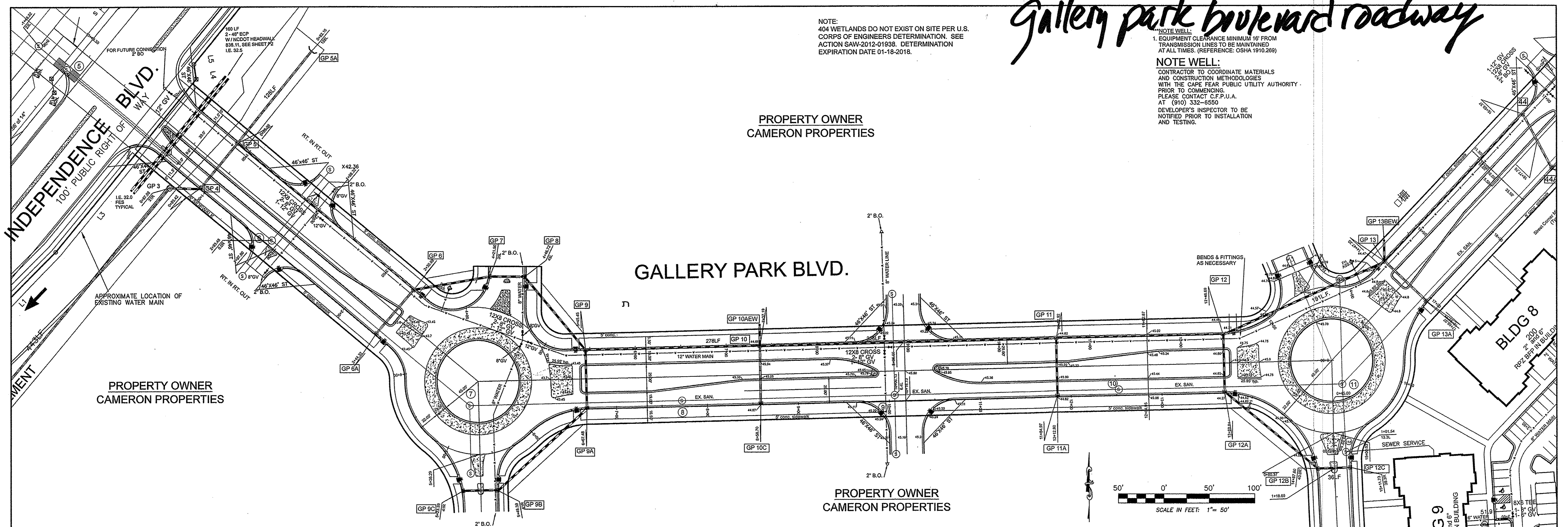




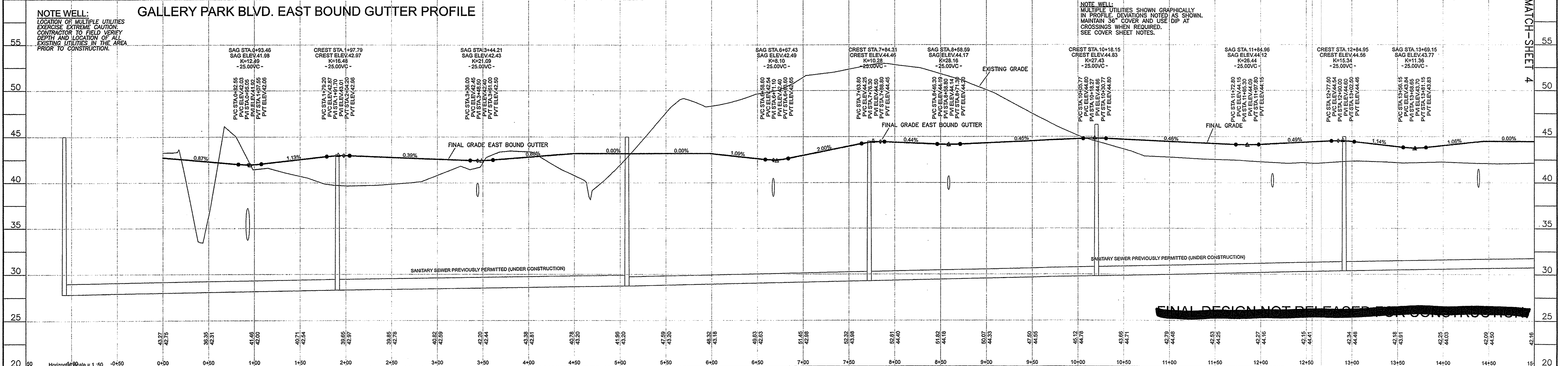
# Gallery park boulevard roadway

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

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.



### GALLERY PARK BLVD. EAST BOUND GUTTER PROFILE



PROFILE LEGEND

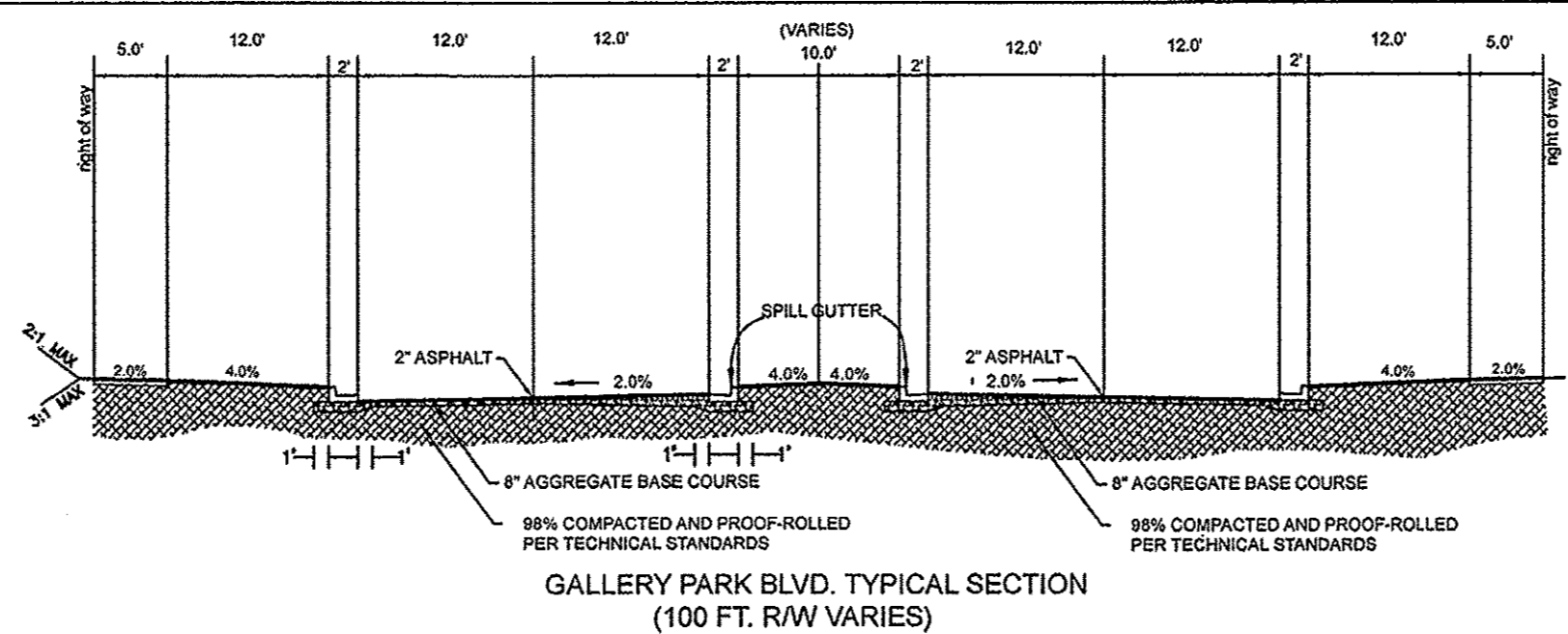
EXISTING GROUND ELEVATION	38.0	37.5	38.0	37.5
FLOWLINE ELEVATION	38.0	37.5	38.0	37.5

PROPOSED CENTERLINE ALIGNMENT STATION

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 7/15/15  
PERMIT # 2014013  
SIGNED [Signature]

Approved Construction Plan  
Planning [Signature] Date 7-15-15  
Traffic [Signature] 7-15-15  
Fire [Signature] 7-15-15



STATION 0+00 THROUGH 16+50  
GALLERY PARK BLVD.

2	REVISED AS PER CITY COMMENTS	3-12-15
1	Major Revision	1-30-15
REV. NO.	REVISIONS	DATE

PLANS & PROFILES  
**BARCLAY WEST**  
PHASE 1 INFRASTRUCTURE  
LOCATED IN THE CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
P.O. BOX 3649  
WILMINGTON, N.C. 28406 PH 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 343-8000

Scale: HORIZ: 1"=50'  
VERT: 1"=2'  
Date: 10-3-14  
Drawn: GW  
Checked: DH  
Project No: 12498  
Sheet No: 2  
Of: 10

F:\In\Project Folders\12498-BARCLAY WEST\Engineering\12498 BASE eng 01-23-14.dwg (Layout PP-3)

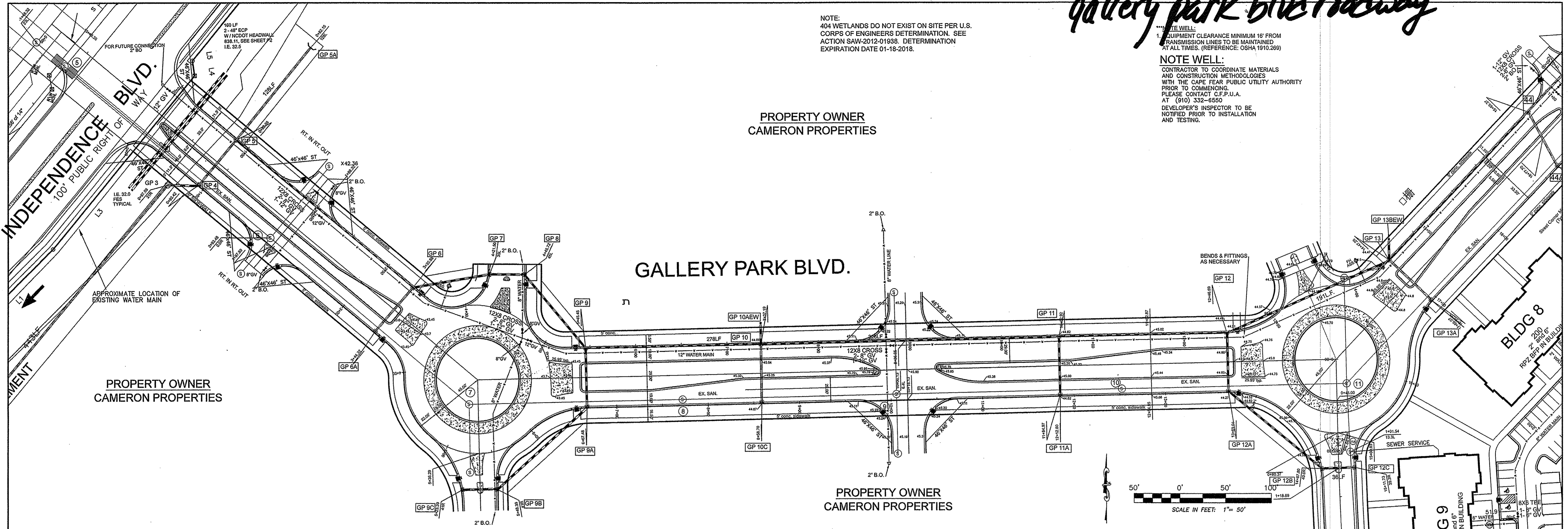
2 of 30 total pgs

# gallery park blvd roadway

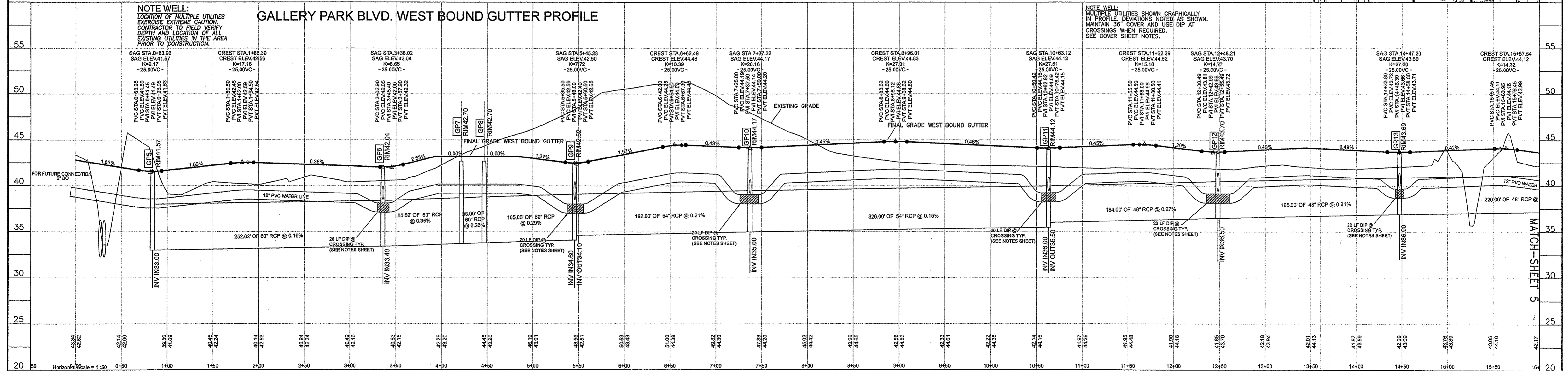
NOTE:  
404 WETLANDS DO NOT EXIST ON SITE PER U.S. CORPS OF ENGINEERS DETERMINATION. SEE ACTION SAW-2012-01938. DETERMINATION EXPIRATION DATE 01-18-2018.

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.

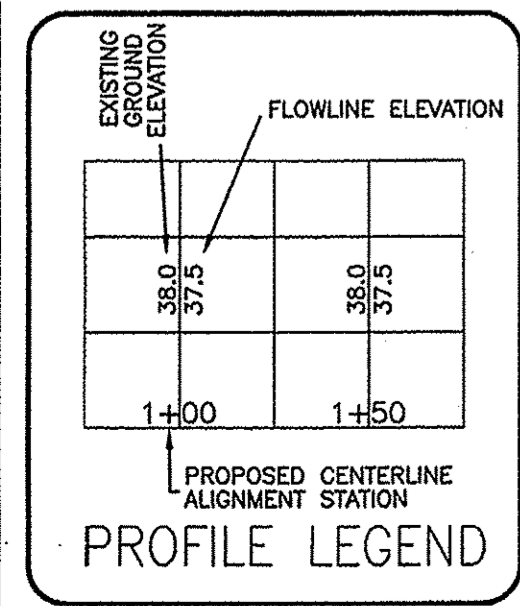


## GALLERY PARK BLVD. WEST BOUND GUTTER PROFILE



NOTE WELL:  
LOCATION OF MULTIPLE UTILITIES EXERCISE EXTREME CAUTION. CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES IN THE AREA PRIOR TO CONSTRUCTION.

NOTE WELL:  
MULTIPLE UTILITIES SHOWN GRAPHICALLY IN PROFILE. DEVIATIONS NOTED AS SHOWN. MAINTAIN 36" COVER AND USE DIP AT CROSSINGS WHEN REQUIRED. SEE COVER SHEET NOTES.



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

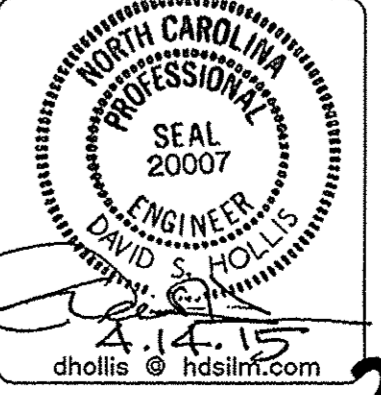
STORMWATER MANAGEMENT PLAN APPROVED CITY OF WILMINGTON ENGINEERING DEPARTMENT DATE 7/15/15 PERMIT # 201401321 SIGNED [Signature]

Approved Construction Plan Name: [Signature] Date: 7-15-15 Planning: [Signature] Traffic: [Signature] Fire: [Signature]

STATION 0+00 THROUGH 16+50 GALLERY PARK BLVD.

REV. NO.	REVISIONS	DATE
2	REVISED AS PER CITY COMMENTS	3-12-15
1	Major Revision	1-30-15

PLANS & PROFILES  
**BARCLAY WEST**  
PHASE 1 INFRASTRUCTURE  
LOCATED IN THE CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA



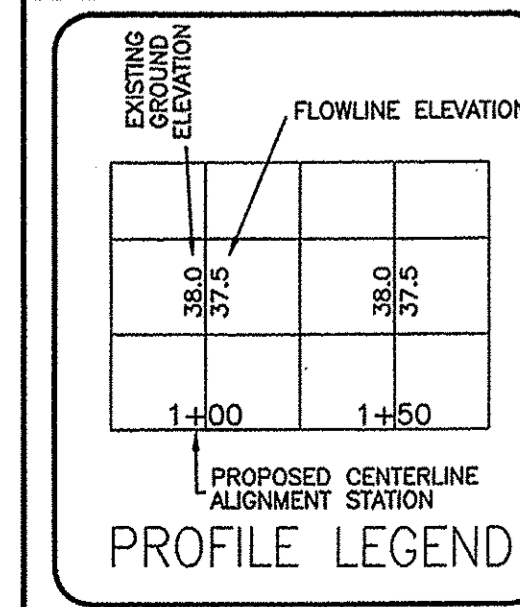
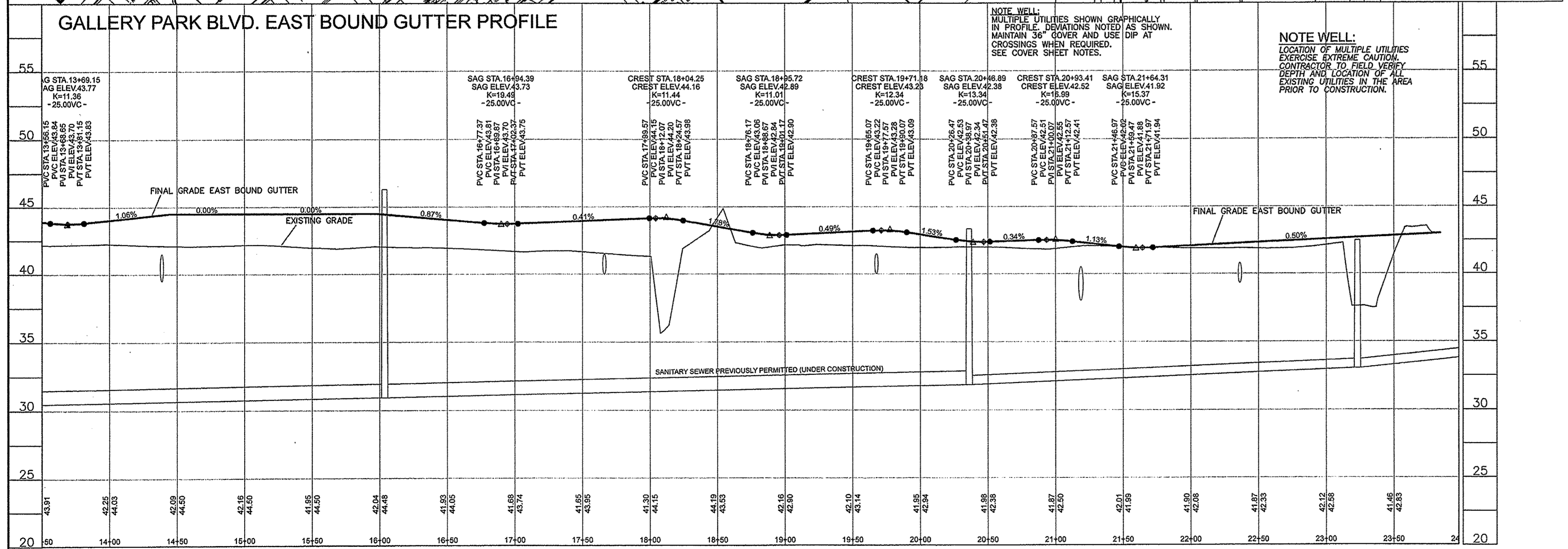
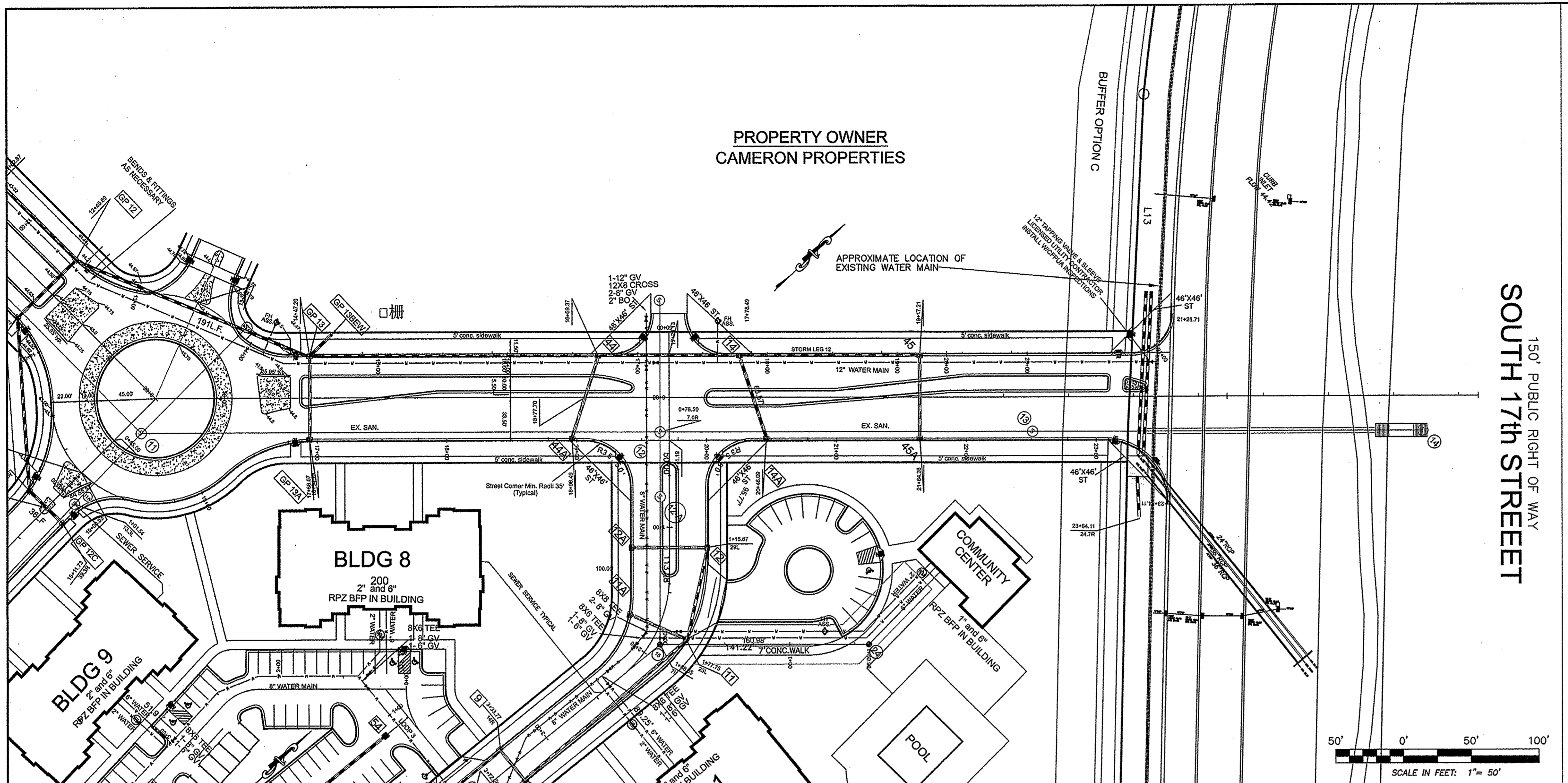
OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
P.O. BOX 3649  
WILMINGTON, N.C. 28406 PH 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORENCE PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 343-8002  
LICENSE # 00577

Date: 10-3-14  
Scale: HORIZ: 1"=50' VERT: 1"=5'  
Drawn: GW  
Checked: DH  
Project No: 12498  
Sheet No: 3  
Of: 10

3 of 30 total pgs

Gallery park boulevard



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.

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 7/15/15  
PERMIT # 2014013R1  
SIGNED [Signature]

Approved Construction Plan

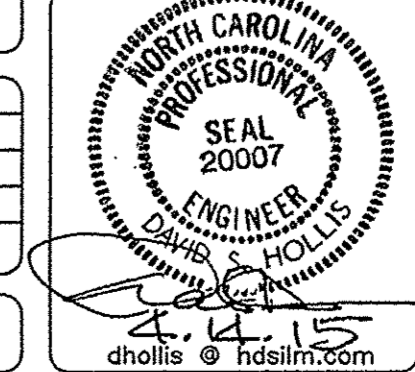
Name	Date
Planning	7-15-15
Traffic	7-15-15
Fire	7-15-15

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.

STATION 15+00 THROUGH 26+00  
GALLERY PARK BLVD.

REV. NO.	REVISIONS	DATE
3	REVISED AS PER CITY COMMENTS	3-12-15
2	Major Revision	1-30-15
1	REVISED AS PER CITY COMMENTS	12-3-14

PLANS & PROFILES  
**BARCLAY WEST**  
PHASE 1 INFRASTRUCTURE  
LOCATED IN THE CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA



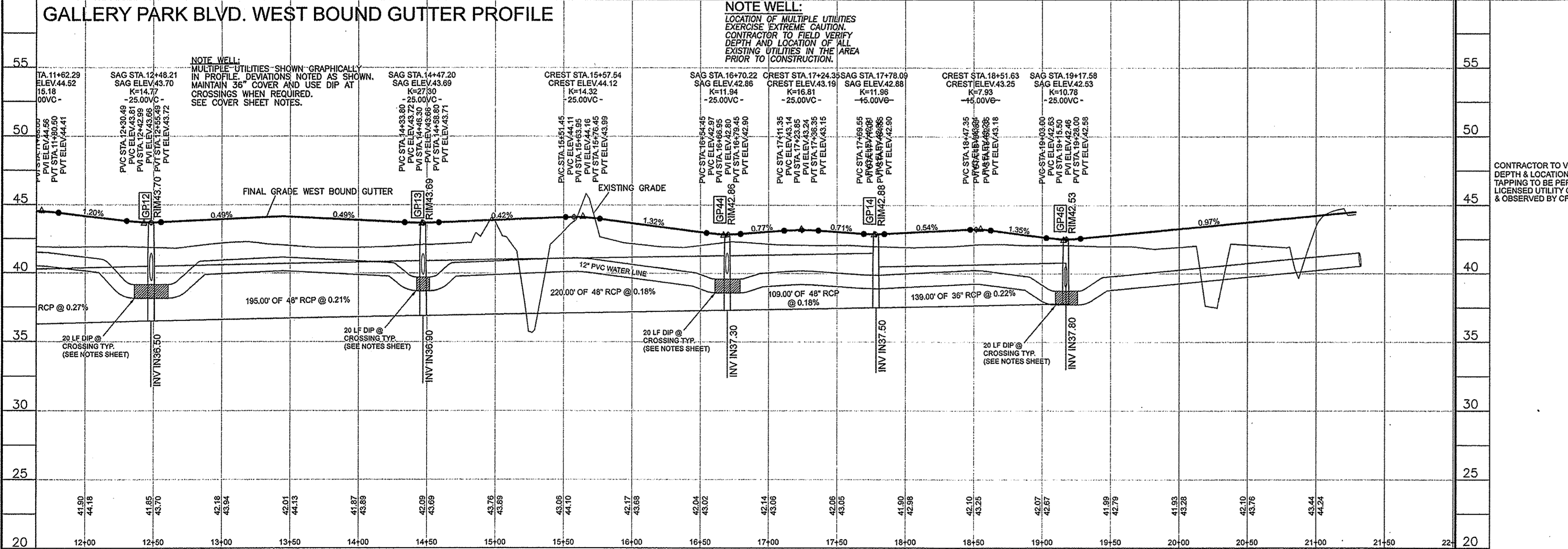
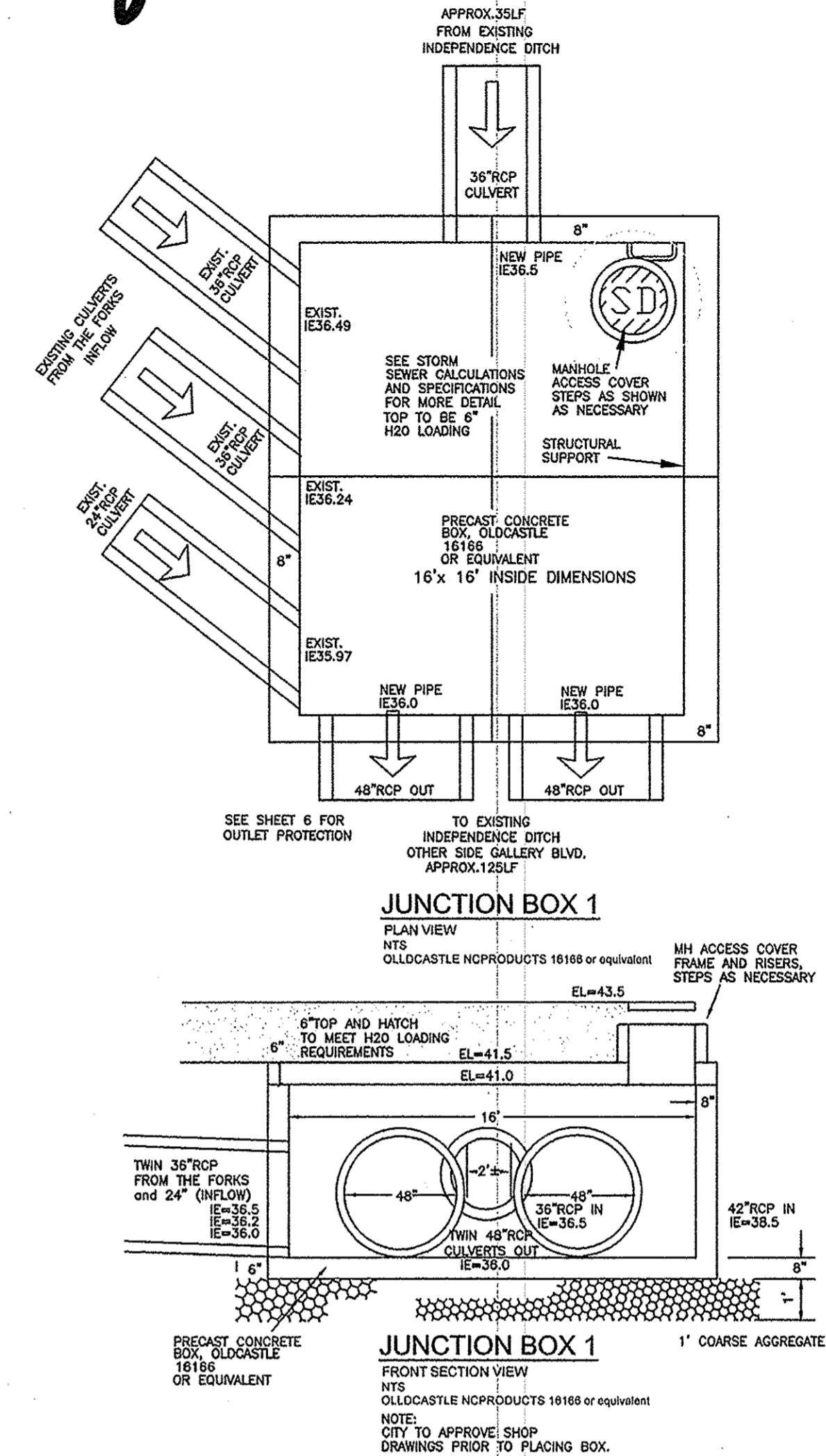
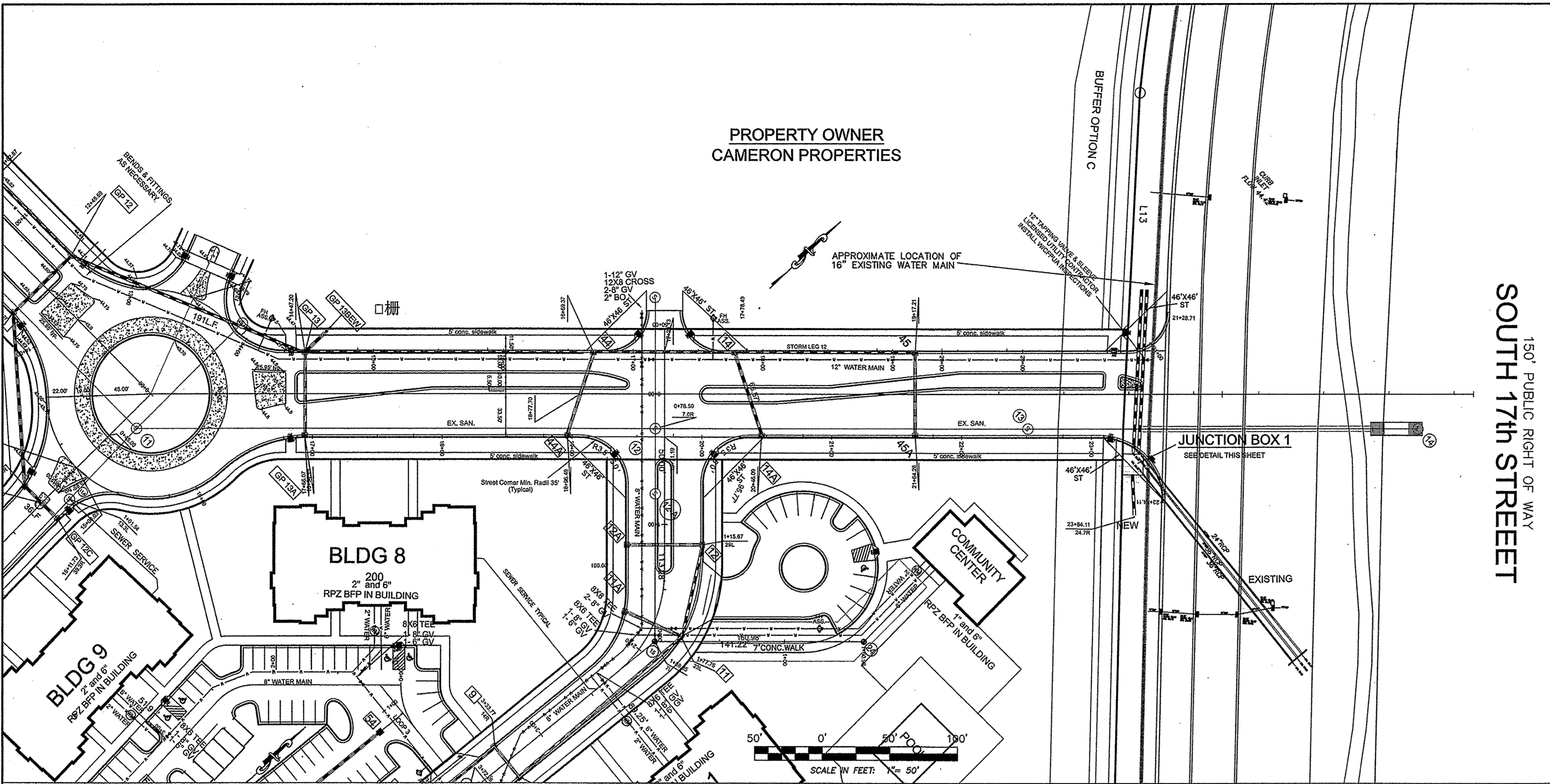
OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
P.O. BOX 3649  
WILMINGTON, N.C. 28406 PH 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 336-5002  
FAX: (910) 336-5003

Date: 10-3-14  
Scale: HORIZ: 1"=50'  
VERT: 1"=5'  
Drawn: GW  
Checked: DH  
Project No: 12498  
Sheet No: 4  
Of: 10

4 of 30 total pgs

gallery park boulevard



PROFILE LEGEND

EXISTING GROUND ELEVATION	38.0	37.5	38.0	37.5
PROPOSED CENTERLINE ALIGNMENT STATION	1+00	1+50	1+00	1+50

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) 332-6560 DEVELOPER'S INSPECTOR TO BE NOTIFIED PRIOR TO INSTALLATION AND TESTING.

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 7/15/15  
PERMIT # 20140321  
SIGNED [Signature]

Approved Construction Plan

Name [Signature] Date 7/15/15

Planning [Signature] Date 7-15-15

Traffic [Signature] Date 7-15-15

Fire [Signature] Date 7-15-15

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.

STATION 12+50 THROUGH 22+00  
GALLERY PARK BLVD.

