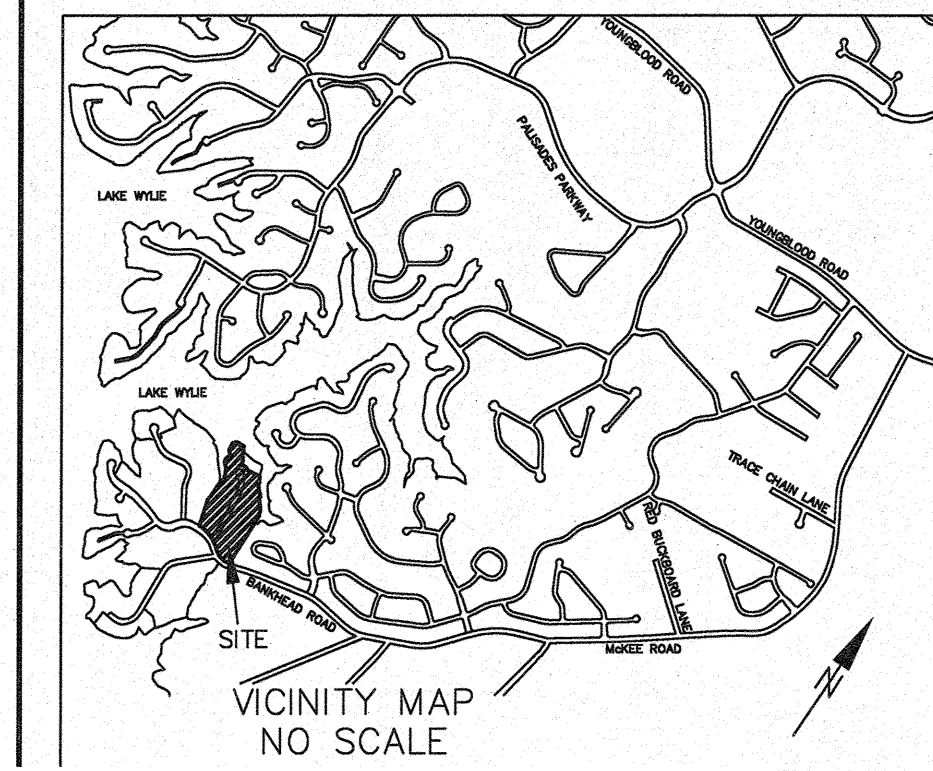




FINAL APPROVAL
http://development.charmeck.org

ENGINEERING
PCO / DETENTION / DRAINAGE PLAN

EROSION CONTROL
NOTE: SCHEDULE PRE-CONSTRUCTION MEETING AT LEAST 48 HRS. PRIOR TO ANY LAND DISTURBING ACTIVITY USING THE ONLINE FORM AT <http://development.charmeck.org>

URBAN FORESTRY
TREE ORDINANCE

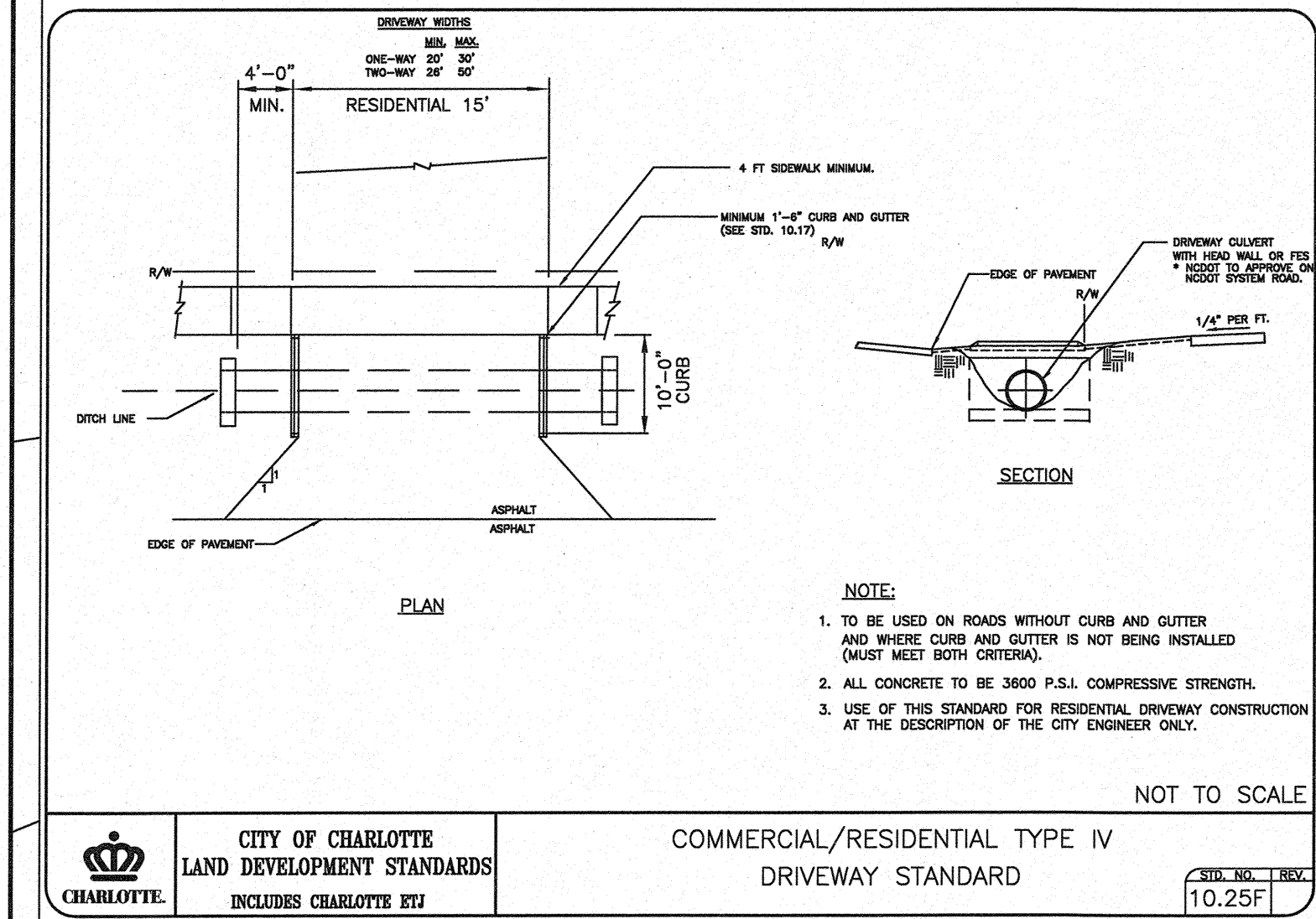
CDOT
NOTE: THIS PLAN APPROVAL DOES NOT INCLUDE COMMERCIAL ZONING. ALL BUILDING PERMITS AND ZONING APPROVALS CAN BE OBTAINED AT MECKLENBURG COUNTY CODE ENFORCEMENT. PLEASE CALL CTAC AT 704-336-3829 FOR MORE INFORMATION.

