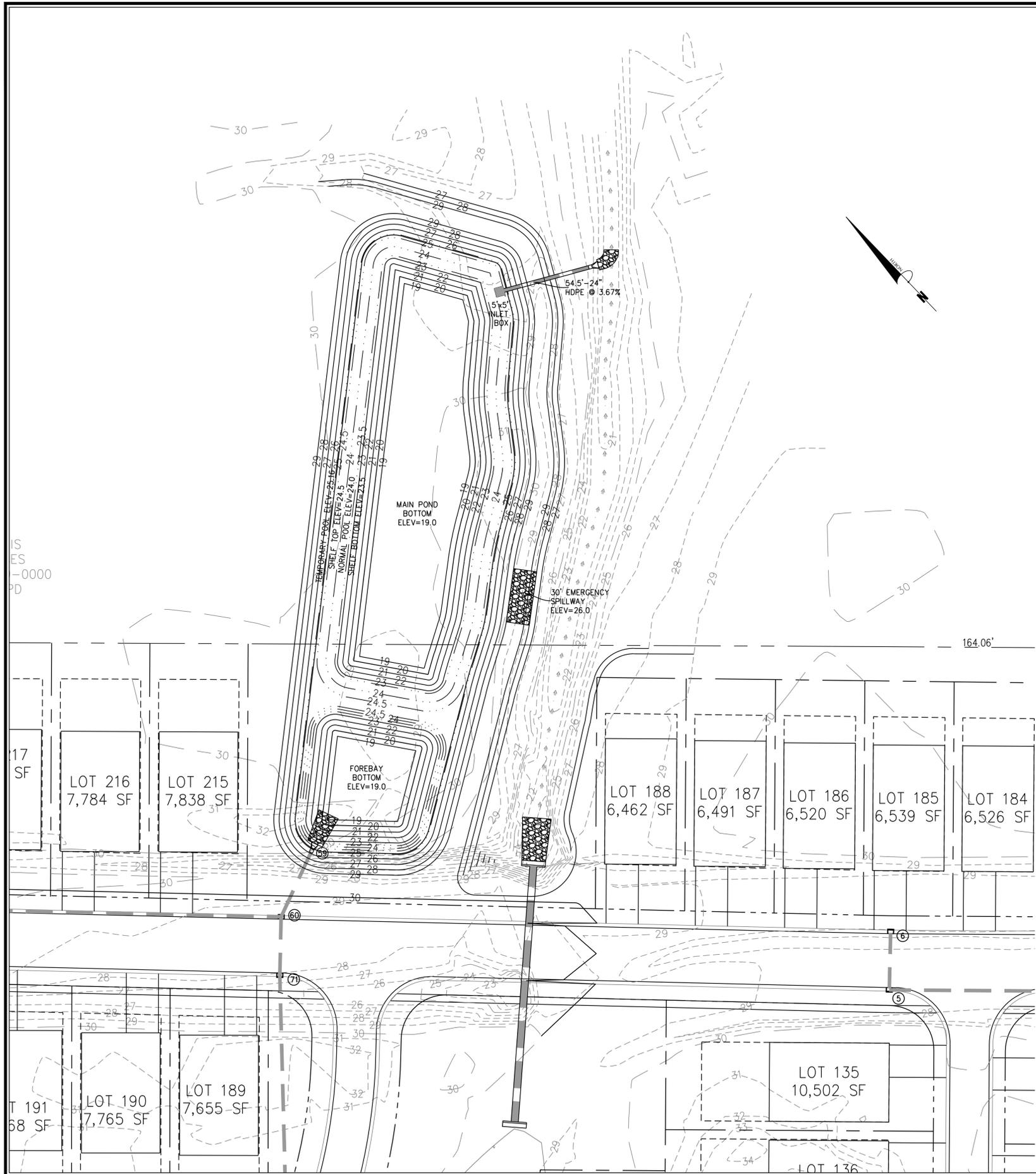
WYNDWATER - PHASE 3
Topsail Township Pender County North Carolina

WET DETENTION BASIN #1 DETAILS

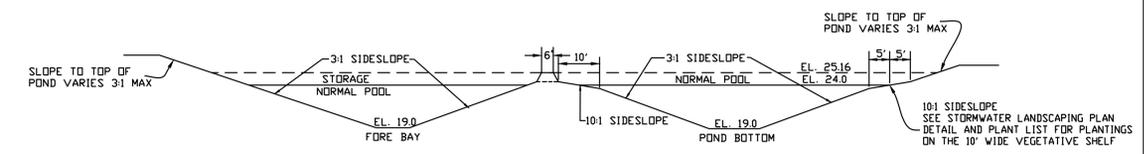
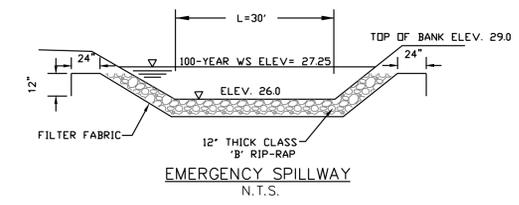
PREPARED FOR:
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Sheet No.
C-9.1



