

# CHATEAU PHASE 3

CITY OF CHARLOTTE  
MECKLENBURG COUNTY, NC



FINAL  
APPROVAL

**ENGINEERING**  
PCO / DETENTION / DRAINAGE PLAN

**EROSION CONTROL**

**URBAN FORESTRY**  
TREE ORDINANCE

**CDOT**

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

**APPROVED**  
By Emily Chien at 1:10 pm, Oct 04, 2016

**APPROVED**

**APPROVED**  
By Kelly Robertson at 2:06 pm, Sep 23, 2016

**APPROVED** Kory Hedrick

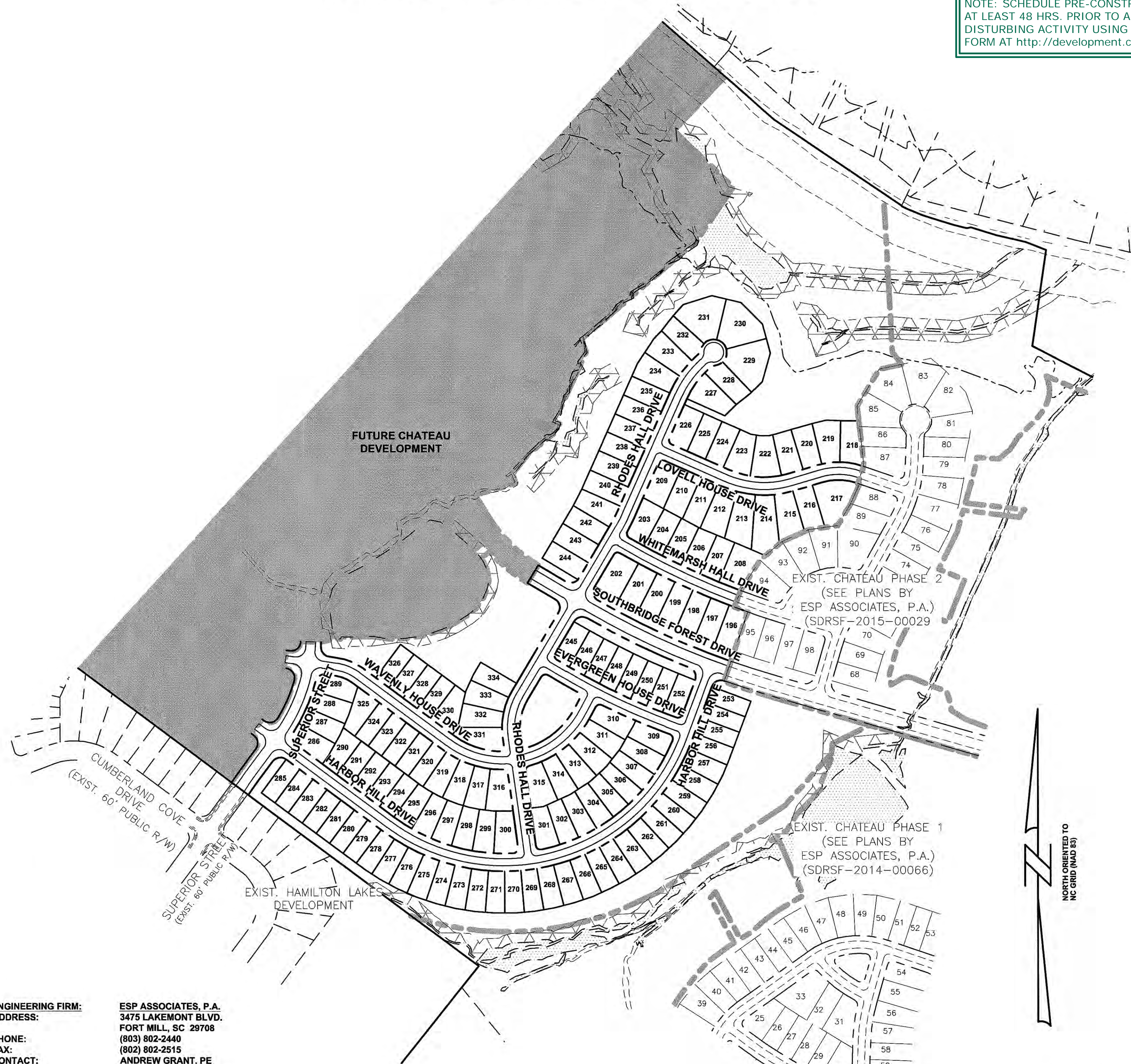
**APPROVED FOR  
CONSTRUCTION**  
CHARLOTTE-MECKLENBURG PLANNING DEPARTMENT  
By: Joshua Weaver 10-4-2016 1 of 2

INDEX OF SHEETS		ORIGINAL DATE	REVISION DATE
C0.0	COVER SHEET	03/11/2016	08/24/2016
C1.0	DEVELOPMENT DETAILS (SHEET 1 OF 4)	03/11/2016	—
C1.1	DEVELOPMENT DETAILS (SHEET 2 OF 4)	03/11/2016	—
C1.2	DEVELOPMENT DETAILS (SHEET 3 OF 4)	03/11/2016	—
C1.3	DEVELOPMENT DETAILS (SHEET 4 OF 4)	03/11/2016	—
C2.0	EXISTING CONDITIONS & DEMOLITION PLAN	03/11/2016	08/24/2016
C3.0	OVERALL PHASE SITE PLAN	03/11/2016	08/24/2016
C3.1	OVERALL SITE PLAN	03/11/2016	08/24/2016
C3.2	SITE PLAN (SHEET 1 OF 4)	03/11/2016	08/24/2016
C3.3	SITE PLAN (SHEET 2 OF 4)	03/11/2016	08/24/2016
C3.4	SITE PLAN (SHEET 3 OF 4)	03/11/2016	08/24/2016
C3.5	SITE PLAN (SHEET 4 OF 4)	03/11/2016	08/24/2016
C3.6	TURNING MOVEMENTS (SHEET 1 OF 2)	03/11/2016	—
C3.7	TURNING MOVEMENTS (SHEET 2 OF 2)	03/11/2016	—
C4.0	OVERALL GRADING PLAN	03/11/2016	08/24/2016
C4.1	GRADING AND DRAINAGE PLAN (SHEET 1 OF 4)	03/11/2016	08/24/2016
C4.2	GRADING AND DRAINAGE PLAN (SHEET 2 OF 4)	03/11/2016	08/24/2016
C4.3	GRADING AND DRAINAGE PLAN (SHEET 3 OF 4)	03/11/2016	08/24/2016
C4.4	GRADING AND DRAINAGE PLAN (SHEET 4 OF 4)	03/11/2016	08/24/2016
C4.5	STORM DRAINAGE PROFILES (SHEET 1 OF 10)	03/11/2016	08/24/2016
C4.6	STORM DRAINAGE PROFILES (SHEET 2 OF 10)	03/11/2016	08/24/2016
C4.7	STORM DRAINAGE PROFILES (SHEET 3 OF 10)	03/11/2016	08/24/2016
C4.8	STORM DRAINAGE PROFILES (SHEET 4 OF 10)	03/11/2016	08/24/2016
C4.9	STORM DRAINAGE PROFILES (SHEET 5 OF 10)	03/11/2016	08/24/2016
C4.10	STORM DRAINAGE PROFILES (SHEET 6 OF 10)	03/11/2016	08/24/2016
C4.11	STORM DRAINAGE PROFILES (SHEET 7 OF 10)	03/11/2016	08/24/2016
C4.12	STORM DRAINAGE PROFILES (SHEET 8 OF 10)	03/11/2016	08/24/2016
C4.13	STORM DRAINAGE PROFILES (SHEET 9 OF 10)	03/11/2016	08/24/2016
C4.14	STORM DRAINAGE PROFILES (SHEET 10 OF 10)	03/11/2016	08/24/2016
C4.15	STORM DRAINAGE AREA PLAN	03/11/2016	08/24/2016
C4.16	100+1 STUDY CHANNEL CROSS SECTION PLAN	03/11/2016	08/24/2016
C4.17	100+1 STUDY CHANNEL CROSS SECTIONS (SHEET 1 OF 3)	03/11/2016	—
C4.18	100+1 STUDY CHANNEL CROSS SECTIONS (SHEET 2 OF 3)	03/11/2016	—
C4.19	100+1 STUDY CHANNEL CROSS SECTIONS (SHEET 3 OF 3)	03/11/2016	—
C5.0	OVERALL BMP AND STORMWATER MANAGEMENT PLAN	03/11/2016	08/24/2016
C5.1	WET POND #1 PLAN AND DETAILS	03/11/2016	08/24/2016
C5.2	WET POND #2 PLAN AND DETAILS	03/11/2016	08/24/2016
C6.0	SOUTHBRIDGE FOREST DRIVE PLAN & PROFILE	03/11/2016	08/24/2016
C6.1	RHODES HALL DRIVE PLAN & PROFILE (SHEET 1 OF 2)	03/11/2016	08/24/2016
C6.2	RHODES HALL DRIVE PLAN & PROFILE (SHEET 2 OF 2)	03/11/2016	08/24/2016
C6.3	LOVELL HOUSE DRIVE PLAN & PROFILE	03/11/2016	08/24/2016
C6.4	WHITEMARSH HALL DRIVE & EVERGREEN HOUSE DRIVE PLAN & PROFILE	03/11/2016	08/24/2016
C6.5	WAVENLY HOUSE DRIVE PLAN & PROFILE (SHEET 1 OF 2)	03/11/2016	08/24/2016
C6.6	WAVENLY HOUSE DRIVE PLAN & PROFILE (SHEET 2 OF 2)	03/11/2016	08/24/2016
C6.7	HARBOR HILL DRIVE PLAN & PROFILE (SHEET 1 OF 2)	03/11/2016	08/24/2016
C6.8	HARBOR HILL DRIVE PLAN & PROFILE (SHEET 2 OF 2)	03/11/2016	08/24/2016
C6.9	SUPERIOR STREET PLAN & PROFILE	03/11/2016	08/24/2016
C7.0	EROSION CONTROL PLAN PHASE 1 OVERALL	03/11/2016	08/24/2016
C7.1	EROSION CONTROL PLAN PHASE 1 (SHEET 1 OF 4)	03/11/2016	08/24/2016
C7.2	EROSION CONTROL PLAN PHASE 1 (SHEET 2 OF 4)	03/11/2016	08/24/2016
C7.3	EROSION CONTROL PLAN PHASE 1 (SHEET 3 OF 4)	03/11/2016	08/24/2016
C7.4	EROSION CONTROL PLAN PHASE 1 (SHEET 4 OF 4)	03/11/2016	08/24/2016
C7.5	EROSION CONTROL PLAN PHASE 2 OVERALL	03/11/2016	08/24/2016
C7.6	EROSION CONTROL PLAN PHASE 2 (SHEET 1 OF 4)	03/11/2016	08/24/2016
C7.7	EROSION CONTROL PLAN PHASE 2 (SHEET 2 OF 4)	03/11/2016	08/24/2016
C7.8	EROSION CONTROL PLAN PHASE 2 (SHEET 3 OF 4)	03/11/2016	08/24/2016
C7.9	EROSION CONTROL PLAN PHASE 2 (SHEET 4 OF 4)	03/11/2016	08/24/2016
C7.10	EROSION CONTROL DETAILS (SHEET 1 OF 3)	03/11/2016	08/24/2016
C7.11	EROSION CONTROL DETAILS (SHEET 2 OF 3)	03/11/2016	—
C7.12	EROSION CONTROL DETAILS (SHEET 3 OF 3)	03/11/2016	08/24/2016
C8.0	SIGNAGE PLAN	03/11/2016	—
L1.0	TREE PROTECTION & PLANTING PLAN	03/11/2016	08/24/2016
L1.1	PLANTING PLAN NOTES & DETAILS	03/11/2016	—

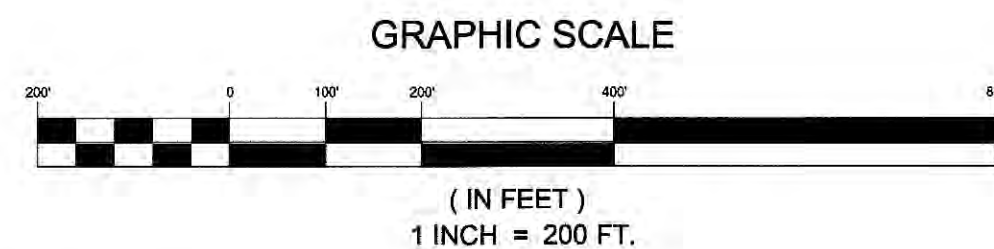
ENGINEERING FIRM:  
ADDRESS:  
PHONE:  
FAX:  
CONTACT:  
  
DEVELOPER:  
ADDRESS:  
PHONE:  
CONTACT:

ESP ASSOCIATES, P.A.  
3475 LAKEMONT BLVD.  
FORT MILL, SC 29708  
(803) 802-2440  
(802) 802-2515  
ANDREW GRANT, PE

LENNAR CAROLINAS LLC  
11230 CARMEL COMMONS BOULEVARD  
CHARLOTTE, NC 28226  
(704) 542-8300  
THOMAS JOHNSON



THIS SET IS CURRENT THROUGH SHEET DATE 08/24/2016



Know what's below.  
Call before you dig.

ESP Associates, P.A.  
P.O. Box 10841  
Charlotte, NC 28211  
4275 W. W. Road  
Fort Mill, SC 29708  
704-583-8449 (NC)  
803-502-2440 (SC)  
[www.espassociates.com](http://www.espassociates.com)

**ESP**

NORTH CAROLINA  
LICENSE NO.:  
C-0567

ESP ASSOCIATES, P.A.  
SEAL  
033416  
ENGINEER  
JAN SCOTT CHILDERS  
8-24-16

BY	ECB
DATE	08/24/2016
NO.	1
REVISION	REVISED PER CITY OF CHARLOTTE COMMENTS

COVER SHEET

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

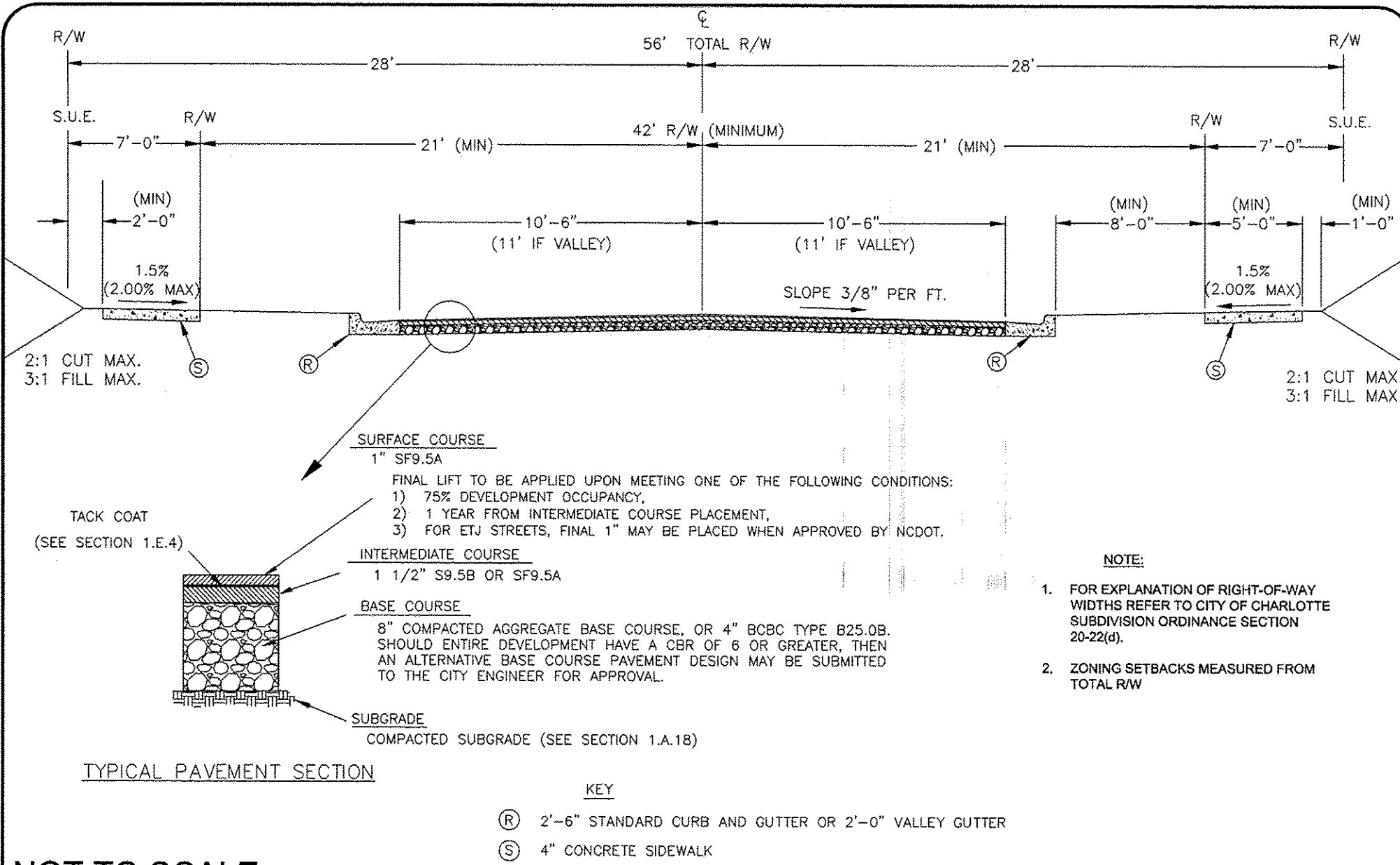
CHARLOTTE, NC

PROJECT INFORMATION

PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016

SHEET:  
**C0.0**



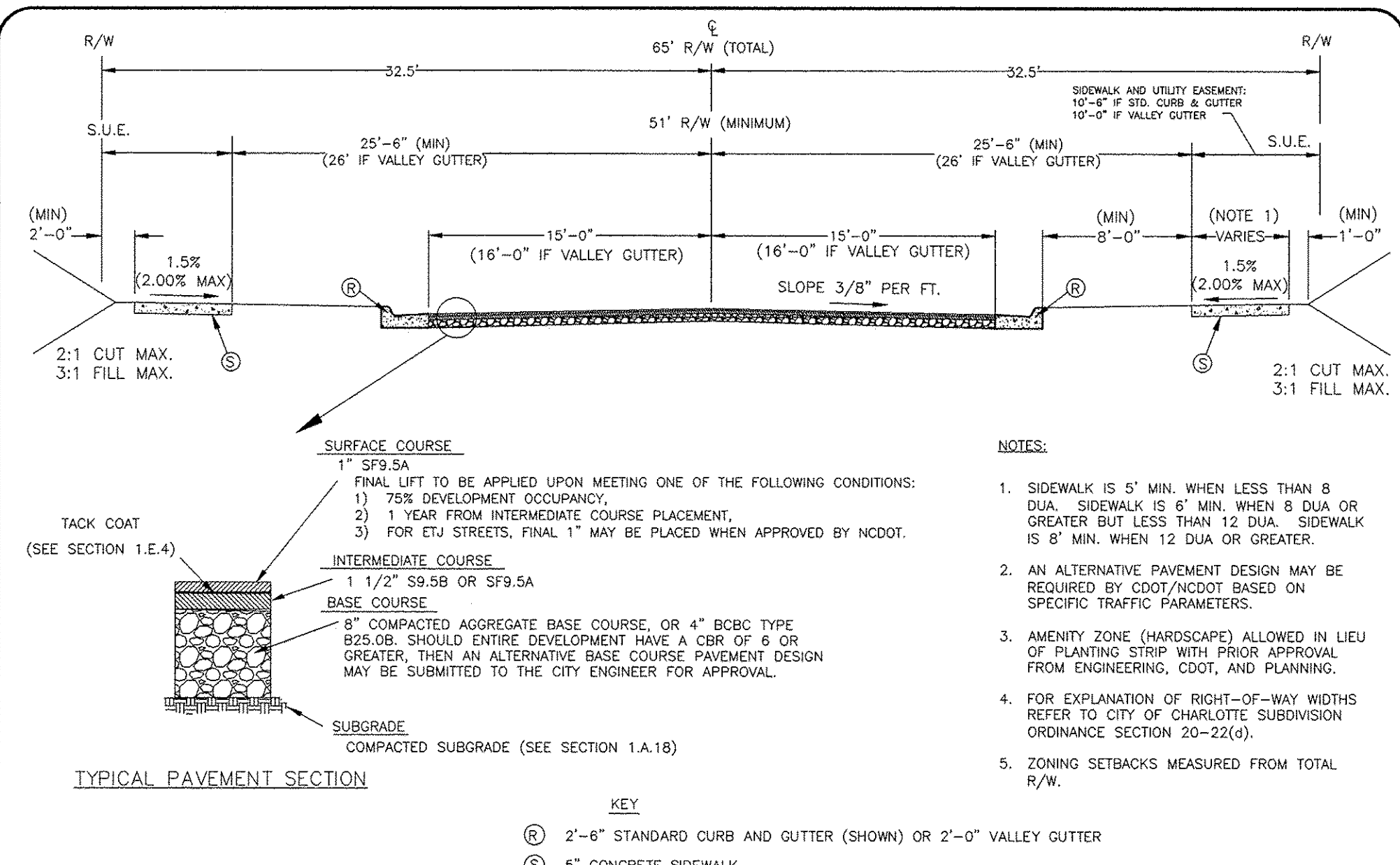


**NOT TO SCALE**

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

**LOCAL RESIDENTIAL MEDIUM STREET**  
TYPICAL SECTION

STD. NO. REV. U-02 13

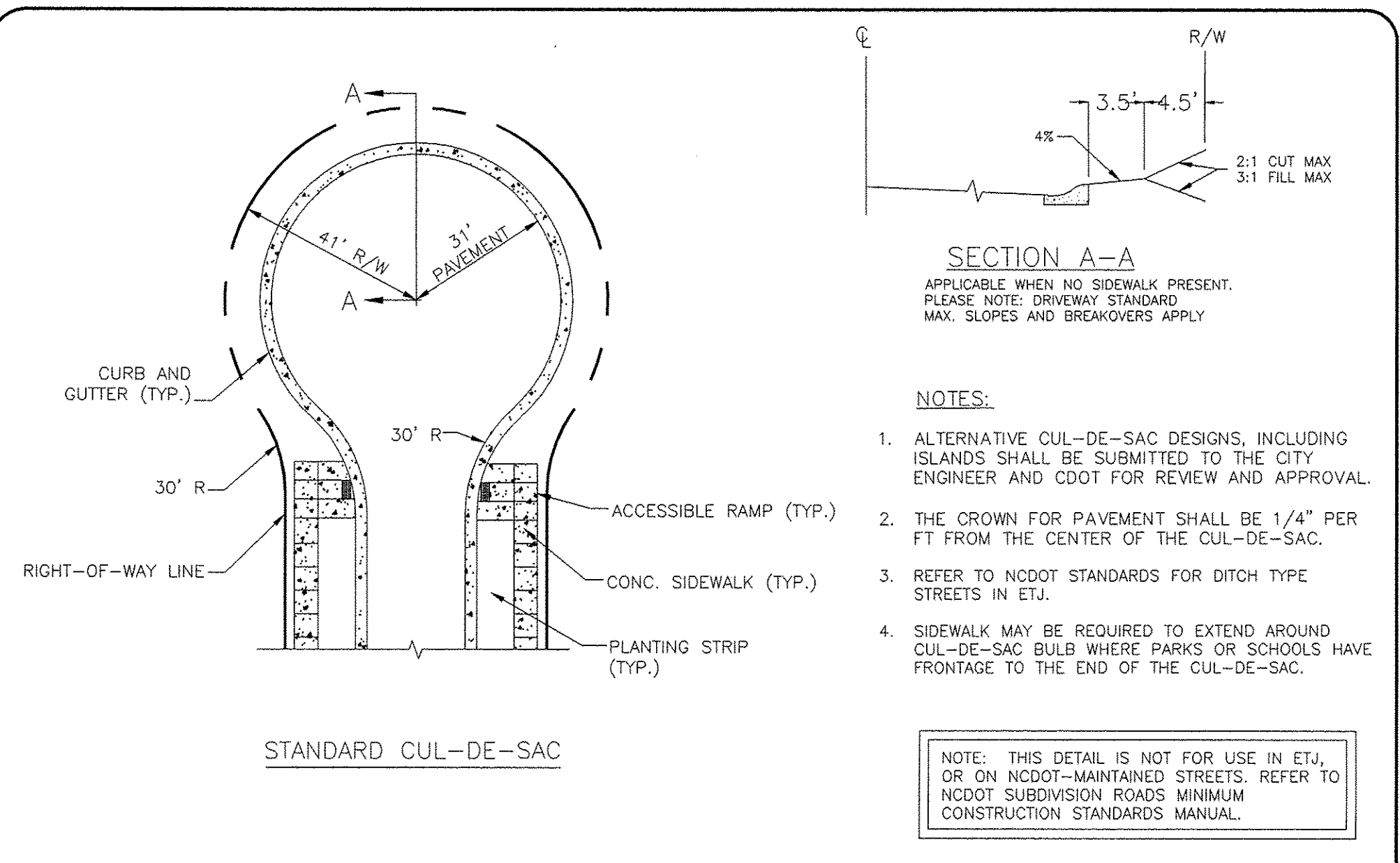


**NOT TO SCALE**

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

**LOCAL COLLECTOR STREET**  
TYPICAL SECTION

STD. NO. REV. U-07 13

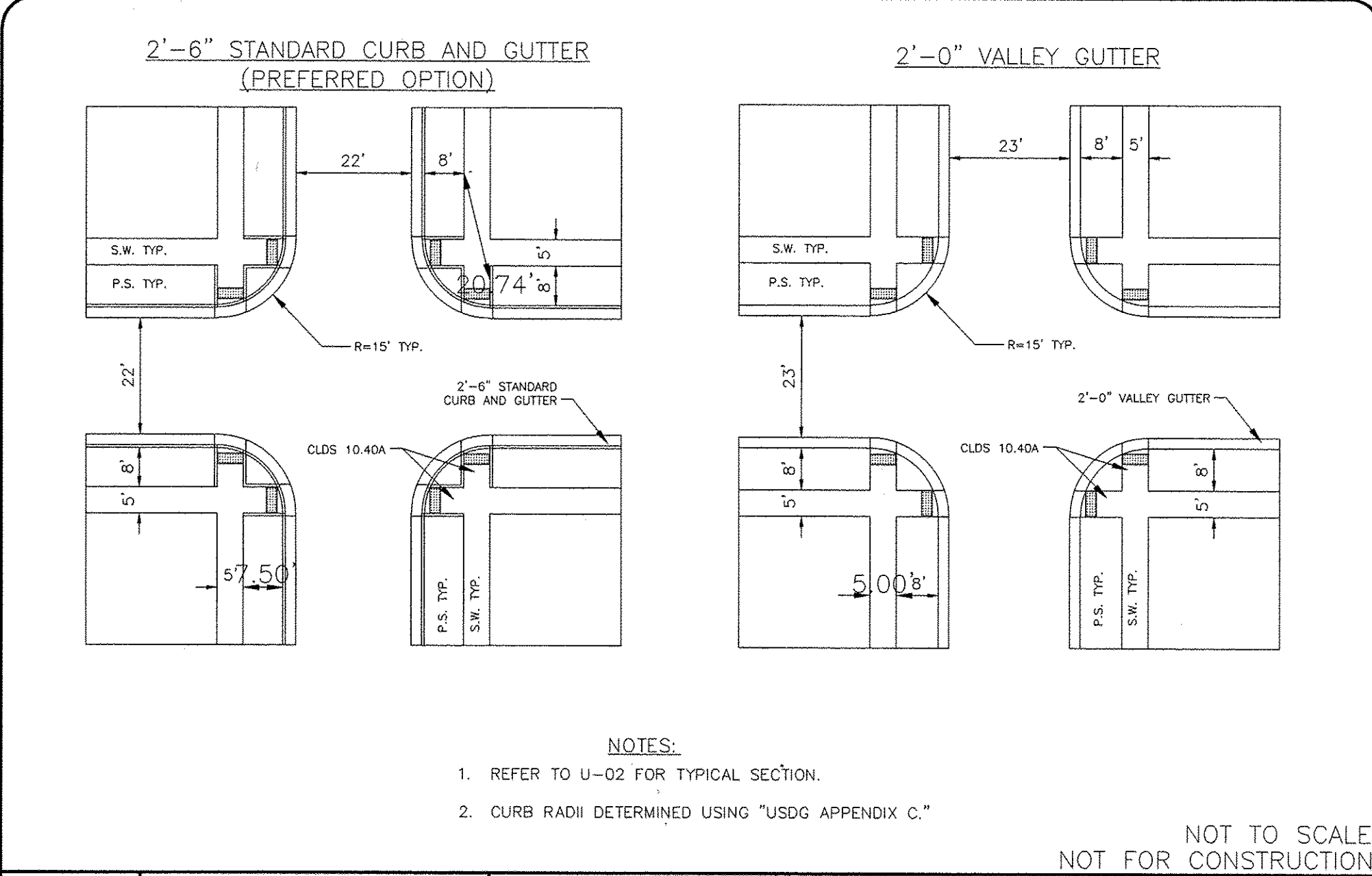


**NOT TO SCALE**

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS

**CITY OF CHARLOTTE RESIDENTIAL**  
CUL-DE-SAC DETAIL

STD. NO. REV. 11.16 13

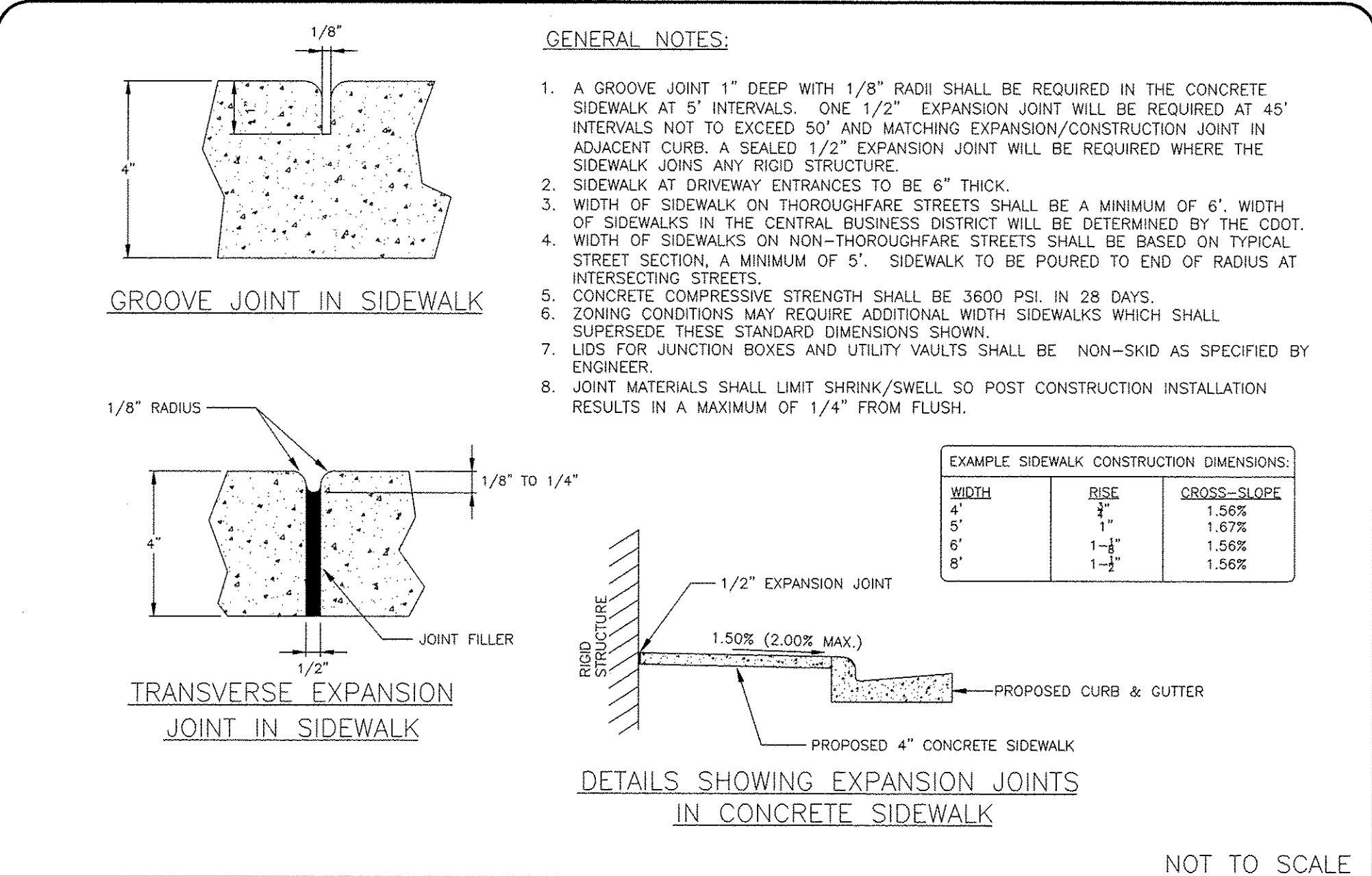


**NOT TO SCALE**

**CITY OF CHARLOTTE**  
DEPARTMENT OF  
TRANSPORTATION  
INTERSECTION GUIDELINES

**LOCAL RESIDENTIAL MEDIUM TO LOCAL RESIDENTIAL MEDIUM**  
TYPICAL INTERSECTION LAYOUT

STD. NO. REV. 1-1

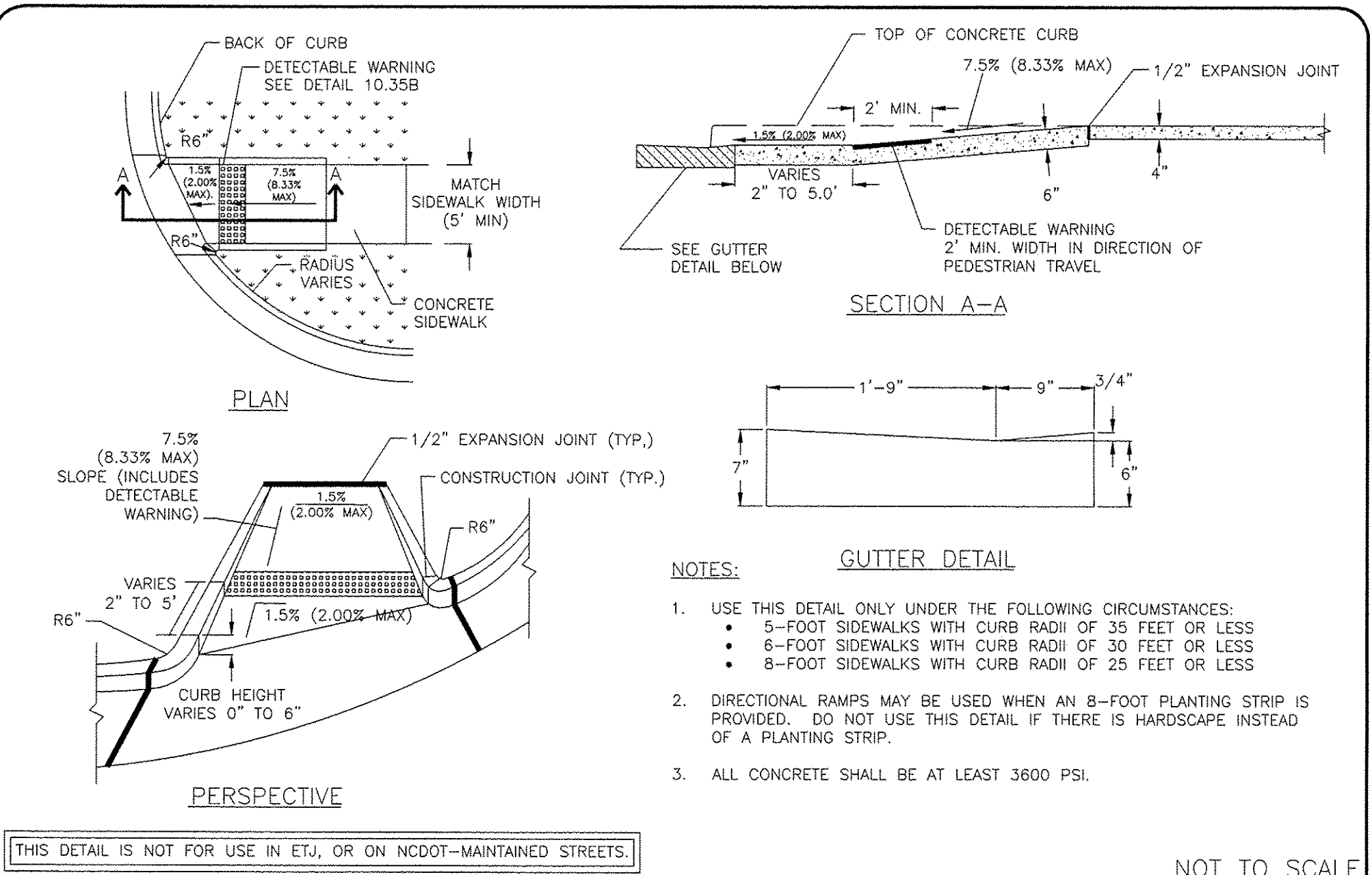


**NOT TO SCALE**

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

**CONCRETE SIDEWALKS**

STD. NO. REV. 10.22 13

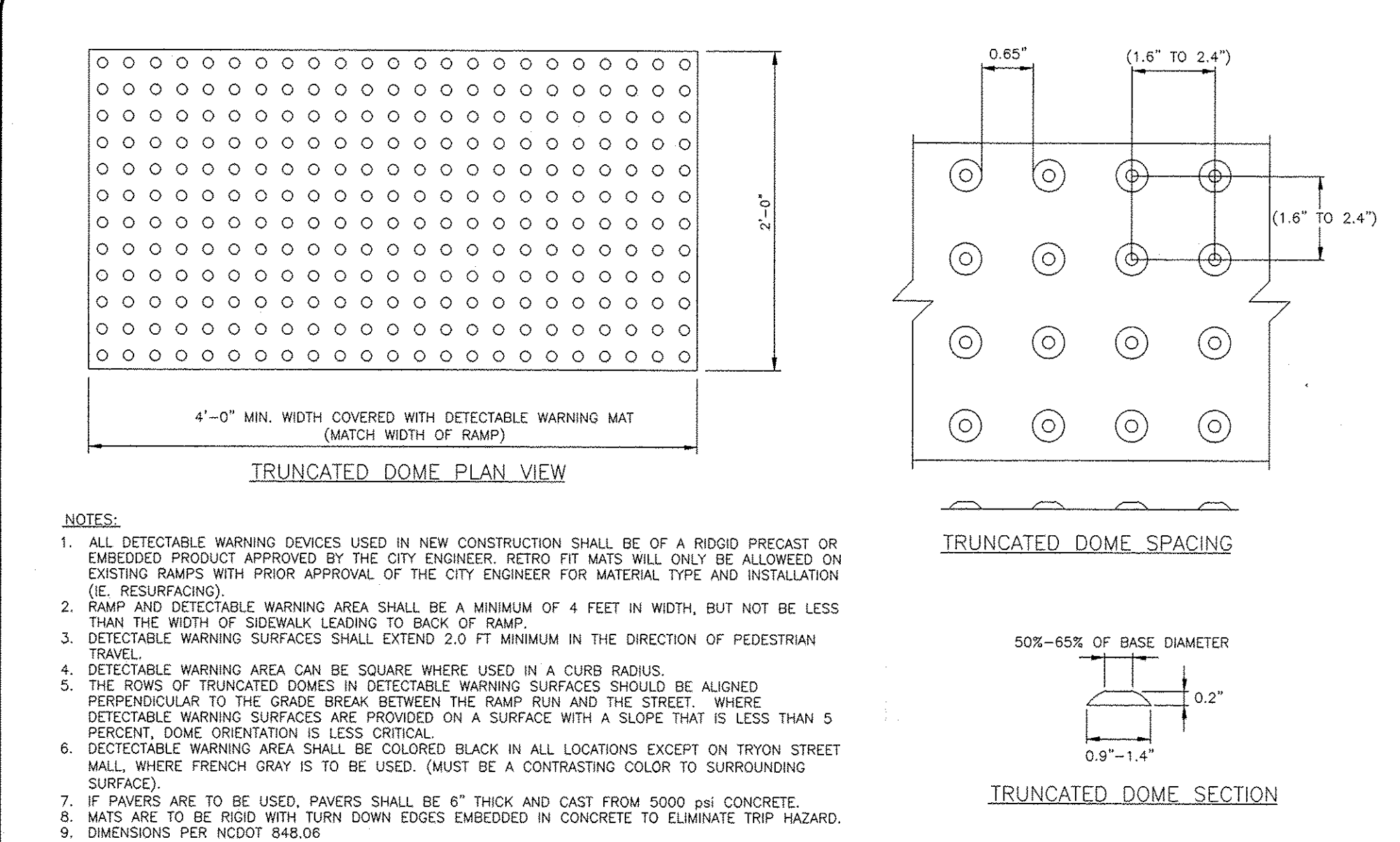


**NOT TO SCALE**

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS

**DIRECTIONAL ACCESSIBLE RAMP**  
WITH SMALL/MEDIUM CURB RADII

STD. NO. REV. 10.40A 13

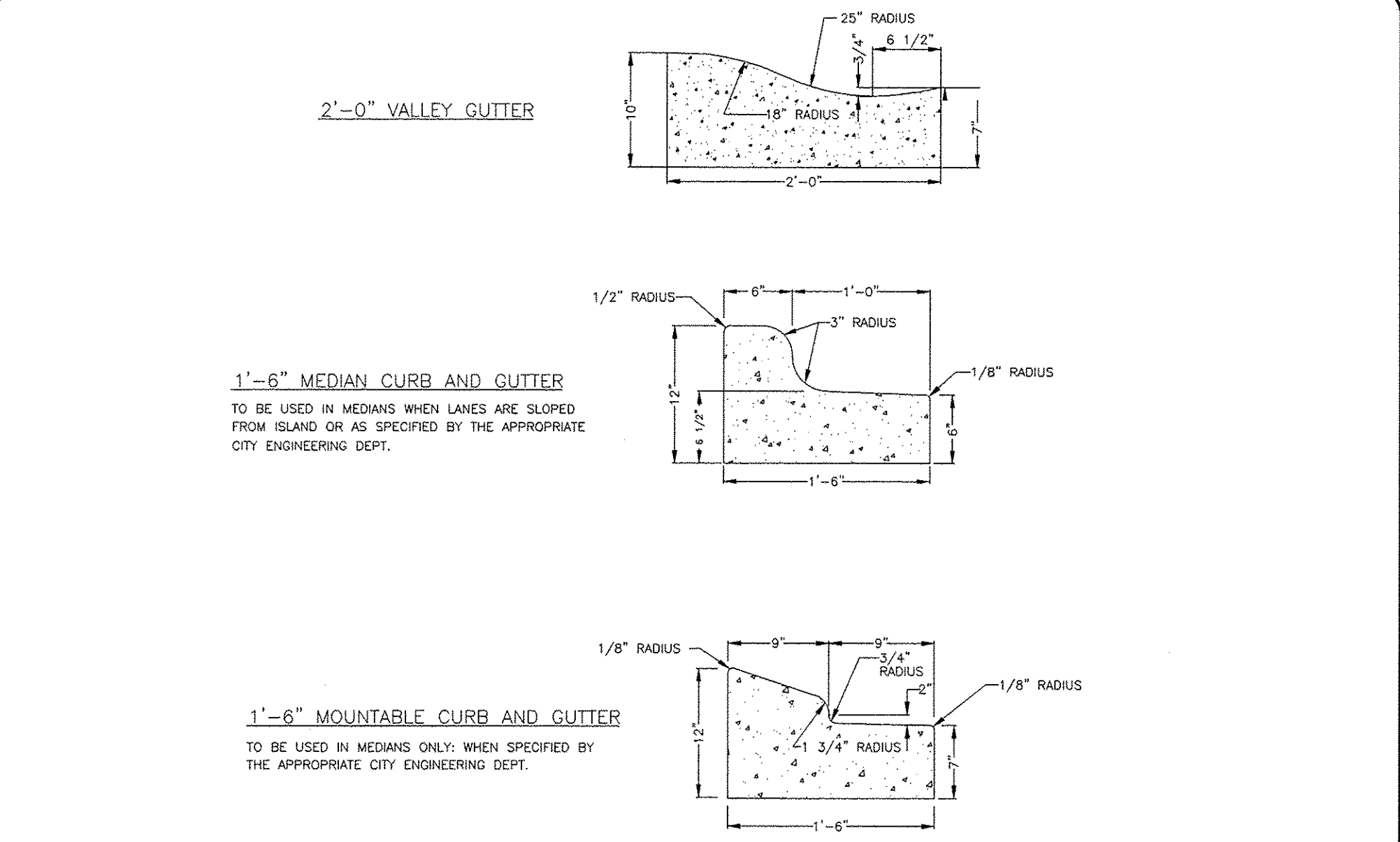


**NOT TO SCALE**

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

**TRUNCATED DOMES**  
PLAN AND CROSS-SECTION

STD. NO. REV. 10.35B 13

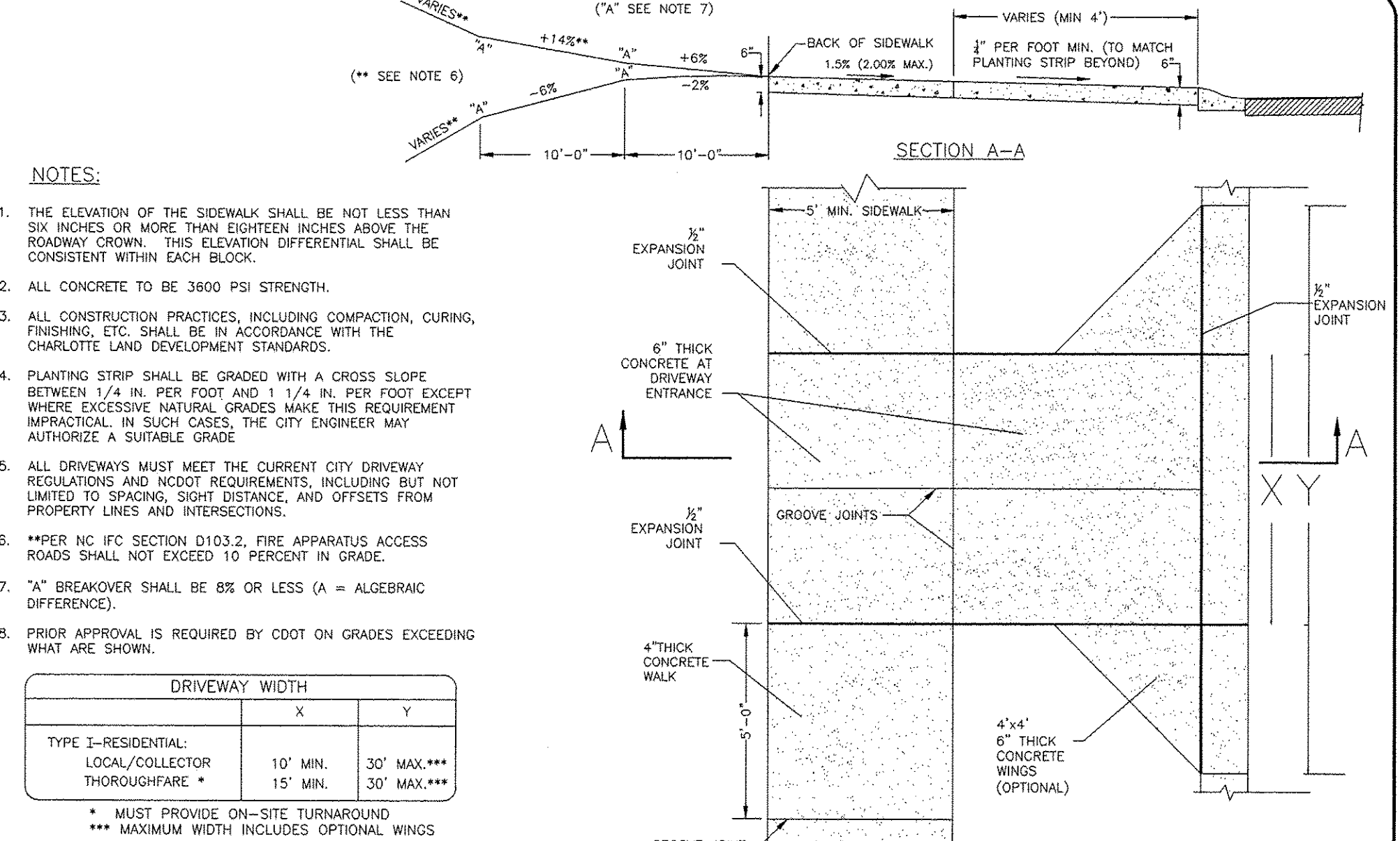


**NOT TO SCALE**

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

**CURB AND GUTTER**

STD. NO. REV. 10.17B 13



**NOT TO SCALE**

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

**RESIDENTIAL DRIVEWAY (TYPE I)**  
FOR 2'-0" VALLEY GUTTER

STD. NO. REV. 10.27A 13

**ESP**  
ESP Associates, P.A.  
P.O. Box 1038  
Charlotte, NC 28241  
Phone: 704-592-4444  
Fax: 704-592-4444  
www.espscales.com

**NORTH CAROLINA**  
LICENSE NO. C-0587  
ESP ASSOCIATES P.A.

**DEVELOPMENT DETAILS**  
(SHEET 1 OF 4)


**CHATEAU PHASE 3**  
LENNAR CAROLINAS, LLC

**PROJECT INFORMATION**

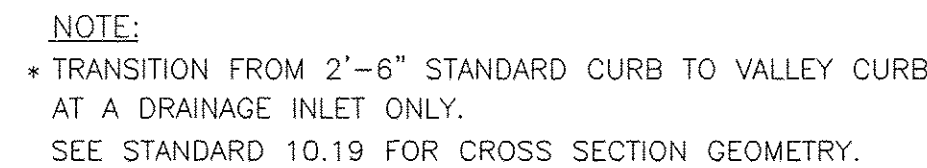
PROJECT MANAGER:	APG
DESIGNED BY:	ECH
DRAWN BY:	ECH
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C1.0






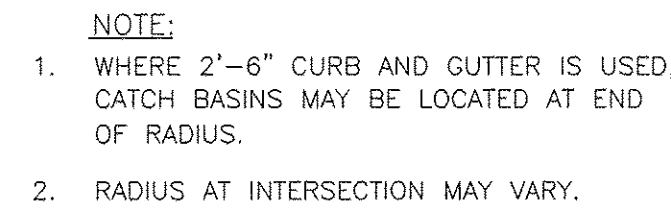
 CITY OF CHARLOTTE  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ


2'6" CURB AND GUTTER TO 2'-0" VALLEY GUTTER



 CITY OF CHARLOTTE  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ


STD. NO.	REV.
10.29	



 CITY OF CHARLOTTE  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ


STD. NO.	REV.
10.30	



 CITY OF CHARLOTTE  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ


STD. NO.	REV.
10.33A	13

NOTE 1: FOR ALL STRUCTURES - NCDOT REQUIRES CLASS B CONCRETE (2500PSI). THE CITY REQUIRES 3600 PSI CONCRETE STRENGTH @ 28 DAYS. 3600 PSI CONCRETE SHALL BE USED IN ALL CITY AND ETJ PROJECTS.


**CITY OF CHARLOTTE**  
**LAND DEVELOPMENT STANDARDS**  
 INCLUDES CHARLOTTE ETJ


STD. NO.	REV.
20 00A	11

NOTE 1: FOR ALL STRUCTURES - NCDOT REQUIRES CLASS B CONCRETE (2500PSI). THE CITY REQUIRES 3600 PSI CONCRETE STRENGTH @ 28 DAYS. 3600 PSI CONCRETE SHALL BE USED IN ALL CITY AND ETJ PROJECTS.

