

- DEVELOPMENT NOTES:**
- ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE.
 - PROJECT SHALL COMPLY WITH ALL FEDERAL, STATE & NEW HANOVER COUNTY REGULATIONS.
 - PROPOSED USE AT THIS TIME IS RESIDENTIAL.
 - CONSTRUCTION AND GRADING IS NOT TO DISTURB THE WETLAND RESOURCE.
- SITE NOTES:**
- SURVEY DATA FROM BATEMAN CIVIL SURVEY COMPANY DATED 9/9/15.
 - SITE LOCATED IN FLOOD ZONE "X" PER FEMA FLOOD MAP# 37203156001 PANEL# 3156 DATED 4/3/2006.
 - IMPERVIOUS AREA FOR UNITS 9-21 TO BE ROUTED TO PARKING AREA.
- UTILITY NOTES:**
- EXISTING WATER AND SANITARY SEWER SERVICES ARE CURRENTLY AVAILABLE TO THE SITE FROM CAPE FEAR PUBLIC UTILITY AUTHORITY PUBLIC MAINS.
 - ALL PROPOSED UTILITY SERVICES, SUCH AS ELECTRIC POWER, CATV, GAS & TELEPHONE SHALL BE INSTALLED UNDERGROUND.
 - ALL WATER & SEWER UTILITIES TO BE INSTALLED PER CFPWA TECHNICAL SPECIFICATIONS & STANDARDS.
 - PROJECT SHALL COMPLY WITH CFPWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND N.C.D.E.N.R. HAS ISSUED THEIR "FINAL APPROVAL". CALL 343-3910 FOR INFORMATION.
 - ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USFCCC OR ASSE.
 - WATER & SEWER SERVICES CAN NOT BE ACTIVATED ON NEW MAINS UNTIL THE ENGINEER'S CERTIFICATION AND AS-BUILTS ARE RECEIVED AND "FINAL APPROVAL" ISSUED BY THE PUBLIC WATER SUPPLY SECTION OF NCDENR, AND "FINAL ENGINEERING CERTIFICATION" ISSUED BY DIVISION OF WATER QUALITY SECTION OF NCDENR.
 - IF CONTRACTOR DESIRES CFPWA 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.
 - WHEN PVC WATER MAINS AND SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED, SINGLE-STRAND COPPER WIRE INSTALLED & STRAPPED TO THE PIPES WITH DUCT TAPE. THIS IS TO BE ACCESSIBLE IN ALL VALVES AND METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OR EXISTING UTILITIES DURING CONSTRUCTION. CALL U-LOCO AT 1-800-692-4949. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ANY UTILITIES, CURB & GUTTER, 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.
 - THE BELLSOUTH CONTACT IS STEVE DAYVAULT, BUILDING INDUSTRY CONSULTANT, AT 910-392-8712. CONTACT HIM PRIOR TO STARTING THE PROJECT IN ORDER TO FACILITATE GOOD COMMUNICATION AND MAXIMUM FLEXIBILITY.
 - THE PROCESS FOR TELEPHONE CABLE PLACEMENT: * FINAL GRADE WILL NEED TO BE ESTABLISHED. * POWER WILL PLACE THEIR CABLE FIRST - APPROXIMATELY 3" DEEP. * BELLSOUTH & CABLE TV WILL THEN PLACE THEIR CABLE AT APPROXIMATELY 2" DEEP.
 - SOLID WASTE DISPOSAL IS COW CURBSIDE PICKUP.
 - EXISTING WATER AND SEWER SERVICES TO BE ABANDONED PER CFPWA SPECIFICATIONS.
 - UNITS 9 AND 10 TO BE PROVIDED MAN HOLE TAPS WITH MIN. 32" BETWEEN EACH TAP.

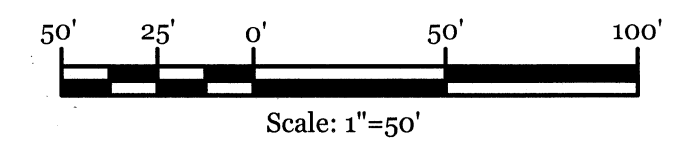
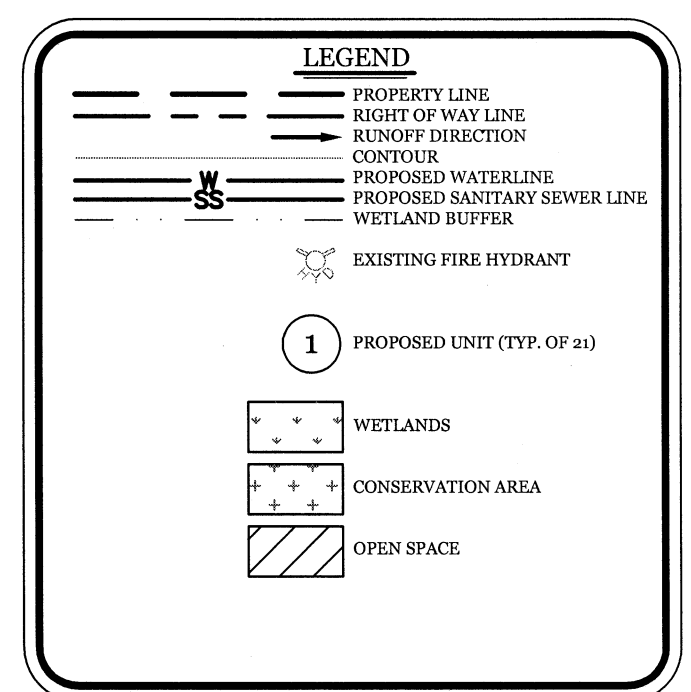
- GENERAL TRAFFIC NOTES:**
- ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS. (DETAIL SD-13 COPW TECH STDS)
 - ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS. (DETAIL SD 15-13 COPW TECH STDS)
 - ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
 - ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE. 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.
 - 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.
 - ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
 - 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 THE RECORDING OF THE FINAL PLAT. (SD 15-14 COPW TECH STDS)
 - CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
 - ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30' TO 10'.

