

# ELEMENT BARCLAY WEST APARTMENTS

## at BARCLAY WEST

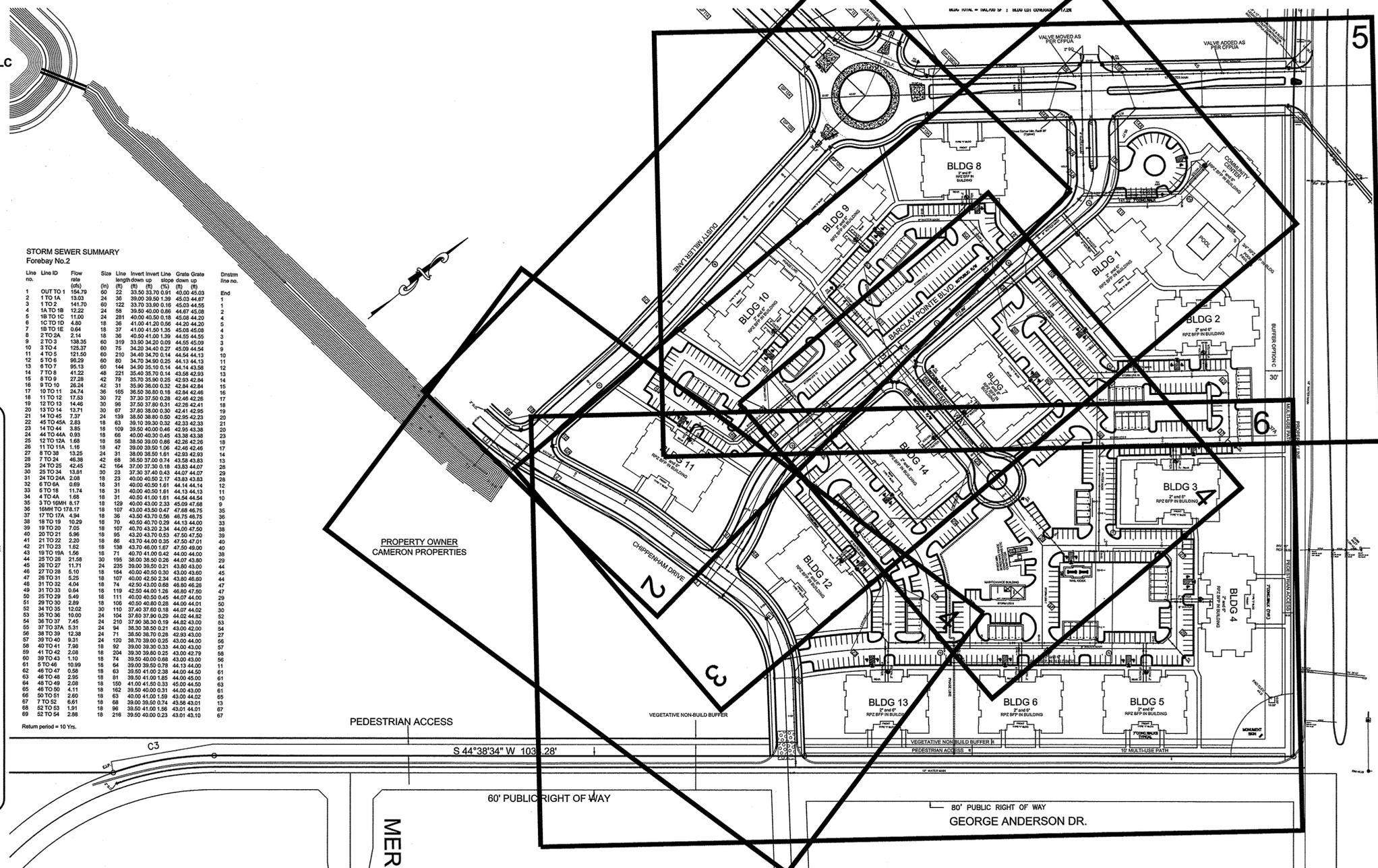
### Plans and Profiles

LOCATED IN THE CITY OF WILMINGTON  
 NEW HANOVER COUNTY, NORTH CAROLINA  
 DATE: MARCH 22, 2016  
 SCALE: 1" = 100'

**OWNER:**  
 CAMERON PROPERTIES LAND COMPANY, LLC  
 1201 GLEN MEADE ROAD PO BOX 3649  
 WILMINGTON, NC 28406  
 910-762-2676

**DEVELOPER:**  
 CK GALLERY PARK WILMINGTON, LLC  
 301 SOUTH COLLEGE STREET  
 CHARLOTTE, NC 28202  
 704-342-9000

NOTE:  
 404 WETLANDS DO NOT EXIST ON SITE PER U.S.  
 CORPS OF ENGINEERS DETERMINATION. SEE  
 ACTION SAW-2012-01938. DETERMINATION  
 EXPIRATION DATE 01-18-2018.



**STORM SEWER SUMMARY**  
 Forebay No. 2

Line No.	Line ID	Flow (cfs)	Flow (MGD)	Size (in)	Line Invert (ft)	Line Grade (ft)	Line Slope (%)	Line Length (ft)	Distm (ft)	Distm (Sta)
1	OUT TO 1	194.79	0.44	24	22	33.50	0.01	40.00	45.03	1
2	1 TO 1A	13.03	0.03	18	39	39.00	0.00	45.00	45.07	2
3	1 TO 2	141.70	0.32	24	122	33.70	0.01	45.00	44.55	3
4	1A TO 1B	12.22	0.03	18	39	39.00	0.00	44.87	45.09	4
5	1B TO 1C	11.00	0.02	18	281	40.00	0.00	45.00	44.20	5
6	1 TO 1D	4.80	0.01	18	39	39.00	0.00	44.87	45.09	6
7	1B TO 1E	0.64	0.00	18	37	41.00	0.00	45.00	45.08	7
8	2 TO 2A	2.14	0.00	18	39	40.50	0.00	44.55	44.25	8
9	2 TO 3	138.35	0.31	24	39	39.00	0.00	44.55	45.09	9
10	3 TO 4	125.37	0.28	24	75	34.20	0.02	45.00	44.54	10
11	3 TO 5	125.37	0.28	24	75	34.20	0.02	44.13	44.13	11
12	5 TO 6	98.29	0.22	24	80	34.70	0.02	45.00	44.54	12
13	6 TO 7	95.13	0.21	24	144	34.60	0.02	44.14	44.13	13
14	7 TO 8	41.22	0.09	18	221	35.40	0.01	43.58	43.58	14
15	8 TO 9	27.28	0.06	18	37	35.70	0.00	42.93	42.94	15
16	9 TO 10	28.24	0.06	18	37	35.70	0.00	42.94	42.94	16
17	10 TO 11	24.74	0.05	18	185	36.50	0.00	42.94	42.94	17
18	11 TO 12	17.53	0.04	18	37	37.50	0.00	42.94	42.94	18
19	12 TO 13	14.48	0.03	18	39	37.50	0.00	42.94	42.94	19
20	13 TO 14	13.71	0.03	18	39	37.50	0.00	42.94	42.94	20
21	14 TO 45	7.27	0.02	18	139	38.00	0.00	42.94	42.94	21
22	45 TO 46A	2.85	0.01	18	63	39.10	0.00	42.93	42.93	22
23	46 TO 46B	1.68	0.00	18	109	38.50	0.00	42.93	42.93	23
24	46 TO 46C	0.93	0.00	18	69	40.00	0.00	43.38	43.38	24
25	14 TO 24A	3.85	0.01	18	109	38.50	0.00	42.93	43.38	25
26	11 TO 11A	1.16	0.00	18	47	39.00	0.00	42.94	42.94	26
27	8 TO 8A	4.35	0.01	24	31	38.00	0.00	43.93	42.93	27
28	24 TO 25	42.45	0.09	24	68	36.50	0.00	43.93	43.93	28
29	25 TO 26	13.81	0.03	24	164	37.00	0.00	43.93	44.07	29
30	24 TO 24A	2.08	0.00	24	23	40.00	0.00	43.83	43.83	30
31	24 TO 24B	0.89	0.00	24	23	40.00	0.00	43.83	43.83	31
32	6 TO 6A	11.74	0.03	18	31	40.00	0.00	44.13	44.13	32
33	6 TO 6B	1.14	0.00	18	31	40.00	0.00	44.13	44.13	33
34	1 TO 4A	1.88	0.00	18	31	40.50	0.00	44.54	44.54	34
35	3 TO 16MHA	41.17	0.09	18	129	40.00	0.00	44.54	44.54	35
36	16M TO 17A	17.17	0.04	18	107	43.00	0.00	47.88	46.75	36
37	17 TO 17A	4.84	0.01	18	36	43.50	0.00	46.75	46.75	37
38	18 TO 19	10.29	0.02	18	70	40.50	0.00	44.14	44.00	38
39	19 TO 20	10.29	0.02	18	70	40.50	0.00	44.14	44.00	39
40	20 TO 21	5.96	0.01	18	95	43.20	0.00	47.50	47.50	40
41	21 TO 22	2.20	0.00	18	88	43.70	0.00	47.50	47.50	41
42	21 TO 23	1.82	0.00	18	138	43.70	0.00	47.50	49.00	42
43	19 TO 19A	1.56	0.00	18	71	40.70	0.00	44.00	44.00	43
44	19 TO 19B	1.56	0.00	18	105	39.00	0.00	44.00	44.00	44
45	28 TO 27	11.71	0.03	24	235	39.00	0.00	43.80	43.00	45
46	28 TO 28A	5.10	0.01	24	184	40.00	0.00	43.00	43.00	46
47	28 TO 28B	6.61	0.01	24	107	40.00	0.00	43.00	43.00	47
48	31 TO 32	4.04	0.01	24	74	42.50	0.00	46.80	46.20	48
49	31 TO 33	5.49	0.01	24	119	42.50	0.00	46.80	47.50	49
50	29 TO 29A	5.49	0.01	24	111	40.00	0.00	44.00	44.00	50
51	30 TO 30A	5.98	0.01	24	105	40.50	0.00	44.00	44.00	51
52	34 TO 35	12.02	0.03	30	110	37.40	0.00	44.07	44.02	52
53	35 TO 36	10.00	0.02	30	104	37.00	0.00	44.02	44.02	53
54	36 TO 37	7.45	0.02	24	210	37.00	0.00	44.02	44.02	54
55	37 TO 37A	5.31	0.01	24	94	38.50	0.00	43.00	42.00	55
56	38 TO 38A	12.38	0.03	24	71	38.50	0.00	42.99	43.00	56
57	39 TO 40	9.31	0.02	24	120	38.70	0.00	43.00	43.00	57
58	40 TO 41	7.98	0.02	24	107	39.00	0.00	43.00	43.00	58
59	41 TO 42	2.08	0.00	18	204	39.50	0.00	43.00	43.00	59
60	39 TO 43	1.10	0.00	18	74	39.50	0.00	43.00	43.00	60
61	42 TO 43	10.99	0.02	24	64	39.50	0.00	44.13	44.00	61
62	46 TO 47	0.58	0.00	18	63	39.50	0.00	44.00	44.00	62
63	46 TO 48	2.08	0.00	18	61	39.50	0.00	44.00	44.00	63
64	48 TO 49	2.08	0.00	18	150	41.00	0.00	45.00	44.00	64
65	48 TO 50	1.11	0.00	18	150	41.00	0.00	45.00	44.00	65
66	50 TO 51	2.60	0.00	18	63	40.00	0.00	43.00	43.00	66
67	7 TO 52	6.61	0.01	18	68	39.00	0.00	43.84	43.01	67
68	52 TO 53	1.91	0.00	18	66	39.50	0.00	43.01	44.01	68
69	52 TO 54	2.98	0.00	18	216	39.50	0.00	43.01	43.10	69

**WATER:**  
 8" pipe = 5,701 LF  
 6" pipe = 1,178 LF  
 2" pipe = 1,172 LF

**TOTAL WATER MAINS:**  
 Total pipe = 8,051 LF

**SEWER:**  
 8" pipe = 2,848 LF  
 6" pipe = 1,396 LF

**TOTAL SEWER MAINS:**  
 Total pipe = 4,244 LF

**STANDARD NOTES:**

- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES AT ALL CROSSINGS PRIOR TO COMMENCING TRENCH EXCAVATION. IF ACTUAL CLEARANCES ARE LESS THAN INDICATED ON PLAN, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. ANY CONDITION DISCOVERED OR EXISTING THAT WOULD NECESSITATE A MODIFICATION OF THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
- NO CONSTRUCTION IS TO BEGIN BEFORE LOCATION OF EXISTING UTILITIES HAS BEEN DETERMINED. CALL "NO ONE-CALL" AT LEAST 48 HOURS BEFORE COMMENCING CONSTRUCTION.
- ALL TREES WHICH ARE NOT REQUIRED TO BE CLEARED FOR CONSTRUCTION SHALL BE PRESERVED WHEREVER POSSIBLE UNLESS OTHERWISE DIRECTED.
- CONTRACTOR SHALL ADJUST ALL MANHOLES, VALVE AND CURB BOXES TO THE FINAL GRADE UPON COMPLETION OF ALL CONSTRUCTION. ANY BOXES DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST AND EROSION DURING CONSTRUCTION AT HIS EXPENSE. ROADS SHALL BE WATERED TO CONTROL DUST WHEN ORDERED BY THE ENGINEER.
- NO GEOTECHNICAL TESTING HAS BEEN PERFORMED ON SITE. NO WARRANTY IS MADE FOR SUITABILITY OF SUBGRADE, AND UNDERCUT AND ANY REQUIRED REPLACEMENT WITH SUITABLE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- EXTREME CARE SHALL BE TAKEN TO ENSURE MINIMUM SEPARATIONS AT ALL UTILITY CROSSINGS.
- CONTRACTOR TO ENSURE THAT PAVEMENT IS PLACED SO AS TO DRAIN POSITIVELY TO THE CURB AND CATCH BASINS. ALL ROOF DRAIN DOWNSPOUTS TO BE DIRECTED TO THE STORM SEWER SYSTEM.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS.
- THIS PLAN IS FOR SITE GRADING, ROADWORK & SEWER INSTALLATION ONLY.
- NO ENCUMBRANCES IN RW EXCEPT AS SHOWN.
- AFFECTED NON-MUNICIPAL UTILITIES SHALL BE CONTACTED AND PROVIDED WITH PLANS AND OTHER PERTINENT INFORMATION, WHEN FEASIBLE, TO COORDINATE APPROPRIATE SCHEDULING AND PLACEMENT. AT THE MINIMUM THIS SHOULD INCLUDE BELL SOUTH AND DUKE ENERGY.
- TEMPORARY PROJECT AREA LIMITS ARE AS SHOWN.
- THIS PROPERTY IS ZONED RB, MF-M & OS-1.
- SEWER AND WATER TO BE PROVIDED BY CFPWA.
- SITE WILL MEET ALL ZONING REQUIREMENTS.
- ANY REGULATED TREES ON SITE TO BE PRESERVED AS SHOWN.
- STRIPING AND LANES TO CITY STANDARDS (THERMOPLASTIC).
- NO VEHICULAR ACCESS TO SITE EXCEPT AS SHOWN.
- ALL UTILITIES UNDERGROUND.
- LANDSCAPING PLAN BY OTHERS.

**NOTE WELL:**

- EQUIPMENT CLEARANCE MINIMUM 16' FROM TRANSMISSION LINES TO BE MAINTAINED AT ALL TIMES. (REFERENCE: OSHA 1910.269)

**LEGEND**

- IRON IN EXIST. CONC. MON.
- EXISTING SANITARY SEWER & MANHOLE
- EXISTING WATERLINE
- E.L.P. = EXISTING IRON PIPE
- E.C.M. = EXISTING CONCRETE MONUMENT
- I.S. = IRON SET
- W.V. = WATER VALVE
- W.M. = WATER METER
- F.H. = FIRE HYDRANT
- P.P. = POWER POLE
- C.P. = COMPUTED POINT
- X 49.0 INDICATES SPOT ELEVATION

**SITE DATA TABLE:**  
 PARCEL IDENTIFICATION:  
 R06500-003-004-000  
 DB 5427 PG 622

**SURVEY NOTES:**

- AREA COMPUTED BY COORDINATE METHOD.
- ALL DISTANCES ARE HORIZONTAL GROUND.
- PROPERTY SUBJECT TO ALL EASEMENTS OF RECORD.
- THE UNDERGROUND UTILITIES SHOWN IN THIS SURVEY ARE LOCATED FROM FIELD SURVEY INFORMATION, AND EXISTING ASBUILT DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THE UTILITIES ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
- THIS MAP IS NOT FOR CONVEYANCE, RECORDATION, OR SALES.
- PORTIONS OF THIS PROPERTY ARE LOCATED WITHIN A 100 YEAR FLOOD HAZARD AREA ACCORDING TO FLOOD INSURANCE RATE MAP COMMUNITY ID#67203125001, DATED APRIL 3, 2006, PLAN 125J
- THIS PROPERTY IS ZONED RB, MF-M & OS-1.
- SURVEYED IN 2013, AND 2014.
- COMBINED GRID FACTOR = 1.00000.

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

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

**Approved Construction Plan**

Name	Date
Planning	_____
Traffic	_____
Fire	_____

**INDEX TO DRAWINGS**

SHEET No.	DESCRIPTION	12498-EBW-1
1 OF 10	COVER SHEET AND GENERAL NOTES	12498-EBW-1
2 OF 10	PLANS and PROFILES (DUSTY MILLER LANE)	12498-EBW-2
3 OF 10	PLANS and PROFILES (BARCLAY POINTE BDULEAVARD)	12498-EBW-3
4 OF 10	PLANS and PROFILES (CHIPPENHAM DRIVE & ELEMENT WAY)	12498-EBW-4
5 OF 10	PLANS and PROFILES (SITE PLAN)	12498-EBW-5
6 OF 10	PLANS and PROFILES (SITE PLAN)	12498-EBW-6
7 OF 10	PLANS and PROFILES (ADDITIONAL PROFILES)	12498-EBW-7
8 OF 10	PLANS and PROFILES (ADDITIONAL PROFILES)	12498-EBW-8
9 OF 10	PLANS and PROFILES (ADDITIONAL PROFILES)	12498-EBW-9
10 OF 10	PLANS and PROFILES (ADDITIONAL PROFILES)	12498-EBW-10
D1	PLANS and PROFILES (DETAIL SHEET)	12498-EBW-D1
WSD-1 to WSD-4	CFPWA SEWER CONSTRUCTION STANDARD DETAILS	CFPWA
WSD-1 to WSD-2	CFPWA WATER CONSTRUCTION STANDARD DETAILS	CFPWA