APPROVED
By Emily Chien at 9:29 am, Sep 10, 2015

APPROVED

APPROVED Kelly Robertson

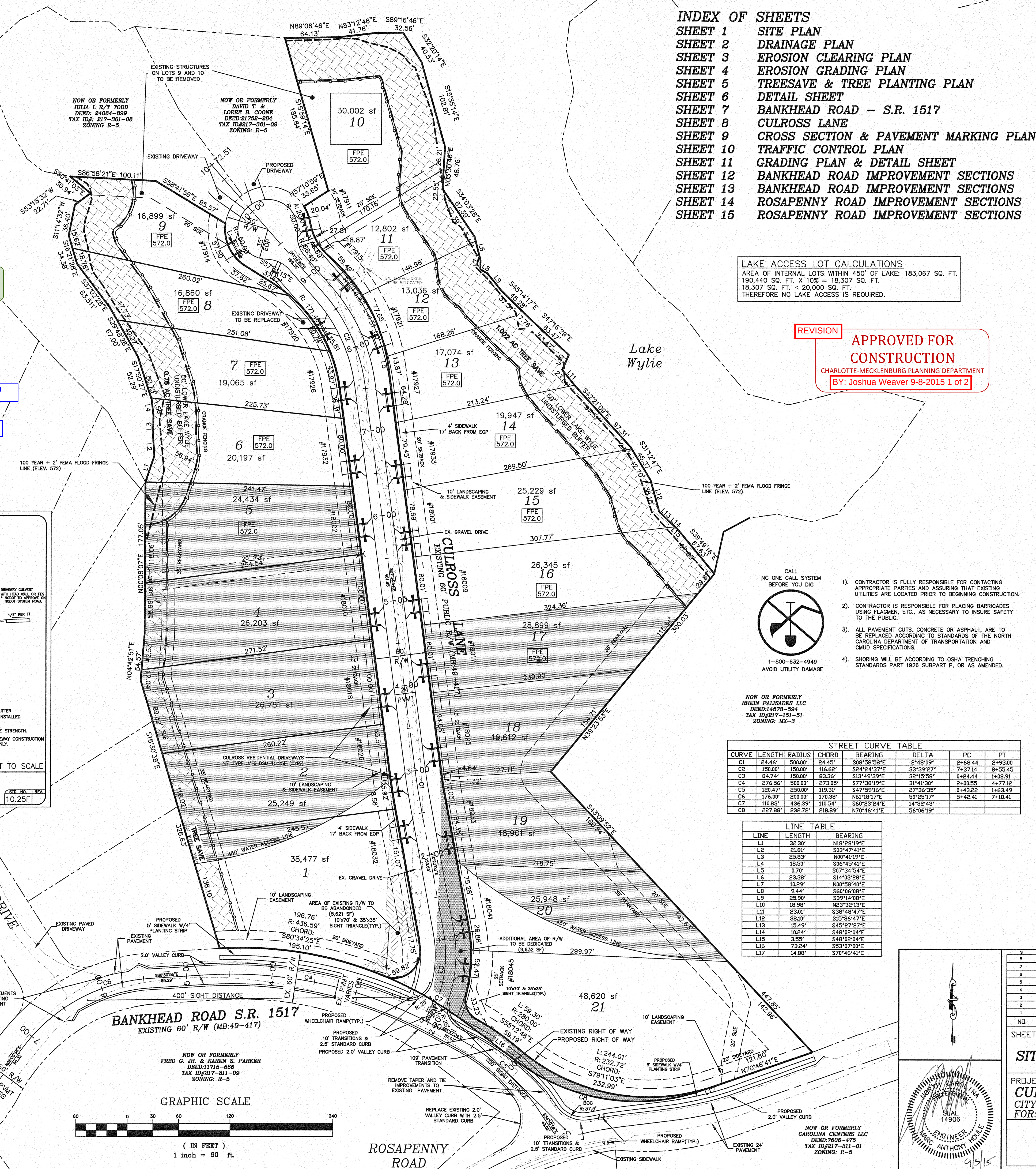
APPROVED Kory Hedrick



NOT TO SCALE

CITY OF CHARLOTTE
LAND DEVELOPMENT STANDARDS
INCLUDES CHARLOTTE RTI

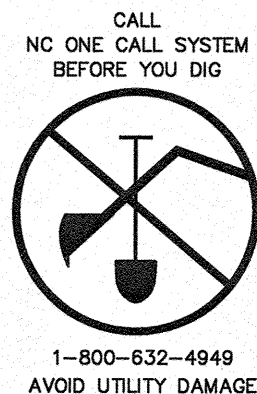
COMMERCIAL/RESIDENTIAL TYPE IV
DRIVEWAY STANDARD



- INDEX OF SHEETS**
- SHEET 1 SITE PLAN
 - SHEET 2 DRAINAGE PLAN
 - SHEET 3 EROSION CLEARING PLAN
 - SHEET 4 EROSION GRADING PLAN
 - SHEET 5 TREESAVE & TREE PLANTING PLAN
 - SHEET 6 DETAIL SHEET
 - SHEET 7 BANKHEAD ROAD - S.R. 1517
 - SHEET 8 CULROSS LANE
 - SHEET 9 CROSS SECTION & PAVEMENT MARKING PLAN
 - SHEET 10 TRAFFIC CONTROL PLAN
 - SHEET 11 GRADING PLAN & DETAIL SHEET
 - SHEET 12 BANKHEAD ROAD IMPROVEMENT SECTIONS
 - SHEET 13 BANKHEAD ROAD IMPROVEMENT SECTIONS
 - SHEET 14 ROSAPENNY ROAD IMPROVEMENT SECTIONS
 - SHEET 15 ROSAPENNY ROAD IMPROVEMENT SECTIONS

LAKE ACCESS LOT CALCULATIONS
AREA OF INTERNAL LOTS WITHIN 450' OF LAKE: 183,067 SQ. FT.
190,440 SQ. FT. X 10% = 18,307 SQ. FT.
18,307 SQ. FT. < 20,000 SQ. FT.
THEREFORE NO LAKE ACCESS IS REQUIRED.

REVISION
APPROVED FOR CONSTRUCTION
CHARLOTTE-MECKLENBURG PLANNING DEPARTMENT
BY: Joshua Weaver 9-8-2015 1 of 2



NOW OR FORMERLY
RUBIN PALISADES LLC
DEED:14570-504
TAX ID#217-151-51
ZONING: MX-3

STREET CURVE TABLE							
CURVE	LENGTH	RADIUS	CHORD	BEARING	DELTA	PC	PT
C1	24.46'	500.00'	24.45'	S08°58'58"E	2°48'09"	2+68.44	2+93.00
C2	150.00'	1500.00'	116.62'	S24°24'37"E	33°39'27"	7+37.14	8+55.45
C3	84.74'	1500.00'	83.36'	S12°49'39"E	32°13'38"	0+24.44	1+08.91
C4	276.56'	500.00'	273.05'	S77°38'19"E	31°41'39"	2+00.35	4+77.12
C5	180.47'	650.00'	119.31'	S47°59'16"E	27°36'35"	0+43.28	1+63.49
C6	176.80'	200.00'	170.38'	N61°08'17"E	50°25'17"	5+02.51	7+18.41
C7	110.83'	436.39'	110.54'	S69°22'24"E	1°52'43"	5+48.41	7+18.41
C8	227.88'	232.72'	188.89'	N70°46'41"E	56°06'19"		

LINE TABLE		
LINE	LENGTH	BEARING
L1	32.30'	N18°28'19"E
L2	21.81'	S03°47'41"E
L3	25.83'	N00°41'19"E
L4	18.50'	S02°45'41"E
L5	0.70'	S07°34'54"E
L6	23.38'	S14°03'28"E
L7	16.29'	N00°58'40"E
L8	9.44'	S60°06'08"E
L9	25.90'	S39°14'08"E
L10	18.98'	N23°32'19"E
L11	23.01'	S38°48'47"E
L12	38.10'	S15°36'47"E
L13	15.49'	S45°27'27"E
L14	10.24'	S48°02'04"E
L15	3.55'	S48°02'04"E
L16	73.24'	S53°07'00"E
L17	14.88'	S70°46'41"E

GENERAL NOTES

A PRELIMINARY PLAN APPROVED UNDER THE PROVISIONS OF THE SUBDIVISION ORDINANCE WILL BE VALID FOR A PERIOD OF THREE YEARS, FOR SUCH APPROVAL TO REMAIN VALID BEYOND THREE, WORK ON THE SITE IN FURTHERANCE OF THE PLAN IS REQUIRED.

