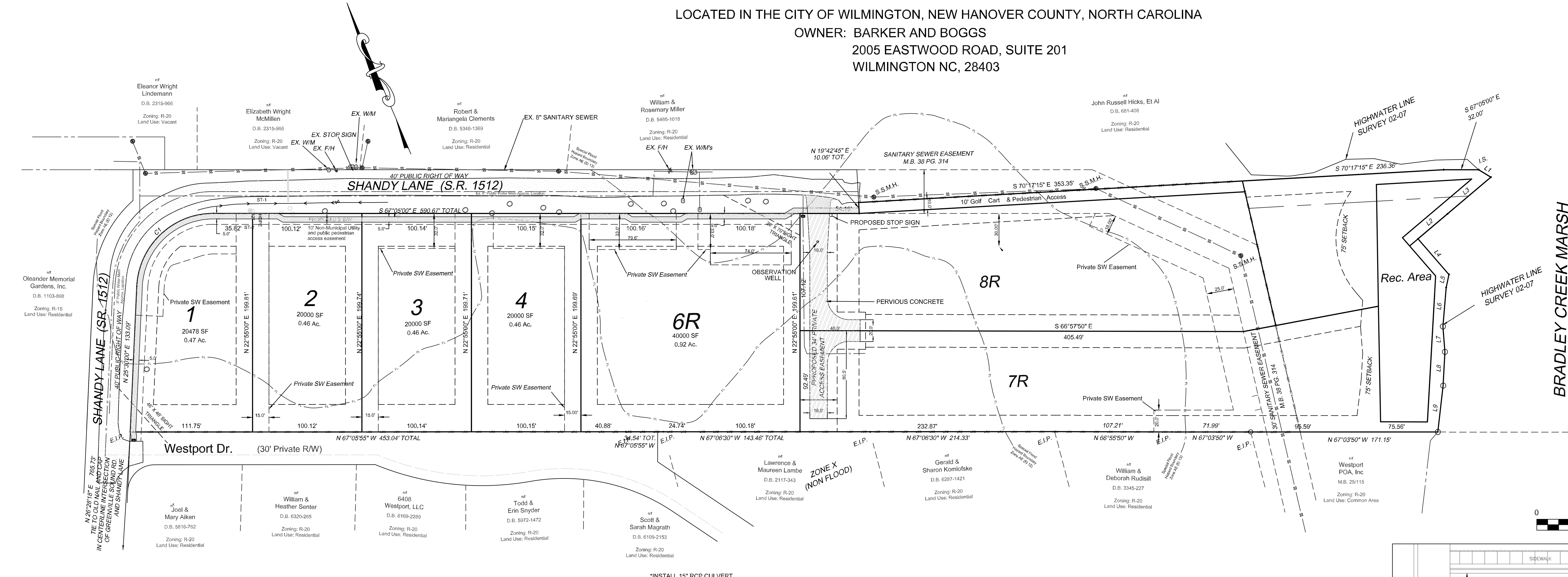
LEGACY POINTE

LOCATED IN THE CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON NC, 28403



LEGEND

E.I.P. = EXISTING IRON PIPE
E.I. = EXISTING IRON
E.C.M. = EXISTING CONCRETE MONUMENT
R/W = RIGHT OF WAY
C.P. = COMPUTED POINT
F/H = FIRE HYDRANT
W/M = WATER METER
EX. SSMH
SIGN
PROPERTY LINE
BUILDING SETBACK
CENTERLINE
EASEMENT
COMPUTED PROPERTY LINE
TREE TO BE REMOVED
TREE TO BE RETAINED
PROPOSED CONTOUR
EXISTING CONTOUR
23.0' PROPOSED SPOT ELEVATION
DRAINAGE FLOW DIRECTION
OBSERVATION WELL
PERVIOUS CONCRETE
TACTILE WARNING MAT
EX. FENCE

*INSTALL 15" RCP CULVERT
WHEN DRIVEWAY IS CONSTRUCTED

IMPERVIOUS CALCULATIONS	
DESCRIPTION	S.F.
SIDEWALK	4,079
PRIVATE DRIVE	343
LOT1	7,000
LOT 2	7,000
LOT 3	7,000
LOT 4	7,000
LOT 6R	14,000
LOT 7R	7,000
LOT 8R	7,000
TOTAL PROPOSED	60,422
EXISTING BUILDINGS	4,351
EXISTING ROADS	3,194
TOTAL EXISTING	7,545

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

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

Approved Construction Plan
Name Date
Planning __________
Traffic __________
Fire __________

Utility Notes:

1. Existing water and sanitary sewer services are currently available to the site from Cape Fear Public Utility Authority public mains.
2. All utility services, such as electric power, CATV, gas & telephone shall be installed underground.
3. All water & sewer utilities to be installed per CFPUA Technical Specifications & Standards.
4. Project shall comply with CFPUA 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.
5. Any backflow prevention devices required by the CFPUA will need to be on the list of approved devices by USCFCCCHR or ASSE.
6. If 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.
7. The contractor is responsible for the location and protection or existing utilities during construction. Call 811

   Contractor is responsible for the repair and replacement of any utilities, curb & gutter, pavement, etc. that may be be damaged during construction. Damaged items shall be repaired to at least the quality or workmanship found in the original item.
8. Solid waste disposal will be serviced by City cart pickup at streetside.

Fire & Life Safety Notes:

1. Construction Type - 5B
2. Residences will not have a sprinkler systems.
3. Landscaping or parking can not block or impede the FDC or fire hydrants. A 3-foot (3') clear space shall be maintained around the circumference of hydrants and FDC.
4. Additional fire protection and/or accessibility requirements may be required due to any special circumstances concerning the project.

General Notes:

1. New Hanover County Parcel Nos.:
   315606.48.6530 [R06300-001-015-000]
   315607.58.7183 [R06300-001-015-001]
2. Project Tract Area: 5.78 ac.±
3. Existing Zoning District: R-20
   Setbacks - 30' Street
   20' Corner Side
   15' Interior Side
   25' Rear
4. CAMA Land Classification:
   Watershed Resource Protection
5. Recreational Space:
   Required: 8 SF units x .03 acres = 0.24 acres
   Provided: 0.58 acres

Site Inventory Notes:

1. Soils Types: Wa (Wakula sand)
   Nh (Newhan fine sand)
2. This property is impacted by an AEC.
3. There are Conservation Overlay boundaries affecting this property.
4. This site is not impacted by any recognized historic or archaeological significance.
5. No cemeteries were evidenced on the site.
6. Regulated vegetation is only within proposed lot boundaries. Removal will only occur during individual home construction.
7. There are no jurisdictional wetlands within the upland project boundary.
8. There is no evidence of endangered species or habitat issues on the site.
9. This property is within a Special Flood Hazard Area as evidenced on N.C. Flood Map 3720315600K.
10. The site drainage flows into the Bradley Creek watershed / SC class waters.

Stormwater Management Notes:

1. Stormwater management will meet City & State requirements.
2. Stormwater control measures will be installed on lots as they are developed.

Tree Preservation Notes:

1. Tree Preservation / Removal Permit is required prior to clearing & land disturbance.
2. 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.
3. Protective fencing is to be maintained throughout the duration of the project. Land clearing and construction contractors shall receive adequate instruction on tree protection requirements and methods.
4. Label protective fencing with signs to be placed every 50 linear feet, or at least two (2) per area, in both English & Spanish "Tree Protection Area: Do Not Enter."

Development Notes:

1. All development shall be in accordance with the City of Wilmington Land Development Code (LDC).
2. All common area, inclusive of recreation space, shall be dedicated to and maintained by a Homeowners' Association.
3. Clearing limits will be limited to what is needed to install the sidewalk within the existing public right-of-way and sidewalk easement. Individual lot clearing will be at the discretion & permitting of the future lot owners.
4. Infiltration basins shall be constructed as individual lots are developed.
5. Maximum structure height = 35'.

GENERAL NOTES

1. 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.

2. ANY TREES AND / OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.

3. NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.

TRAFFIC ENGINEERING

4. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY, MUTCD, AND/OR NCDOT STANDARDS.

5. 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.

6. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.

7. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.

8. CALL TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.

9. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.

10. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE OWNER IN ACCORDANCE WITH MUTCD STANDARDS.

11. STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.

12. TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.

13. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. IN CERTAIN CASES ENTIRE RESURFACING OF THE OPEN CUT AREA MAY BE REQUIRED.

14. ANY BROKEN OR MISSING SIDEWALK,DRIVEWAY PANELS OR CURBING SHALL BE REPLACED WHETHER DAMAGED DURING CONSTRUCTION OR DAMAGE WAS EXISTING.

15. PRIOR TO ENTERING ANY AGREEMENT REGARDING THE SALE OF A HOUSE OR LOT IN A SUBDIVISION, THE BUYER MUST RECEIVE A STREET DISCLOSURE STATEMENT

16. ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SITE LINES FROM 30" TO 10'

17. CONTACT THE CITY AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS. PROPOSED APPROXIMATE LOCATIONS SHOWN ON PLANS.

GENERAL NOTES CONTINUED

18. COORDINATE WITH CITY TRAFFIC SIGNS AND MARKINGS MANAGER PRIOR TO INSTALLATION OF ANY TRAFFIC SIGNS OR MARKINGS.

19. CONTACT TRAFFIC ENGINEERING AT (910) 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.

20. 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.

GENERAL UTILITY NOTES

19. WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.

20. PROJECT SHALL COMPLY WITH CAPE FEAR PUBLIC UTILITY AUTHORITY CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 343-3910 FOR INFORMATION.

21. 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.

22. ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 343-3910 FOR INFORMATION.

23. ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.

24. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE.

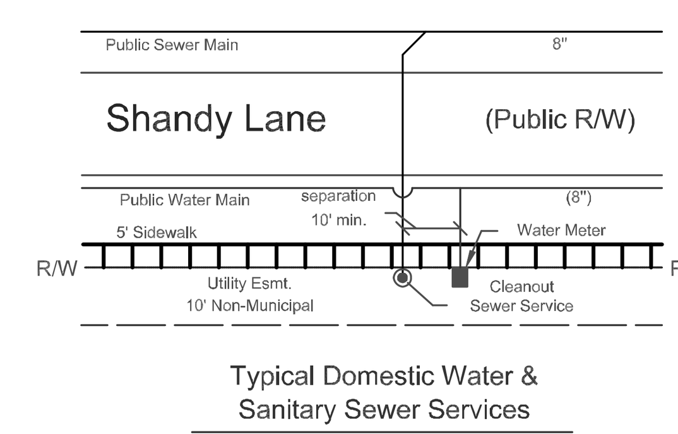
25. CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.

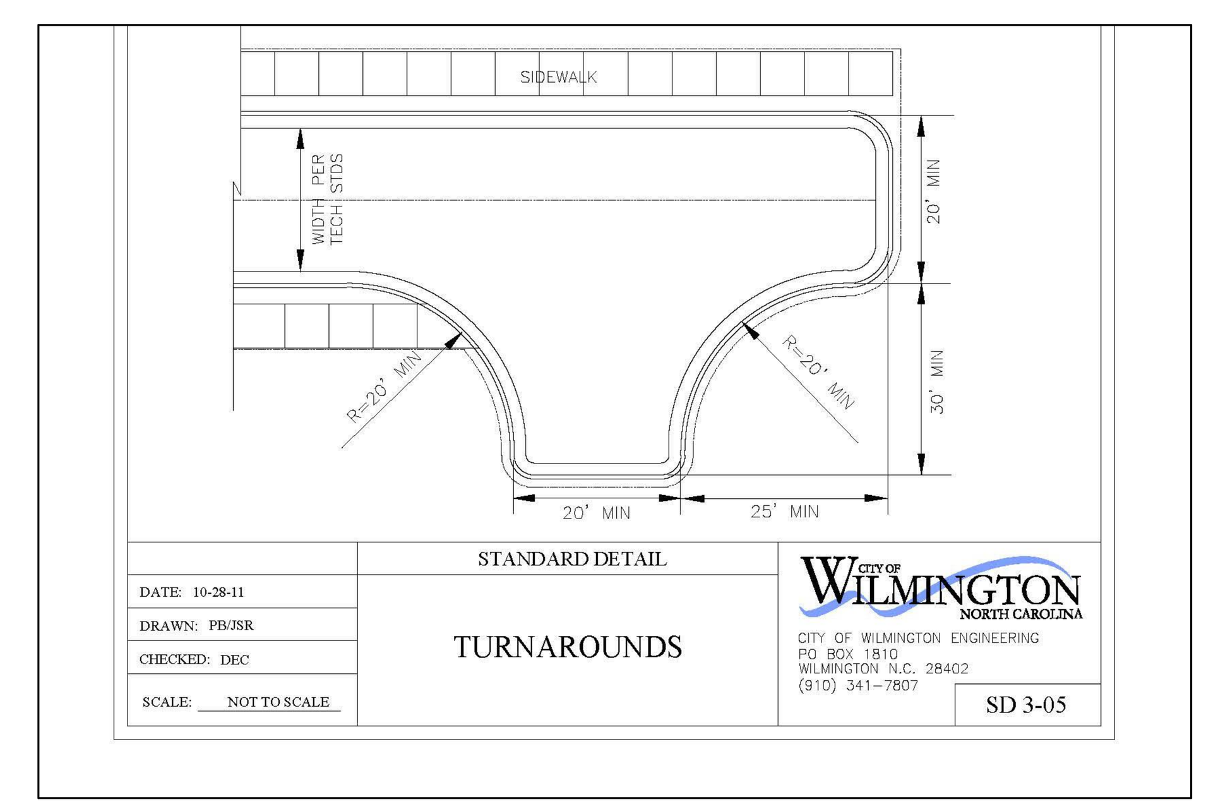
26. CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.

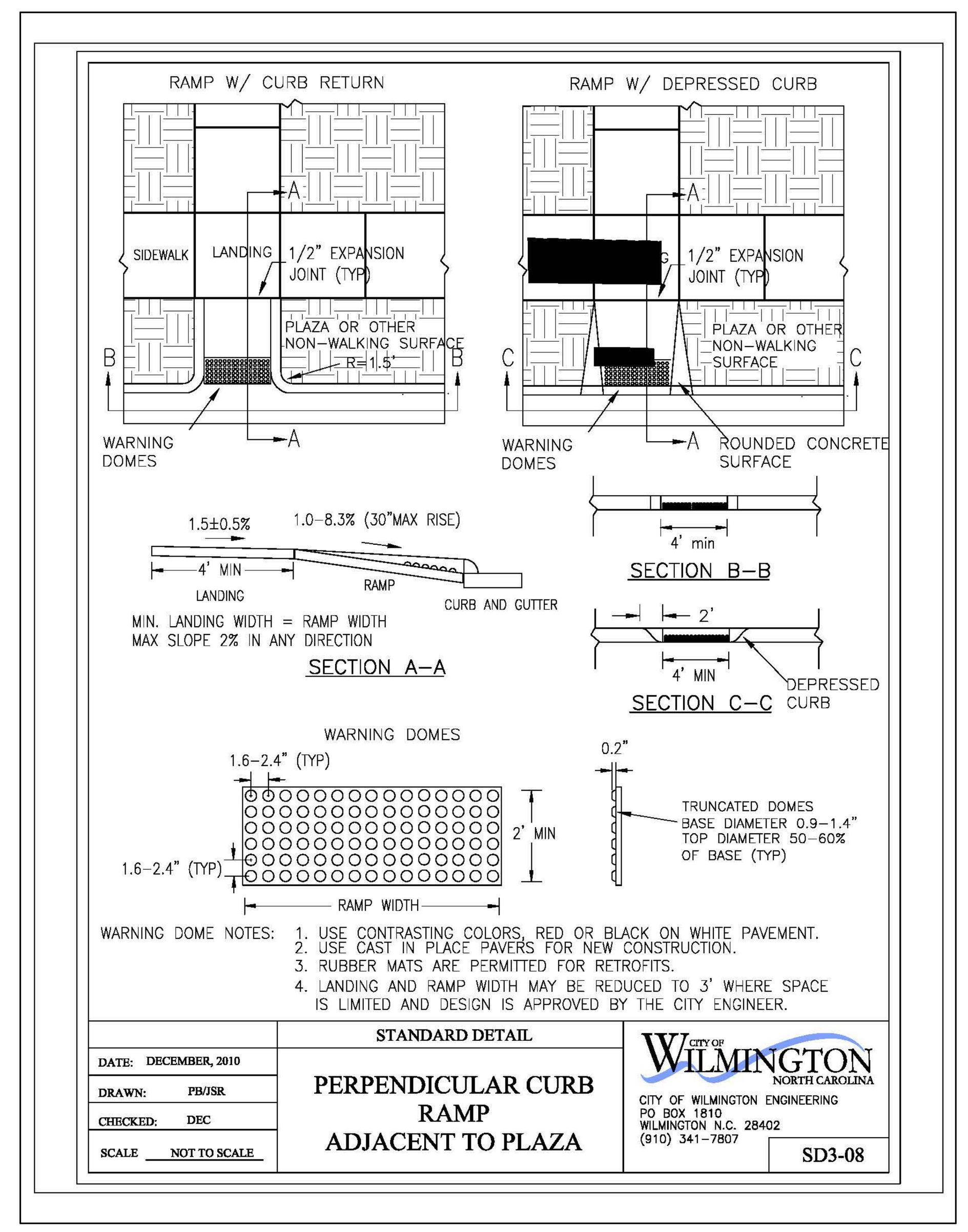
27. UNDERGROUND FIRE LINES MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-341-0696.