- NOTES:**
- DESIGN ELEVATIONS FOR WET DETENTION BASIN ARE TO AN ELEVATION OF 19.0 IN THE MAIN POND AND 19.0 IN THE FOREBAY WITH SEDIMENT STORAGE DOWN TO 18.0 IN THE MAIN POND AND 18.0 IN THE FOREBAY.
 - SEASON HIGH WATER TABLE WAS TAKEN AT A GROUND ELEVATION OF 26.1 AND ESTIMATED TO BE 20 INCHES FOR AN ELEVATION OF 24.5, WHICH IS WITHIN 6" OF THE PERMANENT POOL ELEVATION OF 24.0.
 - ALL IMPERVIOUS SITE AREA TO BE DRAINED TO PROPOSED STORM SEWER SYSTEM AND DISCHARGED TO THE WET DETENTION POND.
 - POND WILL BE PUMPED DOWN BY MECHANICAL MEANS IN CASE OF EMERGENCY.
 - PRIOR TO USE AS A WET DETENTION BASIN, SEDIMENT BASIN WILL BE MUCKED OUT.
 - POND SIDE SLOPES TO BE SODDED WITH CENTIPEDE GRASS OR EQUIVALENT.
 - 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)	SWMT ELEVATION (FT)
24.0	23.5	4.5	20,719	10,547	24,106	21,624	4.0	24.5

POND CROSS-SECTION
N.T.S.

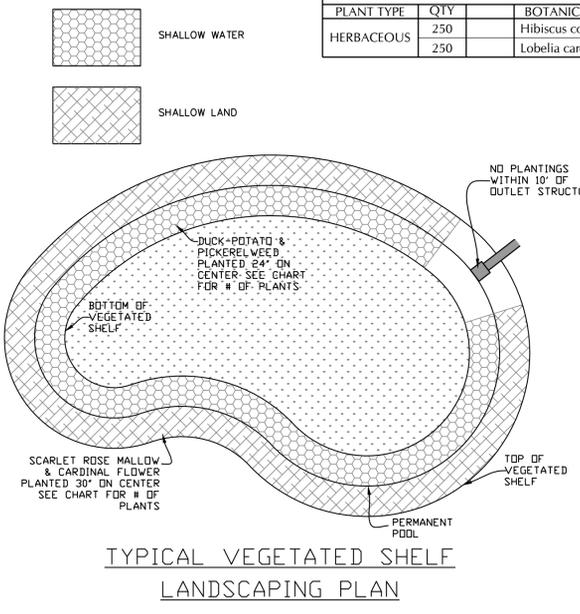
SHALLOW WATER COMMUNITY (NORMAL POOL TO SHELF BOTTOM) = 2,872 S.F.
@ 1 PLANT PER 4 SF (24" O.C.) = 718 PLANTS

PLANT TYPE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	359	Sagittaria latifolia	Duck Potato	CONT.	4" Pot		24" O.C.
	359	Pontederia cordata	Pickerselweed	CONT.	4" Pot		24" O.C.

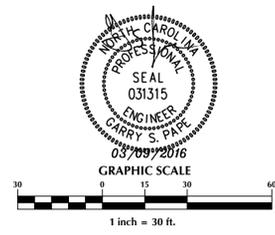
SHALLOW LAND COMMUNITY (NORMAL POOL TO SHELF TOP) = 3,004 S.F.
@ 1 PLANT PER 6.25 SF (30" O.C.) = 500 PLANTS

PLANT TYPE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	250	Hibiscus coccineus	Scarlet Rose Mallow	CONT.	4" Pot		30" O.C.
	250	Lobelia cardinalis	Cardinal Flower	CONT.	4" Pot		30" O.C.

- NOTES:**
- NO PLANTINGS WITHIN 10' OF OUTLET STRUCTURE.
 - 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.
 - A MINIMUM TWO-YEAR WARRANTY PERIOD STIPULATING REQUIREMENTS FOR PLANT SURVIVAL/REPLACEMENT.