3	REVISED AS PER CITY COMMENTS	3-12-15
2	Major Revision	1-30-15
1	REVISED AS PER CITY COMMENTS	12-3-14
REV. NO.	REVISIONS	DATE

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PLANS & PROFILES  
**BARCLAY WEST**  
PHASE 1 INFRASTRUCTURE  
LOCATED IN THE CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA

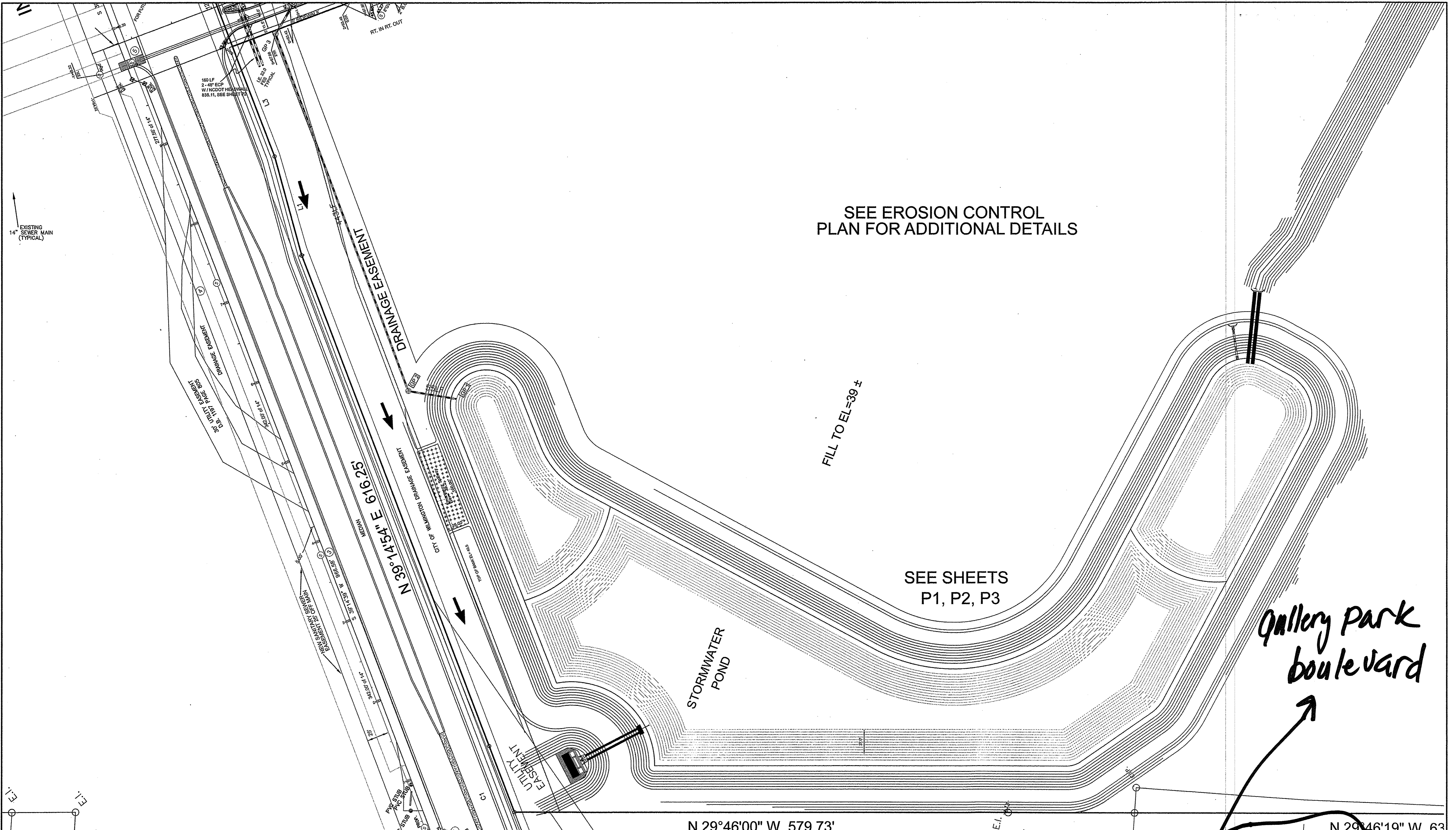
OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
P.O. BOX 3649  
WILMINGTON, N.C. 28406 PH 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE (910) 332-3082

Date: 10-3-14  
Scale: HORIZ: 1"=50'  
VERT: 1"=2'  
Drawn: GW  
Checked: DH  
Project No: 12498  
Sheet No: 5  
Of: 10

SEAL 20007  
NORTH CAROLINA PROFESSIONAL ENGINEER  
[Signature]

514 30 total pgs

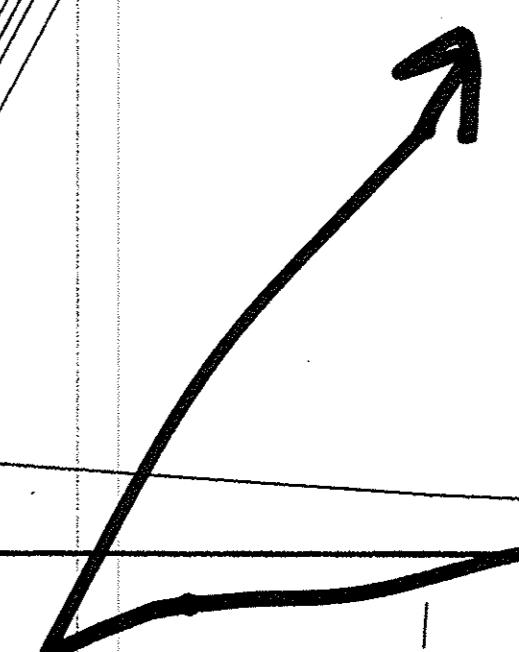


SEE EROSION CONTROL  
PLAN FOR ADDITIONAL DETAILS

FILL TO EL=39 ±

SEE SHEETS  
P1, P2, P3

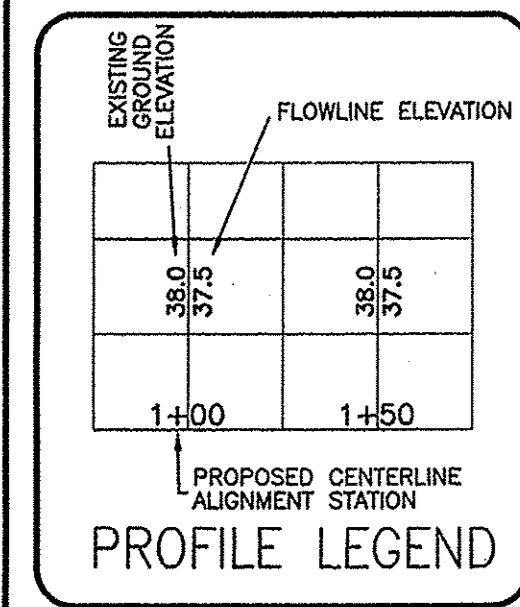
*Gallery Park  
boulevard*



N 29°46'00" W 579.73'

N 29°46'19" W 63'

~~FINAL DESIGN NOT RELEASED FOR CONSTRUCTION~~



**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) 332-8550. DEVELOPER'S INSPECTOR TO BE NOTIFIED PRIOR TO INSTALLATION AND TESTING.

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 7/15/15  
PERMIT # 2014032  
SIGNED *[Signature]*

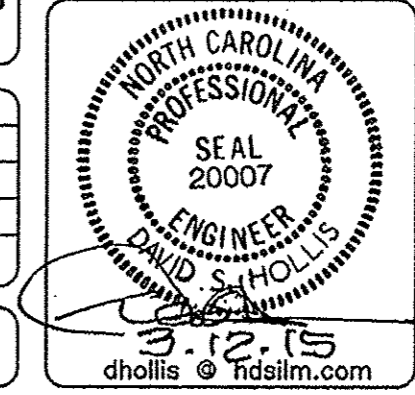
Approved Construction Plan  
Name *[Signature]* Date 7-15-15  
Planning *[Signature]* 7-15-15  
Traffic *[Signature]* 7-15-15  
Fire *[Signature]* 7-15-15

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

WATER QUALITY FACILITY  
SEE SHEETS P1 - P3 FOR ADDITIONAL DETAILS

REV. NO.	REVISIONS	DATE
2	REVISED AS PER CITY COMMENTS	3-12-15
1	Major Revision	1-30-15

PLAN  
**BARCLAY WEST and**  
PHASE 1 INFRASTRUCTURE  
LOCATED IN THE CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA



OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
P.O. BOX 3648  
WILMINGTON, N.C. 28406 PH 910-762-2676

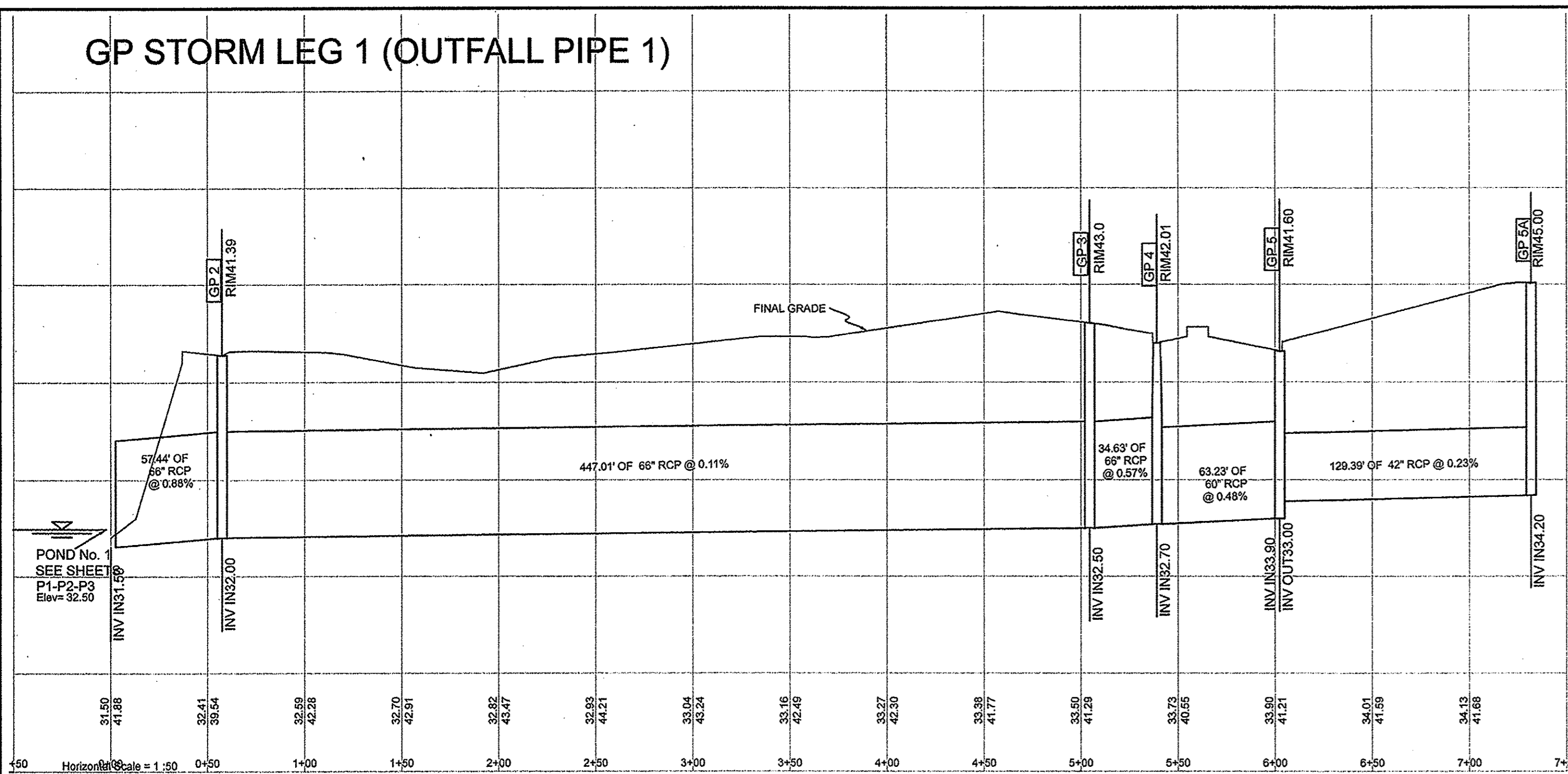
HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARWAY  
WILMINGTON, N.C. 28403  
PHONE (910) 343-8002  
FAX (910) 343-8002  
www.hds.com

Date: 10-3-14  
Scale: HORIZ: 1"=50'  
VERT: 1"=5'  
Drawn: GW  
Checked: DH  
Project No: 12498

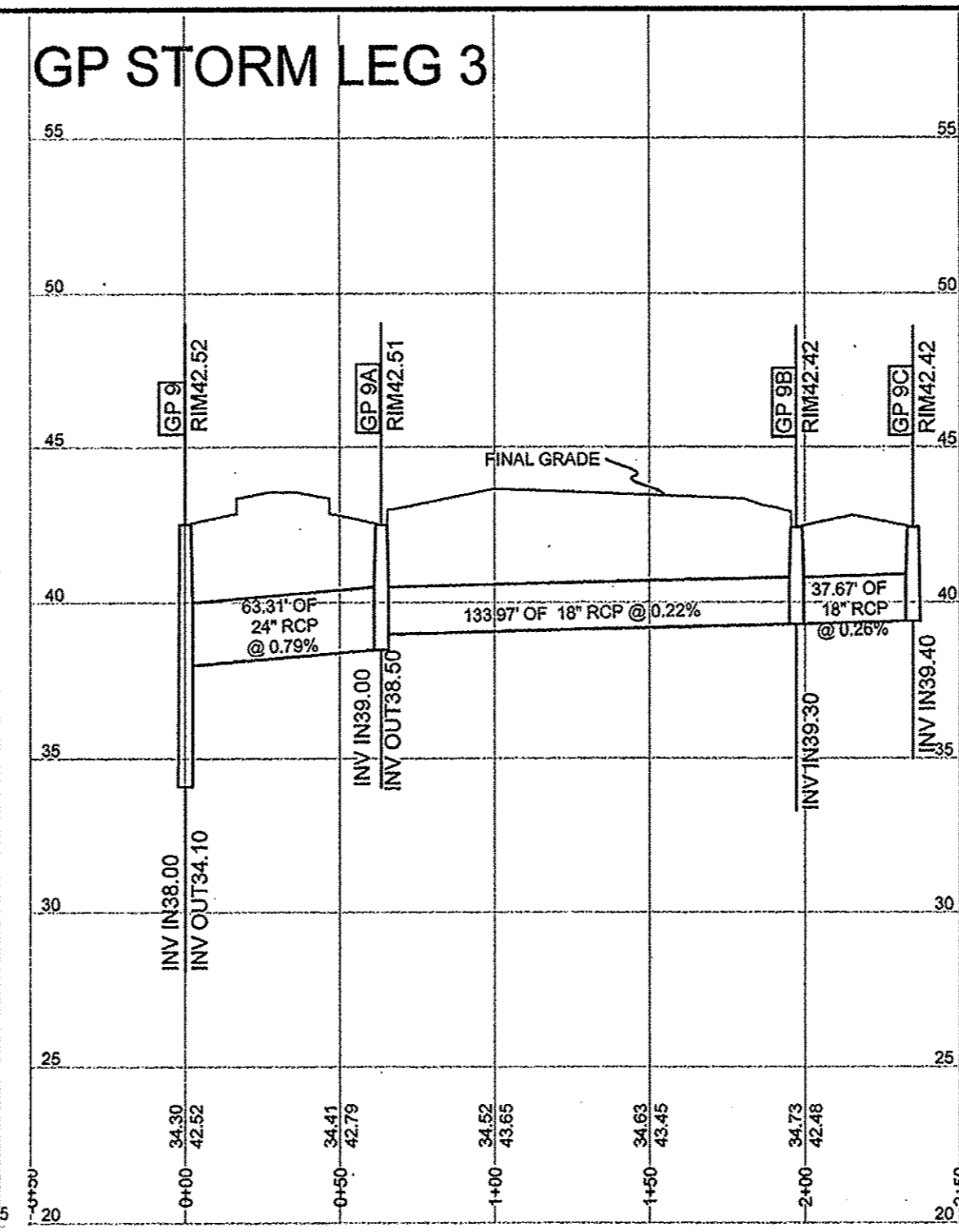
Sheet No: 6  
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OR: 10

*6 of 50 total Pgs*

GP STORM LEG 1 (OUTFALL PIPE 1)

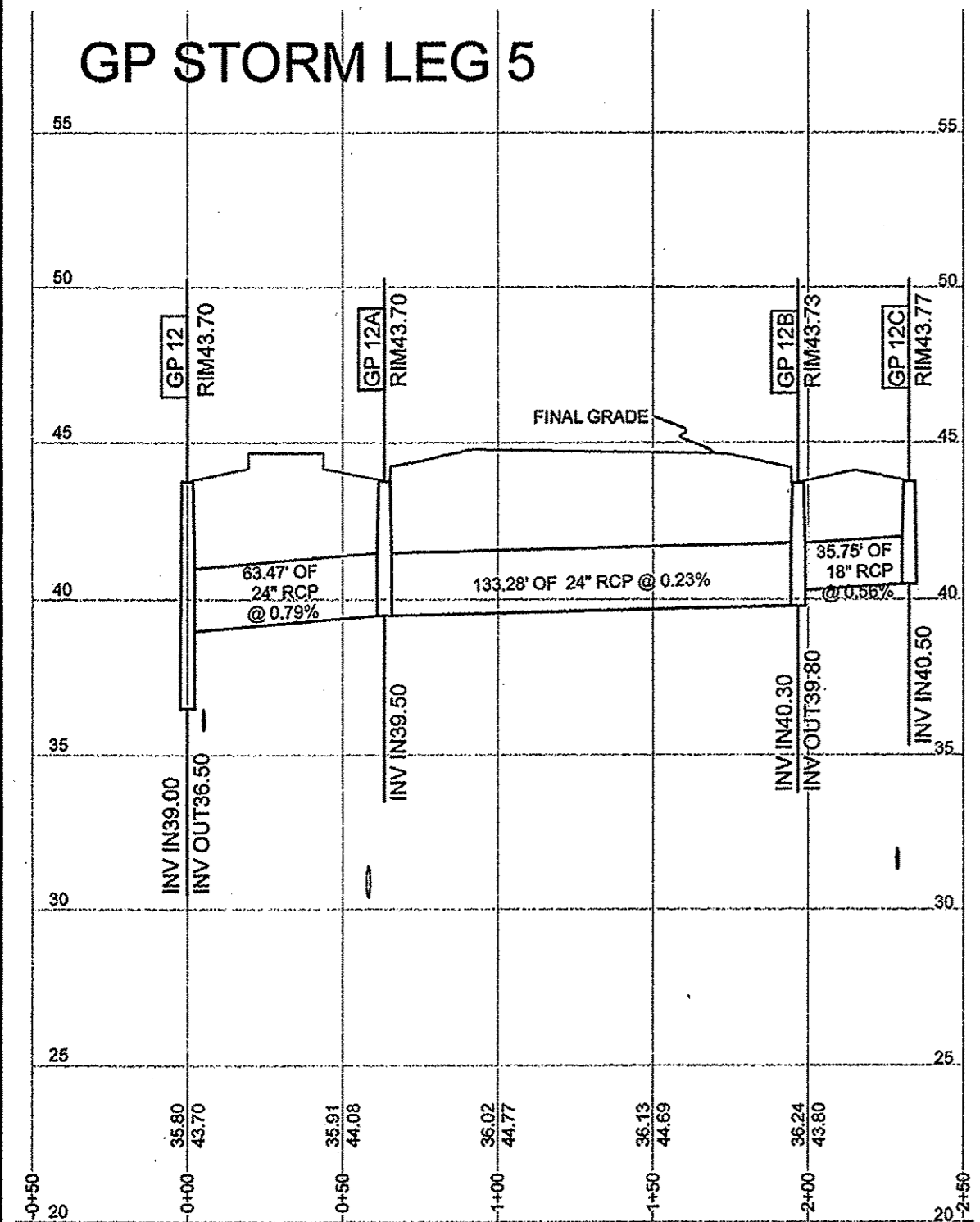


GP STORM LEG 3



*gallery park boulevard*

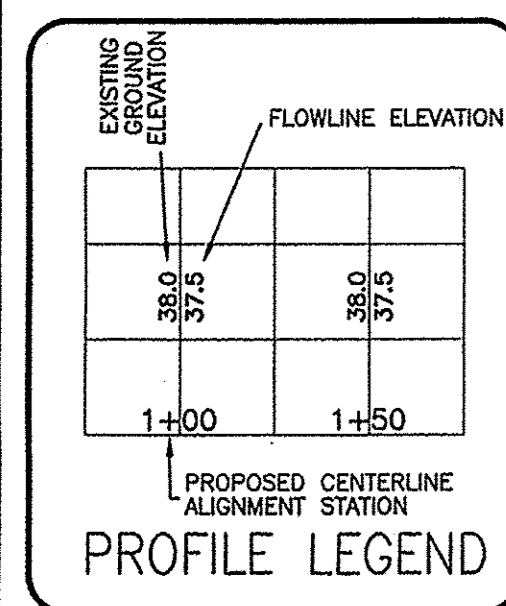
GP STORM LEG 5



STORM SEWER SUMMARY  
Forebay No.1

Line No.	To Line	Length (ft)	Incr Area (ac)	Total Area (ac)	Incr Cx (C)	Total CxA (CxA)	Inlet Time (min)	Rain Syst (min)	Total Runoff (in/hr)	Total Flow (cfs)	Capac. Full (cfs)	Velocity (fps)	Pipe Size (in)	Pipe Slope (%)	Inv Up (ft)	Inv Dn (ft)	HGL Up (ft)	HGL Dn (ft)	Gr/Rim (ft)	Gr/Rim (ft)	Line ID		
1	End	57.0	0.00	42.46	0.60	0.00	33.97	0.0	41.5	3.6	122.57	180.10	340.77	7.73	66	0.88	32.00	31.50	37.06	37.00	41.39	38.00	1 TO 2
2	1	447.0	0.00	42.46	0.60	0.00	33.97	0.0	39.0	3.7	126.66	180.10	121.69	7.58	66	0.11	32.50	32.00	38.60	37.50	43.00	41.39	2 TO 3
3	2	35.0	0.60	42.46	0.80	0.48	33.97	5.0	38.8	3.7	127.00	180.10	180.10	7.58	66	0.57	32.70	32.50	38.77	38.69	42.01	43.00	3 TO 4
4	3	63.0	0.68	41.86	0.80	0.54	33.49	5.0	38.4	3.8	125.80	176.63	194.72	9.00	60	0.48	33.00	32.70	39.11	38.86	41.57	42.01	4 TO 5
5	4	252.0	0.57	24.99	0.80	0.46	19.99	5.0	37.0	3.8	76.56	117.66	112.42	5.99	60	0.16	33.40	33.00	39.67	39.23	42.04	41.57	5 TO 6
6	5	85.0	0.22	23.43	0.80	0.18	18.74	5.0	36.6	3.9	72.26	108.64	167.64	5.53	60	0.35	33.70	33.40	39.85	39.73	42.70	42.04	6 TO 7
7	6	38.0	0.28	23.21	0.80	0.22	18.57	5.0	36.3	3.9	71.79	107.36	144.75	5.47	60	0.26	33.80	33.70	39.96	39.90	42.70	42.70	7 TO 8
8	7	105.0	0.49	22.93	0.80	0.39	18.34	5.0	35.8	3.9	71.52	105.74	150.83	5.39	60	0.29	34.10	33.80	40.15	40.00	42.52	42.70	8 TO 9
9	8	192.0	0.52	21.18	0.80	0.42	16.94	5.0	34.7	4.0	67.08	95.63	97.24	6.01	54	0.21	35.00	34.60	40.58	40.20	44.17	42.52	9 TO 10
10	9	326.0	0.58	19.15	0.80	0.46	15.32	5.0	32.9	4.1	62.29	84.78	83.44	5.33	54	0.15	35.50	35.00	41.18	40.66	44.12	44.17	10 TO 11
11	10	184.0	0.66	17.36	0.80	0.53	13.89	5.0	31.9	4.1	57.34	75.32	81.12	5.99	48	0.27	36.50	36.00	41.65	41.22	43.70	44.12	11 TO 12
12	11	195.0	0.72	14.83	0.80	0.58	11.86	5.0	30.8	4.2	49.81	60.69	70.48	5.83	48	0.21	36.90	36.50	42.01	41.71	43.69	43.70	12 TO 13
13	4	129.0	16.19	16.19	0.80	12.95	12.95	30.0	30.0	4.3	55.05	55.05	52.56	4.72	42	0.23	34.20	33.90	39.56	39.23	45.00	41.57	5 TO 5A
14	5	63.0	0.99	0.99	0.80	0.79	0.79	5.0	5.0	7.2	5.72	5.72	10.13	3.32	18	0.79	38.50	38.00	39.86	39.73	42.04	42.04	6 TO 6A
15	8	63.0	0.52	1.26	0.80	0.42	1.01	5.0	6.0	7.0	7.09	7.29	21.83	2.42	24	0.79	38.50	38.00	40.24	40.20	42.51	42.52	9 TO 9A
16	15	134.0	0.40	0.74	0.80	0.32	0.59	5.0	5.2	7.2	4.25	4.28	5.38	2.47	18	0.22	39.30	39.00	40.67	40.50	42.42	42.51	9A TO 9B
17	16	38.0	0.34	0.34	0.80	0.27	0.27	5.0	5.0	7.2	1.97	1.97	5.84	1.13	18	0.26	39.40	39.30	40.81	40.80	42.42	42.42	9B TO 9C
18	9	24.0	0.69	0.69	0.80	0.55	0.55	15.0	15.0	5.6	3.10	3.10	12.72	1.76	18	1.25	39.30	39.00	40.68	40.66	44.28	44.17	10 TO 10AEW
19	9	63.0	0.82	0.82	0.80	0.66	0.66	5.0	5.0	7.2	4.74	4.74	10.13	3.15	18	0.79	40.00	39.50	41.04	41.00	44.17	44.17	10 TO 10C
20	10	63.0	1.21	1.21	0.80	0.97	0.97	10.0	10.0	6.3	6.10	6.10	10.13	3.52	18	0.79	40.00	39.50	41.38	41.22	44.12	44.12	11 TO 11A
21	11	63.0	0.53	1.87	0.80	0.42	1.50	5.0	5.9	7.0	10.52	10.81	21.83	3.44	24	0.79	39.50	39.00	41.83	41.71	43.70	43.70	12 TO 12A
22	21	133.0	0.76	1.34	0.80	0.61	1.07	5.0	5.2	7.2	7.70	7.75	11.64	2.47	24	0.23	39.80	39.50	41.98	41.85	43.73	43.70	12A TO 12B
23	22	36.0	0.58	0.58	0.80	0.46	0.46	5.0	5.0	7.2	3.35	3.35	8.48	1.90	18	0.56	40.50	40.30	42.00	41.99	43.77	43.73	12B TO 12C
24	12	63.0	0.77	0.77	0.80	0.62	0.62	5.0	5.0	7.2	4.45	4.45	10.13	2.52	18	0.79	40.50	40.00	42.14	42.04	43.69	43.69	13 TO 13A
25	12	24.0	10.06	10.06	0.80	8.05	8.05	30.0	30.0	4.3	34.20	34.20	104.3	4.84	36	2.08	37.50	37.00	42.10	42.04	44.58	43.69	13 TO 13BEW
26	12	220.0	0.58	3.28	0.80	0.46	2.62	10.0	11.4	6.1	16.00	17.87	66.36	1.42	48	0.18	37.30	36.90	42.07	42.04	42.86	43.69	13 TO 44
27	26	109.0	0.43	2.54	0.80	0.34	2.03	5.0	10.8	6.2	12.57	14.02	66.66	1.12	48	0.18	37.50	37.30	42.08	42.08	42.86	42.86	44 TO 14
28	27	139.0	0.90	1.39	0.80	0.72	1.11	10.0	10.0	6.3	7.01	7.37	33.57	1.04	36	0.22	37.80	37.50	42.10	42.09	42.53	42.88	14 TO 45
29	28	63.0	0.49	0.49	0.80	0.39	0.39	5.0	5.0	7.2	2.83	2.83	7.85	1.60	18	0.48	38.70	38.40	42.14	42.10	41.92	42.53	45 TO 45A
30	27	67.0	0.72	0.72	0.80	0.58	0.58	5.0	5.0	7.2	4.16	4.16	9.83	2.36	18	0.75	40.00	39.50	42.18	42.09	42.38	42.88	14 TO 14A
31	26	66.0	0.16	0.16	0.80	0.13	0.13	5.0	5.0	7.2	0.93	0.93	9.90	0.52	18	0.76	40.00	39.50	42.08	42.08	42.89	42.86	44 TO 44A

Return period = 10 Yrs.



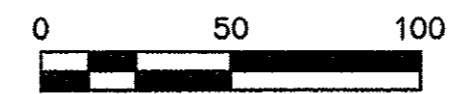
NOTE: EQUIPMENT CLEARANCE MINIMUM 16' FROM TRANSMISSION LINES TO BE MAINTAINED AT ALL TIMES. (REFERENCE: OSHA 1910.269)

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 7/15/15 PERMIT # 201403121 SIGNED [Signature]

Approved Construction Plan Name Date Planning Traffic Fire [Signatures and Dates]

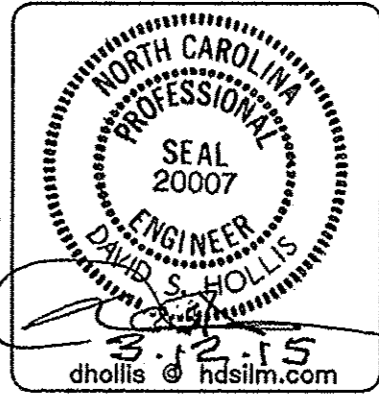
NOTE: 404 WETLANDS DO NOT EXIST ON SITE PER U.S. CORPS OF ENGINEERS DETERMINATION. SEE ACTION SAW-2012-01938. DETERMINATION EXPIRATION DATE 01-18-2018.



ADDITIONAL PROFILES

2	REVISED AS PER CITY COMMENTS	3-12-15
1	Major Revision	1-30-15
REV. NO.	REVISIONS	DATE

PLAN BARCLAY WEST PHASE 1 INFRASTRUCTURE LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA

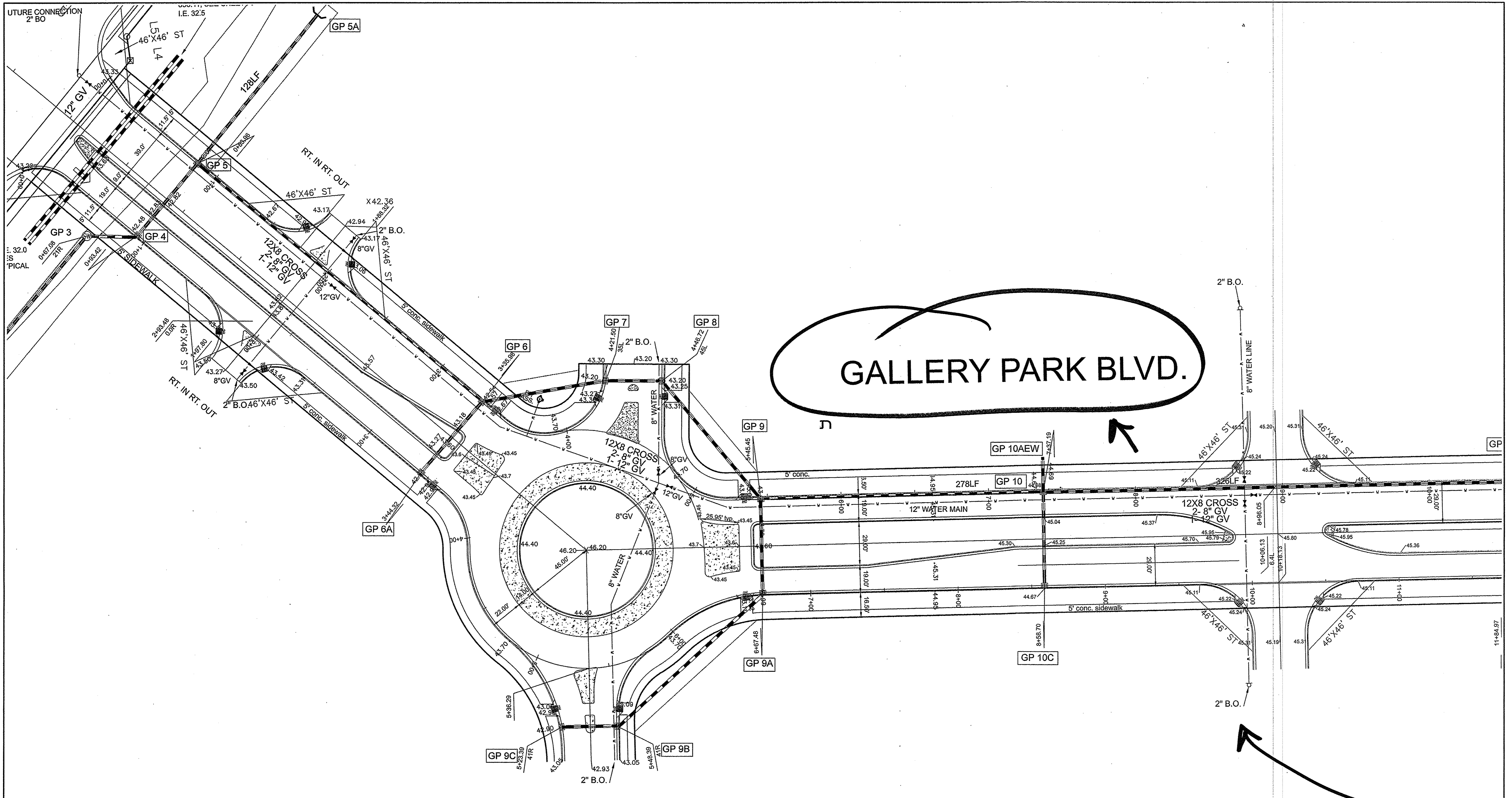


OWNER: CAMERON PROPERTIES LAND COMPANY, LLC P.O. BOX 3649 WILMINGTON, N.C. 28406 PH 910-762-2676

HANOVER DESIGN SERVICES, P.A. LAND SURVEYORS, ENGINEERS & LAND PLANNERS 1123 FLORAL PARKWAY WILMINGTON, N.C. 28403 PHONE (910) 343-8022

Date: 7-15-15 Scale: HORIZ: 1"=50' VERT: 1"=5' Drawn: GW Checked: DH Project No: 12498 Sheet No: 7 of 10

*7 of 30 total pgs*



GALLERY PARK BLVD.

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

NOTE WELL: ALL SPOT ELEVATIONS AS SHOWN ARE PROPOSED BACK OF CURB.



STORMWATER MANAGEMENT PLAN  
 APPROVED  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE 7.15.15  
 PERMIT # 201401321  
 SIGNED *[Signature]*

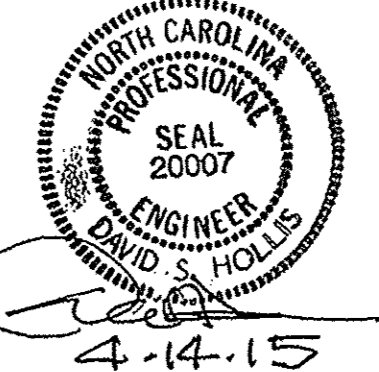
Approved Construction Plan

Name	Date
Planning <i>[Signature]</i>	7-15-15
Traffic <i>[Signature]</i>	7-15-15
Fire <i>[Signature]</i>	7-15-15

LAY-OUT SHEET

**BARCLAY WEST and**  
 PHASE 1 INFRASTRUCTURE  
LOCATED IN THE CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

REV. NO.	REVISIONS	DATE
1	Major Revision	1-30-15



OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
 P.O. BOX 3649  
 WILMINGTON, N.C. 28406 PH 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORAL PARKWAY  
 WILMINGTON, N.C. 28403  
 PHONE: (910) 343-6002

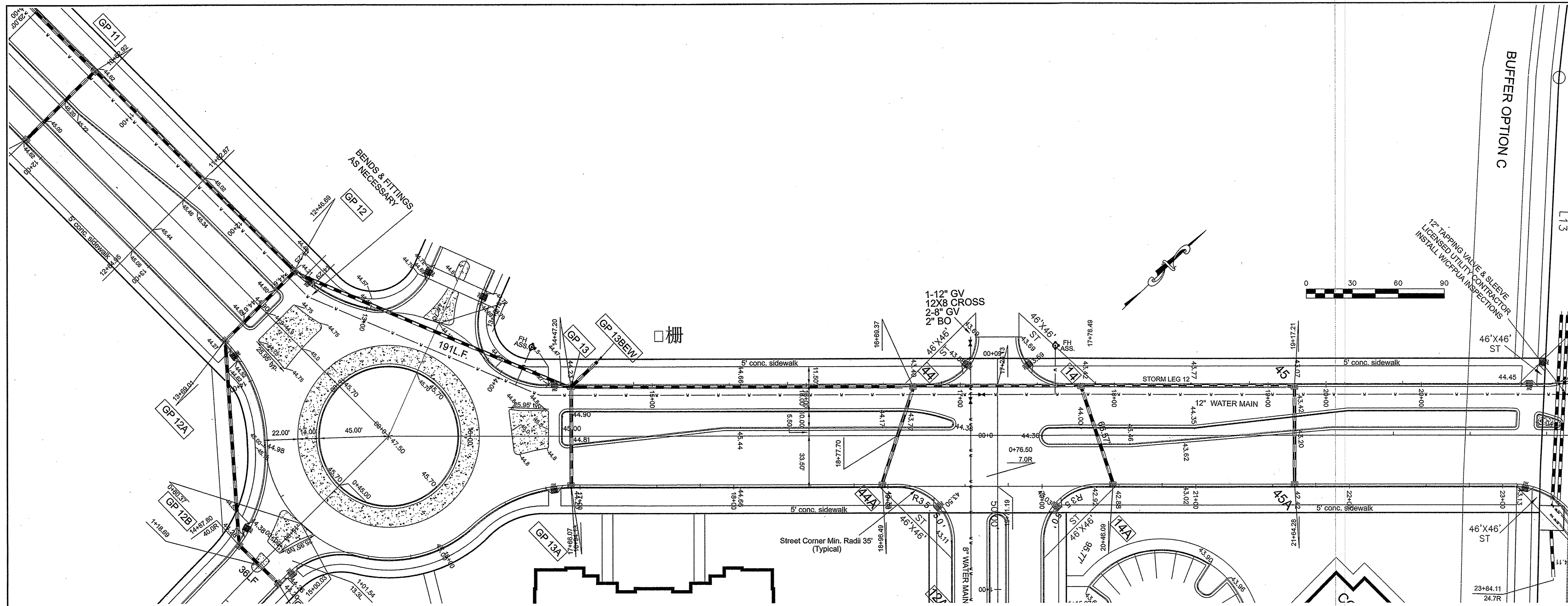
Date: 10-3-14  
 Scale: 1" = 30'  
 Drawn: GW  
 Checked: DH  
 Project No: 12498

Sheet No: 8  
 of 10

~~FINAL DESIGN NOT RELEASED FOR CONSTRUCTION~~

8 of 32 total pgs





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 7/15/15 PERMIT # 2014013121 SIGNED [Signature]

Approved Construction Plan	
Name	Date
Planning <i>[Signature]</i>	7-15-15
Traffic <i>[Signature]</i>	7-15-15
Fire <i>[Signature]</i>	7-15-15

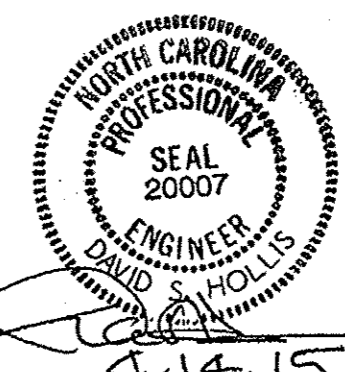
NOTE WELL: ALL SPOT ELEVATIONS AS SHOWN ARE PROPOSED BACK OF CURB.



