

TRACT AREA	8.55 AC
ADDRESS	372-438 SF
ZONING	MF-M (CD)
PROPOSED UNITS	98
2 BEDROOM UNITS	98
1 BEDROOM UNITS	0
UNITS PER ACRE	11.46
TAX PIN	04300-005-001-000
DEED BOOK/PAGE	6029/2271
CAMA LIC	WATER RESOURCE PROTECTION
BUILDING SETBACKS	
FRONT	35'
REAR	20'
MAX. BUILDING HEIGHT	35'
MAX. NUMBER OF STORIES	3
IBC CONSTRUCTION TYPE	TYPE III
EXISTING IMPERVIOUS	86,369 SF
PROPOSED IMPERVIOUS	230,000 SF (5.28 AC)
% IMPERVIOUS	61.8%
BUILDING LOT COVERAGE	24.4%
AREA OF DISTURBANCE	8.6 AC
35% RE'D. OPEN SPACE	2.78 ACRE (PONDS EXCLUDED)
ACTIVE AREA PROVIDED	1.4 AC
PASSIVE AREA PROVIDED	1.6 AC
RECEIVING STREAM	HOME CREEK
CLASSIFICATION	SAIDRW
MIN. REQUIRED PARKING	192 SPACES
MAX. REQUIRED PARKING	245 SPACES
PROP. PARKING SPACES	224 SPACES PROVIDED
BICYCLE PARKING SPACES	16 HANDICAP PROVIDED
EX. WATER DEMAND	13,200 GPD
PROP. WATER DEMAND	39,200 GPD
EX. SEWER DEMAND	11,880 GPD
PROP. SEWER DEMAND	35,280 GPD

SITE DATA

LEGEND

PROJECT BOUNDARY	---
WATER MAIN	---
GRAV. SEWER & MANHOLE	---
STORMDRAIN	---
WETLAND LINE	---
EX. CONTOURS	---
PROP. HIGH POINT	X
PROP. DRAINAGE DIR.	---
DISTURBED AREA	---
GATE VALVE	○
HYDRANT ASSEMBLY	○
DENOTES EX. TREE	○
DENOTES 5 BIKE RACK	○

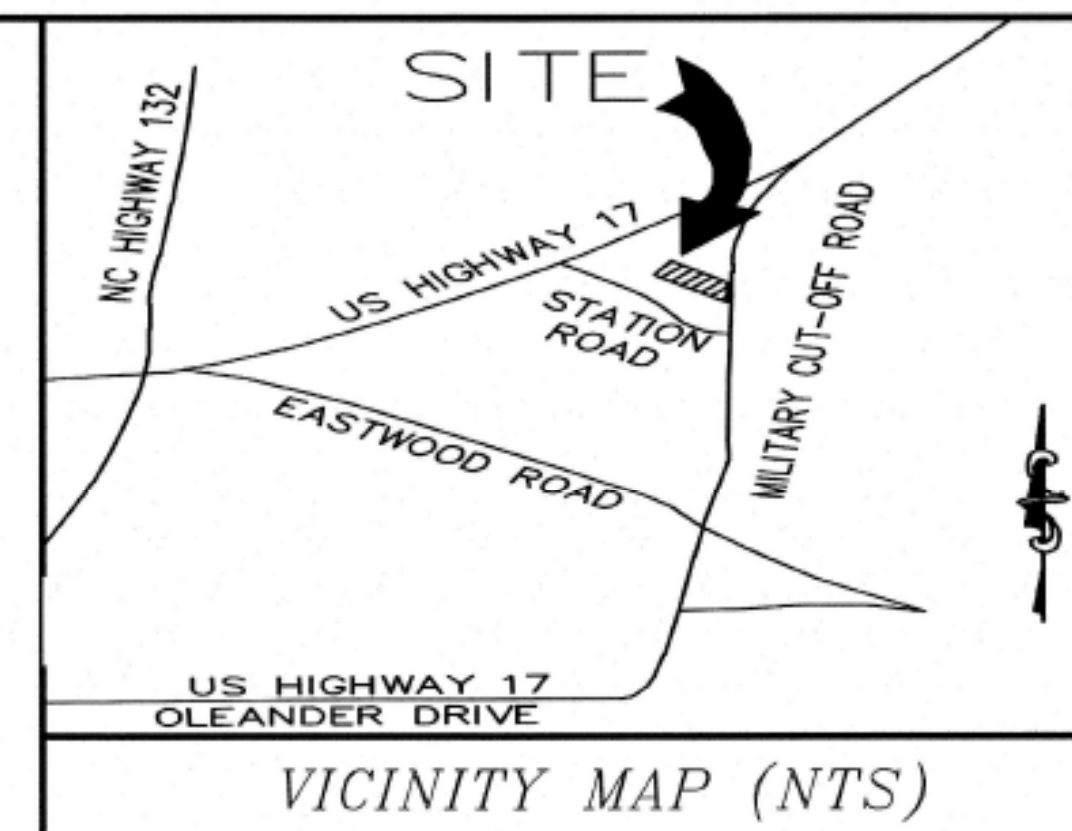
GENERAL NOTES:

- THIS PROPERTY IS NOT LOCATED IN THE 100 YEAR FLOOD ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION FOR LOCATION OF UNDERGROUND UTILITIES CONTACT U.L. LOC AT 1-800-632-4949.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ANY UTILITIES, CURB & GUTTER, PAVEMENT ETC. THAT MAY BE DAMAGED DURING CONSTRUCTION. ALL DAMAGED ITEMS SHALL BE REPAIRED TO AT LEAST THE QUALITY OF WORKMANSHIP FOUND IN THE ORIGINAL ITEM.
- THERE ARE NO JURISDICTIONAL WETLANDS ON THIS SITE.
- ALL ROOF DRAINS SHALL BE DIRECTED TO THE DETENTION POND COLLECTION SYSTEM AND SUBSEQUENTLY TREATED BY THE DETENTION POND.
- NO CLEARING SHALL BE INITIATED UNTIL A TREE PRESERVATION PERMIT HAS BEEN ISSUED, THE REQUIRED TREE PROTECTION IS INSTALLED AND INSPECTED BY A NEW HANOVER COUNTY ZONING DEPT. REPRESENTATIVE.
- WATER AND SEWER SERVICE TO BE PROVIDED BY THE CAPE FEAR PUBLIC UTILITY AUTHORITY.
- FINAL STORMWATER MANAGEMENT, WATER AND SEWER CONSTRUCTION PLANS WILL BE SUBMITTED UPON APPROVAL.
- REFERENCE DEED BOOK 5999, PAGE 216 NHCOR FOR PROPERTY BOUNDARY.
- NEW HANOVER COUNTY SOIL EROSION AND SEDIMENTATION CONTROL, AS WELL AS STORM WATER DETENTION PERMIT IS REQUIRED.
- CONTRACTOR SHALL MAINTAIN AN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS DELIVERED TO THE JOB SITE.
- LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE FIRE HYDRANTS A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT.
- IN ADDITION TO THE STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
- CONTRACTOR SHALL SUBMIT A RADIO SIGNAL STRENGTH STUDY THAT DEMONSTRATES THAT EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SECTION 510 OF THE 2018 NC FIRE CODE.
- SITE LIGHTING WILL BE CONTAINED DOWNWARD AND INWARD TO SAFEGUARD ADJACENT PROPERTIES FROM BEING ADVERSELY AFFECTED FROM SUCH LIGHTING.
- ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
- CONTRACTOR SHALL MAINTAIN AN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS DELIVERED TO THE JOB SITE LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE FIRE HYDRANTS.
- A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT. IN ADDITION TO THE STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
- CONTRACTOR SHALL SUBMIT A RADIO SIGNAL STRENGTH STUDY THAT DEMONSTRATES THAT EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SECTION 510 OF THE 2018 NC FIRE CODE.

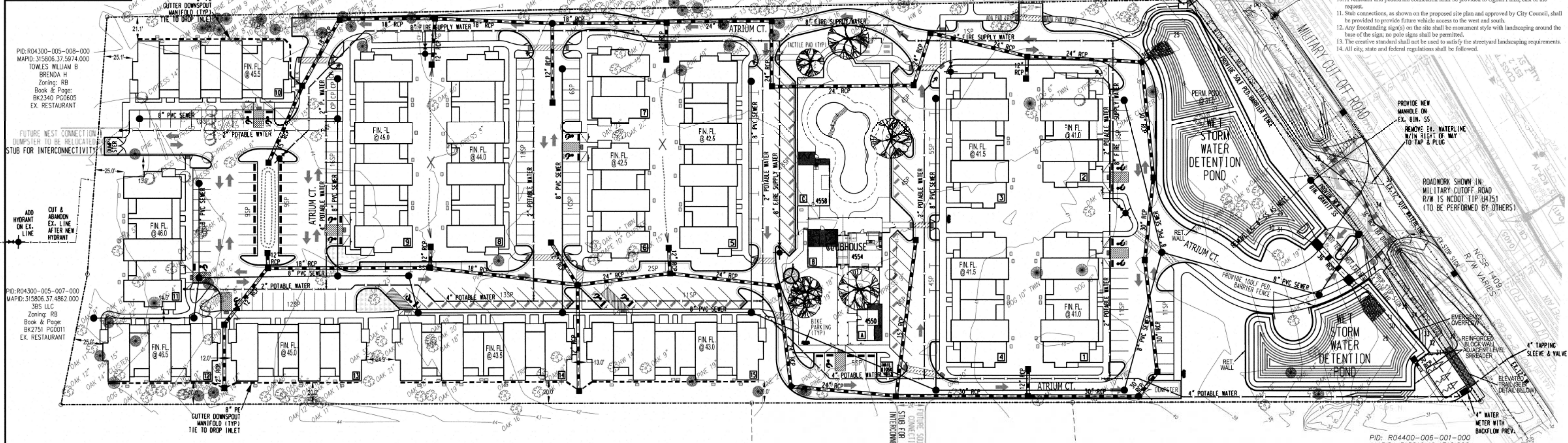
VILLAGE TOWNHOME IMPERVIOUS SUMMARY

Job #	PW1312		
Engineer	JHF		
REVISED	5/3/2019		
REVISED	7/22/2019		
BOUNDARY AREA	372,438 SF	8.55 AC	
TOWNHOME TYPE	NO. OF BLDGS		
9 UNIT BLDGS =	3	7987 SF	23,961 SF
8 UNIT BLDGS =	2	7179 SF	14,358 SF
7 UNIT BLDG =	1	6369 SF	6,369 SF
3 UNIT BLDG =	1	2940 SF	2,940 SF
5A UNIT BLDGS =	2	4805 SF	9,610 SF
5B UNIT BLDGS =	1	4349 SF	4,349 SF
6A UNIT BLDGS =	2	5465 SF	10,930 SF
6B UNIT BLDGS =	3	5159 SF	15,477 SF
TOTAL TOWNHOME COVER	15	87,694 SF	
CLUBHOUSE =		2644 SF	
TOTAL =		90,338 SF	
BUILDING COVER			24%
PARKING IMPERVIOUS			
MILITARY R/W DRIVEWAY		3,014 SF	Consider as future reserve
ONSITE PARKING AND DRIVE AISLES		105,135 SF	
TOTAL =		105,135 SF	
SIDEWALK IMPERVIOUS			
MILITARY CUTOFF R/W		1,927 SF	Consider as future reserve
ONSITE SIDEWALKS		25,393 SF	
TOTAL =		25,393 SF	
TOTAL ONSITE IMPERVIOUS		220,866 SF	
FUTURE RESERVE		9,134 SF	
TOTAL BNDY		372,438 SF	8.55 AC
TOTAL IMPERVIOUS		230,000 SF	5.28 AC
IMPERVIOUS PERCENTAGE			61.8%

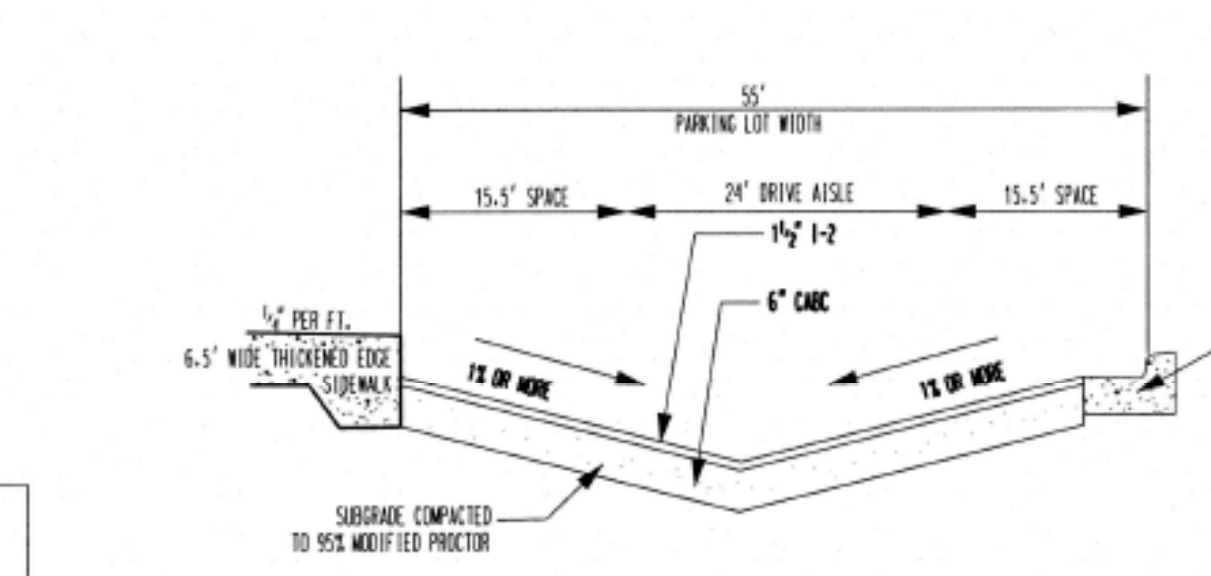
- SHEET INDEX**
- PRELIMINARY PLAN
 - EXISTING CONDITIONS/TREE PRESERVATION
 - SITE GEOMETRY PLAN
 - TYPICAL BUILDING ELEVATIONS
 - SOIL EROSION AND SEDIMENTATION CONTROL/STORMWATER PLAN
 - DRAINAGE/GRADING PLAN
 - DRAINAGE AREAS MAP
 - RETAINING WALL PLAN & PROFILE
 - SOIL EROSION AND SEDIMENTATION CONTROL/STORMWATER PLAN DETAILS
 - NPDES SPECIFICATIONS
 - NPDES SPECIFICATIONS
 - UTILITY PLAN
 - PLAN/PROFILE
 - PLAN/PROFILE
 - DRIVEWAY PLAN
 - DRIVEWAY PROFILE
 - LANDSCAPE PLAN OVERVIEW
 - LANDSCAPE PLAN PLANTINGS FRONT SITE
 - LANDSCAPE PLAN PLANTINGS MID SITE
 - LANDSCAPE PLAN PLANTINGS REAR SITE



- CITY OF WILMINGTON REZONING APPROVAL CONDITIONS**
- The use and development of the subject property shall comply with all regulations and requirements imposed by the Land Development Code, the City of Wilmington Technical Standards and Specifications Manual and any other applicable federal, state or local law, ordinance or regulation, as well as any condition stated below. In the event of a conflict, the more stringent requirement or higher standard shall apply.
 - Approval of this conditional rezoning does not constitute technical approval of the site plan. Final approval by the Technical Review Committee and the issuance of all required permits must occur prior to release of the project for construction.
 - If, for any reason, any condition for approval is found to be illegal or invalid or if the applicant should fail to accept any condition following approval, the approval of the site plan for the district shall be null and void and of no effect and proceedings shall be instituted to rezone the property to its previous zoning classification.
 - The use and development of the subject property shall be in accordance with the plan and elevations dated March 16, 2018.
 - The proposed use shall be limited to a maximum of 98 townhomes, a 4,400 square foot clubhouse, and a swimming pool.
 - No building shall exceed two stories, 35 feet, in height.
 - All existing protected trees not located within the building foot print or impacted by essential site improvements shall be preserved or mitigated.
 - Exterior site lighting shall be installed so as not to shine directly onto adjacent residential parcels.
 - The use of pine straw as ground cover shall be prohibited within ten (10) feet of any combustible exterior wall.
 - A vehicular and pedestrian connection shall be provided to Ogden Plaza, east of the request.
 - Stub connections, as shown on the proposed site plan and approved by City Council, shall be provided to provide future vehicle access to the west and south.
 - Any freestanding sign(s) on the site shall be momentary with landscaping around the base of the sign, no pole signs shall be permitted.
 - The creative standard shall not be used to satisfy the streetway landscaping requirements.
 - All city, state and federal regulations shall be followed.



PID: R04320-005-006-000
 MAPID: 315806.37.4648.000
 MERRITT MICHAEL L RITA
 Zoning: RB
 Book & Page: BK1298 PG0267
 Tract 1
 Map Book 35, Page 124
 EX. CAR & BOAT RETAIL



PID: R04417-011-002-000
 MAPID: 315810.46.4712.000
 PEACE BAPTIST CHURCH
 Zoning: O&I
 Book & Page: BK1100 PG0468
 EX. CHURCH

PID: R04417-011-001-000
 MAPID: 315810.47.1109.000
 CREB PROPERTIES LLC
 Zoning: RB
 Class: COM
 Book & Page: BK5884 PG2008
 Tract 2
 Map Book 35, Page 124
 MARINE SALVAGE

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

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

JAMES H. FENTRESS, JR., P.E.
 ENGINEER
 DATE: 8/31/18

PRELIMINARY PLAN
VILLAGE TOWNHOMES
 (FORMERLY ARBORETUM VILLAGE)
 CITY OF WILMINGTON, NORTH CAROLINA
 OWNER: ARBORETUM VILLAGE, LLC
 ADDRESS: 10 S. CARDINAL DRIVE, WILMINGTON, N.C. 28403
 PHONE: _____
 DESIGNED: JHF
 DRAWN: JHF
 APPROVED: JHF
 DATE: 8/31/18
 SCALE: 1" = 40'
STROUD ENGINEERING, P.A.
 102-D CINEMA DRIVE, WILMINGTON, NORTH CAROLINA 28403
 (910) 815-0175 (910) 815-0593 FAX
 SHEET 1 OF 21

PROJECT NO.: PW 1312

VILLAGE TOWNHOMES TREE REMOVAL ASSESSMENT

Post Hurricane Florence accounting

Undamaged Regulated Trees proposed to be removed						Regulated Trees to be preserved					
NO.	TREE	DIA.	NO.	TREE	DIA.	NO.	TREE	DIA.	NO.	TREE	DIA.
2	Care cluster	14	43	Care	11	1	Pine	11	40	Care	14
3	Flute	16	44	Care	10	2	Care	8	41	Care	10
4	Care	8	45	Care	11	3	Care	10	42	Care	10
5	Flute	20	46	Hwy	12	4	Care	10	43	Care	10
6	Flute	14	47	Cypress cluster	12	5	Care	10	44	Care	12
7	Hwy	9	48	Cypress	13	6	Care	9	45	Care	11
8	Dogwood	4	49	Care	10	7	Care	10	46	Care	10
9	Hwy	9	50	Flute	10	8	Care	10	47	Flute	14
10	Hwy	10	51	Flute	10	9	Flute	12	48	Care	11
11	Flute	10	52	Flute	10	10	Hwy	14	49	Care	8
12	Care	11	53	Flute	10	11	Flute	10	50	Care	10
13	Care	10	54	Hwy	8	12	Care	10	51	Flute	10
14	Care	8	55	Care	10	13	Care	9	52	Care	10
15	Care	10	56	Care	9	14	Care	9	53	Care	10
16	Care	10	57	Cypress	8	15	Care	10	54	Care	10
17	Care	10	58	Flute	10	16	Care	10	55	Care	14
18	Care	9	59	Flute	10	17	Care	8	56	Flute	10
19	Roundleaf Maple	10	60	Flute	10	18	Care	10	57	Flute	14
20	Hwy	14	61	Care	10	19	Care	10	58	Hwy	10
21	Care	9	62	Flute	14	20	Care	14	59	Hwy	10
22	Care	10	63	Flute	10	21	Care	10	60	Care	10
23	Care	10	64	Hwy	10	22	Care	10	61	Care	10
24	Care	10	65	Care	10	23	Care	10	62	Care	10
25	Flute	10	66	Care	10	24	Care	10	63	Care	10
26	Flute	10	67	Care	10	25	Care	10	64	Care	10
27	Flute	10	68	Care	10	26	Care	10	65	Hwy	8
28	Flute	10	69	Cypress	10	27	Care	10	66	Hwy	10
29	Hwy	9	70	Cypress	10	28	Flute	10	67	Hwy	10
30	Care	10	71	Care	10	29	Care	10	68	Care	10
31	Care	10	72	Cypress	10	30	Care	10	69	Care	10
32	Care	10	73	Cypress	10	31	Flute	10	70	Care	10
33	Redwood	10	74	Cypress	10	32	Care	10	71	Care	10
34	Flute	14	75	Cypress	10	33	Care	10	72	Care	10
35	Flute	10	76	Cypress	10	34	Holly	14	73	Hwy	10
36	Flute	10	77	Cypress	10	35	Care	10	74	Care	10
37	Care	9	78	Cypress	10	36	Flute	10	75	Care	10
38	Flute	10	79	Flute	10	37	Care	10	76	Care	10
39	Care	10	80	Cypress	10	38	Care	10	77	Care	10
40	Care	10	81	Cypress	10	39	Care	10	78	Care	10
41	Hwy	10	82	Care	10	40	Care	10	79	Care	10
Tree Dia. Sum	506	Tree Dia. Sum	514	Tree Dia. Sum	1020	Tree Dia. Sum	521	Tree Dia. Sum	578	Tree Dia. Sum	1099

There are 12 Regulated and 1 Significant tree requiring mitigation
48 REGULATED TREE CREDITS REQ'D.
2 SIGNIFICANT TREE CREDITS REQ'D.
55 TREE CREDITS REQUIRED

Damaged Trees historically proposed to be removed

NO.	TREE	DIA.	NO.	TREE	DIA.
17	Flute	10	1	Hwy	10
18	Care	10	2	Flute	10
19	Flute	10	3	Hwy	8
9	Care	10	4	Care	10
1	Cypress	8	5	Care	10
Tree Dia. Sum	72	Tree Dia. Sum	48		

8.6 acres of disturbance requires Sig. and Reg. Tree removal requires therefore 129 Trees Required 55 Trees Required 184 Trees Required
188 Tree Credits provided through preservation

Damaged Trees originally proposed to be saved

NO.	TREE	DIA.	NO.	TREE	DIA.
16	Cypress	9	1	Care	10
4	Care	9	2	Care	10
3	Flute	10	3	Care	10
1	Care	10	4	Care	10
20	Care	10	5	Care	10
5	Care	10	6	Care	10
Tree Dia. Sum	89	Tree Dia. Sum	80		

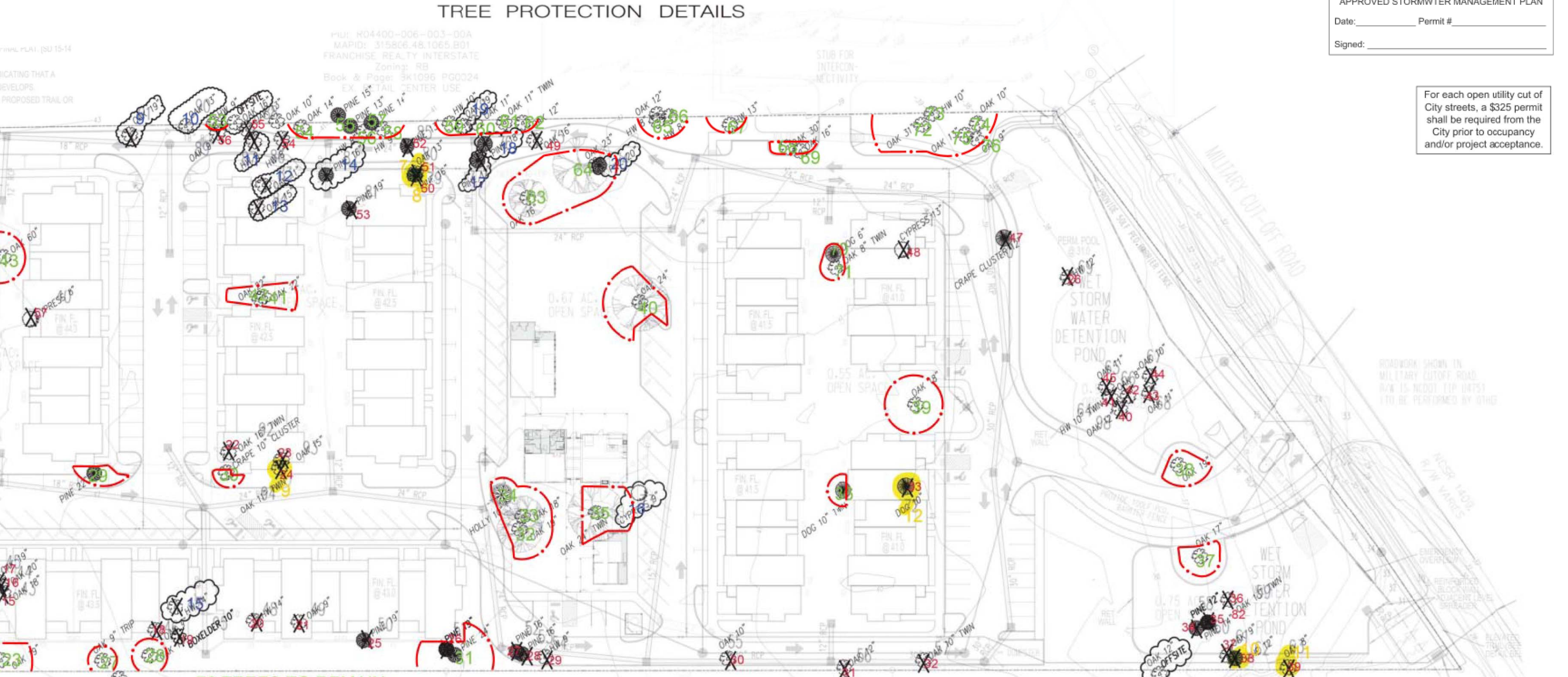
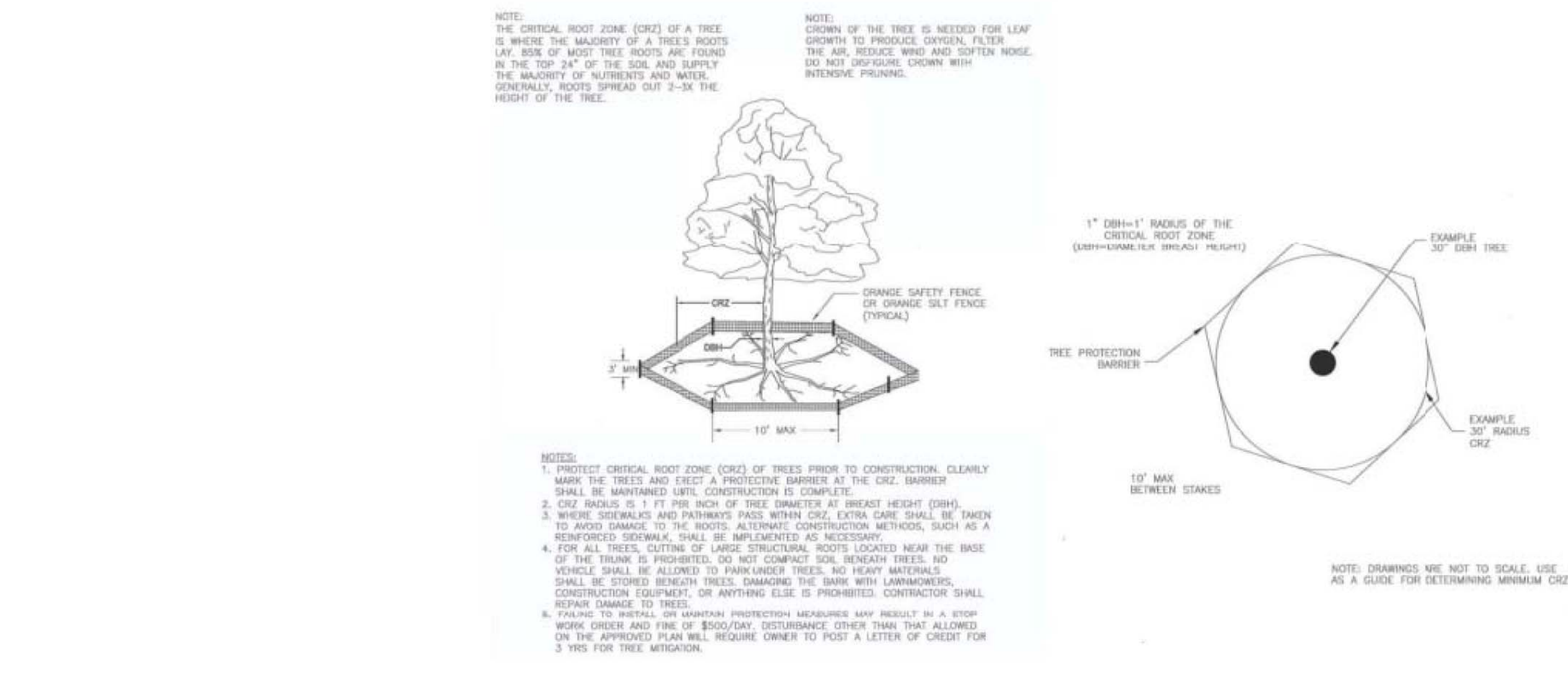
PROJECT NO.: PW 1312

DRAWING NO.: W://MASTER/PW1312/dgn/EXISTING CONDITIONS & TREE PRESERVATION

LEGEND

- PROJECT BOUNDARY
- WATER MAIN
- GRAY SEWER & MANHOLE
- STORMDRAIN
- WETLAND LINE
- EX. CONTOURS
- PROP. HIGH POINT
- PROP. DRAINAGE DIR.
- DISTURBED AREA
- GATE VALVE
- HYDRANT ASSEMBLY
- TREE TO BE REMOVED FOR ESSENTIAL SITE IMPROVEMENTS
- TREE TO BE REMOVED FOR BUILDING CONSTRUCTION
- TREES DAMAGED BY HURRICANE FLORENCE TO BE REMOVED

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



SURVEY REFERENCE :
TREE SURVEY PROVIDED BY BATEMAN CIVIL SURVEY CO.
REVISED MAY 17, 2019 TO REPORT NOTED OMISSIONS AND POST HURRICANE FLORENCE TREE DAMAGE

GRAPHIC SCALE: 1" = 40'

SEAL 20043
NORTH CAROLINA PROFESSIONAL ENGINEER
JAMES H. FENTRESS, JR., P.E.