SITE DATA:

TOTAL SITE AREA:	± 7.06 AC
PARCEL ID	R06200-003-031-000 R06200-003-035-000 R06200-003-038-000 R06200-003-039-000 R06200-003-042-000
CURRENT ZONING:	R-15 (CLUSTER SUBDIVISION)
PROJECT ADDRESS:	6415 GREENVILLE LOOP RD. WILMINGTON, NC 28409
CURRENT OWNER:	SKF ILM, LLC 5929 MARKET ST. WILMINGTON, NC 28405
CAMA LAND USE CLASSIFICATION:	WATERSHED RESOURCE PROTECTION AREA
NUMBER OF UNITS:	21 (3BR) UNITS
BUILDING SIZE:	1,750 S.F.
BUILDING HEIGHT:	35' MAX.
BUILDING SETBACKS: REQUIRED: 25' PERIMETER REQUIRED: 10' BETWEEN STRUCTURES	PROPOSED: 25' PROPOSED: 13.5' MIN.
BUILDING COVERAGE: PROPOSED COVERAGE	36,750 S.F. ± 307,334 S.F. = 12.0%
TOTAL IMPERVIOUS BEFORE & AFTER DEVELOPMENT: BEFORE DEVELOPMENT:	0 S.F.
AFTER DEVELOPMENT: BUILDINGS CONCRETE ASPHALT FUTURE TOTAL	36,750 S.F. 7,033 S.F. 23,586 S.F. 6,391 S.F. 73,760 S.F. (24.0%)
OFFSITE IMPERVIOUS AREAS: CONCRETE DRIVEWAY APRON	251 S.F.
PARKING REQUIRED: 2.25 SPACES / 3BR UNIT @ 21 UNITS =	48 SPACES (2 H.C.)
PARKING PROVIDED:	52 SPACES (3 H.C.)
BICYCLE PARKING REQUIRED: (MIN. 5 PER 25-125 VEHICLE SPACES) PROVIDED	5 BICYCLE RACK SPACES
PARKING LOT INTERIOR LANDSCAPING REQUIRED PROVIDED	12,865 S.F. * 8% = 1,029 S.F. 1,082 S.F.
OPEN SPACE REQUIREMENT: (40% of site area) 7.06 AC X 0.40 = PROVIDED	2.82 AC 3.10 AC
WATER AND SEWER CAPACITY NEEDS:	
WATER (CURRENT USE):	0 GPD
WATER (PROPOSED USE):	21 UNITS @ 400 GPD = 8,400 GPD
SEWER (CURRENT USE):	0 GPD
SEWER (PROPOSED USE):	21 UNITS @ 360 GPD = 7,560 GPD

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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



Approved Construction Plan

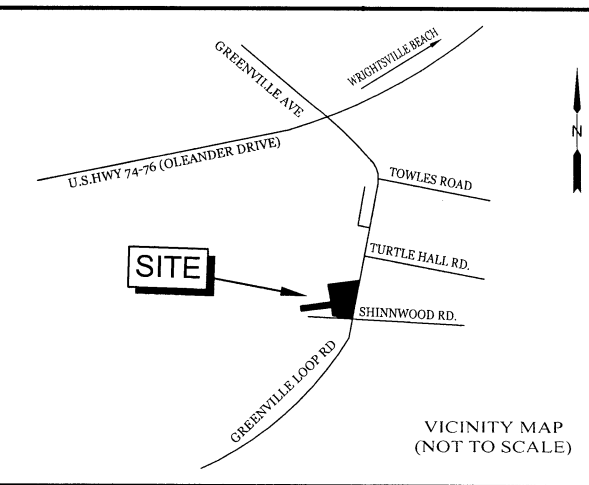
Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE _____ PERMIT # _____
SIGNED _____

CLIENT INFORMATION:
SKF ILM, LLC
5929 MARKET STREET
WILMINGTON, NC 28405
(910) 619-6858

DRAWN: BFD SHEET SIZE: 24x36
CHECKED: CDC DATE: 6/6/2017
APPROVED: CDC SCALE: 1" = 50'
PROJECT NUMBER: 2016-039

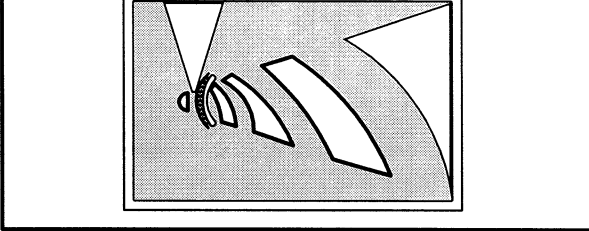
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2 OF 10



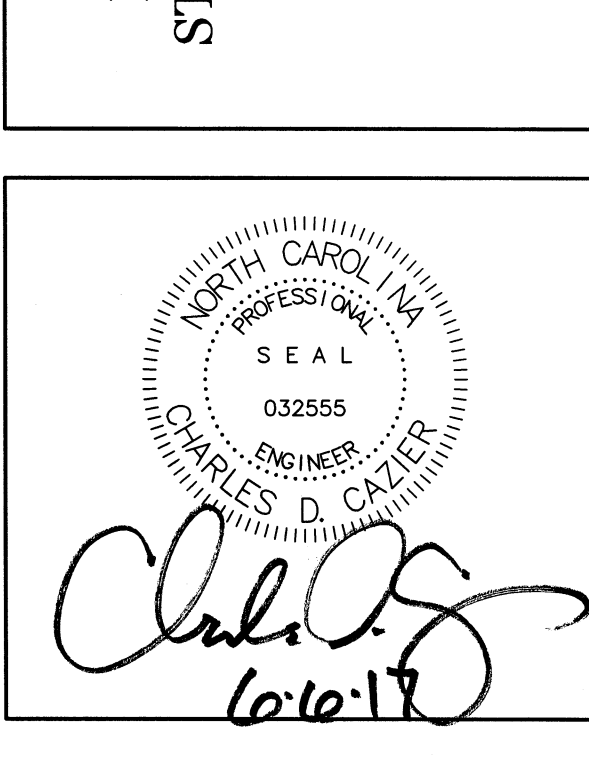
REVISIONS

NO.	DATE	DESCRIPTION

INTRACOASTAL ENGINEERING, PLLC
5725 Oleander Dr. Unit E-7
Wilmington, North Carolina 28403
Phone: 910.859.8983
Email: Charlie@intracoastalengineering.com
License Number: P-0662



SITE, GRADING, DRAINAGE, UTILITIES AND STORMWATER MANAGEMENT PLAN FOR SHINWOOD COTTAGES WILMINGTON, NC



PERMANENT EASEMENT FOR THE CITY OF WILMINGTON PER AN UTILITY EASEMENT SURVEY OF ANNEXATION WATER MAIN PHASE 2 DONE BY MCKIM & CREED DATED: MARCH 15, 2000 DB 3057 PG 713