**BENCHMARK LOCATIONS AND ELEVATIONS**

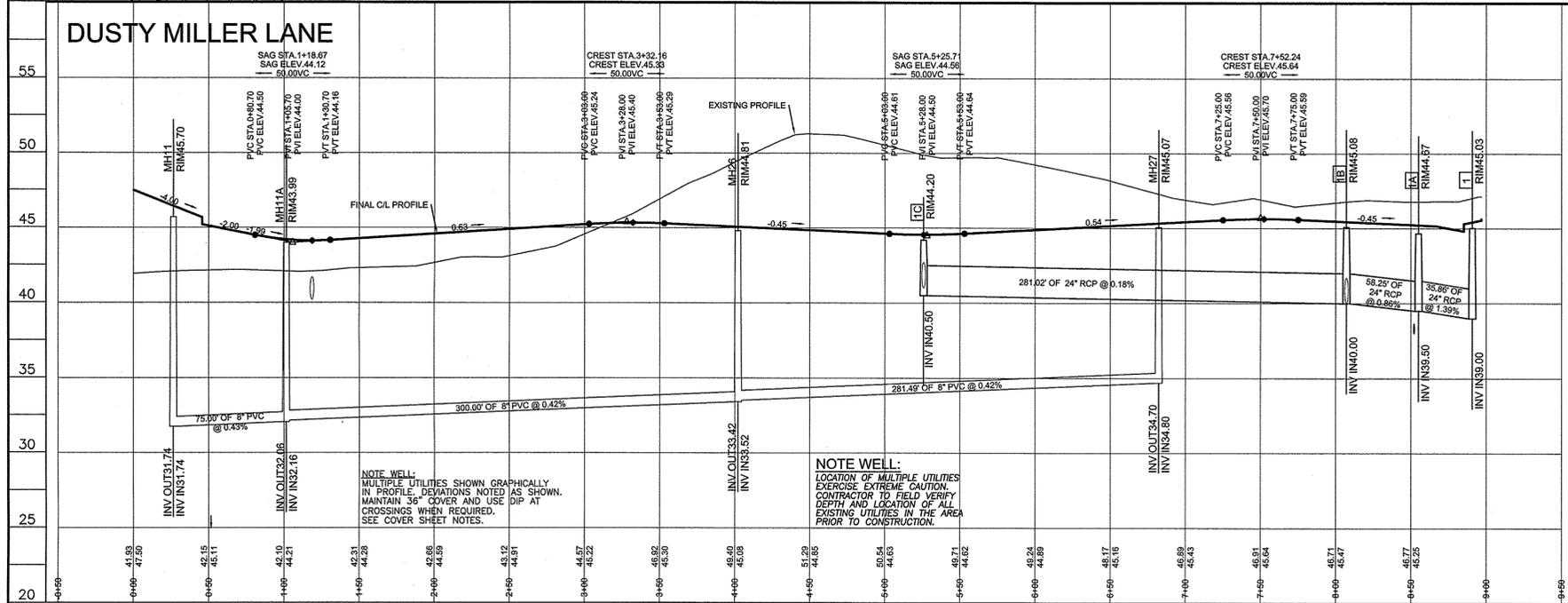
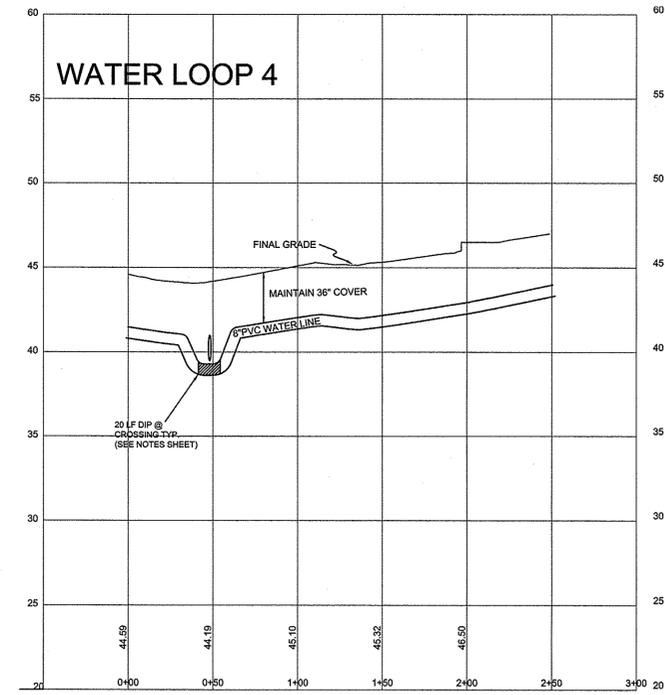
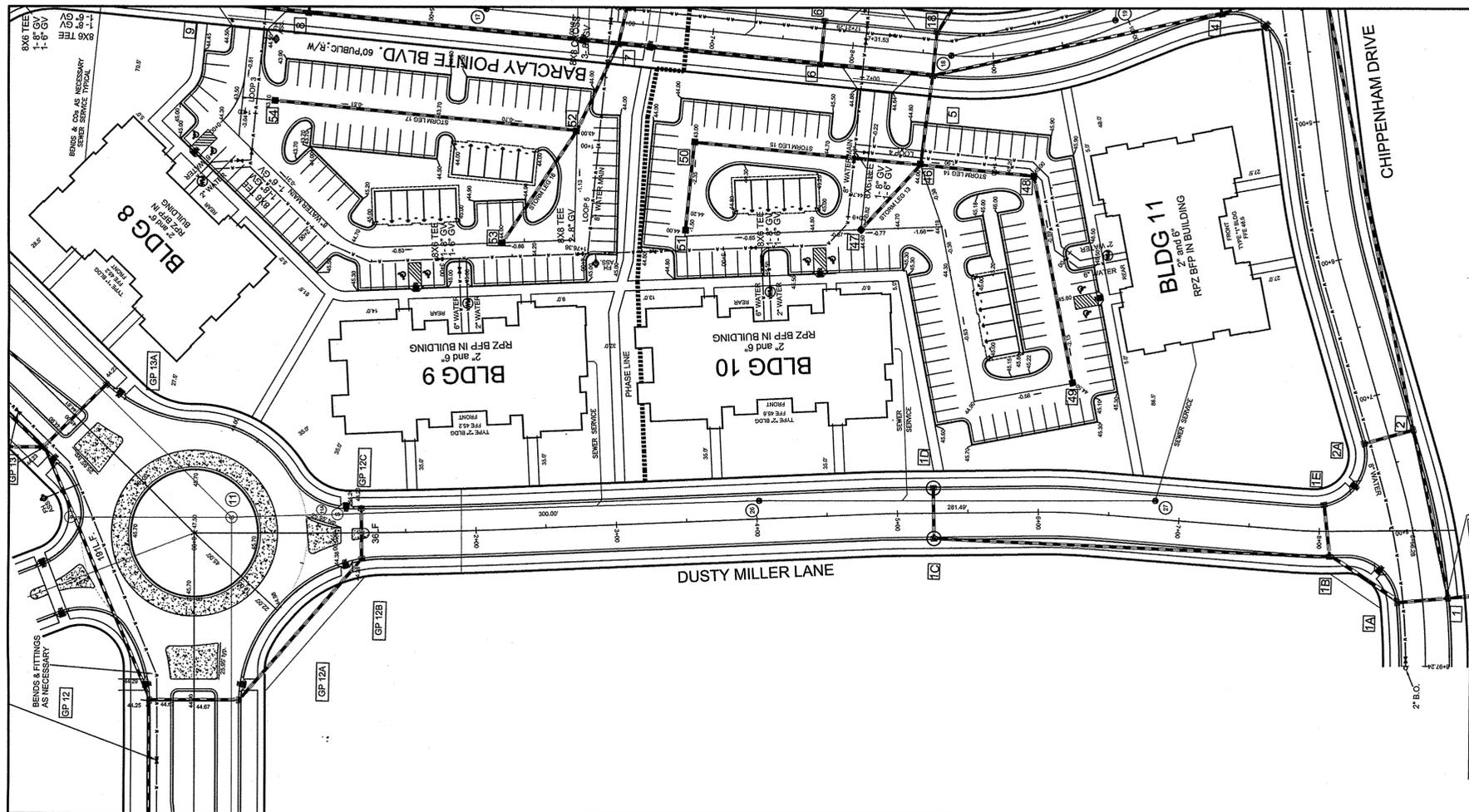
LOCATION	ELEVATION
EX. CONCRETE MONUMENT AT INTERSECTION OF S. 17th STREET & MUSEUM DRIVE.	42.58

**ELEMENT BARCLAY WEST APARTMENTS**  
 LOCATED IN THE CITY OF WILMINGTON  
 NEW HANOVER COUNTY, NORTH CAROLINA

**OWNER:** CAMERON PROPERTIES LAND COMPANY, LLC  
 1201 GLEN MEADE ROAD PO BOX 3649  
 WILMINGTON, NC 28406  
 PH: 910-762-2676



**HANOVER DESIGN SERVICES, P.A.**  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORAL PARKWAY  
 WILMINGTON, NC 28403  
 PHONE: (910) 343-8002  
 License # C-0987

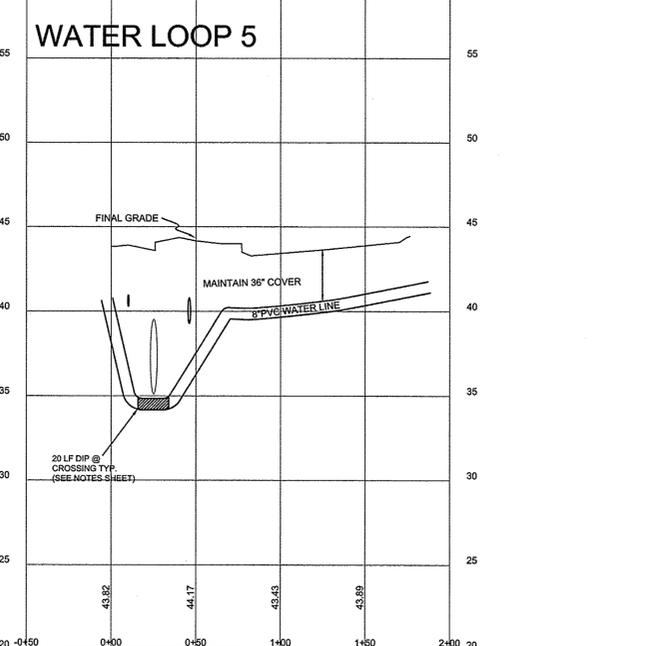


**NOTE WELL:**  
 1. EQUIPMENT CLEARANCE MINIMUM 16' FROM TRANSMISSION LINES TO BE MAINTAINED AT ALL TIMES. (REFERENCE: OSHA 1910.269)

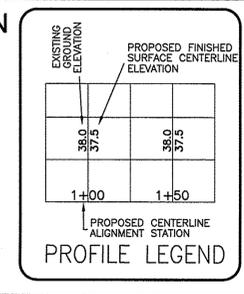
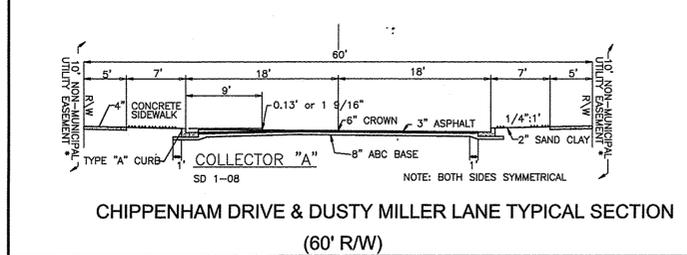
**NOTE WELL:**  
 CONTRACTOR TO COORDINATE MATERIALS AND CONSTRUCTION METHODOLOGIES WITH THE CAPE FEAR PUBLIC UTILITY AUTHORITY PRIOR TO COMMENCING. PLEASE CONTACT C.F.P.U.A. AT (910) 332-6550. DEVELOPER'S INSPECTOR TO BE NOTIFIED PRIOR TO INSTALLATION AND TESTING.

**NOTE WELL:**  
 1) CONTRACTOR TO ENSURE THAT STREET PAVEMENT & CURBING IS PLACED SO AS TO DRAIN POSITIVELY TO CURB INLETS AND DRAINAGE STRUCTURES.

**NOTE WELL:**  
 1. All storm water runoff from built upon areas (i.e. impervious surfaces & roof drainage) to be directed to the storm sewer collection system (i.e. storm inlets or ponds) by swales, overlaid flow, additional grading, or landscaping inlets.



FINAL DESIGN NOT RELEASED FOR CONSTRUCTION



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

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

NOTE: 404 WETLANDS DO NOT EXIST ON SITE PER U.S. CORPS OF ENGINEERS DETERMINATION. SEE ACTION SAW-2012-01938. DETERMINATION EXPIRATION DATE 01-18-2018.

Approved Construction Plan  
 Name Date  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

STATION 0+00 THROUGH 9+00 DUSTY MILLER LANE

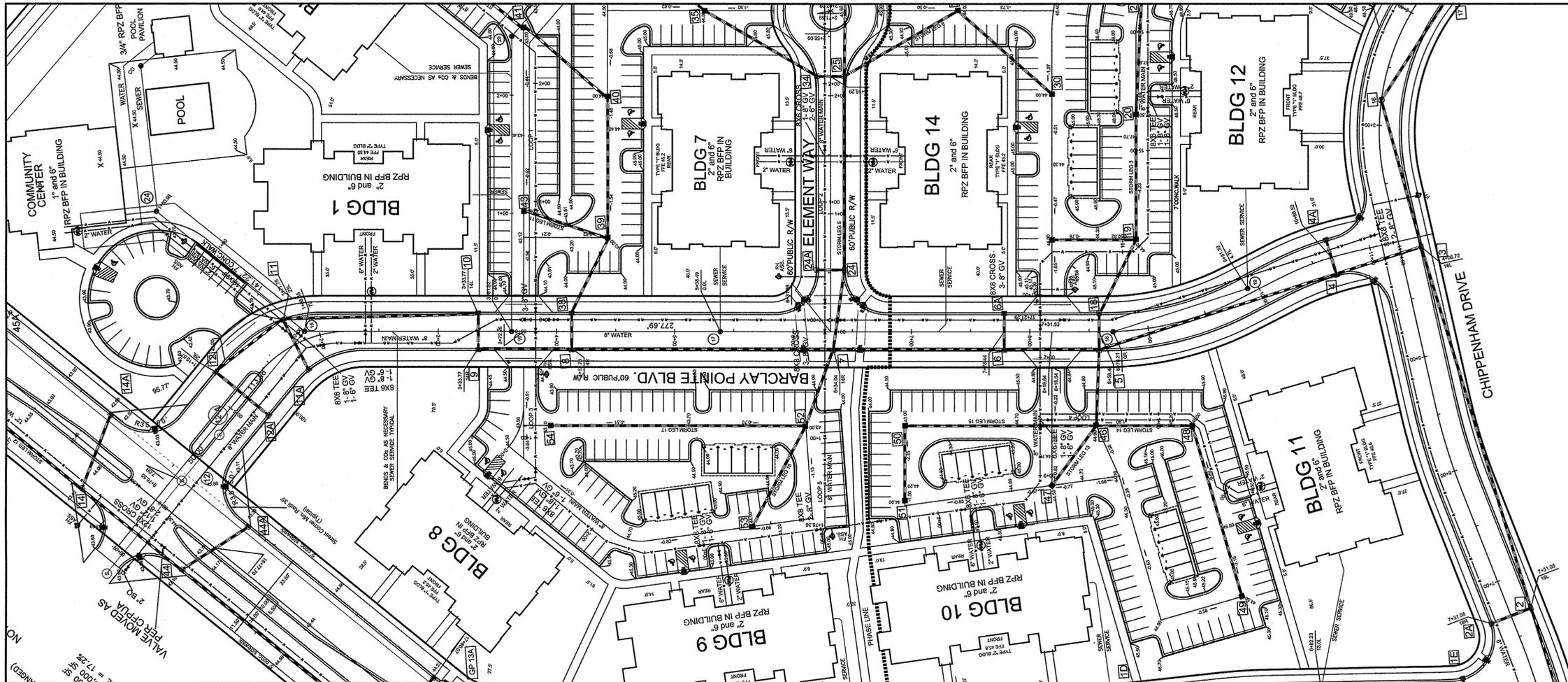
REV. NO.	REVISIONS	DATE

PLANS & PROFILES  
**ELEMENT BARCLAY WEST APARTMENTS**  
 Barclay West  
 LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
 1201 GLEN MEADE ROAD PO BOX 3649  
 WILMINGTON, NC 28406  
 PH: 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORENZ PARKWAY  
 WILMINGTON, N.C. 28403  
 PHONE: (910) 343-8002  
 LICENSE # C-2897

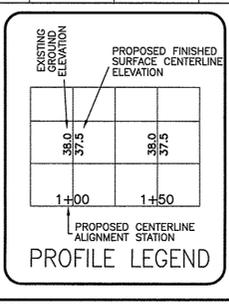
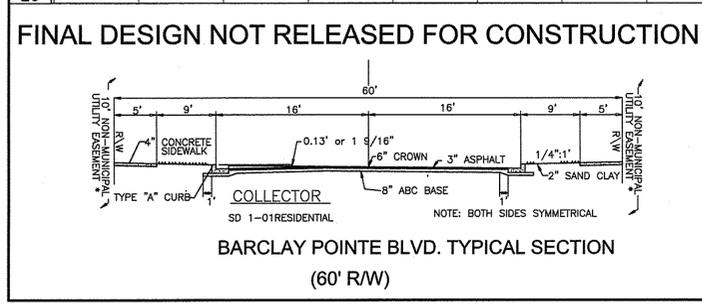
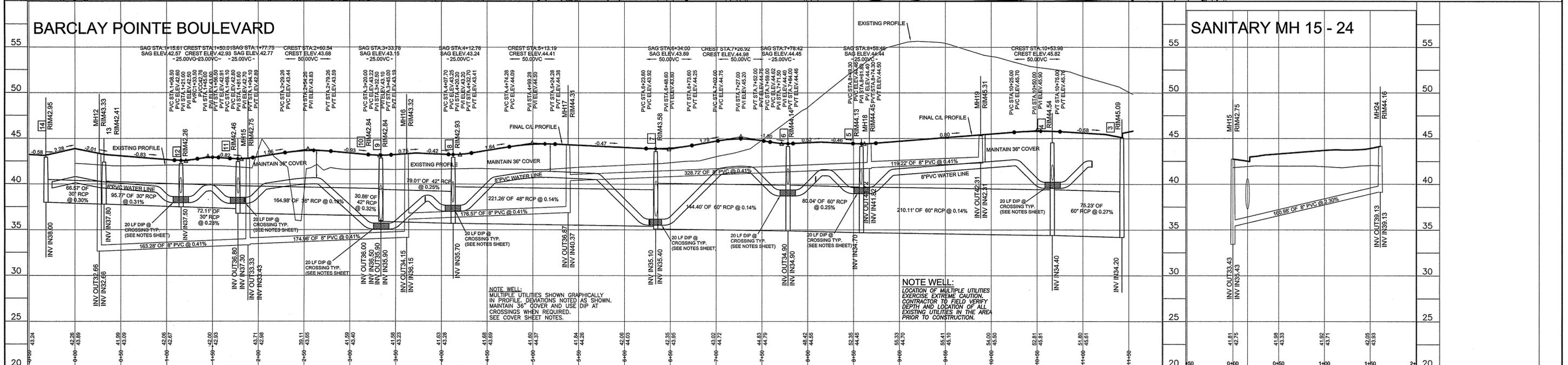
Date: 3-22-16  
 Scale: HORZ: 1" = 50'  
 VERT: 1" = 5'  
 Drawn: GW  
 Checked: DH  
 Project No: 12498  
 Sheet No: 2  
 of: 10



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

Approved Construction Plan  
 Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_



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NOTE WELL:  
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DEVELOPER'S INSPECTOR TO BE NOTIFIED PRIOR TO INSTALLATION AND TESTING.

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STATION 0+00 THROUGH 11+50  
 BARCLAY POINTE BOULEVARD

REV. NO.	REVISIONS	DATE

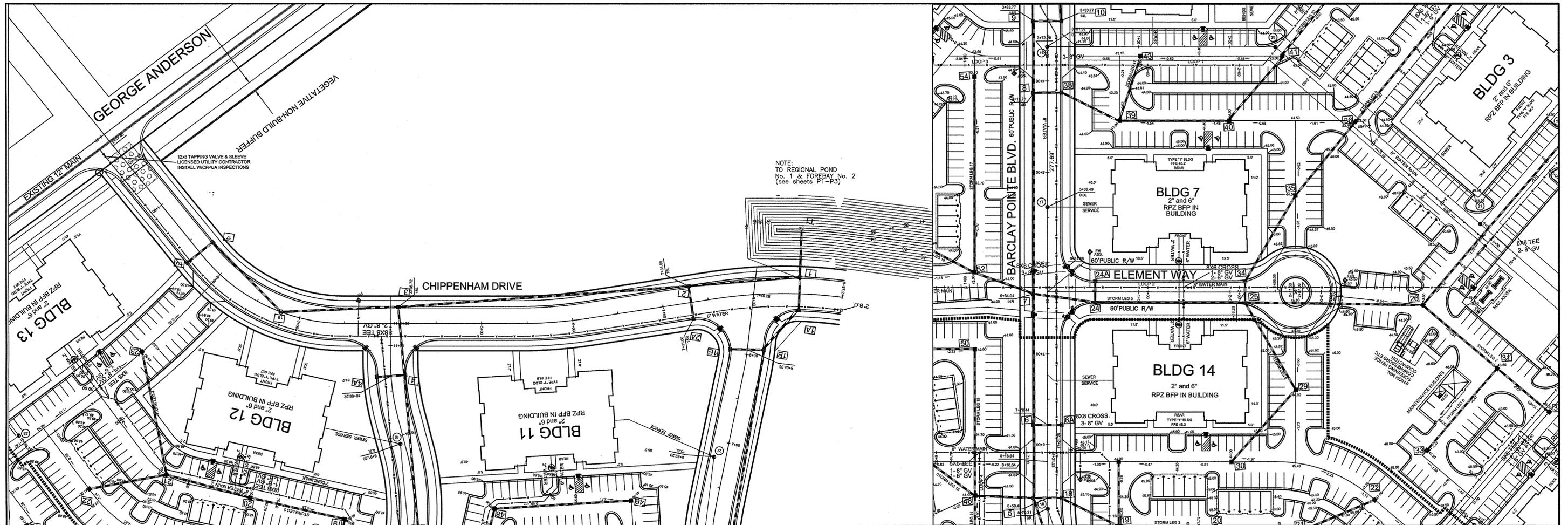
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PLANS & PROFILES  
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 Barclay West  
 LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA

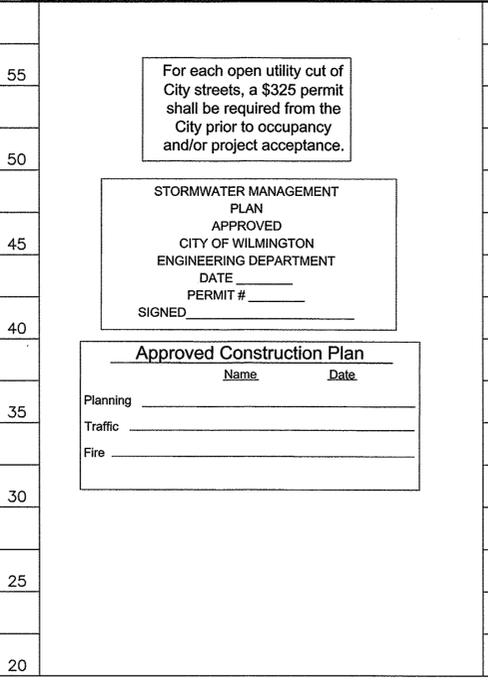
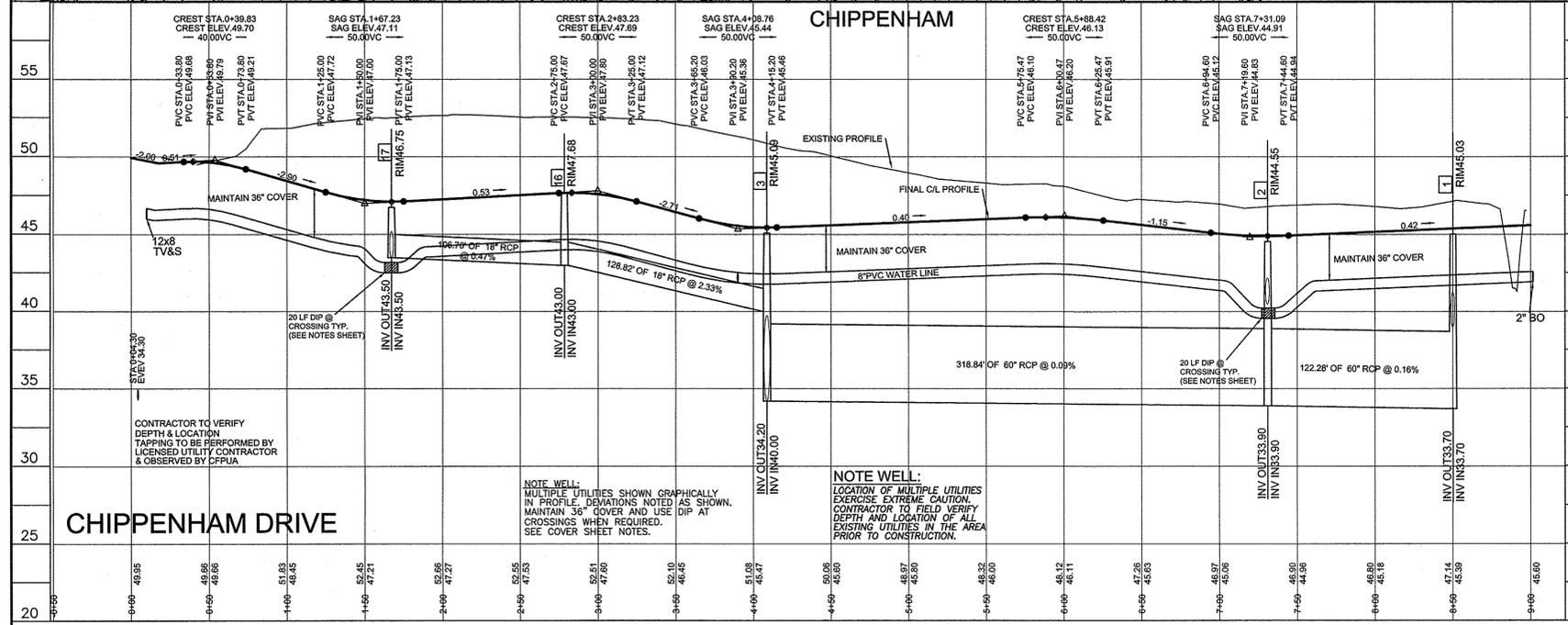
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 WILMINGTON, N.C. 28403  
 PHONE: (910) 343-8002  
 LICENSE # C-2597

Date: 3-22-16  
 Scale: HORZ.: 1" = 50'  
 VERT.: 1" = 5'  
 Drawn: GW  
 Checked: DH  
 Project No: 12498  
 Sheet No: 3  
 of: 10



NOTE:  
TO REGIONAL POND  
No. 1 & FOREBAY No. 2  
(see sheets P1-P3)

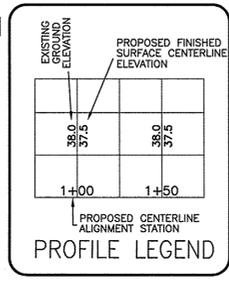
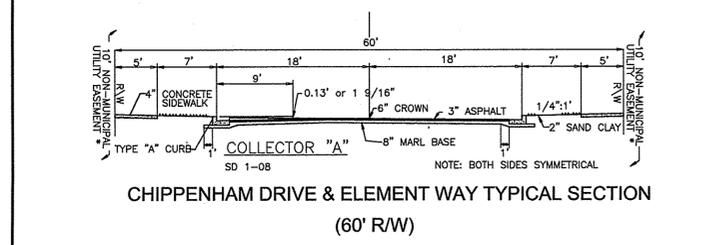


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STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE \_\_\_\_\_  
PERMIT # \_\_\_\_\_  
SIGNED \_\_\_\_\_

Approved Construction Plan  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_

FINAL DESIGN NOT RELEASED FOR CONSTRUCTION



NOTE:  
404 WETLANDS DO NOT EXIST ON SITE PER U.S. CORPS OF ENGINEERS DETERMINATION. SEE ACTION SA-W-2012-01938. DETERMINATION EXPIRATION DATE 01-18-2018.