	<p>CITY OF CHARLOTTE LAND DEVELOPMENT STANDARDS</p> <p>INCLUDES CHARLOTTE ETI</p>
---	---

STD. NO.	REV.
20.00B	5


NOTE 1: FOR ALL STRUCTURES - NCDOT REQUIRES CLASS B CONCRETE (2500PSI). THE CITY REQUIRES 3600 PSI CONCRETE STRENGTH @ 28 DAYS. 3600 PSI CONCRETE SHALL BE USED IN ALL CITY AND ETJ PROJECTS.

	<p>CITY OF CHARLOTTE LAND DEVELOPMENT STANDARDS</p>
---	---

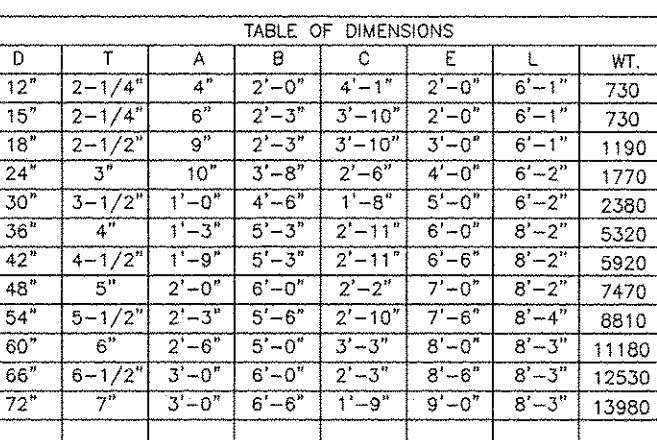
STD. NO.	REV.
30.00C	1.0

1. SEE NCDOT STANDARD 84.01 FOR DETAILS BASED ON PIPE SIZE PER CROSS SECTION.
2. CONSTRUCT TWO SINGLE BASINS PER NCDOT STANDARD WITH DOUBLE INTERIOR WALL.
3. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
4. BASE SLAB SHALL BE MONOLITHIC.
5. SEE CLOSD STANDARDS #10.29 AND #10.30 FOR PLACEMENT OF CATCH BASIN.
6. PIPE SECTION D2 CONNECTING CATCH BASINS SHALL HAVE A MINIMUM DIAMETER SAME AS OF OUTLET PIPE D3.
7. ALL REINFORCING STEEL SHOWN ON NCDOT STANDARDS IS TO BE PROVIDED AS CONTINUOUS MEMBERS. (NO LAPS, USED AS A SINGLE CONTINUOUS BAR IN THE SLAB)
8. WEED HOLES SHALL BE PLACED IN BACK WALL WITH FILTER FABRIC OR STONE ON BACK SIDE




	<p>CITY OF CHARLOTTE LAND DEVELOPMENT STANDARDS</p>
---	---

STD. NO.	REV.
20.03	8



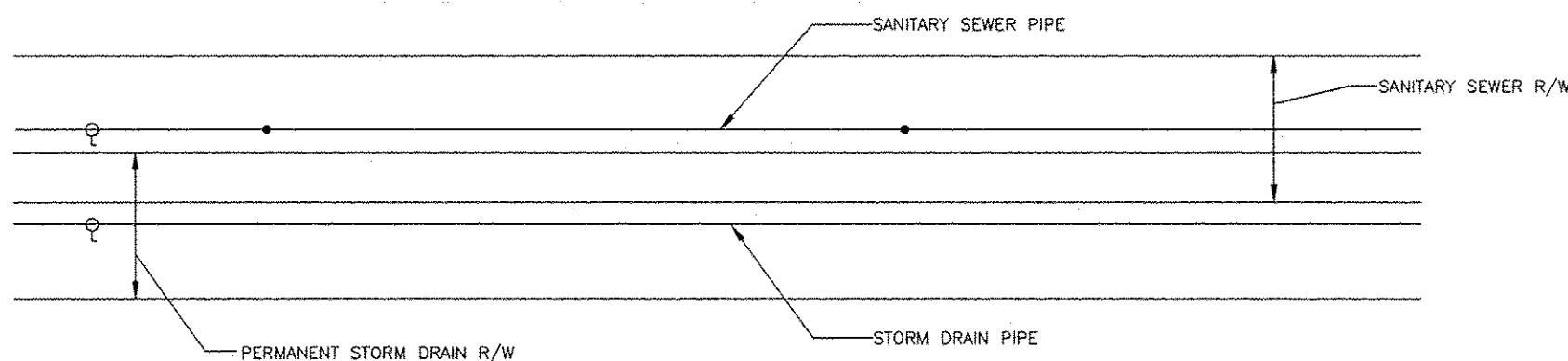
GENERAL NOTES:

1. USE FORMER NCDOT STANDARD 310.01 FOR DETAILS.
2. REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
3. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
4. PROVIDE TONGUE OR SPIGOT JOINT AT INLET END SECTION.
5. PROVIDE GROOVE OR BELL JOINT AT OUTLET END SECTION.
6. THE DIMENSIONS FOR END SECTIONS SHALL SUBSTANTIALLY AGREE WITH THE TABLE. MINOR VARIATIONS WILL BE PERMITTED BASED ON THE MANUFACTURER'S STANDARD FORMS AND TEMPLATES.
7. NOT TO BE USED IN NCDOT MAINTAINED RIGHT OF WAY.

	<p>CITY OF CHARLOTTE LAND DEVELOPMENT STANDARDS</p>
---	---

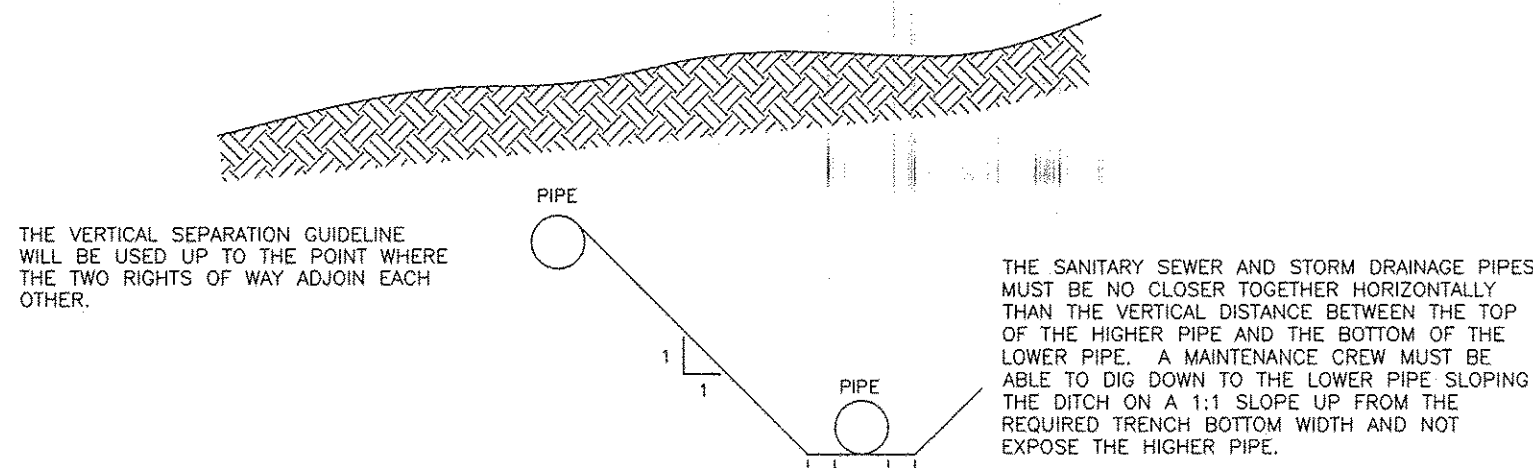
STD. NO.	REV.
20.22	1





THE SANITARY SEWER AND STORM DRAINAGE RIGHTS OF WAY MUST OVERLAP. HOWEVER THE PIPE AND ASSOCIATED STRUCTURES MUST NOT BE IN THE OTHER UTILITY'S RIGHT OF WAY. THE SANITARY SEWER RIGHT OF WAY WIDTHS SHALL BE AS OUTLINED IN C.M.U.D.'S DESIGN MANUAL. THIS DETAIL DOES NOT APPLY TO STORM DRAINAGE UTILIZING OPEN CHANNEL FLOW.

PLAN VIEW



PROFILE VIEW

NOT TO SCALE

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

## OVERLAPPING STORM DRAINAGE/SANITARY SEWER EASEMENTS

STD. NO. REV.  
20.29 9

### GENERAL NOTES:

- FOR STREAMS CARRYING 500 ACRES OR MORE OF SURFACE RUNOFF, THE EASEMENT REQUIREMENT IS TO BE THE WIDTH OF THE STREAM FROM TOP OF BANK TO TOP OF BANK, PLUS (+) 10' ON EACH SIDE OF STREAM. ( 40' MINIMUM WIDTH )
- FOR OPEN CHANNELS THE MINIMUM EASEMENT MUST CONTAIN THE WIDTH OF THE STREAM FROM TOP OF BANK TO TOP BANK.
- WIDER EASEMENT WIDTHS MAY BE REQUIRED FOR PIPE DEPTHS GREATER THAN TEN FEET.
- PIPE SYSTEMS AND OPEN CHANNELS ON PRIVATE PROPERTY SHALL BE PLACED IN A STORM DRAINAGE EASEMENT.

### Easement Requirements for Open Storm Drainage Channels

Area in Acreage	Easement Requirement
0-45 ac.	20'
45-120 ac.	30'
120-500 ac.	40'
500 ac.+	see note

### Easement Requirements for Storm Drain Pipe

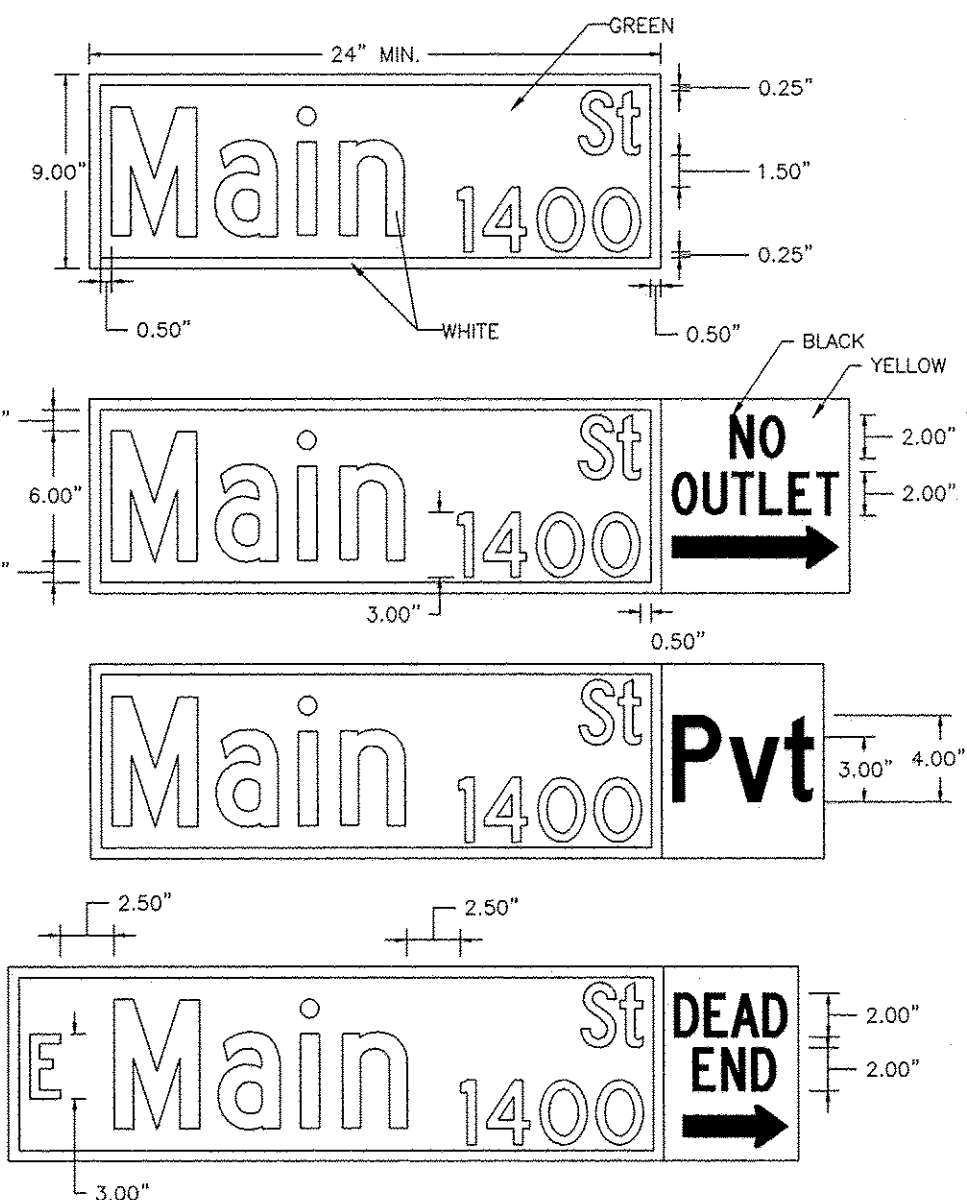
Pipe Size	Easement Requirement
15"	15'
18"	15'
24"	15'
30"	20'
36"	20'
42"	25'
48"	25'
54"+	30'MIN (VARIES)

NOT TO SCALE

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

## MINIMUM DRAINAGE EASEMENT REQUIREMENTS FOR STORM DRAIN PIPES AND OPEN CHANNELS

STD. NO. REV.  
20.30



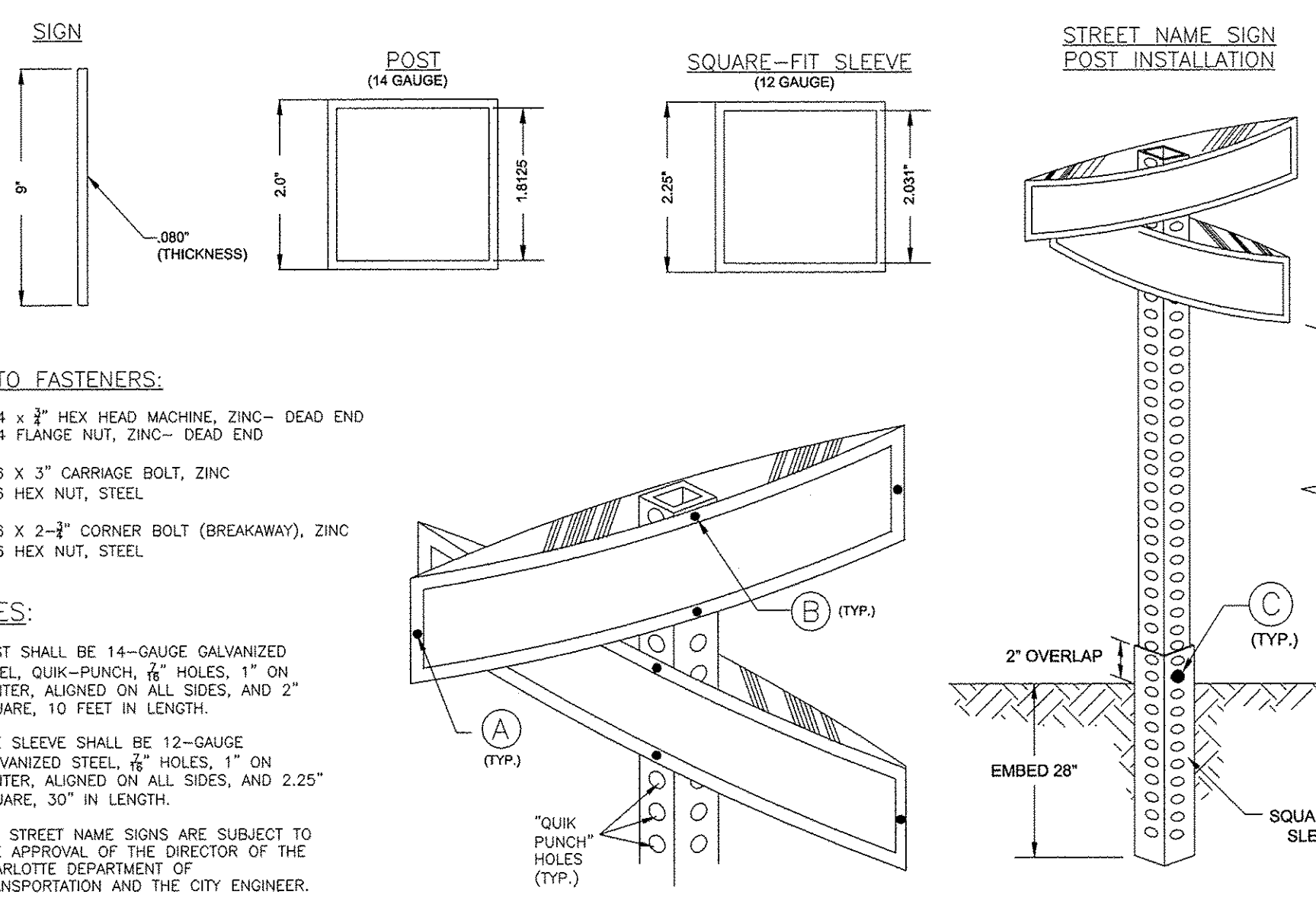
NOT TO SCALE

- NOTES:**
- STREET NAME MARKERS (SNM) SHALL BE ALUMINUM, FLAT, AND HAVE DIMENSIONS AS SHOWN ON THIS DETAIL. MINIMUM LENGTH OF 24" MAXIMUM LENGTH OF 60". THE SNMS SHALL BE COVERED WITH WHITE HIGH INTENSITY PRISMATIC (HIP) RETRO-REFLECTIVE SHEETING (M SERIES 3930 OR EQUIVALENT) WITH PRESSURE SENSITIVE ADHESIVE (OR EQUIVALENT TYPE IV OR HIGHER).
  - THE LETTERS SHALL BE REVERSE CUT FROM TRANSPARENT GREEN OVERLAY FILM (M 117 EC FILM OR EQUIVALENT MEETING FEDERAL SPECIFICATION P-96, SECTION 176.01(A) AND ASTM D4565). THE TRANSPARENT GREEN OVERLAY FILM MUST BE PLACED ON THE SNM TO PROVIDE AN EXPOSED 0.5" BORDER OF THE UNDERLAY WHITE HIP RETRO-REFLECTIVE SHEETING.
  - THE STREET NAME SHALL BE COMPOSED OF INITIAL UPPER CASE LETTERS 6" IN HEIGHT AND CORRESPONDING LOWER CASE LETTERS 4.2" IN HEIGHT, IN FHWA "HIGHWAY B" FONT. THE STREET NAME SHALL BE LEFT-JUSTIFIED AND PLACED 0.5" FROM THE SIGN BORDER. ANY STREET NAME WITH 3 OR FEWER LETTERS SHALL BE CENTERED IN THE SIGN TEXT AREA.
  - PREFIX/SUFFIX NAMES SHALL BE COMPOSED OF INITIAL UPPER CASE LETTERS 3" IN HEIGHT AND CORRESPONDING LOWER CASE LETTERS 2.25" IN HEIGHT, IN FHWA "HIGHWAY C" FONT.
  - BLOCK NUMBERS SHALL BE 3" IN HEIGHT, IN FHWA "HIGHWAY C" FONT.
  - SUFFIX NAMES AND BLOCK NUMBERS SHALL BE RIGHT-JUSTIFIED AND PLACED 0.5" FROM THE RIGHT-SIDE SIGN BORDER AND 0.25" FROM THE TOP AND BOTTOM SIGN BORDERS. PREFIX LETTERS (N, S, E, AND W) SHALL BE CENTERED AND PLACED 0.5" FROM THE LEFT-SIDE SIGN BORDER WITH 2" SPACING TO BEGINNING OF STREET NAME.
  - SUPPLEMENTAL SNM WORDING ON YELLOW HIP RETRO-REFLECTIVE SHEETING WITH BLACK VINYL LETTERS SHALL BE PLACED ADJACENT TO THE GREEN OVERLAY FILM BORDER TO INDICATE STREETS THAT DEAD END, HAVE NO OUTLET, ETC. OR ARE PRIVATE STREETS (PVT). THE YELLOW HIP RETRO-REFLECTIVE SHEETING MUST BE PLACED ON THE SNM TO MAINTAIN AN EXPOSED 0.5" BORDER OF THE UNDERLAY WHITE HIP RETRO-REFLECTIVE SHEETING.
  - NO OUTLET WITH ARROW (RIGHT OR LEFT) - PLACED ON SNM AT ENTRANCE TO A STREET OR STREET NETWORK FROM WHICH THERE IS NO OTHER EXIT. USE UPPER CASE LETTERS 2" IN HEIGHT, IN FHWA "HIGHWAY C" FONT.
  - PVT - PLACED ON SNM AT ENTRANCE TO PRIVATE STREET, USE UPPER CASE LETTER 4" IN HEIGHT AND CORRESPONDING LOWER CASE LETTERS 3" IN HEIGHT, IN FHWA "HIGHWAY C" FONT.
  - DEAD END WITH ARROW (RIGHT OR LEFT) - PLACED ON SNM AT ENTRANCE TO A SINGLE STREET THAT TERMINATES IN A DEAD END OR CUL-DE-SAC. USE UPPER CASE LETTERS 2" IN HEIGHT, IN FHWA "HIGHWAY C" FONT. IF STUB STREET IS LESS THAN OR EQUAL TO 200 FEET, THEN DEAD END IS NOT NECESSARY.
  - ALL SNMS ARE SUBJECT TO THE APPROVAL OF THE DIRECTOR OF THE CHARLOTTE DEPARTMENT OF TRANSPORTATION AND THE CITY ENGINEER.

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

## STREET NAME SIGN

STD. NO. REV.  
50.05B 9



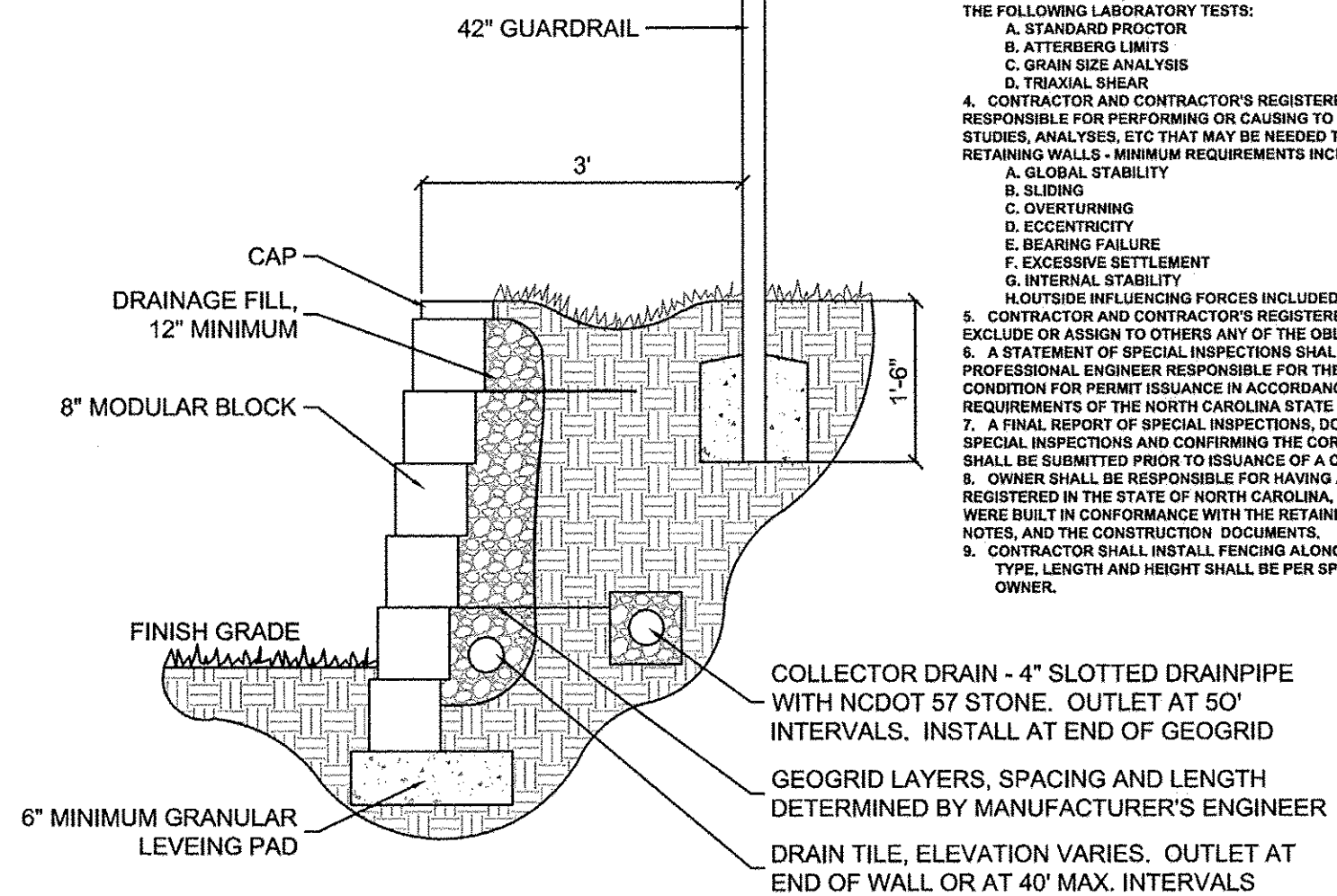
NOT TO SCALE

**CITY OF CHARLOTTE**  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

## STREET NAME SIGN

STD. NO. REV.  
50.05A 9

ESP ASSOCIATES, P.A. IS NOT RESPONSIBLE FOR STRUCTURAL DESIGN OF RETAINING WALLS. DETAIL IS CONCEPTUAL ONLY. ALL WALLS MUST BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER.



## RETAINING WALL DETAIL

- NOTES:**
- CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING ALL RETAINING WALLS DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF NORTH CAROLINA, WHO IS EXPERIENCED AND QUALIFIED IN SUCH WORK.
  - CONTRACTOR IS RESPONSIBLE FOR OBTAINING A BUILDING PERMIT FOR RETAINING WALL CONSTRUCTION PER STATE AND LOCAL BUILDING CODES.
  - CONTRACTOR AND CONTRACTOR'S REGISTERED PROFESSIONAL ENGINEER ARE RESPONSIBLE FOR VERIFYING THE DESIGN SOIL PARAMETERS INDICATED IN THE GEOTECHNICAL REPORT. THESE VALUES INCLUDE, BUT NOT LIMITED TO: FRICTION ANGLE (PHI), COHESION COEFFICIENT (C), SOIL UNIT WEIGHT, SOIL CLASSIFICATION, AND RECOMMENDED LATERAL EARTH PRESSURE COEFFICIENTS FOR REINFORCED ZONE SOIL, RETAINED ZONE SOIL, AND FOUNDATION ZONE SOIL COMPONENTS AS DETERMINED FROM THE FOLLOWING LABORATORY TESTS:
    - STANDARD PROCTOR
    - ATTERBERG LIMITS
    - GRAIN SIZE ANALYSIS
    - TRIAXIAL SHEAR
  - CONTRACTOR AND CONTRACTOR'S REGISTERED PROFESSIONAL ENGINEER ARE RESPONSIBLE FOR PERFORMING OR CAUSING TO BE PERFORMED ANY REQUIRED TESTS, STUDIES, ANALYSES, ETC. THAT MAY BE NEEDED TO SUPPORT THE DESIGN OF THE RETAINING WALLS. MINIMUM REQUIREMENTS INCLUDE THE FOLLOWING:
    - GLOBAL STABILITY
    - SLIDING
    - OVERTURNING
    - ECCENTRICITY
    - BEARING FAILURE
    - EXCESSIVE SETTLEMENT
    - INTERNAL STABILITY
  - ADDITIONAL UNLOADING FORCES INCLUDED IN DESIGN
  - CONTRACTOR AND CONTRACTOR'S REGISTERED PROFESSIONAL ENGINEER MAY NOT EXCLUDE OR ASSIGN TO OTHERS ANY OF THE OBLIGATIONS OR ITEMS NOTED ABOVE.
  - A STATEMENT OF SPECIAL INSPECTIONS SHALL BE SUBMITTED BY THE CONTRACTOR'S PROFESSIONAL ENGINEER RESPONSIBLE FOR THE RETAINING WALL DESIGN AS A CONDITION FOR PERMIT ISSUANCE IN ACCORDANCE WITH THE SPECIAL INSPECTION REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE.
  - A FINAL REPORT OF SPECIAL INSPECTIONS, DOCUMENTING THE COMPLETION OF ALL SPECIAL INSPECTIONS AND CONFIRMING THE CORRECTION OF ANY DISCREPANCIES, SHALL BE SUBMITTED PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY.
  - OWNER SHALL BE RESPONSIBLE FOR HAVING A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF NORTH CAROLINA, CERTIFY THAT THE RETAINING WALL(S) WERE BUILT IN CONFORMANCE WITH THE RETAINING WALL DRAWINGS, THESE SPECIFIC NOTES, AND THE CONSTRUCTION DOCUMENTS.
  - CONTRACTOR SHALL INSTALL FENCING ALONG THE TOP OF RETAINING WALLS. FENCE TYPE, LENGTH AND HEIGHT SHALL BE PER SPECIFICATIONS AS ESTABLISHED BY OWNER.

DEVELOPMENT DETAILS  
(SHEET 3 OF 4)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECH
DRAWN BY:	ECH
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	

C1.2



CITY OF CHARLOTTE  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

STD. NO.	REV.
50.04A	7

NOT TO SCALE



CITY OF CHARLOTTE  
LAND DEVELOPMENT STANDARDS  
INCLUDES CHARLOTTE ETJ

STD. NO.	REV.
50.04B	7

NOT TO SCALE

STANDARD SAFETY RAIL (STD. #50.04A) SHALL BE INSTALLED UNDER ANY OF THE FOLLOWING CIRCUMSTANCES IN BOTH NEW CONSTRUCTION AND IN RETROFITTING OR RECONSTRUCTION OF EXISTING ROADWAYS OR SITES:

1. WHEN THE CULVERT CROSSING DETAIL (STD. #10.36A-B) APPLIES.
2. IF THERE IS A TWO FOOT OR GREATER DROPOFF WITHIN FEET OF THE EDGE OF THE SIDEWALK (SEE DIAGRAM A).
3. IF THERE IS A 1-FOOT OR LARGER DROPOFF DIRECTLY ADJACENT TO THE SIDEWALK EDGE (SEE DIAGRAM B).
4. AT THE TOP OF ANY DROPOFF WITHIN THE PEDESTRIAN CLEAR ZONE OR WHERE PEDESTRIANS CAN REASONABLY BE EXPECTED IN THE VICINITY.
5. AT THE DIRECTION OF CDOT OR ENGINEERING & PROPERTY MANAGEMENT STAFF BASED ON FIELD CONDITIONS.

- DROPOFF -- A SLOPE OF 2:1 OR STEEPER. EXAMPLES INCLUDE HEADWALLS, RETAINING WALLS, AND CULVERTS.
- PEDESTRIAN CLEAR ZONE -- 10 FEET OF ANY COMBINATION OF SIDEWALK, SLOPE, AND SHOULDER SLOPED AT 6:1 OR FLATTER. SIDEWALK DOES NOT NEED TO BE PRESENT.
- SIDEWALK -- FOR PURPOSES OF THIS STANDARD, THE TERM "SIDEWALK" IS USED GENERICALLY AND SHALL MEAN ANY PATH OR SURFACE TO BE USED FOR BICYCLE AND/OR PEDESTRIAN TRANSPORTATION. EXAMPLES INCLUDE, BUT ARE NOT LIMITED TO, SIDEWALKS, BIKE PATHS, SHARED-USE PATHS, PEDESTRIAN PATHS, AND GREENWAYS.

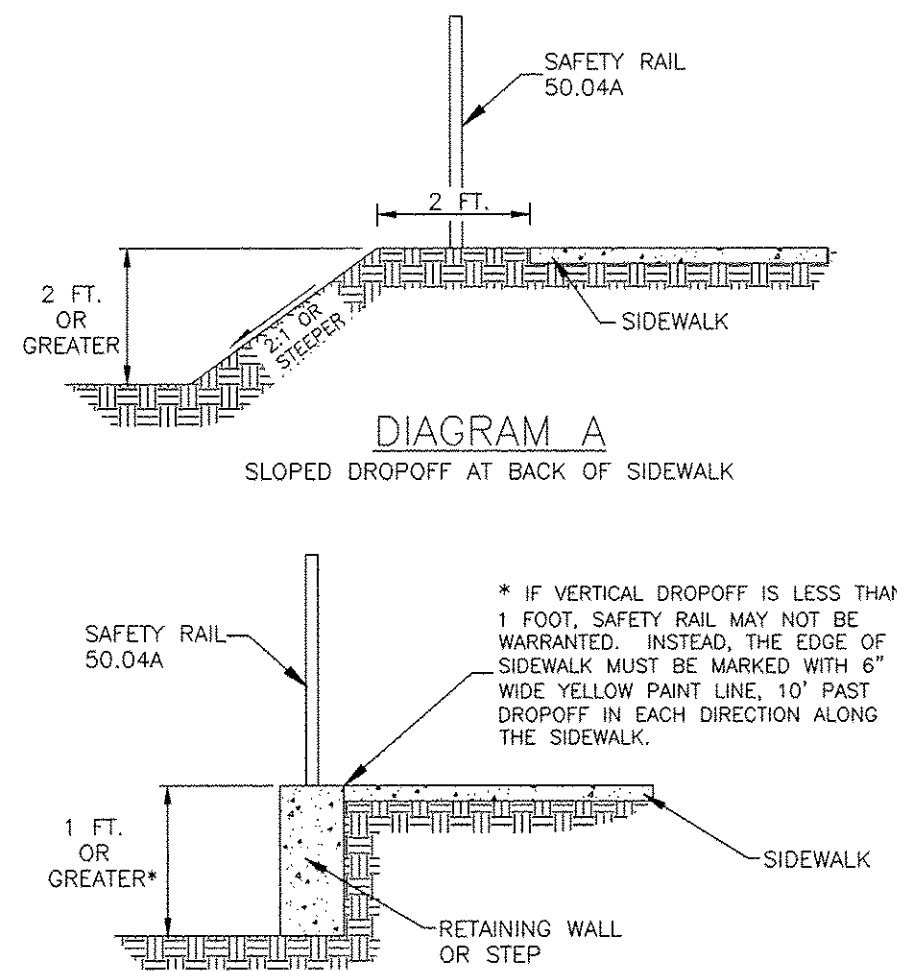


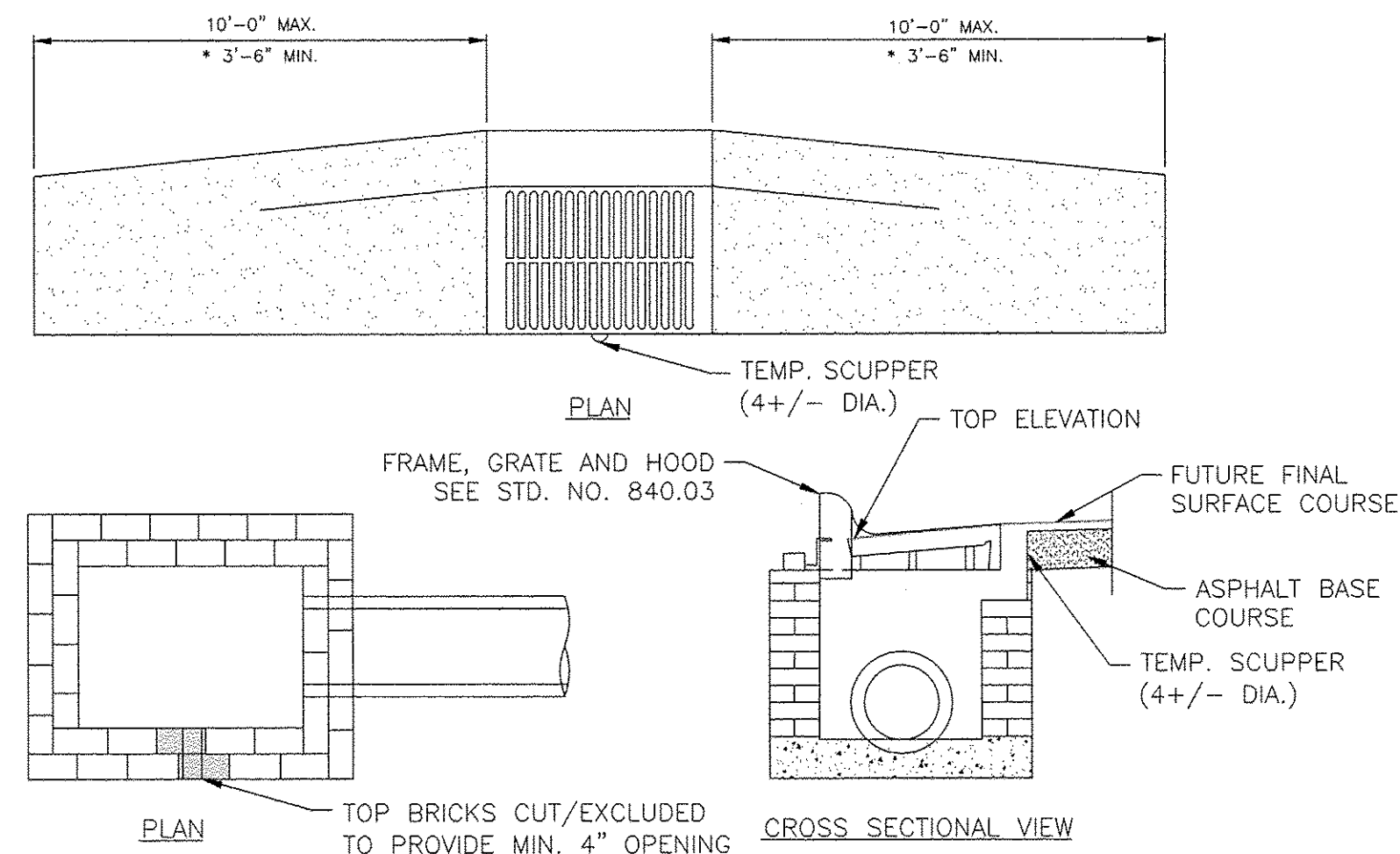
DIAGRAM A

SLOPED DROPOFF AT BACK OF SIDEWALK

DIAGRAM B

VERTICAL DROPOFF AT BACK OF SIDEWALK

NOT TO SCALE



TEMPORARY SCUPPER

NOT TO SCALE

**DEVELOPMENT DETAILS**  
**(SHEET 4 OF 4)**

## CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

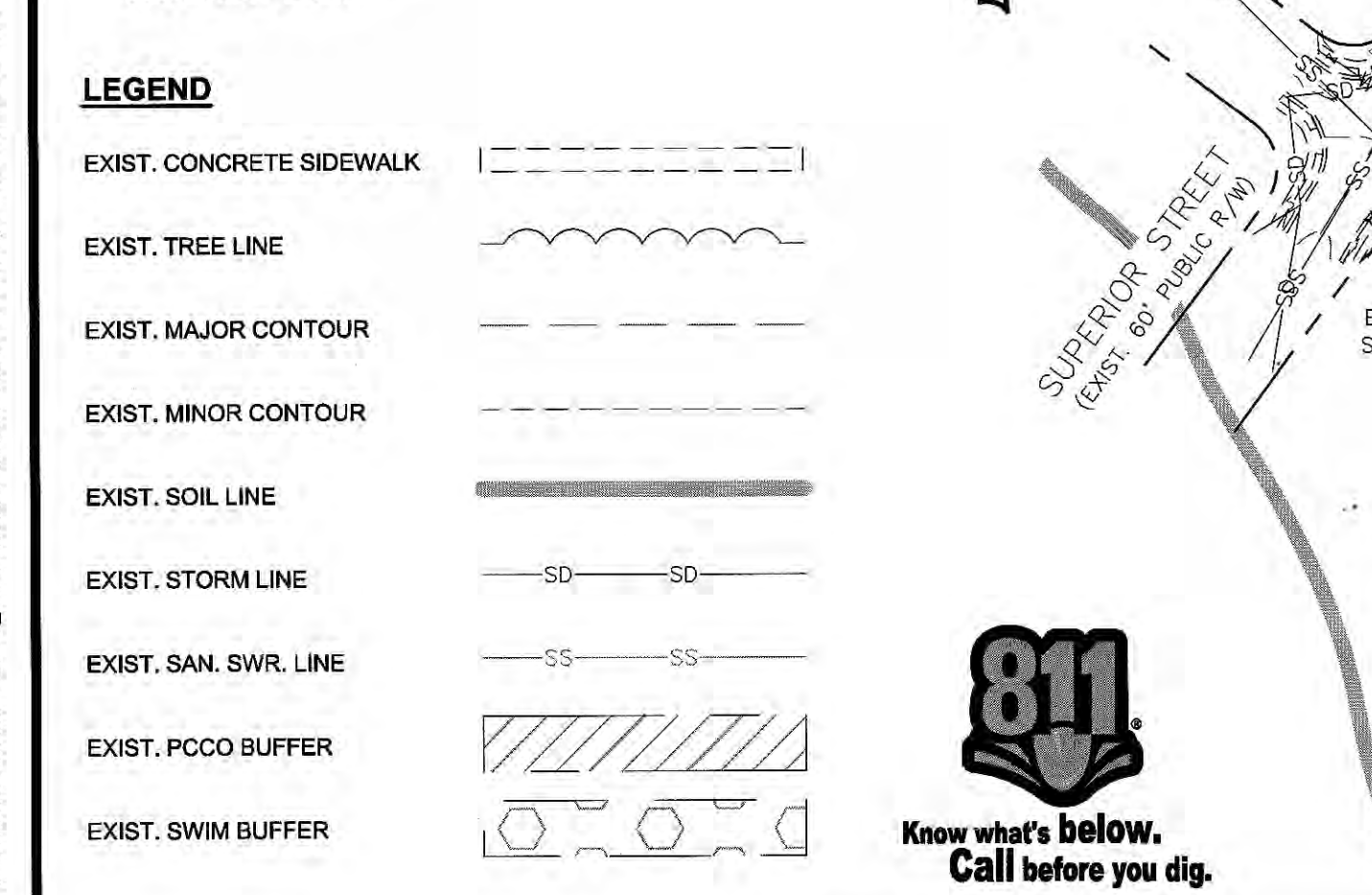
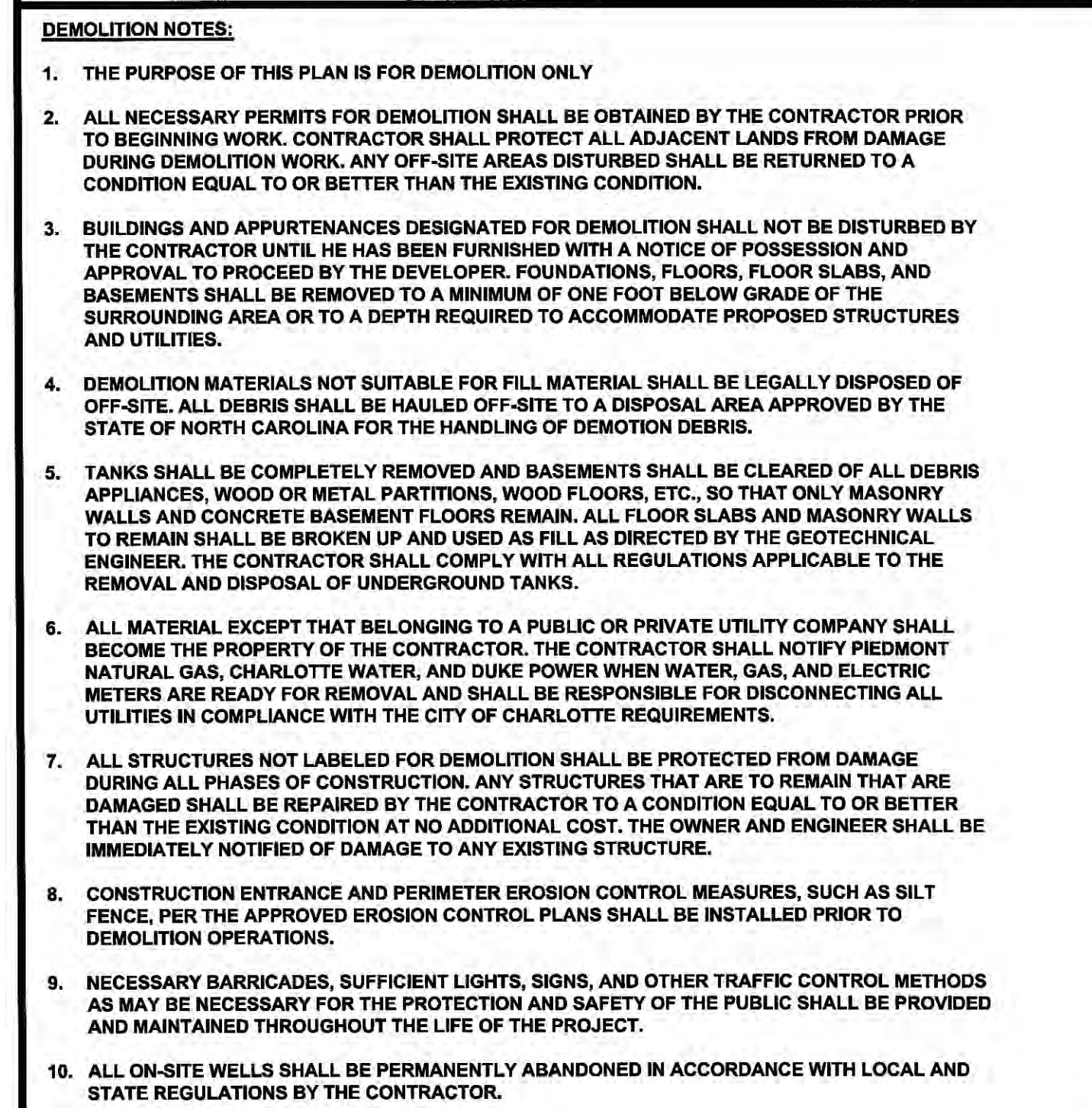
**CHARLOTTE, NC**

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECH
DRAWN BY:	ECH
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016

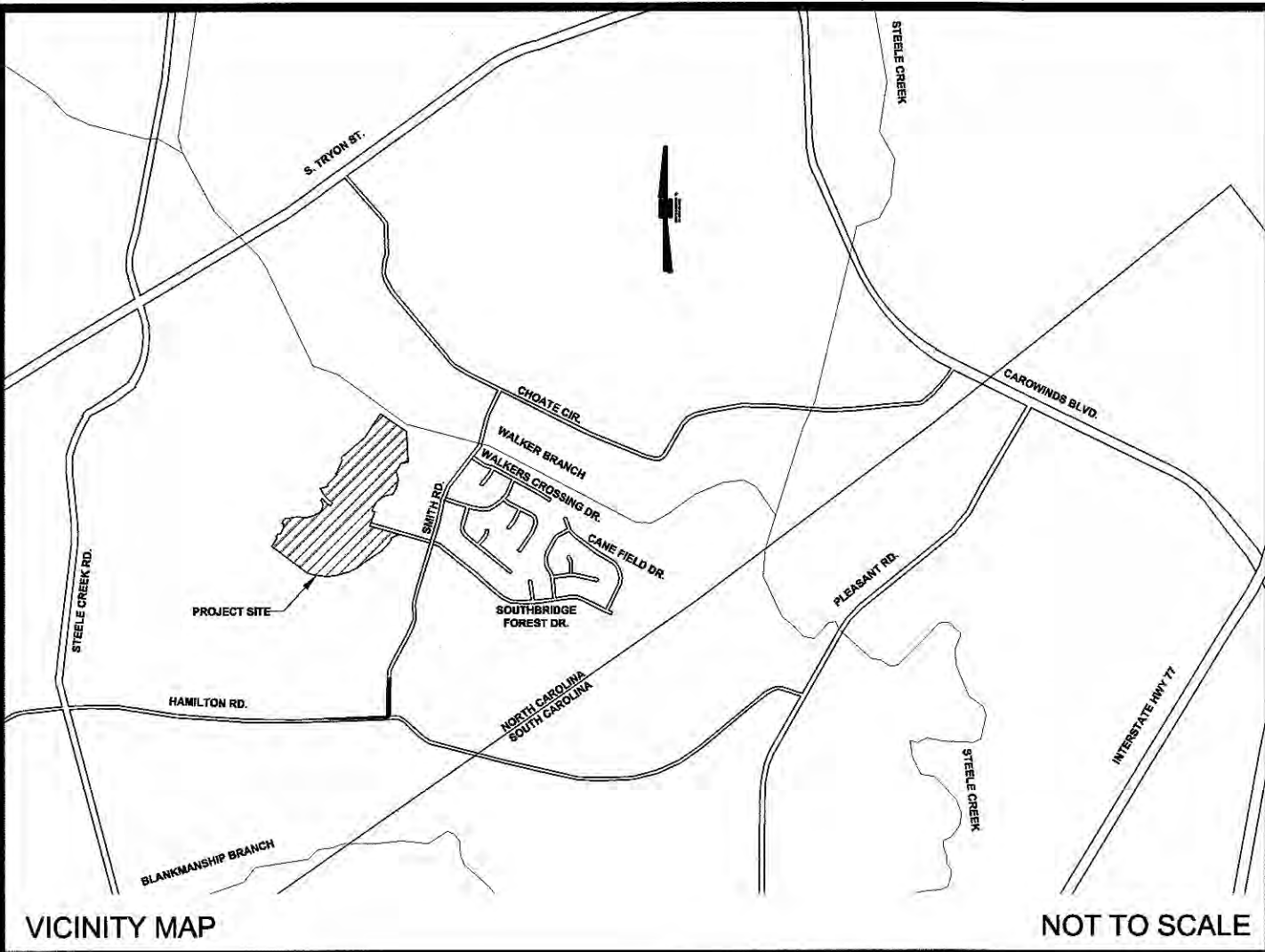
SHEET:

## C1.3



[illegible]





VICINITY MAP NOT TO SCALE

**APPROVED**  
By Kelly Robertson at 2:08 pm, Sep 23, 2016

**OPEN SPACE:**  
REQUIRED MINIMUM OPEN SPACE: 10%  
TOTAL SITE AREA = 59.50  
OPEN SPACE REQUIRED = 59.50 X 10% = 5.95 AC.  
OPEN SPACE PROVIDED = 23.73 AC.

**TREE SAVE:**  
REQUIRED MINIMUM TREE SAVE AREA: 25%  
TOTAL SITE AREA = 59.50  
TREE SAVE REQUIRED = 59.50 X 25% = 14.88 AC.  
TREE SAVE PROVIDED = 14.88 AC.

**NATURAL AREA:**  
REQUIRED MINIMUM NATURAL AREA: 17.5%  
TOTAL SITE AREA = 59.50  
NATURAL AREA REQUIRED = 59.50 X 17.5% = 10.41 AC.  
NATURAL AREA PROVIDED = 14.88 AC.

**DEVELOPMENT INFORMATION:**

**NAME:** CHATEAU PHASE 3

**USE:** SINGLE FAMILY RESIDENTIAL

**ZONING:** R-3  
(R-4 CLUSTER STANDARDS PER TREE ORDINANCE INCENTIVES)

**PROPERTY OWNER:** LENNAR CAROLINAS, LLC  
DB 27950, PG. 127 & PG. 142  
TAX PARCEL ID#: 219-32-392

**DEVELOPER:** LENNAR CAROLINAS, LLC  
11230 CARMEL COMMONS BOULEVARD  
CHARLOTTE, NC 28226

**ENGINEER:** ESP ASSOCIATES, P.A.  
JOHN SCOTT CHILDERS, PE  
P.O. BOX 7030  
CHARLOTTE, NC 28241

**SITE DATA:**

PHASE 3 AREA: 59.50  
PHASE 3 MAX. DENSITY: 3 DU/AC.  
PHASE 3 MAX. ALLOWABLE LOTS: 176  
PHASE 3 DENSITY: 2.34 DU/AC.  
PHASE 3 PROPOSED LOTS: 139

**PHASE 3:**

PROP. AREA IN LOTS: 26.08 AC.  
PROP. AREA IN R/W: 9.56 AC.  
PROP. COMMON OPEN SPACE: 23.73 AC.  
LINEAR FEET OF STREET: 7,630 FT.