OLD 40' RIGHT OF WAY PER DB 5842 PG 144 & DB 5846 PG 211

MATCH EXISTING ASPHALT ±26.54

SECTION OF EXISTING WATER MAIN TO BE REMOVED AND RELOCATED FOR UTILITY CROSSING (± 30 LF OF DIP)

EXISTING 12" DIP WATER MAIN

UTILITY CROSSING (SEE CFPWA DETAIL SHEET FOR INSTALLATION GUIDANCE)

SECTION OF EXISTING WATER MAIN TO BE REMOVED AND RELOCATED FOR UTILITY CROSSING (± 20 LF OF 6" DIP)

EX. STOP/STREET SIGN

TELEPHONE PEDESTAL

SIDEWALK

SSMH TOP = 24.30' INV = 18.78'

CURB INLET TOP = 26.28' INV = 18.78'

SDMH TOP = 26.15' INV = 23.33'

SSMH TOP = 25.90' INV = 18.78'

DROP INLET TOP = 26.60' INV = 23.33'

EXISTING SIDEWALK

TELEPHONE PEDESTAL

EX. STOP/STREET SIGN

EX. SPEED LIMIT SIGN

10' P.U.E.

SSMH TOP = 24.94' INV = 20.78'

8" DIP

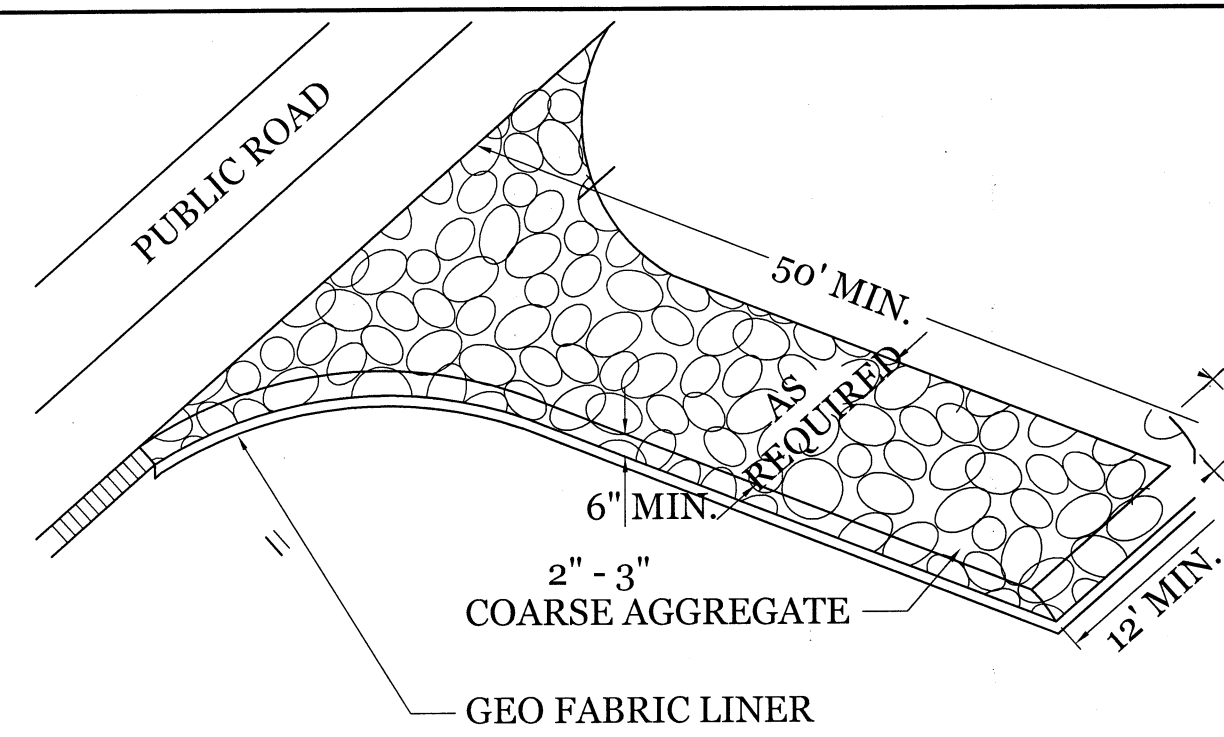
EX. STOP/STREET SIGN

10' P.U.E.

SSMH TOP = 24.94' INV = 20.78'