*gallop park blvd roadway*

LAY-OUT SHEET		
REV. NO.	REVISIONS	DATE
2	Major Revision	1-30-15
1	REVISED AS PER CITY COMMENTS	12-3-14

**BARCLAY WEST**  
PHASE 1 INFRASTRUCTURE  
LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA



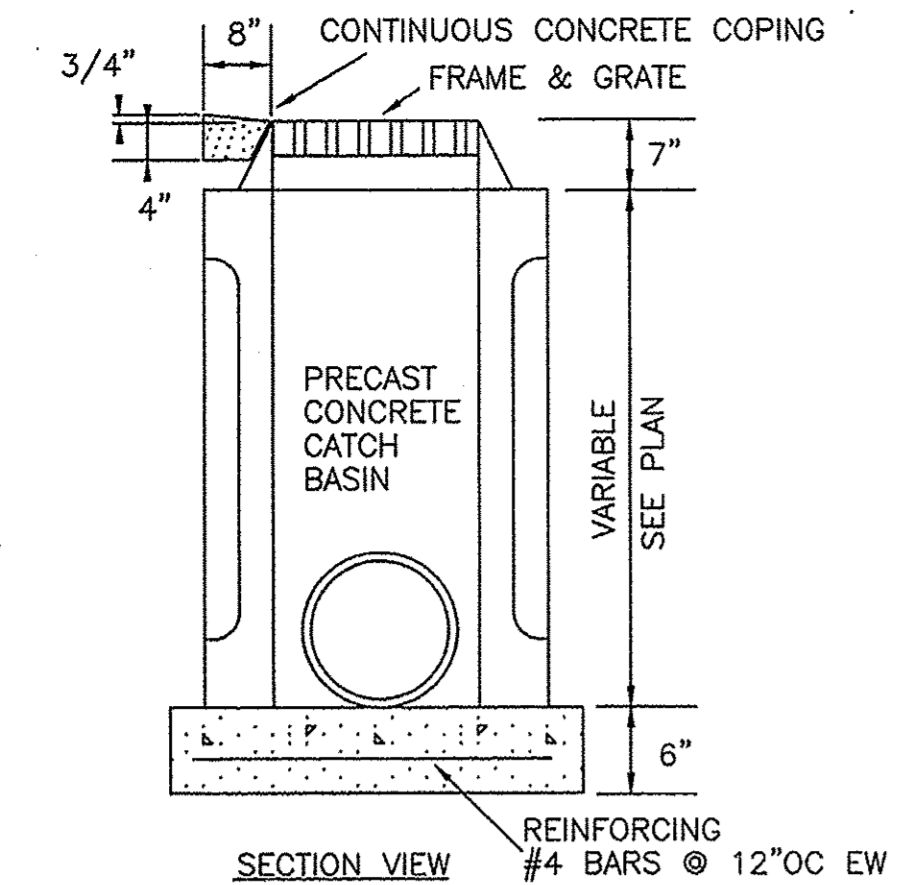
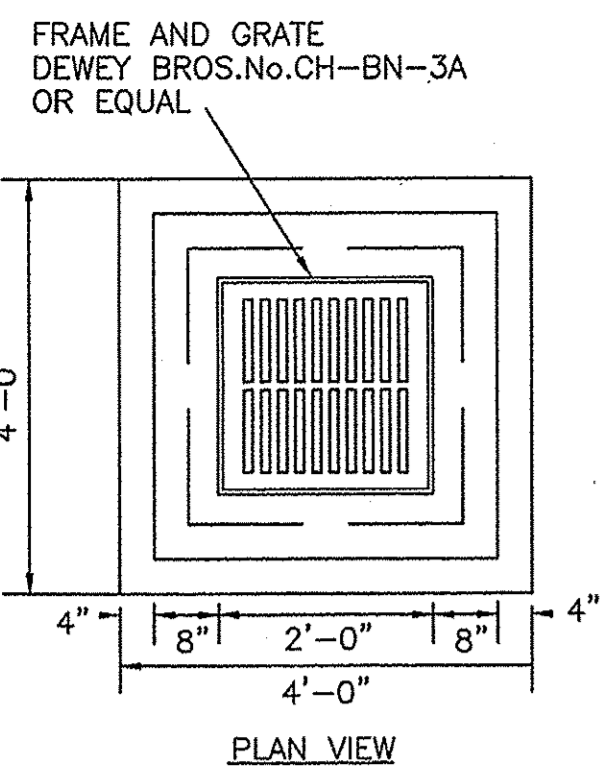
OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
P.O. BOX 3649  
WILMINGTON, N.C. 28406 PH 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 343-8002  
License # G-0527

Date:	10-3-14
Scale:	HORZ: 1" = 30'
Drawn:	GW
Checked:	DH
Project No:	12498
Sheet No:	9
Of:	10

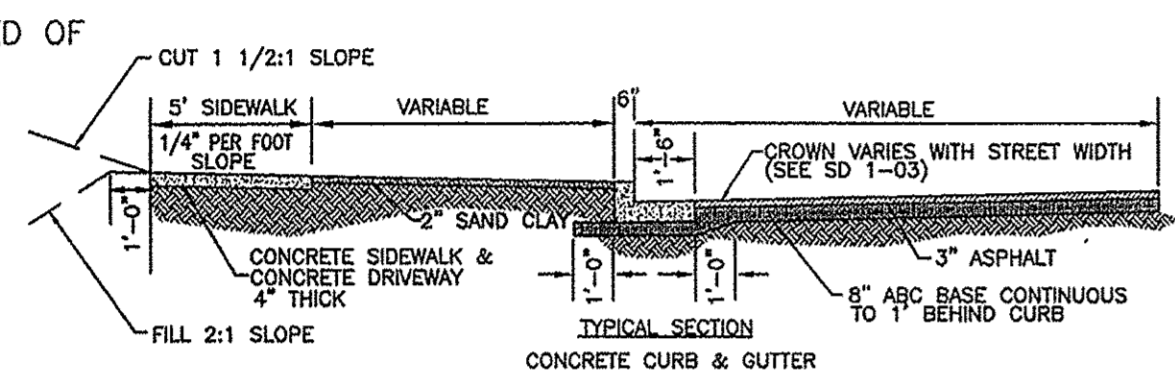
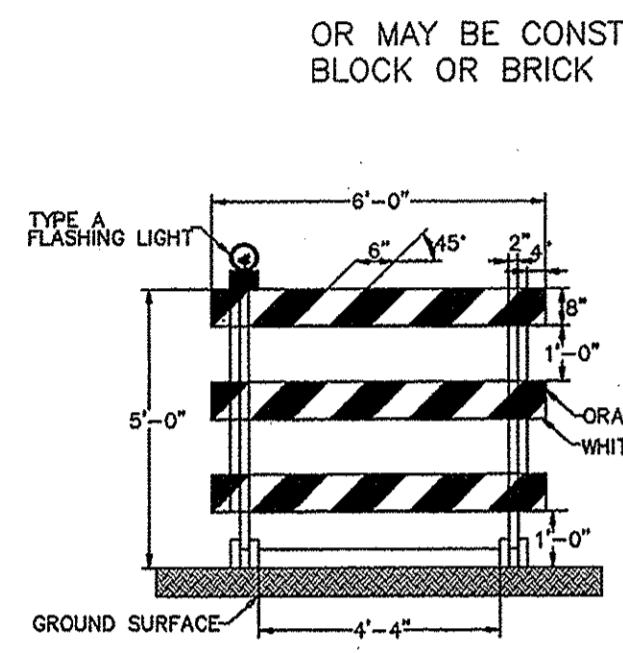
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*9 of 30 total pgs*

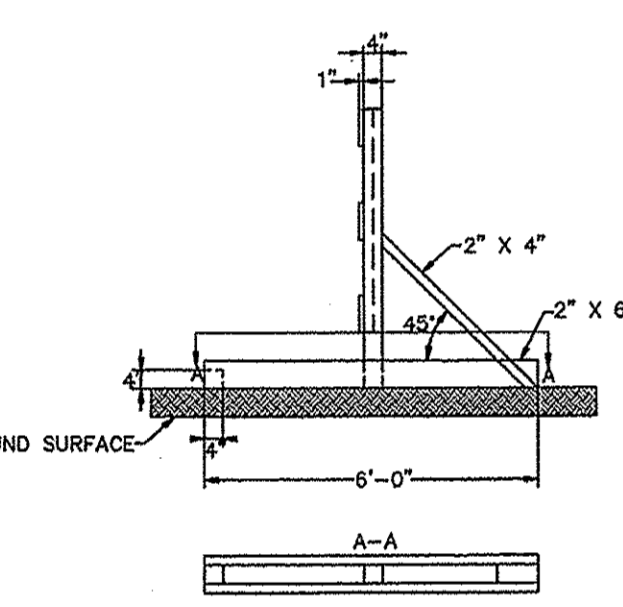


**CATCH BASIN DETAIL**

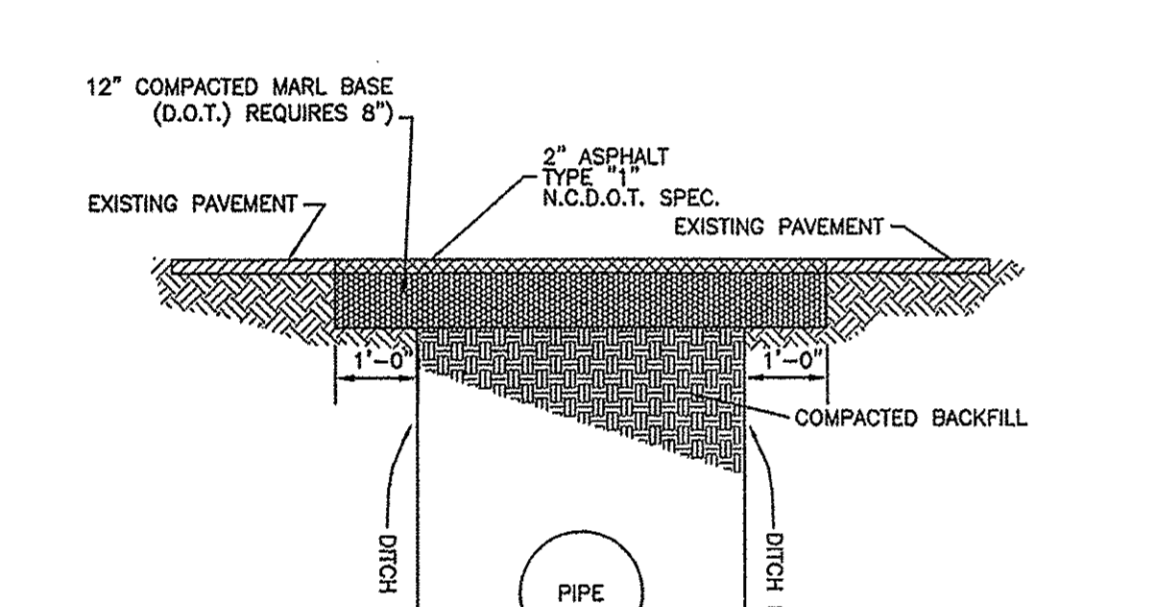
NOTE:  
PRECAST CONCRETE CATCH BASIN TO BE SIZED AS NECESSARY,  
OR MAY BE CONSTRUCTED OF BLOCK OR BRICK



NOTES:  
\* COMBINED CONCRETE CURB & GUTTER, CONCRETE SIDEWALK AND DRIVEWAYS TO BE 3000 POUNDS STRENGTH CONCRETE.  
\* SCORE 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.



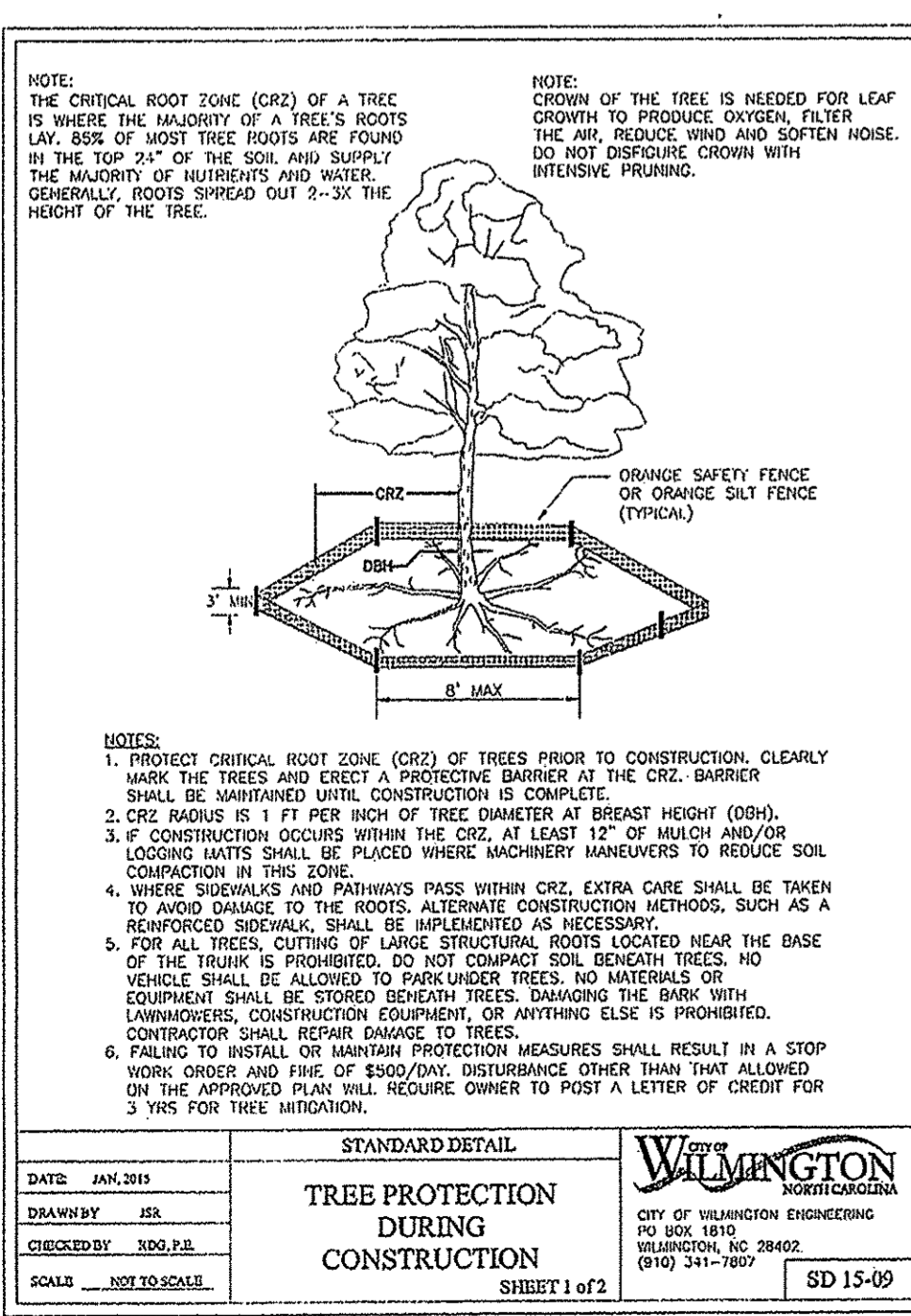
TYPE III BARRICADE  
SD 15-07  
NOT TO SCALE



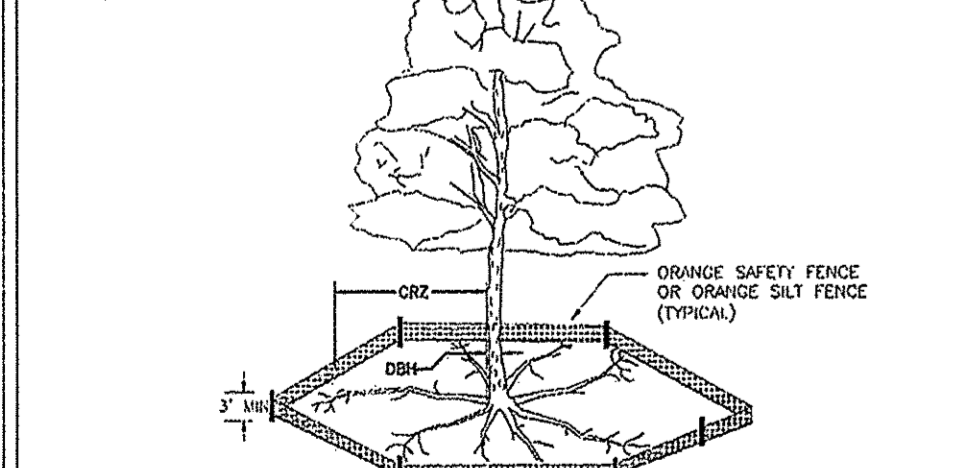
NOTES:  
\* BACKFILL TO BE INSTALLED IN 6" LIFTS (MAXIMUM) AND COMPACTED TO A MINIMUM DENSITY OF 95% AS DETERMINED BY THE MODIFIED A.A.S.H.T.O. STANDARD METHOD T-99  
\* CUT - BACK TO BE PREPARED AFTER TRENCH BACKFILLING AND COMPACTION

**STANDARD SHOWING METHOD MAKING PAVEMENT REPAIRS WHERE PIPE IS INSTALLED**

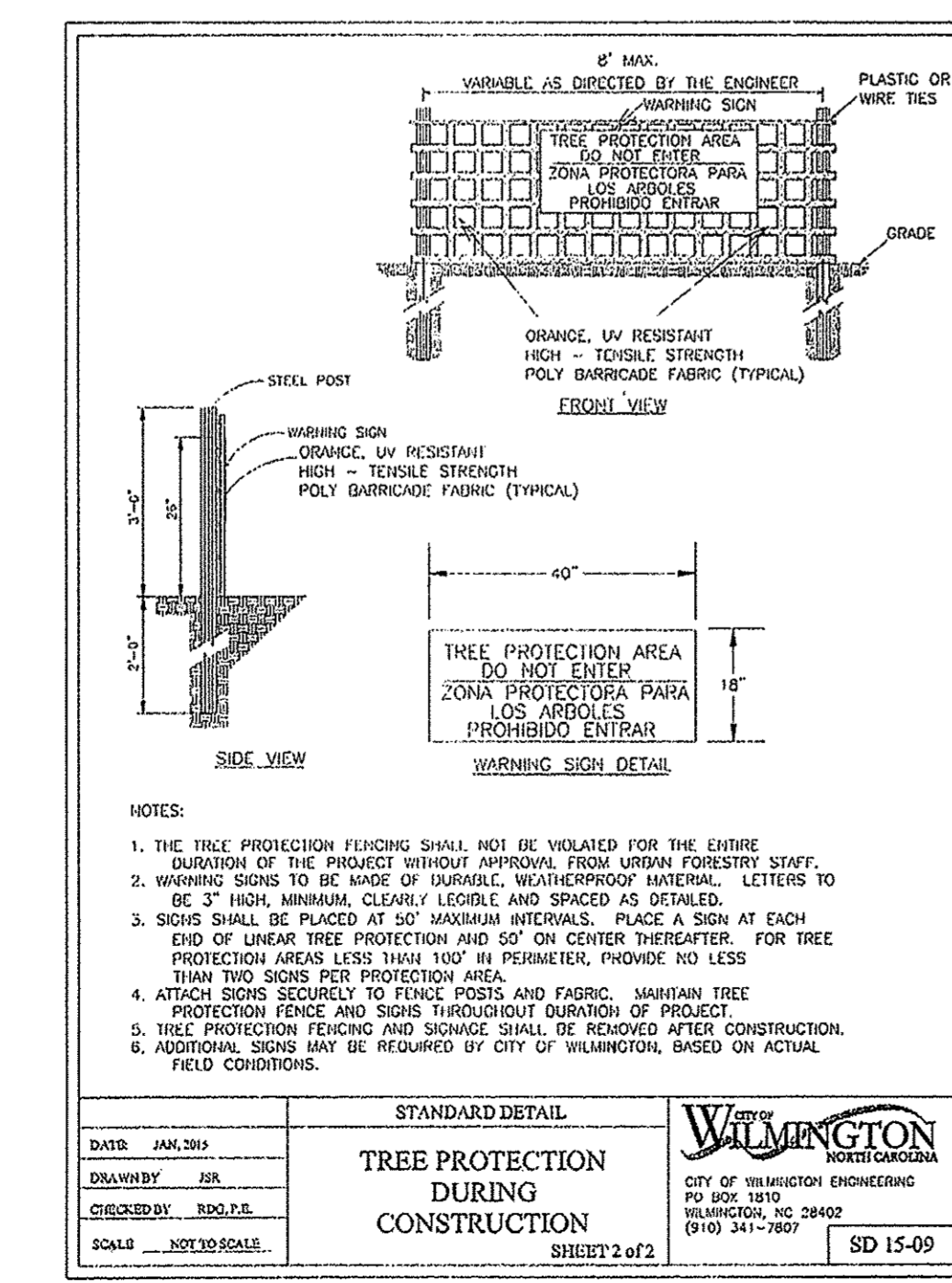
PAVEMENT REPAIRS  
SD 1-05



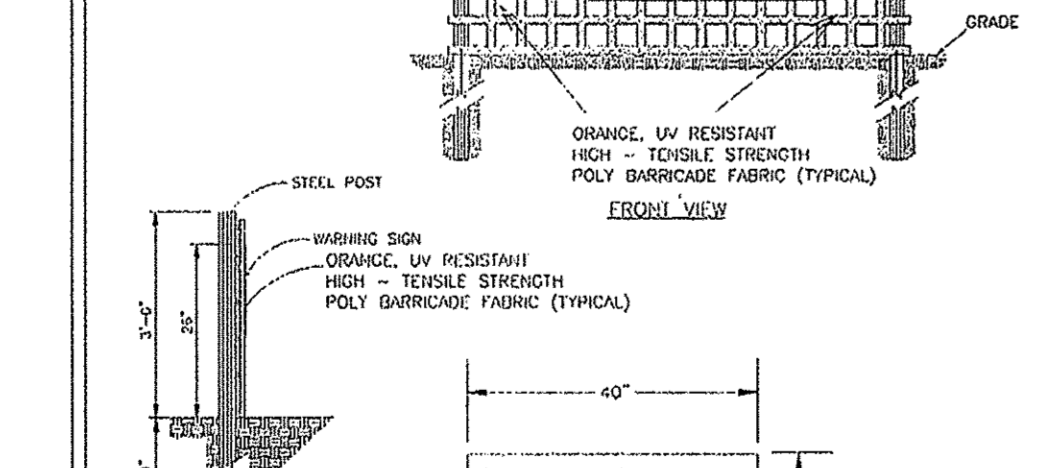
NOTE:  
THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS ARE FOUND. CRZ IS 1 FT PER INCH OF TREE DIAMETER AT GROUND LEVEL (DBH).  
NOTE:  
CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN HOSE. DO NOT DISRUPT CROWN WITH INTENSIVE PRUNING.



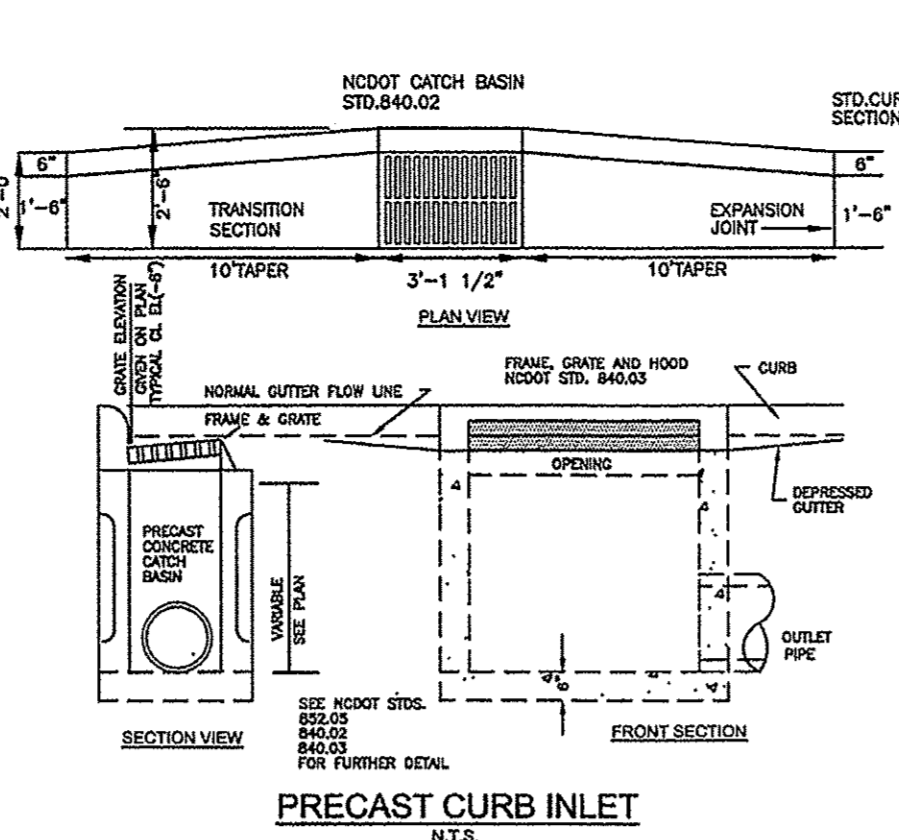
NOTES:  
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION, CLEARLY MARK THE TREES AND LOCATE A PROTECTIVE BARRIER AT THE CRZ BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.  
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT GROUND LEVEL (DBH).  
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATS SHALL BE PLACED WHERE NEAREST MANHOLES TO REDUCE SOIL COMPACTION IN THIS ZONE.  
4. WHERE SIDEWALKS AND DRIVEWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.  
5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLES SHALL BE ALLOWED TO DRIVE OVER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAMINATORS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.  
6. FAILING TO INSTALL OR MAINTAIN PROTECTIVE MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.



NOTE:  
1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.  
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAIL.  
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.  
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.  
5. TREE PROTECTION FENCING AND SIGNS SHALL BE RECHECKED AFTER CONSTRUCTION.  
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

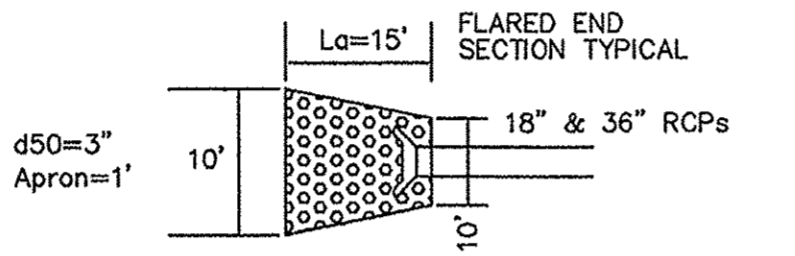


NOTES:  
1. JOINT MATERIAL TO COMPLY WITH CURRENT NC DOT STANDARDS.  
2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE UDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.  
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.  
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3000 PSI.  
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL.  
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.  
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12".  
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1  
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 0.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.



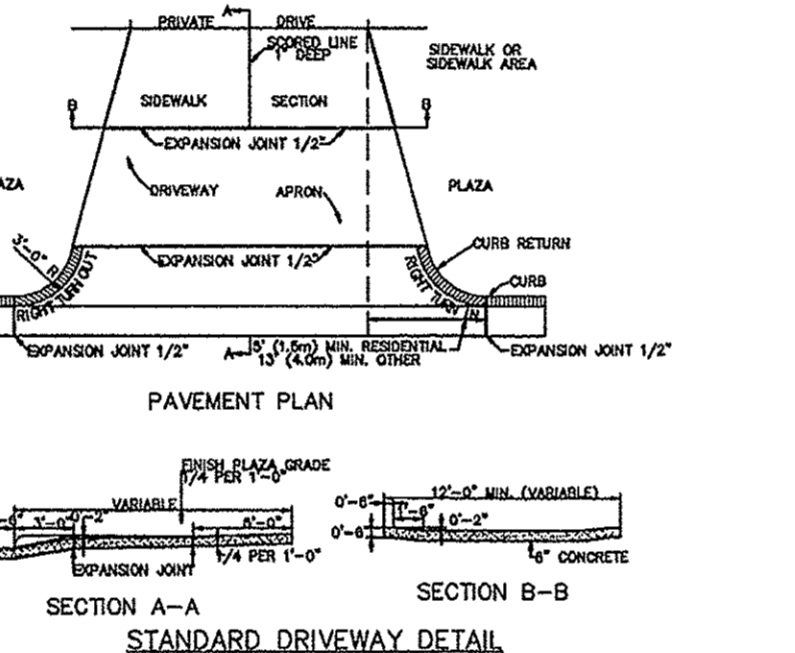
**PRECAST CURB INLET**

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.

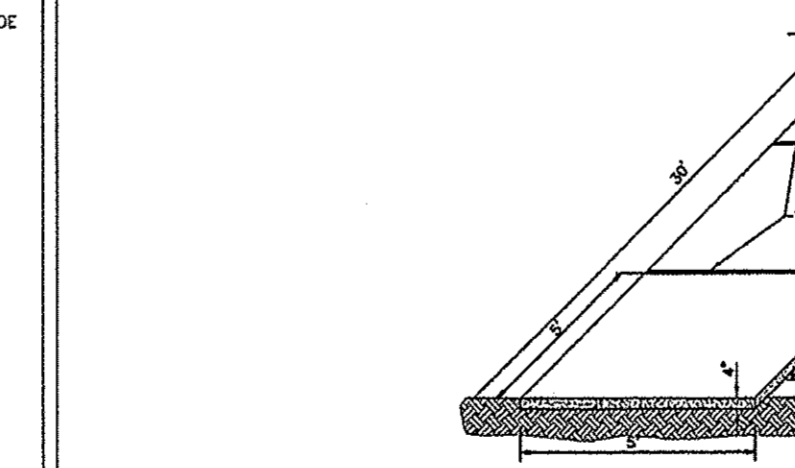


**OUTLET PROTECTION and ROCK STABILIZATION APRON**

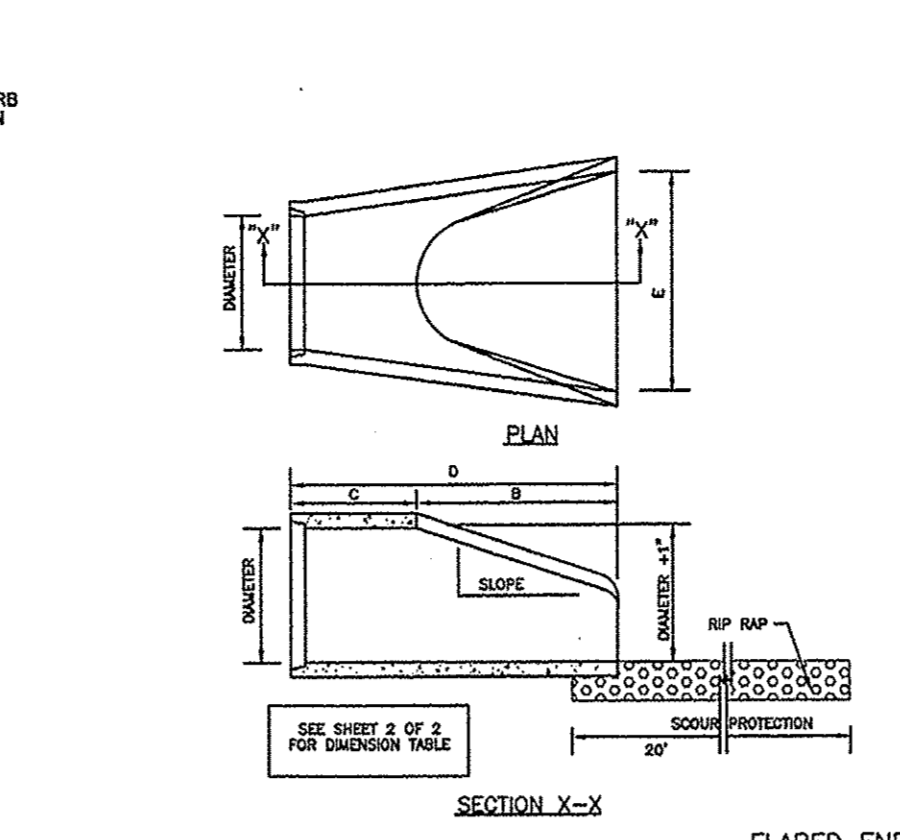
MINIMUM DIMENSIONS  
OUTLET TO AND FROM POND  
6 cyd EACH



STANDARD DRIVEWAY DETAIL  
SD 8-02  
NOT TO SCALE

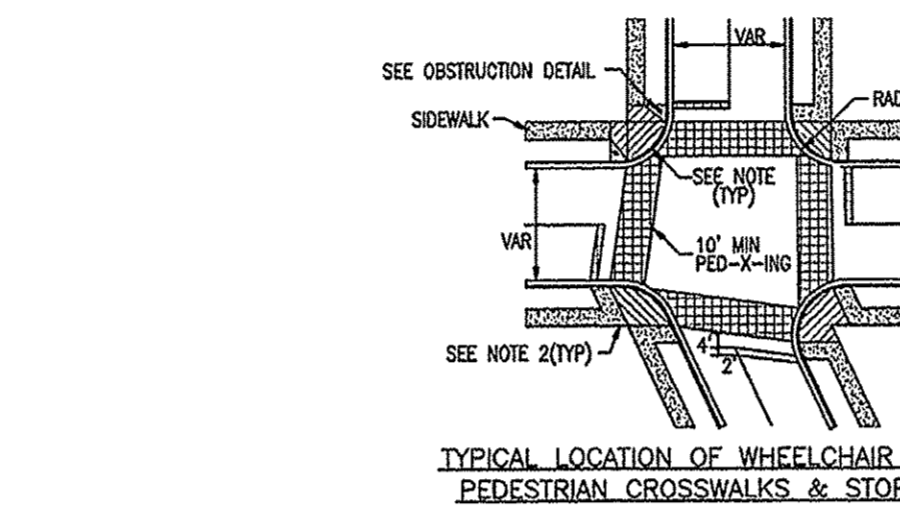


NOTES:  
1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.  
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAIL.  
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.  
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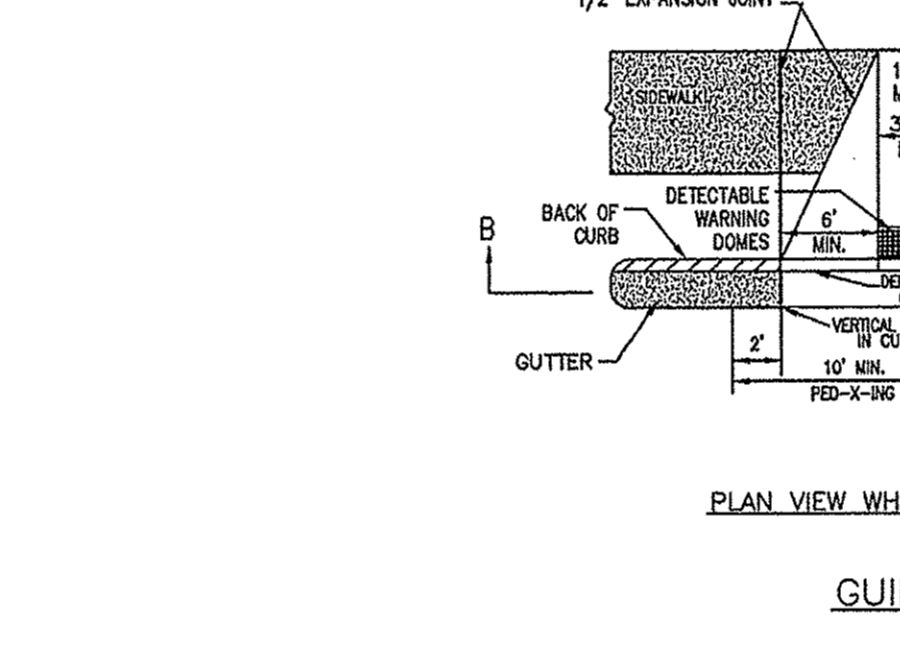


