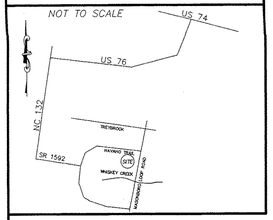
LOCATION MAP

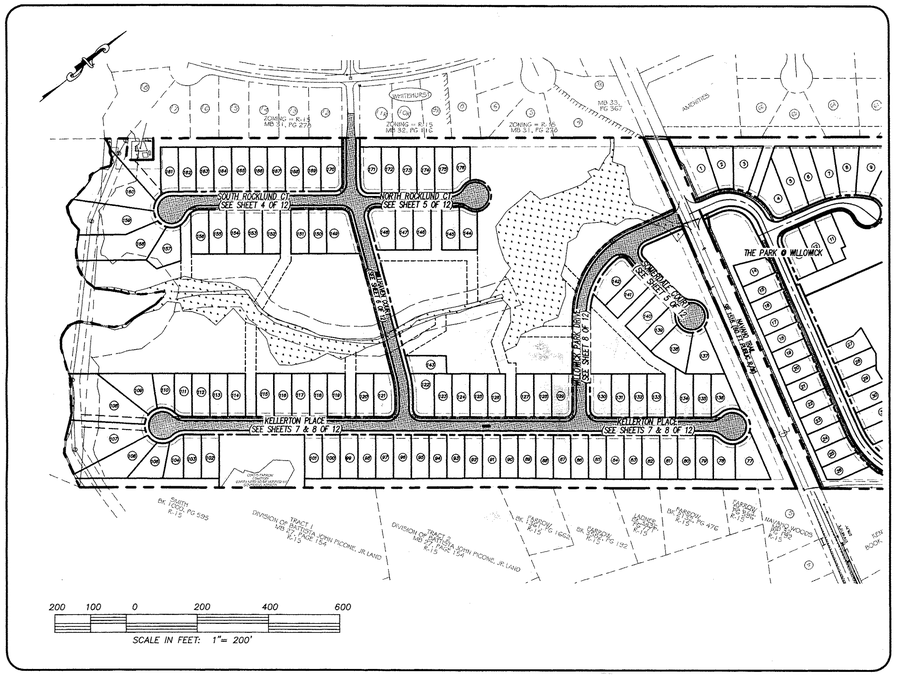
NOT TO SCALE



CONSTRUCTION DRAWINGS for

THE CREEK AT WILLOWICK

LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA



Approved Construction Plan

	Name	Date
Planning		3/4/14
Public Utilities		
Traffic		3-4-14
Fire		3-4-14

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

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT # 20120114
SIGNED

LEGEND

- EXISTING BOUNDARY
- CENTERLINE OF RIGHT OF WAY
- 21 CONTOUR LINE & ELEVATION
- DRAINAGE FLOW
- EXISTING SANITARY SEWER & MANHOLE
- W EXISTING WATERLINE
- EXISTING / PROPOSED STORM SEWER & CATCH BASIN
- E.I.P. EXIST. IRON PIPE
- WATER METER SERVICE CONNECTION
- E.C.M. EXIST. CONCRETE MONUMENT
- HANDICAP RAMP
- 40.9 EL EX. ELEV. & DESCRIPTION

STANDARD NOTES:

1. TOPOGRAPHIC AND BOUNDARY MAPPING PERFORMED BY ARNOLD CARSON, PLS, PC.
2. THIS MAP IS NOT FOR CONVEYANCE, RECORDATION, OR SALES.
3. THIS TRACT IS LOCATED IN ZONE "X" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 372031 4500 J, DATED 4/3/06.
4. THIS PROPERTY IS ZONED R-15.
5. WATER SERVICE TO CONNECT TO CFPUA PUBLIC SYSTEM.
6. SEWER SERVICE TO CONNECT TO CFPUA PUBLIC SEWER SYSTEM.
7. ALL CONSTRUCTION TO CONFORM TO CITY OF WILMINGTON STANDARDS APPLICABLE STATE & LOCAL CODES.
8. CONTRACTOR TO COORDINATE ANY REQUIRED TRAFFIC CONTROL WITH CITY OF WILMINGTON.
9. CARE SHALL BE TAKEN DURING FINAL GRADING TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND TO RECEIVING STRUCTURES. ROOF DRAIN DOWNSPOUTS TO BE CONNECTED TO STORM DRAINAGE STUBOUTS OR DIRECTED TO STREET.
10. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY RELOCATIONS, RE-ALIGNMENTS, DISCONNECTIONS OR CONNECTIONS OF EXISTING UTILITIES WITH APPLICABLE AUTHORITIES.
11. CLEARING AND GRUBBING OF SITE TO INCLUDE REMOVAL OF EXISTING CURB, ASPHALT, INLETS, AND ANY OTHER STRUCTURES INCLUDING TREES, STUMPS AND DEBRIS EXISTING ON SITE. TREES NOT REQUIRED TO BE CLEARED FOR CONSTRUCTION SHALL REMAIN UNLESS OTHERWISE DIRECTED.
12. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES AT ALL CROSSINGS PRIOR TO COMMENCING TRENCH EXCAVATION. IF ACTUAL CLEARANCES ARE LESS THAN INDICATED ON PLAN, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. ANY CONDITION DISCOVERED OR EXISTING THAT WOULD NECESSITATE A MODIFICATION OF THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
13. NO CONSTRUCTION IS TO BEGIN BEFORE LOCATION OF EXISTING UTILITIES HAS BEEN DETERMINED. CALL "NC ONE-CALL" AT LEAST 48 HOURS BEFORE COMMENCING CONSTRUCTION.
14. CONTRACTOR SHALL ADJUST ALL MANHOLES, VALVE & CURB BOXES TO FINAL GRADE UPON COMPLETION OF ALL CONSTRUCTION. ANY BOXES DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
15. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST AND EROSION DURING CONSTRUCTION AT HIS EXPENSE. PARKING AREAS SHALL BE WATERED TO CONTROL DUST WHEN ORDERED BY THE ENGINEER.
16. NO GEOTECHNICAL TESTING HAS BEEN PERFORMED ON SITE. NO WARRANTY IS MADE FOR SUITABILITY OF SUBGRADE, AND UNDERCUT AND ANY REQUIRED REPLACEMENT WITH SUITABLE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
17. EXTREME CARE SHALL BE TAKEN TO ENSURE MINIMUM SEPARATIONS AT ALL UTILITY CROSSING.
18. CONTRACTOR TO ENSURE THAT PAVEMENT IS PLACED SO AS TO DRAIN POSITIVELY TO THE STREET INLETS AND CATCH BASINS. ALL FUTURE ROOF DRAIN DOWNSPOUTS TO BE DIRECTED TO THE STORM SEWER STUBOUTS.
19. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS.
20. THIS PLAN IS FOR SITE GRADING AND DRAINAGE ONLY.
21. CONTRACTOR AND BUILDER ARE RESPONSIBLE FOR COORDINATING FINISHED FLOOR ELEVATION OF ALL BUILDINGS WITH THE OWNER. ELEVATIONS GIVEN ARE MINIMUM GROUND ELEVATIONS AT THE BUILDING SITE AND DO NOT PURPORT TO BE FINISHED FLOOR.
22. AFFECTED NON-MUNICIPAL UTILITIES SHALL BE CONTACTED AND PROVIDED WITH PLANS AND OTHER PERTINENT INFORMATION, WHEN FEASIBLE, TO COORDINATE APPROPRIATE SCHEDULING AND PLACEMENT.
23. MINIMUM SEPARATION SHALL BE MAINTAINED AS FOLLOWS:
    a. HORIZONTAL CLEARANCE OF 10 FEET BETWEEN SANITARY SEWER AND WATER MAINS.
    b. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND WATER OR WHERE SEWER LINE CROSSES ABOVE WATER MAIN, BOTH PIPES SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING.
    c. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING.
    d. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN WATER MAIN AND STORM DRAIN, WATER MAIN SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING.
24. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
25. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
26. ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
27. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
28. CALL TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
29. ANY BROKEN OR MISSING SIDEWALK PANELS AND CURBING WILL BE REPLACED.
30. ALL SIDESLOPES SHALL BE NO STEEPER THAN 3:1.
31. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.

OWNER/ DEVELOPER: TSV DEVELOPERS, INC
1904 EASTWOOD ROAD
SUITE 212
WILMINGTON, NC 28403

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3 OF 12	SITE PLAN	04-0011SP1
4 OF 12	SOUTH ROCKLUND CT. & SEWER EXTENSION	04-0011PP1
5 OF 12	NORTH ROCKLUND COURT & SOMERDALE COURT	04-0011PP2
6 OF 12	MILLHAVEN COURT	04-0011PP3
7 OF 12	KELLERTON PLACE	04-0011PP4
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10 OF 12	UTILITY PLAN	04-0011UTIL
11 OF 12	SIGNAGE PLAN	04-0011SIGN
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2 OF 4	CFPUA SEWER DETAIL SHEET 2	SEWER_DET2
3 OF 4	CFPUA SEWER DETAIL SHEET 3	SEWER_DET3
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1 OF 3	STORMWATER MANAGEMENT, EROSION CONTROL AND OVERALL DRAINAGE PLAN	04-0011ECP1
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1 OF 3	OVERALL DRAINAGE AREA MAP	04-0011DA1
2 OF 3	OVERALL DRAINAGE AREA MAP	04-0011DA2
3 OF 3	OVERALL DRAINAGE AREA MAP	04-0011DA3

LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

COVER SHEET for
THE CREEK AT WILLOWICK

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CONSTRUCTION DRAWINGS for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

NHC PARCEL # R07200-007-031-000
OWNER: TSV DEVELOPERS, INC.
1904 EASTWOOD ROAD, SUITE 212
WILMINGTON, NC 28403

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025483 HOWARD S. RESNIK
10/10/13

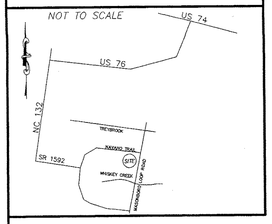
REV. NO.	REMARKS	BY	DATE
6	REVISED NOTES PER TRAFFIC ENGINEERING	JSM	10/10/13
5	REVISED NOTES PER TRAFFIC ENGINEERING	JSM	8/23/13
4	REVISED COVER SHEET PER COW SUBMITTAL	JSM	7/22/13
3	CHANGED SHEET NUMBER, REVISED OVERALL MAP	RLW	8/28/09
2	REVISED PER REANNOTATION	JSH	11/12/08
1	REVISED PER ADDITION OF SHEETS	JSL	9/9/08

DATE: 3-20-08
HORZ. SCALE: 1"= 200'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO: 04-0011
DRAWING NO: 04-0011COV-PH2

Sheet No. 1 Of 12

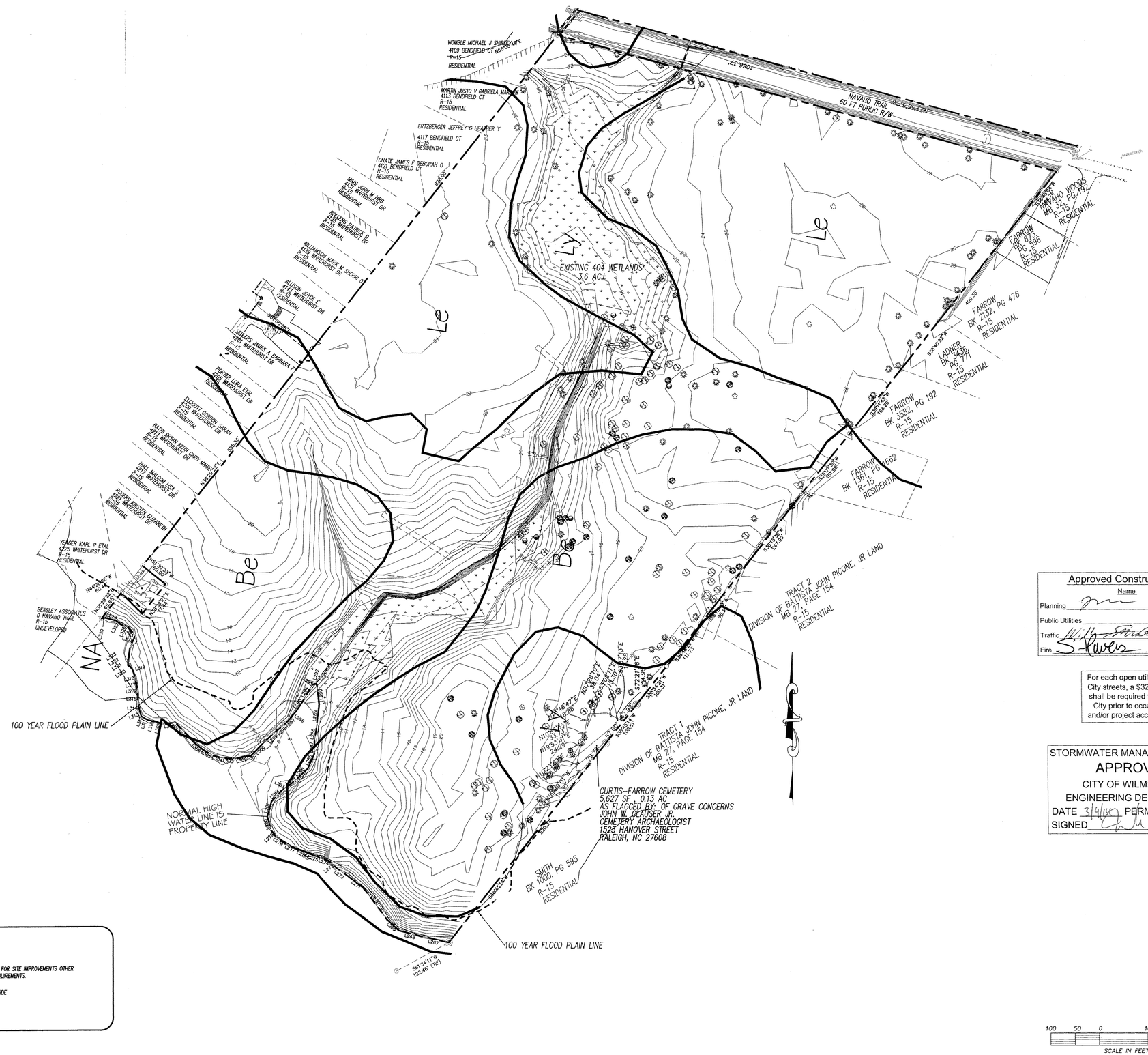
LOCATION MAP

NOT TO SCALE



LINE TABLE		
LINE	BEARING	LENGTH
L267	N77°39'08"W	41.74'
L268	N76°24'14"W	63.44'
L269	N47°19'51"W	32.68'
L270	N36°57'50"W	81.86'
L271	N53°28'57"W	40.83'
L272	N54°20'08"W	26.92'
L273	N46°23'37"W	18.79'
L274	N68°42'52"W	23.78'
L275	N69°44'44"W	25.76'
L276	N68°00'01"W	22.93'
L277	N67°38'59"W	26.30'
L278	N53°46'41"W	25.23'
L279	N34°08'47"W	15.08'
L280	N16°30'16"W	29.29'
L281	N15°56'56"E	31.50'
L282	N42°50'31"E	30.84'
L283	N56°16'27"E	17.92'
L284	N50°18'10"E	18.95'
L285	N47°38'44"E	33.89'
L286	N24°03'04"E	32.49'
L287	N01°12'12"E	26.02'
L288	N07°48'16"E	27.48'
L289	N07°06'22"E	48.09'
L290	N06°43'56"W	39.85'
L291	N46°43'31"W	4.03'
L292	S75°16'35"W	3.56'
L293	S48°22'05"W	8.06'
L294	S29°26'04"W	31.03'
L295	S33°04'31"W	25.88'
L296	S40°05'58"W	22.48'
L297	S43°43'42"W	17.04'
L298	S51°48'26"W	21.00'
L299	S48°37'20"W	30.23'
L300	S44°47'07"W	41.92'
L301	S83°14'30"W	10.40'

LINE TABLE		
LINE	BEARING	LENGTH
L302	S77°00'23"W	20.84'
L303	N86°05'04"W	29.30'
L304	N73°50'13"W	19.19'
L305	N59°26'49"W	25.08'
L306	N51°26'42"W	21.75'
L307	N43°08'32"W	55.15'
L308	S86°45'42"W	27.75'
L309	N72°41'49"W	13.26'
L310	N77°51'46"W	17.40'
L311	N59°38'27"W	8.50'
L312	N59°22'28"W	6.73'
L313	N16°52'05"W	11.37'
L314	N13°49'58"W	14.98'
L315	N00°28'03"W	15.95'
L316	N09°48'15"W	16.19'
L317	N06°52'21"W	16.48'
L318	N15°01'23"W	15.04'
L319	N20°11'26"W	10.46'
L320	N52°34'23"W	10.44'
L321	N02°24'10"E	10.58'
L322	N08°56'33"E	17.59'
L323	N08°14'09"E	8.61'
L324	N23°42'38"E	27.03'
L325	N40°47'06"W	24.26'
L326	N75°38'23"W	13.29'
L327	N50°27'53"W	14.02'
L328	N75°33'01"W	21.09'
L329	S86°17'54"W	9.05'



NOTES
1. BOUNDARY, TREE AND TOPOGRAPHY INFORMATION PREPARED AND PROVIDED BY ARNOLD CARSON, PLS, PC.
2. THIS PLAN SHEET DOES NOT PURPORT TO SHOW ANY DESIGN INFORMATION. BUT RATHER ONLY DISPLAYS THE EXISTING SITE BOUNDARY, WETLANDS AND TOPOGRAPHY AS PROVIDED BY THE SURVEYOR.