TYPICAL VEGETATED SHELF
LANDSCAPING PLAN



No.	Revision	Date	By

Designer	GSP	Scale	1" = 30'
Drawn By	GSP	Date	March 2016
License #	P-0718	Job No.	2015-0004

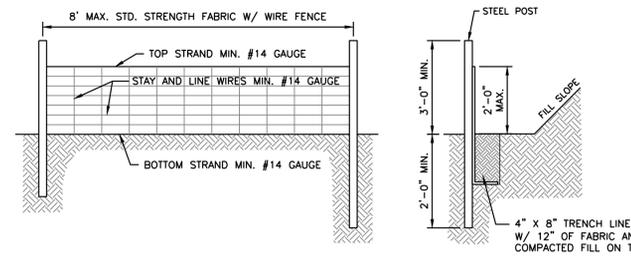
WYNDWATER - PHASE 3
Topsail Township Pender County North Carolina

WET DETENTION BASIN #2 DETAILS

PREPARED FOR:
SIGNATURE TOP SAIL NC, LP
9337B Katy Freeway #377
Houston, TX 77024
713-822-3891

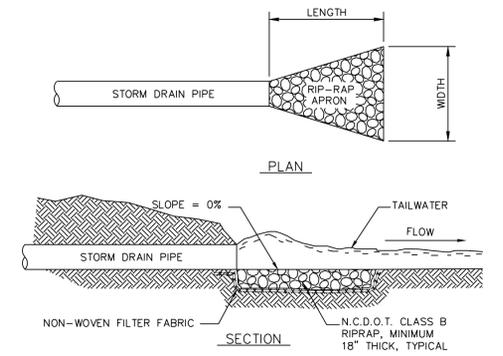
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ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-9.2



- 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



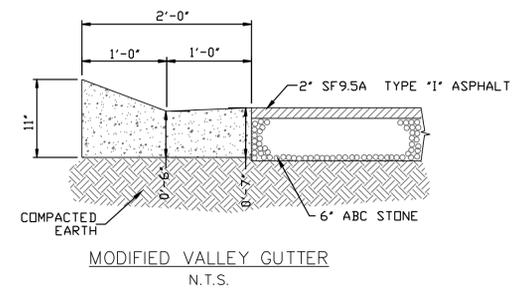
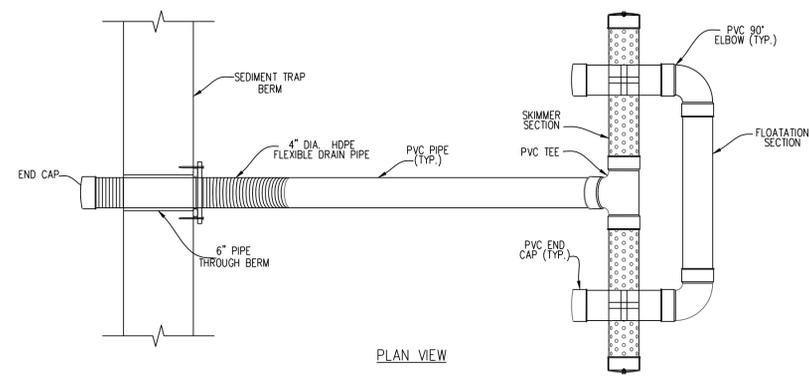
RIPRAP LOCATIONS	LENGTH (FT.)	UPSTREAM WIDTH (FT.)	DOWNSTREAM WIDTH (FT.)
15" CULVERT	7.5	3.75	5.0
18" CULVERT	9.0	4.5	6.0
24" CULVERT	12.0	6.0	8.0
30" CULVERT	15.0	7.5	10.0
36" CULVERT	18.0	9.0	12.0
48" CULVERT	24.0	12.0	16.0

RIP-RAP OUTLET PROTECTION
N.T.S.

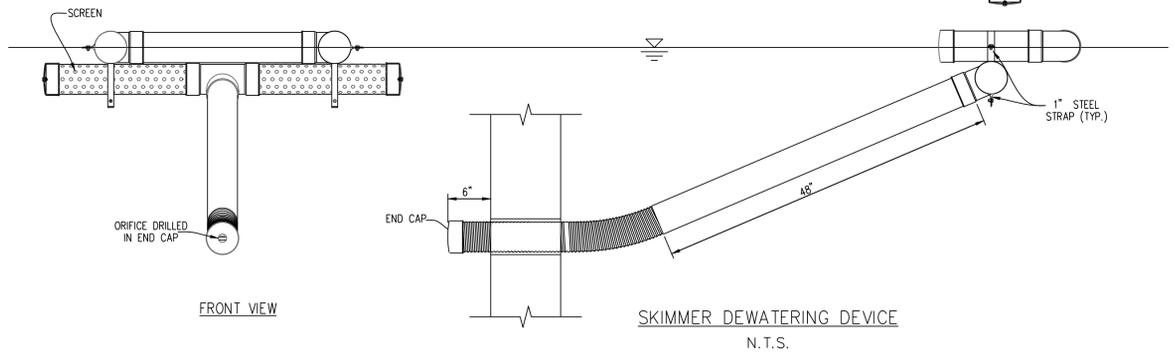
SEQUENCE OF CONSTRUCTION

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.