**FLARED END SECTION - OUTLET**

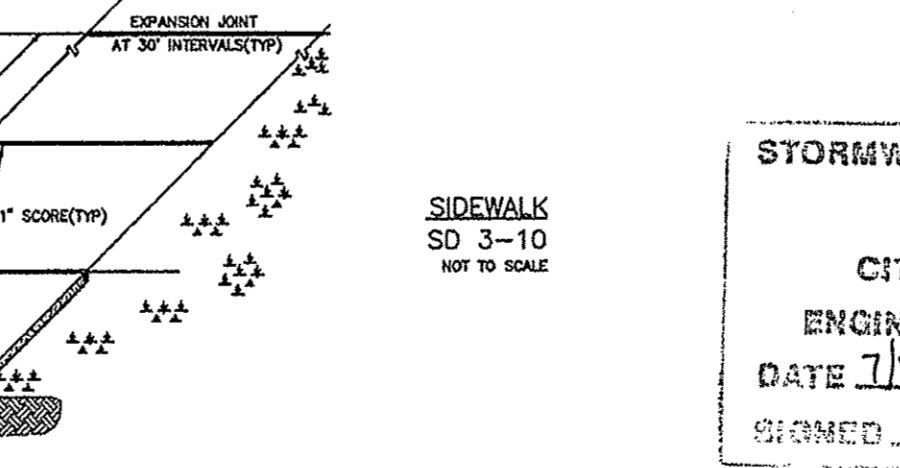
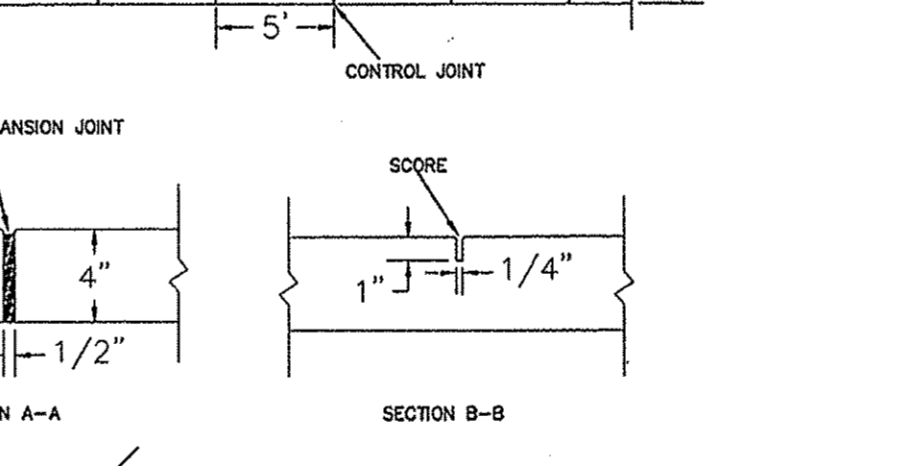
SD 1-17  
NOT TO SCALE



**TYPICAL LOCATION OF WHEELCHAIR RAMPS, PEDESTRIAN CROSSWALKS & STOP BARS**



PLAN VIEW WHEELCHAIR RAMP  
SD 8-10  
NOT TO SCALE



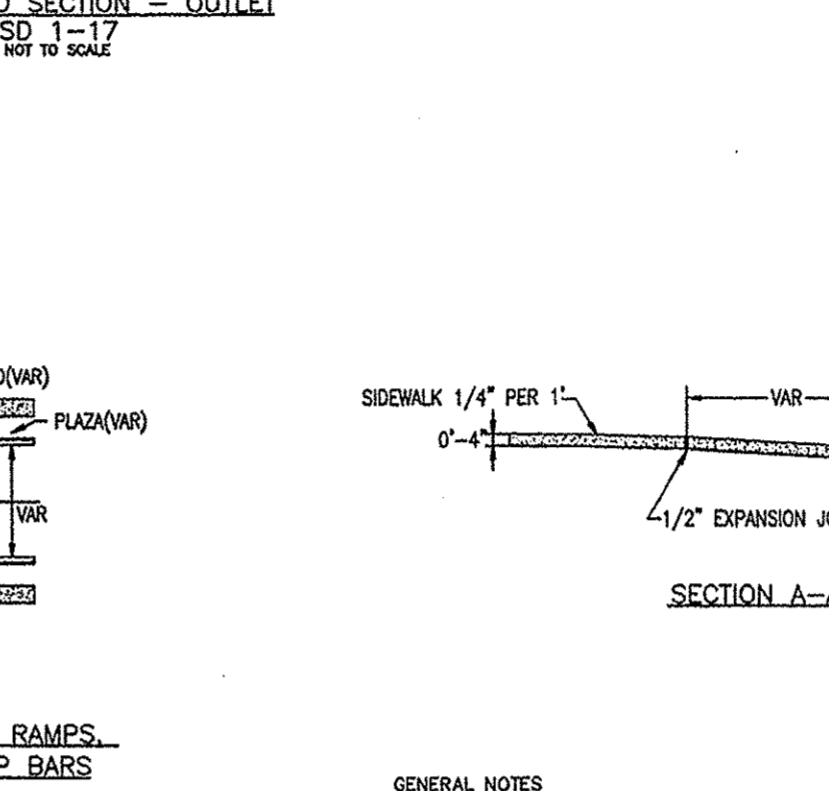
NOTES:  
1. JOINT MATERIAL TO COMPLY WITH CURRENT NC DOT STANDARDS.  
2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE UDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.  
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.  
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3000 PSI.  
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL.  
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.  
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12".  
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1  
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 0.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

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	48	73	24	730
15	2 1/4	3:1	27	48	73	30	910
18	2 1/2	3:1	27	46	73	36	1180
21	2 3/4	3:1	36	37	73	42	1370
24	3	3:1	42	31 1/2	73 1/2	48	1770
27	3 1/4	3:1	48	25 1/2	73 1/2	54	2130
30	3 1/2	3:1	54	19 3/4	73 3/4	60	2380
33	3 3/4	3:1	60	36	96	66	3970
36	4	3:1	63	34 3/4	94	72	5200
42	4 1/2	3:1	63	35	99	78	5920
48	5	3:1	72	26	98	84	7470
54	5 1/2	2.4:1	66	34	100	90	8810
60	6	2:1	60	39	99	96	11160
72	7	2:1	78	21	99	108	13860

DIMENSIONS IN INCHES WEIGHTS IN POUNDS



**GUIDELINES FOR WHEELCHAIR RAMPS**

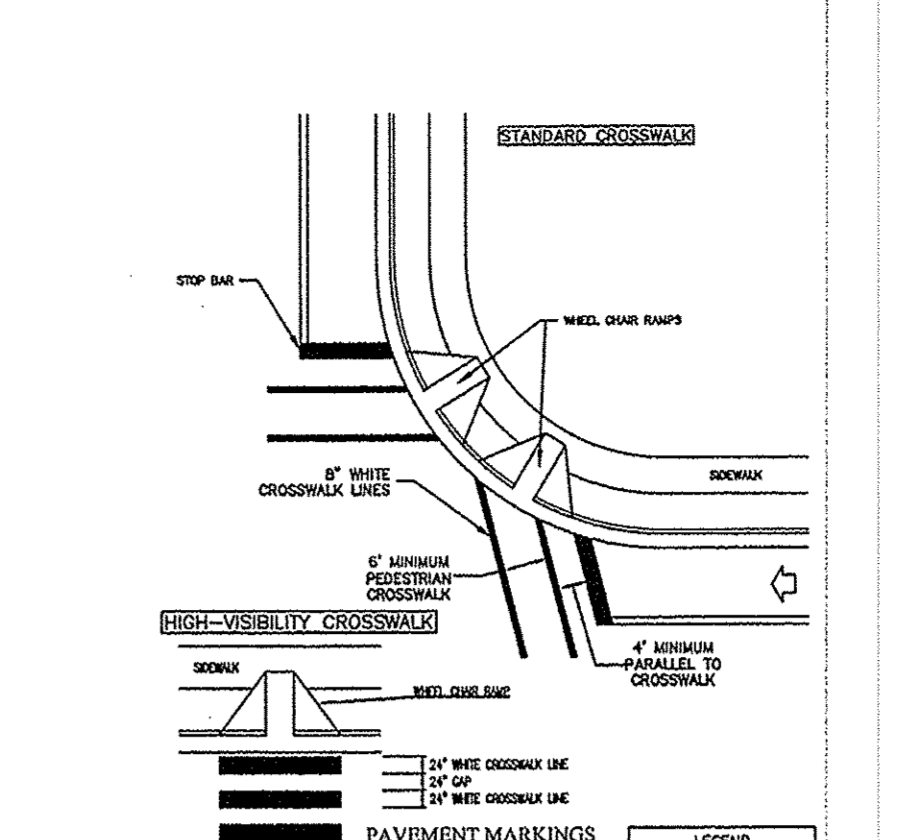
GENERAL NOTES:  
1. LOCATION OF WHEELCHAIR RAMPS:  
a. IN ACCORDANCE WITH THE PAVED HOUSE BILL 1289, ALL STREET CURBS IN NORTH CAROLINA BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1978 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED AT ALL INTERSECTIONS WHERE BOTH CURB AND OUTLET AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.  
b. WHEELCHAIR RAMPS SHOULD BE LOCATED AS INDICATED IN DETAIL DRAWINGS, HOWEVER EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. MAY AFFECT PLACEMENT.  
c. CONSTRUCTION NOTES:  
1. NO SLOPE SHALL EXCEED 1"4" (25%) ON THE RAMP OR SIDEWALK.  
2. IN NO CASE SHALL THE WIDTH OF WHEELCHAIR RAMPS BE LESS THAN 40" (3'-4"). WIDTHS MAY EXCEED 40" IF NECESSARY.  
3. USE CLASS "A" CONCRETE WITH THE SURFACE HAVING A ROUGH, NON-SLIP TYPE FINISH.  
4. 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE CONCRETE WHEELCHAIR RAMP JOINS ANY ROAD PAVEMENT OR STRUCTURE.  
5. CONSTRUCTION METHODS SHALL CONFORM WITH THOSE OF THE COVERING BODY WHICH HAS JURISDICTION OF THE PARTICULAR STREET.  
d. ADDITIONAL NOTES:  
1. THE WIDE PEDESTRIAN CROSSWALK LINES SHALL BE ESTABLISHED BY BISECTING THE INTERSECTION RAMP WHERE HANDICAPPED (SEE NOTE 4).  
2. THE WHEELCHAIR RAMP SHALL BE LOCATED SO THAT THE BEGINNING OF THE WHEEL CHAIR 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 ESTABLISHED A MINIMUM OF 20 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 & DEPRESSED CURBS**



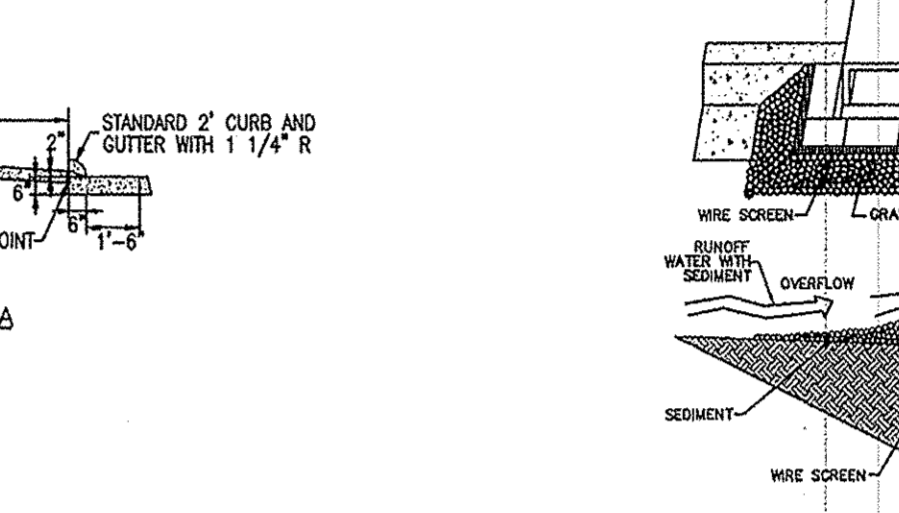
SD 8-10  
NOT TO SCALE

NOTES:  
1. JOINT MATERIAL TO COMPLY WITH CURRENT NC DOT STANDARDS.  
2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE UDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.  
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.  
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3000 PSI.  
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL.  
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.  
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12".  
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1  
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 0.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

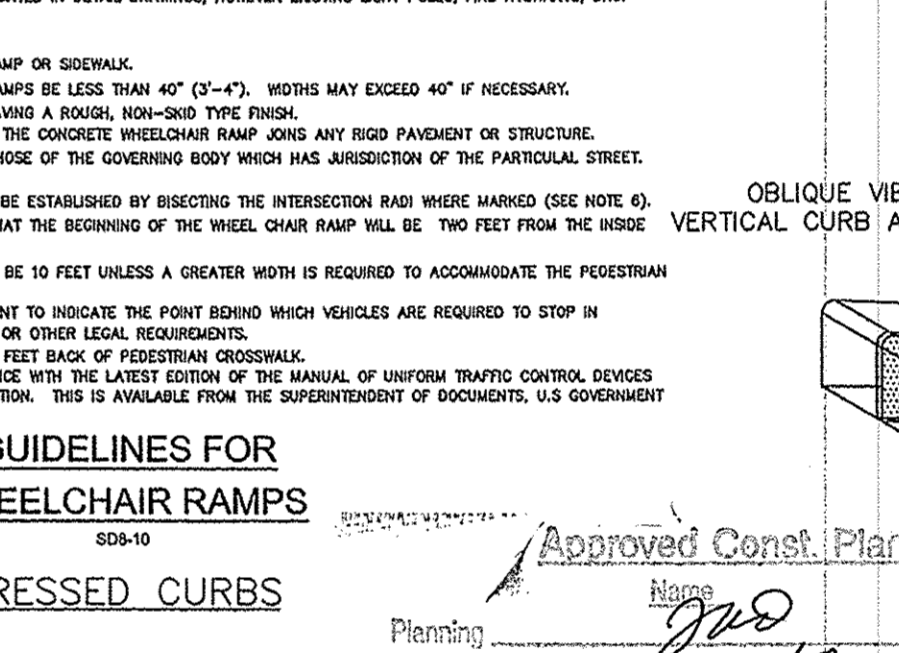


**MULTIUSE PATH DETAIL**

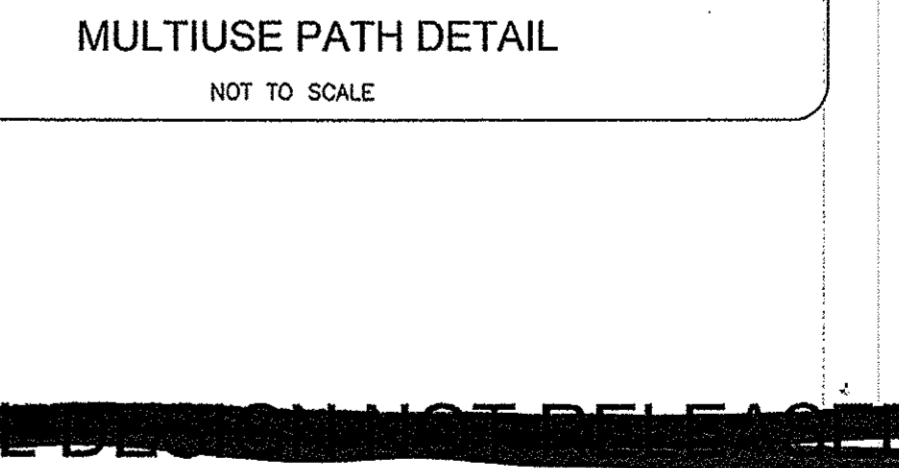
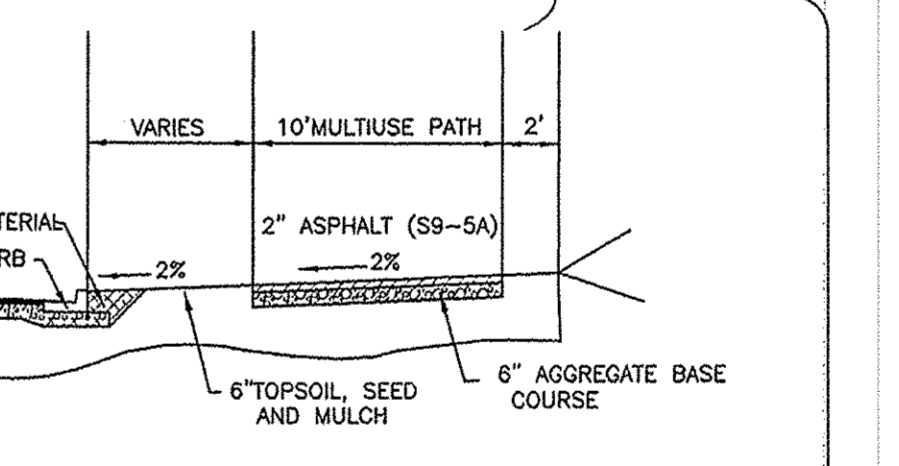
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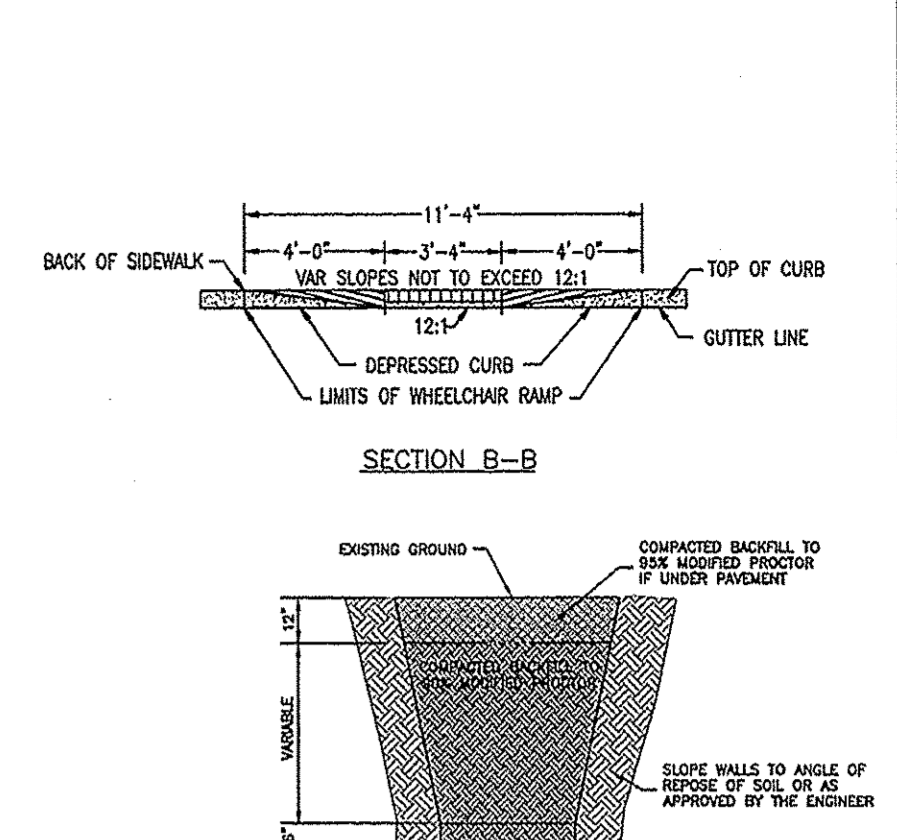
**VERTICAL CURB AND GUTTER**



SD 13-02  
NOT TO SCALE

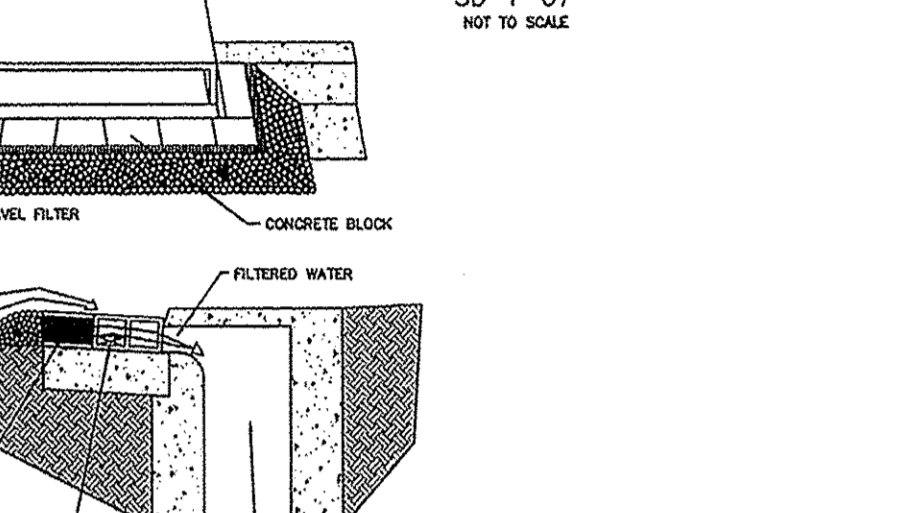


NOTES:  
1. JOINT MATERIAL TO COMPLY WITH CURRENT NC DOT STANDARDS.  
2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE UDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.  
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.  
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3000 PSI.  
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL.  
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.  
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12".  
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1  
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 0.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

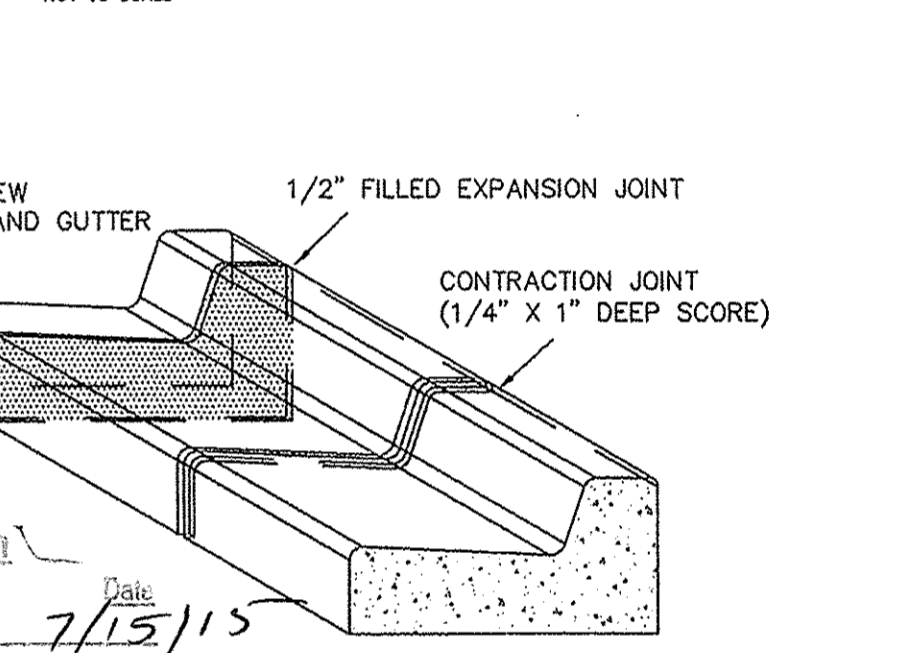


**STANDARD PIPE TRENCH DETAIL**

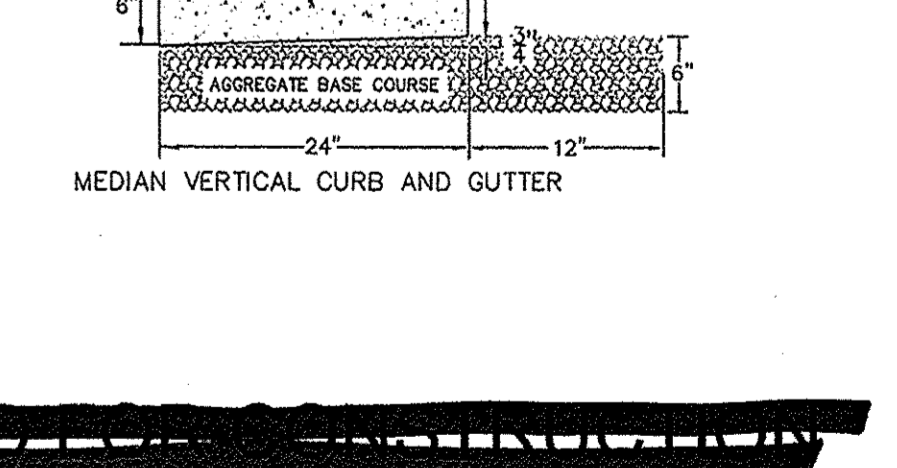
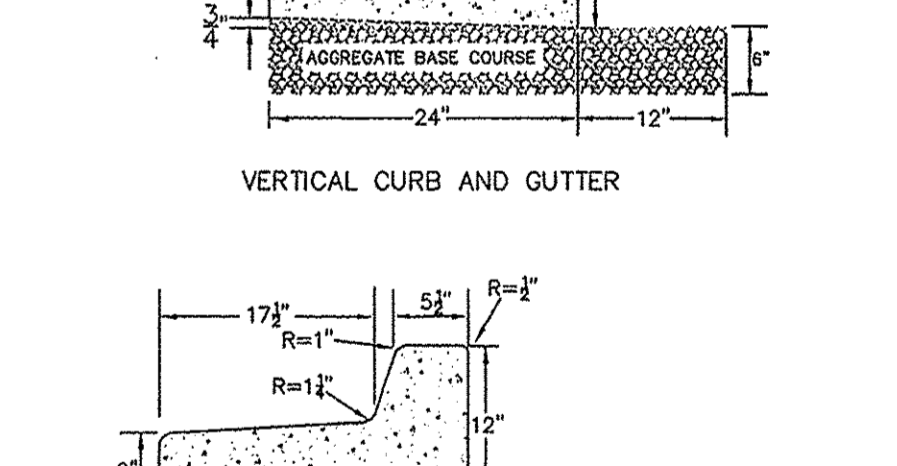
SD 1-07  
NOT TO SCALE



**CURB INLET PROTECTION**



SD 13-02  
NOT TO SCALE



NOTES:  
1. JOINT MATERIAL TO COMPLY WITH CURRENT NC DOT STANDARDS.  
2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE UDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.  
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.  
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3000 PSI.  
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL.  
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.  
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12".  
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1  
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 0.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 7/15/15 PERMIT# 2017013 R1  
SIGNED [Signature]

Approved Const. Plan  
Planning [Signature] Date 7/15/15  
Public Utilities [Signature] Date 7-15-15  
Traffic [Signature] Date 7-15-15  
Fire [Signature] Date 7-15-15

**gallen pk dv roadway**  
**BARCLAY WEST**  
LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: BARCLAY WEST APARTMENTS, LLC  
P.O. BOX 2562  
MOUNT PLEASANT, SC 29465 PH 843-324-5424

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 341-2002

Scale: 10  
Date: 10

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10 of 30 total pgs

# BARCLAY WEST GALLERY PARK BOULEVARD

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

LOCATED IN THE CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA  
DATE: April 2015  
SCALE: 1"=200'

OWNER / DEVELOPER:  
**CAMERON PROPERTIES**  
P.O. BOX 3649  
Wilmington, NC 28406  
910-762-2676

LIMITS OF DISTURBANCE:  
**CAMERON PROPERTIES LAND COMPANY, LLC**  
26.78 Acres

### SITE DATA TABLE:

PARCEL IDENTIFICATION:  
R06500-003-004-000  
DB 5427 PG 622

### 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 OUTLETS 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 R/W 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 BELLSOUTH AND DUKE ENERGY.
- PROJECT AREA = XXX.XX ACRES.
- THIS PROPERTY IS ZONED RB, MF-M & O&I-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.

### VEGETATIVE PLAN -

- 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.I.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
- CE CONSTRUCTION ENTRANCE (TYPICAL)
- SF SILT FENCE (NEW) (TYPICAL)
- IP INLET PROTECTION (TYPICAL)
- OP OUTLET PROTECTION (TYPICAL)
- LIMITS OF DISTURBANCE (PROPOSED)
- PSC PERMANENT STREAM CROSSING
- SB SEDIMENT BASIN
- TSC TEMPORARY STREAM CROSSING

### SURVEY NOTES:

- AREA COMPUTED BY COORDINATE METHOD.
- ALL DISTANCES ARE HORIZONTAL GROUND.
- PROPERTY SUBJECT TO ALL EASEMENTS OF RECORD.
- THE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY ARE LOCATED FROM FIELD SURVEY INFORMATION, AND EXISTING AS-BUILT 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#0720312800, DATED APRIL 3, 2006, PANEL 3125J
- THIS PROPERTY IS ZONED RB, MF-M & O&I-1.
- SURVEYED IN 2013, AND 2014.
- COMBINED GRID FACTOR = 1.00000.

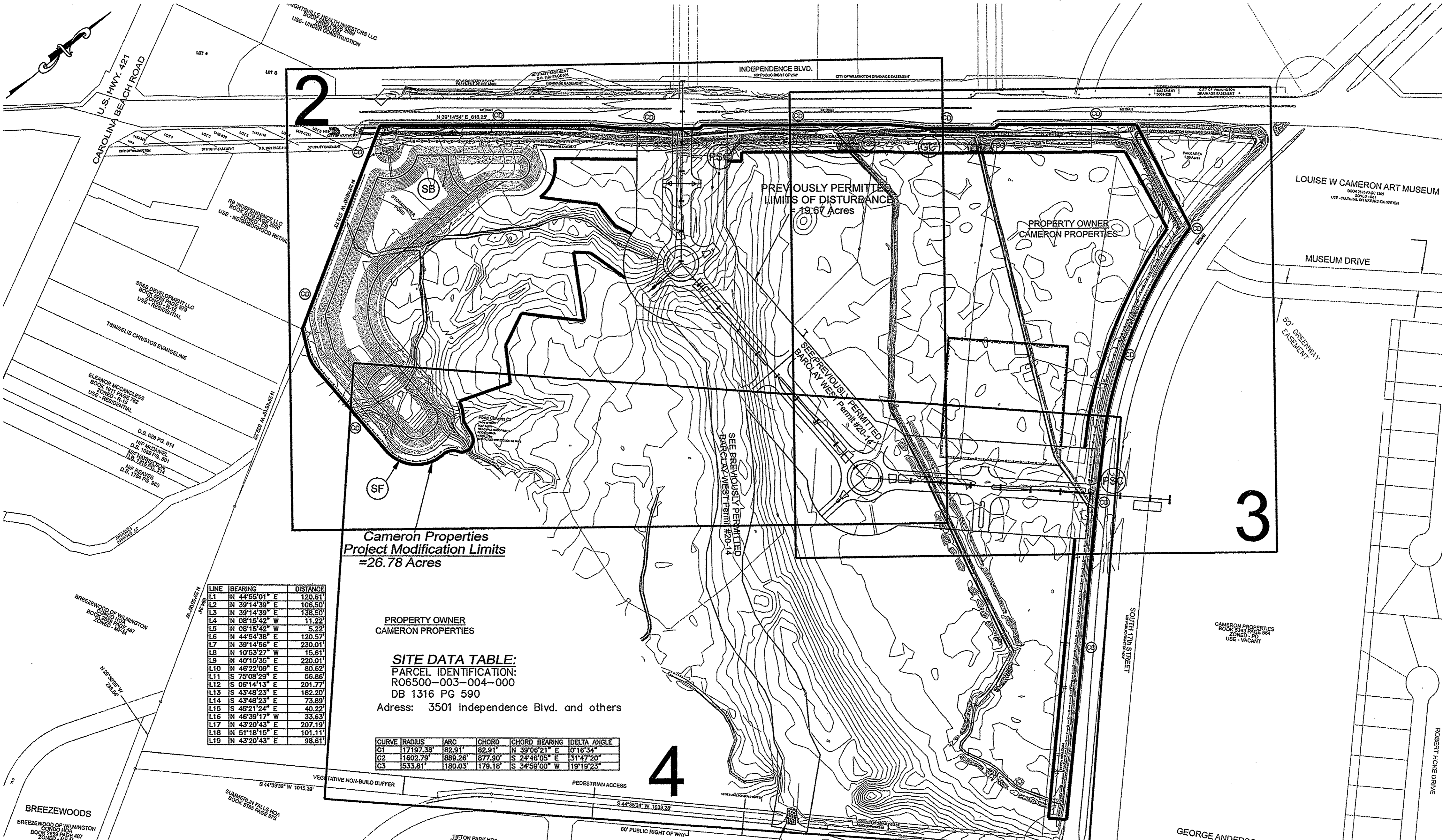
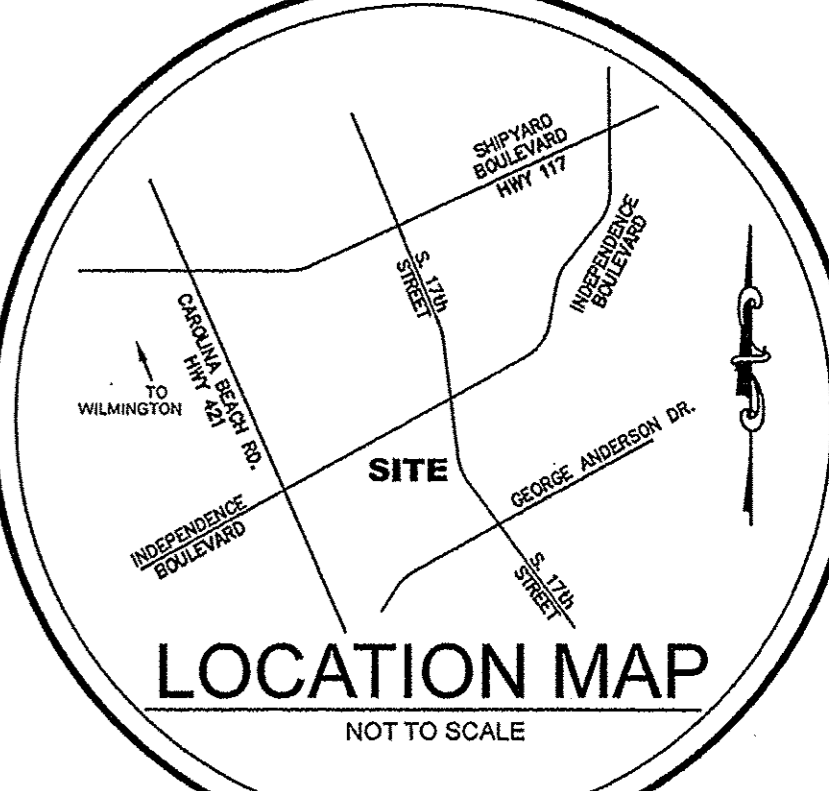
Project: Folders\12498-BARCLAY WEST  
Engineering\12498-BASE.dwg 07-02-14, FINAL ECP.dwg (Layout ECP-1)

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 7/15/15  
PERMIT # 2014013021  
SIGNED [Signature]

Approved Construction Plan  
Name [Signature]  
Date 7-15-15  
Planning [Signature] 7-15-15  
Traffic [Signature] 7-15-15  
Fire [Signature] 7-15-15

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



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 09°15'42" W	5.22
L6	N 42°54'38" E	120.57
L7	N 39°14'56" E	230.01
L8	N 10°53'27" W	15.61
L9	N 40°15'36" E	220.01
L10	N 42°22'09" E	80.62
L11	S 75°08'29" E	56.89
L12	S 06°14'13" E	201.77
L13	S 43°48'23" E	182.50
L14	S 43°48'23" E	73.89
L15	S 49°21'29" E	40.22
L16	N 46°30'17" 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	88.61

PROPERTY OWNER  
CAMERON PROPERTIES  
SITE DATA TABLE:  
PARCEL IDENTIFICATION:  
R06500-003-004-000  
DB 1316 PG 590  
Address: 3501 Independence Blvd. and others

CURVE	RADIUS	ARC	CHORD	CHORD BEARING	DELTA ANGLE
C1	17197.39	82.91	82.91	N 39°08'21" E	0°16'34"
C2	1602.79	889.26	877.30	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 SAV-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:

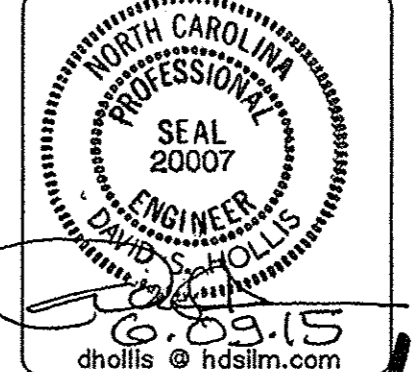
ANY AREAS ON-SITE WITHOUT ACTIVITY SHALL BE STABILIZED WITHIN 15 WORKING DAYS AND AS ABOVE. ALL SLOPES MUST BE STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY ACTIVITY. DETAILS SHOWN ARE TYPICAL OF INSTALLATIONS REQUIRED BY CITY AND COUNTY. THIS SHEET DOES NOT PURPORT TO SHOW ALL REQUIRED CONSTRUCTION DETAILS, BUT BANNER 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.