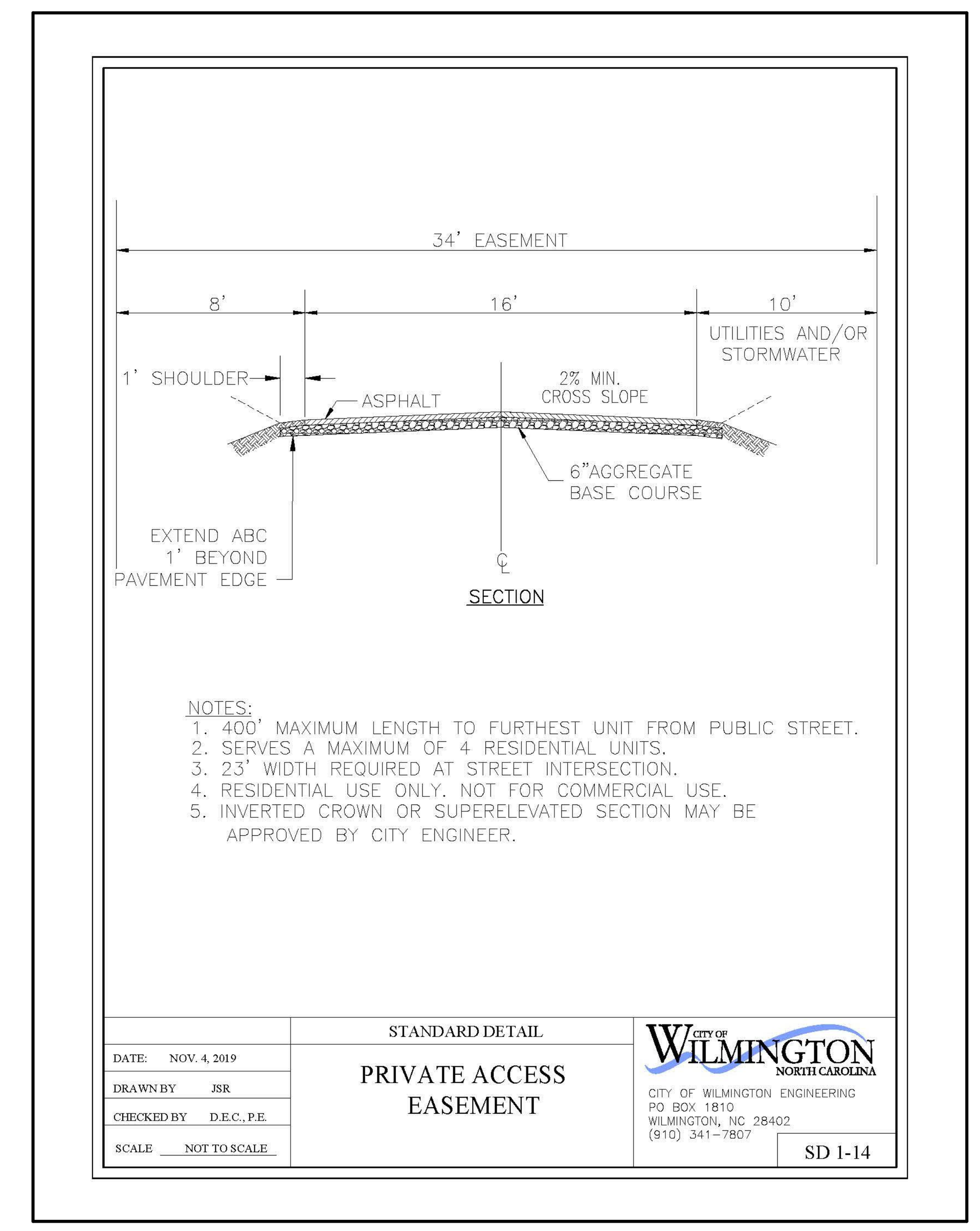
28. CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO ANY DIGGING, CLEARING OR GRADING.

29. ANY PVC MAINS ARE TO BE MARKED WITH NO.10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND ATTACHED TO THE PIPE AND STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS, ACCESSIBLE IN ALL VALVE AND METER BOXES. ALL WATER MAINS SHALL MAINTAIN A MINIMUM OF 3' OF COVER.









HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS
1123 FLORAL PARKWAY
WILMINGTON, N.C. 28403
PHONE: (910) 343-8002
LICENSE # C-0597

REVISIONS	DATE
Revised per SW comments	10-5-22

PRELIMINARY SUBDIVISION PLAN OF
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 3-15-21
Scale: HORZ.: 1"= 50'
Drawn: GAW/AHG
Checked: AHG
Project No: 11736

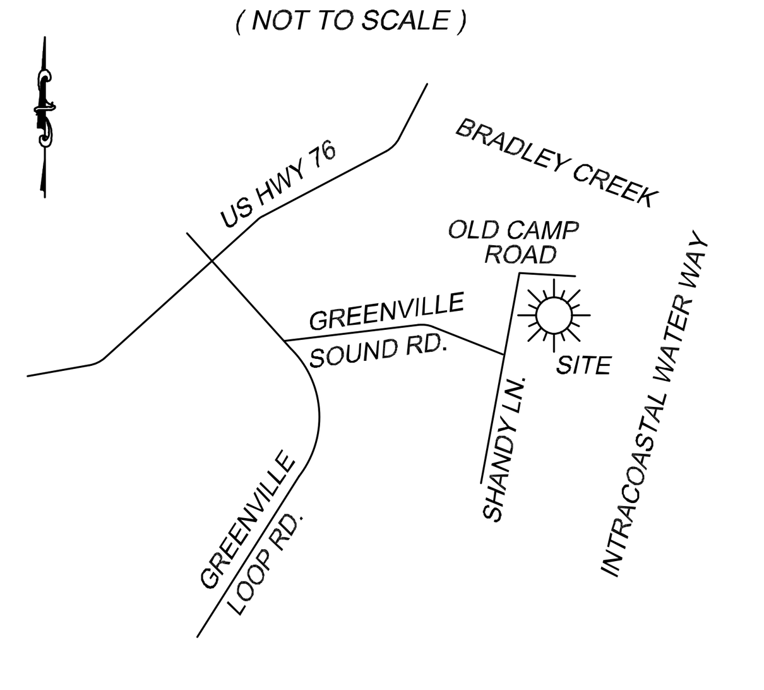
SITE PLAN

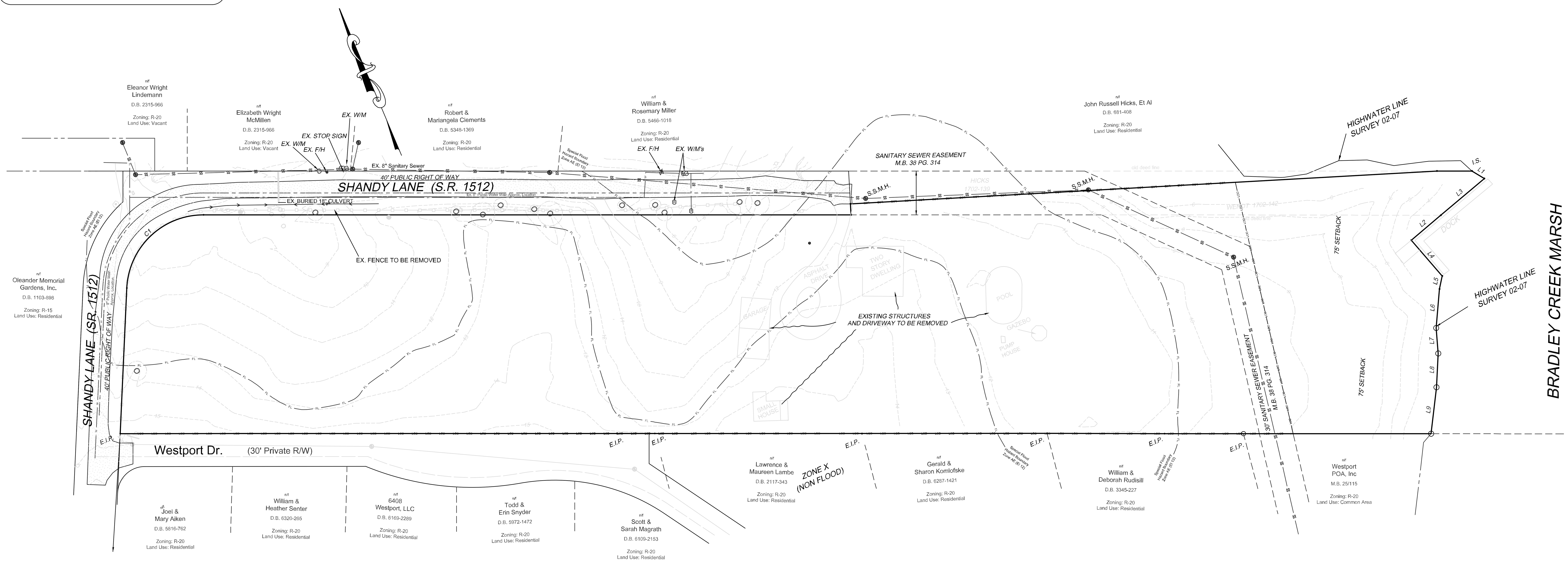
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43166 A. H. GRADY
10-4-22

PRELIMINARY FOR REVIEW

LOCATION MAP

(NOT TO SCALE)





REGULATE TREES TO BE REMOVED = 5
SIGNIFICANT TREES TO BE REMOVED = 2
TREE TO BE RETAINED = 12

TREE INVENTORY

BOLD	RETAINED
TREE #	Description
123	23" HARDWOOD
124	TWIN 22" / 9" MAG
153	15" HARDWOOD
154	10.5" HARDWOOD
161	8" HARDWOOD
186	TWIN 22.5" / 9" OAK
201	TWIN 8" / 6.5" MAG
202	12.5" MAG
214	22" OAK
215	10.5" MAG
232	19" PINE
267	TWIN 14" / 15" MAG
271	10" HARDWOOD
288	12.5" MAG
289	8" HARDWOOD
290	TWIN 9" / 10" MAG
298	18" PINE
299	9.5" OAK
385	TWIN 16" / 18" OAK

NOTES

1. AREA COMPUTED BY COORDINATE METHOD
2. ALL DISTANCES ARE HORIZONTAL
3. FOR REFERENCE SEE DEED BOOK 2869 PAGE 830, DEED BOOK 2544 PAGE 397, MAP BOOK 38 PAGE 314 CURRENT DEED BOOK 5263 PAGE 987
4. SURVEYED : DECEMBER 2006 AND AUGUST 29, 2007
5. 5.78 ACRES TOTAL AREA
6. THIS PROPERTY IS NOT LOCATED WITHIN 2000' OF AN EXISTING N.C. GRID MONUMENT
7. A.E.C. (AREA OF ENVIRONMENTAL CONCERN) SETBACK MUST BE REVIEWED AND APPROVED BY THE CITY OF WILMINGTON

LEGEND

E.I.P. = EXISTING IRON PIPE
E.C.M. = EXISTING CONCRETE MONUMENT
S.S.M.H. = SANITARY SEWER MAN HOLE
I.S. = IRON SET

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

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

HIGH WATER LINE

LINE	BEARING	DISTANCE
L1	S 35°38'37" E	13.13'
L2	S 72°42'21" W	35.32'
L3	S 72°42'21" W	51.97'
L4	S 18°02'03" E	43.17'
L5	S 34°54'01" W	12.21'
L6	S 27°45'55" W	35.73'
L7	S 18°18'21" W	23.32'
L8	S 25°51'07" W	30.94'
L9	S 29°31'47" W	42.67'

CURVE	RADIUS	ARC L.	CHORD L.	CHORD BEARING	TANGENT
C1	70.00'	106.80'	96.74'	N 69°12'30" E	66.91'

0 50 100 150

HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS

REVISIONS	DATE
BASIN REVISIONS FOR LOT OWNERS (LOTS 2,3,6R,7R,8R)	9-9-22

EXISTING CONDITIONS MAP OF
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 3-15-21
Scale: HORZ.: 1"= 50'
Drawn: GAW/AHG
Checked: AHG
Project No: 11736

EXISTING CONDITIONS

NORTH CAROLINA PROFESSIONAL SEAL 43166 ... H. GI...
9-9-22

Sheet No:

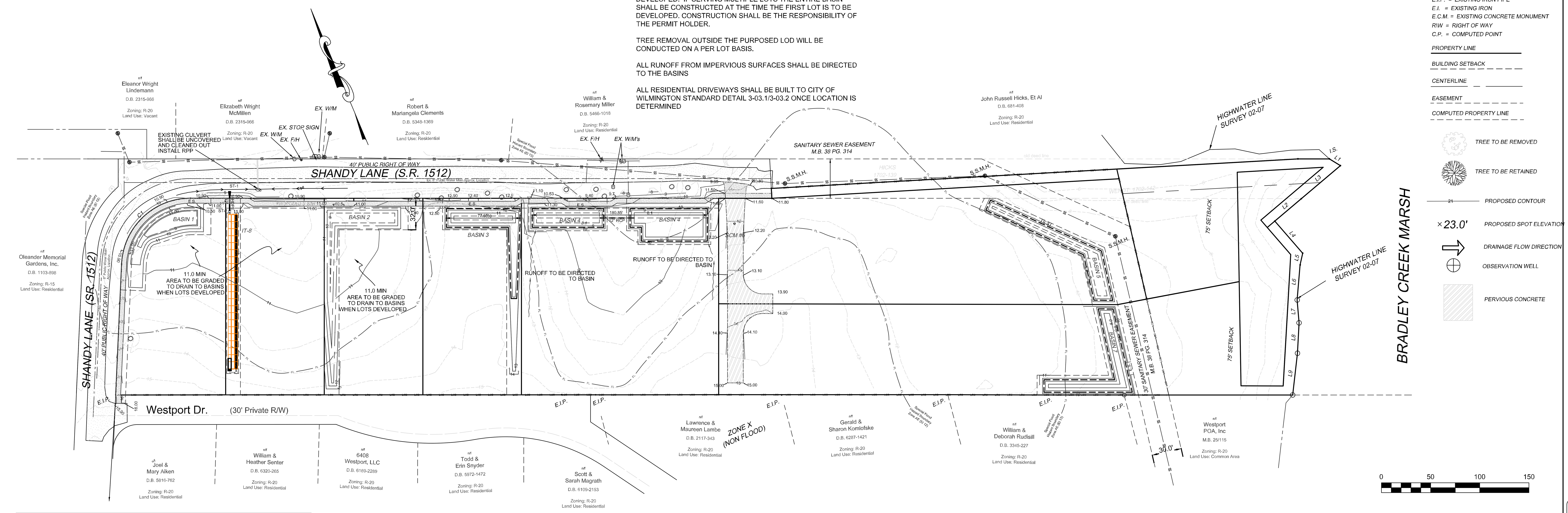
NOTES:

BASINS AND DRIVEWAYS TO BE CONSTRUCTED AS LOTS ARE DEVELOPED. IF SERVING MULTIPLE LOTS THE ENTIRE BASIN SHALL BE CONSTRUCTED AT THE TIME THE FIRST LOT IS TO BE DEVELOPED. CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE PERMIT HOLDER.

TREE REMOVAL OUTSIDE THE PURPOSED LOD WILL BE CONDUCTED ON A PER LOT BASIS.

ALL RUNOFF FROM IMPERVIOUS SURFACES SHALL BE DIRECTED TO THE BASINS

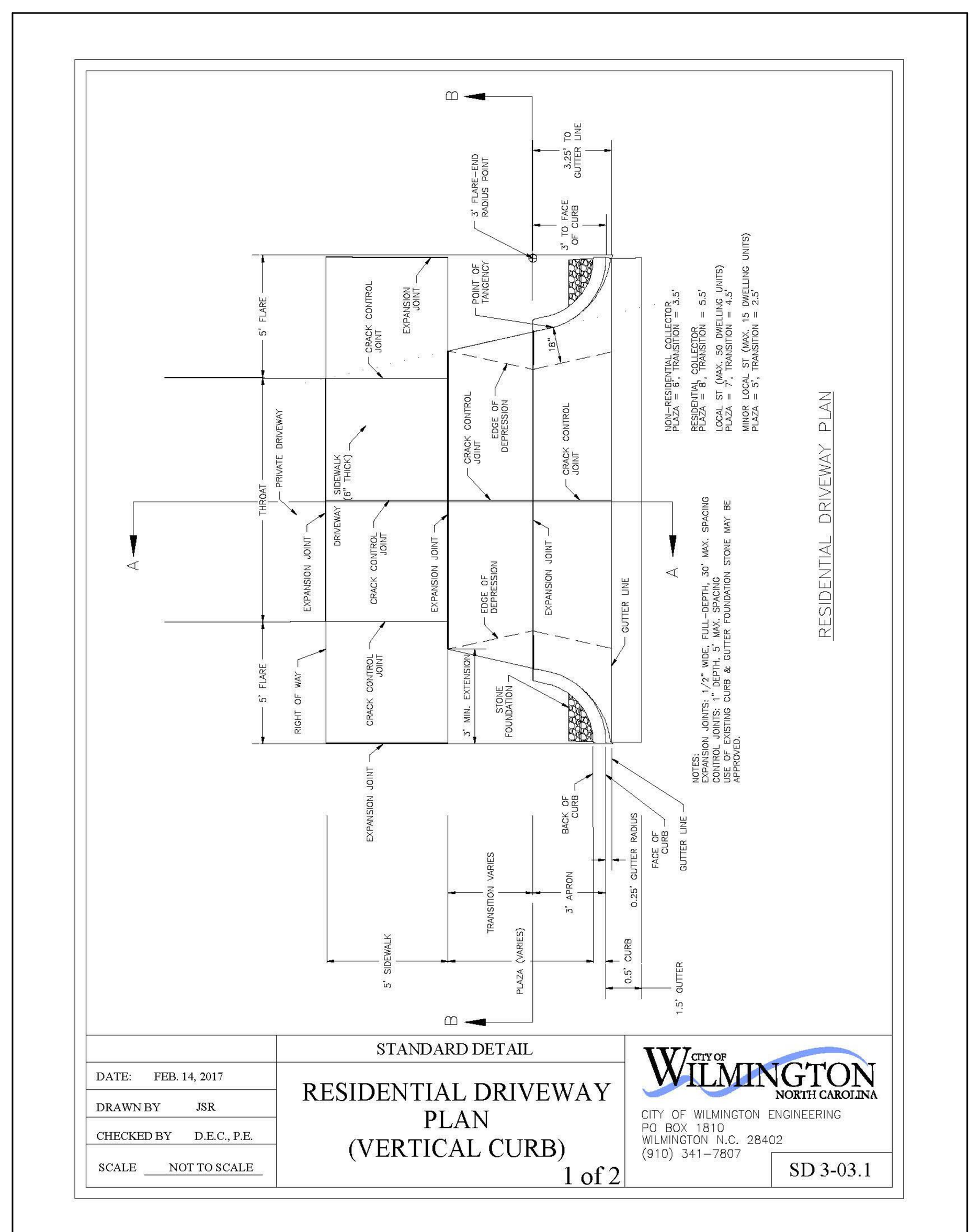
ALL RESIDENTIAL DRIVEWAYS SHALL BE BUILT TO CITY OF WILMINGTON STANDARD DETAIL 3-03.1/3-03.2 ONCE LOCATION IS DETERMINED