NOTE WELL:  
1. CONTRACTOR TO ENSURE THAT STREET PAVEMENT & CURBING IS PLACED SO AS TO DRAIN POSITIVELY TO CURB INLETS AND DRAINAGE STRUCTURES.

NOTE WELL:  
1. All storm water runoff from built upon areas (i.e. impervious surfaces & roof drainage) to be directed to the storm sewer collection system (i.e. storm inlets or ponds) by swales, overland flow, additional grading, or landscaping inlets.

NOTE WELL:  
1. EQUIPMENT CLEARANCE MINIMUM 16' FROM TRANSMISSION LINES TO BE MAINTAINED AT ALL TIMES. (REFERENCE: OSHA 1910.269)

NOTE WELL:  
CONTRACTOR TO COORDINATE MATERIALS AND CONSTRUCTION METHODOLOGIES WITH THE CARE-FEAR PUBLIC UTILITY AUTHORITY PRIOR TO COMMENCING. PLEASE CONTACT C.F.P.U.A. AT (910) 333-6550  
DEVELOPER'S INSPECTOR TO BE NOTIFIED PRIOR TO INSTALLATION AND TESTING.

CHIPPENHAM DRIVE  
STATION 0+00 THROUGH 9+00  
ELEMENT WAY  
STATION 0+00 THROUGH 3+50

REV. NO.	REVISIONS	DATE

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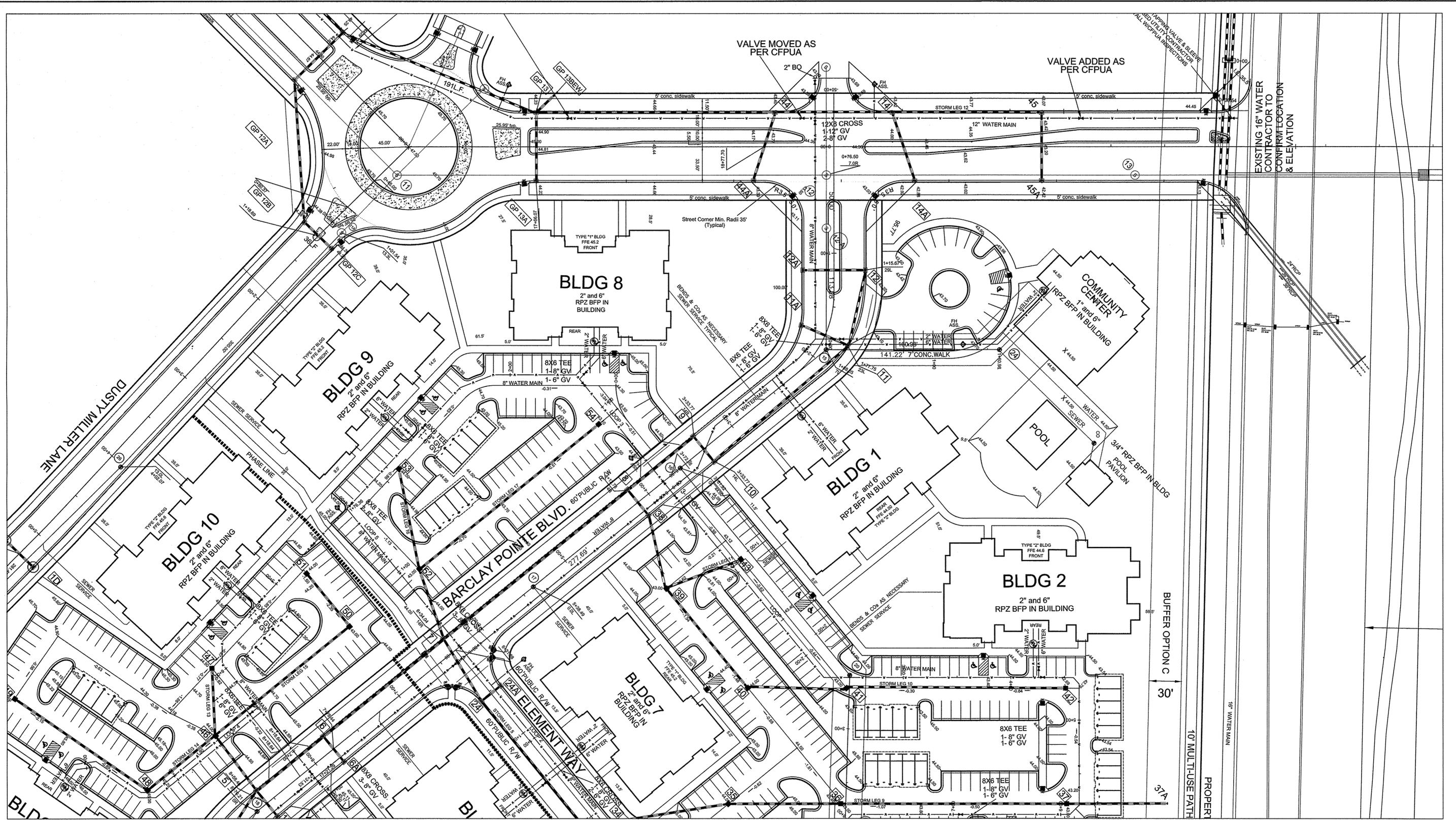
PLANS & PROFILES  
**ELEMENT BARCLAY WEST APARTMENTS**  
Barclay West  
LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
1201 GLEN MEADE ROAD PO BOX 3649  
WILMINGTON, NC 28405  
PH: 910-762-2676

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

1123 FLORAL PARKWAY  
WILMINGTON, NC 28403  
PHONE: (910) 343-8002  
License # C-5597

Scale: 3-22-16  
HORIZ.: 1" = 50'  
VERT.: 1" = 5'  
Drawn: GW  
Checked: DH  
Project No: 12498  
Sheet No: 4  
of: 10

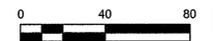


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 Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

FINAL DESIGN NOT RELEASED FOR CONSTRUCTION



REV. NO.	REVISIONS	DATE

SITE PLAN

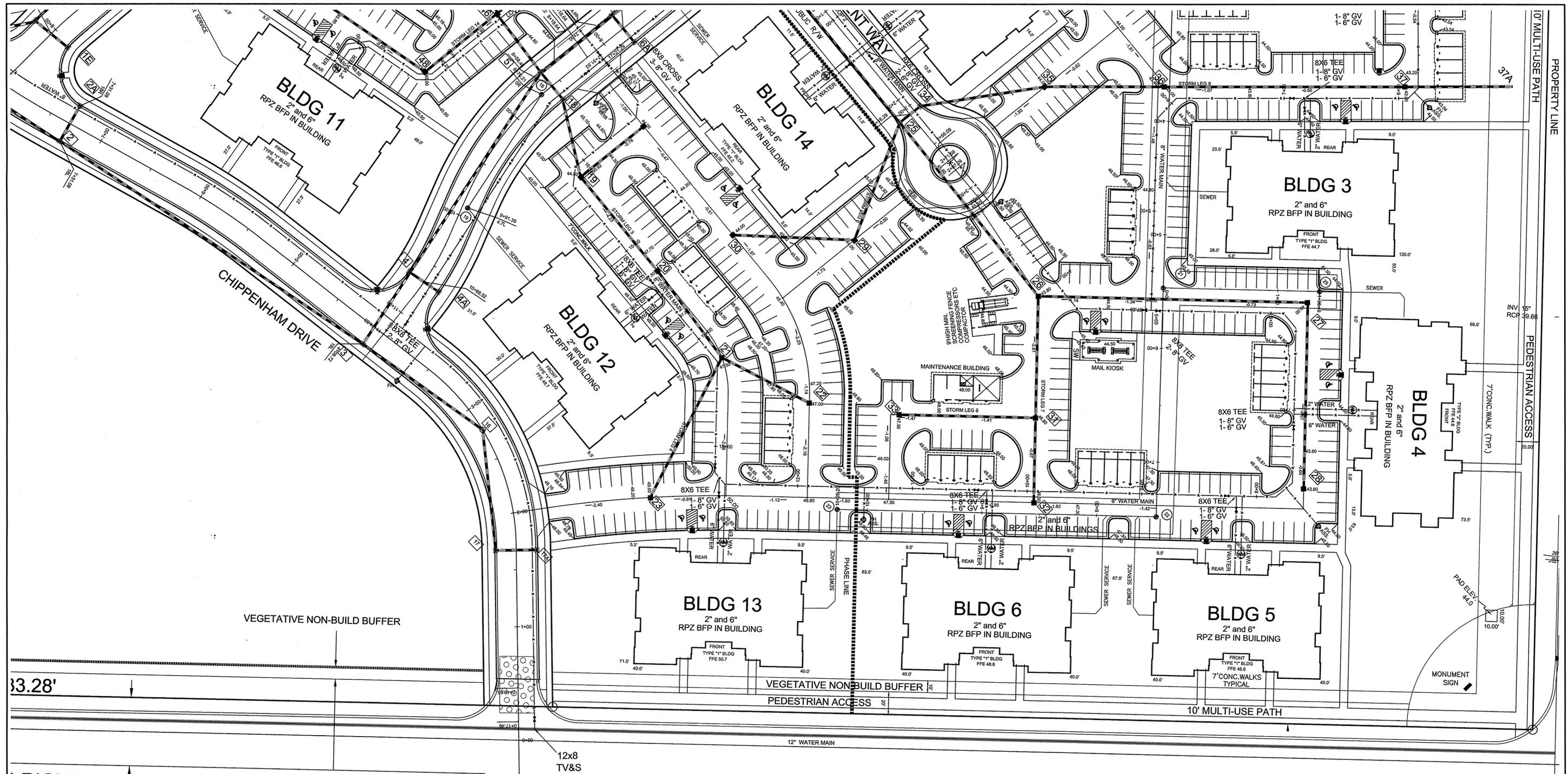
PLANS & PROFILES  
**ELEMENT BARCLAY WEST APARTMENTS**  
 Barclay West  
 LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA



OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
 1201 GLEN MEADE ROAD PO BOX 3649  
 WILMINGTON, NC 28406  
 PH: 910-762-2676

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

Date: 3-22-16  
 Scale: HORZ: 1" = 40'  
 Drawn: GW  
 Checked: DH  
 Project No: 12498  
 Sheet No: 5  
 Of: 10



RIGHT OF WAY

80' PUBLIC RIGHT OF WAY  
**GEORGE ANDERSON DR.**

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PLANS & PROFILES  
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 Barclay West  
 LOCATED IN THE CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

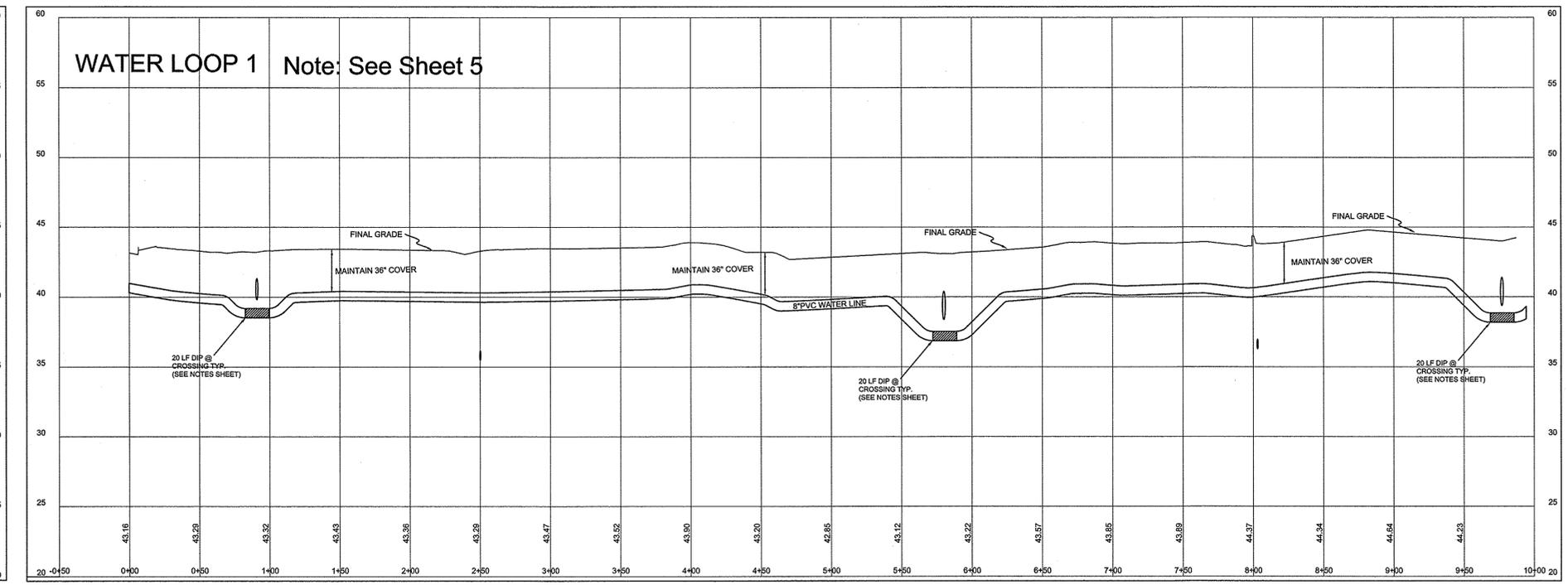
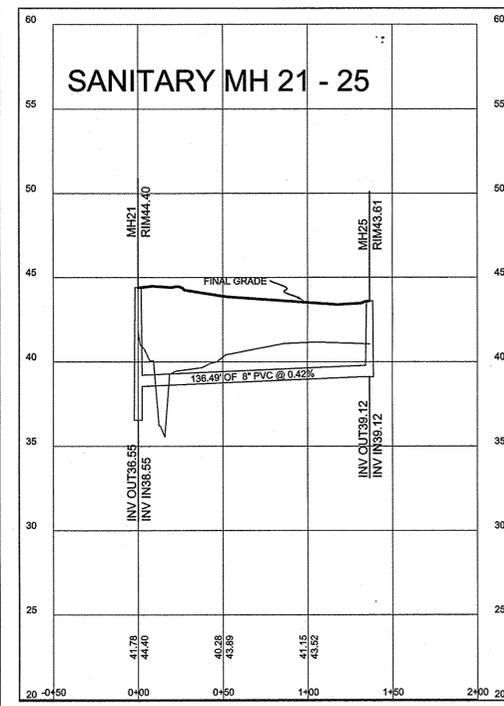
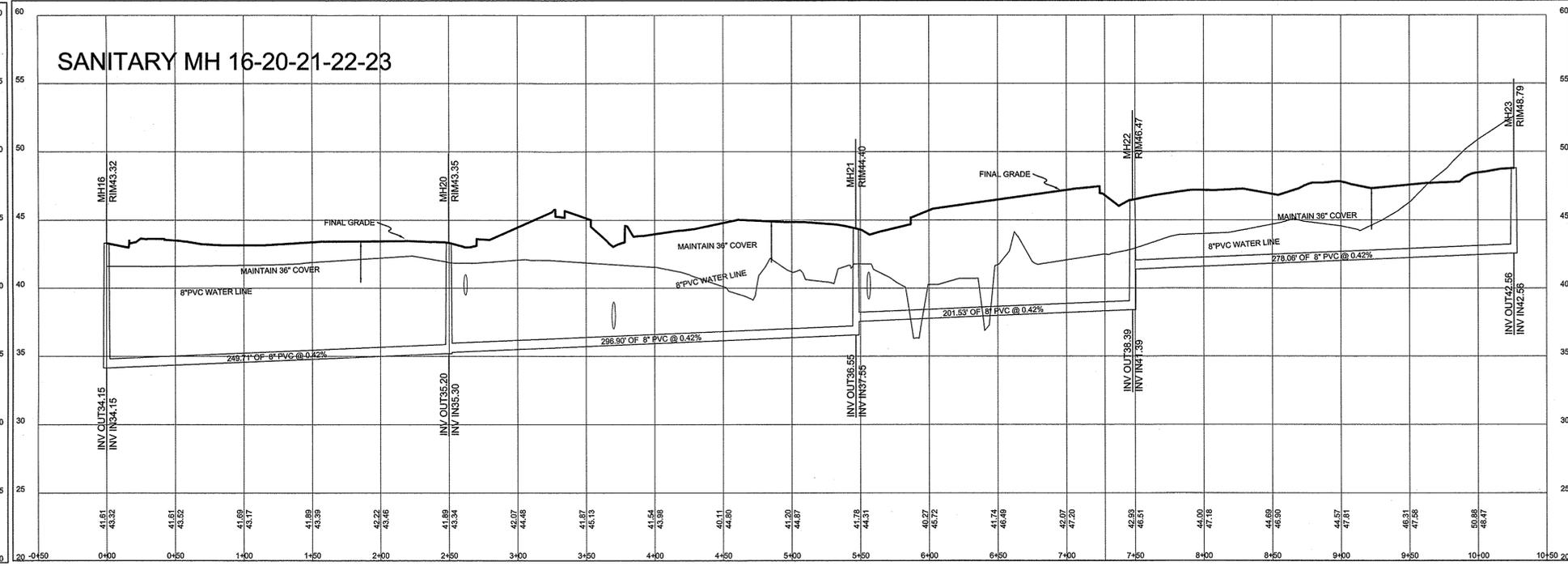
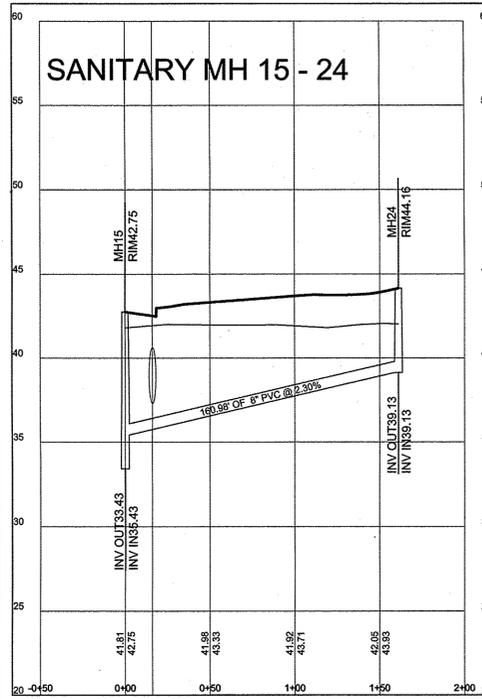
OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
 1201 GLEN MEADE ROAD, PO BOX 3649  
 WILMINGTON, NC 28408  
 PH: 910-762-2676

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 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORAL PARKWAY  
 WILMINGTON, N.C. 28403  
 PHONE: (910) 343-8002  
 License # C-0597



**FINAL DESIGN NOT RELEASED FOR CONSTRUCTION**

Date: 3-22-16  
 Scale: HORIZ: 1"= 40'  
 Drawn: GW  
 Checked: DH  
 Project No: 12498  
 Sheet No: 6  
 Of: 10