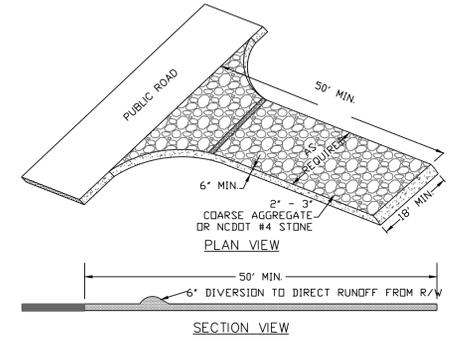
- NOTES:**
1. ALL P.V.C. PIPES ARE TO BE 4" I.D., SCHEDULE 40
 2. ALL JOINTS OF THE FLOATATION SECTION SHALL BE SOLVENT WELDED. JOINTS OF SKIMMER SECTION NEED NOT BE WATER-TIGHT.
 3. 4" HDPE FLEXIBLE DRAIN PIPE IS TO BE ATTACHED TO THE POND OUTLET STRUCTURE WITH WATER-TIGHT CONNECTIONS.
 4. ORIFICE IS TO BE SIZED ACCORDING TO STORAGE VOLUME AND TO SLOWLY RELEASE 1" RUNOFF FOR AT LEAST 24-HOURS.



MODIFIED VALLEY GUTTER
N.T.S.



SKIMMER DEWATERING DEVICE
N.T.S.



TEMPORARY CONSTRUCTION ENTRANCE
N.T.S.