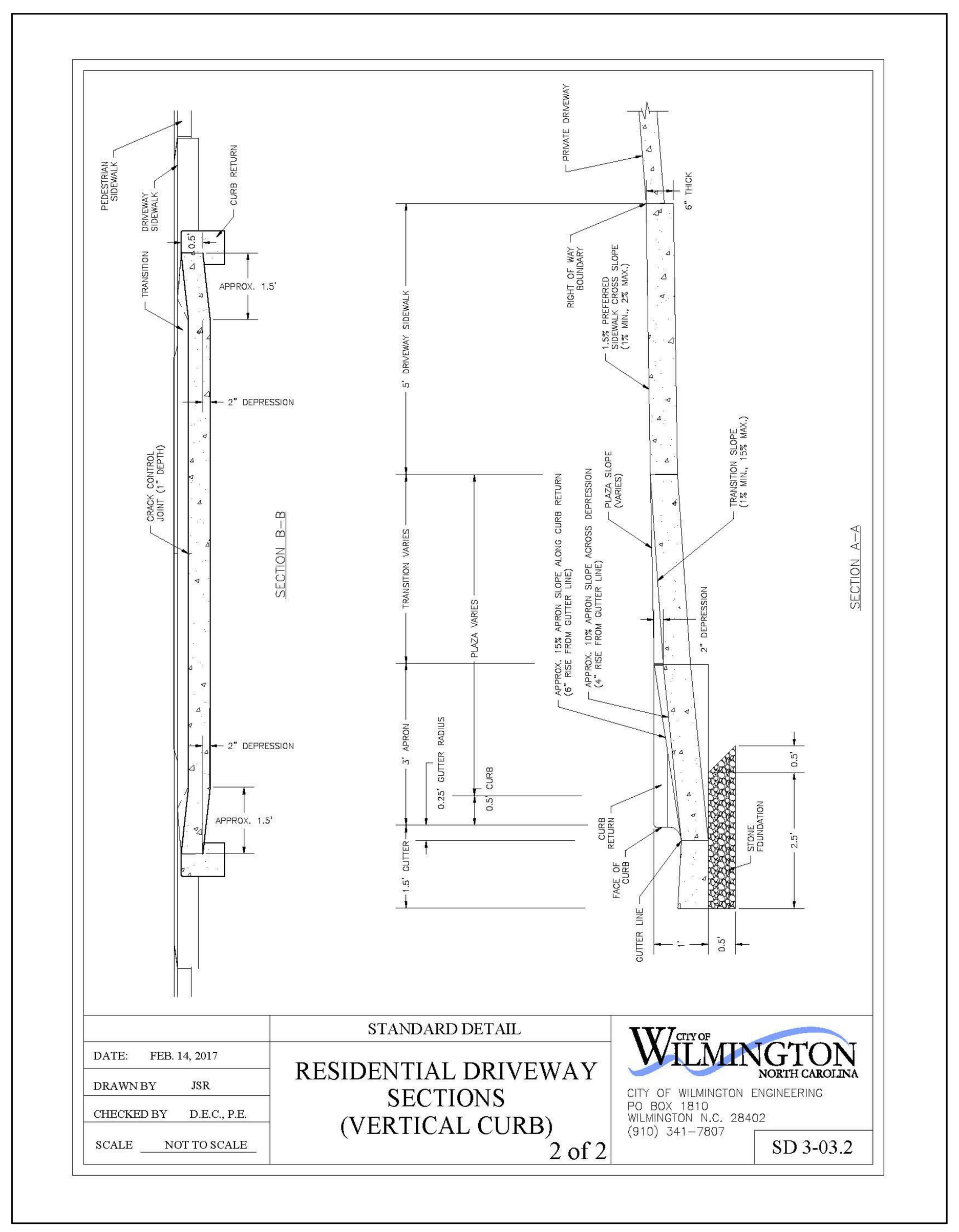


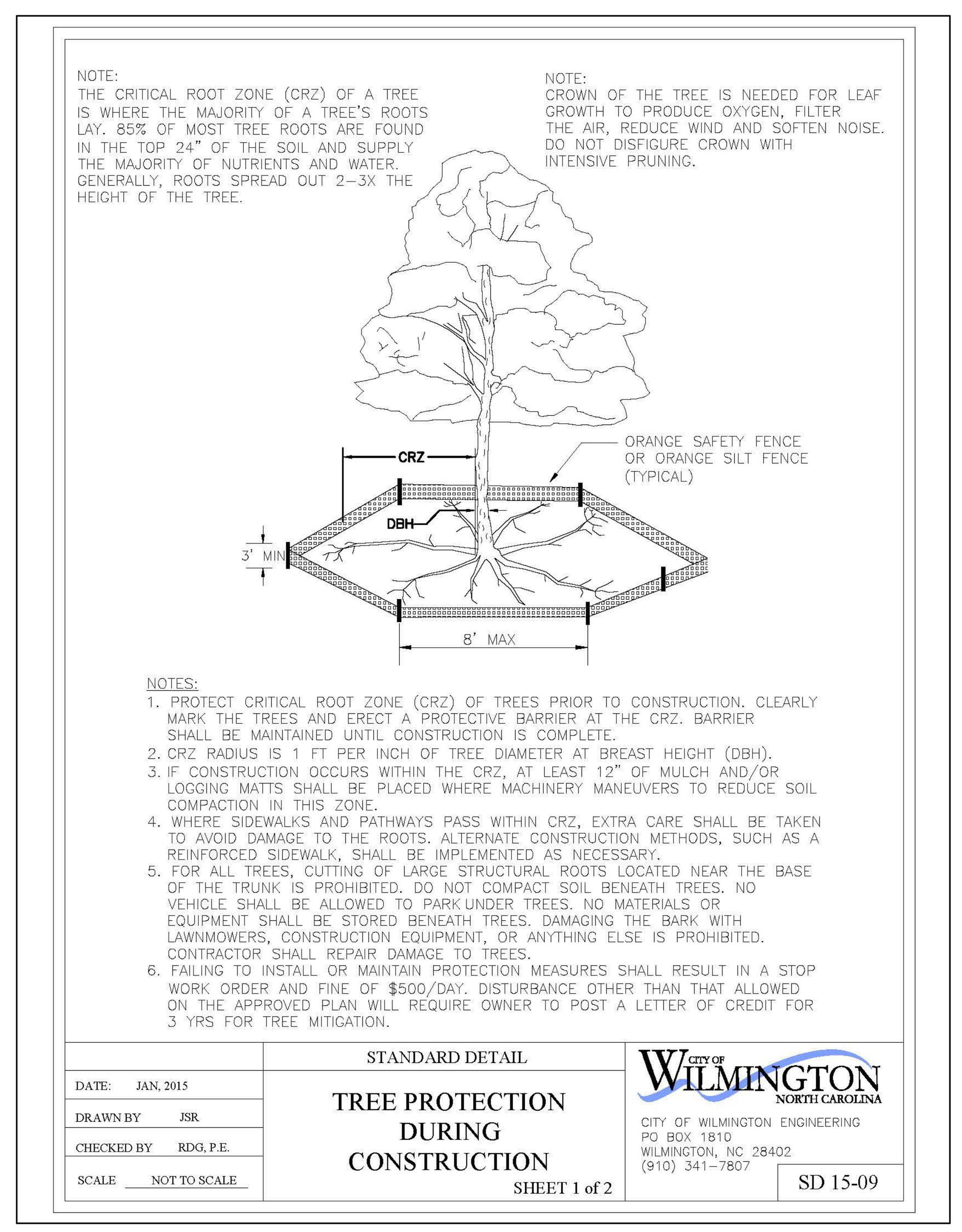
LEGEND

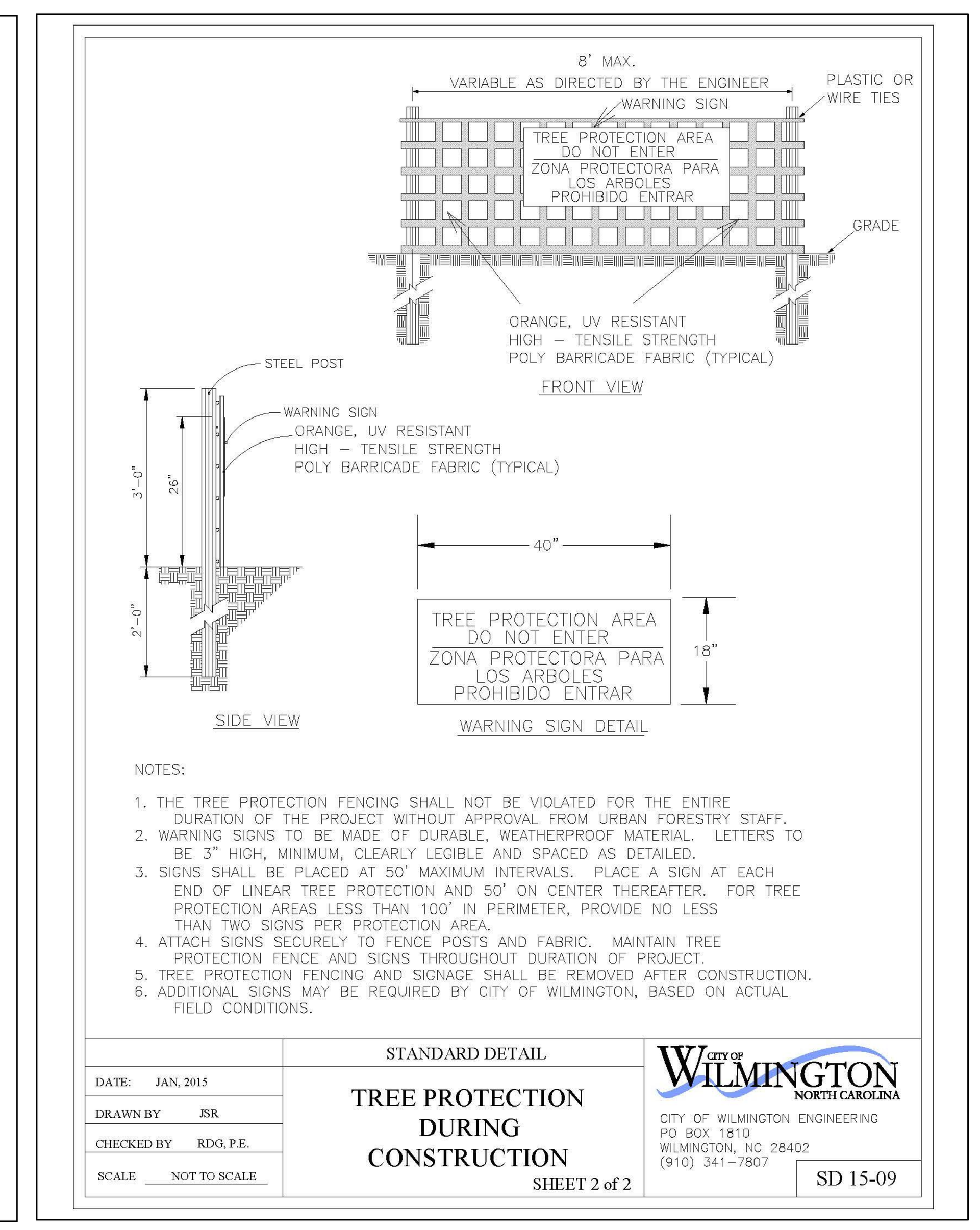
E.I.P. = EXISTING IRON PIPE
E.I. = EXISTING IRON
E.C.M. = EXISTING CONCRETE MONUMENT
R/W = RIGHT OF WAY
C.P. = COMPUTED POINT

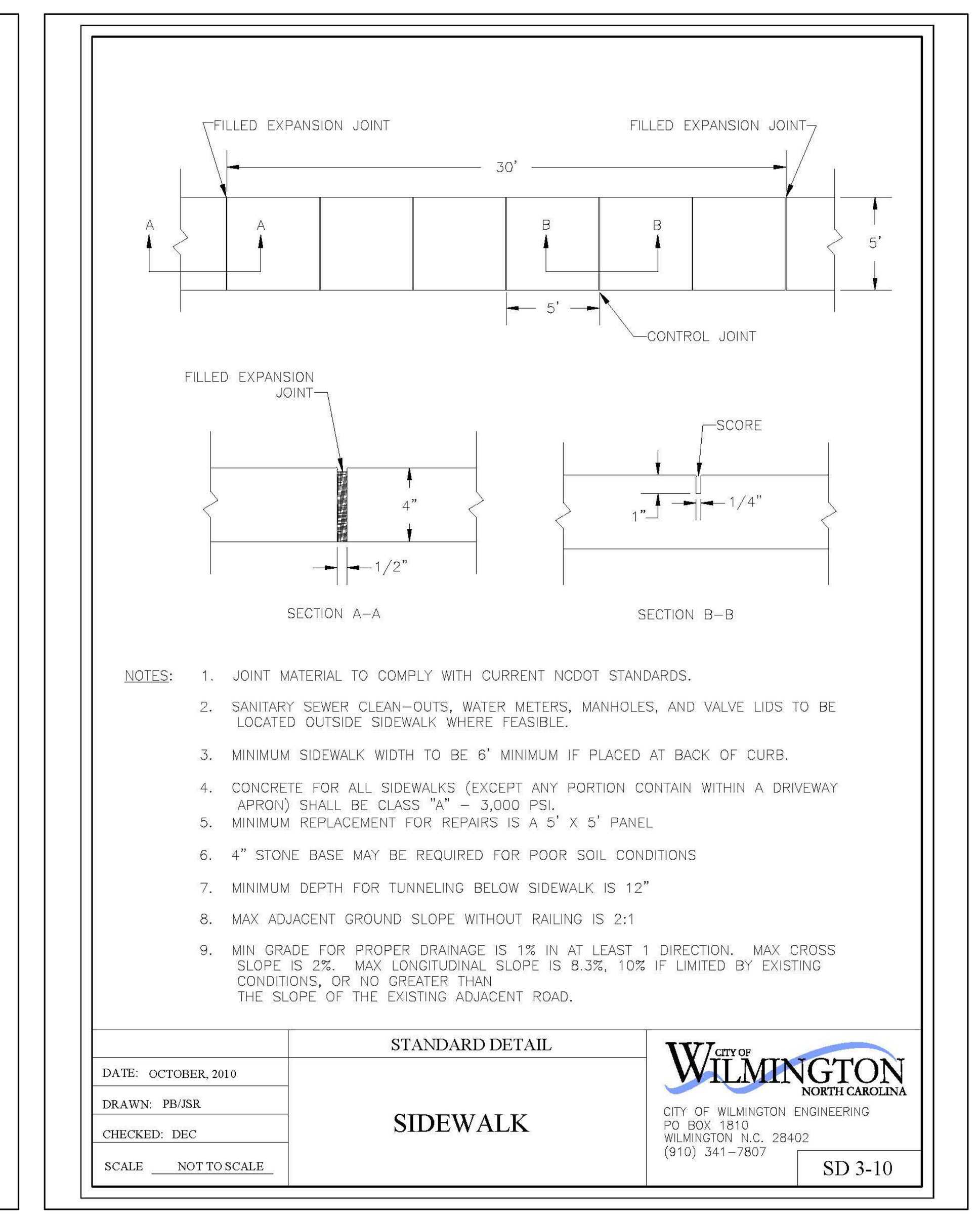
PROPERTY LINE
BUILDING SETBACK
CENTERLINE
EASEMENT
COMPUTED PROPERTY LINE
TREE TO BE REMOVED
TREE TO BE RETAINED
PROPOSED CONTOUR
×23.0' PROPOSED SPOT ELEVATION
DRAINAGE FLOW DIRECTION
OBSERVATION WELL
PERVIOUS CONCRETE







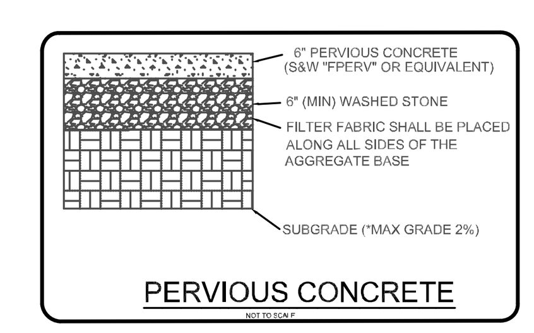


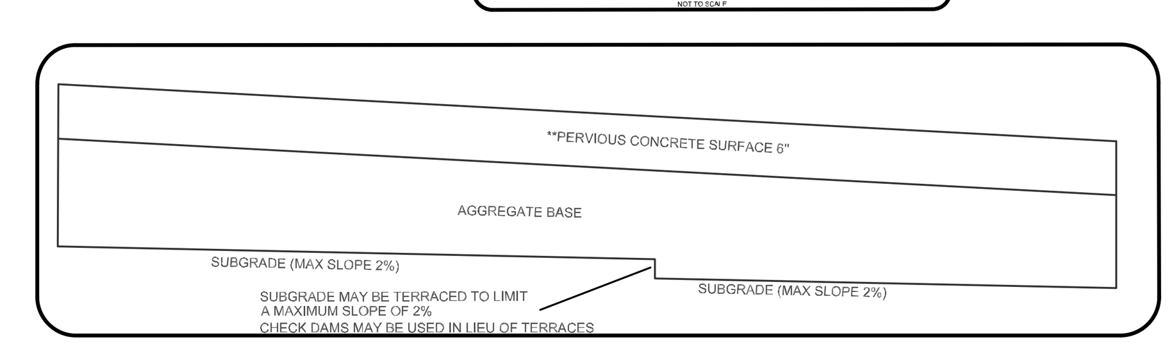


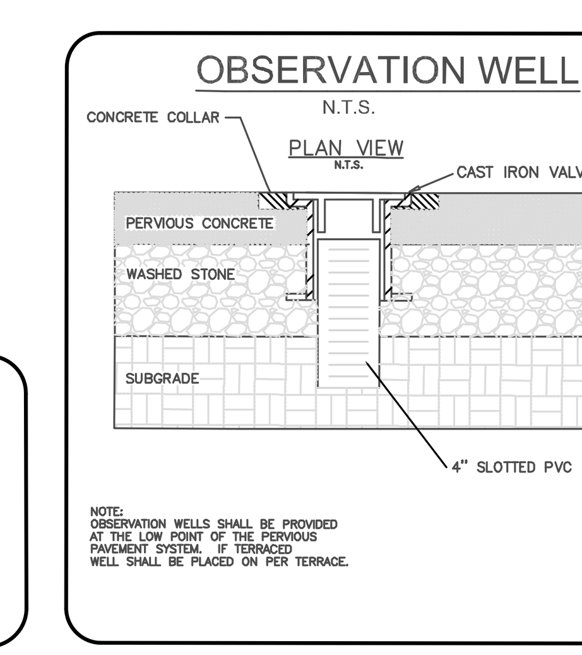
For each open utility cut of City streets, a $325 permit shall be required from the City prior to occupancy and/or project acceptance.