ENVIRONMENTAL NOTES:

1. ALL SIGNIFICANT TREES ON SITE ARE TO BE RETAINED OR MITIGATED.
2. NO LAND DISTURBANCE IS PERMITTED OUTSIDE THE DESIGNATED LIMITS OF DISTURBANCE FOR SITE IMPROVEMENTS OTHER THAN WHAT IS NECESSARY TO TIE INTO EXISTING CONTOURS OR MEET LANDSCAPING REQUIREMENTS.
3. ALL TREES OUTSIDE THE LIMITS OF DISTURBANCE ON SITE ARE TO BE PRESERVED.
4. TREE WELLS TO BE PROVIDED AND INSTALLED AS NECESSARY TO MAINTAIN EXISTING GRADE AT ROOT ZONE (TREE CANOPY) OF TREES TO BE PRESERVED.
5. 3.60 AC OF WETLANDS ON SITE
6. WATER BODY SERVING THIS SITE IS WHISKEY CREEK SA;HQW.

Approved Construction Plan

	Name	Date
Planning		3-4-14
Public Utilities		
Traffic		3-4-14
Fire		3-04-14

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

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT # 2012014
SIGNED

100 50 0 100 200 300
SCALE IN FEET: 1" = 100'

LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

EXISTING BOUNDARY AND TOPOGRAPHY for
THE CREEK AT WILLOWICK

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EXISTING BOUNDARY AND TOPOGRAPHY for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: TSV DEVELOPERS, INC.
1904 EASTWOOD ROAD, SUITE 212
WILMINGTON, NC 28403

NORTH CAROLINA PROFESSIONAL SEAL 025483 ENGINEER HOWARD S. RESNIK
10/10/13

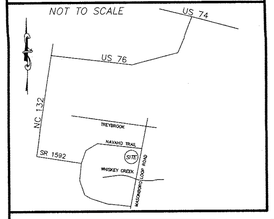
REV. NO.	REMARKS	DATE	BY
9	REVISED PER CITY SUBMITTAL	7/22/13	JSM
8	ADDED LICENSE NUMBER	7/10/12	RLW
7	REVISED SHEET NUMBER	8/28/09	RLW
6	REVISED PER REANNOTATION	11/12/08	JDH
5	REVISED PER ADDITION OF SHEET	9/9/08	JSL
4	REVISED PER CONSTRUCTION SET	3/20/08	JSL
3	REVISED PER PRELIMINARY MYLARS	8/01/07	JSL
2	REMOVED DRAINAGE PLAN STAMP	10/10/14	RLW

DATE: 02-28-07
HORZ. SCALE: 1" = 100'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO: 04-0011
DRAWING NO: 04-0011TOP-PH2

Sheet No. 2 Of 12

LOCATION MAP

NOT TO SCALE



GENERAL NOTES:

1. NEW HANOVER COUNTY PARCEL NOS.: R07200-007-027-000
2. TOTAL TRACT AREA: 1,741,964.4 SF (39.99 AC)
3. EXISTING ZONING DISTRICT: R-15
4. LAND CLASSIFICATION: WATERSHED RESOURCE PROTECTION
5. TREE REMOVAL PERMIT TO BE OBTAINED.
6. LANDSCAPE PLANS TO BE PROVIDED BY OTHERS.
7. THIS TRACT IS LOCATED IN ZONE "C" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 372031 4500 J, DATED 4/3/06.
8. SITE ADDRESS IS 1300 NAVAHO TRAIL
9. NCDENR/DWQ STORMWATER MANAGEMENT PERMIT REQUIRED AND TO BE OBTAINED.
10. NEW HANOVER COUNTY/NCDENR/LQS SEDIMENTATION & EROSION CONTROL PERMIT REQUIRED AND TO BE OBTAINED.
11. BUILDING USE IS FOR SINGLE-FAMILY HOUSING
12. THIS SITE IS PROPOSED TO BE A CLUSTER DEVELOPMENT.
13. UNNAMED STREETS TO BE NAMED PENDING APPROVAL FROM GIS ANALYST/CITY ADDRESS COORDINATOR
14. WATER AND SEWER IS PROPOSED TO BE PUBLIC
15. TRASH IS PROPOSED TO BE PICKED UP BY CITY OF WILMINGTON
16. 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.
17. HYDRANTS MUST BE LOCATED WITHIN 8' OF CURB.
18. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS.
19. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
20. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOW PASSAGE BY VEHICLES.

DEVELOPMENT NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD STANDARDS.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION. CALL U-LOCO AT 1-800-632-4949. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ANY UTILITIES, CURB AND GUTTER, SIDEWALK PANELS, PAVEMENT, ETC...THAT MAY BE DAMAGED DURING CONSTRUCTION. DAMAGED ITEMS SHALL BE REPAIRED TO AT LEAST THE QUALITY OR WORKMANSHIP FOUND IN THE ORIGINAL ITEM.
3. STORMWATER MANAGEMENT TO MEET CITY OF WILMINGTON REQUIREMENTS FOR THE 10 YEAR STORM AND NCDENR/DWQ WATER QUALITY REQUIREMENTS FOR LOW DENSITY PROJECTS.
4. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES.
5. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
6. NO LAND DISTURBANCE, INCLUDING TREE REMOVAL, IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLAN.
7. ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON ZONING ORDINANCE & SUBDIVISION REGULATIONS.
8. APPROVAL OF SITE PLAN DOES NOT CONSTITUTE APPROVAL OF PROPOSED SIGNAGE FOR THIS SITE. A SEPARATE SIGN PERMIT MUST BE OBTAINED.
9. APPLICABLE STREET FRONTAGES SHALL HAVE NATURAL VEGETATIVE SCREENING MEETING CITY REQUIREMENTS.
10. THE DEVELOPMENT SHALL COMPLY WITH ALL CITY TECHNICAL STANDARDS AND DEVELOPMENT REGULATIONS.
11. LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION RELEASE PLAN SHALL ADHERE TO SD 15-17.
12. AFTER LANDSCAPING PLAN IS SUBMITTED, CONTACT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
13. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
14. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTIONS ON TREE PROTECTION REQUIREMENTS AND METHODS. 18-7720)
15. ALL OPEN SPACE SHALL BE DEEDED TO ALL LAND OWNERS AS COMMON OWNERSHIP, THIS LAND IS NOT TO BE DEVELOPED OR IMPROVED, AND OPEN SPACE WILL BE PERPETUALLY PROTECTED. [18-433(G)(5)]
16. TREE SAVE AREAS SHALL BE MARKED PRIOR TO COMMENCEMENT OF ANY SITE CLEARING. THROUGHOUT CONSTRUCTION, MARKINGS FOR TREE SAVE AREAS WILL REMAIN IN PLACE AND VISIBLE.

STANDARD NOTES:

1. TOPOGRAPHIC AND BOUNDARY MAPPING PERFORMED BY ARNOLD CARSON, PLS, PC.
2. THIS MAP IS NOT FOR CONVEYANCE, RECORDATION, OR SALES.
3. THIS TRACT IS LOCATED IN ZONE "C" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 372031 4500 J, DATED 4/3/06.
4. THIS PROPERTY IS ZONED R-15.
5. WATER SERVICE TO CONNECT TO CFPUA PUBLIC SYSTEM.
6. SEWER SERVICE TO CONNECT TO CFPUA PUBLIC SEWER SYSTEM.
7. ALL CONSTRUCTION TO CONFORM TO CITY OF WILMINGTON STANDARDS APPLICABLE STATE & LOCAL CODES.
8. CONTRACTOR TO COORDINATE ANY REQUIRED TRAFFIC CONTROL WITH CITY OF WILMINGTON AND/OR NCDOT.
9. CARE SHALL BE TAKEN DURING FINAL GRADING TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND TO RECEIVING STRUCTURES. ROOF DRAIN DOWNSPOUTS TO BE CONNECTED TO STORM DRAINAGE STUBOUTS OR DIRECTED TO STREET.
10. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY RELOCATIONS, RE-ALIGNMENTS, DISCONNECTIONS OR CONNECTIONS OF EXISTING UTILITIES WITH APPLICABLE AUTHORITIES.
11. NO AREA DESIGNATED AS OPEN SPACE SHALL BE CLEAR-CUT. CLEARING AND GRADING SHALL BE LIMITED TO THAT NECESSARY FOR ESSENTIAL SITE IMPROVEMENTS. TREES SHALL NOT BE REMOVED FROM INDIVIDUAL HOME SITES UNTIL BUILDING PERMITS ARE ISSUED.
12. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES AT ALL CROSSINGS PRIOR TO COMMENCING TRENCH EXCAVATION. IF ACTUAL CLEARANCES ARE LESS THAN INDICATED ON PLAN, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. ANY CONDITION DISCOVERED OR EXISTING THAT WOULD NECESSITATE A MODIFICATION OF THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
13. NO CONSTRUCTION IS TO BEGIN BEFORE LOCATION OF EXISTING UTILITIES HAS BEEN DETERMINED. CALL "NC ONE-CALL" AT LEAST 48 HOURS BEFORE COMMENCING CONSTRUCTION.
14. CONTRACTOR SHALL ADJUST ALL MANHOLES, VALVE & CURB BOXES TO FINAL GRADE UPON COMPLETION OF ALL CONSTRUCTION. ANY BOXES DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
15. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST AND EROSION DURING CONSTRUCTION AT HIS EXPENSE. PARKING AREAS SHALL BE WATERED TO CONTROL DUST WHEN ORDERED BY THE ENGINEER.
16. NO GEOTECHNICAL TESTING HAS BEEN PERFORMED ON SITE. NO WARRANTY IS MADE FOR SUITABILITY OF SUBGRADE, AND UNDERCUT AND ANY REQUIRED REPLACEMENT WITH SUITABLE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
17. EXTREME CARE SHALL BE TAKEN TO ENSURE MINIMUM SEPARATIONS AT ALL UTILITY CROSSING.
18. CONTRACTOR TO ENSURE THAT PAVEMENT IS PLACED SO AS TO DRAIN POSITIVELY TO THE STREET INLETS AND CATCH BASINS. ALL FUTURE ROOF DRAIN DOWNSPOUTS TO BE DIRECTED TO THE STORM SEWER STUBOUTS.
19. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS.
20. CONTRACTOR AND BUILDER ARE RESPONSIBLE FOR COORDINATING FINISHED FLOOR ELEVATION OF ALL BUILDINGS WITH THE OWNER. ELEVATIONS GIVEN ARE MINIMUM GROUND ELEVATIONS AT THE BUILDING SITE AND DO NOT PURPORT TO BE FINISHED FLOOR.
21. AFFECTED NON-MUNICIPAL UTILITIES SHALL BE CONTACTED AND PROVIDED WITH PLANS AND OTHER PERTINENT INFORMATION, WHEN FEASIBLE, TO COORDINATE APPROPRIATE SCHEDULING AND PLACEMENT.
22. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
23. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
24. ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
25. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
26. CALL TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
27. ANY BROKEN OR MISSING SIDEWALK PANELS AND CURBING WILL BE REPLACED.
28. ALL SIDESLOPES SHALL BE NO STEEPER THAN 3:1.
29. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.
30. 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.

WAIVERS GRANTED

1. WAIVERS OF THE TECHNICAL STANDARDS REQUIREMENTS FOR MAXIMUM CUL-DE-SAC LENGTH AND DISTANCE OF INTERSECTIONS FROM A PUBLIC STREET ARE SOUGHT BY THE APPLICANT. THERE ARE TWO CUL-DE-SACS THAT ARE PROPOSED TO EXCEED THE CITY 500-FOOT MAXIMUM LENGTH REQUIREMENT. GRANTED
2. ALSO A WAIVER IS SOUGHT FROM THE 400 FOOT MINIMUM DISTANCE OF A NEW INTERSECTION FROM THE NEAREST ADJACENT STREET. GRANTED

TRAFFIC ENGINEERING NOTES:

1. A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO RECORDING OF THE FINAL PLAT. PLAN SHALL ADHERE SD 15-17.
2. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
3. ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
4. OPEN CUT NOTES:
   A. CONTRACTOR TO COORDINATE WITH CITY OF WILMINGTON FOR ACCEPTABLE HOURS OF CONSTRUCTION AND TRAFFIC CONTROL DURING INSTALLATION OF UTILITIES IN CITY ROADS.
   B. SUITABLE COMPACTION AND APPROVED STONE & BASE COURSES TO BE INSTALLED IN PLACE OF OPEN CUT.
   C. OPEN CUT TO BE SAW CUT.
5. TRIP GENERATION NUMBERS:
   727 TOTAL 2-WAY VOLUME
   57 AM PEAK VOLUME
   77 PM PEAK VOLUME
6. A VARIANCE IS REQUESTED FOR INTERSECTIONS BEING LONGER THAN 400' MAXIMUM DISTANCE PER CITY TECHNICAL STANDARDS.
7. A VARIANCE IS REQUESTED TO ALLOW CUL-DE-SAC ON SOUTH ROCKLUND COURT AND KELLERTON PLACE TO BE MORE THAN 500 FT MAXIMUM LENGTH.
8. ALL DRIVEWAYS WITHIN SUBDIVISION TO BE LOCATED ON STOP-CONTROLLED STREETS.
9. ALL DRIVEWAYS TO BE CITY STANDARD RAMP-TYPE DRIVEWAYS.
10. A NCDOT DRIVEWAY PERMIT IS REQUIRED AND TO BE OBTAINED.
11. A BOND FOR 100% FOR ALL WORK WITHIN THE NCDOT RIGHT OF WAY SHALL BE SUBMITTED ALONG WITH THE DRIVEWAY PERMIT BEFORE IT CAN BE PROCESSED FOR APPROVAL.
12. ALL EXISTING DRIVEWAYS ON NAVAHO TRAIL WILL BE CLOSED.

*** TRAFFIC ENGINEERING NOTES CONTINUED ON SHEET 11 OF 12

ENVIRONMENTAL NOTES:

1. ALL SIGNIFICANT TREES ON SITE ARE TO BE RETAINED OR MITIGATED.
2. NO LAND DISTURBANCE IS PERMITTED OUTSIDE THE DESIGNATED LIMITS OF DISTURBANCE FOR SITE IMPROVEMENTS OTHER THAN WHAT IS NECESSARY TO TIE INTO EXISTING CONTOURS OR MEET LANDSCAPING REQUIREMENTS.
3. ALL TREES OUTSIDE THE LIMITS OF DISTURBANCE ON SITE ARE TO BE PRESERVED.
4. TREE WELLS TO BE PROVIDED AND INSTALLED AS NECESSARY TO MAINTAIN EXISTING GRADE AT ROOT ZONE (TREE CANOPY) OF TREES TO BE PRESERVED.
5. JURISDICTIONAL DETERMINATION FROM USACE HAS BEEN PERFORMED.
6. WATER BODY SERVING THIS SITE IS WHISKEY CREEK SA;HOW.

SITE & BUILDING DATA:

SITE DATA:
TOTAL SITE AREA = 1,742,213.93 SF (39.99 AC)

IMPERVIOUS AREA BREAKDOWN:
PROPOSED SITE -

ASPHALT =	138,093 SF (3.17 AC.)
CONCRETE SIDEWALKS =	24,972 SF (0.57 AC.)
AMENITIES AREA =	0.00 SF (0.00 AC.)
LOT IMPERVIOUS AREA =	272,418 SF (6.25 AC.)
TOTAL PROPOSED IMPERVIOUS =	435,483 SF (10.00 AC)

PROPOSED BUILDING SIZE = 2,724 SF

DENSITY CALCULATION:
MAX. DENSITY R-15 (CLUSTER) = 2.5/AC.
2.5 X 39.99AC. = 99.98
TOTAL PROPOSED LOTS = 100

BUILDING DATA:
TOTAL LOTS = 100 SINGLE-FAMILY HOMES

PRIMARY CONSERVATION AREA ALONG WITH THE 40% OPEN SPACE THAT'S BROKEN DOWN IN SITE & BUILDING DATA.

PRIMARY CONSERVATION AREA SHALL BE PROVIDED IN ACCORDANCE WITH LDC SECTION 18-433(d).
THE PRIMARY CONSERVATION AREA SHALL NOT BE DISTURBED EXCEPT AS PERMITTED IN LDC SECTION 18-433.