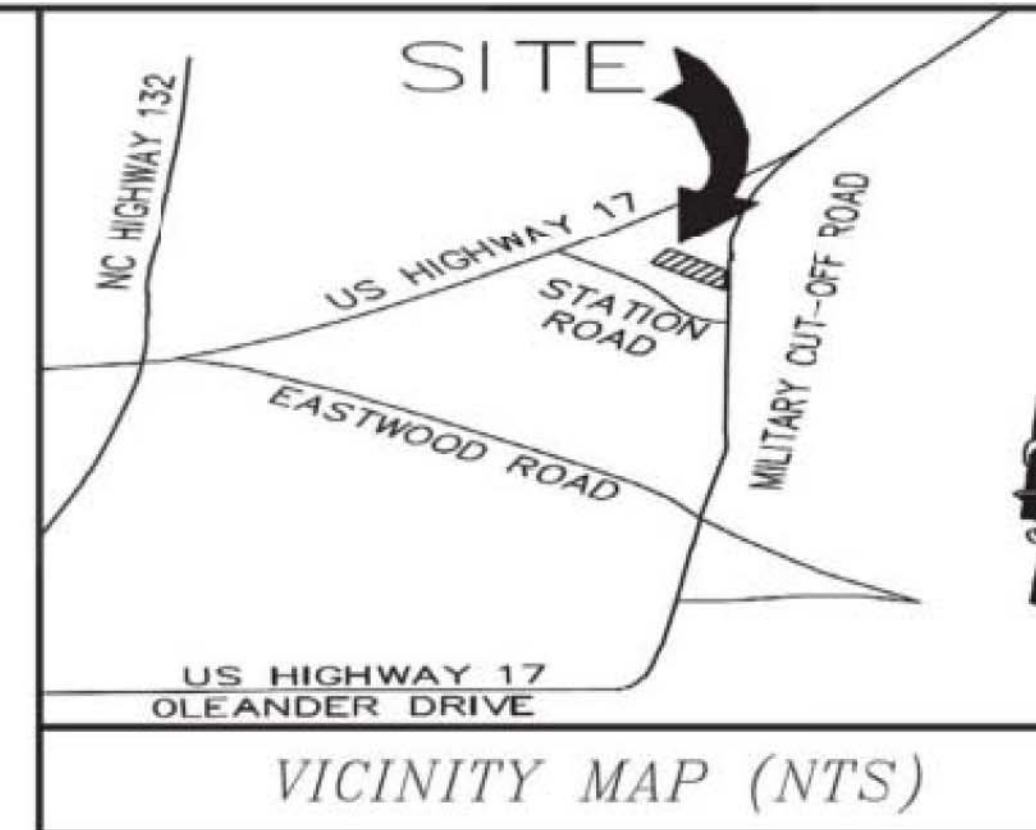
DATE: 6/28/2019

EXISTING CONDITIONS & TREE PRESERVATION PLAN
VILLAGE TOWNHOMES
(FORMERLY ARBORETUM VILLAGE)
CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: WHEEL ESTATES I, LLC
ADDRESS: 101 N. THIRD STREET, WILMINGTON, N.C. 28401
PHONE: (910) 815-0775 (910) 815-0593 FAX

DESIGNED: JHF
DRAWN: kbn
APPROVED: JHF
DATE: 3/6/18
SCALE: 1" = 40'
SHEET 2 OF 19

STROUD ENGINEERING, P.A.
102-D CINEMA DRIVE, WILMINGTON, NORTH CAROLINA 28403
C-0647
(910) 815-0775 (910) 815-0593 FAX



Approved Construction Plan

Name: _____ Date: _____

Planning: _____

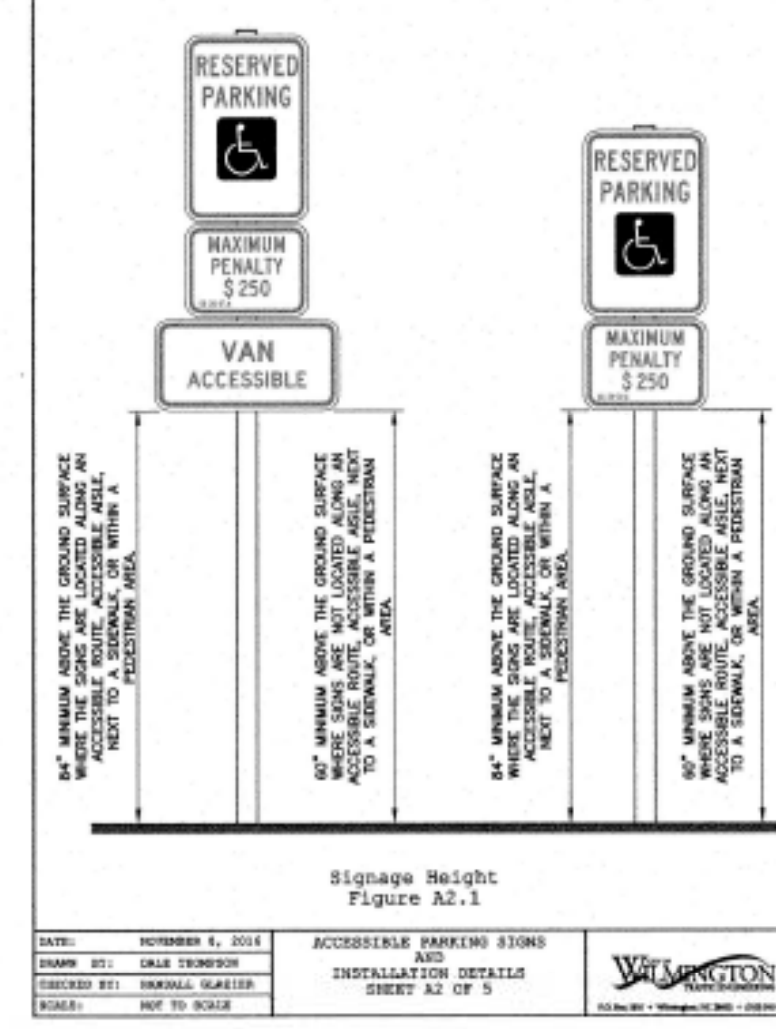
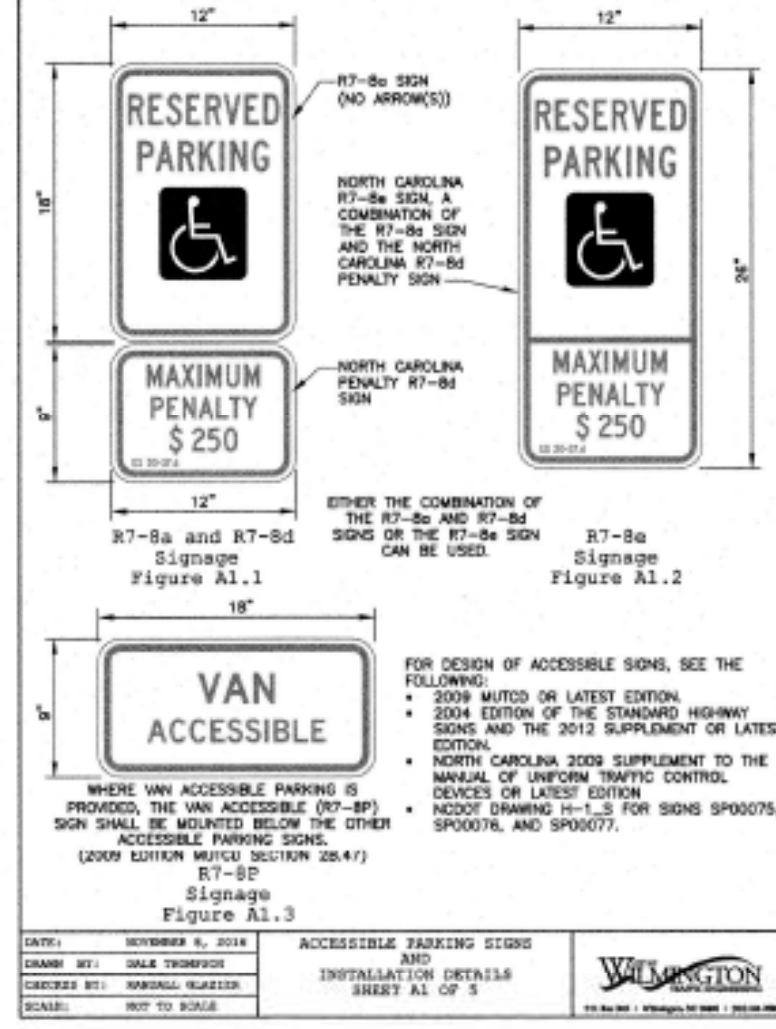
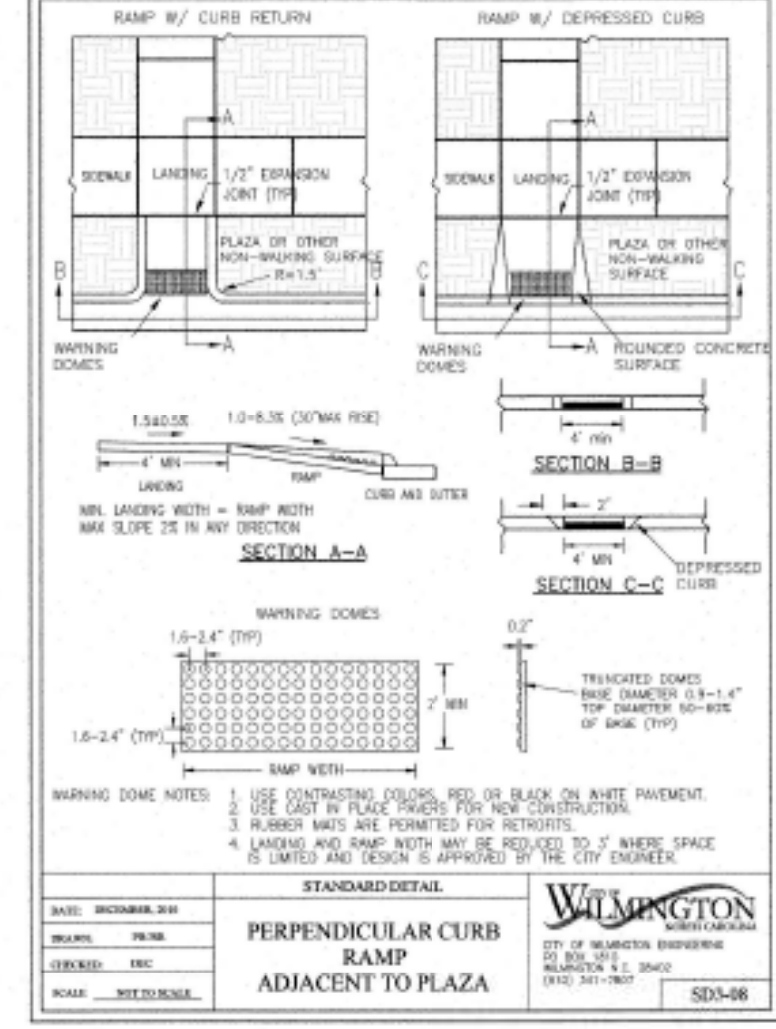
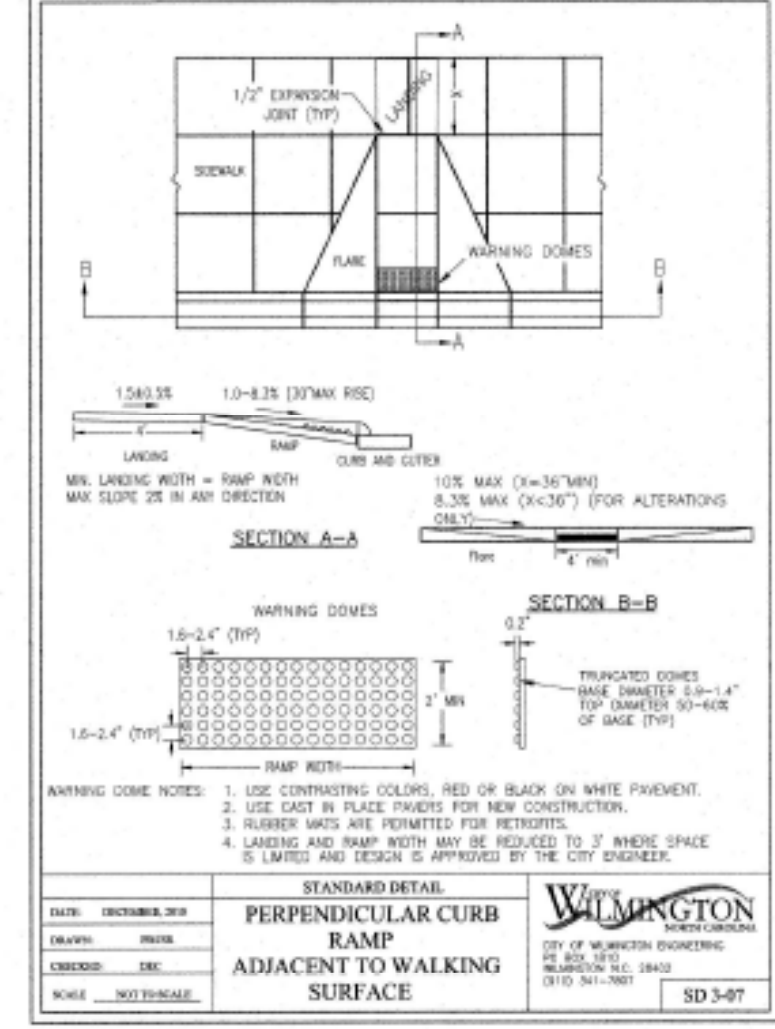
Traffic: _____

Fire: _____

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

ATRIUM COURT CENTERLINE DESCRIPTION					ATRIUM COURT CENTERLINE DESCRIPTION (CONT'D)				
Point Type	Station	Radius	Length	Tangent	Point Type	Station	Radius	Length	Tangent
PC	0+00.00				PT	7+99.49			
PC	0+34.56		34.56		PC	8+10.12		10.63	
PC	0+34.56				PC	8+10.12			
PI	0+43.11	11.24	14.61	8.54	PI	8+20.56	93.00	20.79	10.44
PRC	0+48.17				PT	8+30.91			
PRC	0+48.17				PT	8+30.91			
PI	1+07.01	70.83	97.00	57.84	PI	10+38.63			
PRC	1+46.18				PI	10+79.01	40.00	62.21	39.38
PRC	1+46.18				PT	11+01.84			
PI	1+62.74	70.00	32.52	18.56	PI	11+01.84			
PRC	1+78.59				PT	12+51.04			
PRC	1+78.59				PT	12+51.04			
PI	2+24.85	62.00	76.09	45.95	PI	13+01.34			
PT	2+57.79				PT	13+01.34			
PT	2+57.79				PT	13+01.34			
PC	3+26.51		68.72		PC	13+01.34			
PC	3+26.51				PC	13+01.34			
PI	3+73.91	47.00	73.83	47.00	PI	13+01.34			
PT	4+00.34				PT	13+01.34			
PT	4+00.34				PT	13+01.34			
PC	5+17.85		117.51		PC	13+01.34			
PC	5+17.85				PC	13+01.34			
PI	6+47.41	110.00	57.75	29.56	PI	13+01.34			
PRC	6+75.80				PT	13+01.34			
PRC	6+75.80				PT	13+01.34			
PI	6+94.37	72.50	54.77	28.77	PI	13+01.34			
PT	6+94.37				PT	13+01.34			
PC	6+47.83		17.28		PC	13+01.34			
PC	6+47.83				PC	13+01.34			
PI	6+96.95	86.50	18.58	9.33	PI	13+01.34			
PT	6+46.21				PT	13+01.34			
PT	6+46.21				PT	13+01.34			
PC	7+75.57		100.36		PC	13+01.34			
PC	7+75.57				PC	13+01.34			
PI	7+87.58	107.00	23.91	12.01	PI	13+01.34			
PT	7+99.49				PT	13+01.34			

35% OF SITE AREA EXCLUDING PONDS
REQUIRED TO BE OPEN SPACE
0.35 X 7.95AC. = 2.8AC.
50% OF 2.8AC. REQUIRED TO BE
ACTIVE. 1.4AC. PROVIDED
1.6 AC. PASSIVE OPEN SPACE PROVIDED



VILLAGE TOWNHOMES LANDSCAPE CALCULATIONS

The interior area of a parking facility shall be shaded by canopy trees either planted or retained to provide twenty (20) percent or greater canopy coverage at maturity. For purposes of this section, a parking facility shall include any areas of a development devoted to pedestrian or vehicular use, including, but not limited to, parking areas, loading spaces, automobile sales lots, driveways and internal drive aisles. The following standards shall apply to interior parking area landscaping:

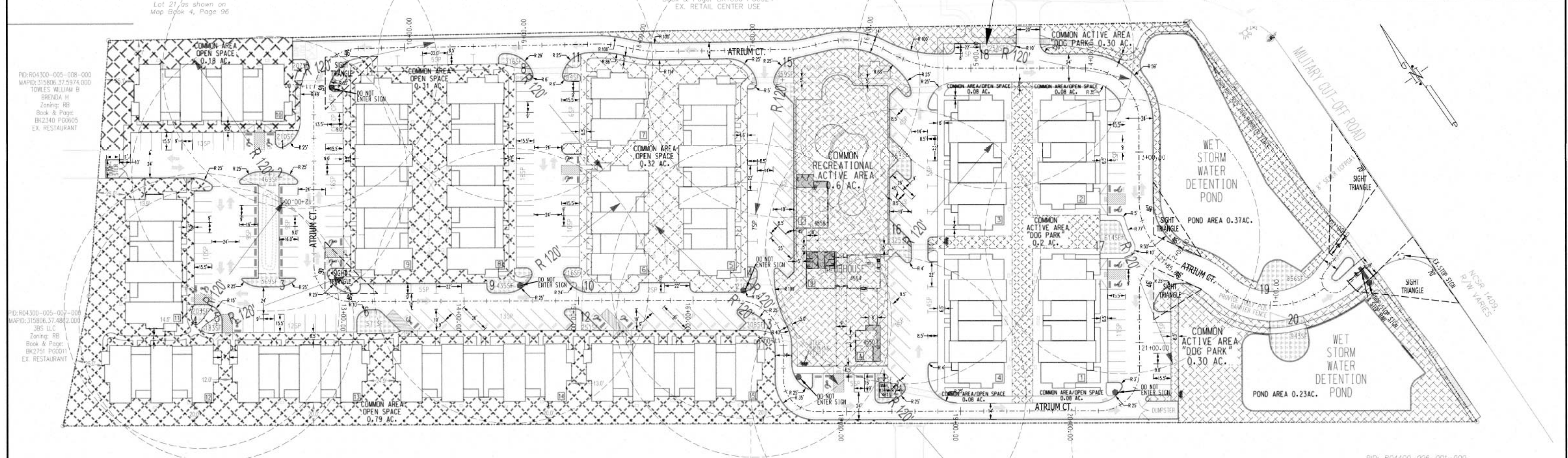
PARKING IMPERVIOUS
ONSITE PARKING AND DRIVE AISLES 105,135 SF
20% CANOPY COVERAGE = 21027 SF

For purposes of determining if the landscape plan meets the shading requirements of this section, each canopy tree of the type described in this section shall be presumed to shade a circular area of seven hundred and seven (707) square feet (based on having a canopy radius of fifteen (15) feet with the trunk of the tree as the center). When smaller shade trees are planted, each tree shall be presumed to shade a circular area of three hundred and fourteen (314) square feet (based on having a canopy radius of ten (10) feet).

21027 Divided by	707 SF per Canopy Tree per island
Need	30 Landscape Islands @ 216 sf each
	6424 sf of island area

LANDSCAPE ISLAND	AREA
1	210
2	469
3	369
4	204
5	189
6	571
7	307
8	316
9	435
10	216
11	394
12	251
13	308
14	216
15	356
16	325
17	614
18	254
19	856
20	943
21	302

7800 sf of Interior Landscape islands proposed within 120 feet of all parking



- SUPPLEMENTAL NOTES:**
- DRIVEWAY STOP SIGN SHALL BE INSTALLED IN ADVANCE OF CROSSWALK.
 - ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND NCDOT STANDARDS. (DETAIL SD 11-03 AND SD 15-13 COPW TECH STD)
 - ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS. (DETAIL SD 15-13 COPW TECH STD)
 - ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.

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



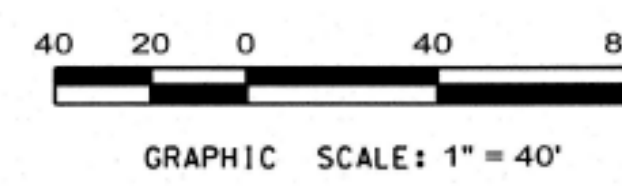
Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____



WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

SITE GEOMETRY PLAN

VILLAGE TOWNHOMES

(FORMERLY ARBORETUM VILLAGE)

CITY OF WILMINGTON NORTH CAROLINA

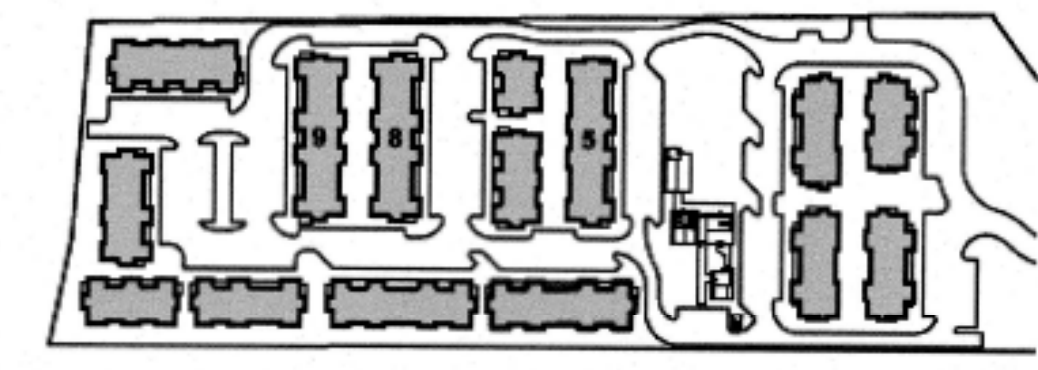
OWNER: ARBORETUM VILLAGE, LLC
ADDRESS: 10 S. CARDINAL DRIVE WILMINGTON, N.C. 28403
PHONE: _____

DESIGNED: JHF
DRAWN: JHF
APPROVED: JHF
DATE: 5/09/19
SCALE: 1" = 40'
SHEET 2A OF 21

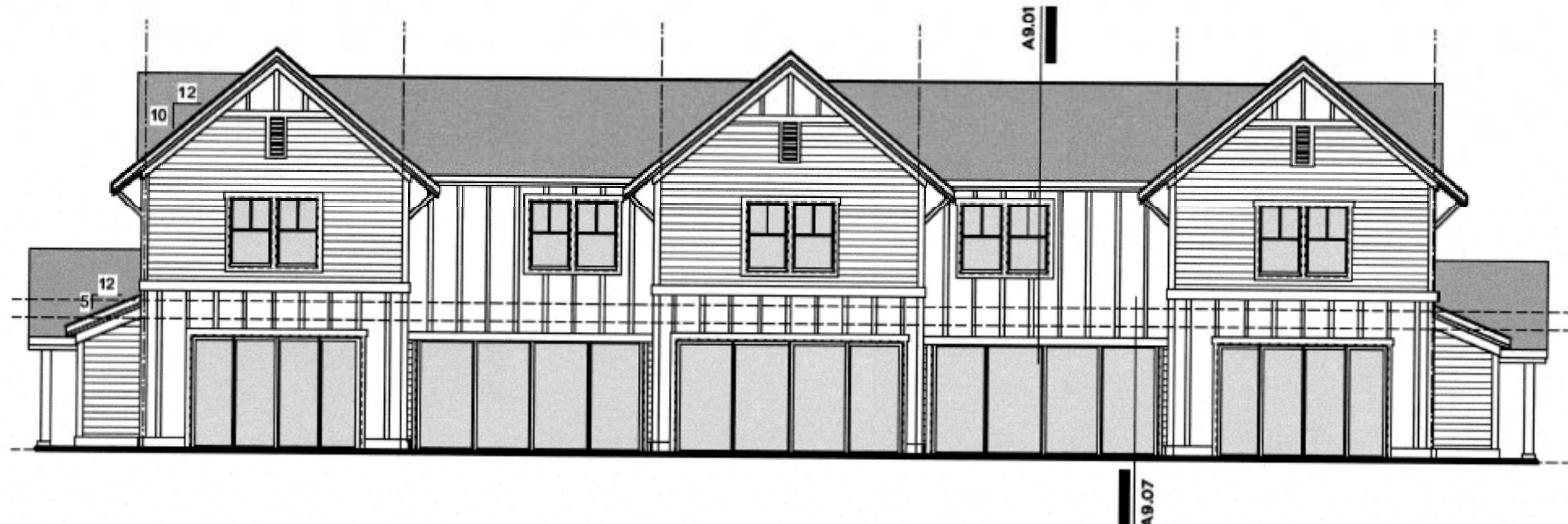
STROUD ENGINEERING, P.A.
102-D CINEMA DRIVE WILMINGTON, NORTH CAROLINA 28403
(910) 815-0775 (910) 815-0593 FAX



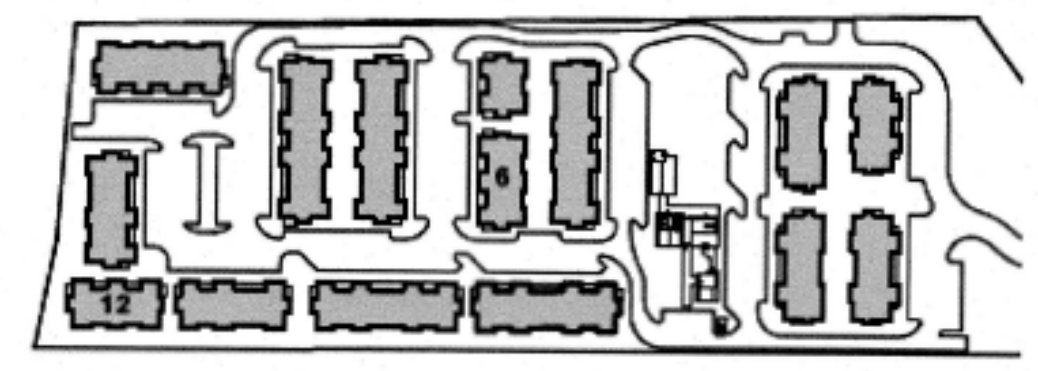
FRONT ELEVATION
A8.18 1/8"



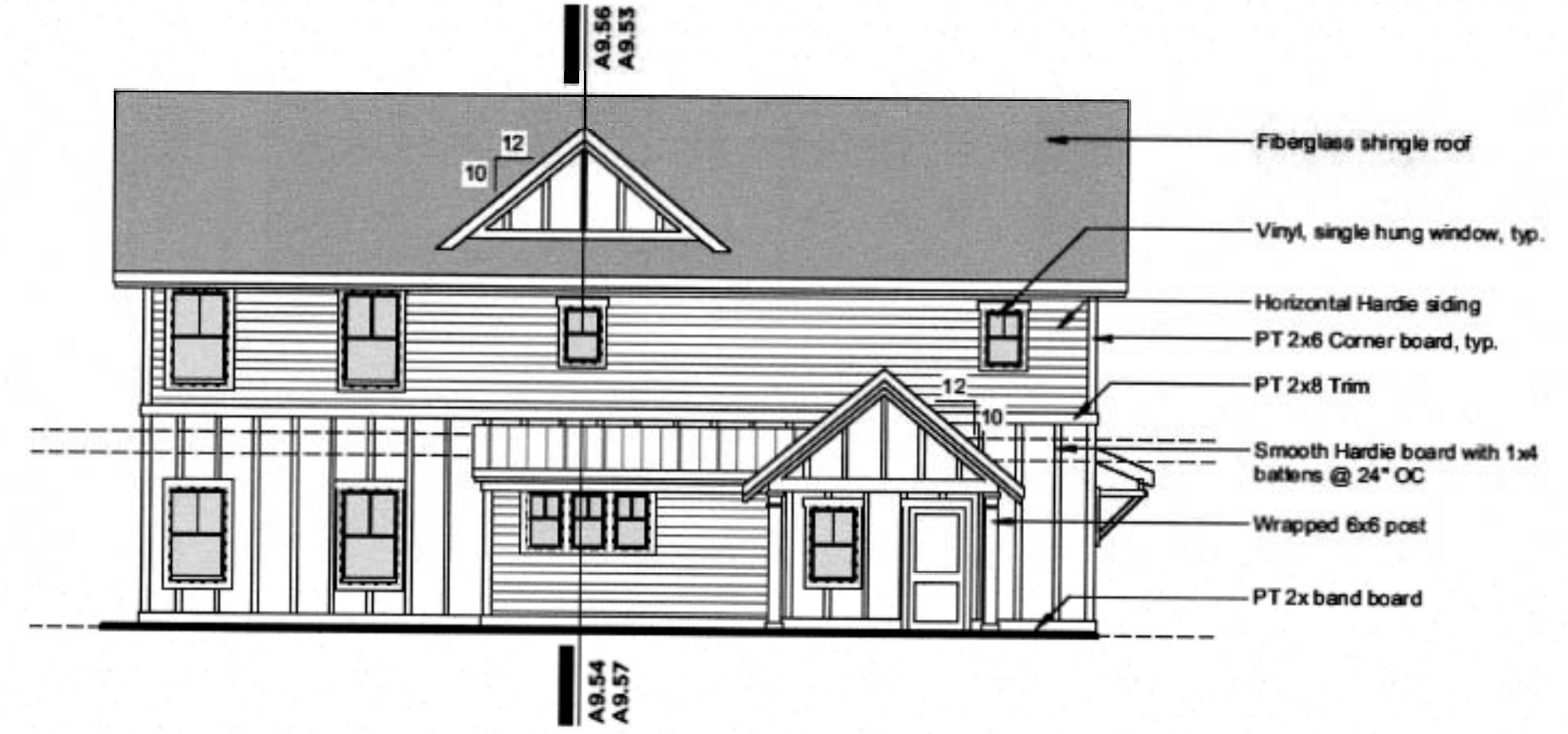
KEY PLAN



REAR ELEVATION
A3.28 1/8"



KEY PLAN



TYPICAL SIDE ELEVATION
A6.22 1/8"

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

Approved Construction Plan		
Name	Date	
Planning		
Traffic		
Fire		

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

Professional Engineer Seal for James H. Pentress, Jr., P.E., State of North Carolina, No. 28643. Includes a signature and the date 8/28/19.

