SITE DEVELOPMENT PLAN

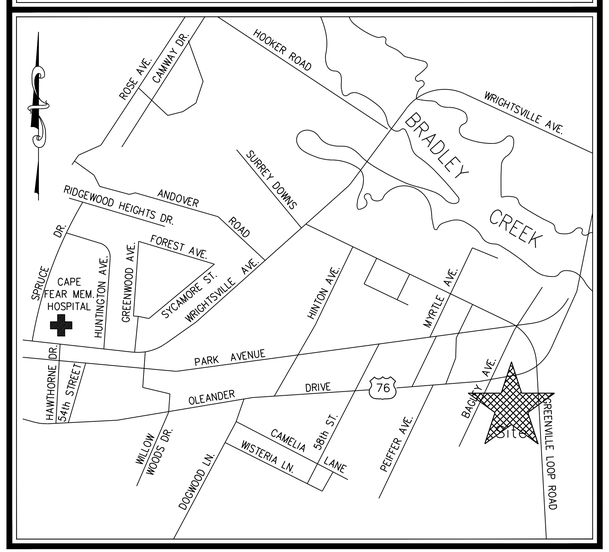
FOR

SUMMERWALK - PHASE 1

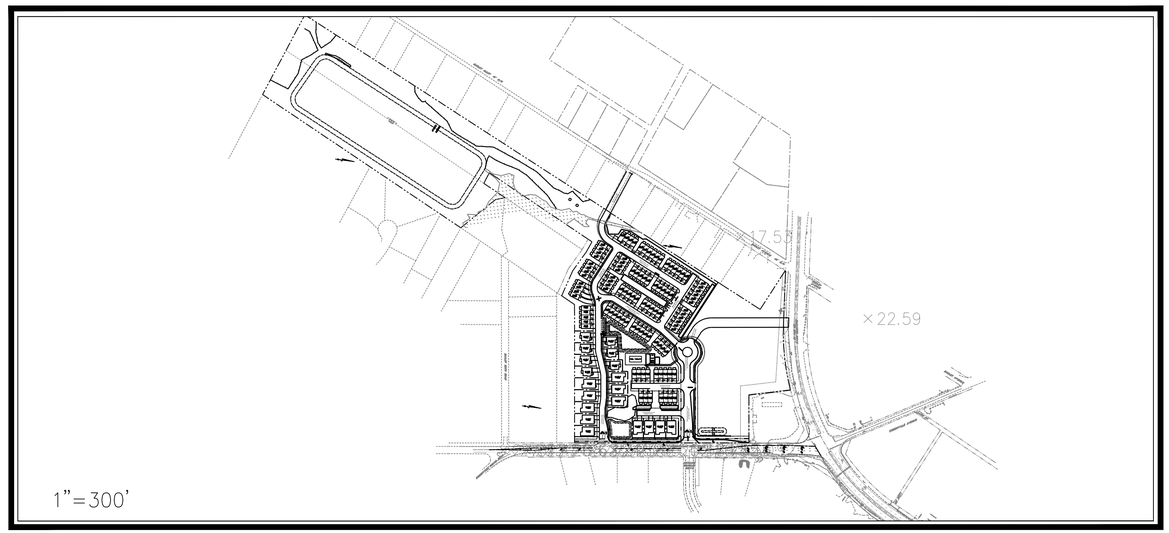
WILMINGTON, NORTH CAROLINA

OCTOBER 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	A
OPEN SPACE	
BUILDING SET BACKS	
PRIVATE SANITARY SET BACKS	
SKIMMER	
STREET SIGN	
404 WETLANDS	
FLOW DIRECTION	
LEVEL SPREADER	

DEVELOPER/OWNER

Summerwalk Development, LLC.
6105 Oleander Drive, Suite 201
WILMINGTON, NC 28403
PHONE: (910) 452-1410

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

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SITE DATA TABLE

GENERAL NOTES:

1. NEW HANOVER COUNTY PARCEL NOS.:
   PIN# R06208-013-012-000, R06208-013-010-001, R06208-013-009-000, R06208-013-008-000, R06208-013-007-000, R06208-013-006-000, R06208-013-010-002, R06211-003-004-000, R06207-008-008-002
   SITE ADDRESS: 6120 OLEANDER DRIVE
2. TOTAL AREA: 1,123,751 SF± = 25.80 AC.±
3. EXISTING ZONING: MF-L (CD) PHASE 1 & O&I (CD) PHASE 2
   SETBACKS – 15' FRONT
   15' REAR
   5' SIDE
4. CAMA LAND CLASSIFICATION: WATER RESOURCE PROTECTION
5. THIS PROPERTY IS NOT WITHIN A SPECIAL FLOOD HAZARD ZONE.
6. TRASH DISPOSAL BY CURBSIDE PICKUP.
7. PER CONDITION #9 OF THE CITY COUNCIL APPROVAL FOR THIS DEVELOPMENT LID TECHNIQUES SUCH AS INFILTRATION BASINS AND PERMEABLE PAVEMENT ARE BEING USED ON SITE.

DEVELOPMENT DATA:

TOTAL TRACT AREA (PHASE 1) = 879,625 SF± = 20.19 AC±

PERMITTED DENSITY (@ 10 UNITS/AC) = 202 UNITS

PROPOSED DENSITY 104 UNITS (2 BEDROOM TOWNHOMES)
19 SINGLE FAMILY HOMES

PROPOSED – 123 UNITS TOTAL = 6.1 UNITS/AC.

PARKING – MIN. REQUIRED – 2 P.S. /2 BDRMS = 246
MAX REQUIRED – 2.5 P.S. / 2 BDRMS = 308

PARKING PROVIDED : TOWNHOMES = 208 SPACES (1 GARAGE, 1 DRIVEWAY) + 14 SURFACE SPACES = 222 TOTAL
SINGLE FAMILY = 38 SPACES (19 IN D/W, 19 IN GARAGE)
260 TOTAL SPACES PROVIDED (1 H/C)
OF REQ'D SPACES FOR POOL FACILITY < 25 SPACES. 1 HC SPACE REQUIRED

BIKE PARKING REQ'D = 5 MIN/100 SPACES
BIKE PARKING PROV'D = 13

BLDG. HEIGHT – 35' MEAN ROOF

OPEN SPACE – 35% TRACT AREA
REQUIRED 35% X 20.19 AC. (TOTAL RESIDENTIAL AC.) = 7.07 AC.
PROPOSED – 7.07 AC.

BUILDING COVERAGE – 107,680 SF (12.2%)

BUILDINGS – 22 TOWNHOME BUILDINGS, 19 SINGLE FAMILY HOMES & CLUBHOUSE = 42 TOTAL BUILDINGS

TOTAL BEDROOMS – 104-2 BEDROOM TOWNHOMES
19-3 BEDROOM SINGLE FAMILY HOMES = 265 BEDROOMS

IMPERVIOUS SURFACES –
PROPOSED BUA –
BUILDINGS – 105,960 S.F.
DRIVEWAYS – 7,396 S.F.
PAVEMENT – 73,223 S.F.
SIDEWALKS – 9,576 S.F.
PERVIOUS PAVEMENT – 10,149 S.F. (40,597 SF A-SOILS USE 25% IMP.)
POOL FACILITY – 4,648 S.F.
TOTAL – 210,952 S.F. (24.0%)

UTILITY CAPACITY REQUESTS:
PROPOSED SEWER CAPACITY –
104-2 BR @ 240 GPD/BR + 19-3 BR @ 360 GPD/UNIT + 30 PERSON
CLUBHOUSE/POOL @ 10 GPD/PERSON = 32,100 GPD
PROPOSED WATER CAPACITY –
123 UNITS @ 400 GPD/UNIT = 49,200 GPD

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
06/17/2016

NOTE:
ALL DESIGN AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE, TECHNICAL STANDARDS MANUAL & THE STATE OF NORTH CAROLINA

PROJECT NAME: SUMMERWALK
GSP CONSULTING PROJECT #: 2015-0006

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 CITY OF WILMINGTON, NEW HANOVER COUNTY, THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) 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 JOHNNY J. WILLIAMS LAND SURVEYING, P.C., PENTON DEVELOPMENT, INC. 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.
12. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.

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 NEW HANOVER COUNTY.
5. WATER, FERTILIZE, MOW AND MAINTAIN SPRIGGED, SODDED AND PLANTED AREAS UNTIL FINAL APPROVAL BY NEW HANOVER COUNTY.
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

ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.

ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.

SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.

DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.

SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 6 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.

SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. THE ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR WHEN THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE.

SEDIMENT WILL BE REMOVED FROM THE SEDIMENT BASIN WHEN THE DESIGN STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR IF THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED FROM BAFFLES WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND WILL BE KEPT CLEAN.

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. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.

FLOCCULANTS WILL BE USED TO ADDRESS TURBIDITY ISSUES. THE PUMPS, TANKS, HOSES AND INJECTION SYSTEMS WILL BE CHECKED FOR PROBLEMS OR TURBID DISCHARGES DAILY.

COMPOST FILTER SOCKS SHOULD BE INSPECTED REGULARLY, AS WELL AS AFTER EACH RAINFALL EVENT, TO ENSURE THAT THEY ARE INTACT AND THE AREA BEHIND THE SOCK IS NOT FILLED WITH SEDIMENT. IF THERE IS EXCESSIVE PONDING BEHIND THE FILTER SOCK OR ACCUMULATED SEDIMENTS REACH THE TOP OF THE SOCK, AN ADDITIONAL SOCK SHOULD BE ADDED ON TOP OR IN FRONT OF THE EXISTING FILTER SOCK IN THESE AREAS, WITHOUT DISTURBING THE SOIL OR ACCUMULATED SEDIMENT. IF THE FILTER SOCK WAS OVERTOPPED DURING A STORM EVENT, THE OPERATOR SHOULD CONSIDER INSTALLING AN ADDITIONAL FILTER SOCK ON TOP OF THE ORIGINAL, PLACING AN ADDITIONAL FILTER SOCK FURTHER UP THE SLOPE, OR USING AN ADDITIONAL BMP, SUCH AS A COMPOST BLANKET IN CONJUNCTION WITH THE SOCK(S).

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 THE CITY OF WILMINGTON 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

NOTI□E RE□□IRED

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.

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1-□00-□□2-□□□□

EMERGEN□□ DIA□ □11 PO□I□E - FIRE - RES□□E

CITY COUNCIL APPROVAL CONDITIONS

1) THE PROPERTY SHALL BE SUBJECT TO ALL OF THE SPECIFIC REQUIREMENTS STATED IN THE LAND DEVELOPMENT CODE FOR THE PROPOSED USE AS WELL AS ANY ADDITIONAL CONDITIONS STATED BELOW.
2) IF FOR ANY REASON ANY CONDITION FOR APPROVAL IS FOUND TO BE ILLEGAL OR INVALID OR IF THE APPLICANT SHOULD FAIL TO ACCEPT ANY CONDITION FOLLOWING APPROVAL, THE APPROVAL OF THE SITE PLAN FOR THE DISTRICT SHALL BE NULL AND VOID AND OF NO EFFECT AND PROCEEDS SHALL BE INSTITUTED TO REZONE THE PROPERTY TO ITS PREVIOUS ZONING CLASSIFICATION.
3) THE USE AND DEVELOPMENT OF THE SUBJECT PROPERTY SHALL BE LIMITED TO:
   A. TWO COMMERCIAL BUILDINGS TOTALING NOT MORE THAN 62,400 SQUARE FEET,
   B. 104 ATTACHED TOWNHOME UNITS AND
   C. 19 SINGLE-FAMILY DWELLING UNITS
4) USES FOR THE PROPOSED COMMERCIAL BUILDINGS SHALL BE LIMITED TO THE FOLLOWING:
   A. BUSINESS SERVICES
   B. BANKING SERVICES
   C. RESTAURANT, STANDARD
   D. RESTAURANT, CARRYOUT AND FAST FOOD (LIMITED TO COFFEE SHOPS OR ICE CREAM SHOPS)
   E. MICROBREWERY
   F. RETAIL SALES ESTABLISHMENTS, INCLUDING SPECIALTY GROCERS AND PHARMACIES
   G. MEDICAL OFFICE
   H. PROFESSIONAL OFFICE
   I. PERSONAL SERVICES
5) REQUIREMENTS OF THE APPROVED TRAFFIC IMPACT ANALYSIS (TIA) MAY BE PHASED. PHASE I IMPROVEMENTS MUST BE COMPLETED PRIOR TO CONSTRUCTION OF THE FIRST PHASE OF RESIDENTIAL DEVELOPMENT OF THE SITE.
6) THE DEVELOPER SHALL COORDINATE WITH CITY STAFF TO CONSTRUCT A MULTI-USE PATH ALONG GREENVILLE LOOP ROAD IN ACCORDANCE WITH THE APPROVED 2014 TRANSPORTATION BOND. THE TECHNICAL REVIEW COMMITTEE SHALL DETERMINE:
   A. THE LOCATION OF ANY PORTION OF THE MULTI-USE PATH; AND
   B. THE SUFFICIENCY OF ANY ALTERNATIVE PUBLIC BIKE FACILITY AND/OR ALLOW PAYMENT IN LIEU FOR CONSTRUCTING THE BIKE LANE ON THE EASTERN SIDE OF GREENVILLE LOOP ROAD.
7) ALL MULTI-FAMILY AND OFFICE PARKING SPACES SHALL BE PERVIOUS MATERIAL.
8) A SHARED PARKING AGREEMENT SHALL BE EXECUTED BETWEEN THE OWNERS IN A TENURE DICTATED BY THE CITY ATTORNEY.
9) THE SITE SHALL BE DEVELOPED UTILIZING LOW IMPACT DESIGN (LID) PRINCIPLES IN ACCORDANCE WITH THE LDC.
10) NO ADDITIONAL IMPERVIOUS SURFACES SHALL BE ALLOWED ON THE SITE WITHOUT ADDITIONAL REVIEW.
11) IMPERVIOUS SURFACES FOR THE PROJECT SHALL BE LIMITED TO 25% OR LESS.
12) ALL REGULATED FLOWERING TREES AND DECIDUOUS TREES 10- INCH CALIPER AND BELOW IN SIZE, TARGETED FOR REMOVAL, SHALL BE SPADED AND RELOCATED ON SITE.
13) THE DEVELOPER SHALL DEDICATE RIGHT-OF-WAY NECESSARY TO ACCOMMODATE THE FUTURE ROAD IMPROVEMENTS, WHEN DEEMED NECESSARY.
14) PROJECT AREAS THAT ARE TO INCORPORATE XERIC LANDSCAPING SHALL BE CLEARLY MARKED ON THE SITE PLAN WITH NOTES INDICATING SUCH AND A NOTE STATING THAT "ALL SOIL AMENDMENTS AND PLANTING SCHEDULES SHALL BE NOTED ON THE PLAN TO PROPERLY VERIFY THE XERIC LANDSCAPING TECHNIQUES UTILIZED" SHALL BE INCLUDED ON ALL RELEVANT PLANS. THE DEVELOPER SHALL CONSULT WITH THE COOPERATIVE EXTENSION SERVICE FOR GUIDANCE.
15) THE CONSTRUCTION RELEASE DOCUMENTS AND DOCUMENTS TO BE FILED IN THE NEW HANOVER COUNTY REGISTRY SHALL NOTE THAT, "THE SITE WILL NOT BE FURTHER DEVELOPED WITH ANY ADDITIONAL IMPERVIOUS SURFACES."
16) NO AUXILIARY SIGNS OR FREESTANDING POLE SIGNS SHALL BE PERMITTED ON THIS SITE. THE FREESTANDING SIGN SHALL BE A MONUMENT SIGN THAT COMPLIES WITH THE LDC AND SHALL HAVE LANDSCAPING AT THE BASE OF THE SIGN.
17) SINGLE-FAMILY UNITS LOCATED ALONG GREENVILLE LOOP ROAD SHALL BE DESIGNED WITH STREET-SIDE FACADES IN ACCORDANCE WITH ELEVATIONS APPROVED BY STAFF.
18) THE DESIGN OF THE COMMERCIAL BUILDINGS SHALL BE IN ACCORDANCE WITH THE ELEVATIONS PROVIDED. ANY DEVIATION IN THE DESIGN, DEEMED A MAJOR MODIFICATION BY STAFF, MUST BE APPROVED BY STAFF.
19) THE PROPERTIES SHALL BE RECOMBINED AND RECORDED IN THE NEW HANOVER COUNTY REGISTRY.
20) THE APPLICANT SHALL PROVIDE ACCESS TO ANY LANDLOCKED PROPERTY TO THE GREENVILLE-MEARES ROAD.
21) ALL CONSTRUCTION TRAFFIC ASSOCIATED WITH THE SITE SHALL ACCESS THE SITE FROM OLEANDER DRIVE.
22) PERPETUAL MAINTENANCE AND UPKEEP OF THE OPEN SPACE AND STORMWATER MANAGEMENT PONDS SHALL BE PROVIDED BY AN INCORPORATED HOMEOWNERS ASSOCIATION OR BY THE DEVELOPER AND/OR OWNERS OF THE PROPERTY.
23) PARKING AREAS SHALL BE REDUCED IN PROPORTION TO ANY REDUCTION IN COMMERCIAL SPACE.
24) THE SITE SHALL BE DEVELOPED IN ACCORDANCE WITH THE APPROVED SITE PLAN.
25) ALL REQUIREMENTS OF THE LAND DEVELOPMENT CODE SHALL BE MET.
26) ALL LOCAL, STATE AND FEDERAL REQUIREMENTS SHALL BE MET.
27) ALL TRC AND SRB REQUIREMENTS AND CONDITIONS SHALL BE MET.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:__________ Permit #__________________
Signed: ______________________________

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
06/17/2016

No.	Revision	Date	By

Designer: GSP	Scale
Drawn By: GSP	Date: October 2015
License #: P-0718	Job No.: 2015-0006

SUMMERWALK - PHASE 1
Wilmington New Hanover County North Carolina

GENERAL NOTES

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Approved Construction Plan

Name Date

Planning

Traffic

Fire

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: Permit #

Signed:

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

No.	Revision	Date	By

Designer GSP	Scale 1" = 100'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

EXISTING CONDITIONS

PREPARED FOR:

Summerwalk Development, LLC
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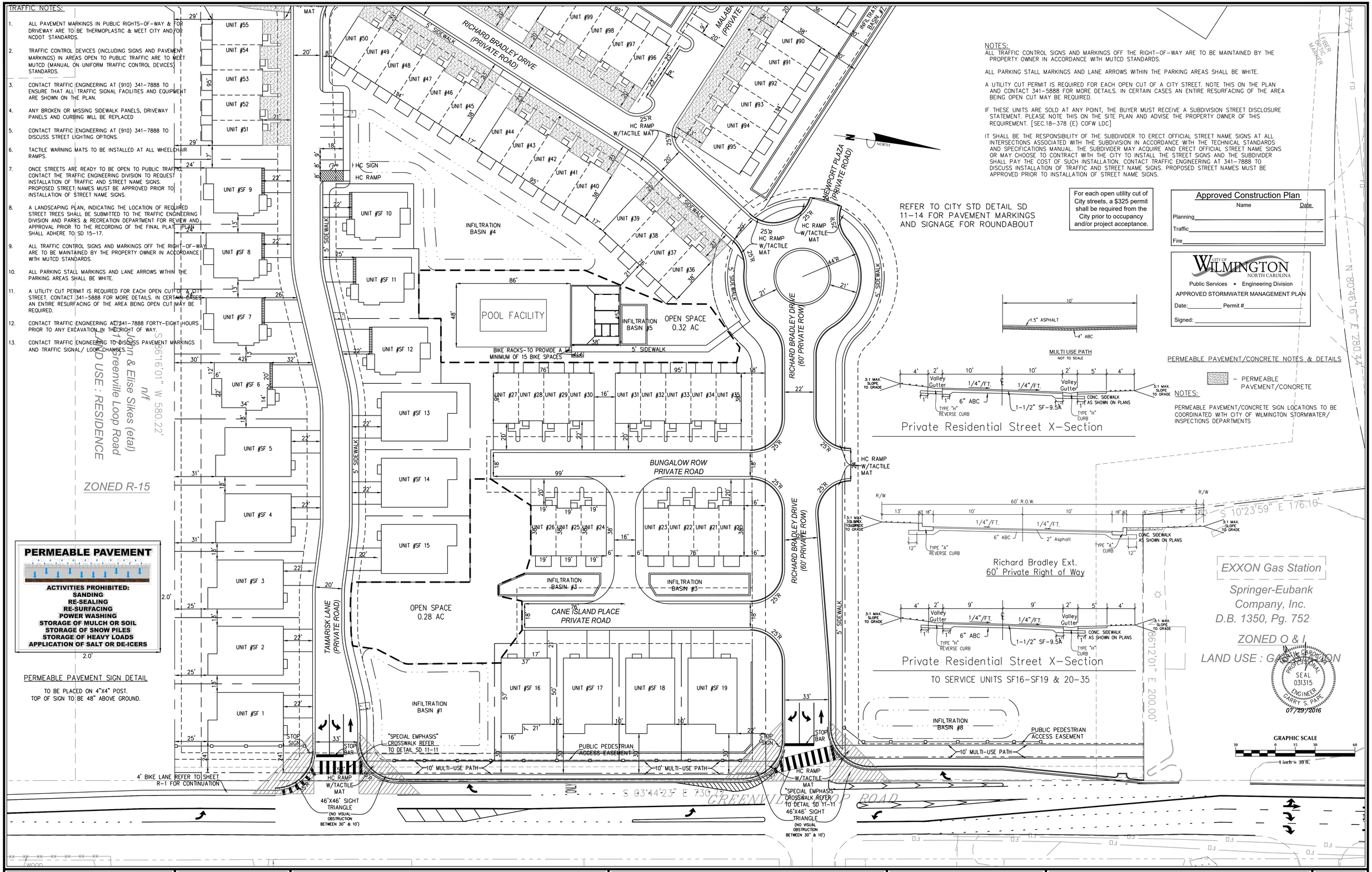
Suite 201
Wilmington, NC 28403

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

Sheet No.
C-2

TRAFFIC NOTES:

1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAY ARE TO BE THERMOPLASTIC & MEET CITY AND/OR NCDOT STANDARDS.
2. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
3. CONTACT TRAFFIC ENGINEERING AT (910) 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
4. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED
5. CONTACT TRAFFIC ENGINEERING AT (910) 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
6. TACTILE WARNING MATS TO BE INSTALLED AT ALL WHEELCHAIR RAMPS.
7. ONCE STREETS ARE READY TO BE OPEN TO PUBLIC TRAFFIC, CONTACT THE TRAFFIC ENGINEERING DIVISION TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
8. A LANDSCAPING PLAN, INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION AND PARKS & RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT. PLAN SHALL ADHERE TO SD 15-17.
9. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
10. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
11. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
12. CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
13. CONTACT TRAFFIC ENGINEERING TO DISCUSS PAVEMENT MARKINGS AND TRAFFIC SIGNAL/ LOOP CHANGES.



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IF THESE UNITS ARE SOLD AT ANY POINT, THE BUYER MUST RECEIVE A SUBDIVISION STREET DISCLOSURE STATEMENT. PLEASE NOTE THIS ON THE SITE PLAN AND ADVISE THE PROPERTY OWNER OF THIS REQUIREMENT. [SEC.18-378 (E) COFW LDC]

IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.

REFER TO CITY STD DETAIL SD 11-14 FOR PAVEMENT MARKINGS AND SIGNAGE FOR ROUNDABOUT

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Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

MULTI USE PATH
NOT TO SCALE

Private Residential Street X-Section

Richard Bradley Ext.
60' Private Right of Way

Private Residential Street X-Section
TO SERVICE UNITS SF16-SF19 & 20-35

PERMEABLE PAVEMENT/CONCRETE NOTES & DETAILS

– PERMEABLE PAVEMENT/CONCRETE

NOTES:

PERMEABLE PAVEMENT/CONCRETE SIGN LOCATIONS TO BE COORDINATED WITH CITY OF WILMINGTON STORMWATER/ INSPECTIONS DEPARTMENTS

PERMEABLE PAVEMENT

ACTIVITIES PROHIBITED:
SANDING
RE-SEALING
RE-SURFACING
POWER WASHING
STORAGE OF MULCH OR SOIL
STORAGE OF SNOW PILES
STORAGE OF HEAVY LOADS
APPLICATION OF SALT OR DE-ICERS

2.0' × 2.0'

PERMEABLE PAVEMENT SIGN DETAIL

TO BE PLACED ON 4"X4" POST.
TOP OF SIGN TO BE 48" ABOVE GROUND.

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PATE 07/29/2016

No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

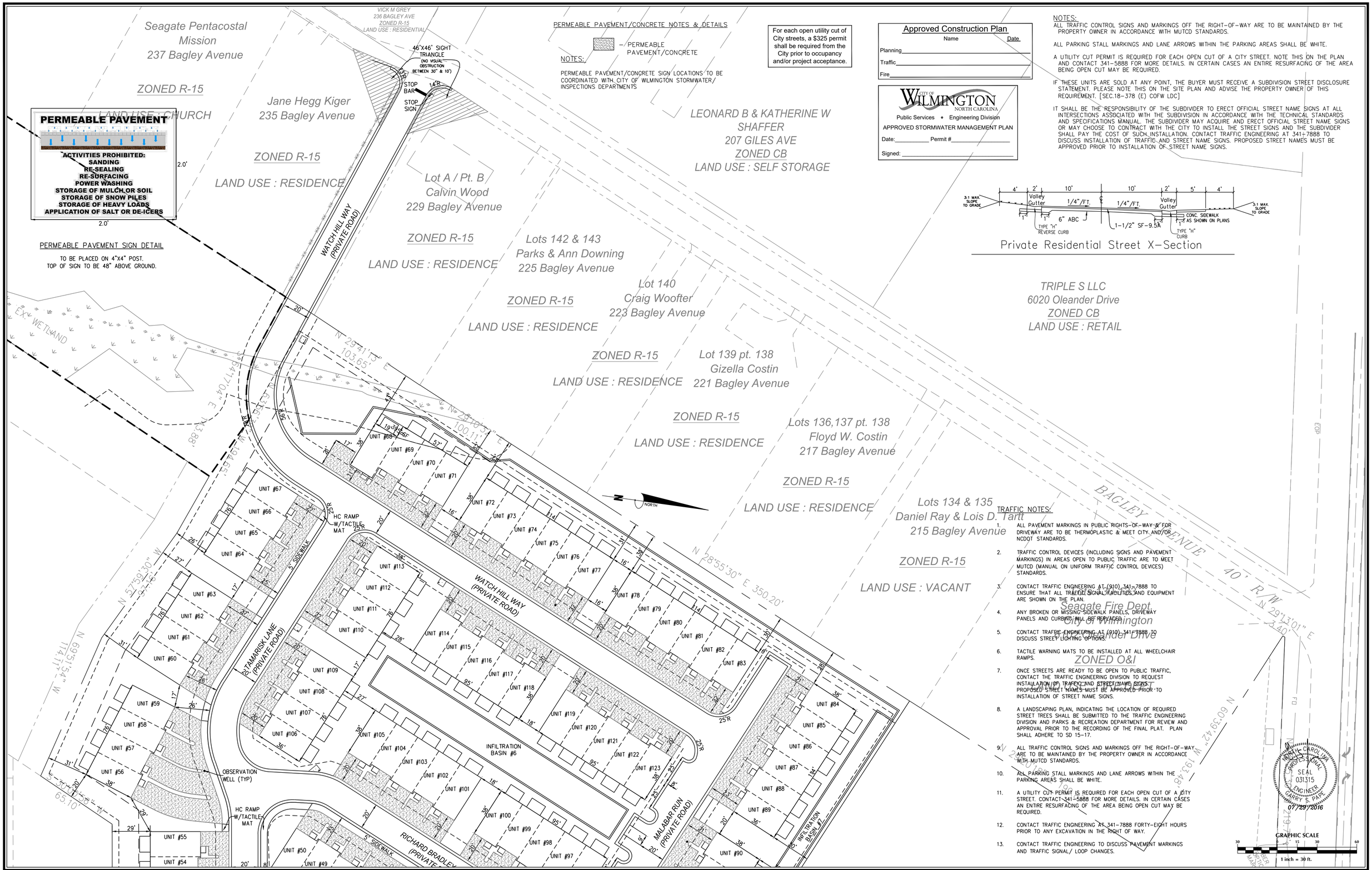
Wilmington New Hanover County North Carolina

SITE PLAN

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No. C-3.1



PERMEABLE PAVEMENT/CONCRETE NOTES & DETAILS

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CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
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Private Residential Street X-Section

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NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PARK 07/29/2016

GRAPHIC SCALE
30 15 0 15 30 60
1 inch = 30 ft.