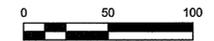


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STORMWATER MANAGEMENT PLAN  
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 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE \_\_\_\_\_  
 PERMIT # \_\_\_\_\_  
 SIGNED \_\_\_\_\_

Approved Construction Plan

Name	Date
Planning _____	_____
Traffic _____	_____
Fire _____	_____



FINAL DESIGN NOT RELEASED FOR CONSTRUCTION

### ADDITIONAL PROFILES

REV. NO.	REVISIONS	DATE

PLANS & PROFILES  
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OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
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**HANOVER DESIGN SERVICES, P.A.**  
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 1123 FLORAL PARKWAY  
 WILMINGTON, N.C. 28403  
 PHONE: (910) 343-8002  
 License # C-0597

Professional Engineer Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20007 DAVID S. HOLLIS

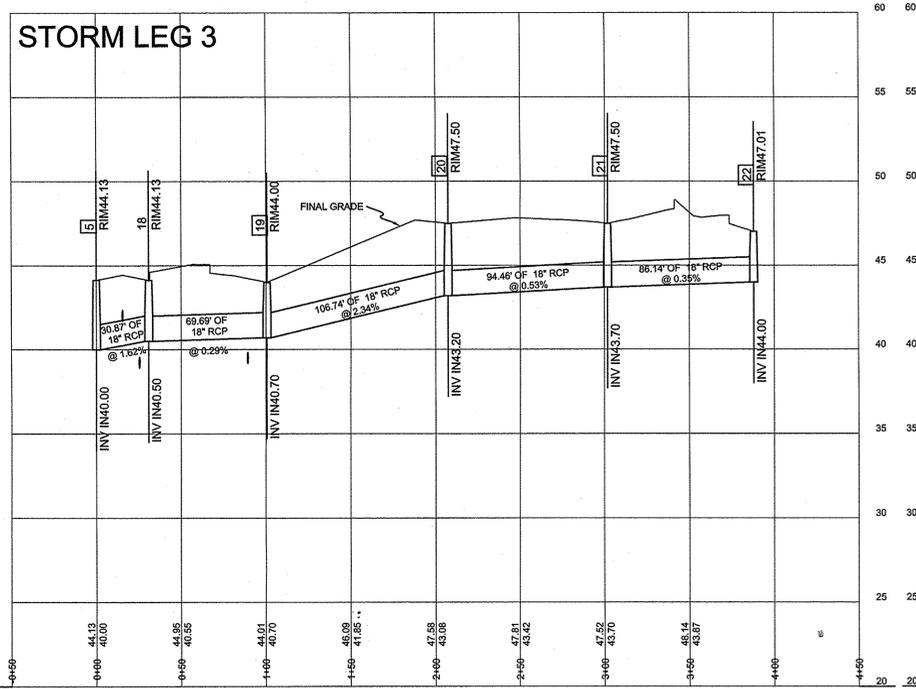
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 VERT: 1"=2'  
 Drawn: GW  
 Checked: DH  
 Project No: 12498  
 Sheet No: 7 of 10

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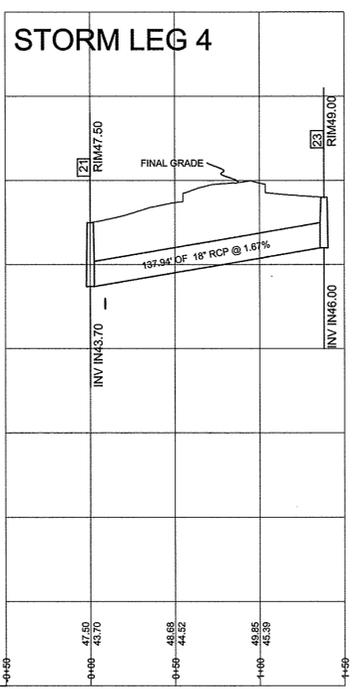


ADDITIONAL STORM PROFILES

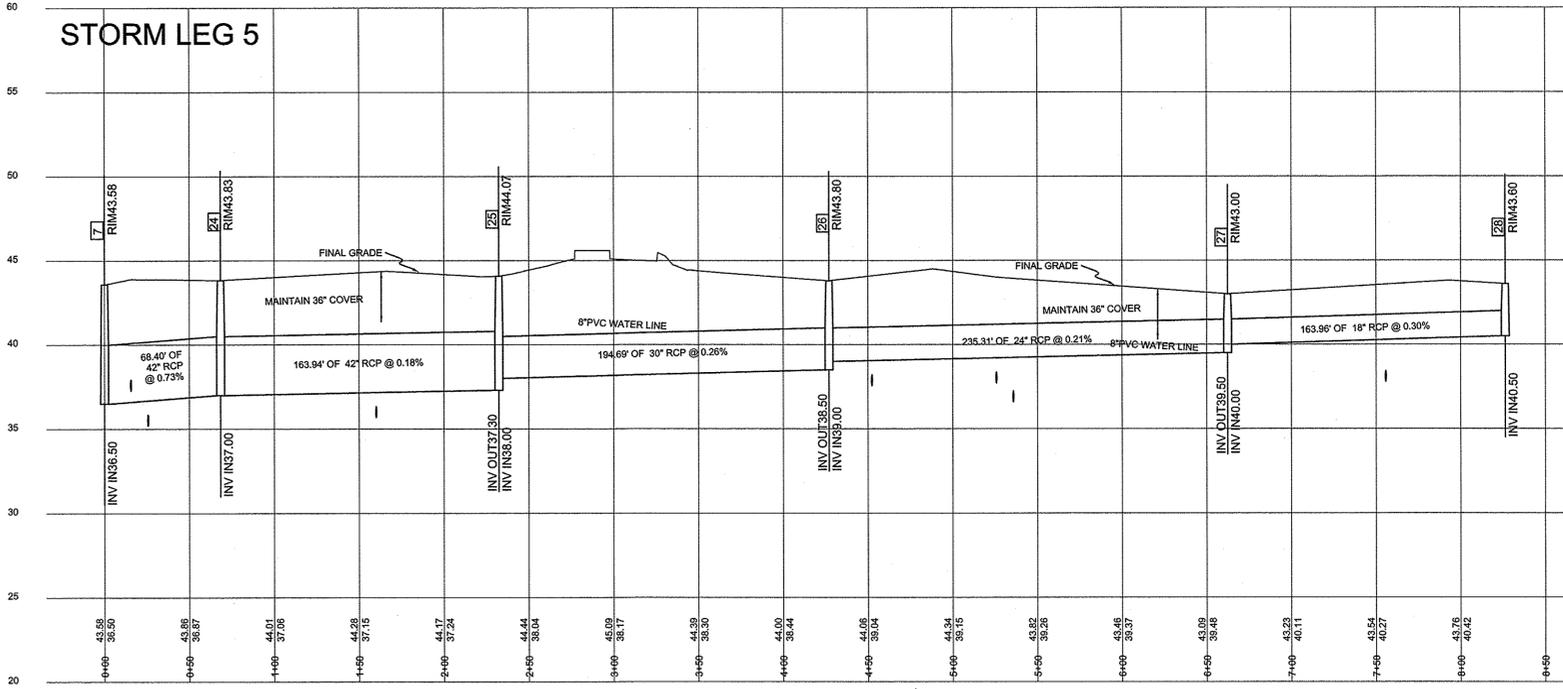
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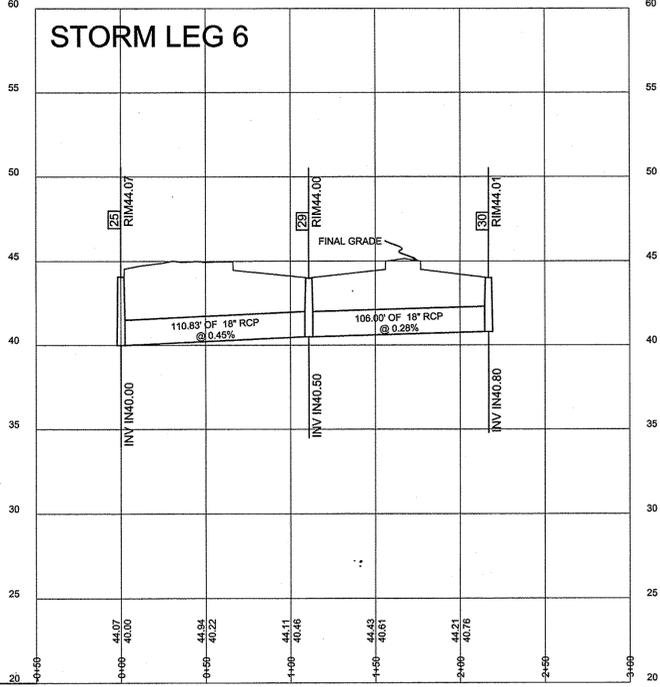
STORM LEG 4



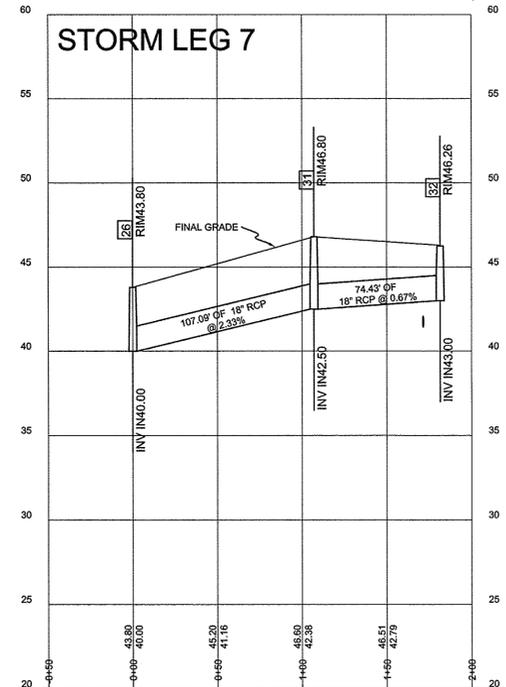
STORM LEG 5



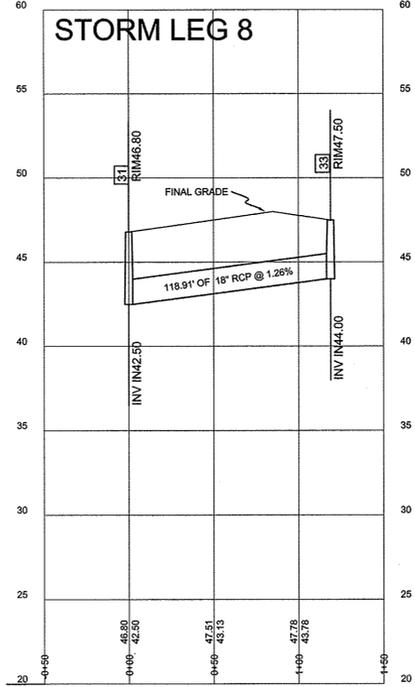
STORM LEG 6



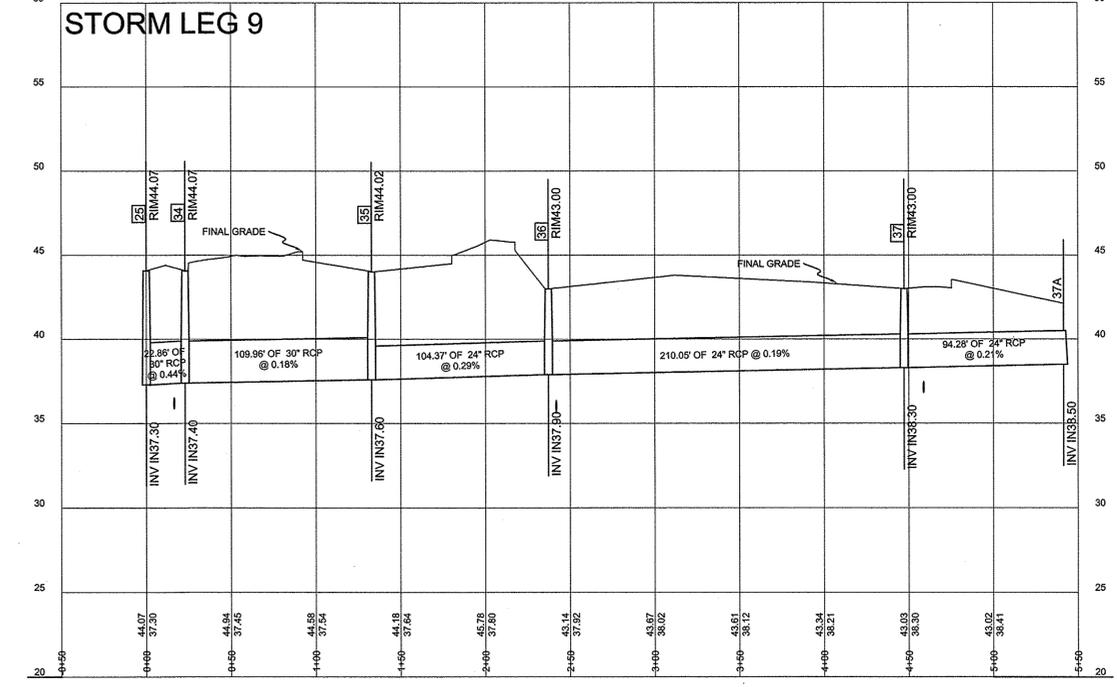
STORM LEG 7



STORM LEG 8



STORM LEG 9



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

Approved Construction Plan Name Date Planning Traffic Fire SIGNED

ADDITIONAL PROFILES

REV. NO.	REVISIONS	DATE

PLANS & PROFILES  
ELEMENT BARCLAY WEST APARTMENTS  
Barclay West  
LOCATED IN THE CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA



OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
1201 GLEN MEADE ROAD PO BOX 3649  
WILMINGTON, NC 28406  
PH: 910-762-2676

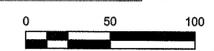
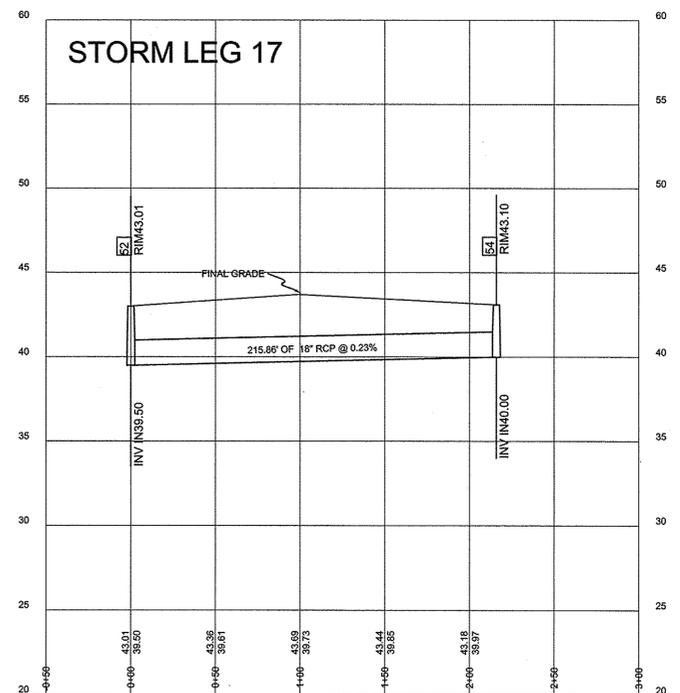
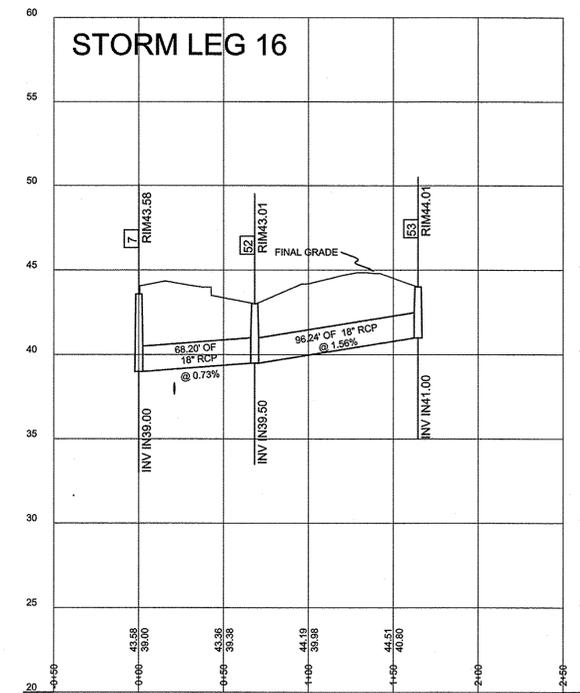
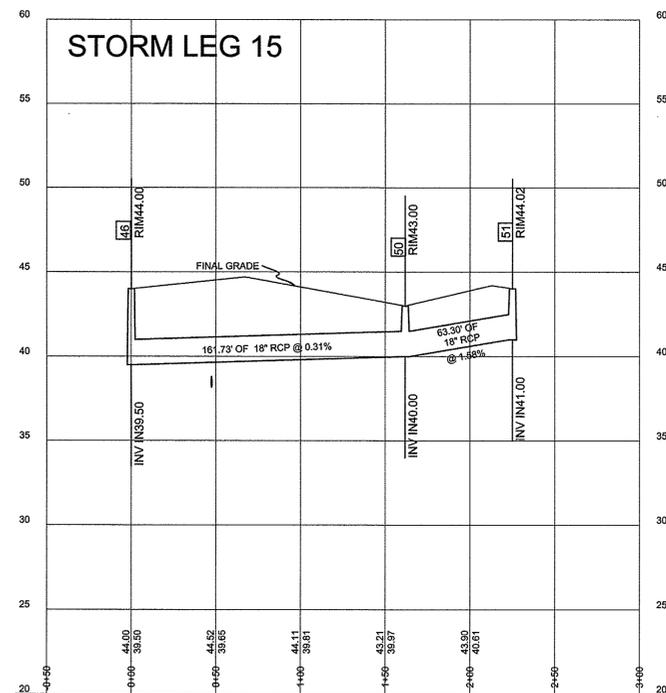
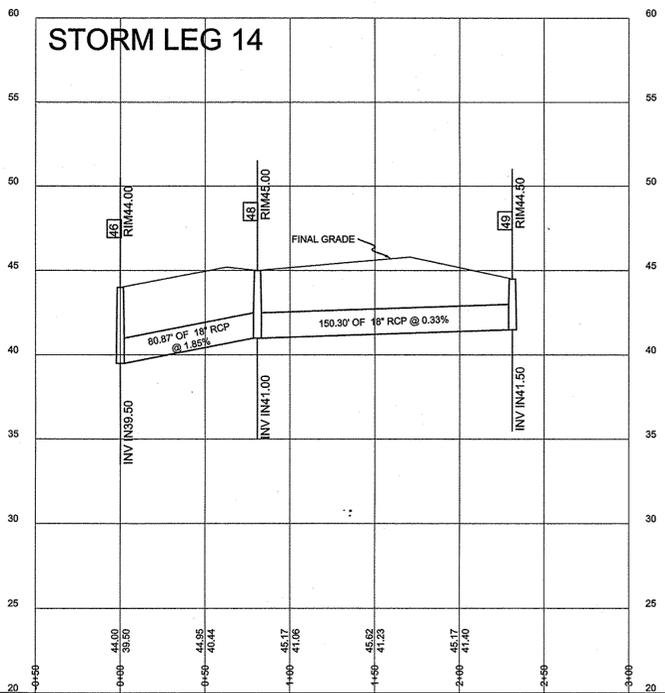
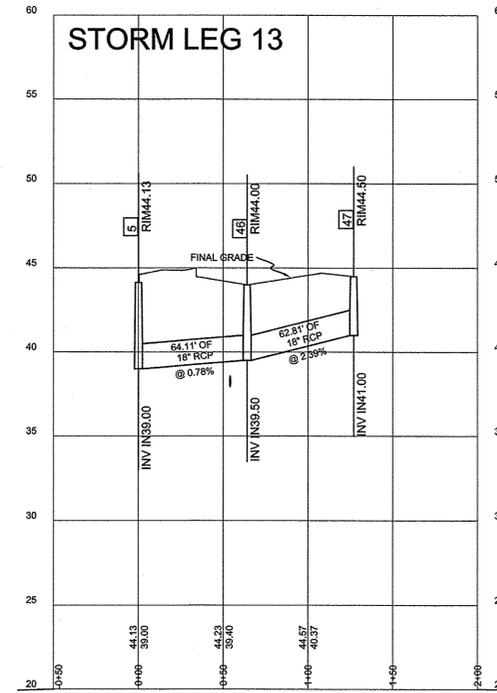
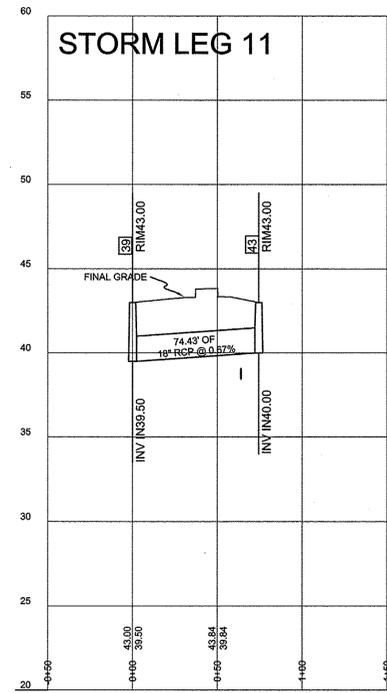
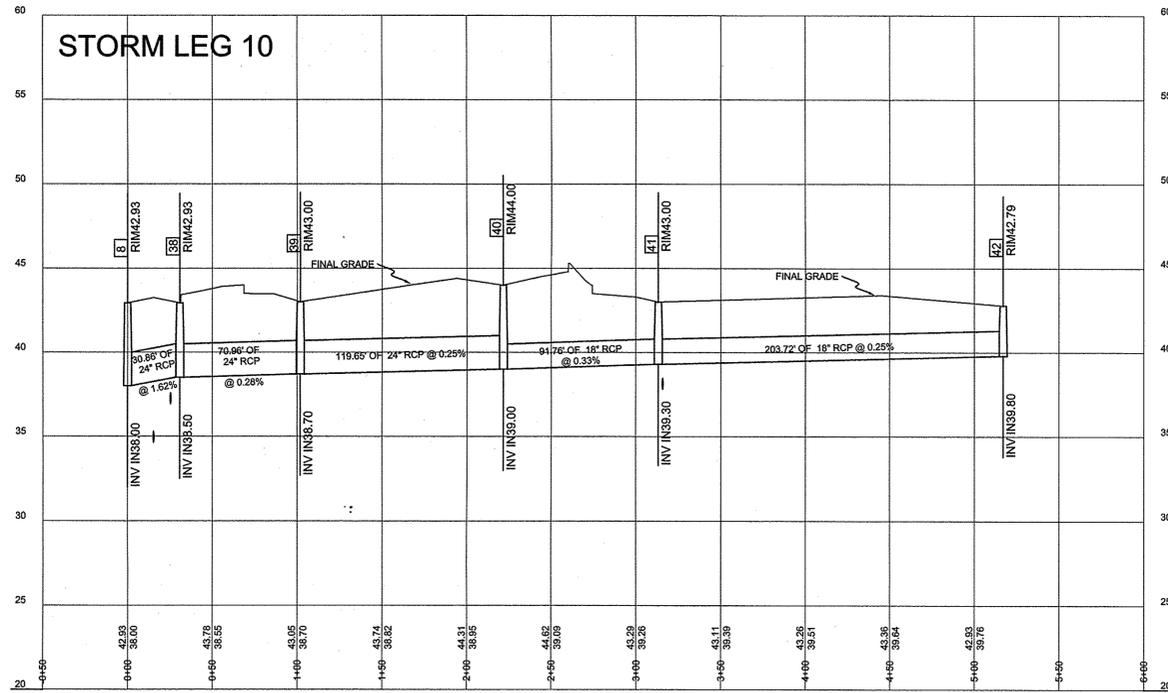
HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1133 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 343-5002  
License # C-5597