THE OWNER WISHES TO SAVE CERTAIN TREES ON THE SITE, PLACE TREE BARRICADES AS SHOWN ON THE PLAN OR AS SPECIFIED BY THE OWNER BEFORE CONSTRUCTION ACTIVITY BEGINS.

THE DEVELOPER SHALL MAINTAIN THE STREAMBED OF EACH STREAM, CREEK, OR BACKWASH CHANNEL IN AN UNSTRUCTURED STATE AND SHALL REMOVE FROM THE CHANNEL AND BANKS OF THE STREAM ALL DEBRIS, LOGS, TIMBER, JUNK AND OTHER ACCUMULATIONS.

SUBSURFACE DRAINAGE FACILITIES MAY BE REQUIRED IN THE STREET RIGHT-OF-WAY IF DEEMED NECESSARY BY THE INSPECTOR.

THE DEVELOPER SHALL CONTACT THE CHARLOTTE DEPARTMENT OF TRANSPORTATION, GUS JORDI (704-336-7086) TO IDENTIFY ANY CONFLICTS WITH TRAFFIC SIGNALIZATION EQUIPMENT. 60-90 DAYS WILL BE REQUIRED TO COORDINATE RELOCATION. DEVELOPER SHALL BE RESPONSIBLE FOR ALL RELATED RELOCATION COSTS AND/OR ANY REPAIR COST CAUSED BY THE CONTRACTOR/DEVELOPER.

APPROVAL OF THIS PLAN IS NOT AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFFSITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNER.

ALL PUBLIC STREETS WITHIN THE DEVELOPMENT WILL BE CONSTRUCTED TO NCDOT/CITY OF CHARLOTTE STANDARDS IN ORDER TO BE DEDICATED PUBLIC ROADWAYS.

ALL STORM PIPE TO BE CLASS III RCP UNLESS OTHERWISE NOTED.

"AS-BUILT" DRAWINGS AND PLANS OF THE STORM DRAINAGE SYSTEM, INCLUDING DESIGN DITCHES, MUST BE SUBMITTED PRIOR TO SUBDIVISION FINAL INSPECTION TO THE CITY/COUNTY ENGINEERING DEPARTMENT IN ACCORDANCE WITH THE CITY/COUNTY SUBDIVISION ORDINANCE.

IN ROLLING AND HILLY TERRAINS, SWEEPING OF STONE BASE AND/OR APPLICATION OF A TACK COAT MAY BE REQUIRED NEAR INTERSECTIONS. THESE REQUIREMENTS WILL BE ESTABLISHED BY THE INSPECTOR BASED ON FIELD CONDITIONS.

ALL CONSTRUCTION SHALL CONFORM TO CITY OF CHARLOTTE STANDARDS. IN ORDER TO ENSURE PROPER DRAINAGE, KEEP A MINIMUM OF 0.50% SLOPE ON CURB.

NON-STANDARD ITEMS (i.e. PAVERS, IRRIGATION SYSTEMS, ETC.) IN THE RIGHT OF WAY REQUIRES A "RIGHT OF WAY ENCROACHMENT AGREEMENT" WITH THE (CHARLOTTE DEPARTMENT OF TRANSPORTATION/NORTH CAROLINA DEPARTMENT OF TRANSPORTATION) BEFORE INSTALLATION.

COORDINATE ALL CURB AND STREET GRADES IN INTERSECTION WITH INSPECTOR.

THE PURPOSE OF THE STORM DRAINAGE EASEMENT (S.D.E.) IS TO PROVIDE STORM WATER CONVEYANCE AND ANY STRUCTURES AND/OR OBSTRUCTION TO STORM WATER FLOW IS PROHIBITED.

DEVELOPER WILL PROVIDE STREET SIGNS PER CLDSM 50.05 (9" SIGNS ONLY).

SIGHT TRIANGLES SHOWN ARE THE MINIMUM REQUIRED. FURTHER REQUIREMENTS MAY BE MADE BY THE CHARLOTTE DEPARTMENT OF TRANSPORTATION IN ACCORDANCE WITH CITY CODE.

SLOPES SHALL GRADE NO STEEPER THAN 2:1.

ALL CURB AND R/W RADIUS DIMENSIONS ARE 25' UNLESS SHOWN OTHERWISE.

SIDEWALKS ARE TO MEET ALL A.D.A. REQUIREMENTS FOR SLOPE AND SPACING.

ALL RIGHT-OF-WAY AND CURB TAPERS ARE 20:1 UNLESS OTHERWISE NOTED.

ALL TOPOGRAPHY IS FROM AERIAL SURVEY.

ACCESSIBLE RAMPS SHALL BE INSTALLED AT ALL INTERSECTIONS PER CLDSM #10.31 THRU 10.35.

THIS PROPERTY IS SHOWN ON THE FEMA FIRM PANEL #370158-0281-E.

FPE - FLOOD PROTECTION ELEVATION

TS - TREE SAVE AREA

THE PROPERTY LINE ALONG LAKE WYLIE FOLLOWS THE DUKE POWER PROJECT LIMITS FOR LAKE WYLIE (570 ELEVATION CONTOUR).