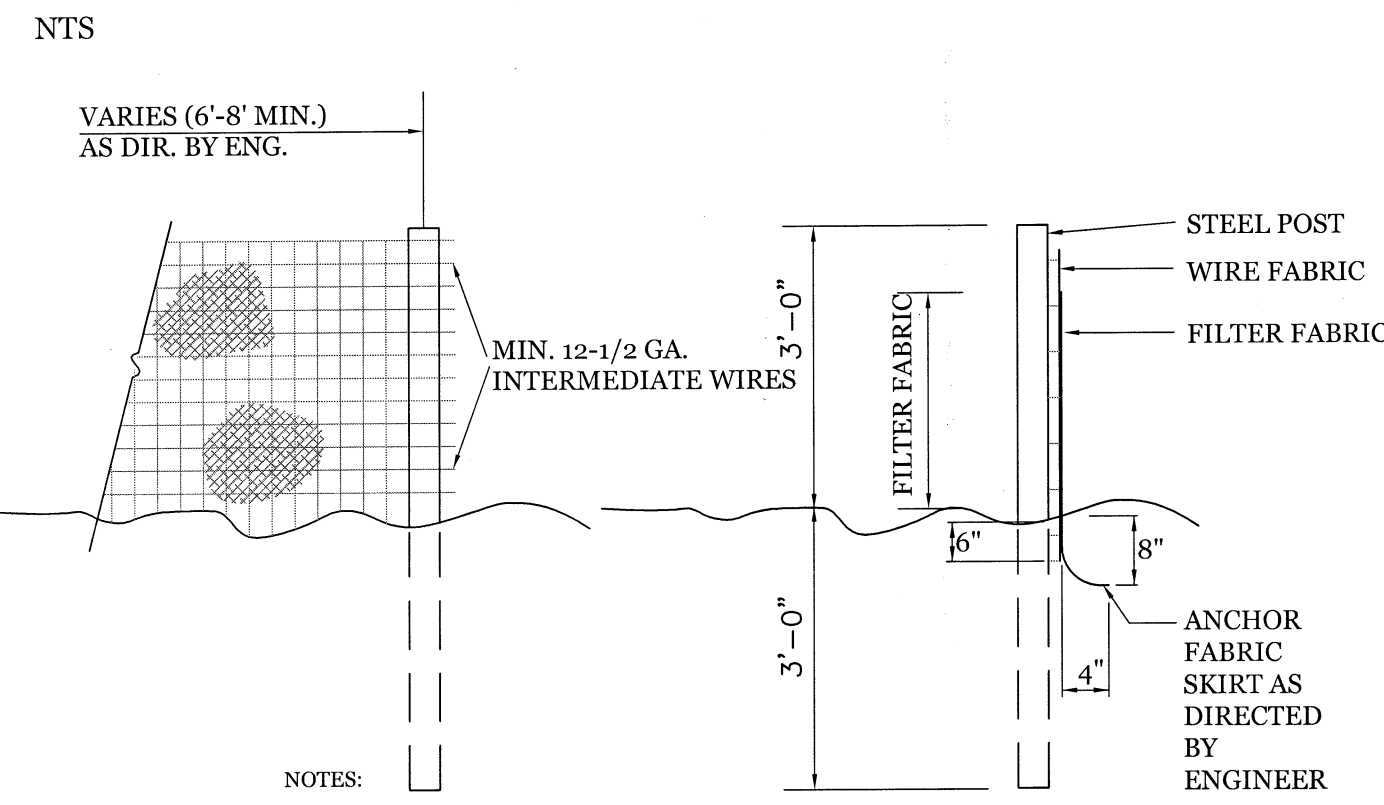
8" DIP

10' P.U.E.



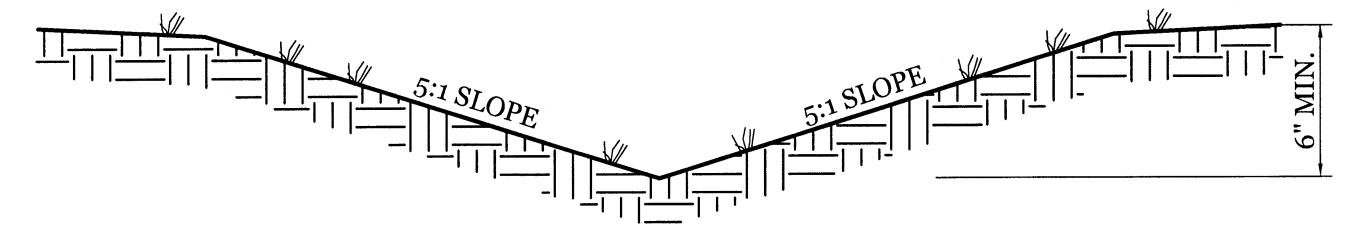
NOTE:
CONSTRUCTION ENTRANCE TO BE 12' OR ENTIRE WIDTH OF ENTRANCE, WHICHEVER IS GREATER.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

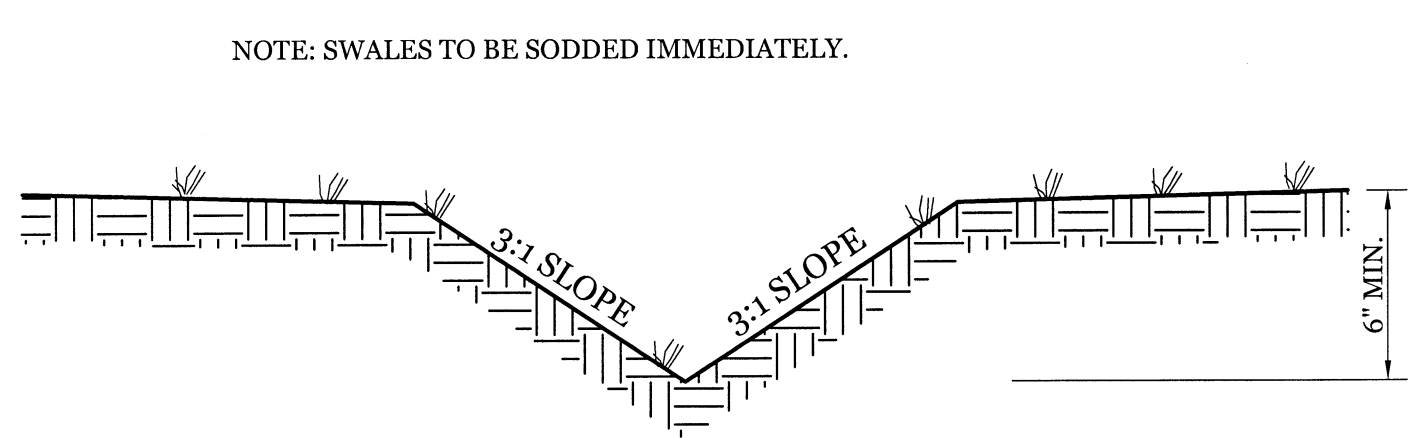


- NOTES:
- FENCE FABRIC SHALL BE A MIN. OF 32" IN WIDTH AND SHALL HAVE A MIN. OF SIX LINE WIRES WITH 12" STAY SPACING.
 - FABRIC SHALL BE FOR EROSION CONTROL AND MIN. OF 36" IN WIDTH. FABRIC SHALL BE FASTENED ADEQUATELY TO THE WIRE FABRIC AS DIRECTED BY THE ENGINEER.
 - STEEL POST SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER STEEL ANGLE TYPE.