OPEN SPACE BREAKDOWN:
REQ'D OPEN SPACE = 39.99 AC. (TOT. TRACT) X 40% = 15.996 AC. REQ'D OPEN SPACE

OPEN SPACE PROVIDED
ACTIVE OPEN SPACE = 432,127 SF (9.92 AC.)
PASSIVE OPEN SPACE = 264,833 SF (6.08 AC.)
TOTAL OPEN SPACE = 696,960 SF (16.00 AC.)

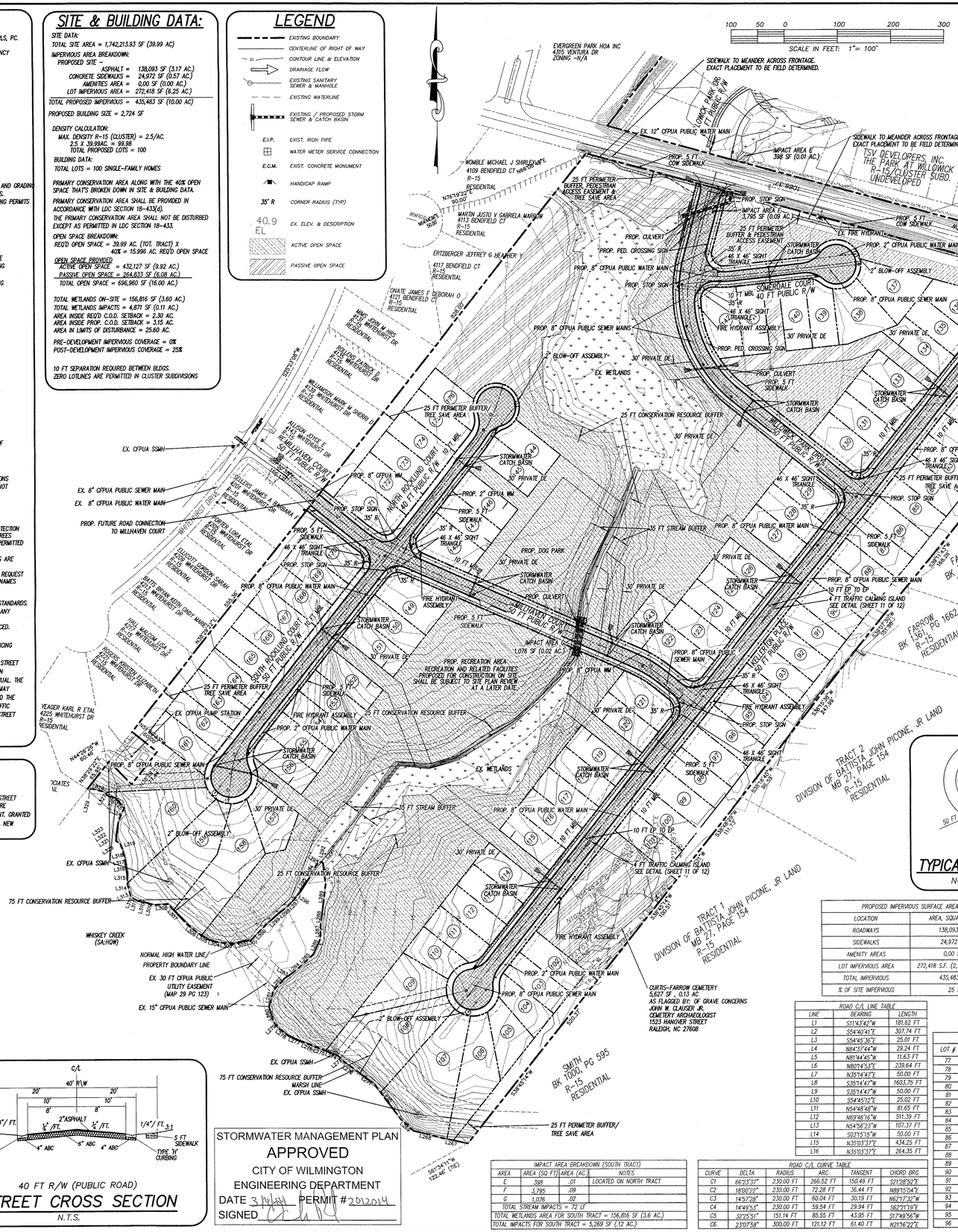
TOTAL WETLANDS ON-SITE = 156,816 SF (3.60 AC.)
TOTAL WETLANDS IMPACTS = 4,871 SF (0.11 AC.)
AREA INSIDE REQ'D C.O.D. SETBACK = 2.30 AC.
AREA INSIDE PROP. C.O.D. SETBACK = 3.15 AC.
AREA IN LIMITS OF DISTURBANCE = 25.60 AC.

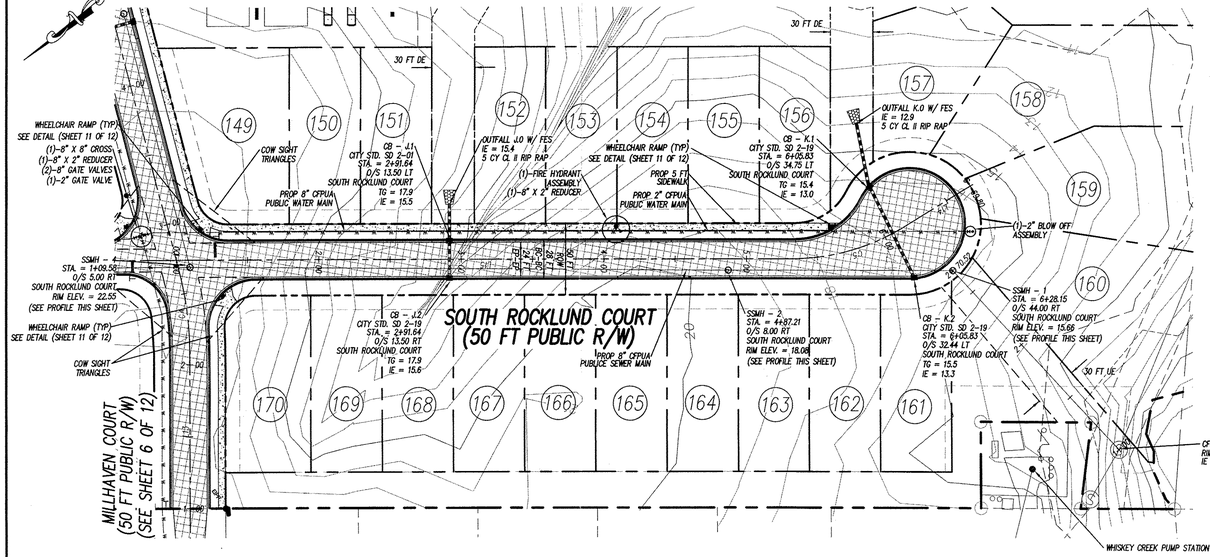
PRE-DEVELOPMENT IMPERVIOUS COVERAGE = 0%
POST-DEVELOPMENT IMPERVIOUS COVERAGE = 25%

10 FT SEPARATION REQUIRED BETWEEN BLDGS.
ZERO LOTLINES ARE PERMITTED IN CLUSTER SUBDIVISIONS

LEGEND

- EXISTING BOUNDARY
- CENTERLINE OF RIGHT OF WAY
- 21 CONTOUR LINE & ELEVATION
- DRAINAGE FLOW
- EXISTING SANITARY SEWER & MANHOLE
- EXISTING WATERLINE
- EXISTING / PROPOSED STORM SEWER & CATCH BASIN
- E.I.P. EXIST. IRON PIPE
- WATER METER SERVICE CONNECTION
- E.C.M. EXIST. CONCRETE MONUMENT
- HANDICAP RAMP
- 35' R CORNER RADIUS (TYP)
- 40.9 EL EX. ELEV. & DESCRIPTION
- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE

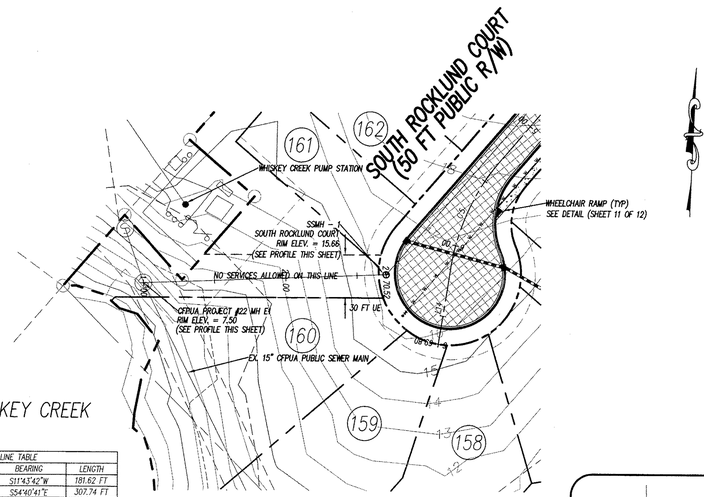

SCALE IN FEET: 1"= 100'
EVERGREEN PARK HOA INC 4315 VENTURA DR ZONING -N/A
SIDEWALK TO MEANDER ACROSS FRONTAGE. EXACT PLACEMENT TO BE FIELD DETERMINED.
TSV DEVELOPERS, INC. THE PARK AT WILLOWICK R-15 CLUSTER SUBD. UNDEVELOPED
LOWRY PARK DR 50 FT PUBLIC R/W
EX. 12" CFPUA PUBLIC WATER MAIN
PROP. 5 FT COW SIDEWALK
IMPACT AREA E 398 SF (0.01 AC.)
WOMBLE MICHAEL J SHIRLEY M 4109 BENDFIELD CT R-15 RESIDENTIAL
25 FT PERIMETER BUFFER, PEDESTRIAN ACCESS EASEMENT & TREE SAVE AREA
MARTIN JUSTO V GABRIELA MARROW 4113 BENDFIELD CT R-15 RESIDENTIAL
IMPACT AREA F 3,795 SF (0.09 AC.)
PROP. STOP SIGN
PROP. CULVERT
PROP. PED. CROSSING SIGN
ERTZBERGER JEFFREY G HEATHER Y 4117 BENDFIELD CT R-15 RESIDENTIAL
PROP. 8" CFPUA PUBLIC WATER MAIN
EX. TREE HYDRANT
PROP. 2" CFPUA PUBLIC WATER MAIN
NAVAHO TRAIL/SR 1516) 60 FT PUBLIC R/W
EX. CFPUA SSMH
2" BLOW-OFF ASSEMBLY
SOMERDALE COURT 40 FT PUBLIC R/W
PROP. 8" CFPUA PUBLIC SEWER MAIN
EX. 10" CFPUA PUBLIC SEWER MAIN
FARROW BK 2132, PG 1596 R-15 RESIDENTIAL
NAVAHO WOODS MB 27, PG 192 R-15 RESIDENTIAL
ONATE JAMES F DEBORAH O 4121 BENDFIELD CT R-15 RESIDENTIAL
PROP. 8" CFPUA PUBLIC SEWER MAINS
30' PRIVATE DE
EX. WETLANDS
PROP. CULVERT
PROP. 5 FT SIDEWALK
STORMWATER CATCH BASIN
25 FT CONSERVATION RESOURCE BUFFER
MINE KEVIN M HRS 4125 WATERHURST DR R-15 RESIDENTIAL
ALLISON JOYCE E 4129 WATERHURST DR R-15 RESIDENTIAL
WILLIAMSON MARK H, SHERRI H 4133 WATERHURST DR R-15 RESIDENTIAL
25 FT PERIMETER BUFFER/ TREE SAVE AREA
KELLERTON PLACE 50 FT PUBLIC R/W
NORTH ROCKLUND COURT 50 FT PUBLIC R/W
PROP. 2" CFPUA WM
PROP. 8" CFPUA WM
EX. CFPUA SSMH
EX. 8" CFPUA PUBLIC SEWER MAIN
EX. 8" CFPUA PUBLIC WATER MAIN
PROP. FUTURE ROAD CONNECTION TO MILLHAVEN COURT
WHITEHURST DRIVE
SELLERS JAMES A BARBARA L 4129 WATERHURST DR R-15 RESIDENTIAL
KORTH LORA ETAL 4125 WATERHURST DR R-15 RESIDENTIAL
ELLIOTT GIBSON SARAH 4121 WATERHURST DR R-15 RESIDENTIAL
BATTS BRIAN KEITH CINDY MARIE 4117 WATERHURST DR R-15 RESIDENTIAL
HALL MALCOLM SR & 4113 WATERHURST DR R-15 RESIDENTIAL
ROGERS KRISTEN ELIZABETH 4109 WATERHURST DR R-15 RESIDENTIAL
PROP. STOP SIGN
PROP. 5 FT SIDEWALK
46 X 46' SIGHT TRIANGLE
35' R
10 FT MBL
PROP. DOG PARK
PROP. RECREATION AREA RECREATION AND RELATED FACILITIES PROPOSED FOR CONSTRUCTION ON SITE SHALL BE SUBJECT TO SITE PLAN REVIEW AT A LATER DATE
35 FT STREAM BUFFER
SOUTH ROCKLUND COURT 50 FT PUBLIC R/W
MILLHAVEN COURT 50 FT PUBLIC R/W
IMPACT AREA D 1,076 SF (0.02 AC.)
PROP. 8" CFPUA PUBLIC SEWER MAIN
PROP. 8" CFPUA WM
PROP. 8" CFPUA PUBLIC WATER MAIN
FIRE HYDRANT ASSEMBLY
PROP. 2" CFPUA PUBLIC WATER MAIN
EX. CFPUA PUMP STATION
YEAGER KARL R ETAL 4225 WHITEHURST DR R-15 RESIDENTIAL
N44°57'28"W 25.46'
N43°57'27"W 50.00'
QUATES M.
PROP. 8" CFPUA PUBLIC SEWER MAIN
2" BLOW-OFF ASSEMBLY
EX. CFPUA SSMH
75 FT CONSERVATION RESOURCE BUFFER
WHISKEY CREEK (SA;HOW)
NORMAL HIGH WATER LINE/ PROPERTY BOUNDARY LINE
EX. 30 FT CFPUA PUBLIC UTILITY EASEMENT (MAP 29 PG 123)
EX. 15" CFPUA PUBLIC SEWER MAIN
MARSH LINE
S25°21'05"E
S58°38'54"W 1111.74'
S58°38'54"W 1111.74'
S58°38'54"W 1111.74'

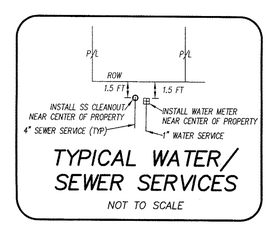


NOTE: RESIDENTIAL DRIVEWAYS MUST MEET OFFSET REQUIREMENTS AND SIGHT DISTANCE REQUIREMENTS AT EACH INTERSECTION (LOTS 121, 122 129, 130, 142, 148, 149, 170, & 171).