No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

SITE PLAN

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

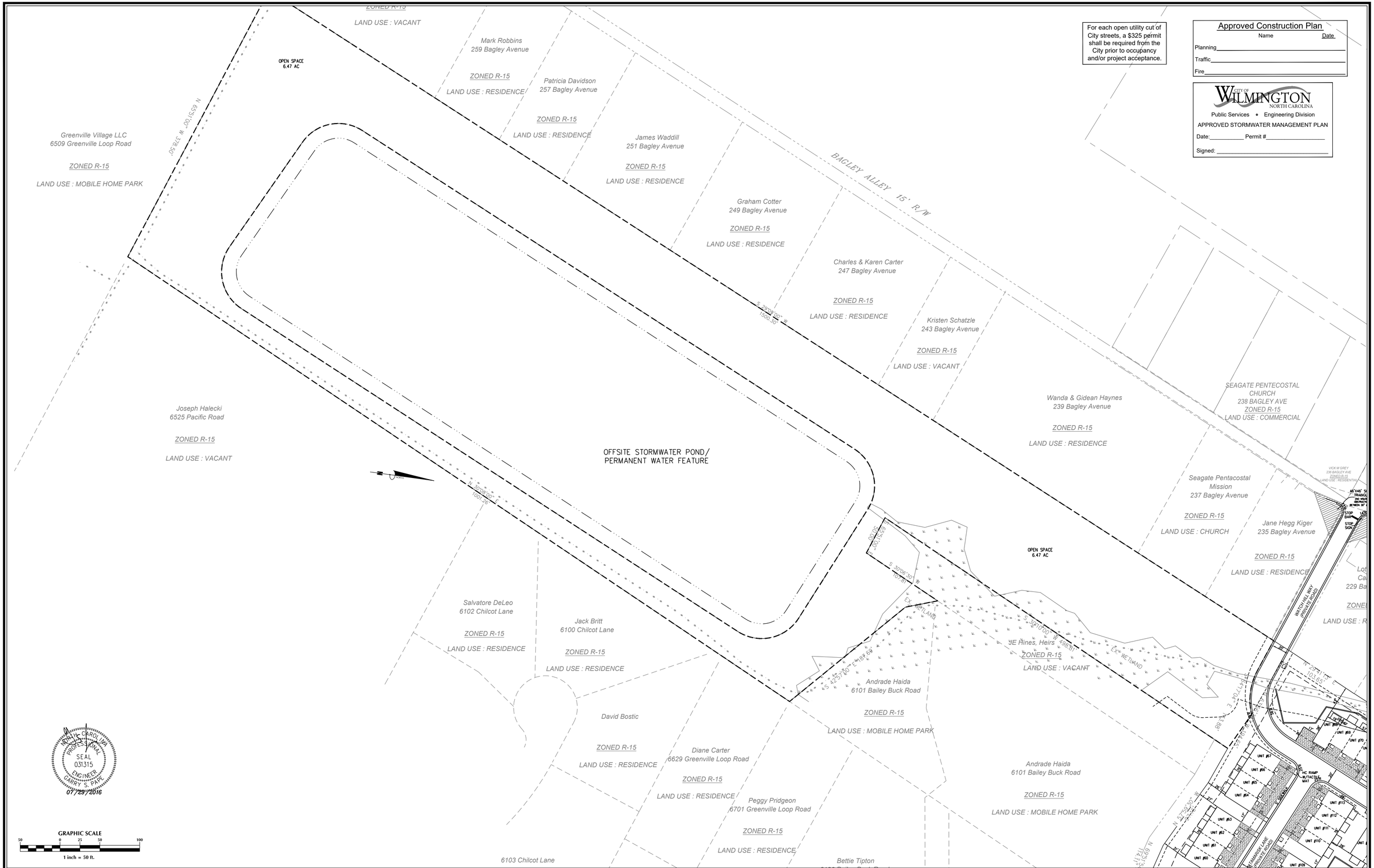
Sheet No.
C-3.2

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____



No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

SITE PLAN

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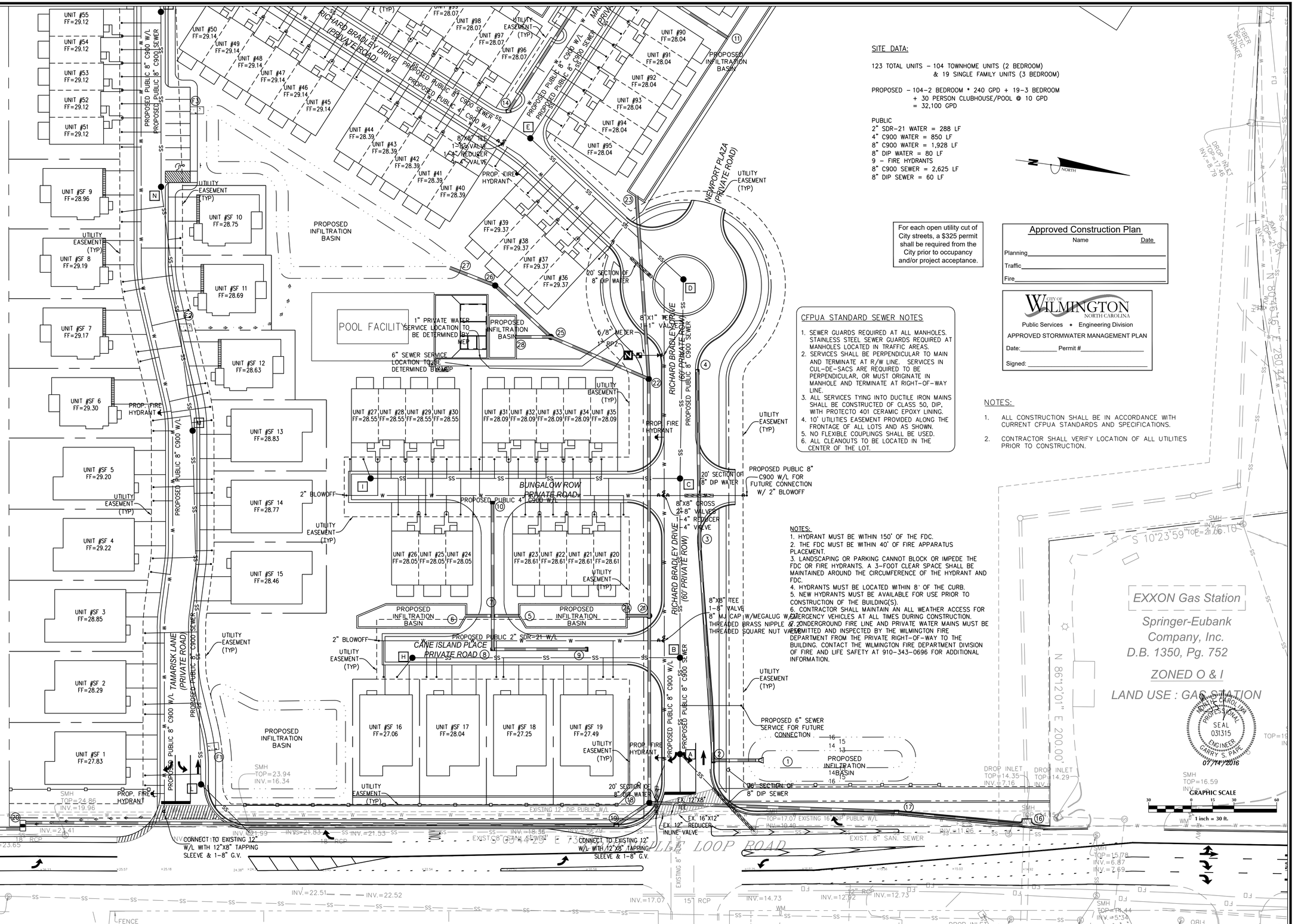
Sheet No.
C-3.3

GENERAL UTILITY NOTES:

1. PROJECT SHALL COMPLY WITH CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) CROSS CONNECTION REQUIREMENTS. WATER METER(S) CANNOT BE SET AND ACTIVATED ON NEW MAINS UNTIL ALL REQUIREMENTS ARE MET AND NCDENR HAS ISSUED THEIR "FINAL APPROVAL". CALL 332-6558 FOR INFORMATION.
2. IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
3. TO USE CFPUA WATER FOR IRRIGATION IT MUST BE METERED SEPARATELY.
4. WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS. THIS WIRE IS TO BE ACCESSIBLE AT ALL VALVES, FIRE HYDRANTS, AND WATER METER BOXES TO AID IN FUTURE LOCATIONS OF FACILITIES.
5. TREES ARE NOT TO BE PLANTED OVER WATER MAINS OR WITHIN UTILITY EASEMENTS.
6. STATE WATER AND SEWER PERMITS SHALL BE OBTAINED PRIOR TO RELEASE OF THE PROJECT FOR CONSTRUCTION.
7. ALL WATERMAINS WITHIN PUBLIC RIGHT OF WAY TO BE PUBLIC AND ALL WATERMAINS LOCATED ON PRIVATE PROPERTY TO BE PRIVATE.
8. POOL IS NOT TO DISCHARGE INTO THE CFPUA SEWER SYSTEM. CFPUA WILL CONSIDER THIS DISCHARGE ONLY IF FLOW IS DENIED INTO THE STORM DRAIN SYSTEM.
9. GATE VALVES TO BE LOCATED AT EACH DOMESTIC SERVICE LINE INTO BUILDINGS
10. 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.
11. ANY SANITARY SEWER SYSTEM OR ANY PORTION THEREOF, INCLUDING THE PUMP CHAMBER AND SERVICE CONNECTION PIPE TO THE COLLECTION MAIN, SHALL BE LOCATED AT LEAST A MINIMUM OF 10-FEET FROM ANY WATER LINE. SEWER LINES MAY CROSS A WATER LINE IF 18-INCH CLEAR SEPARATION DISTANCE IS MAINTAINED, WITH THE SEWER LINE CROSSING UNDER THE WATER LINE. WHEN CONDITIONS PREVENT AN 18-INCH CLEAR SEPARATION FROM BEING MAINTAINED OR WHENEVER IT IS NECESSARY FOR THE WATER LINE TO CROSS UNDER THE SEWER, THE SEWER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE OR ITS EQUIVALENT AND THE WATER LINE SHALL BE CONSTRUCTED OF FERROUS MATERIALS EQUIVALENT TO WATER MAIN STANDARDS WITH FOR A DISTANCE OF AT LEAST TEN FEET ON EACH SIDE OF THE POINT OF CROSSING, WITH FULL SECTIONS OF PIPE CENTERED AT THE POINT OF CROSSING.



SITE DATA:

123 TOTAL UNITS - 104 TOWNHOME UNITS (2 BEDROOM)
& 19 SINGLE FAMILY UNITS (3 BEDROOM)

PROPOSED - 104-2 BEDROOM * 240 GPD + 19-3 BEDROOM
+ 30 PERSON CLUBHOUSE/POOL @ 10 GPD
= 32,100 GPD

PUBLIC
2" SDR-21 WATER = 288 LF
4" C900 WATER = 850 LF
8" C900 WATER = 1,928 LF
8" DIP WATER = 80 LF
9 - FIRE HYDRANTS
8" C900 SEWER = 2,625 LF
8" DIP SEWER = 60 LF

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

CFPUA STANDARD SEWER NOTES

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
2. SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT R/W LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
3. ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
4. 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL CLEANOUTS TO BE LOCATED IN THE CENTER OF THE LOT.

NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT CFPUA STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

NOTES:

1. HYDRANT MUST BE WITHIN 150' OF THE FDC.
2. THE FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
3. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
4. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
5. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING(S).
6. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.

NOTE: UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PRIVATE RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PAPE
07/14/2016

No.	Revision	Date	By

Designer: GSP	Scale: 1" = 30'
Drawn By: GSP	Date: October 2015
License #: P-0718	Job No.: 2015-0006

SUMMERWALK - PHASE 1

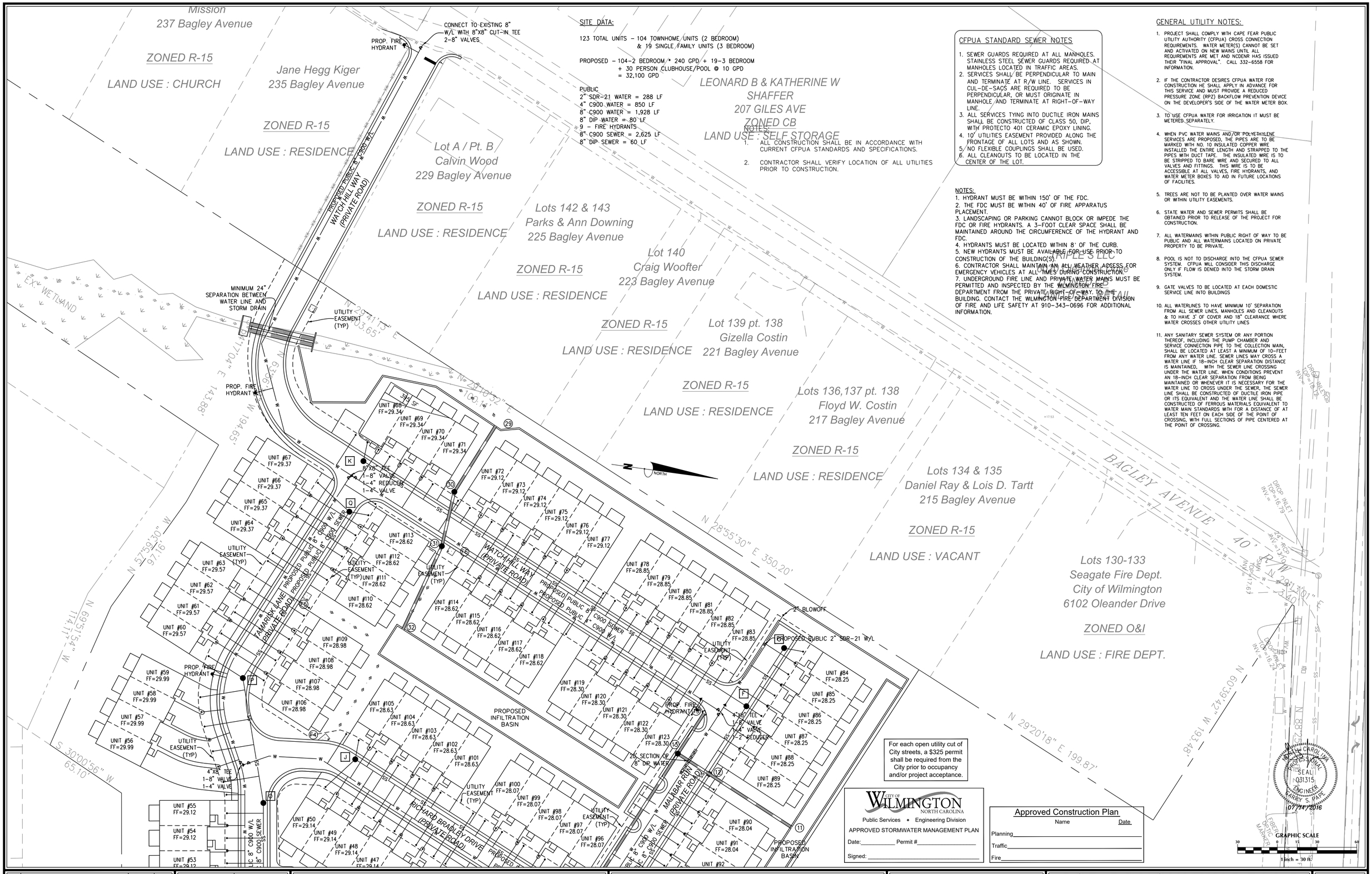
Wilmington New Hanover County North Carolina

UTILITY PLAN

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No. C-4.1



SITE DATA:

123 TOTAL UNITS – 104 TOWNHOME UNITS (2 BEDROOM) & 19 SINGLE FAMILY UNITS (3 BEDROOM)

PROPOSED – 104–2 BEDROOM * 240 GPD + 19–3 BEDROOM + 30 PERSON CLUBHOUSE/POOL @ 10 GPD = 32,100 GPD

PUBLIC
2" SDR–21 WATER = 288 LF
4" C900 WATER = 850 LF
8" C900 WATER = 1,928 LF
8" DIP WATER = 80 LF
9 – FIRE HYDRANTS
8" C900 SEWER = 2,625 LF
8" DIP SEWER = 60 LF

NOTES:
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT CFPUA STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

CFPUA STANDARD SEWER NOTES

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
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NOTES:
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5. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING(S).
6. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
7. UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PRIVATE RIGHT–OF–WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910–343–0696 FOR ADDITIONAL INFORMATION.

GENERAL UTILITY NOTES:

1. PROJECT SHALL COMPLY WITH CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) CROSS CONNECTION REQUIREMENTS. WATER METER(S) CANNOT BE SET AND ACTIVATED ON NEW MAINS UNTIL ALL REQUIREMENTS ARE MET AND NCDENR HAS ISSUED THEIR "FINAL APPROVAL". CALL 332–6558 FOR INFORMATION.
2. IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
3. TO USE CFPUA WATER FOR IRRIGATION IT MUST BE METERED SEPARATELY.
4. WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS. THIS WIRE IS TO BE ACCESSIBLE AT ALL VALVES, FIRE HYDRANTS, AND WATER METER BOXES TO AID IN FUTURE LOCATIONS OF FACILITIES.
5. TREES ARE NOT TO BE PLANTED OVER WATER MAINS OR WITHIN UTILITY EASEMENTS.
6. STATE WATER AND SEWER PERMITS SHALL BE OBTAINED PRIOR TO RELEASE OF THE PROJECT FOR CONSTRUCTION.
7. ALL WATERMAINS WITHIN PUBLIC RIGHT OF WAY TO BE PUBLIC AND ALL WATERMAINS LOCATED ON PRIVATE PROPERTY TO BE PRIVATE.
8. POOL IS NOT TO DISCHARGE INTO THE CFPUA SEWER SYSTEM. CFPUA WILL CONSIDER THIS DISCHARGE ONLY IF FLOW IS DENIED INTO THE STORM DRAIN SYSTEM.
9. GATE VALVES TO BE LOCATED AT EACH DOMESTIC SERVICE LINE INTO BUILDINGS
10. 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
11. ANY SANITARY SEWER SYSTEM OR ANY PORTION THEREOF, INCLUDING THE PUMP CHAMBER AND SERVICE CONNECTION PIPE TO THE COLLECTION MAIN, SHALL BE LOCATED AT LEAST A MINIMUM OF 10–FEET FROM ANY WATER LINE. SEWER LINES MAY CROSS A WATER LINE IF 18–INCH CLEAR SEPARATION DISTANCE IS MAINTAINED, WITH THE SEWER LINE CROSSING UNDER THE WATER LINE. WHEN CONDITIONS PREVENT AN 18–INCH CLEAR SEPARATION FROM BEING MAINTAINED OR WHENEVER IT IS NECESSARY FOR THE WATER LINE TO CROSS UNDER THE SEWER, THE SEWER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE OR ITS EQUIVALENT AND THE WATER LINE SHALL BE CONSTRUCTED OF FERROUS MATERIALS EQUIVALENT TO WATER MAIN STANDARDS WITH FOR A DISTANCE OF AT LEAST TEN FEET ON EACH SIDE OF THE POINT OF CROSSING, WITH FULL SECTIONS OF PIPE CENTERED AT THE POINT OF CROSSING.

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

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

Approved Construction Plan
Name Date
Planning_____
Traffic_____
Fire_____

No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P–0718	Job No. 2015–0006

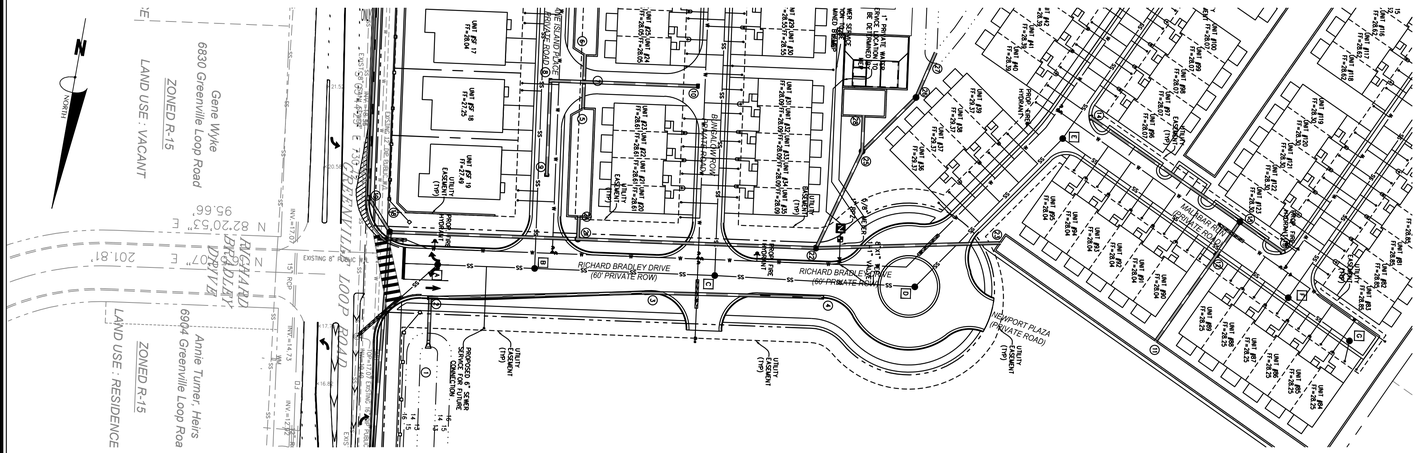
SUMMERWALK - PHASE 1
Wilmington New Hanover County North Carolina

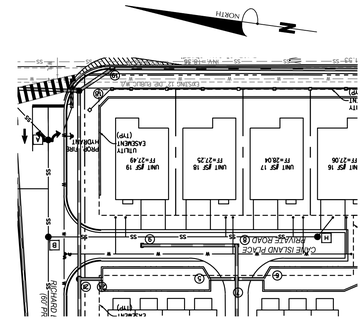
UTILITY PLAN

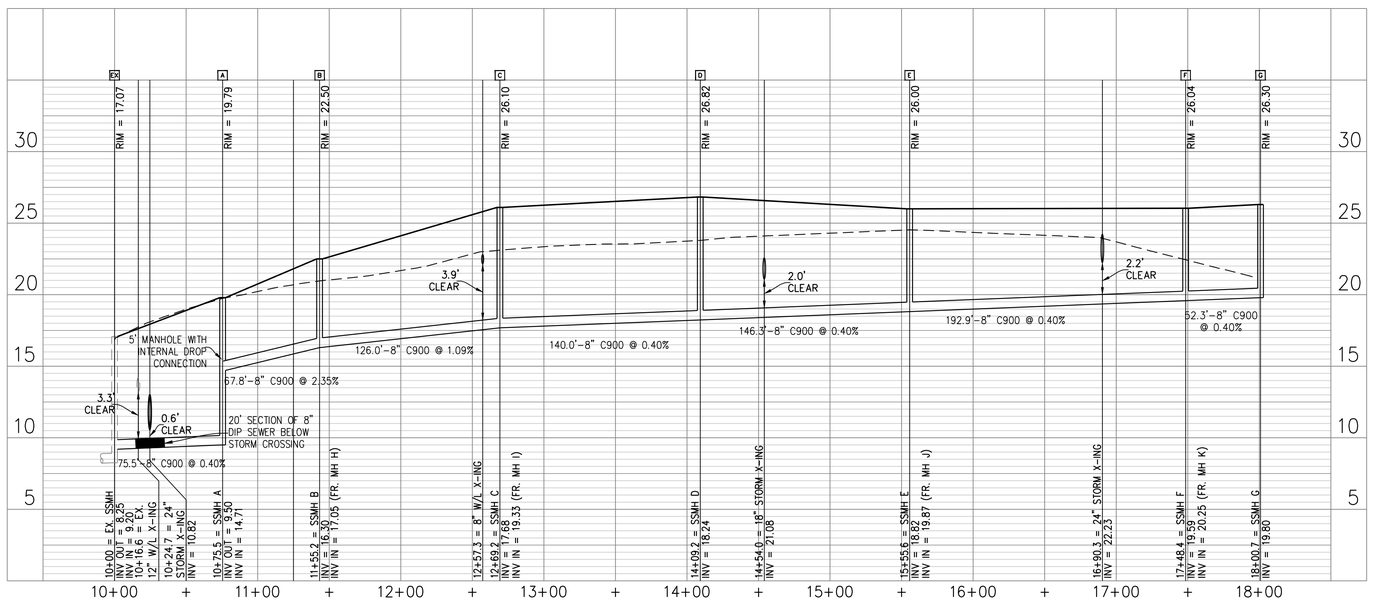
PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

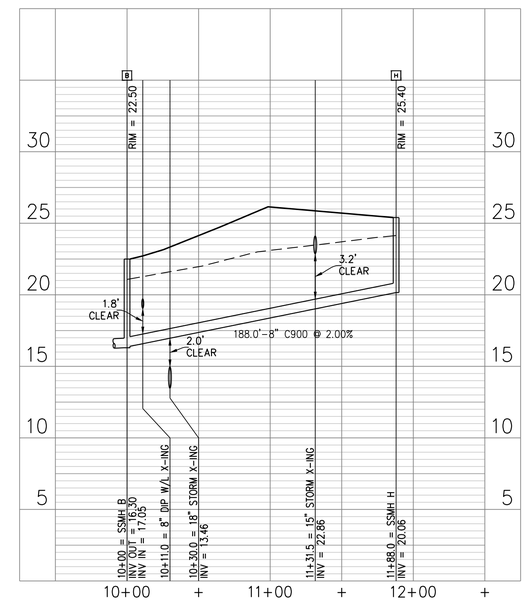
GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-4.2









Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
07/01/2016

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

GRAPHIC SCALE
50 0 25 50 100
1 inch = 50 ft.

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

UTILITY PROFILES

PREPARED FOR:
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6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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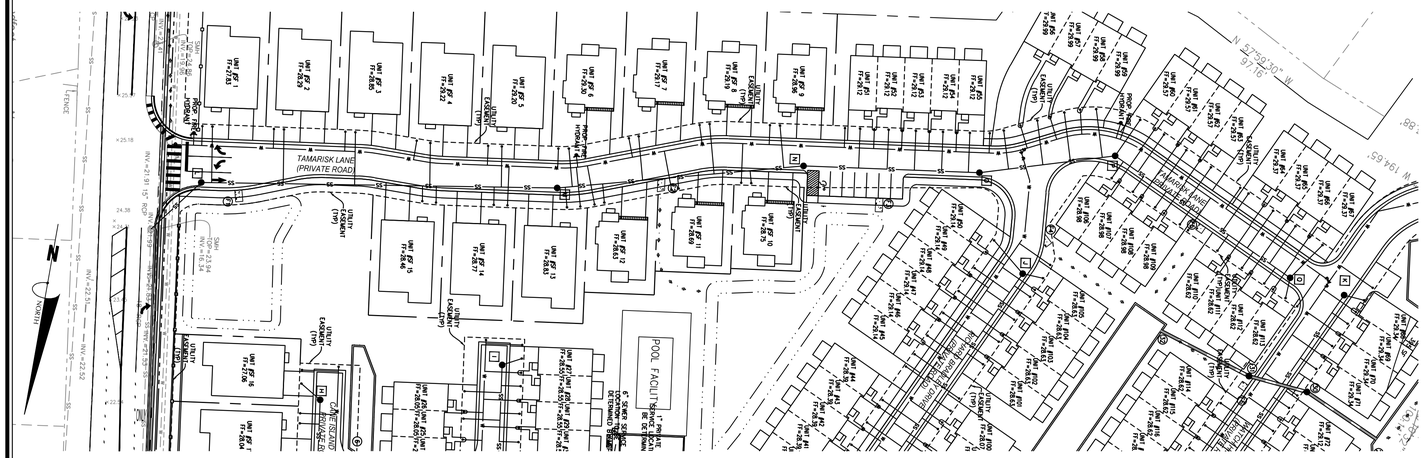
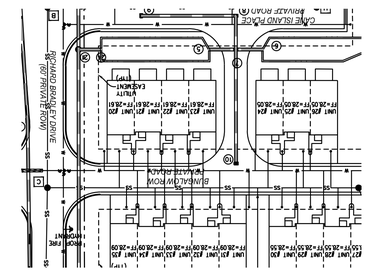
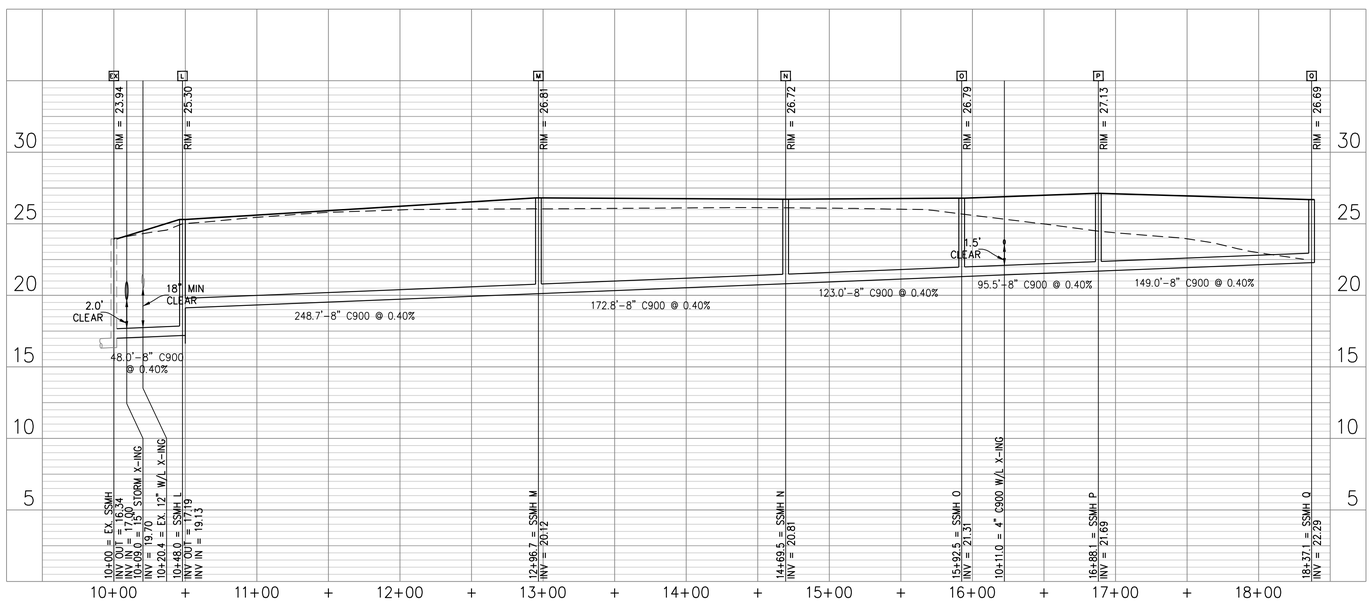
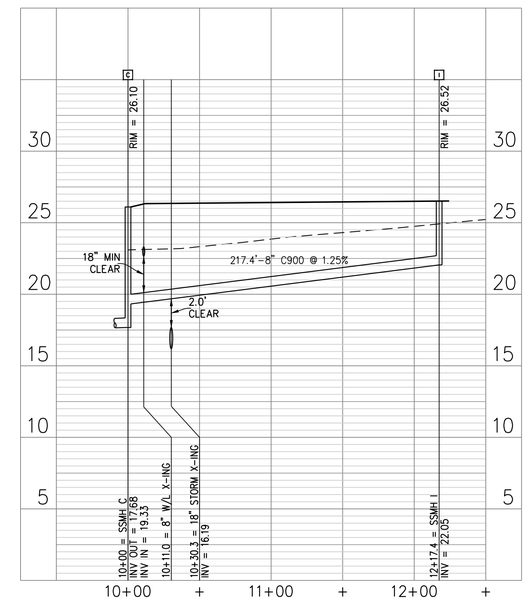
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-4.3









Approved Construction Plan		
	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
07/01/2016

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GRAPHIC SCALE
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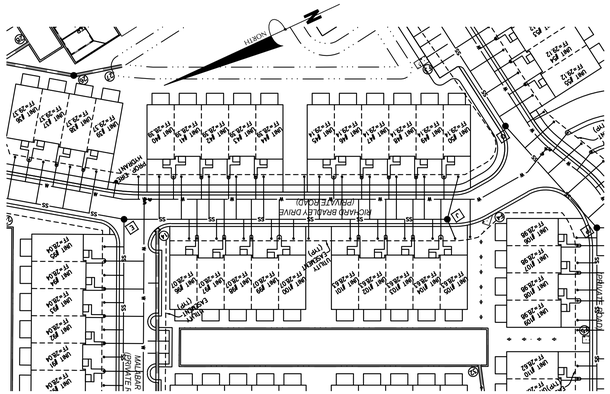
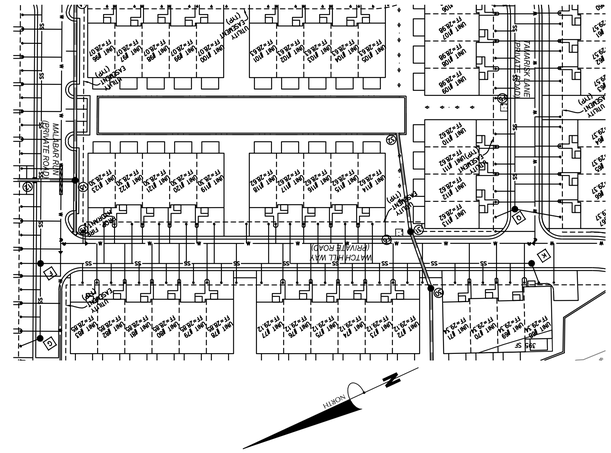
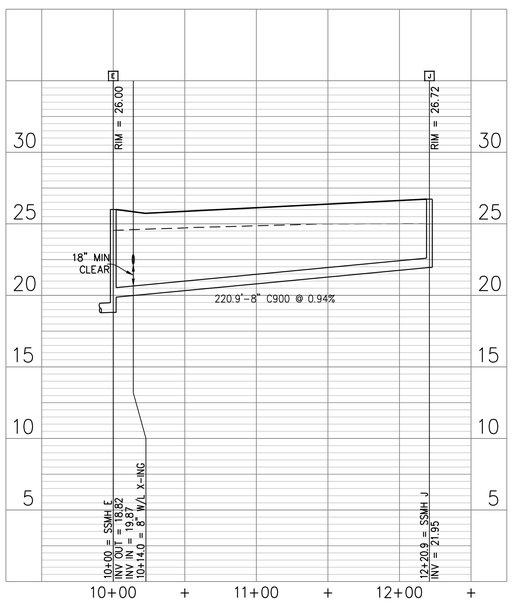
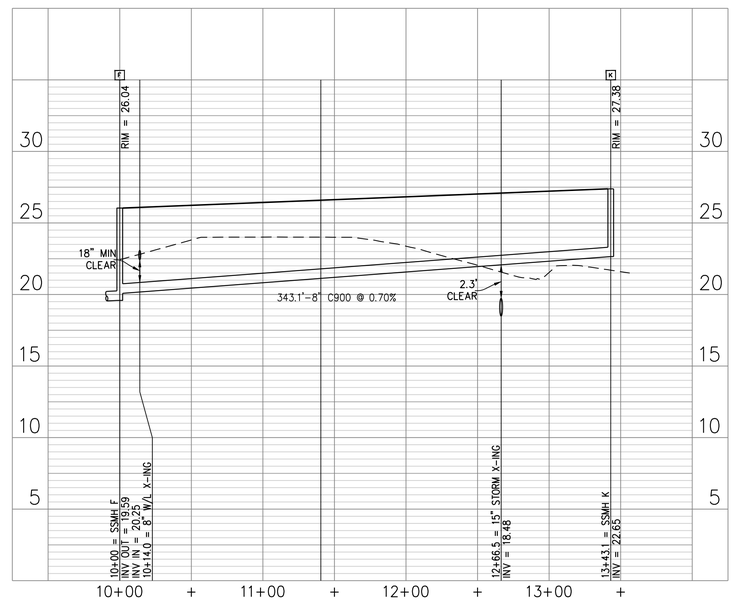
Sheet No.
C-4.4









Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
07/01/2016

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No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
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SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

UTILITY PROFILES

PREPARED FOR:
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6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No.
C-4.5

PUMPING NOTES:

1. SEDIMENT LADEN PUMP DISCHARGE IS ONLY ALLOWED IF ITS DISCHARGED AT OR BELOW 25 NTU'S WITHOUT EROSIVE VELOCITY AT THE POINT OF DISCHARGE, INFILTRATED ONSITE OUTSIDE ANY WETLANDS WITH NO RUNOFF, OR BY USING PAMS WITH A LIQUID INJECTION SYSTEM DISCHARGING INTO A DIRT BAG PLACED ON A STABLE SURFACE.