**SETBACKS:**

MIN. FRONT YARD: 17 FT.  
MIN. FRONT OF GARAGE: 20 FT.  
MIN. SIDE YARD: 5 FT.  
MIN. SIDE YARD AT CORNER: 10 FT.  
MIN. REAR YARD: 30 FT.  
\*SETBACKS MEASURED FROM R/W UNLESS NOTED OTHERWISE

**LOTS:**

MIN. LOT WIDTH REQUIRED: 50 FT.  
MIN. LOT WIDTH PROVIDED: 50 FT.  
MIN. LOT AREA PROVIDED: 6,000 SF  
AVG. LOT AREA PROVIDED: 8,215 SF  
PROPOSED LOTS < 60': 90 (64.7%)  
PROPOSED LOTS ≥ 60': 49 (35.3%)

- NOTES:**
- BOUNDARY SURVEY INFORMATION:
    - BOUNDARY SURVEY INFORMATION BY ESP ASSOCIATES, P.A. TITLED "BOUNDARY SURVEY AND MINOR SUBDIVISION PLAT OF THE ELISHA PROPERTY" DATED 09/29/2014.
  - TOPOGRAPHIC SURVEY INFORMATION:
    - TOPOGRAPHIC SURVEY INFORMATION FROM FIELD SURVEY BY ESP ASSOCIATES, P.A. TITLED "TOPOGRAPHIC SURVEY OF TAX PARCELS 21932392, 21904113, 21904102, 21926112" DATED 07/09/2014.
    - PROJECT BENCHMARK:  
NCGS MONUMENT "M 090"  
NC GRID COORDINATES:  
NAD 83(2011)  
N=491,710.76  
E=1,409,457.77  
ELEVATION=645.67 (NAVD 88)
  - WETLAND AND STREAM INFORMATION:  
WETLAND DETERMINATION BY ENVIRONMENTAL PLANNING CONSULTANTS TITLED "WETLANDS SURVEY OF TAX PARCELS 21932392, 21904113, 21904102, 21926112" DATED 08/23/2014
  - NO TREE EQUAL TO OR LARGER THAN TWO (2) INCHES CALIPER MAY BE TRIMMED, PRUNED, OR REMOVED FROM THE TREE SAVE AREA WITHOUT A PERMIT. NO GRADING, DEMOLITION, TRENCHING, OR OTHER ACTIVITY WHICH MAY ADVERSELY AFFECT TREES IN THIS ZONE MAY PROCESS PRIOR TO APPROVAL AND ISSUANCE OF NECESSARY PERMITS BY THE CITY.
  - S.W.I.M. BUFFER UPLAND ZONE DEPICTED ON PLANS IS GREATER THAN OR EQUAL TO 50% OF THE AREA BETWEEN THE 100' S.W.I.M. BUFFER AND THE FEMA FRINGE LINE

**LEGEND**

PHASE LINE

PROP. UNDISTURBED NATURAL AREA & TREE SAVE AREA

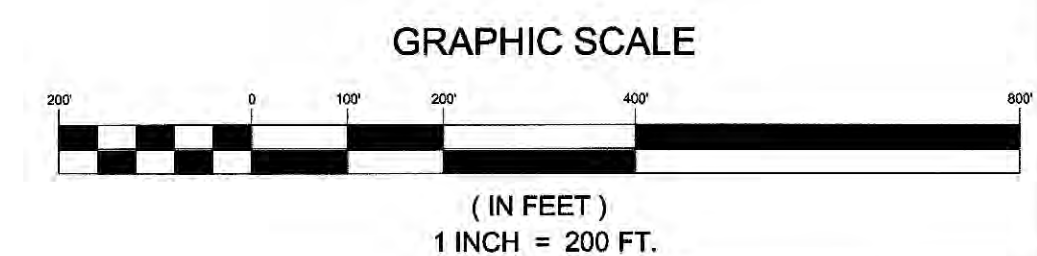
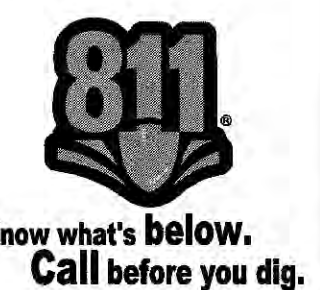
PROP. COMMON OPEN SPACE

EXIST. WETLANDS

WETLAND BUFFER

EXIST. PCCO BUFFER

EXIST. SWIM BUFFER



Chateau - Roadway Improvement Phasing Schedule				
Phase	Phase Build Year	Lots in Phase	Total Lots	Description of Improvements*
1		100	100	• Widen the Smith Road cross-section between Hamilton Road and Choate Circle • Restripe the northbound portion of Smith Road at Choate Circle
2	2016	105	205	• Turn lane improvements at Smith Road and Choate Circle • Turn lane improvements at Steele Creek Road and Hamilton Road • Turn lane improvements at Carowinds Boulevard and Choate Circle
3	2019	450	655	• Construct roundabout at Smith Road and Hamilton Road • Install traffic signal at Smith Road and Choate Circle • Turn lane improvement along southbound South Tryon Street onto Choate Circle
4	2021	160	815	• Widen Hamilton Rd to 3-lane section between Cumberland Dr and Smith Boyd Rd • Bike lane along Hamilton Road • Restripe roadway at Hamilton Road and proposed Site Drive 1

Note: The above schedule is preliminary. Refer to the approved Traffic Impact Study by Ramey Kemp & Associates, Inc. for the current phasing schedule.

\*Improvements to be completed prior to beginning the next phase

V:\CH13.430 - Chateau Phase 3\CH13.430-SITE\OVERALL.dwg, C3.0, maby

ESP Associates, P.A.  
P.O. Box 7030  
Charlotte, NC 28241  
704-934-9448 (NC)  
704-934-9448 (SC)  
803-802-2440 (SC)  
www.espassociates.com

**ESP**

NORTH CAROLINA  
LICENSE NO.:  
C-0587

ESP ASSOCIATES, P.A.  
JOHN SCOTT CHILDERS  
ENGINEER  
SEAL  
033416

BY	ECB
REVISION	REVISED PER CITY OF CHARLOTTE COMMENTS
DATE	08/24/2016
NO.	1

OVERALL PHASE SITE PLAN

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

PROJECT INFORMATION

PROJECT MANAGER: APG

DESIGNED BY: ECB

DRAWN BY: ECB

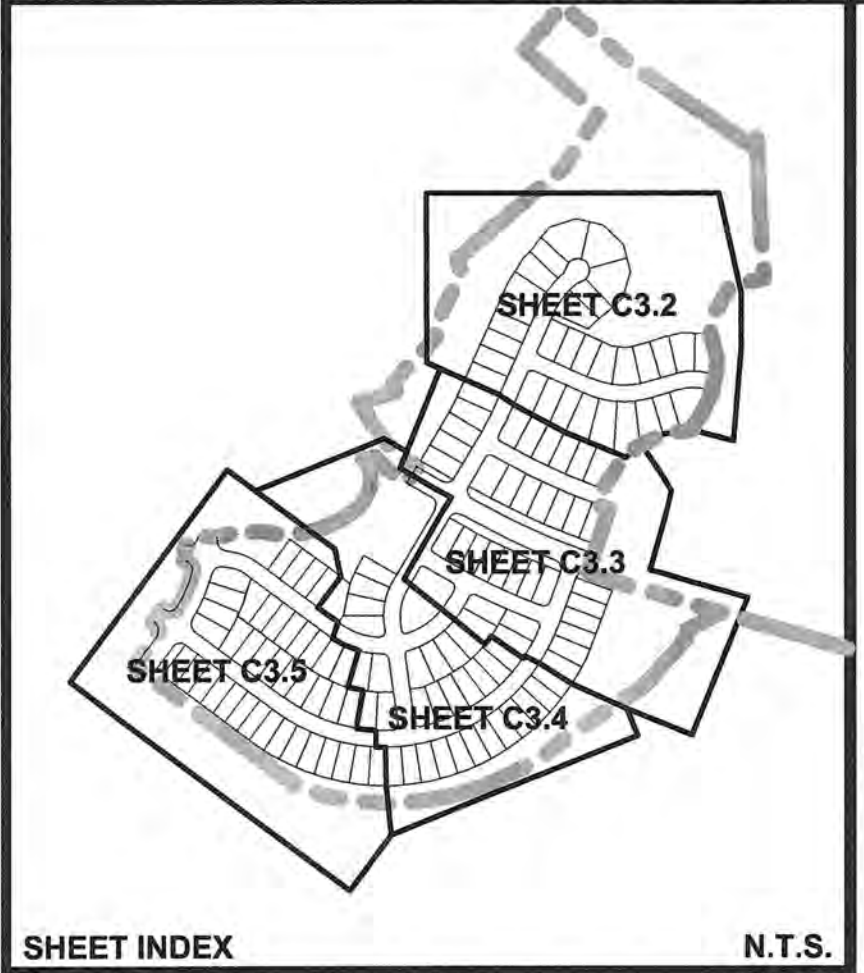
PROJECT NUMBER: CN13.430

ORIGINAL DATE: 03/11/2016

SHEET:

**C3.0**





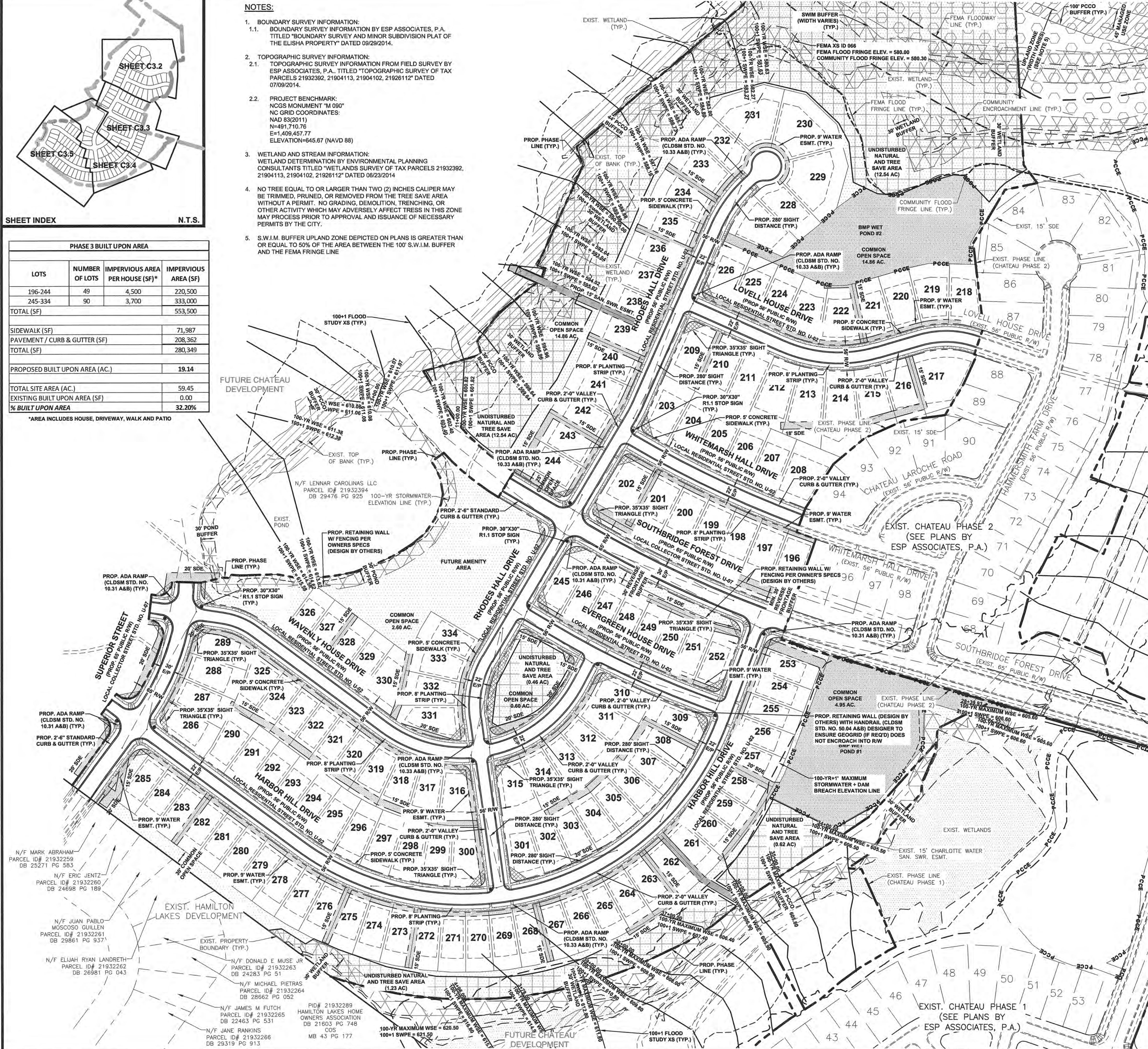
SHEET INDEX N.T.S.

PHASE 3 BUILT UPON AREA			
LOTS	NUMBER OF LOTS	IMPERVIOUS AREA PER HOUSE (SF)*	IMPERVIOUS AREA (SF)
196-244	49	4,500	220,500
245-334	90	3,700	333,000
TOTAL (SF)			553,500
SIDEWALK (SF)			
PAVEMENT / CURB & GUTTER (SF)			
TOTAL (SF)			
PROPOSED BUILT UPON AREA (AC.)			
TOTAL SITE AREA (AC.)			
EXISTING BUILT UPON AREA (SF)			
% BUILT UPON AREA			

\*AREA INCLUDES HOUSE, DRIVEWAY, WALK AND PATIO

#### NOTES:

- BOUNDARY SURVEY INFORMATION:
  - BOUNDARY SURVEY INFORMATION BY ESP ASSOCIATES, P.A. TITLED "BOUNDARY SURVEY AND MINOR SUBDIVISION PLAT OF THE ELISHA PROPERTY" DATED 08/29/2014.
- TOPOGRAPHIC SURVEY INFORMATION:
  - TOPOGRAPHIC SURVEY INFORMATION FROM FIELD SURVEY BY ESP ASSOCIATES, P.A. TITLED "TOPOGRAPHIC SURVEY OF TAX PARCELS 21932392, 21904113, 21904102, 21926112" DATED 07/09/2014.
  - PROJECT BENCHMARK:  
NCGS MONUMENT "M 090"  
NC GRID COORDINATES:  
NAD 83(2011)  
N=491,710.76  
E=1,409,457.77  
ELEVATION=645.67 (NAVD 88)
- WETLAND AND STREAM INFORMATION:  
WETLAND DETERMINATION BY ENVIRONMENTAL PLANNING CONSULTANTS TITLED "WETLANDS SURVEY OF TAX PARCELS 21932392, 21904113, 21904102, 21926112" DATED 06/23/2014
- NO TREE EQUAL TO OR LARGER THAN TWO (2) INCHES CALIPER MAY BE TRIMMED, PRUNED, OR REMOVED FROM THE TREE SAVE AREA WITHOUT A PERMIT. NO GRADING, DEMOLITION, TRENCHING, OR OTHER ACTIVITY WHICH MAY ADVERSELY AFFECT TREES IN THIS ZONE MAY PROCESS PRIOR TO APPROVAL AND ISSUANCE OF NECESSARY PERMITS BY THE CITY.
- S.W.I.M. BUFFER UPLAND ZONE DEPICTED ON PLANS IS GREATER THAN OR EQUAL TO 50% OF THE AREA BETWEEN THE 100' S.W.I.M. BUFFER AND THE FEMA FRINGE LINE



#### DEVELOPMENT INFORMATION:

NAME: CHATEAU PHASE 3  
USE: SINGLE FAMILY RESIDENTIAL  
ZONING: R-3  
(R-4 CLUSTER STANDARDS PER TREE ORDINANCE INCENTIVES)  
PROPERTY OWNER: LENNAR CAROLINAS, LLC  
DB 27950, PG. 127 & PG. 142  
TAX PARCEL ID#: 219-32-392  
DEVELOPER: LENNAR CAROLINAS, LLC  
11230 CARMEL COMMONS BOULEVARD  
CHARLOTTE, NC 28226  
ENGINEER: ESP ASSOCIATES, P.A.  
JOHN SCOTT CHILDERS, PE  
P.O. BOX 7030  
CHARLOTTE, NC 28241

#### SITE DATA:

PHASE 3 AREA: 59.50  
PHASE 3 MAX. DENSITY: 3 DU/AC.  
PHASE 3 MAX. ALLOWABLE LOTS: 176  
PHASE 3 DENSITY: 2.34 DU/AC.  
PHASE 3 PROPOSED LOTS: 139

#### PHASE 3:

PROP. AREA IN LOTS: 26.08 AC.  
PROP. AREA IN RW: 9.56 AC.  
PROP. COMMON OPEN SPACE: 23.73 AC.  
LINEAR FEET OF STREET: 7,630 FT.

#### SETBACKS:

MIN. FRONT YARD: 17 FT.  
MIN. FRONT OF GARAGE: 20 FT.  
MIN. SIDE YARD: 5 FT.  
MIN. SIDE YARD AT CORNER: 10 FT.  
MIN. REAR YARD: 30 FT.  
\*SETBACKS MEASURED FROM RW UNLESS NOTED OTHERWISE

#### LOTS:

MIN. LOT WIDTH REQUIRED: 50 FT.  
MIN. LOT WIDTH PROVIDED: 50 FT.  
MIN. LOT AREA PROVIDED: 6,000 SF  
AVG. LOT AREA PROVIDED: 8,215 SF  
PROPOSED LOTS < 60': 90 (64.7%)  
PROPOSED LOTS ≥ 60': 49 (35.3%)

#### OPEN SPACE:

REQUIRED MINIMUM OPEN SPACE: 10%  
TOTAL SITE AREA = 59.50  
OPEN SPACE REQUIRED = 59.50 X 10% = 5.95 AC.  
OPEN SPACE PROVIDED = 23.73 AC.

#### TREE SAVE:

REQUIRED MINIMUM TREE SAVE AREA: 25%  
TOTAL SITE AREA = 59.50  
TREE SAVE REQUIRED = 59.50 X 25% = 14.88 AC.  
TREE SAVE PROVIDED = 14.88 AC.

#### NATURAL AREA:

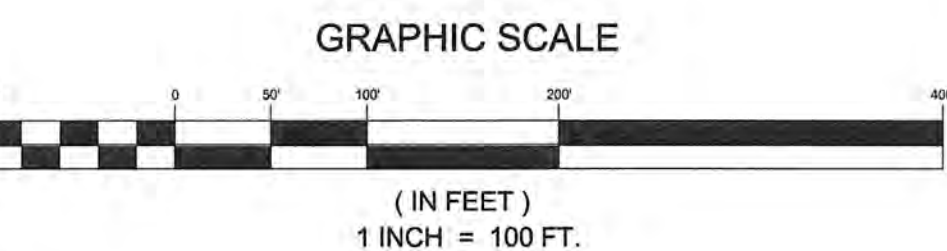
REQUIRED MINIMUM NATURAL AREA: 17.5%  
TOTAL SITE AREA = 59.50  
NATURAL AREA REQUIRED = 59.50 X 17.5% = 10.41 AC.  
NATURAL AREA PROVIDED = 14.88 AC.

#### APPROVED

By Kelly Robertson at 2:09 pm, Sep 23, 2016

#### LEGEND

PROP. CONCRETE SIDEWALK	
PROP. STORM DRAINAGE EASEMENT (SDE)	
PROP. SANITARY SEWER EASEMENT	
PROP. UNDISTURBED NATURAL AREAS AND TREE SAVE AREAS	
PROP. SIGHT TRIANGLE	
PROP. COMMON OPEN SPACE	
EXIST. CONCRETE SIDEWALK	
EXIST. POCO BUFFER	
EXIST. SWIM BUFFER	
PROP. WATER MAIN EASEMENT	



ESP Associates, P.A.  
P.O. Box 7030  
Charlotte, NC 28241  
3475 Lakewood Blvd  
Fort Mill, SC 29708  
704-583-4646 (NC)  
803-802-2440 (SC)  
www.espassociates.com

**ESP**

NORTH CAROLINA  
LICENSE NO.:  
C-0587  
ESP ASSOCIATES, P.A.  
JOHN SCOTT CHILDERS, PE  
P.O. BOX 7030  
CHARLOTTE, NC 28241

BY: ECB

NO.	DATE	REVISION
1	08/22/2016	REVISED PER CITY OF CHARLOTTE COMMENTS

OVERALL SITE PLAN

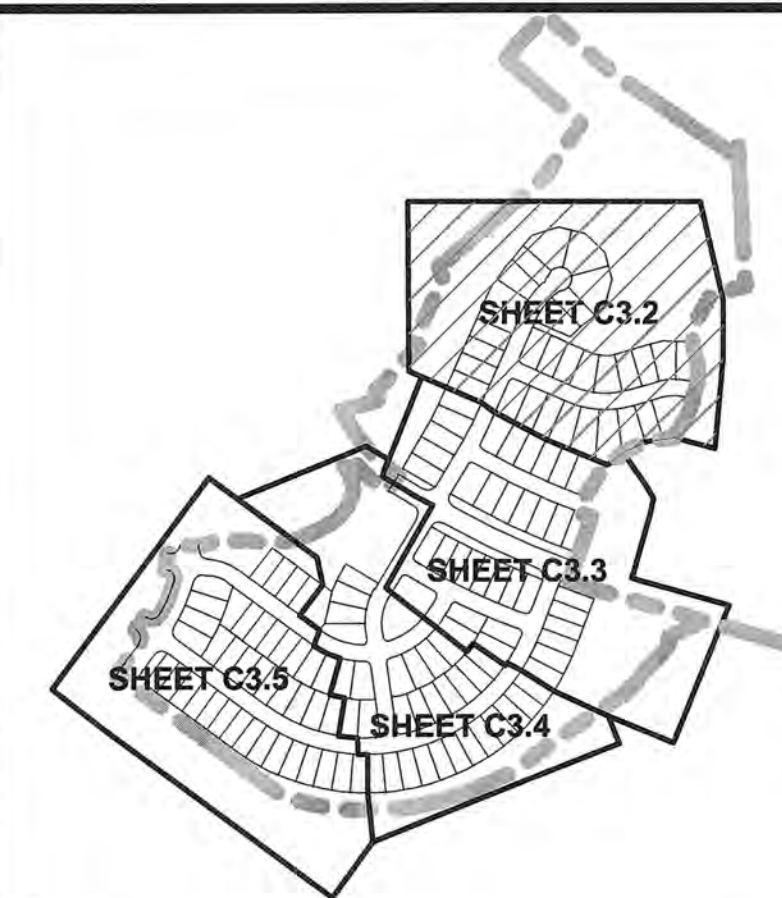
CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C3.1





LINE	LENGTH	BEARING
L1	114.79'	N 35°39'57" E
L2	135.33'	N 36°36'57" E
L3	1520.10'	N 53°23'03" W
L4	244.29'	S 20°29'32" W
L5	155.77'	N 81°26'06" W
L6	351.68'	N 53°23'03" W
L7	74.13'	S 27°38'25" W
L8	169.32'	N 7°32'56" W
L9	209.47'	N 7°55'35" W
L10	608.47'	N 30°39'04" E
L11	414.21'	N 23°52'51" E
L12	80.32'	N 47°55'17" E
L13	87.12'	N 99°20'56" W
L14	64.44'	N 69°30'28" W
L15	177.88'	N 59°20'56" W
L16	23.07'	N 59°20'56" W
L17	236.06'	N 66°07'09" W
L18	97.38'	S 73°33'00" W
L19	168.07'	N 71°12'43" W

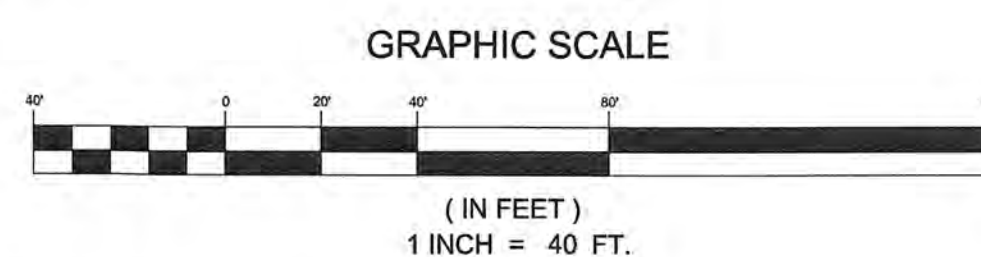
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	500.00'	8.29'	4.15'	8.29'	N 36°08'27" E	0°57'00"
C2	525.00'	394.66'	207.18'	385.44'	N 15°04'48" E	43°04'17"
C3	600.00'	1111.32'	796.02'	959.14'	S 73°33'14" W	106°07'25"
C4	150.00'	73.44'	37.47'	72.71'	N 67°24'34" W	28°03'03"
C5	284.00'	490.60'	332.38'	431.83'	S 77°07'41" W	98°58'32"
C6	2000.00'	13.16'	6.59'	13.16'	N 7°44'15" W	0°22'39"
C7	200.00'	134.66'	69.99'	132.13'	N 11°21'44" E	38°34'39"
C8	350.00'	41.36'	20.70'	41.33'	N 27°15'57" E	6°46'13"
C9	300.00'	125.88'	63.88'	124.96'	N 35°54'04" E	24°02'26"
C10	1995.50'	353.81'	177.37'	353.35'	N 64°25'42" W	10°09'32"
C11	2500.00'	638.57'	321.03'	636.83'	N 66°39'59" W	14°38'06"
C12	2275.00'	559.27'	281.05'	557.86'	N 66°23'29" W	14°05'06"
C13	300.00'	211.17'	110.17'	206.84'	N 66°17'05" W	40°19'51"
C14	200.00'	123.00'	63.52'	121.07'	N 68°49'52" W	35°14'17"

#### LEGEND

PROP. STOP SIGN	
PROP. CONCRETE SIDEWALK	
PROP. STORM DRAINAGE EASEMENT (SDE)	
PROP. SAN. SWR. EASEMENT	
PROP. SIGHT TRIANGLE	
PROP. COMMON OPEN SPACE	
PROP. UNDISTURBED NATURAL AND TREE SAVE AREAS	
PROP. POST CONSTRUCTION CONTROL EASEMENT	
EXIST. POCO BUFFER	
EXIST. SWIM BUFFER	
EXIST. WETLANDS	
EXIST. WETLAND BUFFER	
EXIST. CONCRETE SIDEWALK	
PROP. WATER MAIN EASEMENT	

#### NOTES:

- SWPE = STORMWATER PROTECTION ELEVATION
- FPE = FLOOD PROTECTION ELEVATION



ESP ASSOCIATES, P.A.  
P.O. Box 1000  
Charlotte, NC 28241  
3475 Alameda Blvd.  
Fort Mill, SC 29708  
704-583-1946 (NC)  
803-582-2440 (SC)  
www.espace.com

**ESP**

NORTH CAROLINA  
LICENSE NO.:  
C-0587

SEAL  
033416  
ENGINEER  
JAMES SCOTT CHILDERS  
8-24-16

BY: ECB

REVISION

NO. DATE

1 08/24/2016

REVISED PER CITY OF CHARLOTTE COMMENTS

SITE PLAN (SHEET 1 OF 4)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION

PROJECT MANAGER: APG

DESIGNED BY: ECB

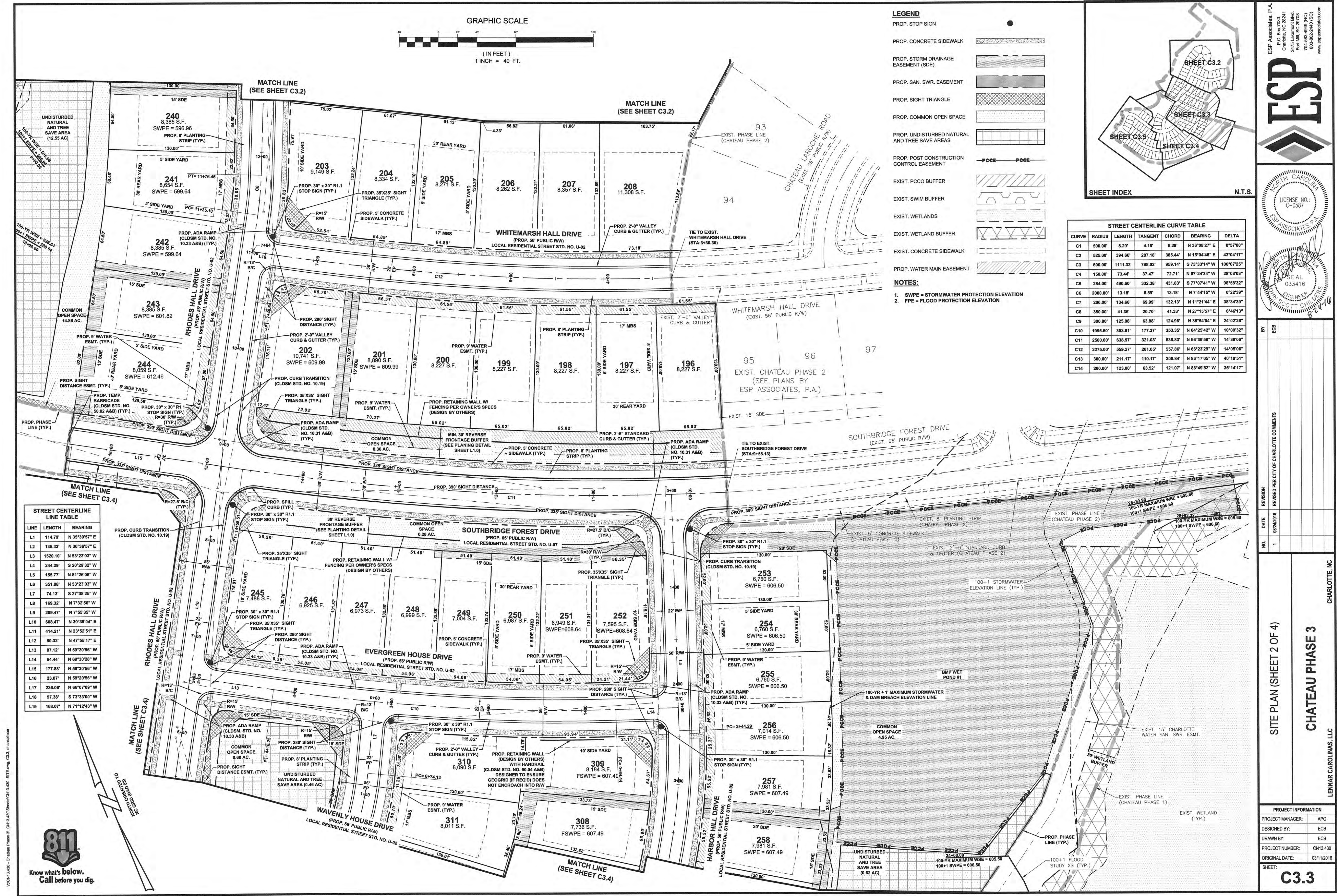
DRAWN BY: ECB

PROJECT NUMBER: CN13.430

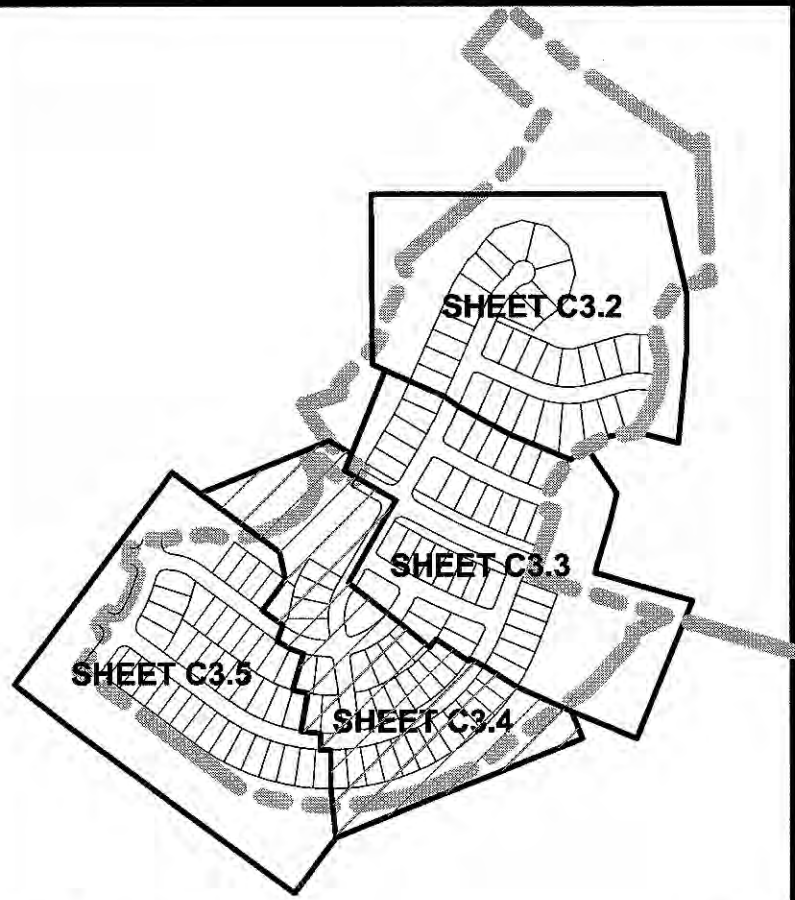
ORIGINAL DATE: 03/11/2016

SHEET: **C3.2**





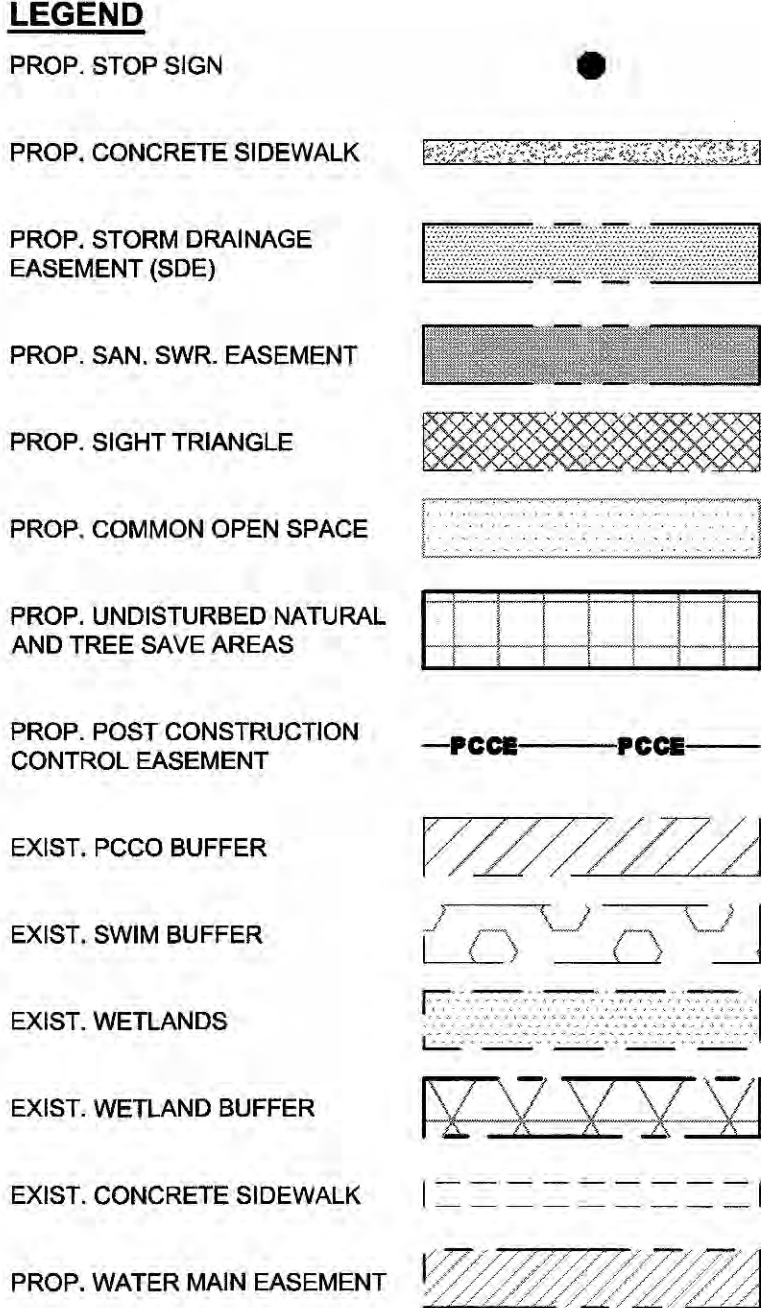




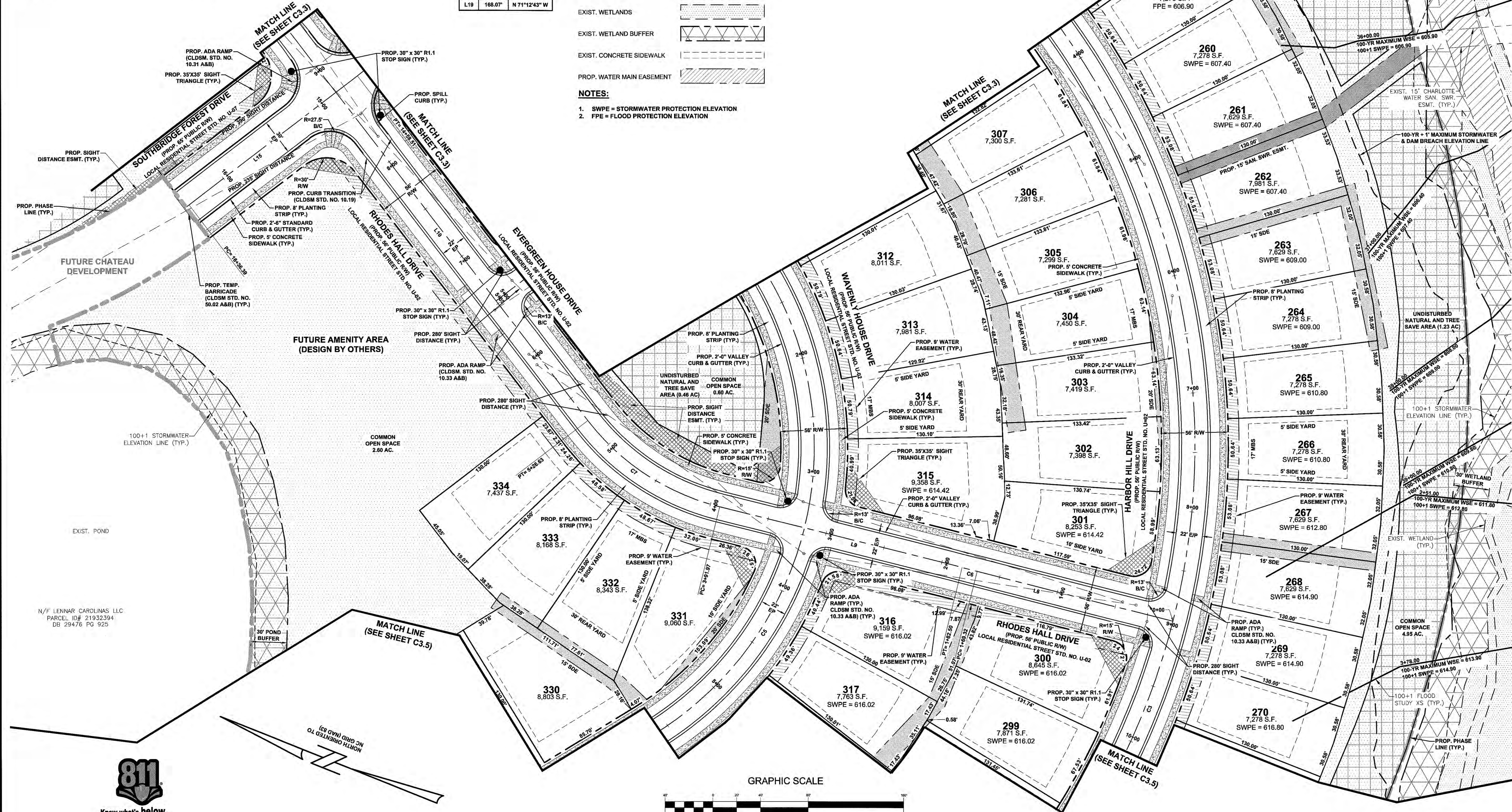
SHEET INDEX N.T.S.

STREET CENTERLINE CURVE TABLE					
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING
C1	500.00'	8.29'	4.15'	8.29'	N 36°06'27" E
C2	525.00'	394.66'	207.18'	385.44'	N 15°04'48" E
C3	600.00'	1111.32'	798.02'	959.14'	S 73°33'14" W
C4	150.00'	73.44'	37.47'	72.71'	N 67°24'34" W
C5	284.00'	499.60'	332.38'	431.83'	S 77°07'41" W
C6	2000.00'	13.18'	6.59'	13.18'	N 7°44'15" W
C7	200.00'	134.66'	69.99'	132.13'	N 11°21'44" E
C8	350.00'	41.36'	20.70'	41.33'	N 27°15'57" E
C9	300.00'	125.88'	63.88'	124.96'	N 35°54'04" E
C10	1985.50'	353.81'	177.37'	353.35'	N 64°25'42" W
C11	2500.00'	638.57'	321.03'	636.83'	N 66°39'59" W
C12	2275.00'	559.27'	281.05'	557.86'	N 66°23'29" W
C13	300.00'	211.17'	110.17'	206.84'	N 86°17'05" W
C14	200.00'	123.00'	63.52'	121.07'	N 88°49'52" W

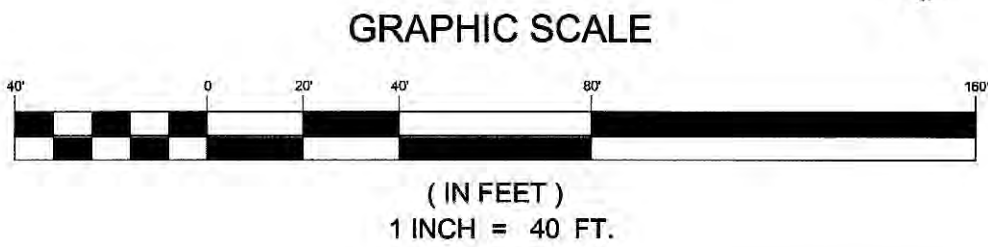
STREET CENTERLINE LINE TABLE		
LINE	LENGTH	BEARING
L1	114.79'	N 35°39'57" E
L2	135.33'	N 36°36'57" E
L3	1520.10'	N 53°23'03" W
L4	244.29'	S 20°29'32" W
L5	155.77'	N 81°26'06" W
L6	351.08'	N 53°23'03" W
L7	74.13'	S 27°38'25" W
L8	169.32'	N 7°32'56" W
L9	209.47'	N 7°55'35" W
L10	608.47'	N 30°39'04" E
L11	414.21'	N 23°52'51" E
L12	80.32'	N 47°55'17" E
L13	87.12'	N 59°20'56" W
L14	64.44'	N 69°38'28" W
L15	177.88'	N 59°20'56" W
L16	23.07'	N 59°20'56" W
L17	236.06'	N 66°07'09" W
L18	97.38'	S 73°33'00" W
L19	168.07'	N 71°12'43" W



NOTES:  
1. SWPE = STORMWATER PROTECTION ELEVATION  
2. FPE = FLOOD PROTECTION ELEVATION



N/F LENNAR CAROLINAS LLC  
PARCEL ID# 21932394  
DB 29476 PG 925



ESP Associates, P.A.  
P.O. Box 7030  
Charlotte, NC 28241  
704-583-9446 (NC)  
803-902-2442 (SC)  
www.espaceassociates.com

**ESP**

NORTH CAROLINA  
LICENSE NO.: C-0587  
ESP ASSOCIATES, P.A.  
Professional Engineer  
SEAL  
033416  
SCOTT CHILDS

BY	ECB
REVISION	
DATE	08/24/2016
NO.	1
REVISED PER CITY OF CHARLOTTE COMMENTS	

SITE PLAN (SHEET 3 OF 4)

**CHATEAU PHASE 3**

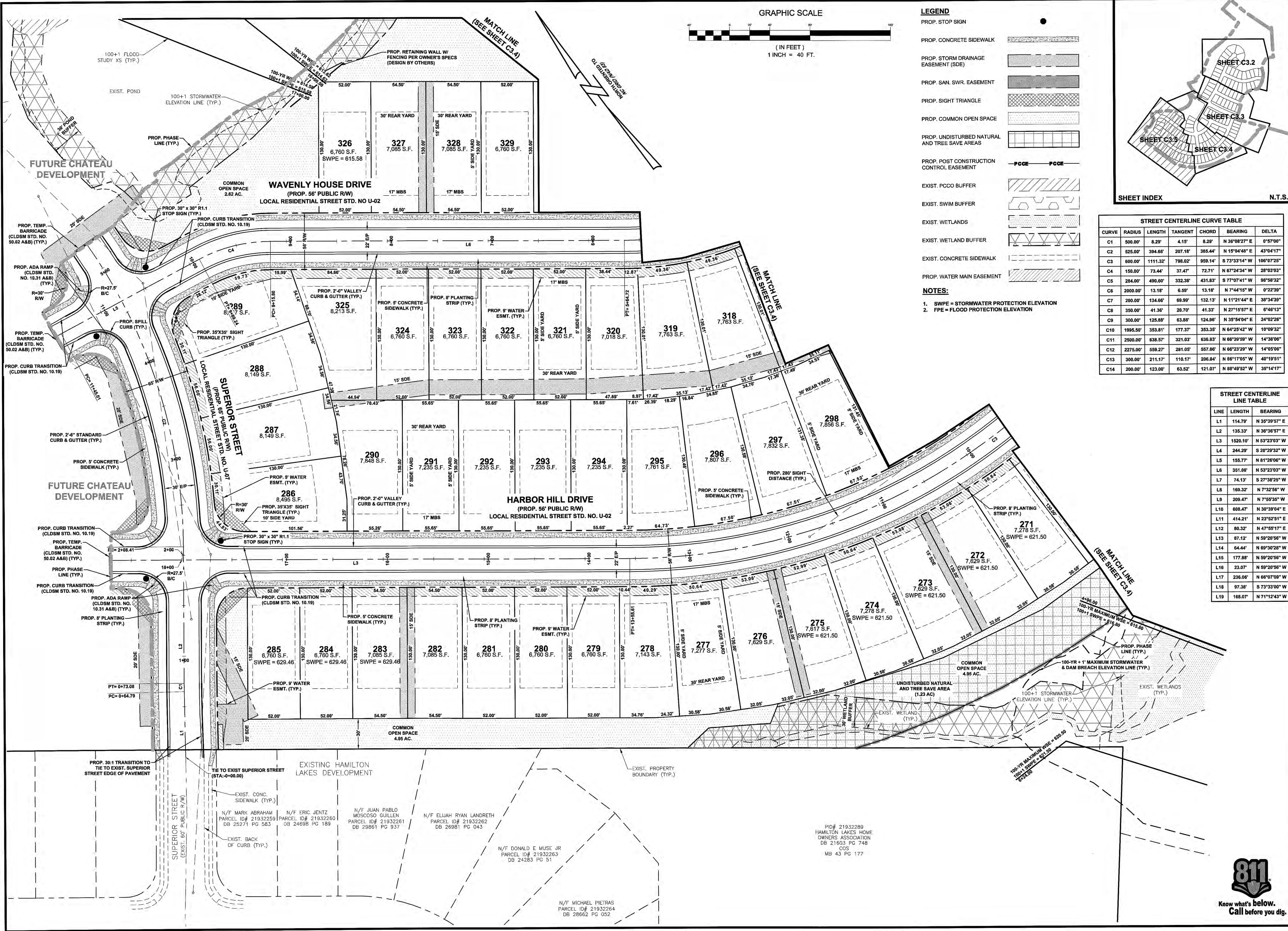
LENNAR CAROLINAS LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	<b>C3.4</b>



V:\CH13.430 - Chateau Phase 3\CH13.430\Drawings\CH13.430 - SITE.dwg, C3.5, mxd



ESP Associates, P.A.  
P.O. Box 2020  
Charlotte, NC 28241  
3475 Lenoir Blvd  
Fort Mill, SC 29708  
704-583-4946 (NC)  
803-882-2440 (SC)  
www.espace.com