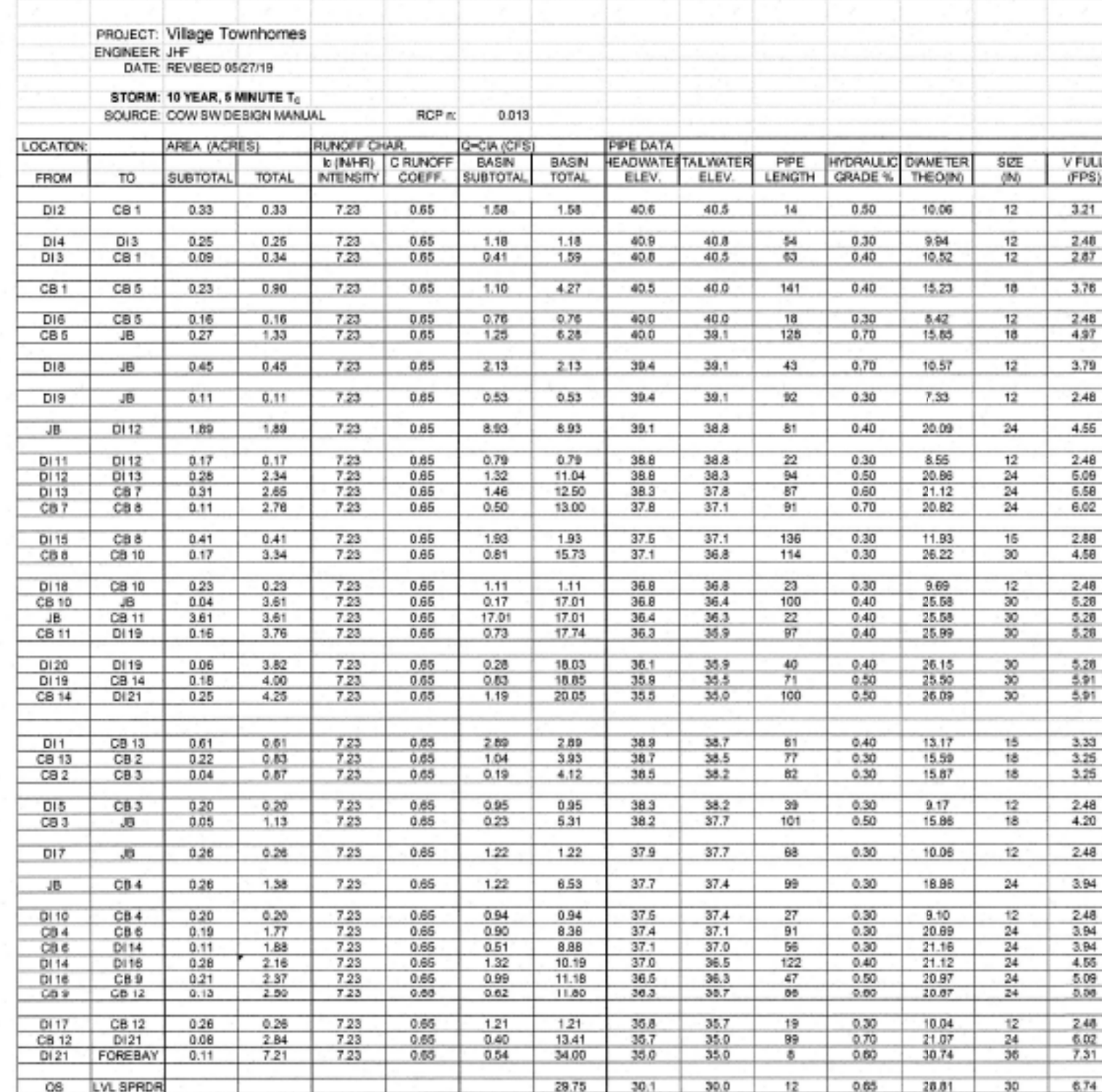
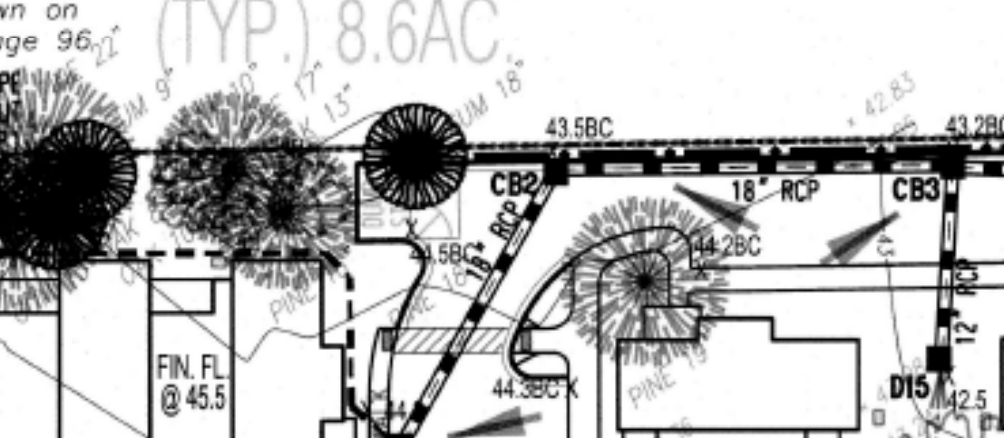
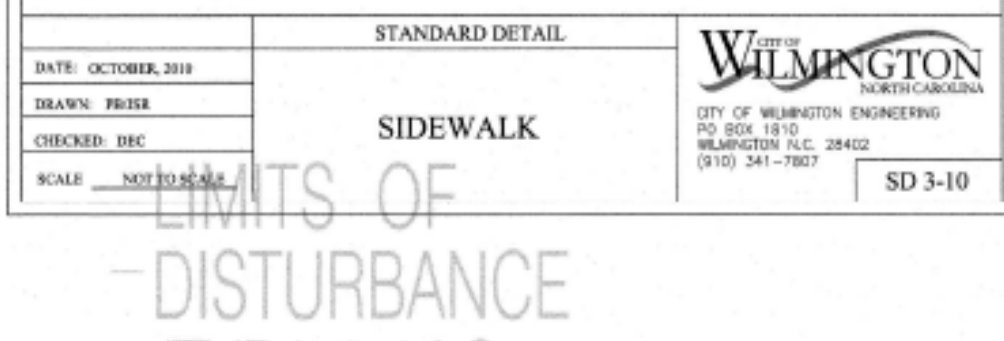
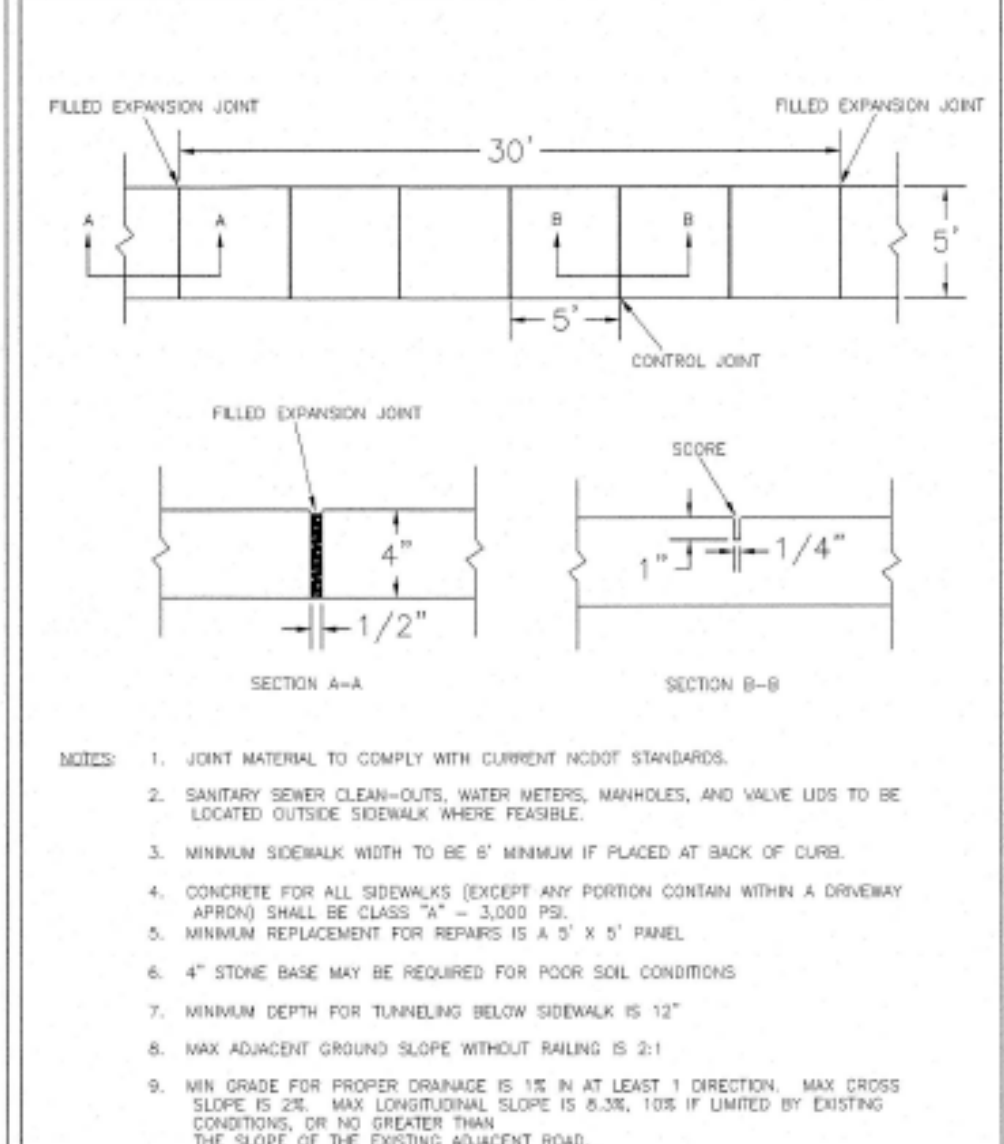
TYPICAL BUILDING ELEVATIONS
VILLAGE TOWNHOMES
(FORMERLY ARBORETUM VILLAGE)
CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: ARBORETUM VILLAGE, LLC	DESIGNED: JHF
ADDRESS: 10 S. CARDINAL DRIVE WILMINGTON, N.C. 28403	DRAWN: JHF
PHONE:	APPROVED: JHF
STROUD ENGINEERING, P.A. 102-0 CINEMA DRIVE WILMINGTON, NORTH CAROLINA 28403 (910) 815-0775 (910) 815-0593 FAX	DATE: 8/28/19
	SCALE: AS NOTED
	SHEET 2B OF 21