IF THE EXISTING STREET IS MAINTAINED BY NCDOT, A NCDOT ENCROACHMENT AGREEMENT IS REQUIRED FOR THE PROPOSED IMPROVEMENTS (CONTACT NCDOT, 704-386-8900).

CERTIFICATION AND STREET CUT PERMITS ARE REQUIRED FOR UTILITY CUTS ON CITY STREETS. ALLOW 7 DAYS PROCESSING FOR PERMIT. FOR INFORMATION CONTACT CHARLOTTE DEPARTMENT OF TRANSPORTATION (704-336-4025) OR VISIT <http://www.charmeck.org/Departments/Transportation/Street+Maintenance/Home.htm>

TREES PLANTED WITHIN SIGHT TRIANGLES & SIGHT EASEMENTS MUST BE LIMBED UP TO 6" ABOVE ADJACENT GROUND.

GENERAL NOTES

TAX PARCEL #'S: 217-151-43, 217-361-06, 217-361-07
SITE AREA: 11,347 AC.
ZONING: R-5
LOTS ALLOWED - 56
LOTS PROPOSED - 21 (1.84 UNITS/ACRE)
TYPICAL INTERIOR LOT SIZE: 100 FT. x 140 FT.
TYPICAL LAKEFRONT LOT WIDTH 80-100 FT.

TREE SAVE CALCULATIONS
GROSS TOTAL SITE AREA = 11,347 AC.
TOTAL TREE SAVE AREA REQUIRED = 1.13 AC. (10% NET AREA)
TOTAL TREE SAVE AREA PROVIDED = 1.78 AC.

R-5 ZONING
MIN. LOT SIZE - 6,000 SF
MIN. LOT WIDTH - 50 FT.
MIN. FRONT SETBACK - 20'
SIDEYARD - 5'
REAR YARD - 35'
NOTE: MAXIMUM BUILDING COVERAGE SHALL BE IN ACCORDANCE WITH TABLE 9.205(1)(i) OF THE ZONING ORDINANCE.

LOWER LAKE WYLIE WATERSHED OVERLAY CRITICAL AREA:
MAXIMUM ALLOWABLE IMPERVIOUS AREA FOR LOW DENSITY:
TOTAL PROJECT AREA (LESS EXISTING R/W'S): 11,347 ACRES
TOTAL ALLOWABLE IMPERVIOUS ACREAGE 2,269 AC. (98,860 SF) 20% IMPERVIOUS AREAS:
STREETS - 0.00 AC. (0 SF)
SIDEWALKS - 0.23 AC. (10,044 SF)
TOTAL - 0.23 AC. (10,044 SF)
IMPERVIOUS AREA REMAINING FOR LOTS - 2,039 AC. (88,816 SF)
TOTAL IMPERVIOUS AREA ALLOWED PER LOT(21) - 4,229 SF AND SHALL BE RECORDED ON THE RECORD PLAT.

THIS PLAN IS A FINAL DESIGN-NOT RELEASED FOR CONSTRUCTION UNLESS INITIALLED/DATED AS APPROVED:
APPROVED: _____ INITIALS / DATE