**ESP**

NORTH CAROLINA  
LICENSE NO.: C-0587  
6/24/16

BY: ECB  
DATE: 08/24/2016  
REVISION: 1  
NO.: 1

REVIEWED PER CITY OF CHARLOTTE COMMENTS

SITE PLAN (SHEET 4 OF 4)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

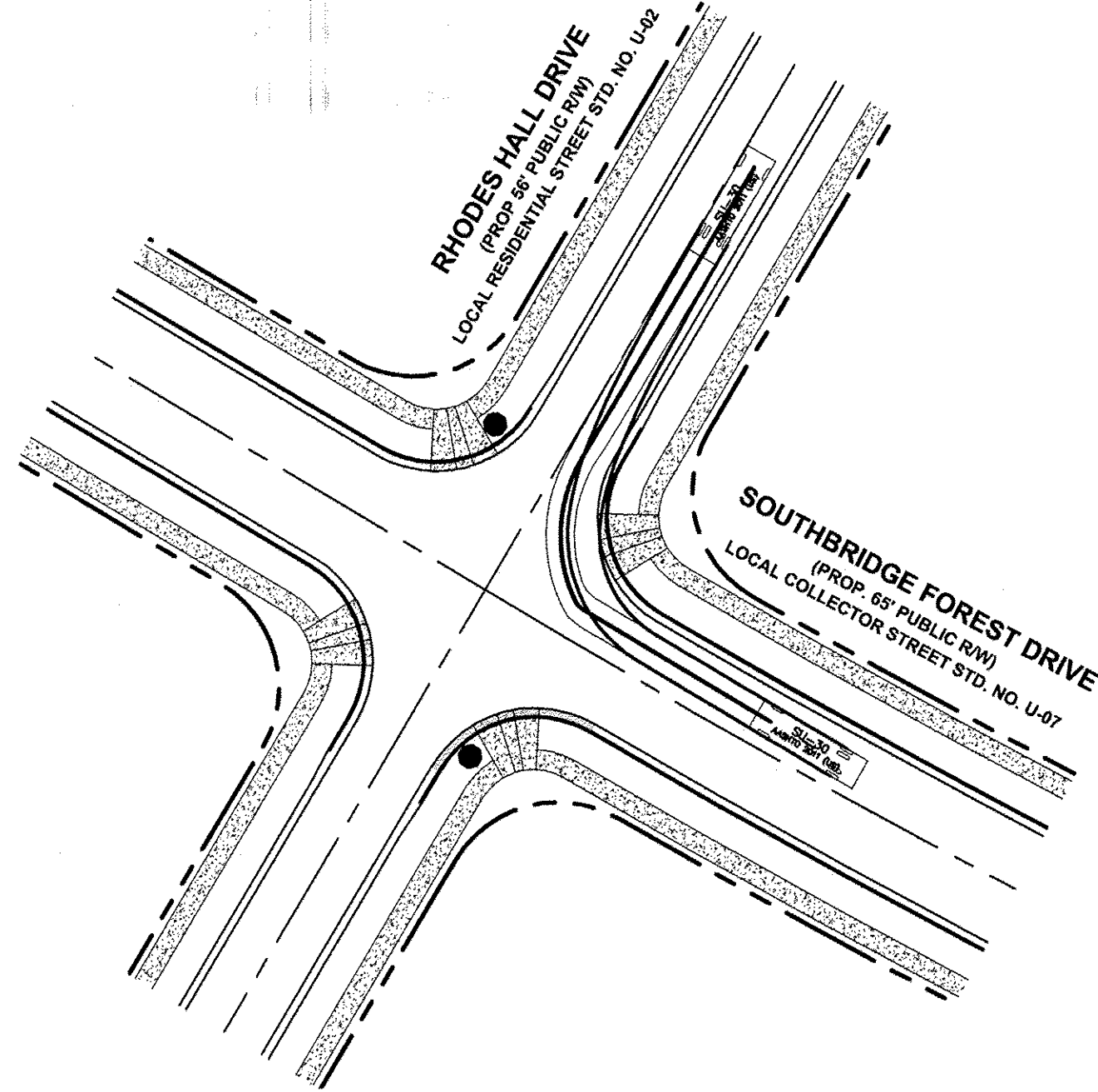
CHARLOTTE, NC

PROJECT INFORMATION

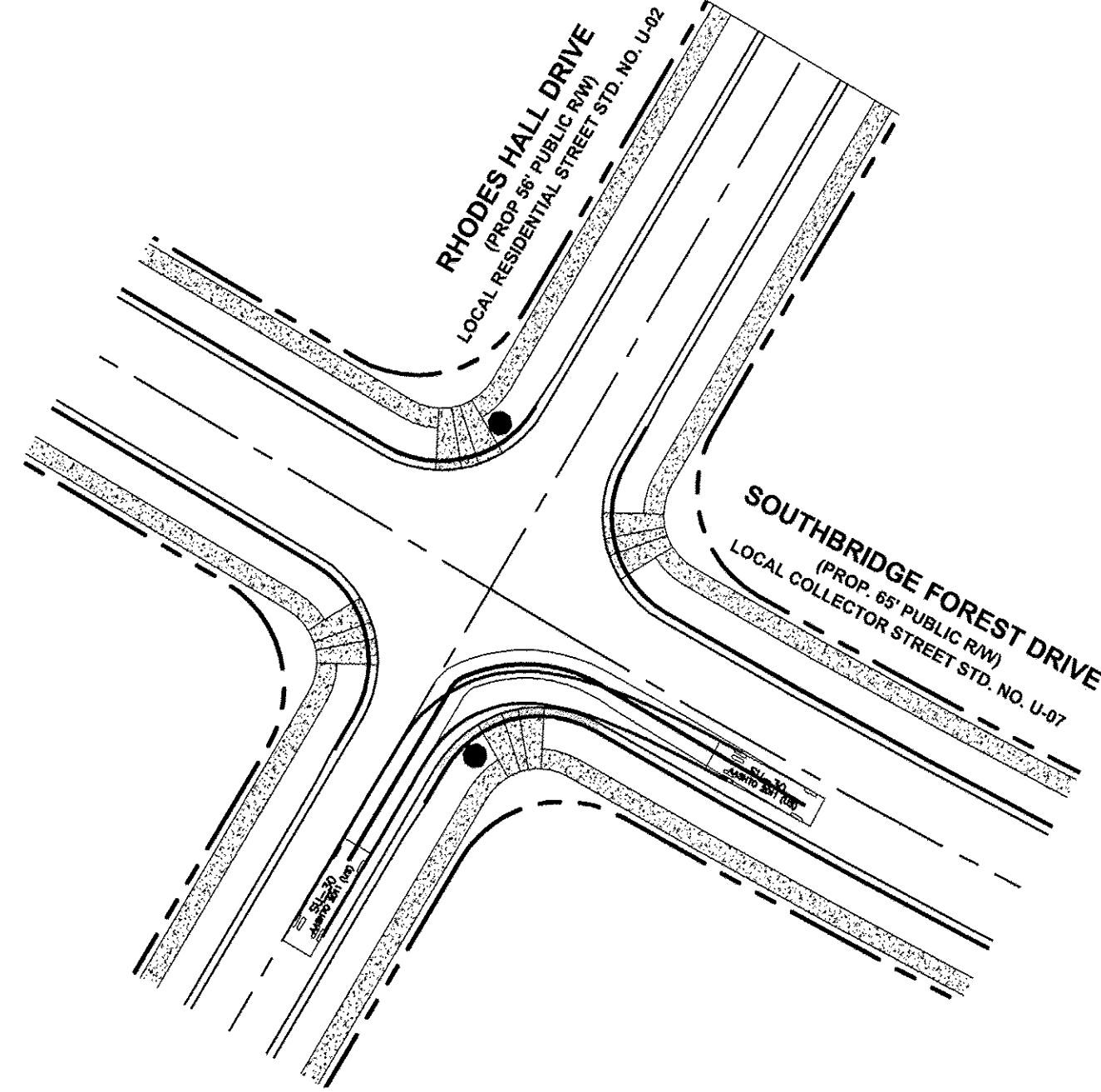
PROJECT MANAGER: APG  
DESIGNED BY: ECB  
DRAWN BY: ECB  
PROJECT NUMBER: CH13.430  
ORIGINAL DATE: 03/11/2016  
SHEET: C3.5



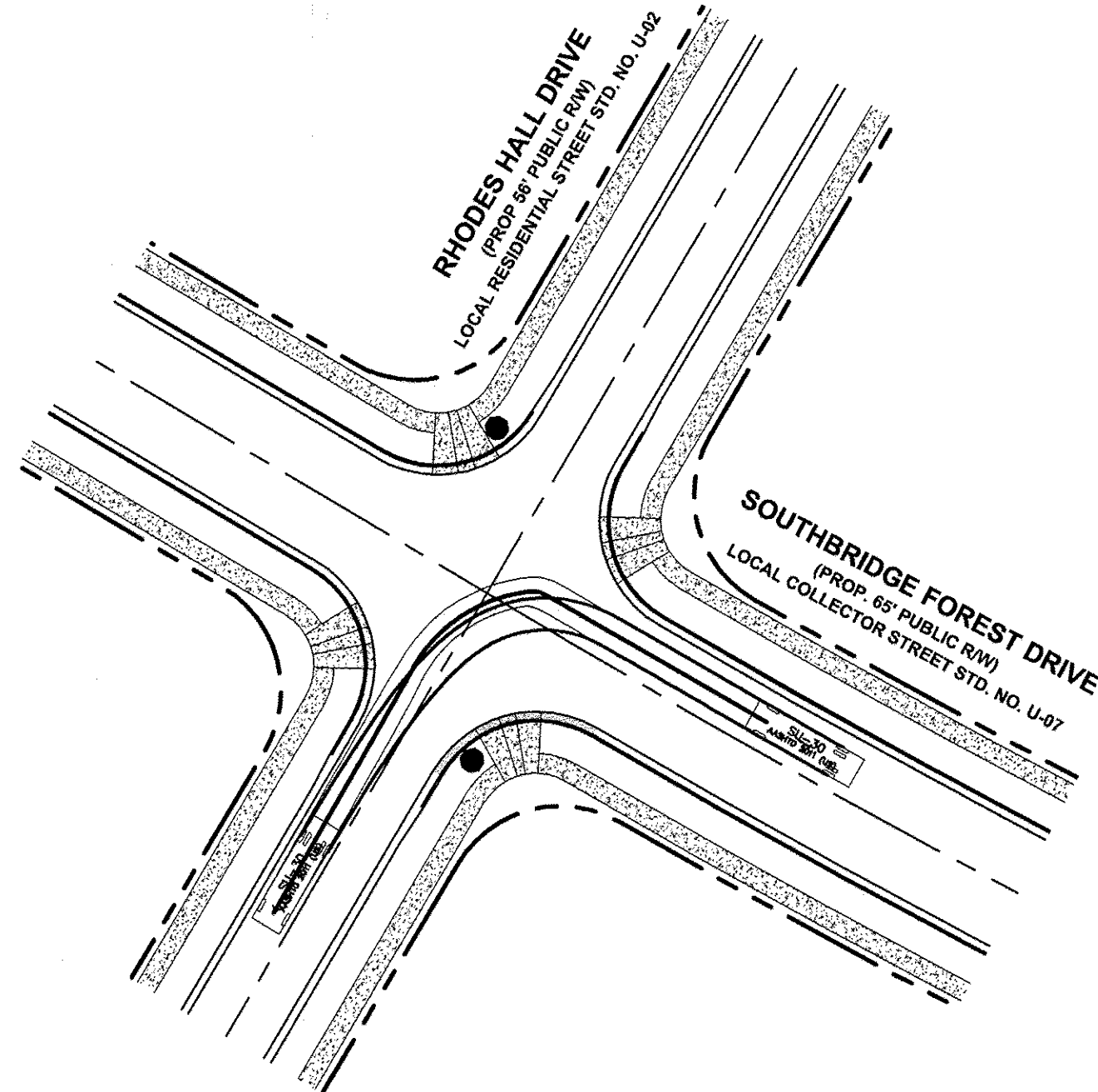
V:\CH13.430 - Chateau Phase 3\CH13.430\Sheet\CH13.430-ROAD-TURNING.dwg, TURNING MOVEMENTS - SHEET 1, e:\mshuman



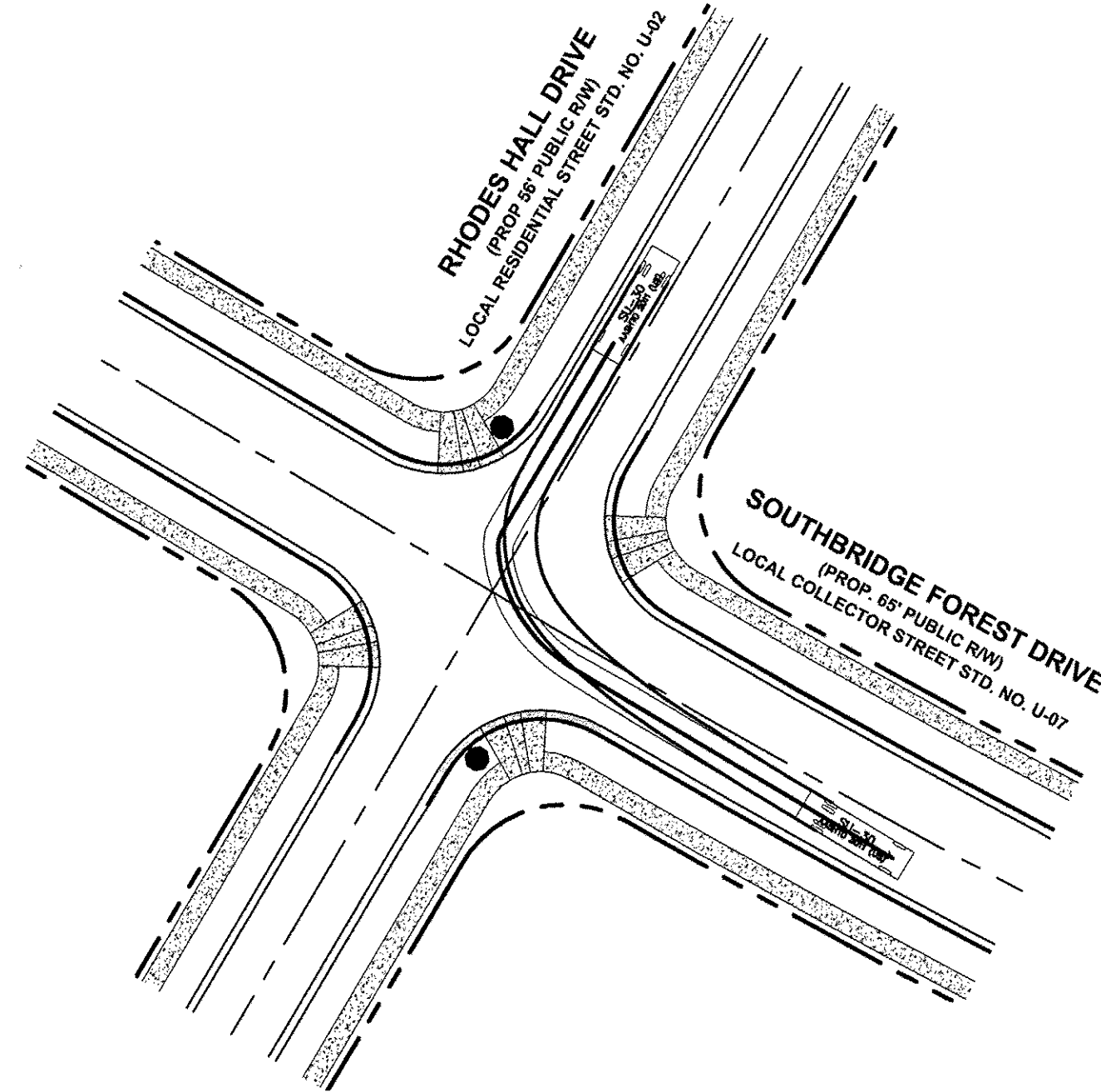
SU-30 RIGHT TURN IN



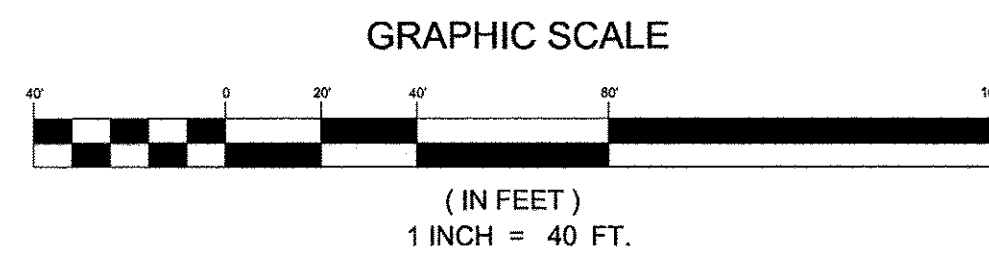
SU-30 RIGHT TURN OUT



SU-30 LEFT TURN IN



SU-30 LEFT TURN OUT



ESP Associates, P.A.  
P.O. Box 703241  
Charlotte, NC 28270  
704-583-4949 (NC)  
803-802-2440 (SC)  
www.espsociates.com

**ESP**

NORTH CAROLINA  
LICENSE NO.:  
C-0587  
ESP ASSOCIATES, P.A.

Professional Engineer  
SEAL  
033416  
SCOTT CHILDS  
3-22-16

NO.	DATE	REVISION	BY

TURNING MOVEMENTS (SHEET 1 OF 2)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

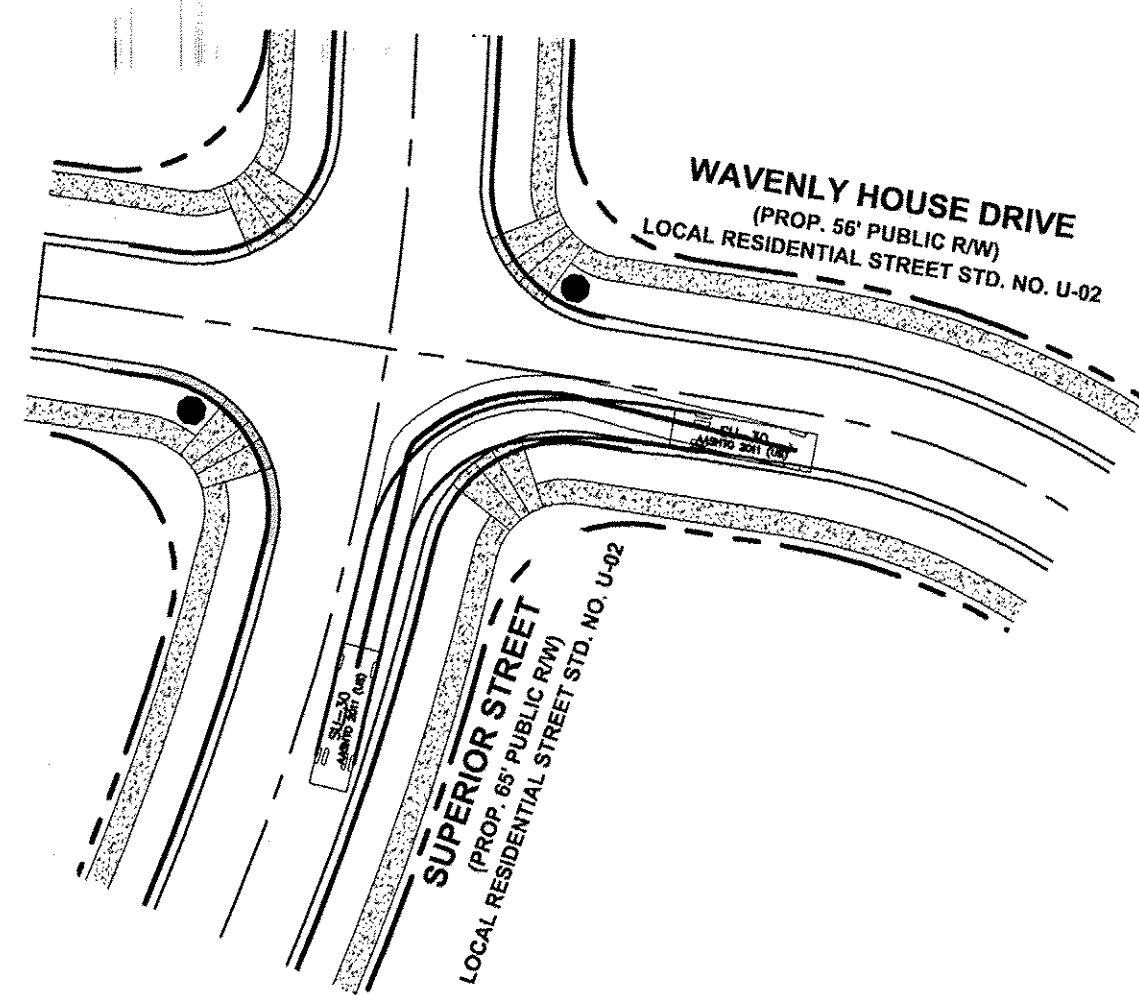
PROJECT INFORMATION

PROJECT MANAGER:	APG
DESIGNED BY:	ECH
DRAWN BY:	ECH
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016

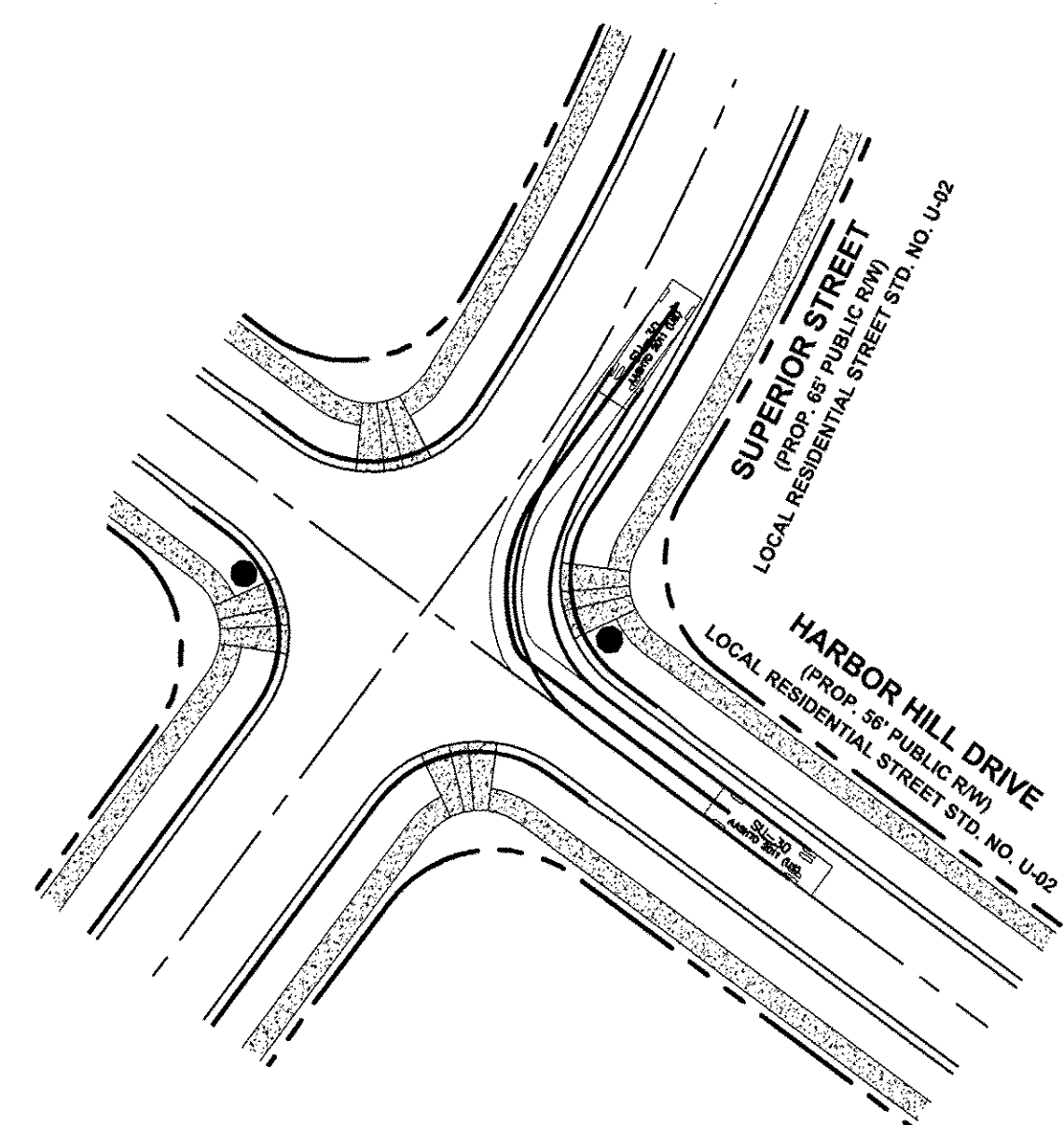
SHEET:

**C3.6**

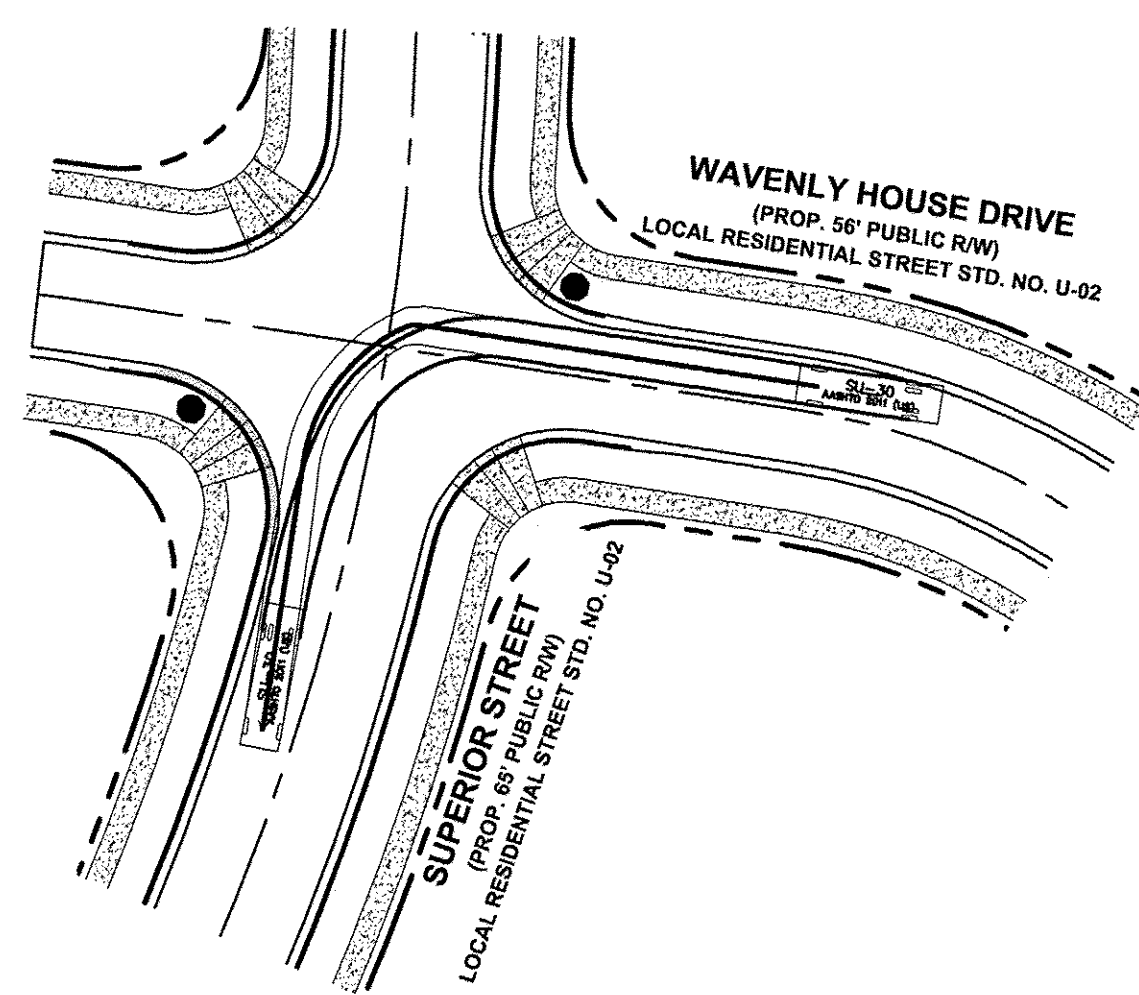




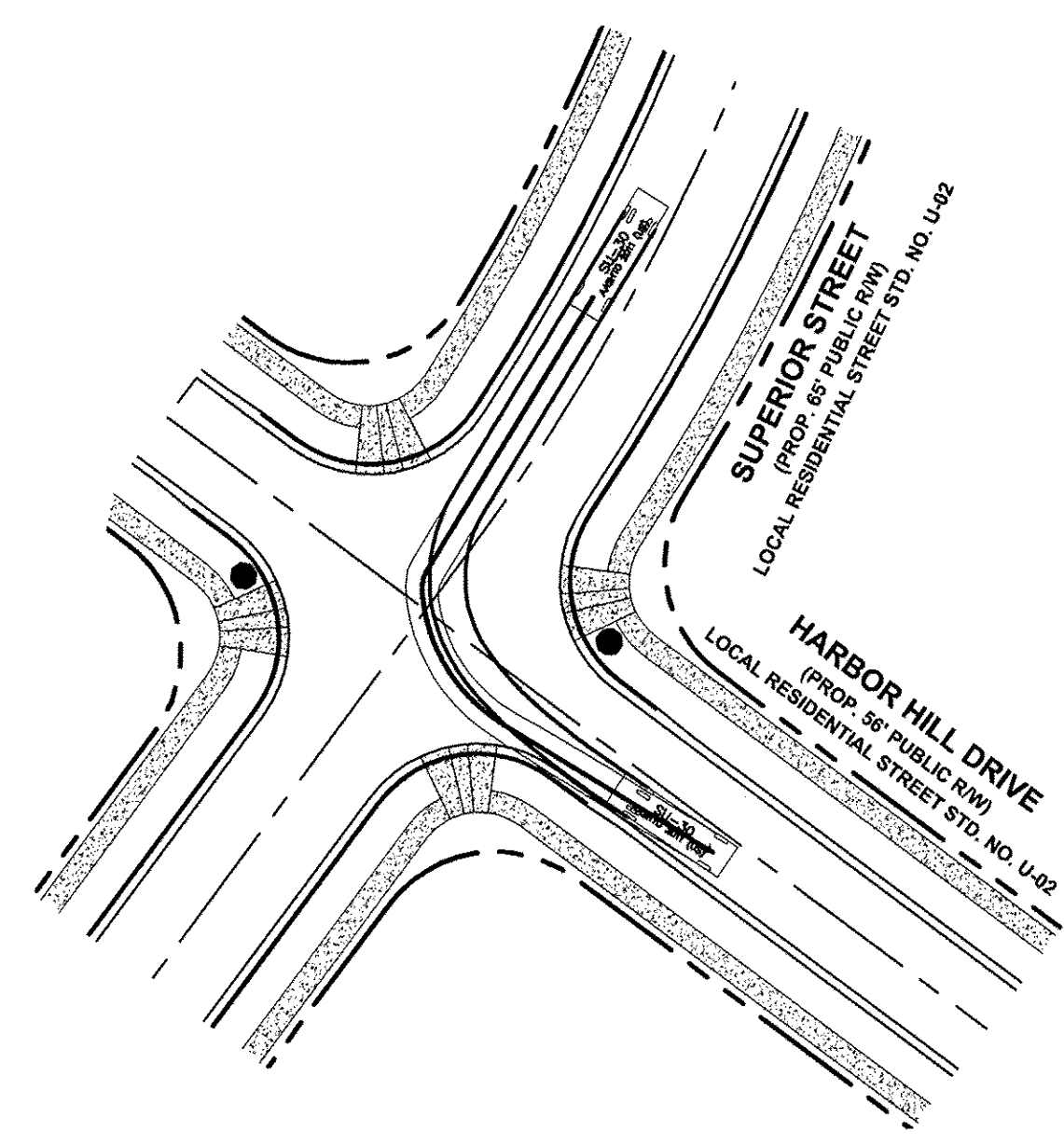
SU-30 RIGHT TURN IN



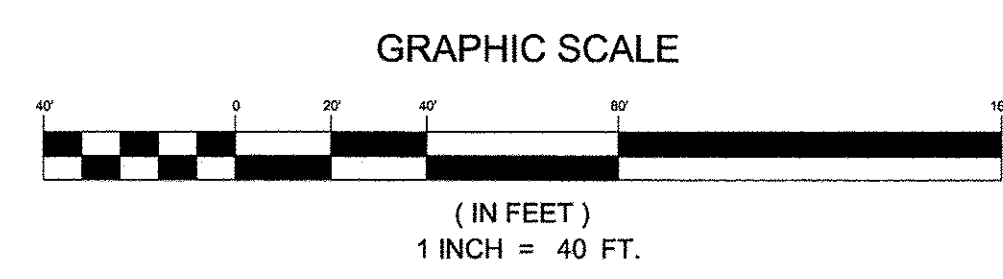
SU-30 RIGHT TURN OUT



SU-30 LEFT TURN OUT



SU-30 LEFT TURN IN



ESP Associates, P.A.  
P.O. Box 7030  
Charlotte, NC 28241  
919-486-5555  
704-563-4949 (NC)  
803-502-2440 (SC)  
www.espassociates.com

**ESP**

NORTH CAROLINA  
LICENSE NO.: C-0587  
ESP ASSOCIATES, P.A.

SEAL  
033416  
ENGINEER  
JOHN SCOTT CHILDERS  
3-22-16

NO.	DATE	REVISION	BY

TURNING MOVEMENTS (SHEET 2 OF 2)

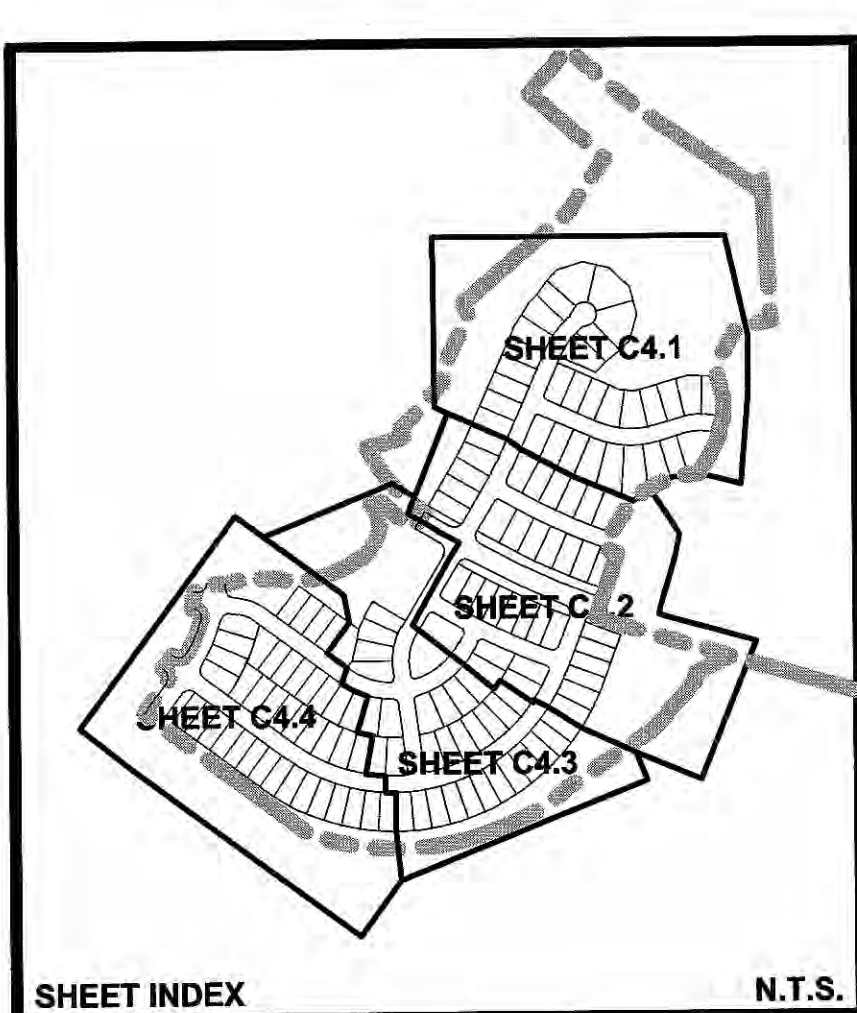
**CHATEAU PHASE 3**

LENNAR CAROLINAS, LLC

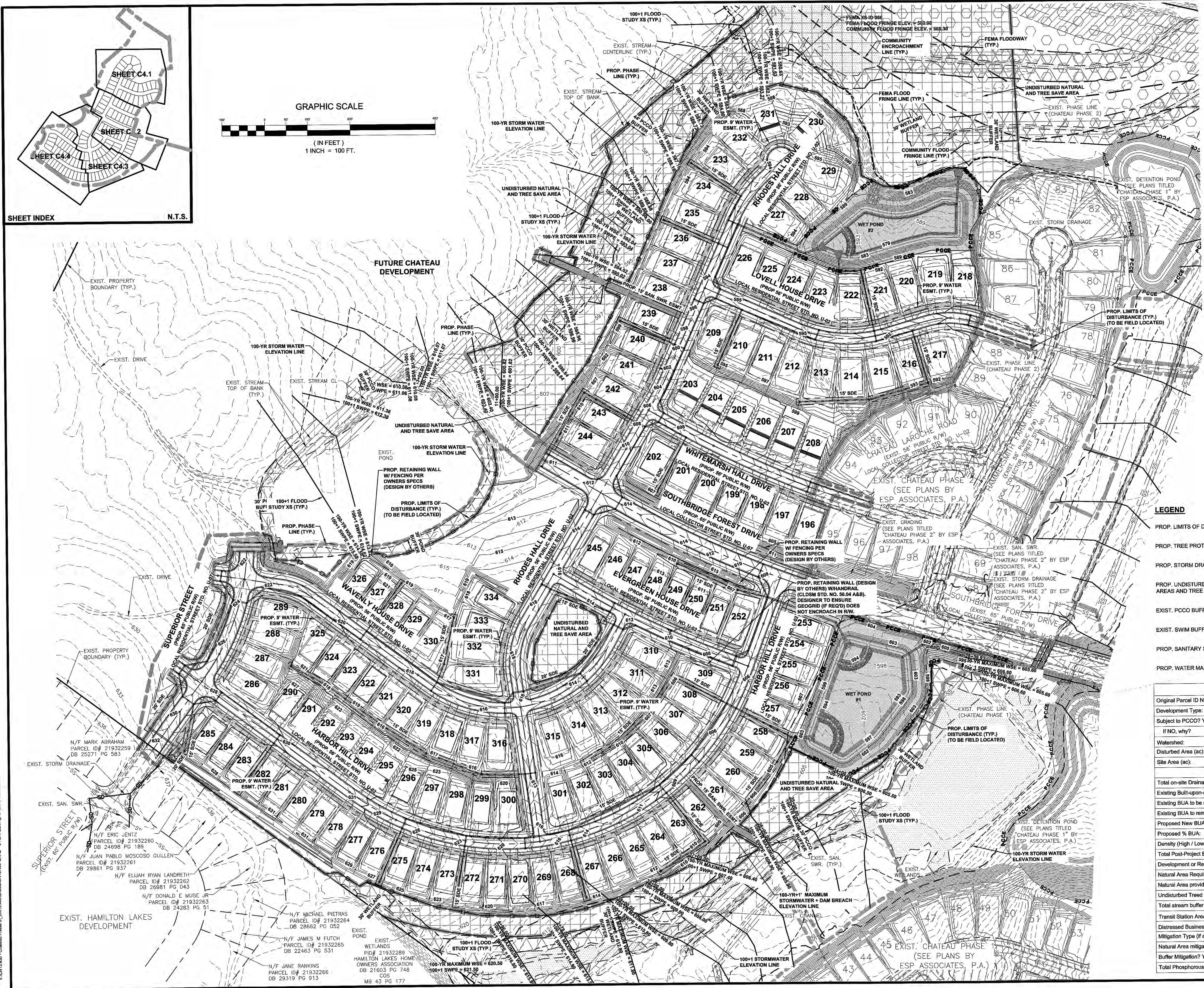
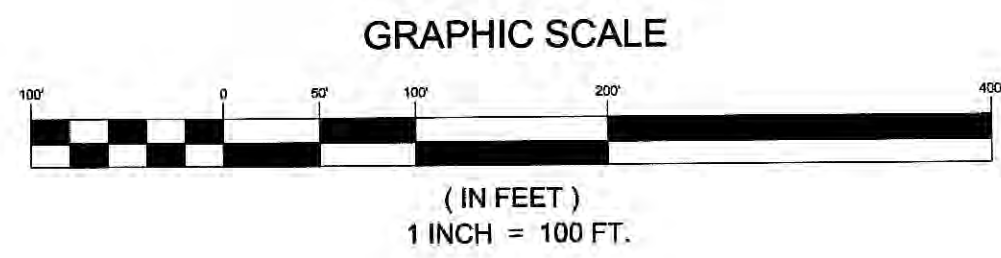
CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECH
DRAWN BY:	ECH
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	<b>C3.7</b>





SHEET INDEX N.T.S.



LEGEND

- PROP. LIMITS OF DISTURBANCE
- PROP. TREE PROTECTION FENCE
- PROP. STORM DRAINAGE EASEMENT (SDE)
- PROP. UNDISTURBED NATURAL AREAS AND TREE SAVE AREAS
- EXIST. POCO BUFFER
- EXIST. SWIM BUFFER
- PROP. SANITARY SEWER EASEMENT
- PROP. WATER MAIN EASEMENT

PCCO SUMMARY		
Original Parcel ID Number(s):	219-32-394	
Development Type:	Single-Family	
Subject to PCCO? Y/N	Y	
If NO, why?	N/A	
Watershed:	Central Catawba	
Disturbed Area (ac):	46.00	
Site Area (ac):	59.50	
	DA#1	DA#2
Total on-site Drainage Area (ac):	27.8	15.72
Existing Built-upon-area (SF):	25264.8	13939.2
Existing BUA to be removed (SF):	25264.8	13939.2
Existing BUA to remain (SF):	0	0
Proposed New BUA (SF):	571507.2	305791.2
Proposed % BUA:	47.19	44.66
Density (High / Low):	High	High
Total Post-Project BUA for site:	833,849 sf (19.14 ac.) 32.20%	
Development or Redevelopment?	Development	
Natural Area Required (ac):	10.41	
Natural Area provided, total (ac):	14.88	
Undisturbed Treed Natural Area Preserved (ac):	14.88	
Total stream buffer protected on-site (ac):	4.95	
Transit Station Area? Y/N	N	
Distressed Business District? Y/N	N	
Mitigation Type (if applicable)	N/A	
Natural Area mitigation? Y/N	N	
Buffer Mitigation? Y/N	N	
Total Phosphorous Mitigation? Y/N	N	

ESP Associates, P.A.  
P.O. Box 1000  
Charlotte, NC 28241  
3521 Lakeside Blvd.  
Fort Mill, SC 29708  
704-583-9449 (NC)  
803-502-2440 (SC)  
www.espassoc.com

# ESP

NORTH CAROLINA  
LICENSE NO.:  
C-0587

ESP ASSOCIATES, P.A.

SEAL  
033416  
ENGINEER  
SCOTT CHILDS

BY	DATE	REVISION	REVISION PER CITY OF CHARLOTTE COMMENTS
ECB	08/24/2016	1	

OVERALL GRADING PLAN

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION

PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016

SHEET:  
**C4.0**

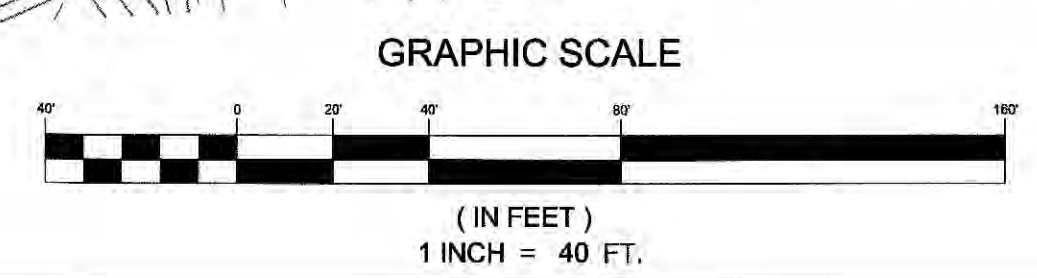
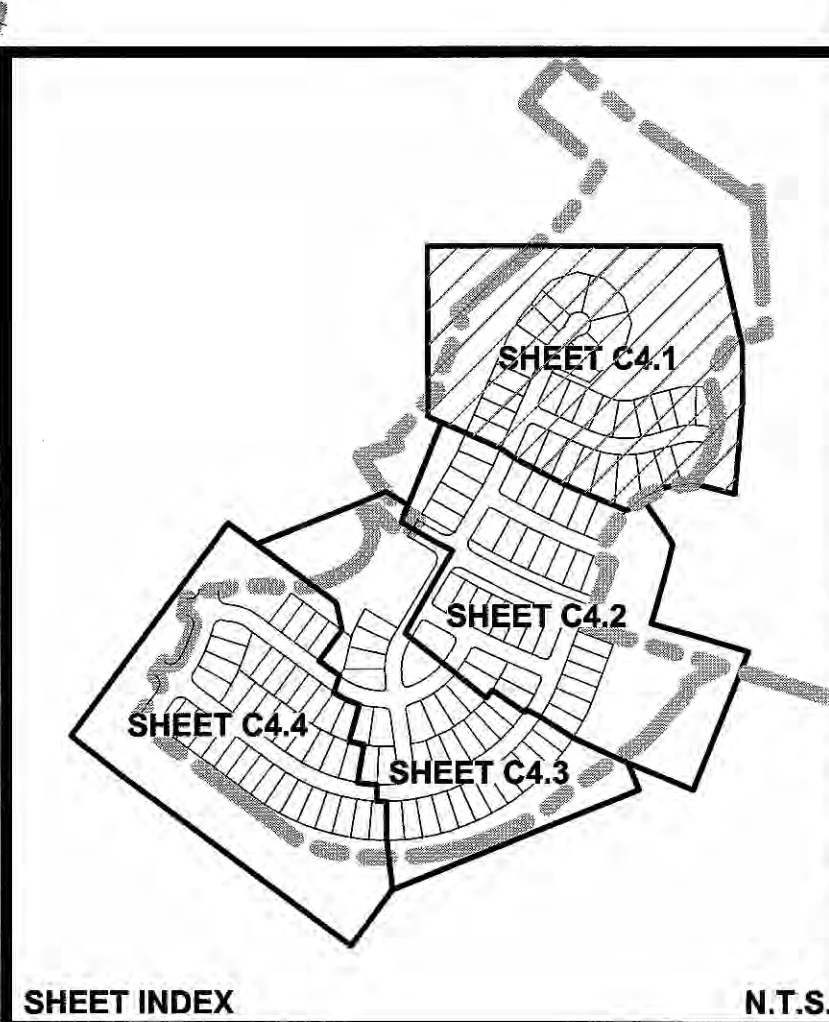




- NOTES:**
- 1) ALL STORM STRUCTURES SHALL MEET CURRENT NCDOT STANDARDS APPROVED FOR USE IN THE CITY OF CHARLOTTE AND CHARLOTTE ETJ PER CLDSM STD. NO. 20.00.
  - 2) ALL STORM INLETS LABELED "YI" SHALL BE SLAB TYPE INLETS (NCDOT 840.04) WITH ALL FOUR SIDES OPEN. RIM ELEVATION SHOWN IS THE INLET LIP.
  - 3) ALL STORM INLETS LABELED "CB" SHALL BE GRATE TYPE INLETS (NCDOT 840.02).
  - 4) ALL STORM STRUCTURES LABELED "JB" SHALL BE JUNCTION BOXES (NCDOT 840.52).
  - 5) ALL STORM STRUCTURES LABELED "DI" SHALL BE GRATE DROP TYPE INLET (NCDOT 840.14 & 840.17 IF PIPE GREATER THAN 30" DIA.).
  - 6) ALL SPOT ELEVATIONS SHOWN ARE TOP BACK OF CURB (BC) UNLESS OTHERWISE NOTED.
  - 7) SEE STORM SEWER PROFILE SHEETS FOR RIM AND INVERTS.
  - 8) SHADED CURB & GUTTER INDICATES LOCATIONS FOR SPILL CURBS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING POSITIVE DRAINAGE AT ALL INTERSECTIONS. SPECIAL CARE MUST BE TAKEN WHERE SPILL CURB IS CALLED OUT.
  - 9) NO STORM PIPE SHALL BE INSTALLED WITHIN THE S.W.I.M. BUFFERS.
  - 10) SDE = STORM DRAINAGE EASEMENT.
  - 11) FPE = FLOOD PROTECTION ELEVATION.
  - 12) FSWPE = STORMWATER PROTECTION ELEVATION AT FRONT SETBACK.
  - 13) RSWPE = STORMWATER PROTECTION ELEVATION AT REAR OF PAD.
  - 14) SWPE = STORMWATER PROTECTION ELEVATION.
  - 15) BMP ACCESS EASEMENTS SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 15% AND A MAXIMUM CROSS SLOPE OF 5%.
  - 16) SEE SHEET C1.3 DEVELOPMENT NOTES FOR RETAINING WALL NOTES.
  - 17) NO DISTURBANCE SHALL OCCUR WITHIN LIMITS OF THE COMMUNITY FRINGE FLOOD LINE.

- LEGEND**
- PROP. CONCRETE SIDEWALK
  - PROP. CONTOUR
  - PROP. LIMITS OF DISTURBANCE
  - PROP. STORM DRAINAGE EASEMENT (SDE)
  - PROP. SANITARY SEWER EASEMENT
  - PROP. UNDISTURBED NATURAL AREAS AND TREE SAVE AREAS
  - PROP. OVERLAND RELIEF
  - PROP. TREE PROTECTION FENCE
  - TEMP. EROSION CONTROL BLANKET
  - EXIST. CONCRETE SIDEWALK
  - EXIST. MAJOR CONTOUR
  - EXIST. MINOR CONTOUR
  - EXIST. POCO BUFFER
  - EXIST. SWIM BUFFER
  - EXIST. WETLANDS
  - EXIST. WETLAND BUFFER
  - PROP. WATER MAIN EASEMENT

- NOTES:**
1. SWPE = STORMWATER PROTECTION ELEVATION
  2. FPE = FLOOD PROTECTION ELEVATION



ESP ASSOCIATES, P.A.  
P.O. Box 2009  
Charlotte, NC 28241  
3475 Alameda Blvd  
Fort Mill, SC 29708  
704-583-0440 (NC)  
803-582-2440 (SC)  
www.espassociates.com

**ESP**

NORTH CAROLINA  
LICENSE NO. C-0587  
ESP ASSOCIATES, P.A.  
ENGINEER  
JAN SCOTT CHILDERS  
033416

BY: ECB

NO.	DATE	REVISION	REVISED PER CITY OF CHARLOTTE COMMENTS
1	08/24/2016		

GRADING AND DRAINAGE PLAN  
(SHEET 1 OF 4)

**CHATEAU PHASE 3**

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION

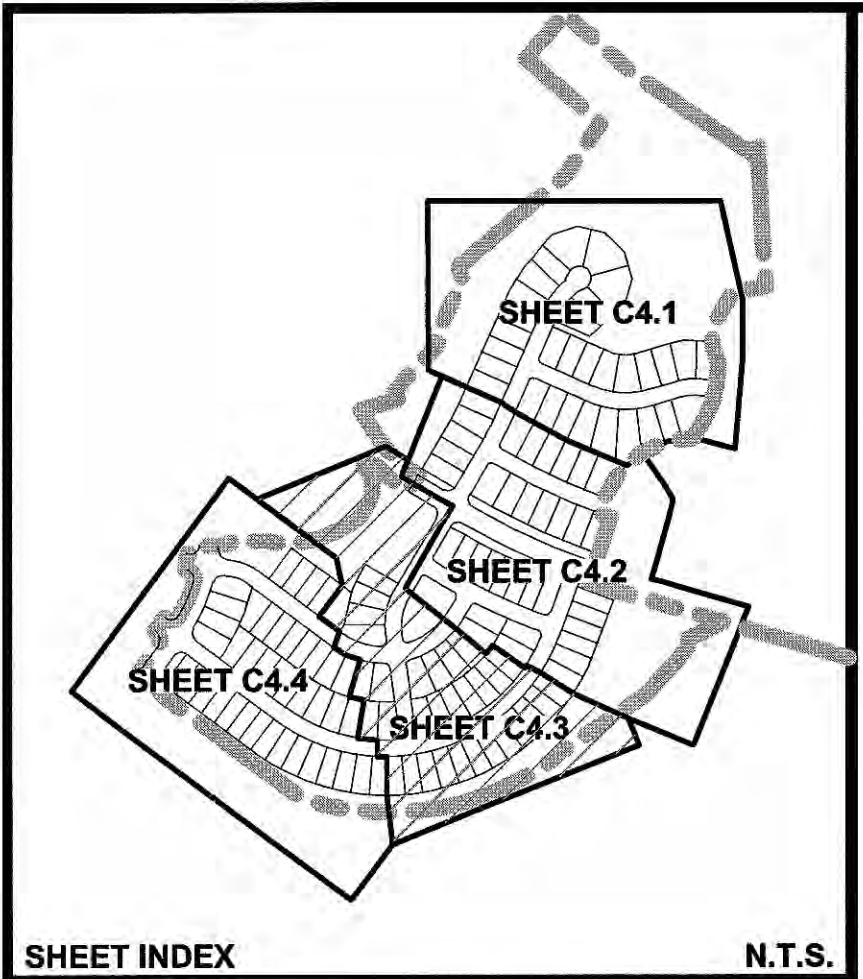
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	<b>C4.1</b>

N.T.S.