No.	Revision	Date	By

Designer	GSP	Scale	NO SCALE
Drawn By	GSP	Date	Morch 2016
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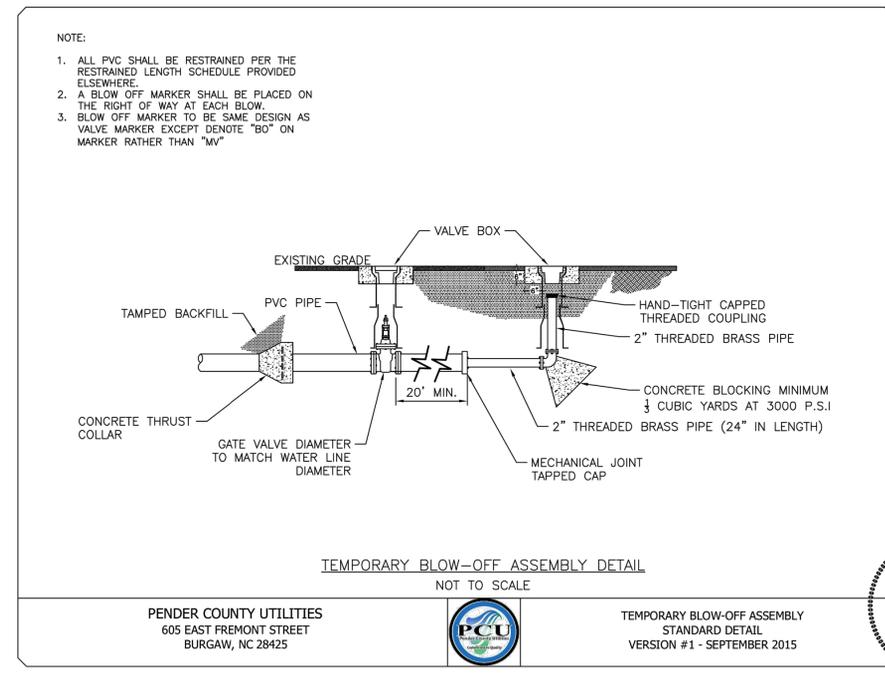
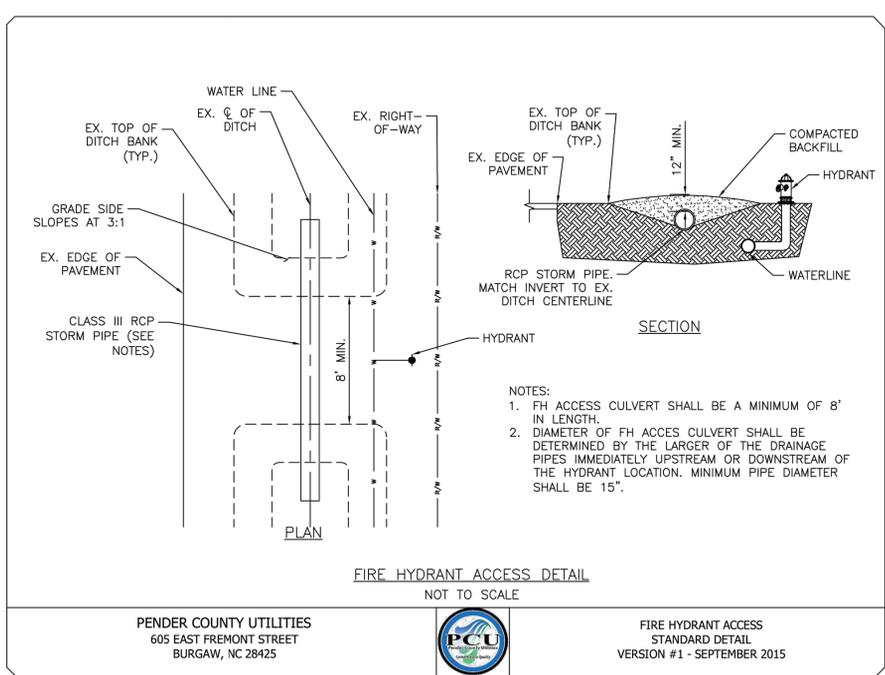