ADDITIONAL PERVIOUS CONCRETE NOTES

-PAVEMENT SURFACE SHALL HAVE A MINIMUM INFILTRATION RATE OF 50 IN/HR
-MIX DESIGN PREPERATION AND PLACEMENT SHALL BE IN ACCORDANCE TO ACI SPEC-522.1-13
-**SURFACE THICKNESS MAY BE REDUCED OR INCREASED BASED ON GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
-MAXIMUM SOIL SUBGRADE SLOPE SHALL BE 2%. SUBGRADE MAY BE TERRACED OR GRADED BERMS MAY BE USED TO ACHIEVE A SLOPE LESS THAN OR EQUAL TO 2%
-OBSERVATIONS WELLS SHALL BE PROVIDED AT THE LOW POINT OF THE SYSTEM. IF SYSYTEM IS TERRACED THER SHALL BE ONE OBSERVATION WELL PER TERRACE.
-AGGREGATE BASE SHALL BE COMPRISED OF WASH STONE. PERCENT VOIDS SHALL BE 30%-40%
-THE AREA ADJACENT TO THE PC SHALL BE GRADED TO DIVERT RUNOFF FROM ALL OTHER AREAS.
- SOIL SUBGRADES SHALL NOT BE GRADED WHEN SATURATED, ONLY GRADE WHEN DRY.
- PC SHALL BE PROTECTED AND KEPT FREE FROM DEBRIS DURING CONSTRUCTION
- PC SHALL BE INSPECTED QUARTILY AND ANY DEFICIENCIES REPAIRED
- CONTRACTOR IS RESPONSIBLE FOR GEOTECHNICAL TESTING AS NECESSARY.
- CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL MANUFACTURING INSTALLATION GUILDLINES







CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date:__________ Permit #__________

Signed:__________

Approved Construction Plan	Name	Date
Planning		
Traffic		
Fire		

HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS
1123 FLORAL PARKWAY
WILMINGTON, N.C. 28403
PHONE: (910) 343-8002
LICENSE # C-0597

1"=50'

DATE	REVISIONS
10-5-22	Revised per SW Comments

PRELIMINARY SUBDIVISION PLAN OF
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 3-15-21
Scale: HORZ.: 1"= 50'
Drawn: GAW/AHG
Checked: AHG
Project No: 11736

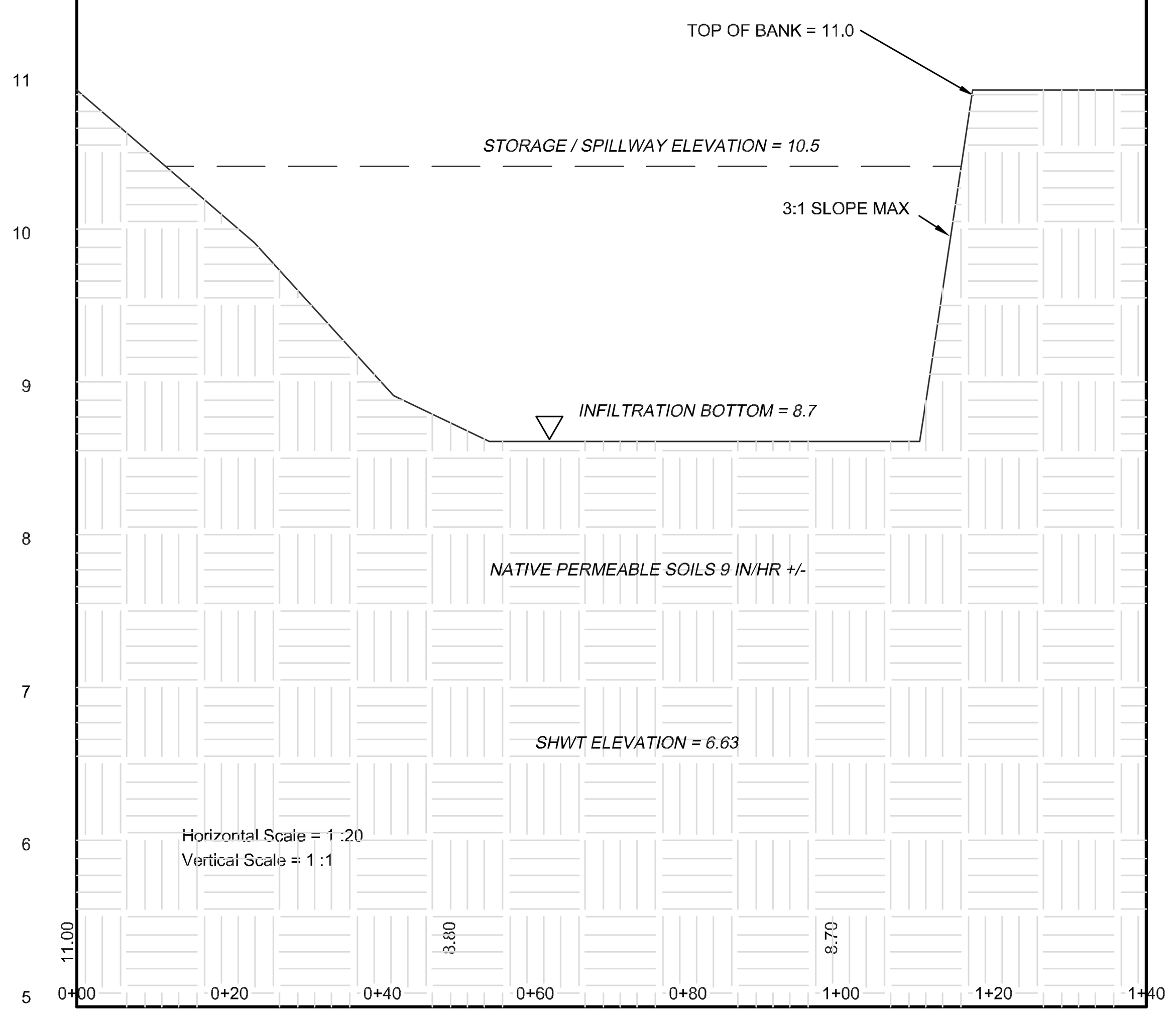
GRADING AND STORM

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43166 ADAM H. GRADY

Sheet No: 3 of 4

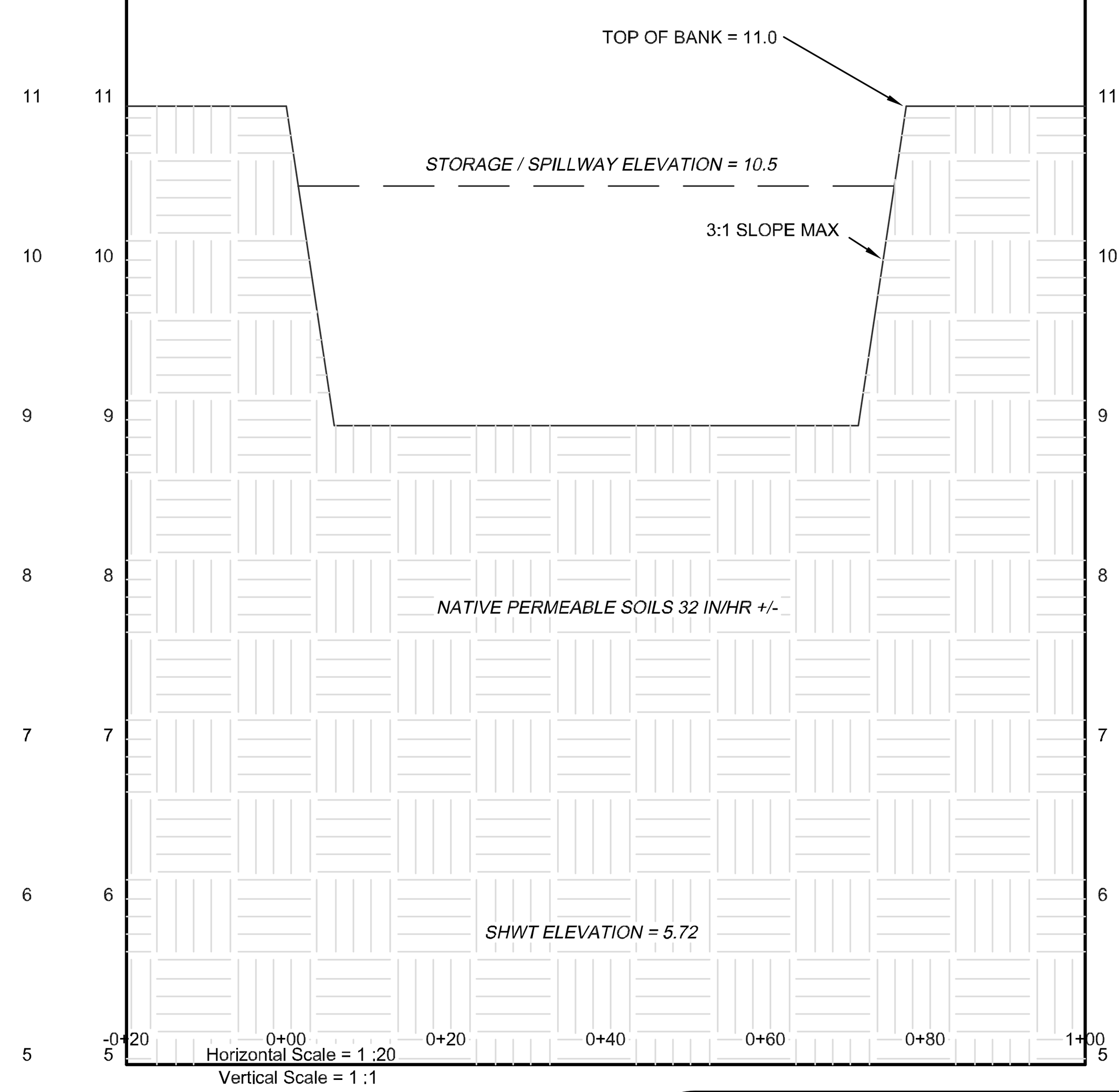
BASIN 1

BASIN 1			
Elev(Ft)	Storage(CF)	Area(SF)	Area(Acre)
8.700	0.0	670.587	0.015
9.000	227	843.072	0.019
10.000	1391	1517.828	0.035
10.500	2290	2094.320	0.048
11.000	3438	2503.903	0.057



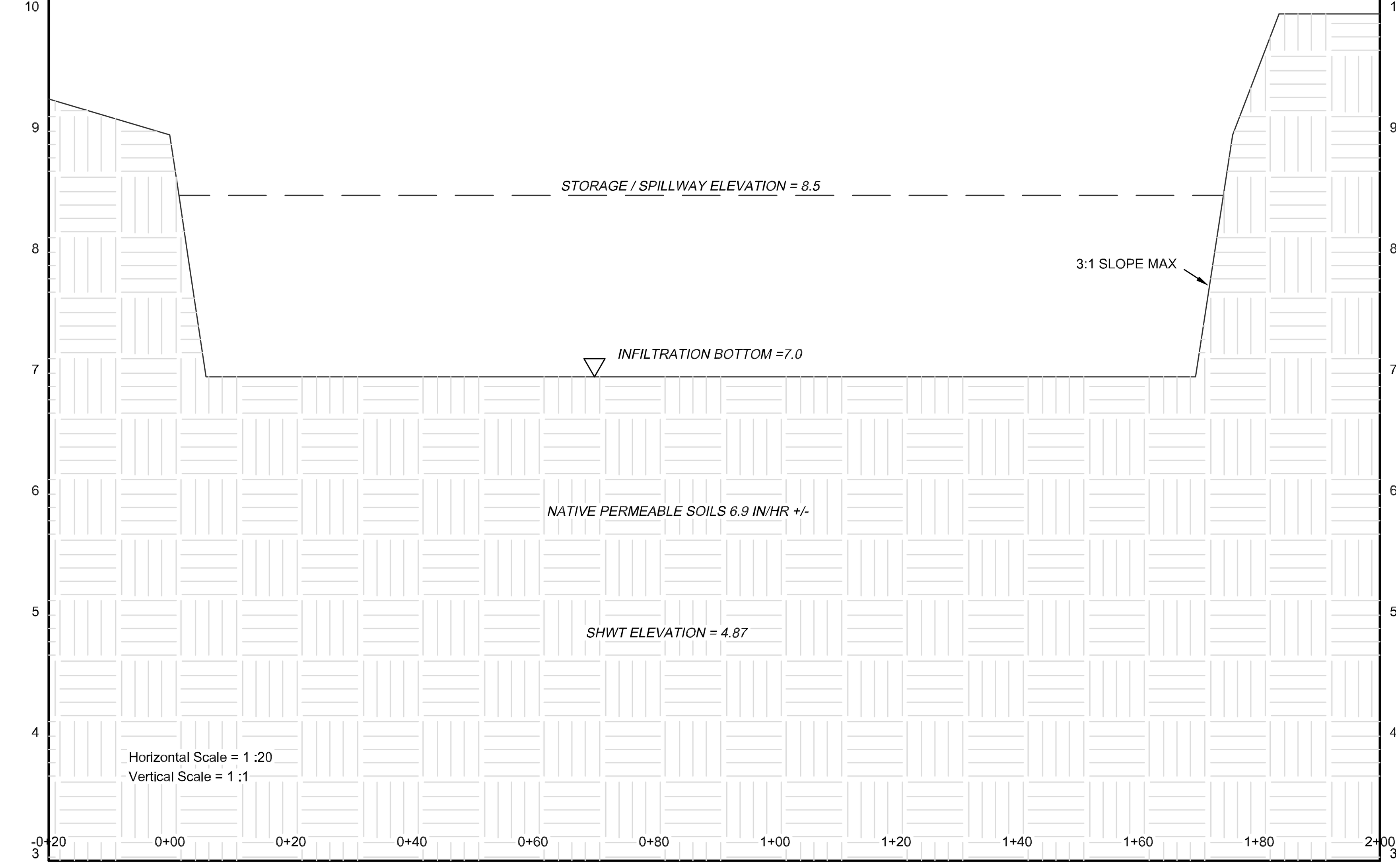
BASIN 2

BASIN 2				
Elev(Ft)	Storage(CF)	Storage(Acre-Ft)	Area(SF)	Area(Acre)
9.000	0.0	0.000	722.800	0.017
10.000	1223.8	0.028	1790.727	0.041
10.500	2282.7	0.052	2459.982	0.056
11.000	3695.6	0.085	3200.492	0.073



BASIN 5

BASIN 5				
Elev(Ft)	Storage(CF)	Storage(Acre-Ft)	Area(SF)	Area(Acre)
7.000	0.0	0.000	665.566	0.015
8.000	1166.0	0.027	1678.671	0.039
8.500	2138.1	0.049	2212.583	0.051
9.000	3381.7	0.078	2764.734	0.063



GENERAL BASIN NOTES:

BASINS TO BE CONSTRUCTED AS LOTS ARE DEVELOPED. IF SERVING MULTIPLE LOTS THE ENTIRE BASIN SHALL BE CONSTRUCTED AT THE TIME THE FIRST LOT IS TO BE DEVELOPED.

DURING CONSTRUCTION, BASIN AREAS SHALL BE MARKED OFF TO PREVENT CONSTRUCTION TRAFFIC FROM ENTERING THE AREA AND COMPACTING SOILS.

GRADING OF THE BASIN SHALL BE ACCOMPLISHED USING LOW-IMPACT EQUIPMENT TO PREVENT COMPACTION OF THE SOILS.

DO NOT DISTURB UNDERLYING SOILS BELOW FINAL DESIGN ELEVATION.

PERMANENT VEGETATION, SEEDING, AND MATTING OF BASINS SHALL BE COMPLETED WITHIN 2 DAYS OF FINAL GRADING.

VEGETATION ALONG THE SURFACE OF BASINS SHALL BE MAINTAINED IN GOOD CONDITION. AVOID EXCESSIVE COMPACTION BY MOWERS AND OTHER EQUIPMENT WHILE MAINTAINING.

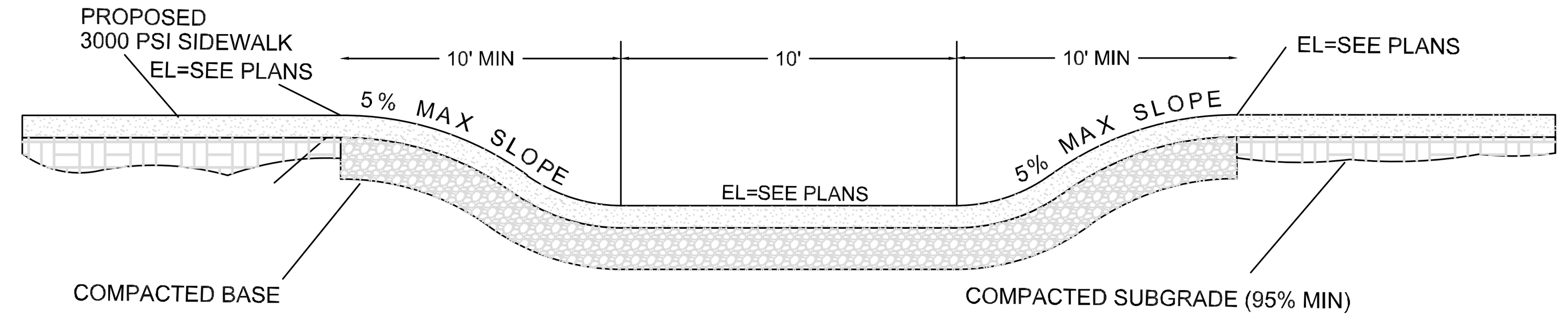
LOW MAINTENANCE VEGETATION SHALL BE USED IN LANDSCAPING OF BASIN TO REDUCE COMPACTION FROM CONSTANT MOWING.

ALL ROOF DRAINS DIRECTED TO BASINS SHALL BE SCREENED.

NO IMPERVIOUS SURFACES SHALL BE DIRECTLY CONNECTED TO BASIN UNLESS IT HAS BEEN SCREENED

MAXIMUM SIDE SLOPES SHALL BE 3:1 UNLESS WITHOUT SPECIAL STABILIZATION

BASIN 5: A 1' LAYER OF CLAY WAS OBSERVED AT THE BORING LOCATION BETWEEN THE DEPTHS OF 3-4 FEET. IF ENCOUNTERED DURING CONSTRUCTION THE LAYER SHALL BE REMOVED FROM THE BASIN BOTTOM AND REPLACED WITH SOIL MATCHING THE EXISTING INFILTRATION RATES AT MINIMUM.