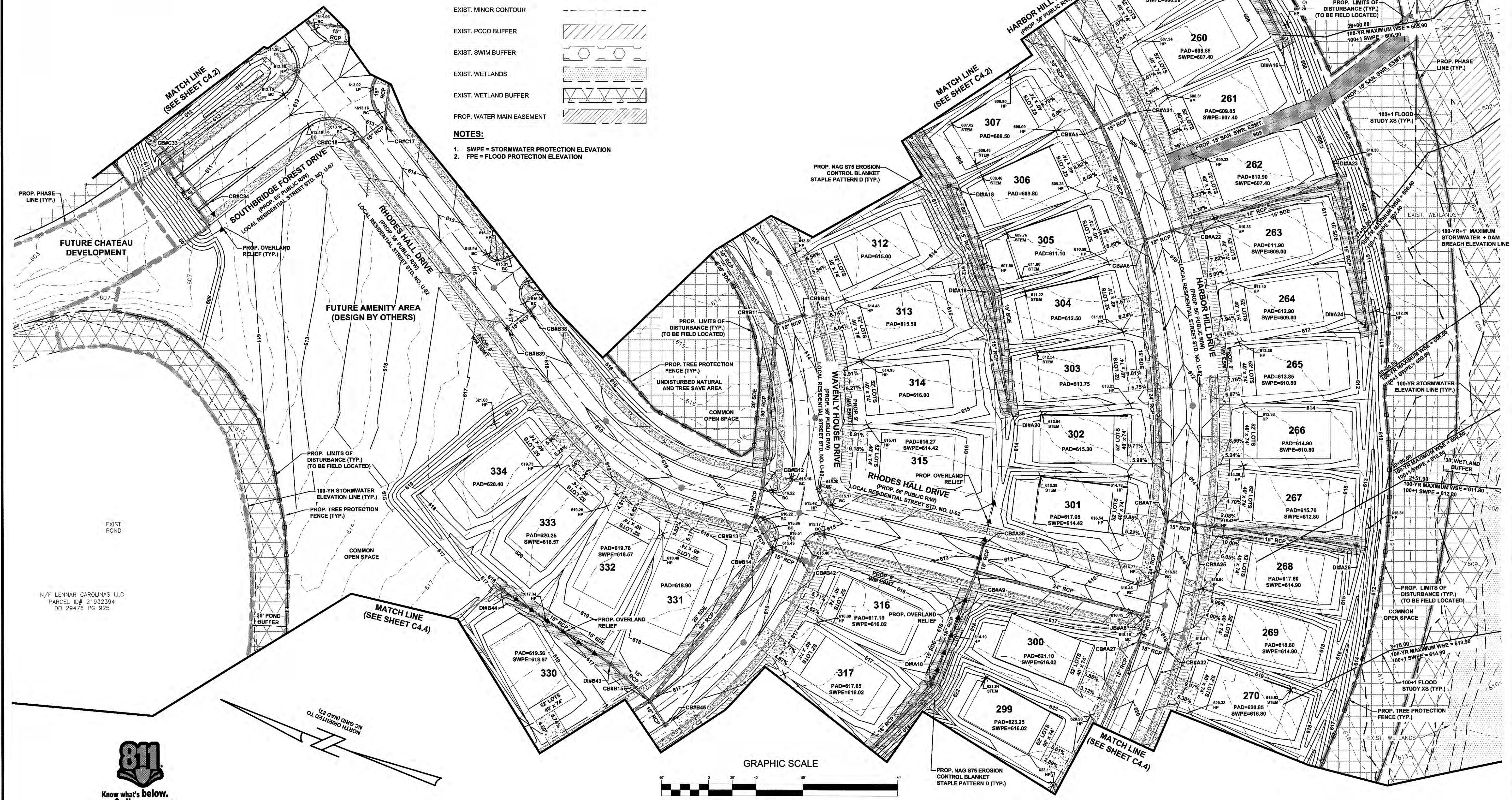


SHEET INDEX N.T.S.

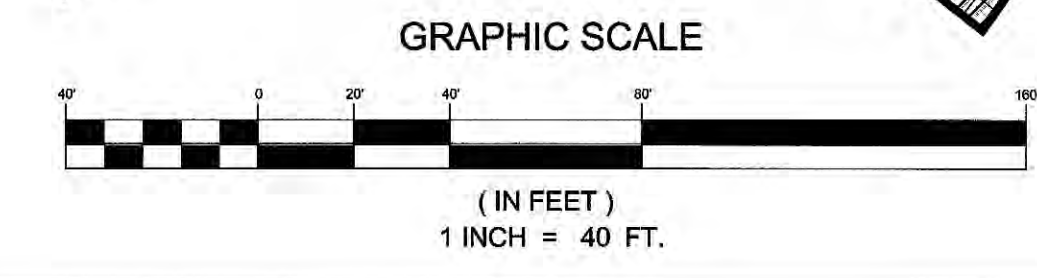
- LEGEND**
- PROP. CONCRETE SIDEWALK
  - PROP. CONTOUR
  - PROP. LIMITS OF DISTURBANCE
  - PROP. STORM DRAINAGE EASEMENT (SDE)
  - PROP. SANITARY SEWER EASEMENT
  - PROP. UNDISTURBED NATURAL AREAS AND TREE SAVE AREAS
  - PROP. OVERLAND RELIEF
  - PROP. TREE PROTECTION FENCE
  - TEMP. EROSION CONTROL BLANKET
  - EXIST. CONCRETE SIDEWALK
  - EXIST. MAJOR CONTOUR
  - EXIST. MINOR CONTOUR
  - EXIST. PCCO BUFFER
  - EXIST. SWIM BUFFER
  - EXIST. WETLANDS
  - EXIST. WETLAND BUFFER
  - PROP. WATER MAIN EASEMENT

- NOTES:**
- SWPE = STORMWATER PROTECTION ELEVATION
  - FPE = FLOOD PROTECTION ELEVATION

- NOTES:**
- ALL STORM STRUCTURES SHALL MEET CURRENT NCDOT STANDARDS APPROVED FOR USE IN THE CITY OF CHARLOTTE AND CHARLOTTE ETJ PER CLDSM STD. NO. 20.00.
  - ALL STORM INLETS LABELED "YI" SHALL BE SLAB TYPE INLETS (NCDOT 840.04), WITH ALL FOUR SIDES OPEN. RIM ELEVATION SHOWN IS THE INLET LIP.
  - ALL STORM INLETS LABELED "CB" SHALL BE GRATE TYPE INLETS (NCDOT 840.02).
  - ALL STORM STRUCTURES LABELED "JB" SHALL BE JUNCTION BOXES (NCDOT 840.52).
  - ALL STORM STRUCTURES LABELED "DI" SHALL BE GRATE DROP TYPE INLET (NCDOT 840.14 & 840.17 IF PIPE GREATER THAN 30" DIA.).
  - ALL SPOT ELEVATIONS SHOWN ARE TOP BACK OF CURB (BC) UNLESS OTHERWISE NOTED.
  - SEE STORM SEWER PROFILE SHEETS FOR RIM AND INVERTS.
  - SHADED CURB & GUTTER INDICATES LOCATIONS FOR SPILL CURBS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING POSITIVE DRAINAGE AT ALL INTERSECTIONS. SPECIAL CARE MUST BE TAKEN WHERE SPILL CURB IS CALLED OUT.
  - NO STORM PIPE SHALL BE INSTALLED WITHIN THE S.W.I.M. BUFFERS.
  - SDE = STORM DRAINAGE EASEMENT.
  - FPE = FLOOD PROTECTION ELEVATION.
  - FSWPE = STORMWATER PROTECTION ELEVATION AT FRONT SETBACK.
  - RSWPE = STORMWATER PROTECTION ELEVATION AT REAR OF PAD.
  - SWPE = STORMWATER PROTECTION ELEVATION.
  - BMP ACCESS EASEMENTS SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 15%, AND A MAXIMUM CROSS SLOPE OF 5%.
  - SEE SHEET C1.3 DEVELOPMENT NOTES FOR RETAINING WALL NOTES.
  - NO DISTURBANCE SHALL OCCUR WITHIN LIMITS OF THE COMMUNITY FRINGE FLOOD LINE.



N/F LENNAR CAROLINAS LLC  
PARCEL ID# 21932394  
DB 29476 PG 925



ESP Associates, P.A.  
P.O. Box 2804  
Charlotte, NC 28241  
3075 Alameda Blvd  
Fort Mill, SC 29708  
704-583-9449 (NC)  
803-902-2440 (SC)  
www.espassociates.com

**ESP**

NORTH CAROLINA  
LICENSE NO. C-0587  
ESP ASSOCIATES, P.A.

NORTH CAROLINA  
REGISTERED PROFESSIONAL ENGINEER  
SCOTT CHILDERS  
033416  
82716

NO.	DATE	REVISION
1	08/24/2016	REVISED PER CITY OF CHARLOTTE COMMENTS

BY: EGB

GRADING AND DRAINAGE PLAN  
(SHEET 3 OF 4)

**CHATEAU PHASE 3**

LENNAR CAROLINAS, LLC

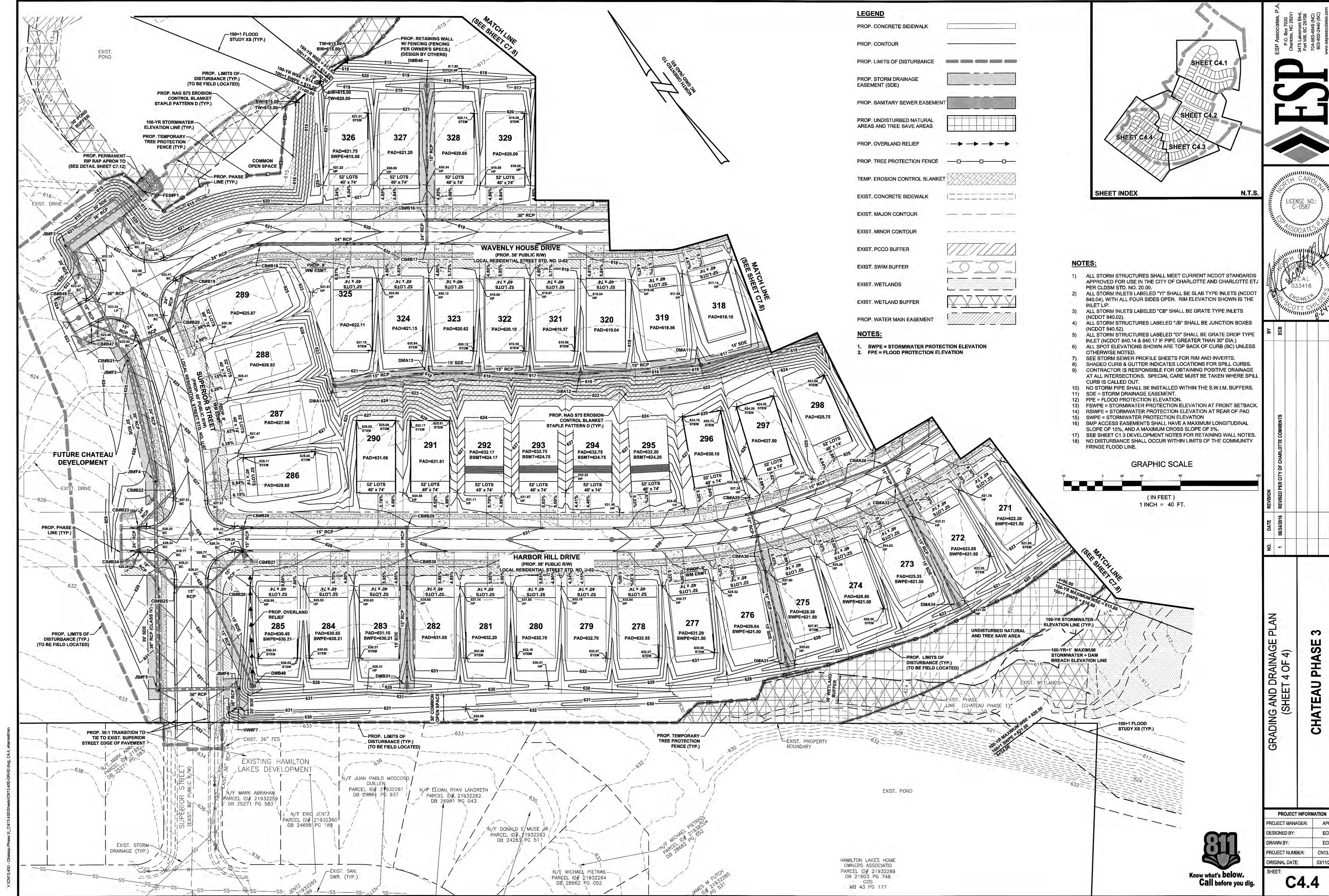
CHARLOTTE, NC

PROJECT INFORMATION

PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016

SHEET: **C4.3**





**LEGEND**

PROP. CONCRETE SIDEWALK

PROP. CONTOUR

PROP. LIMITS OF DISTURBANCE

PROP. STORM DRAINAGE EASEMENT (SDE)

PROP. SANITARY SEWER EASEMENT

PROP. UNDISTURBED NATURAL AREAS AND TREE SAVE AREAS

PROP. OVERLAND RELIEF

PROP. TREE PROTECTION FENCE

TEMP. EROSION CONTROL BLANKET

EXIST. CONCRETE SIDEWALK

EXIST. MAJOR CONTOUR

EXIST. MINOR CONTOUR

EXIST. PCO BUFFER

EXIST. SWIM BUFFER

EXIST. WETLANDS

EXIST. WETLAND BUFFER

PROP. WATER MAIN EASEMENT

- NOTES:**
- SWPE = STORMWATER PROTECTION ELEVATION
  - FPE = FLOOD PROTECTION ELEVATION

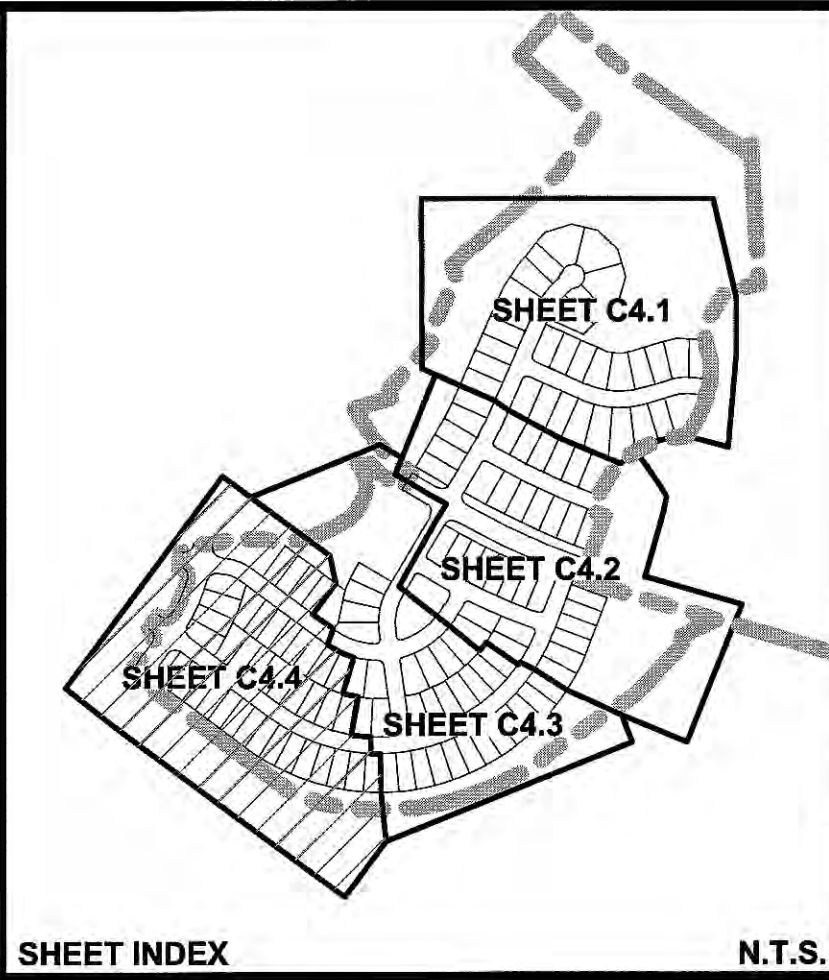
**NOTES:**

- ALL STORM STRUCTURES SHALL MEET CURRENT NCDOT STANDARDS APPROVED FOR USE IN THE CITY OF CHARLOTTE AND CHARLOTTE ETJ PER CLDSM STD. NO. 20.00.
- ALL STORM INLETS LABELED "YI" SHALL BE SLAB TYPE INLETS (NCDOT 840.04) WITH ALL FOUR SIDES OPEN. RIM ELEVATION SHOWN IS THE INLET LIP.
- ALL STORM INLETS LABELED "CB" SHALL BE GRATE TYPE INLETS (NCDOT 840.02).
- ALL STORM STRUCTURES LABELED "JB" SHALL BE JUNCTION BOXES (NCDOT 840.52).
- ALL STORM STRUCTURES LABELED "DI" SHALL BE GRATE DROP TYPE INLET (NCDOT 840.14 & 840.17 IF PIPE GREATER THAN 30" DIA.)
- ALL SPOT ELEVATIONS SHOWN ARE TOP BACK OF CURB (BC) UNLESS OTHERWISE NOTED.
- SEE STORM SEWER PROFILE SHEETS FOR RIM AND INVERTS.
- SHADED CURB & GUTTER INDICATES LOCATIONS FOR SPILL CURBS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING POSITIVE DRAINAGE AT ALL INTERSECTIONS. SPECIAL CARE MUST BE TAKEN WHERE SPILL CURB IS CALLED OUT.
- NO STORM PIPE SHALL BE INSTALLED WITHIN THE S.W.I.M. BUFFERS.
- SDE = STORM DRAINAGE EASEMENT.
- FPE = FLOOD PROTECTION ELEVATION.
- FSWPE = STORMWATER PROTECTION ELEVATION AT FRONT SETBACK.
- RSWPE = STORMWATER PROTECTION ELEVATION AT REAR OF PAD
- SWPE = STORMWATER PROTECTION ELEVATION
- BNP ACCESS EASEMENTS SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 15%, AND A MAXIMUM CROSS SLOPE OF 5%.
- SEE SHEET C1.3 DEVELOPMENT NOTES FOR RETAINING WALL NOTES.
- NO DISTURBANCE SHALL OCCUR WITHIN LIMITS OF THE COMMUNITY FRINGE FLOOD LINE.

**GRAPHIC SCALE**

(IN FEET)

1 INCH = 40 FT.



ESP Associates, P.A.  
P.O. Box 7030  
Charlotte, NC 28261  
704-582-8000 (NC)  
803-802-2440 (SC)  
www.espaceassociates.com

**ESP**

NORTH CAROLINA  
LICENSE NO.:  
C-0587

SEAL  
033416  
ENGINEER  
SCOTT CHILBERS

BY: ECB

NO.	DATE	REVISION	REVIEWED PER CITY OF CHARLOTTE COMMENTS
1	08/24/2016		

GRADING AND DRAINAGE PLAN  
(SHEET 4 OF 4)

**CHATEAU PHASE 3**

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

**PROJECT INFORMATION**

PROJECT MANAGER: APG

DESIGNED BY: ECB

DRAWN BY: ECB

PROJECT NUMBER: CN13.430

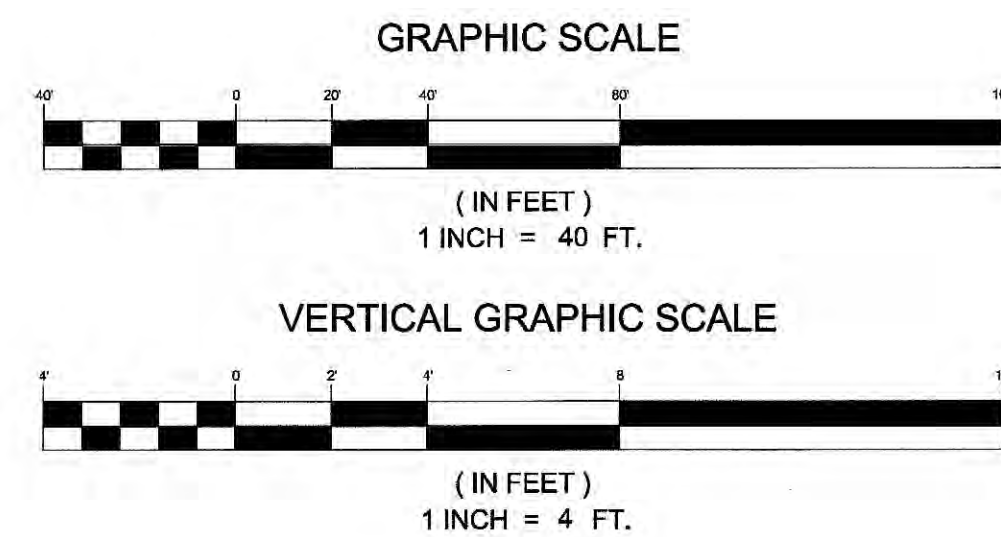
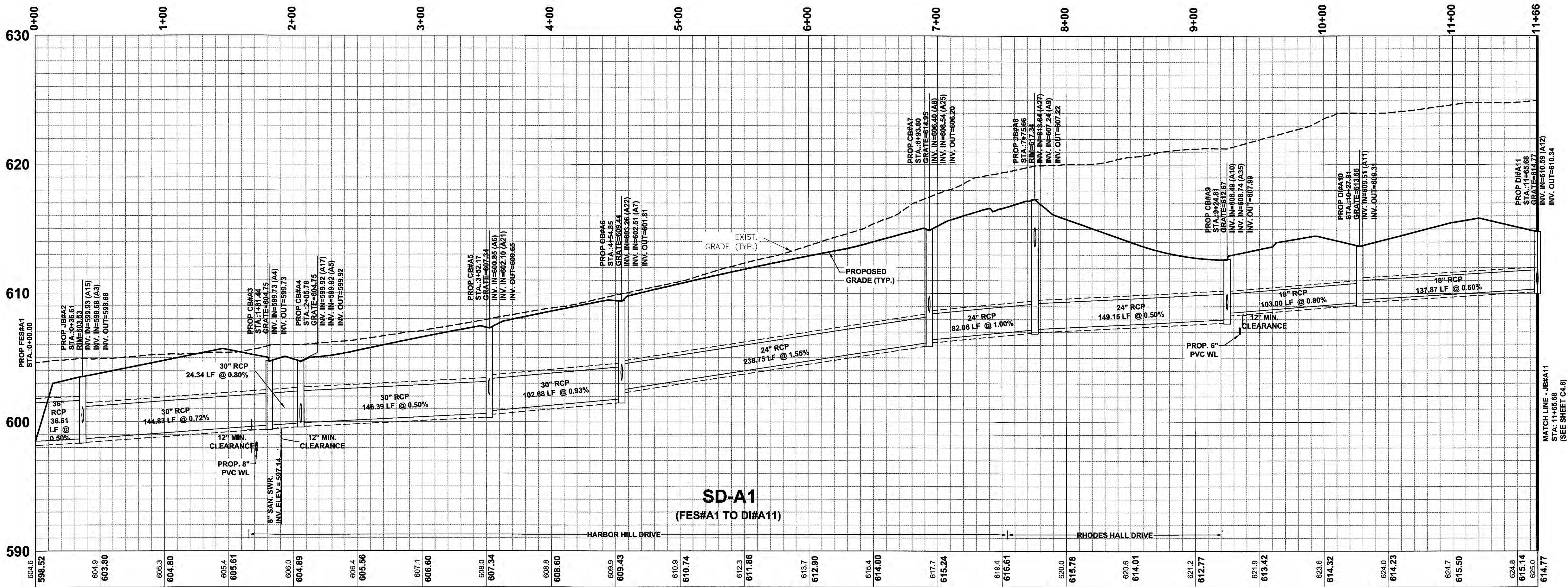
ORIGINAL DATE: 03/11/2016

SHEET: **C4.4**

**811**  
Know what's below.  
Call before you dig.



V:\CN13\430 - Chateau Phase 3\CH13\430\Sheets\CH13\430-STRM - SD-A.dwg, C:\s, shanahan



STORM DRAINAGE PROFILES  
(SHEET 1 OF 10)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

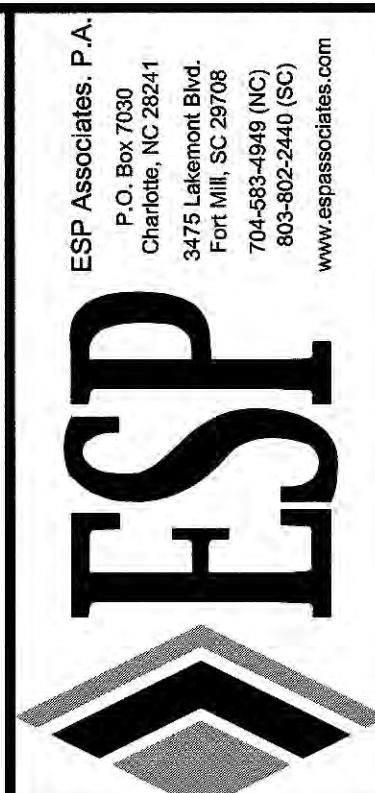
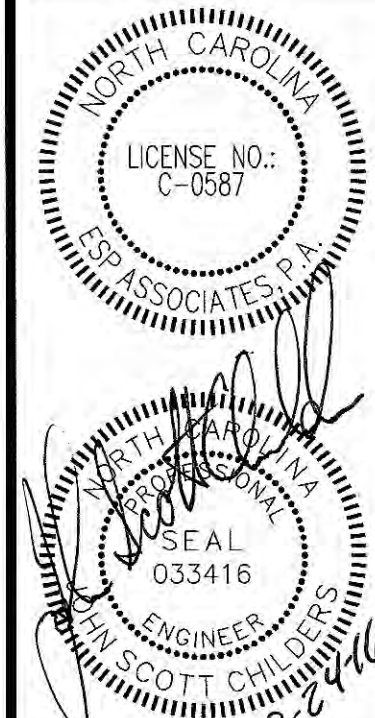
CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.5

NO.	DATE	REVISION	REVIEWED PER CITY OF CHARLOTTE COMMENTS
1	08/24/2016		

BY

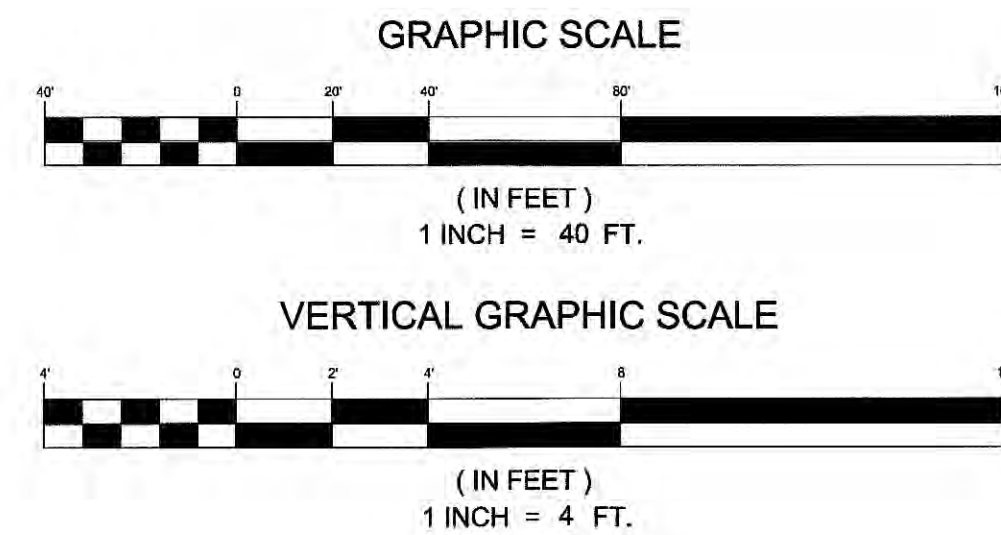
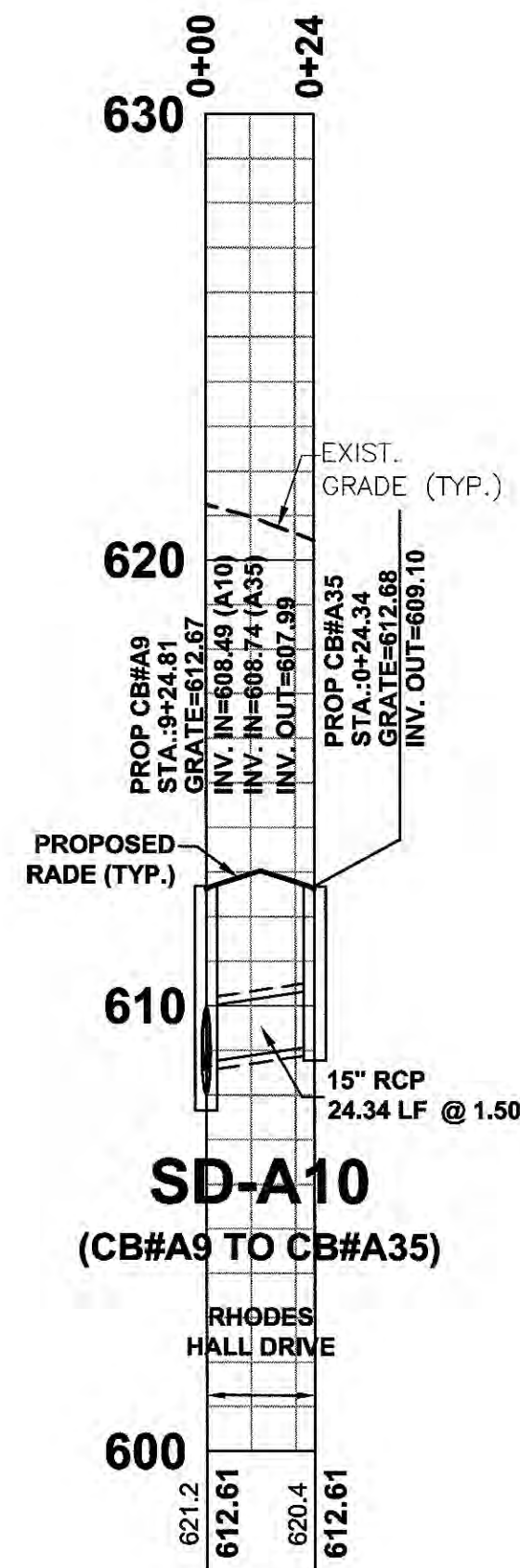
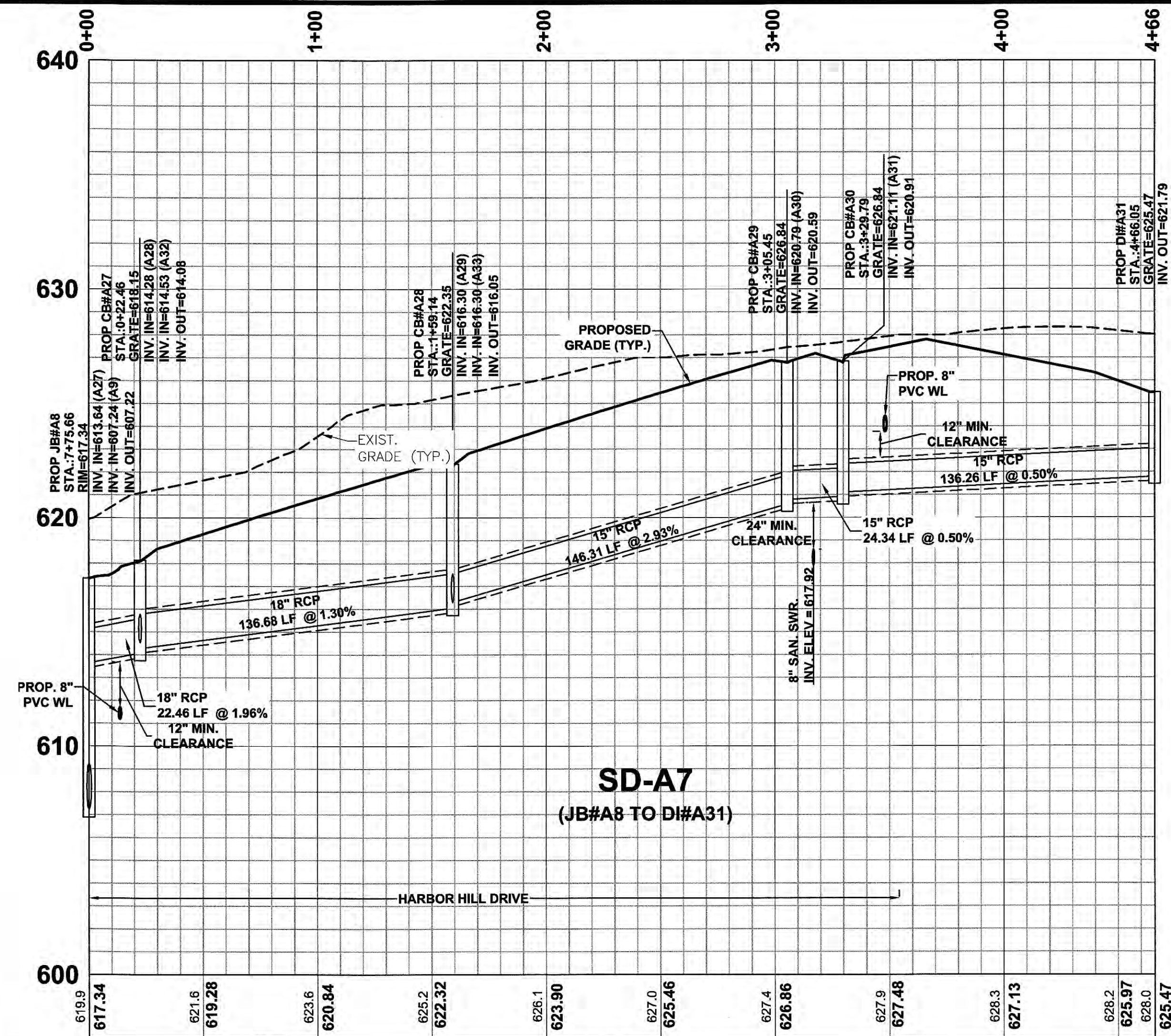
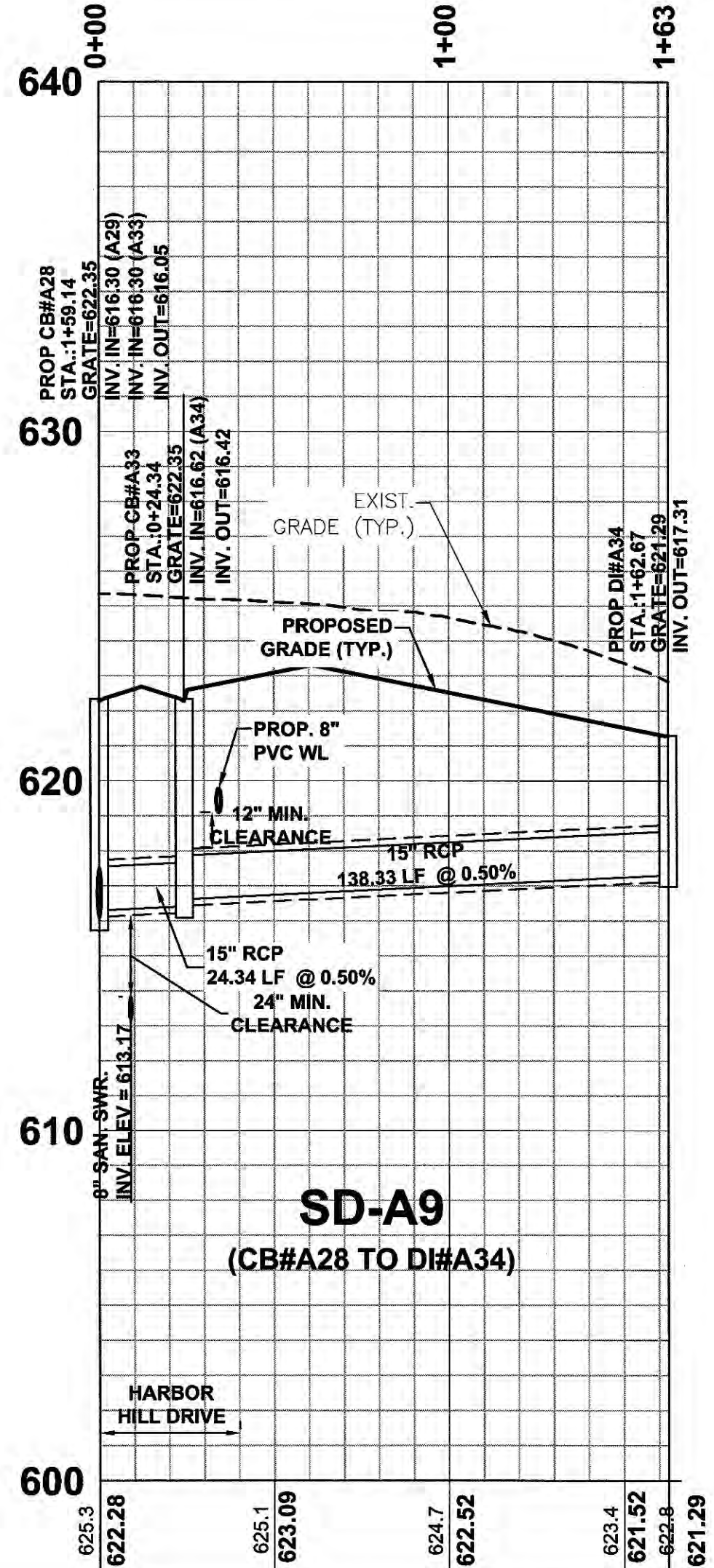
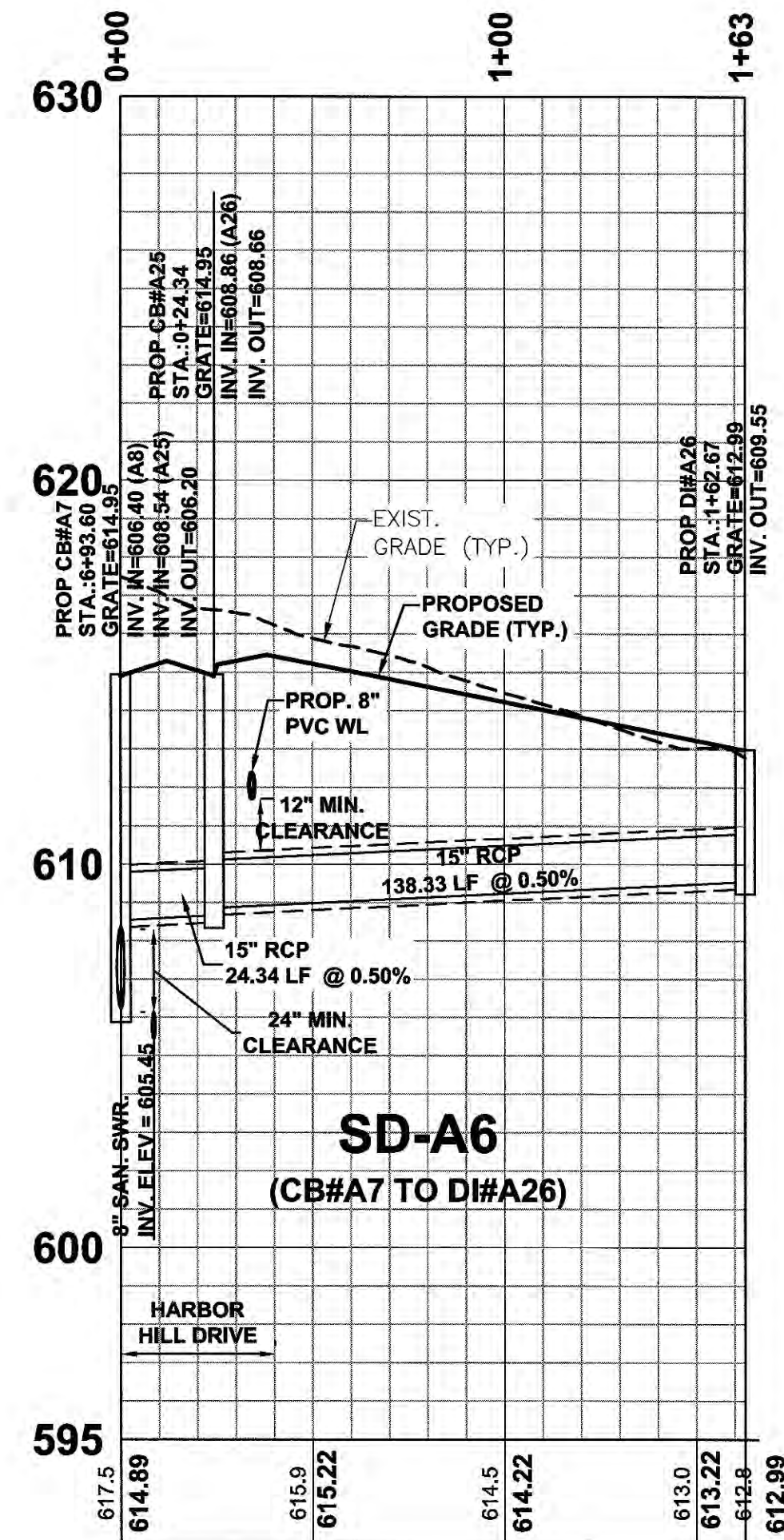
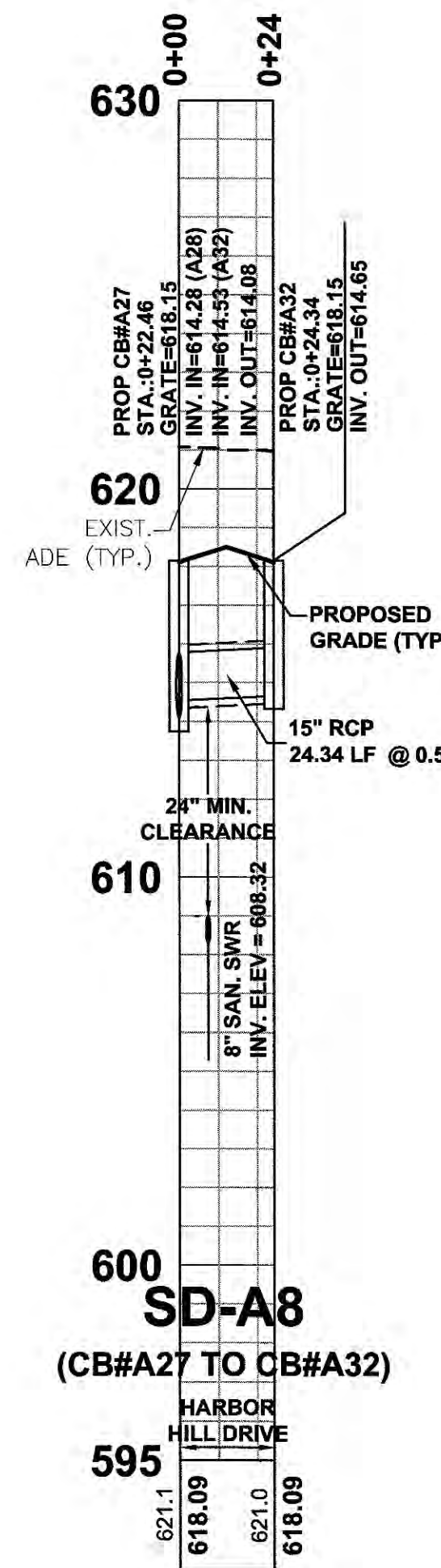
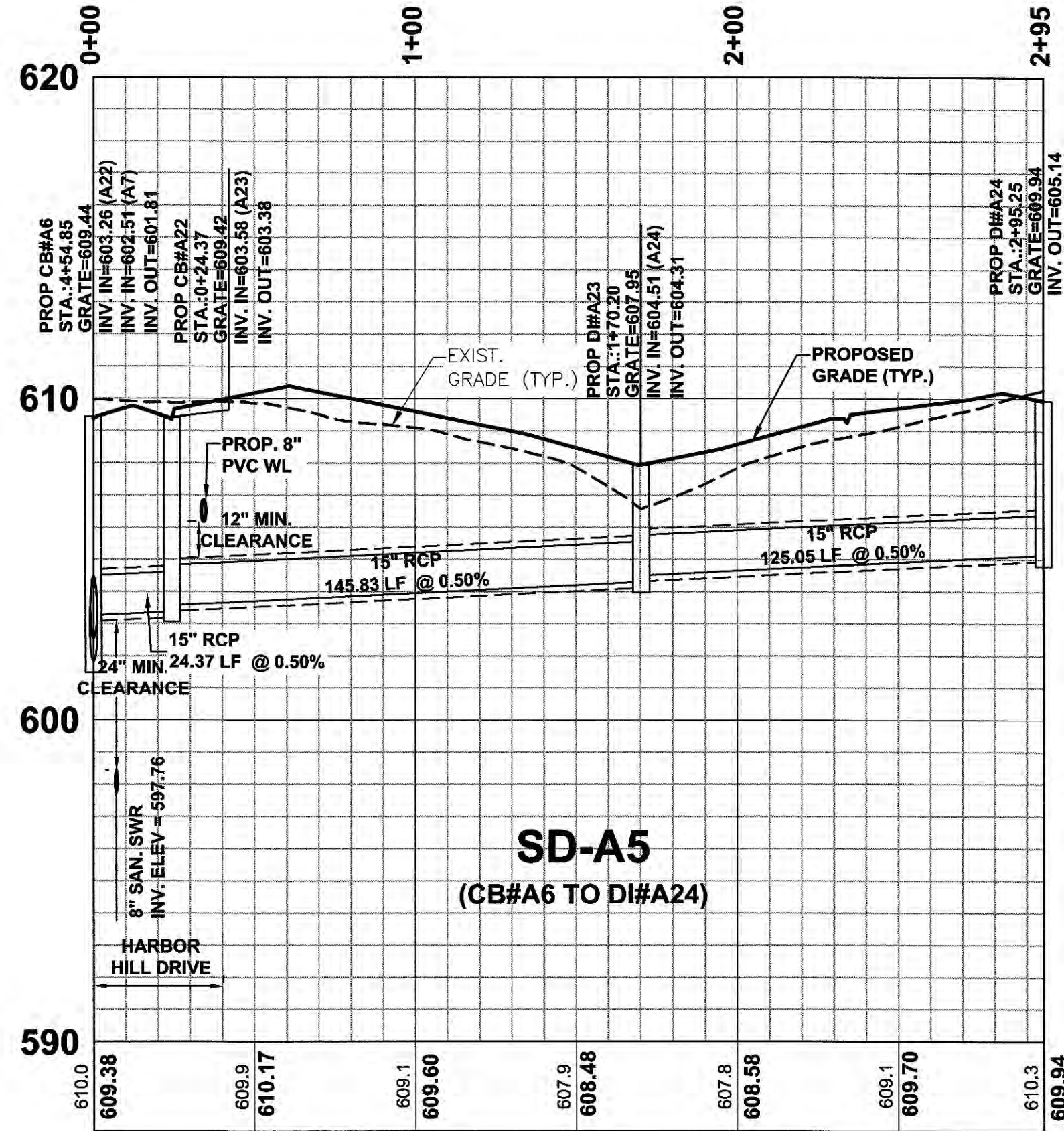
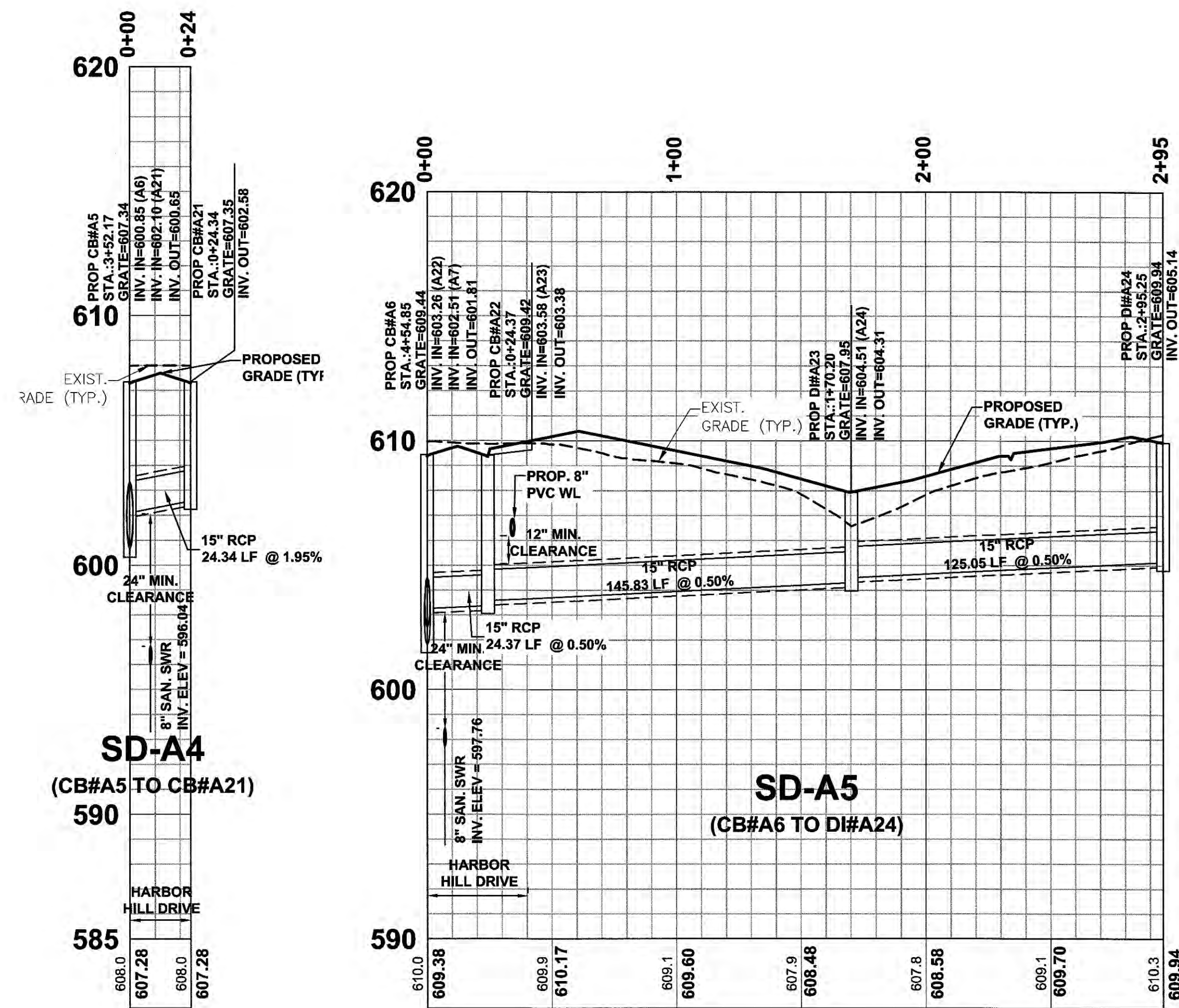
ECB











STORM DRAINAGE PROFILES  
(SHEET 3 OF 10)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.7

ESP Associates, P.A.  
P.O. Box 100  
Charlotte, NC 28241  
2475 Belmont Blvd.  
Fort Mill, SC 29708  
704-583-1946 (NC)  
803-502-2440 (SC)  
www.espsdallas.com