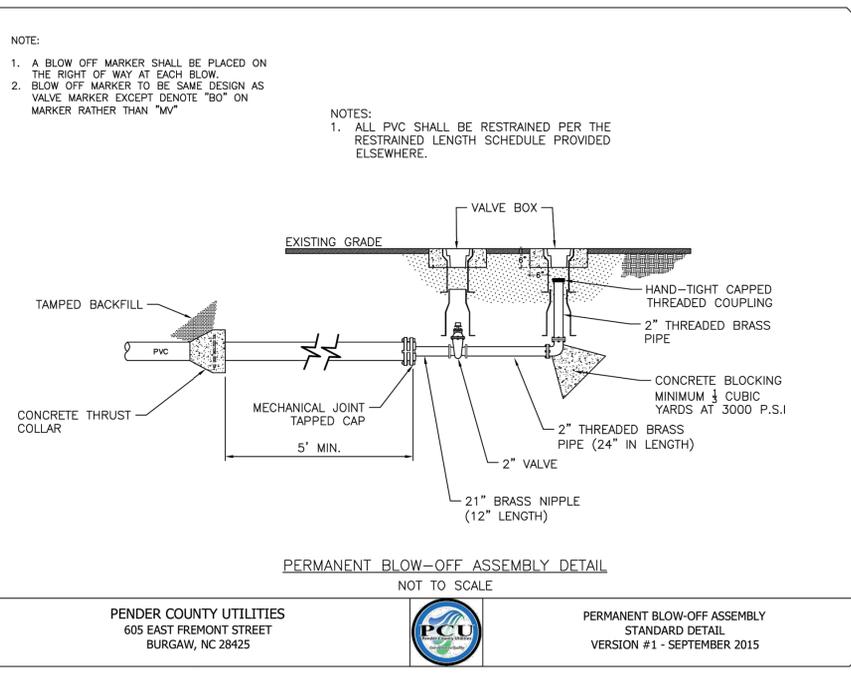
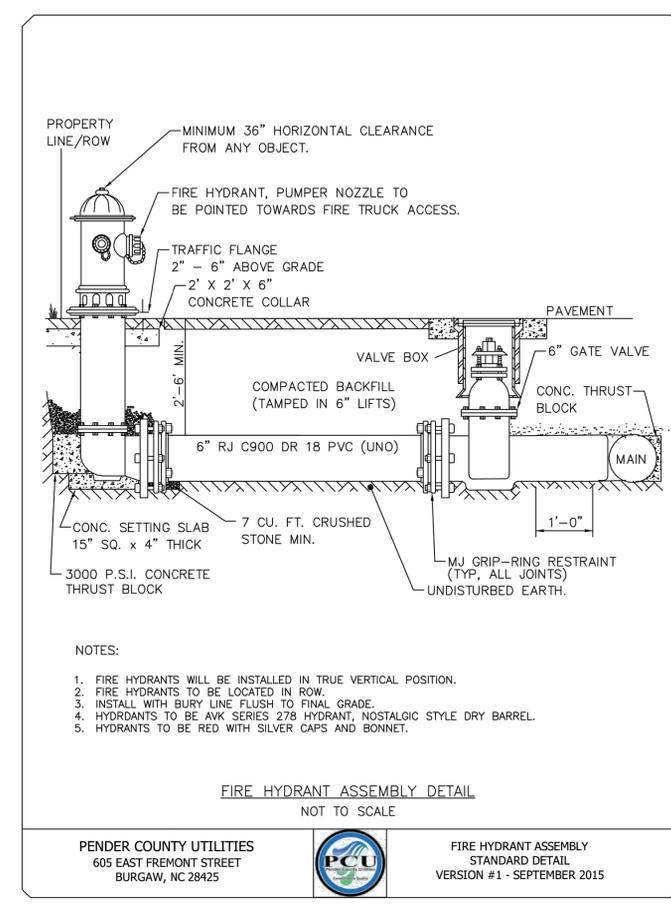
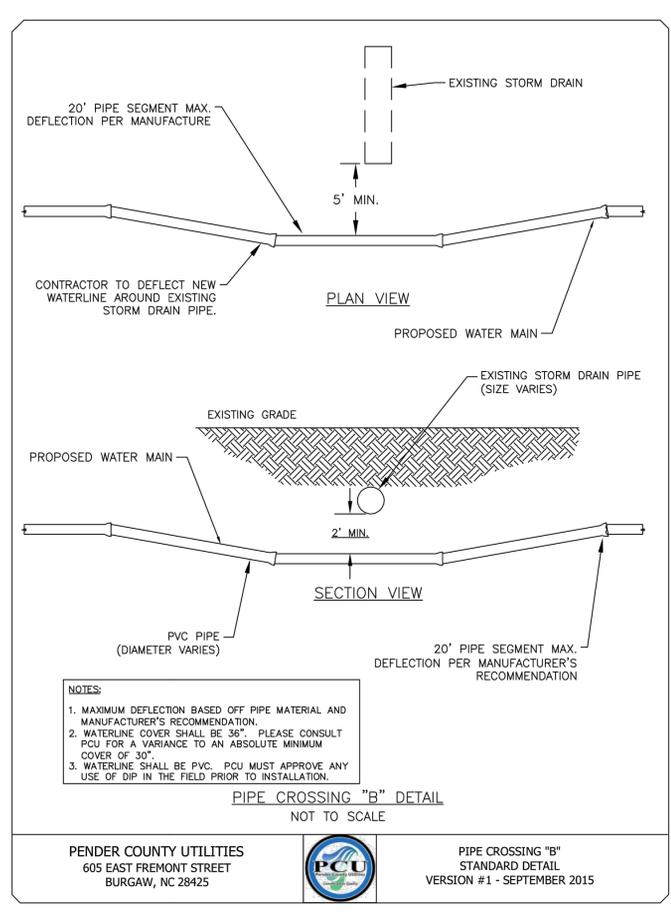
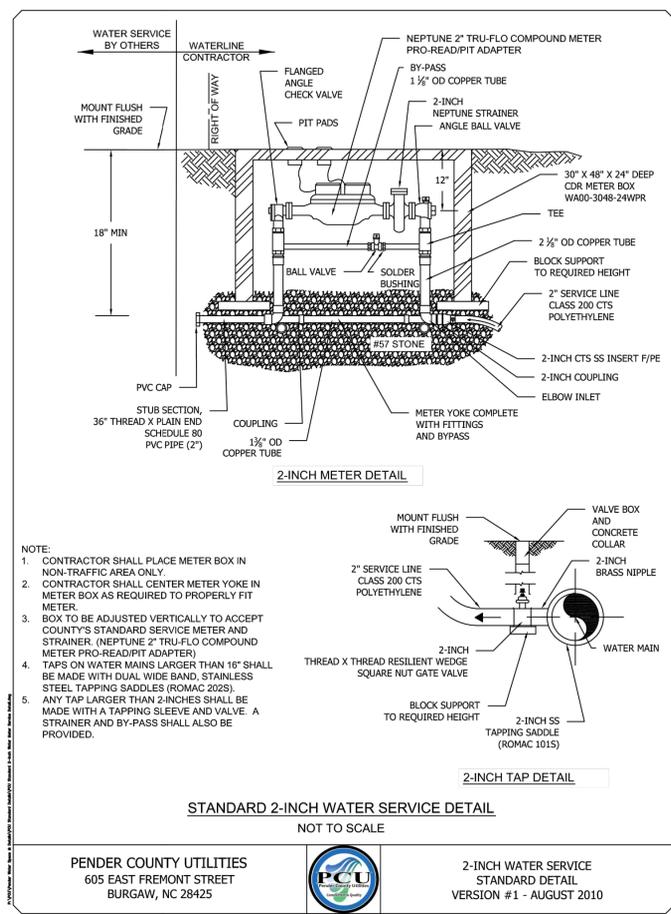
WYNDWATER - PHASE 3
Topsail Township Pender County North Carolina