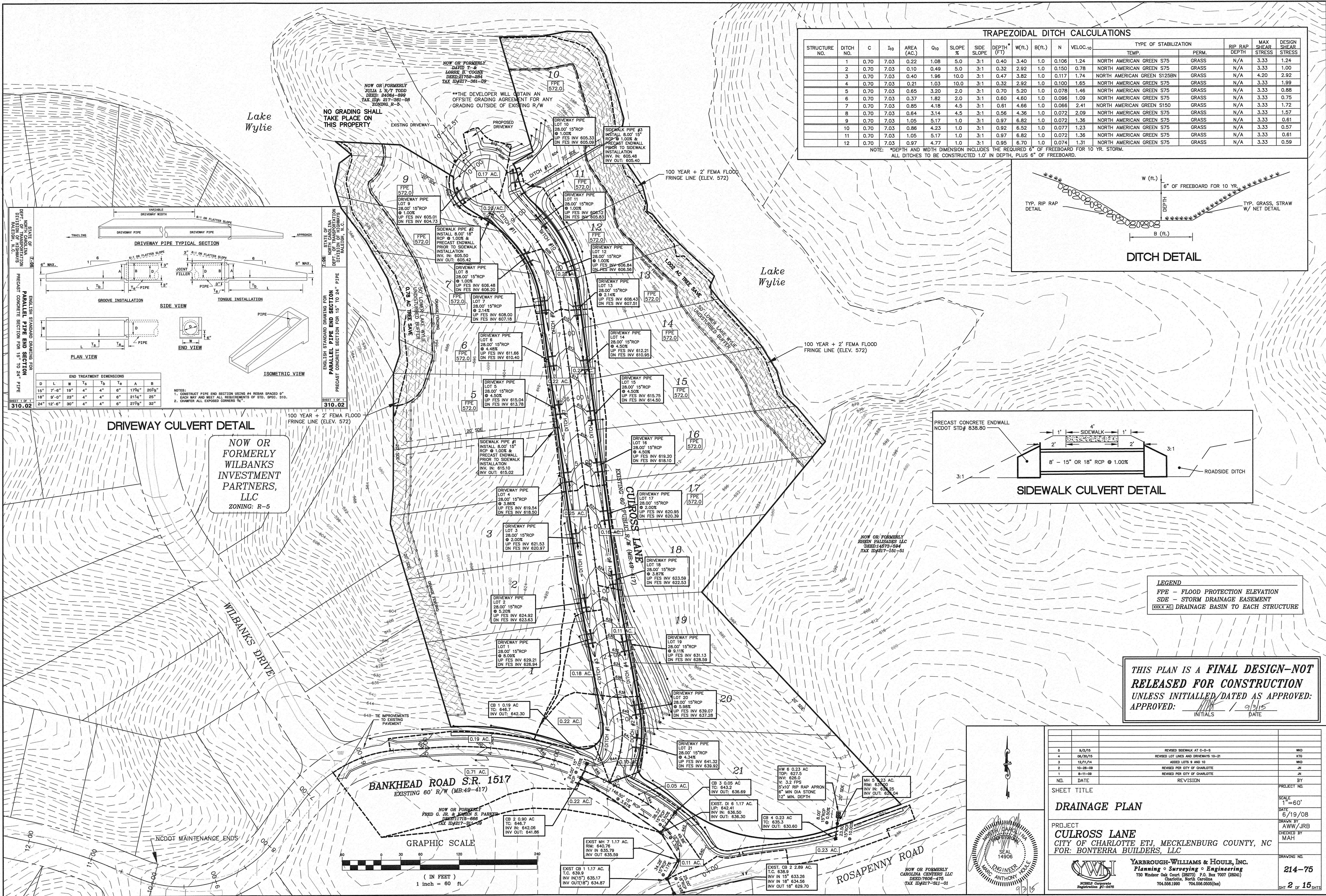
NO.	DATE	REVISION	BY
1	8-11-09	REVISED PER CITY OF CHARLOTTE	JN
2	10-26-09	REVISED PER CITY OF CHARLOTTE	JN
3	01-27-10	ADDRESSES ADDED	JEW
4	10/24/14	REVISED LOTS	WFO
5	12/11/14	ADDED LOTS 9 AND 10	WFO
6	06/20/15	REVISED LOT LINES AND DRIVEWAYS 10-21	KTG
7	07/14/15	ADDED REVISED ADDRESSES	YWH
8	7/24/15	REVISED SUBMITTAL AT C-3 AND FIRST TRIANGLE ON LOT 10	WFO