CURVE TABLE					
CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD BRG
C1	66°23'37"	230.00 FT	266.52 FT	150.49 FT	S21°28'52"E
C2	18°00'22"	230.00 FT	72.28 FT	36.44 FT	N89°15'04"E
C3	14°57'28"	230.00 FT	60.04 FT	30.19 FT	N62°17'32"W
C4	14°49'53"	230.00 FT	59.54 FT	29.94 FT	S62°21'19"E
C5	32°25'01"	151.14 FT	85.55 FT	43.95 FT	S17°49'56"W
C6	23°07'58"	300.00 FT	121.12 FT	61.40 FT	N21°16'22"E

LINE TABLE		
LINE	BEARING	LENGTH
L1	S11°43'42"W	181.62 FT
L2	S54°40'41"E	307.74 FT
L3	S54°45'35"E	25.01 FT
L4	N84°37'44"W	29.24 FT
L5	N81°44'45"W	11.63 FT
L6	N80°14'53"E	239.64 FT
L7	N35°14'47"E	50.00 FT
L8	S35°14'47"W	1603.75 FT
L9	S35°14'47"W	50.00 FT
L10	S54°45'13"E	25.02 FT
L11	N54°48'48"W	81.65 FT
L12	N69°46'16"W	511.39 FT
L13	N54°56'23"W	107.37 FT
L14	S03°15'15"W	50.00 FT
L15	N35°03'37"E	434.26 FT
L16	N35°03'37"E	264.35 FT

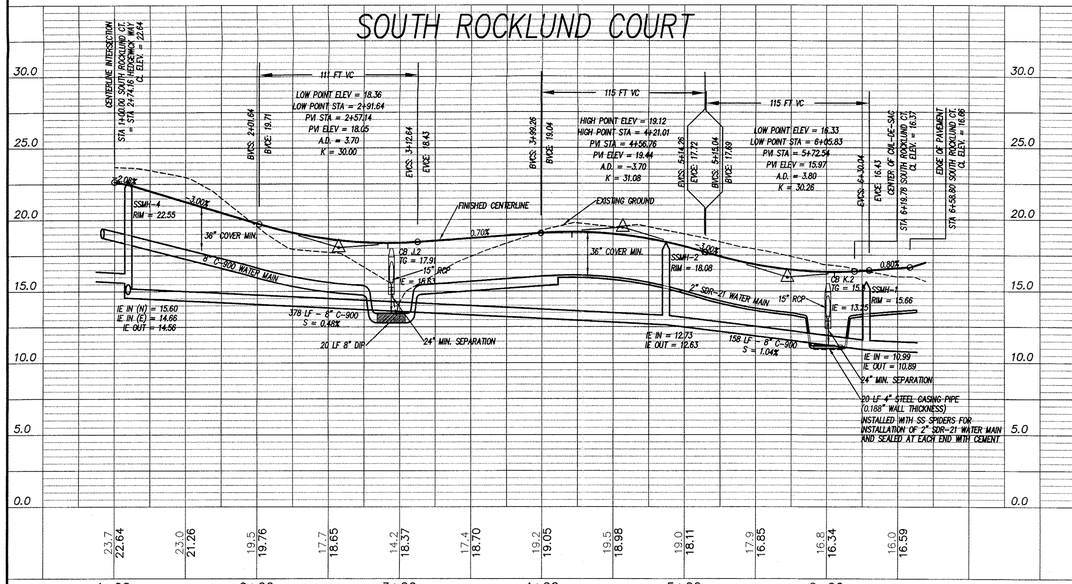




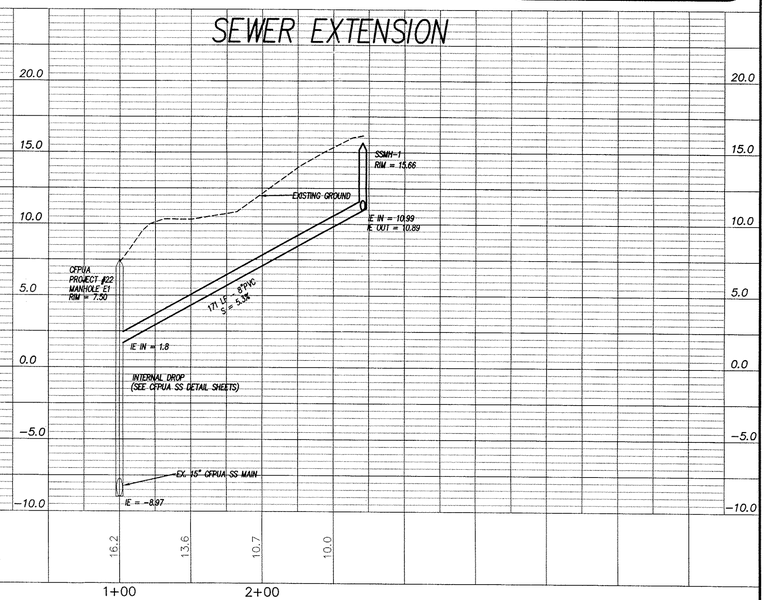
TYPICAL WATER/ SEWER SERVICES
NOT TO SCALE

SCALE IN FEET: 1"= 50'

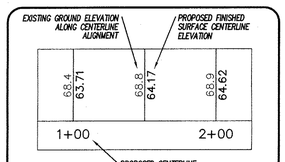
SOUTH ROCKLUND COURT



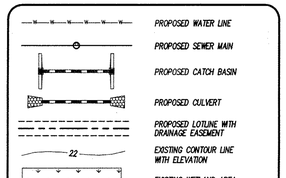
SEWER EXTENSION

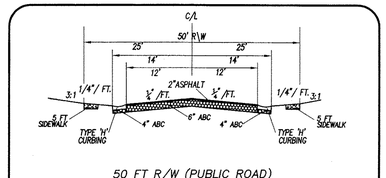


PROFILE LEGEND

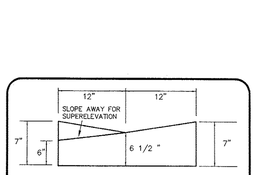


PLAN LEGEND





50 FT R/W (PUBLIC ROAD)
STREET CROSS SECTION
N.T.S.



TYPE "H" CURB
NOT TO SCALE

CPPUA 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.

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

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT # 20120114
SIGNED

Approved Construction Plan

	Name	Date
Planning		3-4-14
Public Utilities		
Traffic		3-4-14
Fire	Shawls	3-4-14

CSD
LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

STATION 1+00.00 THROUGH END SOUTH ROCKLUND COURT
&
STATION 1+00.00 THROUGH END SEWER EXTENSION

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PLANS & PROFILES for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

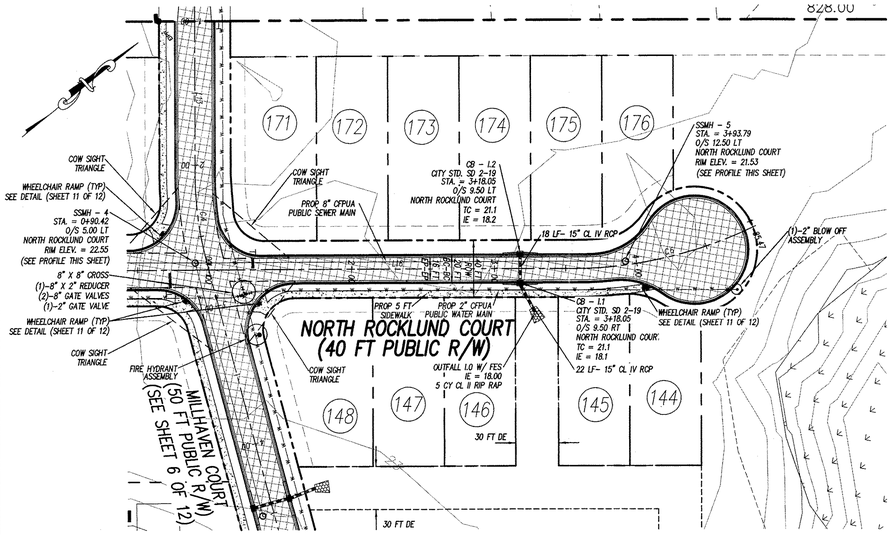
OWNER: TSV DEVELOPERS, INC.
1904 EASTWOOD ROAD, SUITE 212
WILMINGTON, NC 28403

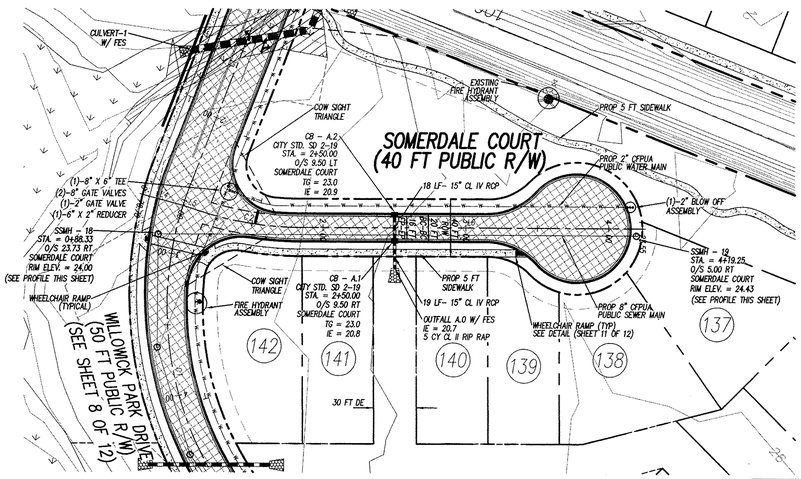
NORTH CAROLINA PROFESSIONAL SEAL 025483 ENGINEER HOWARD S. RESNIK
4/1/14

REV. NO.	REMARKS	BY	DATE
8	REVISED PER CPPUA COMMENTS	RLW	7/22/13
7	REVISED PER CPPUA COMMENTS	JSM	7/10/13
14	REVISED PER SS CLEANOUT AND WATER METER DETAIL	JSM	1/28/14
13	REVISED WATER MAIN POSITION	JSM	12/30/13
12	REVISED DIP WATER MAINS	JSM	11/22/13
11	REVISED PER WATER AND SEWER MAIN LOCATIONS	JSM	10/10/13
10	REVISED PUBLIC UTILITY OWNERSHIP	JSM	8/23/13
9	REMOVED WATER/SEWER SERVICES, ADDED TYP. DETAIL	RLW	7/30/13

DATE: 3-20-08
HORZ. SCALE: 1"= 50'
VERT. SCALE: 1"= 5'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO: 04-0011
DRAWING NO: 04-0011PP1

Sheet No. 4 Of 12





LINE TABLE		
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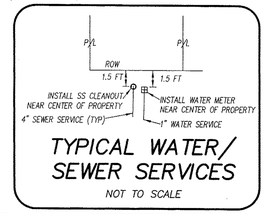
L12	N69°46'16"W	511.39 FT
L13	N54°56'23"W	107.37 FT
L14	S03°15'15"W	50.00 FT
L15	N35°03'37"E	434.25 FT
L16	N35°03'37"E	264.35 FT

CURVE TABLE					
CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD BRG
C1	66°23'37"	230.00 FT	266.52 FT	150.49 FT	S21°28'52"E
C2	18°00'22"	230.00 FT	72.28 FT	36.44 FT	N89°15'04"E
C3	14°57'28"	230.00 FT	60.04 FT	30.19 FT	N62°17'32"W
C4	14°40'53"	230.00 FT	59.54 FT	29.94 FT	S62°27'19"E
C5	32°25'51"	151.14 FT	85.55 FT	43.95 FT	S17°49'56"W
C6	23°07'58"	300.00 FT	121.12 FT	61.40 FT	N21°16'22"E

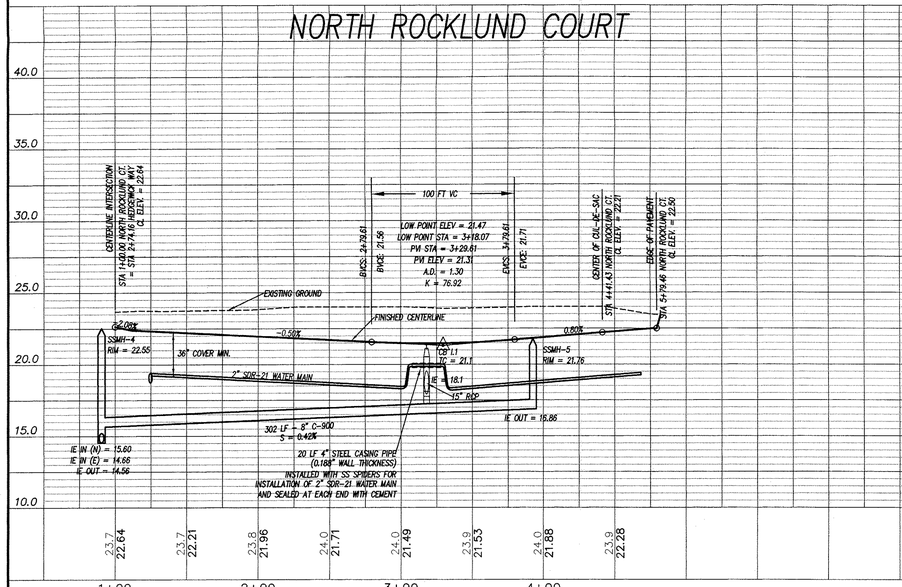
NOTE: RESIDENTIAL DRIVEWAYS MUST MEET OFFSET REQUIREMENTS AND SIGHT DISTANCE REQUIREMENTS AT EACH INTERSECTION (LOTS 121, 122 129, 130, 142, 148, 149, 170, & 171).

50 25 0 50 100 150
SCALE IN FEET: 1"= 50'

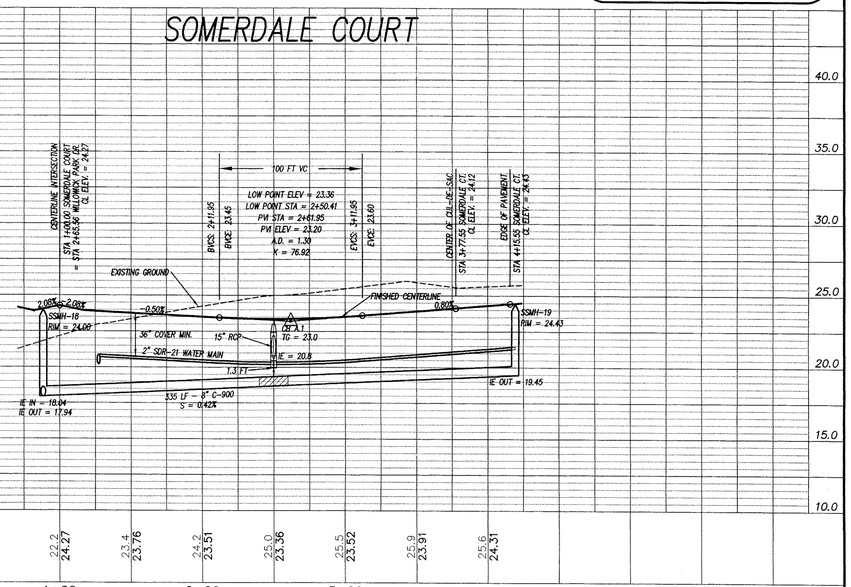


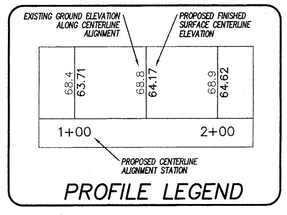
TYPICAL WATER/ SEWER SERVICES
NOT TO SCALE

NORTH ROCKLUND COURT

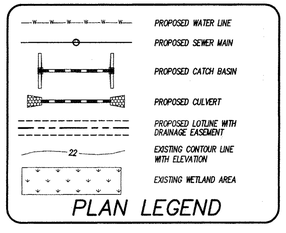


SOMERDALE COURT

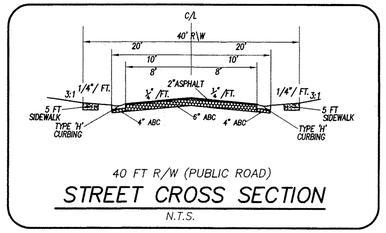




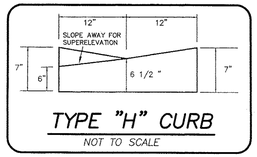
PROFILE LEGEND



PLAN LEGEND



40 FT R/W (PUBLIC ROAD)
STREET CROSS SECTION
N.T.S.



TYPE "H" CURB
NOT TO SCALE

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.

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

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT # 20120214
SIGNED

Approved Construction Plan

	Name	Date
Planning		3/4/14
Public Utilities		
Traffic		3-4-14
Fire		3-4-14

LICENSE # C–2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791–4441

STATION 1+00.00 THROUGH END NORTH ROCKLUND COURT & STATION 1+00.00 THROUGH END SOMERDALE COURT

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PLANS & PROFILES for THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: TSV DEVELOPERS, INC.
1504 CHANNING BLVD, SUITE 212
WILMINGTON, NC 28403

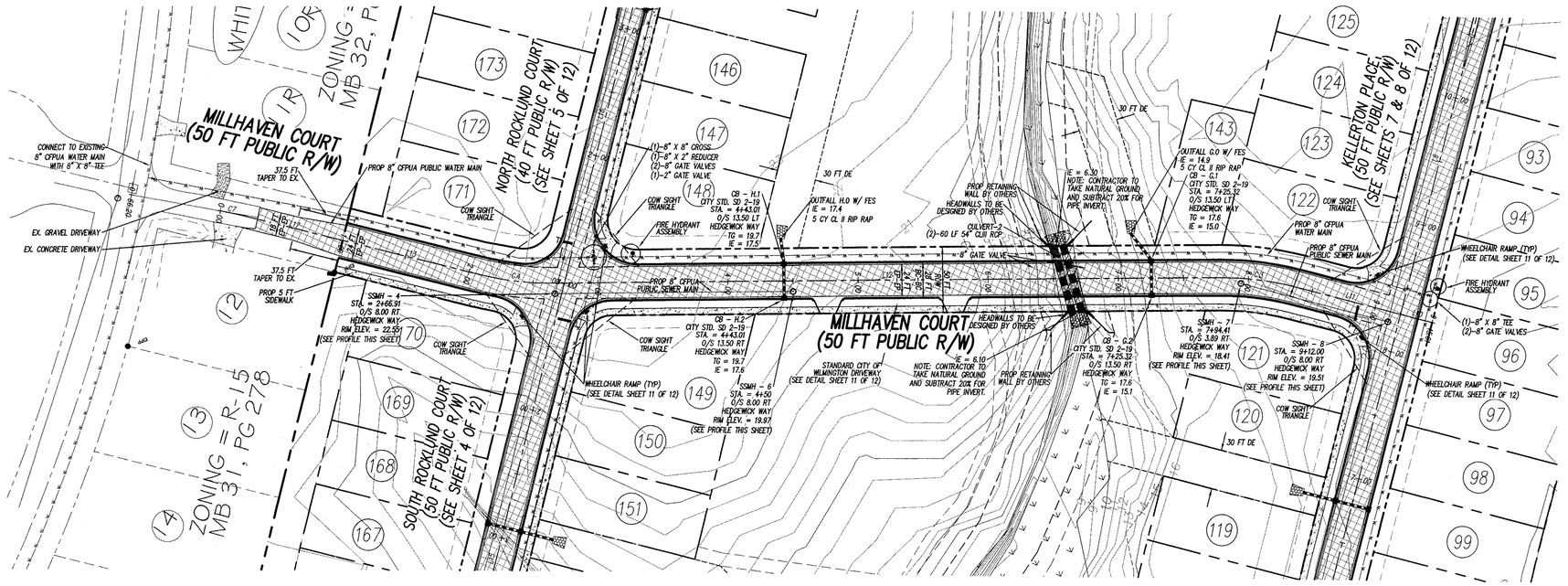
NORTH CAROLINA PROFESSIONAL SEAL 025483 ENGINEER HOWARD S. PERNIK

REV. NO.	REMARKS	BY	DATE
8	REMOVED WATER/SEWER SERVICES, ADDED TYP. DETAIL	RLW	7/30/13
15	ADDED ADDITIONAL VALVE AT SOMERDALE INTERSECTION	RLW	8/19/14
14	REVISED PER CFPUA	RLW	8/3/14
13	REVISED PER SS CLEANOUT AND WATER METER DETAIL	JSM	1/28/14
12	REVISED WATER MAIN LOCATION	JSM	12/30/13
11	REVISED WATER DIP MAIN	JSM	11/22/13
10	REVISED PER WATER AND SEWER LOCATIONS	JSM	10/10/13
9	REVISED PER PUBLIC UTILITY OWNERSHIP	JSM	8/23/13