GRADING NOTES:

1. ALL SWALES TO BE SODDED WITH CENTIPEDE GRASS OR EQUIVALENT.
2. COMPOST FILTER SOCKS (OR OTHER COMPARABLE FLUME PROTECTION) TO BE INSTALLED AT FLUMES

NOTES:

1. ALL IMPERVIOUS SITE AREA TO BE DRAINED TO PROPOSED STORM SEWER SYSTEM AND DISCHARGED TO INFILTRATION BASIN.
2. INFILTRATION BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS IN CASE OF EMERGENCY.
3. PRIOR TO USE AS AN INFILTRATION BASIN, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF, THEN THE APPROPRIATE MODIFICATIONS TO THE BASIN CAN BE INCORPORATED.
4. THE SWALES DIRECTING THE RUNOFF TO THE INFILTRATION BASIN MUST BE REGULARLY MAINTAINED TO ENSURE THAT THE STORMWATER SYSTEM FUNCTIONS AS DESIGNED.
5. ALL DITCH WORK WITHIN ROW TO BE COMPLETED AND EXCELSIOR MAT TO BE INSTALLED PRIOR TO ANY RAIN EVENT.
6. PRIOR TO THE CREATION OF ANY IMPERVIOUS SURFACES THE FINAL DESIGN SHOULD BE BUILT. SEE SHEET C-6 FOR BASIN DETAILS.
7. ALL EXISTING/PROPOSED STORM INLETS WITHIN THE DISTURBANCE AREA TO HAVE EITHER INLET PROTECTION OR A SILT SACK INSTALLED. SEE DETAILS ON SHEET C-8.
8. SEDIMENT BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS WHEN SEDIMENT REACHES 50% STORAGE ELEVATION AND MUCKED OUT.
9. ALL REAR PATIOS TO BE OPEN SLATTED DECKING.

SEDIMENT BASIN CALCULATIONS

SEDIMENT TRAPPING DEVICE	DRAINAGE AREA (AC)	REQUIRED STORAGE (1,800CF/AC)	PROVIDED STORAGE (CF)	PEAK Q10 FLOW (CFS)	REQUIRED AREA (435 SF/CFS)	PROVIDED AREA (SF)
SEDIMENT BASIN #1	1.20	2,153	10,946	2.26	983	6,201
SEDIMENT BASIN #3	0.74	1,341	5,940	1.41	612	2,160
SEDIMENT BASIN #4	2.10	3,787	19,014	3.98	1,730	8,878
SEDIMENT BASIN #5	0.21	380	1,490	0.40	173	618
SEDIMENT BASIN #6	1.45	2,616	13,290	2.75	1,195	5,316
SEDIMENT BASIN #7	1.97	3,542	14,917	3.72	1,618	3,194
SEDIMENT BASIN #ROAD	0.91	1,639	7,358	1.72	749	3,548

PER THE REQUIREMENTS OF THE STORMWATER PERMIT, THE FOLLOWING SHALL OCCUR PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY OR OPERATION OF THE PERMITTED FACILITY.

- AS-BUILT DRAWINGS FOR ALL STORMWATER MANAGEMENT FACILITIES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON ENGINEERING DIVISION.
- AN ENGINEER'S CERTIFICATION SHALL ALSO BE SUBMITTED, ALONG WITH ALL SUPPORTING DOCUMENTATION THAT SPECIFIES, UNDER SEAL THAT THE AS-BUILT STORMWATER MEASURES, CONTROLS AND DEVICES ARE IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLANS.
- A FINAL INSPECTION BY CITY OF WILMINGTON ENGINEERING PERSONNEL.

SWALE COMPUTATIONS					
X-SEC	TYPE	AVERAGE SLOPE	SIDE SLOPE	BOTTOM WIDTH	DITCH TYPE
SWALE #2	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
SWALE #4	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
SWALE #5	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
SWALE #6	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL

SWALE CROSS SECTION DETAIL

Approved Construction Plan

Name Date

Planning_____

Traffic_____

Fire_____

CITY OF WILMINGTON NORTH CAROLINA

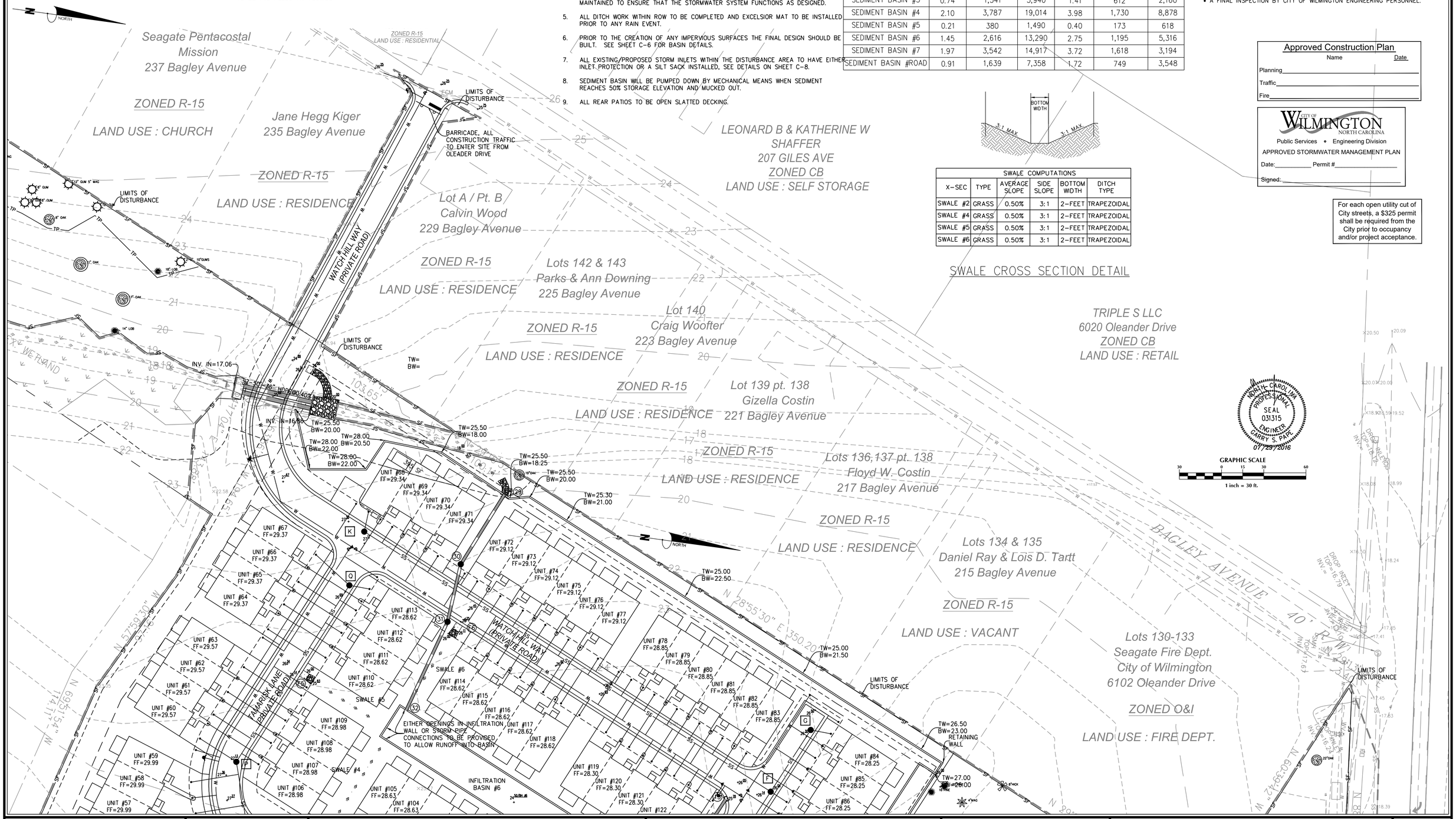
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date:_____ Permit #_____

Signed:_____

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



No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

GRADING & EROSION & SEDIMENT CONTROL PLAN

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No. C-5.1

PUMPING NOTES:

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GRADING NOTES:

1. ALL SWALES TO BE SODDED WITH CENTIPEDE GRASS OR EQUIVALENT.
2. COMPOST FILTER SOCKS (OR OTHER COMPARABLE FLUME PROTECTION) TO BE INSTALLED AT FLUMES

PER THE REQUIREMENTS OF THE STORMWATER PERMIT, THE FOLLOWING SHALL OCCUR PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY OR OPERATION OF THE PERMITTED FACILITY.

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- AN ENGINEER'S CERTIFICATION SHALL ALSO BE SUBMITTED, ALONG WITH ALL SUPPORTING DOCUMENTATION THAT SPECIFIES, UNDER SEAL THAT THE AS-BUILT STORMWATER MEASURES, CONTROLS AND DEVICES ARE IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLANS.
- A FINAL INSPECTION BY CITY OF WILMINGTON ENGINEERING PERSONNEL.

NOTES:

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2. INFILTRATION BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS IN CASE OF EMERGENCY.
3. PRIOR TO USE AS AN INFILTRATION BASIN, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF, THEN THE APPROPRIATE MODIFICATIONS TO THE BASIN CAN BE INCORPORATED.
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5. ALL DITCH WORK WITHIN ROW TO BE COMPLETED AND EXCELSIOR MAT TO BE INSTALLED PRIOR TO ANY RAIN EVENT.
6. PRIOR TO THE CREATION OF ANY IMPERVIOUS SURFACES THE FINAL DESIGN SHOULD BE BUILT. SEE SHEET C-6 FOR BASIN DETAILS.
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8. SEDIMENT BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS WHEN SEDIMENT REACHES 50% STORAGE ELEVATION AND MUCKED OUT.
9. ALL REAR PATIOS TO BE OPEN SLATTED DECKING.

SEDIMENT BASIN CALCULATIONS

SEDIMENT TRAPPING DEVICE	DRAINAGE AREA (AC)	REQUIRED STORAGE (1,800CF/AC)	PROVIDED STORAGE (CF)	PEAK Q10 FLOW (CFS)	REQUIRED AREA (435 SF/CFS)	PROVIDED AREA (SF)
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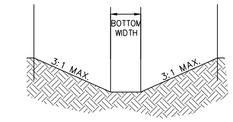
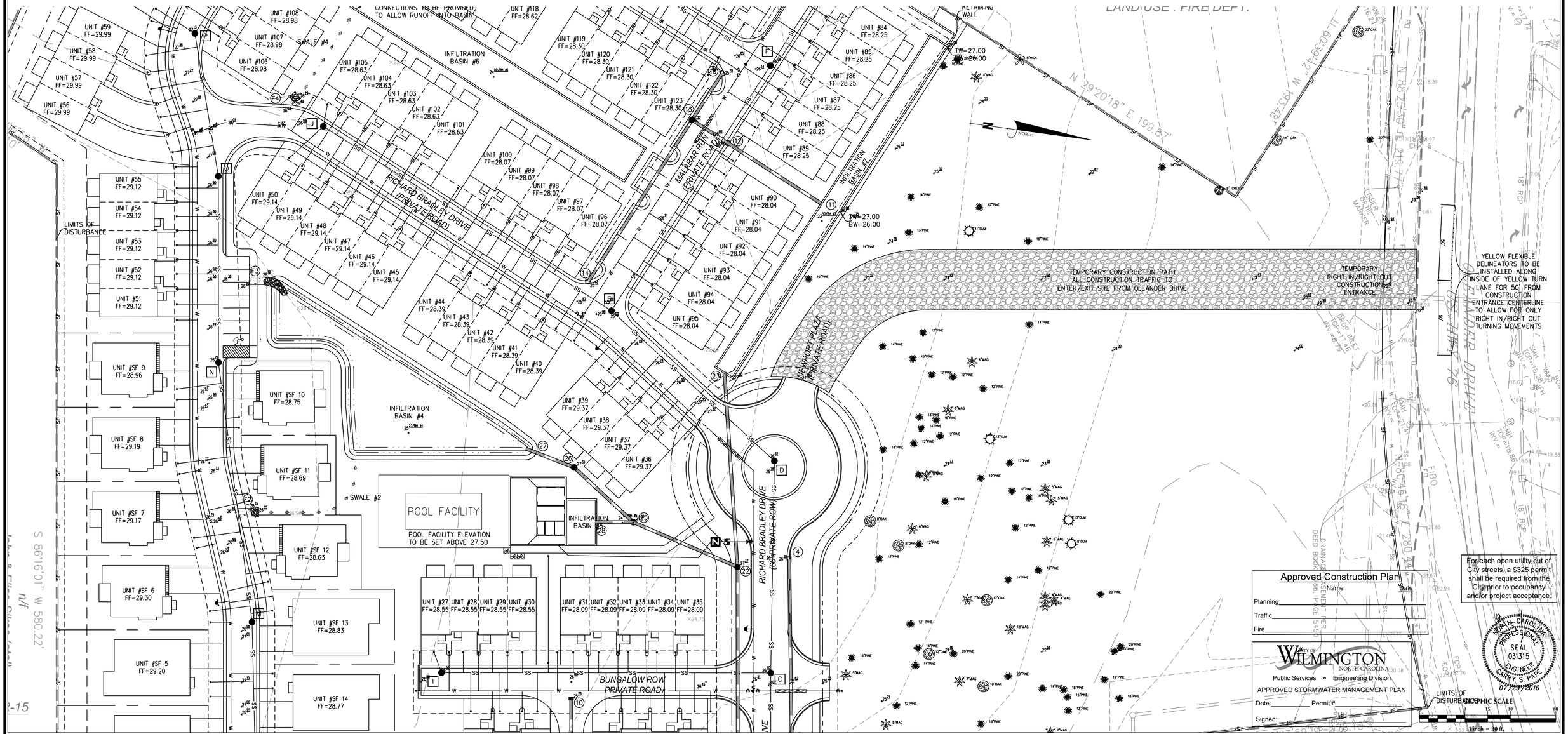
SEDIMENT BASIN #6	1.45	2,616	13,290	2.75	1,195	5,316
SEDIMENT BASIN #7	1.97	3,542	14,917	3.72	1,618	3,194
SEDIMENT BASIN #ROAD	0.91	1,639	7,358	1.72	749	3,548



SWALE COMPUTATIONS					
X-SEC	TYPE	AVERAGE SLOPE	SIDE SLOPE	BOTTOM WIDTH	DITCH TYPE
F2	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
F4	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
F5	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
F6	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL

SWALE CROSS SECTION DETAIL



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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER LARRY S. PAPE 07/29/2016

No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

GRADING & EROSION & SEDIMENT CONTROL PLAN

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

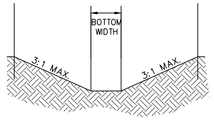
Sheet No. **C-5.2**

PUMPING NOTES:

1. SEDIMENT LADEN PUMP DISCHARGE IS ONLY ALLOWED IF ITS DISCHARGED AT OR BELOW 25 NTU'S WITHOUT EROSIVE VELOCITY AT THE POINT OF DISCHARGE, INFILTRATED ONSITE OUTSIDE ANY WETLANDS WITH NO RUNOFF, OR BY USING PAMS WITH A LIQUID INJECTION SYSTEM DISCHARGING INTO A DIRT BAG PLACED ON A STABLE SURFACE.

GRADING NOTES:

1. ALL SWALES TO BE SODDED WITH CENTIPEDE GRASS OR EQUIVALENT.
2. COMPOST FILTER SOCKS (OR OTHER COMPARABLE FLUME PROTECTION) TO BE INSTALLED AT FLUMES



SWALE COMPUTATIONS					
X-SEC	TYPE	AVERAGE SLOPE	SIDE SLOPE	BOTTOM WIDTH	DITCH TYPE
F2	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
F4	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
F5	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL
F6	GRASS	0.50%	3:1	2-FEET	TRAPEZOIDAL

SWALE CROSS SECTION DETAIL

NOTES:

1. ALL IMPERVIOUS SITE AREA TO BE DRAINED TO PROPOSED STORM SEWER SYSTEM AND DISCHARGED TO INFILTRATION BASIN.
2. INFILTRATION BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS IN CASE OF EMERGENCY.
3. PRIOR TO USE AS AN INFILTRATION BASIN, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF, THEN THE APPROPRIATE MODIFICATIONS TO THE BASIN CAN BE INCORPORATED.
4. THE SWALES DIRECTING THE RUNOFF TO THE INFILTRATION BASIN MUST BE REGULARLY MAINTAINED TO ENSURE THAT THE STORMWATER SYSTEM FUNCTIONS AS DESIGNED.
5. ALL DITCH WORK WITHIN ROW TO BE COMPLETED AND EXCELSIOR MAT TO BE INSTALLED PRIOR TO ANY RAIN EVENT.
6. PRIOR TO THE CREATION OF ANY IMPERVIOUS SURFACES THE FINAL DESIGN SHOULD BE BUILT. SEE SHEET C-6 FOR BASIN DETAILS.
7. ALL EXISTING/PROPOSED STORM INLETS WITHIN THE DISTURBANCE AREA TO HAVE EITHER INLET PROTECTION OR A SILT SACK INSTALLED, SEE DETAILS ON SHEET C-8.
8. SEDIMENT BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS WHEN SEDIMENT REACHES 50% STORAGE ELEVATION AND MUCKED OUT.
9. ALL REAR PATIOS TO BE OPEN SLATTED DECKING.

SEDIMENT BASIN CALCULATIONS

SEDIMENT TRAPPING DEVICE	DRAINAGE AREA (AC)	REQUIRED STORAGE (1,800CF/AC)	PROVIDED STORAGE (CF)	PEAK Q10 FLOW (CFS)	REQUIRED AREA (435 SF/CFS)	PROVIDED AREA (SF)
SEDIMENT BASIN #1	1.20	2,153	10,946	2.26	983	6,201
SEDIMENT BASIN #3	0.74	1,341	5,940	1.41	612	2,160
SEDIMENT BASIN #4	2.10	3,787	19,014	3.98	1,730	8,878
SEDIMENT BASIN #5	0.21	380	1,490	0.40	173	618
SEDIMENT BASIN #6	1.45	2,616	13,290	2.75	1,195	5,316
SEDIMENT BASIN #7	1.97	3,542	14,917	3.72	1,618	3,194
SEDIMENT BASIN #ROAD	0.91	1,639	7,358	1.72	749	3,548

PER THE REQUIREMENTS OF THE STORMWATER PERMIT, THE FOLLOWING SHALL OCCUR PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY OR OPERATION OF THE PERMITTED FACILITY.

- AS-BUILT DRAWINGS FOR ALL STORMWATER MANAGEMENT FACILITIES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON ENGINEERING DIVISION.
- AN ENGINEER'S CERTIFICATION SHALL ALSO BE SUBMITTED, ALONG WITH ALL SUPPORTING DOCUMENTATION THAT SPECIFIES, UNDER SEAL THAT THE AS-BUILT STORMWATER MEASURES, CONTROLS AND DEVICES ARE IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLANS.
- A FINAL INSPECTION BY CITY OF WILMINGTON ENGINEERING PERSONNEL.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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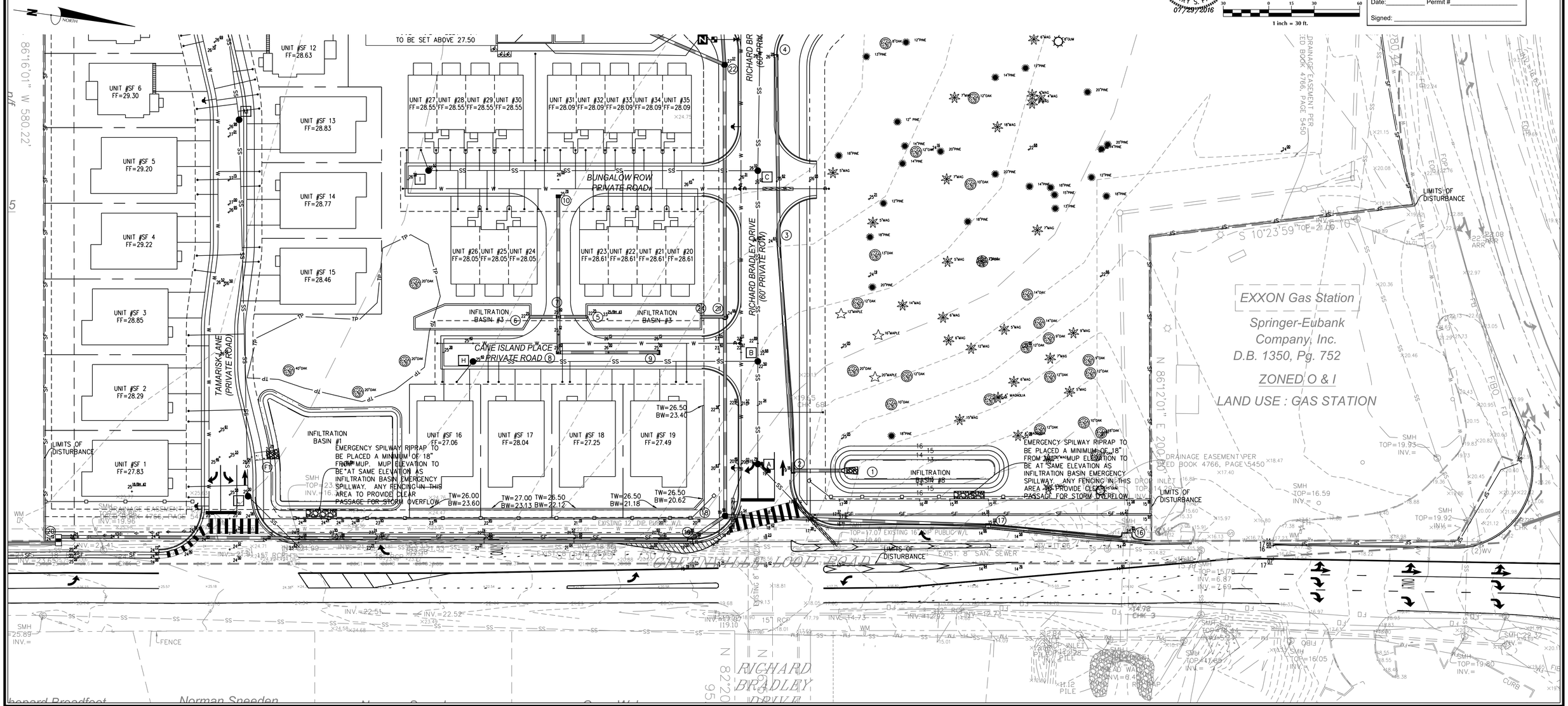
NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPA 07/29/2016

GRAPHIC SCALE 0 15 30 60 — 1 inch = 30 ft.

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____



No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

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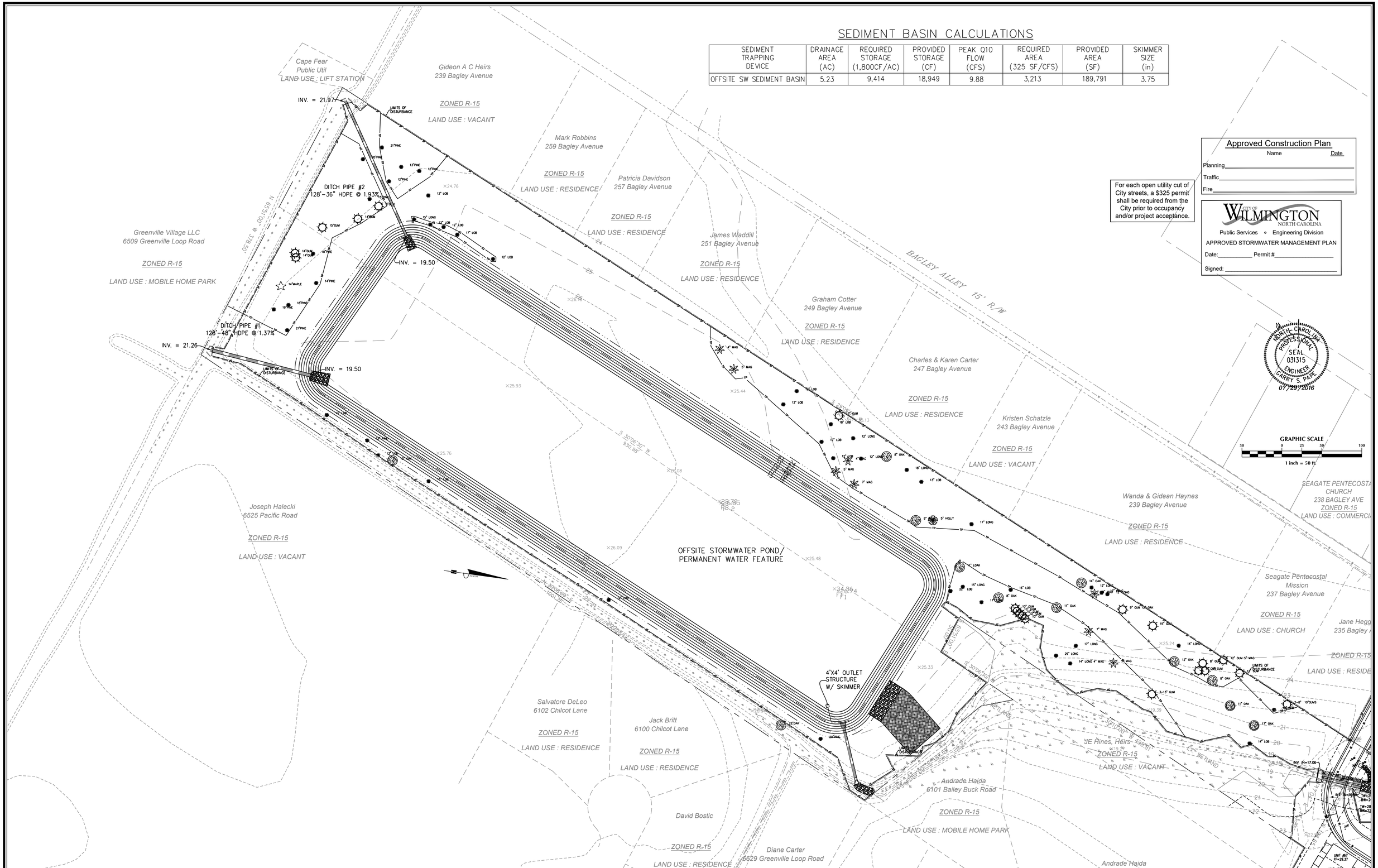
Sheet No. C-5.3

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)
OFFSITE SW SEDIMENT BASIN	5.23	9,414	18,949	9.88	3,213	189,791	3.75



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Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
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APPROVED STORMWATER MANAGEMENT PLAN
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NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE 07/29/2016

GRAPHIC SCALE
50 0 25 50 100
1 inch = 50 ft.

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

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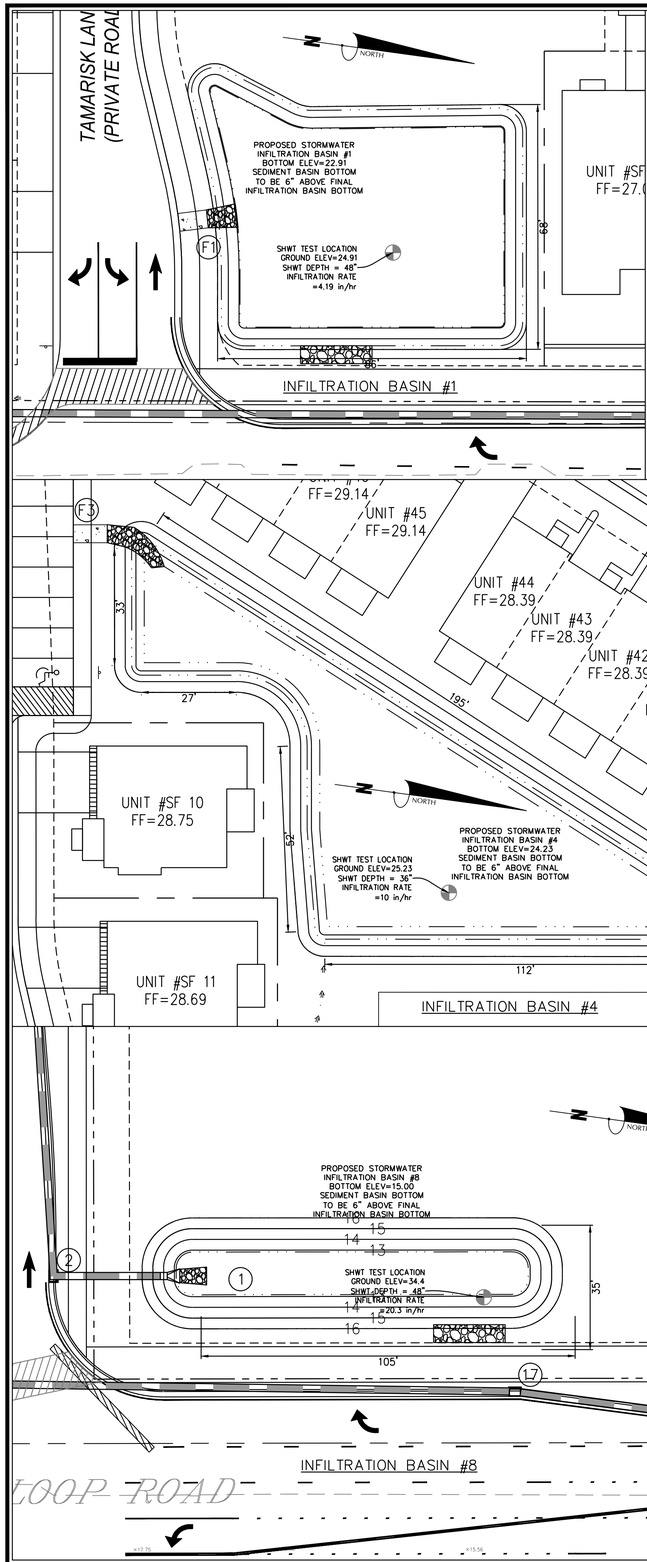
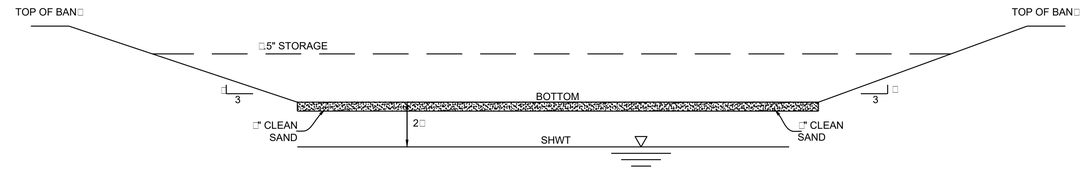
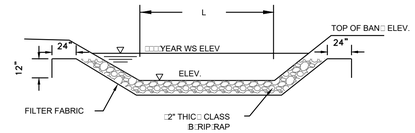
Sheet No.
C-5.4



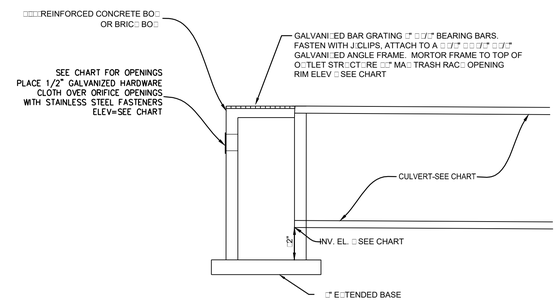


INFILTRATION BASIN	GROUND ELEVATION	SHWT DEPTH	SHWT ELEVATION	BASIN BOTTOM ELEVATION	BASIN DEPTH (FT)	1.5" STORAGE ELEVATION	1.5" STORAGE VOLUME REQ. (CF)	1.5" STORAGE VOLUME PROV. (CF)	OVERFLOW DEVICE	50-YEAR ELEVATION	TOP OF BANK ELEVATION
BASIN #1	24.91	48"	20.91	22.91	2.09	23.65	3,551	3,728	SPILLWAY	24.62	25.00
BASIN #4	25.23	36"	22.23	24.23	2.77	25.40	6,172	6,715	PIPE	26.57	27.00
BASIN #8	15.00	50"	10.83	12.83	3.17	14.25	2,448	2,450	SPILLWAY	15.76	16.00

INFILTRATION BASIN CROSS-SECTION
N.T.S.