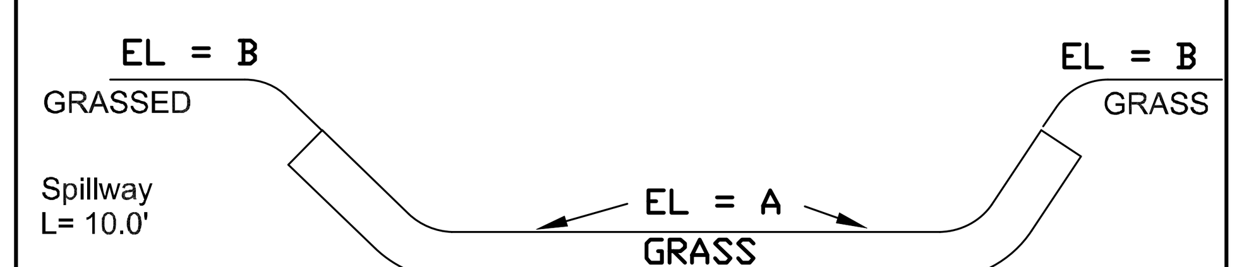


SIDEWALK AT EMERGENCY SPILLWAY

NOT TO SCALE

MAX. CROSS SLOPE - 2.0%
SEE SIDEWALK DETAIL FOR FURTHER INFORMATION

BASIN-1-5



EMERGENCY SPILLWAY DETAIL

NOT TO SCALE

BASIN	TOP OF BANK (B)	SPILLWAY (A)
1	11	10.5
2	11	10.5
3	13	12.5
4	10	9.5
5	10	8.5
7	10	9.5

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

Approved Construction Plan

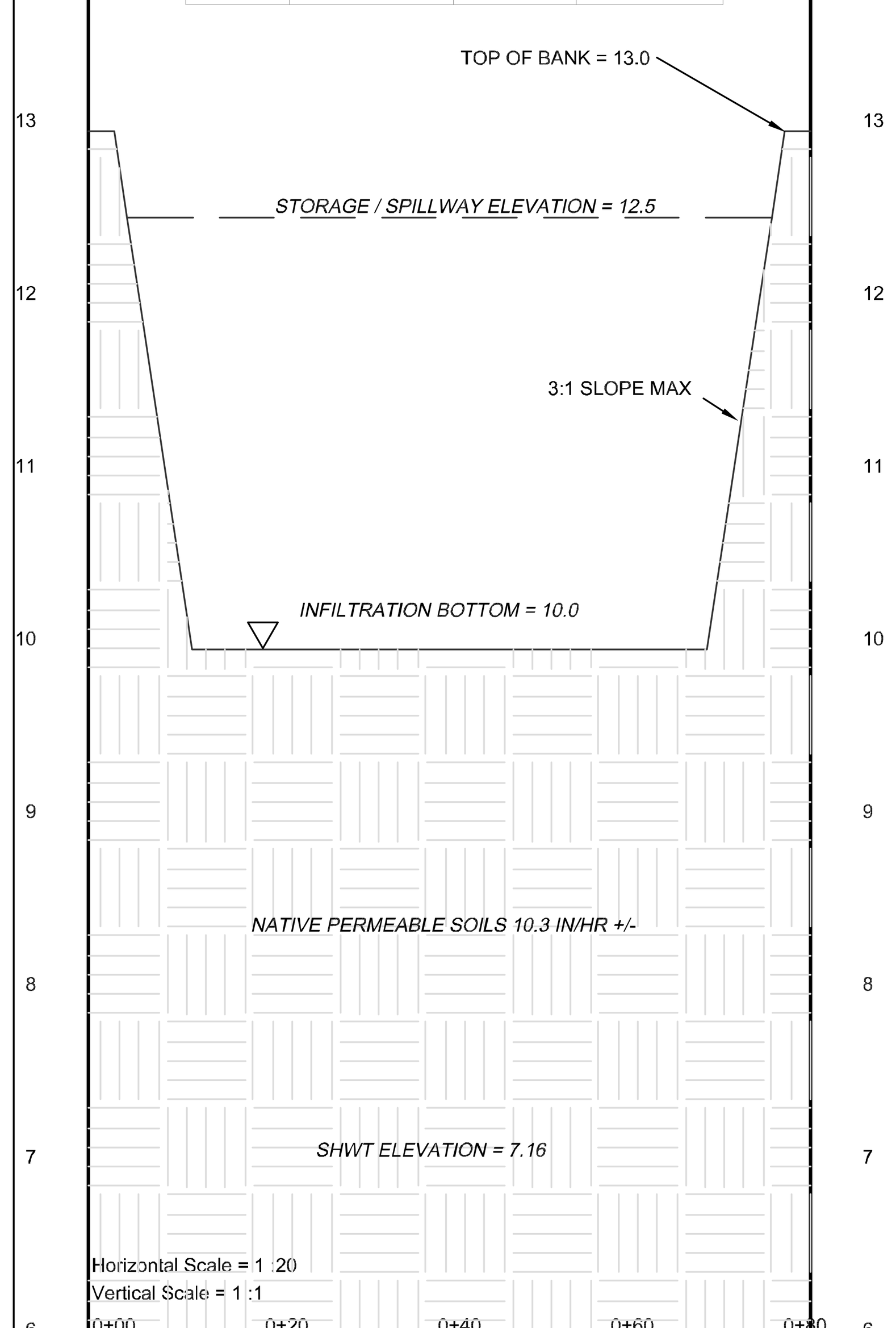
	Name	Date
Planning		
Traffic		
Fire		

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

PRELIMINARY

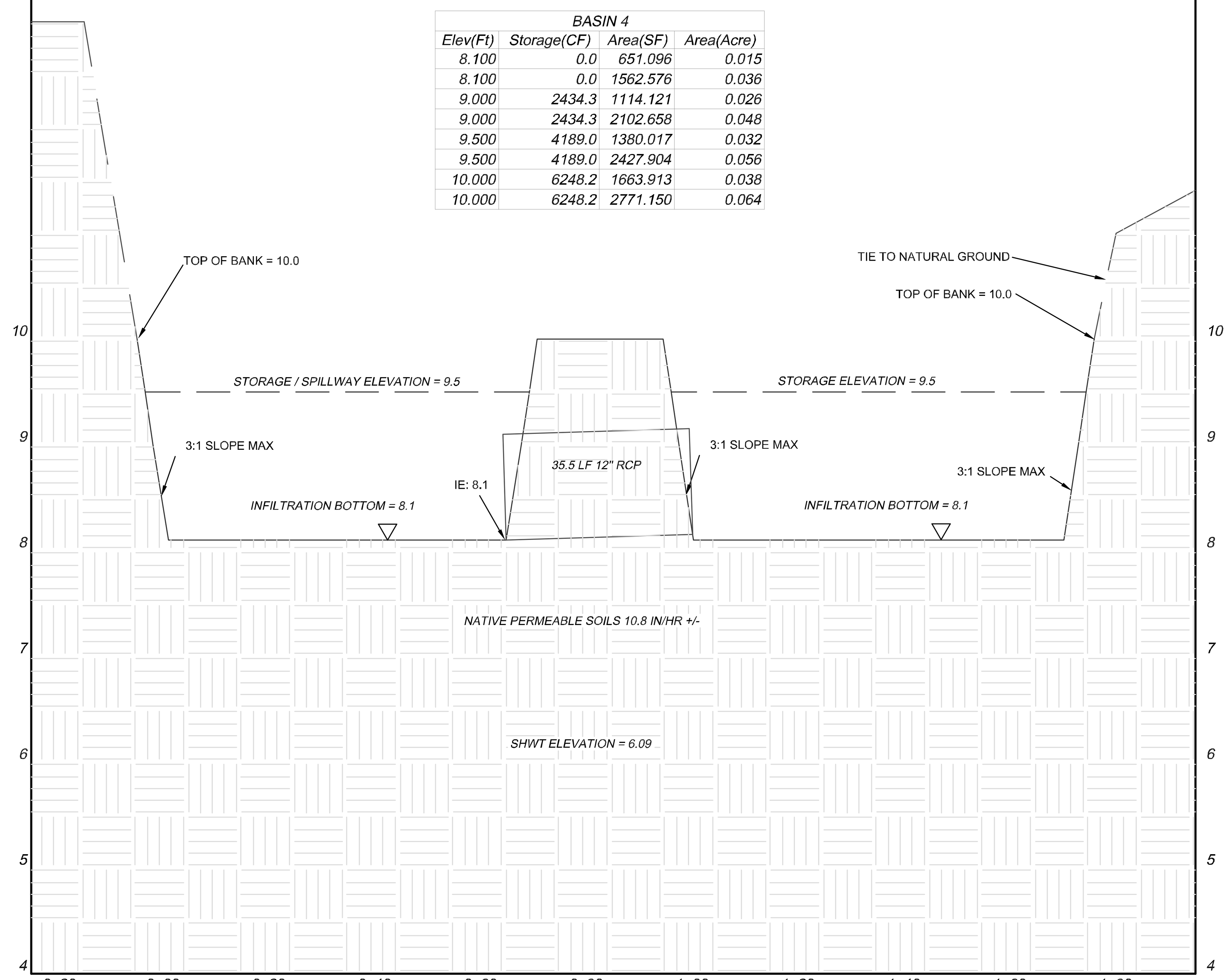
BASIN 3

BASIN 3			
Elev(Ft)	Storage (CF)	Area(SF)	Area(Acre)
10.0	0.0	238.600	0.005
11.0	431	656.500	0.015
12.0	1512	1569.979	0.036
12.5	2414	2050.244	0.047
13.0	3663	2974.358	0.068



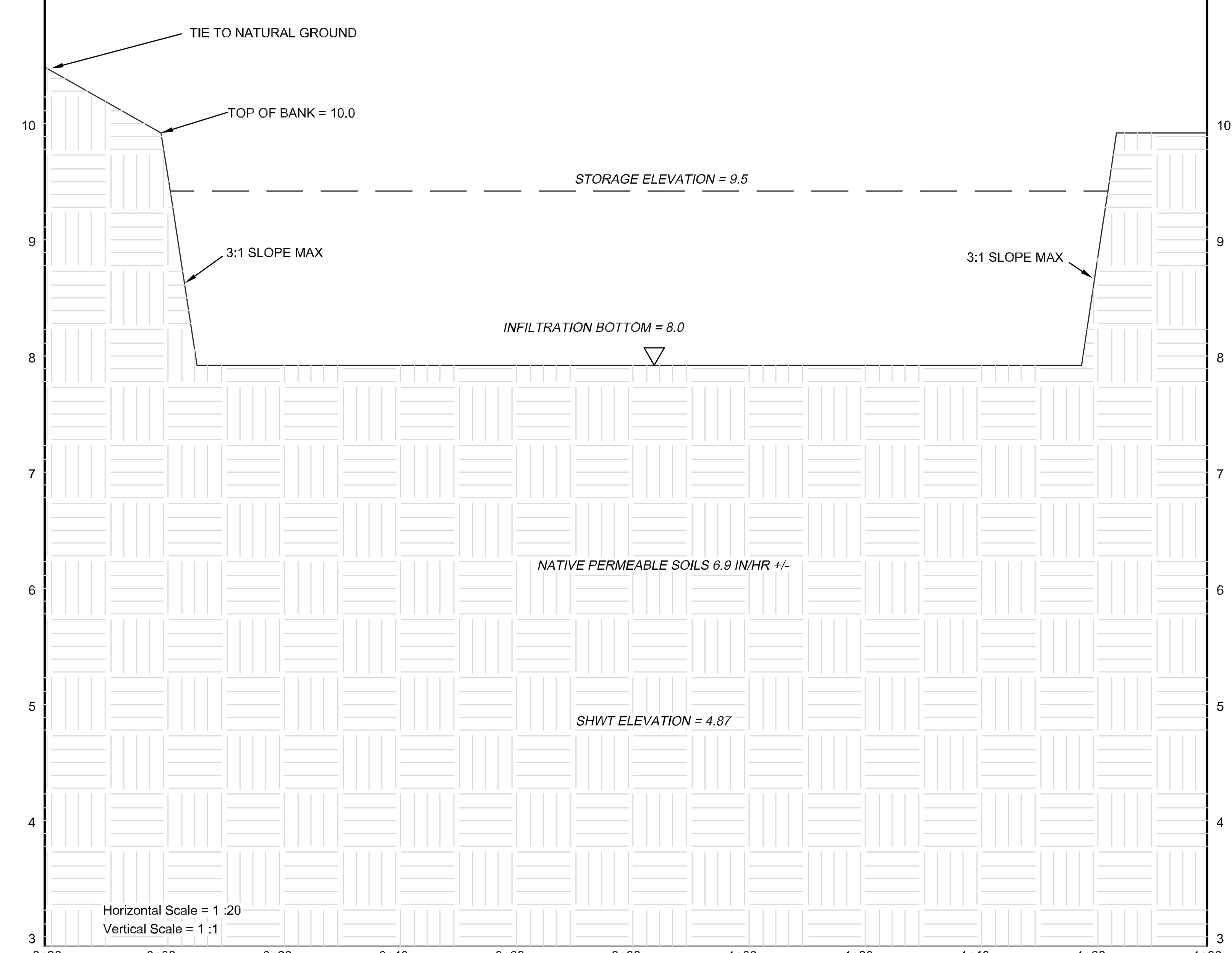
BASIN 4

BASIN 4			
Elev(Ft)	Storage(CF)	Area(SF)	Area(Acre)
8.100	0.0	651.096	0.015
8.100	0.0	1562.576	0.036
9.000	2434.3	1114.121	0.026
9.000	2434.3	2102.658	0.048
9.500	4189.0	1380.017	0.032
9.500	4189.0	2427.904	0.056
10.000	6248.2	1663.913	0.038
10.000	6248.2	2771.150	0.064



BASIN 7

BASIN 6				
Elev(Ft)	Storage(CF)	Storage(Acre-Ft)	Area(SF)	Area(Acre)
8.000	0.0	0.000	698.047	0.016
9.000	1179.8	0.027	1673.732	0.038
9.500	2144.7	0.049	2188.934	0.050
10.000	3371.8	0.077	2722.286	0.062



HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS
1123 FLORAL PARKWAY
WILMINGTON, N.C. 28403
PHONE: (910) 343-8002
LICENSE # C-0597

0 50 100 150
1"=50'

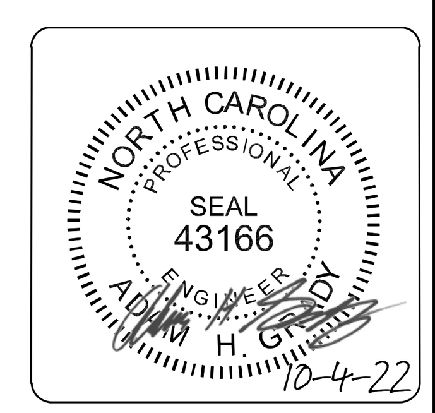
	REVISIONS	DATE
1	REVISED PER SW COMMENTS	10-4-22
1	BASIN 2 REPLACED WITH TRENCH CHAMBERS	
	BASIN 4 (LOT COMBINATION)	9-14-21

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

GRADING AND STORMWATER
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

Date: 3-15-21
Scale: HORZ.: 1"= 20' VERT.: 1"= 1'
Drawn: AHG
Checked: AHG
Project No: 11736

INFILTRATION BASINS



Sheet No:
4 of 4

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADS Advanced Drainage Systems, Inc.

ADS SiteAssist FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

LEGACY POINT LOT 2

WILMINGTON, NC

SC-310 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-310.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE OR POLYETHYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2922 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310 SYSTEM

1. STORMTECH SC-310 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

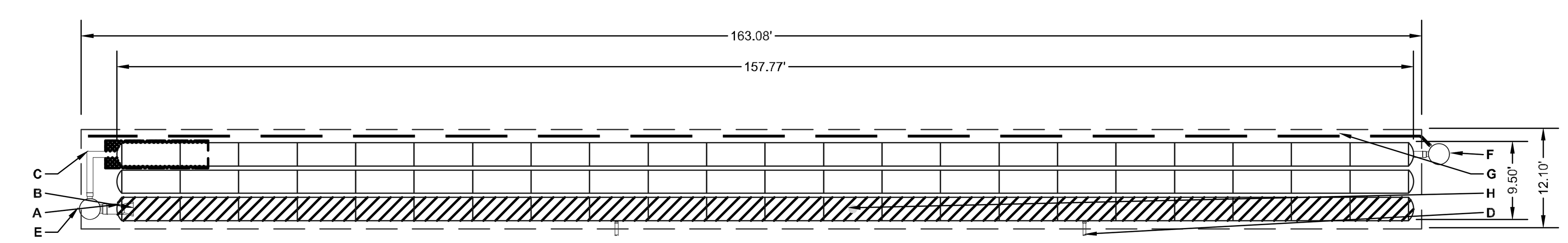
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT	
66	STORMTECH SC-310 CHAMBERS
6	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	STONE VOID
2426	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
1973	SYSTEM AREA (SF)
350.4	SYSTEM PERIMETER (ft)

CONCEPTUAL ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	9.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	3.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	3.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	3.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	3.33
TOP OF STONE:	2.33
TOP OF SC-310 CHAMBER:	1.83
4" INSERTA TEE INVERT:	0.83
8" x 8" TOP MANIFOLD INVERT:	0.79
12" ISOLATOR ROW PLUS INVERT:	0.58
8" BOTTOM CONNECTION INVERT:	0.55
BOTTOM OF SC-310 CHAMBER:	0.50
UNDERDRAIN INVERT:	0.00
BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED EZ END CAP	A	12" BOTTOM PREFABRICATED EZ END CAP, PART#: SC310ECEZ / TYP OF ALL 12" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	0.90"	
FLAMP	B	INSTALL FLAMP ON 12" ACCESS PIPE / PART#: SC31012RAMP		
MANIFOLD	C	8" x 8" TOP MANIFOLD, MOLDED FITTINGS	3.50"	
INSERTA TEE	D	4" DIAMETER	4.00"	
NYLOPLAST (INLET W/ ISO PLUS ROW)	E	30" DIAMETER (24.00" SUMP MIN)		0.9 CFS IN
NYLOPLAST (OUTLET)	F	30" DIAMETER (DESIGN BY ENGINEER)		0.7 CFS OUT
UNDERDRAIN	G	4" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		
INSPECTION PORT	H	4" SEE DETAIL		



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

LEGACY POINT LOT 2
WILMINGTON, NC

DATE: | DRAWN: AG
PROJECT #: | CHECKED: N/A

DATE | DRW | CHK | DESCRIPTION

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

SHEET 2 OF 6

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

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

0 50 100 150
1"=50'

HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS
1123 FLORAL PARKWAY
WILMINGTON, N.C. 28403
PHONE: (910) 343-8002
LICENSE # C-0597

REVISIONS	DATE

PRELIMINARY SUBDIVISION PLAN OF
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 7-28-22
Scale: AS SHOWN
Drawn: AHG
Checked: AHG
Project No: 11736

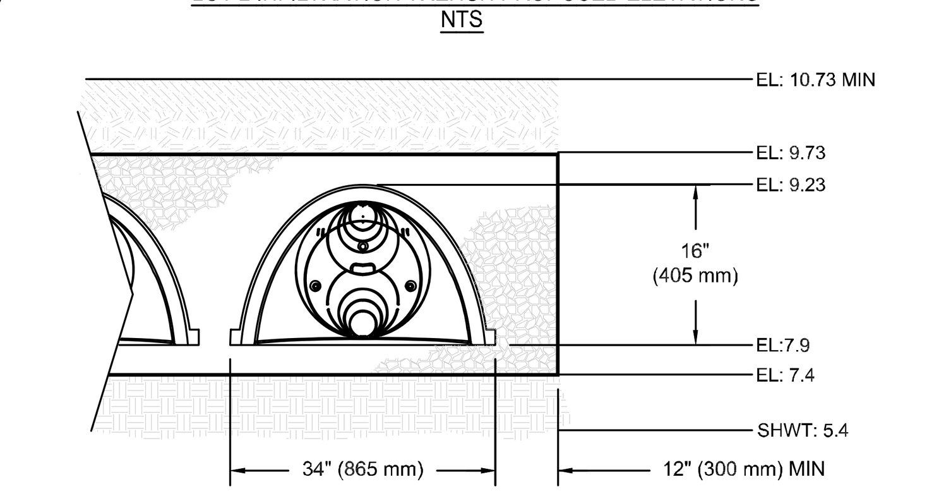
ADS INFILTRATION TRENCH DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 43166
3-3-22