PROJECT NUMBER: PW 1312

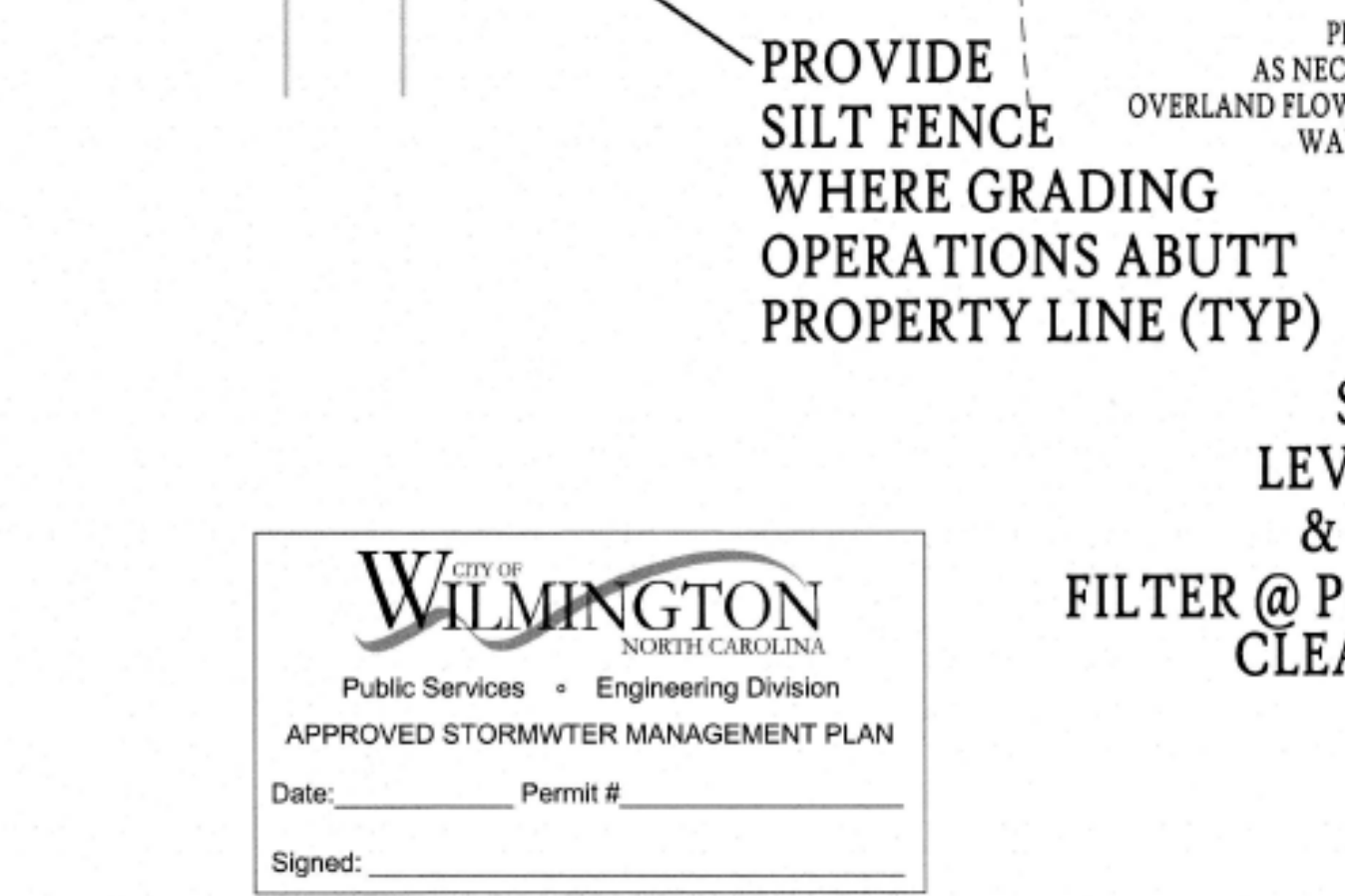
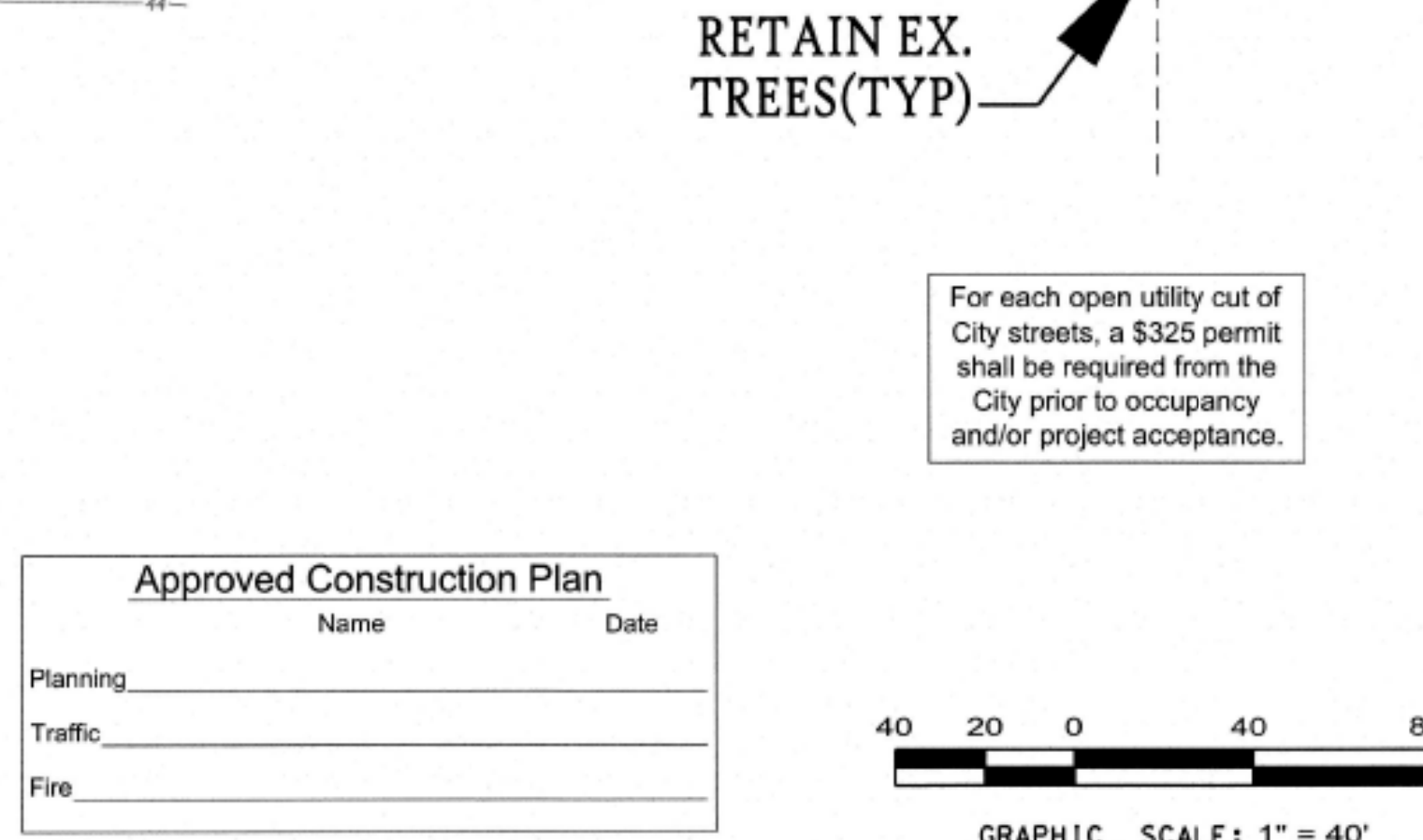
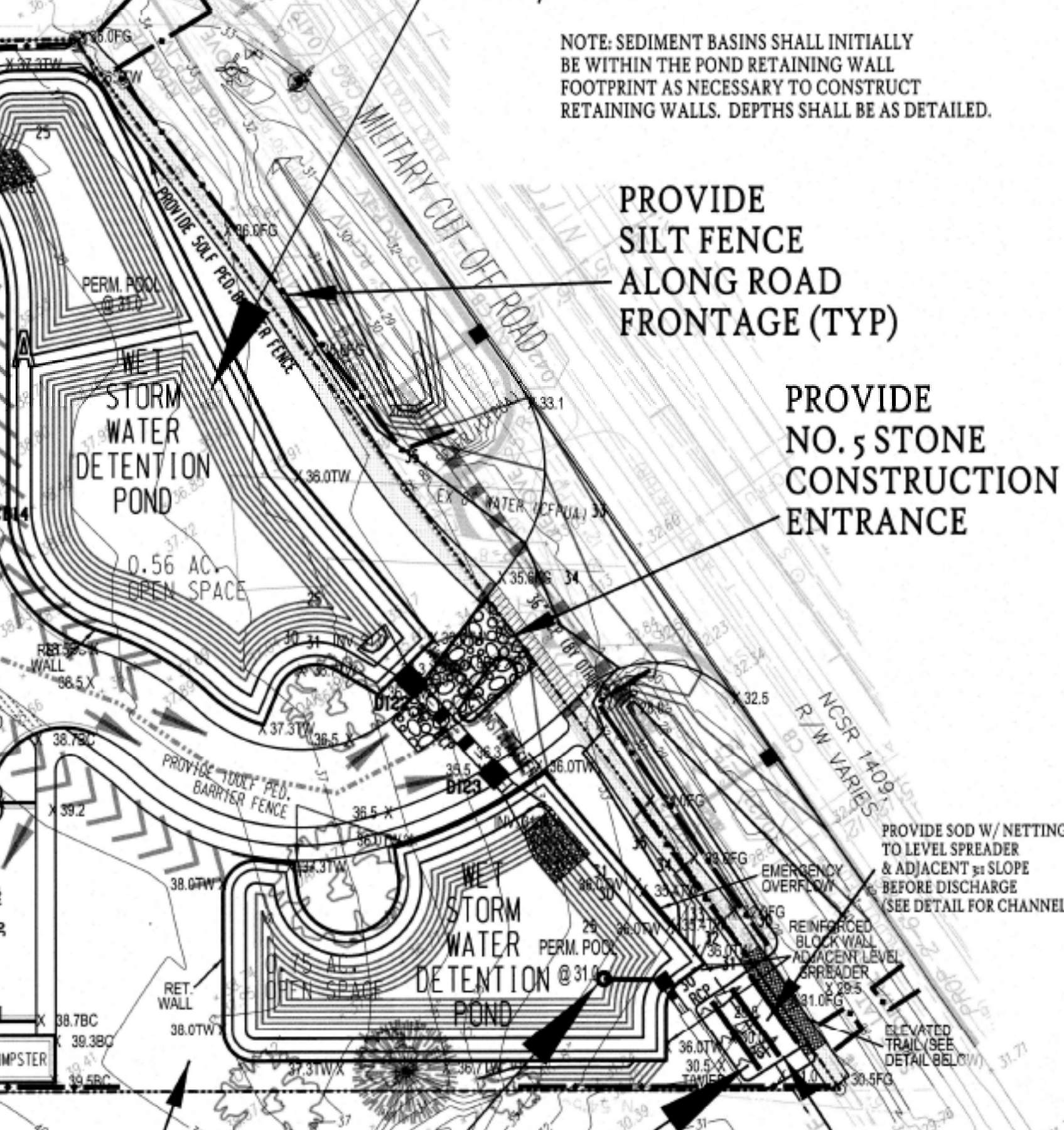
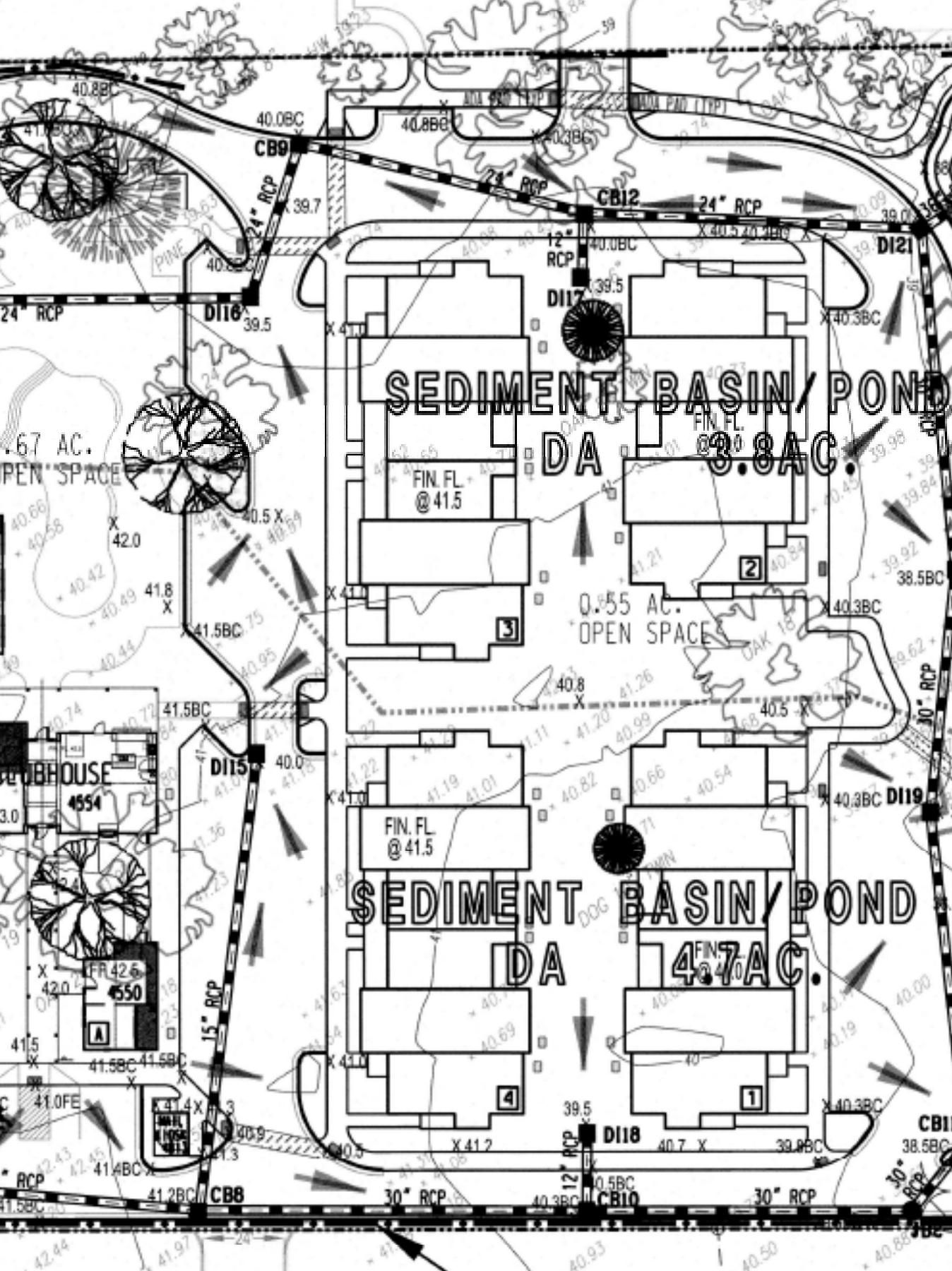
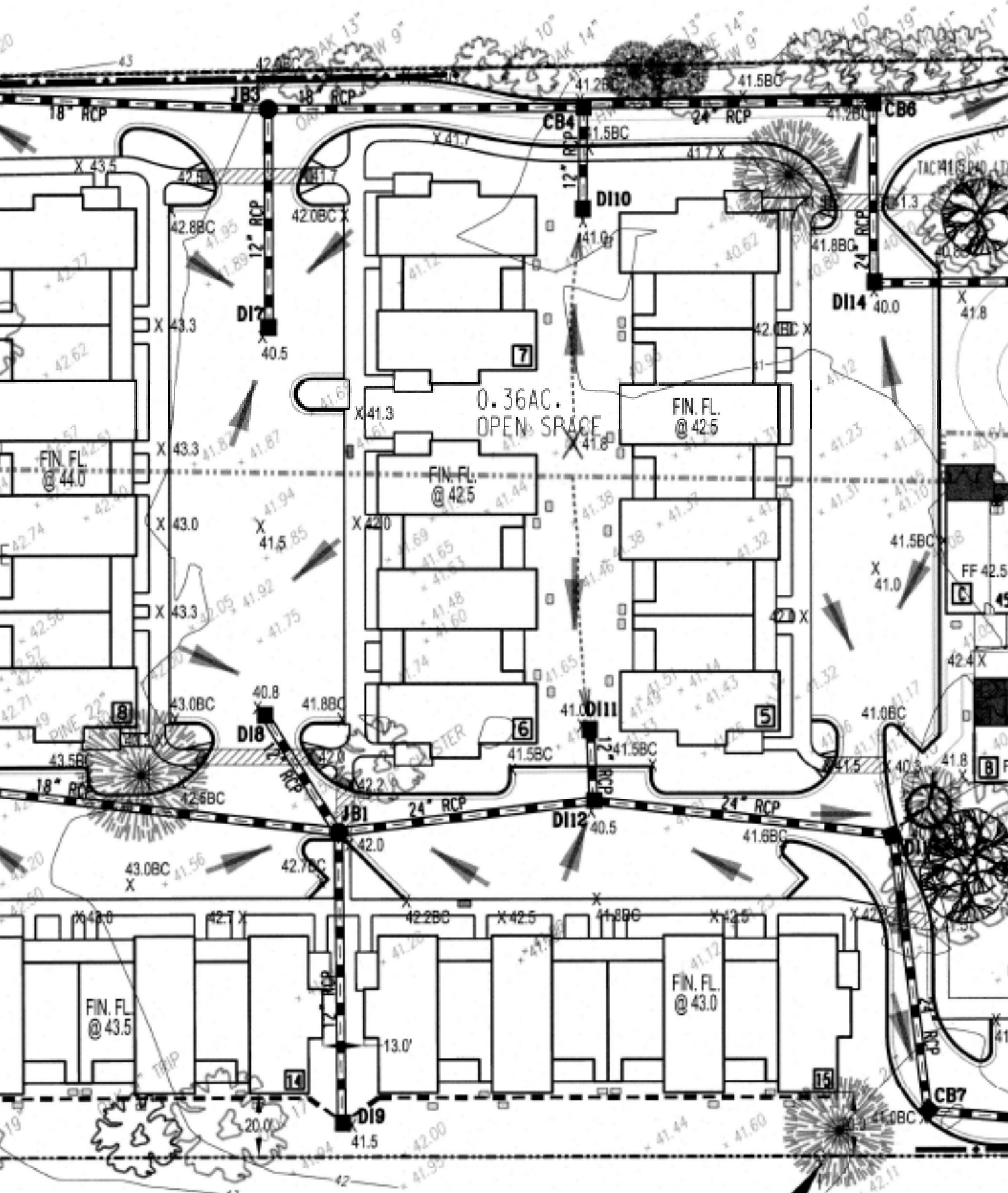
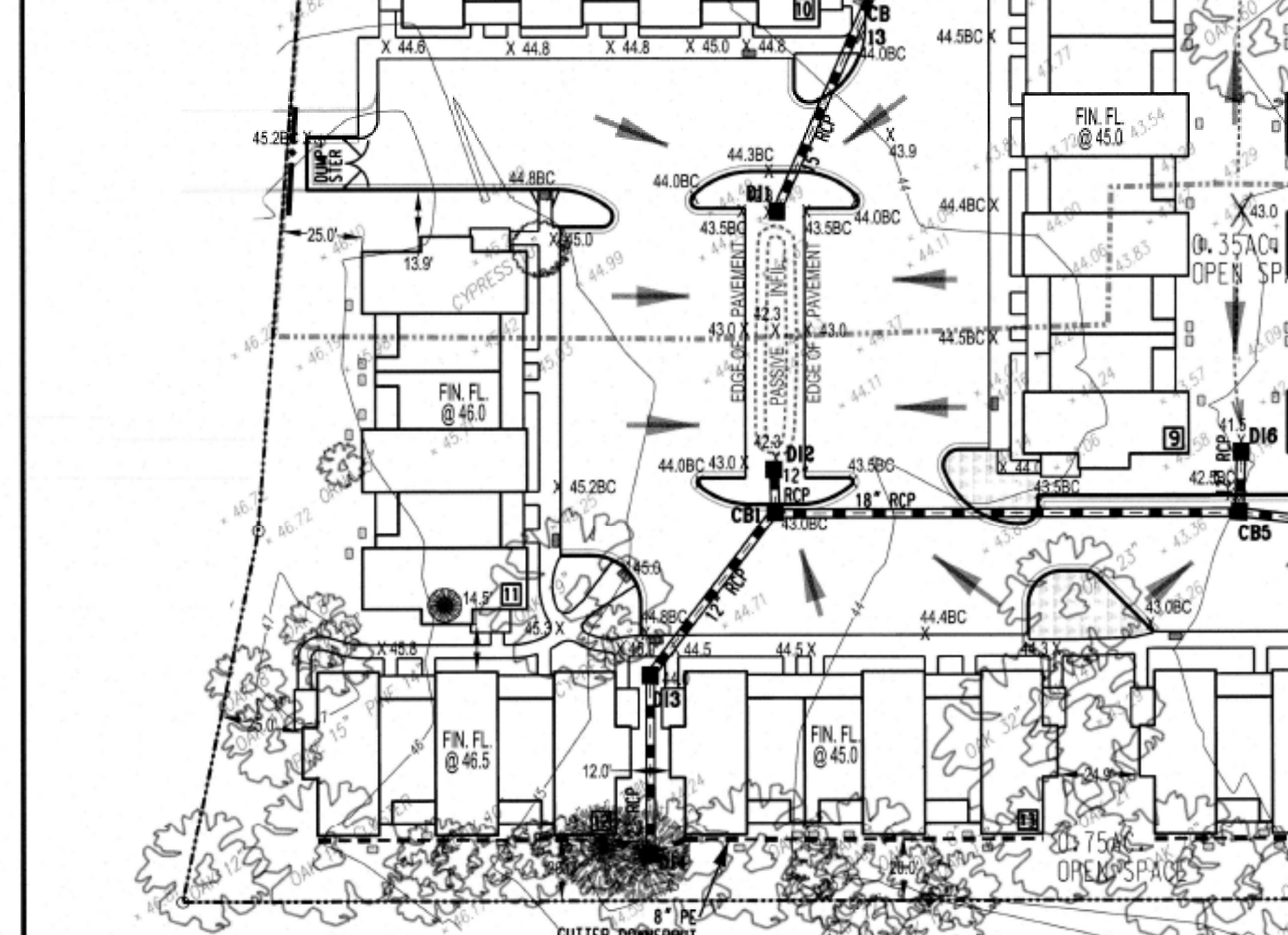
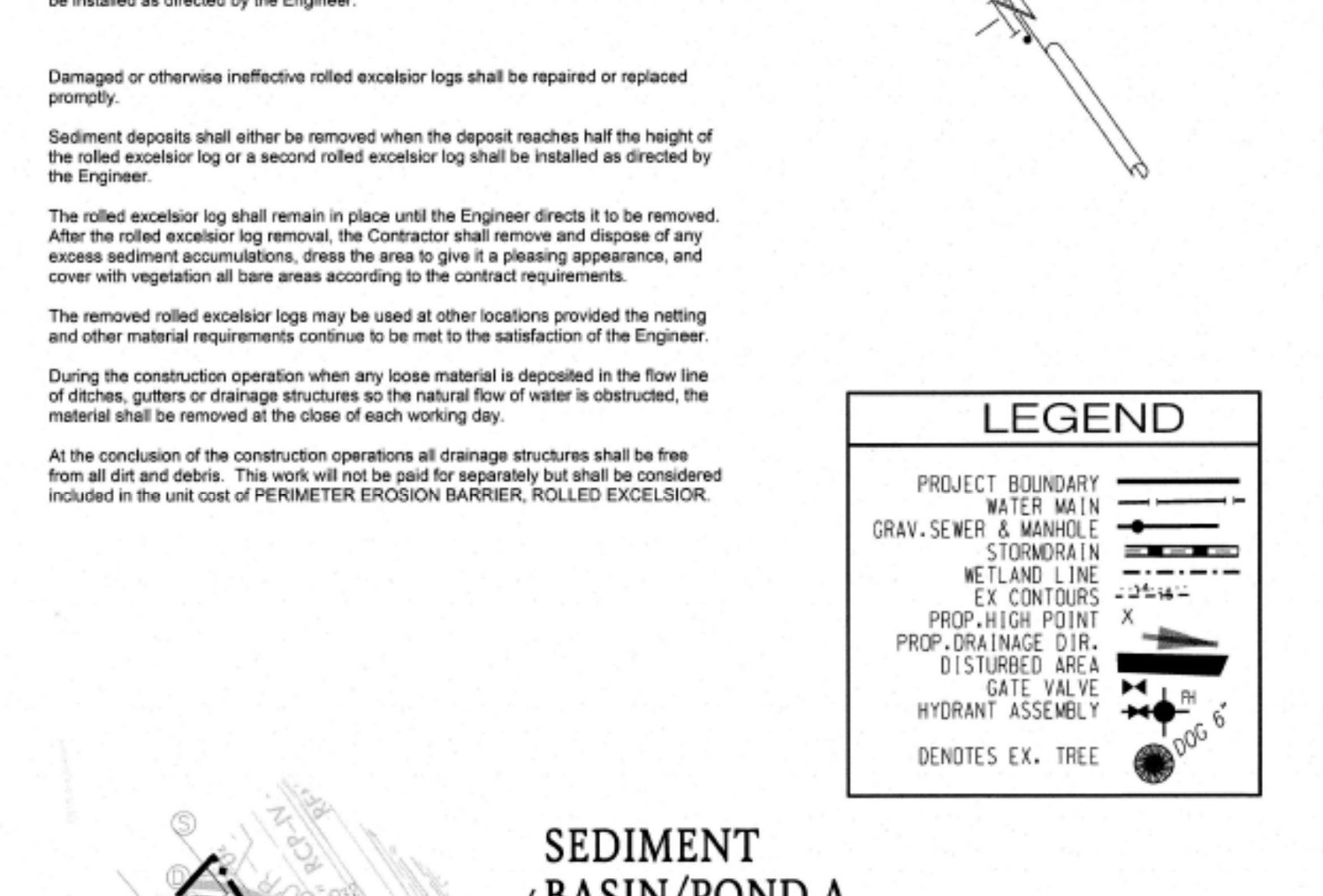
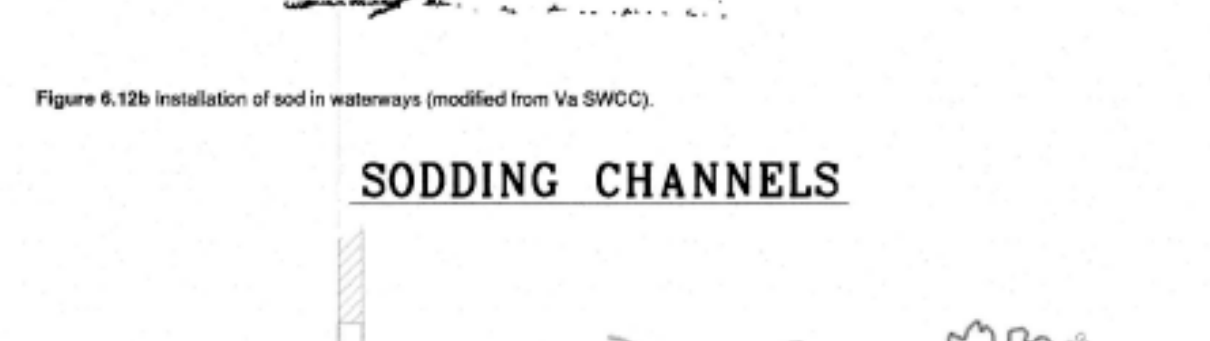
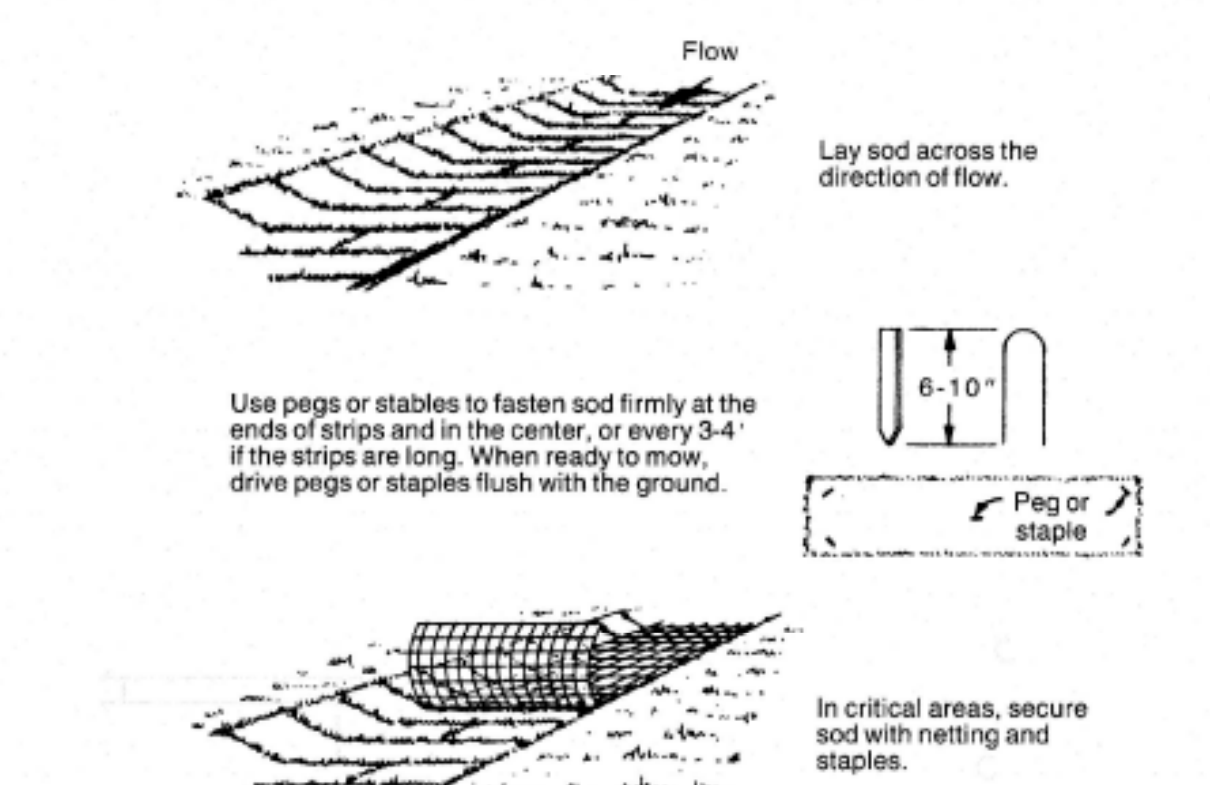
STORM DRAIN SCHEDULE REVISED 7/22/2019

STRUCTURE	HOOD	INVERT	DEPTH	PIPE DIA.	HEADWATER
D12	42.00	39.80	2.40	12	43.60
D14	43.50	39.95	3.55	12	49.85
D13	44.00	39.78	4.21	12	45.79
CB 1	43.50	39.03	4.47	18	49.53
D18	41.50	39.02	2.48	12	43.02
CB 5	42.50	38.47	4.03	18	39.97
D19	40.80	38.38	2.42	12	39.28
D19	41.50	38.35	3.15	12	39.35
JB 1	41.50	37.07	4.43	24	39.07
D111	41.00	37.82	3.18	12	38.62
D112	40.50	36.75	3.75	24	38.78
D113	40.50	36.58	4.22	24	38.28
CB 7	41.00	35.70	5.34	24	37.76
D118	40.00	36.28	3.72	18	37.63
D118	41.50	34.92	6.58	30	37.12
D119	39.50	35.85	3.65	12	36.63
CB 10	40.50	34.28	6.22	30	38.79
JB 2	38.70	33.88	4.82	30	38.38
CB 11	38.50	33.79	4.71	30	38.29
D120	38.00	33.50	4.44	30	38.09
D118	39.00	33.40	5.60	30	38.50
CB 14	38.50	33.05	5.45	30	35.05
D11	42.30	37.69	4.61	18	38.94
CB 13	44.00	37.20	6.80	30	38.70
CB 2	43.50	36.97	6.53	18	39.47
D15	42.50	37.34	5.16	12	38.34
CB 3	43.50	36.72	6.78	18	39.22
D17	40.50	36.92	3.58	12	37.92
JB 3	41.80	35.72	6.08	24	37.72
D110	41.00	36.60	4.40	12	37.60
CB 4	41.20	35.42	5.78	24	37.42
CB 9	41.20	35.15	6.05	24	37.15
D114	40.00	34.08	5.92	24	35.98
D116	39.50	34.49	5.01	24	34.49
CB 9	40.00	34.28	5.72	24	34.28
D117	39.50	34.80	4.70	12	35.80
CB 12	40.00	33.74	6.26	24	33.74
D121	39.00	32.02	6.98	30	33.03
D122	35.50	31.00	4.50	36	33.80
D123	35.50	31.00	4.50	36	33.80
D18	35.50	30.08	5.42	30	30.08



Sodded waterways—Sod provides a resilient channel lining, providing immediate protection from concentrated runoff and eliminating the need for installing mats or mulch. The following points apply to the use of sod in waterways:
 1. Prepare the soil as described in Practice 6.30, *Grass-lined Channels*. The sod type must be able to withstand the velocity of flow specified in the channel design (Appendix 8.05).
 2. Lay sod strips perpendicular to the direction of flow, with the lateral joints staggered on a brick-like pattern. Edges should be tightly together (Figure 6.12b).

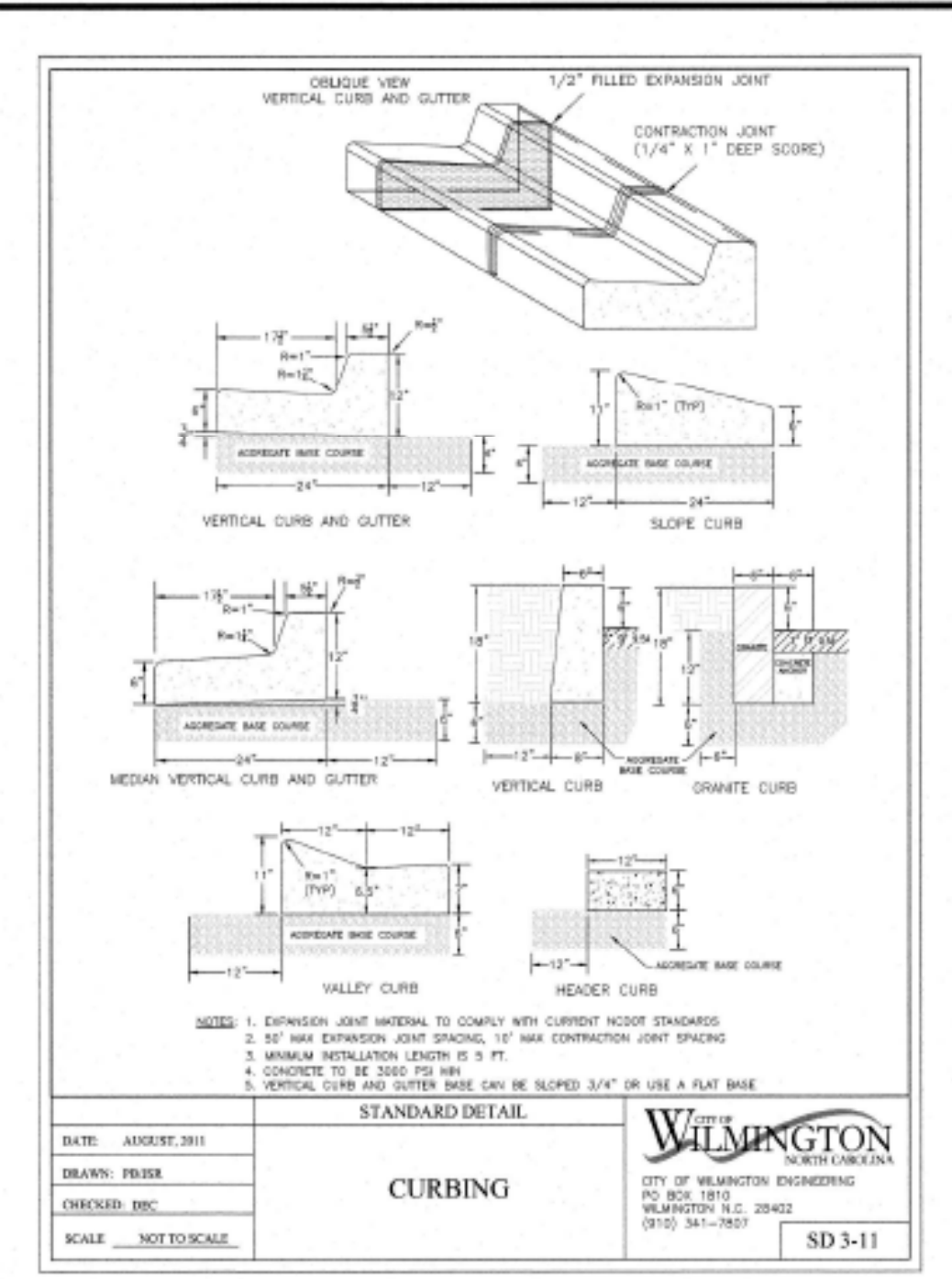
EXCELSIOR LOG
Maintenance: The Contractor shall inspect all rolled excelsior logs immediately after each rainfall and at least daily during prolonged rainfall. The Contractor shall immediately correct any deficiencies.
 The Contractor shall also make a daily review of the location of rolled excelsior logs in areas where construction activities have altered the natural contour and drainage runoff to ensure that the rolled excelsior logs are properly located for effectiveness. Where deficiencies exist as determined by the Engineer, additional rolled excelsior logs shall be installed as directed by the Engineer.
 Damaged or otherwise ineffective rolled excelsior logs shall be repaired or replaced promptly.
 Sediment deposits shall either be removed when the deposit reaches half the height of the rolled excelsior log or a second rolled excelsior log shall be installed as directed by the Engineer.
 The rolled excelsior log shall remain in place until the Engineer directs it to be removed. After the rolled excelsior log removal, the Contractor shall remove and dispose of any excess sediment accumulations, dress the area to give it a pleasing appearance, and cover with vegetation all bare areas according to the contract requirements.
 The rolled excelsior logs may be used at other locations provided the netting and other material requirements continue to be met to the satisfaction of the Engineer.
 During the construction operation when any loose material is deposited in the flow line of ditches, gutters or drainage structures so the natural flow of water is obstructed, the material shall be removed at the close of each working day.
 At the conclusion of the construction operations all drainage structures shall be free from all dirt and debris. This work will not be paid for separately but shall be considered included in the unit cost of PERIMETER EROSION BARRIER, ROLLED EXCELSIOR.



VILLAGE TOWNHOMES
 (FORMERLY ARBORETUM VILLAGE)
 CITY OF WILMINGTON, NORTH CAROLINA
 OWNER: ARBORETUM VILLAGE, LLC
 ADDRESS: 10 S. CARDINAL DRIVE WILMINGTON, N.C. 28403
 PHONE: [blank]
 DESIGNED: JHF
 DRAWN: JHF
 APPROVED: JHF
 DATE: 8/31/18
 SCALE: 1" = 40'
 SHEET 3 OF 21

STORM DRAIN SCHEDULE REVISED 7/22/2019

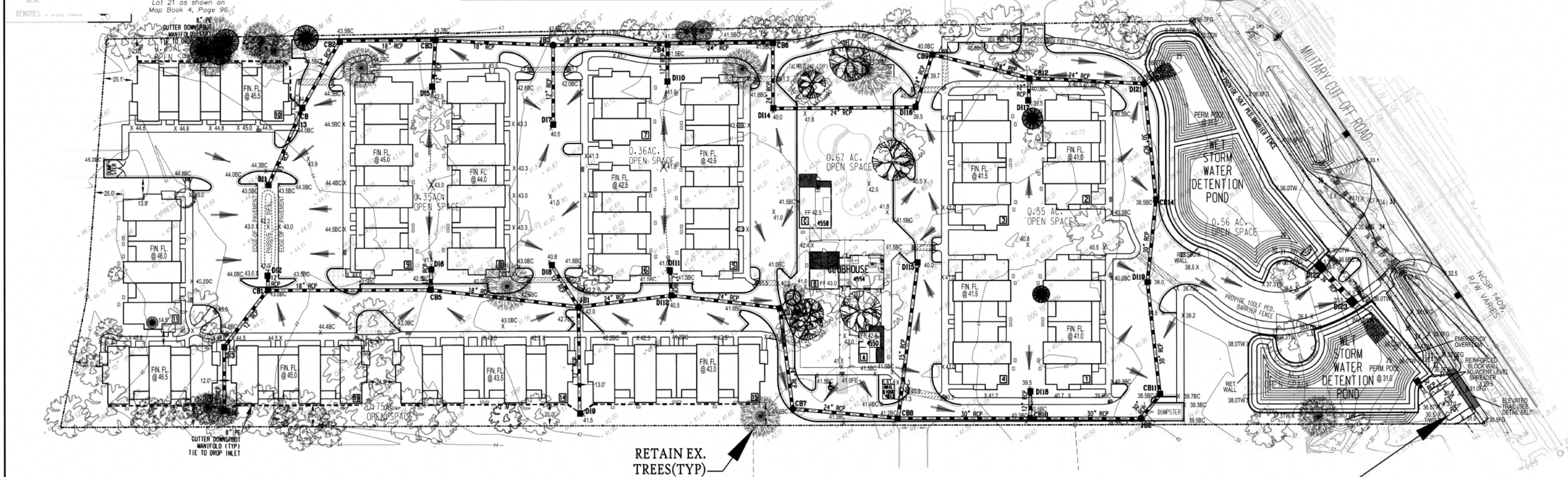
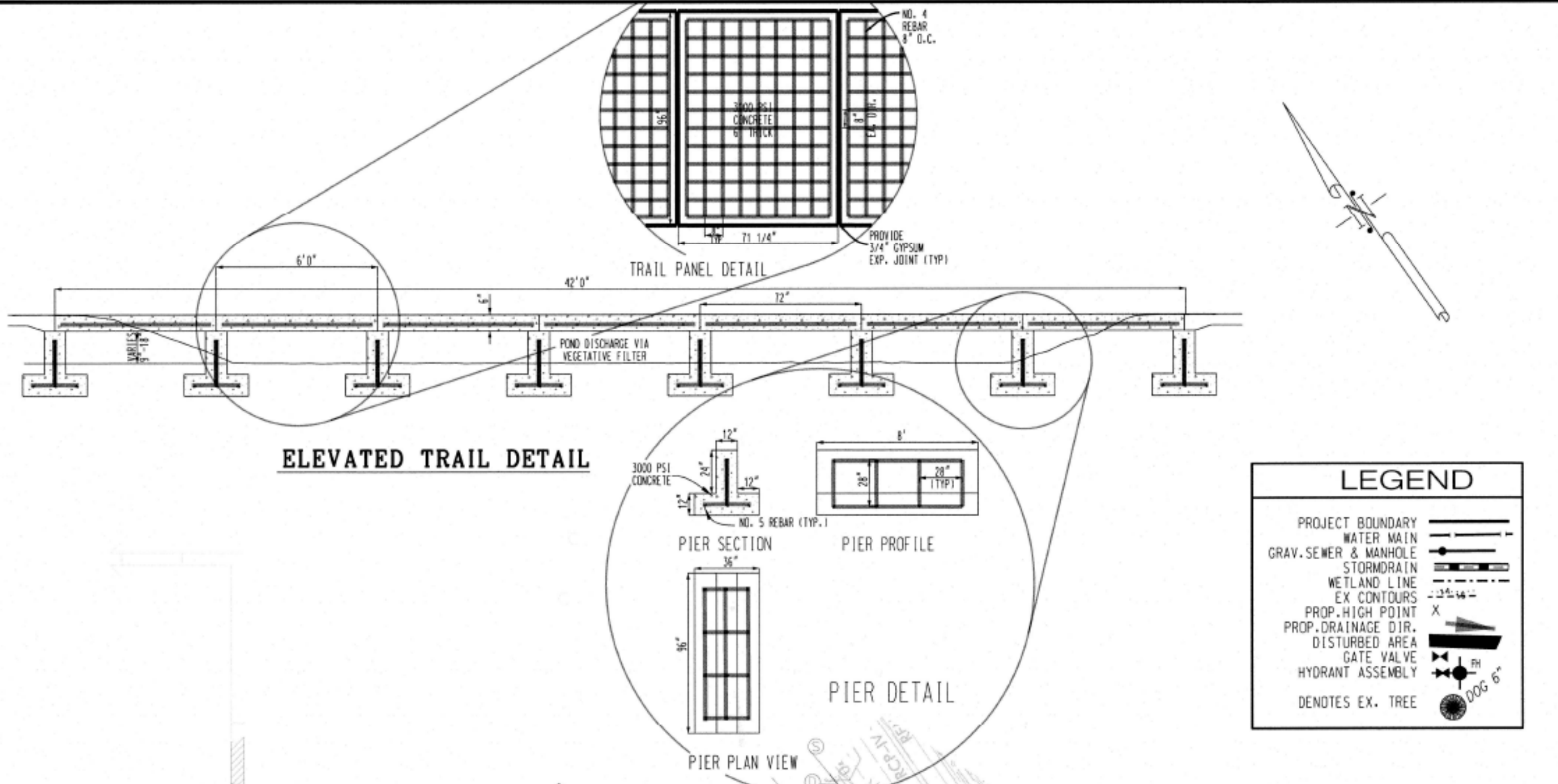
STRUCTURE	HOOD	INVERT	DEPTH	PIPE DIA.	HEADWATER
DI2	42.00	36.60	5.40	12	40.60
DI4	43.50	36.95	6.55	12	40.95
DI3	44.00	36.70	7.30	12	40.70
CB1	43.50	36.03	7.47	18	40.53
DI6	41.80	39.02	2.78	12	40.02
CB5	42.50	36.47	6.03	18	39.97
DI8	40.80	38.38	2.42	12	39.38
DI9	41.80	38.35	3.45	12	39.35
JB1	41.50	37.07	4.43	24	39.07
DI11	41.00	37.82	3.18	12	39.82
DI12	40.80	36.75	4.05	12	38.75
DI13	40.80	36.28	4.52	24	38.28
CB7	41.00	36.76	4.24	24	37.76
DI15	40.80	36.28	4.52	18	37.52
CB9	41.20	34.62	6.58	20	37.12
DI18	39.80	35.63	4.17	12	36.83
CB10	40.30	34.28	6.02	20	36.78
JB2	38.70	33.85	4.85	30	36.30
CB11	38.80	33.79	5.01	30	36.29
DI20	38.00	33.56	4.44	30	36.56
DI19	38.00	33.40	4.60	30	36.50
CB14	38.80	33.05	5.75	30	33.55
DI1	42.30	37.69	4.61	18	36.94
CB13	44.00	37.20	6.80	18	38.70
CB2	43.00	36.97	6.03	18	38.47
DI5	42.50	37.34	5.16	12	38.34
CB3	43.00	36.72	6.28	18	39.22
DI7	40.80	36.92	3.88	12	37.92
JB3	41.80	35.72	6.08	24	37.72
DI10	41.00	36.50	4.50	12	37.50
CB4	41.20	35.42	5.78	24	37.42
CB6	41.80	35.15	6.65	24	37.15
DI14	40.00	34.95	5.05	24	36.95
DI16	39.50	34.49	5.01	24	36.49
CB8	40.00	34.26	5.74	24	36.26
DI17	39.50	34.80	4.70	12	36.80
CB12	40.00	33.74	6.26	24	35.74
DI21	39.00	32.05	6.95	30	41.05
DI22	35.50	31.00	4.50	30	35.80
DI23	35.50	31.00	4.50	30	35.80
CB	35.50	30.00	5.50	30	30.00