SHEET No.	DESCRIPTION	DRAWING No.
1 OF 5	COVER SHEET AND GENERAL NOTES	12498-SHT1
2 OF 5	Erosion Control Plans	12498-SHT2
3 OF 5	Erosion Control Plans	12498-SHT3
4 OF 5	Erosion Control Plans	12498-SHT4
5 OF 5	Erosion Control Notes & Additional Details	12498-SHT5

BENCHMARK LOCATIONS AND ELEVATIONS		
LOCATION:	ELEVATION	
1 EX. CONCRETE MONUMENT AT INTERSECTION OF S. 17TH STREET & MUSEUM DRIVE..	42.58	

REV. NO.	REVISIONS	DATE
1	ADDED TEMPORARY STREAM CROSSINGS AS PER NHC	6-2-15

GP# 20-14  
Modified Erosion Control Plan Cover Sheet and General Notes  
**BARCLAY WEST and GALLERY PARK BOULEVARD**  
LOCATED IN THE CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA



OWNER: CAMERON PROPERTIES  
P.O. BOX 3649  
WILMINGTON, N.C. 28406  
PH 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
123 FLORENCE PARKWAY  
WILMINGTON, N.C. 28403  
PH 910-762-2676

Date: 4-21-15  
Scale: 1"=200'  
Drawn: WNP  
Checked: DSH  
Project No: 12498 P1  
Sheet No: 1 of 5

### GENERAL NOTES:

- PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROUPS OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
- 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.
- NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.
- ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND NC DOT STANDARDS.
- ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
- TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
- CONTACT TRAFFIC ENGINEERING AT 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
- CALL TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
- TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
- ALL PARKING STALL MARKINGS & LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
- ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE OWNER.
- STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
- TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
- A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET.
- ANY BROKEN OR MISSING SIDEWALK PANELS OR CURBING WILL BE REPLACED.
- CONTACT THE CITY AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
- WATER AND SEWER SERVICES SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.
- PROJECT SHALL COMPLY WITH CAPE FEAR PUBLIC UTILITY AUTHORITY CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 343-3910 FOR INFORMATION.
- IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 343-3910 FOR INFORMATION.
- ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH RAIN AND FREEZER SENSOR.
- ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USEFOODCOPRSE.
- CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
- CONTRACTOR SHALL MAINTAIN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- 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 910-341-0666.
- NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SIGHT DISTANCE.
- CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-652-4949 PRIOR TO ANY DIGGING, CLEARING OR GRADING.
- ANY 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 IN ALL VALVE AND METER BOXES. ALL WATER MAINS ARE TO HAVE A MINIMUM OF 3' COVER.

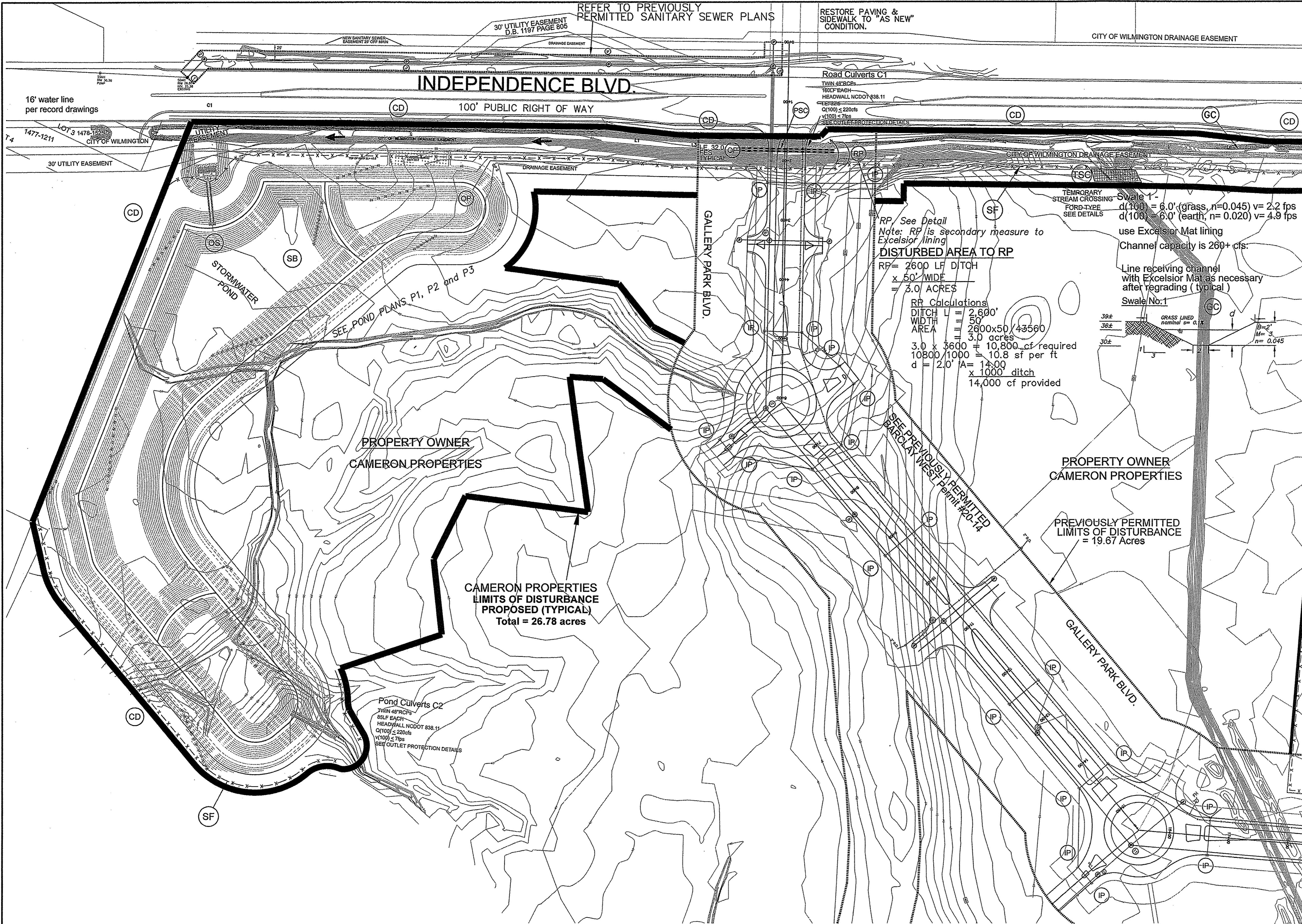
### MORE GENERAL NOTES:

- 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.
- MINIMUM UTILITIES SEPARATION SHALL BE MAINTAINED AS FOLLOWS:
  - a) HORIZONTAL CLEARANCE OF 10 FEET BETWEEN SANITARY SEWER OR STORM SEWERS AND WATER 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 FOOT ON EITHER SIDE OF THE SEWER, 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.
- SEE DETAIL SHEETS FOR TYPICAL UTILITIES HOOKUPS.
- CONTRACTOR TO COORDINATE STAGING OF CONSTRUCTION ACTIVITIES WITH THE OWNER & ARCHITECT TO FACILITATE ONGOING ADJOINING BUSINESS ACTIVITIES.
- 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.

*Gallery Park Blvd. Roadway*

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.

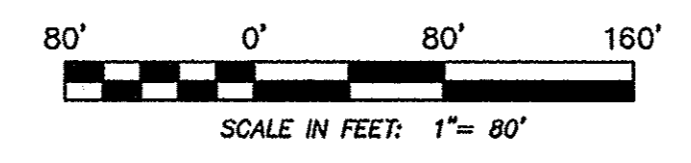
11 of 30 total pgs



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 7/15/15  
 PERMIT # 201403721  
 SIGNED [Signature]

Approved Construction Plan  
 Name Date  
 Planning [Signature] 7-16-15  
 Traffic [Signature] 7-15-15  
 Fire [Signature] 7-15-15



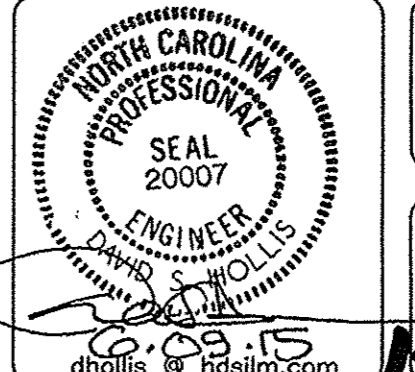
NOTE:  
 THIS PLAN TO BE UTILIZED AND REVIEWED ONLY IN CONJUNCTION WITH THE WRITTEN NARRATIVE, WHICH IS AN INTEGRAL PART OF THIS EROSION AND SEDIMENT CONTROL PLAN.

NOTE:  
 404 WETLANDS DO NOT EXIST ON SITE PER U.S. CORPS OF ENGINEERS DETERMINATION. SEE ACTION SA#-2012-01938. DETERMINATION EXPIRATION DATE 01-18-2018.  
 \*\*\*NOTE WELL:  
 1. EQUIPMENT CLEARANCE MINIMUM 16' FROM TRANSMISSION LINES TO BE MAINTAINED AT ALL TIMES. (REFERENCE: OSHA 1910.269)

STATION 0+00 THROUGH 10+50  
 INDEPENDENCE BLVD.

REV. NO.	REVISIONS	DATE
1	ADDED TEMPORARY STREAM CROSSINGS AS PER NHC	6-2-15

GP# 20-14  
 Modification to Erosion & Sediment Control and Water Quality Plan  
**BARCLAY WEST**  
 GALLERY PARK BOULEVARD  
 WILMINGTON, NORTH CAROLINA

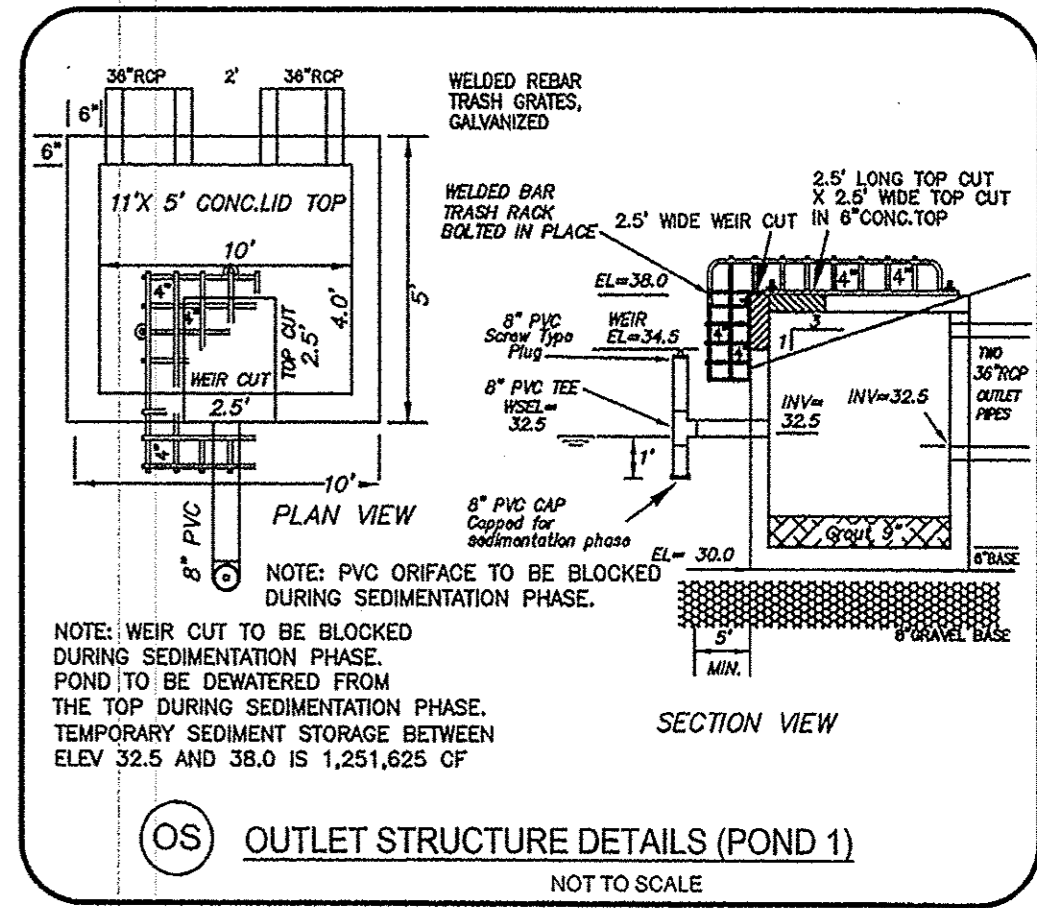


OWNER: CAMERON PROPERTIES  
 P.O. BOX 3549  
 WILMINGTON, N.C. 28406 PH 910-762-2676

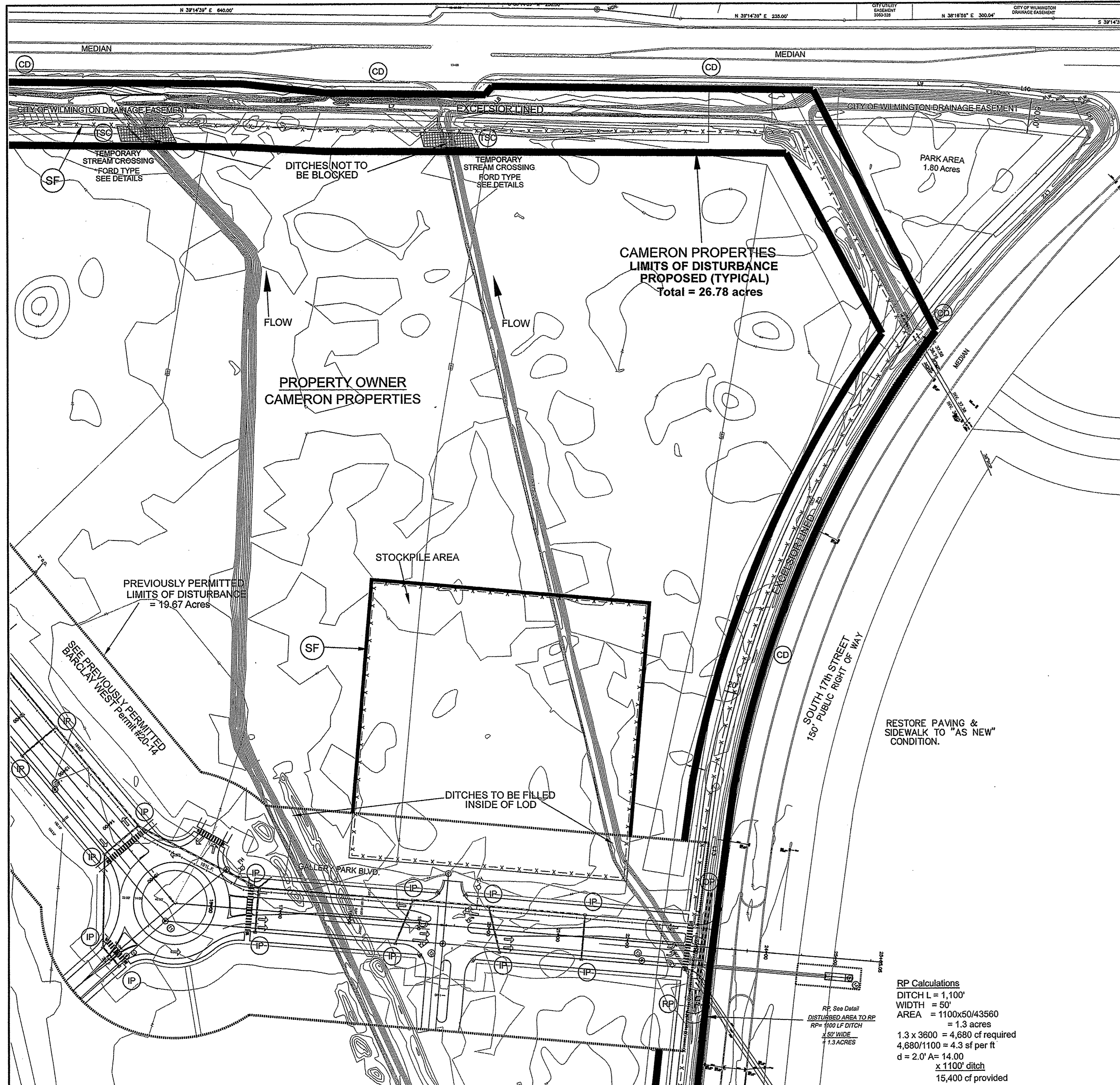
HANOVER DESIGN SERVICES, P.A.  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORAL PARKWAY  
 WILMINGTON, N.C. 28403  
 (910) 743-9002

Date: 4-21-15  
 Scale: HORIZ: 1" = 80'  
 Drawn: WNP  
 Checked: DSH  
 Project No: 12498 P2  
 Sheet No: 5  
 of 5

- PLANNED EROSION AND SEDIMENT CONTROL PRACTICES -
- CE** 1. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE  
 Practice 6.05  
 Shall be installed at the entrances of the proposed project in and from Low Country Boulevard as shown. Drainage is away from the road and sedimentation will be controlled with downstream practices. During wet weather it may be necessary to wash truck tires at these locations.
  - LD** 2. LAND GRADING  
 Practice 6.02  
 Grading should be limited to areas as shown on the Plans. Cut and fill slopes shall be 3:1 or flatter except where specifically indicated. Care shall be taken during land grading activities not to damage existing trees that are not required to be removed.
  - SF** 3. SEDIMENT FENCE  
 Practice 6.62  
 Sediment fencing should be installed as shown on the Plan, first, to delineate and protect low areas, and around any temporary stockpile areas as necessary to prevent any graded interior areas from eroding onto adjacent lands or roadway, or into inlets.
  - PSC** 4. PERMANENT STREAM CROSSING  
 Practice 6.71  
 Permanent stream crossings are to be constructed in the locations shown on the Plan to ensure protection of the existing drainage.
  - GC** 5. GRASS-LINED CHANNELS  
 Practice 6.30  
 All collection ditches to be graded to design configuration, seeded, and stabilized if necessary with temporary straw-net liners to collect and convey site water as shown on Plan. After final project stabilization, ditches to be re-graded and cleaned of siltation as needed to establish original contours for stormwater conveyance.
  - CD** 6. CHECK-DAM  
 Practice 6.83  
 Check dams are to be installed as indicated on plan (approximately every 500 feet) to reduce flow in an open channel, serving as a temporary measure to limit erosion.
  - SB** 7. SEDIMENT BASIN  
 Practice 6.81  
 The Sediment Basins are to be constructed (see Construction Schedule) as the primary practice to prevent sediment from leaving the site. Detailed design and spillway configurations are specified in the details on shown on this Plan and the Narrative. The PVC outlet is to be attached to the slimmer during the sedimentation function until settle watered is permanently stabilized and pond is converted to permanent stormwater management detention / retention function. The Contractor will then install the control orifice to specifications as shown on Sheet 5 and in the calculations.



12 of 30 total pgs



RP Calculations  
 DITCH L = 1,100'  
 WIDTH = 50'  
 AREA = 1100x50/43560  
 = 1.3 acres  
 1.3 x 3600 = 4,680 of required  
 4,680/1100 = 4.3 sf per ft  
 d = 2.0' A = 14.00  
 x 1100' ditch  
 15,400 of provided

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

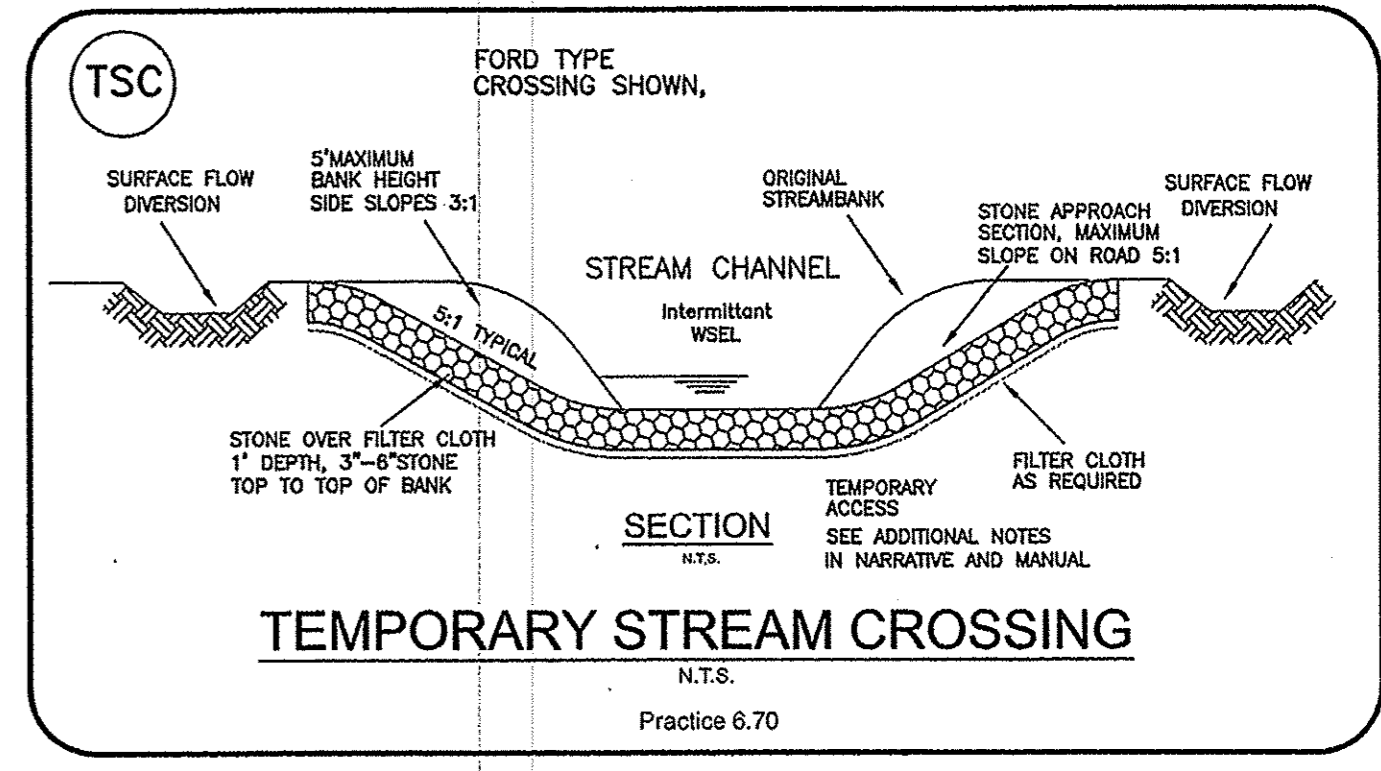
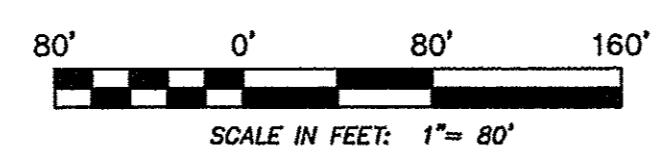
NOTE WELL:  
 1. ALL WORK AND INSTALLATION OF THE LINER MUST BE COMPLETED PRIOR TO ANY RAIN EVENT OR DESIGN OTHER EROSION CONTROL FOR THIS ACTIVITY.

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.

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 7/15/15 PERMIT # 20140321 SIGNED [Signature]

Approved Construction Plan	
Name	Date
Planning [Signature]	7-15-15
Traffic [Signature]	7-15-15
Fire [Signature]	7-15-15



STATION 0+00 THROUGH 10+50 INDEPENDENCE BLVD.

REV. NO.	REVISIONS	DATE
1	ADDED TEMPORARY STREAM CROSSINGS AS PER NHC	6-2-15

GP# 20-14  
 Modification to Erosion & Sediment Control and Water Quality Plan  
**BARCLAY WEST**  
 GALLERY PARK BOULEVARD  
 LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA



OWNER: CAMERON PROPERTIES  
 P.O. BOX 3649  
 WILMINGTON, N.C. 28406 PH 910-762-2676

HANOVER DESIGN SERVICES, P.A.  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLOREAL PARKWAY  
 WILMINGTON, N.C. 28403  
 PHONE (910) 343-4032  
 FAX (910) 343-4032  
 www.hdsil.com

Date: 4-21-15  
 Scale: HORIZ: 1" = 80'  
 Drawn: WNP  
 Checked: DSH  
 Project No: 12498 PJ  
 Sheet No: 3 of 5

13 of 30 total pgs



**Pond Culverts C2**  
 TWIN 48" RCPS  
 85LF EACH  
 HEADWALL NCDOT 838.11  
 Q(100) ≤ 20cfs  
 V(100) ≤ 7fps  
 SEE OUTLET PROTECTION DETAILS

**DISTURBED AREA TO RP**  
 RP= 1100 LF DITCH  
 X 100' WIDE  
 = 2.53 ACRES

RP, See Detail  
 RP Calculations  
 DITCH L = 1,100'  
 WIDTH = 100'  
 AREA = 1100x100/43560  
 = 2.53 acres  
 2.53 x 3600 = 9,108 of required  
 9,108/1100 = 8.28 sf per ft  
 d = 2.0' A= 14.00  
 X 1100' ditch  
 15,400 of provided

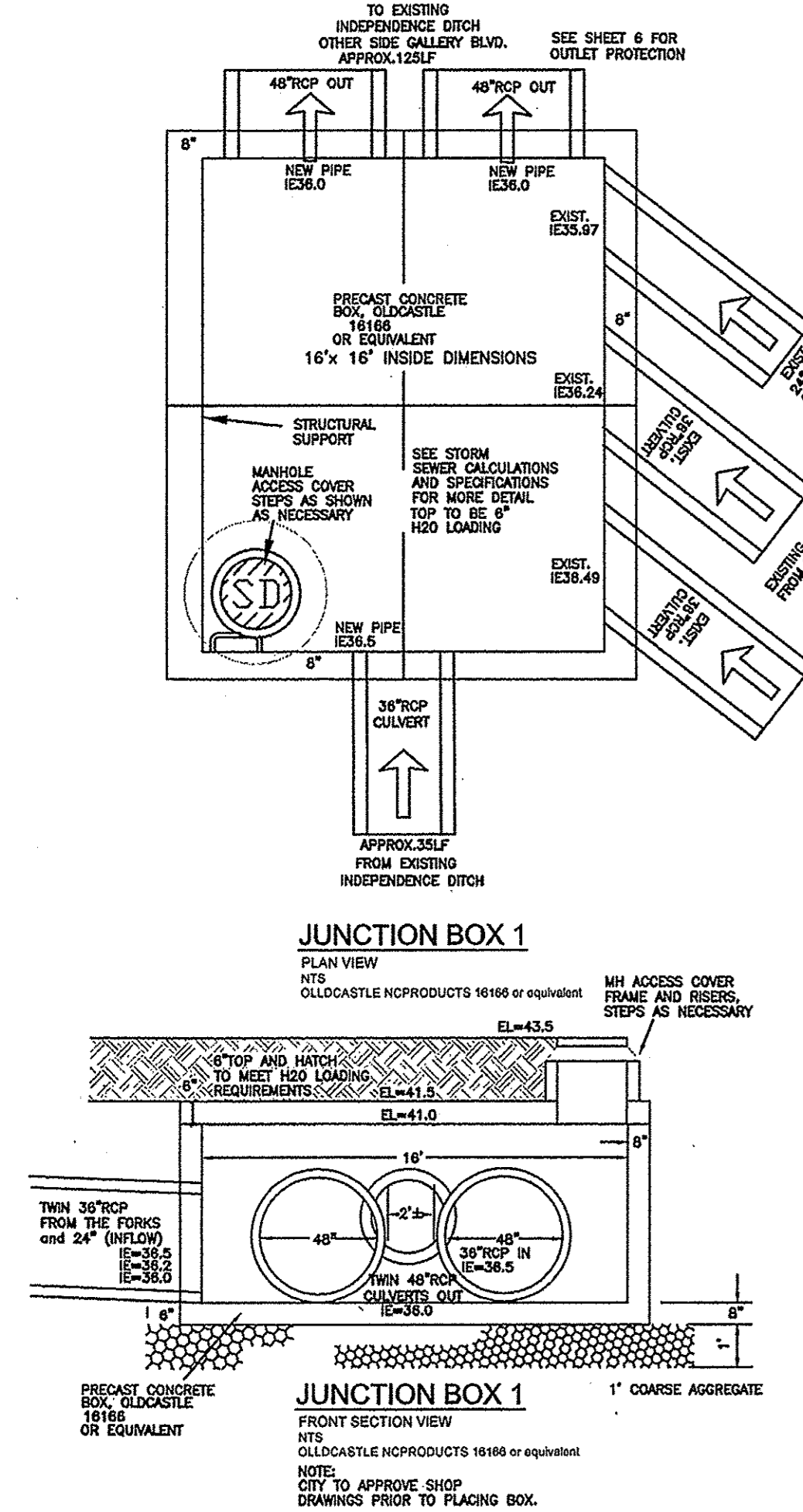
PREVIOUSLY PERMITTED  
 LIMITS OF DISTURBANCE  
 = 19.67 Acres

SEE PREVIOUSLY PERMITTED  
 BARCLAY WEST Permit #20-14

RP, See Detail  
 DISTURBED AREA TO RP  
 RP= 1100 LF DITCH  
 X 50' WIDE  
 = 1.3 ACRES

**CAMERON PROPERTIES  
 LIMITS OF DISTURBANCE  
 PROPOSED (TYPICAL)**  
 Total = 26.78 acres

NO GRADING IN EXISTING SWALE



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 7.15.15  
 PERMIT # 1919013721  
 SIGNED [Signature]

**Approved Construction Plan**

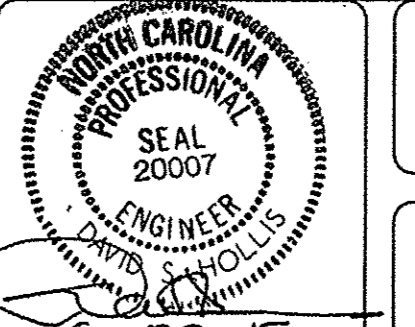
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Planning [Signature]	7-15-15
Traffic [Signature]	7-15-15
Fire [Signature]	7-15-15



STATION 0+00 THROUGH 10+50  
 INDEPENDENCE BLVD.

REV. NO.	REVISIONS	DATE

GP# 20-14  
 Modification to Erosion & Sediment Control and Water Quality Plan  
**BARCLAY WEST**  
 GALLERY PARK BOULEVARD  
 LOCATED IN THE CITY OF WILMINGTON  
 NEW HANOVER COUNTY, NORTH CAROLINA



OWNER: CAMERON PROPERTIES  
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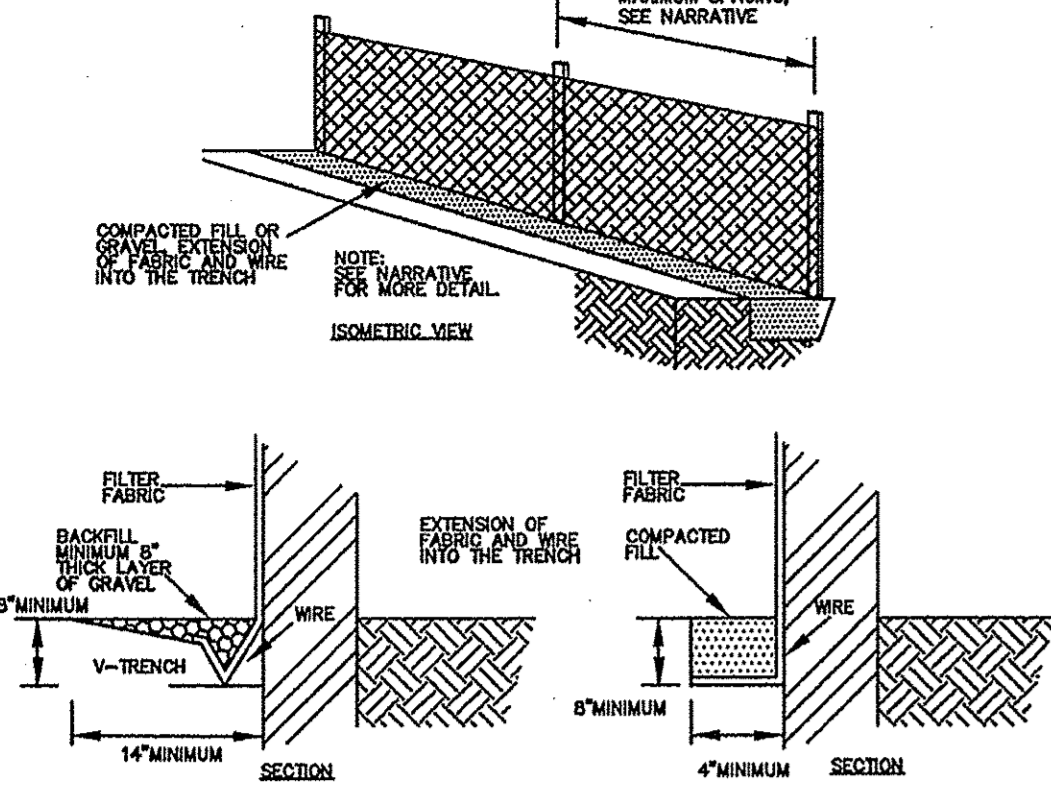
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Sheet No: 4  
 of: 5

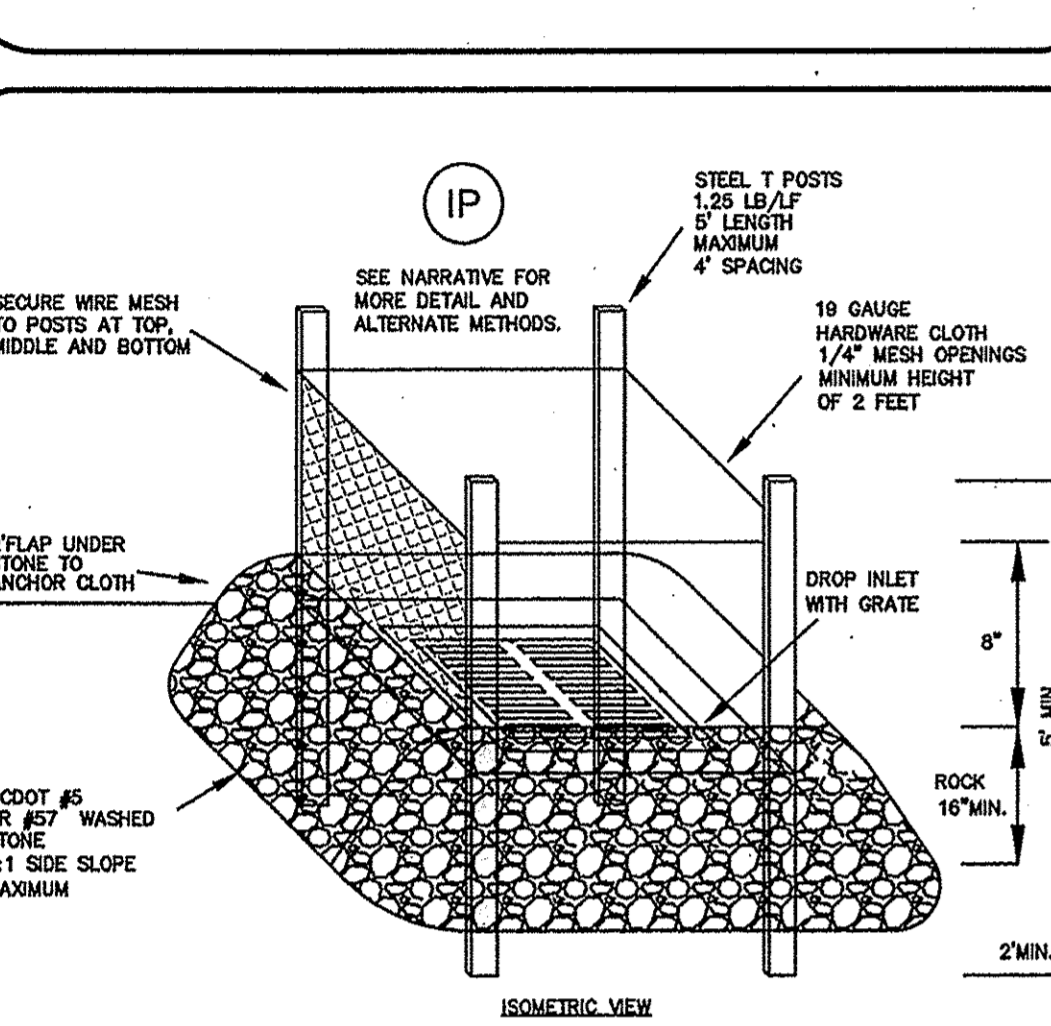
14 of 30 total pgs

P:\All\Project\_Folders\12498-BARCLAY WEST  
 Engineering\12498 BASE.dwg 07-02-14 FINAL ECP.dwg (Layout ECP-4)

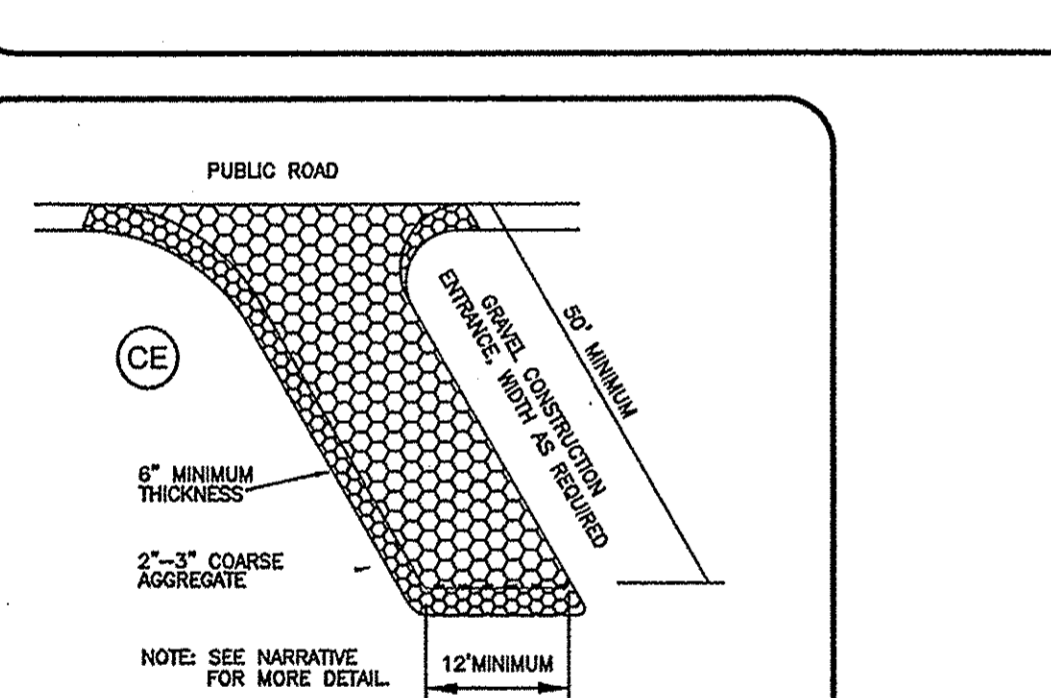
Note: Metal stakes are minimum 4' long, 1.33 lb/LF steel.  
 Note: 8" Max standard strength Fabric w/ wire fence  
 Note: 6" Max extra strength Fabric without wire fence



**SEDIMENT FENCE (SILT FENCE)**  
 PRACTICE 6.02



**HARDWARE CLOTH & GRAVEL INLET PROTECTION**  
 PRACTICE 6.51



**TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT DETAIL**  
 N.T.S.

RCP DIAMETER	La	W	d50	dMAX	APRON	REQ. STONE
ALL 18"	15'	15'	3"	6"	1'	approx. 7cy
ALL 24"	15'	15'	3"	6"	1'	approx. 7cy
ALL 30"	15'	15'	3"	6"	1'	approx. 7cy
ALL 36"	30'	15'	3"	6"	1'	approx. 14cy
ALL 48"	20'	20'	3"	6"	1'	approx. 13cy
ALL 54"	20'	20'	3"	6"	1'	approx. 13cy
ALL 60-66"	20'	20'	3"	6"	1'	approx. 13cy
ROCK STABILIZING APRON	La	W	d50	dMAX	APRON	REQ. STONE
TWIN 48"	20'	20'	3"	6"	1'	approx. 13cy
TWIN 36"	10'	15'	3"	6"	1'	approx. 6cy
TWIN 24"	10'	15'	3"	6"	1'	approx. 6cy
TWIN 18"	10'	15'	3"	6"	1'	approx. 6cy

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

**MORE GENERAL NOTES:**  
 1. ALL CONSTRUCTION TO APPLICABLE STATE AND LOCAL CODES.  
 2. CONTRACTOR TO COORDINATE ANY REQUIRED TRAFFIC CONTROL WITH NCDOT & THE CITY OF WILMINGTON WHERE APPLICABLE.  
 3. CARE SHALL BE TAKEN DURING FINAL GRADING TO ENSURE POSITIVE DRAINAGE TO DRAINAGE SWALES AND RECEIVING STRUCTURES.  
 4. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY RELOCATIONS, RE-ALIGNMENTS, DISCONNECTIONS OR CONNECTIONS OF EXISTING UTILITIES WITH APPLICABLE AUTHORITIES, AND ANY REQUIRED PERMITS.  
 5. 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.