DATE: 3–20–08
HORZ. SCALE: 1"= 50'
VERT. SCALE: 1"= 5'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO: 04–0011
DRAWING NO: 04–0011PP2

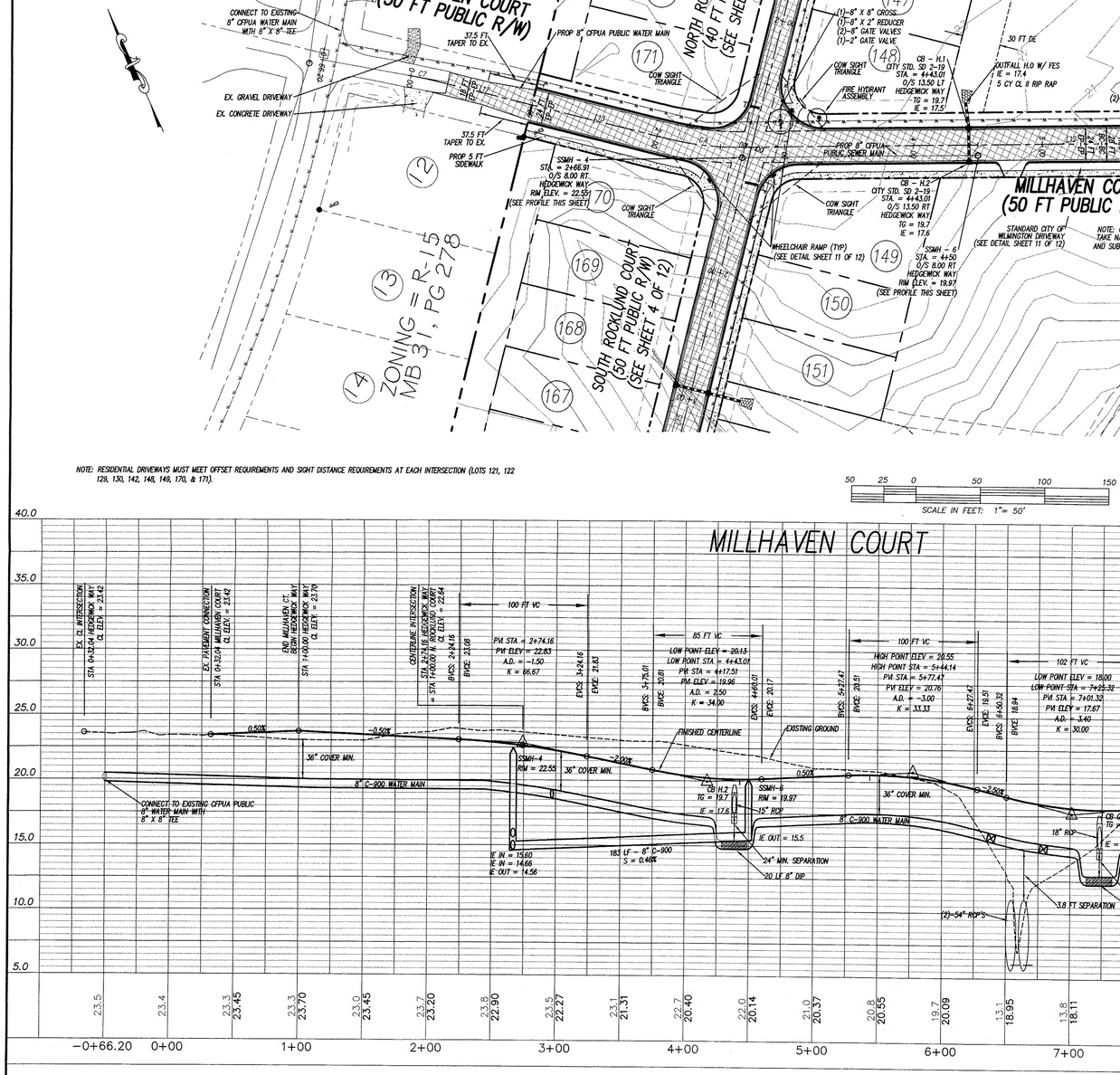
Sheet No. 5 Of 12

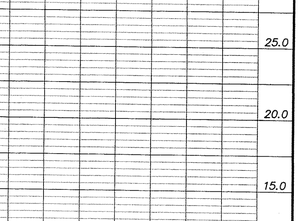
ASPHALT TAPER LENGTH
L = WS/2
L = TAPER WIDTH X SPEED LIMIT / 2
L = 3 FT X 25 MPH / 2
L = 75 / 2
L = 37.5 FT



NOTE: RESIDENTIAL DRIVEWAYS MUST MEET OFFSET REQUIREMENTS AND SIGHT DISTANCE REQUIREMENTS AT EACH INTERSECTION (LOTS 121, 122 129, 130, 142, 148, 149, 170, & 171).

50 25 0 50 100 150
SCALE IN FEET: 1"= 50'

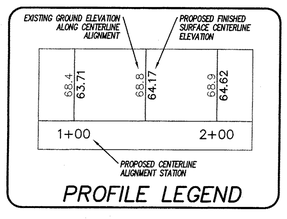




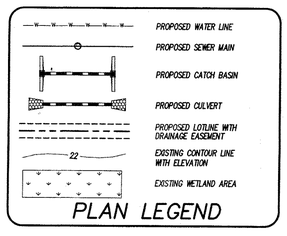
TYPICAL WATER/ SEWER SERVICES
NOT TO SCALE

LINE TABLE		
LINE	BEARING	LENGTH
L1	S51°43'42"W	181.62 FT
L2	S54°40'41"E	307.74 FT
L3	S54°45'36"E	25.01 FT
L4	N84°37'44"W	29.24 FT
L5	N81°44'45"W	11.63 FT
L6	N80°14'53"E	239.64 FT
L7	N35°14'47"E	50.00 FT
L8	S35°14'47"W	1603.75 FT
L9	S35°14'47"W	50.00 FT
L10	S54°45'12"E	25.02 FT
L11	N54°48'48"W	81.65 FT
L12	N83°46'16"W	511.39 FT
L13	N54°56'23"W	107.37 FT
L14	S03°15'15"W	50.00 FT
L15	N35°01'37"E	434.25 FT
L16	N35°01'37"E	264.35 FT
L17	S54°56'23"E	78.25 FT

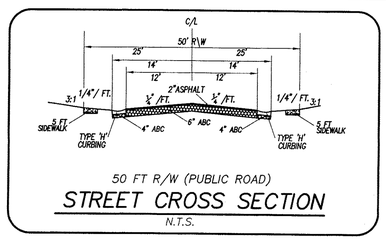
CURVE TABLE					
CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD BRG
C1	66°23'37"	230.00 FT	266.52 FT	150.49 FT	S21°28'52"E
C2	18°00'22"	230.00 FT	72.28 FT	36.44 FT	N89°15'04"E
C3	14°57'28"	230.00 FT	60.04 FT	30.19 FT	N62°17'32"W
C4	14°49'53"	230.00 FT	59.54 FT	29.94 FT	S62°21'19"E
C5	32°25'51"	151.14 FT	85.55 FT	43.95 FT	S17°49'56"W
C6	23°07'58"	300.00 FT	121.12 FT	61.40 FT	N21°16'22"E
C7	3°51'56"	300.00 FT	20.24 FT	61.40 FT	N56°52'22"W



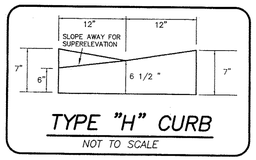
PROFILE LEGEND



PLAN LEGEND



50 FT R/W (PUBLIC ROAD)
STREET CROSS SECTION
N.T.S.



TYPE "H" CURB
NOT TO SCALE

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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5. NO FLEXIBLE COUPLINGS SHALL BE USED.

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STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/14/14 PERMIT # 2012014
SIGNED

Approved Construction Plan
Name Date
Planning 3/14/14
Public Utilities
Traffic 3-14-14
Fire S Powers 3-14-14

CSD
LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

STATION 1+00.00 THROUGH END
HEDGEWICK WAY

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PLANS & PROFILES for
THE CREEK AT WILLOWCK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

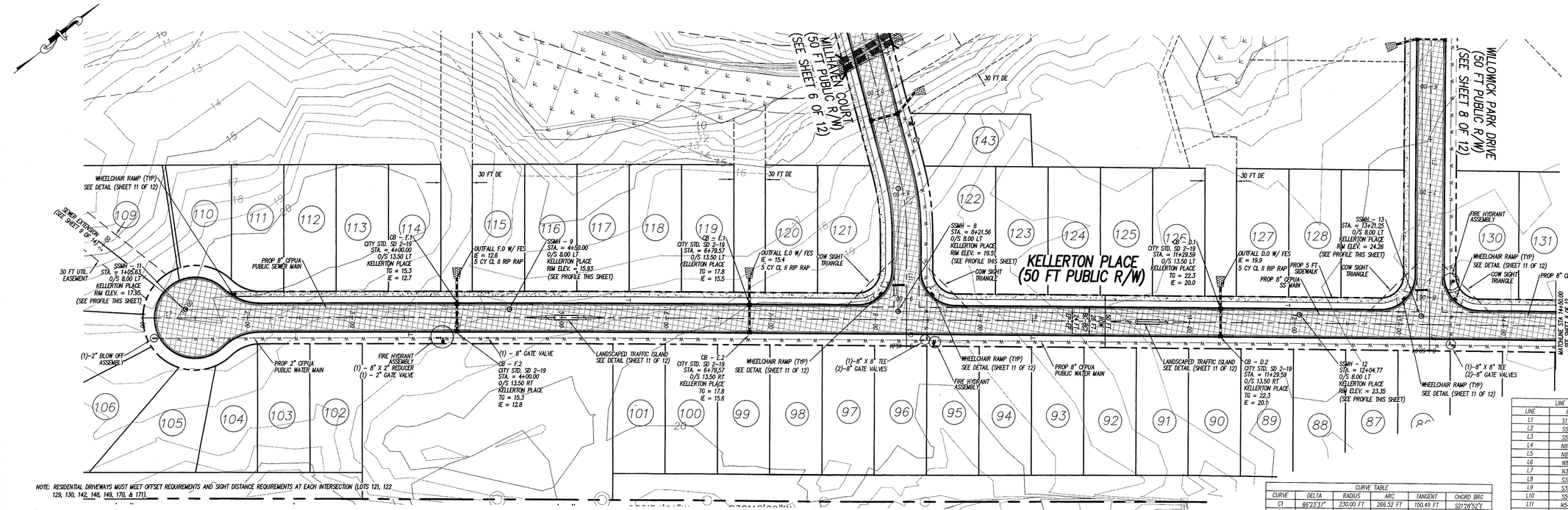
OWNER: TSV DEVELOPERS, INC.
1904 EASTWOOD ROAD, SUITE 212
WILMINGTON, NC 28403

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025483 HOWARD S. RESNIK

REV. NO.	REMARKS	BY	DATE
8	REVISED PER CFPUA COMMENTS	RLW	7/22/13
7	REVISED PER CFPUA COMMENTS	JSM	7/10/12
14	REVISED PER SS CLEANOUT AND WATER METER DETAIL	JSM	1/28/14
13	REVISED WATER MAIN LOCATION	JSM	12/30/13
12	REVISED LOCATIONS OF WATER AND SEWER MAINS	JSM	10/10/13
11	REVISED PER MILLHAVEN COURT EXTENSION	JSM	9/23/13
10	REVISED PER PUBLIC UTILITY OWNERSHIP	JSM	8/23/13
9	REMOVED WATER/SEWER SERVICES, ADDED TYP. DETAIL	RLW	7/30/13

DATE: 3-20-08
HORZ. SCALE: 1"= 50'
VERT. SCALE: 1"= 5'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO: 04-0011
DRAWING NO: 04-0011PP3

Sheet No. 6 Of 12



CURVE TABLE					
CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD BRG
C1	66°23'37"	230.00 FT	266.52 FT	150.49 FT	S21°28'52"E
C2	18°00'22"	230.00 FT	72.28 FT	36.44 FT	N83°15'04"E
C3	14°57'28"	230.00 FT	60.04 FT	30.19 FT	N52°17'32"W
C4	14°49'53"	230.00 FT	59.54 FT	29.94 FT	S62°21'19"E
C5	32°25'51"	151.14 FT	85.55 FT	43.95 FT	S17°49'56"W
C6	23°07'58"	300.00 FT	121.12 FT	61.40 FT	N21°16'22"E

LINE TABLE		
LINE	BEARING	LENGTH
L1	S11°43'42"W	181.62 FT
L2	S54°40'41"E	307.74 FT
L3	S54°45'36"E	25.01 FT
L4	N84°37'44"W	29.24 FT
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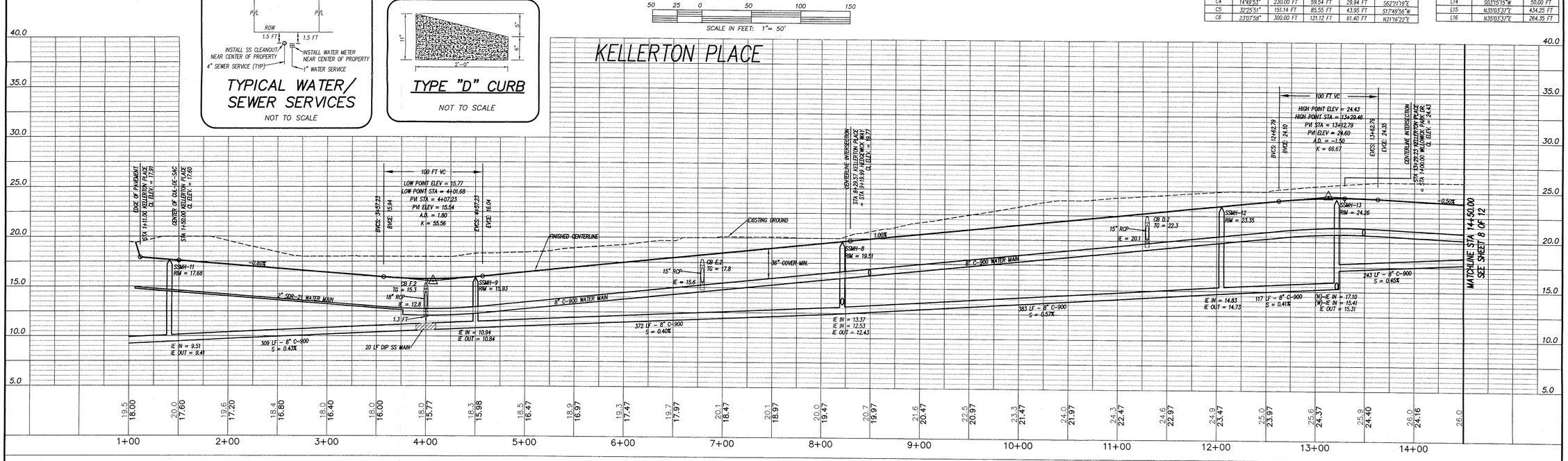
L6	N89°14'53"E	239.64 FT
L7	N35°14'47"E	50.00 FT
L8	S35°14'47"W	1603.75 FT
L9	S35°14'47"W	50.00 FT
L10	S54°45'13"E	25.02 FT
L11	N54°48'48"W	81.65 FT
L12	N69°46'16"W	511.39 FT
L13	N54°56'23"W	107.37 FT
L14	S33°15'15"W	50.00 FT
L15	N35°03'37"E	434.25 FT
L16	N35°03'37"E	264.35 FT

SCALE IN FEET: 1"= 50'

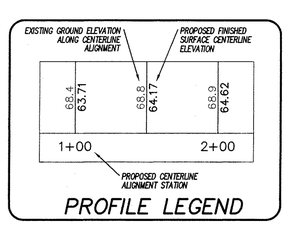


TYPICAL WATER/ SEWER SERVICES

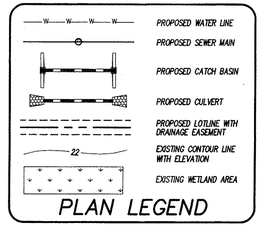
NOT TO SCALE

TYPE "D" CURB

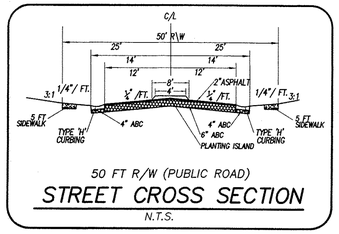
NOT TO SCALE



PROFILE LEGEND



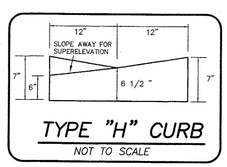
PLAN LEGEND



50 FT R/W (PUBLIC ROAD)

STREET CROSS SECTION

N.T.S.