STANDARD DETAILS

PREPARED FOR:
SIGNATURE TOP SAIL NC, LP
9337B Katy Freeway #377
Houston, TX 77024
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-10



No.	Revision	Date	By

Designer	GSP	Scale	NO SCALE
Drawn By	GSP	Date	March 2016
License #	P-0718	Job No.	2015-0004

WYNDWATER - PHASE 3
Topsail Township Pender County North Carolina

PENDER COUNTY UTILITIES DETAILS

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Sheet No.
C-11



Restrained Length In Feet Each Side of Fitting Joint

PIPE DIAMETER (INCHES)	D. I. P.				P. V. C.			
	90°	45°	22 1/2°	11 1/4°	90°	45°	22 1/2°	11 1/4°
3"	30'	15'	10'	5'	40'	20'	10'	5'
4"	35'	15'	10'	5'	50'	25'	15'	10'
6"	55'	25'	10'	5'	80'	35'	20'	10'
8"	65'	30'	15'	10'	90'	40'	20'	10'
10"	80'	35'	20'	10'	110'	50'	25'	15'
12"	95'	40'	20'	10'	130'	55'	30'	15'
16"	120'	50'	25'	15'	165'	70'	35'	20'
20"	150'	65'	30'	15'	200'	85'	40'	20'
24"	180'	70'	35'	20'	210'	90'	45'	25'
30"	190'	80'	40'	20'	250'	105'	50'	25'
36"	220'	95'	45'	25'	0	0	0	0
42"	245'	105'	50'	25'	0	0	0	0
48"	260'	120'	55'	30'	0	0	0	0

Restrained lengths for valves, dead ends and branches from tees shall be the same as for 90° (degree) bends

Restrained Length In Feet For Reducer

PIPE DIAMETER (INCHES)	3"	4"	6"	8"	10"	12"	16"	20"	24"	30"
3"	0	0	0	0	0	0	0	0	0	0
4"	40'	0	0	0	0	0	0	0	0	0
6"	50'	45'	0	0	0	0	0	0	0	0
8"	75'	70'	45'	0	0	0	0	0	0	0
10"	85'	80'	70'	45'	0	0	0	0	0	0
12"	120'	115'	100'	75'	45'	0	0	0	0	0
16"	150'	155'	140'	125'	100'	70'	0	0	0	0
20"	200'	195'	185'	170'	150'	130'	75'	0	0	0
24"	180'	155'	150'	140'	135'	120'	90'	50'	0	0
30"	195'	190'	185'	180'	170'	160'	120'	105'	70'	0
36"	225'	220'	215'	210'	205'	195'	180'	150'	125'	70'
42"	245'	240'	235'	230'	225'	220'	205'	180'	155'	105'
48"	255'	250'	245'	240'	235'	230'	215'	195'	175'	125'

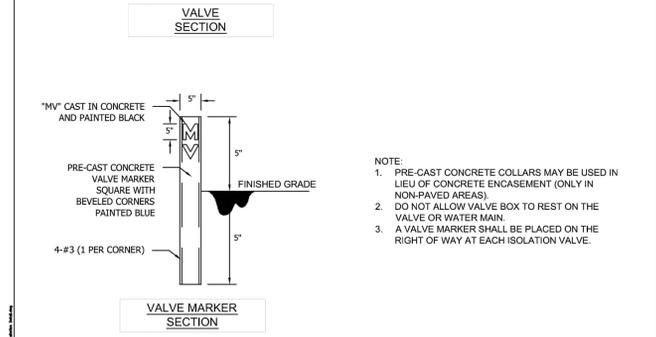
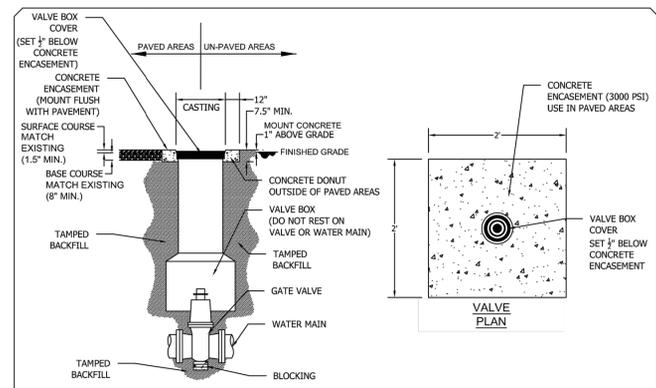
Length of restrained joint for larger diameter pipe

- NOTES:
- PENDER COUNTY STANDARD RESTRAINT METHOD IS MJ "GRIP RING" TYPE. ALL RJ TO BE MJ "GRIP RING" TYPE, UNLESS SPECIFICALLY APPROVED BY PCU IN WRITING.
 - ALL FITTINGS AND JOINTS SHALL BE RESTRAINED JOINT.
 - "L" ABOVE IS GIVEN IN FEET FROM FITTING JOINT.