EMERGENCY SPILLWAY
N.T.S.



OUTLET STRUCTURE DETAIL
N.T.S.

BASIN	10-YEAR INFILTRATION ELEV @ 1/2 RATE	OUTLET BOX RIM ELEV	CONTROL ORIFICE ELEV	CONTROL ORIFICE LENGTH	CULVERT INVERT	CULVERT SIZE	CULVERT LENGTH	CULVERT SLOPE
BASIN #3	25.38	25.50	N/A	N/A	22.50	15"	7'	3.02%
BASIN #4	26.12	26.20	N/A	N/A	24.76	15"	34'	0.50%
BASIN #5	26.43	26.53	N/A	N/A	24.45	15"	25'	0.50%
BASIN #6	25.90	25.90	N/A	N/A	24.17	15"	175'	0.30%
BASIN #7	24.38	25.00	24.38	3'	22.92	18"	125'	0.30%

OUTLET STRUCTURE INFORMATION
N.T.S.

NOTES:

1. ALL IMPERVIOUS SITE AREA TO BE DRAINED TO PROPOSED STORM SEWER SYSTEM AND DISCHARGED TO INFILTRATION BASIN.
2. BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS IN CASE OF EMERGENCY.
3. PRIOR TO USE AS AN INFILTRATION BASIN, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF, THEN THE APPROPRIATE MODIFICATIONS TO THE BASIN CAN BE INCORPORATED.
4. ESTABLISHED GRASS REQUIRED IN THE SWALES, DITCHES & BANKS OF THE INFILTRATION BASIN PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
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CITY OF WILMINGTON NORTH CAROLINA
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Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PAPE
06/17/2016

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

No.	Revision	Date	By

Designer GSP	Scale 1" = 20'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1
Wilmington New Hanover County North Carolina

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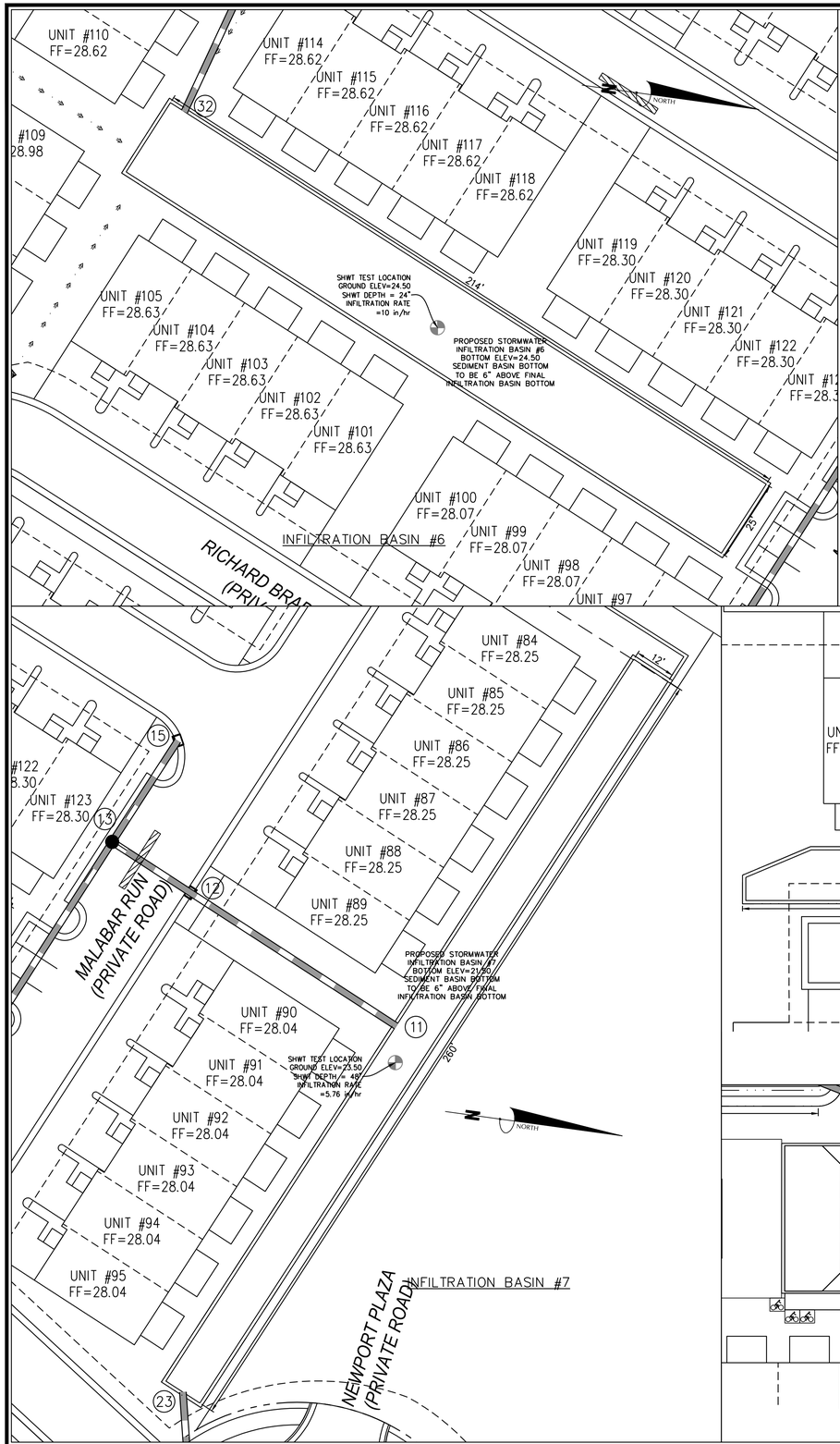
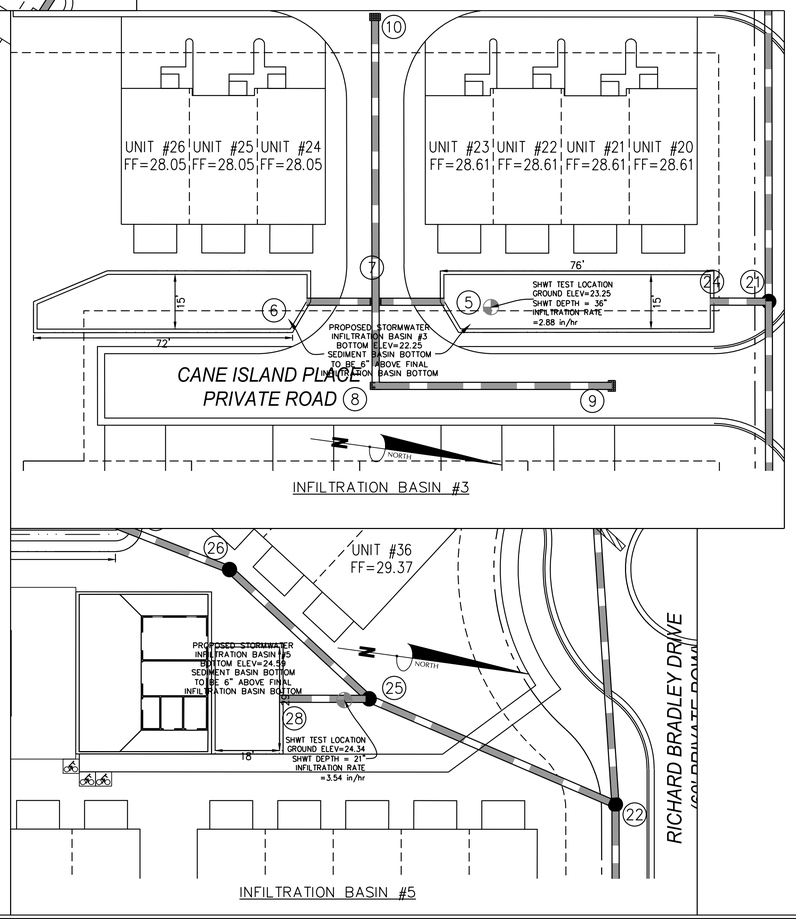
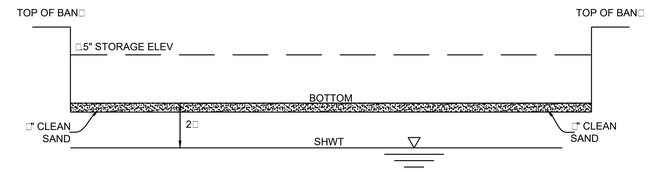
Sheet No.
C-6.1







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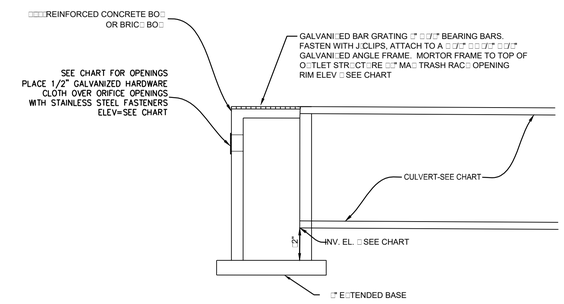
BASIN	GROUND ELEVATION	SHWT DEPTH	SHWT ELEVATION	BASIN BOTTOM ELEVATION	BASIN DEPTH (FT)	1.5" STORAGE ELEVATION	1.5" STORAGE VOLUME REQ. (CF)	1.5" STORAGE VOLUME PROV. (CF)	OVERFLOW DEVICE	50-YEAR ELEVATION	TOP OF BANK ELEVATION
BASIN #3	23.25	26"	20.25	22.25	4.75	23.36	2,353	2,353	PIPE	23.77	27.00
BASIN #5	24.34	21"	22.59	24.59	2.41	25.40	480	501	PIPE	26.59	27.00
BASIN #6	24.50	24"	22.50	24.50	2.50	25.40	4,415	4,784	PIPE	26.32	27.00
BASIN #7	23.50	48"	19.50	21.50	5.50	23.60	6,623	6,707	PIPE	25.62	27.00

INFILTRATION BASIN CROSS-SECTION

N.T.S.



OUTLET STRUCTURE DETAIL

N.T.S.

BASIN	10-YEAR INFILTRATION ELEV. @ 1/2 RATE	OUTLET BOX RIM ELEV	CONTROL ORIFICE ELEV	CONTROL ORIFICE LENGTH	CULVERT INVERT	CULVERT SIZE	CULVERT LENGTH	CULVERT SLOPE
BASIN #3	N/A	23.36	N/A	N/A	22.50	15"	7'	3.02%
BASIN #4	26.12	26.20	N/A	N/A	24.76	15"	34'	0.50%
BASIN #5	26.43	26.53	N/A	N/A	24.45	15"	25'	0.50%
BASIN #6	25.90	25.90	N/A	N/A	24.17	15"	175'	0.30%
BASIN #7	24.38	25.00	24.38	3'	22.92	18"	125'	0.30%

OUTLET STRUCTURE INFORMATION

N.T.S.

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CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: Permit #

Signed:

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PAPE

08/17/2016

GRAPHIC SCALE

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1 inch = 20 ft.

No.	Revision	Date	By

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Sheet No.

C-6.2

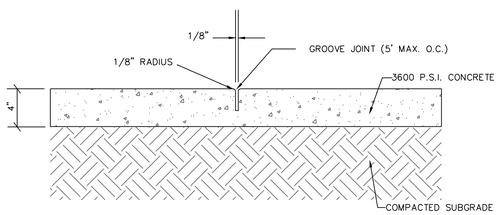
GENERAL NOTES

I. LOCATION OF WHEELCHAIR RAMPS:
□. IN ACCORDANCE WITH THE RATIFIED HO□SE BILL □2□□, ALL STREET C□RBS IN NORTH CAROLINA BEING CONSTR□CTED OR RECONSTR□CTED FOR MAINTENANCE PROCED□RES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF □TILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER □, □□3 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED AT ALL INTERSECTIONS WHERE BOTH C□RB AND G□TTERS AND SIDEWAL□S ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.
2. WHEELCHAIR RAMPS SHO□LD BE LOCATED AS INDICATED IN DETAIL DRAWINGS, HOWEVER E□ISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. MAY AFFECT PLACEMENT.

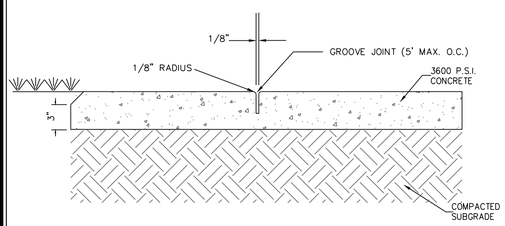
II. CONSTR□CTION NOTES:
□. NO SLOPE SHALL E□CEED □.□□ □2□□ ON THE RAMP OR SIDEWAL□.
2. IN NO CASE SHALL THE WIDTH OF WHEELCHAIR RAMPS BE LESS THAN □□ □3□□. WIDTHS MAY E□CEED □□ IF NECESSARY.
3. □SE CLASS "A" CONCRETE WITH THE S□RFACE HAVING A RO□GH, NON-S□ID TYPE FINISH.
□. □/2" E□PANSION JOINT WILL BE REQ□IRED WHERE THE CONCRETE WHEELCHAIR RAMP JOINS ANY RIGID PAVEMENT OR STR□CT□RE.
5. CONSTR□CTION METHODS SHALL CONFORM WITH THOSE OF THE GOVERNING BODY WHICH HAS J□RISDICTION OF THE PARTIC□LAR STREET.

III. ADDITIONAL NOTES:
□. THE INSIDE PEDESTRIAN CROSSWAL□ LINES SHALL BE ESTABLISHED BY BISECTING THE INTERSECTION RADII WHERE MAR□ED -SEE NOTE □□
2. THE WHEELCHAIR RAMP SHALL BE LOCATED SO THAT THE BEGINNING OF THE WHEEL CHAIR RAMP WILL BE TWO FEET FROM THE INSIDE PEDESTRIAN CROSSWAL□ LINE.
3. THE WIDTH OF THE PEDESTRIAN CROSSWAL□ SHALL BE □□ FEET □NLESS A GREATER WIDTH IS REQ□IRED TO ACCOMMODATE THE PEDESTRIAN TRAFFIC.
□. STOP BARS SHALL BE □SED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQ□IRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN, OR OTHER LEGAL REQ□IREMENTS.
5. PAR□ING SHALL BE ELIMINATED A MINIM□M OF 2□FEET BAC□ OF PEDESTRIAN CROSSWAL□.
□. ALL PAVEMENT MAR□INGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MAN□AL OF □NIFORM TRAFFIC CONTROL DEVICES, P□BLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION. THIS IS AVAILABLE FROM THE S□PERINTENDENT OF DOC□MENTS, □.S GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 2□□□2.

GUIDELINES FOR WHEELCHAIR RAMPS



CONCRETE SIDEWALK DETAIL

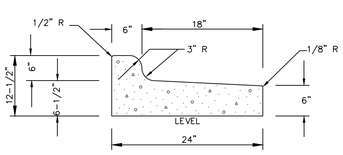


SIDEWALK ADJACENT TO GRASSED AREAS AND PLANTERS

CONCRETE SIDEWALK

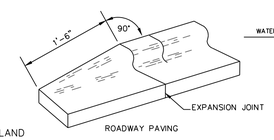
N.T.S.

GENERAL NOTES:
A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK ABUTS ANY CURB & GUTTER AND ANY RIGID STRUCTURES. IN SIDEWALKS & PLAZA AREAS EXPANSION JOINTS ARE REQUIRED AT NO GREATER THAN 30' INTERVALS CONCRETE SHALL BE 3600 PSI. IN 28 DAYS.



(TO BE USED WHEN PAVEMENT IS SLOPED AWAY FROM ISLAND 1/4' : 1'-0" SLOPE OR AS SHOWN ON PLANS)

24" CURB AND GUTTER (REVERSE SLOPE)

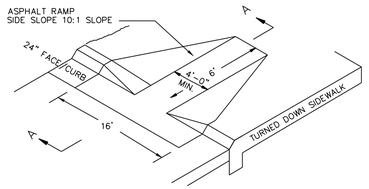


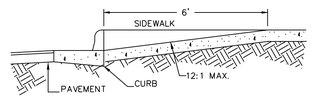
24" CURB & GUTTER TERMINATION DETAIL

CURB AND GUTTER

N.T.S.

GENERAL NOTES:
CONTRACTION JOINTS SHALL BE SPACED AT MAX. 10' INTERVALS, EXCEPT THAT A 15 FOOT SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10 FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1-1/2" SHALL BE OBTAINED. ALL CONTRACTION JOINTS EXCEPT IN 8" X 6" MEDIAN CURB SHALL BE FILLED WITH JOINT SEALER. EXPANSION JOINTS SHALL BE SPACED AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.

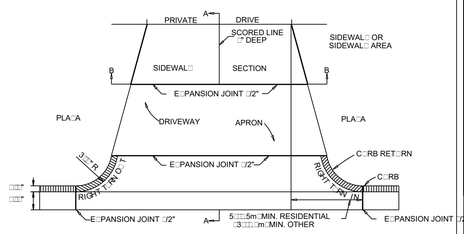




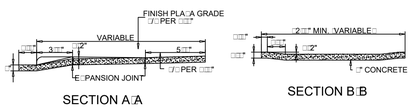
SECTION A-A
WHEELCHAIR RAMP (DROP CURB)

WHEELCHAIR RAMP

N.T.S.



PAVEMENT PLAN

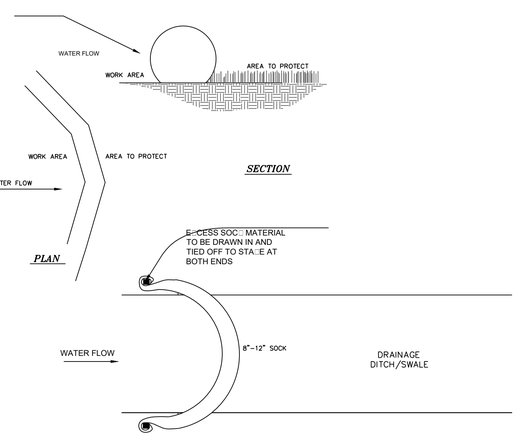


SECTION A□A SECTION B□B

STANDARD DRIVEWAY DETAIL

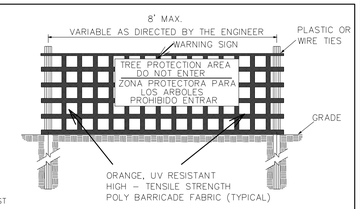
SD 8-02

N.T.S.

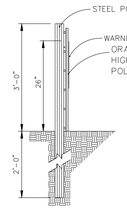


COMPOST FILTER SOCK (OR OTHER COMPARABLE FLUME PROTECTION)

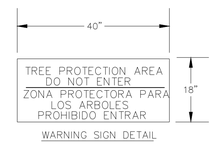
N.T.S.



FRONT VIEW



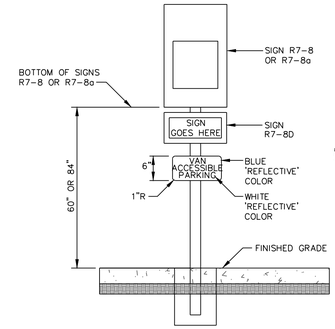
SIDE VIEW

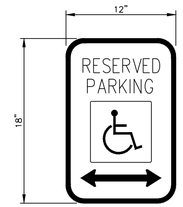


WARNING SIGN DETAIL

NOTES:
1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

DATE□ □AN□201□	STANDARD DETAI□	CITY OF WILMINGTON NORTH CAROLINA
DRA□N □□ □SR	TREE PROTE□TION D□RING □ONSTR□□TION	CITY OF WILMINGTON ENGINEERING PO BO□ □□□□ WILMINGTON, NC 2□□□2 □□□□3□□□□□
□E□KED □□ RDG□P□E□	S□EET 2 □□2	SD 1□-0□
S□A□E NOT TO S□A□E		





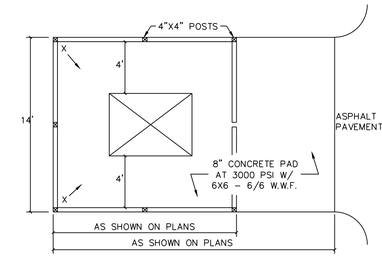
R7-8

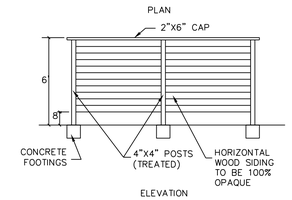
SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20.37.5

COLORS:
LEGEND AND BORDER-GREEN
WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND-WHITE

HANDICAP PARKING SIGNAGE

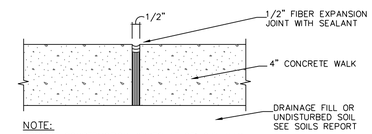
N.T.S.





DUMPSTER PAD & ENCLOSURE DETAIL

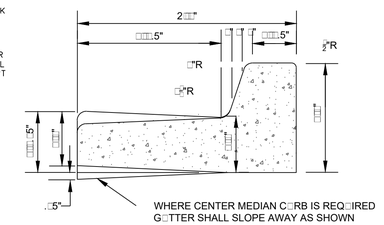
N.T.S.



NOTE:
PROVIDE CONSTRUCTION JOINTS AT 25' O.C. MAX. IN EITHER DIRECTION WITH SQUARE FOOTAGE LESS THAN 400 S.F. AND AT CURVES, TANGENTS, AND CORNERS (UNLESS NOTED OTHERWISE).

CONSTRUCTION JOINT

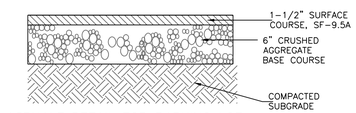
N.T.S.



STANDARD C□RB SECTION TYPE "A"

SD □□□□

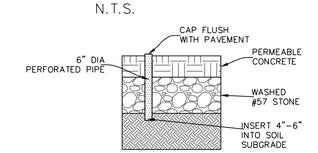
NOT TO SCALE



ASPHALT DETAIL FOR PARKING LOT

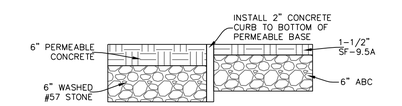
PAVEMENT DETAIL

N.T.S.



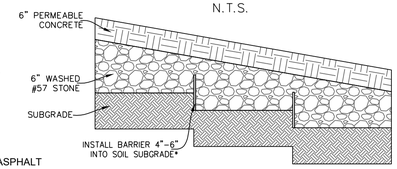
OBSERVATION WELL DETAIL

N.T.S.



PERMEABLE PAVEMENT SECTION

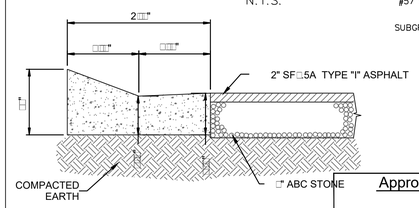
N.T.S.



PERMEABLE PAVEMENT TERRACING

N.T.S.

* BARRIER TO BE OF IMPERMEABLE MATERIAL TO PREVENT UNEVEN PONDING

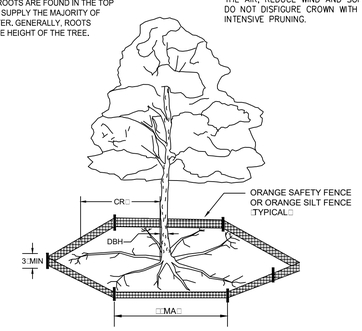


MODIFIED VALLEY GUTTER

N.T.S.

NOTE:
THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.

NOTE:
CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.



NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
6. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF $500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

DATE□ □AN□201□	STANDARD DETAI□	CITY OF WILMINGTON NORTH CAROLINA
DRA□N □□ □SR	TREE PROTE□TION D□RING □ONSTR□□TION	CITY OF WILMINGTON ENGINEERING PO BO□ □□□□ WILMINGTON, NC 2□□□2 □□□□3□□□□□
□E□KED □□ RDG□P□E□	S□EET 1 □□2	SD 1□-0□
S□A□E NOT TO S□A□E		

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PARK
06/17/2016

No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

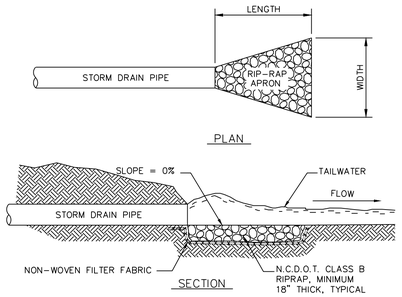
SUMMERWALK - PHASE 1
Wilmington New Hanover County North Carolina

STANDARD DETAILS

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

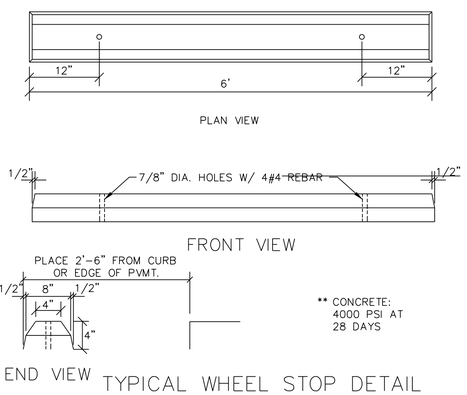
Sheet No.
C-7



RIPRAP LOCATIONS	LENGTH (FT.)	UPSTREAM WIDTH (FT.)	DOWNSTREAM WIDTH (FT.)
CONC FLUMES	5	5	6
SWALES	8	5	6
36" STORM	18	9	12
48" STORM	24	12	16

RIP-RAP OUTLET PROTECTION

N.T.S.



TYPICAL WHEEL STOP DETAIL

PERVIOUS CONCRETE CONSTRUCTION SEQUENCE:

CONTRACTORS NOT FAMILIAR WITH PERMEABLE PAVEMENT ARE ACCUSTOMED TO COMPACTING PAVEMENT SOIL SUBGRADES TO INCREASE STRUCTURAL STRENGTH. HOWEVER, THIS IS IN DIRECT OPPOSITION TO THE CORRECT TREATMENT OF SOIL BENEATH PERMEABLE PAVEMENT FOR AN INFILTRATING DESIGN. A PRECONSTRUCTION MEETING IS HIGHLY RECOMMENDED TO ENSURE CONTRACTORS UNDERSTAND THE NEED TO PREVENT SUBGRADE COMPACTION AND CLOGGING OF THE PAVEMENT SURFACE AS WELL AS OTHER UNIQUE CONSTRUCTION CONSIDERATIONS FOR PERMEABLE PAVEMENT. CONSTRUCTION OVERSIGHT BY A DESIGN PROFESSIONAL FAMILIAR WITH PERMEABLE PAVEMENT INSTALLATION CAN HELP ENSURE THAT THE INVESTMENT RESULTS IN ADEQUATE LONG-TERM PERFORMANCE.

CONSTRUCTION STEP 1: ENSURE ACCEPTABLE CONDITIONS FOR CONSTRUCTION

DO NOT BEGIN CONSTRUCTION ON PERMEABLE PAVEMENT UNTIL ACCEPTABLE CONDITIONS ARE PRESENT. THIS INCLUDES THE FOLLOWING ITEMS:
PERVIOUS SURFACES ARE GRADED SO THAT THEY DO NOT DISCHARGE TO THE PERMEABLE PAVEMENT, EXCEPT FOR INSTANCES WHEN THIS IS UNAVOIDABLE, SUCH AS REDEVELOPMENT PROJECTS.
IMPERVIOUS AREAS THAT WILL DRAIN TO THE PERMEABLE PAVEMENT ARE COMPLETED.
AREAS OF THE SITE ADJACENT TO THE PERMEABLE PAVEMENT ARE STABILIZED WITH VEGETATION, MULCH, STRAW, SEED, SOD, FIBER BLANKETS OR OTHER APPROPRIATE COVER IN ORDER TO PREVENT EROSION AND POSSIBLE CONTAMINATION WITH SEDIMENTS.
CONSTRUCTION ACCESS TO OTHER PORTIONS OF THE SITE IS ESTABLISHED SO THAT NO CONSTRUCTION TRAFFIC PASSES THROUGH THE PERMEABLE PAVEMENT SITE DURING INSTALLATION. INSTALL BARRIERS OR FENCES AS NEEDED.
THE FORECAST CALLS FOR A WINDOW OF DRY WEATHER TO PREVENT EXCESS COMPACTION OR SMEARING OF THE SOIL SUBGRADE WHILE IT IS EXPOSED.
ALL PERMEABLE PAVEMENT AREAS ARE CLEARLY MARKED ON THE SITE.

CONSTRUCTION STEP 2: EXCAVATE THE PAVEMENT AREA AND PREPARE SUBGRADE SURFACE

CLEAR AND EXCAVATE THE AREA FOR PAVEMENT AND BASE COURSES WHILE PROTECTING AND MAINTAINING SUBGRADE INFILTRATION RATES USING FOLLOWING THESE STEPS:
EXCAVATE IN DRY SUBGRADE CONDITIONS AND AVOID EXCAVATING IMMEDIATELY AFTER STORMS WITHOUT A SUFFICIENT DRYING PERIOD.
DO NOT ALLOW EQUIPMENT TO CROSS THE PAVEMENT AREA AFTER EXCAVATION HAS BEGUN.
OPERATE EXCAVATION EQUIPMENT FROM OUTSIDE THE PAVEMENT AREA OR FROM UNEXCAVATED PORTIONS OF THE AREA USING AN EXCAVATION STAGING PLAN.
USE EQUIPMENT WITH TRACKS RATHER THAN TIRES TO MINIMIZE SOIL COMPACTION WHEN EQUIPMENT ON THE SUBGRADE SURFACE IS UNAVOIDABLE.
DIG THE FINAL 9 TO 12 IN. BY USING THE TEETH OF THE EXCAVATOR BUCKET TO LOOSEN SOIL AND DO NOT SMEAR THE SUBGRADE SOIL SURFACE. FINAL GRADING OR SMOOTHING OF THE SUBGRADE SHOULD BE DONE BY HAND IF POSSIBLE.
MINIMIZE THE TIME BETWEEN EXCAVATION AND PLACEMENT OF THE AGGREGATE.