PIPE DESIGN CALCULATIONS

PROJECT: Village Townhomes
 ENGINEER: JHF
 DATE: REVISED 06/27/19
 STORM: 10 YEAR, 5 MINUTE T_p
 SOURCE: COWI DESIGN MANUAL RCP 18, 24

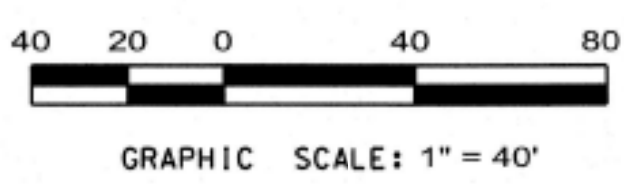
LOCATION	AREA (ACRES)	RUNOFF CHART (I/P/PP)	CURVE COEFF	CORR. COEFF	CURVE SUBTOTAL	PIPE DATA	HEADWATER ELEV.	TAILWATER ELEV.	PIPE LENGTH	HYDRAULIC GRADE (%)	DIAMETER (IN)	SIZE (IN)	V FULL (FPS)	
DI2	CB1	0.33	0.83	7.23	0.89	1.58	1.58	40.6	14	0.50	10.08	12	3.21	
DI4	DI3	0.25	0.25	7.23	0.85	1.18	1.18	40.9	40.8	54	0.30	9.94	12	2.48
DI3	CB1	0.89	0.34	7.23	0.85	0.41	1.59	40.8	40.5	83	0.40	10.52	12	2.87
CB1	CB5	0.23	0.90	7.23	0.85	1.10	4.27	40.5	40.0	141	0.40	15.23	18	3.76
DI6	CB5	0.16	0.16	7.23	0.85	0.78	0.78	40.0	40.0	18	0.30	8.42	12	2.48
CB5	JB	0.27	1.33	7.23	0.85	1.25	8.26	40.0	39.1	128	0.70	15.85	18	4.97
DI8	JB	0.45	0.45	7.23	0.85	2.13	2.13	39.4	39.1	43	0.30	10.57	12	3.79
DI9	JB	0.11	0.11	7.23	0.85	0.53	0.53	39.4	39.1	82	0.30	7.33	12	2.48
JB	DI12	1.89	1.89	7.23	0.85	8.93	8.93	38.1	38.8	81	0.40	20.09	24	4.45
DI11	DI12	0.17	0.17	7.23	0.85	0.79	0.79	38.8	38.8	23	0.30	8.55	12	2.48
DI12	DI13	0.28	0.28	7.23	0.85	1.32	1.32	38.8	38.3	94	0.40	20.86	24	5.08
DI13	CB7	0.31	2.65	7.23	0.85	1.46	12.50	38.3	37.8	87	0.60	21.12	24	5.58
CB7	DI19	0.15	1.75	7.23	0.85	0.95	13.50	37.8	37.1	81	0.70	20.82	24	6.02
DI15	CB8	0.41	0.41	7.23	0.85	1.93	1.93	37.8	37.1	158	0.30	11.83	15	2.88
CB8	CB10	0.17	0.34	7.23	0.85	0.81	15.73	37.1	36.8	114	0.30	28.22	30	4.58
DI18	CB10	0.23	0.23	7.23	0.85	1.11	1.11	36.8	36.8	23	0.30	9.69	12	2.48
CB10	JB	0.64	3.61	7.23	0.85	0.17	17.91	36.8	36.4	100	0.40	25.58	30	5.28
CB6	DI14	0.11	1.88	7.23	0.85	0.91	8.88	37.1	37.0	56	0.30	21.58	24	5.94
DI14	DI16	0.28	2.16	7.23	0.85	1.30	18.19	37.0	36.5	122	0.40	21.12	24	4.55
DI16	CB9	0.21	1.13	7.23	0.85	0.90	11.30	36.5	35.7	47	0.50	20.87	24	6.00
CB9	DI12	0.13	2.65	7.23	0.85	0.85	11.80	36.3	35.7	84	0.85	20.87	24	6.84
DI17	CB12	0.28	0.28	7.23	0.85	1.21	1.21	36.8	35.7	19	0.30	16.04	12	2.48
CB12	DI21	0.88	2.84	7.23	0.85	0.40	13.41	35.7	35.0	89	0.70	21.07	24	6.02
DI21	FOREBAY	0.11	7.21	7.23	0.85	0.84	34.00	35.0	0	0	0.60	30.74	36	7.31
CB	LVL SPRING						29.75	30.1	30.0	12	0.85	28.81	30	6.74



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

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	



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

PROVIDE SAND FILTER LEVEL SPREADER & VEGETATIVE FILTER @ POND OUTLET



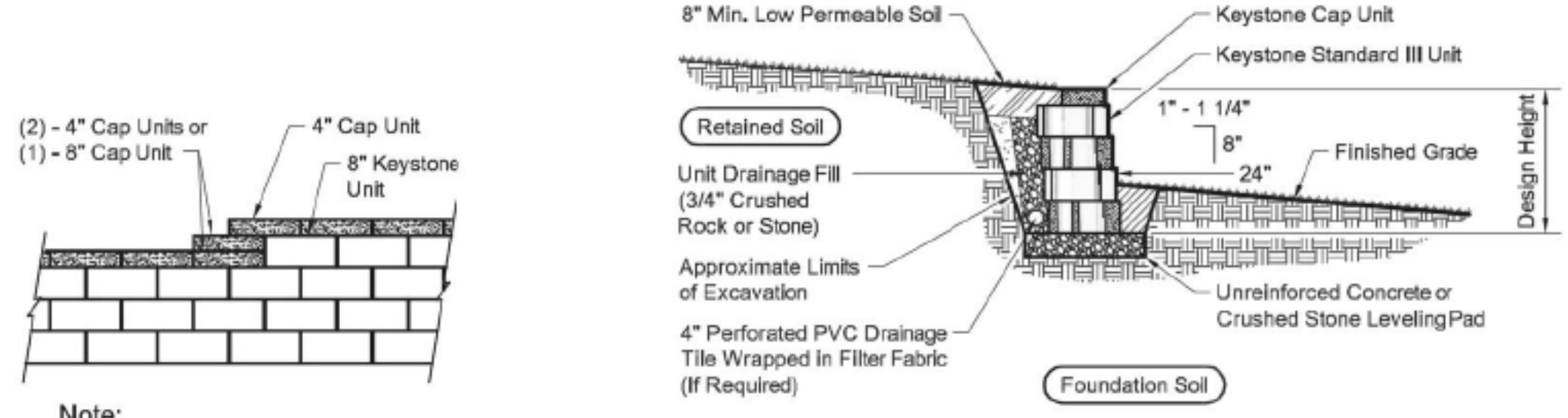
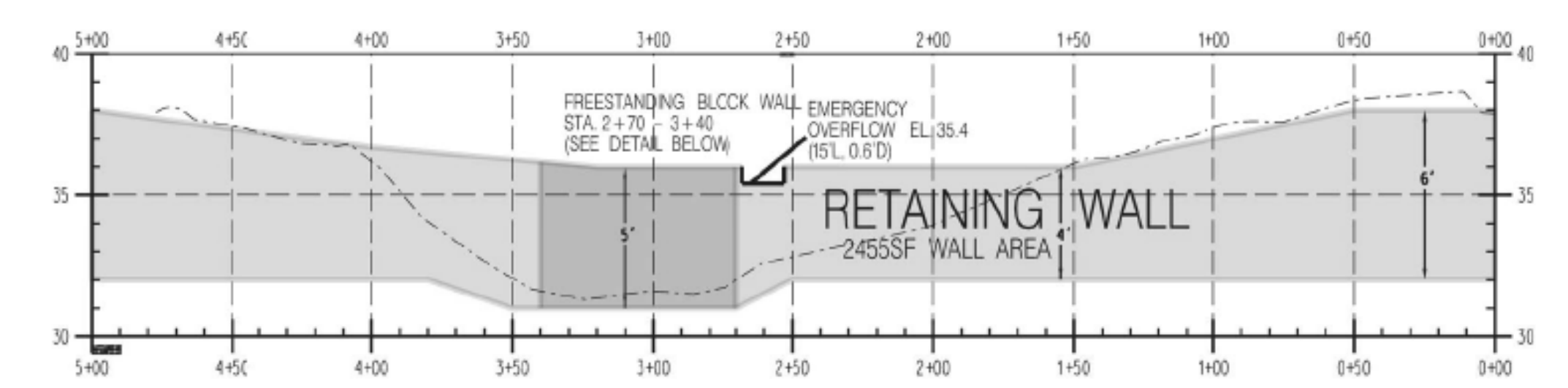
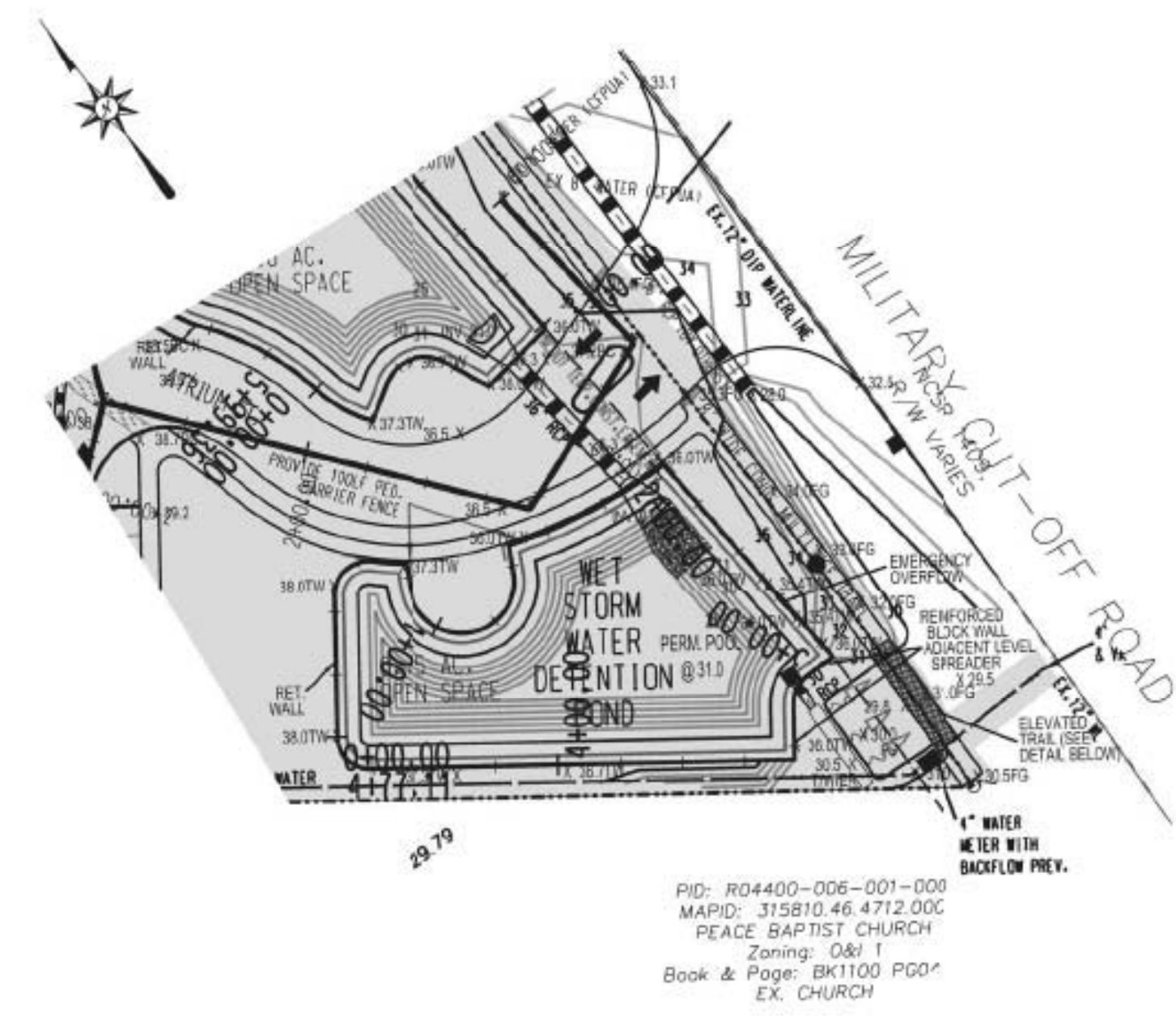
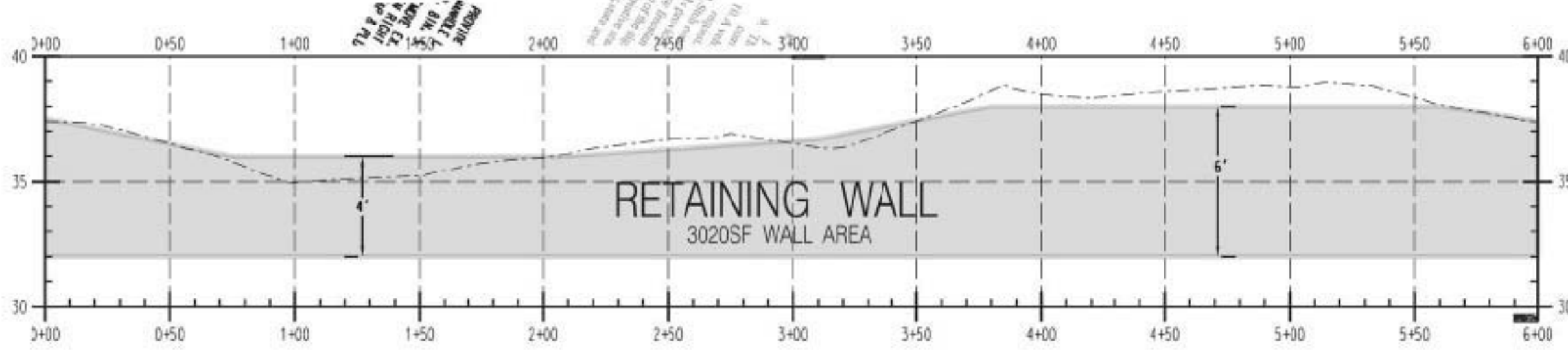
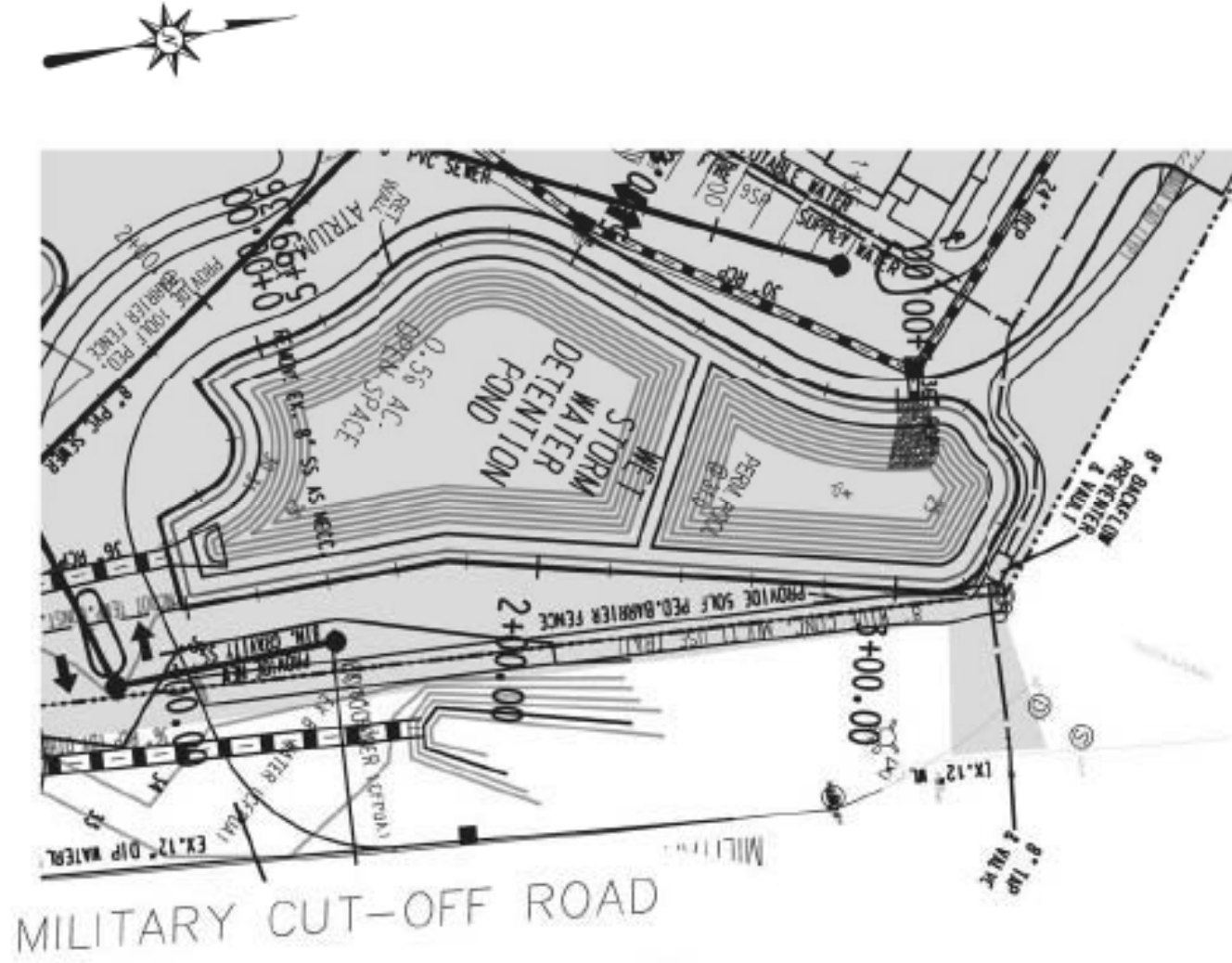
DRAINAGE/GRADING PLAN
VILLAGE TOWNHOMES
 (FORMERLY ARBORETUM VILLAGE)
 CITY OF WILMINGTON, NORTH CAROLINA

OWNER: ARBORETUM VILLAGE, LLC
ADDRESS: 10 S. CARDINAL DRIVE, WILMINGTON, N.C. 28403
PHONE:

DESIGNED: JHF
DRAWN: JHF
APPROVED: JHF
DATE: 8/31/18
SCALE: 1" = 40'
SHEET: 3A OF 21

STROUD ENGINEERING, P.A.
 102-D CINEMA DRIVE, WILMINGTON, NORTH CAROLINA 28403
 (910) 815-0775 (910) 815-0593 FAX

PROJECT NO.: PW 1312



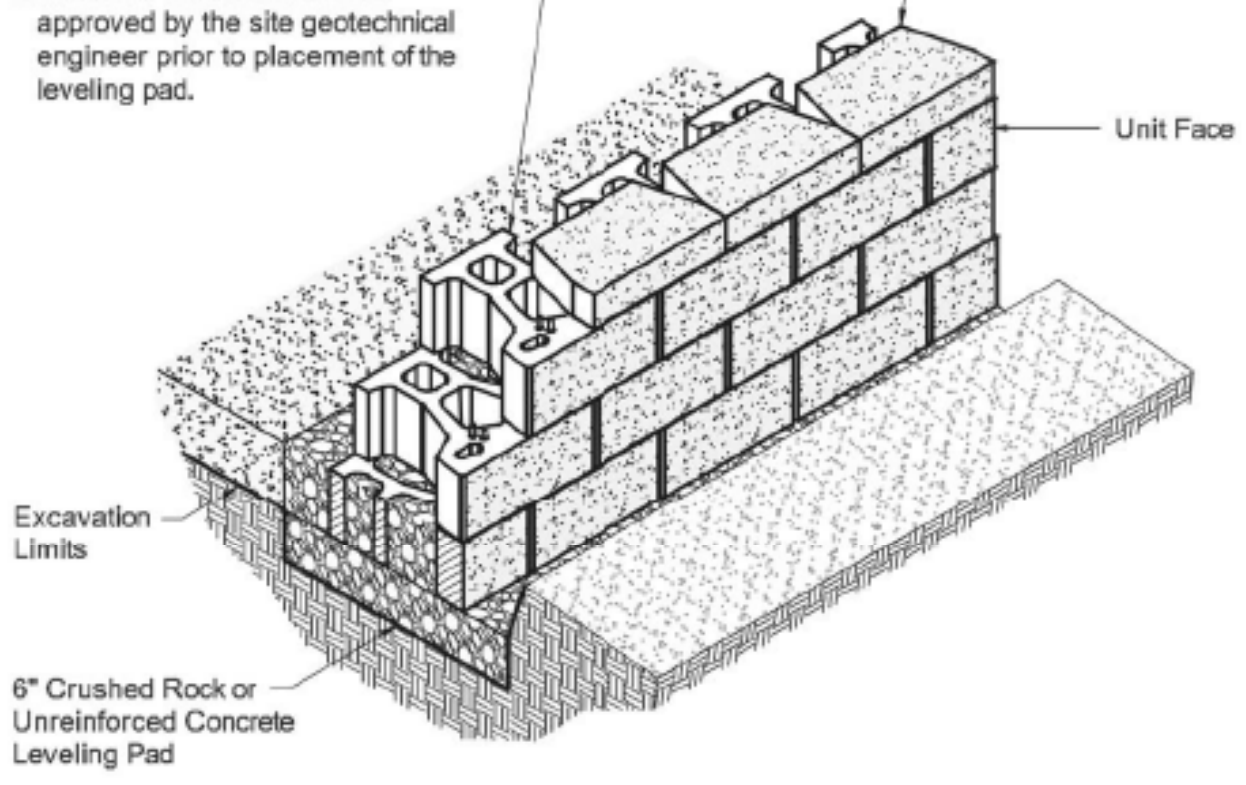
Typical Gravity Wall Section
Standard III Unit - 1\"/>

Note:
1. Secure all cap units with Keystone Kapseal or equal.