**Check Dams**  
**6.83 Construction Specifications**  
 1. Place stone to the lines and dimensions shown in the plan on a filter fabric foundation.  
 2. Keep the center stone section at least 9 inches below natural ground level where the dam abuts the channel banks.  
 3. Extend stone at least 1.5 ft beyond the ditch banks (Figure 6.83b) to keep overflow water from undercutting the dam on its re-entrant side.  
 4. Set spacing between dams to ensure that the elevation at the top of the lower dam is same as the elevation of the upper dam.  
 5. Protect the channel downstream from the lowest check dam, considering that water will flow over and around the dam (Practice 6.41, Outlet Stabilization Structure).  
 6. Make sure that the channel reach above the most upstream dam is stable.  
 7. Ensure that channel encroachments, such as culvert entrances below check dams, are not subject to damage or blockage from displaced stones.

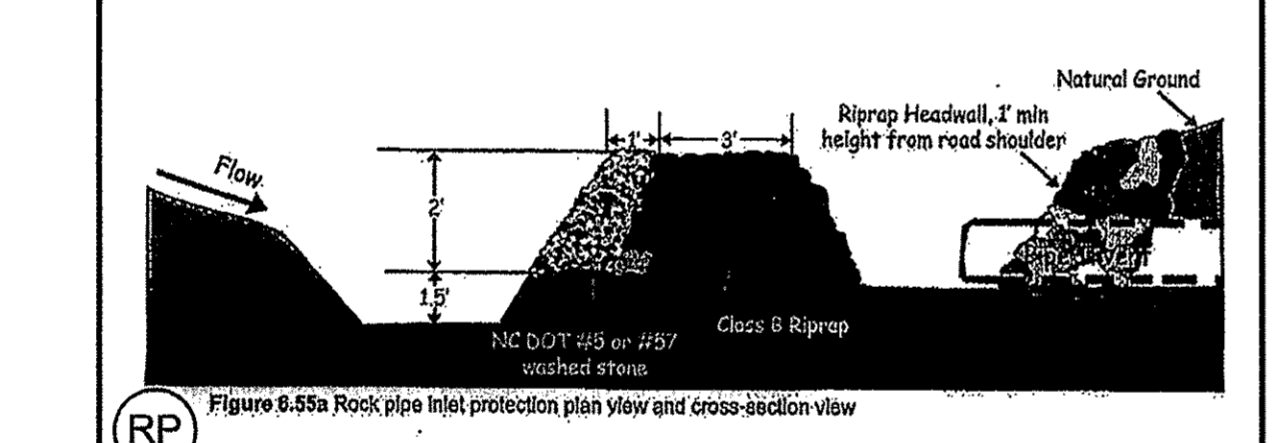
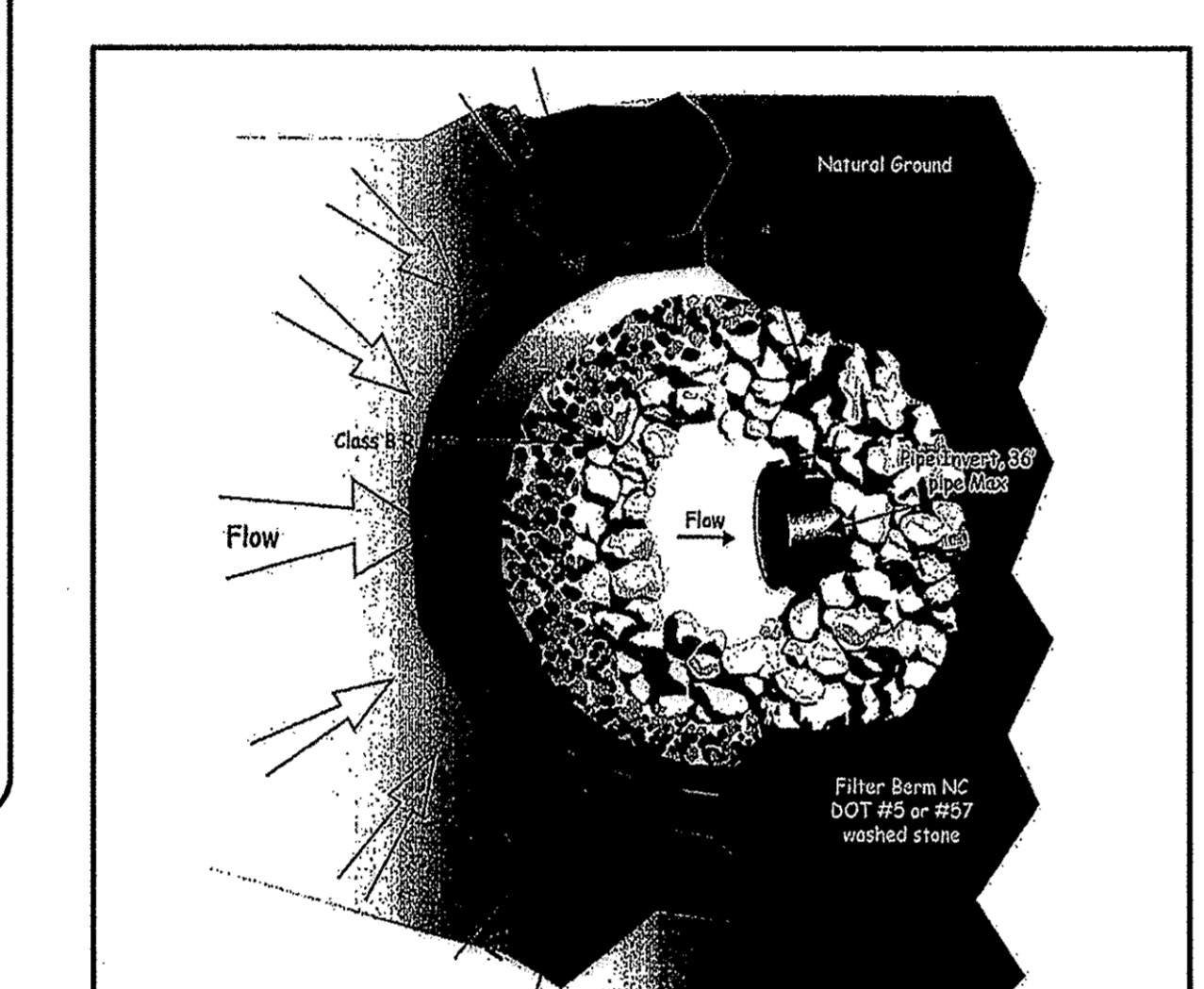
**Maintenance**  
 Inspect check dams and channels for damage after each runoff event. Anticipate subsidence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct erosion immediately. If significant erosion occurs between dams, install a protective riprap liner in that portion of the channel (Practice 6.33, Riprap-lined and Paved Channels). Remove sediment accumulated behind the dams as needed to prevent damage to channel vegetation, size the channel to drain through the stone check dam, and prevent large flows from carrying sediment over the dam. Add stones to dams as needed to maintain design height and cross section.

**Rock Inlet Protection**  
 Specifications # 6.51.1 Construction Specifications

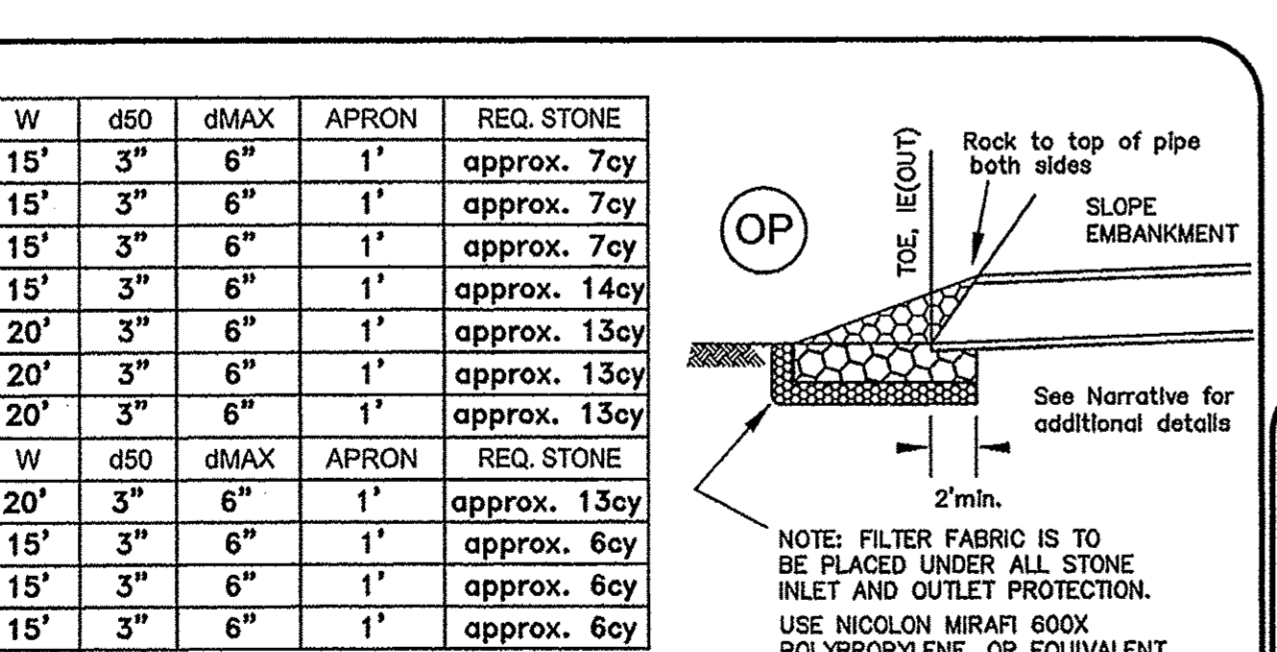
1. Clear the area of all debris that might hinder excavation and disposal of spoil.  
 2. Install the Class B, or Class I riprap in a semi-circle around the pile inlet. The stone should be built up higher on each side where it fits into the embankment. The minimum crest height should be 2 feet, but also 1 foot lower than the shoulder of the embankment or diversion.  
 3. A 1 foot thick layer of NO DOT #5 or #7 stone should be placed on the outside slope of the rip rap.  
 4. The sediment storage area should be excavated around the outside of the stone horseshoe of 18 inches below natural grade. When the contributing drainage area has been stabilized, fill depression and establish final grading elevations, compact core properly and stabilize with ground cover.

**Maintenance**  
 Inspect rock pile inlet protection at least weekly and after each significant (1/2 in or greater) rainfall event and repair immediately. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to the design depth of the trap. Place the sediment that is removed in the designated disposal area and restore the contaminated part of the gravel facing.

**Check the structure for damage.** Any riprap displaced from the stone horseshoe must be replaced immediately. After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover (Surface Stabilization).



**GRASSED CONVEYANCE CHANNELS**  
 N.T.S.



**CHECK DAM DETAIL**  
 NOT TO SCALE

**CONSTRUCTION SCHEDULE -**

- Obtain approval of plan and any necessary permits, and hold a pre-construction conference prior to commencing any work.
- Flag work limits and staking-out primary measures, for preliminary clearing and grubbing, install all fencing entirely along the US Army Corps approved wetlands line as shown.
- Install Gravel Construction Entrances.
- Immediately stabilize all non construction areas.
- Contract any other sediment control Practices shown, prior to rough grading, including stone, stopbank, mulch and topsoil as necessary.
- All erosion and sediment control Practices are to be inspected weekly and after each rainfall event as necessary.
- After site stabilization, temporary measures are to be removed.

**MAINTENANCE PLAN -**

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

**VEGETATIVE PLAN -**

- 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.

**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

**HARDWARE CLOTH & GRAVEL INLET PROTECTION (Temporary)**  
 Specification # 6.51 - Construction Specifications

As fabric, use a 19-gauge hardware cloth with 1/4 inch mesh openings, with a total height of 2 feet minimum. The sediment control unit, with a height of 18 inches, should have an outside slope of 2:1.

Space posts evenly around the perimeter of the inlet, a maximum of 4 feet apart.

**Specifications**

- Uniformly grade a shallow depression approaching the inlet.
- Drive 5-foot steel posts 2 feet into the ground surrounding the inlet. This is done to provide a firm base for the hardware cloth.
- Surround the posts with wire mesh hardware cloth. Secure the mesh to the steel posts at the top, middle, and bottom. Pacing a 2-foot anchoring flap of the mesh under the gravel is recommended.
- Place clean gravel (NO DOT #5 or #7 stone) on a 2:1 slope with a height of 18 inches around the wire, and smooth to an even grade.
- Once the contributing drainage area has been stabilized, remove the accumulated sediment, and establish final grades.
- Compact the area properly and stabilize with groundcover.

**Maintenance**  
 Inspect the barrier after each significant rain and make repair as needed. Sediment to be removed from behind the any inlet protection devices when it becomes 0.5' deep. Remove sediment from the area as necessary to provide adequate storage volume for the next flow. Take care not to damage or undercut the hardware cloth during sediment removal.

When the contributing drainage area has been adequately stabilized, remove all materials and any unstable sediment and dispose of them properly. Bring the disturbed area to the grade of the drop inlet and smooth and compact it. Appropriately stabilize all bare areas around the inlet.

**Land Grading**  
 Specification # 6.02 - Construction Specifications

1. Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and construction schedule.  
 2. Remove spoil topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.  
 3. Spoil areas to be topsoiled to a minimum depth of 2 inches before placing topsoil (Practice 6.04, Topsoiling).  
 4. Clear and grub areas to be used to remove trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.  
 5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.  
 6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.  
 7. Do not incorporate frozen material or soft, mucky, or highly compressible materials into fill slopes.  
 8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.  
 9. Keep diversions and other water conveyance measures free of sediment during all phases of development.  
 10. Handle spoils or springs encountered during construction in accordance with approved methods (Practice 6.01, Subsurface Drain).  
 11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 working days or longer.  
 12. Ensure that topsoil stockpiles, borrow areas, and spoil areas are adequately protected from erosion with temporary and final stabilization measures, including sediment fencing and temporary seeding as necessary.

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

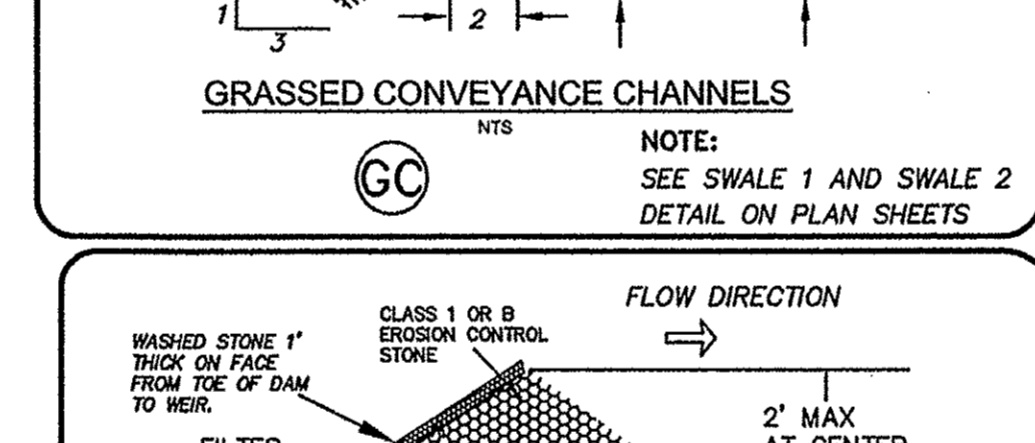
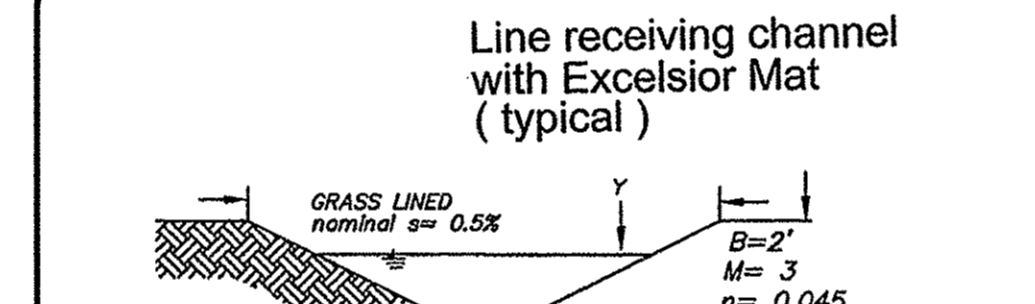
**Line receiving channel with Excelsior Mat (typical)**

**Sediment Fence (Silt Fence)**  
 Specification 6.62 - Construction Specifications

**MATERIALS**

- Use a synthetic filter fabric or a pervious sheet of polypropylene, nylon, polyester, or polyethylene yarn, which is certified by the manufacturer or supplier as conforming to the requirements shown in Table 6.02b. Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120 F.
- Ensure that posts for sediment fences are 1.33 lb/linear ft steel with a minimum length of 4 ft. Make sure that steel posts have projections to facilitate fastening the fabric.
- For reinforcement of standard strength filter fabric, use a fence with a minimum 14 gauge and a maximum mesh spacing of 8 inches.

**Table 6.02a**  
 Specifications For Sediment Fence Fabric  
 Physical Property Requirements  
 Tensile Efficiency - 85% (min)  
 Tensile Strength at Standard Strength - 30 lb/in (min)  
 Extra Strength - 50 lb/in (min)  
 Sturdy Flow Rate - 0.3 gal/sq ft/min (min)



**CHECK DAM DETAIL**  
 NOT TO SCALE

**CONSTRUCTION SCHEDULE -**

- Obtain approval of plan and any necessary permits, and hold a pre-construction conference prior to commencing any work.
- Flag work limits and staking-out primary measures, for preliminary clearing and grubbing, install all fencing entirely along the US Army Corps approved wetlands line as shown.
- Install Gravel Construction Entrances.
- Immediately stabilize all non construction areas.
- Contract any other sediment control Practices shown, prior to rough grading, including stone, stopbank, mulch and topsoil as necessary.
- All erosion and sediment control Practices are to be inspected weekly and after each rainfall event as necessary.
- After site stabilization, temporary measures are to be removed.

**MAINTENANCE PLAN -**

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

**VEGETATIVE PLAN -**

- 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.

**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

**Table 6.11a - Seeding No. 4CP For Well-Drained Sandy Soils to Dry Sands, Coastal Plain; Low to Medium-Care Lame Seeding Mixture**

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

**Table 6.11b - Seeding No. 5CP For Well-Drained Sandy Soils to Dry Sands; Low Maintenance**

Seeding mixture  
 Species Rate  
 Pennstach Bahiagrass 50  
 Sericea lespedeza 30  
 Common Bermudagrass 10  
 Annual millet 10

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

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

**Table 6.11c - Seeding No. 7CP For Grass-Lined Channels; Coastal Plain Seeding Mixture**

Species - Common Bermudagrass - Rate - 40-80 (1/2 lb/1,000 ft)  
 Seeding dates - Coastal Plain; Apr - July  
 Soil amendments - Apply lime and fertilizer according to soil tests, or apply 3,000 lb/acre ground agricultural limestone and 500 lb/acre 10-10-10 fertilizer.  
 Mulch - Use lime, excelsior matting, or other effective channel lining material to cover the bottom of channels and ditches. The lining should extend above the highest calculated depth of flow. On channel side slopes above this height, and in drainage basins not requiring temporary linings, apply 4,000 lb/acre straw and anchor anchor by stapling netting over the top.  
 Mulch and anchoring materials must be allowed to wash down slopes where they can do drainage basins not requiring temporary linings.  
 Maintenance - A minimum of 3 weeks is required for establishment. Inspect and repair much frequently. Refertilize the following April, with 50 lb/acre nitrogen.

**Permanent Seeding**  
 Specifications # 6.11 - Specifications

**Seeded Requirements**  
 Establishment of vegetation should not be attempted on sites that are uncorrected due to inappropriate soil texture (Table 6.11a), poor drainage, concentrated overhead flow, or steepness of slope until measures have been taken to correct these problems.  
 To maintain a good stand of vegetation, the soil must meet certain minimum requirements as a growth medium. The existing soil should have these criteria:  
 - Enough fine-grained (silt and clay) material to maintain adequate moisture and nutrient supply (available water capacity of at least .05 inches water to 1 inch of soil).  
 - Sufficient pore space to permit root penetration.  
 - Sufficient depth of soil to provide an adequate root zone. The depth to rock or impermeable layers such as hardpan should be 12 inches or more, except on slopes steeper than 2:1 where the addition of soil is not feasible.  
 - A favorable pH range for plant growth, usually 6.0-8.5.  
 - Freedom from large roots, branches or hardpan close to earth, or trash of any kind. Clods and stones may be left on slopes steeper than 3:1 if they are to be hydroseeded.

If any of the above criteria are not met, the following criteria are too coarse, dense, shallow or acidic to foster vegetation-suitable amendments are required. The soil conditions described below may be beneficial or, preferably, topsoil may be applied in accordance with Practice 6.04, Topsoiling.

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

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

**Species Selection**  
 Use the key to Permanent Seeding Mixtures (Table 6.11b) to select the most appropriate seeding mixture based on the general site and maintenance factors. A listing of species, including scientific names and characteristics, is given in Appendix 6.02.

**Seeded Preparation**  
 Select an appropriate species or species mixture from Table 6.11a, for seeding in late winter and early spring, Table 6.10b for summer, and Table 6.10c for fall.

**Seeding**  
 Evenly apply seed using a cyclone seeder (broadcast), drill, cutlifter seeder, or hydroseeder. Use seeding rates given in Table 6.11a. Broadcast seeding and hydroseeding are appropriate for steep slopes where equipment cannot be driven. Hand broadcasting is not recommended because of the difficulty in achieving a uniform distribution. Small areas should be planted no more than 1 inch deep, and grasses and legumes no more than 1/2 inch. Broadcast seed must be covered by raking or chain dragging, and then lightly firming with a roller or cutlifter. Hydroseeded mixtures should include a wood fiber (cellulose) mulch.

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

**Table 6.10a - Temporary Seeding Recommendation for Late Winter and Early Spring**

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

**Table 6.10b - Temporary Seeding Recommendations for Summer**

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

**Table 6.10c - Temporary Seeding Recommendation for Full**

Seeding mixture  
 Species - Ryegrass  
 Rate (lb/acre) - 120  
 Seeding dates - Coastal Plain and Piedmont - Aug 15 - Dec. 30  
 Soil amendments - Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.  
 Mulch - Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.  
 Maintenance - Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

**Table 6.10a - Temporary Seeding Recommendation for Late Winter and Early Spring**

Seeding mixture  
 Species - Ryegrass, Annual lespedeza (Kobe in Piedmont and Coastal Plain)  
 Rate (lb/acre) - 120  
 Omit annual lespedeza when duration of temporary cover is not to extend beyond June.  
 Seeding dates - Coastal Plain - Apr. 15 - Apr. 15.  
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 Maintenance - Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

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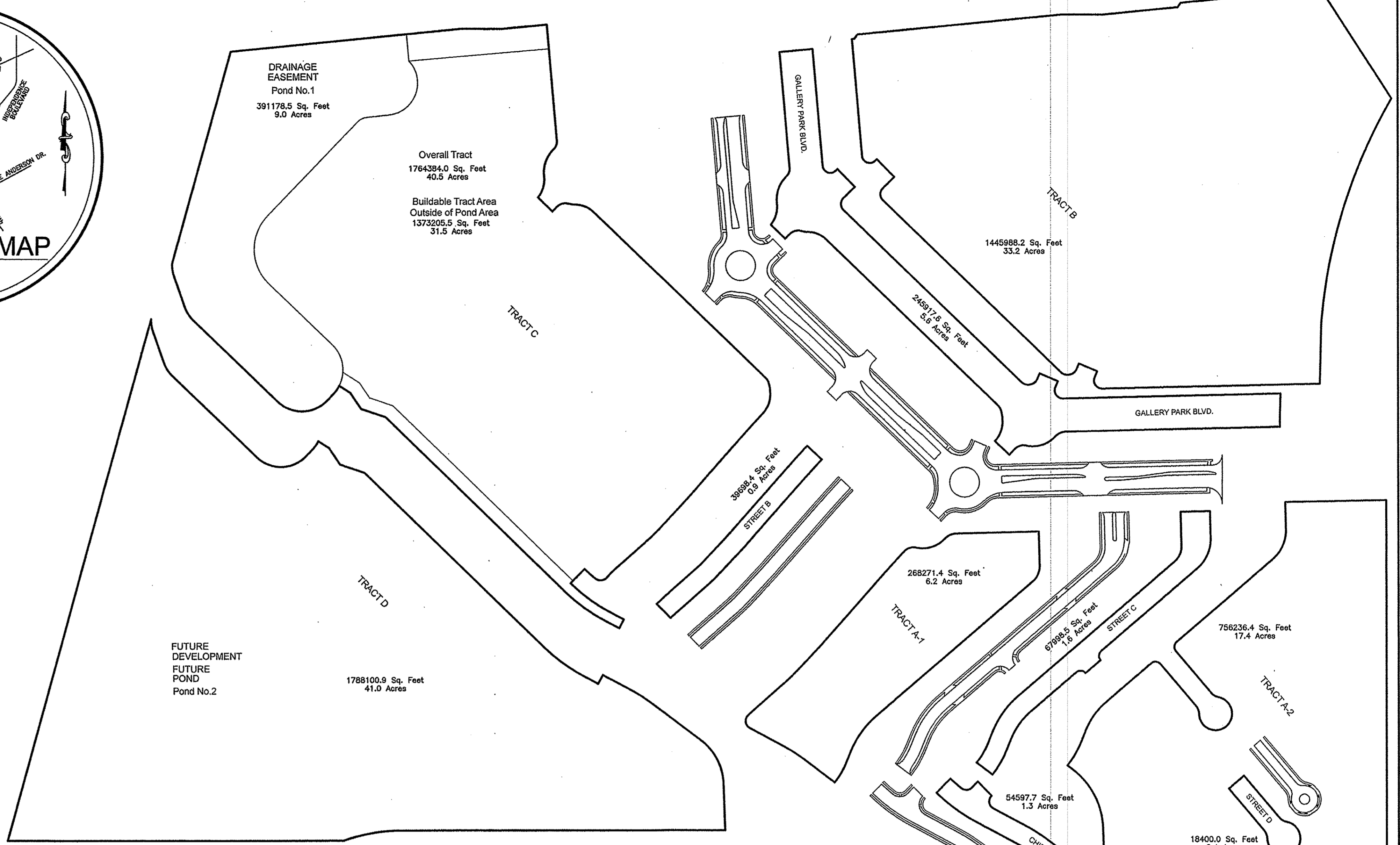
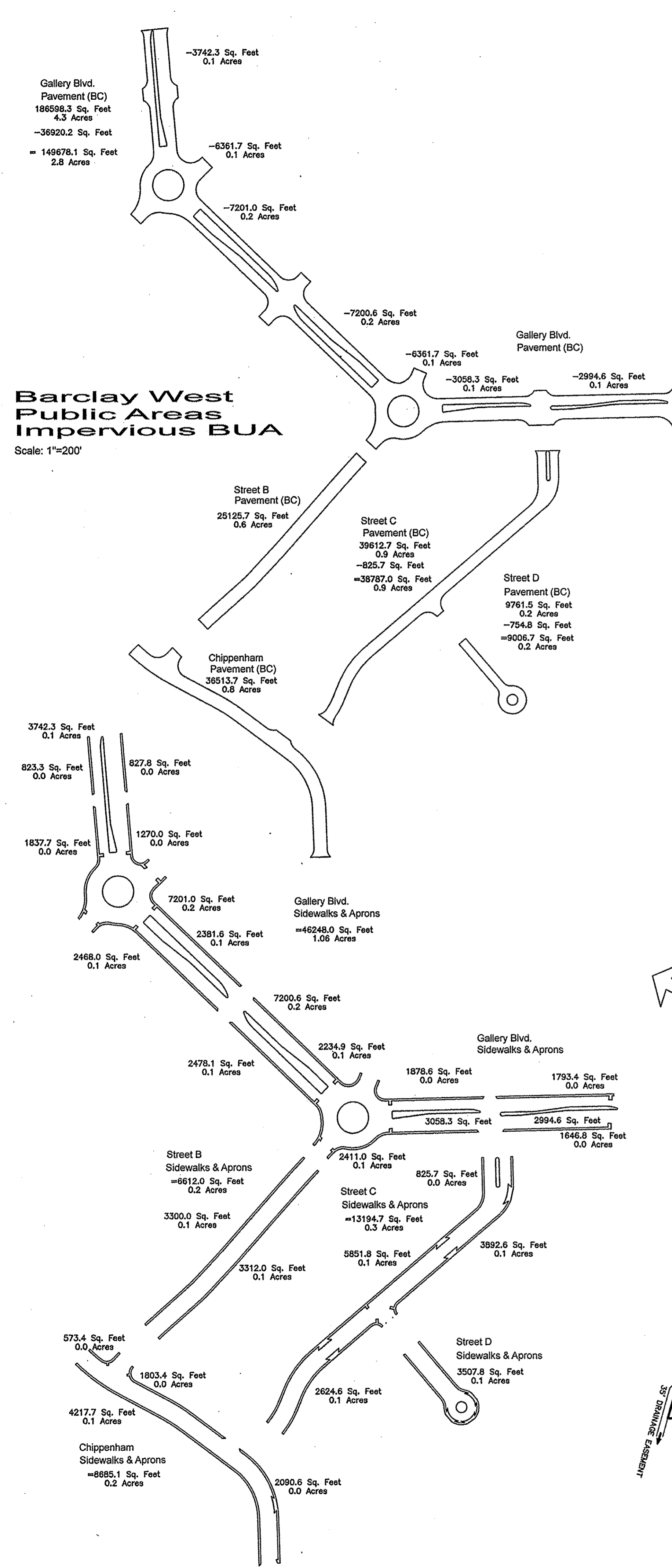
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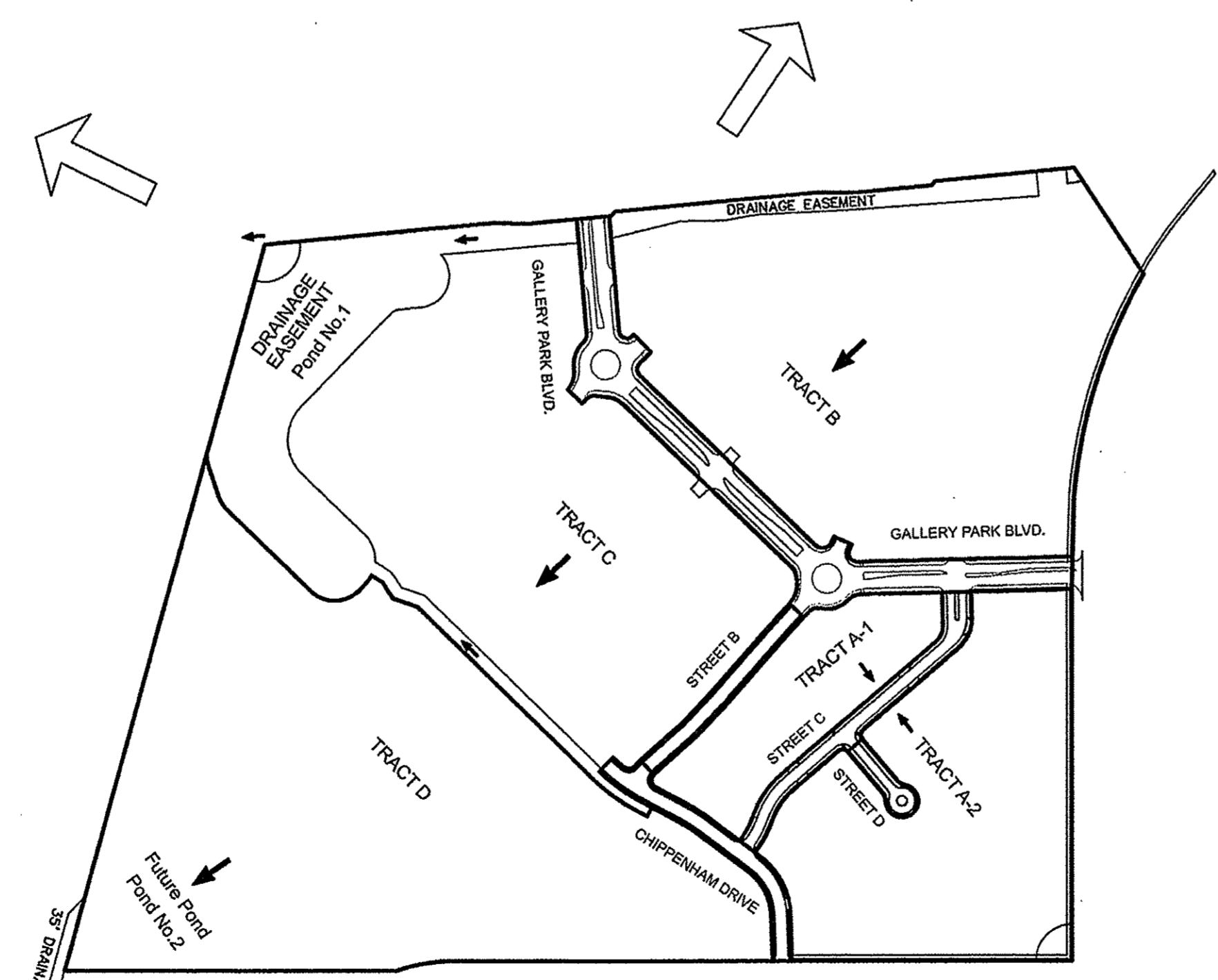
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 Mulch - Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.  
 Maintenance - Refertilize if growth is not fully adequate. Reseed, refertilize and



**Barclay West Tract Areas**  
Scale: 1"=200'



**Barclay West Tract Identifier Map**  
Scale: 1"=400'

**Barclay West - Pond No.1 Areas**

Tract	Area Impervious (BUA) sf	Impervious sf (@75%)	Forebay No.	Street	Area Pmnt (BC) sf	SW, Islands sf	Street BUA sf	Forebay No.
A-1	268,271	201,203	2					
A-2	756,236	567,177	2	Gallery Blvd	245,918	149,678	195,926	1
B	1,446,968	1,084,991	1	Street B	39,698	25,128	31,738	2
Overall C	1,764,394	NA	NA	Street C	67,999	38,787	51,992	2
(+) DE net C	391,179	NA	NA	Street D	18,400	9,007	3,508	2
D	1,373,205	1,029,904	2	Chippenham	54,698	36,514	45,199	2
FUTURE POND								
<b>Totals Tracts</b>	<b>3,843,700</b>	<b>2,882,776</b>		<b>Total Streets</b>	<b>426,613</b>	<b>259,112</b>	<b>78,248</b>	<b>337,360</b>
<b>Total DA</b>	<b>4,661,482</b>			<b>Total Impervious</b>	<b>3,220,135</b>		<b>Total BUA %</b>	<b>69%</b>
Area into Forebay 1	1,691,908		40%					
Area into Forebay 2	2,578,407		60%					
<b>Stormwater Management:</b>								
Pre-developed CN		55'		4,661,482				
Post-developed CN grass		61		1,441,357				
Post-developed CN BUA		98		3,220,135				
Composite Post-developed CN		86		4,661,482				

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 7/15/15  
PERMIT # 201403321  
SIGNED [Signature]

**Approved Construction Plan**

Name	Date
Planning: [Signature]	7-15-15
Traffic: [Signature]	7-15-15
Fire: [Signature]	7-15-15

**Barclay West Tract Areas Summary Spreadsheet**

Scale: NTS

REV. NO.	REVISIONS	DATE
1	MAJOR REVISION TO GALLERY PARK BOULEVARD	1-30-15

Water Quality Pond Plans -- Drainage and BUA Areas  
**Barclay West**  
Regional Pond No. 1 Plans & Profiles and Details  
CITY OF WILMINGTON  
OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
1201 GLEN MEADE ROAD  
WILMINGTON, NC 28403  
910-762-2676

**HANOVER DESIGN SERVICES, P.A.**  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 762-5822 LICENSE No. 0582

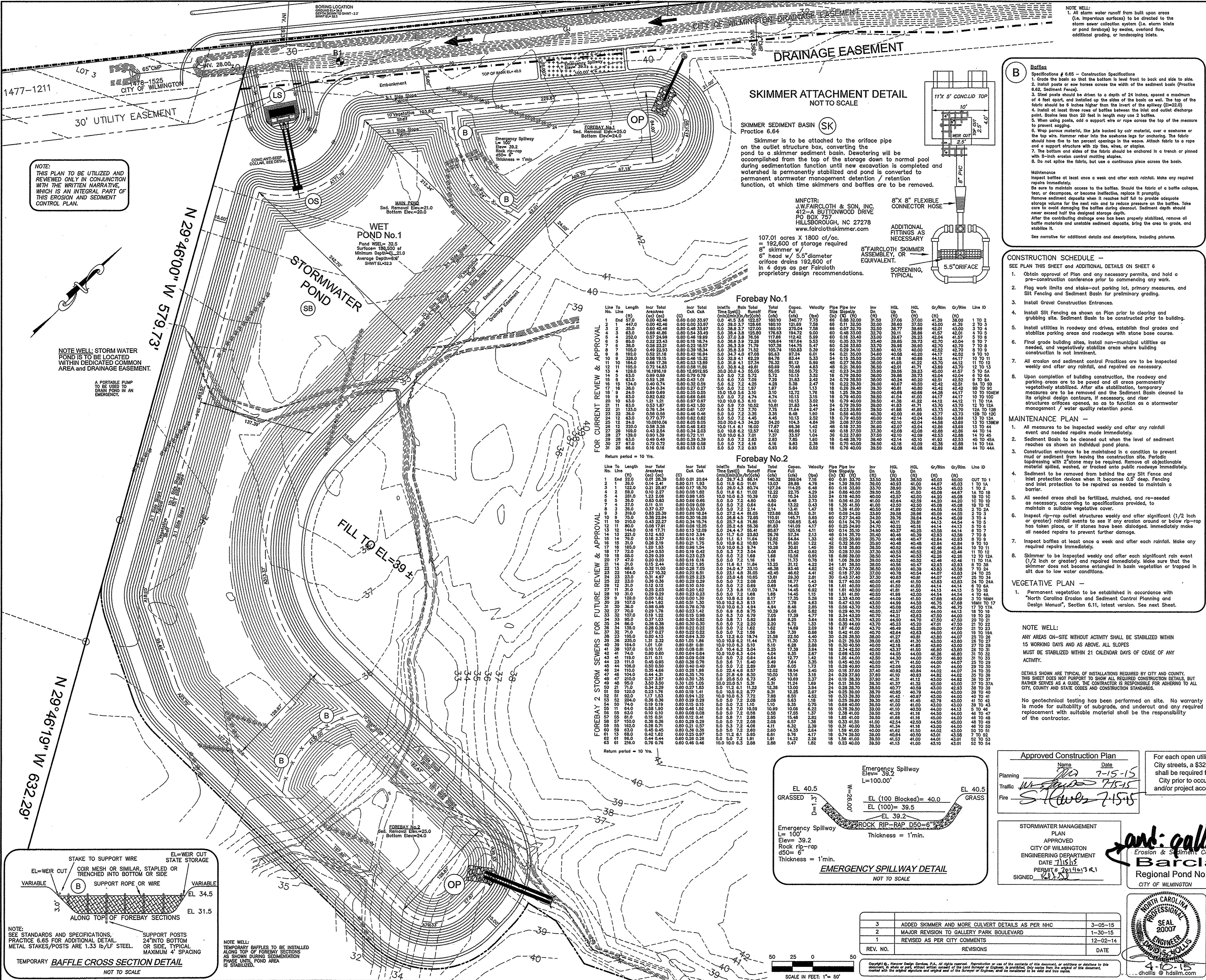
For: **Gallery Park Blvd Roadway**

Date: 10-6-14  
Scale: AS SHOWN  
Sheet: 12498  
Sheet No: P1  
Of: 3

16 of 70 total pgs







**DESIGNER'S PLAN CERTIFICATION:**  
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST CITY OF WILMINGTON ORDINANCES AND STORMWATER DESIGN MANUAL.