THE FINAL SUBGRADE SLOPE SHALL NOT EXCEED 0.5%. THE SLOPE OF THE SUBGRADE SHALL BE CHECKED BEFORE PROCEEDING.

AFTER VERIFYING THE SUBGRADE SLOPE, SCARIFY, RIP OR TRENCH THE SOIL SUBGRADE SURFACE OF INFILTRATING PAVEMENT SYSTEMS TO MAINTAIN THE SOIL'S PRE- DISTURBANCE INFILTRATION RATE. THESE TREATMENTS MUST OCCUR WHILE THE SOIL IS DRY. TO SCARIFY THE PAVEMENT, USE BACKHOE BUCKET'S TEETH TO RAKE THE SURFACE OF THE SUBGRADE. TO RIP THE SUBGRADE, USE A SUBSOIL RIPPER TO MAKE PARALLEL RIPS 6 TO 9 IN. DEEP SPACED 3 FT APART ALONG THE LENGTH OF THE PERMEABLE PAVEMENT EXCAVATION AS SHOWN IN FIGURE 18-16. IN SILTY OR CLAYEY SOILS, CLEAN COARSE SAND MUST BE PLACED OVER THE RIPPED SURFACE TO KEEP IT FREE-FLOWING (BROWN AND HUNT 2009). THE SAND LAYER SHOULD BE ADEQUATE TO FILL THE RIPS.

AN ALTERNATIVE TO SCARIFICATION AND RIPPING IS TRENCHING. SEE FIGURE 18-17. IF TRENCHING, THEN PARALLEL TRENCHES 12 IN. WIDE BY 12 IN. DEEP SHALL BE MADE ALONG THE LENGTH OF THE PERMEABLE PAVEMENT EXCAVATION. EXCAVATE TRENCHES EVERY 6 FT (MEASURED FROM CENTER TO CENTER OF EACH TRENCH) AND FILL WITH ½ IN. OF CLEAN COURSE SAND AND 11½ IN. OF ASTM NO. 67 AGGREGATE (BROWN AND HUNT 2009).

CONSTRUCTION STEP 3: PLACE GEOTEXTILES AND GEOMEMBRANE (IF APPLICABLE)

IF THE SOILS ENGINEER REQUIRES USING GEOTEXTILES OR GEOMEMBRANES, THEN FOLLOW THE MANUFACTURER'S RECOMMENDATIONS SO FOR THE APPROPRIATE OVERLAP BETWEEN ROLLS OF MATERIAL. SECURE GEOTEXTILE OR GEOMEMBRANE SO THAT IT WILL NOT MOVE OR WRINKLE WHEN PLACING AGGREGATE.

CONSTRUCTION STEP 4: PLACE OBSERVATION WELLS

PLACE THE OBSERVATION WELLS ACCORDING TO THE DESIGN PLANS AND VERIFY THAT THE ELEVATIONS ARE CORRECT.

CONSTRUCTION STEP 5: PLACE AGGREGATE BASE

INSPECT ALL STONE TO INSURE THAT IT IS CLEAN, FREE OF FINES AND CONFORMS TO THE PLANS AND SPECIFICATIONS. ALL AGGREGATES SHOULD BE STOCKPILED ON AN IMPERVIOUS SURFACE, GEOTEXTILE, OR OTHER IMPERVIOUS MATERIAL TO KEEP THE AGGREGATE FREE OF SEDIMENT. IF AGGREGATE BECOMES CONTAMINATED WITH SEDIMENT, THEN IT SHALL BE REPLACED WITH CLEAN MATERIALS. REMOVE ANY ACCUMULATION OF SEDIMENTS ON THE FINISHED SOIL SUBGRADE WITH LIGHT, TRACKED EQUIPMENT. IF THE EXCAVATED SUBGRADE SURFACE IS SUBJECTED TO RAINFALL BEFORE PLACEMENT OF THE AGGREGATE BASE, THE RESULTING SURFACE CRUST MUST BE EXCAVATED TO AT LEAST AN ADDITIONAL 2 IN. DEPTH, RAKED OR SCARIFIED TO BREAK UP THE CRUST. FOR SITES WITH AN IMPERMEABLE LINER OR GEOTEXTILES, REMOVE ANY ACCUMULATED SEDIMENTS AND CHECK PLACEMENT. SLOPES AND ELEVATIONS SHALL BE CHECKED ON THE SOIL SUBGRADE AND THE FINAL BEDDING MATERIAL TO ASSURE THEY CONFORM TO THE PLANS AND SPECIFICATIONS.

ALL AGGREGATE SHALL BE SPREAD (NOT DUMPED) BY A FRONT-END LOADER OR FROM DUMP TRUCKS DEPOSITING FROM NEAR THE EDGE OF THE EXCAVATED AREA OR RESTING DIRECTLY ON DEPOSITED AGGREGATE PILES. MOISTEN AND SPREAD THE WASHED STONE WITHOUT DRIVING ON THE SOIL SUBGRADE AND BEING CAREFUL NOT TO DAMAGE THE OBSERVATION WELLS.

CONSTRUCTION STEP 6: INSTALL CURB RESTRAINTS AND PAVEMENT BARRIERS

EDGE RESTRAINTS AND BARRIERS BETWEEN PERMEABLE AND IMPERVIOUS PAVEMENT SHALL BE INSTALLED. BEFORE MOVING ON TO CONSTRUCTION STEP 9, BE CERTAIN THAT THE DESIGN AND INSTALLATION ARE CONSISTENT.

CONSTRUCTION STEP 7: INSTALL BEDDING AND PAVEMENT COURSES

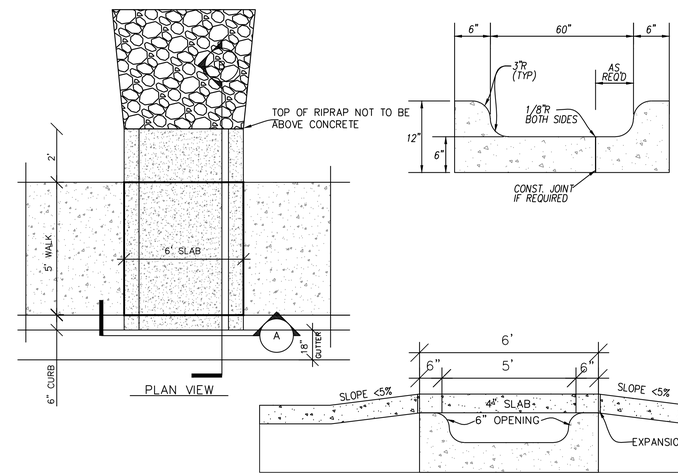
PC PAVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST VERSION OF ACI 522.1 SPECIFICATION FOR PERVIOUS CONCRETE. IT IS REQUIRED THAT THE CONTRACTOR INSTALLING THE PERVIOUS CONCRETE MEET THE REQUIREMENTS OUTLINED IN THE LATEST VERSION OF ACI 522.1. INSTALLATION OF PC MAY BE ACCOMPLISHED USING EITHER THE ONE- STEP OR THE TWO-STEP METHOD. THE TWO-STEP METHOD IS MORE COMMONLY USED AND IT SEPARATES THE STEPS OF STRIKE-OFF FROM PERVIOUS CONCRETE COMPACTION. IN THIS METHOD, THE PERVIOUS CONCRETE USUALLY REQUIRES A MORE TRADITIONAL, STIFFER MIX. THE ONE-STEP METHOD USES A COUNTER-ROTATING ROLLER SCREED TO SIMULTANEOUSLY STRIKE-OFF AND COMPACT THE PERVIOUS CONCRETE. THIS METHOD REQUIRES PERVIOUS CONCRETE WITH A MORE FLOWABLE MIX SO THAT THE SCREED CAN MORE ADEQUATELY COMPACT THE MIXTURE. BOTH METHODS REQUIRE DENSE- PASTE PERVIOUS CONCRETE MIXTURES. THESE MIXES ARE DEFINED BY CHEMICAL ADMIXTURES THAT REDUCE THE VISCOSITY OF THE CEMENT PASTE SO THAT IT WILL STICK TO AND NOT RUN OFF THE AGGREGATES. THE MIXES PROVIDE GREATER COHESION THAT INCREASES STRENGTH AND DURABILITY

CONSTRUCTION STEP 8: PROTECT THE PAVEMENT THROUGH PROJECT COMPLETION

THE PERMEABLE PAVEMENT SHALL BE INSTALLED AT THE END OF THE SITE CONSTRUCTION TIMELINE. THE SITE CONTRACTOR MUST PROTECT THE PERMEABLE PAVEMENT UNTIL PROJECT COMPLETION. THIS SHALL BE DONE BY:
ROUTE CONSTRUCTION ACCESS THROUGH OTHER PORTIONS OF THE SITE SO THAT NO CONSTRUCTION TRAFFIC PASSES THROUGH THE PERMEABLE PAVEMENT SITE. INSTALL BARRIERS OR FENCES AS NEEDED.
PROTECT THE PAVEMENT PER THE CONSTRUCTION DOCUMENTS. TECHNIQUES THAT MAY BE SPECIFIED INCLUDE MATS, PLASTIC SHEETING, BARRIERS TO LIMIT ACCESS, OR MOVING THE STABILIZED CONSTRUCTION ENTRANCE
SCHEDULE STREET SWEEPING DURING AND AFTER CONSTRUCTION TO PREVENT SEDIMENT FROM ACCUMULATING ON THE PAVEMENT.

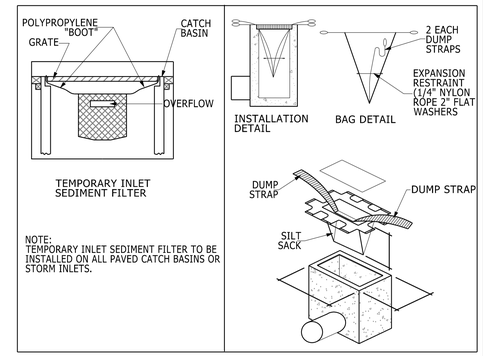
CONSTRUCTION STEP 9: AS-BUILT INSPECTION

AFTER INSTALLATION, AN APPROPRIATELY LICENSED NC DESIGN PROFESSIONAL SHALL PERFORM A FINAL AS-BUILT INSPECTION AND CERTIFICATION THAT INCLUDES:
ENSURING THAT THE PAVEMENT IS INSTALLED PER THE PLANS AND SPECIFICATIONS.
ENSURING THAT THE SURFACE IS NOT DAMAGED, FREE FROM FINES AND SEDIMENT.
CHECKING THAT ALL PERVIOUS SURFACES DRAIN AWAY FROM THE PAVEMENT AND THAT SOIL AROUND THE PAVEMENT IS STABILIZED WITH VEGETATION.
PREPARING THE AS-BUILT PLANS THAT INCLUDE ANY CHANGES TO THE OBSERVATION WELL LOCATIONS, TERRACE LAYOUTS, AGGREGATE DEPTH OR STORAGE STRUCTURES, ANY REVISED CALCULATIONS, ETC.
TESTING THE PAVEMENT SURFACE PERMEABILITY USING THE NCSU SIMPLE INFILTRATION TEST (SEE MAINTENANCE SECTION 18.6.4) OR OTHER APPROPRIATE TEST SUCH AS ASTM C1701 STANDARD TEST METHOD FOR INFILTRATION RATE OF IN-PLACE PERVIOUS CONCRETE. ANY DEFICIENCIES FOUND DURING THE AS-BUILT INSPECTION SHALL BE PROMPTLY ADDRESSED AND CORRECTED.



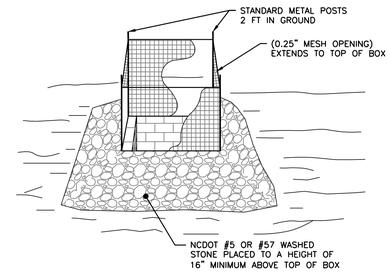
STORM DRAINAGE FLUME

N.T.S.



SILT SACK DETAIL

NOT TO SCALE

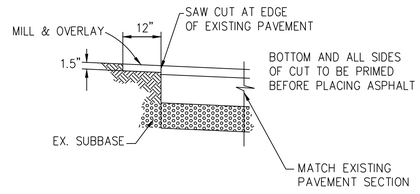


NOTES:

1. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
2. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 1-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
3. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A MIN HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.

STANDARD INLET PROTECTION

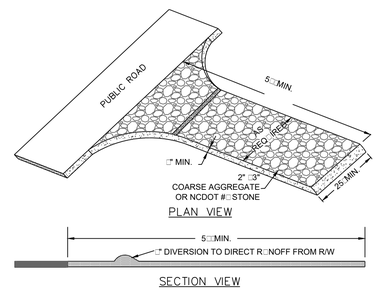
NOT TO SCALE



TYPICAL PAVEMENT WEDGING & PATCHING DETAIL

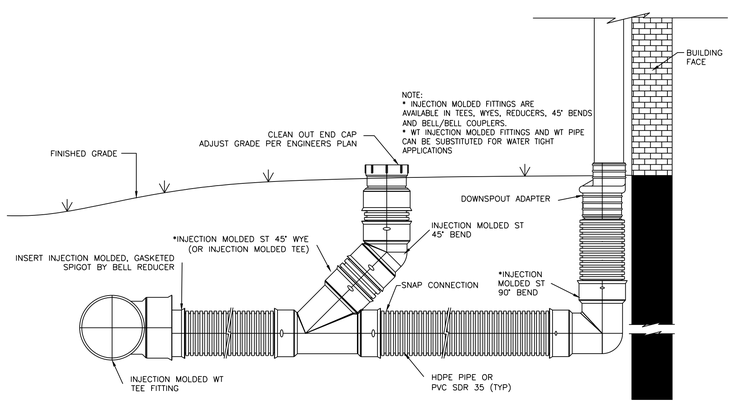
N.T.S.

DEVELOPER AND CONTRACTOR TO COORDINATE WITH CITY OF WILMINGTON CONSTRUCTION MANAGEMENT ON ROAD WIDENING



TEMPORARY CONSTRUCTION ENTRANCE

N.T.S.



ROOF DRAIN DETAIL WITH CLEANOUT

N.T.S.

SEQUENCE OF CONSTRUCTION

LIMITS OF CONSTRUCTION = 1.85 ACRES

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

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

3. THE PROPOSED INFILTRATION BASIN WILL ACT AS A SEDIMENT BASIN DURING CONSTRUCTION ACTIVITIES.

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

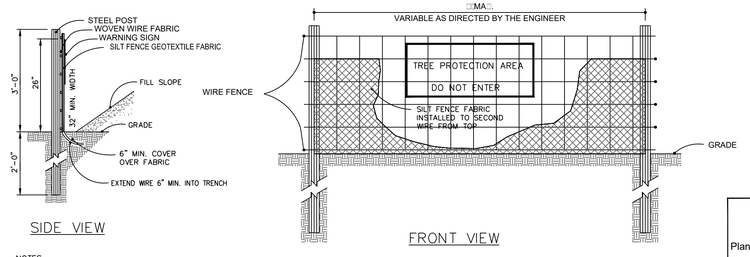
5. UPON BRINGING THE SITE TO ROUGH GRADE, STABILIZE ALL AREAS WITH TEMPORARY VEGETATION IF LEFT UNDISTURBED FOR 15 WORKING DAYS AND ALL SLOPES WITHIN 21 CALENDAR DAYS.

6. ONCE THE PARKING AREAS, SANITARY SEWERS, WATERLINES AND STORM SEWERS ARE IN PLACE, INSTALL INLET PROTECTION AS SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN.

7. UPON BRINGING THE PARKING AREA TO SUBGRADE ELEVATIONS, STABILIZE THE AREAS BY PLACING STONE BASE AS EARLY AS POSSIBLE. PERMEABLE PAVEMENT TO BE INSTALLED AS CLOSE TO THE END OF CONSTRUCTION AS POSSIBLE IN ORDER TO AVOID CLOGGING OF THE SYSTEM.

8. FOR TEMPORARY VEGETATIVE STABILIZATION OF ALL DENUDED AREAS SEE NOTE REFERENCING THE EROSION CONTROL PROGRAM AND SPECIFICATIONS ON SHEET C-1.

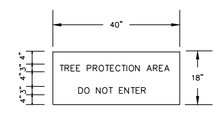
9. AFTER CONSTRUCTION OPERATIONS HAVE ENDED AND ALL DISTURBED AREAS HAVE BEEN STABILIZED, MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED. SEDIMENT FROM TEMPORARY SEDIMENT TRAPPING DEVICES SHALL BE DISPOSED OF BY SPREADING ON THE SITE OR HAULING AWAY IF NOT SUITABLE FOR FILL. ALL DENUDED AREAS ARE TO BE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



NOTES:
1. SYNTHETIC FILTER FABRIC SHOULD BE OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER PER ASTM D 6461 AND SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS PER ASTM D 4355.

2. WIRE FENCE SHALL BE MINIMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.

3. SEE THE NC EROSION AND SEDIMENTATION CONTROL MANUAL FOR OTHER SPECIFICATIONS.



WARNING SIGN DETAIL

NOTE:
WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.

STANDARD TEMPORARY SILT / TREE PROTECTION FENCE

N.T.S.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE 06/17/2016

No.	Revision	Date	By

Designer: GSP	Scale: 1" = 30'
Drawn By: GSP	Date: October 2015
License #: P-0718	Job No.: 2015-0006

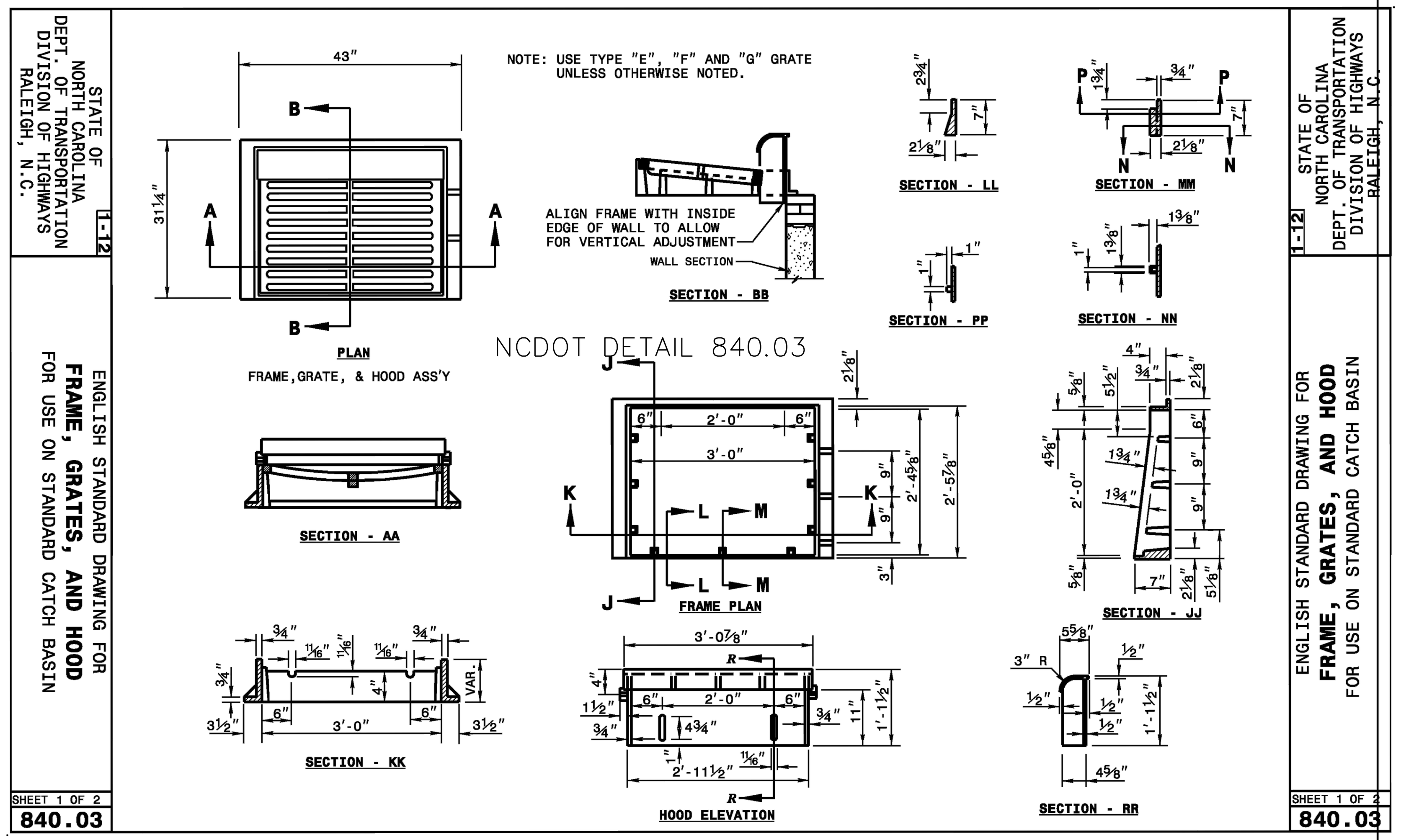
SUMMERWALK - PHASE 1
Wilmington New Hanover County North Carolina

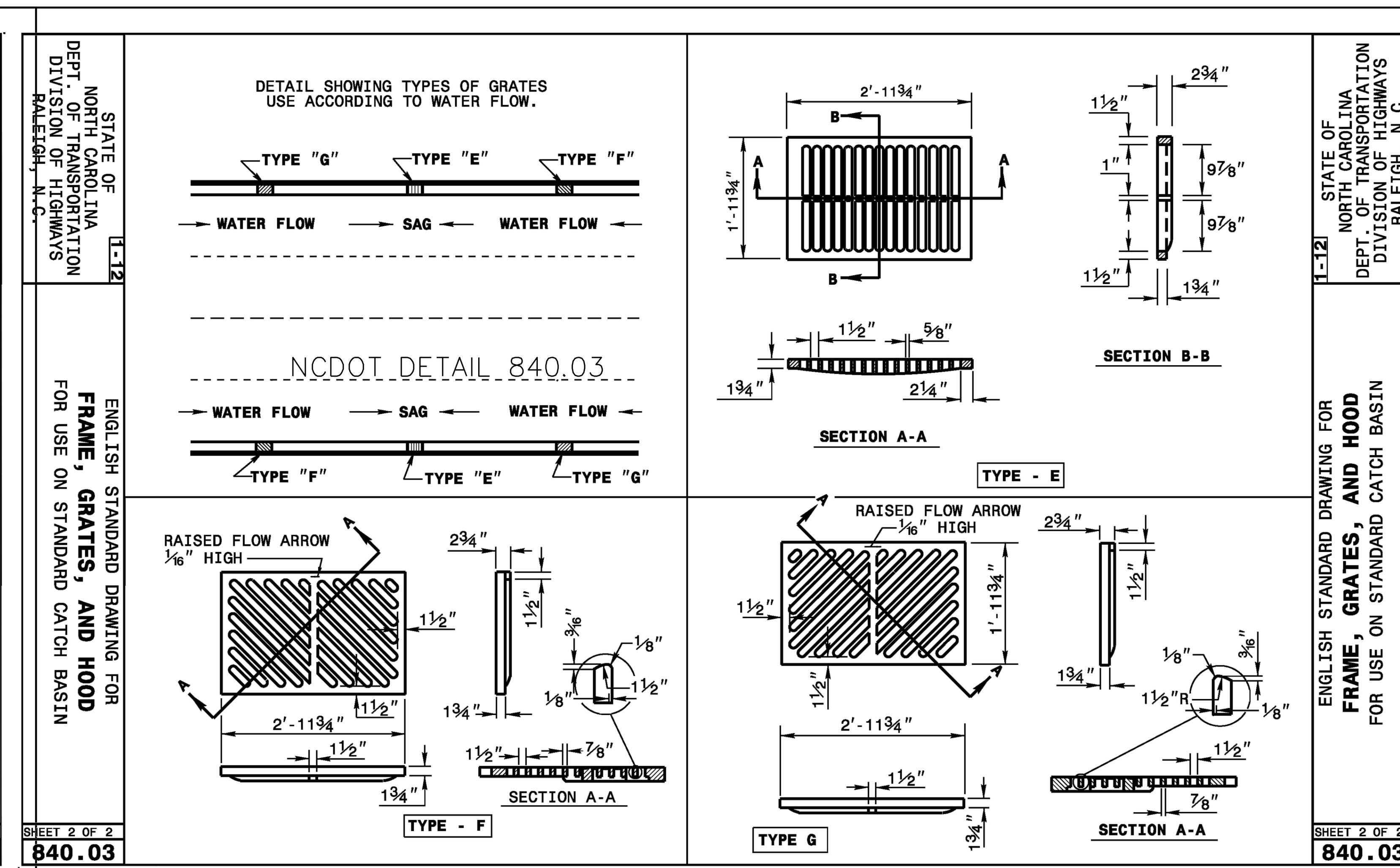
STANDARD DETAILS

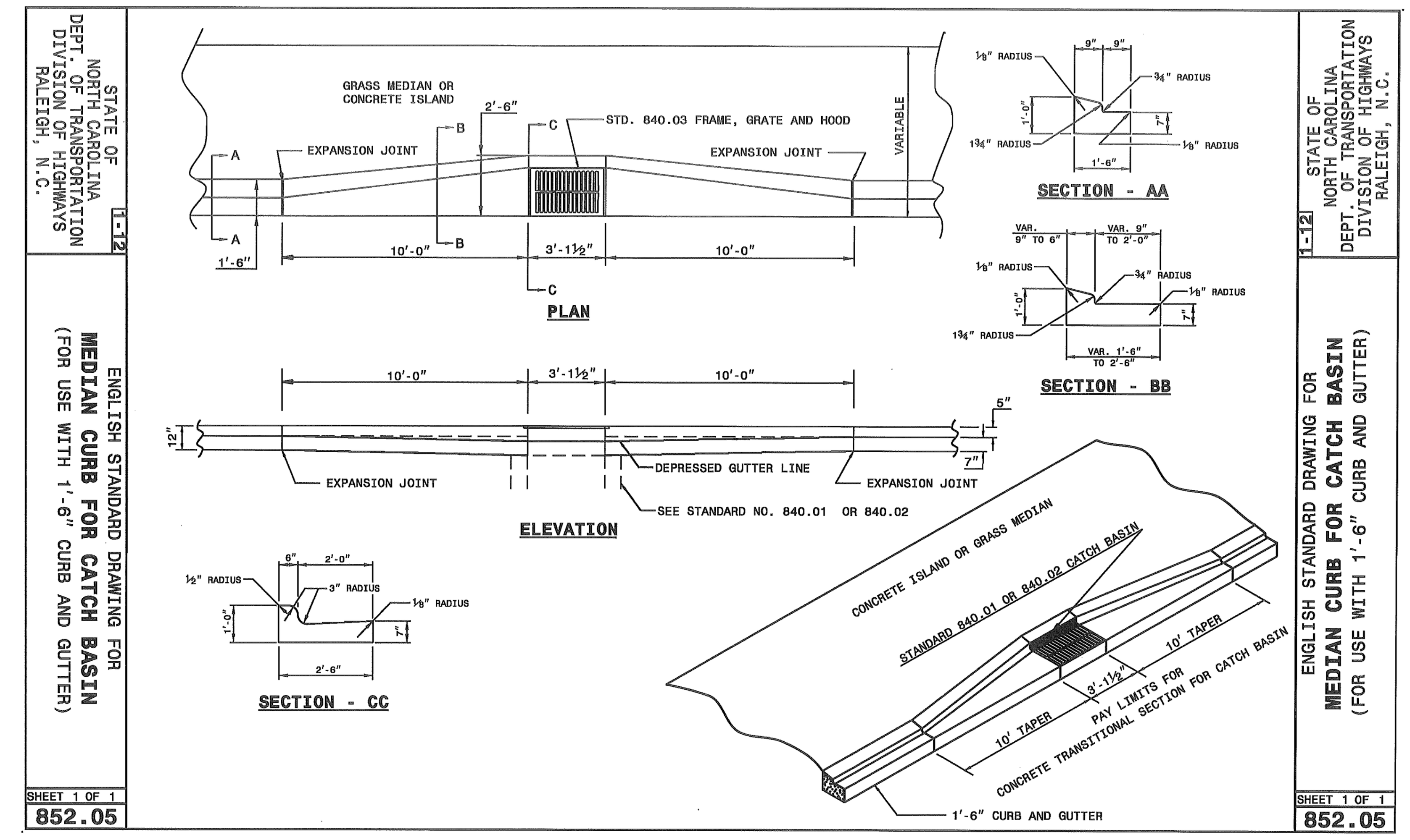
PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

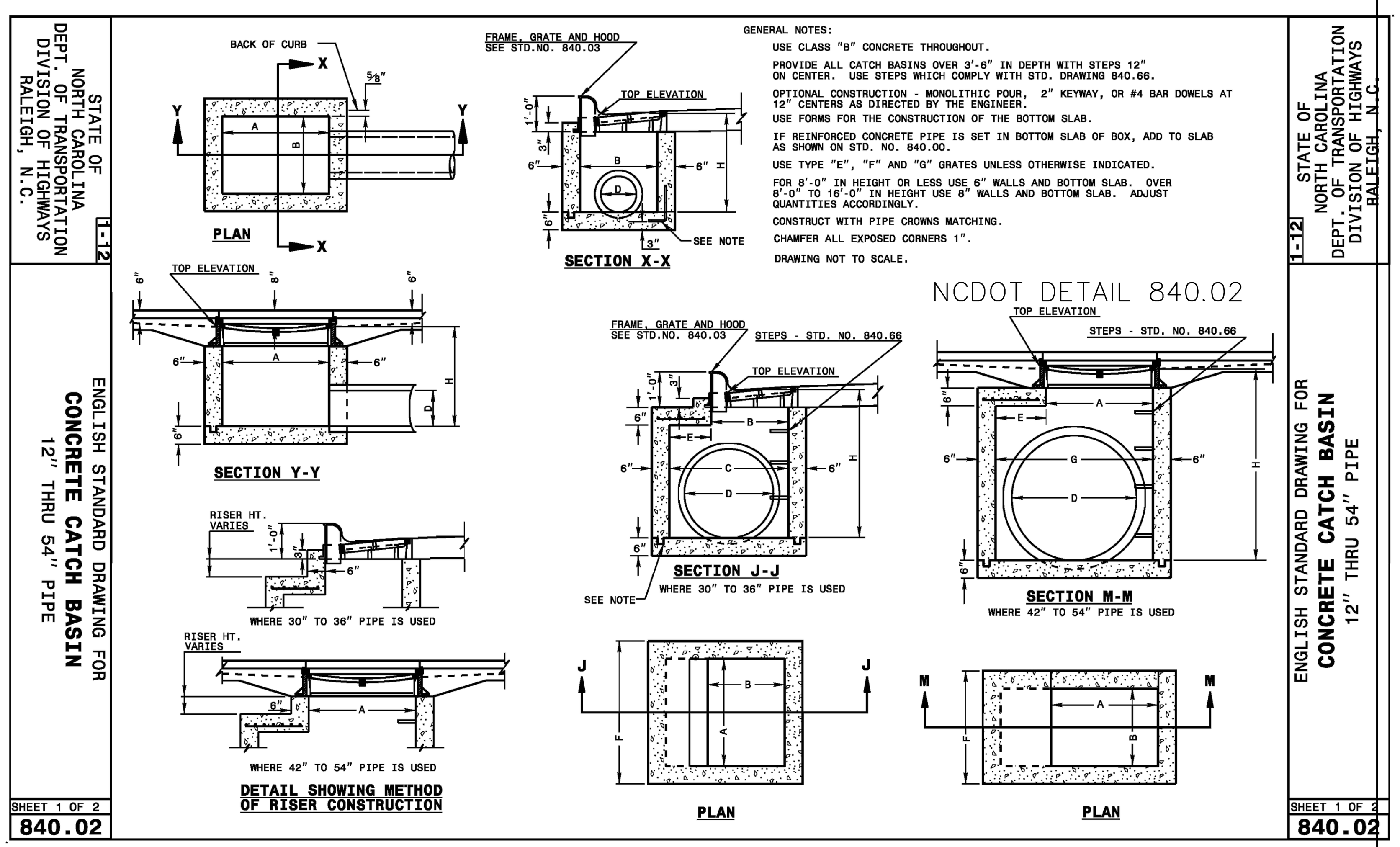
GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