PRELIMINARY PLAN

Sheet No: T1 of T3

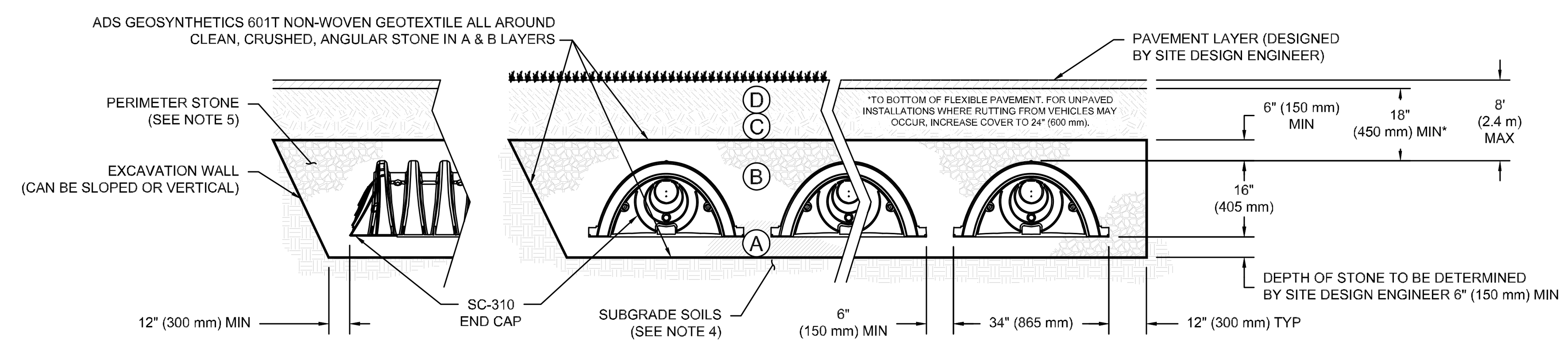
LOT 2 INFILTRATION TRENCH PROPOSED ELEVATIONS
NTS



ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

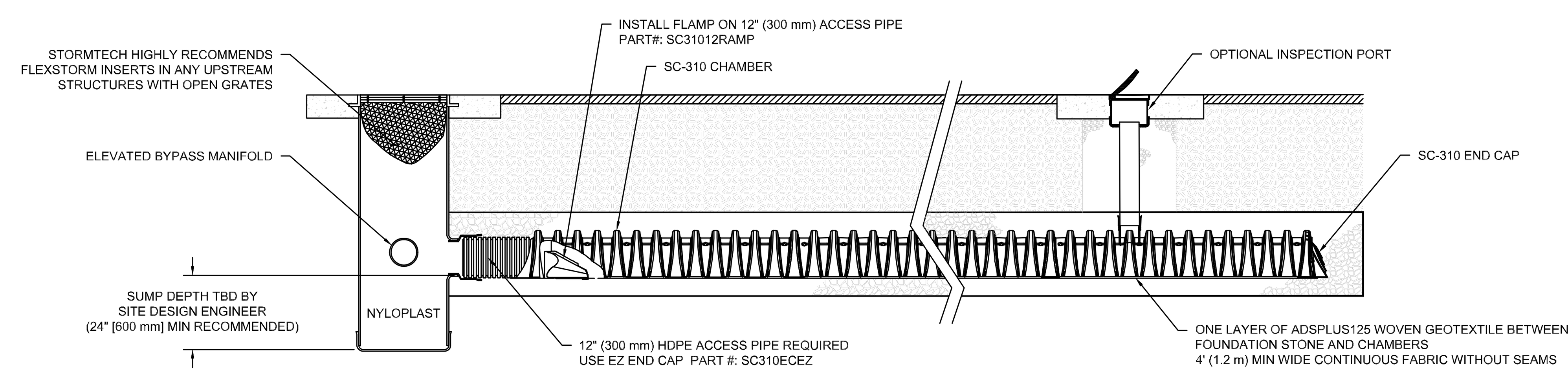
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

LEGACY POINT
WILMINGTON, NC
StormTech® Chamber System
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473
888-892-2694 | WWW.STORMTECH.COM
SHEET 3 OF 6



SC-310 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

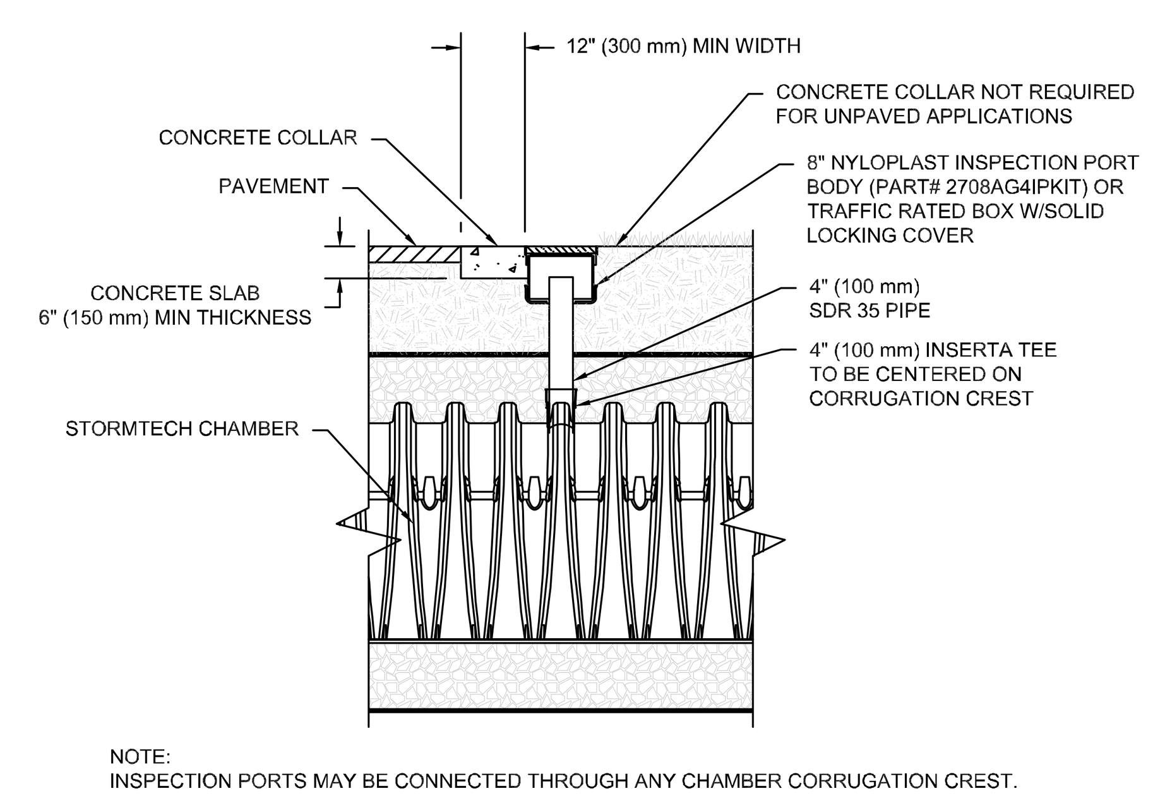
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)
NTS

LEGACY POINT
WILMINGTON, NC
StormTech® Chamber System
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473
888-892-2694 | WWW.STORMTECH.COM
SHEET 4 OF 6

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

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS

REVISIONS | DATE

PRELIMINARY SUBDIVISION PLAN OF
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 7-28-22
Scale: NTS
Drawn: AHG
Checked: AHG
Project No: 11736

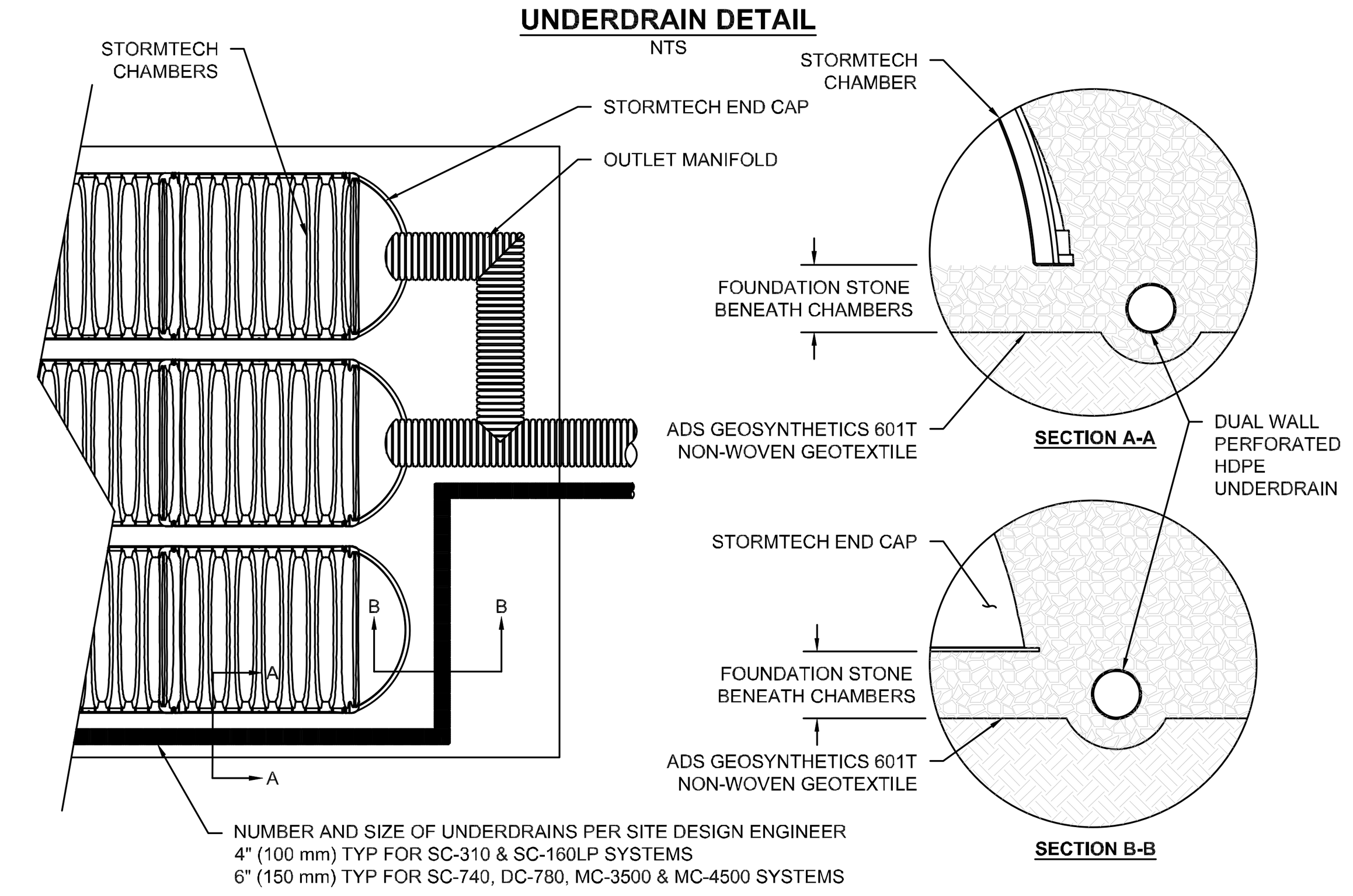
ADS INFILTRATION TRENCH DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 43166 ENGINEER
8-3-22

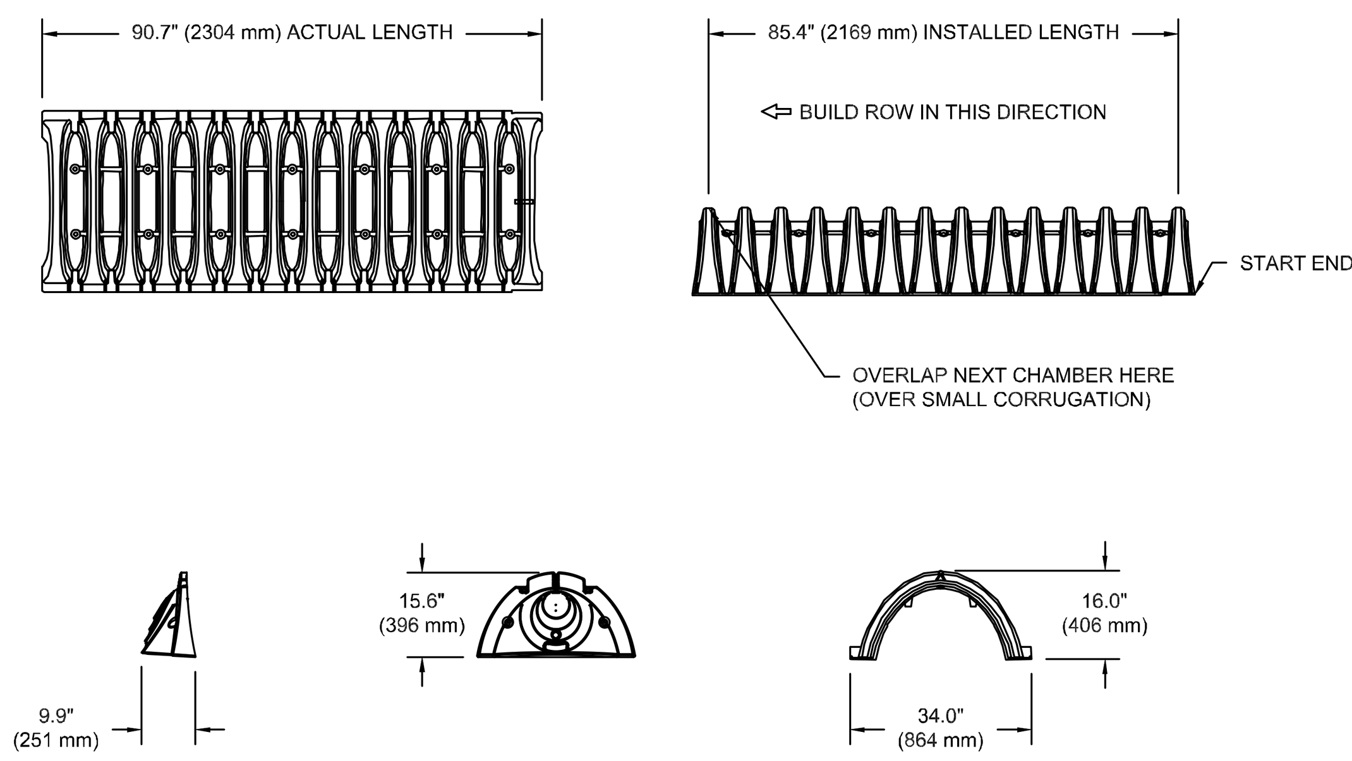
PRELIMINARY PLAN

Sheet No: T2 of T3

UNDERDRAIN DETAIL
NTS


STORMTECH CHAMBERS
STORMTECH CHAMBER
STORMTECH END CAP
OUTLET MANIFOLD
FOUNDATION STONE BENEATH CHAMBERS
ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE
SECTION A-A
DUAL WALL PERFORATED HDPE UNDERDRAIN
STORMTECH END CAP
FOUNDATION STONE BENEATH CHAMBERS
ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE
SECTION B-B
NUMBER AND SIZE OF UNDERDRAINS PER SITE DESIGN ENGINEER
4" (100 mm) TYP FOR SC-310 & SC-160LP SYSTEMS
6" (150 mm) TYP FOR SC-740, DC-780, MC-3500 & MC-4500 SYSTEMS

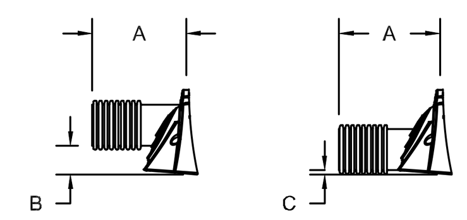
SC-310 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET	(0.88 m³)
WEIGHT	35.0 lbs.	(16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR"
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE06B / SC310EPE06BPC			---	0.5" (13 mm)
SC310EPE08T / SC310EPE08TPC	8" (200 mm)	11.9" (302 mm)	3.5" (89 mm)	---
SC310EPE08B / SC310EPE08BPC			---	0.6" (15 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC			---	0.7" (18 mm)
SC310ECEZ*	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310ECEZ THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

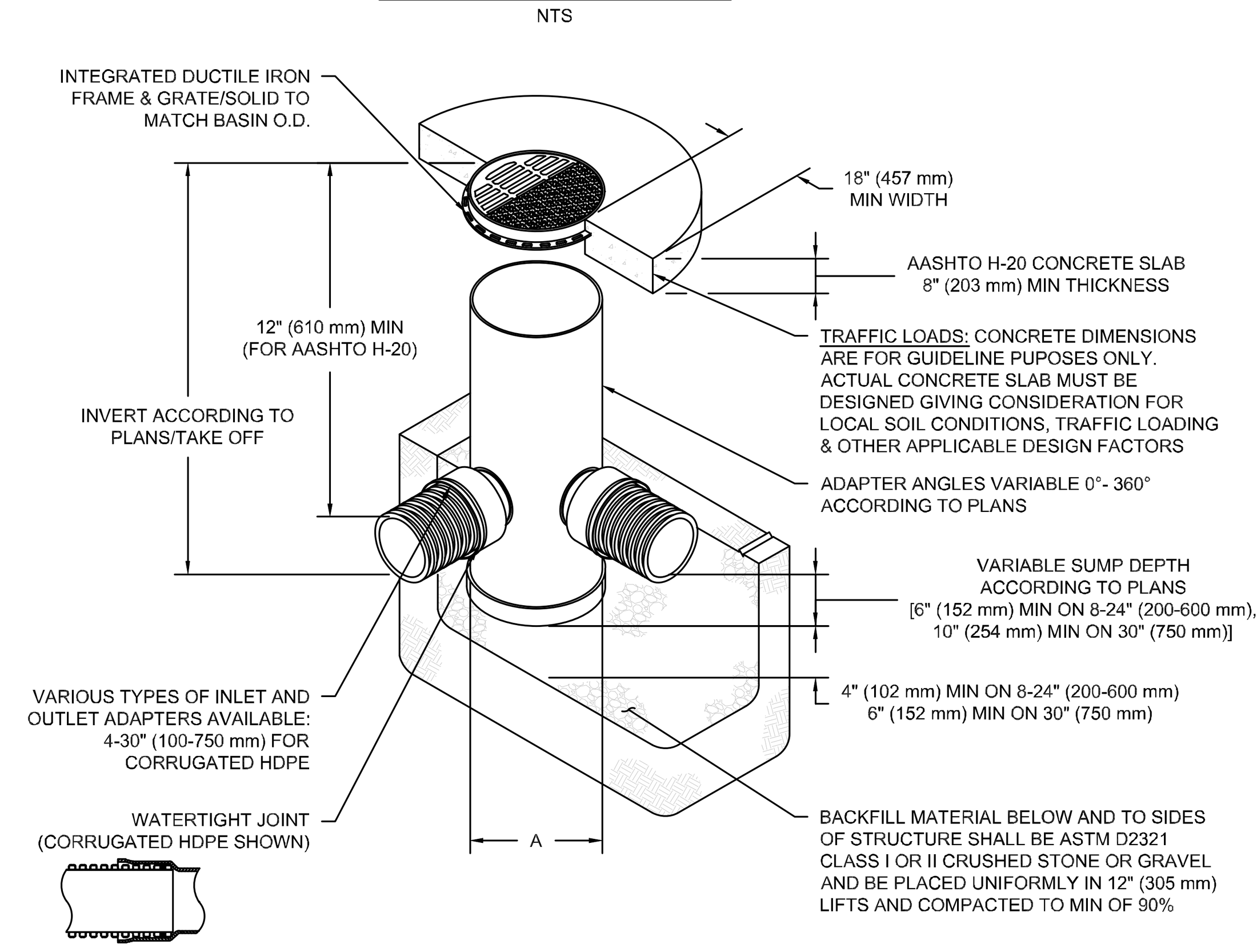
LEGACY POINT
WILMINGTON, NC
DRAWN: AG
CHECKED: N/A