SHEET TITLE
SITE PLAN

PROJECT
CULROSS LANE
CITY OF CHARLOTTE ETI, MECKLENBURG COUNTY, NC
FOR: BONTERRA BUILDERS, LLC

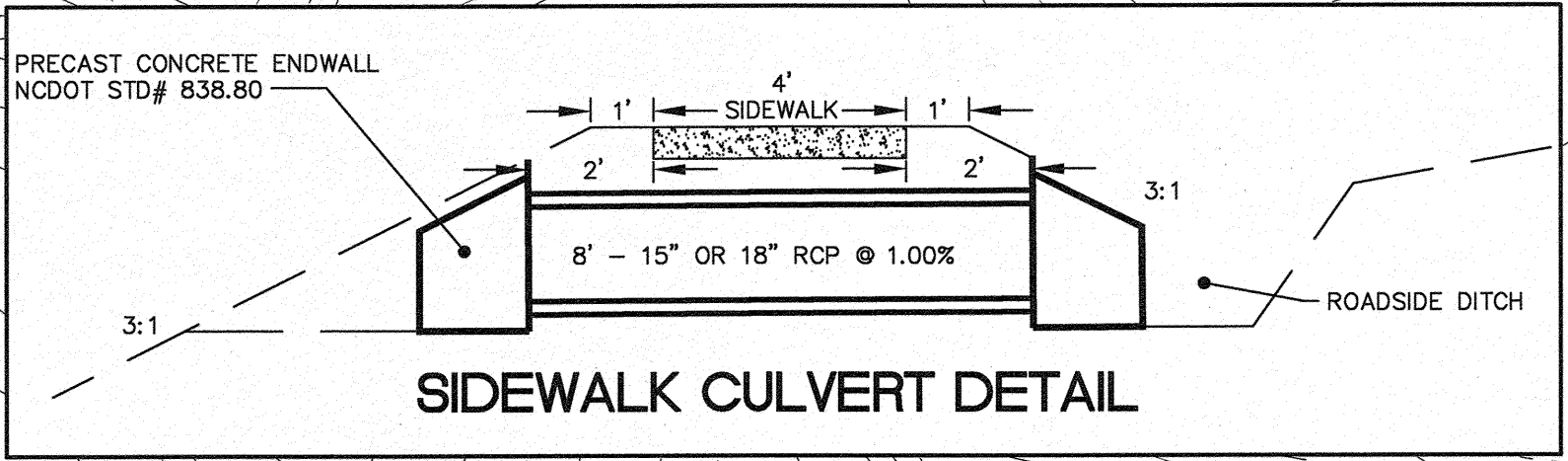
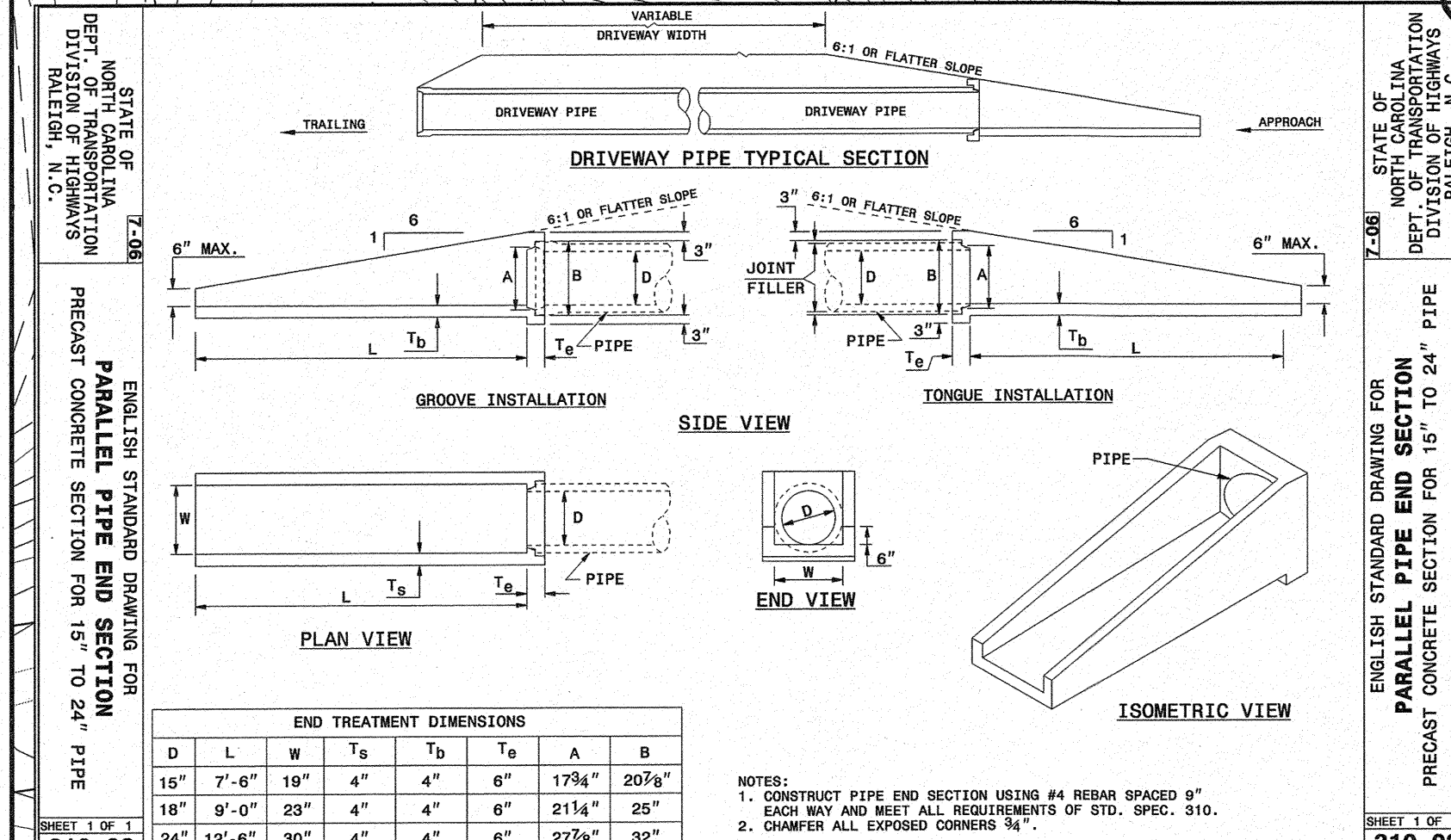