TEMPORARY SILT FENCE



TYPICAL 5:1 GRASS SWALE

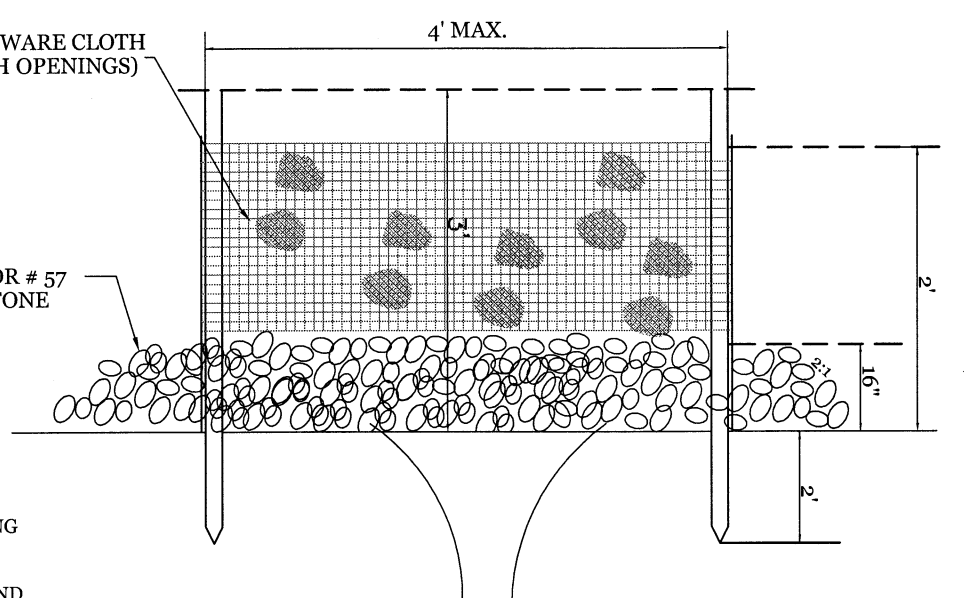


TYPICAL 3:1 GRASS SWALE

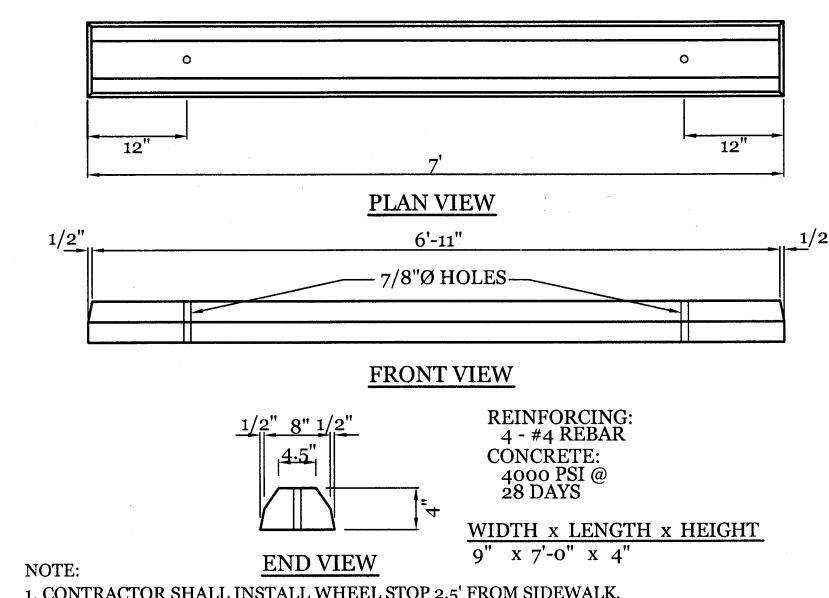


- CONSTRUCTION SPECIFICATIONS:
- UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
 - DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
 - SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 9-FOOT TEAR OF WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
 - PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 4 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
 - ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
 - COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUND COVER.

HARDWARE CLOTH AND GRAVEL INLET PROTECTION

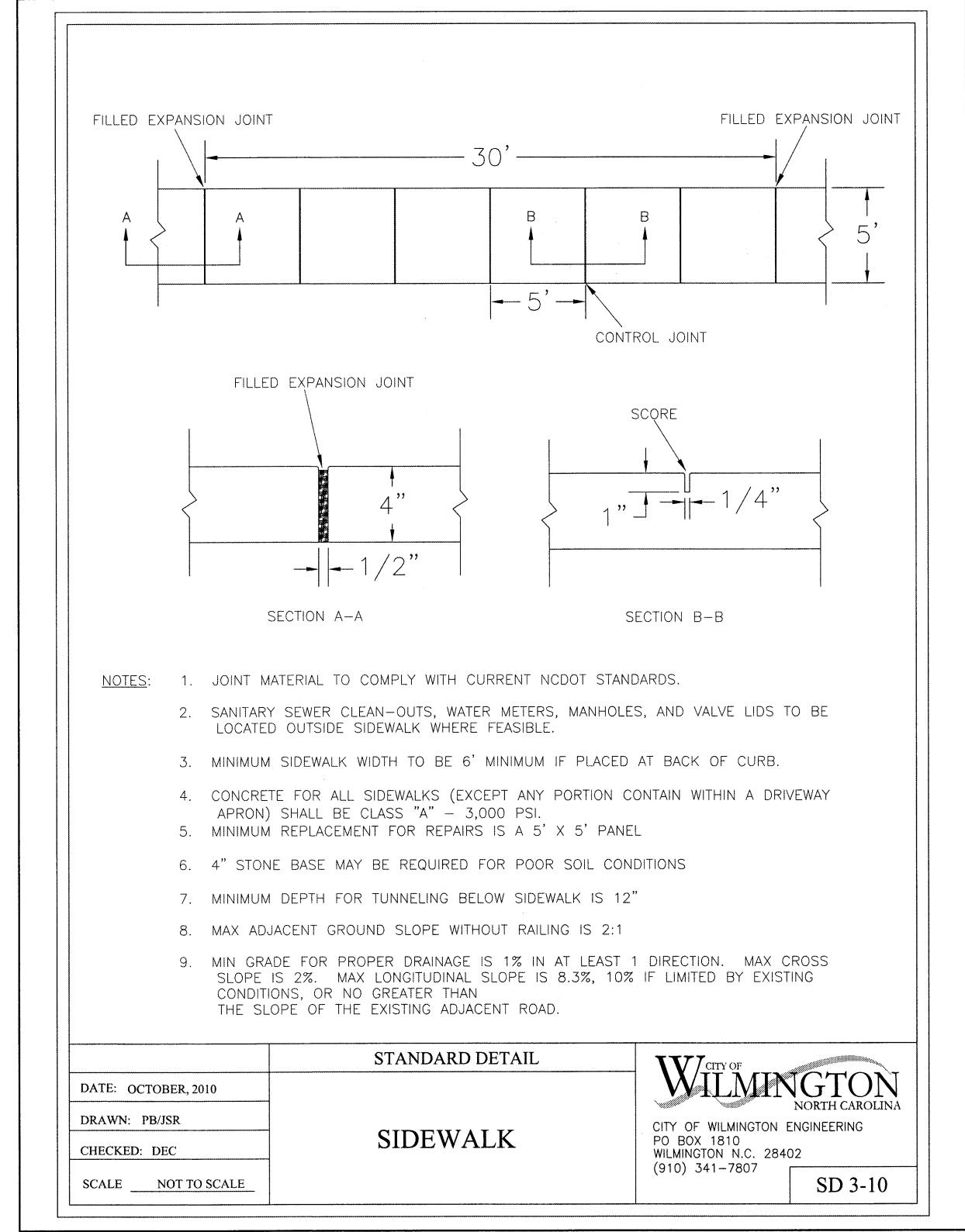


MAINTENANCE:
INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (4 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.