TYPE "H" CURB

NOT TO SCALE

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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5. NO FLEXIBLE COUPLINGS SHALL BE USED.

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STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT # 20120114
SIGNED

Approved Construction Plan

	Name	Date
Planning		3/4/14
Public Utilities		
Traffic		3-4-14
Fire	S. Flowers	

LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

STATION 1+00.00 THROUGH 14+50.00
KELLERTON PLACE

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PLANS & PROFILES for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

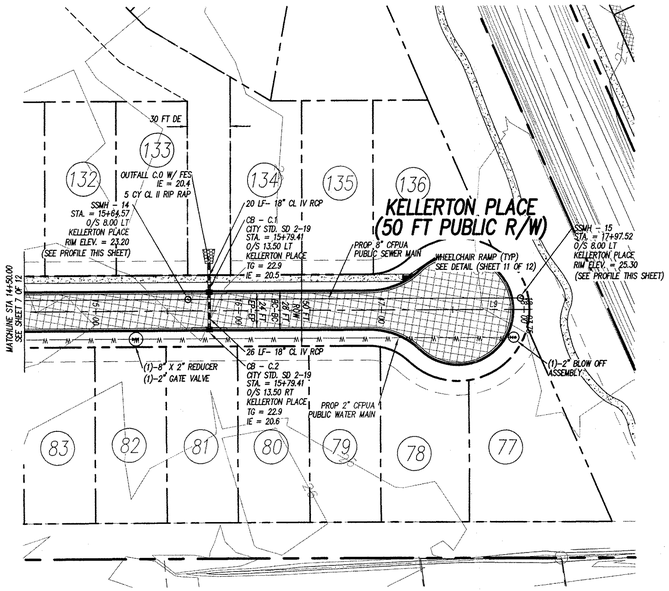
OWNER: TSV DEVELOPERS, INC.
1004 MILITARY CUTOFF, SUITE 212
WILMINGTON, NC 28403

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025483 HOWARD S. RESNIK

REV. NO.	REMARKS	BY	DATE
8	REMOVED WATER/SEWER SERVICES, ADDED TYP. DETAIL	RLW	7/30/13
7	REVISED PER COMMENTS FROM CFPUA	RLW	7/22/13
14	REVISED PER SS CLEANOUT AND WATER METER DETAIL	JSM	1/28/14
13	REVISED PER CFPUA COMMENTS / WATER MAIN LOCATION	JSM	12/30/13
12	REVISED DIP WATER MAINS	JSM	11/21/13
11	REVISED ISLAND SIZE	JSM	10/29/13
10	REVISED WATER AND SEWER MAIN LOCATIONS	JSM	10/10/13
9	REVISED PER PUBLIC UTILITY OWNERSHIP	JSM	8/23/13

DATE: 3-20-08
HORZ. SCALE: 1"= 50'
VERT. SCALE: 1"= 5'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO: 04-0011
DRAWING NO: 04-0011PP4

Sheet No. 7 of 12



LINE TABLE		
LINE	BEARING	LENGTH
L1	S11°43'42"W	181.62 FT
L2	S54°40'41"E	307.74 FT
L3	S54°45'36"E	25.01 FT
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L5	N81°44'45"W	11.63 FT
L6	N80°14'53"E	239.64 FT
L7	N35°14'47"E	50.00 FT
L8	S35°14'47"W	1603.75 FT
L9	S35°14'47"W	50.00 FT
L10	S54°45'12"E	25.02 FT
L11	N54°48'48"W	81.65 FT
L12	N63°46'16"W	511.39 FT
L13	N54°56'23"W	107.37 FT
L14	S03°15'15"W	50.00 FT
L15	N35°03'37"E	434.25 FT
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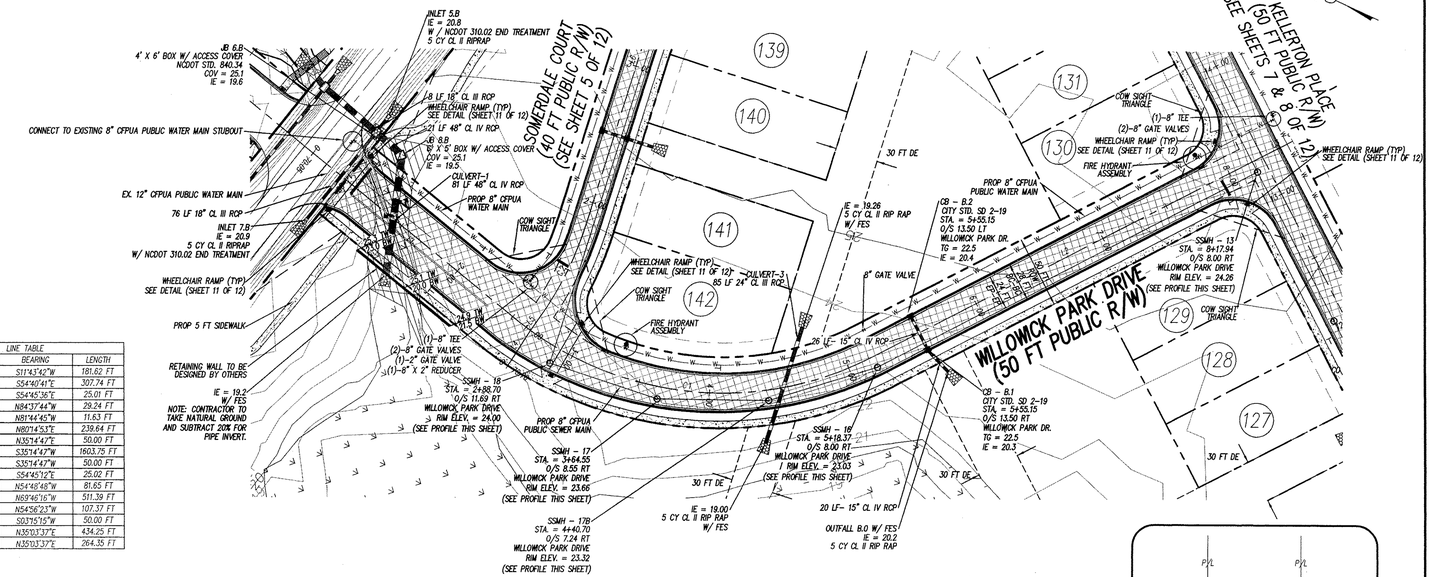
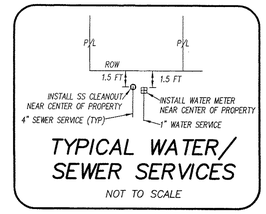


CURVE TABLE					
CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD BRG
C1	66°23'37"	230.00 FT	266.52 FT	150.49 FT	S21°28'52"E
C2	18°00'22"	230.00 FT	72.28 FT	36.44 FT	N89°55'04"E
C3	14°57'28"	230.00 FT	60.04 FT	30.19 FT	N62°17'32"W
C4	14°49'53"	230.00 FT	59.54 FT	29.94 FT	S62°21'19"E
C5	32°25'51"	151.14 FT	85.55 FT	43.95 FT	S17°49'56"W
C6	23°07'58"	300.00 FT	121.12 FT	61.40 FT	N21°16'22"E

NOTE: RESIDENTIAL DRIVEWAYS MUST MEET OFFSET REQUIREMENTS AND SIGHT DISTANCE REQUIREMENTS AT EACH INTERSECTION (LOTS 121, 122 128, 130, 142, 148, 149, 170, & 171).

50 25 0 50 100 150

SCALE IN FEET: 1"= 50'

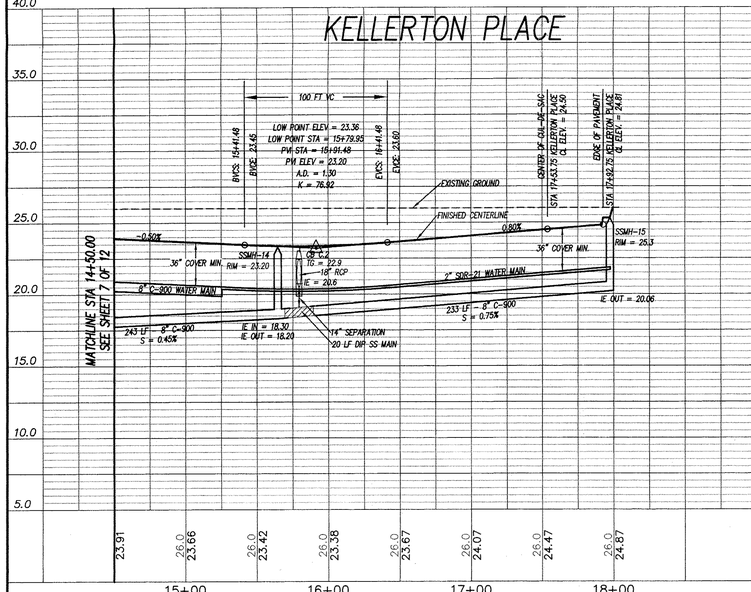


TYPICAL WATER/ SEWER SERVICES

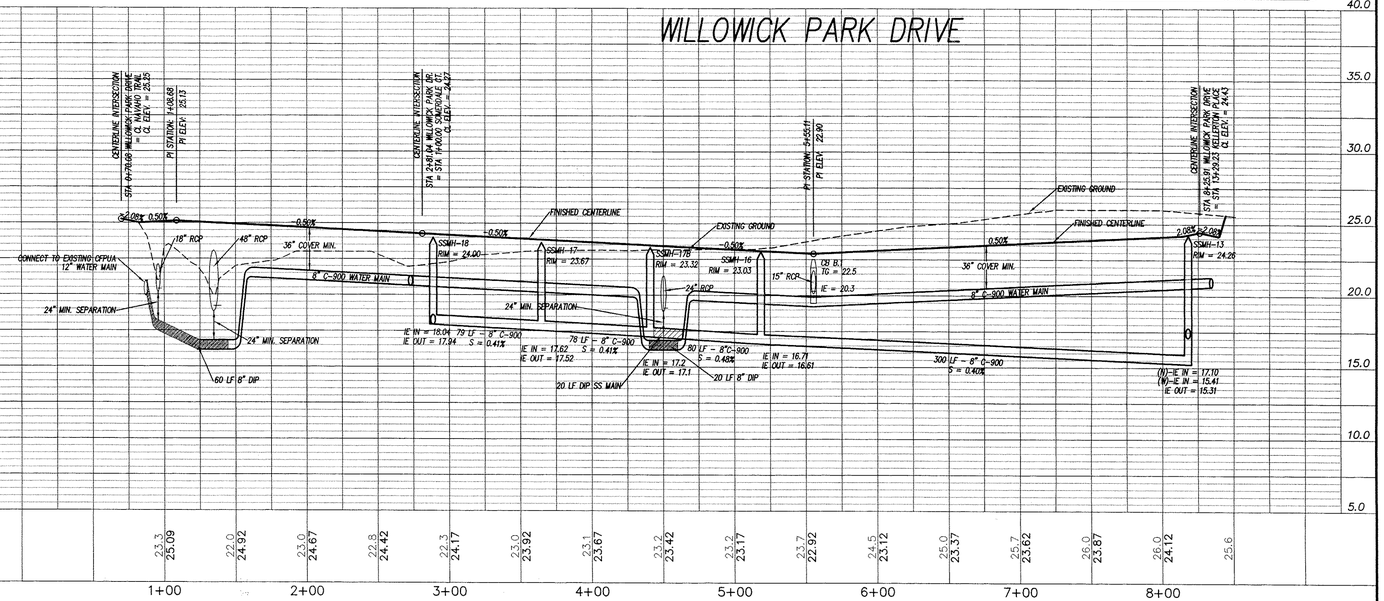
NOT TO SCALE

40.0

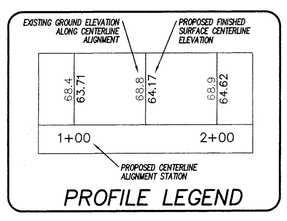
KELLERTON PLACE



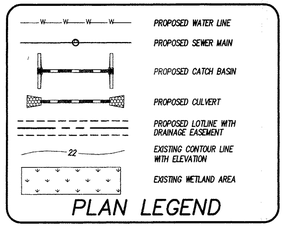
WILLOWICK PARK DRIVE



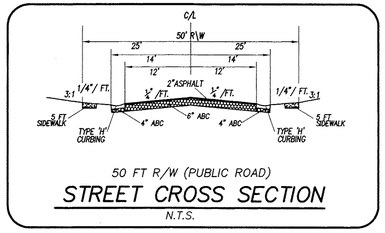
40.0 35.0 30.0 25.0 20.0 15.0 10.0 5.0



PROFILE LEGEND



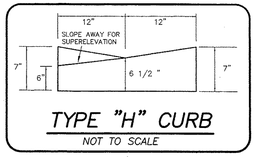
PLAN LEGEND



50 FT R/W (PUBLIC ROAD)

STREET CROSS SECTION

N.T.S.



TYPE "H" CURB

NOT TO SCALE

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.

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

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT# 2012014
SIGNED

Approved Construction Plan

	Name	Date
Planning		3/4/14
Public Utilities		
Traffic		3/4/14
Fire	S Hawes	3-4-14

LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

STATION 14+50.00 THROUGH END
KELLERTON PLACE
&
STATION 1+00.00 THROUGH END
WILLOWICK PARK DRIVE

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PLANS & PROFILES for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

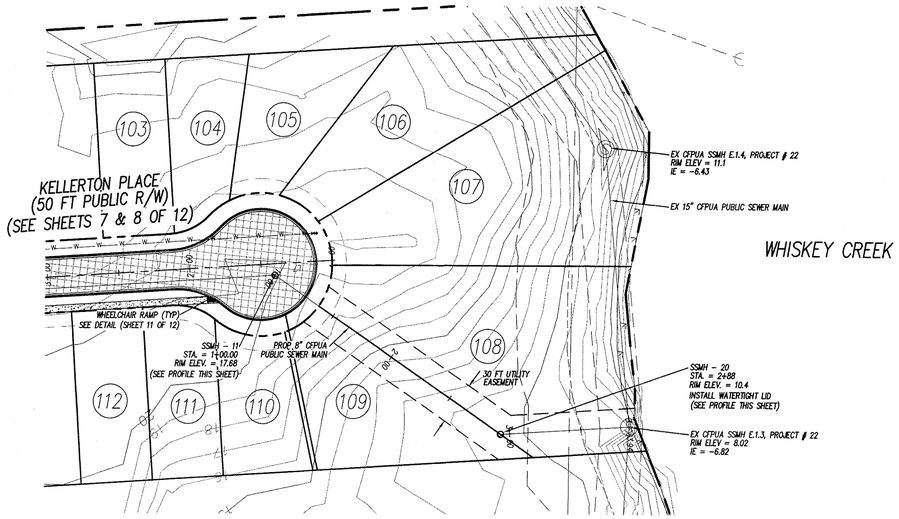
OWNER: TSV DEVELOPERS, INC.
1904 EASTWOOD ROAD, SUITE 212
WILMINGTON, NC 28403

NORTH CAROLINA PROFESSIONAL SEAL 025483 ENGINEER HOWARD S. RESNIK

REV. NO.	REMARKS	BY	DATE
16	REMOVED ADDITIONAL DROP IN WL IN WPD PROFILE	RLW	2/19/14
15	ADDED GATE VALVE, REVISED DOT NOTES	RLW	2/3/14
14	REVISED PER SS CLEANOUT AND WATER METER DETAIL	JSH	1/28/14
13	REVISED SS PIPE SLOPE PER CFPUA / WATER MAIN RELOCATION	JSH	12/30/13
12	REVISED DIP WATER MAINS	JSH	11/22/13
11	REVISED WATER AND SEWER MAIN LOCATIONS	JSH	10/16/13
10	REVISED PER PUBLIC UTILITY OWNERSHIP	JSH	8/23/13
9	REMOVED WATER/SEWER SERVICES, ADDED TYP. DETAIL	RLW	7/30/13