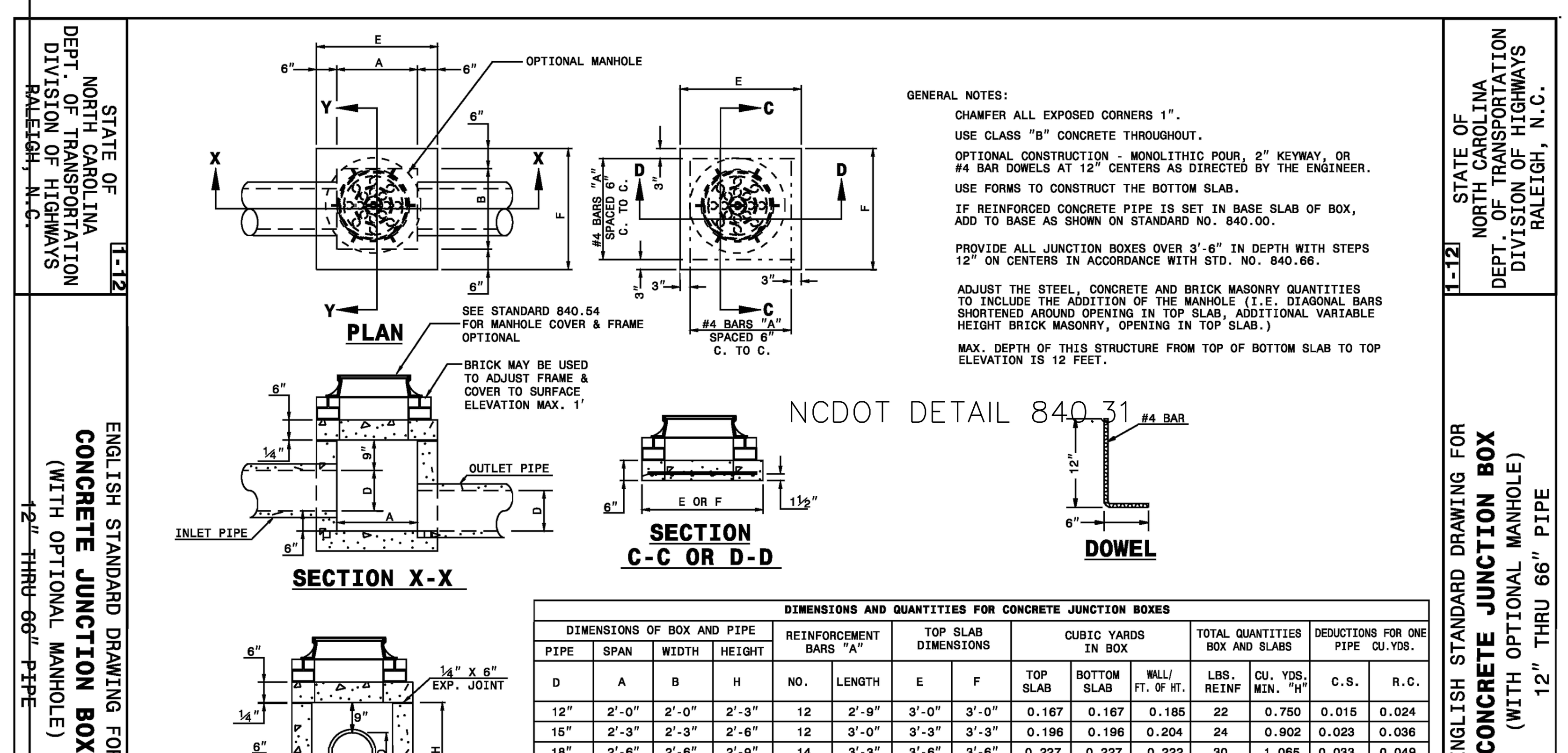
Sheet No. C-8



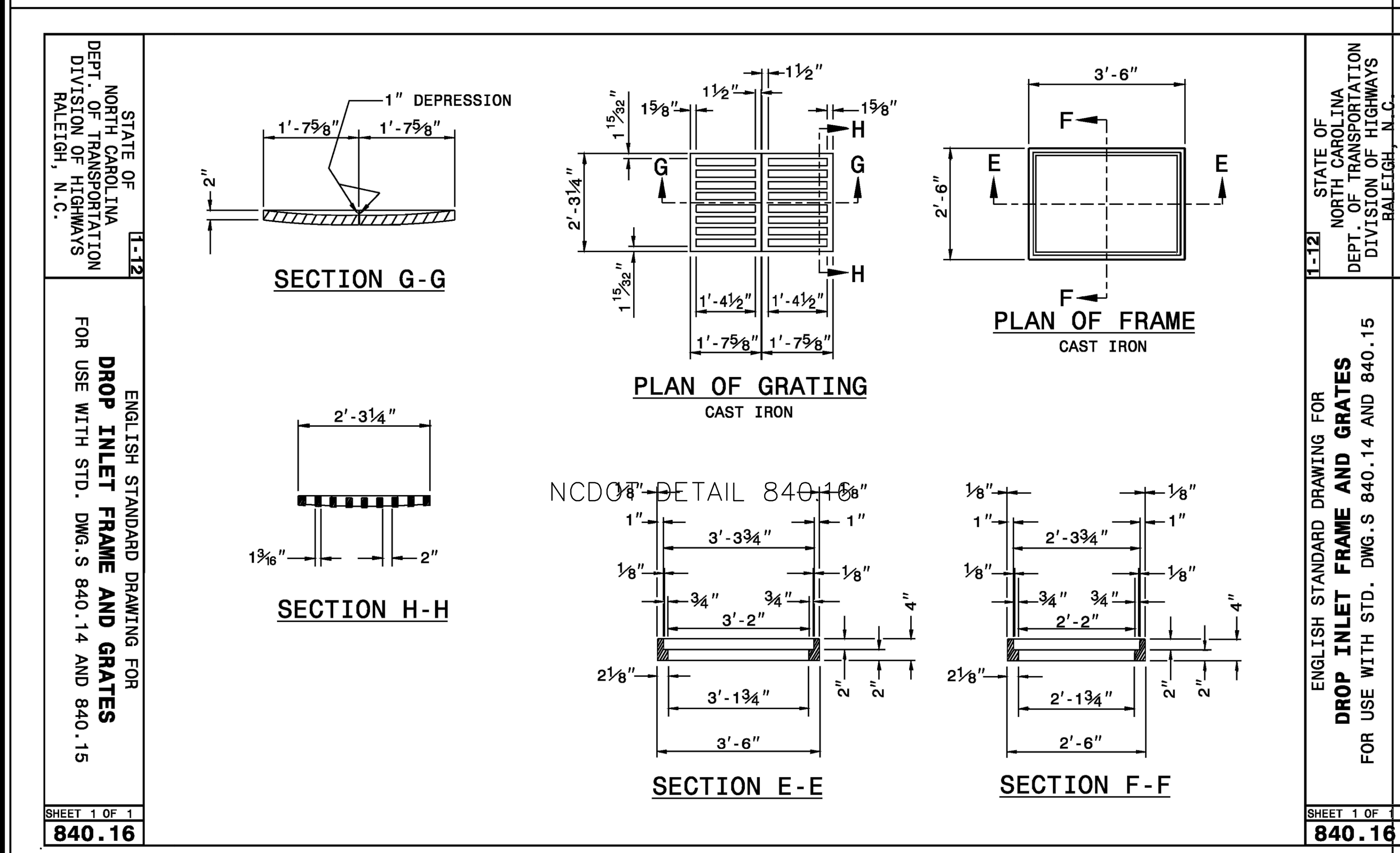


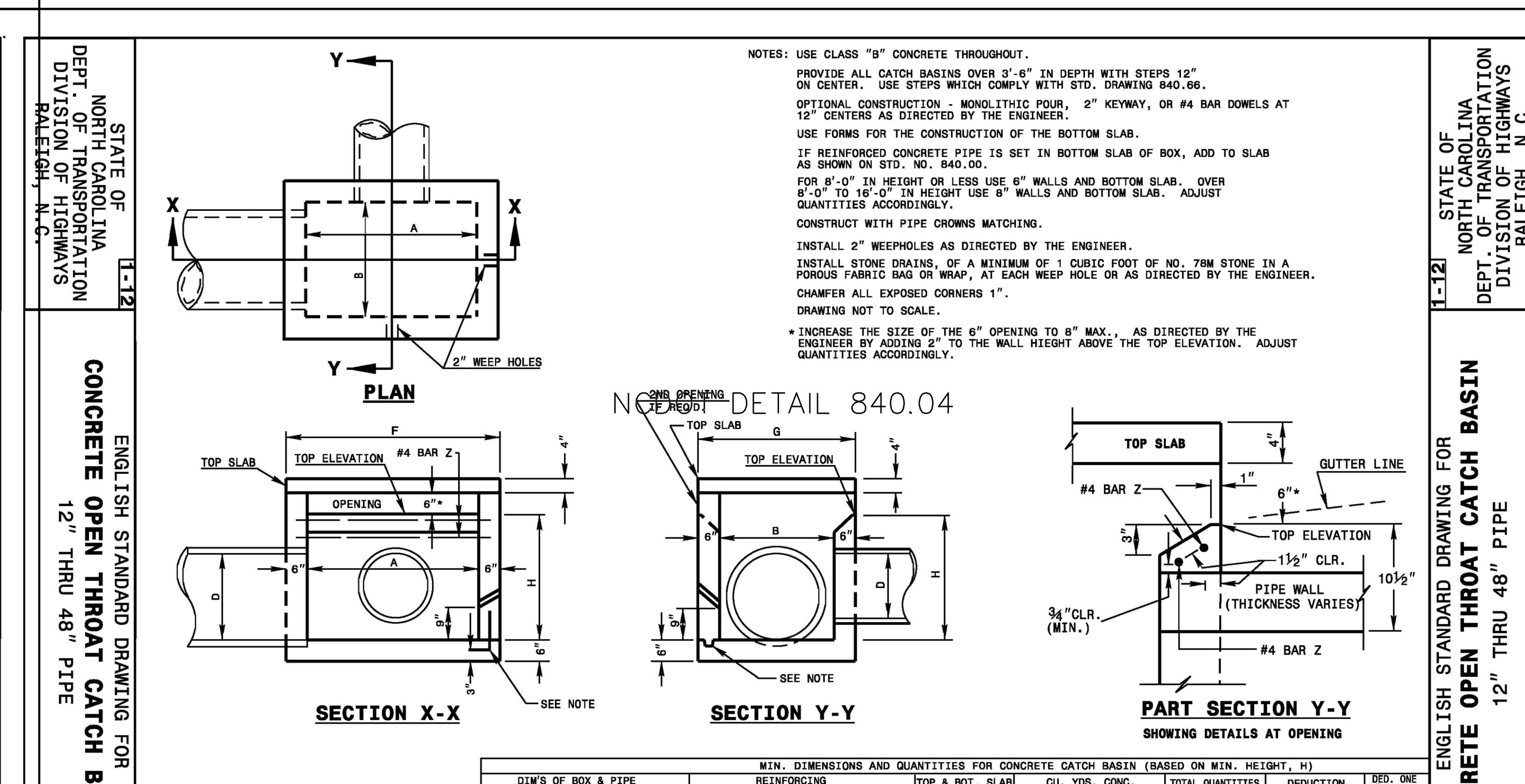






DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES														
DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE D	SPAN A	WIDTH B	HEIGHT H	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL/ 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	0.049
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 6" THROAT OPENING
PIPE	SPAN	WIDTH	HEIGHT	BARS - X		BARS - Y		BARS - Z											
D	A	B	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	F	G	TOP SLAB	BOT. SLAB	WALL/FT. HT.	LBS. REINF.	YD^3 (MIN H)	C.S.	R.C.	YD^3
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'-8"	2'-4"	5	3'-5"	7	4'-9"	2	4'-9"	5'-0"	3'-8"	0.226	0.340	0.284	35	1.379	0.033	0.049	0.053
24"	4'-0"	2'-8"	2'-10"	5	3'-5"	7	4'-9"	2	4'-9"	5'-0"	3'-8"	0.226	0.340	0.284	35	1.521	0.059	0.085	0.053
30"	4'-0"	3'-6"	3'-4"	5	4'-3"	9	4'-9"	2	4'-9"	5'-0"	4'-6"	0.278	0.417	0.315	43	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

STORM TABLE

FROM	TO	LENGTH (ft)	DIAMETER (in)	SLOPE (%)	INV. DN (ft)	INV. UP (ft)	RIM (ft)	MATERIAL	STRUCTURE
2	1	47	15	3.50	12.50	13.73	18.97	HDPE	CURB INLET
3	2	152	15	3.50	15.47	20.79	24.42	HDPE	CURB INLET
4	3	122	15	1.60	20.79	22.74	26.09	HDPE	CURB INLET
7	5	19	15	0.30	22.25	22.31	25.00	HDPE	DROP INLET
8	7	24	15	0.30	22.31	22.38	25.00	HDPE	DROP INLET
9	8	66	15	0.30	22.38	22.58	25.00	HDPE	DROP INLET
7	6	19	15	0.30	22.25	22.31	25.00	HDPE	DROP INLET
10	7	91	15	0.30	22.31	22.58	26.00	HDPE	DROP INLET
12	11	74	24	0.30	22.00	22.22	25.68	HDPE	CURB INLET
13	12	27	18	0.30	22.22	22.30	26.22	HDPE	MANHOLE
14	13	127	15	0.30	22.30	22.68	25.40	HDPE	CURB INLET
15	13	36	15	0.30	22.30	22.41	25.59	HDPE	CURB INLET
16	EX	82	54	0.87	6.45	7.16	14.35	RCP	EX. DI TO CI
17	16	87	24	0.30	10.20	10.46	14.47	RCP	CURB INLET
18	17	170	24	0.30	10.46	10.97	19.96	RCP	MANHOLE
19	18	24	15	1.50	15.25	15.61	19.31	RCP	CURB INLET
20	19	413	15	1.19	16.00	20.90	24.15	RCP	DROP INLET
20A	20	66	15	2.36	20.90	22.46	25.71	RCP	DROP INLET
20B	20A	97	15	0.50	22.46	22.94	26.21	RCP	DROP INLET
21	18	134	18	2.17	11.25	14.16	24.66	HDPE	MANHOLE
22	21	170	18	2.17	14.16	17.85	27.37	HDPE	MANHOLE
23	22	125	18	3.27	17.85	21.93	25.00	HDPE	OUTLET BOX
24	21	7	15	3.00	22.29	22.50	25.50	HDPE	OUTLET BOX
25	22	66	15	1.00	23.14	23.80	27.50	HDPE	MANHOLE
26	25	53	15	1.00	23.80	24.33	27.75	HDPE	MANHOLE
27	26	34	15	1.00	24.33	24.67	26.20	HDPE	OUTLET BOX
28	25	25	15	0.50	24.32	24.45	26.53	HDPE	OUTLET BOX
30	29	59	15	0.30	18.25	18.43	28.50	HDPE	MANHOLE
31	30	42	15	0.30	18.43	18.55	27.50	HDPE	MANHOLE
32	31	69	15	0.30	18.55	18.76	25.90	HDPE	OUTLET BOX

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:__________ Permit #__________________
Signed: ______________________________

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE 06/17/2016

No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

STANDARD DETAILS

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No. C-9

GENERAL NOTES

□. In accordance □ith N.C.G.S. □3□□□.□□, all street curbs being constructed or reconstructed shall provide □heelchair ramps for the physically handicapped on each side of any street or road, □here curbs and side□al□s are provided and at other major points of pedestrian flo□.
2. Wheelchair ramps shall be located as indicated in detail dra□ings□ho□ever, e□isting light poles, fire hydrants, drop inlets, etc. may affect placement.
3. Curb ramps shall have detectable □arnings e□tending the full □idth of the ramp and a minimum of 2□ft. in length.

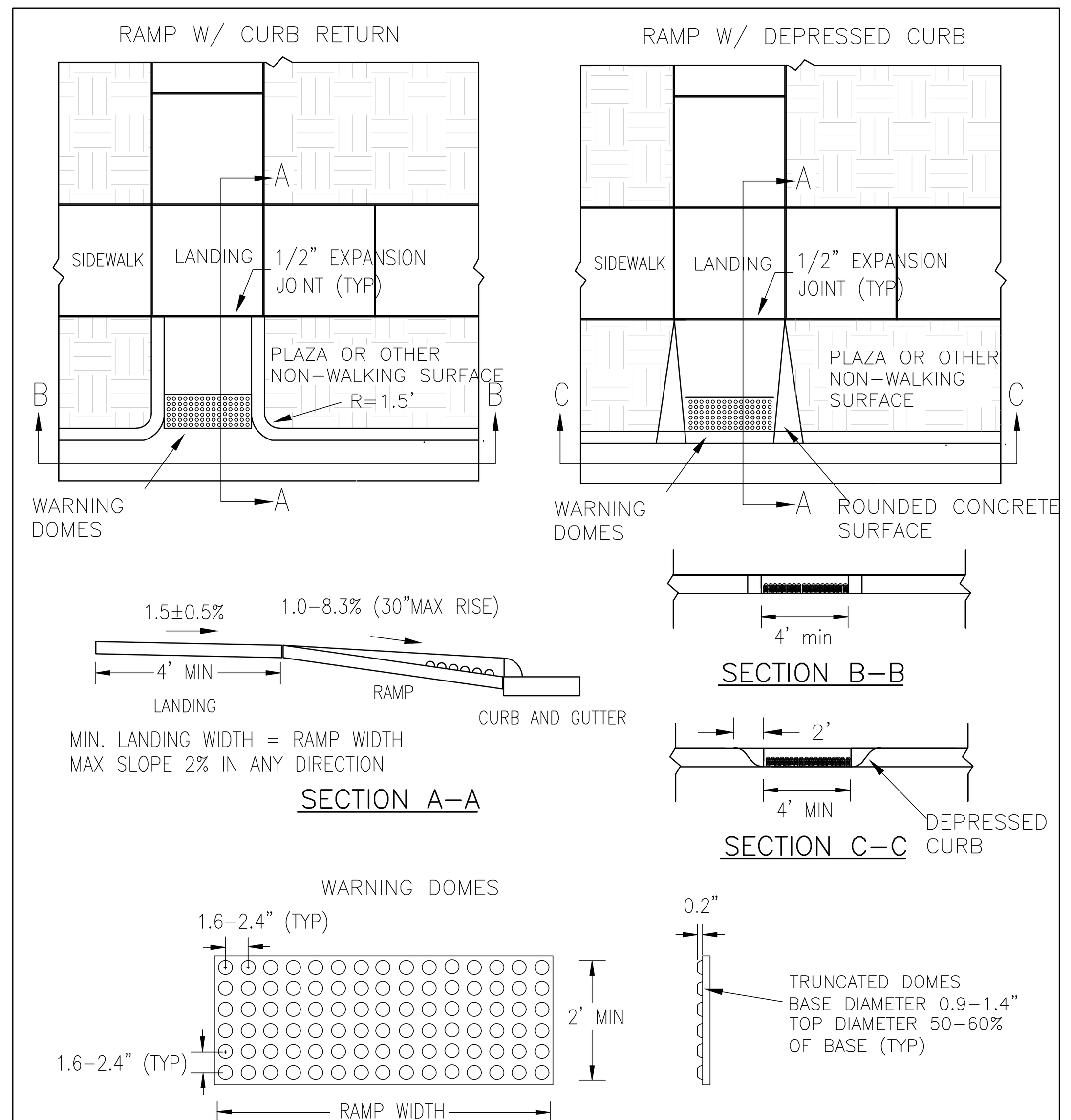
CONSTR□CTION NOTES

□. Construction shall conform □ith construction standards of the governing body □hich has jurisdiction of the particular street.
2. Wheelchair ramps shall be constructed of Class “A” concrete □ith the surface having a rough, non□s□id type finish.
3. A ½-in. e□pansion joint shall be required □here the concrete □heelchair ramp joins any rigid pavement or structure.
□. In no case shall the □idth of a curb ramp or curb cut be less than □□in. □3□ft, □in.□, not including the flared sides.
5. Transitions from ramps to □al□s, gutters or streets shall be flush and free of abrupt changes.
□. The ma□imum slope on the curb ramp run is □:□2.
□. The ma□imum cross slope of the curb ramp is □:5□.
□. Ma□imum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not e□ceed □:2□.
□. Any raised islands in crossings shall be cut through level □ith the street or have curb ramps at both sides and a level area at least □□in. long bet□een the curb ramps.
□□. Detectable □arnings shall consist of raised truncated domes □ith a diameter of nominal □.□in., a height of nominal □.2□in. and a center□to□center spacing of nominal 2.35□in. and shall contrast visually □ith adjoining surfaces, either light□on□dar□, or dar□□on□light.

ADDITIONAL NOTES

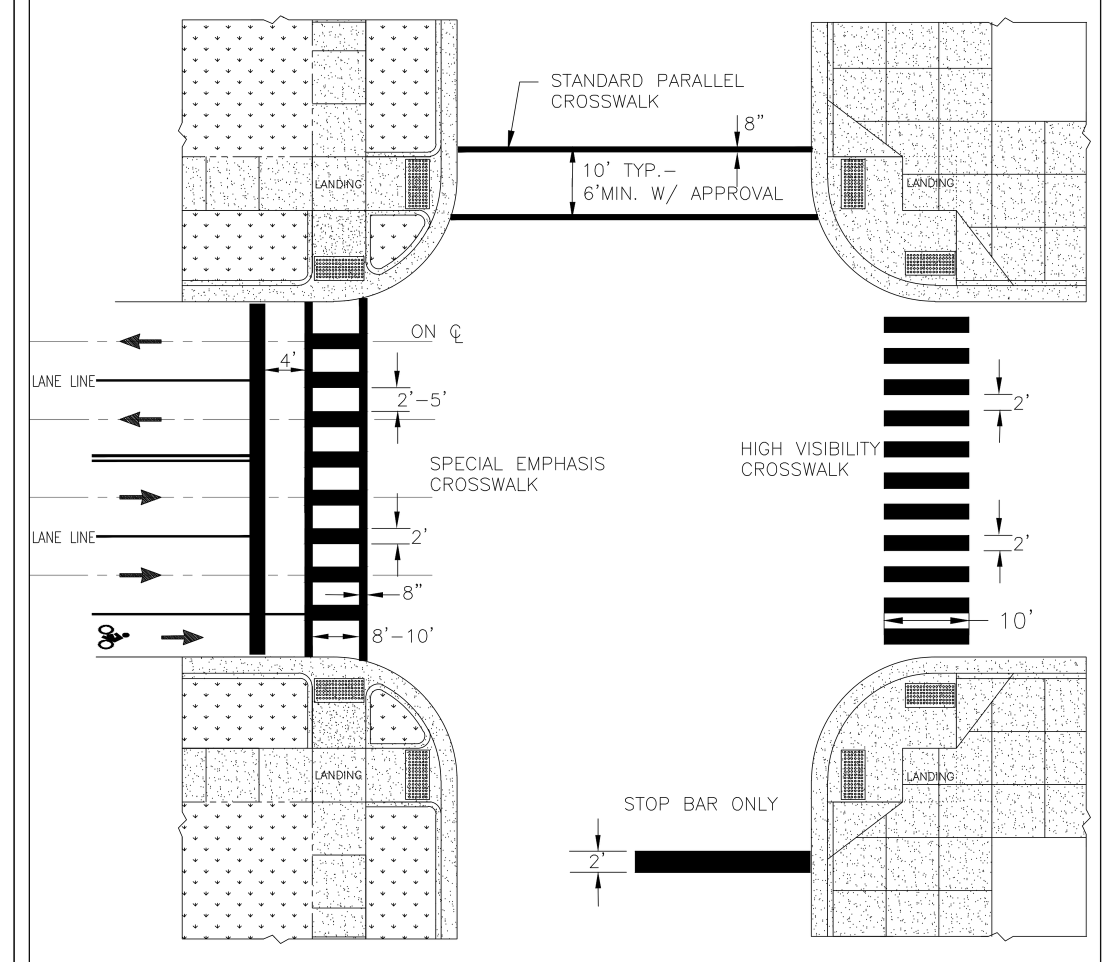
□. Stop bars shall be used □here it is important to indicate the point behind □hich vehicles are required to stop in compliance □ith a traffic signal, stop sign or other legal requirement.
2. Par□ing shall be eliminated a minimum of 2□feet bac□of the pedestrian cross□al□.
3. All pavement mar□ings shall be in accordance □ith the latest edition of the Manual of □niform Traffic Control Devices, published by the Federal High□ay Administration. This document is available from the Superintendent of Documents, □.S. Government Printing Office, Washington, D.C. 2□□□2.
□. Curb ramps at mar□ed crossings shall be □holly contained □ithin the mar□ings, e□cluding any flared sides.
5. The bottom of diagonal □corner type□curb ramps at mar□ed crossings shall have □□□in. minimum clear space □ithin the mar□ings.
□. If diagonal curb ramps have flared sides, they shall have at least a 2□□in. long segment of straight curb located on each side of the curb ramp and □ithin the mar□ed crossing.

SD □□□□



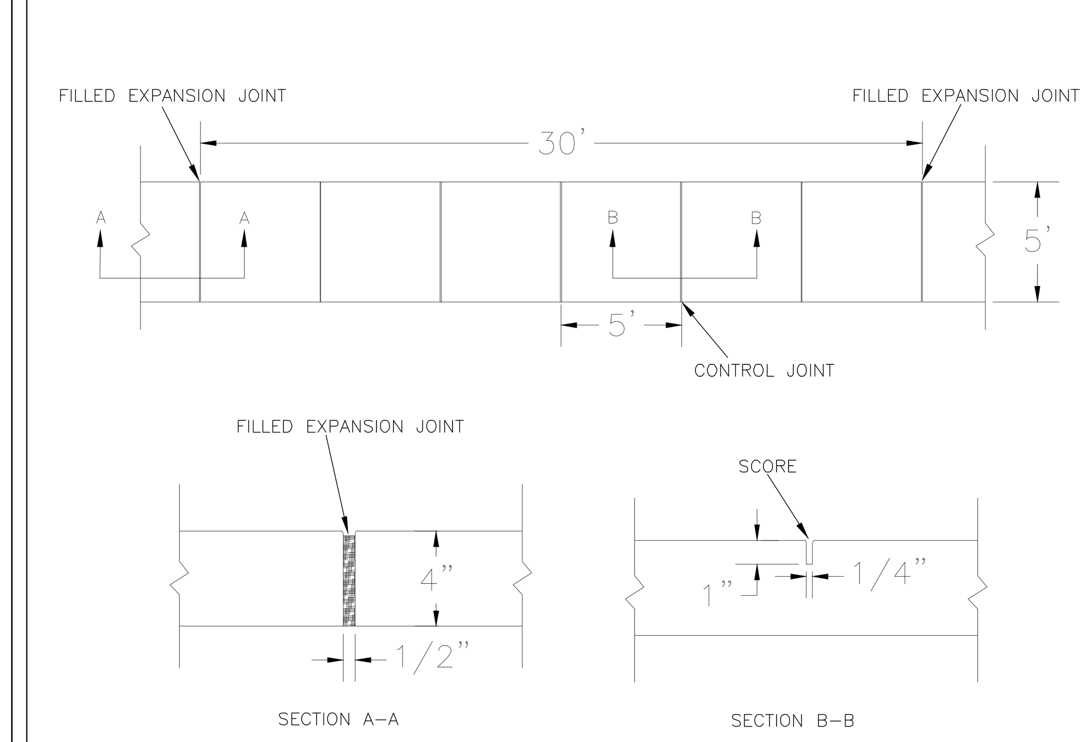
WARNING DOME NOTES:
1. USE CONTRASTING COLORS, RED OR BLACK ON WHITE PAVEMENT.
2. USE CAST IN PLACE PAVERS FOR NEW CONSTRUCTION.
3. RUBBER MATS ARE PERMITTED FOR RETROFITS.
4. LANDING AND RAMP WIDTH MAY BE REDUCED TO 3' WHERE SPACE IS LIMITED AND DESIGN IS APPROVED BY THE CITY ENGINEER.

	STANDARD DETAIL	
DATE: DECEMBER, 2□□□ DRAWN: PB/JSR CHEC□ED: DEC SCALE NOT TO SCALE	PERPENDIC□LAR C□RB RAMP ADJACENT TO PLA□A	CITY OF WILMINGTON NORTH CAROLINA CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807 SD3□□□



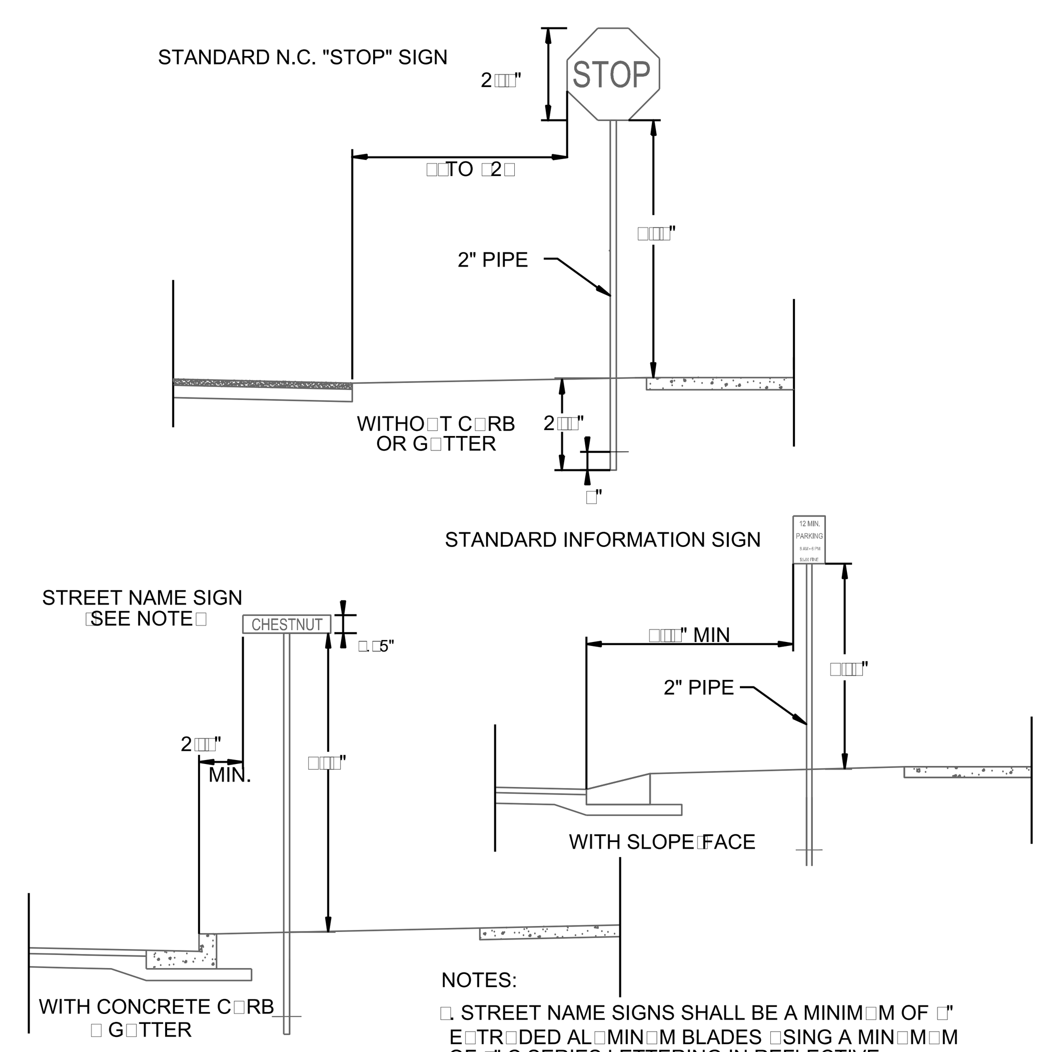
1-TYPICAL CROSSWALK DIMENSIONS ARE PROVIDED FOR REFERENCE. ALL APPLICATIONS SHALL CONSIDER PEDESTRIAN, BICYCLE AND TRAFFIC CONDITIONS AND ARE SUBJECT TO ADA GUIDELINES AND MATERIAL SPECIFICATIONS. LAYOUTS SHALL BE DIRECTED BY THE ENGINEER.
2-GENERALLY, STANDARD PARALLEL CROSSWALKS TO BE USED AT SIGNALIZED INTERSECTIONS OR WHERE CROSSWALK TRAFFIC OR CONFLICT POINTS ARE AVERAGE. SPECIAL EMPHASIS CROSSWALKS AND HIGH VISIBILITY CROSSWALKS ARE NEEDED AT BUSY SIGNALIZED INTERSECTIONS AND WHERE BICYCLE AND PEDESTRIAN TRAFFIC REQUIRES INCREASED VISIBILITY.