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

SHEET 5 OF 6

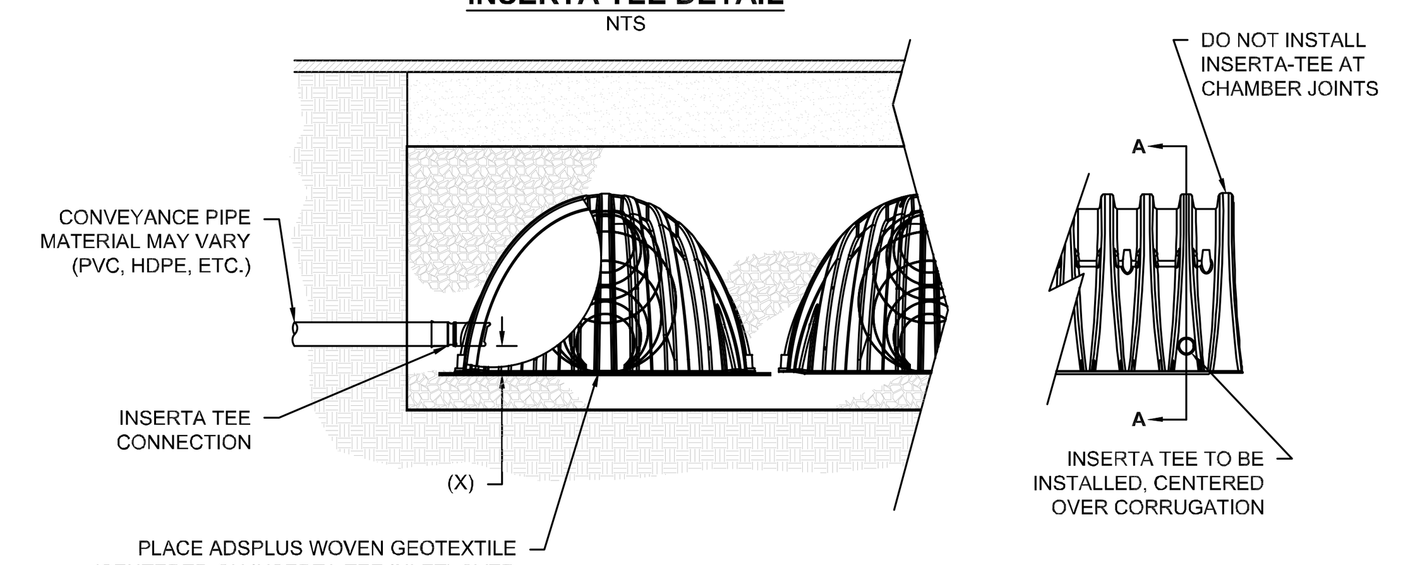
NYLOPLAST DRAIN BASIN
NTS


INTEGRATED DUCTILE IRON FRAME & GRATE/SOLID TO MATCH BASIN O.D.
18" (457 mm) MIN WIDTH
AASHTO H-20 CONCRETE SLAB
8" (203 mm) MIN THICKNESS
12" (610 mm) MIN (FOR AASHTO H-20)
TRAFFIC LOADS: CONCRETE DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED GIVING CONSIDERATION FOR LOCAL SOIL CONDITIONS, TRAFFIC LOADING & OTHER APPLICABLE DESIGN FACTORS
INVERT ACCORDING TO PLANS/TAKE OFF
ADAPTER ANGLES VARIABLE 0°- 360° ACCORDING TO PLANS
VARIABLE SUMP DEPTH ACCORDING TO PLANS
[6" (152 mm) MIN ON 8-24" (200-600 mm), 10" (254 mm) MIN ON 30" (750 mm)]
VARIOUS TYPES OF INLET AND OUTLET ADAPTERS AVAILABLE: 4-30" (100-750 mm) FOR CORRUGATED HDPE
4" (102 mm) MIN ON 8-24" (200-600 mm)
6" (152 mm) MIN ON 30" (750 mm)
WATERTIGHT JOINT (CORRUGATED HDPE SHOWN)
A
BACKFILL MATERIAL BELOW AND TO SIDES OF STRUCTURE SHALL BE ASTM D2321 CLASS I OR II CRUSHED STONE OR GRAVEL AND BE PLACED UNIFORMLY IN 12" (305 mm) LIFTS AND COMPACTED TO MIN OF 90%

NOTES
1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

INSERTA TEE DETAIL
NTS


CONVEYANCE PIPE MATERIAL MAY VARY (PVC, HDPE, ETC.)
INSERTA TEE CONNECTION
(X)
PLACE ADSPLUS WOVEN GEOTEXTILE (CENTERED ON INSERTA-TEE INLET) OVER BEDDING STONE FOR SCOUR PROTECTION AT SIDE INLET CONNECTIONS. GEOTEXTILE MUST EXTEND 6" (150 mm) PAST CHAMBER FOOT
DO NOT INSTALL INSERTA-TEE AT CHAMBER JOINTS
A
INSERTA TEE TO BE INSTALLED, CENTERED OVER CORRUGATION
SECTION A-A
SIDE VIEW

NOTES:
- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

LEGACY POINT
WILMINGTON, NC
DRAWN: AG
CHECKED: N/A

Nyloplast®
770-932-2443 | WWW.NYLOPLAST-US.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

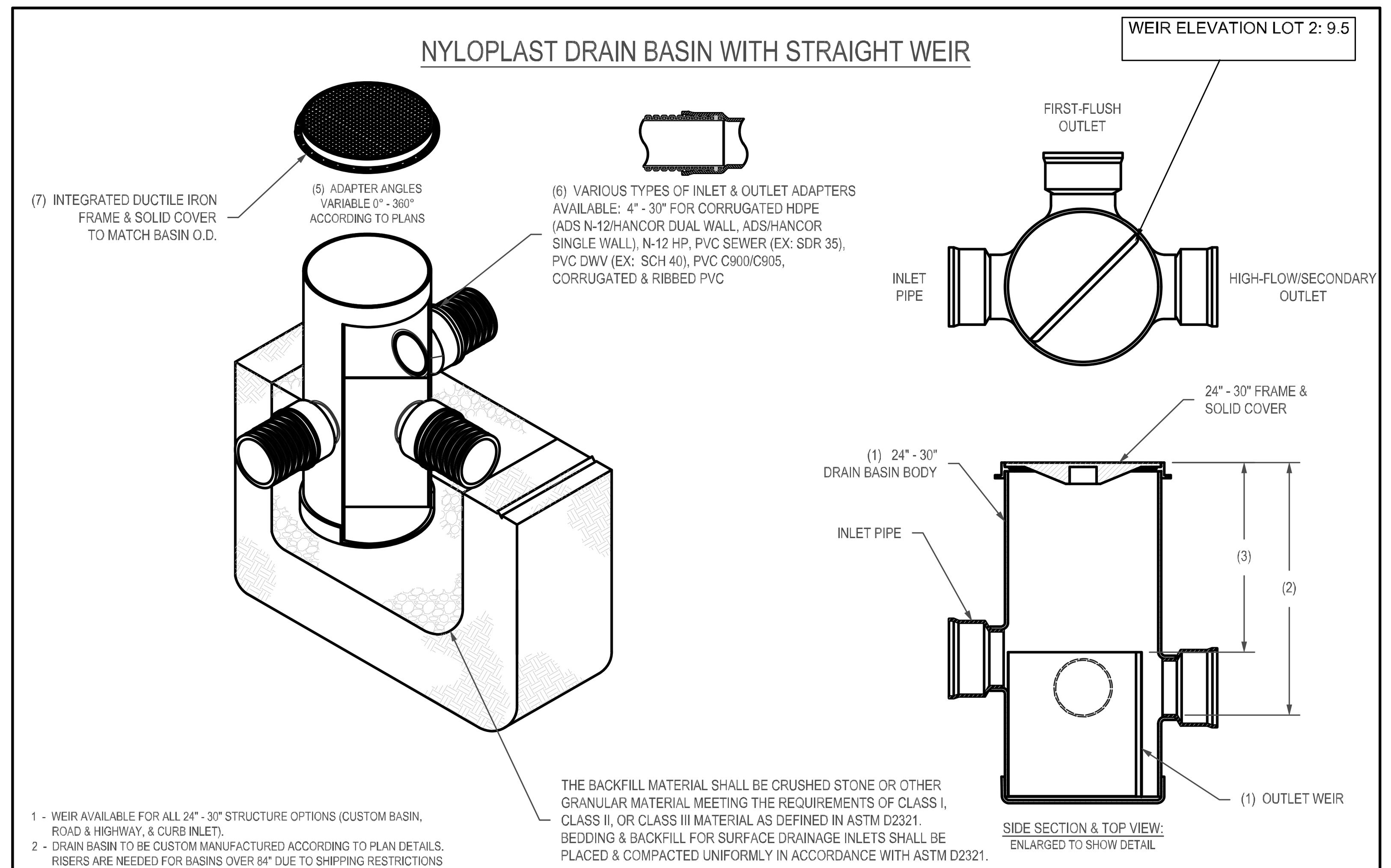
SHEET 6 OF 6

PIPE OUTLET SUMMARY

DN STRUCTURE	UP STRUCTURE	DOWN INVERT (FT)	UP INVERT (FT)	LENGTH (FT)	SLOPE (%)	SIZE (IN)
ST-1	ST-2	7.90	8.00	20.07	0.50	12.0

NYLOPLAST DRAIN BASIN WITH STRAIGHT WEIR

WEIR ELEVATION LOT 2: 9.5


(7) INTEGRATED DUCTILE IRON FRAME & SOLID COVER TO MATCH BASIN O.D.
(5) ADAPTER ANGLES VARIABLE 0° - 360° ACCORDING TO PLANS
(6) VARIOUS TYPES OF INLET & OUTLET ADAPTERS AVAILABLE: 4" - 30" FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL, ADS/HANCOR SINGLE WALL), N-12 HP, PVC SEWER (EX: SDR 35), PVC DWV (EX: SCH 40), PVC C900/C905, CORRUGATED & RIBBED PVC
FIRST-FLUSH OUTLET
INLET PIPE
HIGH-FLOW/SECONDARY OUTLET
24" - 30" FRAME & SOLID COVER
(1) 24" - 30" DRAIN BASIN BODY
INLET PIPE
(3)
(2)
(1) OUTLET WEIR
THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.
SIDE SECTION & TOP VIEW:
ENLARGED TO SHOW DETAIL

1 - WEIR AVAILABLE FOR ALL 24" - 30" STRUCTURE OPTIONS (CUSTOM BASIN, ROAD & HIGHWAY, & CURB INLET).
2 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS SEE DRAWING NO. 7001-110-065.
3 - HEIGHT OF WEIR TO BE DETERMINED BY ENGINEER. **WEIR HEIGHT CANNOT EXCEED 84" DUE TO MANUFACTURING AND SHIPPING RESTRICTIONS.**
4 - WEIR MANUFACTURED TO MINIMIZE LOSS OF OUTLET PIPE OPEN AREA.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
7 - FRAMES, GRATES, COVERS, HOODS, & BASE PLATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.

DRAWN BY NMH | DATE 9-19-16 | APPD BY NMH | DATE 9-19-16 | MATERIAL | PROJECT NO./NAME
Nyloplast — 3130 VERONA AVE, BUFORD, GA 30518, PHN (770) 932-2443, FAX (770) 932-2490, www.nyloplast-us.com
TITLE: DRAIN BASIN WITH STRAIGHT WEIR QUICK SPEC INSTALLATION DETAIL
DWG SIZE A | SCALE 1:40 | SHEET 1 OF 1 | DWG NO. 7004-110-134 | REV A

Section 2721

Engineered Surface Drainage Products

GENERAL
PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

MATERIALS
The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grates and frames furnished for all surface drainage inlets shall be ductile iron for sizes 8", 10", 12", 15", 18", 24" and 30" and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting various wheel loads as specified by Nyloplast. 12" and 15" square grates will be hinged to the frame using pins. Ductile iron used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05. Grates and covers shall be provided painted black.

INSTALLATION
The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For load rated installations, a concrete slab shall be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

DRAWN BY CJA | DATE 3-10-00 | REVISED BY NMH | DATE 03-11-16 | MATERIAL | PROJECT NO./NAME
Nyloplast — 3130 VERONA AVE, BUFORD, GA 30518, PHN (770) 932-2443, FAX (770) 932-2490, www.nyloplast-us.com
TITLE: 8 IN - 30 IN DRAIN BASIN SPECIFICATIONS
DWG SIZE A | SCALE 1:1 | SHEET 1 OF 1 | DWG NO. 7001-110-011 | REV H

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

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

Approved Construction Plan
	Name	Date
Planning		
Traffic		
Fire		

HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS

REVISIONS | DATE

PRELIMINARY SUBDIVISION PLAN OF
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 7-28-22
Scale: NTS
Drawn: AHG
Checked: AHG
Project No: 11736

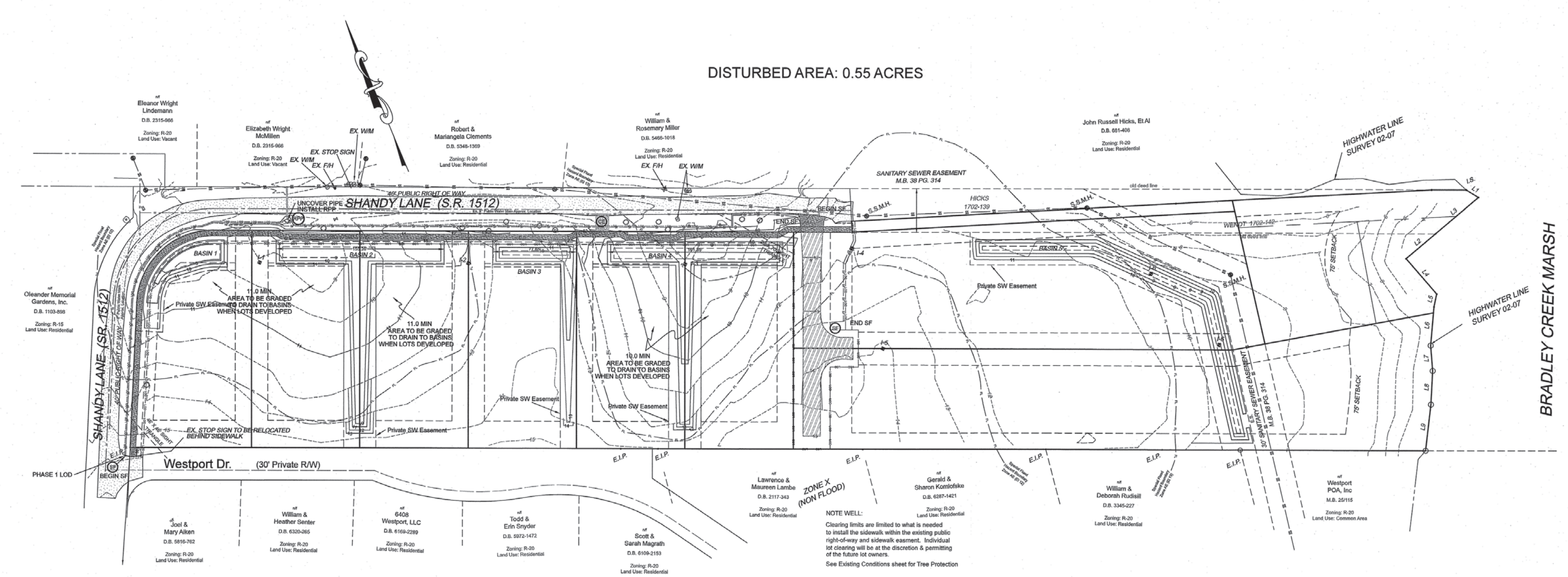
ADS INFILTRATION TRENCH DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 43166
8-9-22

PRELIMINARY PLAN

Sheet No: T3 of T3

DISTURBED AREA: 0.55 ACRES



NOTE WELL:

Clearing limits are limited to what is needed to install the sidewalk within the existing public right-of-way and sidewalk easment. Individual lot clearing will be at the discretion & permitting of the future lot owners.

See Existing Conditions sheet for Tree Protection

LEGEND

W/V = WATER VALVE
W/M = WATER METER
C/O = SANITARY SEWER CLEAN OUT
INV. = INVERT
B/O = BLOW OFF ASSEMBLY
BFP = BACK FLOW PREVENTOR
G/W = GUY WIRE
SWMH = STORM MANHOLE
GT. = GREASE TRAP
F/H = FIRE HYDRANT ASSEMBLY
I.S. = IRON SET
(S) = SANITARY SEWER MH
= TREE
= CURB RAMP
(W) = WATER SERVICE
= SEWER CLEANOUT
= WATER VALVE
= SIGN LOCATION
PROPERTY LINE
BUILDING SETBACK
CENTERLINE
EASEMENT
COMPUTED PROPERTY LINE
EXISTING CONTOUR
SANITARY SEWER
TREE PROTECTION FENCING
(CE) CONSTRUCTION ENTRANCE (TYPICAL)
LOD — LOD — LIMITS OF DISTURBANCE
(SF) SILT FENCE (TYPICAL)
(RPP) ROCK PIPE PROTECTION

Permanent Seeding
Specifications # 6.11 - Specifications

Seedbed Requirements
Establishment of vegetation should not be attempted on sites that are unsuitable due to inappropriate soil texture (Table 6.11a), poor drainage, concentrated overland flow, or steepness of slope until measures have been taken to correct these problems.
To maintain a good stand of vegetation, the soil must meet certain minimum requirements as a growth medium. The existing soil should have these criteria:

- Enough fine-grained (silt and clay) material to maintain adequate moisture and nutrient supply (available water capacity of at least .05 inches water to 1 inch of soil).
- Sufficient pore space to permit root penetration.
- Sufficient depth of soil to provide an adequate root zone. The depth to rock or impermeable layers such as hardpans should be 12 inches or more, except on slopes steeper than 2:1 where the addition of soil is not feasible.
- A favorable pH range for plant growth, usually 6.0-6.5.
- Freedom from large roots, branches, stones, large clods of earth, or trash of any kind. Clods and stones may be left on slopes steeper than 3:1 if they are to be hydroseeded.

If any of the above criteria are not met-i.e., if the existing soil is too coarse, dense, shallow or acidic to foster vegetation-special amendments are required. The soil conditioners described below may be beneficial or, preferably, topsoil may be applied in accordance with Practice 6.04, Topsoiling.

Soil Conditioners
In order to improve the structure or drainage characteristics of a soil, the following material may be added. These amendments should only be necessary where soils have limitations that make them poor for plant growth or for fine turf establishment (see Chapter 3, Vegetative Considerations).

Peat-Appropriate types are sphagnum moss peat, hypnum moss peat, reedsedge peat, or peat humus, all from fresh-water sources. Peat should be shredded and conditioned in storage piles for at least 6 months after excavation.
Sand-clean and free of toxic materials
Vermiculite-horticultural grade and free of toxic substances.
Rotted manure-stable or cattle manure not containing undue amounts of straw or other bedding materials.
Thoroughly rotted sawdust- free of stones and debris. Add 6 lb. Of nitrogen to each cubic yard.
Sludge-Treated sewage and industrial sludges are available in various forms: these should be used only in accordance with local, State and Federal regulations.