DATE: 3-20-08
HORZ. SCALE: 1"= 50'
VERT. SCALE: 1"= 5'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO: 04-0011
DRAWING NO: 04-0011PP5

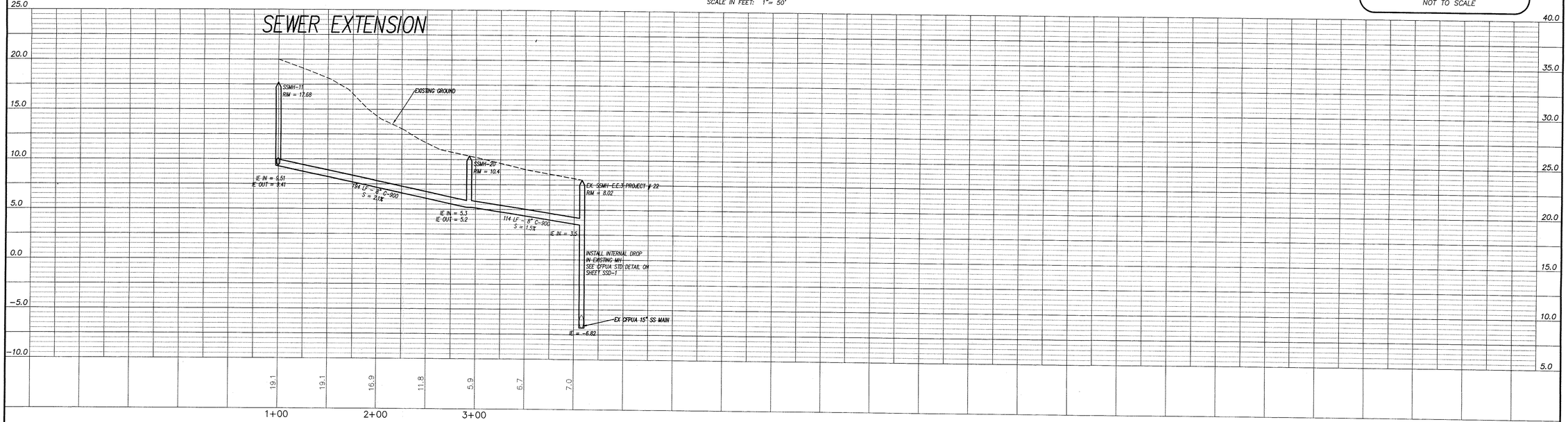
Sheet No. 8 Of 12

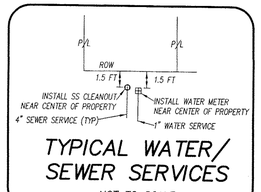


NOTE: RESIDENTIAL DRIVEWAYS MUST MEET OFFSET REQUIREMENTS AND SIGHT DISTANCE REQUIREMENTS AT EACH INTERSECTION (LOTS 121, 122 129, 130, 142, 148, 149, 170, & 171).

50 25 0 50 100 150

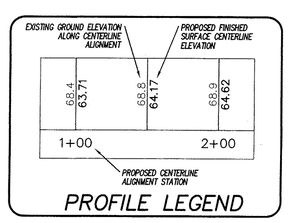
SCALE IN FEET: 1"= 50'



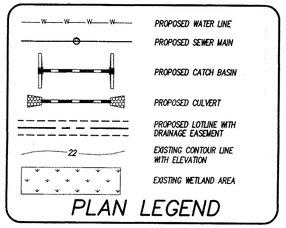


TYPICAL WATER/ SEWER SERVICES

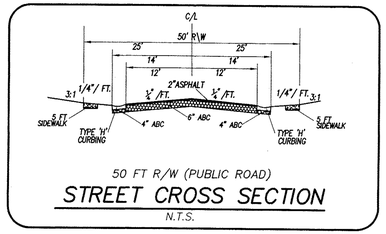
NOT TO SCALE



PROFILE LEGEND



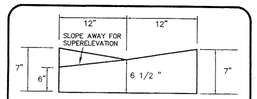
PLAN LEGEND



50 FT R/W (PUBLIC ROAD)

STREET CROSS SECTION

N.T.S.



TYPE "H" CURB

NOT TO SCALE

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 MOST ORDINATE 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.

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STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT # 20120/4
SIGNED

Approved Construction Plan

	Name	Date
Planning		3/4/14
Public Utilities		
Traffic		3-4-14
Fire		3-4-14

LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

STATION 1+00.00 THROUGH END
SEWER EXTENSION

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PLANS & PROFILES for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: TSV DEVELOPERS, INC.
1904 EASTWOOD ROAD, SUITE 212
WILMINGTON, NC 28403

NORTH CAROLINA PROFESSIONAL SEAL 025483 ENGINEER HOWARD S. RESNIK

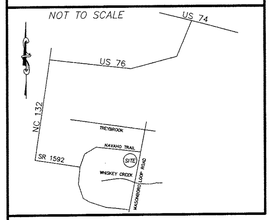
REV. NO.	DATE	REMARKS
9	11/22/13	REVISED CONNECTION POINT OF SEWER
10	1/23/14	REVISED PER CFPUA COMMENTS
11	1/28/14	REVISED PER SS CLEANOUT AND WATER METER DETAIL
12	2/14/14	REVISED SEWER DEPTHS MH11, EXISTING MH E.1.3
5	7/22/13	REVISED PER CFPUA COMMENTS
6	7/30/13	REMOVED WATER/SEWER SERVICES, ADDED TYP. DETAIL
7	8/23/13	REVISED PER PUBLIC UTILITY OWNERSHIP
8	10/10/13	REVISED WATER AND SEWER LOCATIONS

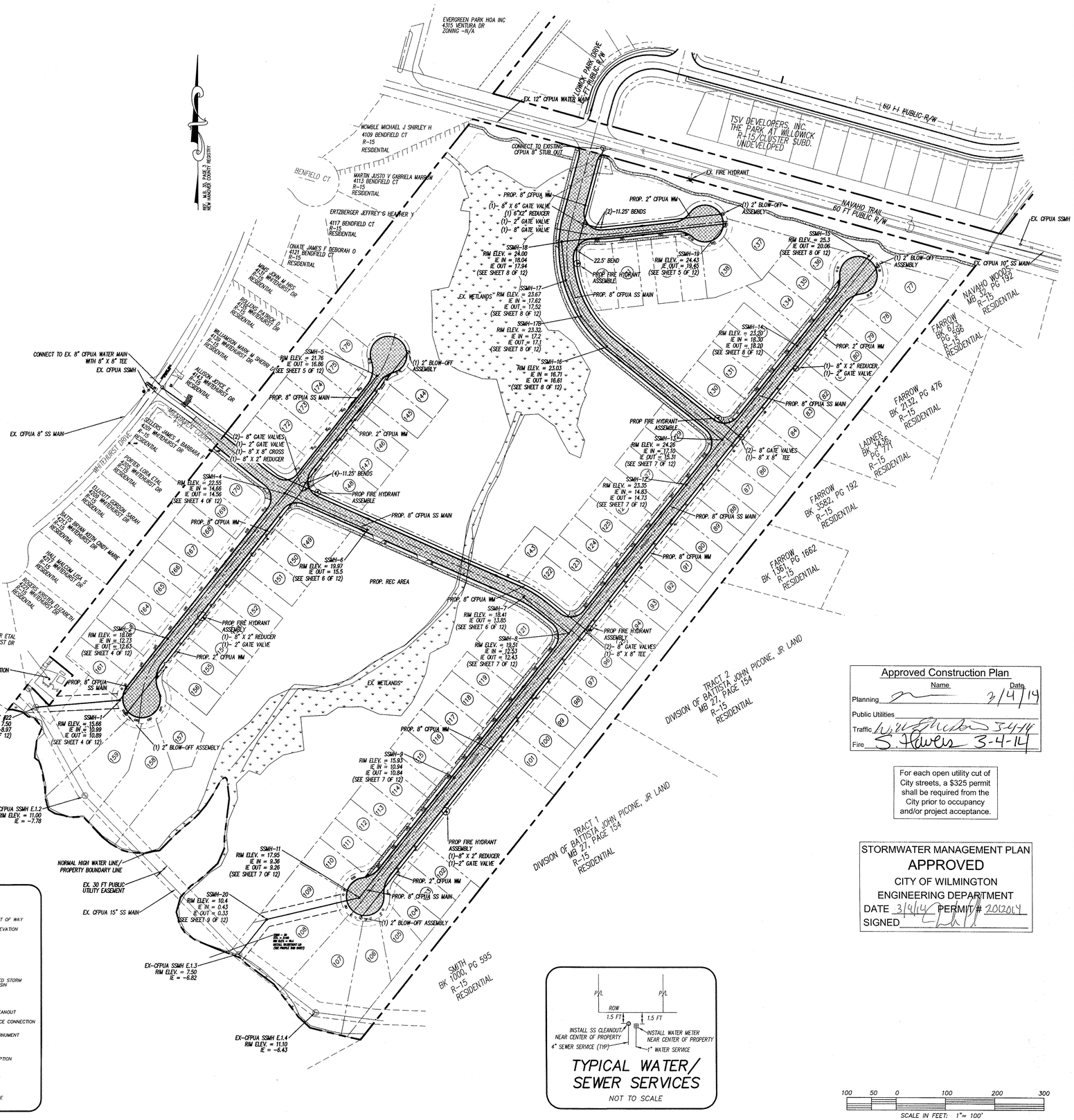
DATE: 3-20-08
HORZ. SCALE: 1"= 50'
VERT. SCALE: 1"= 5'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO.: 040011

Sheet No. 9 Of 12

LOCATION MAP

NOT TO SCALE





UTILITY NOTES:

1. PROJECT SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE SET AND ACTIVATED ON NEW MAINS UNTIL ALL REQUIREMENTS ARE MET. CALL 799-6064 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. ALL COMMERCIAL WATER SERVICES AND ANY IRRIGATION SYSTEMS SUPPLIED BY CFPUA WATER SHALL HAVE A BACKFLOW PREVENTION DEVICE ACCEPTABLE TO THE CITY AND APPROVED BY USCFCCCHR OR ASSE. CALL 343-3910 FOR INFORMATION.
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. THE WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
5. 36"MINIMUM COVER OVER ALL WATER MAINS.
6. ANY SEPARATE CONNECTION FOR IRRIGATION SHALL COMPLY WITH CFPUA CROSS-CONNECTION REQUIREMENTS WITH APPROVED BACKFLOW PREVENTION DEVICES.
7. AT LOCATIONS WHERE WATER MAIN CROSSES UNDER STORM SEWER, A MINIMUM OF 18"VERTICAL SEPARATION SHALL BE PROVIDED.
8. ALL WATER MAINS TO BE C-900.
9. EASEMENTS FROM ADJACENT PROPERTY TO BE OBTAINED FOR SERVICE LINE LOCATIONS.
10. WATER AND SEWER SERVICES CANNOT BE ACTIVATED ON NEW MAINS UNTIL ENGINEER'S CERTIFICATION AND AS-BUILTS ARE RECEIVED AND "FINAL APPROVAL" ISSUED BY PUBLIC WATER SUPPLY SECTION OF NCDENR AND "FINAL ENGINEERING CERTIFICATION" ISSUED BY DIVISION OF WATER QUALITY OF NCDENR.
11. LANDSCAPING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3 FT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FDC AND FIRE HYDRANT.
12. HYDRANTS MUST BE LOCATED WITHIN 8 FT OF THE CURB.
13. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS.
14. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
15. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.
17. A 10 FT NON-MUNICPAL UTILITY EASEMENT IS TO BE PROVIDED TO THE OUTSIDE OF ALL RIGHTS OF WAY.

LEGEND

- EXISTING BOUNDARY
- CENTERLINE OF RIGHT OF WAY
- 21 CONTOUR LINE & ELEVATION
- DRAINAGE FLOW
- EXISTING SANITARY SEWER & MANHOLE
- EXISTING WATERLINE
- EXISTING / PROPOSED STORM SEWER & CATCH BASIN
- E.I.P. EXIST. IRON PIPE
- SANITARY SEWER CLEANOUT
- WATER METER SERVICE CONNECTION
- E.C.M. EXIST. CONCRETE MONUMENT
- HANDICAP RAMP
- 40.9 EL EX. ELEV. & DESCRIPTION
- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE

TYPICAL WATER/ SEWER SERVICES

NOT TO SCALE

Approved Construction Plan

	Name	Date
Planning		3/4/14
Public Utilities		
Traffic		3-4-14
Fire		3-4-14

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

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT # 20120614
SIGNED

100 50 0 100 200 300
SCALE IN FEET: 1"= 100'

CSD
LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

UTILITY PLAN for
THE CREEK AT WILLOWICK

The Contractor is responsible for Call-A-Dig-Safe, Inc. with all digging required, the use of this drawing by any contractor or subcontractor shall indicate that he has verified all dimensions and conditions shown thereon and shall report any discrepancies to the Engineer before commencing work. Any work performed by the Contractor or subcontractor prior to the Engineer's approval shall be the responsibility of the Contractor.

UTILITY PLAN for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: TSV DEVELOPERS, INC.
1904 EASTWOOD ROAD, SUITE 212
WILMINGTON, NC 28403

NORTH CAROLINA PROFESSIONAL SEAL 025483 ENGINEER JOHN S. HOWES, III
1/29/14

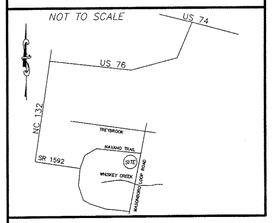
REV. NO.	REMARKS	BY	DATE
8	ADDED LICENSE NUMBER	RLW	7/10/12
7	REVISED PER CFPUA COMMENTS	JDH	10/28/09
6	REVISED SHEET NUMBER	RLW	08/28/09
13	ADDED PER SS CLEANOUT AND WATER METER DETAIL	JSM	1/28/14
12	REVISED SEWER CONNECTION	RLW	1/3/14
11	REVISED WATER AND SEWER MAIN LOCATIONS	JSM	10/10/13
10	REVISED PER TRC COMMENTS	JSM	8/23/13
9	REVISED PER CFPUA COMMENTS	JSM	7/22/13

DATE: 05-03-07
HORZ. SCALE: 1"= 100'
DRAWN BY: CSH
CHECKED BY: HSR
PROJECT NO. 04-0011
DRAWING NO: 04-0011UTIL-PH2

Sheet No. 10 Of 12

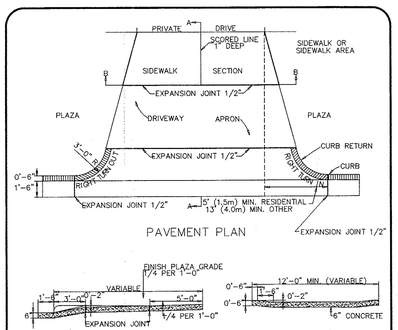
LOCATION MAP

NOT TO SCALE



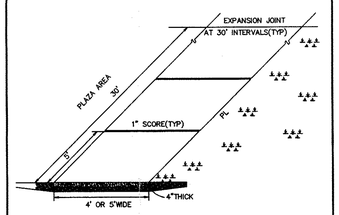
STANDARD DRIVEWAY DETAIL

NOT TO SCALE
SD 8-02



STANDARD SIDEWALK DETAIL

NTS
SD8-15



PAVEMENT MARKINGS OFFSETS

SD 11-02

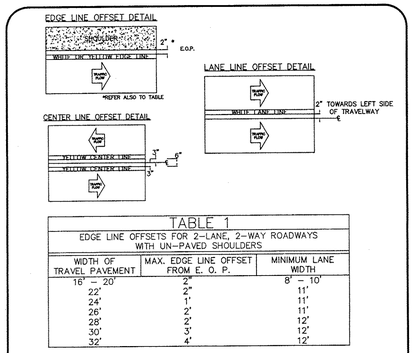
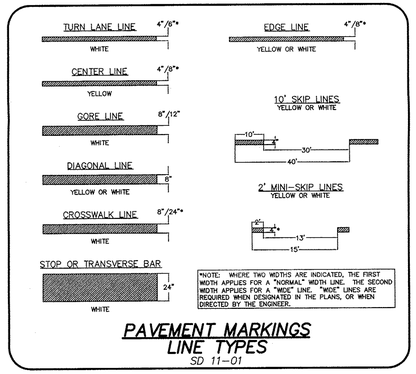


TABLE 1
EDGE LINE OFFSETS FOR 2-LANE, 2-WAY ROADWAYS WITH UN-PAVED SHOULDERS

WIDTH OF TRAVEL PAVEMENT	MAX. EDGE LINE OFFSET FROM E. O. P.	MINIMUM LANE WIDTH
18' - 20'	2"	8' - 10'
22'	2"	11'
24'	1'	11'
26'	2'	11'
28'	3'	12'
30'	3'	12'
32'	4'	12'

PAVEMENT MARKINGS LINE TYPES

SD 11-01



*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 REQUIRED WHEN DESIGNATED IN THE PLANS, OR WHEN DIRECTED BY THE ENGINEER.