SIGNATURE: \_\_\_\_\_  
PRINTED NAME AND TITLE: DAVID S. HOLLIS, PE, PL  
DATE: \_\_\_\_\_  
REGISTRATION NUMBER: PE #0007

**PROPERTY OWNER CERTIFICATION:**  
I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF AUTHORITY TO CONSTRUCT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF THE CITY OF WILMINGTON, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN. AS THE OWNER, I ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROVIDED FACILITIES. I WILL NOT ATTEMPT TO TRANSFER THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF THE CITY OF WILMINGTON.

SIGNATURE: \_\_\_\_\_  
PRINTED NAME AND TITLE: Adair Graham, Jr., Manager Member  
Cameron Properties Land Company, LLC  
DATE: \_\_\_\_\_

**CONSTRUCTION SCHEDULE -**  
SEE PLAN THIS SHEET AND ADDITIONAL DETAILS ON SHEET 6

- Obtain approval of Plan and any necessary permits, and hold a pre-construction conference prior to commencing any work.
- Flag work limits and stake-out parking lot, primary measures, and Silt Fencing and Sediment Basin for preliminary grading.
- Install Gravel Construction Entrances.
- Install Silt Fencing as shown on Plan prior to clearing and grubbing site. Sediment Basin to be constructed prior to building.
- Install utilities in roadway and drives, establish final grades and stabilize parking areas and roadways with stone base course.
- Final grade building sites, install non-municipal utilities as needed, and vegetatively stabilize areas where building construction is not in progress.
- All erosion and sediment control Practices are to be inspected weekly and after any rainfall, and repaired as necessary.
- Upon completion of building construction, the roadway and parking areas are to be paved and all areas permanently vegetatively stabilized. After site stabilization, temporary measures are to be removed and the Sediment Basin cleaned to its original design contours. If necessary, and riser structures orifices opened, so as to function as a stormwater management / water quality retention pond.

**MAINTENANCE PLAN -**

- All measures to be inspected weekly and after any rainfall event and needed repairs made immediately.
- Sediment Basin to be cleaned out when the level of sediment reaches as shown on individual pond plans.
- Construction entrances to be maintained in a condition to prevent mud or sediment from leaving the construction site. Periodic topdressing with 2" stone may be required. Remove all objectionable material spilled, washed, or tracked onto public roadways immediately.
- Siltment to be removed from behind the Silt Fence and inlet protection devices when it becomes 0.5" deep. Fencing and inlet protection to be repaired as needed to maintain a barrier.
- All seeded areas shall be fertilized, mowed, and re-seeded as necessary, according to specifications provided, to maintain a suitable vegetative cover.
- Inspect rip-rap outlet structures weekly and after significant (1/2 inch or greater) rainfall events to see if any erosion around or below rip-rap has taken place, or if stones have been dislodged. Immediately make all needed repairs to prevent further damage.
- Inspect baffles at least once a week and after each rainfall. Make any required repairs immediately.
- Skimmer to be inspected weekly and after each significant rain event (1/2 inch or greater) and repaired immediately. Make sure that the skimmer does not become entangled in basin vegetation or trapped in silt due to low water conditions.

**VEGETATIVE PLAN -**

- 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.

**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.**

**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
Non-erodible surfaces	14 DAYS
Non-erodible surfaces	14 DAYS

**APPROVED CONSTRUCTION PLAN**  
Name: \_\_\_\_\_ Date: 7-15-15  
Planning: \_\_\_\_\_ 7-15-15  
Traffic: \_\_\_\_\_ 7-15-15  
Fire: \_\_\_\_\_ 7-15-15

**STORMWATER MANAGEMENT PLAN**  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE: 7-15-15  
PERMIT # 2014013 R1  
SIGNED: \_\_\_\_\_

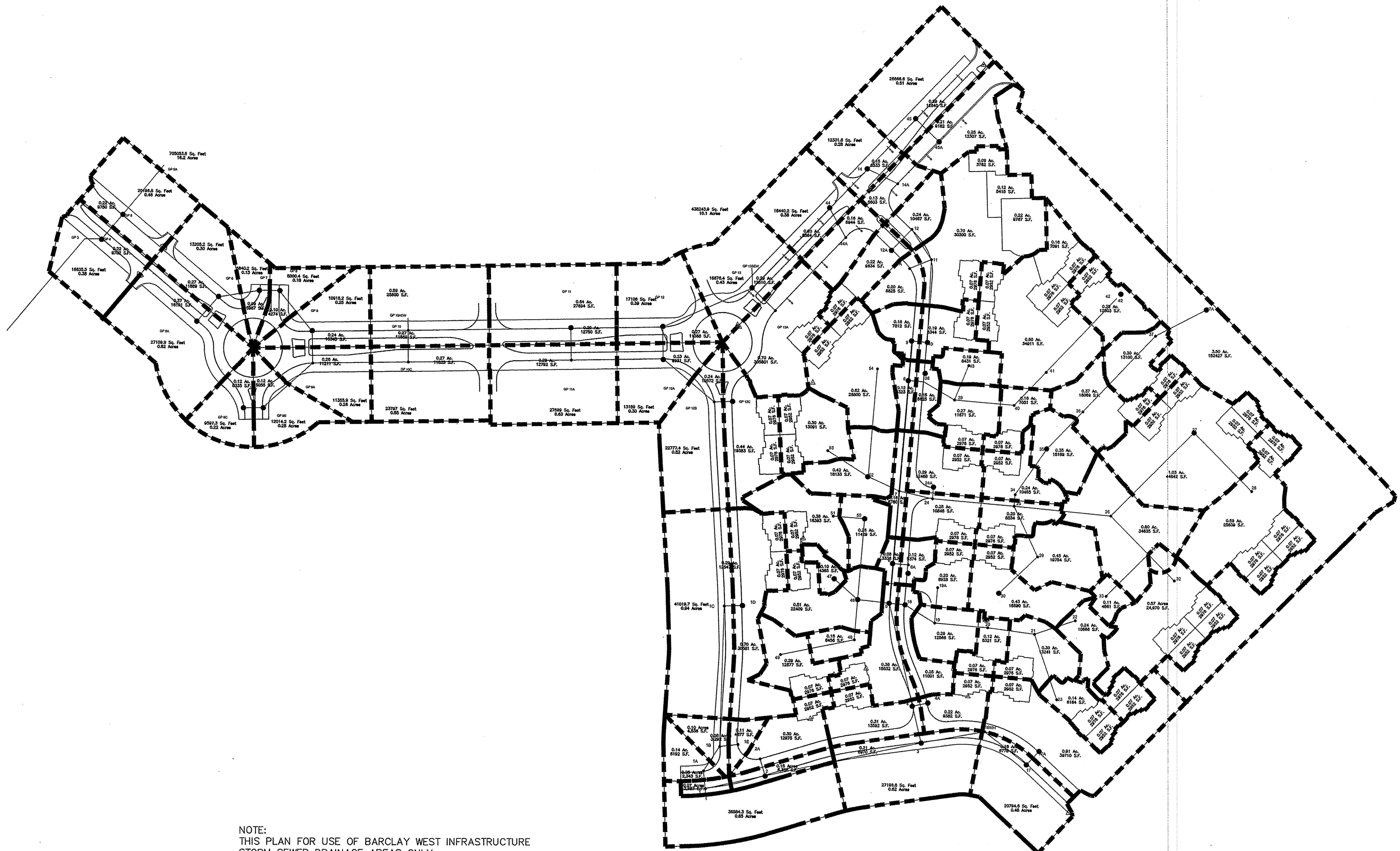
**Regional Pond No.1 Plans & Details**  
CITY OF WILMINGTON  
NEW HAMOVER COUNTY, NORTH CAROLINA

**OWNER:** CAMERON PROPERTIES LAND COMPANY, LLC  
1201 GLEN MEADE ROAD  
WILMINGTON, NC 28403  
910-762-2676

**HANOVER DESIGN SERVICES, P.A.**  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, NC 28403  
910-762-2676

**Sheet No. P3 of 3**

**18 of 30 total pgs**



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

NOTE: THIS PLAN FOR USE OF BARCLAY WEST INFRASTRUCTURE STORM SEWER DRAINAGE AREAS ONLY.

**Barclay West & Gallery Park Apartments Storm Sewer Drainage Areas Map**

Scale: 1"= 100'

STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 7/15/15  
PERMIT # 201101321  
SIGNED [Signature]

Approved Construction Plan  
Name [Signature] Date 7/15/15  
Planning [Signature] 7/15/15  
Traffic [Signature] 7/15/15  
Fire [Signature] 7/15/15

Barclay West Infrastructure -				Drainage Areas Forebay 1			
Inlet	Area	Inlet	Area	Inlet	Area	Inlet	Area
4	0.60	9A	0.52	12A	0.53	45A	0.49
5	0.66	9B	0.40	12B	0.36	44	0.36
5A(future)	16.19	9C	0.34	12C	0.68	44A	0.16
6	0.57	10	0.27	13	0.72		
6A	0.59	10A(EW)	0.59	13B(EW)	16.16		
7	0.22	10C	0.82	13A	0.77		
8	0.28	11	0.93	14	0.43		
9	0.49	11A	0.92	14A	0.13		
		12	0.65	45	0.9		

Gallery Parker Apartments-				Drainage Areas Forebay 2			
Inlet	Area	Inlet	Area	Inlet	Area	Inlet	Area
1	0.07			32	0.65	46	0.56
1A	0.19	8	0.12	19	0.28	33	0.11
1B	0.18	9	0.18	19A	0.27	34	0.31
1C	1.23	10	0.26	20	0.19	35	0.35
1D	0.84	11	1.20	21	0.37	36	0.44
1E	0.11	11A	0.20	22	0.36	37	0.37
2	0.15	12	0.24	23	0.28	37A	3.50
2A	0.37	12A	0.23	24	0.32	38	0.15
3	0.83			24A	0.36	39	0.34
4	0.38			25	0.27	40	0.23
4A	0.29			26	0.80	41	1.17
5	0.43			27	1.31	42	0.36
6	0.08	16MH	0	28	1.01	43	0.19
6A	0.12	17	0.84	29	0.45		
7	0.16	17A	0.98	30	0.50		
		18	0.25	31	0.05		

and: gallery park bv. roadway

Water Quality Pond Plans - Drainage and BUA Areas  
**Barclay West**  
Regional Pond No.1 Plans & Profiles and Details  
CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
1201 GLEN MEADE ROAD  
WILMINGTON, NC 28403  
910-762-2676

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, NC 28403  
PHONE: (910) 833-2800

Professional Engineer Seal: David A. Hollis, License No. 28007, dated 2007.

REV. NO. 2: REVISION TO GALLERY PARK BOULEVARD (2-26-15)  
1: MAJOR REVISION TO GALLERY PARK BOULEVARD (1-30-15)

Sheet No: 1 of 1

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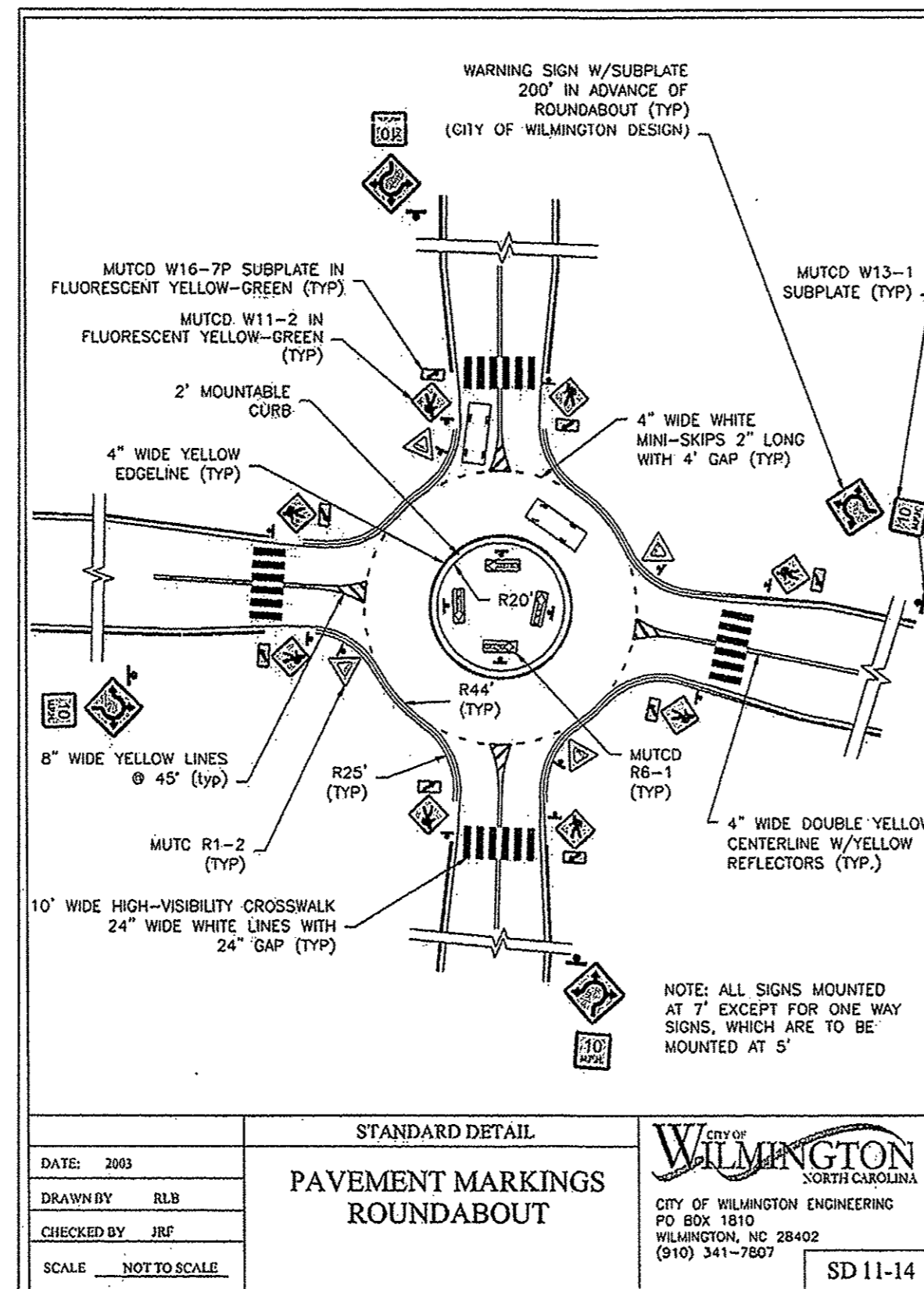
19 of 30 to 1A pgs

# Barclay West Gallery Park Boulevard

## Striping Plan

SCALE: 1"= 40'

INDEPENDENCE BLVD.

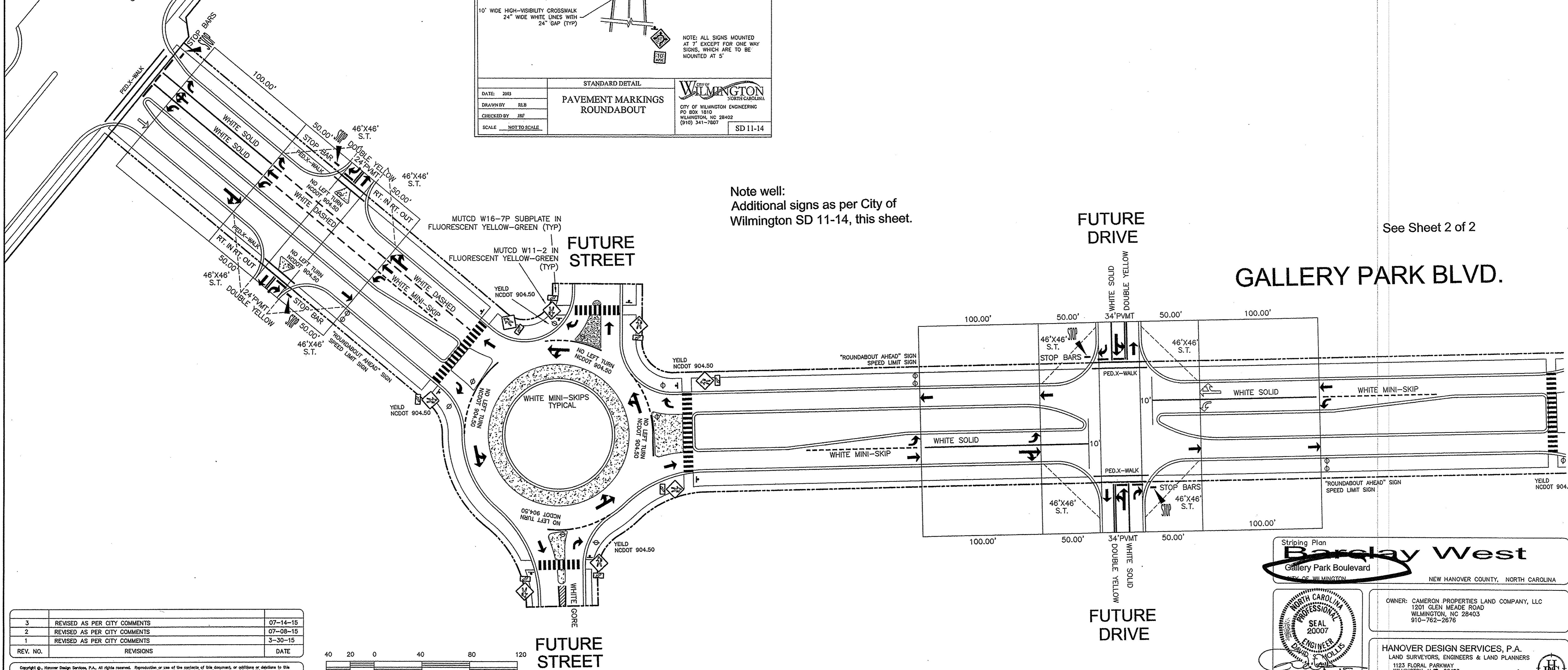


Note well:  
Additional signs as per City of  
Wilmington SD 11-14, this sheet.

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

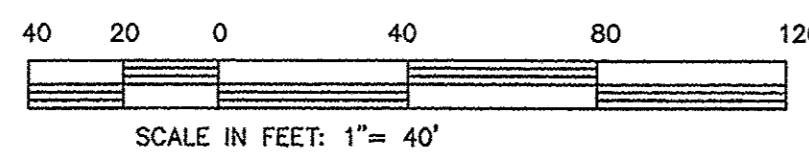
STORMWATER MANAGEMENT  
PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 7/15/15  
PERMIT # 201403021  
SIGNED [Signature]

Approved Construction Plan  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning [Signature] 7-15-15  
Traffic [Signature] 7-15-15  
Fire [Signature] 7-15-15



See Sheet 2 of 2

REV. NO.	REVISIONS	DATE
3	REVISED AS PER CITY COMMENTS	07-14-15
2	REVISED AS PER CITY COMMENTS	07-08-15
1	REVISED AS PER CITY COMMENTS	3-30-15



Striping Plan  
**Barclay West**  
Gallery Park Boulevard  
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: CAMERON PROPERTIES LAND COMPANY, LLC  
1201 GLEN MEADE ROAD  
WILMINGTON, NC 28403  
910-762-2676

HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, NC 28403  
PHONE: (910) 762-2676  
FAX: (910) 762-2676  
www.hdsim.com

Professional Engineer Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20007, DANIEL W. HOLLIS, ENGINEER, 7/14/15, dhollis@hdsim.com

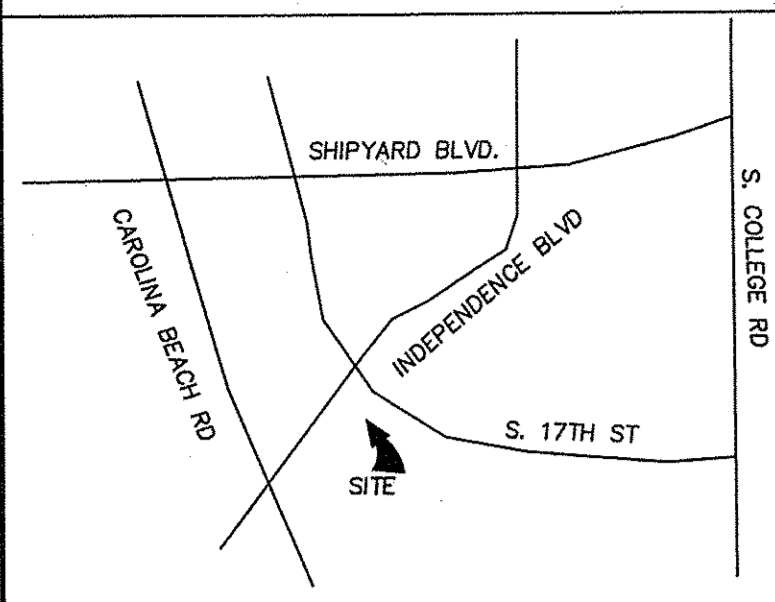
Date: 1-30-15  
Scale: AS SHOWN  
Drawn: DSH  
Checked: GAW  
Project No: 12498  
Sheet No: 1  
2

20 of 30 total pgs



**LOCATION MAP**

NOT TO SCALE



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

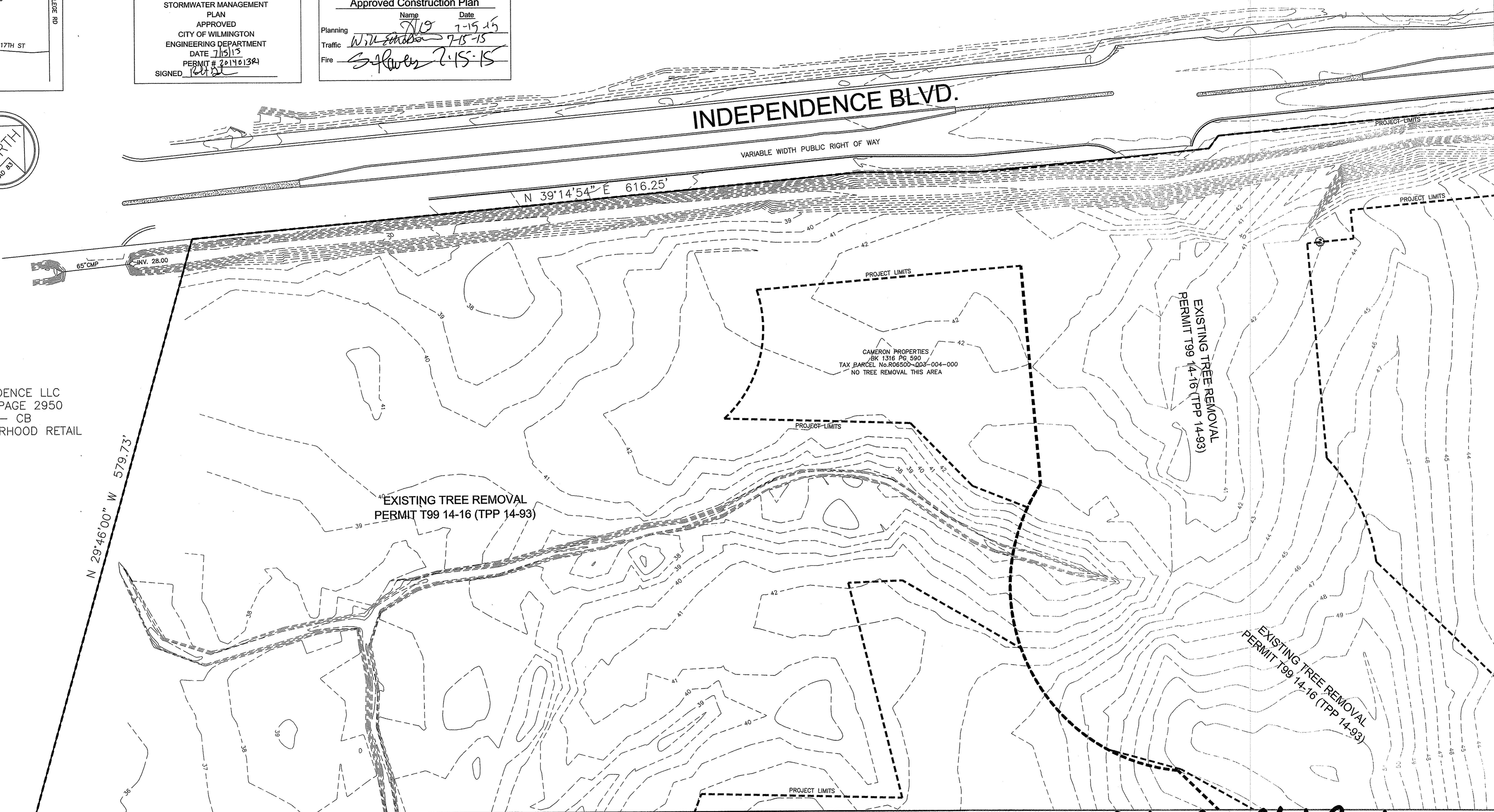
**STORMWATER MANAGEMENT PLAN**  
 APPROVED  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE 7/15/15  
 PERMIT # 201401324  
 SIGNED [Signature]

**Approved Construction Plan**

Name: [Signature] Date: 7-15-15  
 Planning: [Signature] 7-15-15  
 Traffic: [Signature] 7-15-15  
 Fire: [Signature] 7-15-15



RB INDEPENDENCE LLC  
 BOOK 5179 PAGE 2950  
 ZONED - CB  
 USE - NEIGHBORHOOD RETAIL



**LEGEND**

- EXISTING PROPERTY LINE
- - - PROPOSED PROPERTY LINE
- - - - PROJECT LIMITS

**SITE INVENTORY NOTES**

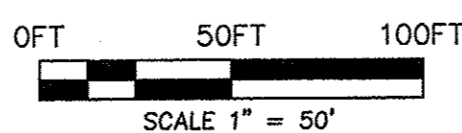
1. SOILS TYPE - Mu, Le, Rm, Ly  
 Mu - MURVILLE FINE SAND  
 Le - LEON SAND  
 Rm - RIMINI SAND  
 Ly - LYNN HAVEN FINE SAND
2. THIS PROPERTY IS NOT IMPACTED BY ANY AEC.
3. NO CONSERVATION OVERLAY BOUNDARIES
4. SITE DOES NOT APPEAR TO BE IMPACTED BY ANY HISTORIC OR ARCHEOLOGICAL SIGNIFICANCE.
5. NO EVIDENCE OF CEMETERIES FOUND
6. NO JURISDICTIONAL WETLAND ON SITE
7. NO EVIDENCE OF ENDANGERED SPECIES FOUND ON SITE
8. THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA ACCORDING TO FEMA FIRM 3720312500J DATE APRIL 3, 2006
9. CAMA LAND USE CLASSIFICATION - URBAN
10. SITE DRAINS INTO BARNARDS CREEK, INDEX No. 18-80 CLASSIFICATION C:Sw

**GENERAL NOTES**

1. TAX PARCEL No. R06500-003-004-000
2. SURVEYED JUNE - DEC. 2013
3. SITE ADDRESS - 3501 INDEPENDENCE BLVD.
4. CAMA LAND USE CLASSIFICATION - URBAN
5. ALL DISTANCES ARE HORIZONTAL
6. ALL ELEVATIONS ARE NGVD 1988

**TREE PRESERVATION NOTES**

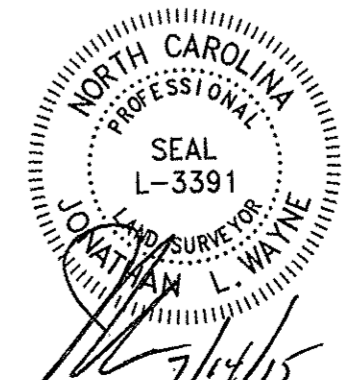
1. TREE PRESERVATION / REMOVAL PERMIT IS REQUIRED PRIOR TO CLEARING AND LAND DISTURBANCE
2. ANY REGULATED OR SIGNIFICANT TREES WITHIN STREETYARDS, AND ALL TREES WITHIN BUFFER YARDS OR BEYOND LIMITS OF ESSENTIAL SITE IMPROVEMENTS ARE REQUIRED TO BE PROTECTED AND PRESERVED. EXISTING TREES WITHIN CONSTRUCTION LIMITS SHOULD BE SPADED AND REPLANTED ELSEWHERE ON SITE WHEN FEASIBLE.
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4. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
5. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.