	STANDARD DETAIL	
DATE: FEBR□ARY, 2□□2 DRAWN BY JSR CHEC□ED BY BDR, P.E. SCALE NOT TO SCALE	CROSSWAL□ PAVEMENT MAR□INGS	CITY OF WILMINGTON NORTH CAROLINA CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807 SD □□□□□



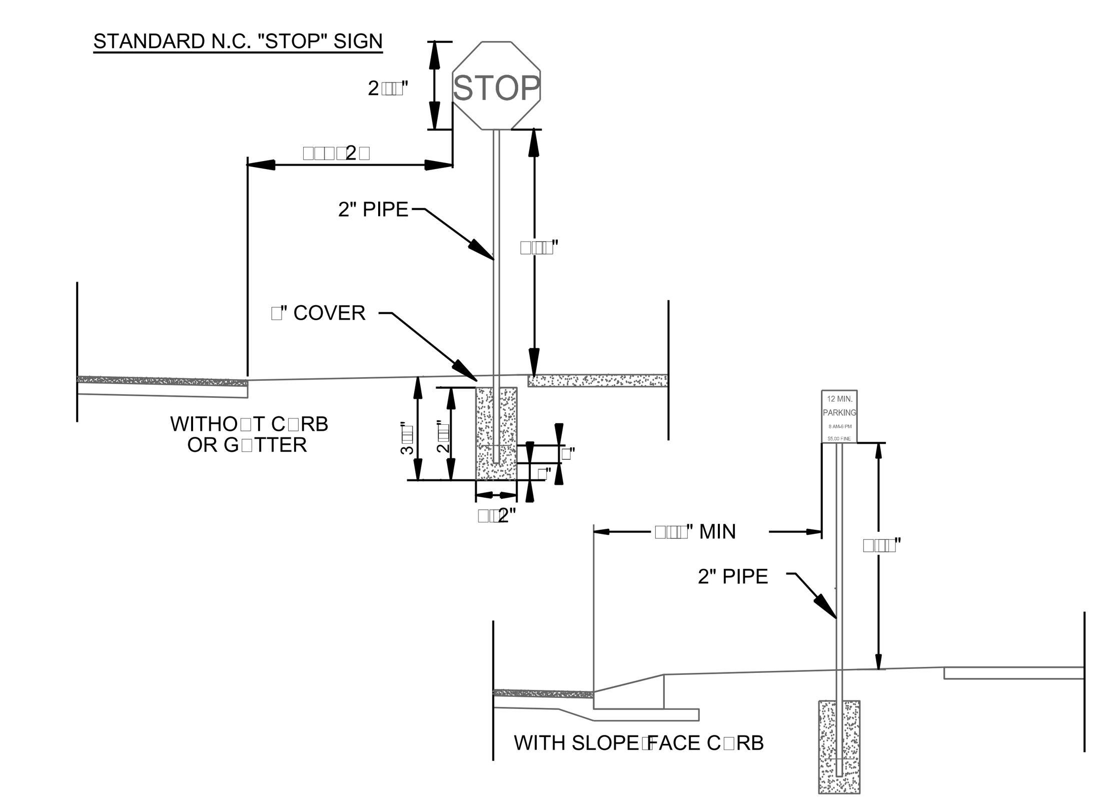
NOTES:
1. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3,000 PSI.
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

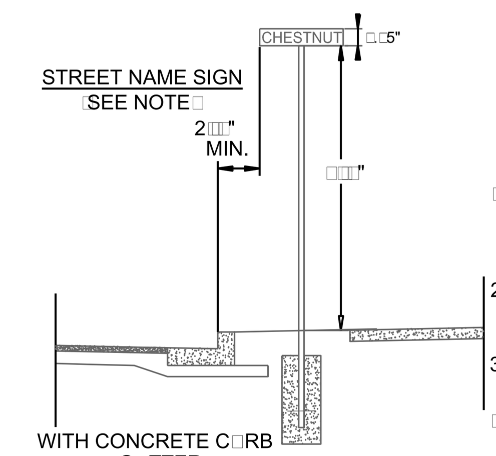
	STANDARD DETAIL	
DATE: OCTOBER, 2□□□ DRAWN: PB/JSR CHEC□ED: DEC SCALE NOT TO SCALE	SIDEWAL□	CITY OF WILMINGTON NORTH CAROLINA CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807 SD 3□□□



NOTES:
□. STREET NAME SIGNS SHALL BE A MINIM□M OF □" E□TR□DED AL□MIN□M BLADES □SING A MIN□M□M OF □" C SERIES LETTERING IN REFLECTIVE SILVER □ REFLECTIVE GREEN BAC□GRO□ND.
2. ALL REFLECTIVE SIGNS SHALL BE MADE OF ENGINEERING GRADE OR HIGH INTENSITY GRADE REFLECTIVE SHEETING OR APPROVED EQ□IVALENT.
3. ALL SIGNS PLACED IN RIGHT□OF□WAY WILL BE APPROVED BY TRAFFIC ENGINEERING DIVISION.
□. ALL FOOTINGS TYPICAL FOR ALL SIGNS, WHICH NEED TO BE ANCHORED IN CONCRETE.

STANDARD SIGN INSTALLATION LOCATION
SD □5□□□
NOT TO SCALE





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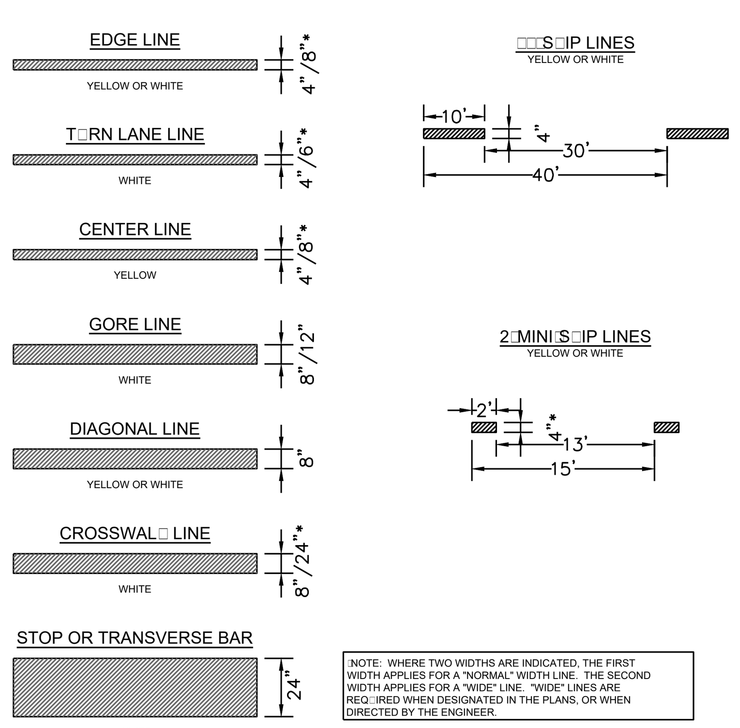
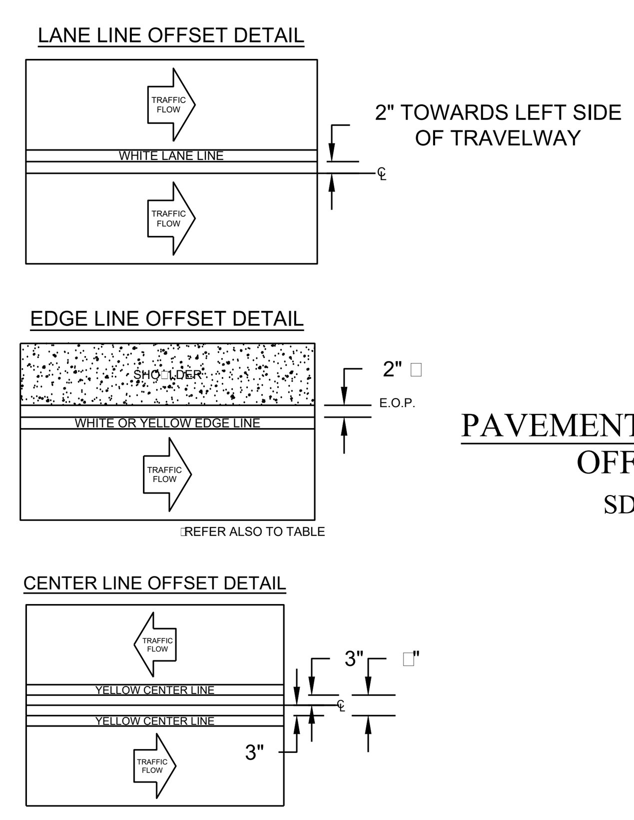
STANDARD SIGN INSTALLATION LOCATION
SD □5□□3
NOT TO SCALE



□NOTE: WHERE TWO WIDTHS ARE INDICATED, THE FIRST WIDTH APPLIES FOR A "NORMAL" WIDTH LINE. THE SECOND WIDTH APPLIES FOR A "WIDE" LINE. "WIDE" LINES ARE REQ□IRED WHEN DESIGNATED IN THE PLANS, OR WHEN DIRECTED BY THE ENGINEER.

PAVEMENT MARKINGS
LINE TYPES
SD 11-01
N.T.S.



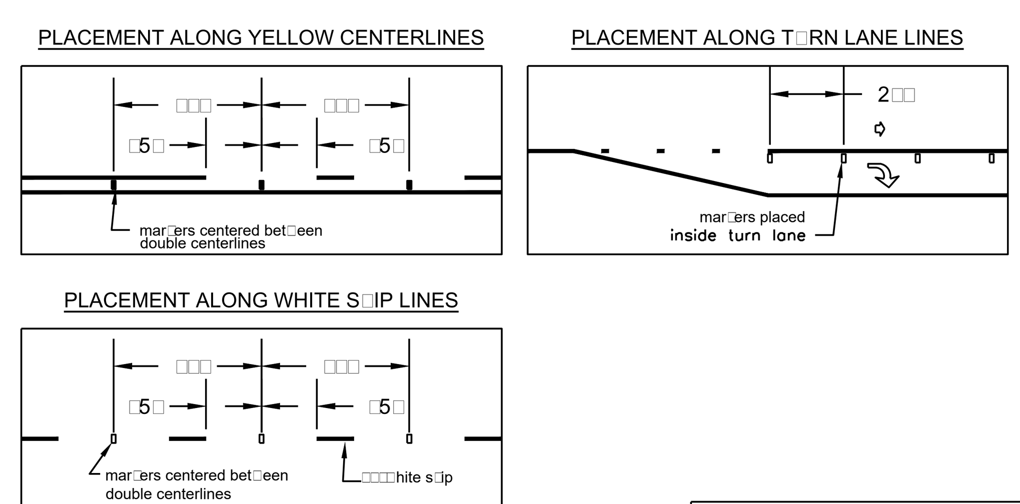
PAVEMENT MARKINGS
OFFSETS
SD 11-02

TABLE □		
EDGE LINE OFFSETS FOR 2□LANE, 2□WAY ROADWAYS WITH □N□PAVED SHO□LDERS		
WIDTH OF TRAVEL PAVEMENT	MA□. EDGE LINE OFFSET FROM E. O. P.	MINIM□M LANE WIDTH
□□□□2□□	2"	□□□□□□
22□	2"	□□□
2□□	□□	□□□
2□□	2□	□□□
2□□	2□	□2□
3□□	3□	□2□
32□	□□	□2□

PAVEMENT MARKER SPACING CHART	
TYPE OF PAVEMENT MAR□ING	TYPICAL SPACING in FT □speed limit □□ □5mph□
Centerlines□along through lanes	□□
Centerlines□along hori□ontal curves	per Traffic Engineering
S□ip Lines□along through lanes	□□
Turn Lanes□S□ip Lines	□□
Turn Lanes□Solid Lane Lines	2□
Turn Lanes□Centerlines	□□
Painted Islands□White	2□
Painted Islands□Yello□	□□
Raised Median Islands	□□
Other Mar□ings	per Traffic Engineering

GENERAL NOTES

□CRYSTAL/RED MAR□ERS SHALL BE □SED ALONG WHITE PAVEMENT MAR□INGS □NLESS OTHERWISE DIRECTED BY TRAFFIC ENGINEERING. RED SIDE OF MAR□ER TO FACE "WRONG□WAY" TRAFFIC.
□PAVEMENT MAR□ERS SHO□LD NOT BE PLACED CLOSER THAN 2 INCHES TO A PAVEMENT CONSTR□CTION JOINT, E□CEPT WHEN PLACED BETWEEN DO□BLE YELLOW CENTERLINES.
□PAVEMENT MAR□ERS SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MAR□INGS.
□PAVEMENT MAR□ERS □SED IN CONJ□NCTION WITH DO□BLE YELLOW CENTERLINES SHALL BE PLACED MID□WAY BETWEEN THE LINES, WITH A GAP BETWEEN MAR□ER AND MAR□INGS.



PAVEMENT MARKINGS
RAISED PAVEMENT MARKERS
SD 11-10

LEGEND
- DIRECTION OF TRAFFIC FLOW
- AMBER / AMBER MAR□ER
- CRYSTAL / RED MAR□ER

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:____________ Permit #____________
Signed: ____________

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE 06/17/2016

No.	Revision	Date	By

Designer GSP	Scale NO SCALE
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

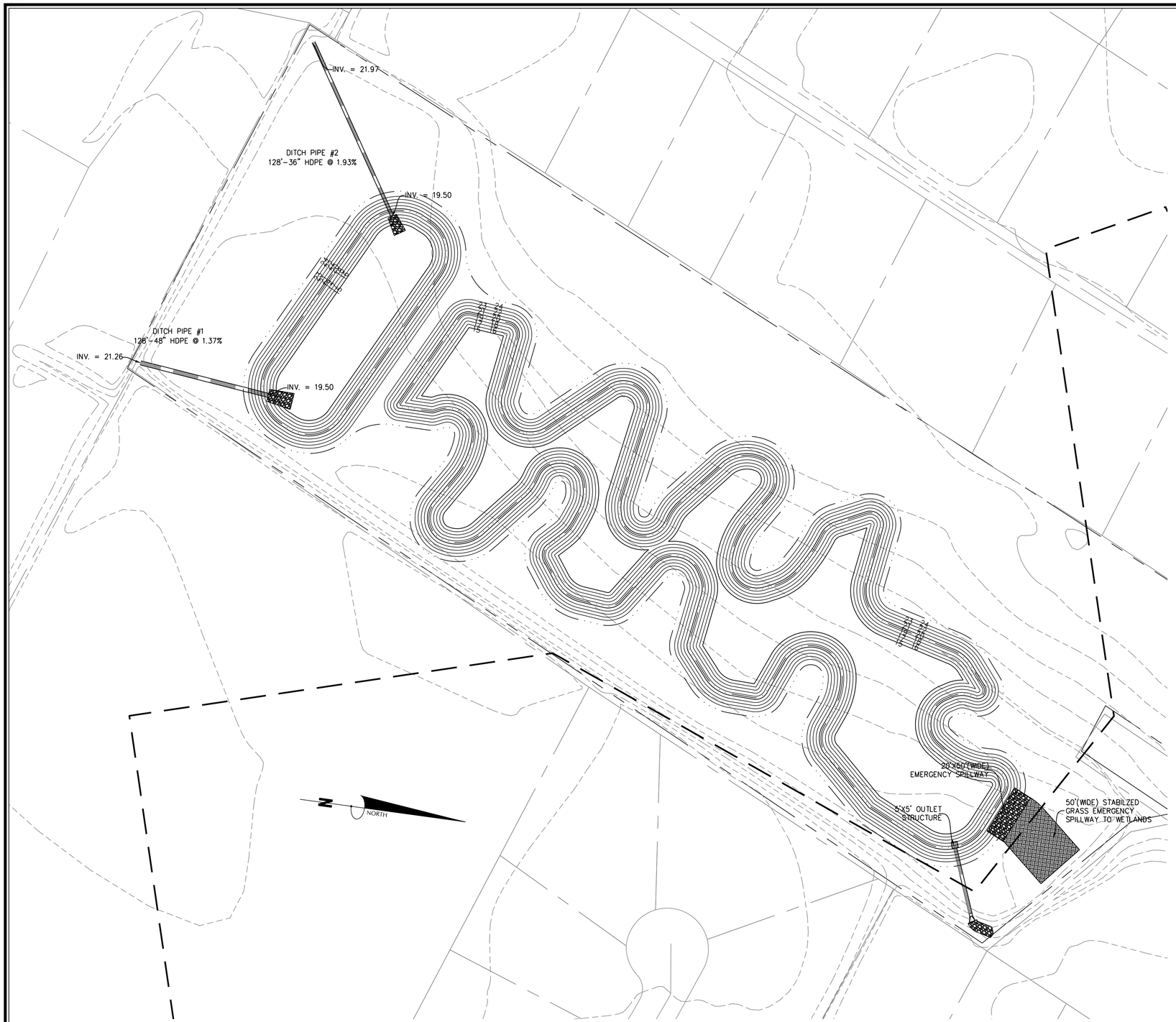
SUMMERWALK - PHASE 1
Wilmington New Hanover County North Carolina

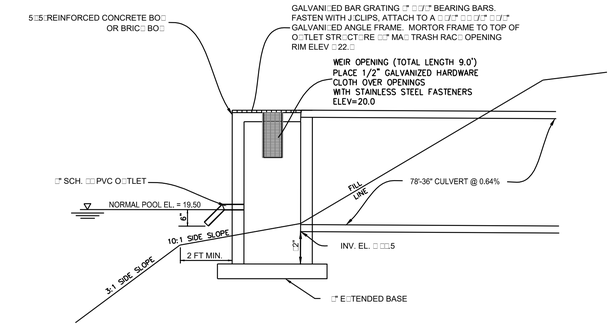
STANDARD DETAILS

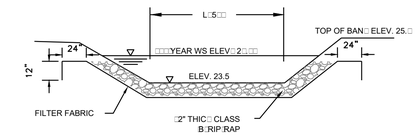
PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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







EMERGENCY SPILLWAY
N.T.S.

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

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
06/17/2016

GRAPHIC SCALE
50 0 25 50 100
1 inch = 50 ft.

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

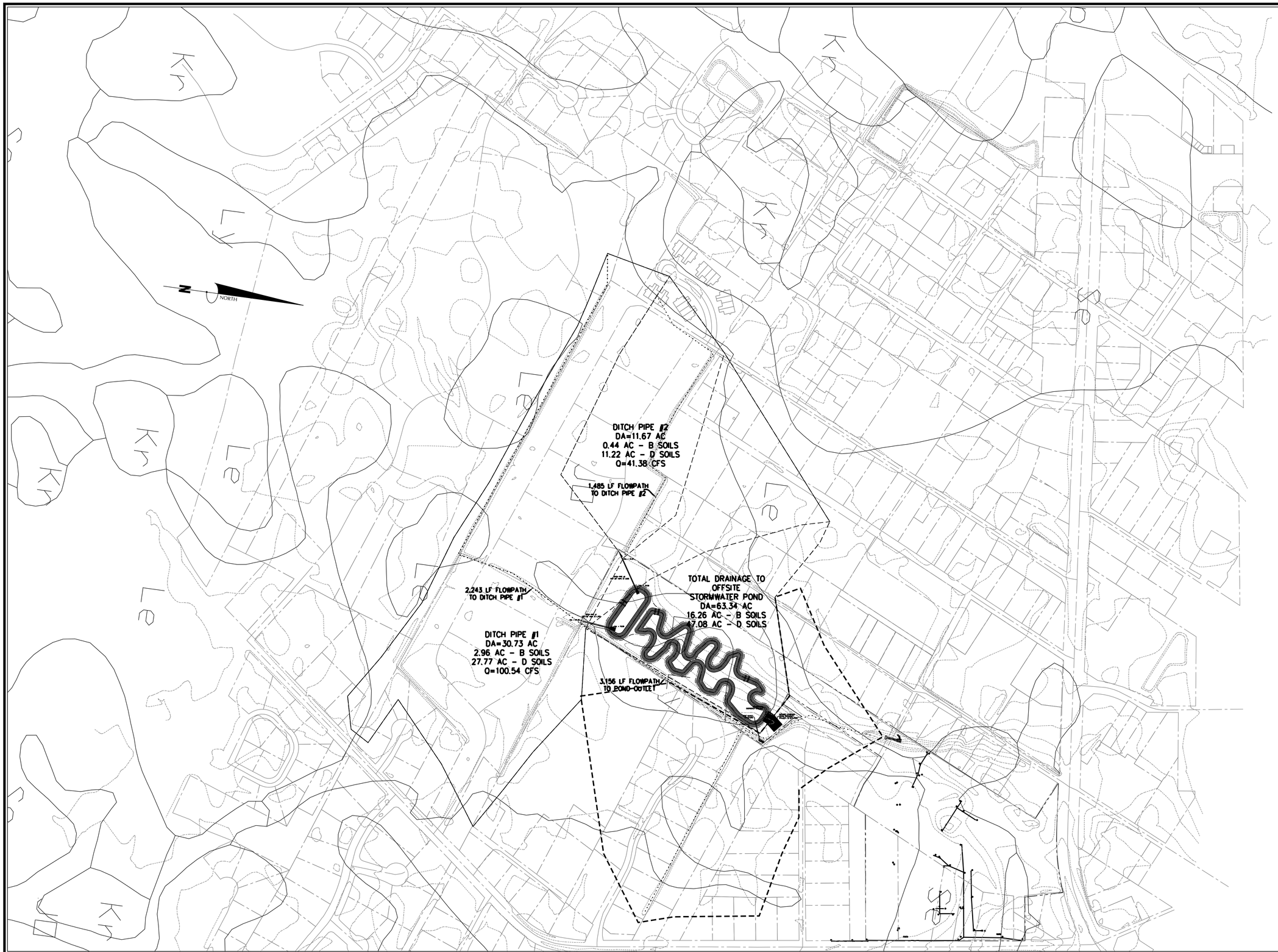
Wilmington New Hanover County North Carolina

OFFSITE STORMWATER POND PLAN & DETAILS

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No.
C-11.1



Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date:_____ Permit #_____

Signed: _____

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

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE

06/17/2016

GRAPHIC SCALE

200 0 100 200 400

1 inch = 200 ft.

No.	Revision	Date	By

Designer GSP	Scale 1" = 200'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

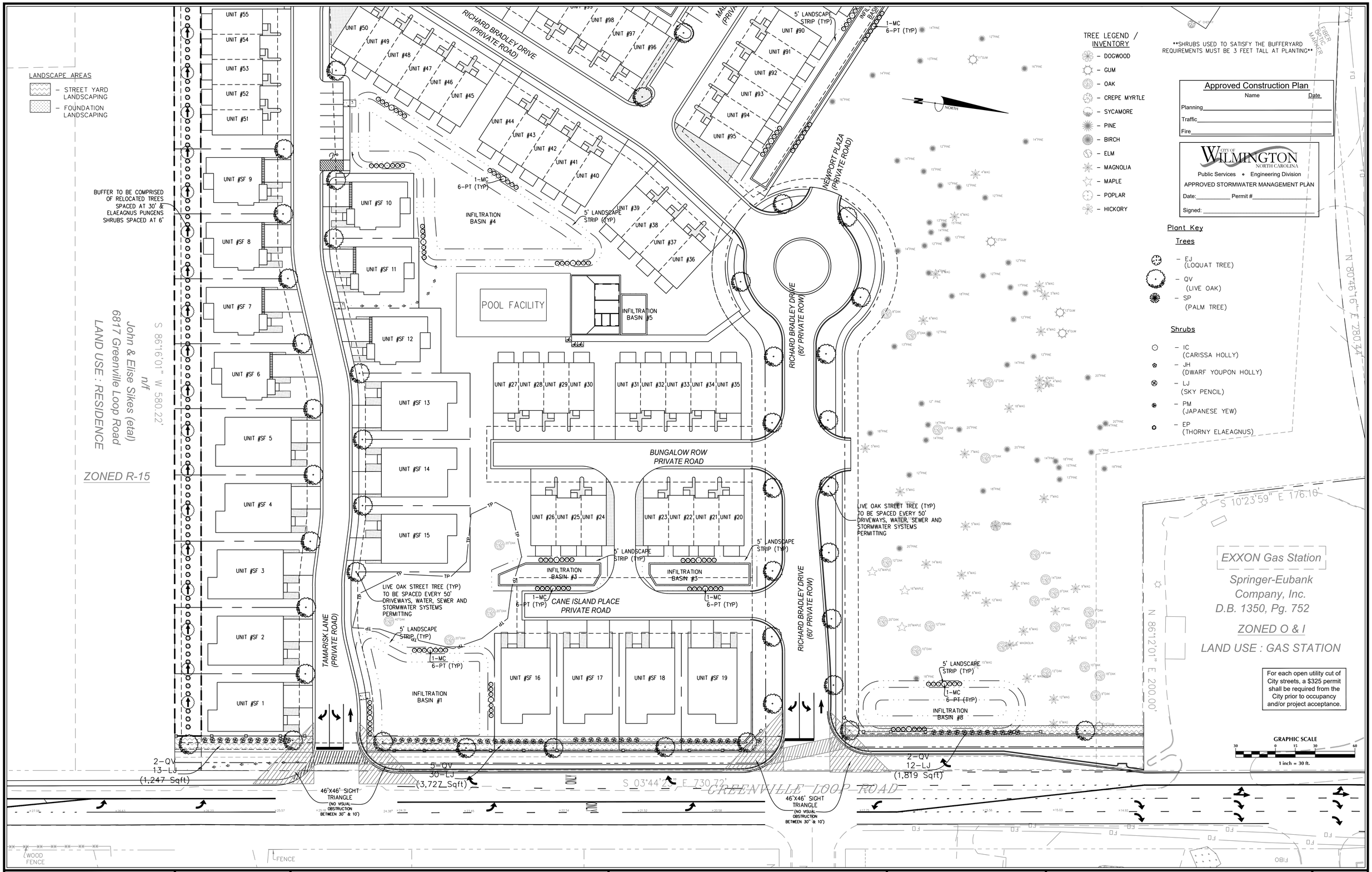
OFFSITE DRAINAGE MAP

PREPARED FOR:

Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No.
C-11.2



No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

LANDSCAPE PLAN

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No. **L-1**

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

Approved Construction Plan

Name Date

Planning_____

Traffic_____

Fire_____

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date:_____ Permit #_____

Signed: _____

LANDSCAPE NOTES:

1. EXISTING REGULATED & SIGNIFICANT TREES HAVE BEEN LOCATED BY FIELD SURVEY.
2. KEY LETTERS REFER TO PLANT LIST.
3. ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM STANDARDS SET FORTH IN "THE AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANTING BEDS SHALL RECEIVE A MIN. OF 4" MULCH.
5. ALL AREAS DISTURBED AND NOT SPECIFIED AS PLANTING BEDS WILL BE GRASSED.
6. SOLID WASTE WILL BE BY CURBSIDE PICKUP.
7. ALL MECHANICAL EQUIPMENT, INCLUDING ANY ROOFTOP EQUIPMENT, SHALL BE SCREENED.
8. CONTRACTOR SHALL USE WHATEVER METHOD OF TREE STAKING HE DEEMS FIT. HOWEVER, HE WILL BE HELD LIABLE FOR ANY DAMAGES CAUSED TO TREES BY IMPROPER STAKING METHODS (OR ABSENCE OF STAKING) AND IS RESPONSIBLE FOR UPRIGHT AND REPLANTING TREES WHICH ARE BLOWN OVER.
9. CONTRACTOR SHALL WARRANTY ALL TREES AND SHRUBS FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK OF THE LANDSCAPE PLAN.
10. IF DISCREPANCIES OR AVAILABILITIES ARE FOUND IN THE PLANT SPECIES AND/OR MIN. SIZES REQ'D., CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT. SUBSTITUTIONS MAY BE MADE WITH AUTHORIZATION AS LONG AS THE PLANTS FOLLOW THE INTENDED FORM AND FUNCTION.
11. THE USE OF FABRIC DURING INSTALLATION OF PLANTINGS IS RECOMMENDED FOR WEED CONTROL. CONTRACTOR SHALL MAKE EFFORTS TO INCLUDE AND DISCLOSE TO OWNER UPON INSTALLATION OF PLANTINGS IF LANDSCAPE FABRIC OR OTHER ALTERNATIVE IS TO BE USED.
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7. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND ALL LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.
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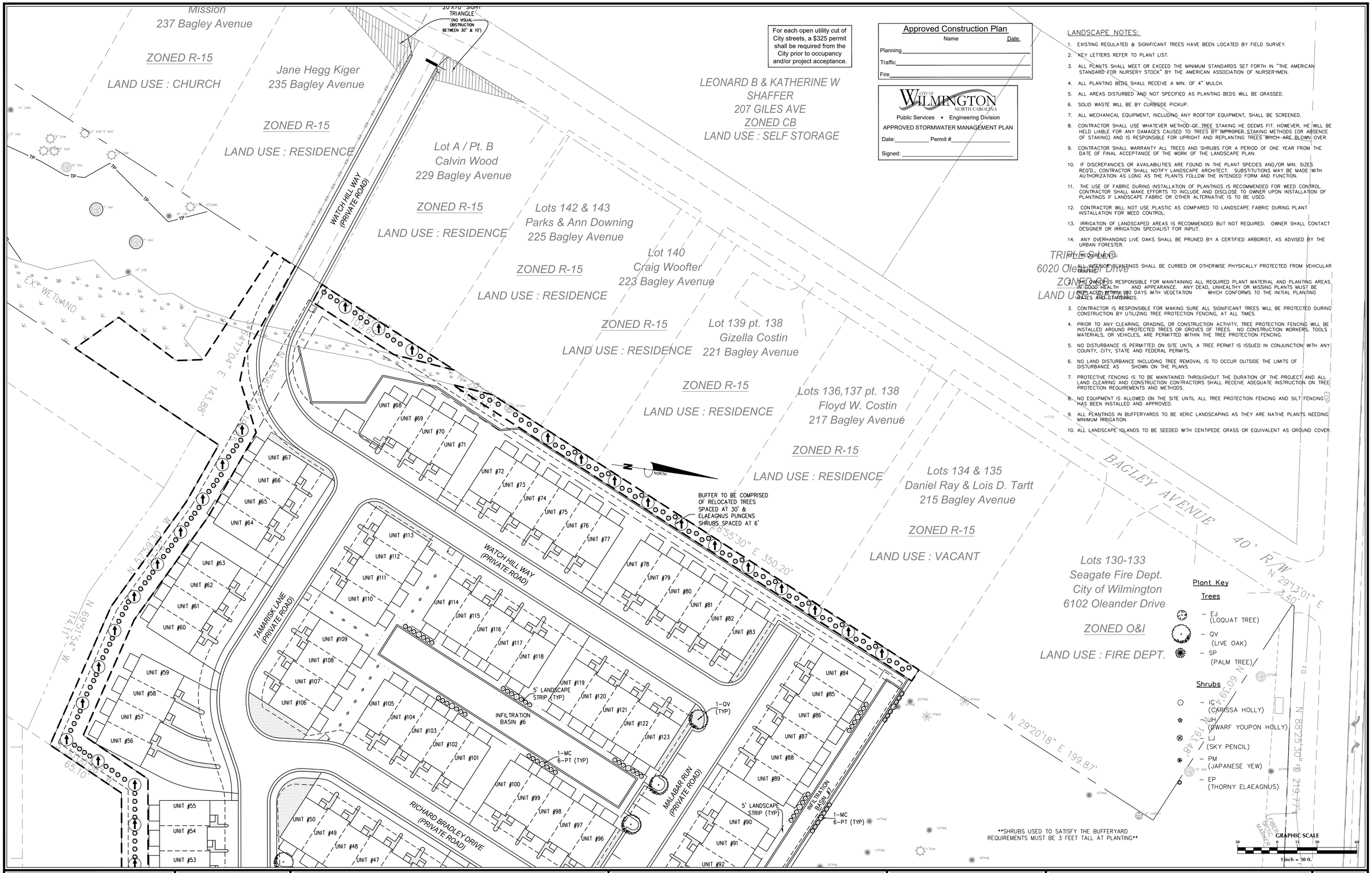