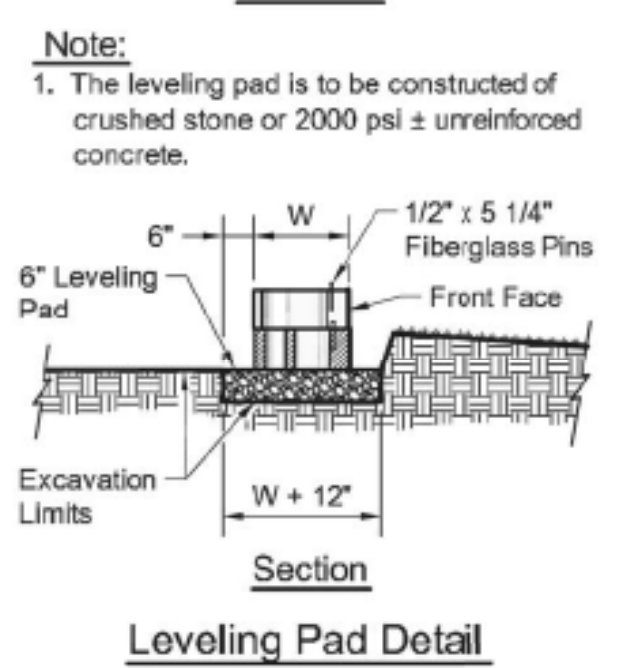
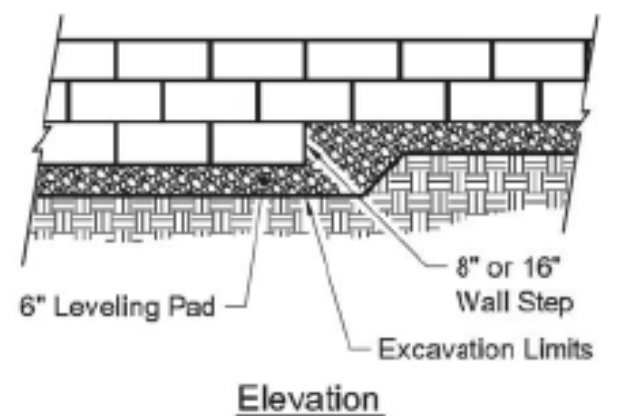
Top of Wall Steps

Base Leveling Pad Notes:
1. The leveling pad is to be constructed of crushed stone or 2,000 psi unreinforced concrete.
2. The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

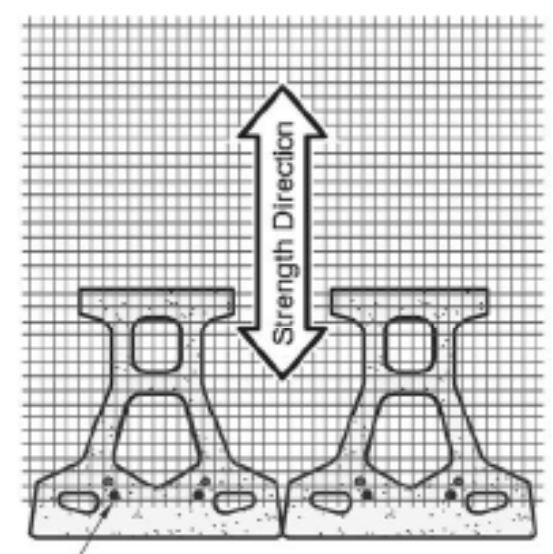
Standard III Unit	Cap Unit
*Width: 18"	*Width: 18"
*Depth: 18"	*Depth: 10 1/2"
*Height: 8"	*Height: 4"
*Weight: 89 lbs	*Weight: 50 lbs



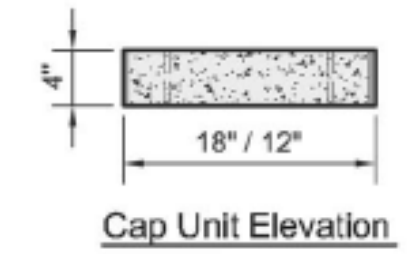
Standard III Unit/Base Pad Isometric Section View
*Dimensions & Weight May Vary by Region



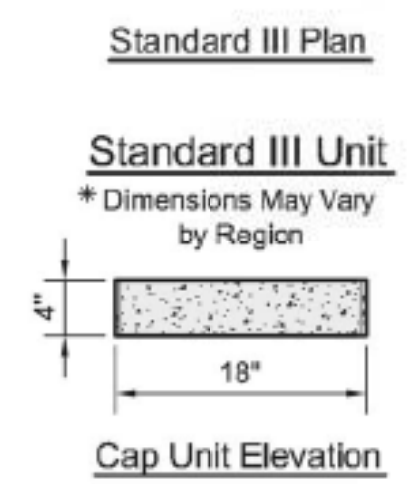
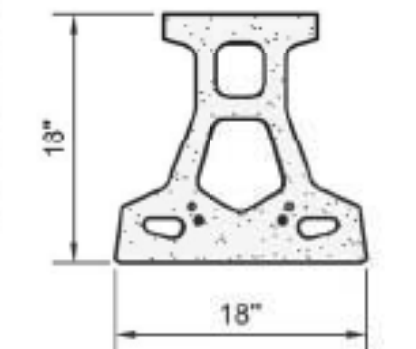
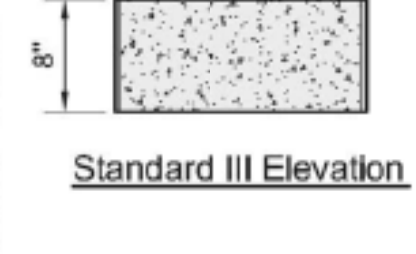
Leveling Pad Detail



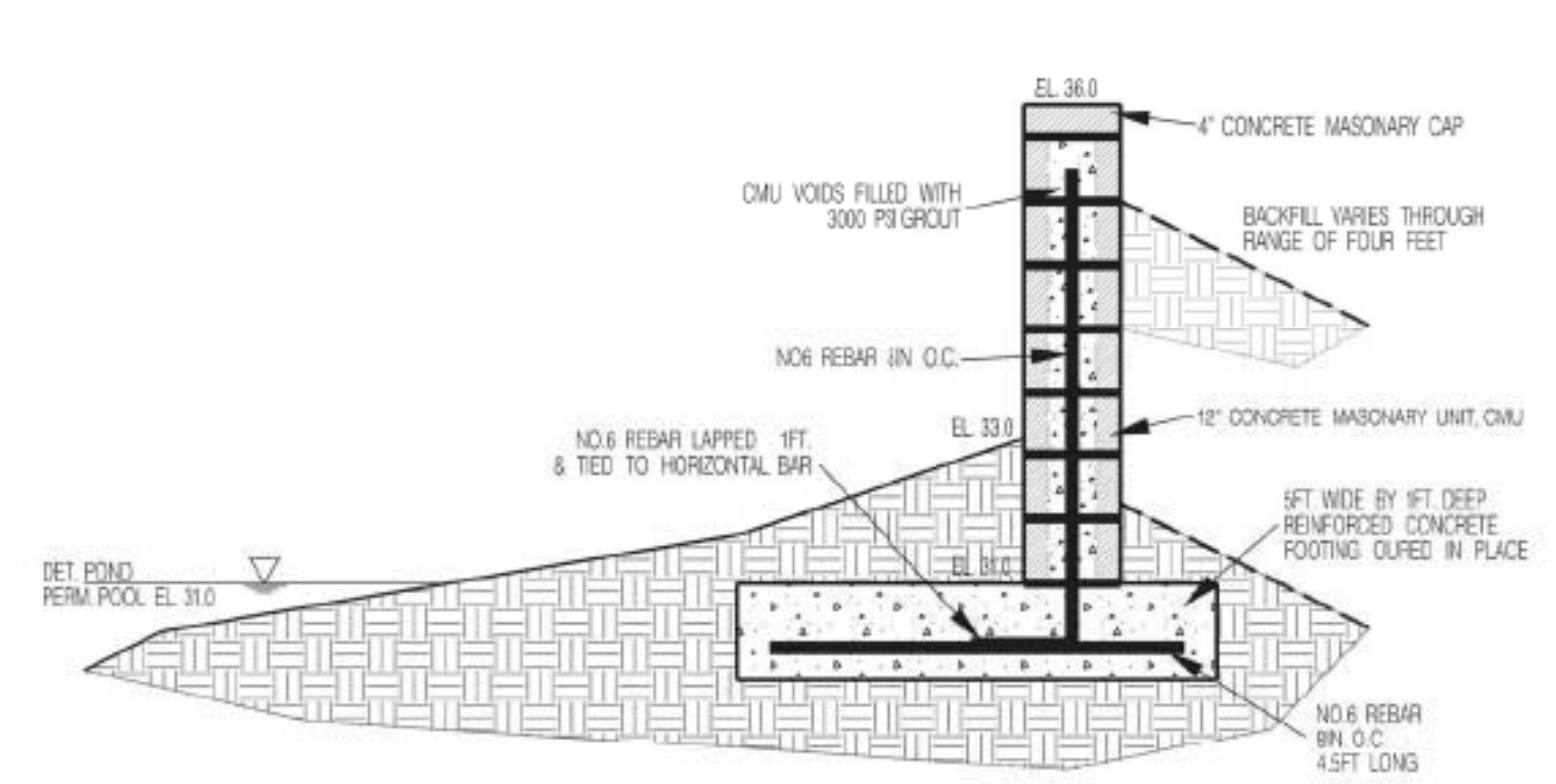
Grid & Pin Connection



Universal Cap Unit Option
*Dimensions & Availability Will Vary by Region



Straight Split Cap Unit Option
*Dimensions & Availability Will Vary by Region



FREESTANDING WALL SECTION

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

Approved Construction Plan

Name _____ Date _____

Planning _____

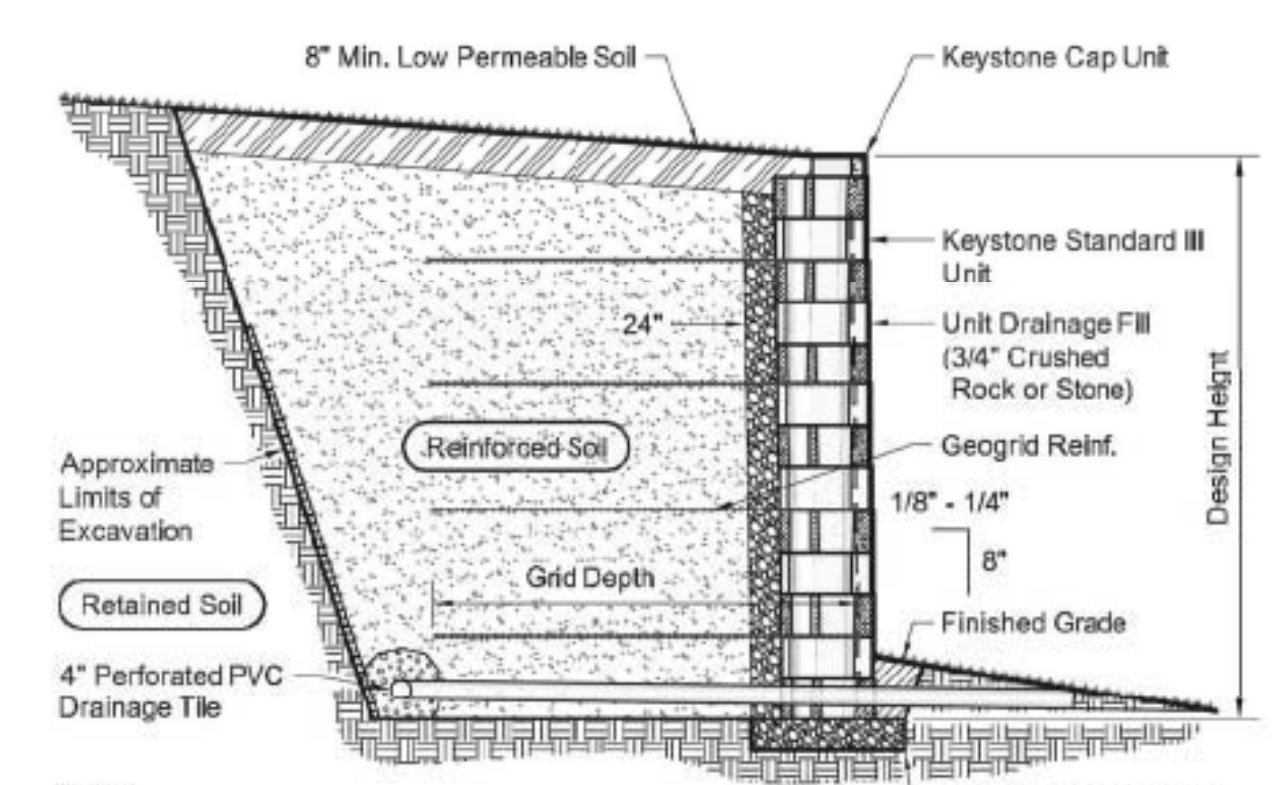
Traffic _____

Fire _____

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

Date: _____ Permit # _____

Signed: _____



Typical Reinforced Wall Section
Standard III Unit - Near Vertical Setback

Note:
When site conditions require, wrap drainage tile in 3/4\"/>

JAMES H. FENTRESS, JR., P.E.
Professional Engineer
North Carolina
102 D Cinema Drive
Wilmington, NC 28403
(910) 815-0775

RETAINING WALL PLAN AND PROFILE

VILLAGE TOWNHOMES
(FORMERLY ARBORETUM VILLAGE)

CITY OF WILMINGTON, NORTH CAROLINA

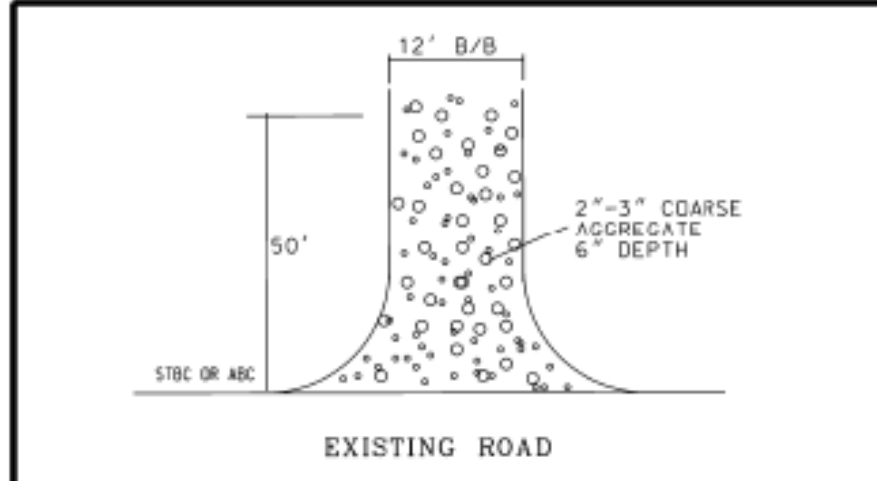
OWNER: ARBORETUM VILLAGE, LLC
ADDRESS: 10 S. CARDINAL DRIVE
WILMINGTON, N.C. 28403
PHONE: _____

DESIGNED: JHF
DRAWN: JHF
APPROVED: JHF

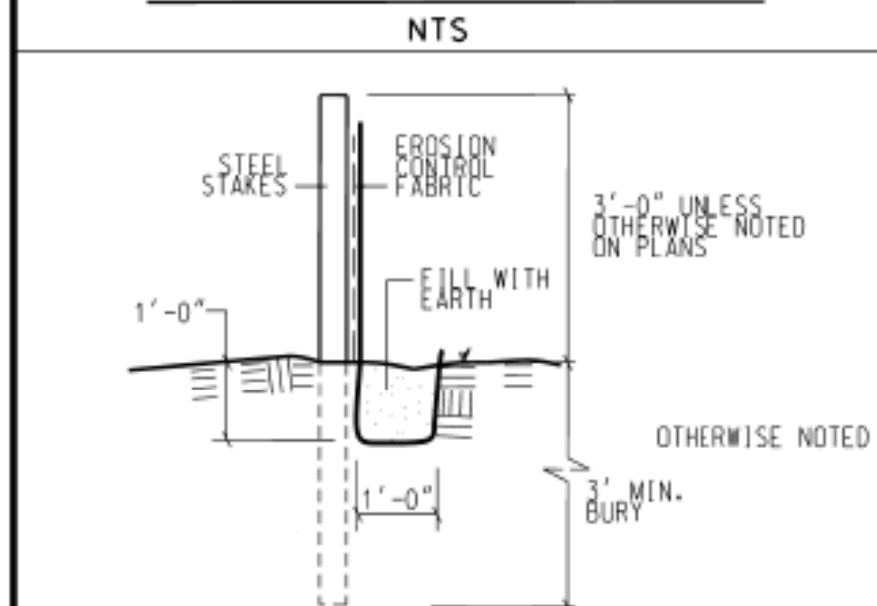
DATE: 10/10/18
SCALE: HOR: 1" = 50'
VER: 1" = 5'

STROUD ENGINEERING, P.A.
102 D CINEMA DRIVE
WILMINGTON, NC 28403
(910) 815-0775

SHEET 4 OF 21

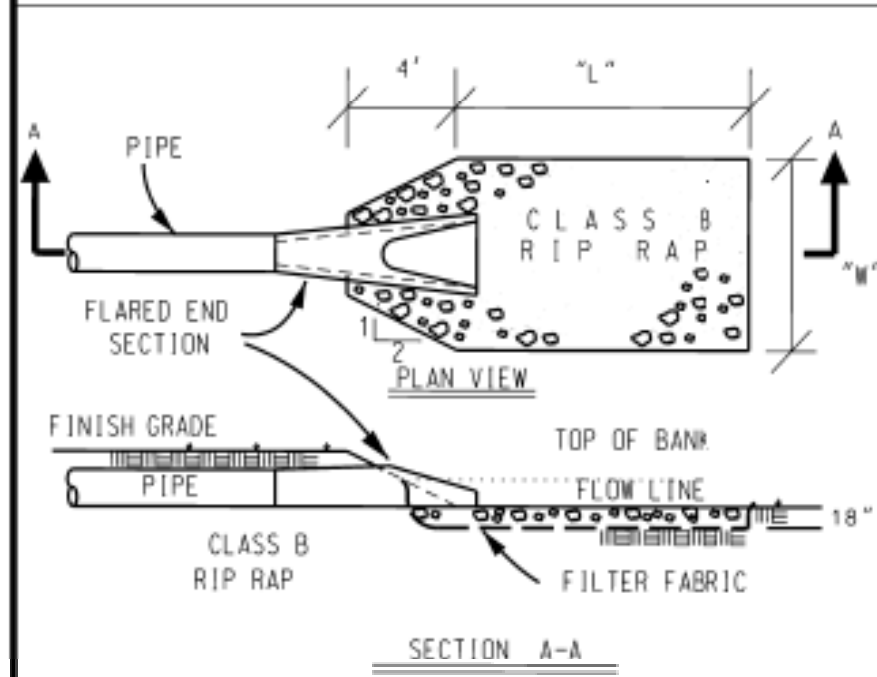


TEMPORARY CONSTRUCTION ENTRANCE DETAIL



TYPICAL SILT FENCE

NOTES:
POSTS TO BE SPACED 6 FT O.C.
UTILIZE COIR MESH W/ 10 GAUGE 6 X 6 WIRE MESH REINFORCEMENT FOR BATTENS



RIP RAP APRON DETAIL

PIPE LENGTH	WIDTH
36'	18.0' x 9.0'

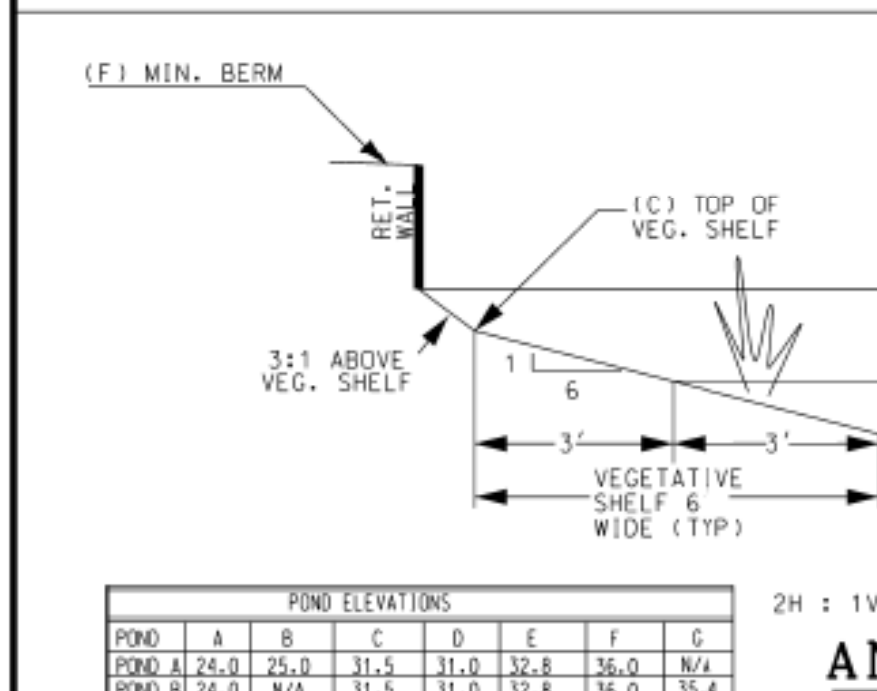
FILTER FABRIC TO BE TREVIRA SPUNBOND TYPE 11/120
RIP RAP APRONS SHALL BE PROVIDED ON DOWNSTREAM ENDS OF CULVERT FLARED END SECTIONS

COASTAL PLAIN SITE STABILIZATION SCHEDULE

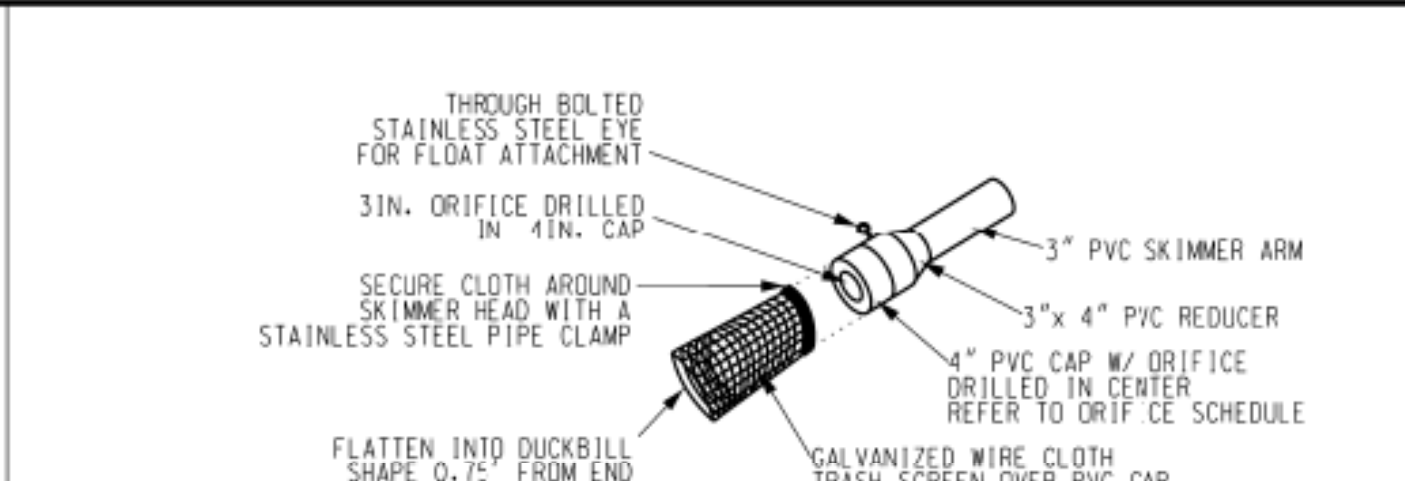
1. Fertilize and lime per recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.
2. Incorporate lime/fertilizer 4-6 inches.
3. Roughen steep slopes by tracked machinery.
4. Select species based on season. Refer to tables.
5. Broadcast seeds evenly and cover by raking or dragging a chain. Firm soil by rolling.
6. Apply straw mulch at a rate 1-2 tons per acre. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool.
7. A disk with blades set nearly straight can be used as a mulch anchoring tool.
8. Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

SOD INSTALLATION

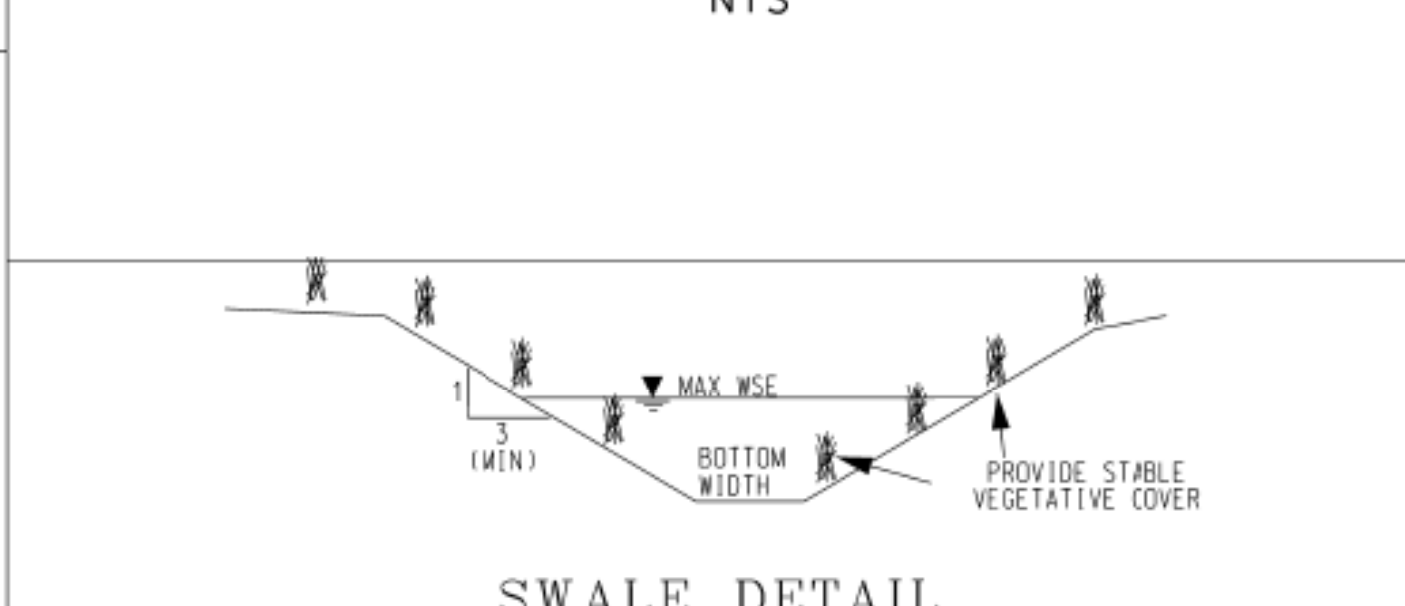
1. Fertilize and lime per recommendations of soil tests or apply 100 lb/1,000 sf ground agricultural limestone and 25 lb/1,000 sf fertilizer. In the fall, use 10-10-10. In the spring, use 5-10-10.
2. Incorporate lime/fertilizer 4-6 inches.
3. Rake or harrow to achieve a smooth final grade.
4. Roll to achieve a smooth, firm surface on which to lay the sod.
5. Lightly rake and irrigate top layer of soil just prior to installation.
6. Lay sod in a staggered, brick-like pattern with the longest dimension perpendicular to the slope. Avoid gaps. Use a knife to fit irregular shapes.
7. Roll sod lightly after installation to ensure good sod to soil contact.
8. Irrigate initially to wet soil to a depth of 4'. Keep soil moist for 2-3 weeks thereafter or until sod has taken root.



DETENTION POND AND FOREBAY SECTION

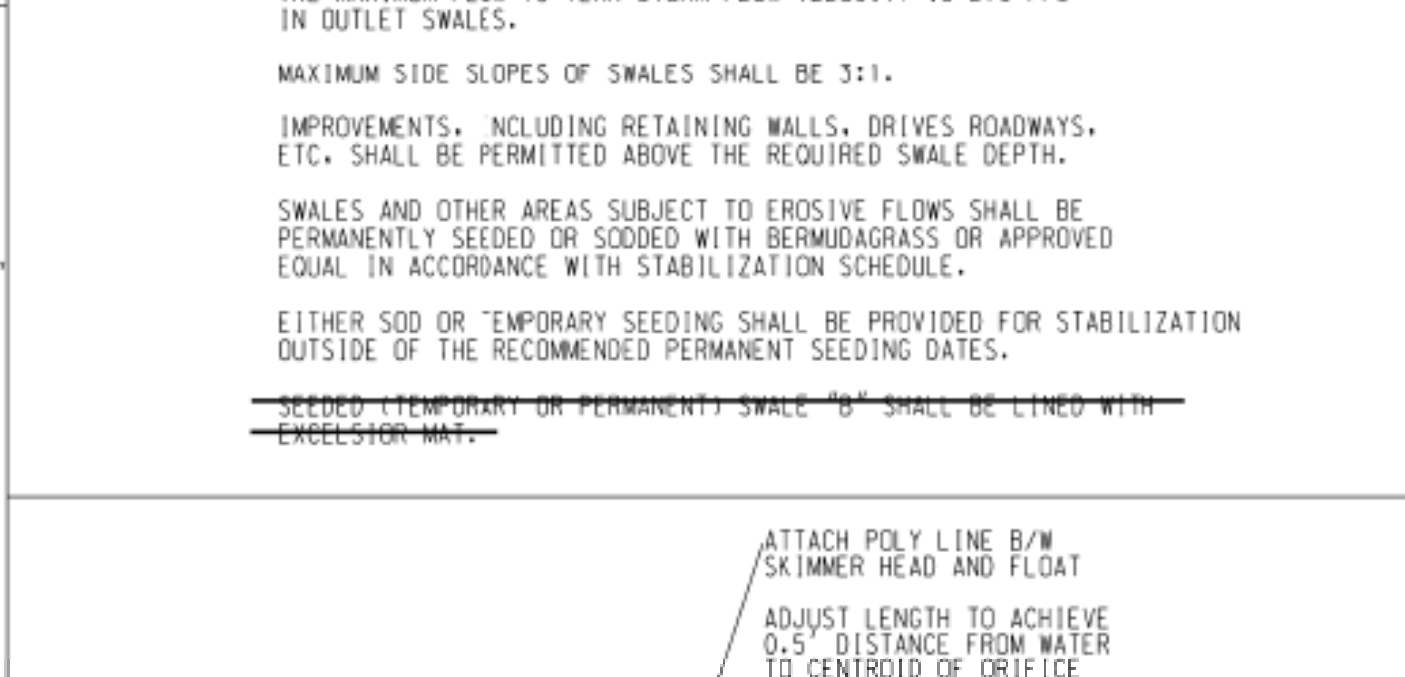


SKIMMER HEAD DETAIL

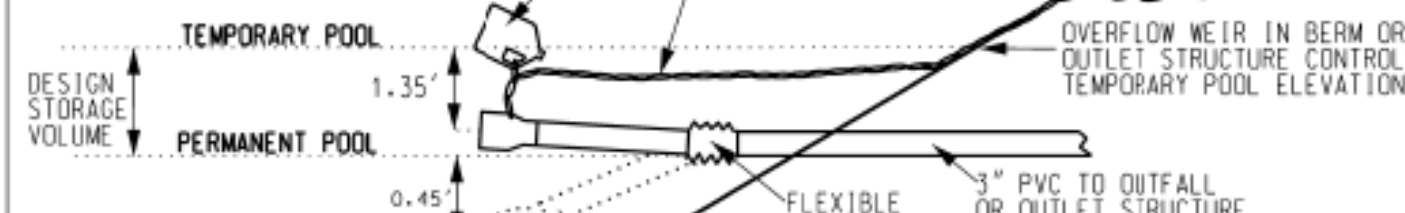


SWALE DETAIL

SWALE NOTES:
THE REQUIRED DEPTH INCLUDES THE FLOW DEPTH OF THE 10 YEAR STORM PLUS 0.5' OF FREEBOARD.
THE MAXIMUM FLOW TO YEAR STORM FLOW VELOCITY IS 2.0 FPS IN OUTLET SWALES.
MAXIMUM SIDE SLOPES OF SWALES SHALL BE 3:1.
IMPROVEMENTS, INCLUDING RETAINING WALLS, DRIVES ROADWAYS, ETC. SHALL BE PERMITTED ABOVE THE REQUIRED SWALE DEPTH.
SWALES AND OTHER AREAS SUBJECT TO EROSION FLOWS SHALL BE PERMANENTLY SEEDED OR SODDED WITH BERMUDAGRASS OR APPROVED EQUAL IN ACCORDANCE WITH STABILIZATION SCHEDULE.
EITHER SOD OR TEMPORARY SEEDING SHALL BE PROVIDED FOR STABILIZATION OUTSIDE OF THE RECOMMENDED PERMANENT SEEDING DATES.
SEEDED (TEMPORARY OR PERMANENT) SWALE "B" SHALL BE LINED WITH EXCELSTOR-MAT.