Date: 3-22-16  
Scale: HORIZ: 1"=50'  
VERT: 1"=5'  
Drawn: GW  
Checked: DH  
Project No: 12458  
Sheet No: 9 of 10

FINAL DESIGN NOT RELEASED FOR CONSTRUCTION

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ADDITIONAL STORM PROFILES



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 APPROVED  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE \_\_\_\_\_  
 PERMIT # \_\_\_\_\_  
 SIGNED \_\_\_\_\_

Approved Construction Plan  
 Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

FINAL DESIGN NOT RELEASED FOR CONSTRUCTION

ADDITIONAL PROFILES

REV. NO.	REVISIONS	DATE

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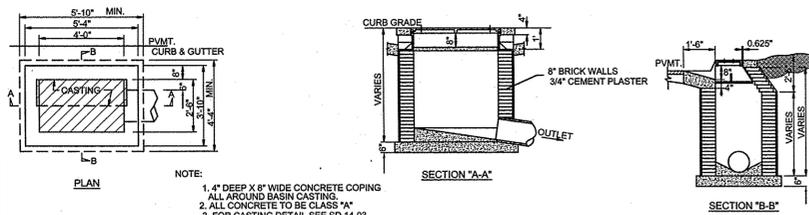
PLANS & PROFILES  
**ELEMENT BARCLAY WEST APARTMENTS**  
 Barclay West  
 LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
 1201 GLEN MEADE ROAD PO BOX 3649  
 WILMINGTON, NC 28406  
 PH: 910-762-2676

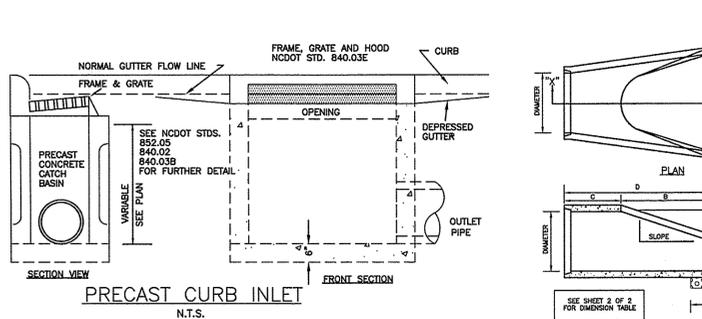
HANOVER DESIGN SERVICES, P.A.  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORAL PARKWAY  
 WILMINGTON, N.C. 28403  
 PHONE: (910) 343-8902  
 License # C-0597

North Carolina Professional Engineer Seal 20007  
 David S. Hollis

Sheet No: 10  
 10  
 Of:



**CATCH BASIN**  
SD 2-01  
NOT TO SCALE



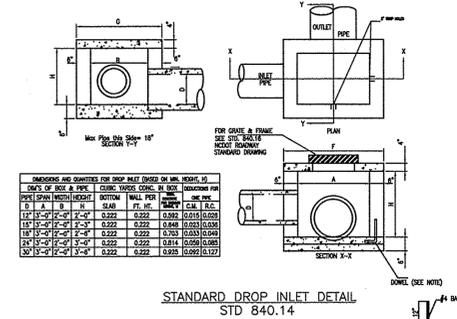
**PRECAST CURB INLET**  
N.T.S.

SEE SHEET P2 FOR OUTLET PROTECTION

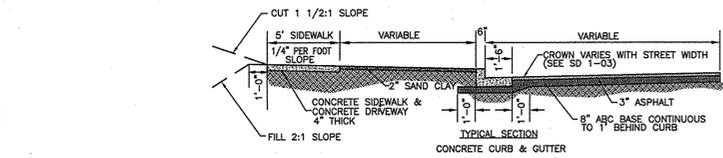
NOTE:  
1. STRUCTURAL DESIGN OF END SECTION SHALL CONFORM WITH THAT OF STANDARD REINFORCED CONCRETE.

PIPE DIAMETER	WALL THICKNESS	SLOPE	B	C	D	E	UNIT WEIGHT
12	2 1/4	3:1	24	49	73	24	730
15	2 1/4	3:1	27	46	73	30	910
18	2 1/2	3:1	27	46	73	36	1190
21	2 3/4	3:1	36	37	73	42	1370
24	3	3:1	42	31	1/2 73	48	1770
27	3 1/4	3:1	48	25	1/2 73	54	2130
30	3 1/2	3:1	54	19	3/4 73	60	2380
33	3 3/4	3:1	60	36	96	66	3870
36	4	3:1	63	34	3/4 97	72	5320
42	4 1/2	3:1	63	35	98	78	5920
48	5	3:1	72	25	98	84	7470
54	5 1/2	2.4:1	66	34	100	90	8810
60	6	2:1	60	39	99	96	11180
72	7	2:1	78	21	99	108	13980

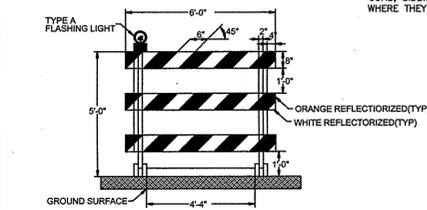
DIMENSIONS IN INCHES WEIGHTS IN POUNDS



**STANDARD DROP INLET DETAIL**  
STD 840.14

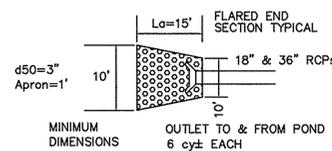


NOTES:  
\* COMBINED CONCRETE CURB & GUTTER, CONCRETE SIDEWALK AND DRIVEWAYS TO BE 3000 POUNDS STRENGTH CONCRETE.  
\* JOINTS TO BE PLACED EVERY 5' ACROSS SIDEWALK, IN SIDEWALK AREA OF DRIVEWAYS.  
\* EXPANSION JOINTS TO BE PLACED ACROSS SIDEWALK EVERY 30'.  
\* EXPANSION JOINTS TO BE PLACED BETWEEN SIDEWALK AND CURB, SIDEWALK AND DRIVEWAY, AND DRIVEWAY AND CURB RETURN WHERE THEY ADJOIN.



**TYPE A FLASHING LIGHT**

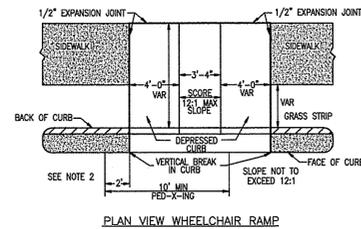
NOTE WELL:  
1) OUTLET PROTECTION & ROCK STABILIZATION APRONS REQUIRED AS SHOWN ON PLAN.  
2) SLOPE IS FLAT (0%) FOR A MINIMUM OF 2LF 2' MIN. BOTTOM WIDTH.



**OUTLET PROTECTION and ROCK STABILIZATION APRON**  
NOT TO SCALE

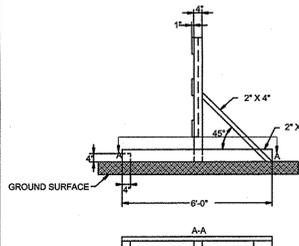
- GENERAL NOTES
- LOCATION OF WHEELCHAIR RAMPS:  
1. IN ACCORDANCE WITH THE RATIFIED HOUSE BILL 1296, ALL STREET CURBS IN NORTH CAROLINA BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF DEFECTS OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1973 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTER AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.  
2. WHEELCHAIR RAMPS SHOULD BE LOCATED AS INDICATED IN DETAIL, DRAWINGS, HOWEVER EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. MAY AFFECT PLACEMENT.  
3. NO SLOPE SHALL EXCEED 1" IN 12" (12%) ON THE RAMP OR SIDEWALK.  
4. IN NO CASE SHALL THE WIDTH OF WHEELCHAIR RAMPS BE LESS THAN 48" (4'-0"). WIDTHS MAY EXCEED 48" IF NECESSARY.  
5. USE CLASS 90 CONCRETE WITH THE SURFACE FINISHING A RUGGED, NON-SLIP TYPE FINISH.  
6. 1/2" EXPANSION JOINTS WILL BE REQUIRED WHERE THE CONCRETE WHEELCHAIR RAMPS JOIN ANY RIGID PAVEMENT OR STRUCTURE.  
7. CONSTRUCTION METHODS SHALL CONFORM WITH THOSE OF THE GOVERNING BODY WHICH HAS JURISDICTION OF THE PARTICULAR STREET.
  - ADDITIONAL NOTES:  
1. THE INSIDE PEDESTRIAN CROSSWALK LINES SHALL BE ESTABLISHED BY BISECTING THE INTERSECTION RADI WHERE MARKED (SEE NOTE 6).  
2. THE WHEELCHAIR RAMP SHALL BE LOCATED SO THAT THE BEGINNING OF THE WHEELCHAIR RAMP WILL BE TWO FEET FROM THE INSIDE PEDESTRIAN CROSSWALK LINE.  
3. THE WIDTH OF THE PEDESTRIAN CROSSWALK SHALL BE 10 FEET UNLESS A GREATER WIDTH IS REQUIRED TO ACCOMMODATE THE PEDESTRIAN TRAFFIC.  
4. STOP BARS SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENTS.  
5. PARKING SHALL BE ELIMINATED A MINIMUM OF 30 FEET BACK OF PEDESTRIAN CROSSWALK.  
6. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION. THIS IS AVAILABLE FROM THE SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT.

**GUIDELINES FOR WHEELCHAIR RAMPS**  
SD 8-9

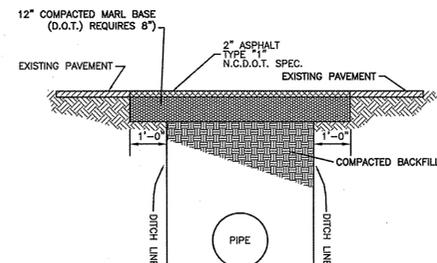


**PLAN VIEW WHEELCHAIR RAMP**

**GUIDELINES FOR WHEELCHAIR RAMPS & DEPRESSED CURBS**  
SD 8-10  
NOT TO SCALE

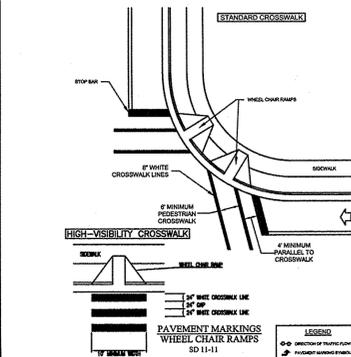


**TYPE III BARRICADE**  
SD 15-07  
NOT TO SCALE

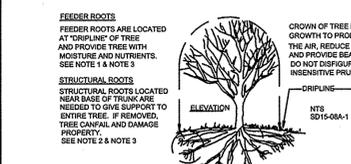


NOTES:  
\* BACKFILL TO BE INSTALLED IN 6" LIFTS (MAXIMUM) AND COMPACTED TO A MINIMUM DENSITY OF 95% AS DETERMINED BY THE MODIFIED A.A.S.H.T.O. STANDARD METHOD T-99  
\* CUT - BACK TO BE PREPARED AFTER TRENCH BACKFILLING AND COMPACTION

**PAVEMENT REPAIRS**  
SD 15-05

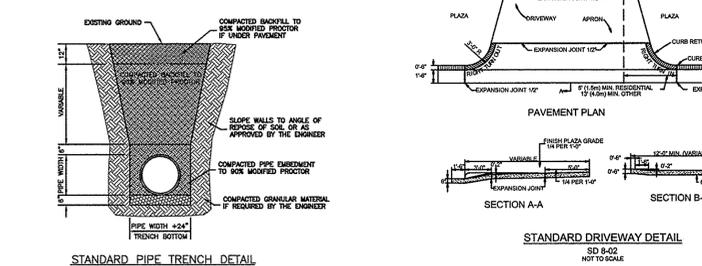


**PAVEMENT MARKINGS WHEEL CHAIR RAMPS**  
SD 11-11

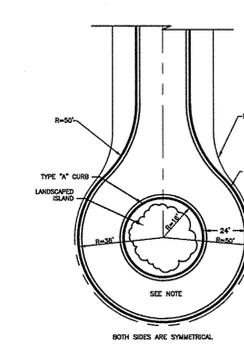


**METHOD OF TREE PROTECTION DURING CONSTRUCTION**  
NTS

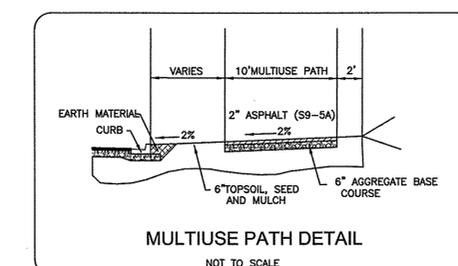
TREE PROTECTION DURING CONSTRUCTION -  
1. CLEARLY MARK THE TREE TO BE SAVED PRIOR TO CONSTRUCTION AND ERECT A PROTECTIVE BARRIER AT THE DRIPLINE. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO HEAVY MATERIALS SHALL BE STORED BENEATH TREES. RESULTS OF CONSTRUCTION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



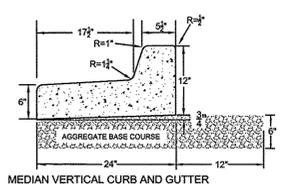
**STANDARD DRIVEWAY DETAIL**  
SD 8-02  
NOT TO SCALE



**MULTIUSE PATH DETAIL**  
NOT TO SCALE



**VERTICAL CURB AND GUTTER**



**MEDIAN VERTICAL CURB AND GUTTER**

**TYPICAL DETAILS**

REV. NO.	REVISIONS	DATE

**PLANS & PROFILES**  
**ELEMENT BARCLAY WEST APARTMENTS**  
Barclay West  
LOCATED IN THE CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA

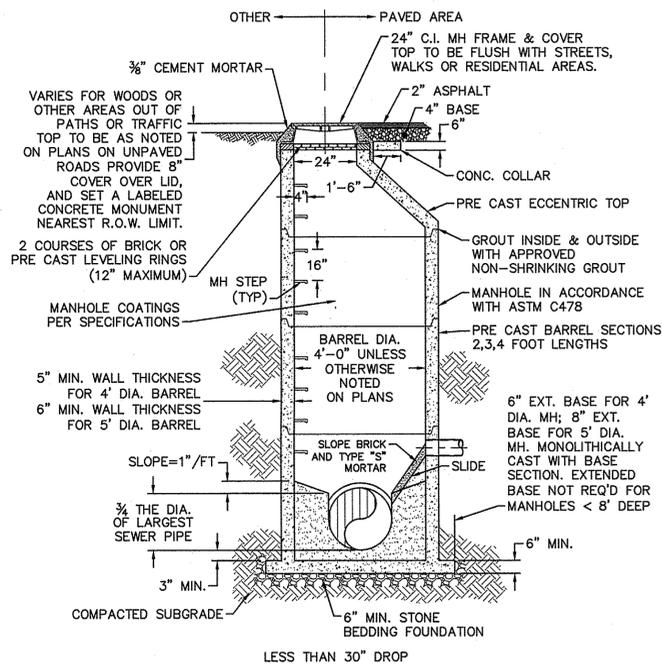
Date: 3-22-16  
Scale: N/A  
Drawn: DSH  
Checked: DSH  
Project No: 12498  
Sheet No: D1  
Of:  

OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
1201 GLEN MEADE ROAD PO BOX 3649  
WILMINGTON, NC 28408 PH 910-762-2676

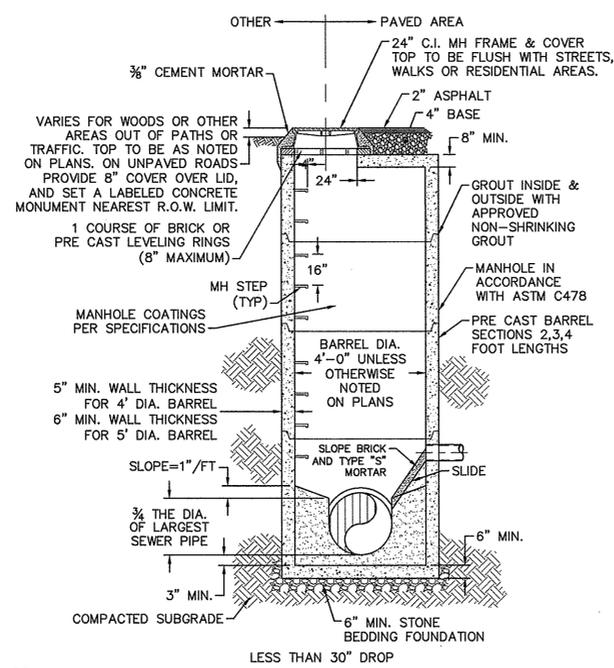
HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 343-8902  
License # C-0597

FINAL DESIGN NOT RELEASED FOR CONSTRUCTION

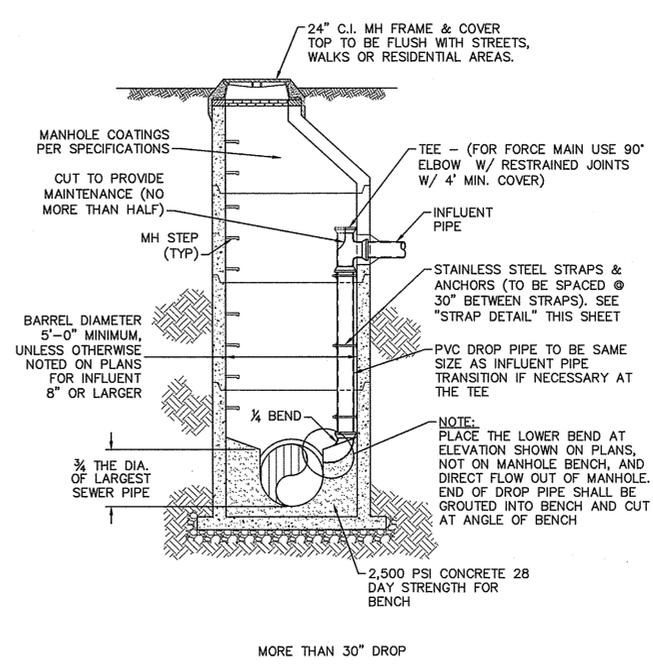
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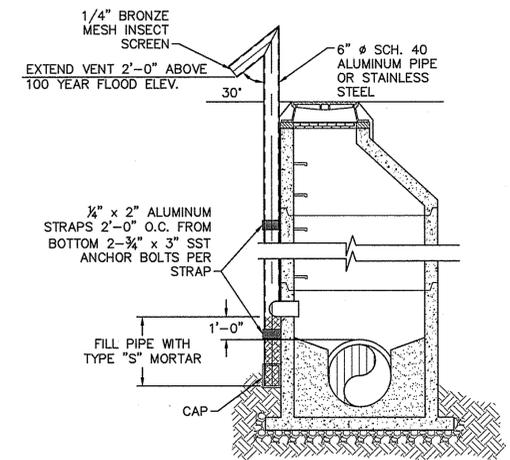
**SD-1 PRECAST CONCRETE OFFSET MANHOLE TYPICAL**  
NOT TO SCALE



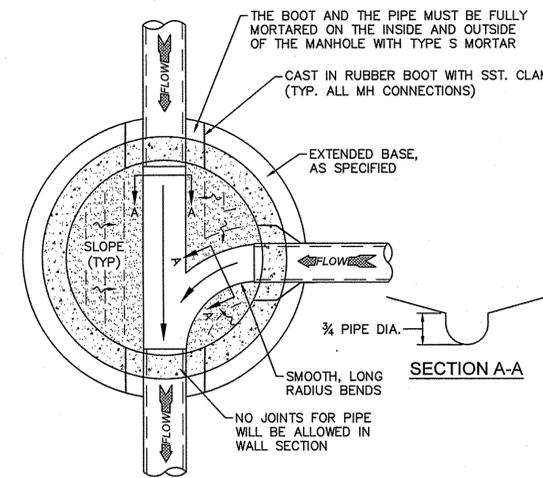
**SD-2 PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL**  
NOT TO SCALE



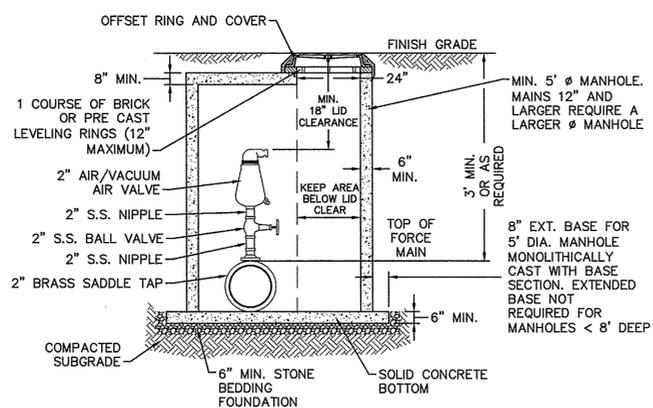
**SD-3 DROP MANHOLE**  
NOT TO SCALE



**SD-4 STANDARD VENT MANHOLE**  
NOT TO SCALE

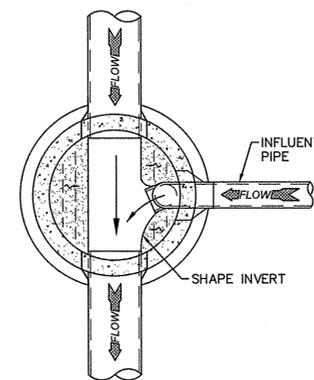


**SD-5 MANHOLE FLOOR PLAN**  
NOT TO SCALE

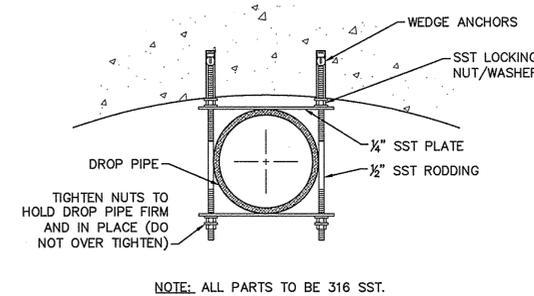


**NOTES:**  
1. CONTRACTOR TO INSTALL VALVE AND MANHOLE AT SUFFICIENT DEPTH TO ALLOW FOR ACCESS.  
2. FORCE MAIN TO BE OFFSET IN MANHOLE TO KEEP AREA BELOW LID CLEAR.  
3. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.  
4. USE CAST IN RUBBER BOOT WITH S.S.T. CLAMPS FOR ALL MH CONNECTIONS, INCLUDING FORCE MAIN.