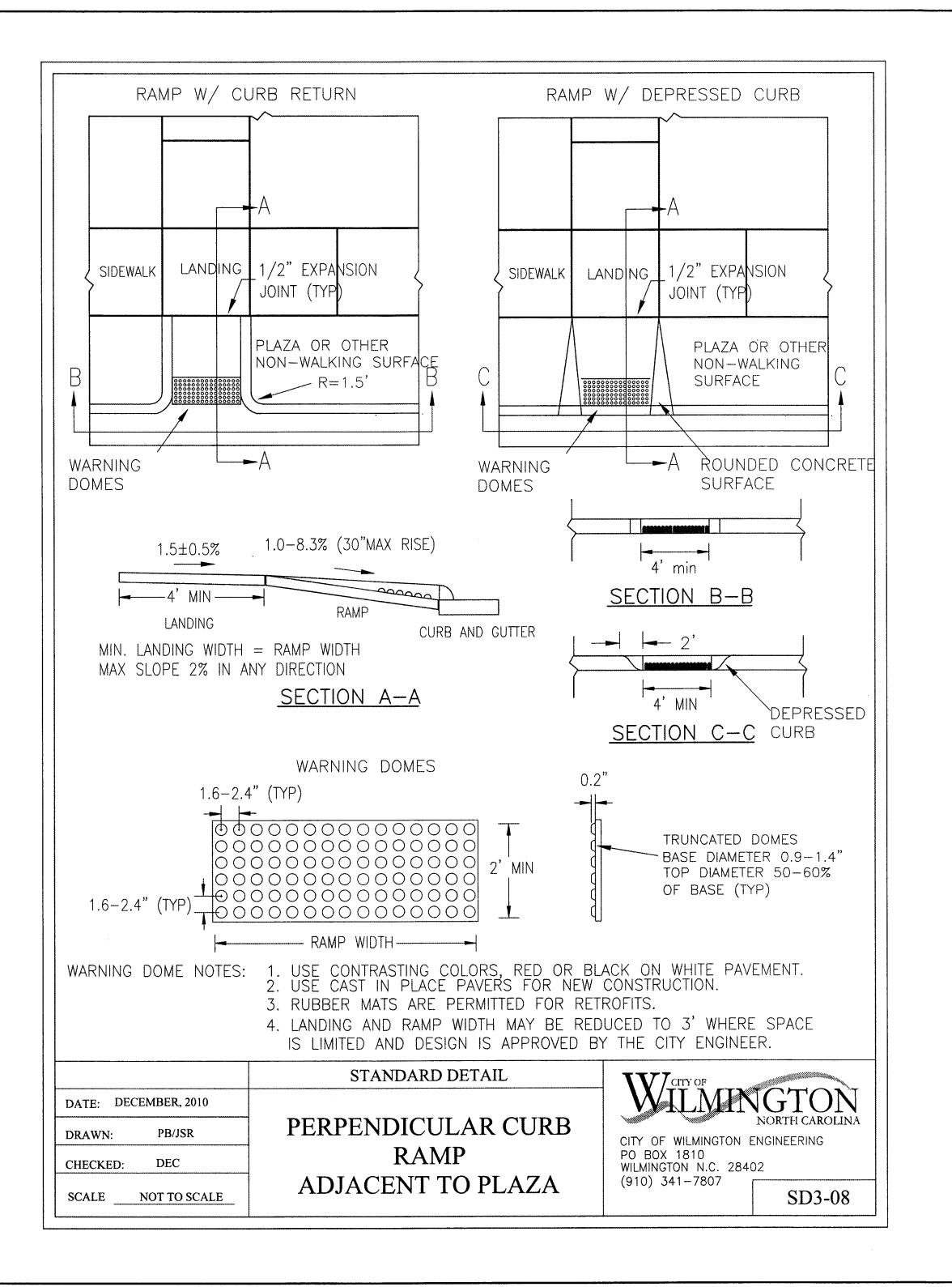
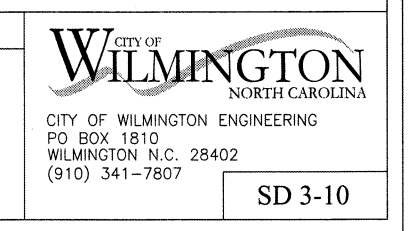
WHEEL STOP DETAIL

NOTE:
1. CONTRACTOR SHALL INSTALL WHEEL STOP 2.5' FROM SIDEWALK.



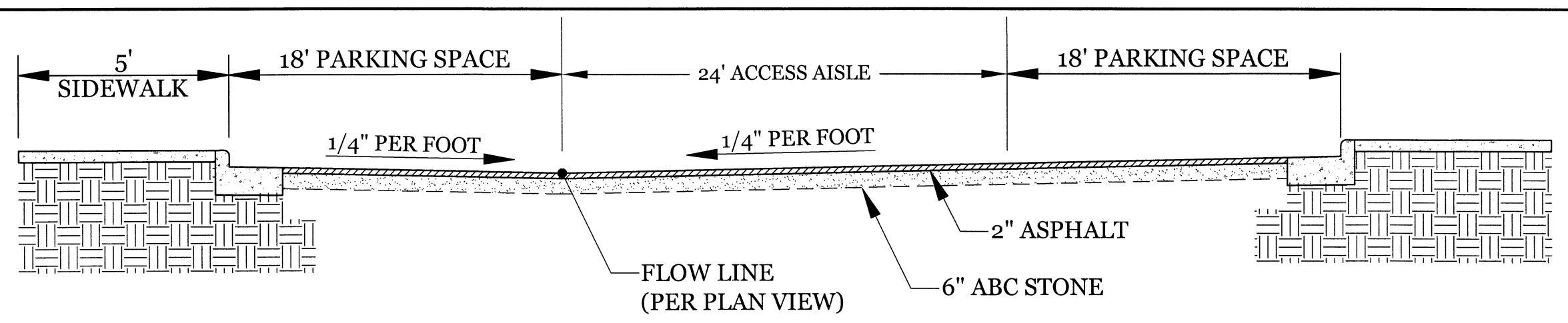
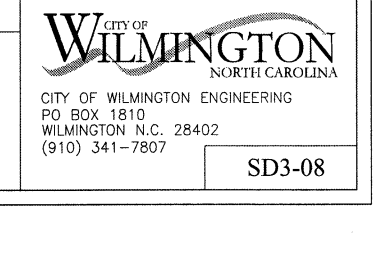
- NOTES:
- JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
 - SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
 - MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
 - CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3,000 PSI.
 - MINIMUM REPLACEMENT FOR REPAIRS IS A 5' x 5' PANEL.
 - 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.
 - MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
 - MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
 - 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.