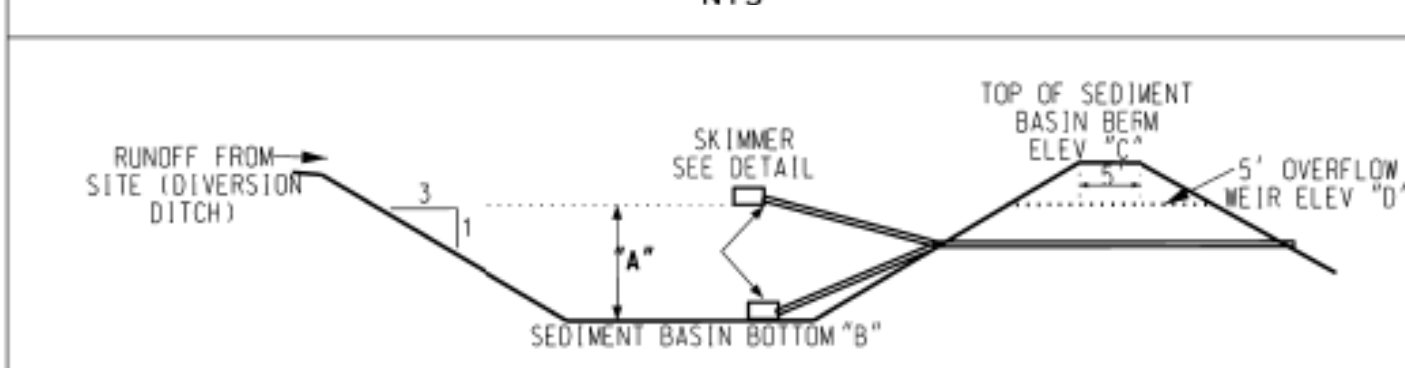
SKIMMER ASSEMBLY DETAIL



SEDIMENT BASIN DETAIL

SEDIMENT BASIN	LENGTH (FT)	WIDTH (FT)	BATTEN SPACING (FT)	FOREBAY (FT)	ELEVATION (FT)	INVERT (FT)	OVERFLOW (FT)
A	200	18.2	14.5	21	50/50/50	2.0	31.0
B	125	10.7	15.0	32	30/30/30	2.0	31.0

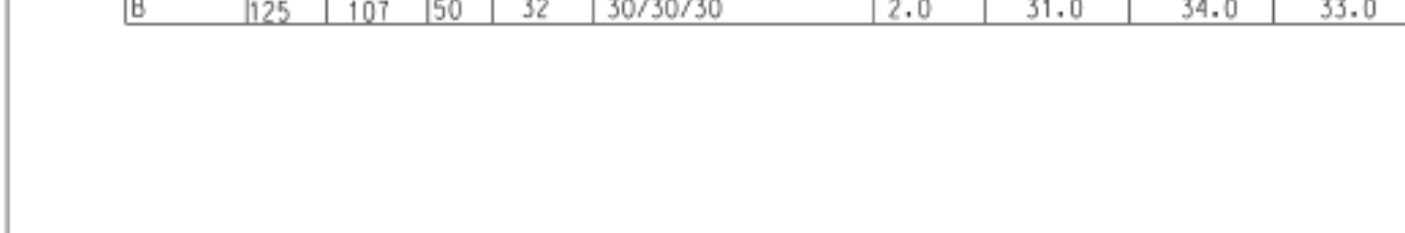
NOTE: DEMATER, DE-MUCK AND FILL POND ONCE SITE IS STABILIZED.



TYPICAL INLET PROTECTION

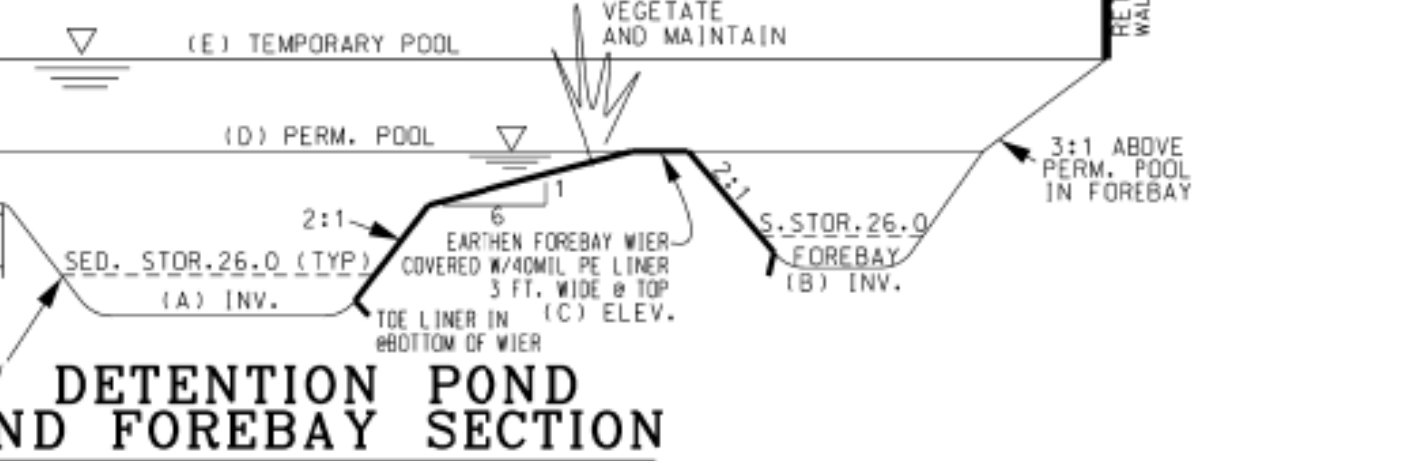
POND OUTLET STRUCTURE

OUTLET STRUCTURE SCHEDULE	A	B	C	D	E	F	G	H
05	1	31.0	3'	32.84	35.0	24.0	30'	25.5



BAFFLE DETAIL

COIR BAFFLE MATERIAL PROPERTY REQUIREMENTS	MIN. TENSILE STRENGTH (METS)	MIN. ELONGATION (METS)	MIN. FLOW VELOCITY (METS)	MINIMUM WIDTH OPEN AREA
1	300 x 680 (3.7' x 7.1' MIN)	85% x 34% (MAX)	10.2/27.2 (MIN)	6.5 FT
2	300 x 680 (3.7' x 7.1' MIN)	85% x 34% (MAX)	26.0/27.2 (MIN)	50% (MAX)



DIVERSION BERM

PERMANENT SEEDING TABLE 1

Seeding Dates	Recommended Planting	Rate (lb/ac)
Feb. 15 - Apr. 1	Tall Fescue Mixture	80
Sep. 1 - Nov. 1	Hybrid Bermudagrass	80
Apr. 1 - Aug. 1	Common Bermudagrass	see table 2
Apr. 1 - Jul. 15	Common Bermudagrass	see table 2
Mar. 1 - Jul. 1	Centipede grass	see table 2

PERMANENT SEEDING TABLE 2a-LOW MAINTENANCE MIXTURES

Site Description	Recommended Planting	Rate (lb/ac)
Well to poorly drained soils	Tall Fescue Mixture	80
	Pensacola Bahiagrass	50
	Kobe Lespedeza	50
Dry to well drained soils	Pensacola Bahiagrass	40
	Common Bermudagrass	50
	Kobe Lespedeza	50
	German Millet	10
Swales	Common Bermudagrass	10

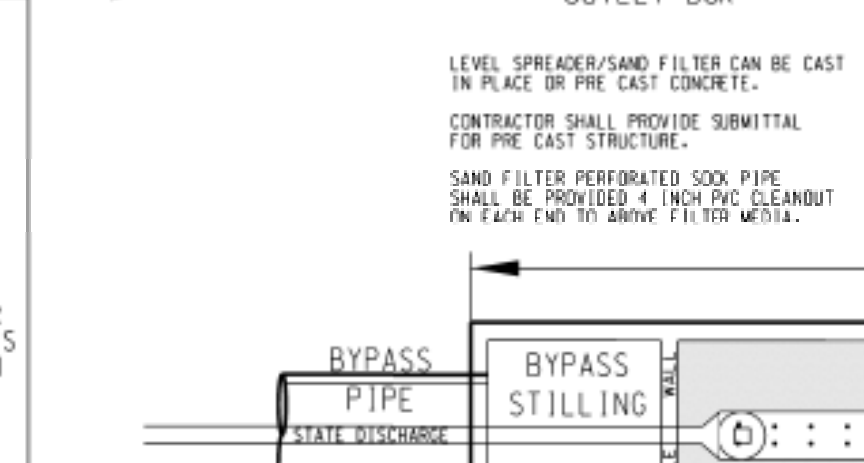
PERMANENT SEEDING TABLE 2b-HIGH MAINTENANCE MIXTURES

Site Description	Recommended Planting	Rate (lb/ac)
Well to poorly drained soils	Tall Fescue Mixture	100
Dry to well drained soils	Hybrid Bermudagrass	25
Well drained sandy loam to sand, loams	Centipede grass	10-20

TEMPORARY SEEDING TABLE

Seeding Dates	Recommended Planting	Rate (lb/ac)
Dec. 1 - Apr. 15	Kobe Lespedeza with Rye Grain	60
Apr. 15 - Aug. 15	German Millet	120
Aug. 15 - Dec. 1	Rye Grain	40

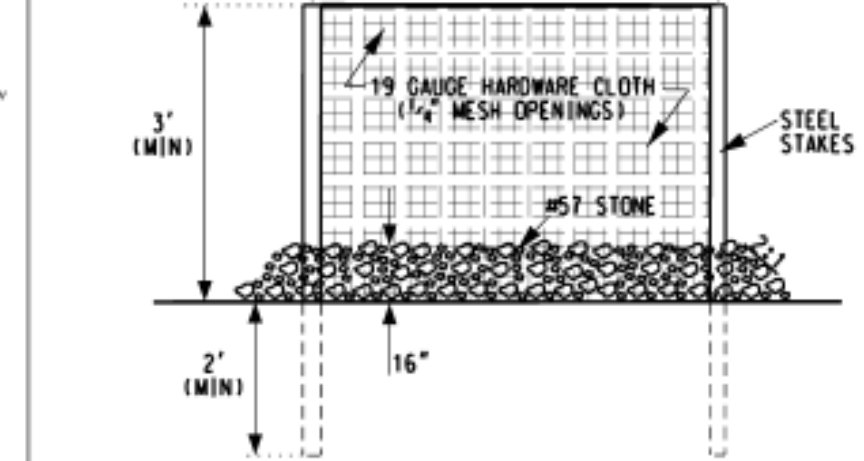
Notes:
For seeding outside of recommended dates and/or for temporary stabilization, refer to temporary seeding table.
For highly erosive areas or as directed by an engineer, sod shall be provided.



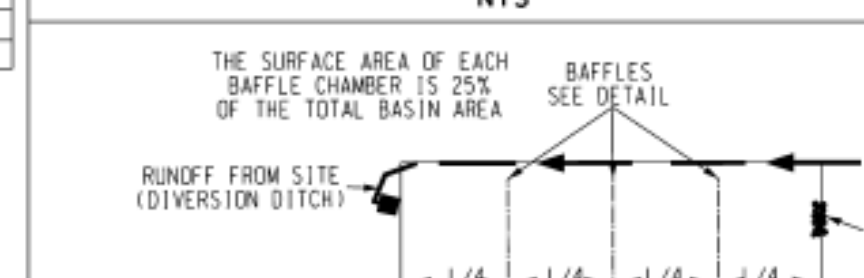
LEVEL SPREADER/SAND/VEGETATIVE FILTER DETAIL



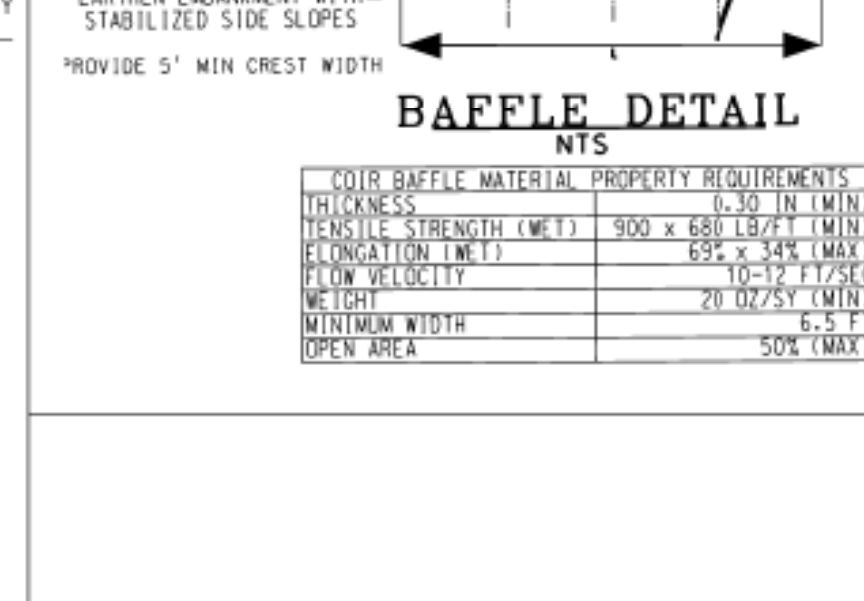
STANDARD BRICK CATCH BASIN DETAIL



TYPICAL INLET PROTECTION



POND OUTLET STRUCTURE



BAFFLE DETAIL

CONSTRUCTION SEQUENCE

1. INSTALL STONE CONSTRUCTION ENTRANCE AT MILITARY CUTOFF ROAD.
2. INSTALL SILT FENCE AND TREE PROTECTION.
3. CLEAR & GRADE FOR SEDIMENT BASIN-PONDS A & B AND CONNECTING PIPE.
4. INSTALL STORMWATER SEDIMENT BASIN-PONDS A & B AND PROMOTE DRAINAGE TO BOTH.
5. CLEAR & GRADE SITE.
6. INSTALL UNDERGROUND UTILITIES.
7. PROVIDE VEGETATIVE COVER IN ACCORDANCE TO NPDES SPECIFICATIONS.
8. INSTALL CURB, GUTTER, AND PAVEMENT.
9. PROVIDE 100% VEGETATIVE COVER OF ALL DISTURBED SOILS.

NPDES NOTES

PERMITS: PERMITS ARE REQUIRED FOR ALL DISTURBED AREAS. PERMITS ARE REQUIRED FOR ALL DISTURBED AREAS WITH SLOPES FLATTER THAN 4:1.

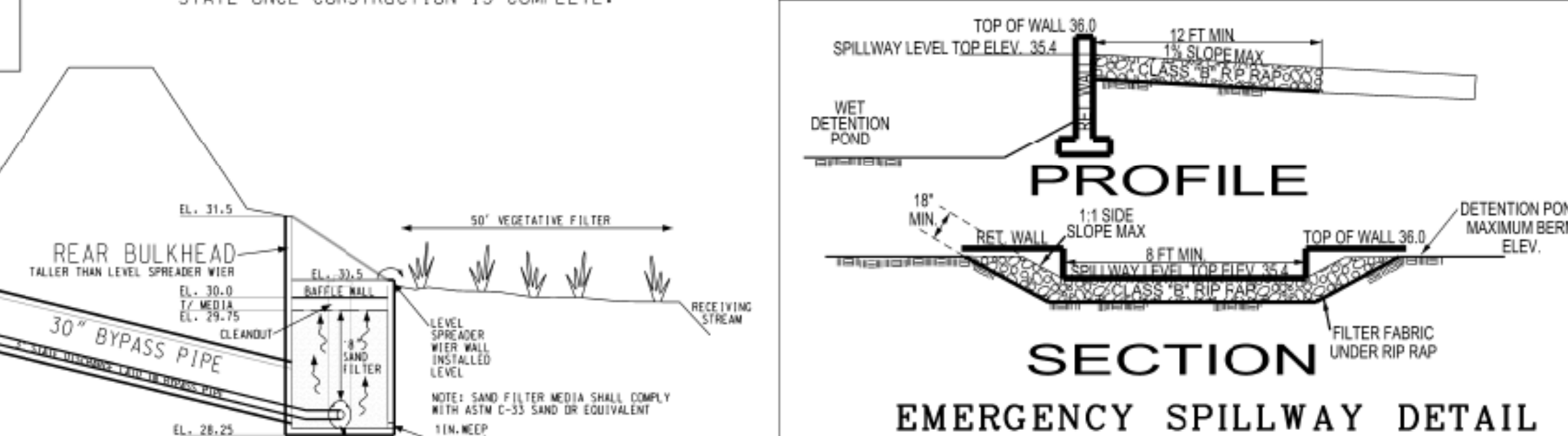
BUILDING WASTES HANDLING: NO PAINT OR LIQUID WASTES IN STREAMS OR STORM DRAINS. DESIGNATED AREAS FOR DEMOLITION, CONSTRUCTION, AND OTHER WASTES MUST BE LOCATED 50' FROM STREAM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE. EARTHEN MATERIALS STOCKPILES MUST BE LOCATED 50' FROM STREAM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE. CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS.

INSPECTIONS: 1. SAME WEEK INSPECTION REQUIREMENTS. 2. SAME WEEK INSPECTIONS AFTER 0.5\"/>

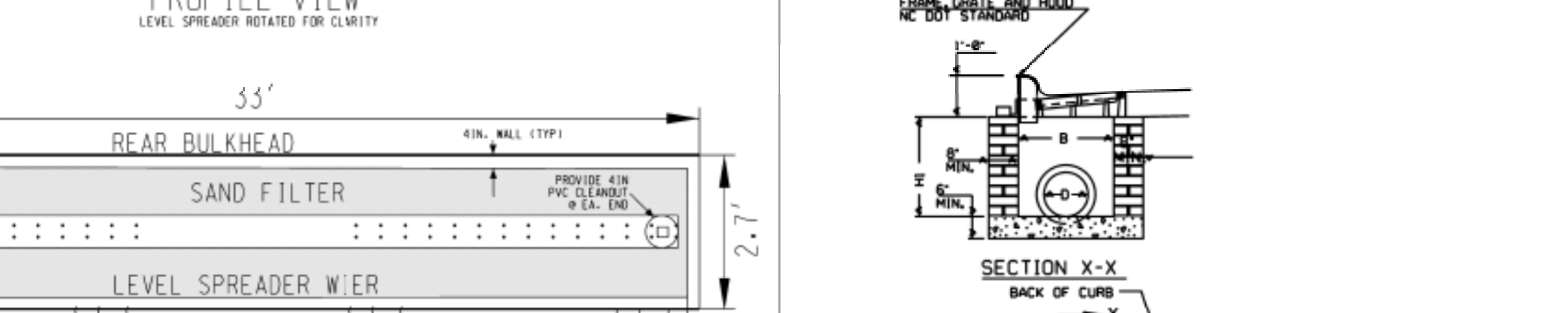
SILT FENCE SPECIFICATIONS

NOTE: ALL SCM'S IMPACTED BY EROSION DURING THE CONSTRUCTION PHASE SHALL BE CLEANED OUT AND CONVERTED TO ITS APPROVED DESIGN STATE ONCE CONSTRUCTION IS COMPLETE.

NOTE: IN THE INSTANCE THAT A COMPLETE DRAWDOWN IS NEEDED FOR MAINTENANCE OR INSPECTION, A SUMP PUMP WILL NEED TO BE PROVIDED.



EMERGENCY SPILLWAY DETAIL



STANDARD BRICK CATCH BASIN DETAIL



POND OUTLET STRUCTURE



DIVERSION BERM



STANDARD DROP INLET

EROSION & SEDIMENT CONTROL MAINTENANCE PLAN

1. ALL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.
2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2\"/>

NPDES STABILIZATION TIMEFRAMES

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
PERIMETER DITCHES, SWALES, AND DITCHES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND FLATTER THAN 2:1 THEN 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE

GENERAL NOTES:
MORTAR JOINTS 1/2\"/>

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

Approved Construction Plan
Name: _____ Date: _____
Planning: _____
Traffic: _____
Fire: _____

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

Date: _____ Permit # _____
Signed: _____

SOIL EROSION, SEDIMENTATION CONTROL AND STORMWATER DETAILS
VILLAGE TOWNHOMES
(FORMERLY ARBORETUM VILLAGE)
CITY OF WILMINGTON NEW HANOVER COUNTY NORTH CAROLINA

OWNER: ARBORETUM VILLAGE, LLC
ADDRESS: 10 S. CARDINAL DRIVE WILMINGTON, N.C. 28403
PHONE: (910) 815-0775

DESIGNED: JHF
DRAWN: JHF
APPROVED: JHF
DATE: 7/16/18
SCALE: AS NOTED
SHEET 5 OF 21

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

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

Temporary and Permanent Groundcover*

STABILIZATION TIMEFRAMES (Effective Aug. 3, 2011)		
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

*-For Falls Lake watershed, in disturbed areas where grading activities are incomplete, provide temporary groundcover no later than seven (7) days for slopes steeper than 3:1; ten (10) days for slopes equal to or flatter than 3:1; fourteen (14) days for areas with no slope.

GROUND STABILIZATION SPECIFICATION

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

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> Temporary grass seed covered with straw or other mulches and tackifiers Hydroseeding Rolled erosion control products with or without temporary grass seed Appropriately applied straw or other mulch Plastic sheeting 	<ul style="list-style-type: none"> Permanent grass seed covered with straw or other mulches and tackifiers Geotextile fabrics such as permanent soil reinforcement matting Hydroseeding Shrubs or other permanent plantings covered with mulch Uniform and evenly distributed ground cover sufficient to restrain erosion Structural methods such as concrete, asphalt or retaining walls

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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



EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number of waste containers on site to manage the quantity of waste produced.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow.
- Dispose waste off-site at an approved disposal facility.

PAINT AND OTHER LIQUID WASTE

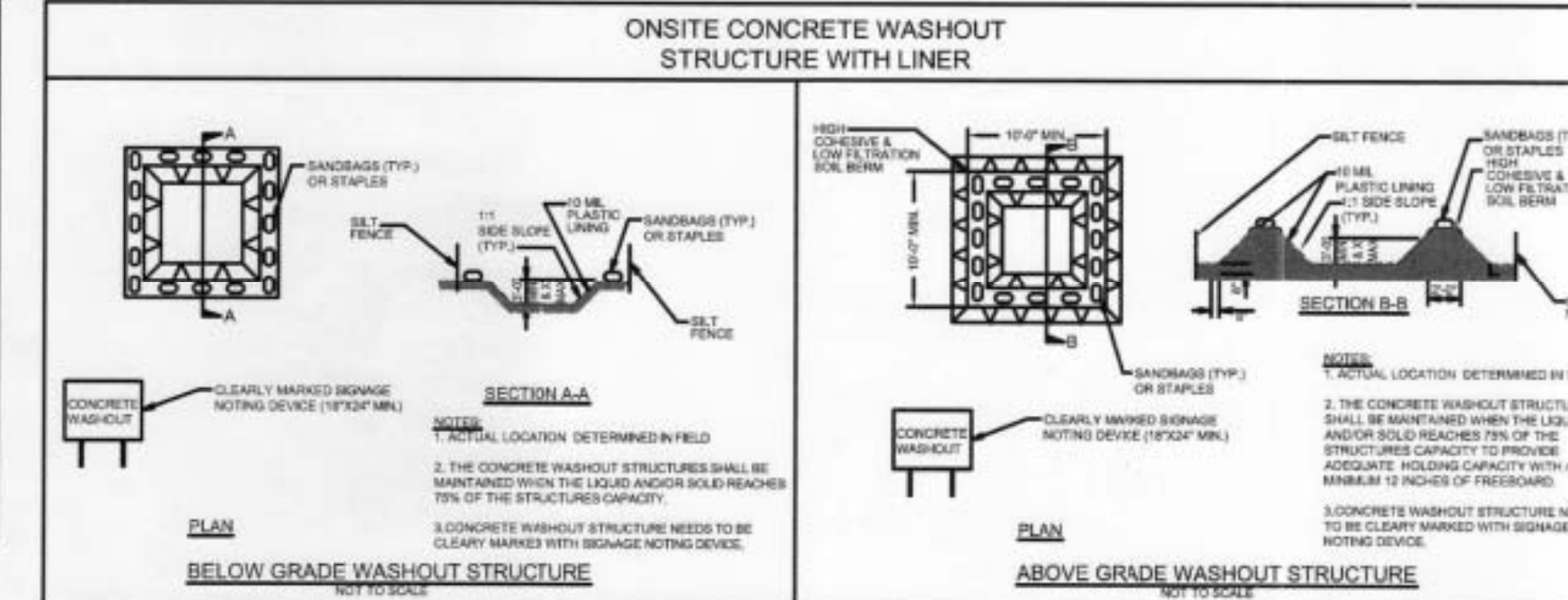
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled,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

PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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



CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 03/01/19

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

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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

Date: _____ Permit #: _____

Signed: _____



SOIL EROSION, SEDIMENTATION CONTROL AND STORMWATER DETAILS

VILLAGE TOWNHOMES
(FORMERLY ARBORETUM VILLAGE)

CITY OF WILMINGTON NEW HANOVER COUNTY NORTH CAROLINA

OWNER: ARBORETUM VILLAGE, LLC
ADDRESS: 10 S. CARDINAL DRIVE WILMINGTON, N.C. 28403
PHONE: _____

DESIGNED: JHF
DRAWN: JHF
APPROVED: JHF

DATE: 7/16/18
SCALE: AS NOTED
SHEET 6 OF 21

STROUD ENGINEERING, P.A.
102-D CINEMA DRIVE WILMINGTON, NORTH CAROLINA 28403
(910) 815-0775 (910) 815-0593 FAX

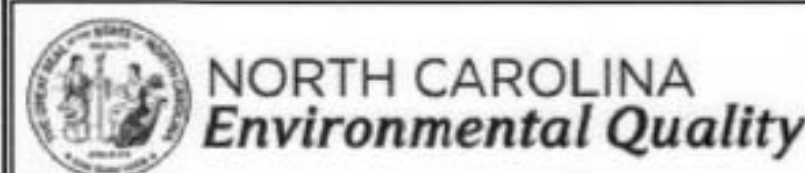
**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION A: SELF-INSPECTION

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

Inspect	Frequency (during normal business hours)	Inspection records must include [40 CFR 122.41]:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Corrective actions taken, and 7. Date of actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Actions taken to correct/prevent sedimentation, and 7. Date of actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Date of actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Evidence and actions taken to reduce sediment contributions, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.