**ESP**

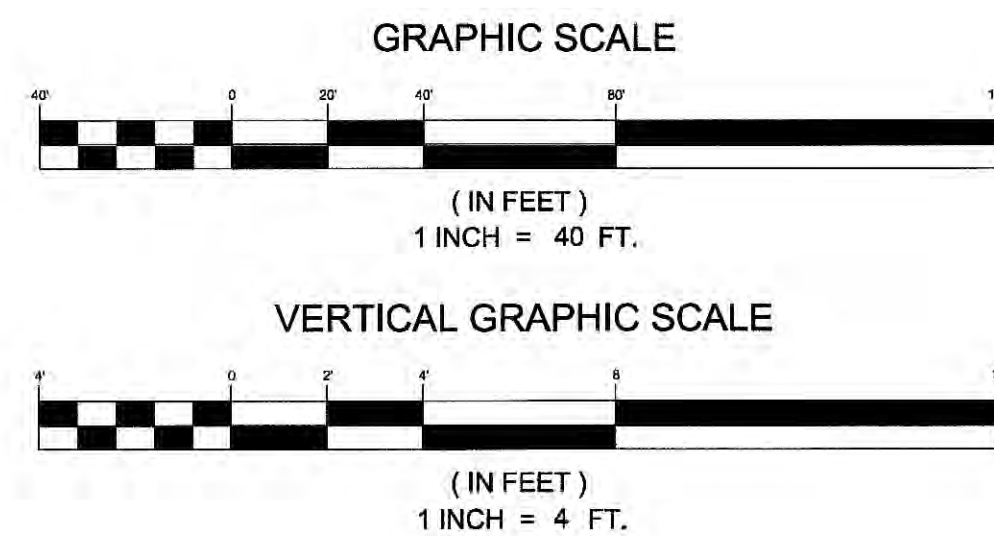
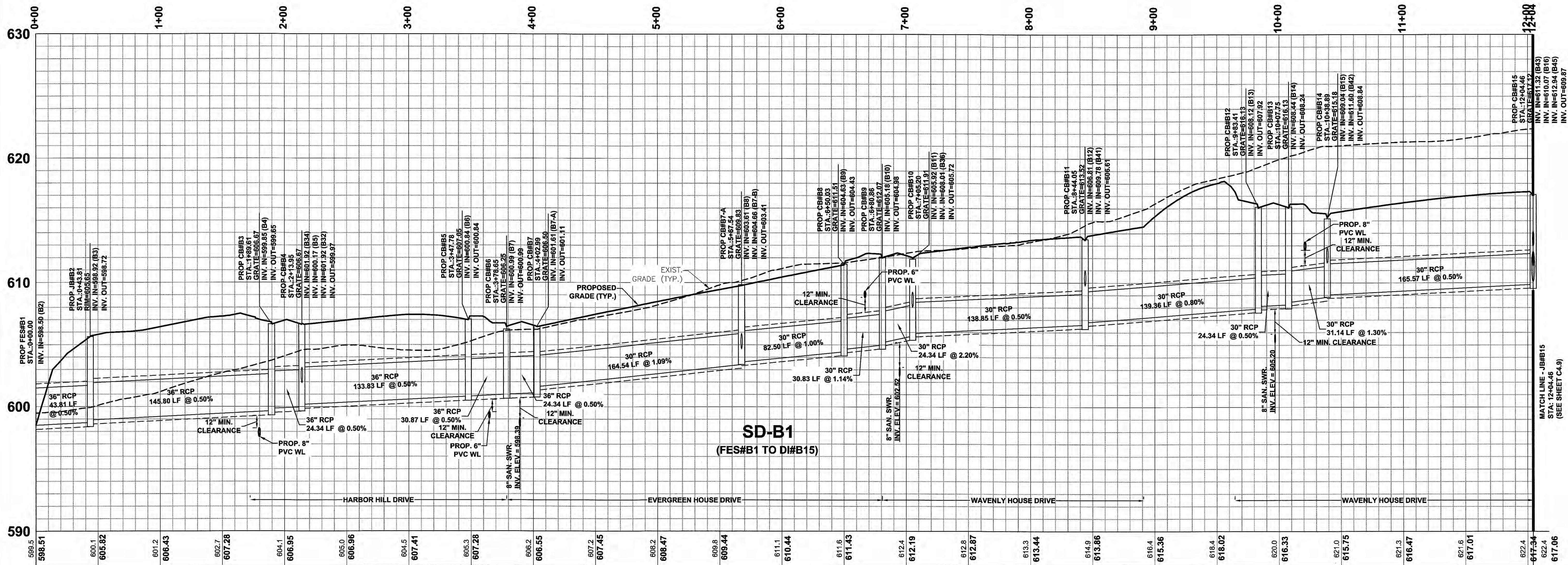
NORTH CAROLINA  
LICENSE NO.:  
C-0587

REGISTERED PROFESSIONAL ENGINEER  
SCOTT CHILDERS  
033416  
8-24-16

NO.	DATE	REVISION	REVISOR	REVISION PER CITY OF CHARLOTTE COMMENTS
1	08/22/2016		ECB	



V:\CN13\430 - Chateau Phase 3\_CN13\325\Sheet\CN13.430-STRM - SD-B.dwg, C4.8, ehsanman



STORM DRAINAGE PROFILES  
(SHEET 4 OF 10)

CHATEAU PHASE 3

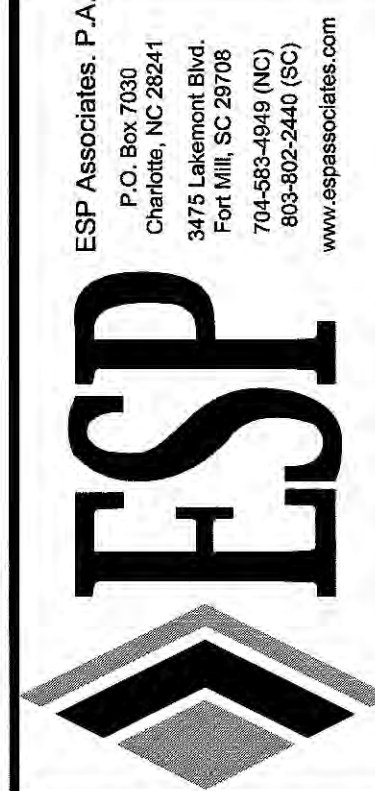
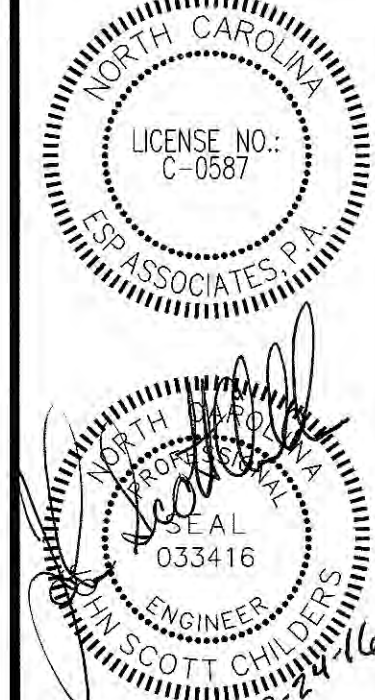
LENNAR CAROLINAS, LLC

CHARLOTTE, NC

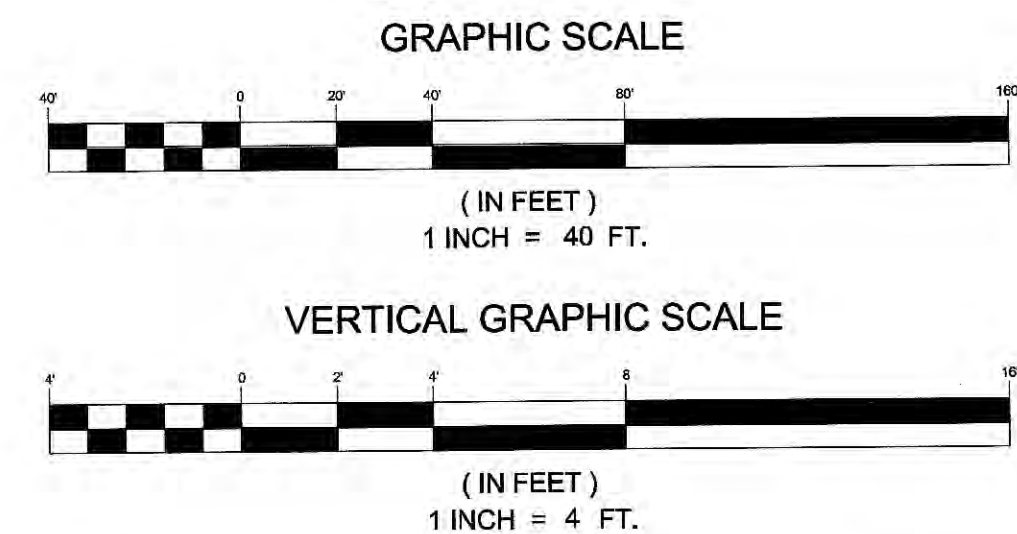
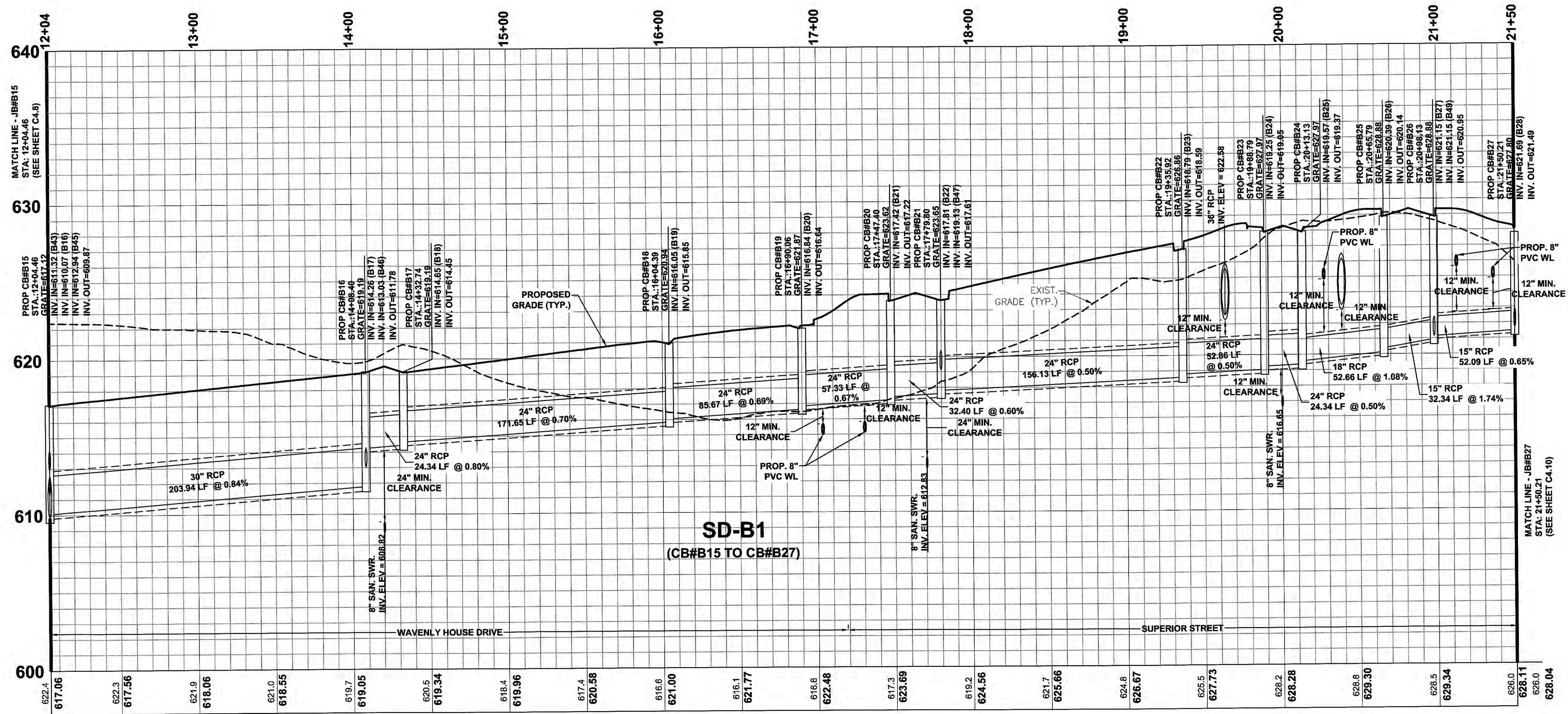
PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.8

NO.	DATE	REVISION
1	08/24/2016	REVISED PER CITY OF CHARLOTTE COMMENTS

BY: ECB







STORM DRAINAGE PROFILES  
(SHEET 5 OF 10)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.9

BY

ECB

DATE

08/24/2016

REVISION

REVISED PER CITY OF CHARLOTTE COMMENTS

NO.

1

NO.

1

DATE

08/24/2016

REVISION

REVISED PER CITY OF CHARLOTTE COMMENTS

NO.

1

DATE

08/24/2016

REVISION

REVISED PER CITY OF CHARLOTTE COMMENTS

NO.

1

DATE

08/24/2016

REVISION

REVISED PER CITY OF CHARLOTTE COMMENTS

NO.

1

DATE

08/24/2016

REVISION

REVISED PER CITY OF CHARLOTTE COMMENTS

NO.

1

DATE

08/24/2016

REVISION

REVISED PER CITY OF CHARLOTTE COMMENTS

NO.

1

DATE

08/24/2016

ESP

ESP Associates, P.A.  
P.O. Box 2002  
Charlotte, NC 28241  
2475 Lenoir Blvd.  
Fort Mill, SC 29708  
704-583-4946 (NC)  
803-802-2440 (SC)  
www.espassociates.com

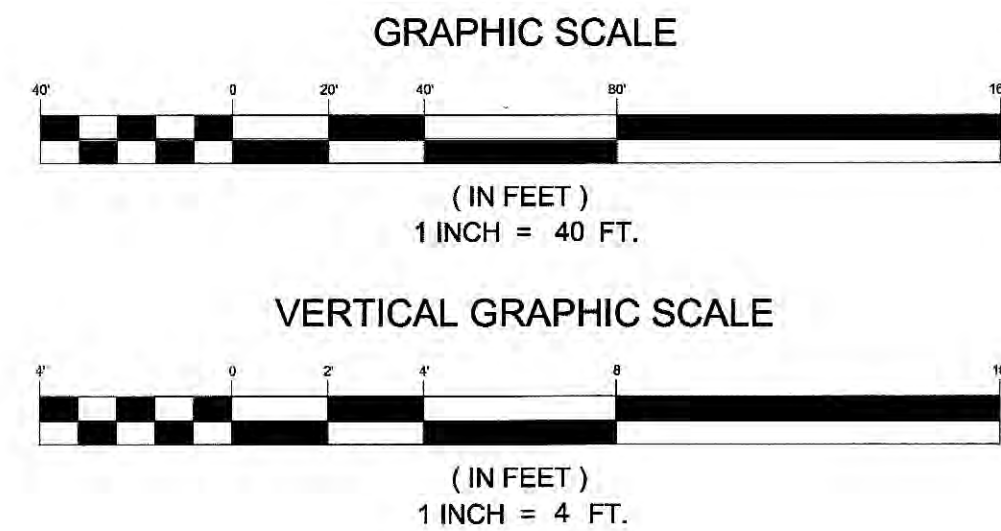
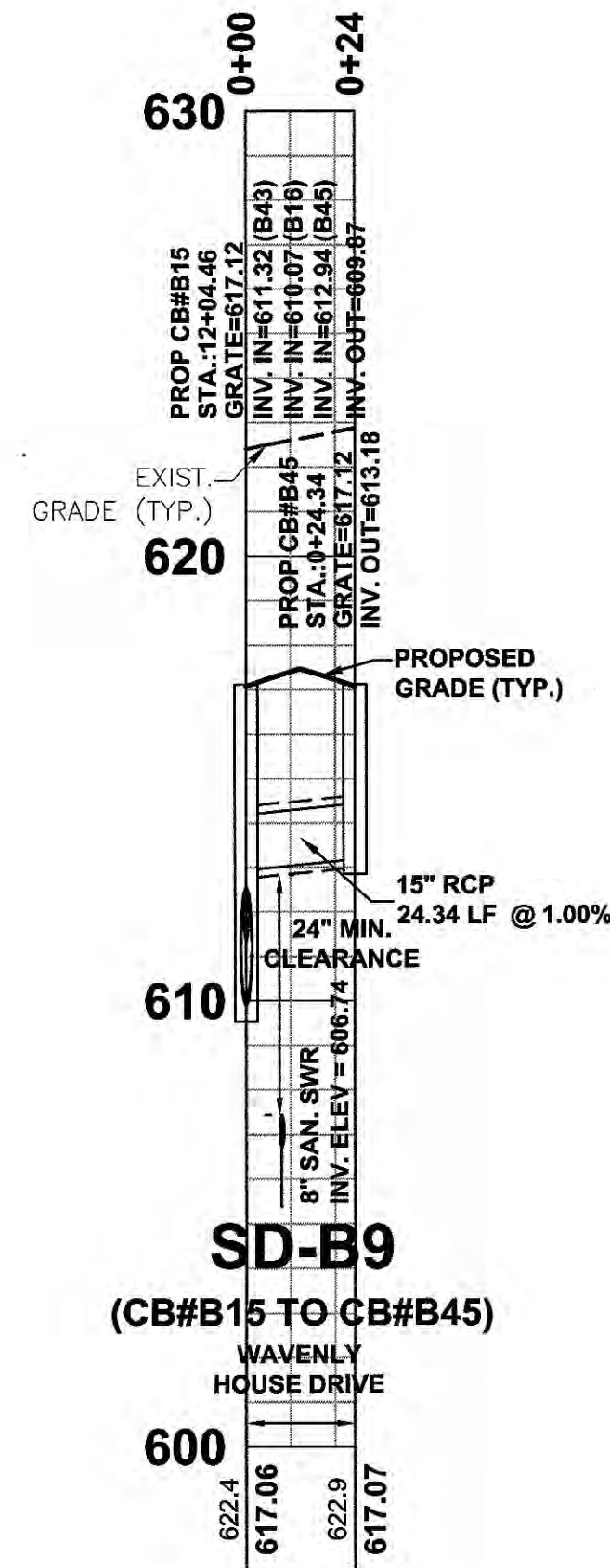
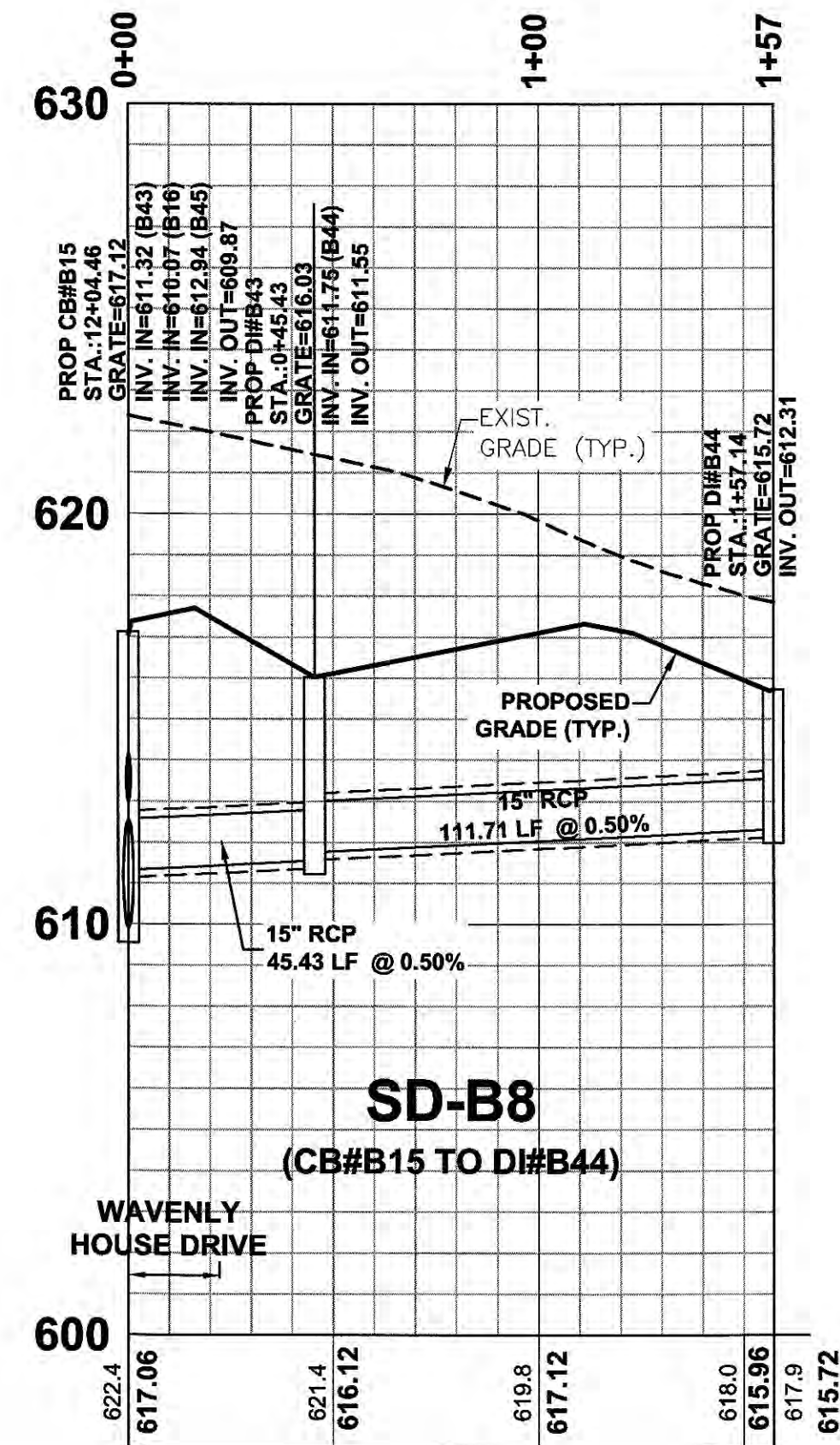
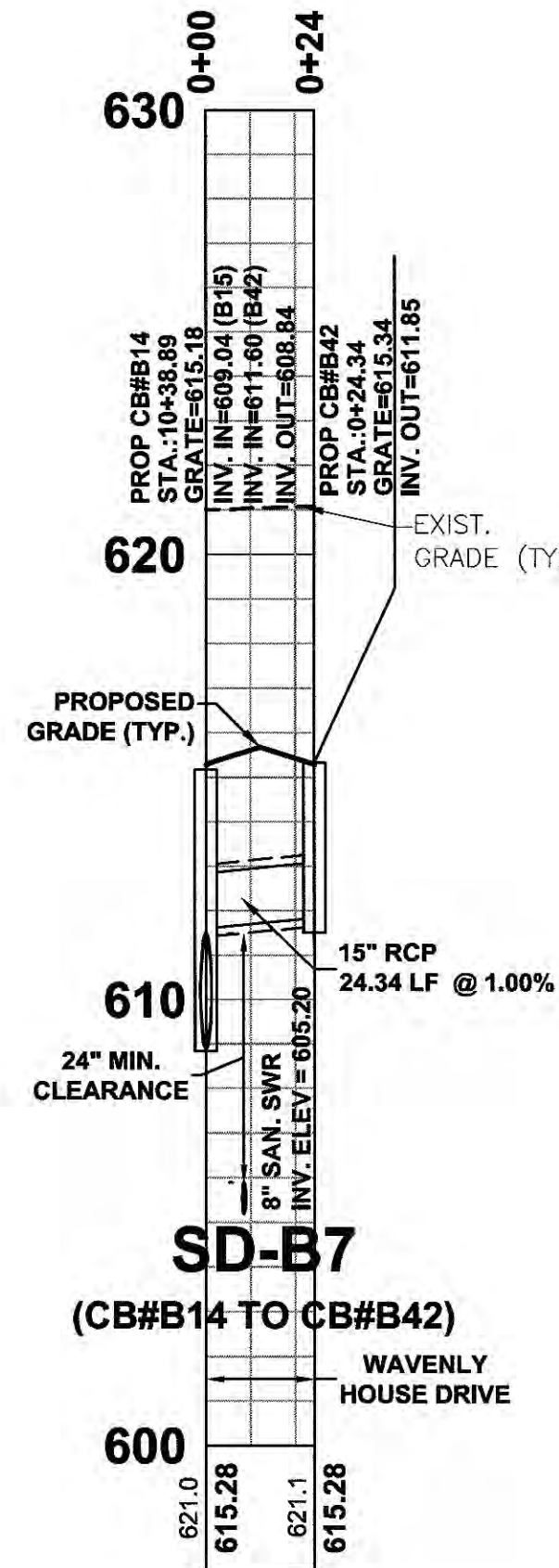
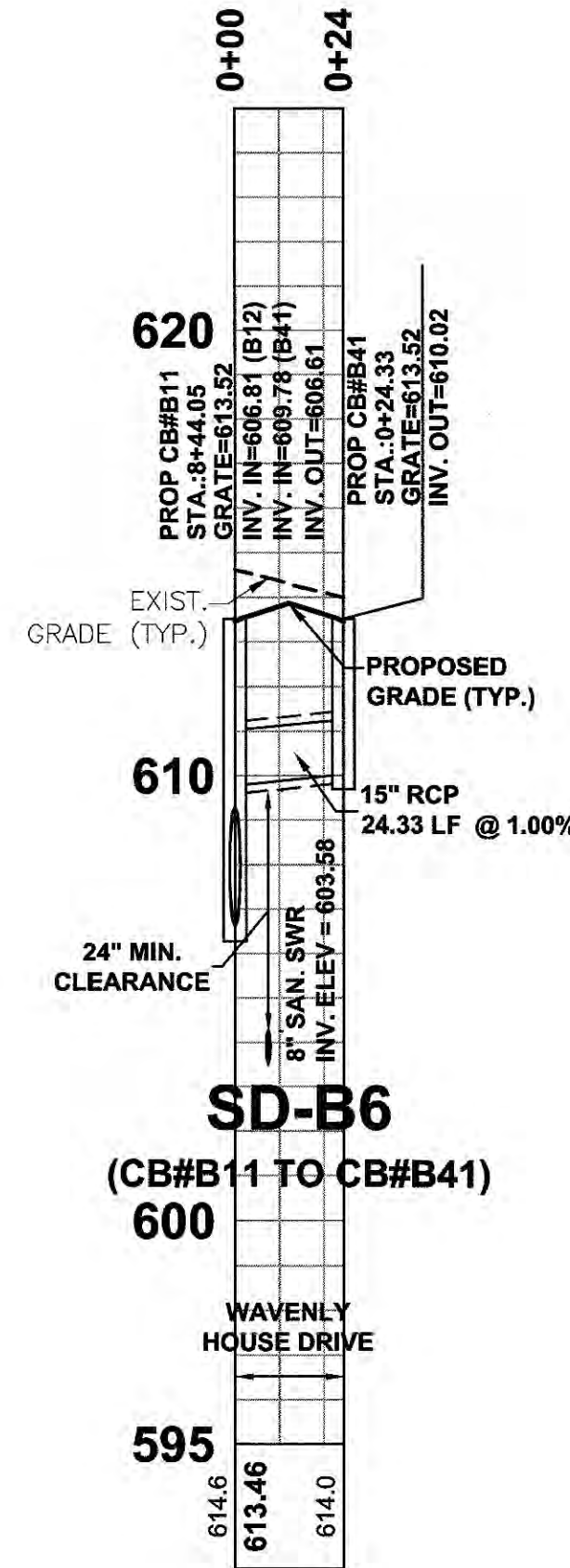
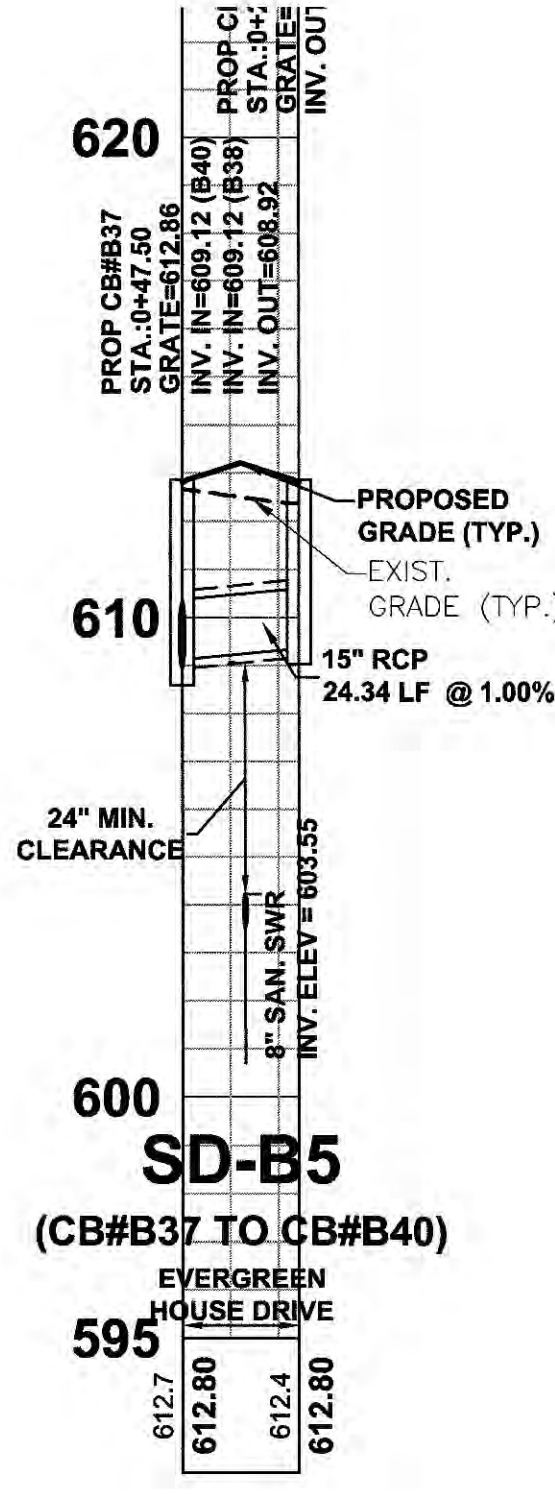
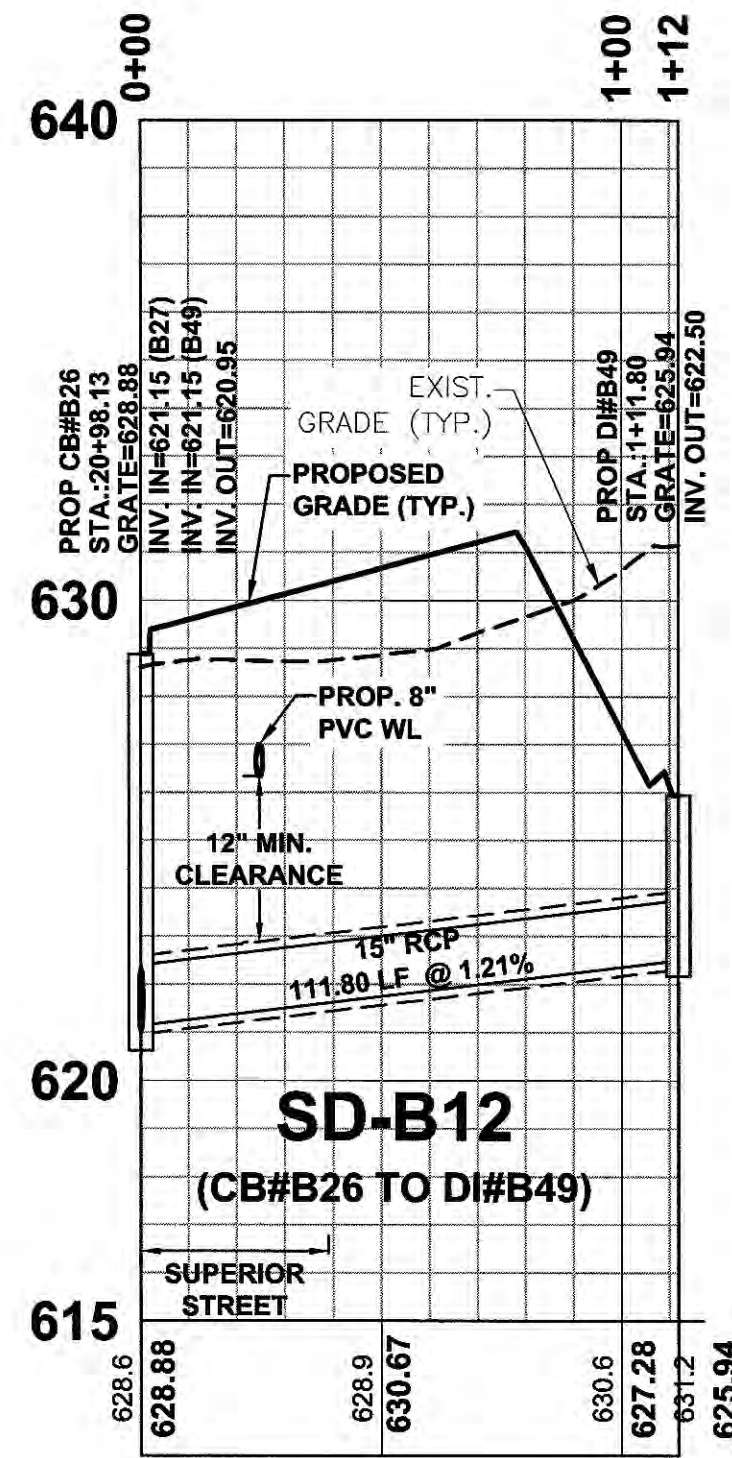
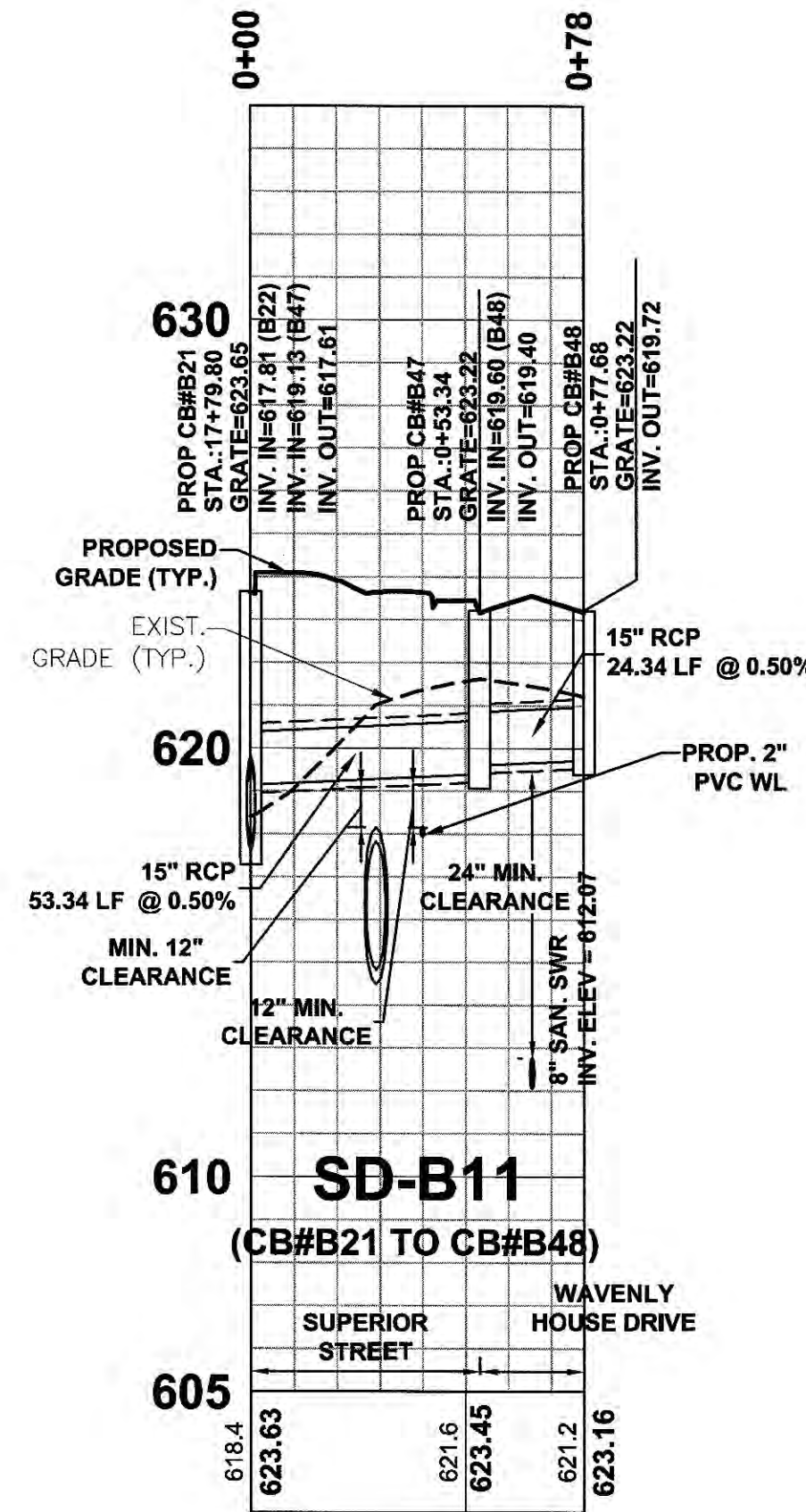
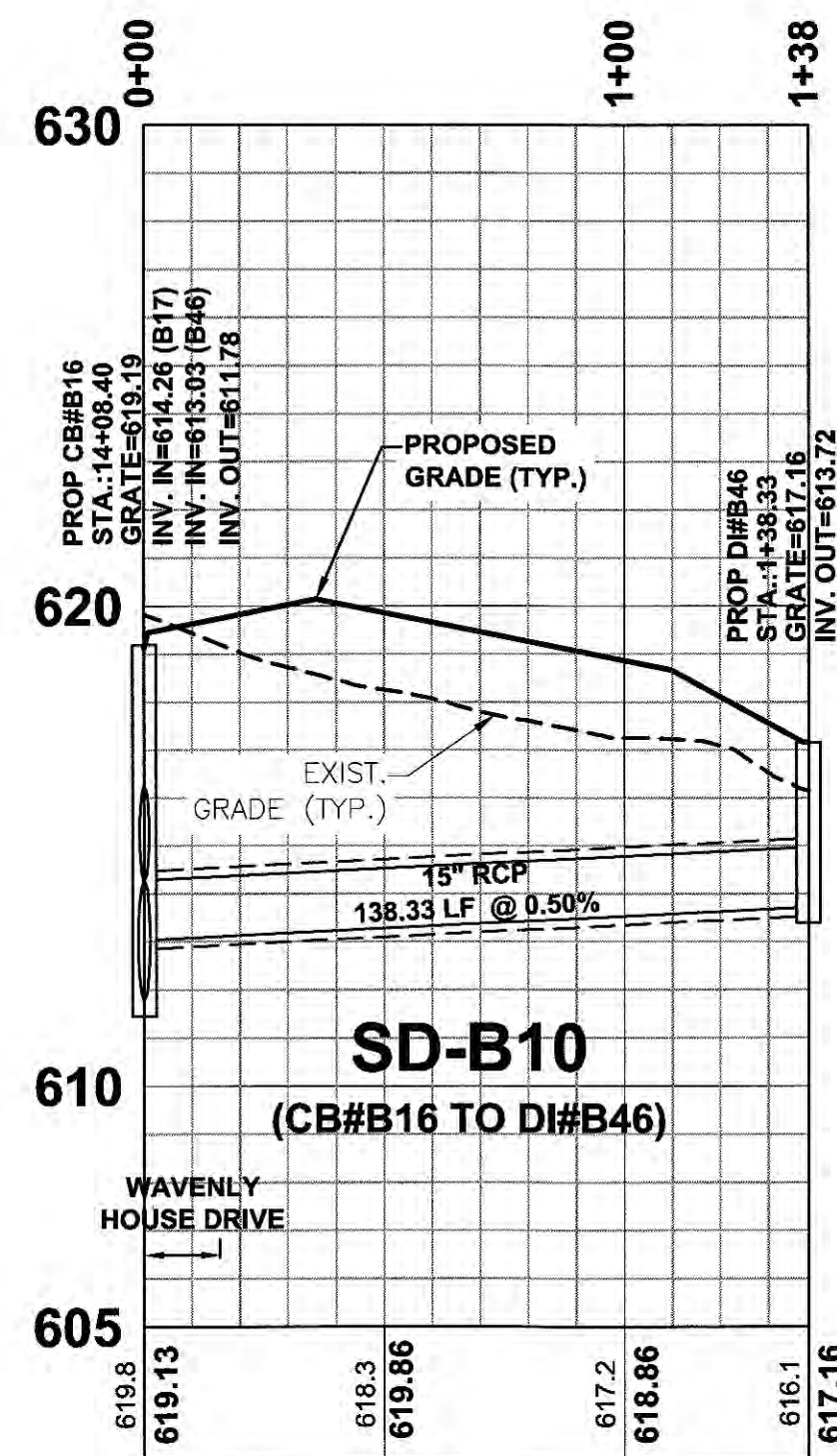
NORTH CAROLINA  
LICENSE NO.:  
C-0587

ESP ASSOCIATES, P.A.  
REGISTERED PROFESSIONAL ENGINEER  
SCOTT CHILLES  
033416  
8/24/16









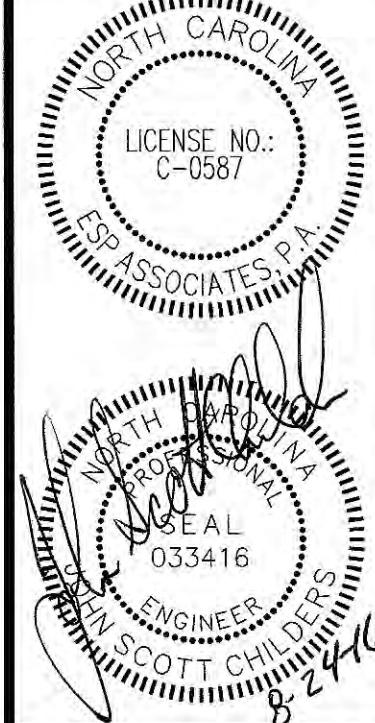
STORM DRAINAGE PROFILES  
(SHEET 7 OF 10)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.11

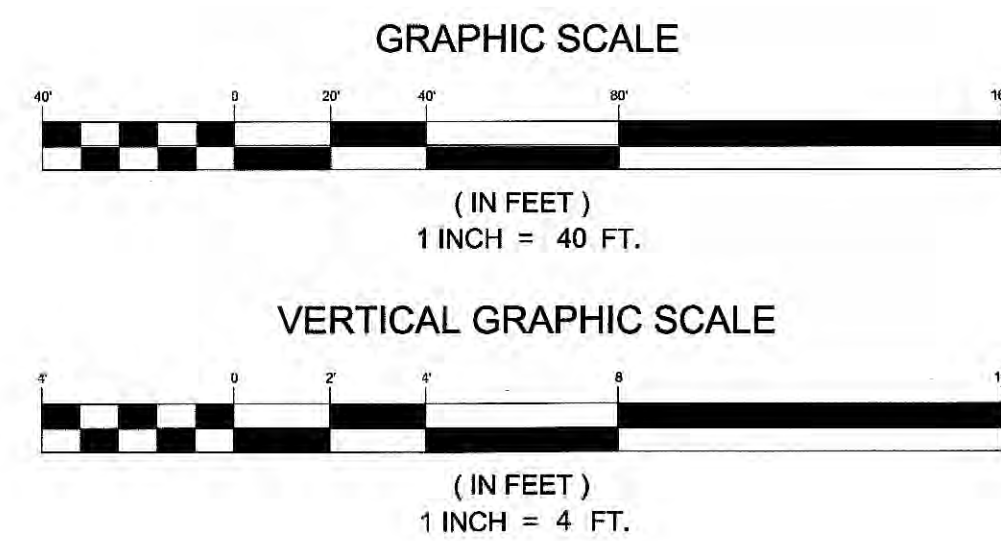
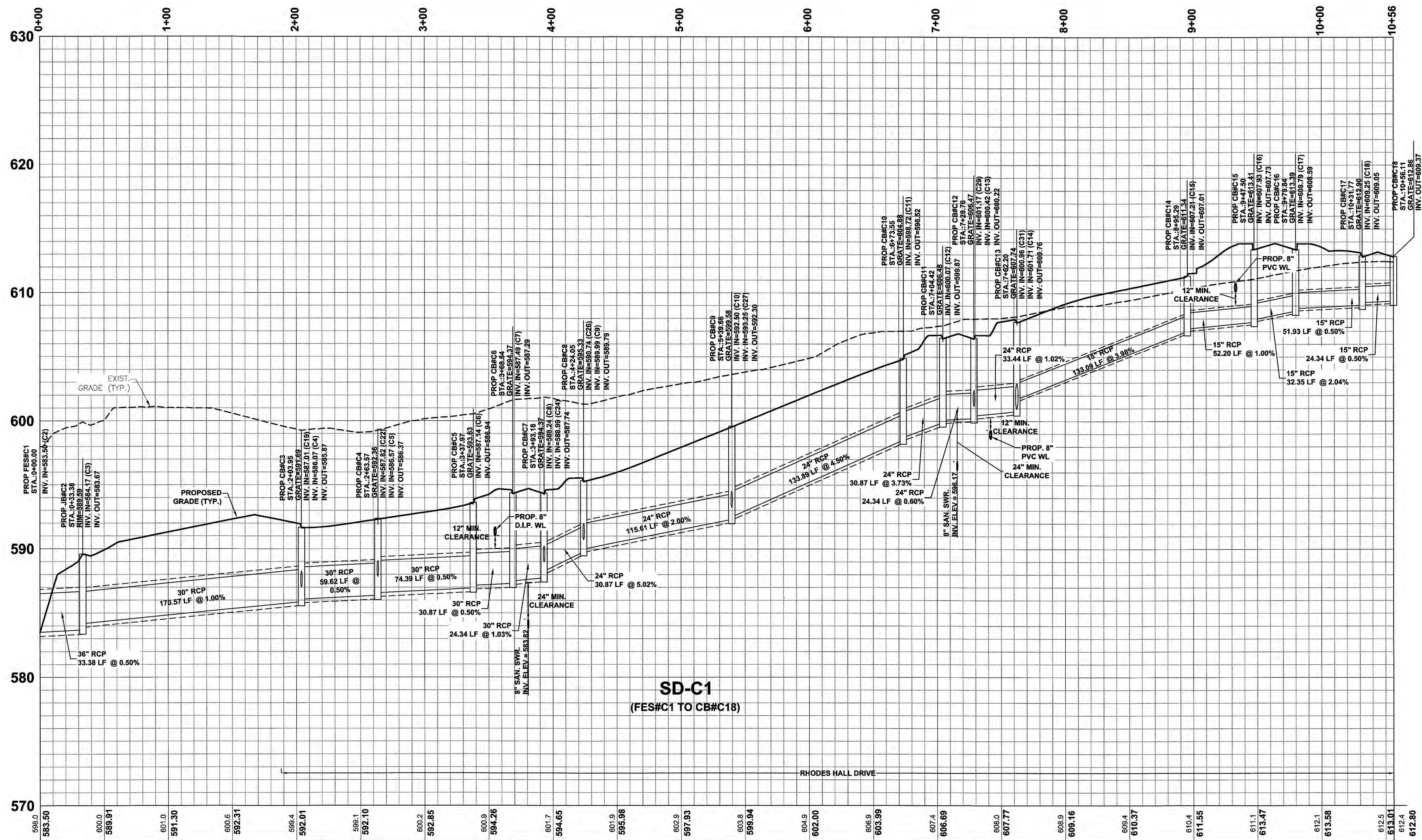


ESP Associates, P.A.  
P.O. Box 7009  
Charlotte, NC 28241  
3475 Lakewood Blvd  
Fort Mill, SC 29708  
704-583-4940 (NC)  
803-582-2440 (SC)  
www.espspecialties.com





V:\CN13.430 - Chateau Phase 3\_CN13.430\Sheets\CN13.430-STRM - SD-C.dwg, C4.12, mhammiman



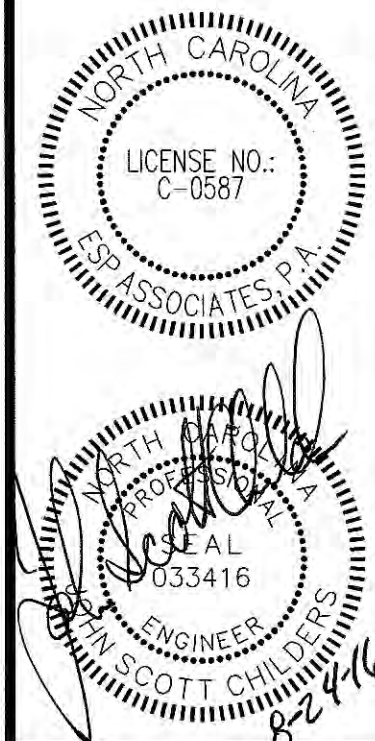
STORM DRAINAGE PROFILES  
(SHEET 8 OF 10)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.12