EXISTING CONDTIONS		
REV. NO.	REVISIONS	DATE

*Gallop Park Blvd. Roadway and J*

**BARCLAY WEST INFRASTRUCTURE**  
 LOCATED IN THE CITY OF WILMINGTON, NORTH CAROLINA

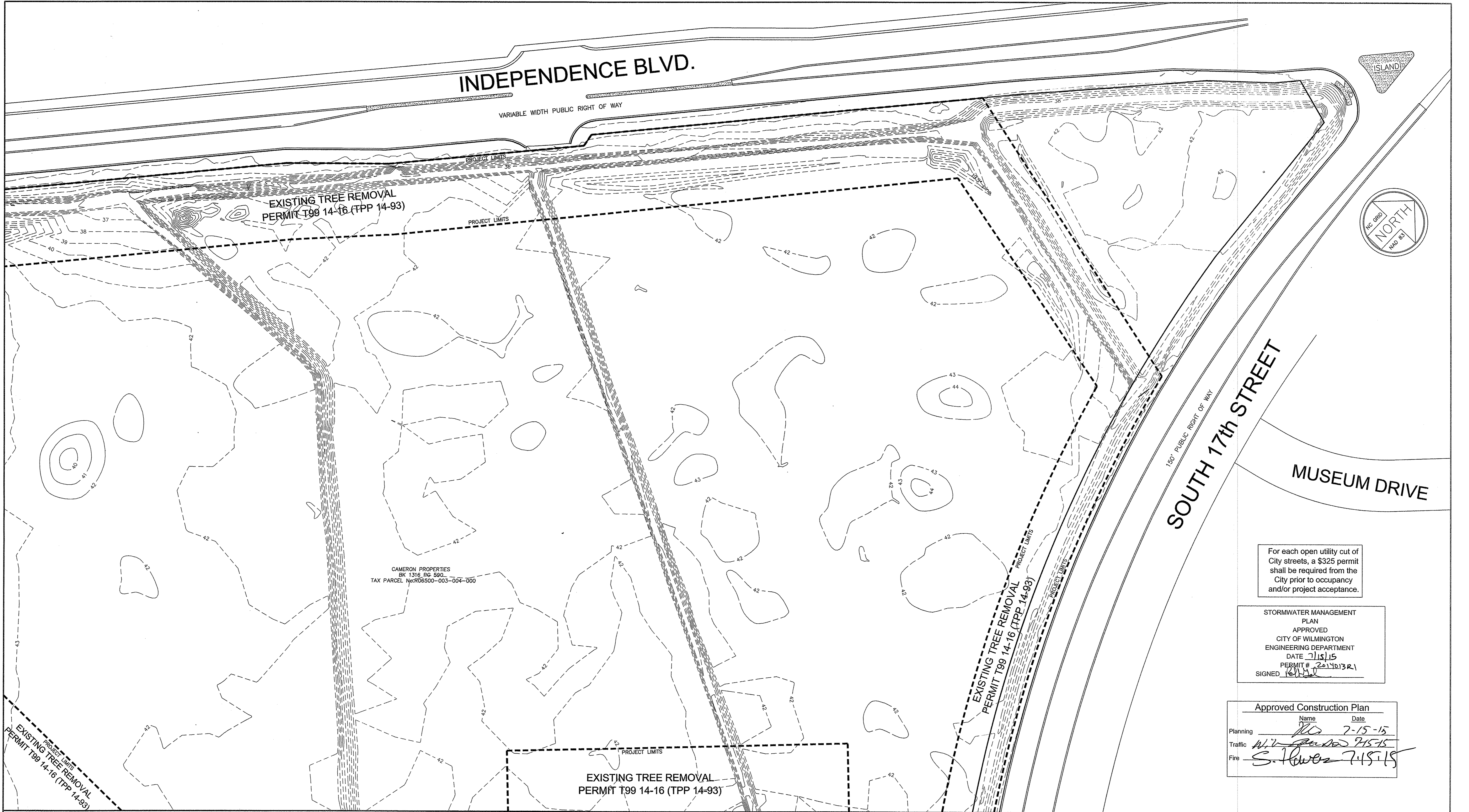


OWNER: CAMERON PROPERTIES  
 P.O. BOX 3649  
 WILMINGTON, N.C. 28406 PH 910-762-2676

**HANOVER DESIGN SERVICES, P.A.**  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORAL PARKWAY  
 WILMINGTON, N.C. 28403  
 PH 910-762-543-8262

Date: 04/16/15  
 Scale: HORZ.: 1" = 50'  
 Drawn: J. WAYNE  
 Checked: J. WAYNE  
 Project No: 12498  
 Sheet No: 1 of 5

*22 & 30 total pgs*



CAMERON PROPERTIES  
BK 1318 PG 500  
TAX PARCEL No. R06500-003-004-000

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 7/15/15  
PERMIT # 201401321  
SIGNED [Signature]

Approved Construction Plan  
Name: [Signature] Date: 7-15-15  
Planning: [Signature] 7-15-15  
Traffic: [Signature] 7-15-15  
Fire: [Signature] 7-15-15

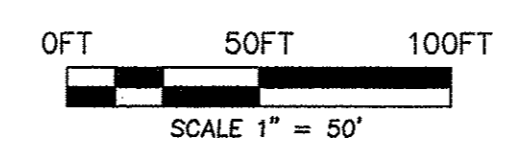
**LEGEND**  
 - - - - - EXISTING PROPERTY LINE  
 - - - - - PROPOSED PROPERTY LINE  
 - - - - - PROJECT LIMITS

**SITE INVENTORY NOTES**  
 1. SOILS TYPE - Mu, Le, Rm, Ly  
 Mu - MURVILLE FINE SAND  
 Le - LEON SAND  
 Rm - RIMINI SAND  
 Ly - LYNN HAVEN FINE SAND  
 2. THIS PROPERTY IS NOT IMPACTED BY ANY AEC.  
 3. NO CONSERVATION OVERLAY BOUNDARIES  
 4. SITE DOES NOT APPEAR TO BE IMPACTED BY ANY HISTORIC OR ARCHEOLOGICAL SIGNIFICANCE.  
 5. NO EVIDENCE OF CEMETERIES FOUND  
 6. NO JURISDICTIONAL WETLAND ON SITE  
 7. NO EVIDENCE OF ENDANGERED SPECIES FOUND ON SITE  
 8. THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA ACCORDING TO FEMA FIRM 3720312500J DATE APRIL 3, 2006  
 9. CAMA LAND USE CLASSIFICATION - URBAN  
 10. SITE DRAINS INTO BARNARD'S CREEK, INDEX No. 18-80 CLASSIFICATION C:Sw

**GENERAL NOTES**  
 1. TAX PARCEL No. R06500-003-004-000  
 2. SURVEYED JUNE - DEC. 2013  
 3. SITE ADDRESS - 3501 INDEPENDENCE BLVD.  
 4. CAMA LAND USE CLASSIFICATION - URBAN  
 5. ALL DISTANCES ARE HORIZONTAL  
 6. ALL ELEVATIONS ARE NGVD 1988

**TREE PRESERVATION NOTES**  
 1. TREE PRESERVATION / REMOVAL PERMIT IS REQUIRED PRIOR TO CLEARING AND LAND DISTURBANCE  
 2. ANY REGULATED OR SIGNIFICANT TREES WITHIN STREETYARDS, AND ALL TREES WITHIN BUFFER YARDS OR BEYOND LIMITS OF ESSENTIAL SITE IMPROVEMENTS ARE REQUIRED TO BE PROTECTED AND PRESERVED. EXISTING TREES WITHIN CONSTRUCTION LIMITS SHOULD BE SPADED AND REPLANTED ELSEWHERE ON SITE WHEN FEASIBLE.  
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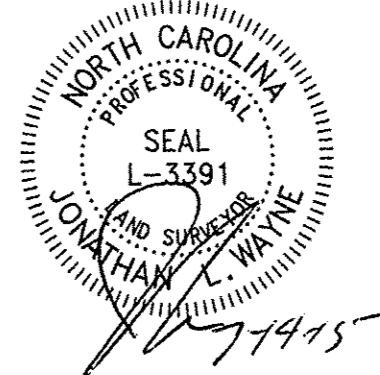
REV. NO.	REVISIONS	DATE



**EXISTING CONDITONS**

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*gallary park by roadway and*  
**BARCLAY WEST INFRASTRUCTURE**  
 LOCATED IN THE CITY OF WILMINGTON NEW HANOVER COUNTY, NORTH CAROLINA



OWNER: CAMERON PROPERTIES  
 P.O. BOX 3649  
 WILMINGTON, N.C. 28406 PH 910-762-2676

**HANOVER DESIGN SERVICES, P.A.**  
 LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
 1123 FLORAL PARKWAY  
 WILMINGTON, N.C. 28403  
 PH 910-762-2676

Date: 04/16/15  
 Scale: HORZ.: 1" = 50'  
 Drawn: J. WAYNE  
 Checked: J. WAYNE  
 Project No: 12498  
 Sheet No: 2  
 of: 5

*23 of 30 total pgs*



EXISTING TREE REMOVAL  
PERMIT T99 14-16 (TPP 14-93)

EXISTING TREE REMOVAL  
PERMIT T99 14-16 (TPP 14-93)

CAMERON PROPERTIES  
BK 1316 PG 590  
TAX PARCEL No. R06500-003-004-000

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

STORMWATER MANAGEMENT  
PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 7/15/15  
PERMIT # 201401321  
SIGNED [Signature]

Approved Construction Plan  
Name Date  
Planning [Signature] 7-15-15  
Traffic [Signature] 7-15-15  
Fire [Signature] 7-15-15

LEGEND  
——— EXISTING PROPERTY LINE  
- - - - - PROPOSED PROPERTY LINE  
- - - - - PROJECT LIMITS

SITE INVENTORY NOTES  
1. SOILS TYPE - Mu, Le, Rm, Ly  
Mu - MURVILLE FINE SAND  
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Rm - RIMINI SAND  
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6. NO JURISDICTIONAL WETLAND ON SITE  
7. NO EVIDENCE OF ENDANGERED SPECIES FOUND ON SITE  
8. THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA ACCORDING TO FEMA FIRM 3720312500J DATE APRIL 3, 2009  
9. CAMA LAND USE CLASSIFICATION - URBAN  
10. SITE DRAINS INTO BARNARDS CREEK, INDEX No. 18-80 CLASSIFICATION C:Sw

GENERAL NOTES  
1. TAX PARCEL No. R06500-003-004-000  
2. SURVEYED JUNE - DEC. 2013  
3. SITE ADDRESS - 3501 INDEPENDENCE BLVD.  
4. CAMA LAND USE CLASSIFICATION - URBAN  
5. ALL DISTANCES ARE HORIZONTAL  
6. ALL ELEVATIONS ARE NGVD 1988

TREE PRESERVATION NOTES  
1. TREE PRESERVATION / REMOVAL PERMIT IS REQUIRED PRIOR TO CLEARING AND LAND DISTURBANCE OR BEYOND LIMITS OF ESSENTIAL SITE IMPROVEMENTS ARE REQUIRED TO BE PROTECTED AND PRESERVED. EXISTING TREES WITHIN CONSTRUCTION LIMITS SHOULD BE SPADED AND REPLANTED ELSEWHERE ON SITE WHEN FEASIBLE.  
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0FT 50FT 100FT  
SCALE 1" = 50'

EXISTING CONDITONS

REV. NO.	REVISIONS	DATE

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Gallery Park Blvd and J

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

OWNER: CAMERON PROPERTIES  
P.O. BOX 3849  
WILMINGTON, N.C. 28406 PH 910-762-2676

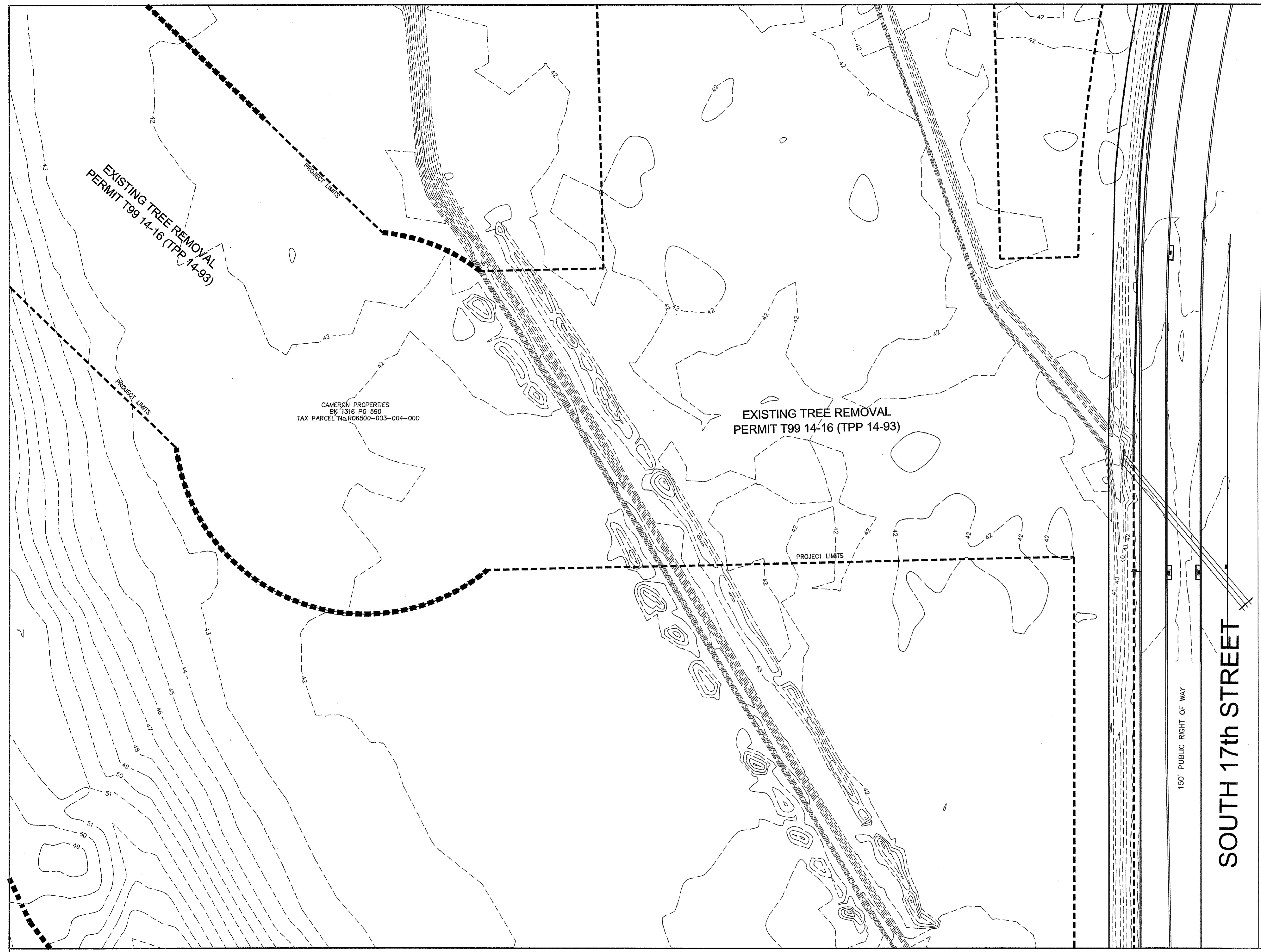
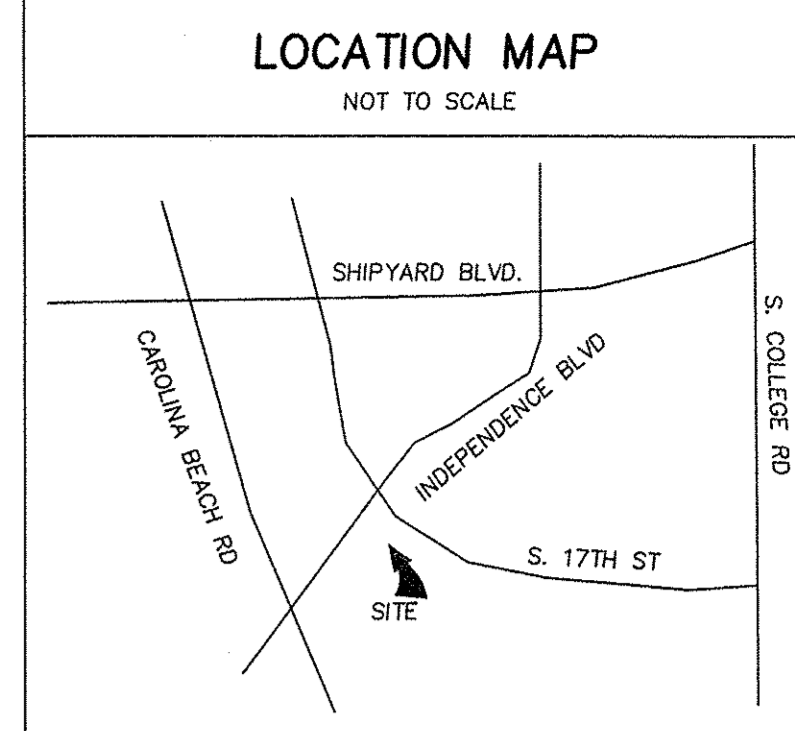
HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PH (910) 243-8922

Date: 04/16/15  
Scale: HORZ.: 1" = 50'  
Drawn: J. WAYNE  
Checked: J. WAYNE  
Project No: 12498  
Sheet No: 3 of 5

Seal: NORTH CAROLINA PROFESSIONAL SURVEYOR L-3391 J. WAYNE

24 of 30 total pgs





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 7/15/15 PERMIT # 254013(R) SIGNED [Signature]

Approved Construction Plan		
	Name	Date
Planning	[Signature]	7-15-15
Traffic	[Signature]	7-15-15
Fire	[Signature]	7-15-15

- LEGEND**
- EXISTING PROPERTY LINE
  - PROPOSED PROPERTY LINE
  - PROJECT LIMITS

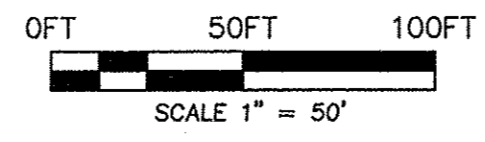
- SITE INVENTORY NOTES**
- SOLS TYPE - Mu, Le, Rm, Ly  
Mu - MURVILLE FINE SAND  
Le - LEON SAND  
Rm - RIMINI SAND  
Ly - LYNN HAVEN FINE SAND
  - THIS PROPERTY IS NOT IMPACTED BY ANY AEC.
  - NO CONSERVATION OVERLAY BOUNDARIES
  - SITE DOES NOT APPEAR TO BE IMPACTED BY ANY HISTORIC OR ARCHEOLOGICAL SIGNIFICANCE.
  - NO EVIDENCE OF CEMETERIES FOUND
  - NO JURISDICTIONAL WETLAND ON SITE
  - NO EVIDENCE OF ENDANGERED SPECIES FOUND ON SITE
  - THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA ACCORDING TO FEMA FIRM 3720312500J DATE APRIL 3, 2006
  - CAMA LAND USE CLASSIFICATION - URBAN
  - SITE DRAINS INTO BARNARDS CREEK, INDEX No. 18-80 CLASSIFICATION C:SW

- GENERAL NOTES**
- TAX PARCEL No. R06500-003-004-000
  - SURVEYED JUNE - DEC. 2013
  - SITE ADDRESS - 3501 INDEPENDENCE BLVD.
  - CAMA LAND USE CLASSIFICATION - URBAN
  - ALL DISTANCES ARE HORIZONTAL
  - ALL ELEVATIONS ARE NGVD 1988

- TREE PRESERVATION NOTES**
- TREE PRESERVATION / REMOVAL PERMIT IS REQUIRED PRIOR TO CLEARING AND LAND DISTURBANCE
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  - NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
  - PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.

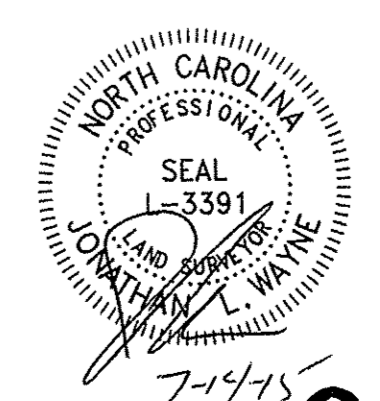
**EXISTING CONDITONS**

REV. NO.	REVISIONS	DATE



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

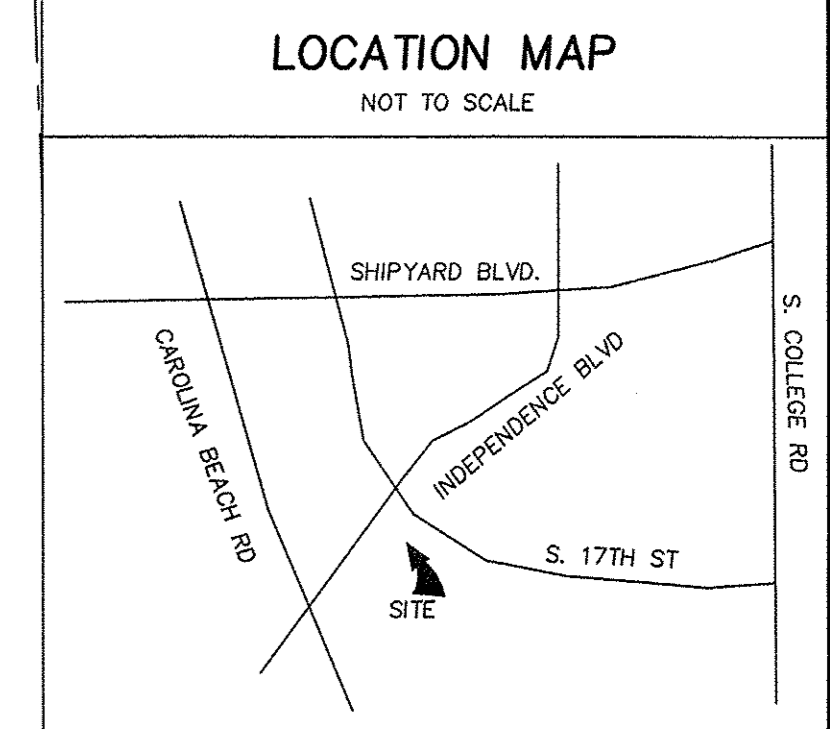
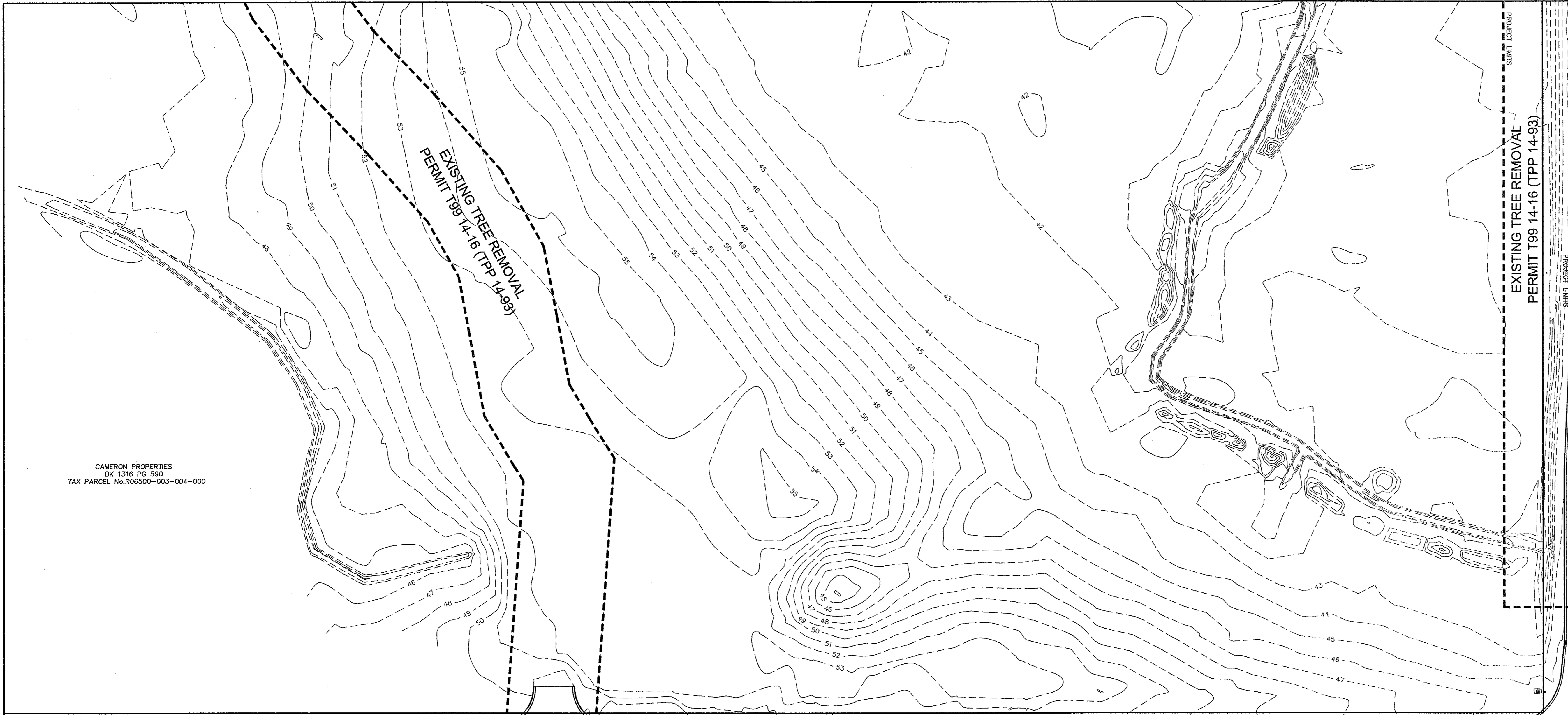


OWNER: CAMERON PROPERTIES  
P.O. BOX 3849  
WILMINGTON, N.C. 28406 PH 910-762-2676

**HANOVER DESIGN SERVICES, P.A.**  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1125 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 343-8002

Date: 04/16/15  
Scale: HORZ.: 1" = 50'  
Drawn: J. WAYNE  
Checked: J. WAYNE  
Project No: 1249B  
Sheet No: 4  
Of: 5

*gallery park by roadway and 25 of 30 total pgs*



CAMERON PROPERTIES  
BK 1316 PG 590  
TAX PARCEL No. R06500-003-004-000

S 44°38'34" W 1034.07'

S 44°38'34" W 855.44'

60' PUBLIC RIGHT OF WAY

80' PUBLIC RIGHT OF WAY

GEORGE ANDERSON DR.

WINDGROVE PARK HOA COMMON AREA  
BOOK 3523 PAGE 213  
ZONED - MF-L  
USE - COMMON AREA

CHIPPENHAM DR.

TEMPLE BAPTIST CHURCH  
BOOK 5108 PAGE 2293  
ZONED - MF-M  
USE - RELIGIOUS ACTIVITIES (CHURCH)

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 7/15/15  
PERMIT # 2014013021  
SIGNED [Signature]

Approved Construction Plan		
	Name	Date
Planning	[Signature]	7-15-15
Traffic	[Signature]	7-15-15
Fire	[Signature]	7-15-15

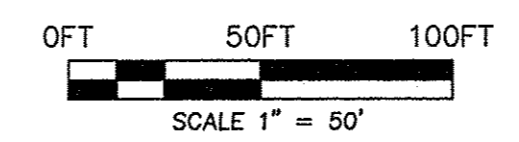
LEGEND

[Solid Line]	EXISTING PROPERTY LINE
[Dashed Line]	PROPOSED PROPERTY LINE
[Dotted Line]	PROJECT LIMITS

- SITE INVENTORY NOTES**
- SOILS TYPE - Mu, Le, Rm, Ly  
Mu - MURVILLE FINE SAND  
Le - LEON SAND  
Rm - RIMINI SAND  
Ly - LYNN HAVEN FINE SAND
  - THIS PROPERTY IS NOT IMPACTED BY ANY AEC.
  - NO CONSERVATION OVERLAY BOUNDARIES
  - SITE DOES NOT APPEAR TO BE IMPACTED BY ANY HISTORIC OR ARCHEOLOGICAL SIGNIFICANCE.
  - NO EVIDENCE OF CEMETERIES FOUND
  - NO JURISDICTIONAL WETLAND ON SITE
  - NO EVIDENCE OF ENDANGERED SPECIES FOUND ON SITE
  - THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA ACCORDING TO FEMA FIRM 3720312500J DATE APRIL 3, 2006
  - CAMA LAND USE CLASSIFICATION - URBAN
  - SITE DRAINS INTO BARNARDS CREEK, INDEX No. 18-80 CLASSIFICATION C:Sw

- GENERAL NOTES**
- TAX PARCEL No. R06500-003-004-000
  - SURVEYED JUNE - DEC. 2013
  - SITE ADDRESS - 3501 INDEPENDENCE BLVD.
  - CAMA LAND USE CLASSIFICATION - URBAN
  - ALL DISTANCES ARE HORIZONTAL
  - ALL ELEVATIONS ARE NGVD 1988

- TREE PRESERVATION NOTES**
- TREE PRESERVATION / REMOVAL PERMIT IS REQUIRED PRIOR TO CLEARING AND LAND DISTURBANCE
  - ANY REGULATED OR SIGNIFICANT TREES WITHIN STREETYARDS, AND ALL TREES WITHIN BUFFER YARDS OR BEYOND LIMITS OF ESSENTIAL SITE IMPROVEMENTS ARE REQUIRED TO BE PROTECTED AND PRESERVED. EXISTING TREES WITHIN CONSTRUCTION LIMITS SHOULD BE SPADED AND REPLANTED ELSEWHERE ON SITE WHEN FEASIBLE.
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EXISTING CONDITIONS		
REV. NO.	REVISIONS	DATE

*gallery park roadway and*

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

OWNER: CAMERON PROPERTIES  
P.O. BOX 3649  
WILMINGTON, N.C. 28406 PH 910-762-2676

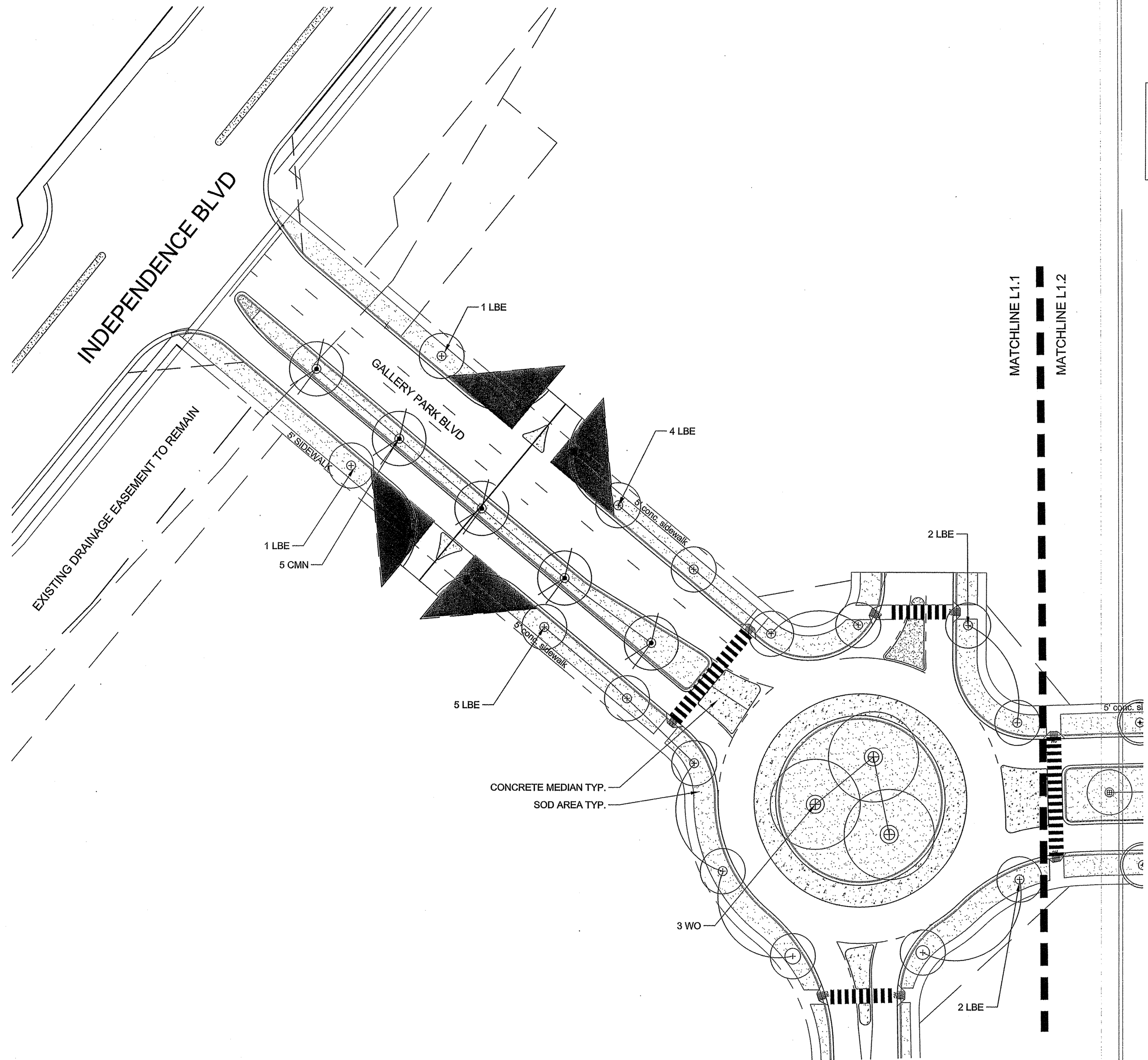
HANOVER DESIGN SERVICES, P.A.  
LAND SURVEYORS, ENGINEERS & LAND PLANNERS  
1123 FLORAL PARKWAY  
WILMINGTON, N.C. 28403  
PHONE: (910) 343-8002

DATE: 7-14-15

Scale: HORIZ.: 1" = 50'

Drawn: J. WAYNE  
Checked: J. WAYNE  
Project No: 12498  
Sheet No: 5  
Of: 5

*26 of 30 total pgs*



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 7/15/15  
 PERMIT # 2014013 P-1  
 SIGNED [Signature]

Approved Construction Plan  
 Name [Signature] Date 7-15-15  
 Planning [Signature] 7/15/15  
 Traffic [Signature] 7/15/15  
 Fire [Signature] 7-15-15

REVISIONS:	DATE	DESCRIPTION
Rev. 1	2/12/15	Landscaping Adjusted to new Baseline Layout
Rev. 2	4/16/15	Sheet layout revised per CIVIL comment
Rev. 3	5/29/15	Site area adjusted per CIVIL comment
Rev. 4	7/09/15	Site area adjusted per CIVIL comment

CLIENT INFORMATION:  
 CAMERON PROPERTIES  
 2508 INDEPENDENCE BLVD  
 WILMINGTON, NC

**PARAMOUNT**  
 ENGINEERING, INC.  
 5911 Oleander Drive, Suite 201  
 Wilmington, North Carolina 28403  
 (910) 791-6707 (O) (910) 701-6700 (F)  
 NC License #: C-2846

GALLERY PARK BLVD  
 LANDSCAPE PLAN  
 WILMINGTON  
 NORTH CAROLINA

PROJECT STATUS  
 CONCEPT LAYOUT:  
 FINAL DESIGN LAYOUT:  
 RELEASED FOR CONST:  
 DRAWING INFORMATION  
 DATE: 12/23/14  
 SCALE: 1"=30'  
 DRAWN: JON AHE  
 CHECKED: AHE

SEAL  
  
 L-1.1  
 PEI JOB#: 13251.PE

LEGEND:

- SOD AREA
- 46" x 46" SIGHT TRIANGLE
- RIGHT OF WAY

Scale: 1"=30'

North

27 of 30 total pgs

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 7/15/15  
 PERMIT # 201401321  
 SIGNED [Signature]

Approved Construction Plan  
 Name Date  
 Planning [Signature] 7-15-15  
 Traffic [Signature] 7-15-15  
 Fire [Signature] 7-15-15

REVISIONS:

2/23/15	Rev. 1. Landscape Adjusted to new Roadway Layout.
4/20/15	Rev. 2. Street layout revised per City comment.
6/29/15	Rev. 3. New tree locations per City comment.
7/09/15	Rev. 4. New tree placement near light fixtures per City comment.

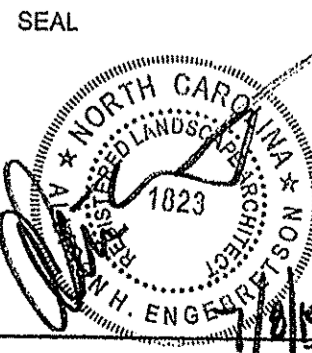
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 WILMINGTON, NC

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 NC License #: C-2846

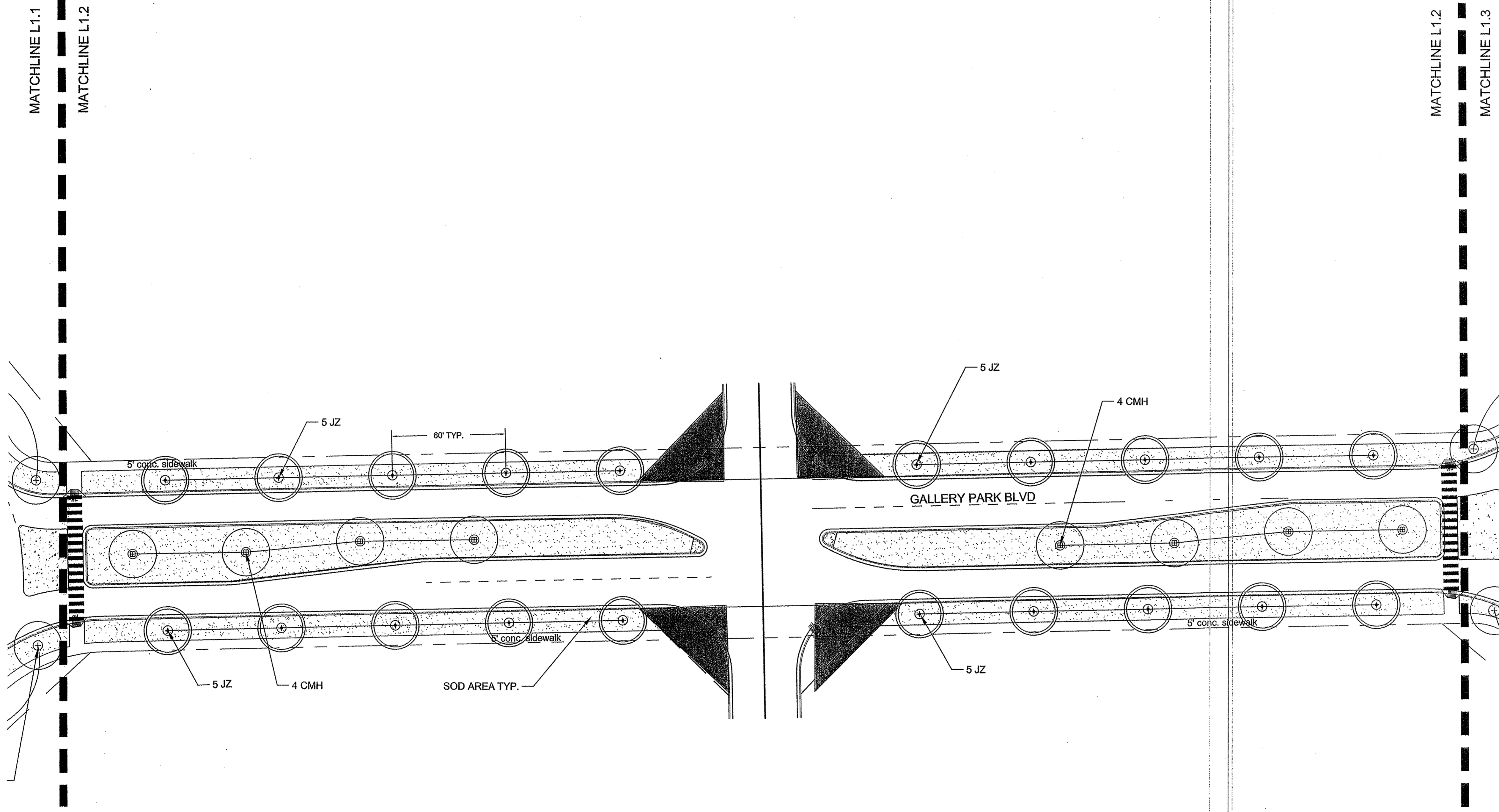
GALLERY PARK BLVD  
 LANDSCAPE PLAN  
 WILMINGTON  
 NORTH CAROLINA

PROJECT STATUS  
 CONCEPT LAYOUT: [ ]  
 PRELIMINARY LAYOUT: [ ]  
 FINAL DESIGN: [ ]  
 RELEASED FOR CONSTRUCTION: [ ]

DRAWING INFORMATION  
 DATE: 12/28/14  
 SCALE: 1" = 30'  
 DRAWN: [ ]  
 CHECKED: [ ]

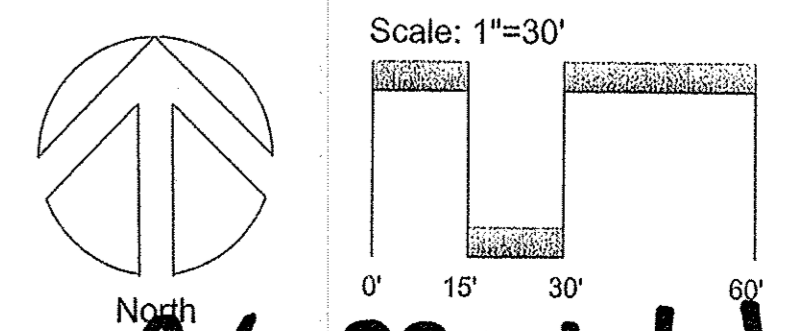


L-1.2  
 PEI JOB#: 13251.PE



LEGEND:

- [Stippled Area] SOD AREA
- [Triangle] 46' x 46' SIGHT TRIANGLE
- [Dashed Line] RIGHT OF WAY



28 of 30 total pgs

FINAL DESIGN NOT TO BE USED FOR CONSTRUCTION