**SD-6 AIR/VACUUM AND AIR RELEASE COMBINATION VALVE**  
NOT TO SCALE



**SD-7 DROP MANHOLE FLOOR PLAN**  
NOT TO SCALE



**SD-8 STRAP DETAIL**  
NOT TO SCALE

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
  - WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
  - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
  - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
  - NO FLEXIBLE COUPLINGS SHALL BE USED.
  - ALL STAINLESS STEEL FASTENERS SHALL BE 316.
  - CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

**SD-9 STANDARD NOTES**  
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)

- GENERAL NOTES:**
- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
  - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
  - THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
  - THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
  - THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**CFPUA SANITARY SEWER**

**STANDARD DETAILS**

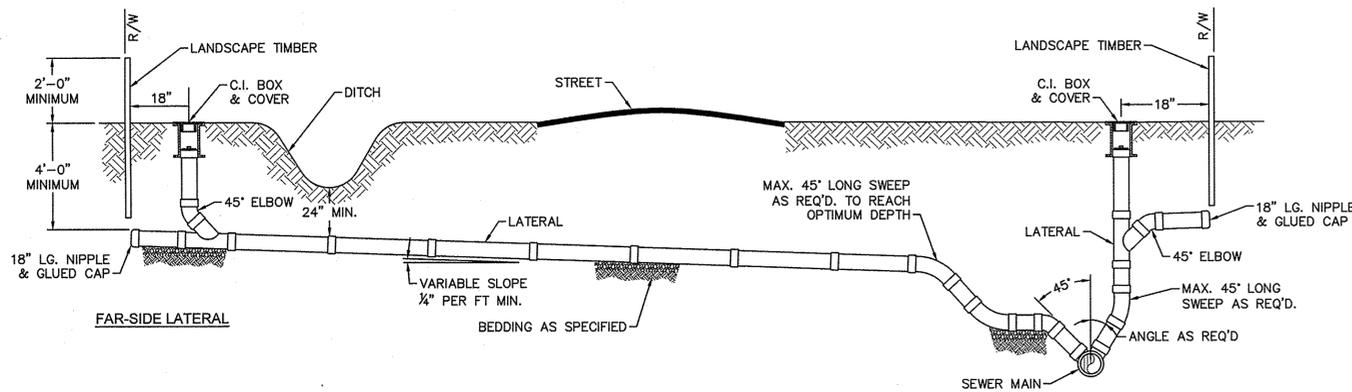


**CAPE FEAR PUBLIC UTILITY AUTHORITY**  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE:  
1/9/12  
SCALE:  
N/A  
DRAWN BY:  
CFPUA  
CHECKED BY:  
CFPUA  
PROJECT NO.:

**SHEET NO:**  
**SSD-1**

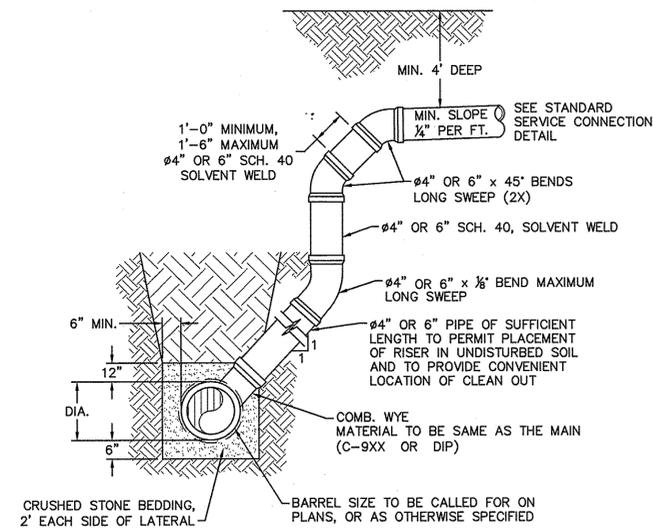
REV:	DESCRIPTION:	DATE:
1	AIR / VACUUM AND AIR RELEASE COMBINATION VALVE REVISED	10/26/12
2	STANDARD SEWER NOTE #6 REVISED	12/10/12
3	REVISED STANDARD VENT MANHOLE TO EXTEND VENT 2'-0" ABOVE 100 YR FLOOD	11/20/14
4	Revised Multiple Details	02/15/16



NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN

**SD-19** STANDARD SERVICE CONNECTION TO SANITARY SEWER

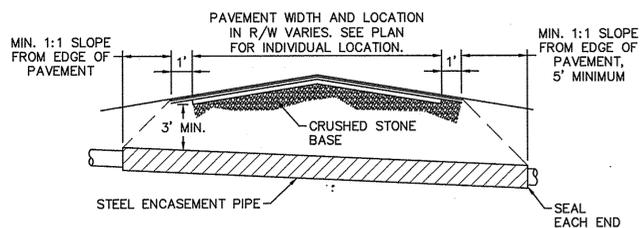
NOT TO SCALE



NOTE: 1. SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION.  
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

**SD-12** DEEP SERVICE LATERAL

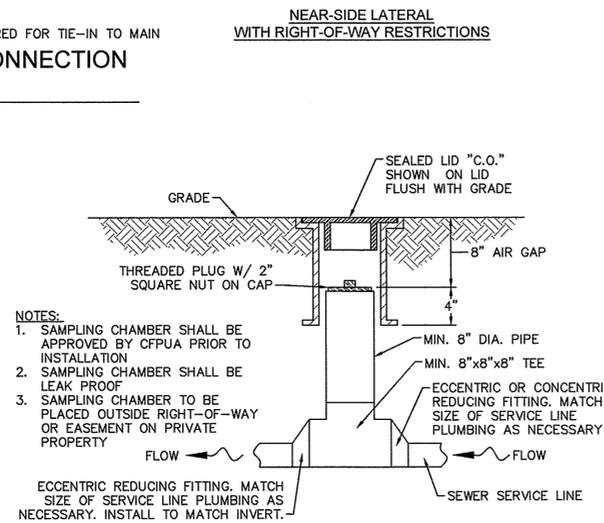
NOT TO SCALE



NOTE: 1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.  
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

**SD-16** TYPICAL BORING/JACKING DETAIL

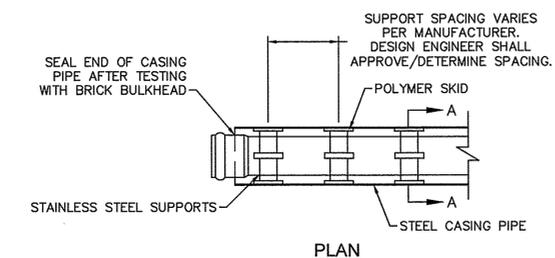
NOT TO SCALE



NOTE: 1. SAMPLING CHAMBER SHALL BE APPROVED BY CFPUA PRIOR TO INSTALLATION  
2. SAMPLING CHAMBER SHALL BE LEAK PROOF  
3. SAMPLING CHAMBER TO BE PLACED OUTSIDE RIGHT-OF-WAY OR EASEMENT ON PRIVATE PROPERTY

**SD-13** SAMPLING CHAMBER

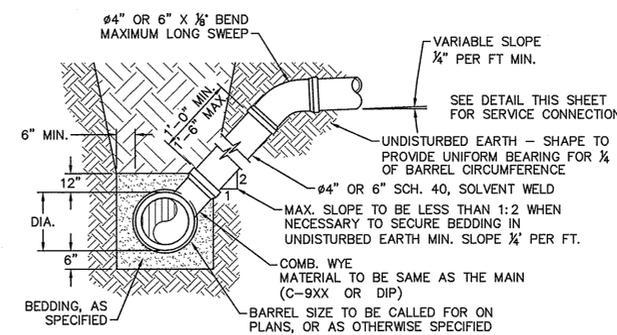
NOT TO SCALE



NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.

**SD-17** PIPE CASING SUPPORT DETAIL

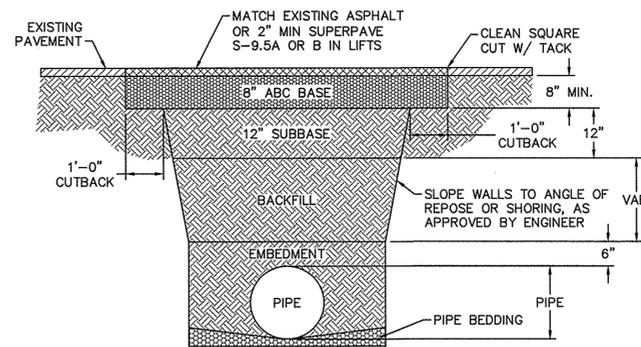
NOT TO SCALE



NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

**SD-10** STANDARD SERVICE LATERAL

NOT TO SCALE

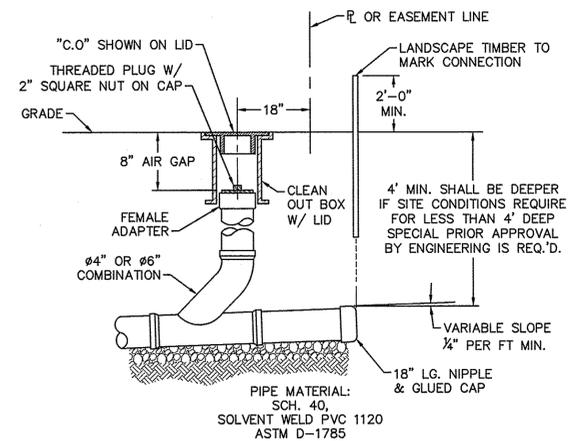


NOTE: 1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.  
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).  
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.  
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS  
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK). HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.  
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.  
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.  
8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

**SD-14** PAVEMENT REPAIR WHERE PIPE INSTALLED

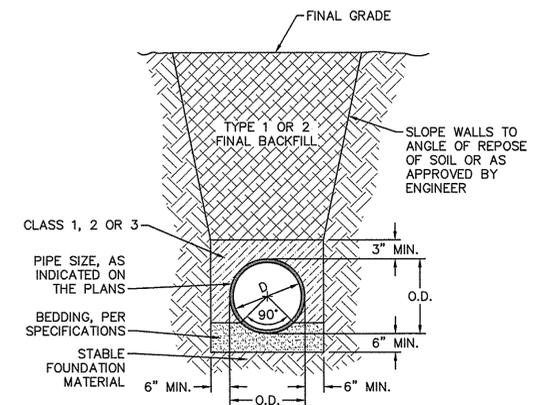
NOT TO SCALE



NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

**SD-11** SERVICE CONNECTION AND CLEAN-OUT

NOT TO SCALE



**SD-15** TYPICAL TRENCH DETAIL

NOT TO SCALE

- GENERAL NOTES:
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
  2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
  3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
  4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
  5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**CFPUA SANITARY SEWER**

**STANDARD DETAILS**



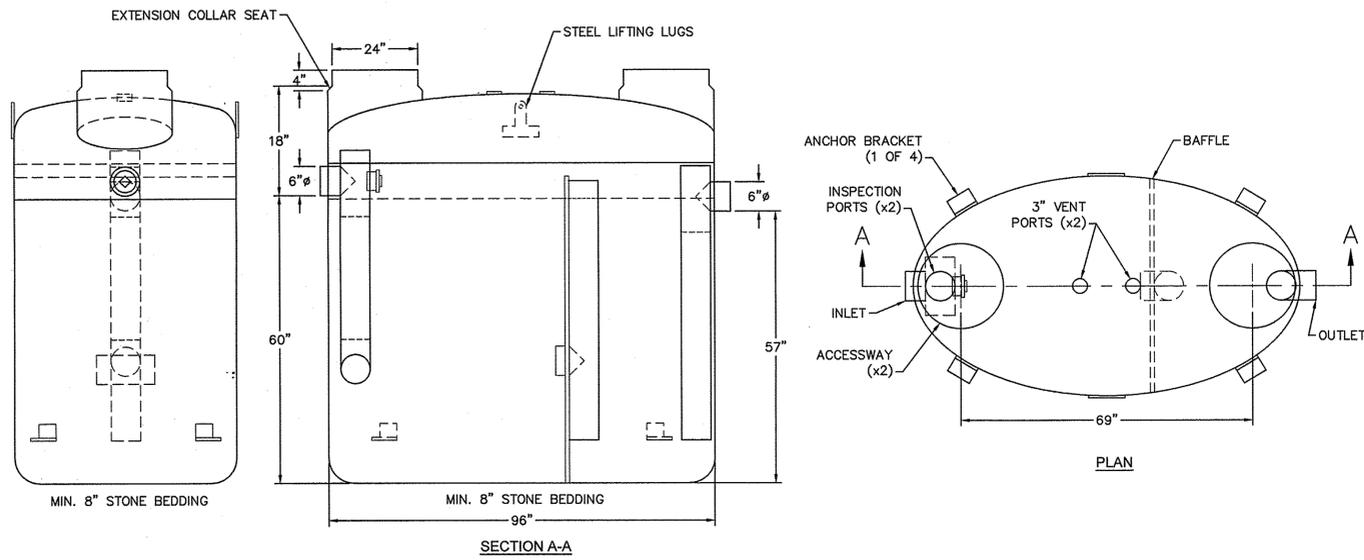
CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE:  
1/9/12  
SCALE:  
N/A  
DRAWN BY:  
CFPUA  
CHECKED BY:  
CFPUA  
PROJECT NO.:

SHEET NO:  
**SSD-2**

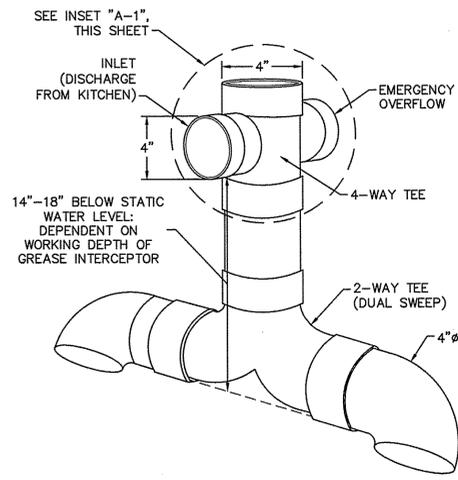
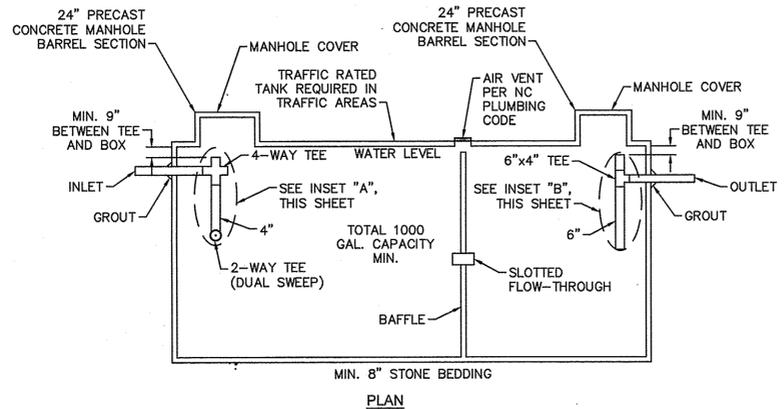
REV:	DESCRIPTION:	DATE:
1	SAMPLING CHAMBER REVISED	10/26/12
2	Revised Multiple Details	02/15/16





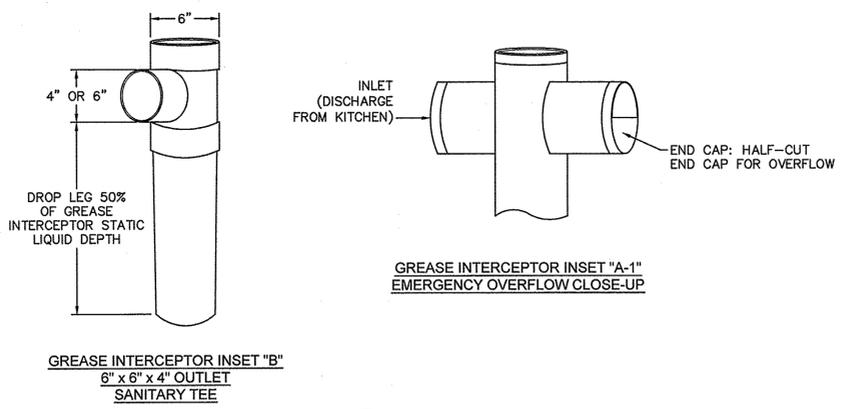
- NOTES:**
1. FOR GRAVITY APPLICATIONS ONLY.
  2. MIN. THICKNESS: 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS.
  3. STANDARD PIPE STUBS ARE SOCKET SDR 35 PVC.
  4. EXTENSION COLLARS SHALL BE CAULKED WITH SIKAFLEX OR EQUIVALENT FOR WATERTIGHT SEAL.
  5. FOLLOW MANUFACTURE'S SPECS FOR TRAFFIC OR PEDESTRIAN LOADING.

**SD-22 FIBERGLASS GREASE INTERCEPTOR**  
NOT TO SCALE



- GENERAL NOTES:**
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
  2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
  3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
  4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
  5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**



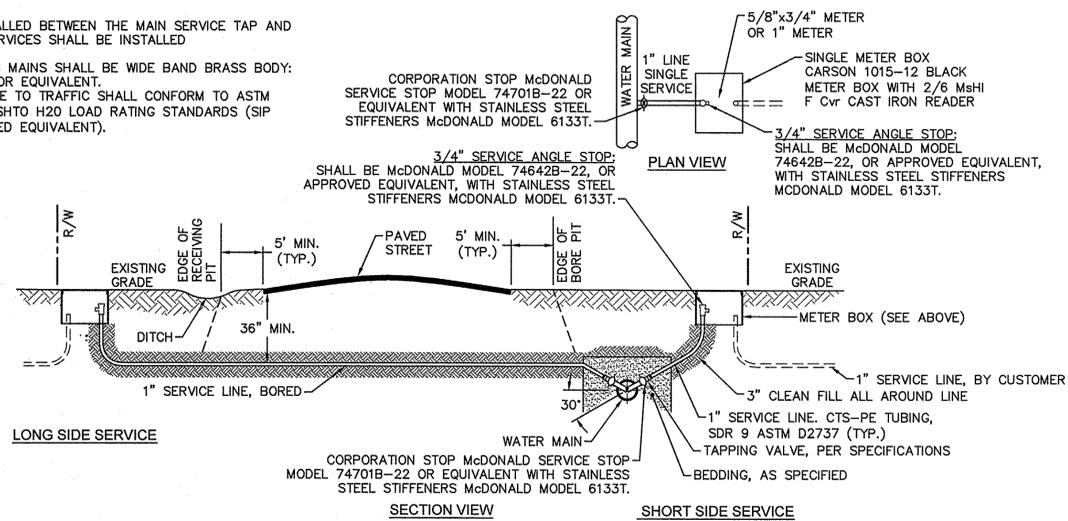
**SD-23 CONCRETE GREASE INTERCEPTOR**  
NOT TO SCALE

<b>CFPUA SANITARY SEWER</b>			DATE: 1/9/12
			SCALE: N/A
			DRAWN BY: CFPUA
			CHECKED BY: CFPUA
			PROJECT NO.:
<b>STANDARD DETAILS</b>			<b>SHEET NO.:</b> SSD-4
			<b>CAPE FEAR PUBLIC UTILITY AUTHORITY</b> 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 <small>Stewardship. Sustainability. Service.</small>

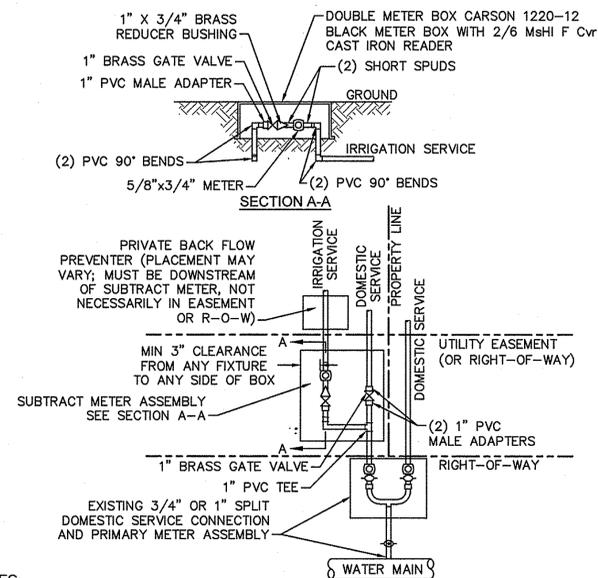
REV:	DESCRIPTION:	DATE:

S:\Engineering\2012\_Planning and Design\_Division\Technical\Design\Std Det for detail\Standard Details\CFPUA Sanitary Sewer Detail.dwg 7/27/2012 11:23 PM jhmcarr

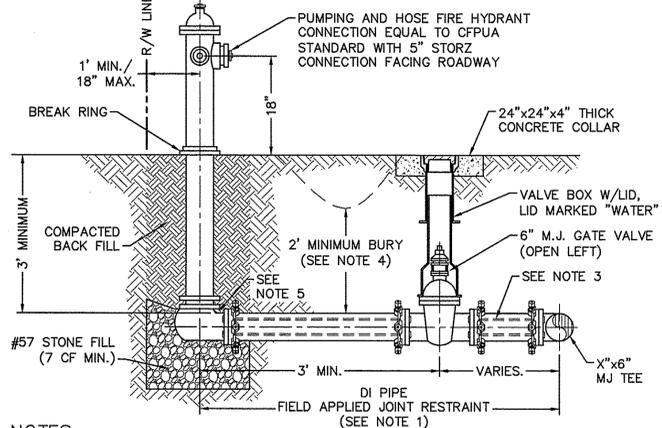
- NOTES:**
- NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
  - SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: SADDLE McDONALD 3801 OR EQUIVALENT.
  - METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4242, OR APPROVED EQUIVALENT).