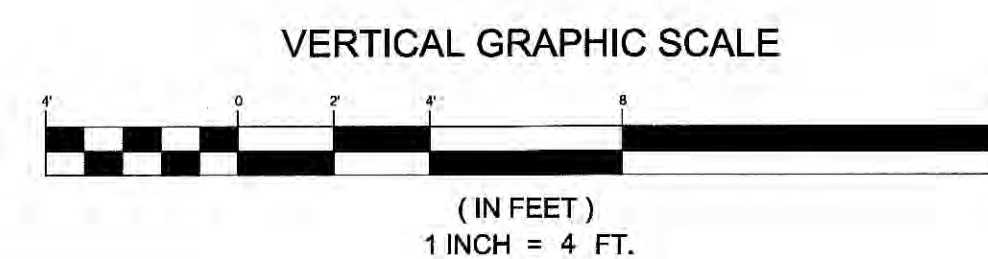
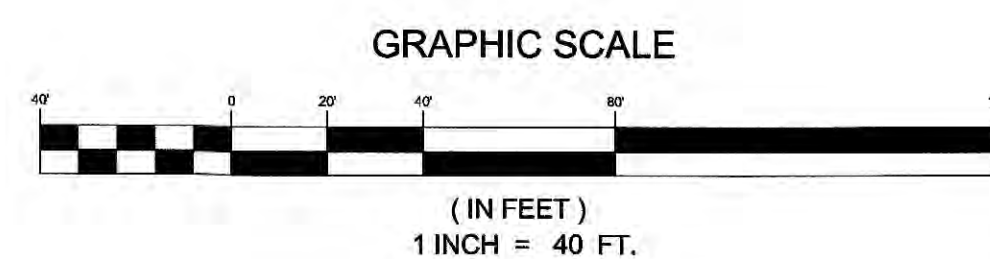
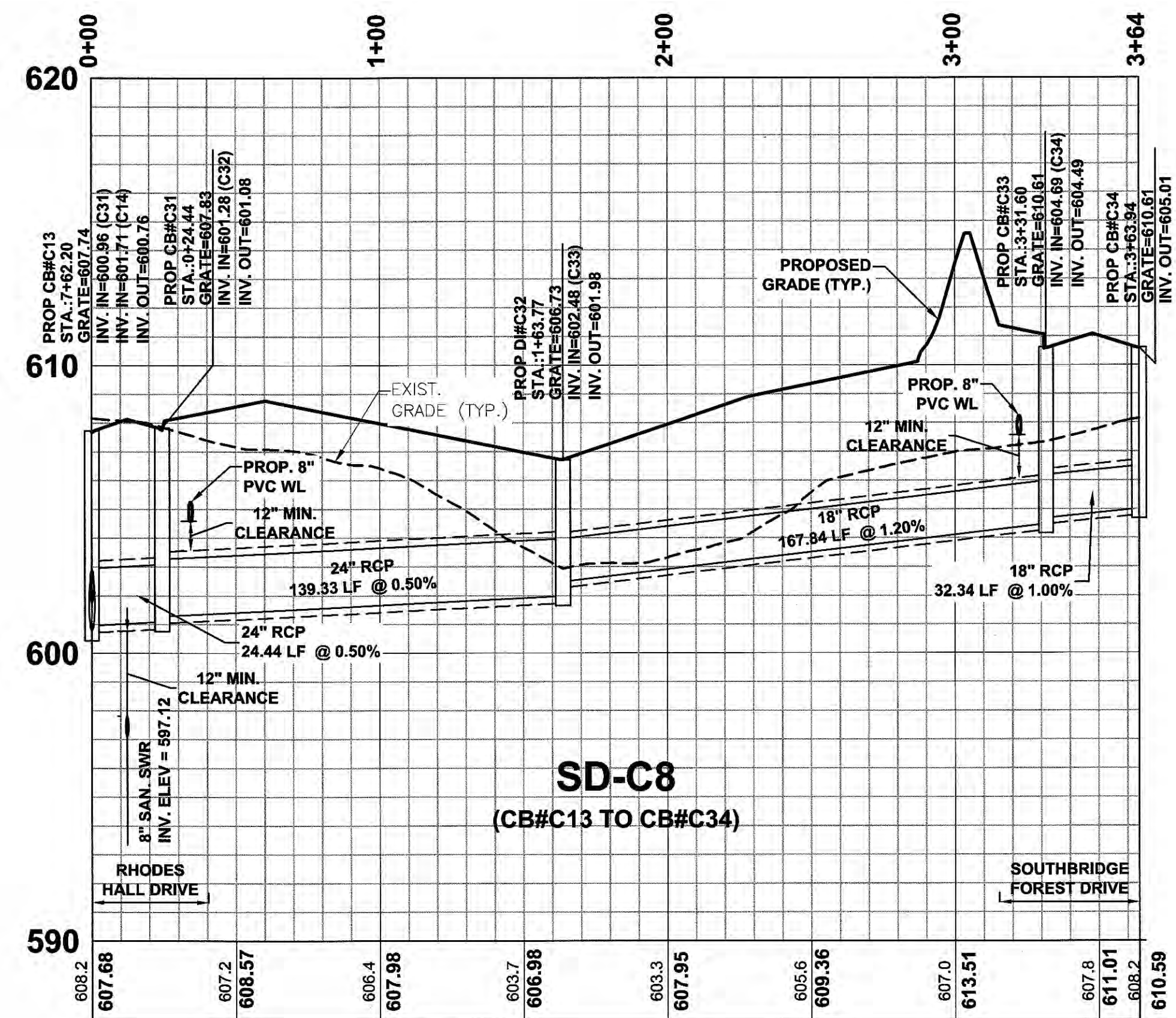
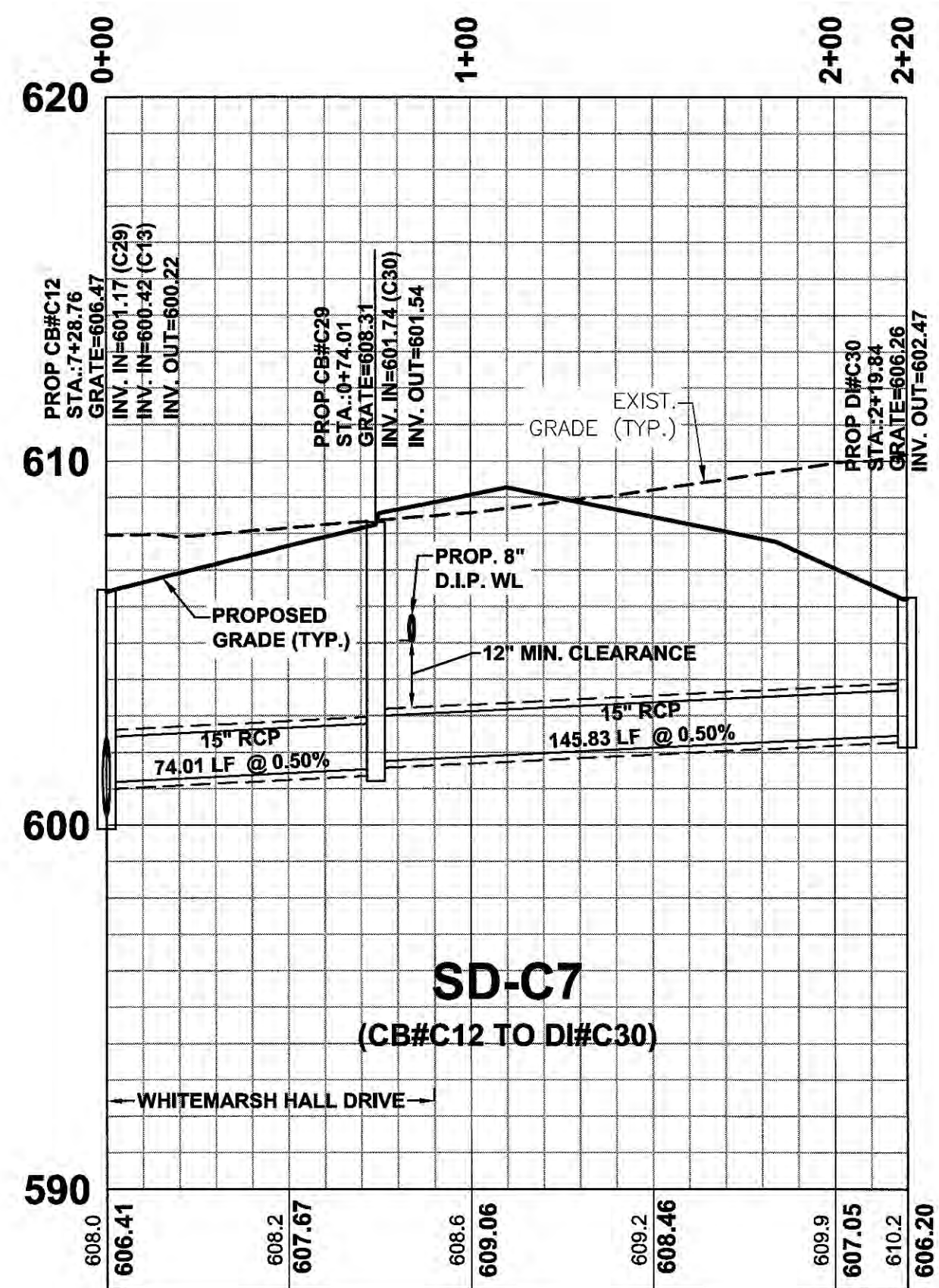
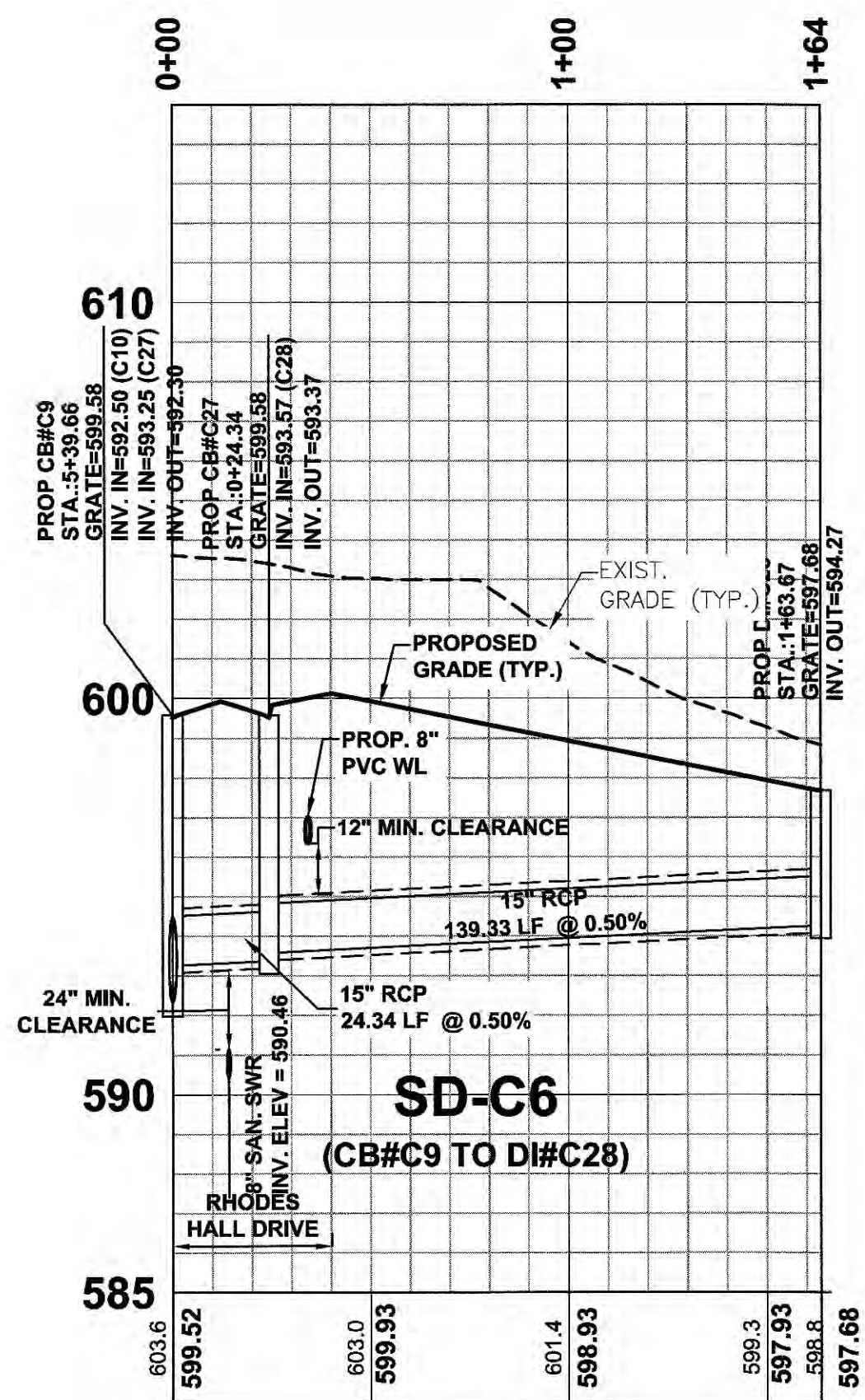
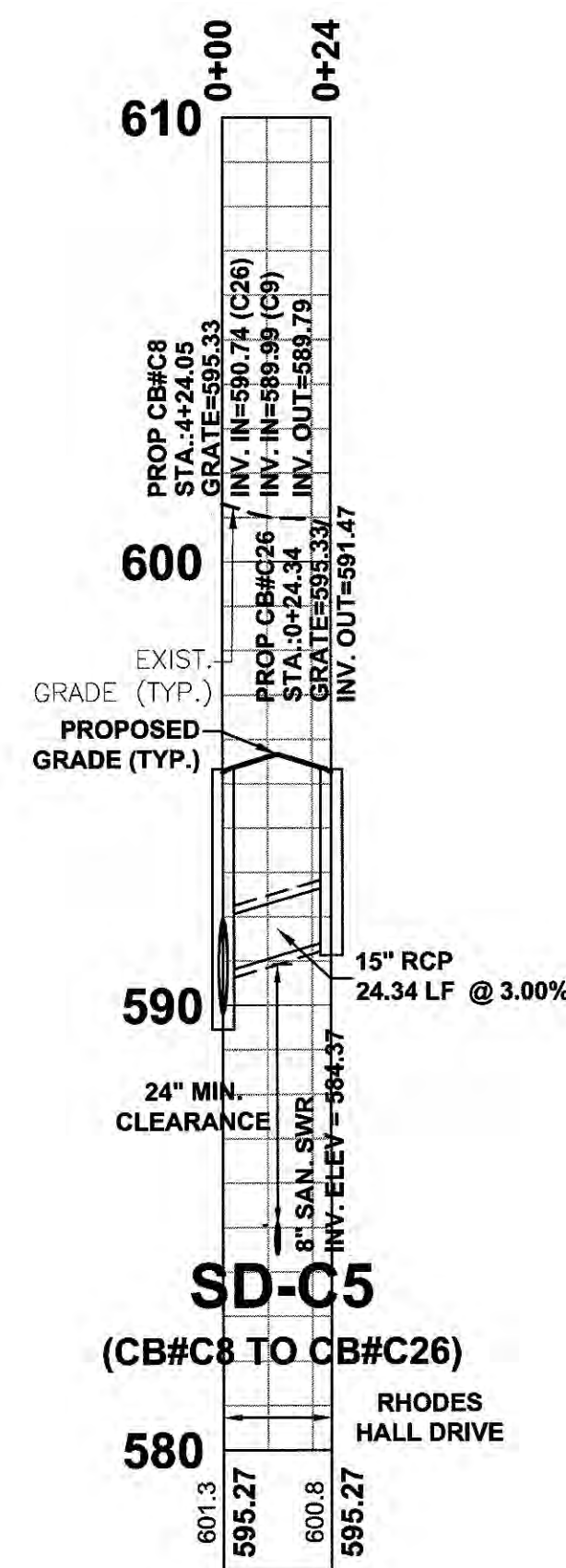
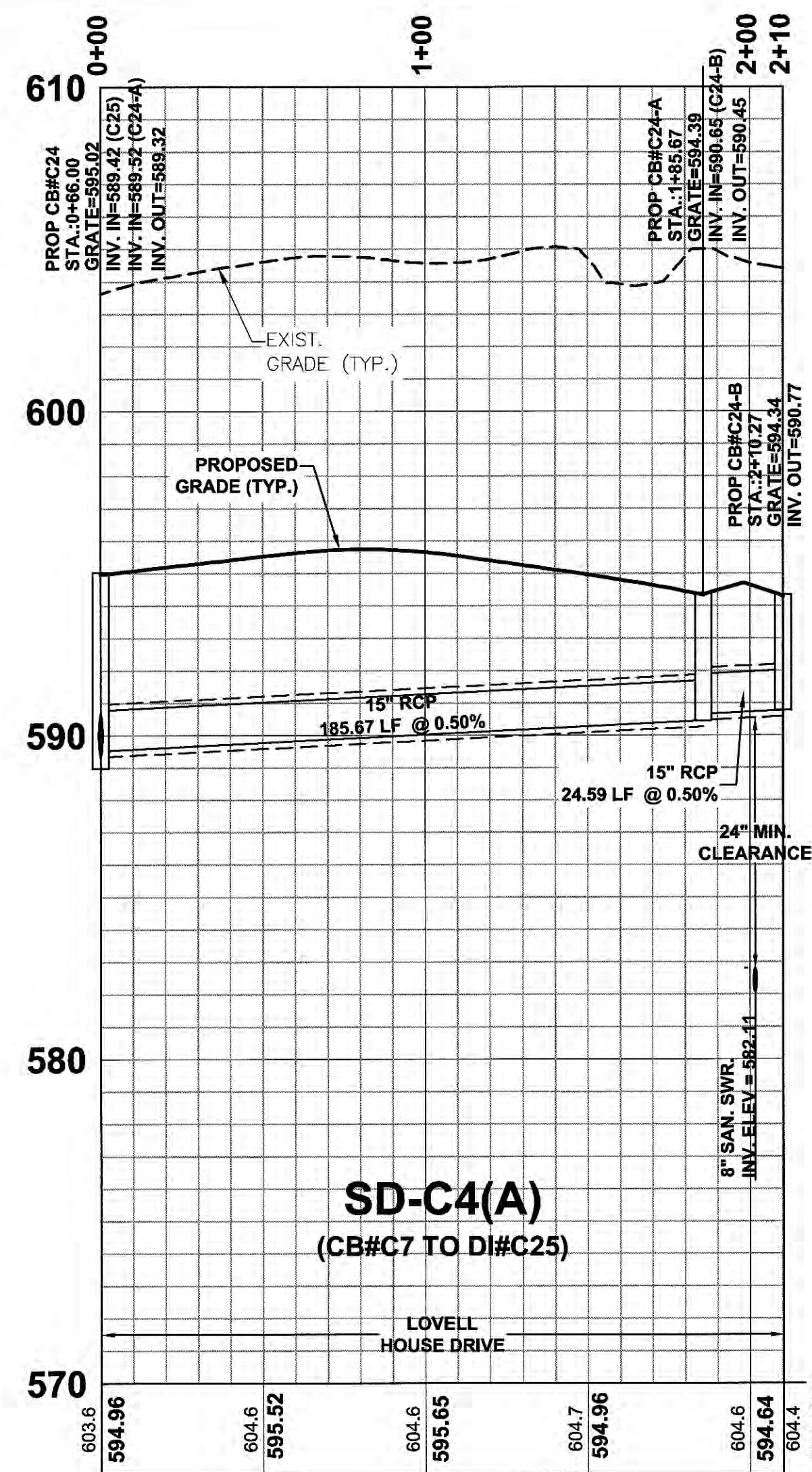
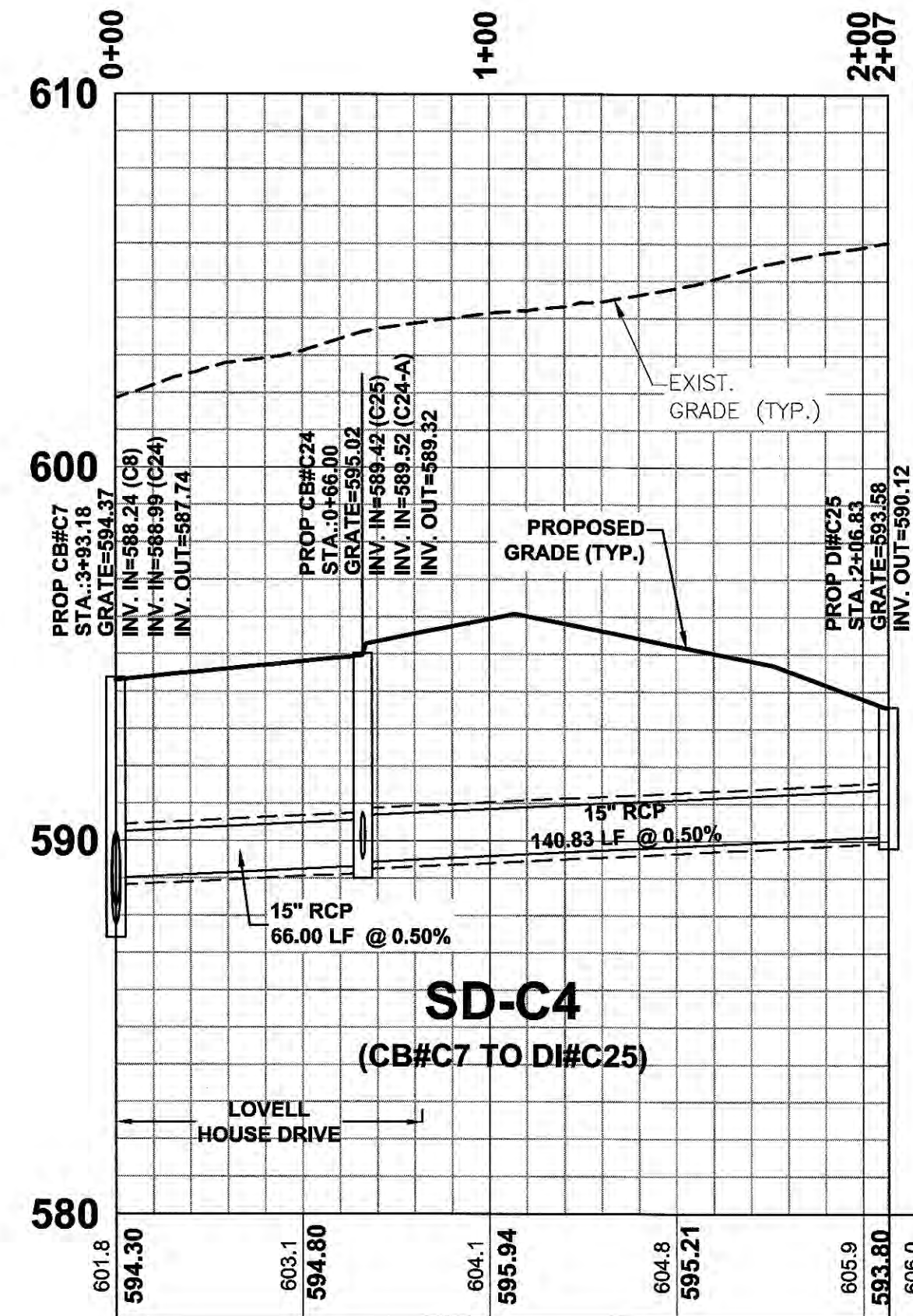
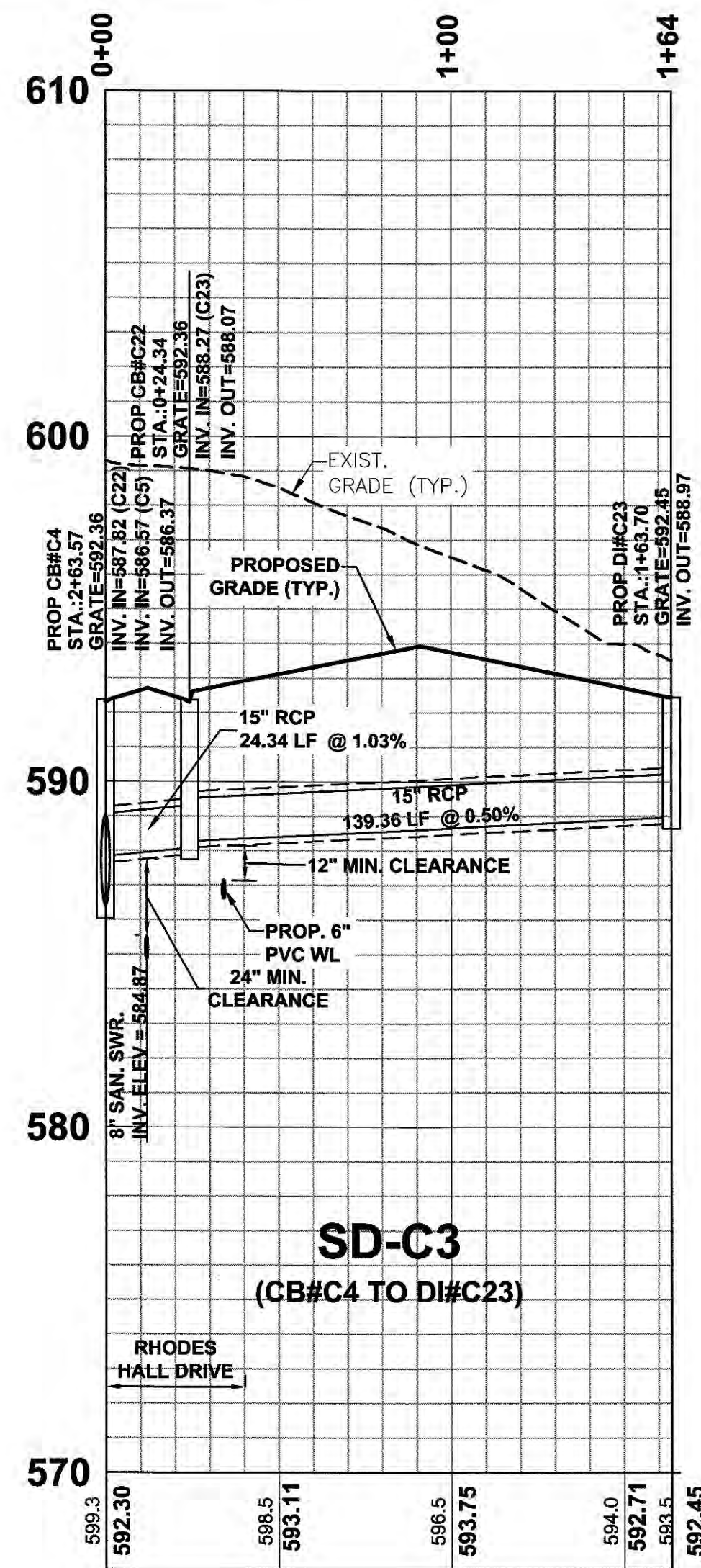
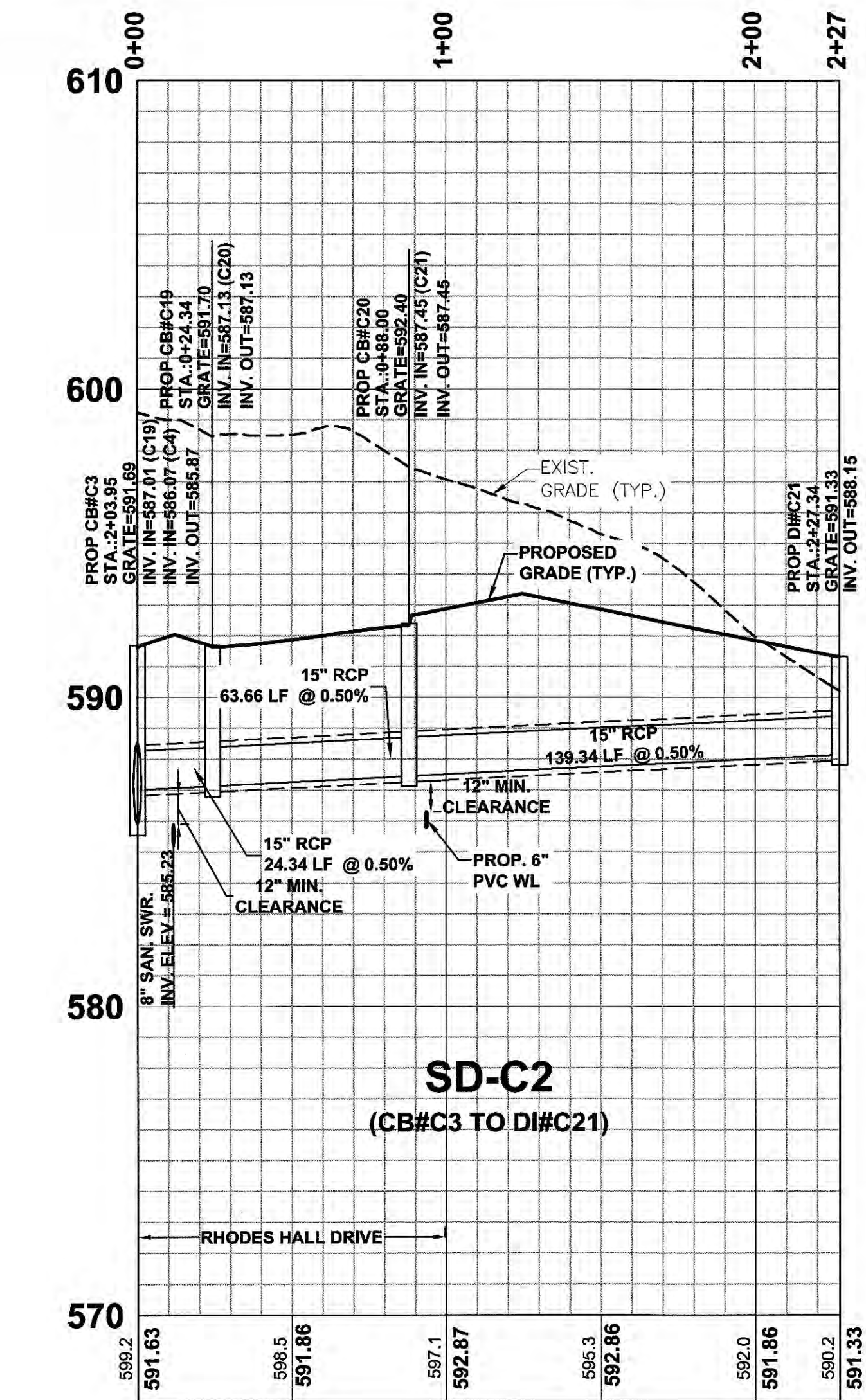


ESP Associates, P.A.  
P.O. Box 7203  
Charlotte, NC 28241  
3475 Leonard Blvd.  
Fort Mill, SC 29708  
704-583-6445 (NC)  
803-502-2440 (SC)  
www.espassociates.com





V:\CN13.430 - Chateau Phase 3\_CN13.430\Sheet\CN13.430-STRM - SD-C.dwg, CA13, 1/10/2016



STORM DRAINAGE PROFILES  
(SHEET 9 OF 10)

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.13

ESP ASSOCIATES, P.A.  
P.O. BOX 226241  
3475 Leland Rd.  
Fort Mill, SC 29708  
704-583-1946 (NC)  
803-502-2440 (SC)  
www.espsolidates.com

**ESP**

NORTH CAROLINA  
LICENSE NO.:  
C-0587

ESP ASSOCIATES, P.A.  
ENGINEER  
SCOTT CHILLERS  
8-24-16

NO.	DATE	REVISION	BY	REVISION PER CITY OF CHARLOTTE COMMENTS
1	08/24/2016		ECB	



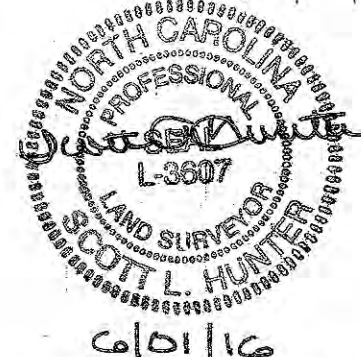
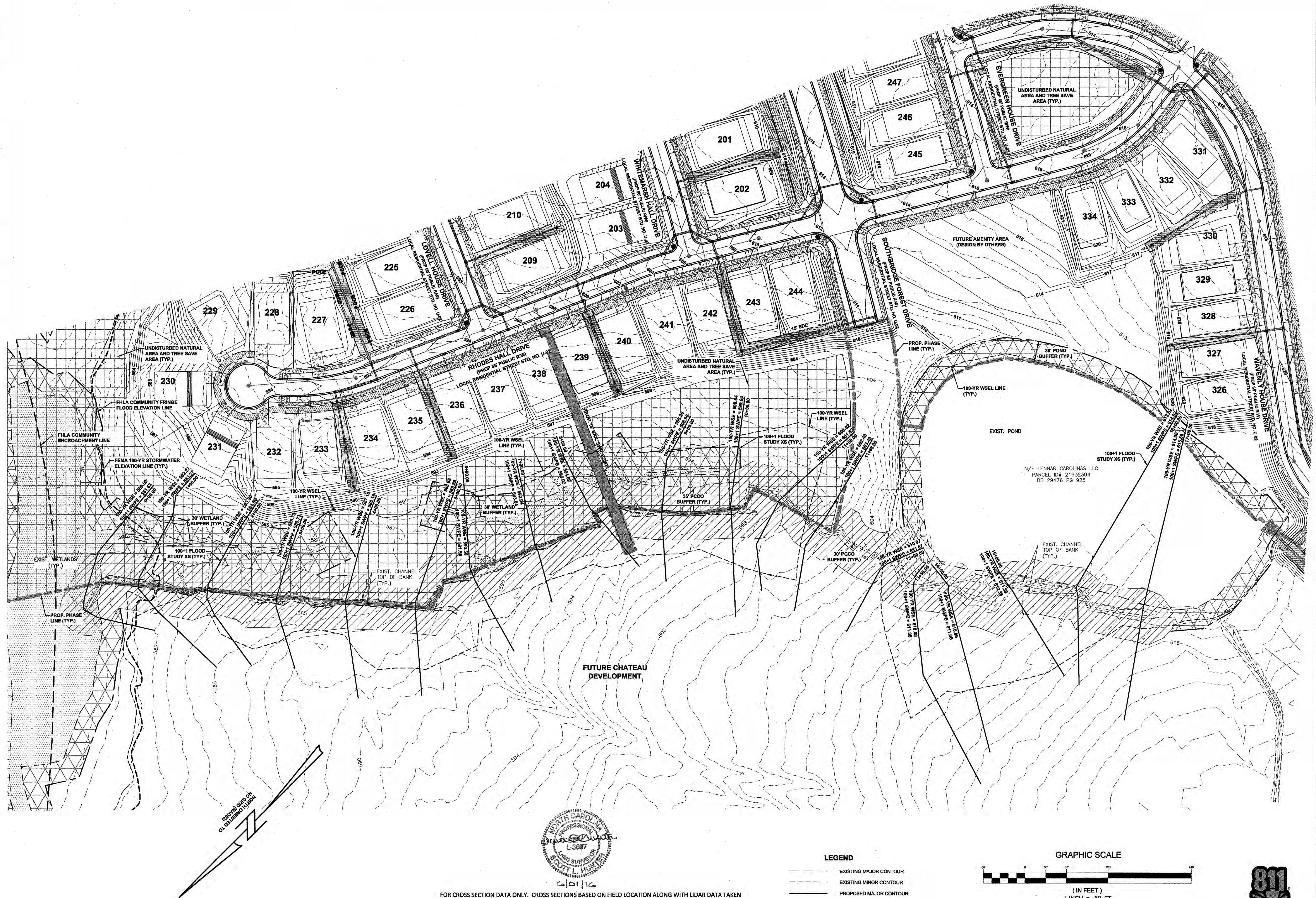






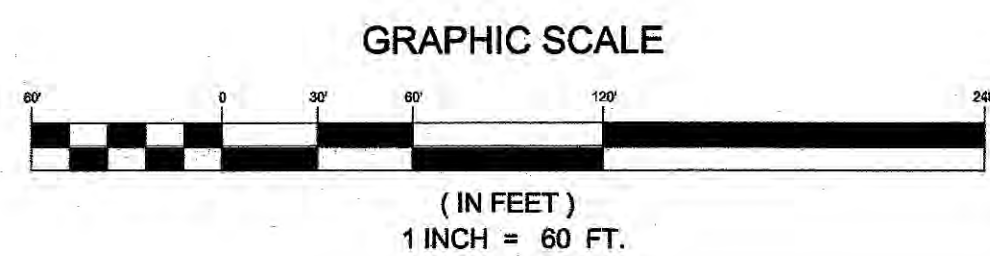


V:\CN13.430 - Chateau Phase 3 - CN13.430\Sheet\CH13.430-FLOOD XSECTIONS.dwg, XS PLAN, ehamman



FOR CROSS SECTION DATA ONLY. CROSS SECTIONS BASED ON FIELD LOCATION ALONG WITH LIDAR DATA TAKEN FROM SURVEY BY ESP ASSOCIATES, P.A. TITLED "TOPOGRAPHIC SURVEY OF TAX PARCELS 21932392, 21904113, 21904102, 21926112", DATED JULY 9, 2014

- LEGEND**
- EXISTING MAJOR CONTOUR
  - - - EXISTING MINOR CONTOUR
  - - - PROPOSED MAJOR CONTOUR
  - - - PROPOSED MINOR CONTOUR
  - - - 100-YEAR WATER SURFACE ELEVATION



100+1 STUDY CHANNEL  
CROSS SECTION PLAN

CHATEAU PHASE 3

LENNAR CAROLINAS, LLC

CHARLOTTE, NC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECB
DRAWN BY:	ECB
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016

SHEET:  
**C4.16**

**ESP**  
ESP ASSOCIATES, P.A.  
P.O. Box 7030  
Charlotte, NC 28241  
3475 Lakemont Blvd.  
Fort Mill, SC 29708  
704-683-6940 (NC)  
803-502-2440 (SC)  
www.espassoc.com

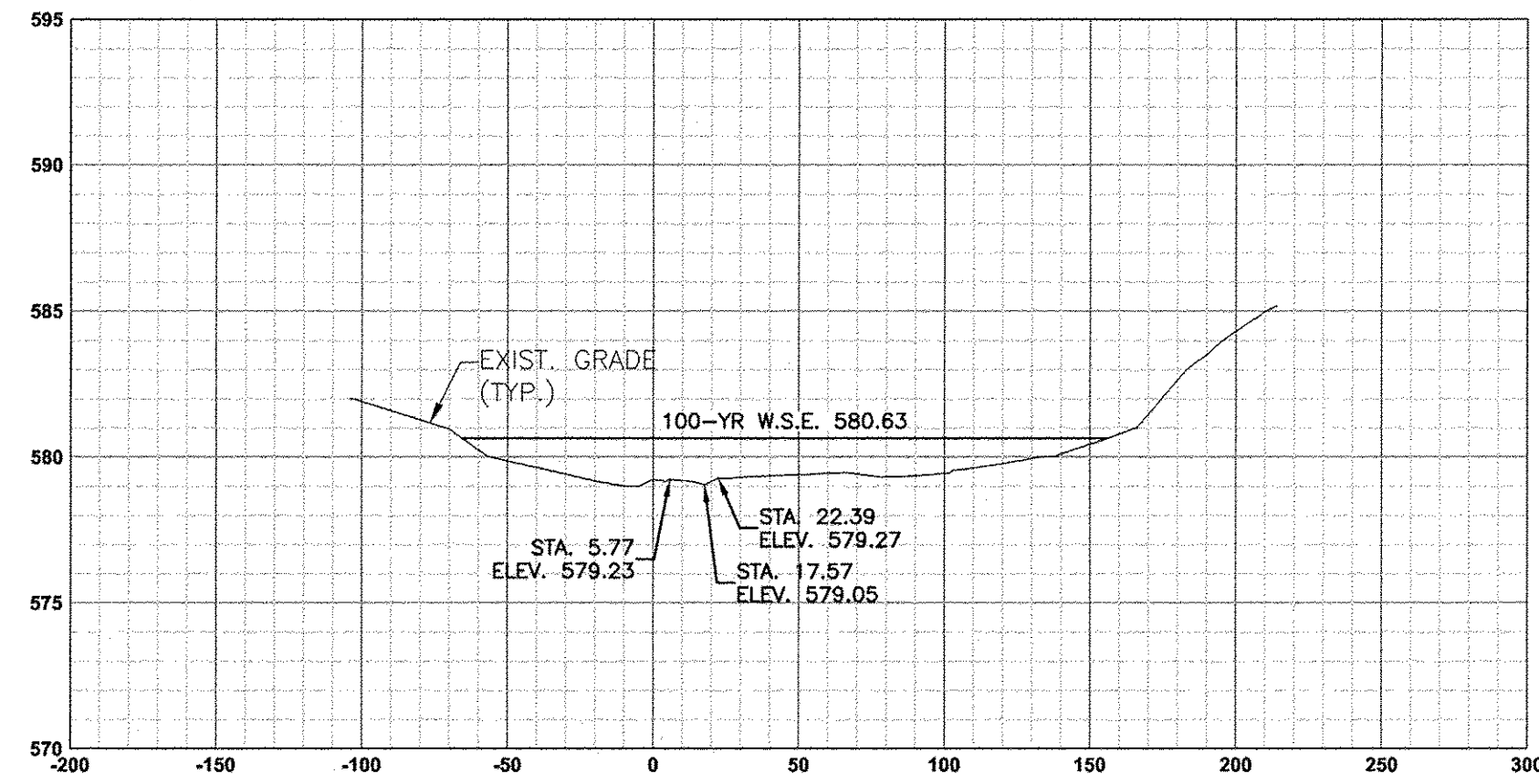
**North Carolina Professional Engineer Seal**  
License No.: C-0587  
Scott L. Hunter  
Professional Engineer  
033416  
State of North Carolina

NO.	DATE	REVISION	REVIEWED PER CITY OF CHARLOTTE COMMENTS	BY
1	08/24/2016			ECB

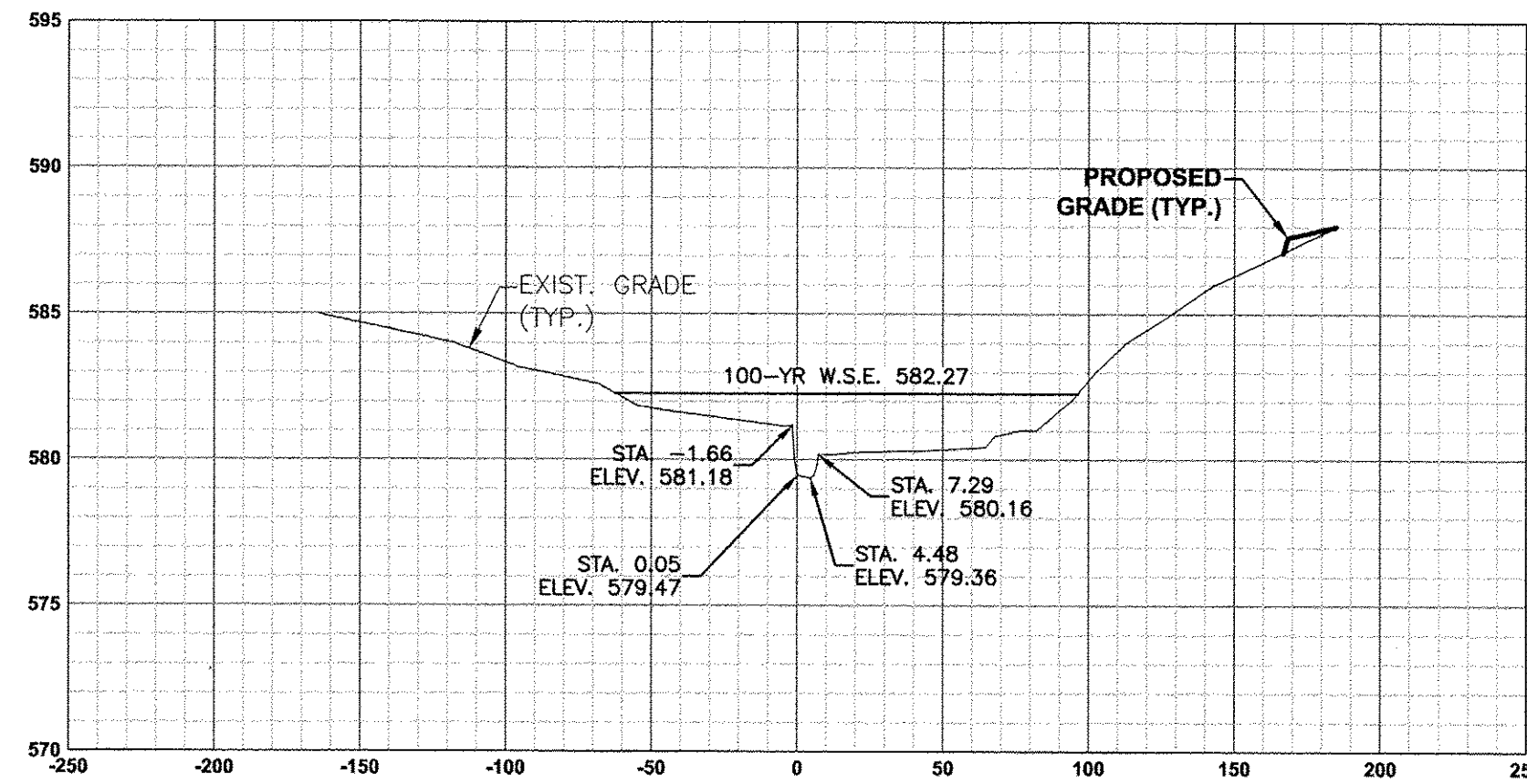


V:\CH13.430 - Chateau Phase 3\CN13.430\Sheet\CH13.430-FLOOD XSECTIONS.dwg\_X31, jhamel@lenar.com