DATE: OCTOBER, 2010
DRAWN: PBJSR
CHECKED: DEC
SCALE: NOT TO SCALE



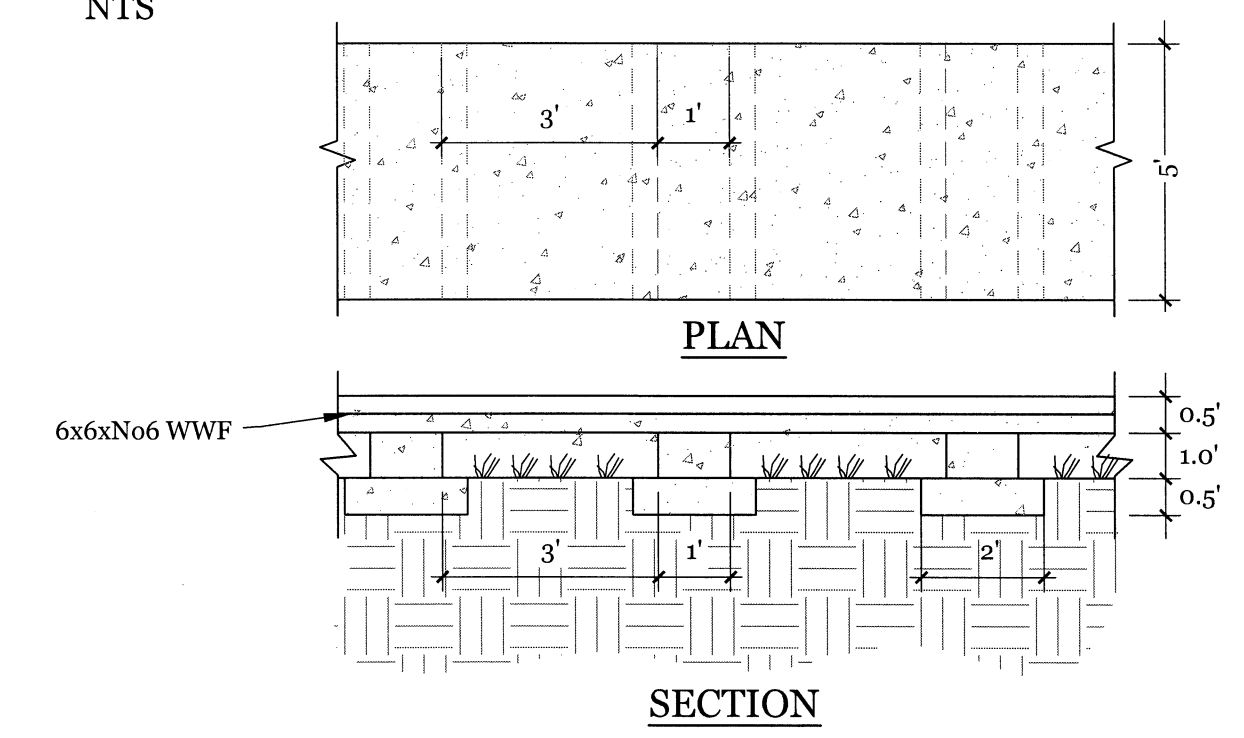
PERPENDICULAR CURB RAMP ADJACENT TO PLAZA