**WD-18 SINGLE SERVICE CONNECTION**  
NOT TO SCALE



**WD-8 DOUBLE SERVICE CONNECTION USING SUBTRACT METER**  
NOT TO SCALE

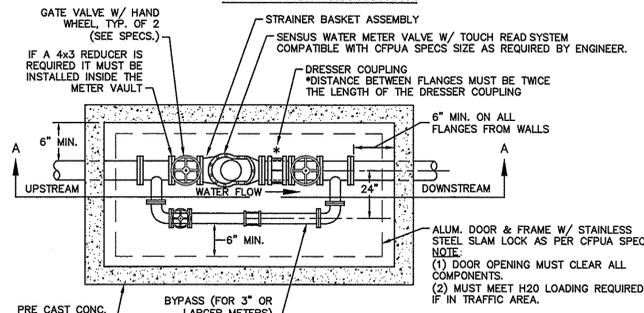
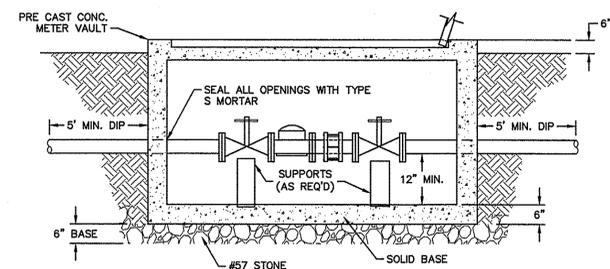


- NOTES:**
- JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI PIPE AS MANUFACTURED BY EBAA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
  - WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
  - CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH COR-BLUE MJ T-BOLT AND GASKET KITS, AS AN ALTERNATIVE.
  - HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
  - WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.

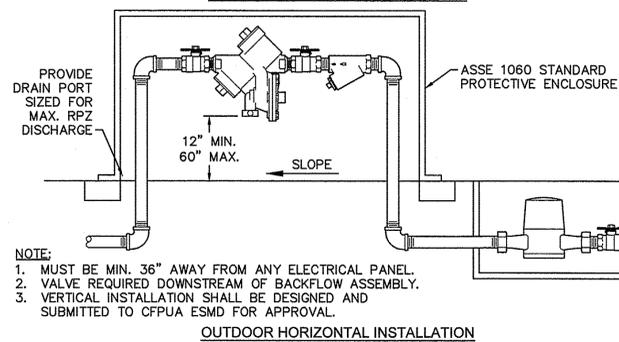
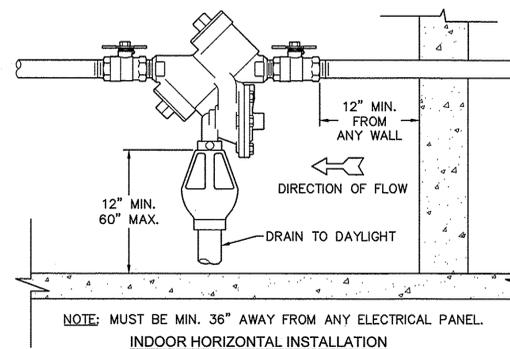
**WD-10 FIRE HYDRANT ASSEMBLY**  
NOT TO SCALE

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
  - WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
  - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
  - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
  - NO FLEXIBLE COUPLINGS SHALL BE USED.
  - ALL STAINLESS STEEL FASTENERS SHALL BE 316.
  - CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

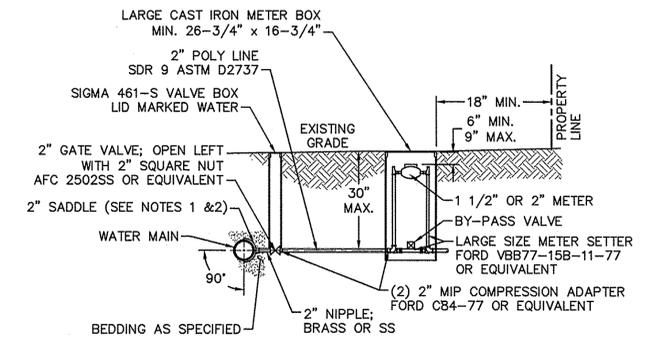
**WD-19 STANDARD NOTES**  
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)



**WD-1 WATER METER VAULT**  
NOT TO SCALE

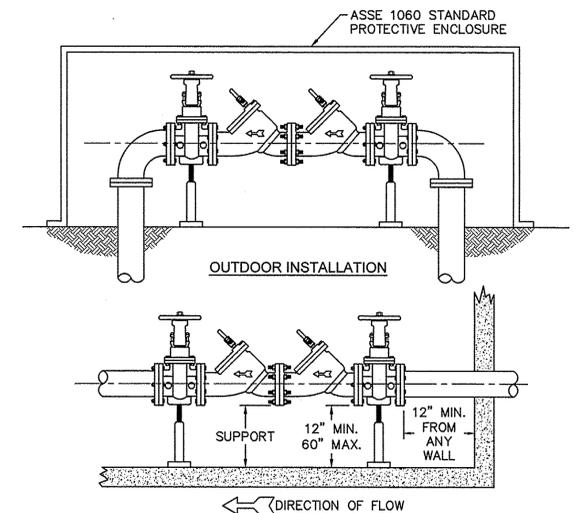


**WD-12 REDUCED PRESSURE PRINCIPLE ASSEMBLY**  
NOT TO SCALE



- NOTES:**
- ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
  - SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.
  - METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).
  - METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANSI/SCTE 77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17x30 OR APPROVED EQUIVALENT).
  - NON-TRAFFIC METER BOXES SHALL BE SIGMA MB2203 OR APPROVED EQUIVALENT.
  - 3\"/>

**WD-11 LARGE METER**  
NOT TO SCALE



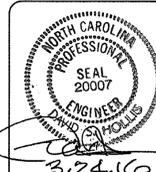
- NOTE:**
- MUST BE MIN. 36\"/>

**WD-7 DOUBLE CHECK VALVE ASSEMBLY**  
NOT TO SCALE

- GENERAL NOTES:**
- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
  - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
  - THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
  - THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
  - THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**CFPUA WATER DISTRIBUTION SYSTEM**



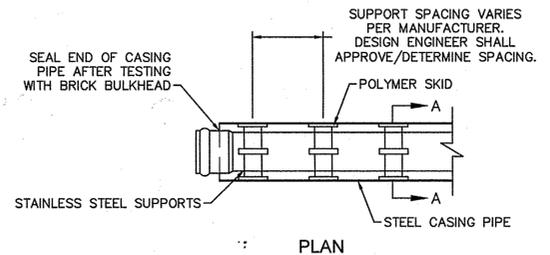
REV.	DESCRIPTION:	DATE:
1	Single Service Connection, Double Service Connection, and Large Meter Revised	10/28/12
2	Single Service Connection and Fire Hydrant Details Revised	7/23/13
3	Fire Hydrant Detail Revised	01/03/14
4	Revised Fire Hydrant Assembly To Show 5\"/>	

**STANDARD DETAILS**

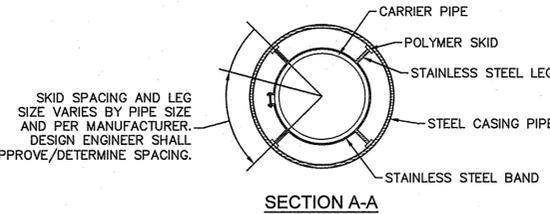
**CAPE FEAR PUBLIC UTILITY AUTHORITY**  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE:  
1/9/12  
SCALE:  
N/A  
DRAWN BY:  
CFPUA  
CHECKED BY:  
CFPUA  
PROJECT NO.:

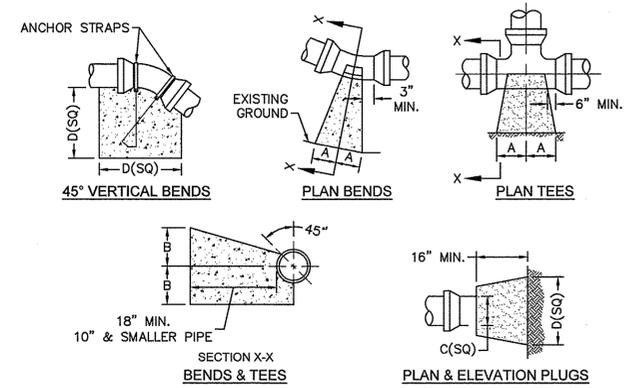
**SHEET NO.:**  
**WSD-1**



NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.

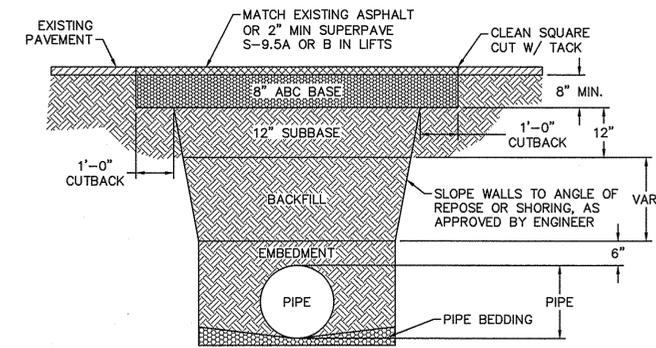


WD-15 PIPE CASING SUPPORT DETAIL  
NOT TO SCALE



SIZE	90 BENDS		45 BENDS		22-1/2 BENDS		TEES/PLUGS		45 VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

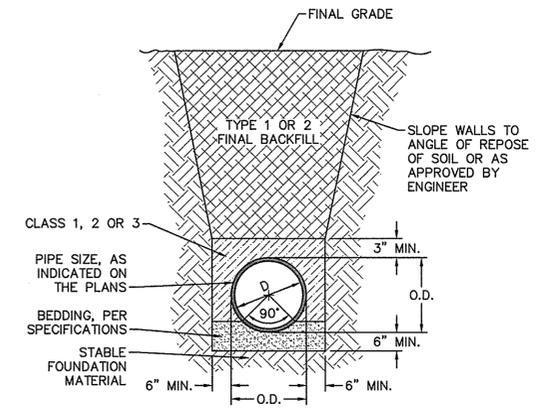
NOTES:  
1. BASED ON 160 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.  
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.  
3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.



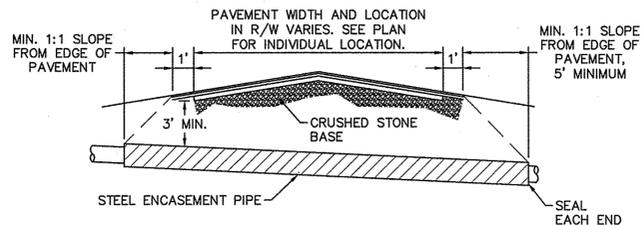
NOTES:  
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.  
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION. (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC.)  
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.  
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS  
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.  
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.  
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.  
8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

WD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED  
NOT TO SCALE



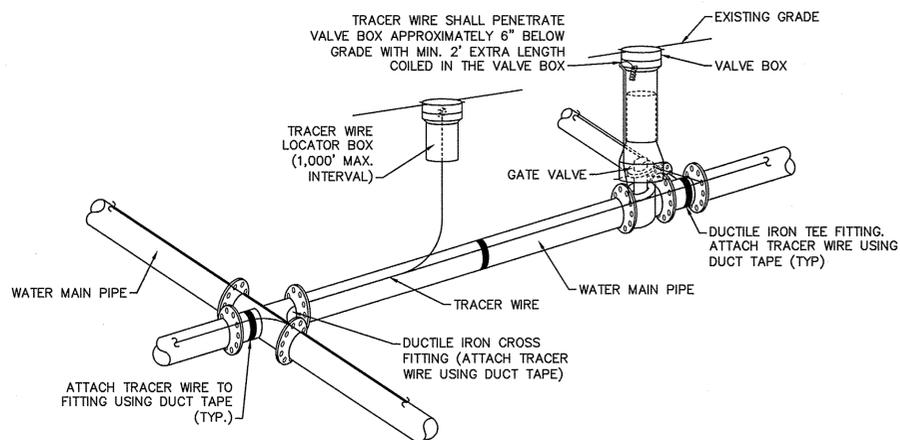
WD-13 TYPICAL TRENCH DETAIL  
NOT TO SCALE



NOTES:  
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.  
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

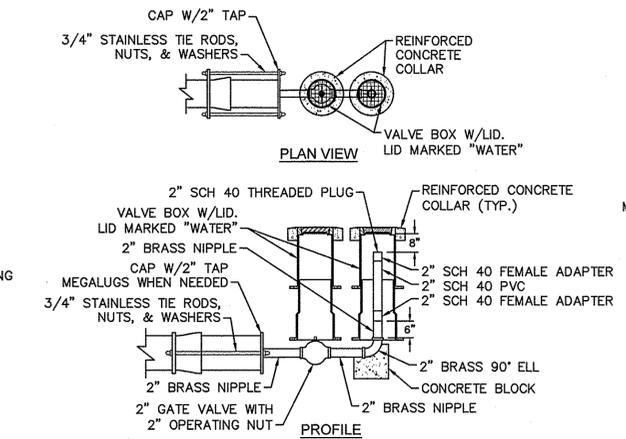
WD-16 TYPICAL BORING/ JACKING DETAIL  
NOT TO SCALE

WD-4 THRUST BLOCK DETAIL  
NOT TO SCALE

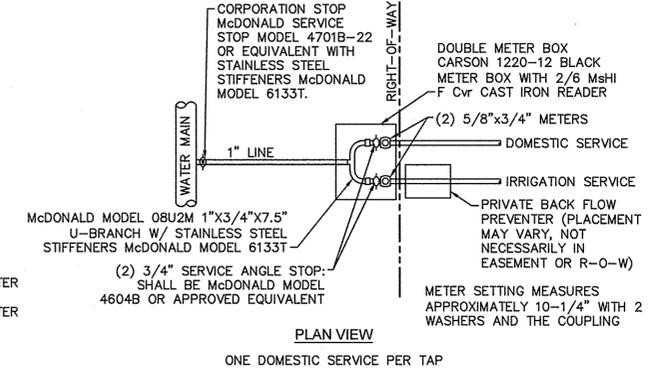


NOTES:  
1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.  
2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12 FOOT INTERVALS ALONG THE PIPE.  
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH DUCT TAPE.  
4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURY SPLICE KIT AN UNDERGROUND RATED, WATERTIGHT, AND APPROVED SPLICE CONNECTOR OR APPROVED EQUAL.

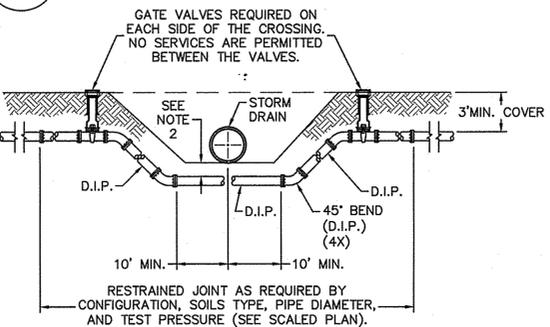
WD-17 TRACER WIRE DETAIL  
NOT TO SCALE



WD-5 2" BLOW-OFF  
NOT TO SCALE

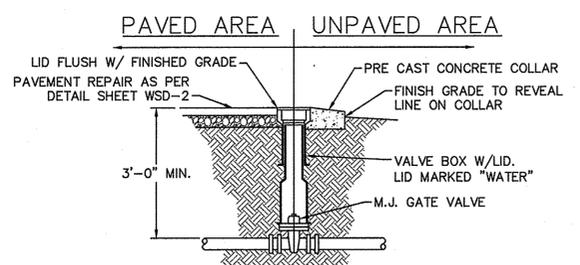


WD-9 DOUBLE SERVICE CONNECTION  
NOT TO SCALE

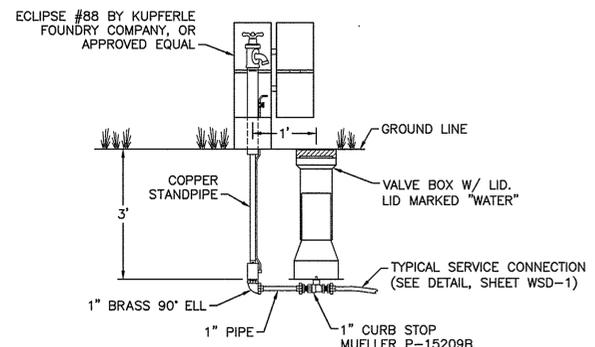


NOTES:  
1. USE PRESSURE CLASS 350 DIP, UNLESS SPECIFIED OTHERWISE.  
2. MINIMUM DEPTH REQUIRED, UNLESS SPECIFIED OTHERWISE BY CFPWA:  
a. IN DOT R/W, 36" MIN. TYPICAL, OR 24" MIN. WHEN CROSSING A DITCH LINE.  
b. ALL OTHER LOCATIONS, 30" MIN.  
c. WHEN STORM DRAIN INVERT IS BURIED AT OR BELOW ABOVE DEPTHS, 18" MIN. CLEARANCE IS REQUIRED.