PENDER COUNTY UTILITIES
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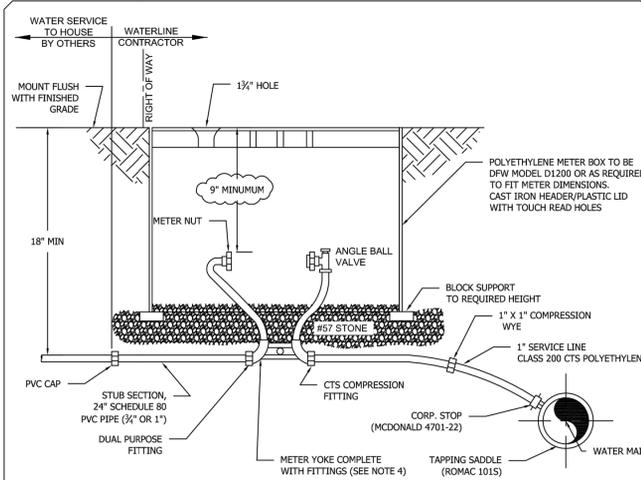
RESTRAINED JOINT TABLE
STANDARD DETAIL
VERSION #1 - OCTOBER 2015



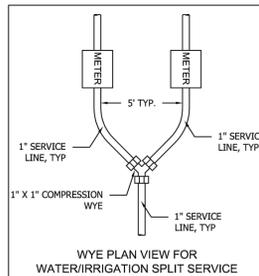
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605 EAST FREMONT STREET
BURGAW, NC 28425



VALVE INSTALLATION
STANDARD DETAIL
VERSION #2 - SEPTEMBER 2015



- NOTE:
- CONTRACTOR SHALL PLACE METER BOX IN NON-Traffic AREA ONLY.
 - ALL TAPS TO BE MADE ON THE TOP QUARTER OF THE WATER MAIN.
 - CONTRACTOR SHALL CENTER METER YOKE IN METER BOX.
 - MCDONALD 26-702WX2D 33 (3/4") MCDONALD 26-410WX2D 44 (1") BOX TO BE ADJUSTED VERTICALLY TO ACCEPT COUNTY'S STANDARD SERVICE METER. (NEPTUNE T-10, PRO READ REGISTER, R600 MIU)
 - METER TO BE SET BY COUNTY UPON RECEIPT OF WATER SERVICE FEES, AND SATISFACTORY INSPECTION OF WATER SERVICE TO HOUSE.
 - TAPS ON WATER MAINS LARGER THAN 16" SHALL BE MADE WITH DUAL WIDE BAND, STAINLESS STEEL TAPPING SADDLES (ROMAC 2025).
 - 1 1/2" METERS REQUIRE 2" TAP AND 2" SQUARE NUT GATE VALVE PER 2" METER DETAIL. REDUCE TO 1 1/2" SERVICE PIPE.
 - INSTALL WYE TO PROVIDE A DOMESTIC METER SETTER AND IRRIGATION METER SETTER PER SPLIT SERVICE INSET.

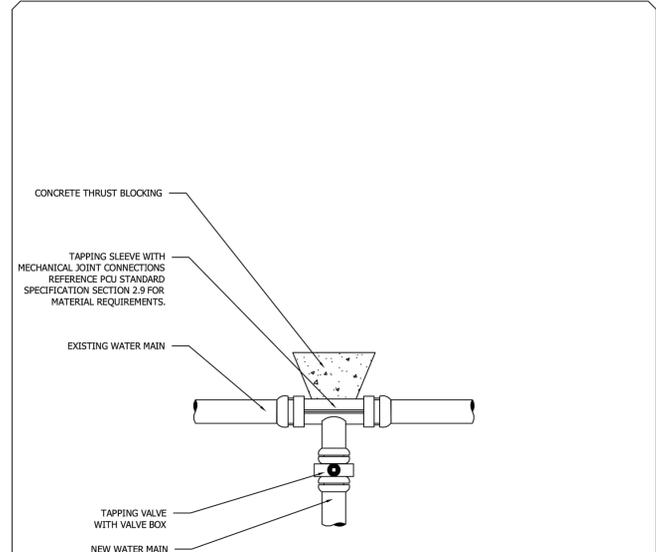


STANDARD WATER SERVICE DETAIL
NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425



WATER SERVICE (3/4" - 1")
STANDARD DETAIL
VERSION #3 - SEP 2015



TAPPING SLEEVE AND VALVE ASSEMBLY DETAIL
NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425



TAPPING SLEEVE AND VALVE ASSEMBLY
STANDARD DETAIL
VERSION #2 - SEPTEMBER 2015



No.	Revision	Date	By	Designer	Scale
				GSP	NO SCALE
				CSP	Morch 2016
				P-0718	2015-0004

WYNDWATER - PHASE 3
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