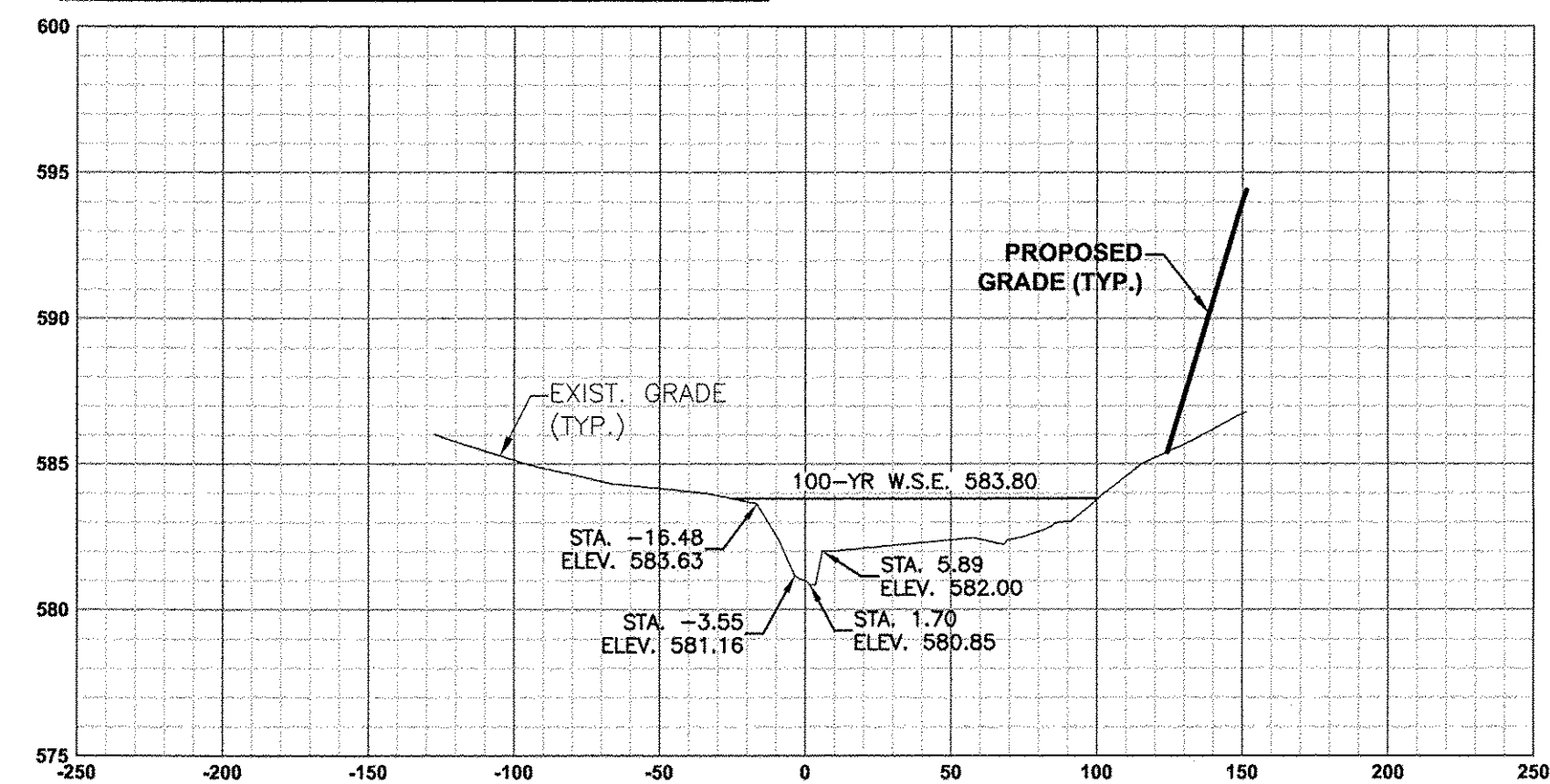
CROSS SECTION AT STATION 0+00.00



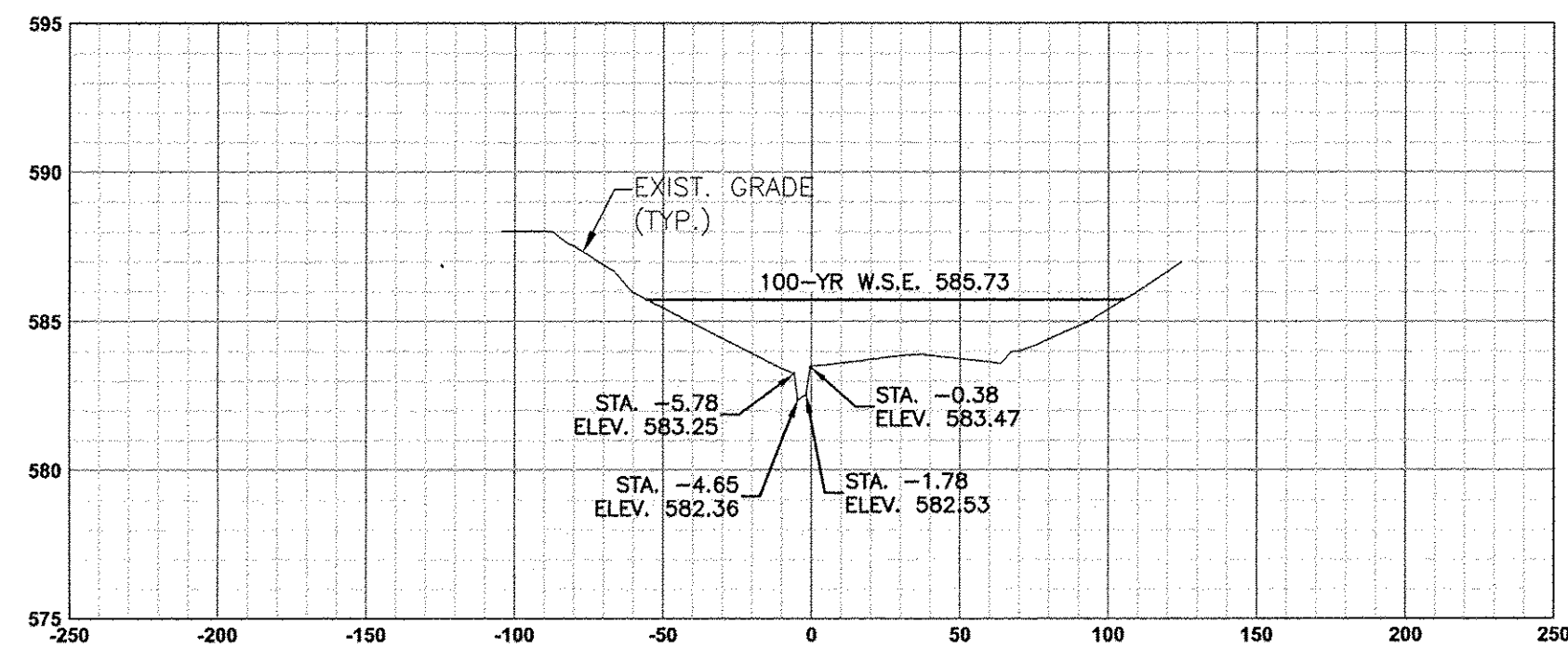
CROSS SECTION AT STATION 1+00.00



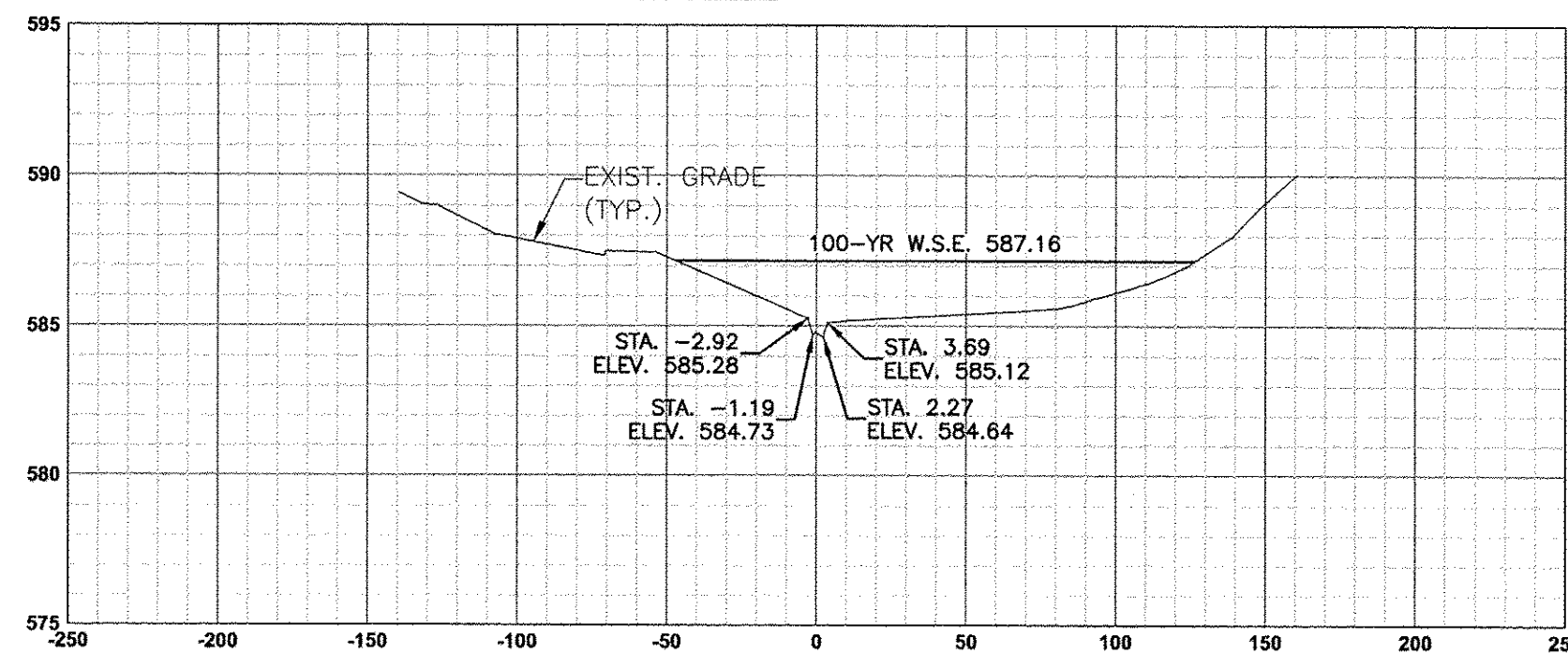
CROSS SECTION AT STATION 2+00.00



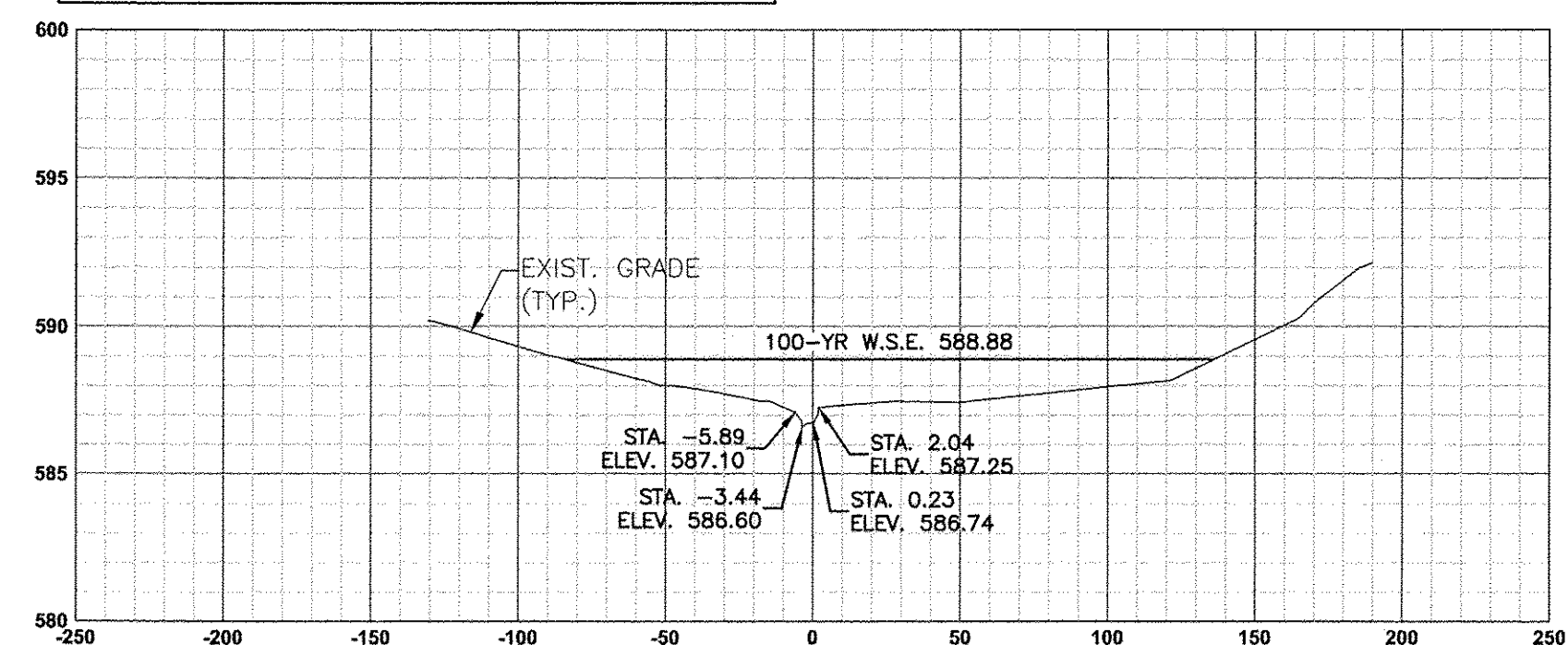
CROSS SECTION AT STATION 3+00.00



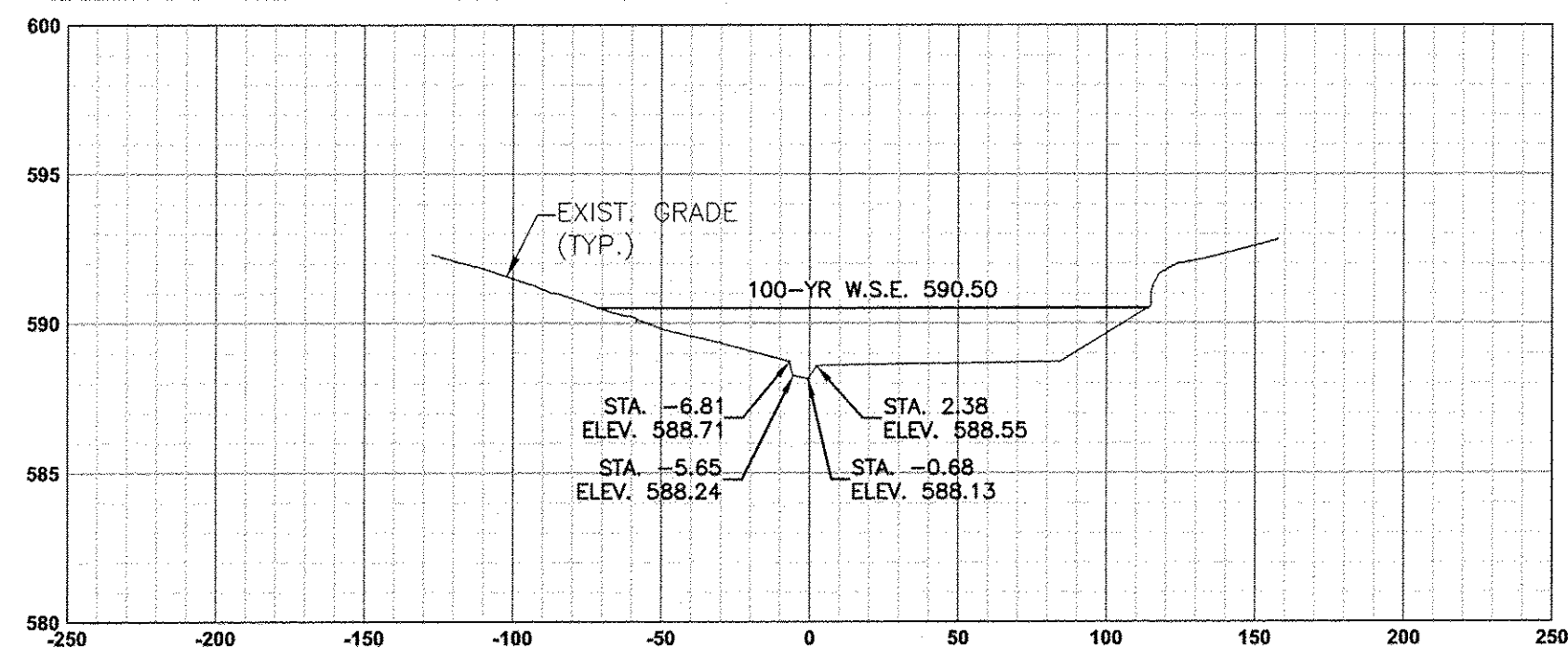
CROSS SECTION AT STATION 4+00.00



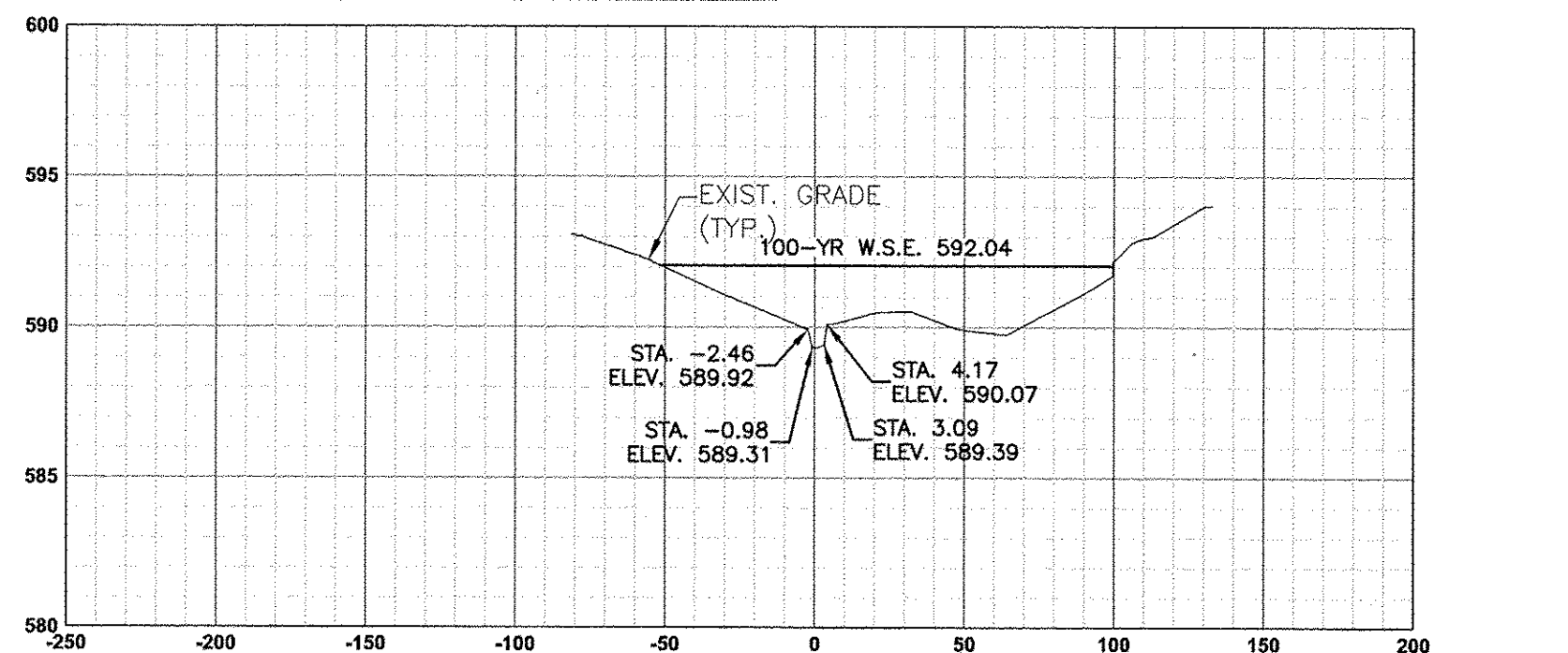
CROSS SECTION AT STATION 5+00.00



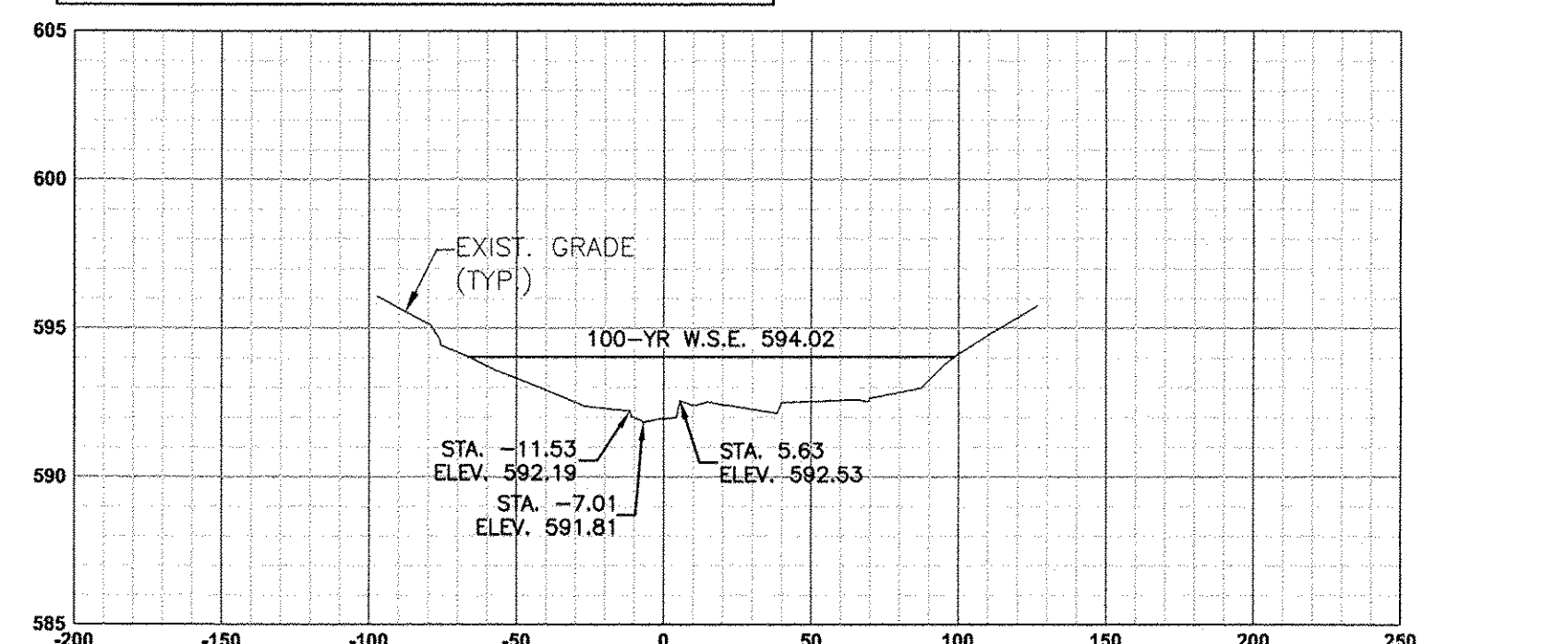
CROSS SECTION AT STATION 6+00.00



CROSS SECTION AT STATION 7+00.00



CROSS SECTION AT STATION 8+00.00

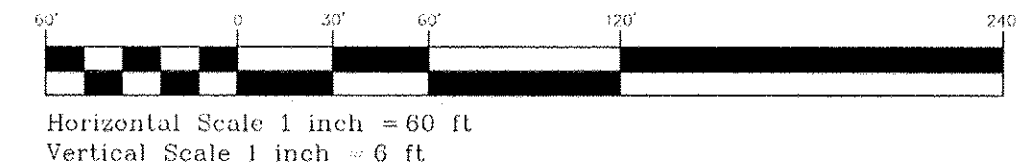


Professional Engineer  
L-3607  
Scott L. Hunter  
3/23/16

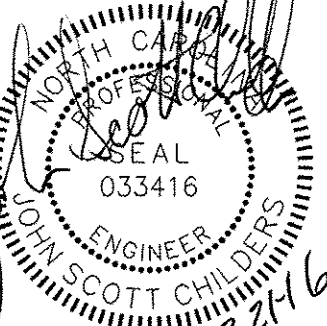
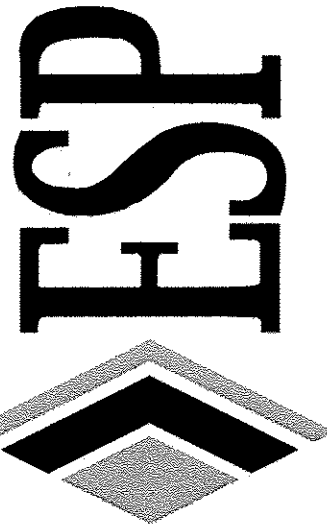
FOR CROSS SECTION DATA ONLY. CROSS SECTIONS BASED ON FIELD LOCATION ALONG WITH LIDAR DATA TAKEN FROM SURVEY BY ESP ASSOCIATES, P.A. TITLED "TOPOGRAPHIC SURVEY OF TAX PARCELS 21932392, 21904113, 21904102, 21926112", DATED JULY 9, 2014

LEGEND

- EXISTING GROUND
- PROPOSED GRADE
- 100 YR WATER SURFACE ELEVATION



ESP Associates, P.A.  
P.O. Box 7008  
Charlotte, NC 28241  
3475 Lameron Blvd  
Fort Mill, SC 29708  
704-583-4946 (NC)  
803-802-2446 (SC)  
www.espassociates.com



NO.	DATE	REVISION	BY

100+1 STUDY CHANNEL CROSS  
SECTIONS (SHEET 1 OF 3)

CHATEAU PHASE 3

CHARLOTTE, NC

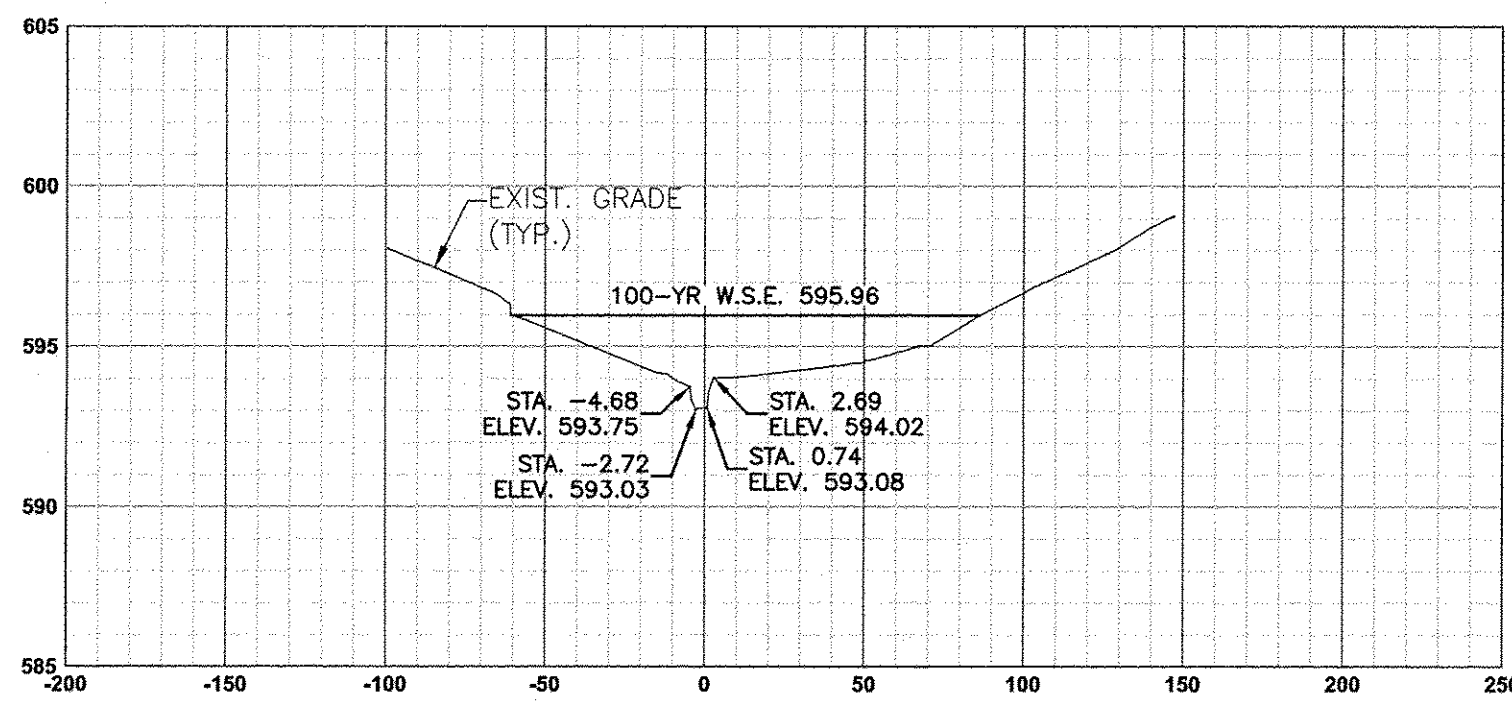
LENNAR CAROLINAS, LLC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECH
DRAWN BY:	ECH
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.17

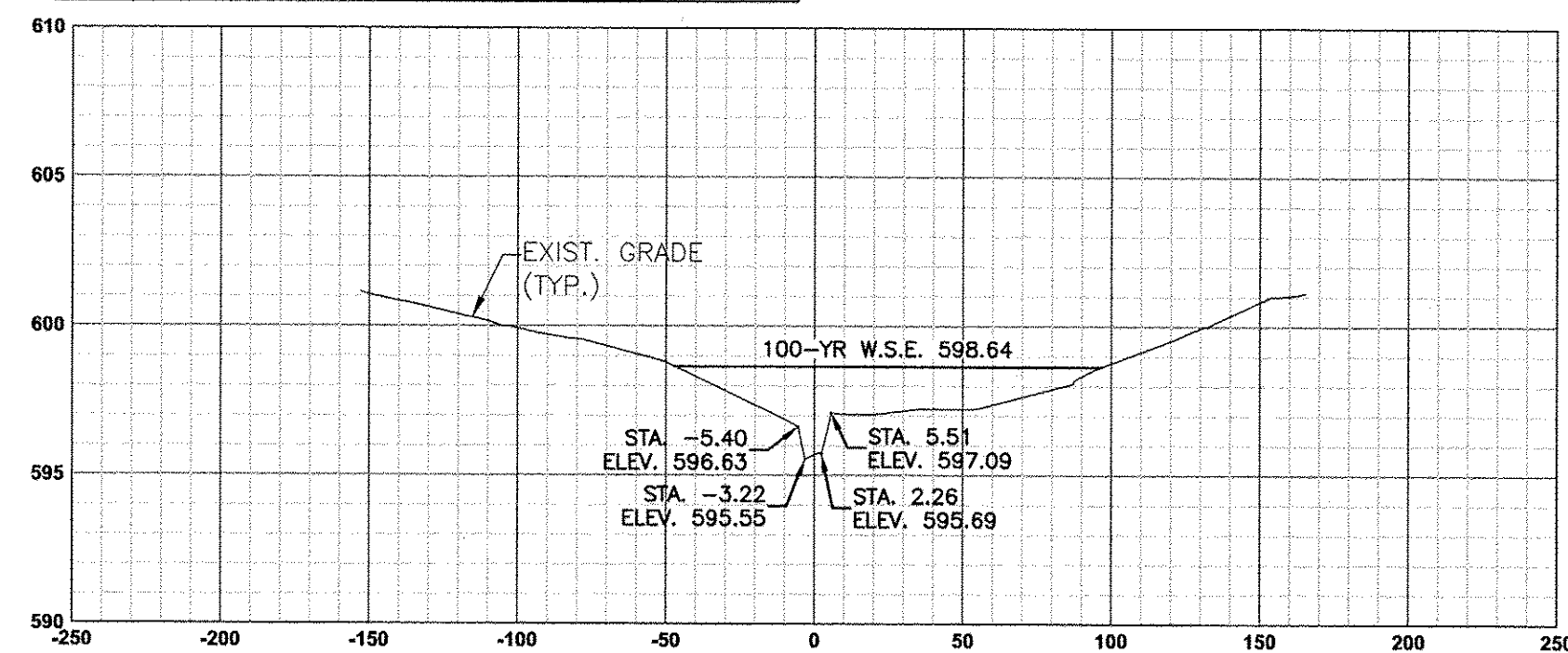


V:\CH13.430 - Chateau Phase 3\_CN13.430\Sheets\CN13.430-FLOOD XSECTIONS.dwg X32, ehamelham

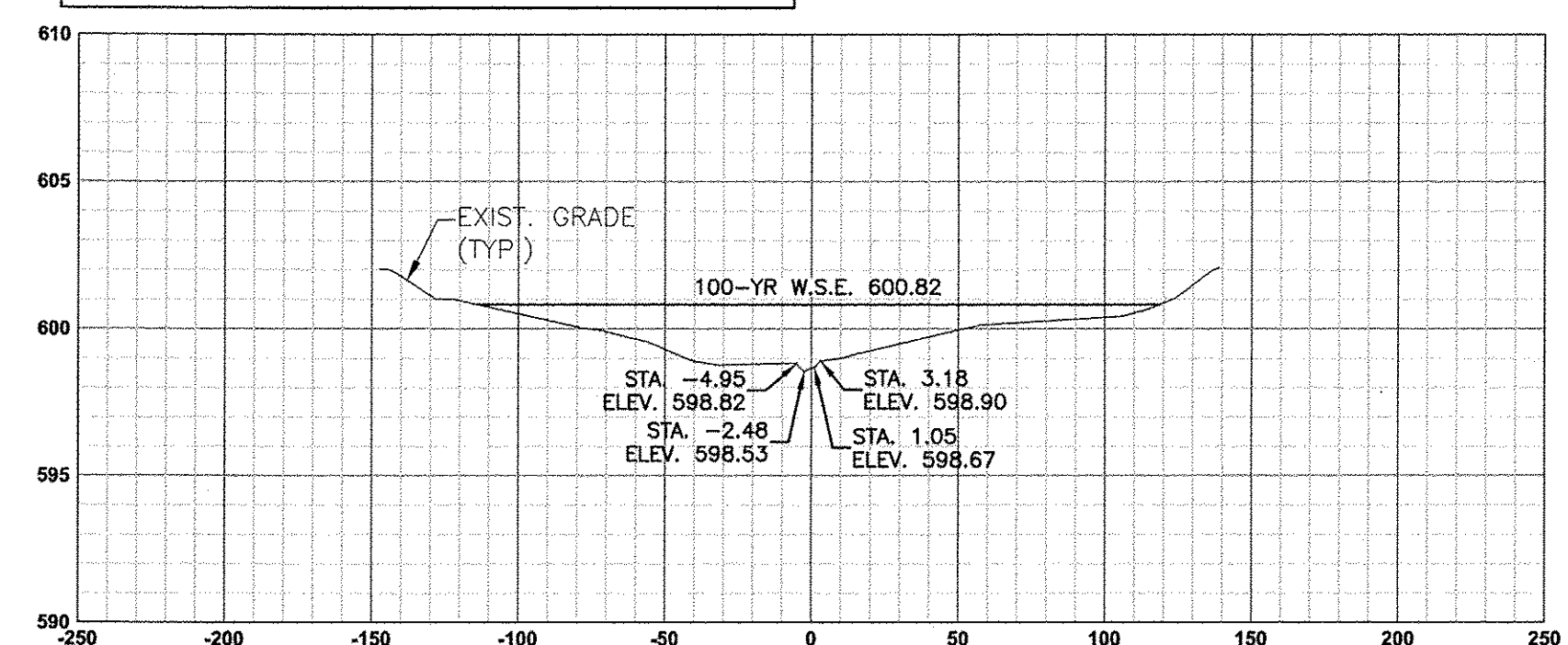
CROSS SECTION AT STATION 9+00.00



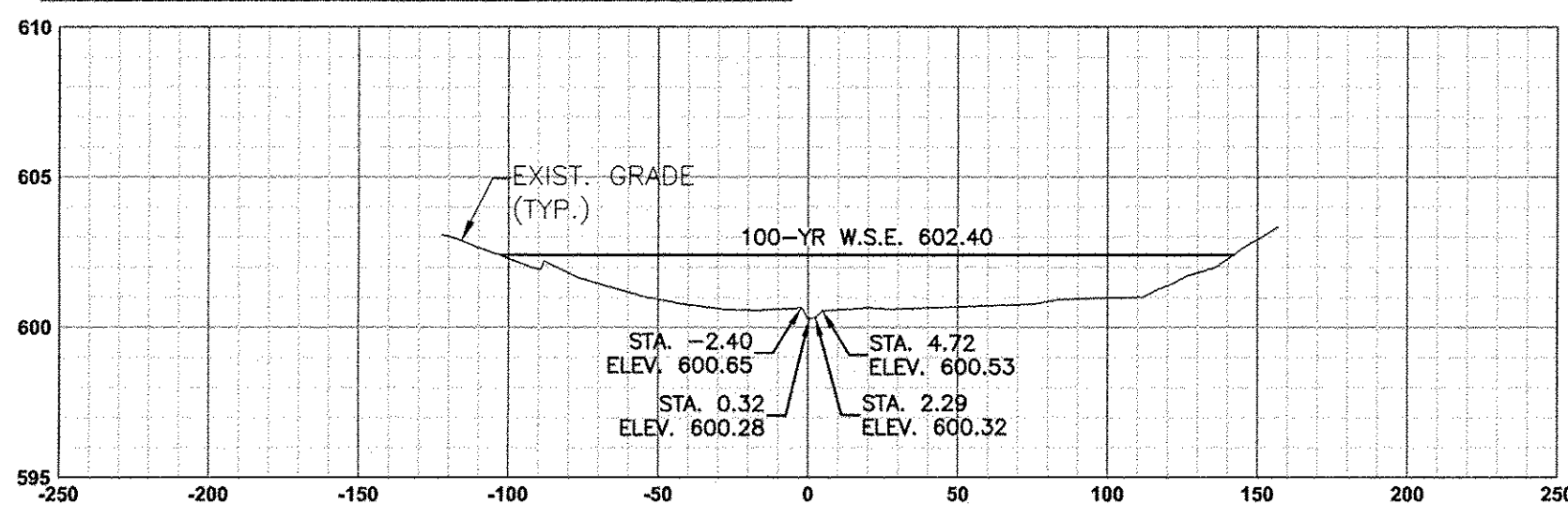
CROSS SECTION AT STATION 10+00.00



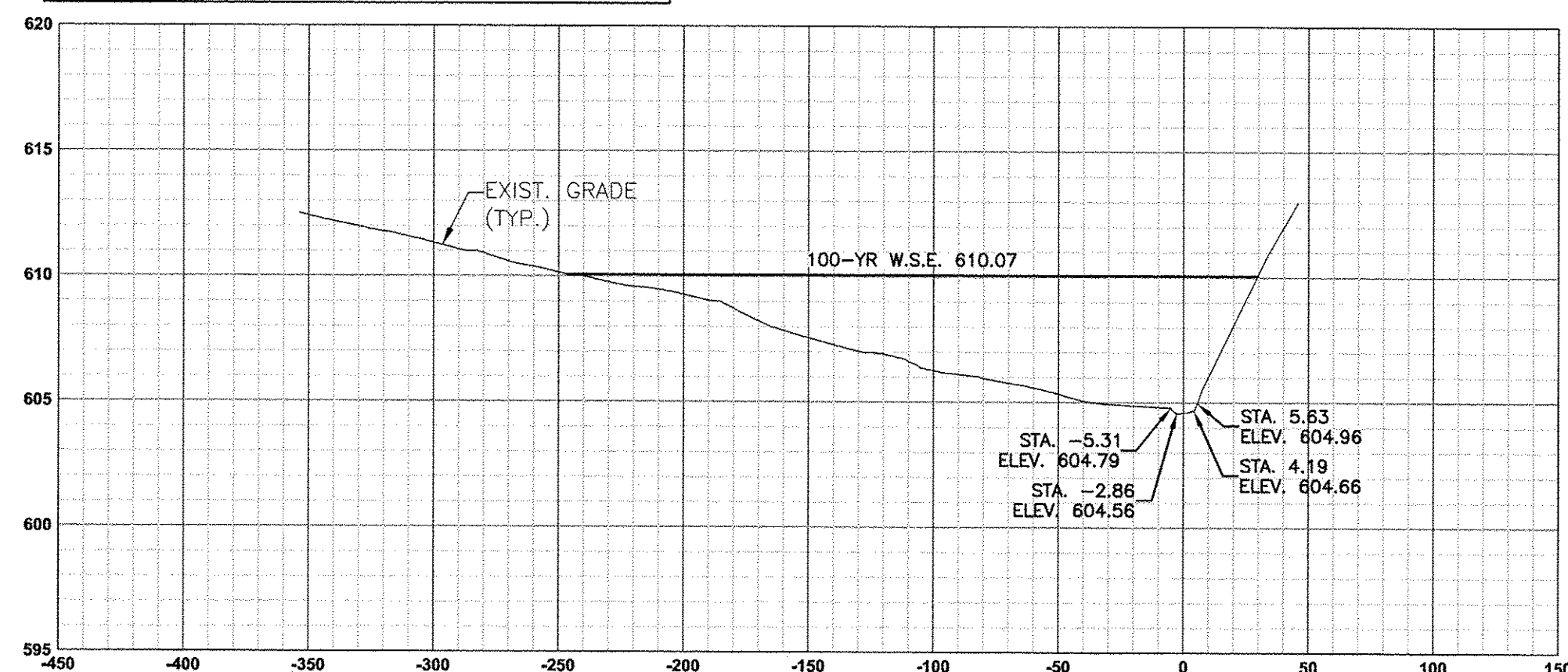
CROSS SECTION AT STATION 11+00.00



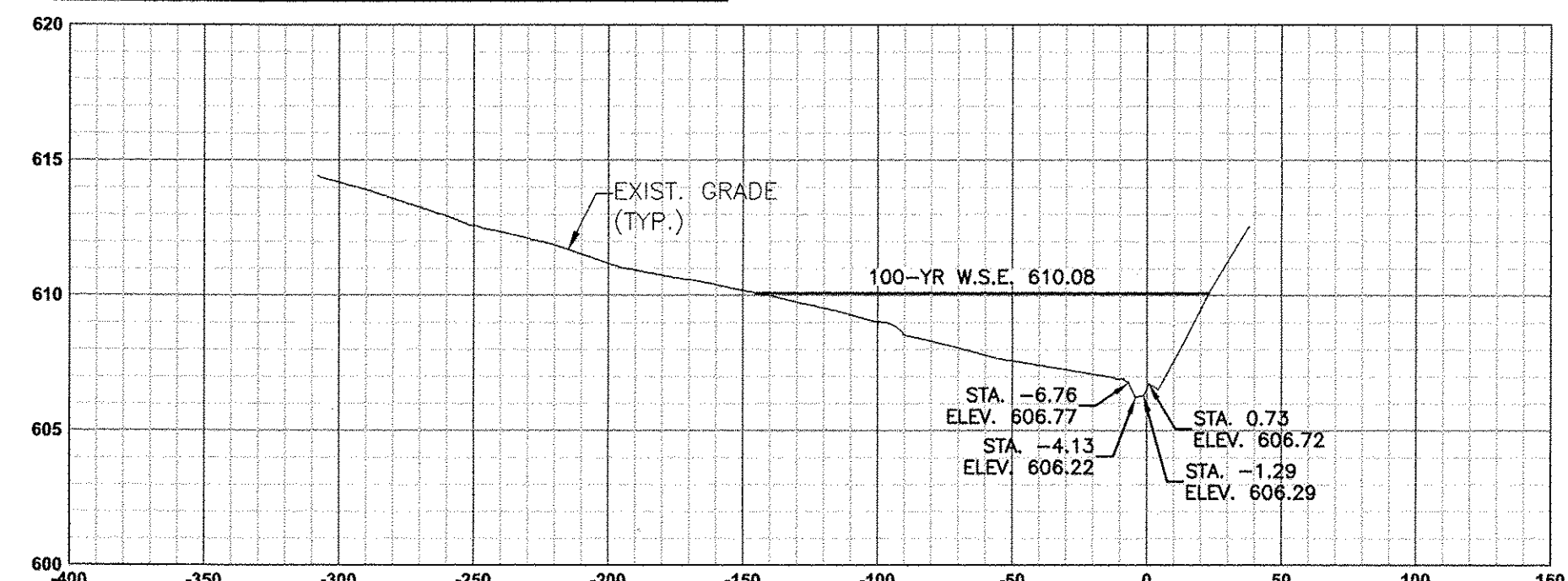
CROSS SECTION AT STATION 11+68.33



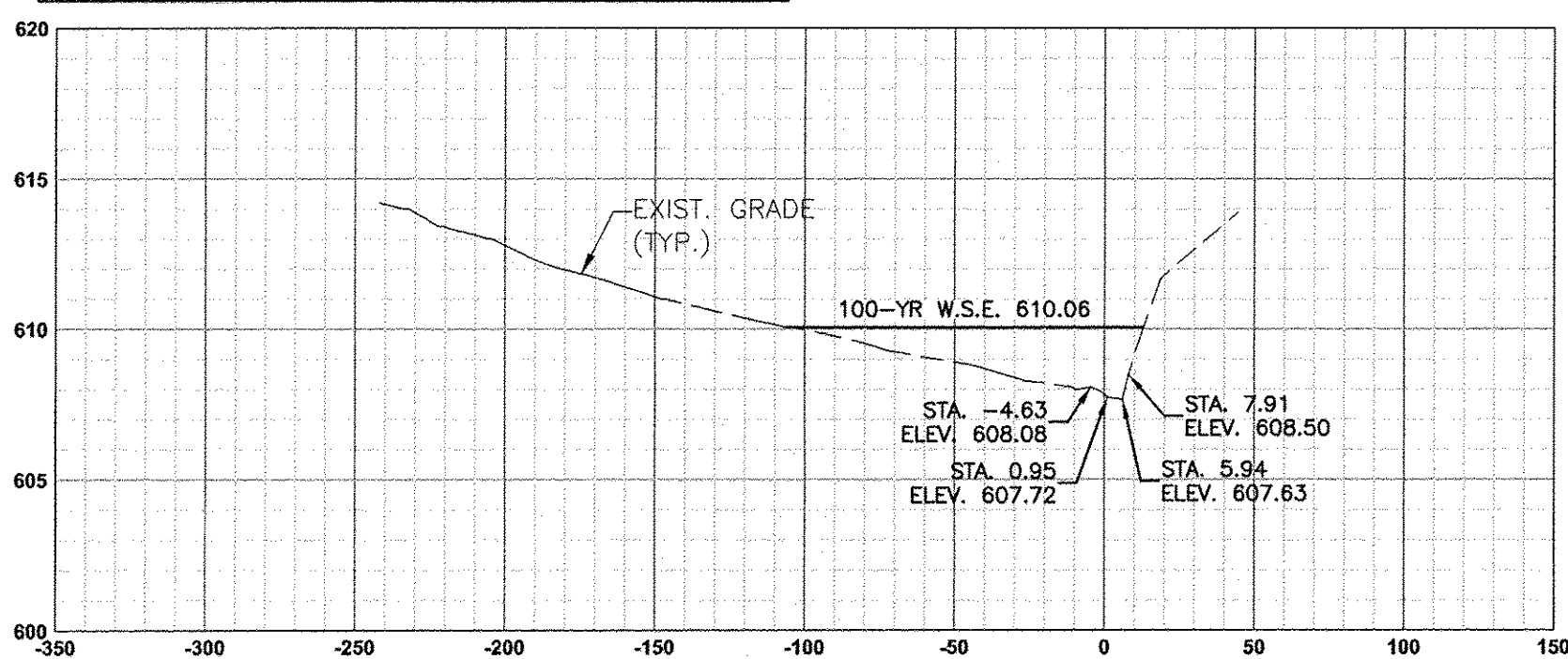
CROSS SECTION AT STATION 13+00.00



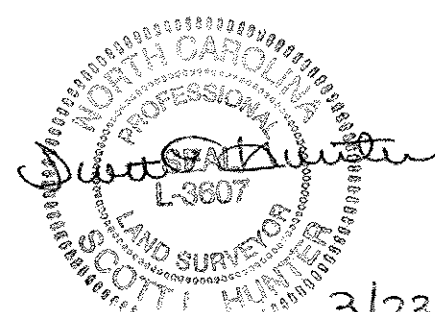
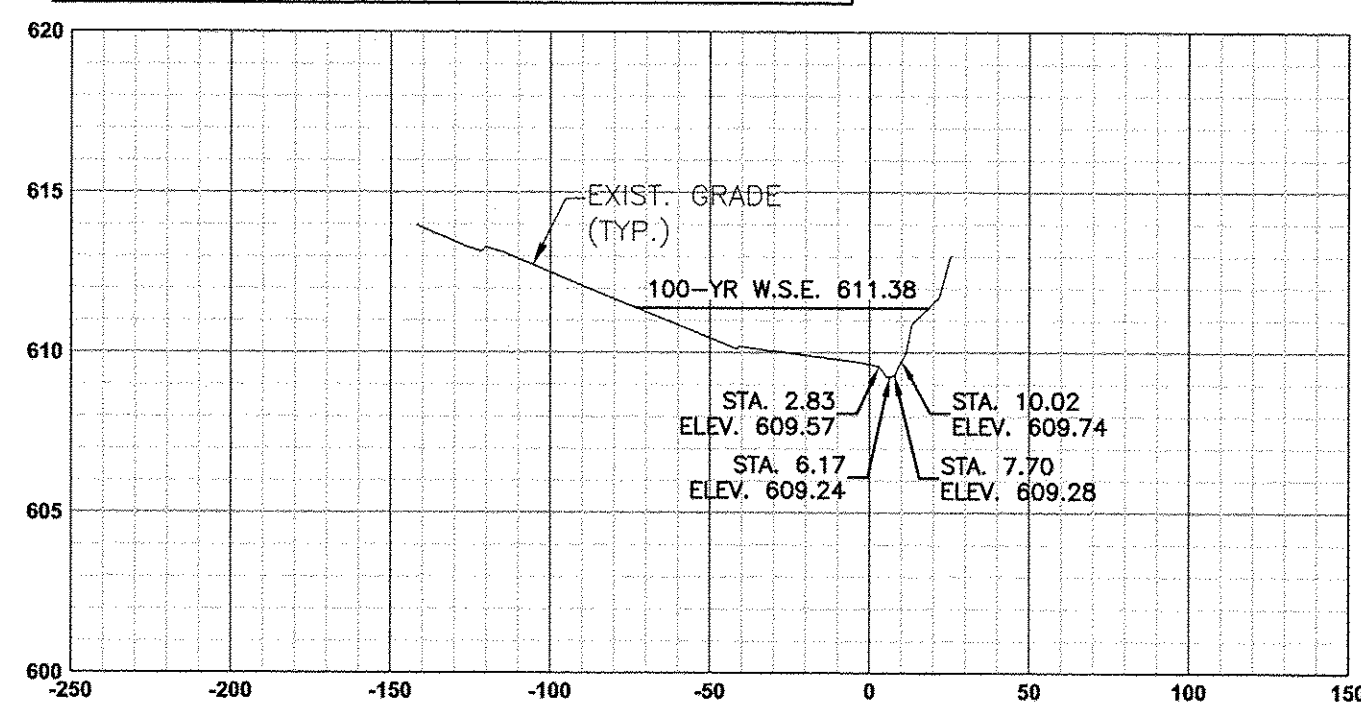
CROSS SECTION AT STATION 13+50.00



CROSS SECTION AT STATION 14+00.00



CROSS SECTION AT STATION 15+00.00

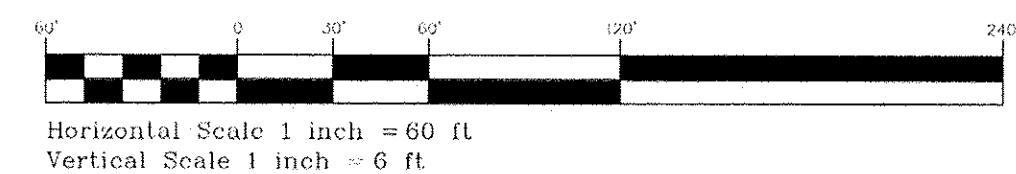


3/23/16

FOR CROSS SECTION DATA ONLY. CROSS SECTIONS BASED ON FIELD LOCATION ALONG WITH LIDAR DATA TAKEN FROM SURVEY BY ESP ASSOCIATES, P.A. TITLED "TOPOGRAPHIC SURVEY OF TAX PARCELS 21932392, 21904113, 21904102, 21926112", DATED JULY 9, 2014

LEGEND

- EXISTING GROUND
- PROPOSED GRADE
- 100 YR WATER SURFACE ELEVATION



100+1 STUDY CHANNEL CROSS SECTIONS (SHEET 2 OF 3)

CHATEAU PHASE 3

CHARLOTTE, NC

LENNAR CAROLINAS, LLC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECH
DRAWN BY:	ECH
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.18

ESP Associates, P.A.  
P.O. Box 1000  
Charlotte, NC 28241  
3475 Lakeside Blvd.  
Fort Mill, SC 29708  
704-583-1946 (NC)  
803-502-2440 (SC)  
www.espassociates.com

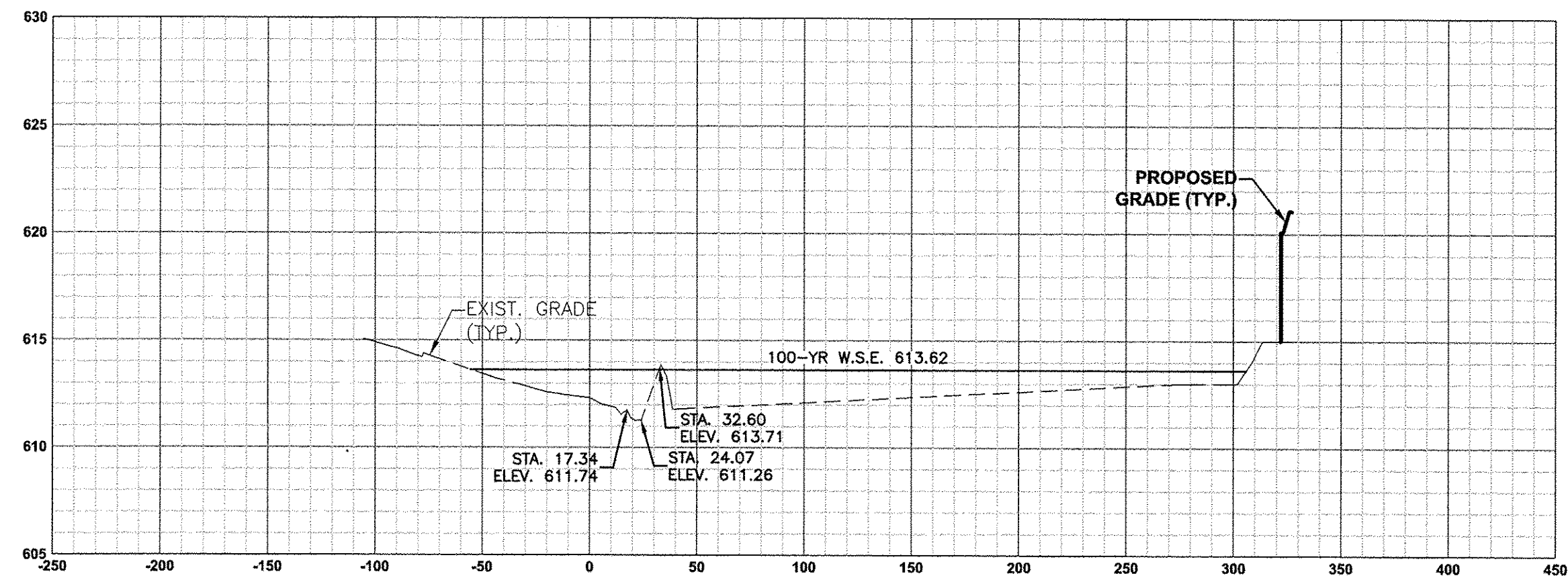
ESP

NORTH CAROLINA  
LICENSE NO.:  
C-0587  
ESP ASSOCIATES, P.A.  
SCOTT CHILDERS  
ENGINEER  
033416  
3/23/16

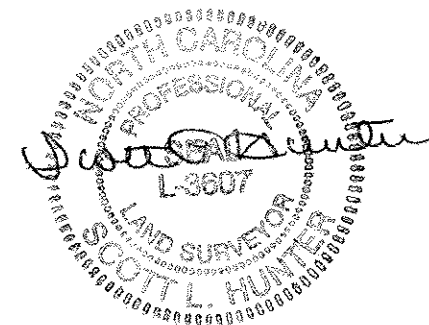
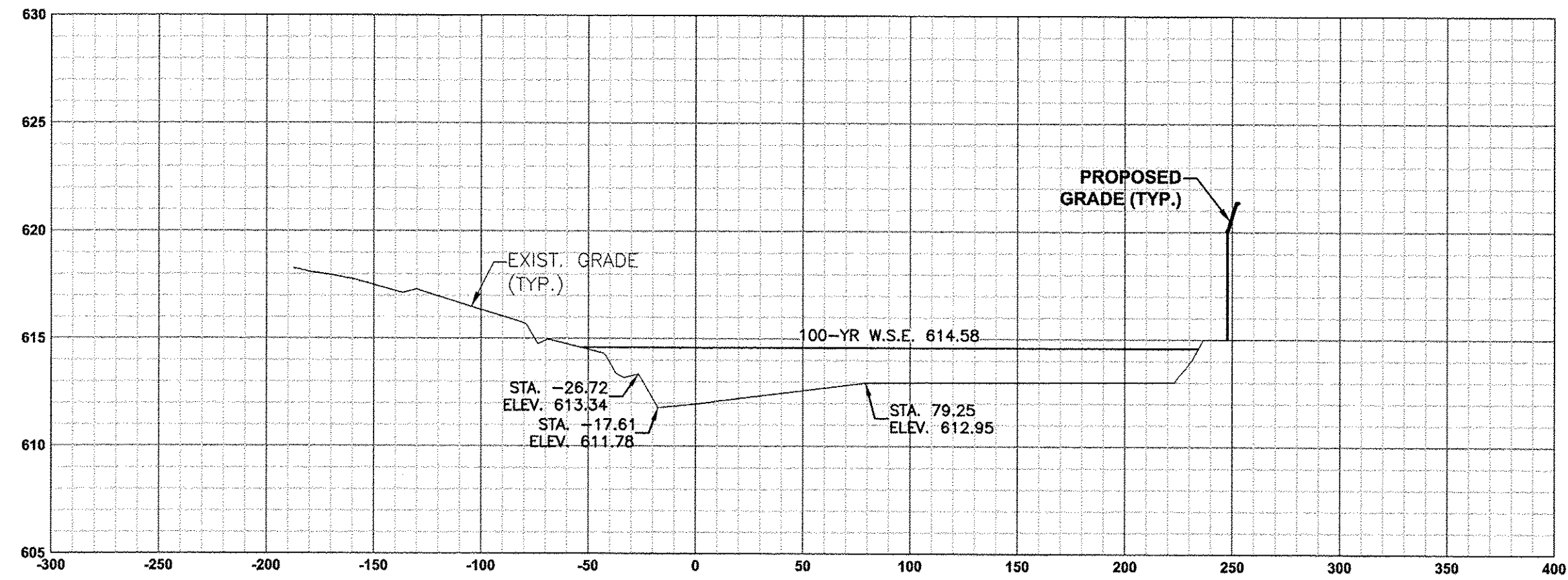


V:\CN13.430 - Chateau Phase 3\CN13.430\Sheet\CN13.430-FLOOD XSECTIONS.dwg\_X3S\_ehanselman

CROSS SECTION AT STATION 16+00.00



CROSS SECTION AT STATION 17+00.00

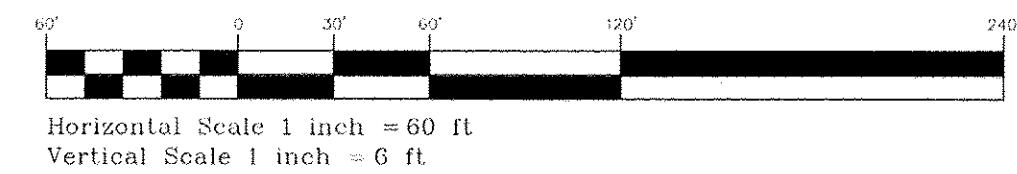


3/23/16

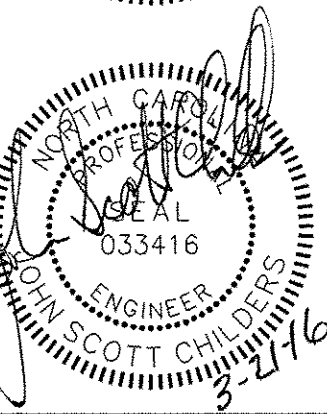
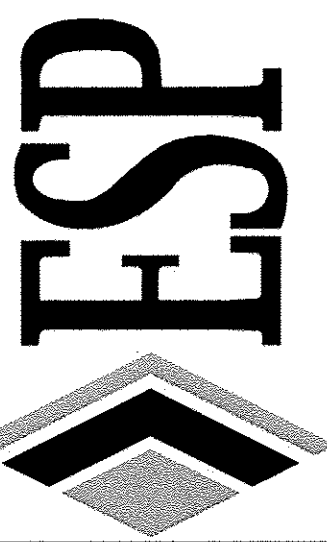
FOR CROSS SECTION DATA ONLY. CROSS SECTIONS BASED ON FIELD LOCATION ALONG WITH LIDAR DATA TAKEN FROM SURVEY BY ESP ASSOCIATES, P.A. TITLED "TOPOGRAPHIC SURVEY OF TAX PARCELS 21932392, 21904113, 21904102, 21926112", DATED JULY 9, 2014

LEGEND

- EXISTING GROUND
- PROPOSED GRADE
- 100 YR WATER SURFACE ELEVATION



ESP Associates, P.A.  
P.O. Box 7030  
Charlotte, NC 28241  
3475 Lakewood Blvd  
Fort Mill, SC 29708  
704-583-4946 (NC)  
803-802-2440 (SC)  
www.espassociates.com



NO.	DATE	REVISION	BY

100+1 STUDY CHANNEL CROSS SECTIONS (SHEET 3 OF 3)	CHARLOTTE, NC
CHATEAU PHASE 3	LENNAR CAROLINAS, LLC

PROJECT INFORMATION	
PROJECT MANAGER:	APG
DESIGNED BY:	ECH
DRAWN BY:	ECH
PROJECT NUMBER:	CN13.430
ORIGINAL DATE:	03/11/2016
SHEET:	C4.19