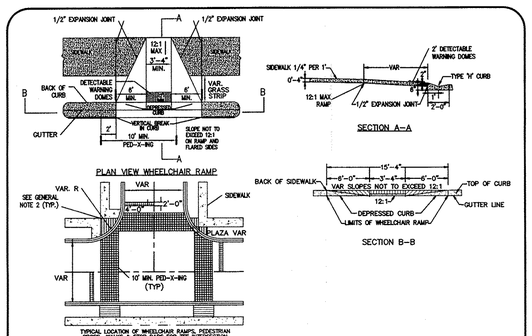
NOTE: ALL SIGNS MOUNTED AT 7'.
CONTACT TRAFFIC ENGINEERING PRIOR TO TRAFFIC SIGN INSTALLATION.

LEGEND

- EXISTING BOUNDARY
- CENTERLINE OF RIGHT OF WAY
- CONTOUR LINE & ELEVATION
- DRAINAGE FLOW
- EXISTING SANITARY SEWER & MANHOLE
- EXISTING WATERLINE
- EXISTING / PROPOSED STORM SEWER & CATCH BASIN
- E.I.P. EXIST. IRON PIPE
- SANITARY SEWER CLEANOUT
- WATER METER SERVICE CONNECTION
- E.C.M. EXIST. CONCRETE MONUMENT
- HANDICAP RAMP
- 40.9 EL EX. ELEV. & DESCRIPTION
- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE

GUIDELINES FOR WHEELCHAIR RAMPS & DEPRESSED CURBS

SD 8-11
NOT TO SCALE



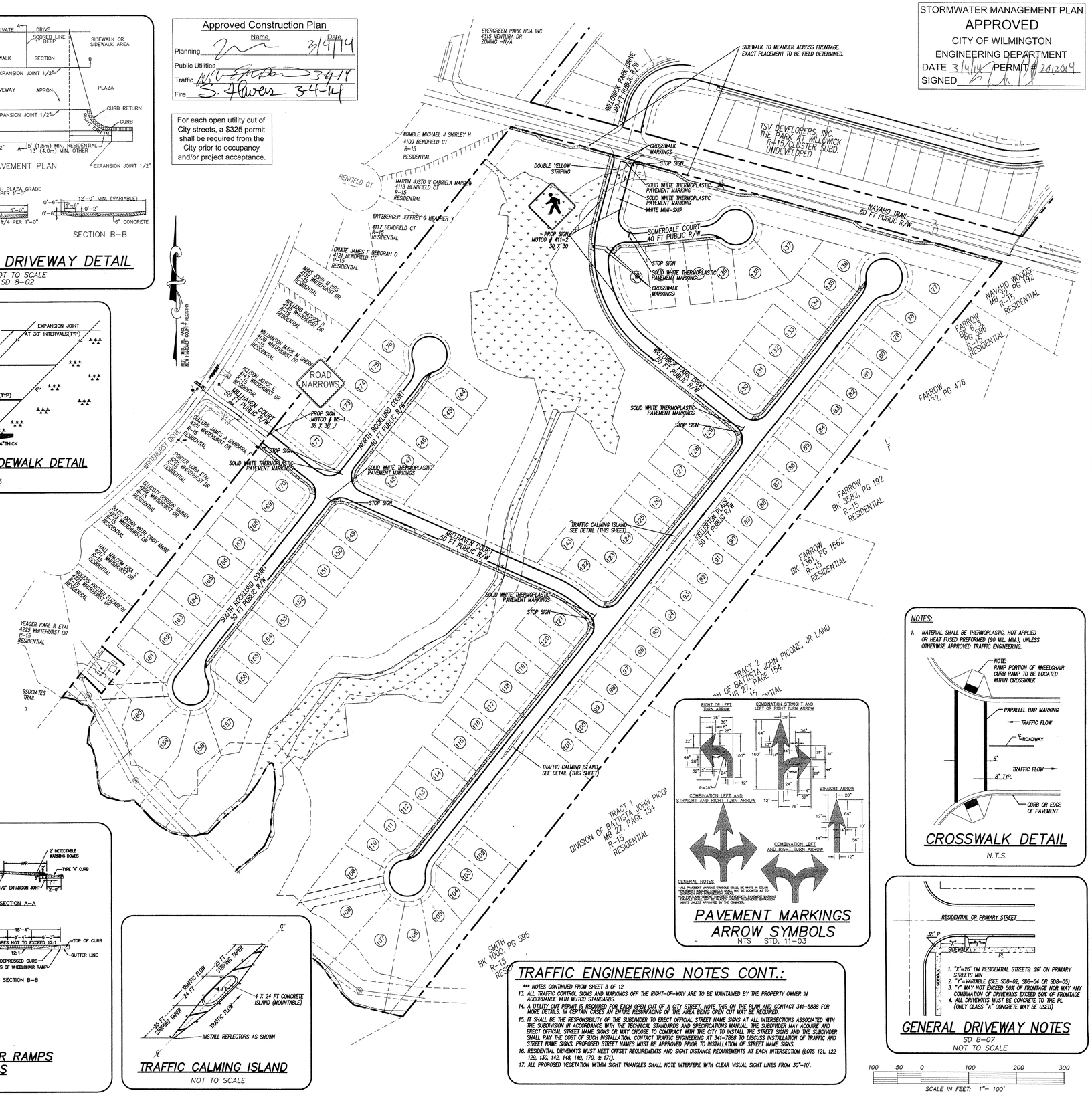
TRAFFIC CALMING ISLAND

NOT TO SCALE

Approved Construction Plan	Name	Date
Planning		3/14/14
Public Utilities		
Traffic		3-14-14
Fire	S. Flowers	3-14-14

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

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/14/14 PERMIT # 201204
SIGNED



TRAFFIC ENGINEERING NOTES CONT.:

*** NOTES CONTINUED FROM SHEET 3 OF 12

13. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
14. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. NOTE THIS ON THE PLAN AND CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
15. 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.
16. RESIDENTIAL DRIVEWAYS MUST MEET OFFSET REQUIREMENTS AND SIGHT DISTANCE REQUIREMENTS AT EACH INTERSECTION (LOTS 121, 122 129, 130, 142, 148, 149, 170, & 171).
17. ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOTE INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30"-10'.

PAVEMENT MARKINGS ARROW SYMBOLS

NTS STD. 11-03

NOTES:

1. MATERIAL SHALL BE THERMOPLASTIC, HOT APPLIED OR HEAT FUSED PREFORMED (90 MIL. MIN.), UNLESS OTHERWISE APPROVED TRAFFIC ENGINEERING.

CROSSWALK DETAIL

N.T.S.

GENERAL DRIVEWAY NOTES

SD 8-07
NOT TO SCALE

100 50 0 100 200 300
SCALE IN FEET: 1"= 100'

CSD
LICENSE # C-2710
COASTAL SITE DESIGN, PC
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. Box 4041
Wilmington, NC 28406
(910) 791-4441

SIGNAGE PLAN for
THE CREEK AT WILLOWICK

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SIGNAGE PLAN for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: TSV DEVELOPERS, INC.
1904 EASTWOOD ROAD, SUITE 212
WILMINGTON, NC 28403

NORTH CAROLINA PROFESSIONAL SEAL 025483 ENGINEER HOWARD S. RESIN
1/3/14

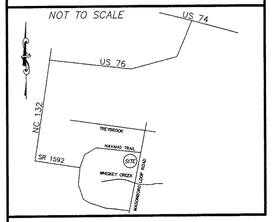
REV. NO.	REMARKS	BY	DATE
7	REVISED SIDEWALK LOCATION ALONG NAVAHO	RLW	1/3/14
6	REVISED PER TRAFFIC ENGINEERING	JSM	10/29/13
5	REVISED PER TRAFFIC ENGINEERING	JSM	10/10/13
4	ADDED COW DETAILS	JSM	7/22/13
3	ADDED LICENSE NUMBER	RLW	7/10/12
2	REVISED SHEET NUMBER	RLW	06/28/09
1	REVISIONS PER LEGEND CHANGES	JDH	11/12/08

DATE: 09-09-08
HORZ. SCALE: 1"= 100'
DRAWN BY: JSL
CHECKED BY: HSR
PROJECT NO: 04-0011
DRAWING NO: 04-0011SIGN-PH2

Sheet No. 11 Of 12

LOCATION MAP

NOT TO SCALE



LEGEND

TOB	TOB OF STREAM BANK
	EXISTING TREE TO BE REMOVED
	EXISTING TREE
	CRITICAL ROOT ZONE
	TREE PROTECTION FENCING
	LIMITS OF DISTURBANCE / CLEARING LIMITS

GENERAL NOTES:

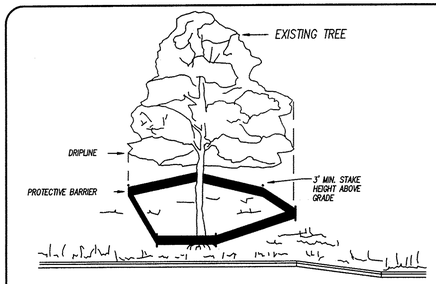
1. BOUNDARY AND TREE INFORMATION PREPARED AND PROVIDED BY ARNOLD CARSON, PLS, PC.
2. THIS PLAN SHEET DOES NOT PROPORT TO SHOW ANY DESIGN INFORMATION, BUT RATHER ONLY DISPLAYS THE EXISTING SITE BOUNDARY AND TREES AS PROVIDED BY THE SURVEYOR.

ENVIRONMENTAL NOTES:

1. ALL SIGNIFICANT TREES ON SITE ARE TO BE RETAINED OR MITIGATED.
2. NO LAND DISTURBANCE IS PERMITTED OUTSIDE THE DESIGNATED LIMITS OF DISTURBANCE FOR SITE IMPROVEMENTS OTHER THAN WHAT IS NECESSARY TO TIE INTO EXISTING CONTOURS OR MEET LANDSCAPING REQUIREMENTS.
3. ALL TREES OUTSIDE THE LIMITS OF DISTURBANCE ON SITE ARE TO BE PRESERVED.
   - THE 25 FT PERIMETER BUFFER AND ALL AREAS OUTSIDE OF CLEARING LIMITS ARE TO BE TREE SAVE AREAS. THE CONTRACTOR / DEVELOPER WILL NEED INSTALL TREE PROTECTION FENCING WHERE NECESSARY IN ADDITION TO SILT FENCE.
4. TREE WELLS TO BE PROVIDED AND INSTALLED AS NECESSARY TO MAINTAIN EXISTING GRADE AT ROOT ZONE (TREE CANOPY) OF TREES TO BE PRESERVED.
5. JURISDICTIONAL DETERMINATION FROM USACE HAS BEEN PERFORMED.
6. WATER BODY SERVING THIS SITE IS WHISKEY CREEK SA;HQW.

TREE PROTECTION NOTES:

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

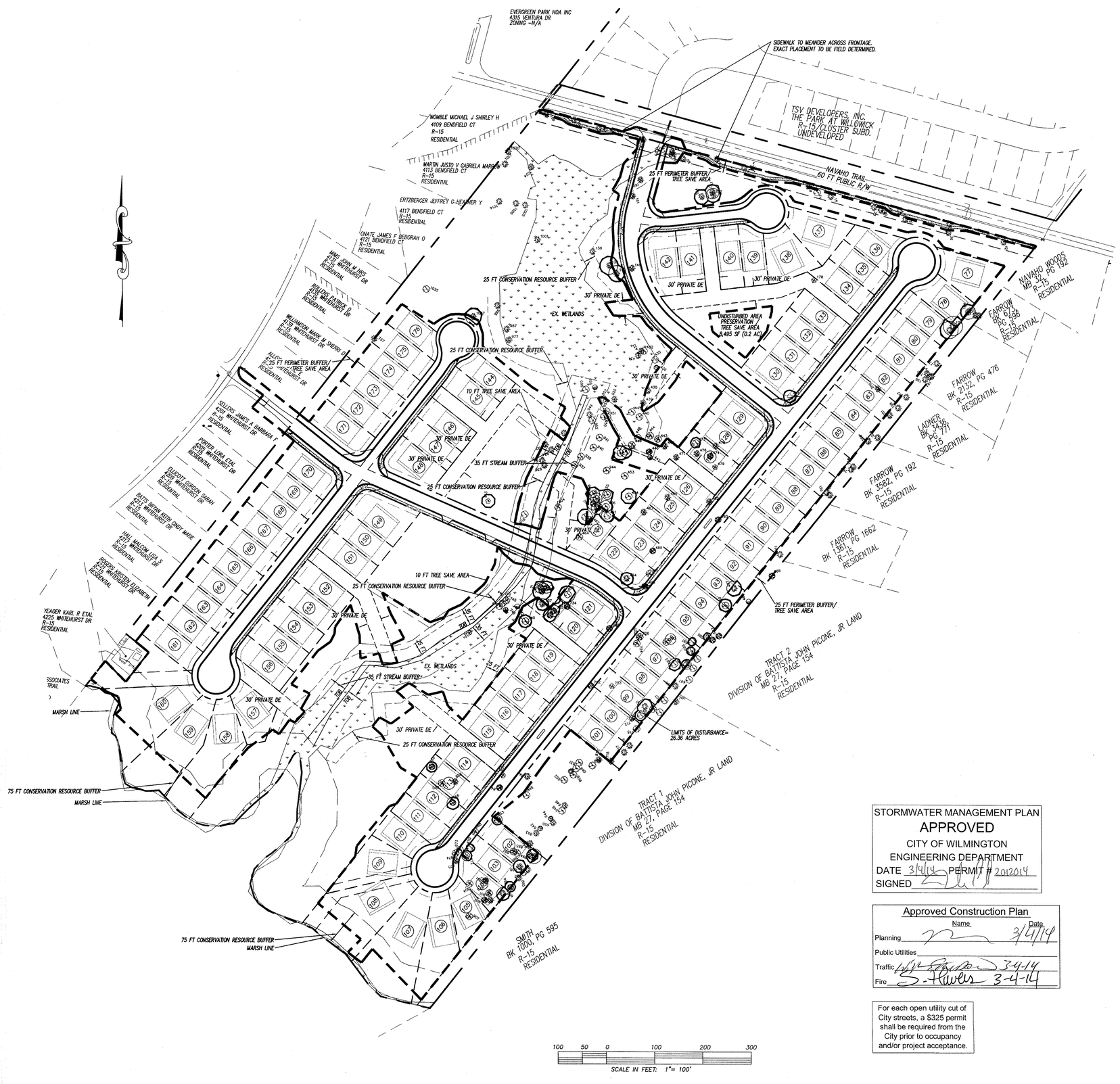


TREES TO BE SAVED WILL BE CLEARLY MARKED PRIOR TO CONSTRUCTION AND A PROTECTIVE BARRIER IS TO BE INSTALLED AT THE DRIPLINE.

DRIP LINE - THE AREA OF SOIL DIRECTLY BENEATH THE TREE EXTENDING OUT TO THE TIPS OF THE OUTERMOST BRANCHES.

METHOD OF TREE PROTECTION DURING CONSTRUCTION

NTS
SD15-08



100 50 0 100 200 300

SCALE IN FEET: 1"= 100'

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 3/4/14 PERMIT # 20120614
SIGNED

Approved Construction Plan

	Name	Date
Planning		3/4/14
Public Utilities		
Traffic		3-4-14
Fire	S. Fowler	3-4-14

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

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TREE REMOVAL AND CLEARING PLAN for
THE CREEK AT WILLOWICK

No licensee is required to submit for them, nor will submit, the set of his documents, or any part thereof, whether in paper or digital form, to any building official or other approving person or agency for the purpose of obtaining approval of any governmental authority having jurisdiction over the project unless such official or agency agrees in writing to accept full responsibility for the structural design, design of fire protection, design of mechanical systems, and design of electrical systems contained in such documents and to indemnify and hold harmless the licensee against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising from any reuse of the documents or any portion thereof without the prior written consent of the licensee.

TREE REMOVAL AND CLEARING PLAN for
THE CREEK AT WILLOWICK
LOCATED IN MASONBORO TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

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NORTH CAROLINA PROFESSIONAL SEAL 025483 ENGINEER HOWARD S. RESNIK
1/3/14

REV. NO.	REMARKS	BY	DATE
3	REVISED SIDEWALK LOCATION ALONG NAVAHO	RLW	1/3/14
2	REVISED PER CITY OF WILMINGTON PLANNING COMMENTS	JSM	10/10/13
1	ADDED STREAM AND CONSERVATION BUFFERS	RLW	8/23/13

DATE: 07-22-13
HORZ. SCALE: 1"= 100'
DRAWN BY: JSM
CHECKED BY: HSR
PROJECT NO: 04-0011
DRAWING NO: 04-0011PH2sp3

Sheet No. 12 of 12