No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

LANDSCAPE PLAN

PREPARED FOR:

Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

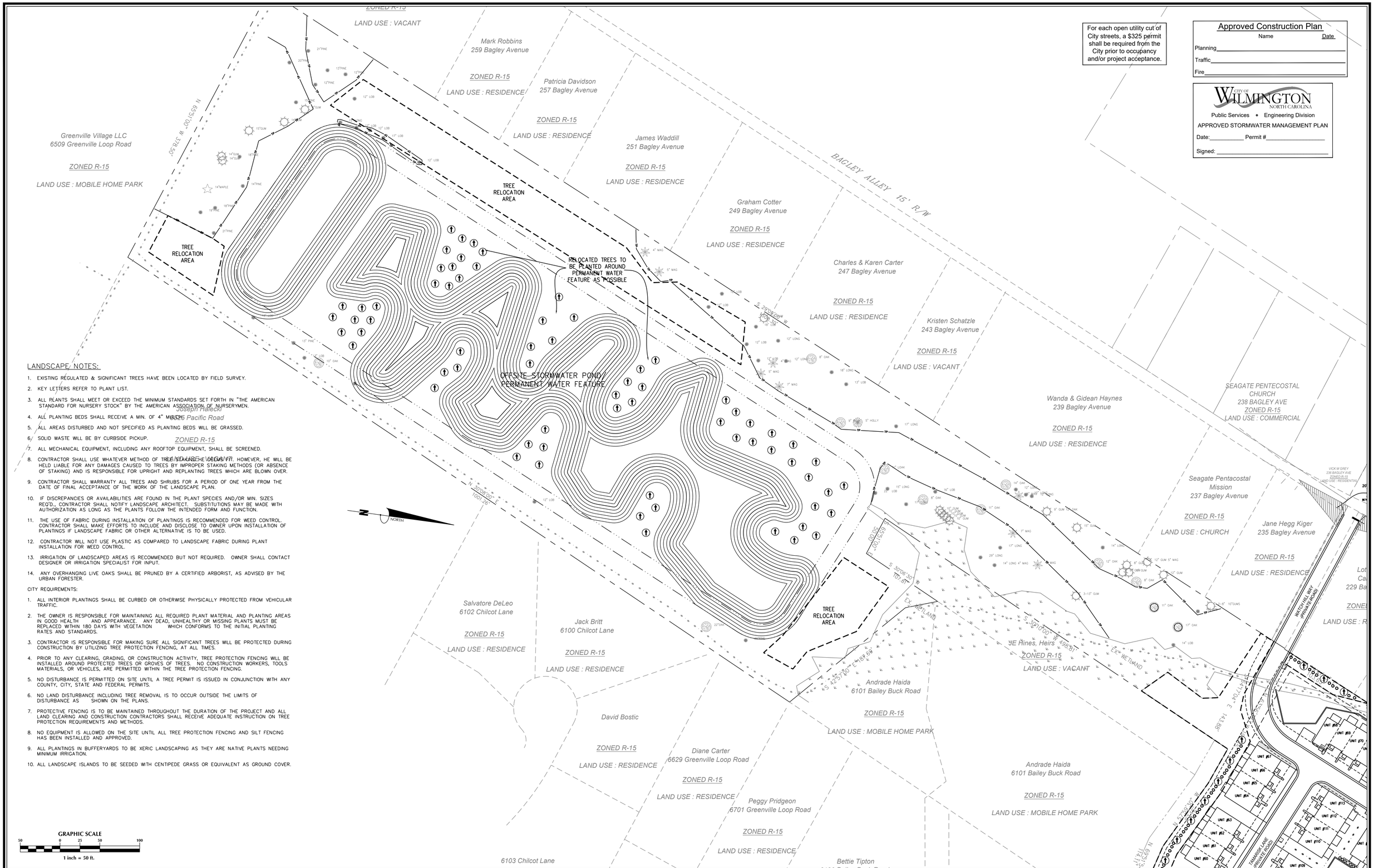
Sheet No.
L-2

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____



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No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

Wilmington New Hanover County North Carolina

LANDSCAPE PLAN

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No.
L-3

PLANT LIST–OR EQUIVALENTS

KEY	NO.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	PLANTING REMARKS
SP	120	SABAL PALMETTO	PALM TREE	8'–10' Ht.	SPACING AS SHOWN
QV	9	QUERCUS VIRGINIANA	LIVE OAK	8'–10' Ht. 2.5" CAL.	SPACING AS SHOWN
EJ	120	ERIOBOTRYA JAPONICA	LOQUAT TREE	3.4 GAL.	SPACING AS SHOWN
PM	379	PODOCARPUS MACROPHYLLUS	JAPANESE YEW	2 GAL.	SPACING AS SHOWN
IC	426	ILEX CORNUTA 'CARISSA'	CARISSA HOLLY	3 GAL.	4' O.C.
JH	104	ILEX CRENATA 'JAPANESE HOLLY'	SKY PENCIL	3 GAL.	4' O.C.
LJ	55	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	2 GAL.	4' O.C.
EP**	180	ELAEAGNUS PUNGENS	THORNY ELAEAGNUS	3' AT PLANTING	6'–8'' O.C.

O.C. – "ON CENTER" CAL. – "CALIPER AT 6'' ABOVE GRADE" GAL. – "GALLON CONTAINER"
MIN. PLANTING SIZE: SHADE TREES=2–2.5" CAL. MULTI–STEM= 8–10' SHRUBS= 12"

SHRUBS USED TO SATISFY THE BUFFERYARD REQUIREMENTS MUST BE 3 FEET TALL AT PLANTING

Plant Key

Trees

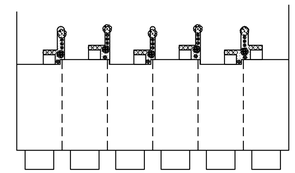
- EJ (LOQUAT TREE)
- QV (LIVE OAK)
- SP (PALM TREE)

Shrubs

- IC (CARISSA HOLLY)
- JH (DWARF YOUPON HOLLY)
- LJ (SKY PENCIL)
- PM (JAPANESE YEW)
- EP (THORNY ELAEAGNUS)

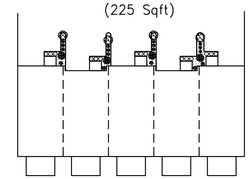
TYPICAL FOUNDATION PLANTINGS

5–EJ
15–PM
5–SP
18–IC
6–JH
(284 Sqft)



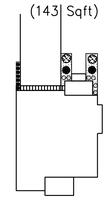
6–UNIT

4–EJ
12–PM
4–SP
15–IC
5–JH
(225 Sqft)

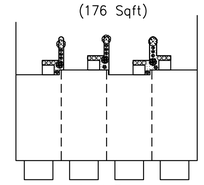


5–UNIT

2–EJ
7–PM
2–SP
6–IC
(143 Sqft)

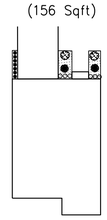


3–EJ
9–PM
3–SP
12–IC
4–JH
(176 Sqft)

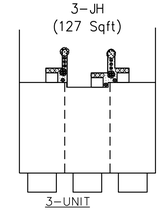


4–UNIT

2–EJ
7–PM
2–SP
6–IC
(156 Sqft)



2–EJ
6–PM
2–SP
9–IC
3–JH
(127 Sqft)



3–UNIT

Landscape Calculations:

(Note: All regulated & significant trees have been field located and are labeled.)

	Req'd.	Prov'd.
Oleander Drive Streetyard 503 l.f. frontage – 58' driveways =4451 l.f. X 18 (CB District factor) @ 1 tree / 600 s.f. @ 6 shrubs / 600 s.f.	8,010 s.f. 13 80	TO BE COMPLETED WITH PHASE 2
Greenville Loop Road Secondary Streetyard 732 l.f. frontage – 120' driveways =612 l.f. X 9 (MF District factor) @ 1 tree / 600 s.f. @ 6 shrubs / 600 s.f.	5,508 s.f. 9 55	6,793 s.f. 9 55
Bufferyards – 1,460 l.f. buffer length @ 1 tree / 30 l.f.	49	49
Foundation Plantings – TOWNHOME BUILDINGS – 2,198 l.f. X 30' facade X 12% SINGLE FAMILY HOMES – 682 l.f. X 35' facade X 12%	7,913 s.f. 2,864 s.f. 10,777 s.f. (TOTAL)	9,100 s.f. 2,873 s.f. 11,973 s.f. (TOTAL)
Overall Development Area – 20.19 ac.± Phase 1 development area x 15 trees/ac.	303	173 PROPOSED 216 EXISTING 168 RELOCATED 557 TOTAL

MITIGATION CALCULATIONS		
TREE TO BE REMOVED	DIAMETER (in)	# OF TREES REQUIRED
MAGNOLIA	12	8
MAGNOLIA	18	12
SYCAMORE	27	18
	TOTAL	38*

*EXISTING TREES 2"–5" DBH TO BE RETAINED ON SITE AND SUPPLEMENTED WITH 168 RELOCATED TREES

OFFSITE SW POND MITIGATION CALCULATIONS		
TREE TO BE REMOVED	# OF TREES	# OF TREES REQUIRED
12" MAGNOLIA	1	8
18" MAGNOLIA	1	12
11" OAK	1	4
12" OAK	1	4
13" OAK	1	4
16" OAK	1	5
12" PINE	35	70
13" PINE	7	15
14" PINE	4	9
15" PINE	2	5
16" PINE	5	13
17" PINE	1	3
18" PINE	3	9
19" PINE	1	3
21" PINE	1	4
22" PINE	1	4
25" PINE	1	4
	TOTAL	177*

*EXISTING TREES 2"–5" DBH TO BE RETAINED ON SITE AND SUPPLEMENTED WITH 168 RELOCATED TREES

LANDSCAPE NOTES:

1. EXISTING REGULATED & SIGNIFICANT TREES HAVE BEEN LOCATED BY FIELD SURVEY.
2. KEY LETTERS REFER TO PLANT LIST.
3. ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM STANDARDS SET FORTH IN "THE AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANTING BEDS SHALL RECEIVE A MIN. OF 4" MULCH.
5. ALL AREAS DISTURBED AND NOT SPECIFIED AS PLANTING BEDS WILL BE GRASSED.
6. SOLID WASTE WILL BE BY CURBSIDE PICKUP.
7. ALL MECHANICAL EQUIPMENT, INCLUDING ANY ROOFTOP EQUIPMENT, SHALL BE SCREENED.
8. CONTRACTOR SHALL USE WHATEVER METHOD OF TREE STAKING HE DEEMS FIT. HOWEVER, HE WILL BE HELD LIABLE FOR ANY DAMAGES CAUSED TO TREES BY IMPROPER STAKING METHODS (OR ABSENCE OF STAKING) AND IS RESPONSIBLE FOR UPRIGHT AND REPLANTING TREES WHICH ARE BLOWN OVER.
9. CONTRACTOR SHALL WARRANTY ALL TREES AND SHRUBS FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK OF THE LANDSCAPE PLAN.
10. IF DISCREPANCIES OR AVAILABILITIES ARE FOUND IN THE PLANT SPECIES AND/OR MIN. SIZES REQ'D., CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT. SUBSTITUTIONS MAY BE MADE WITH AUTHORIZATION AS LONG AS THE PLANTS FOLLOW THE INTENDED FORM AND FUNCTION.
11. THE USE OF FABRIC DURING INSTALLATION OF PLANTINGS IS RECOMMENDED FOR WEED CONTROL. CONTRACTOR SHALL MAKE EFFORTS TO INCLUDE AND DISCLOSE TO OWNER UPON INSTALLATION OF PLANTINGS IF LANDSCAPE FABRIC OR OTHER ALTERNATIVE IS TO BE USED.
12. CONTRACTOR WILL NOT USE PLASTIC AS COMPARED TO LANDSCAPE FABRIC DURING PLANT INSTALLATION FOR WEED CONTROL.
13. IRRIGATION OF LANDSCAPED AREAS IS RECOMMENDED BUT NOT REQUIRED. OWNER SHALL CONTACT DESIGNER OR IRRIGATION SPECIALIST FOR INPUT.
14. ANY OVERHANGING LIVE OAKS SHALL BE PRUNED BY A CERTIFIED ARBORIST, AS ADVISED BY THE URBAN FORESTER.

CITY REQUIREMENTS:

1. ALL INTERIOR PLANTINGS SHALL BE CURBED OR OTHERWISE PHYSICALLY PROTECTED FROM VEHICULAR TRAFFIC.
2. THE OWNER IS RESPONSIBLE FOR MAINTAINING ALL REQUIRED PLANT MATERIAL AND PLANTING AREAS IN GOOD HEALTH AND APPEARANCE. ANY DEAD, UNHEALTHY OR MISSING PLANTS MUST BE REPLACED WITHIN 180 DAYS WITH VEGETATION WHICH CONFORMS TO THE INITIAL PLANTING RATES AND STANDARDS.
3. CONTRACTOR IS RESPONSIBLE FOR MAKING SURE ALL SIGNIFICANT TREES WILL BE PROTECTED DURING CONSTRUCTION BY UTILIZING TREE PROTECTION FENCING, AT ALL TIMES.
4. PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS MATERIALS, OR VEHICLES, ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
5. NO DISTURBANCE IS PERMITTED ON SITE UNTIL A TREE PERMIT IS ISSUED IN CONJUNCTION WITH ANY COUNTY, CITY, STATE AND FEDERAL PERMITS.
6. NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS.
7. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND ALL LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.
8. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.
9. ALL PLANTINGS IN BUFFERYARDS TO BE XERIC LANDSCAPING AS THEY ARE NATIVE PLANTS NEEDING MINIMUM IRRIGATION.
10. ALL LANDSCAPE ISLANDS TO BE SEEDED WITH CENTIPEDE GRASS OR EQUIVALENT AS GROUND COVER.

Approved Construction Plan

Name Date

Planning_____

Traffic_____

Fire_____

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date:_____ Permit #_____

Signed: _____

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

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
License # P–0718	Job No. 2015–0006

SUMMERWALK - PHASE 1

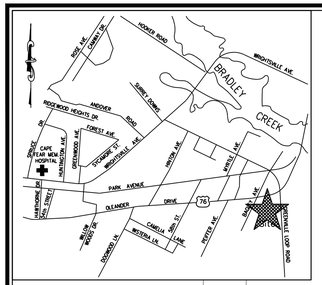
Wilmington New Hanover County North Carolina

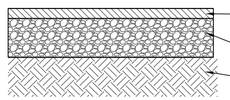
LANDSCAPING DETAILS

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No.
L-4





GREENVILLE LOOP ROAD PAVEMENT DETAIL

NOT TO SCALE

1. 3" OF SF-9.5B TO BE INSTALLED USING 2-1.5" LIFTS.
2. PROCTOR TEST OF THE FILL MATERIALS TO BE USED REQUIRED.
3. PROOF ROLLING OF ROCK PRIOR TO INSTALLATION OF PAVING.
4. THE SUBGRADE AND ASPHALT TO BE TESTED IN LOCATIONS CHOSEN BY GEOTECH AND INSTALLED AS PER GEOTECH RECOMMENDATIONS.

NOTES:

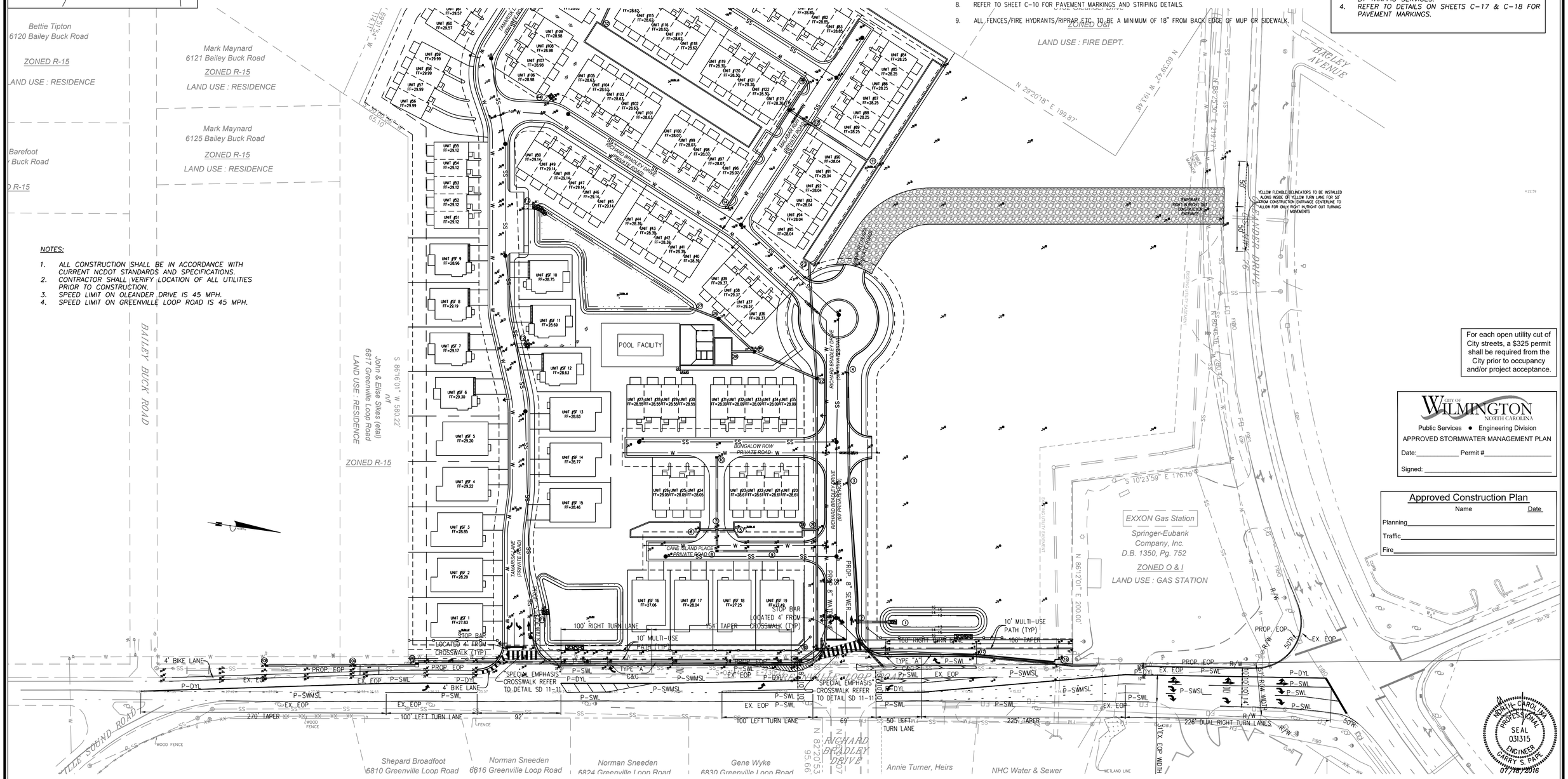
1. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING. CONTACT TRAFFIC ENGINEERING FOR PAVEMENT MARKING AND SIGN PLACEMENT DETAILS.
2. INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS.
3. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
4. ALL PAVEMENT MARKINGS REGULATING TRAFFIC FLOW MUST BE THERMOPLASTIC.
5. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
6. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT TRAFFIC ENGINEERING AT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
7. CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
8. REFER TO SHEET C-10 FOR PAVEMENT MARKINGS AND STRIPING DETAILS.
9. ALL FENCES/FIRE HYDRANTS/RIPRAP, ETC. TO BE A MINIMUM OF 18" FROM BACK EDGE OF MUP OR SIDEWALK.

PAVEMENT MARKING LEGEND

P-DYL = PROPOSED NEW DOUBLE YELLOW LINE
P-SWL = PROPOSED SINGLE WHITE LINE
P-SWSL = PROPOSED NEW WHITE SKIP LINE
P-SWMSL = PROPOSED SINGLE WHITE MINI SKIP LINE
P-SYL = PROPOSED SINGLE YELLOW LINE
P-SYSL = PROPOSED NEW YELLOW SKIP LINE
P-SYMSL = PROPOSED SINGLE YELLOW MINI SKIP LINE

NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
2. ALL PAVEMENT MARKINGS SHALL BE TIED TO EXISTING MARKINGS.
3. ALL STRIPING TO BE PREMARKED AND INSPECTED BY TRAFFIC SERVICES.
4. REFER TO DETAILS ON SHEETS C-17 & C-18 FOR PAVEMENT MARKINGS.



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

CITY OF WILMINGTON NORTH CAROLINA
Public Services ● Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PARK 07/18/2016

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

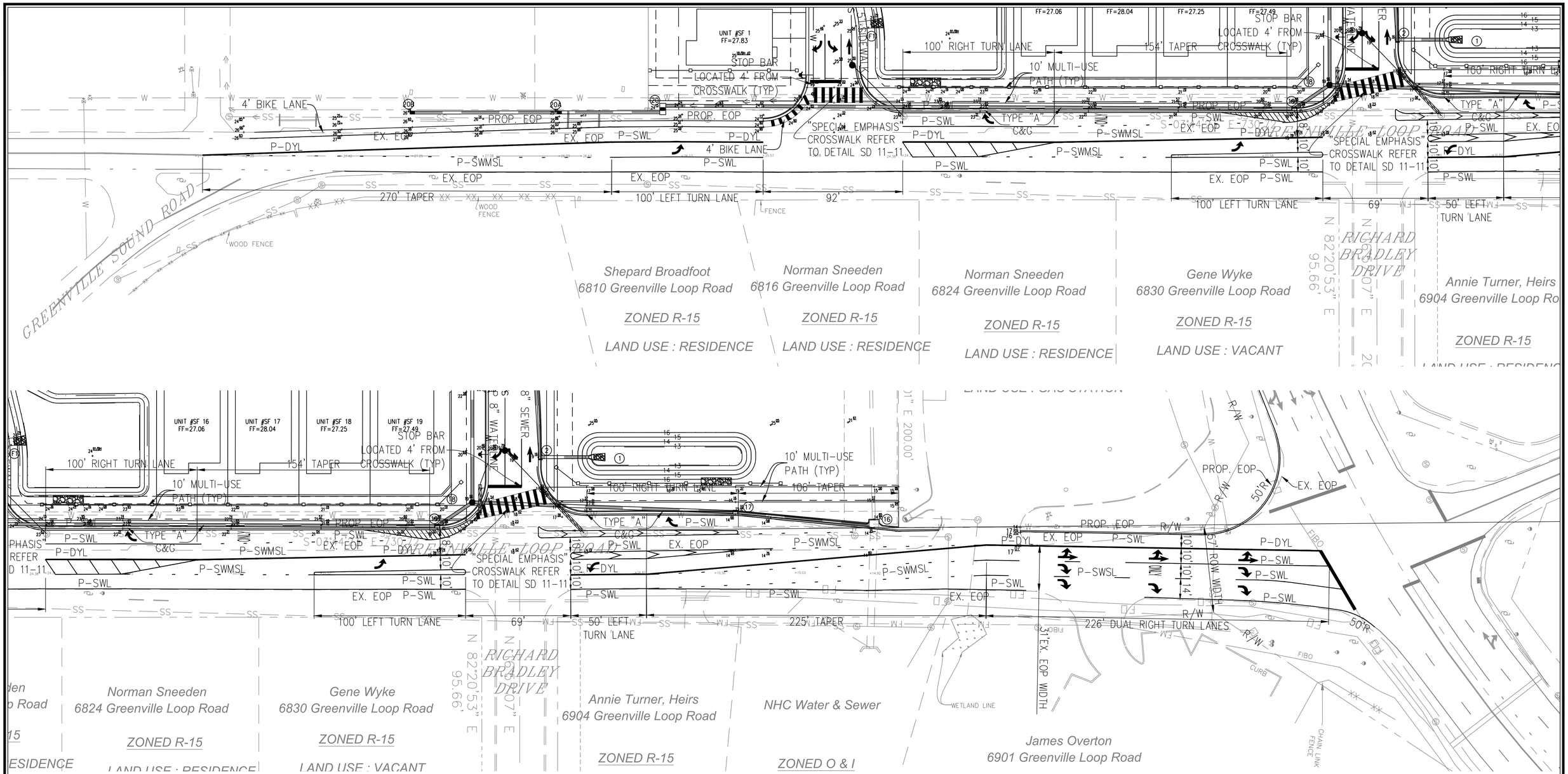
Wilmington New Hanover County North Carolina

OVERALL GREENVILLE LOOP ROADWAY IMPROVEMENTS PLAN

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No. R-1



CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER GARRY S. PAPE
07/18/2016

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

No.	Revision	Date	By

Designer GSP	Scale 1" = 30'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1

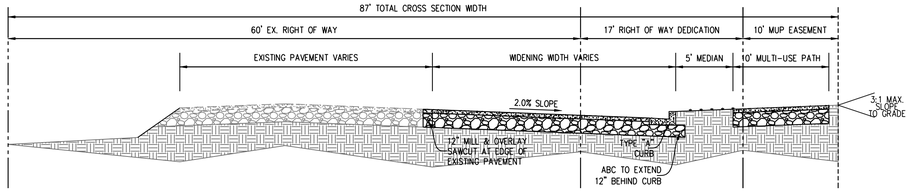
Wilmington New Hanover County North Carolina

DETAILED GREENVILLE LOOP ROADWAY IMPROVEMENTS PLAN

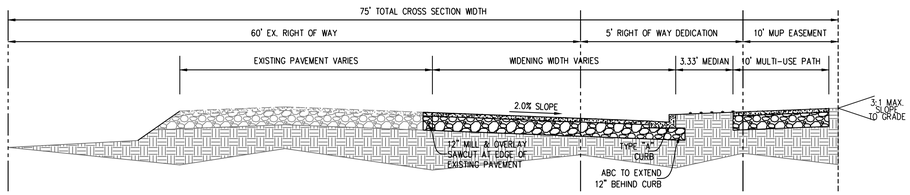
PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

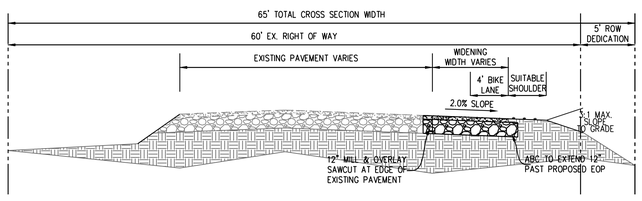
Sheet No.
R-2



ROAD WIDENING SECTION
FROM NORTHERN PROPERTY BOUNDARY
TO RICHARD BRADLEY DRIVE
NOT TO SCALE



ROAD WIDENING SECTION
FROM RICHARD BRADLEY DRIVE
TO TAMARISK LANE
NOT TO SCALE



ROAD WIDENING SECTION
FROM TAMARISK LANE TO
SOUTHERN PROPERTY BOUNDARY
NOT TO SCALE

PAVEMENT MARKING LEGEND

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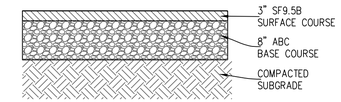

GREENVILLE LOOP ROAD
PAVEMENT DETAIL
NOT TO SCALE

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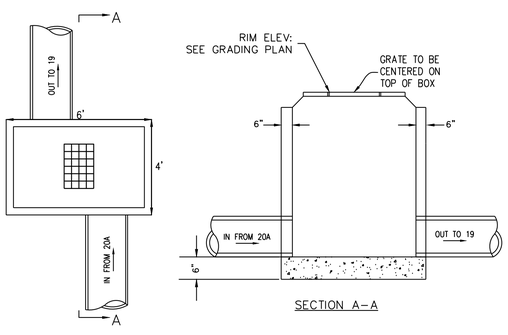
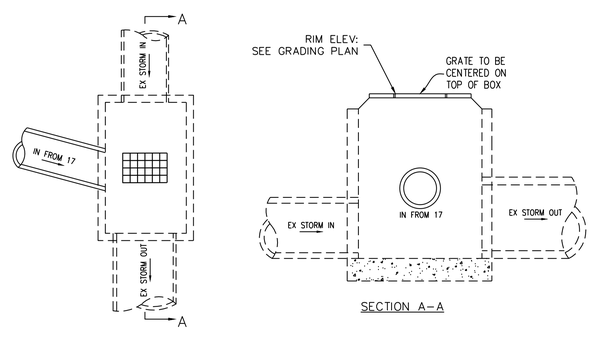
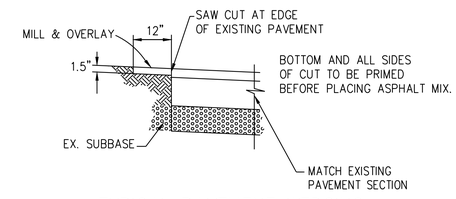


STORM INLET #20
6'X4' DROP INLET
N.T.S.



EX. STORM
MANHOLE #16
N.T.S.



TYPICAL PAVEMENT WEDGING
& PATCHING DETAIL
N.T.S.

DEVELOPER AND CONTRACTOR TO COORDINATE WITH CITY OF WILMINGTON CONSTRUCTION MANAGEMENT ON ROAD WIDENING

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

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

Approved Construction Plan
Name Date
Planning_____
Traffic_____
Fire_____

NORTH CAROLINA PROFESSIONAL SEAL 031315 ENGINEER CARRY S. PARR
07/18/2016

No.	Revision	Date	By

Designer GSP	Scale 1" = 50'
Drawn By GSP	Date October 2015
License # P-0718	Job No. 2015-0006

SUMMERWALK - PHASE 1
Wilmington New Hanover County North Carolina

GREENVILLE LOOP ROADWAY DETAILS

PREPARED FOR:
Summerwalk Development, LLC
6105 Oleander Drive
Suite 201
Wilmington, NC 28403

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

Sheet No.
R-3