DATE: DECEMBER, 2010
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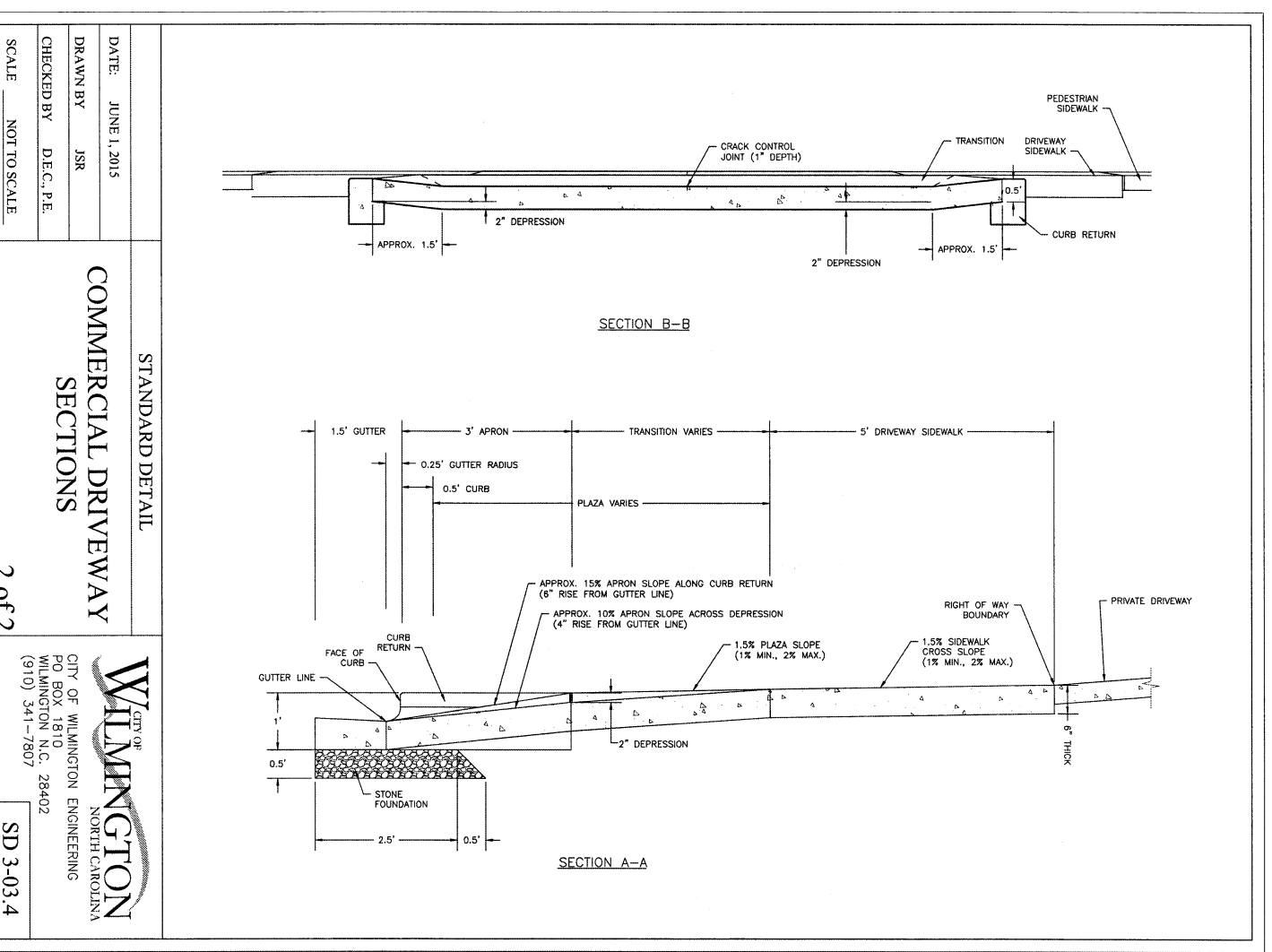
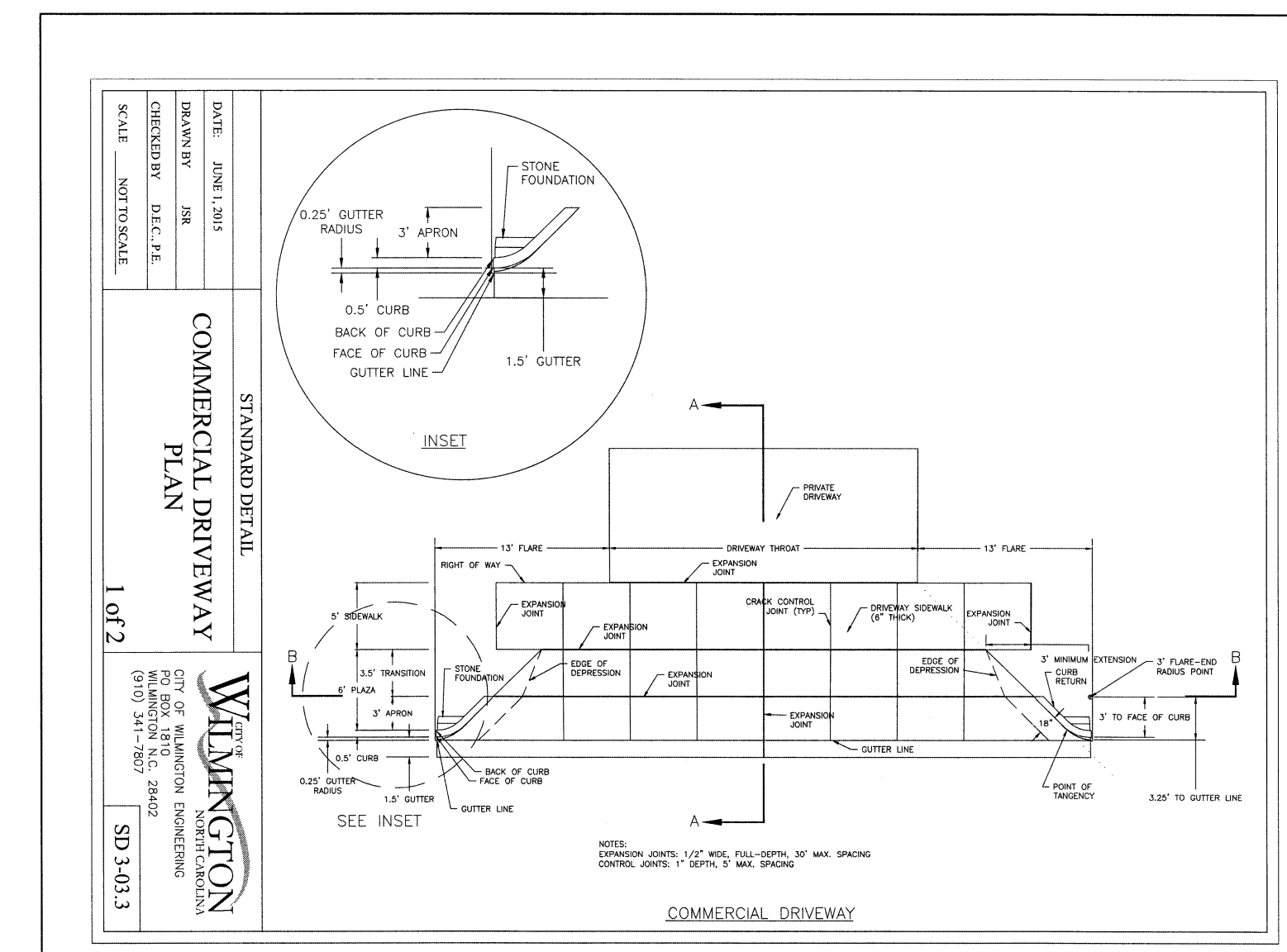
ACCESS DRIVE CROSS SECTION (SUPERELEVATED)

NTS



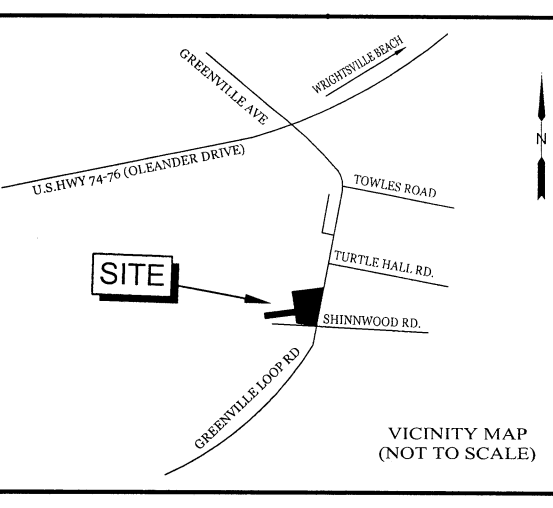
FLOW UNDER SIDEWALK DETAIL

NTS



Approved Construction Plan	
Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE _____ PERMIT # _____
SIGNED _____



REVISIONS

INTRACOASTAL ENGINEERING, PLLC
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Email: charlie@intracoastalengineering.com
License Number: P-0662

DETAILS FOR
SHINWOOD COTTAGES
WILMINGTON, NC

PROFESSIONAL SEAL
CHARLES D. CAZIER
ENGINEER
6/2/17

CLIENT INFORMATION:
SKF ILM, LLC
5929 MARKET STREET
WILMINGTON, NC 28405
(910) 619-6858

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PROJECT NUMBER:	2016-039		
DRAWING NUMBER:	C-5		