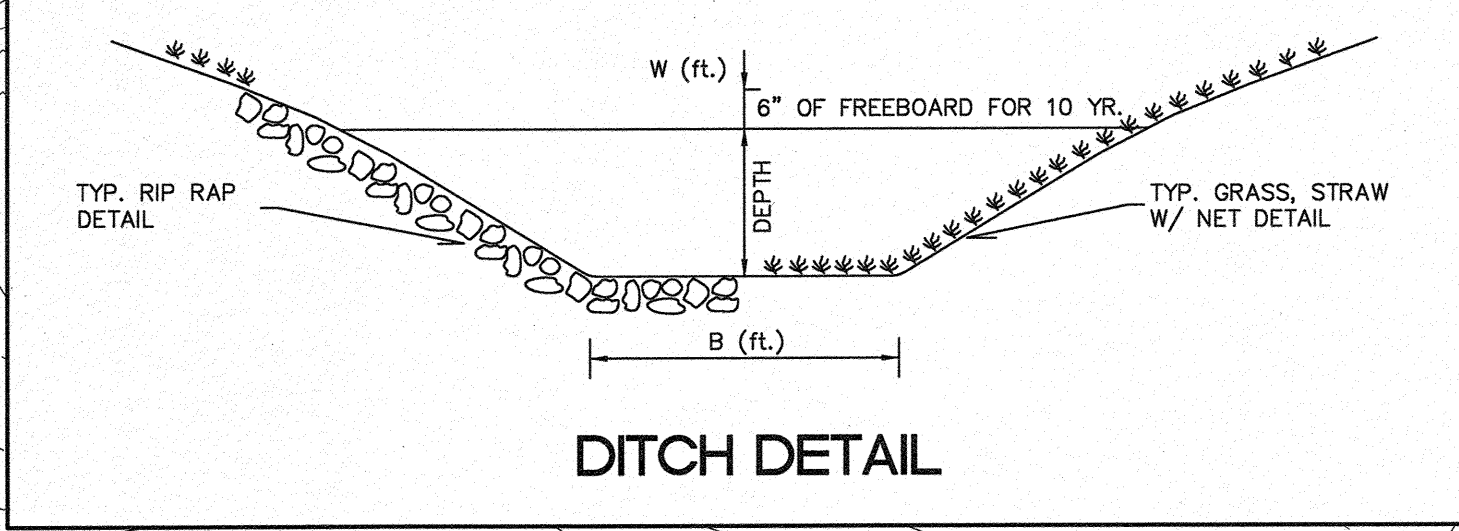
YARBROUGH-WILLIAMS & HOULE, INC.
Planning • Surveying • Engineering
750 Windsor Oak Court (28207) P.O. Box 7007 (28641)
Charlotte, North Carolina
704.558.1990 704.558.0505(fax)