Species Selection
Use the key to Permanent Seeding Mixtures (Table 6.11b) to select the most appropriate seeding mixture based on the general site and maintenance factors. A listing of species, including scientific names and characteristics, is given in Appendix 8.02.

Seedbed Preparation
Install necessary mechanical erosion and sedimentation control practices before seeding, and complete grading according to the approved plan.
Lime and fertilizer needs should be determined by soil tests. Soil testing is performed free of charge by the North Carolina Department of Agriculture soil testing laboratory. Directions, sample cartons, and information sheets are available through county agricultural extension offices or from NCDA. Because the NCDA soil testing lab requires 1-6 weeks for sample turn-around, sampling must be planned well in advance of final grading. Testing is also done by commercial laboratories.
When soil test are not available, follow rates suggested on the individual specification sheet for the seeding mix chosen (Tables 6.11c through 6.11v).
Applications rates usually fall into the following ranges:
- Ground agricultural limestone
  Light-textured, sandy soils: 1-1 1/2 tons/acre
  Heavy textured, clayey soils 2-3 tons/acre
- Fertilizer:
  Grasses 800-1200 lb/acre of 10-10-10 (or the equivalent)
  Grass-legume mixtures: 800-1200 lb/acre of 5-10-10 (or the equivalent)

Apply lime and fertilizer evenly and incorporate into the top 4-6 inches of soil by disking or other suitable means. Operate machinery on the contour. When using a hydroseeder, apply lime and fertilizer to a rough, loose surface.

Roughen surfaces according to Practice 6.03, Surface Roughening.
Complete seedbed preparation by breaking up large clods and raking into a smooth, uniform surface (slope less than 3:1) Fill in or level depressions than can collect water. Broadcast seed into a freshly loosened seedbed that has not been sealed by rainfall.

Temporary Seeding
Specification # 6.10 - Specifications

Complete grading before preparing seedbeds and install all necessary erosion control practices, such as dikes, waterways and basins. Minimize steep slopes because they make seedbed preparation difficult and increase the erosion hazard. If soils become compacted during grading, loosen then to a depth of 6-8 inches using a ripper, harrow, or chisel plow.

Seedbed Preparation
Good seedbed preparation is essential to successful plant establishment. A good seedbed is well-pulverized, loose and uniform. Where hydroseeding methods are used, the surface may be left with a more irregular surface of large clods and stones.
Lining - Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1 1/2 tons/acre on coarse-textured soils and 2-3 tons/acres on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.
Fertilizer- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb./acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.
Surface roughening- If recent tillage operations have resulted in a loose surface, additional roughening may not be required except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by disking, raking, harrowing, or other suitable methods. Groove or furrow slopes steeper than 3:1 on the contour before seeding (Practice 6.03, Surface Roughening).

Plant Selection
Select an appropriate species or species mixture from Table 6.10a, for seeding in late winter and early spring, Table 6.10b for summer, and Table 6.10c for fall.

Seeding
Evenly apply seed using a cyclone seeder (broadcast), drill, cultipacker seeder, or hydroseeder. Use seeding rates given in Table 6.10a-6.10c. Broadcast seeding and hyroseeding are appropriate for steep slopes where equipment cannot be driven. Hand broadcasting is not recommended because of the difficulty in achieving a uniform distribution. Small grains should be planted no more than 1 inch deep, and grasses and legumes no more than 1/2 inch. Broadcast seed must be covered by raking or chain dragging, and then lightly firmed with a roller or cultipacker. Hydroseeded mixtures should include a wood fiber (cellulose) mulch.

Mulching
The use of appropriate mulch will help ensure establishment under normal conditions and is essential to seeding success under harsh site condition (Practice 6.14, Mulching). Harsh site conditions include:
-seeding in fall for winter cover (wood fiber mulches are not considered adequate for this use),
-slopes steeper than 3:1,
-excessively hot or dry weather,
-adverse soils(shallow, rocky, or high in clay or sand), and
-areas receiving concentrated flow.
If the area to be mulched is subject to concentrated waterflow, as in channels, anchor mulch with netting (Practice 6.14, Mulching).

Table 6.11s - Seeding No. 4CP for:
Well-Drained Sandy loans to Dry Sands, Coastal Plain; Low to Medium-Care Lawns
Seeding mixture
Species - Centipedegrass - Rate - 10-20 lb/acre (seed) or 33 bu/acre (sprigs)
Seeding dates - Mar. - June, (Sprigging can be done through July where water is available for irrigation.)
Soil amendments - Apply lime and fertilizer according to soil test, or apply 300 lb/acre 10-10-10.
Sprigging - Plant sprigs in furrows with a tractor-drawn transplanter, or broadcast by hand.
Furrows should be 4-6 inches deep and 2ft apart. Place sprigs about 2 ft. apart in the row with one end at or above ground level (Figure 6.11d).
Broadcast at rates shown above, and press sprigs into the top 1 1/2 inches of soil with a disk set straight so that sprigs are not brought back toward the surface.
Mulch - Do not mulch
Maintenance - Fertilize very sparingly- 20 lb/acre nitrogen in spring with no phosphorus. Centipedegrass cannot tolerate high pH or excess fertilizer.

Table 6.11t - Seeding No. 5CP for: Well-Drained Sandy Loams to Dry Sands; Low Maintenance
Seeding mixture

Species	Rate (lb/acre)
Pensacola Bahiagrass	50
Sericea lespedeza	30
Common Bermudagrass	10
German millet	10

Seeding notes
1. Where a neat appearance is desired, omit sericea
2. Use common Bermudagrass only on isolated sites where it cannot become a pest. Bermudagrass may be replaced with 5 lb/acre centipedgrass.

Seeding dates - Apr. 1 - July 15
Soil amendments - Apply lime and fertilizer according to soil tests, or apply 3,000 lb/acre ground agricultural limestone and 500 lb/acre 10-10-10 fertilizer.
Mulch
Apply 4,000 lb/acre grain straw or equivalent cover of another suitable mulch. Anchor by tacking with asphalt, roving and netting or by crimping with a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.
Maintenance - Refertilize the following Apr. with 50 lb/acre nitrogen. Repeat as growth requires. May be mowed only once a year. Where a neat appearance is desired, omit sericea and mow as often as needed.

Table 6.11v - Seeding No. 7CP for: Grass-lined Channels; Coastal Plain
Seeding Mixture
Species - Common Bermudagrass - Rate - 40-80 (1/2 lb/1,000 ft)
Seeding dates - Coastal Plain; Apr - July
Soil amendments - Apply lime and fertilizer according to soil tests, or apply 3,000 lb/acre ground agricultural limestone and 500 lb/acre 10-10-10 fertilizer.
Mulch - Use jute, excelsior matting, or other effective channel lining material to cover the bottom of channels and ditches. The lining should extend above the highest calculated depth of flow. On channel side slopes above this height, and in drainages not requiring temporary linings, apply 4,000 lb/acre grain straw and anchor straw by stapling netting over the top.
Mulch and anchoring materials must be allowed to wash down slopes where they can clog drainage devices.
Maintenance -A minimum of 3 weeks is required for establishment. Inspect and repair mulch frequently. Refertilize the following Apr. with 50 lb/acre nitrogen.

Refer to Appendix 8.02 for botanical names

Table 6.10a - Temporary Seeding Recommendation for Late Winter and Early Spring
Seeding mixture
Species- Rye(grain), Annual lespedeza (Kobe in Piedmont and Coastal Plain
Rate (lb/acre)- 120
Omit annual lespedeza when duration of temporary cover is not to extend beyond June
Seeding dates-Coastal Plain - Dec. 1 - Apr. 15.
Soil amendments- Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.
Mulch-Apply 4,000lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.
Maintenance - Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10b - Temporary Seeding Recommendations for Summer
Seeding mixture
Species-German millet
Rate(lb/acre)- 40
Seeding dates-Coastal Plain- Apr. 15-Aug. 15
Soil amendments-Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.
Mulch -Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.
Maintenance-Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10c - Temporary Seeding Recommendation for Fall
Seeding mixture
Species-Rye(grain)
Rate(lb/acre) - 120
Seeding dates - Coastal Plain and Piedmont-Aug 15 - Dec. 30
Soil amendments - Follow soil tests or apply 2,000 lb./acre ground agriculturel limestone and 1,000 lb/acre 10-10-10 fertilizer.
Mulch- Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.
Maintenance- Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March, if it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain)

Land Grading
Specification # 6.02 - Construction Specifications
1. Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and construction schedule.
2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.
3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil (Practice 6.04, Topsoiling).
4. Clear and grub areas to be filled to remove trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.
5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.
6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.
7. Do not incorporate frozen material or soft, mucky, or highly compressible materials into fill slopes.
8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.
9. Keep diversions and other water conveyance measures free of sediment during all phases of development.
10. Handle seeps or springs encountered during construction in accordance with approved methods (Practice 6.81, Subsurface Drain).
11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 working days or longer.
12. Ensure that topsoil stockpiles, borrow areas, and spoil areas are adequately protected from erosion with temporary and final stabilization measures, including sediment fencing and temporary seeding as necessary.

Maintenance
Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversions and other water-disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

Sediment Fence (Silt Fence) (SF)
Specification 6.62 - Construction Specifications
MATERIALS
1. Use a synthetic filter fabric of atleast 95% by weight of polyolefins or polyester which is certified by the manufacturer or supplier as conforming to the requirements shown in Table 6.62b. Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120 F.
2. Ensure that posts for sediment fences are 1.33 lb/linear ft steel with a minimum length of 5 ft. Make sure that steel posts have projections to facilitate fastening the fabric.
3. For reinforcement of standard strength filter fabric, use wire fence with a minimum 14 gauge and a maximum mesh spacing of 6 inches.

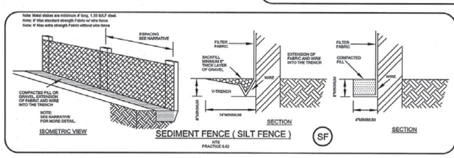
Table 6.62b Specifications For Sediment Fence Fabric

Temporary Silt Fence Material Property Requirements

	Test Material	Units	Supported Silt Fence	Un-Supported Silt Fence	Type of Value
Grab Strength	ASTM D 4632	N (lbs)			
Machine Direction			400	550	MARV
			(90)	(90)	
X-Machine Direction			400	450	MARV
			(90)	(90)	
Permittivity	ASTM D 4491	sec-1	0.05	0.05	MARV
Apparent Opening Size	ASTM D 4751	mm	0.60	0.60	Max. ARV
		(US Sieve #)	(30)	(30)	
Ultraviolet Stability	ASTM D 4355	% Retained Strength	70% after 500h of exposure	70% after 500h of exposure	Typical

CONSTRUCTION
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 18 inches above the ground surface. (Higher fences may impound volumes of water sufficient to cause failure of the structure.)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the up slope side of the posts using heavy duty wire staples at least 1 inch long, or tie wires. Extend the wire mesh support to the bottom of the trench.
5. When a wire mesh support fence is used, space posts a maximum of 8 ft apart. Support posts should be driven securely into the ground to a minimum of 18 inches.
6. Extra strength filter fabric with 6ft post spacing does not require wire mesh support fence. Staple or wire the filter fabric directly to posts.
7. Excavate a trench approximately 4 inches wide and 8 inches deep along the proposed line of posts and upslope from the barrier (figure 6.62a).
8. Backfill the trench with compacted soil or gravel placed over the filter fabric.
9. Do not attach filter fabric to existing trees.

Maintenance
Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately.
Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly. Replace burlap every 60 days.
Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.
Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.



SEDIMENT FENCE (SILT FENCE) (SF)
NTS
PRACTICE 6.62

Temporary Gravel Construction Entrance/Exit (CE)
Specification # 6.06 - Construction Specifications

1. Clear the entrance and exit area of all vegetation, roots and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics because they improve stability of the foundation in locations subject to seepage or high water table.

Maintenance

Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary. Immediately remove all objectionable materials spilled, washed, or tracked onto public roadways.

STABILIZATION TIME FRAMES:

SITE AREA DESCRIPTION	STABILIZATION
Perimeter dikes, swales, ditches and slopes	7 DAYS
High Quality Water (HQW) Zones	7 DAYS
Slopes steeper than 3:1	7 DAYS
Slopes 3:1 or flatter	14 DAYS
All other areas with slopes flatter than 4:1	14 DAYS

STABILIZATION TIME FRAMES:
ANY AREAS ON-SITE WITHOUT ACTIVITY SHALL BE STABILIZED WITHIN 15 WORKING DAYS OR 21 CALENDAR DAYS AND AS ABOVE. ALL SLOPES MUST BE STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY ACTIVITY.

DETAILS SHOWN ARE TYPICAL OF INSTALLATIONS REQUIRED BY THE TOWN AND COUNTY. THIS SHEET DOES NOT PURPORT TO SHOW ALL REQUIRED CONSTRUCTION DETAILS, BUT RATHER SERVES AS A GUIDE. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL CITY, COUNTY AND STATE CODES AND CONSTRUCTION STANDARDS.

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.

NOTE WELL:

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

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

Approved Construction Plan
Date: 3/15/21
2021004
SWP #: 2021011
PO, CW, RC, MB, BM

CONSTRUCTION SCHEDULE - PHASE 1: SIDEWALK AND PRIVATE ACCESS CONSTRUCTION

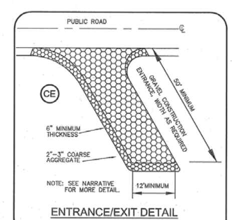
1. Obtain approval of Plan and any necessary permits, and hold a pre-construction conference prior to commencing any work.
2. Flag work limits and stake-out measures for preliminary grading. Install silt fencing as shown, prior to clearing and grubbing site.
3. Install Gravel Construction Entrances.
4. Maintain Sediment fence as this will be the main source of sediment control.
5. Immediately stabilize all non-construction areas.
6. Construct any other sediment control Practices shown, prior to rough grading site, stockpiling topsoil as necessary.
7. Establish final grades.
8. All erosion and sediment control Practices are to be inspected weekly and after any rainfall, and repaired as necessary.
9. Upon completion of grading and concrete installation, all disturbed areas are to be permanently vegetative stabilized. After site stabilization, temporary measures are to be removed.
10. Every SCM impacted by sedimentation and erosion control during the construction phase shall be cleaned out and converted to its approved design state

CONSTRUCTION SCHEDULE - PHASE 2: FUTURE LOT DEVELOPMENT.

1. Lot owner/developer shall be responsible for obtaining/modifiing erosion control permits prior to commencing any work on lots outside of the phase 1 limits of disturbance.
2. Every SCM impacted by sedimentation and erosion control during the construction phase shall be cleaned out and converted to its approved design state

MAINTENANCE PLAN -

1. All measures to be inspected weekly and after any rainfall event and needed repairs made immediately.
2. Sediment to be removed from behind the Silt Fence when it becomes 0.5' deep. Fencing to be repaired as needed to maintain a barrier.
3. All seeded areas shall be fertilized, mulched, and re-seeded as necessary, according to specifications provided, to maintain a suitable vegetative cover.
4. Construction entrances are to be maintained in a condition to prevent mud or sediment from leaving the construction site. Periodic topdressing with 2" stone may be required. Remove all objectionable material spilled, washed, or tracked onto public roadways immediately.



ENTRANCE/EXIT DETAIL
N.T.S.

0 50 100 150

HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS

REVISIONS | DATE

EROSION CONTROL
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 3-15-21
Scale: HORZ: 1"= 50'
Drawn: AHG
Checked: AHG
Project No: 11736

EROSION CONTROL PLAN

Sheet No.
EC-1
EC-3

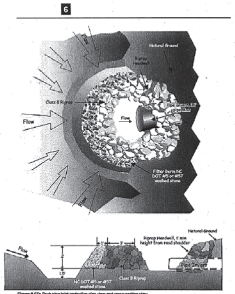


Figure 6.66a Rock pipe inlet protection plan view and cross-section view

6.55.2 Rev. 6/06

ROCK INLET PROTECTION
SPECIFICATION 6.55 (RPP)

CONSTRUCTION SPECIFICATIONS

1. Clear the area of all debris that might hinder excavation and disposal of spoil.

2. Install the Class B or Class I riprap in a semi-circle around the pipe inlet. The stone should be built up higher on each end where it ties into the embankment. The minimum crest width of the riprap should be 3 feet, with a minimum bottom width of 11 feet. The minimum height should be 2 feet, but also 1 foot lower than the shoulder of the embankment or diversions.

3. A 1 foot thick layer of NC DOT #5 or #57 stone should be placed on the outside slope of the riprap.

4. The sediment storage area should be excavated around the outside of the stone horseshoe 18 inches below natural grade.

5. When the contributing drainage area has been stabilized, fill depression and establish final grading elevations, compact area properly, and stabilize with ground cover.

MAINTENANCE

Inspect rock pipe inlet protection at least weekly and after each significant (½ inch or greater) rainfall event and repair immediately. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Place the sediment that is removed in the designated disposal area and replace the contaminated part of the gravel facing.

Check the structure for damage. Any riprap displaced from the stone horseshoe must be replaced immediately.

After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover (Surface Stabilization).

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

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

Approved Construction Plan
Date: 3/15/21
2021004
SWP #: 2021011
PO, CW, RC, MB, BM

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: *After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.*

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the NC DWR List of Approved PAMS/Flocculants.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the NC DWR List of Approved PAMS/Flocculants and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

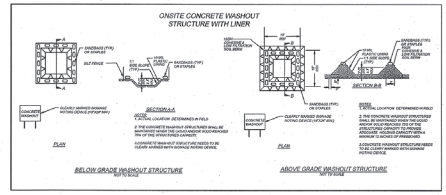
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

0 50 100 150
1"=50'

HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS
1123 FLORAL PARKWAY
WILMINGTON, N.C. 28403
PHONE: (910) 343-8002
LICENSE # C-0597

REVISIONS | DATE

EROSION CONTROL
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 3-15-21
Scale: HORZ.: 1"= 50'
Drawn: AHG
Checked: AHG
Project No: 11736

EROSION CONTROL PLAN

3/15/21

Sheet No: EC-2 EC-3

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- *They are 25 gallons or more,*
- *They are less than 25 gallons but cannot be cleaned up within 24 hours,*
- *They cause sheen on surface waters (regardless of volume), or*
- *They are within 100 feet of surface waters (regardless of volume).*

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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

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

Approved Construction Plan
Date: 3/15/21
2021004
SWP #: 2021011
PO, CW, RC, MB, BM

0 50 100 150
1"=50'

HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS, ENGINEERS & LAND PLANNERS
1123 FLORAL PARKWAY
WILMINGTON, N.C. 28403
PHONE: (910) 343-8002
LICENSE # C-0597

REVISIONS	DATE

EROSION CONTROL
LEGACY POINTE
HARNETT TOWNSHIP, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARKER AND BOGGS
2005 EASTWOOD ROAD, SUITE 201
WILMINGTON, N.C. 28403

Date: 3-15-21
Scale: HORZ.: 1"= 50'
Drawn: AHG
Checked: AHG
Project No: 11736

EROSION CONTROL PLAN

Sheet No: EC-3
EC-3