WD-2 WATER MAIN DITCH AND STORM DRAIN CROSSING  
NOT TO SCALE



WD-3 VALVE DETAIL  
NOT TO SCALE

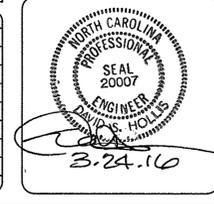


WD-6 SAMPLING STATION  
NOT TO SCALE

GENERAL NOTES:  
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.  
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.  
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.  
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.  
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPWA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	Revised Water Main Ditch and Storm Crossing Detail	11/12/13
2	Revised Water Main Ditch and Storm Crossing Detail	05/05/14
3	Revised Tracer Wire Detail	10/20/15
4	Added Backflow Preventer to Double Service Connection Detail	02/01/16
5	Revised Sampling Station Detail	02/15/16



**STANDARD DETAILS**

CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE: 1/9/12  
SCALE: N/A  
DRAWN BY: CFPWA  
CHECKED BY: CFPWA  
PROJECT NO.:  
SHEET NO: WSD-2

# ELEMENT BARCLAY WEST APARTMENTS

## at Barclay west

### Modification to Erosion & Sediment Control and Water Quality Plan

LOCATED IN THE CITY OF WILMINGTON  
 NEW HANOVER COUNTY, NORTH CAROLINA  
 DATE: March 2016  
 SCALE: 1"=200'  
**OWNER:**  
 CAMERON PROPERTIES LAND COMPANY, LLC  
 1201 GLEN MEADE ROAD P.O. BOX 3649  
 WILMINGTON, NC 28406  
 910-762-2676

**LIMITS OF DISTURBANCE:**  
 ELEMENT BARCLAY WEST APARTMENTS  
 25.52 Acres

**SITE DATA TABLE:**  
 PARCEL IDENTIFICATION:  
 R06500-003-004-000  
 DB 5427 PG 622

**STANDARD NOTES:**

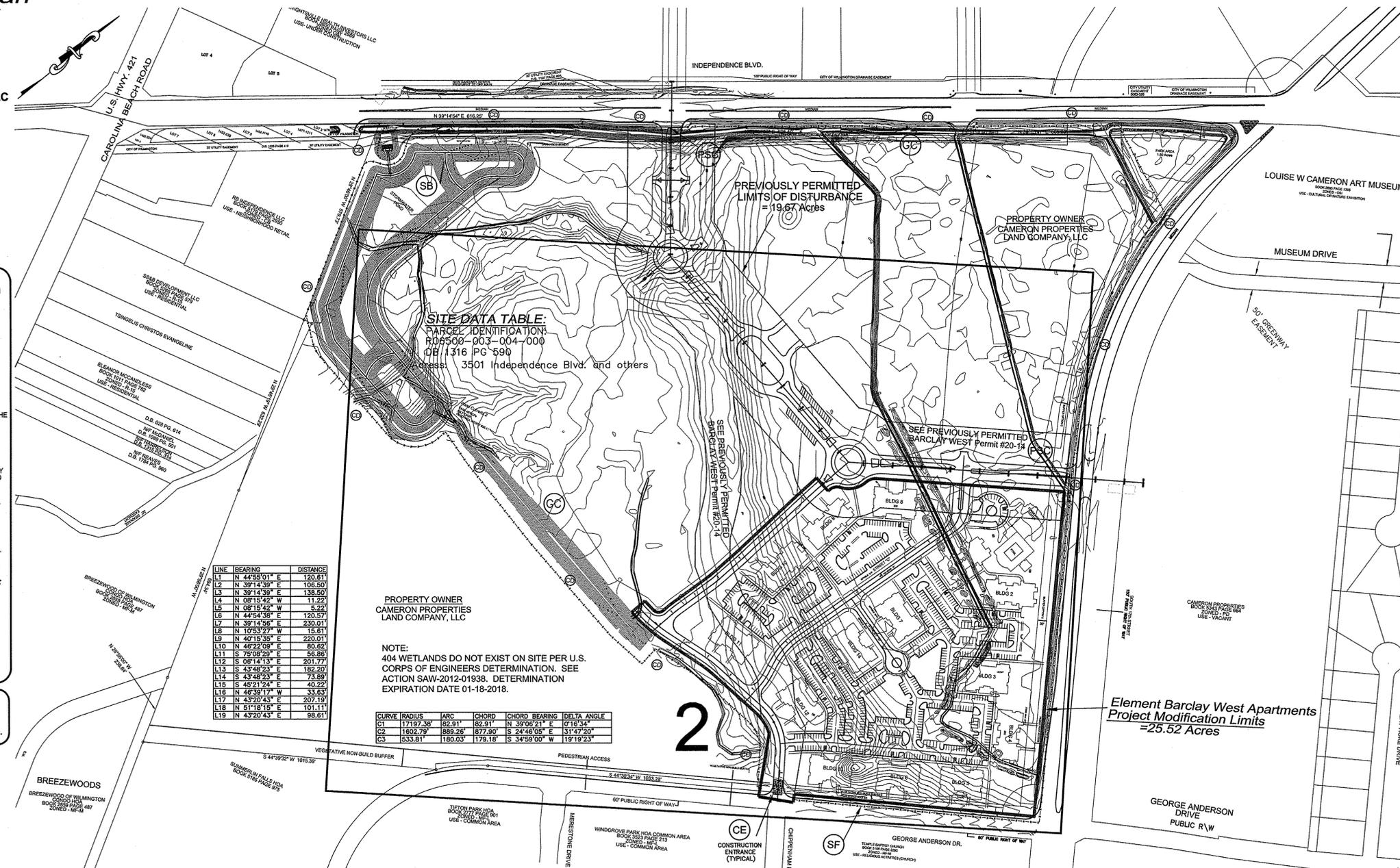
1. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES AT ALL CROSSINGS PRIOR TO COMMENCING TRENCH CONSTRUCTION. IF ACTUAL CLEARANCES ARE LESS THAN INDICATED ON PLAN, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. ANY CONDITION DISCOVERED OR EXISTING THAT WOULD NECESSITATE A MODIFICATION OF THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
2. NO CONSTRUCTION IS TO BEGIN BEFORE LOCATION OF EXISTING UTILITIES HAS BEEN DETERMINED. CALL "NO ONE CALL" AT LEAST 48 HOURS BEFORE COMMENCING CONSTRUCTION.
3. ALL TREES WHICH ARE NOT REQUIRED TO BE CLEARED FOR CONSTRUCTION SHALL BE PRESERVED WHEREVER POSSIBLE UNLESS OTHERWISE DIRECTED.
4. CONTRACTOR SHALL ADJUST ALL MANHOLES, VALVE AND CURB BOXES TO THE FINAL GRADE UPON COMPLETION OF ALL CONSTRUCTION. ANY BOXES DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
5. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST AND EROSION DURING CONSTRUCTION AT HIS EXPENSE. ROADS SHALL BE WATERED TO CONTROL DUST WHEN ORDERED BY THE CONTRACTOR.
6. NO GEOTECHNICAL TESTING HAS BEEN PERFORMED ON SITE. NO WARRANTY IS MADE FOR SUITABILITY OF SUBGRADE, AND UNDERCUT AND ANY REQUIRED REPLACEMENT WITH SUITABLE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. EXTREME CARE SHALL BE TAKEN TO ENSURE MINIMUM SEPARATIONS AT ALL UTILITY CROSSINGS.
8. CONTRACTOR TO ENSURE THAT PAVEMENT IS PLACED SO AS TO DRAIN POSITIVELY TO THE CURB OUTLETS AND CATCH BASINS. ALL ROOF DRAIN DOWNSPOUTS TO BE DIRECTED TO THE STORM SEWER SYSTEM.
9. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS. THIS PLAN IS FOR SITE GRADING, ROADWORK & SEWER INSTALLATION ONLY.
10. THIS PLAN IS FOR SITE GRADING, ROADWORK & SEWER INSTALLATION ONLY.
11. NO ENCUMBRANCES IN RW EXCEPT AS SHOWN.
12. AFFECTED NON-MUNICIPAL UTILITIES SHALL BE CONTACTED AND PROVIDED WITH PLANS AND OTHER PERTINENT INFORMATION, WHEN FEASIBLE, TO COORDINATE APPROPRIATE SCHEDULING AND PLACEMENT. AT THE MINIMUM, THIS SHOULD INCLUDE BELL SOUTH AND DUKE ENERGY.
13. PROJECT AREA = XXXXX ACRES.
14. THIS PROPERTY IS ZONED RB, MF-M & O&I.
15. SEWER AND WATER TO BE PROVIDED BY CFPWA.
16. SITE WILL MEET ALL ZONING REQUIREMENTS.
17. ANY REGULATED TREES ON SITE TO BE PRESERVED AS SHOWN.
18. STRIPING AND LANES TO CITY STANDARDS (THERMOPLASTIC).
19. NO VEHICULAR ACCESS TO SITE EXCEPT AS SHOWN.
20. ALL UTILITIES UNDERGROUND.
21. LANDSCAPING PLAN BY OTHERS.

**VEGETATIVE PLAN -**

1. Permanent vegetation to be established in accordance with "North Carolina Erosion and Sediment Control Planning and Design Manual", Section 6.11, latest version. See Next Sheet.

**LEGEND**

- IRON IN EXIST. CONC. MON.
- EXISTING SANITARY SEWER & MANHOLE
- EXISTING WATERLINE
- E.P. = EXISTING IRON PIPE
- E.I.R. = EXISTING IRON REBAR
- E.C.M. = EXISTING CONCRETE MONUMENT
- I.S. = IRON SET
- W/V = WATER VALVE
- W/M = WATER METER
- F/H = FIRE HYDRANT
- P/P = POWER POLE
- C.P. = COMPUTED POINT
- X 49.0 INDICATES SPOT ELEVATION
- WETLANDS
- CONSTRUCTION ENTRANCE (TYPICAL)
- SILT FENCE (NEW) (TYPICAL)
- INLET PROTECTION (TYPICAL)
- OUTLET PROTECTION (TYPICAL)
- LIMITS OF DISTURBANCE (PROPOSED)
- PERMANENT STREAM CROSSING
- SEDIMENT BASIN



**SITE DATA TABLE:**  
 PARCEL IDENTIFICATION:  
 R06500-003-004-000  
 DB 5427 PG 590  
 3501 Independence Blvd. and others

LINE	BEARING	DISTANCE
L1	N 44°55'01" E	120.61
L2	N 39°14'39" E	106.50
L3	N 39°14'39" E	138.50
L4	N 08°15'42" W	11.22
L5	N 08°15'42" W	5.22
L6	N 44°54'58" E	120.57
L7	N 39°14'56" E	230.01
L8	N 10°53'27" W	15.61
L9	N 40°15'33" E	220.01
L10	N 46°22'08" E	80.82
L11	S 78°05'29" E	56.88
L12	S 08°14'13" E	201.77
L13	S 42°46'23" E	182.20
L14	S 43°48'23" E	73.89
L15	S 45°21'24" E	40.22
L16	N 42°48'17" W	33.63
L17	N 43°20'43" E	207.19
L18	N 51°18'15" E	101.11
L19	N 43°20'43" E	98.61

CURVE	RADIUS	ARC	CHORD	CHORD BEARING	DELTA ANGLE
C1	17197.36'	82.31'	82.31'	N 39°06'21" E	9°16'34"
C2	1602.79'	889.26'	877.50'	S 24°46'05" E	31°47'20"
C3	533.81'	180.03'	179.18'	S 34°59'00" W	19°19'23"

**NOTE:**  
 404 WETLANDS DO NOT EXIST ON SITE PER U.S. CORPS OF ENGINEERS DETERMINATION. SEE ACTION SAW-2012-01938. DETERMINATION EXPIRATION DATE 01-18-2018.

**STABILIZATION TIME FRAMES:**

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

**NOTE WELL:**  
 ANY AREAS ON-SITE WITHOUT ACTIVITY SHALL BE STABILIZED WITHIN 15 WORKING DAYS AND AS ABOVE. ALL SLOPES MUST BE STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY ACTIVITY.  
 DETAILS SHOWN ARE TYPICAL OF INSTALLATIONS REQUIRED BY CITY AND COUNTY. THIS SHEET DOES NOT PURPORT TO SHOW ALL REQUIRED CONSTRUCTION DETAILS, BUT RATHER SERVES AS A GUIDE. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL CITY, COUNTY AND STATE CODES AND CONSTRUCTION STANDARDS.  
 No geotechnical testing has been performed on site. No warranty is made for suitability of subgrade, and undercut and any required replacement with suitable material shall be the responsibility of the contractor.

**SURVEY NOTES:**

1. AREA COMPUTED BY COORDINATE METHOD.
2. ALL DISTANCES ARE HORIZONTAL.
3. PROPERTY SUBJECT TO ALL EASEMENTS OF RECORD.
4. THE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY ARE LOCATED FROM FIELD SURVEY INFORMATION, AND EXISTING ASBUILT DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THE UTILITIES ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
5. THIS MAP IS NOT FOR CONVEYANCE, RECORDATION, OR SALES.
6. PORTIONS OF THIS PROPERTY ARE LOCATED WITHIN A 100 YEAR FLOOD HAZARD AREA ACCORDING TO FLOOD INSURANCE RATE MAP COMMUNITY ID#972012500J, DATED APRIL 3, 2009, PANEL 3125J
7. THIS PROPERTY IS ZONED RB, MF-M & O&I.
8. SURVEYED IN 2013, and 2014.
9. COMBINED GRID FACTOR = 1.00000.

**NOTE:**  
 THIS PLAN TO BE UTILIZED AND REVISED ONLY IN CONJUNCTION WITH THE WRITTEN NARRATIVE, WHICH IS AN INTEGRAL PART OF THIS EROSION AND SEDIMENT CONTROL PLAN.

**STABILIZATION TIME FRAMES:**

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



**GENERAL NOTES:**

1. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
2. ANY TREES AND /OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
3. NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTIONS ON TREE PROTECTION METHODS.
4. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
5. ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING TO REQUEST INSTALLATION OF TRAFFIC AND STREET MARKINGS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
6. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
7. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
8. CALL TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
9. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
10. CALL TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
11. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE OWNER.
12. STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
13. CALL TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
14. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET.
15. ANY BROKEN OR MISSING SIDEWALK PANELS OR CURBING WILL BE REPLACED.
16. CONTACT THE CITY AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
17. WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.
18. PROJECT SHALL COMPLY WITH CAPE FEAR PUBLIC UTILITY AUTHORITY CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN FINAL APPROVAL. CALL 343-3910 FOR INFORMATION.
19. IF THE CONTRACTOR DESIRES CFPWA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
20. ANY IRRIGATION SYSTEM SUPPLIED BY CFPWA WATER SHALL COMPLY WITH CFPWA CROSS CONNECTION CONTROL REGULATIONS. CALL 343-3910 FOR INFORMATION.
21. ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.
22. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USFCOCHR OR ASSE.
23. CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
24. CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
25. UNDERGROUND FIRE LINES MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-341-0686.
26. NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SIGHT DISTANCE.
27. CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO ANY DIGGING, CLEARING OR GRADING.
28. ANY PVC MAINS ARE TO BE MARKED WITH NO.10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STAPPED TO THE PIPE WITH DUCT TAPE, AND STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS, ACCESSIBLE AT ALL VALVE AND METER BOXES. ALL WATER MAINS ARE TO HAVE A MINIMUM OF 3' COVER.

**MORE GENERAL NOTES:**

1. CLEARING AND GRUBBING OF SITE TO INCLUDE REMOVAL OF EXISTING CURB, ASPHALT, INLETS, AND ANY OTHER STRUCTURES INCLUDING TREES, STUMPS AND DEBRIS EXISTING ON SITE. TREES NOT REQUIRED TO BE CLEARED FOR CONSTRUCTION SHALL REMAIN UNLESS OTHERWISE DIRECTED. ANY REGULATED TREES TO BE REMOVED ARE FOR ESSENTIAL SITE IMPROVEMENTS.
2. MINIMUM UTILITIES SEPARATION SHALL BE MAINTAINED AS FOLLOWS:
  - a) HORIZONTAL CLEARANCE OF 10 FEET BETWEEN SANITARY SEWER OR STORM SEWERS AND ATER MAINS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10' LATERAL SEPARATION, IN WHICH CASE:
  - 1) THE WATER MAIN IS LAID IN A SEPARATE TRENCH WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, OR
  - 2) THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND WITH THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, OR
  - b) WHERE VERTICAL CLEARANCE IS LESS THAN 18" BETWEEN SANITARY SEWER AND WATER OR WHERE SEWER LINE CROSSES ABOVE WATER MAIN, BOTH PIPES SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING.
  - c) WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING.
  - d) WHERE VERTICAL CLEARANCE IS LESS THAN 12" BETWEEN WATER MAIN AND STORM DRAIN, WATER MAIN SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING.
3. SEE DETAIL SHEETS FOR TYPICAL UTILITIES HOOKUPS.
4. CONTRACTOR TO COORDINATE STAGING OF CONSTRUCTION ACTIVITIES WITH THE OWNER & ARCHITECT TO FACILITATE ONGOING ADJOINING BUSINESS ACTIVITIES.
5. CONTRACTOR TO COORDINATE REMOVAL & RELOCATION OF LIGHTING & OTHER NON-MUNICIPAL UTILITIES SUCH AS ELECTRICAL & TELEPHONE CONNECTIONS WITH THE AFFECTED AGENCIES AND THE OWNER AND ARCHITECT.

**BENCHMARK LOCATIONS AND ELEVATIONS**

LOCATION	ELEVATION
EX. CONCRETE MONUMENT AT INTERSECTION OF S. 17th STREET & MUSEUM DRIVE..	42.58

**INDEX TO DRAWINGS**

SHEET No.	DESCRIPTION	DRAWING No.
1 OF 3	COVER SHEET and GENERAL NOTES	12498-SHT1
2 OF 3	Erosion Control Plans	12498-SHT2
3 OF 3	Erosion Control Notes & Additional Details	12498-SHT3

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GPH# 34-14

Modified Erosion Control Plan Cover Sheet and General Notes  
**ELEMENT BARCLAY WEST APARTMENTS**  
 Barclay West  
 LOCATED IN THE CITY OF WILMINGTON  
 NEW HANOVER COUNTY, NORTH CAROLINA



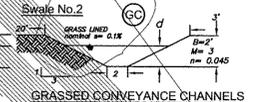
**OWNER:** Cameron Properties Land Company, LLC  
 1201 Glen Meade Road, P.O. Box 3649  
 Wilmington, NC 28406 PH 910-762-2676

**HANOVER DESIGN SERVICES, P.A.**  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORAL PARKWAY  
 WILMINGTON, N.C. 28403  
 PHONE: (910) 343-8002  
 License # C-5087

Date: 3-28-16  
 Scale: 1"=200'  
 Drawn: WNP  
 Checked: DSH  
 Project No: 12498  
 Sheet No: 1  
 Of: 3

NOTE: SEE LAND DISTURBING PERMIT MODIFICATION TO GP # 20-14, SUBMITTED BY CAMERON PROPERTIES LAND COMPANY, LLC

Swale 2 -  
 DA = 60 acres  
 Tc = 30 min.  
 I(25) = 5 in/hr  
 I(100) = 6 in/hr  
 Q(25) = 180 cfs  
 Q(100) = 220 cfs  
 Use 220 cfs:  
 d(100) = 5.8' (grass, n=0.045) v= 2.1 fps  
 d(100) = 4.1' (earth, n= 0.020) v= 3.8 fps  
 use Excelsior Mat lining  
 Line receiving channel with Excelsior Mat as necessary (typical)  
 Swale No. 2



GRASSED CONVEYANCE CHANNELS

PREVIOUSLY PERMITTED LIMITS OF DISTURBANCE = 19.67 Acres

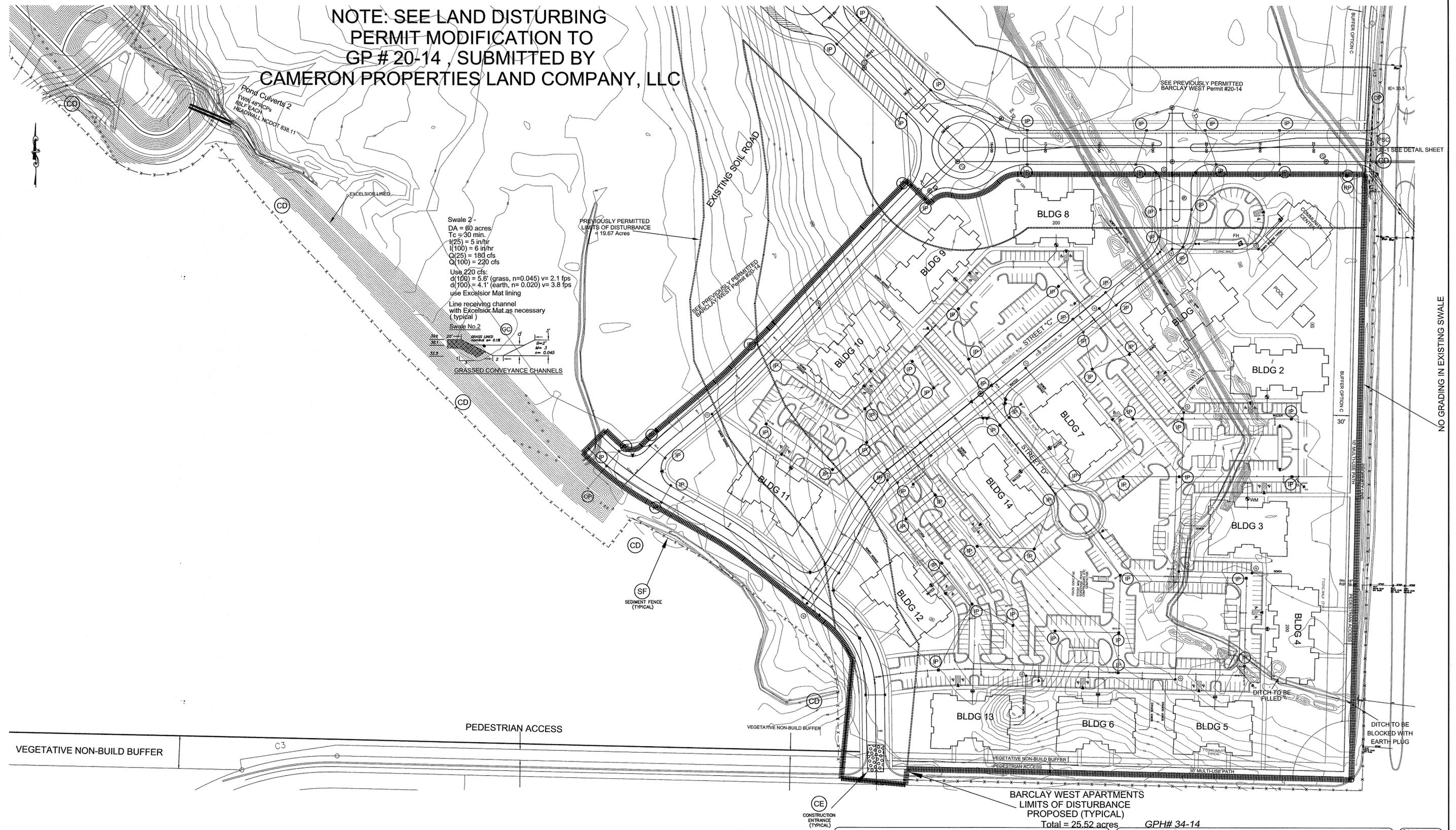
EXISTING SOIL ROAD

SEE PREVIOUSLY PERMITTED BARCLAY WEST Permit #20-14

SEE PREVIOUSLY PERMITTED BARCLAY WEST Permit #20-14

SEE DETAIL SHEET

NO GRADING IN EXISTING SWALE



VEGETATIVE NON-BUILD BUFFER

PEDESTRIAN ACCESS

VEGETATIVE NON-BUILD BUFFER

BARCLAY WEST APARTMENTS  
 LIMITS OF DISTURBANCE  
 PROPOSED (TYPICAL)  
 Total = 25.52 acres

GPH# 34-14

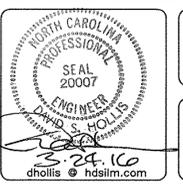
Modification to Erosion & Sediment Control and Water Quality Plan

STATION 0+00 THROUGH 10+50  
 INDEPENDENCE BLVD.

ELEMENT BARCLAY WEST APARTMENTS

LOCATED IN THE CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

REV. NO.	REVISIONS	DATE



OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
 1201 GLEN MEADE ROAD PO BOX 5649  
 WILMINGTON, NC 28406 PH 910-762-2676

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

Date: 03-28-16  
 Scale: HORIZ: 1"= 80'  
 Drawn: WNP  
 Checked: DSH  
 Project No: 12498  
 Sheet No: 2  
 3  
 Of: 3