214-76
SHT 1 OF 15 SHTS



TRAPEZOIDAL DITCH CALCULATIONS																		
STRUCTURE NO.	DITCH NO.	C	I ₁₀	AREA (AC.)	Q ₁₀	SLOPE %	SIDE SLOPE	DEPTH (FT)*	W(ft.)	B(ft.)	N	VELOC. ₁₀	TYPE OF STABILIZATION			RIP RAP DEPTH	MAX SHEAR STRESS	DESIGN SHEAR STRESS
													TEMP.		PERM.			
	1	0.70	7.03	0.22	1.08	5.0	3:1	0.40	3.40	1.0	0.106	1.24	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	1.24	
	2	0.70	7.03	0.10	0.49	5.0	3:1	0.32	2.92	1.0	0.150	0.78	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	1.00	
	3	0.70	7.03	0.40	1.96	10.0	3:1	0.47	3.82	1.0	0.117	1.74	NORTH AMERICAN GREEN S125BN	GRASS	N/A	4.20	2.92	
	4	0.70	7.03	0.21	1.03	10.0	3:1	0.32	2.92	1.0	0.100	1.65	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	1.99	
	5	0.70	7.03	0.65	3.20	2.0	3:1	0.70	5.20	1.0	0.078	1.46	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	0.88	
	6	0.70	7.03	0.37	1.82	2.0	3:1	0.60	4.60	1.0	0.096	1.09	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	0.75	
	7	0.70	7.03	0.85	4.18	4.5	3:1	0.61	4.66	1.0	0.066	2.41	NORTH AMERICAN GREEN S150	GRASS	N/A	3.33	1.72	
	8	0.70	7.03	0.64	3.14	4.5	3:1	0.56	4.36	1.0	0.072	2.09	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	1.57	
	9	0.70	7.03	1.05	5.17	1.0	3:1	0.97	6.82	1.0	0.072	1.36	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	0.61	
	10	0.70	7.03	0.86	4.23	1.0	3:1	0.92	6.52	1.0	0.077	1.23	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	0.57	
	11	0.70	7.03	1.05	5.17	1.0	3:1	0.97	6.82	1.0	0.072	1.36	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	0.61	
	12	0.70	7.03	0.97	4.77	1.0	3:1	0.95	6.70	1.0	0.074	1.31	NORTH AMERICAN GREEN S75	GRASS	N/A	3.33	0.59	
NOTE: *DEPTH AND WIDTH DIMENSION INCLUDES THE REQUIRED 6" OF FREEBOARD FOR 10 YR. STORM. ALL DITCHES TO BE CONSTRUCTED 1.0' IN DEPTH, PLUS 6" OF FREEBOARD.																		

NOTE: *DEPTH AND WIDTH DIMENSION INCLUDES THE REQUIRED 6" OF FREEBOARD FOR 10 YR. STORM.
ALL DITCHES TO BE CONSTRUCTED 1.0' IN DEPTH, PLUS 6" OF FREEBOARD.



LEGEND	
FPE	FLOOD PROTECTION ELEVATION
SDE	STORM DRAINAGE EASEMENT
XXXX AC.	DRAINAGE BASIN TO EACH STRUCTURE

THIS PLAN IS A **FINAL DESIGN-NOT RELEASED FOR CONSTRUCTION** UNLESS INITIALLED/DATED AS APPROVED:
APPROVED: [Signature] / 9/3/15
INITIALS DATE

SHEET TITLE		PROJECT	
DRAINAGE PLAN		CULROSS LANE	
		CITY OF CHARLOTTE ETJ, MECKLENBURG COUNTY, NC	
		FOR: BONTERA BUILDERS, LLC	
		YARBROUGH, WILLIAMS & HOULE, Inc.	
		Planning • Surveying • Engineering	
		730 Windsor Oak Court (28273) P.O. Box 7007 (28241)	
		Charlotte, North Carolina	
		704.556.1900 704.556.0005(fax)	
		214-75	
		2 of 15 SHEETS	