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



**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

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

2. Additional Documentation

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

- (a) This general permit as well as the certificate of coverage, after it is received.
- (b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.
- (c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

- (a) Visible sediment deposition in a stream or wetland.
- (b) Oil spills if:
 - They are 25 gallons or more,
 - They are less than 25 gallons but cannot be cleaned up within 24 hours,
 - They cause sheen on surface waters (regardless of volume), or
 - They are within 100 feet of surface waters (regardless of volume).
- (a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- (b) Anticipated bypasses and unanticipated bypasses.
- (c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> • A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 03/01/19

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

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

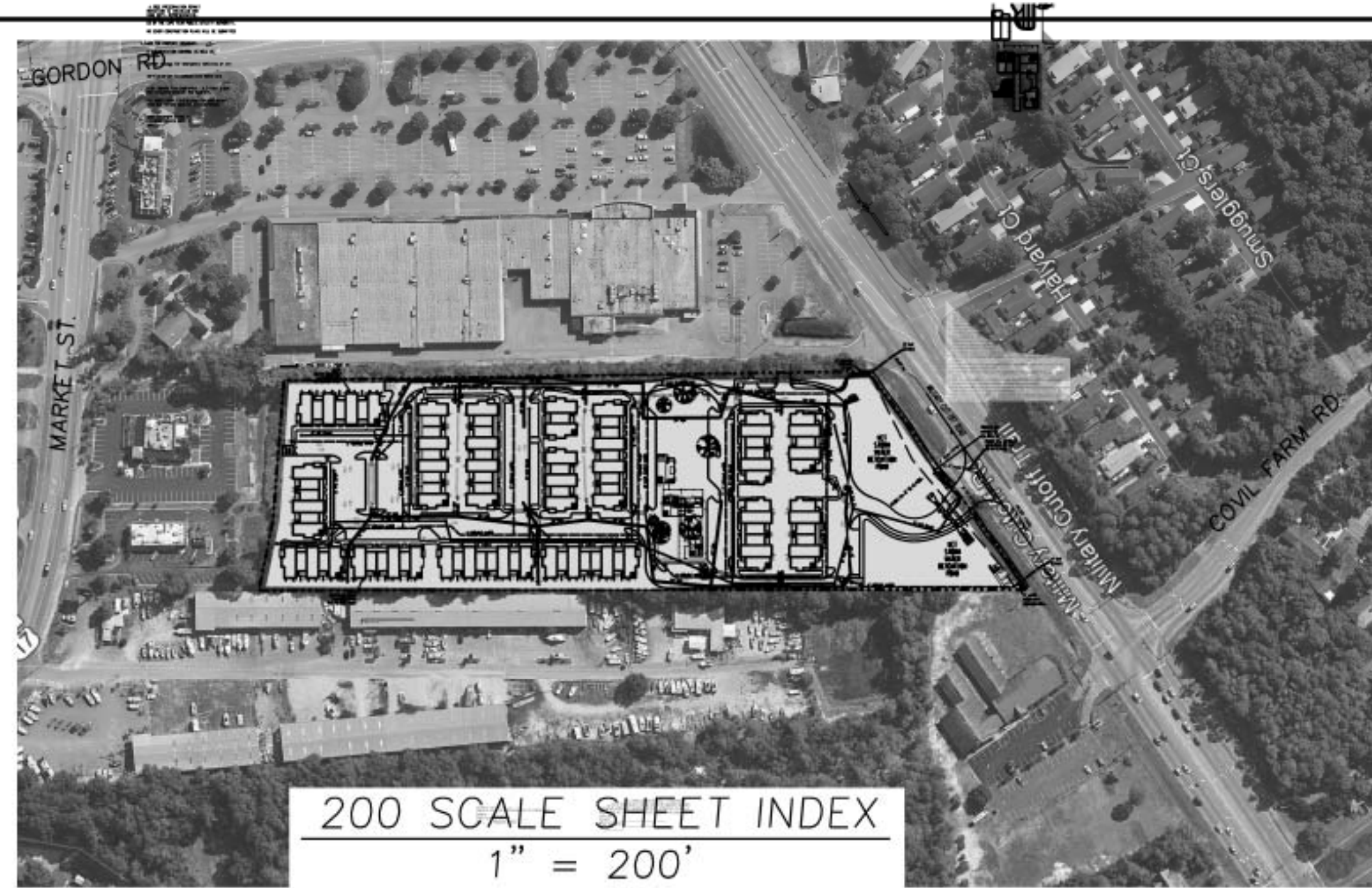


VILLAGE TOWNHOMES
(FORMERLY ARBORETUM VILLAGE)

CITY OF WILMINGTON NEW HANOVER COUNTY NORTH CAROLINA

OWNER: ARBORETUM VILLAGE, LLC	DESIGNED: JHF
ADDRESS: 10 S. CARDINAL DRIVE WILMINGTON, N.C. 28403	DRAWN: JHF
PHONE:	APPROVED: JHF
STRoud ENGINEERING, P.A.	DATE: 7/16/18
102-0 ZINEWA DRIVE WILMINGTON, NORTH CAROLINA 28403 (910) 815-0775 (910) 815-0593 FAX	SCALE: AS NOTED
C-0647	SHEET 7 OF 21

PROJECT NO.:
DRAWING NO.:



200 SCALE SHEET INDEX
1" = 200'

UTILITY PLANSET INDEX

COVER.....	8
PLAN & PROFILES.....	9-11
CFPUA SEWER DETAILS.....	12-14
CFPUA WATER DETAILS.....	15-16

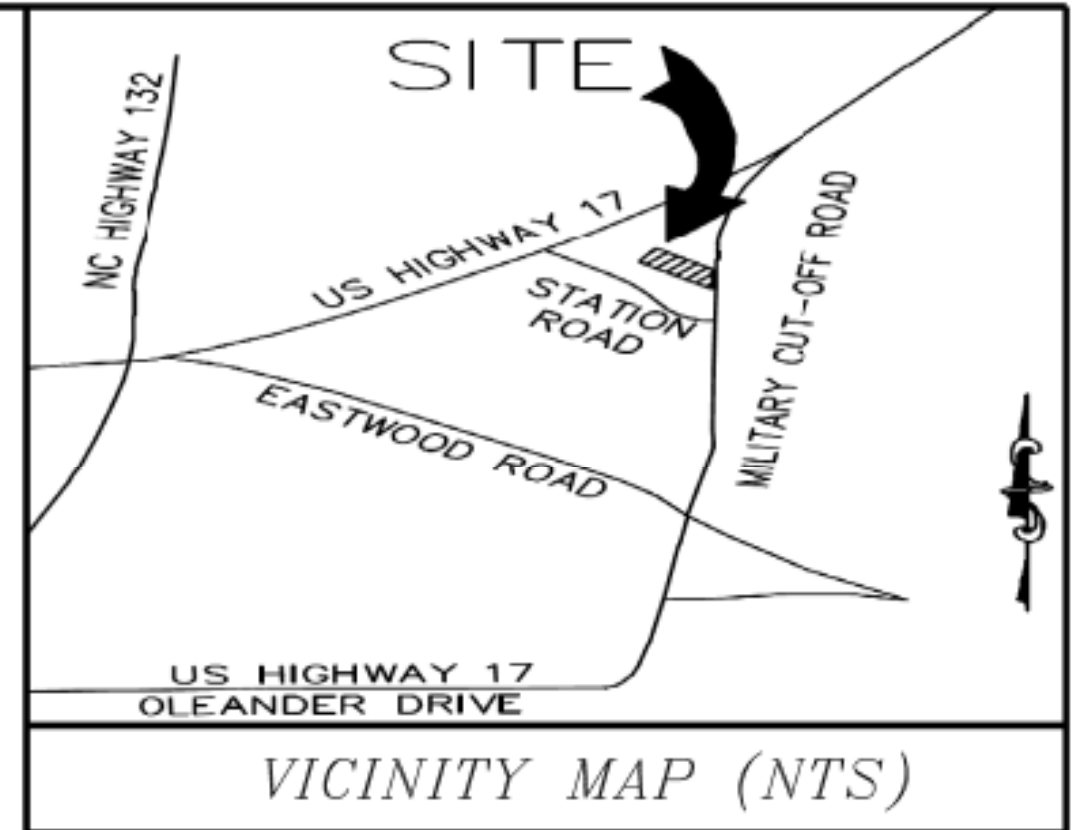
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

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

Date: _____ Permit # _____
Signed: _____

LEGEND

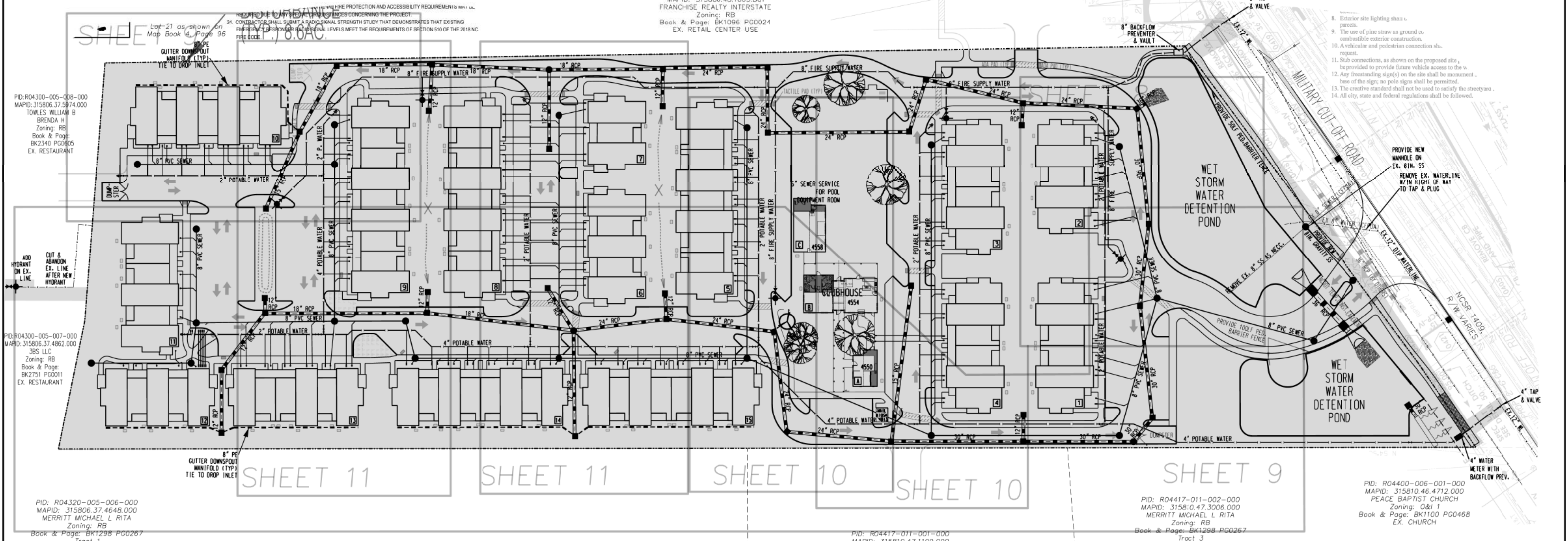
- PROJECT BOUNDARY
- WATER MAIN
- GRAV. SEWER & MANHOLE
- STORMDRAIN
- PROP. HIGH POINT
- PROP. DRAINAGE DIR.
- GATE VALVE
- HYDRANT ASSEMBLY



Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

PID: R04400-006-003-00A
MAPID: 315806.48.1065.B01
FRANCHISE REALTY INTERSTATE
Zoning: RB
Book & Page: BK1096 PG0024
EX. RETAIL CENTER USE



PID: R04300-005-008-000
MAPID: 315806.37.5974.000
TOWLES WILLIAM B
BRENDA H
Zoning: RB
Book & Page: BK2340 PG0605
EX. RESTAURANT

PID: R04300-005-007-000
MAPID: 315806.37.4862.000
385 LLC
Zoning: RB
Book & Page: BK2751 PG0011
EX. RESTAURANT

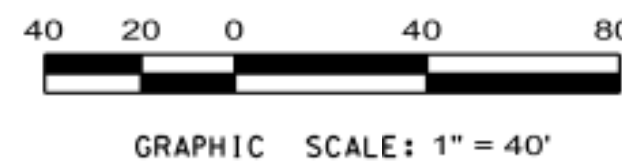
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MAPID: 315806.37.4648.000
MERRITT MICHAEL L RITA
Zoning: RB
Book & Page: BK1298 PG0267
Tract 1
Map Book 35, Page 124
EX. CAR & BOAT RETAIL

PID: R04417-011-001-000
MAPID: 315810.47.1109.000
CREB PROPERTIES LLC
Zoning: RB
Class: COM
Book & Page: BK5884 PG2008
Tract 2
Map Book 35, Page 124
MARINE SALVAGE

PID: R04417-011-002-000
MAPID: 315810.47.3006.000
MERRITT MICHAEL L RITA
Zoning: RB
Book & Page: BK1298 PG0267
Tract 3
Map Book 35, Page 124
EX. CHURCH

PID: R04400-006-001-000
MAPID: 315810.46.4712.000
PEACE BAPTIST CHURCH
Zoning: O&I 1
Book & Page: BK1100 PG0468
EX. CHURCH

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



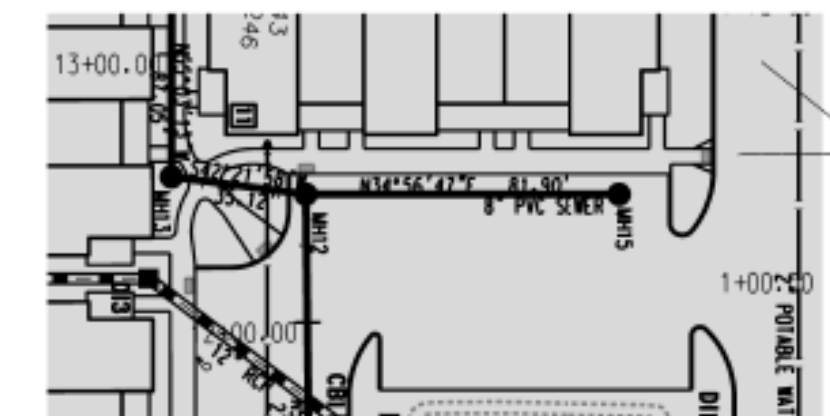
JAMES H. FENTRESS, JR., P.E.
DATE: 8/19/19

UTILITY SITE PLAN
VILLAGE TOWNHOMES
(FORMERLY ARBORETUM VILLAGE)
CITY OF WILMINGTON NEW HANOVER COUNTY NORTH CAROLINA

OWNER: ARBORETUM VILLAGE, LLC	DESIGNED: JHF
ADDRESS: 10 S. CARDINAL DRIVE WILMINGTON, N.C. 28403	DRAWN: JHF
PHONE:	APPROVED: JHF
 102-D CINEMA DRIVE WILMINGTON, NORTH CAROLINA 28403 (910) 815-0775 (910) 815-0593 FAX	DATE: 6-29-2018
	SCALE: 1" = 40'
	SHEET 8 OF 21

PROJECT NO.: PW 1312

6. No Inlets
7. All inlets in residential areas shall be provided with lights, guards.
8. Exterior site lights, guards.
9. The use of pedestrian as a combustible material is prohibited.
10. A vehicular and pedestrian crossing shall be provided.
11. This connection, or other on the project, shall be provided to provide proper vehicle access.
12. Any freestanding sign(s) on the site shall be in accordance with the sign code of the City of Wilmington.
13. The creative standard shall apply to satisfy.
14. All city, state and federal regulations shall be followed.



SEE SHEET 4 FOR CONTINUATION

PID: RD4300-005-007-000
 MAPID: 315806.57.4862.000
 Zoning: RB
 Book & Page: BK2751 PG0011
 EX. RESTAURANT

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

SEE SHEET 9 FOR CONTINUATION

SEE SHEET 8 FOR CONTINUATION

SEE SHEET 7 FOR CONTINUATION

SEE SHEET 6 FOR CONTINUATION

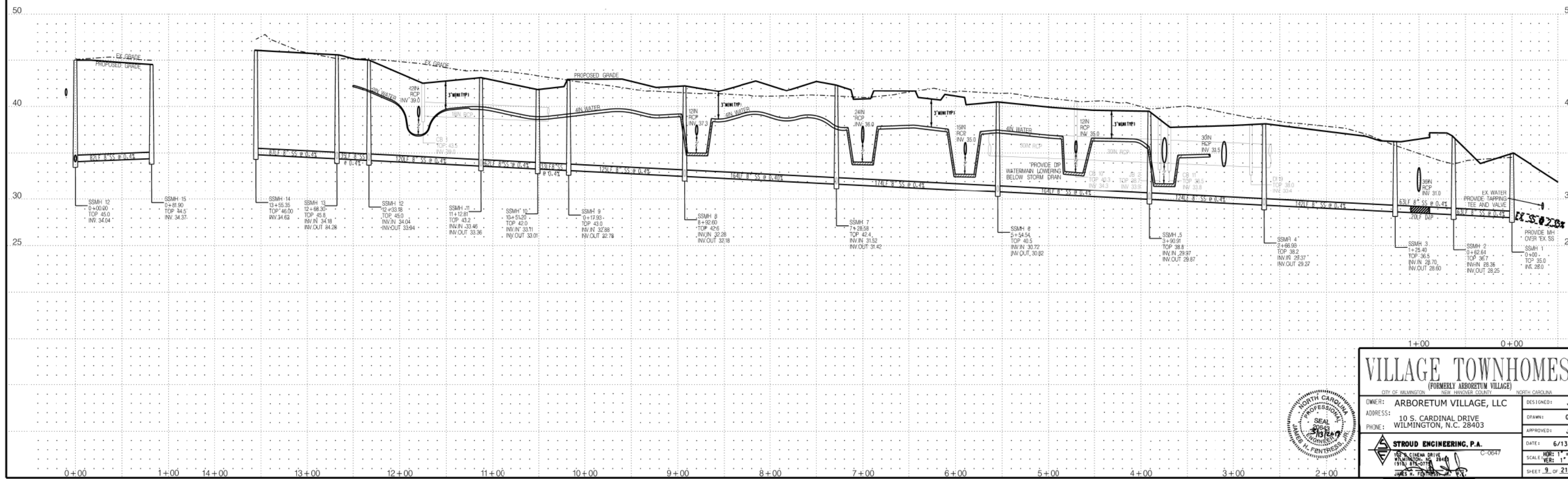
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 MAPID: 315810.46.4712.000
 MERRITT MICHAEL L RITA
 Zoning: RB
 Book & Page: BK1298 PG0267
 Tract 3
 Map Book 33, Page 124
 EX. CHURCH

PID: R04400-006-001-000
 MAPID: 315810.46.4712.000
 PEACE BAPTIST CHURCH
 Zoning: OMI 1
 Book & Page: BK1100 PG0468
 EX. CHURCH

Approved Construction Plan		
Name	Date	
Planning		
Traffic		
Fire		

CITY OF WILMINGTON
 PUBLIC SERVICES • ENGINEERING DIVISION
 APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #: _____
 Signed: _____



VILLAGE TOWNHOMES
 (FORMERLY ARBORETUM VILLAGE)

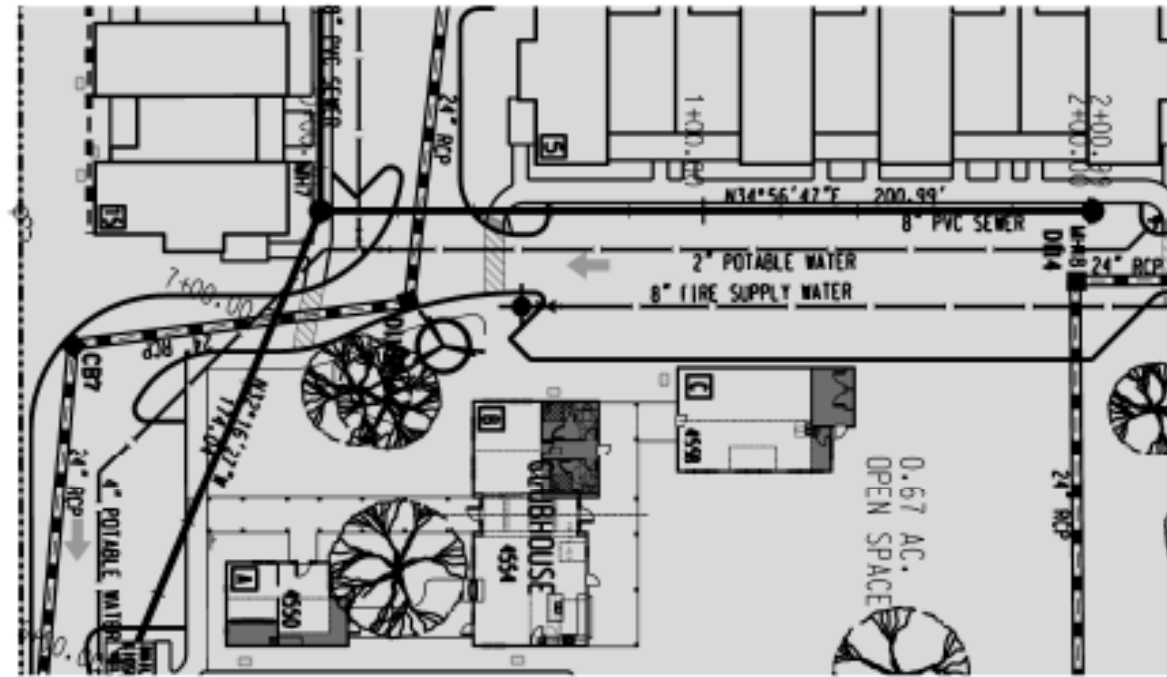
CITY OF WILMINGTON, NORTH CAROLINA

OWNER: ARBORETUM VILLAGE, LLC
 ADDRESS: 10 S. CARDINAL DRIVE, WILMINGTON, N.C. 28403
 PHONE: _____

DESIGNED BY: JHF
 DRAWN BY: GAG
 APPROVED BY: JHF

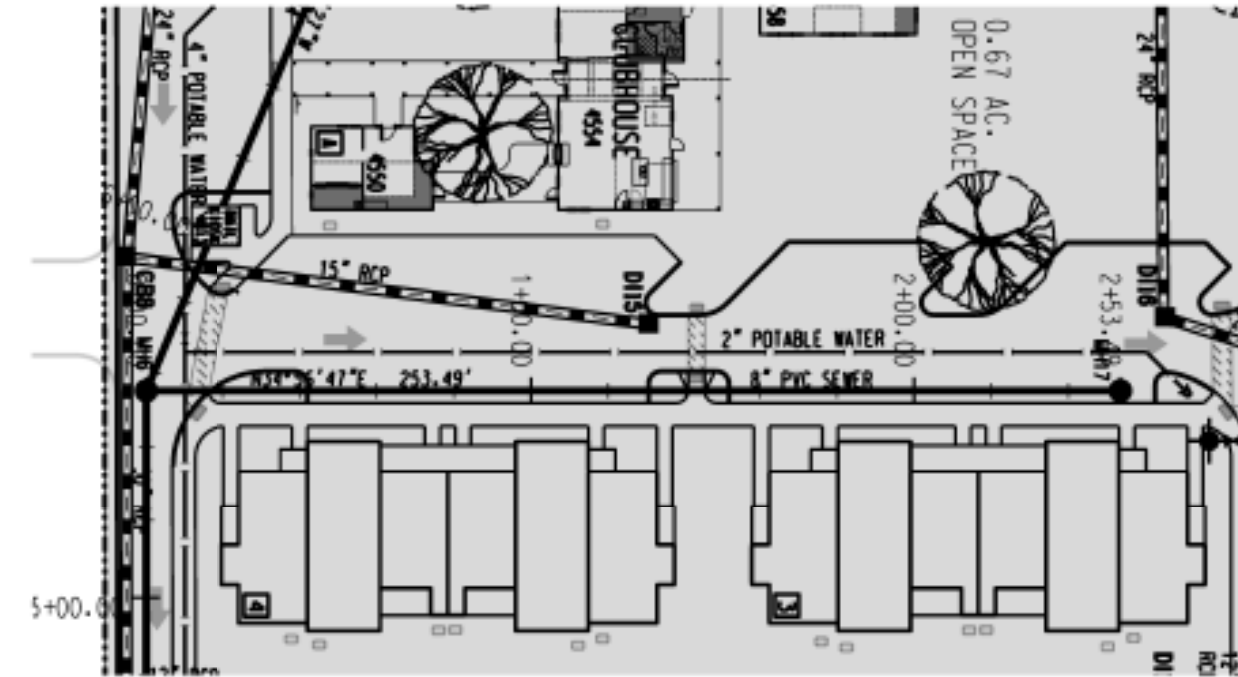
DATE: 6/13/18
 SCALE: HOR: 1" = 50'
 VER: 1" = 5'
 SHEET 9 OF 21

STROUD ENGINEERING, P.A.
 102 S. CINCINNATI DRIVE
 WILMINGTON, N.C. 28403
 JAMES H. STROUD, P.E.

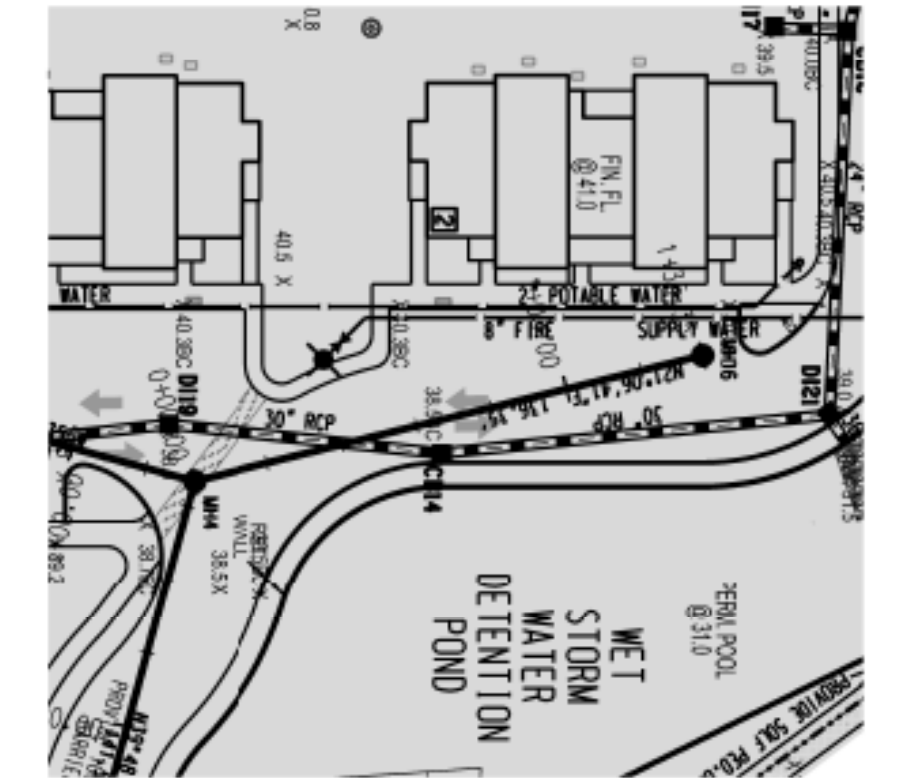


SEE SHEET 7
FOR CONTINUATION

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




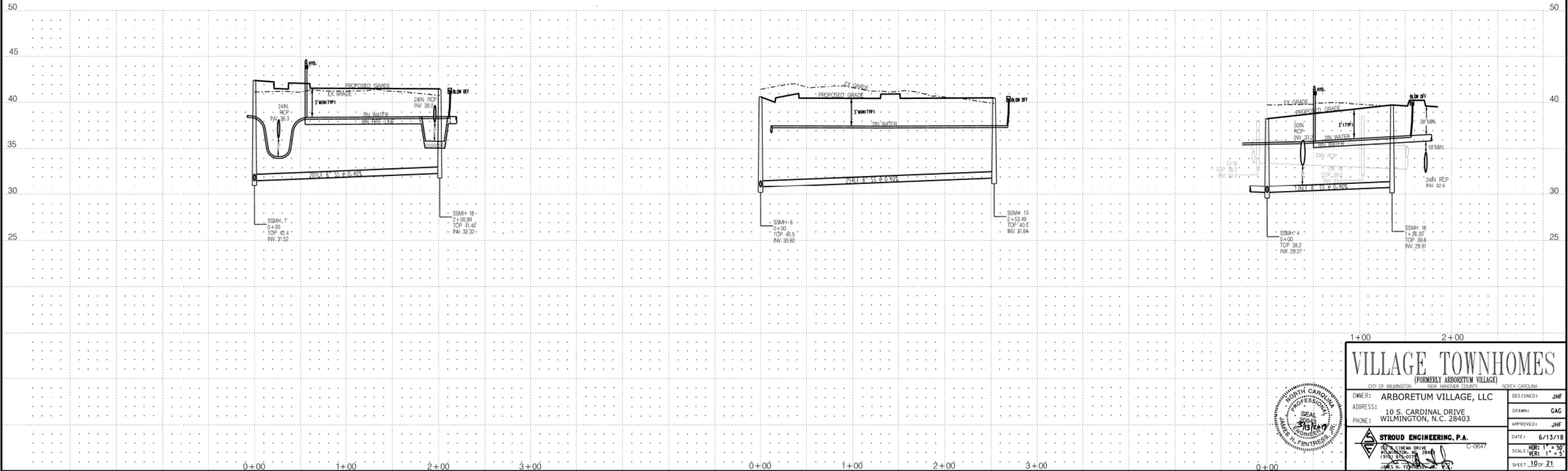
SEE SHEET 7
FOR CONTINUATION



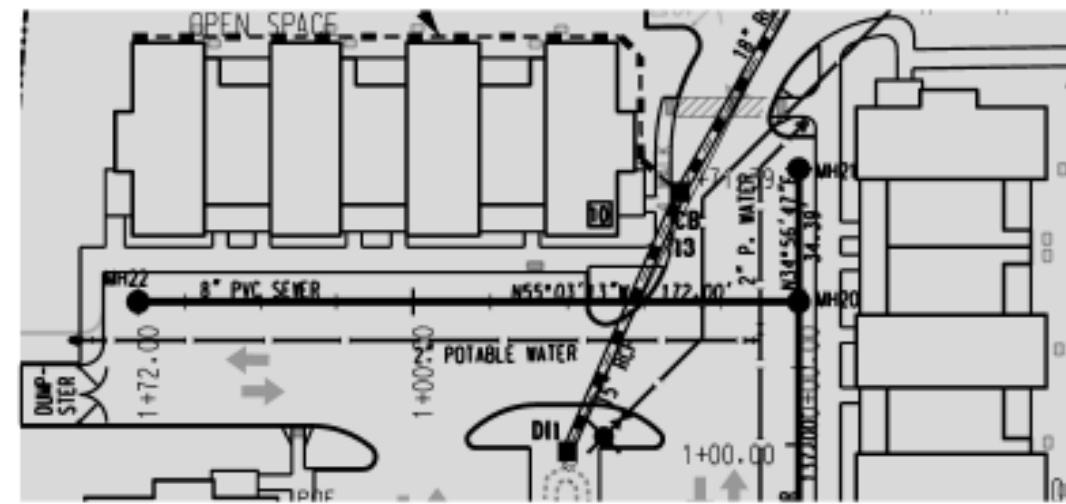
SEE SHEET 7
FOR CONTINUATION

Approved Construction Plan		
Name	Date	
Planning		
Traffic		
Fire		

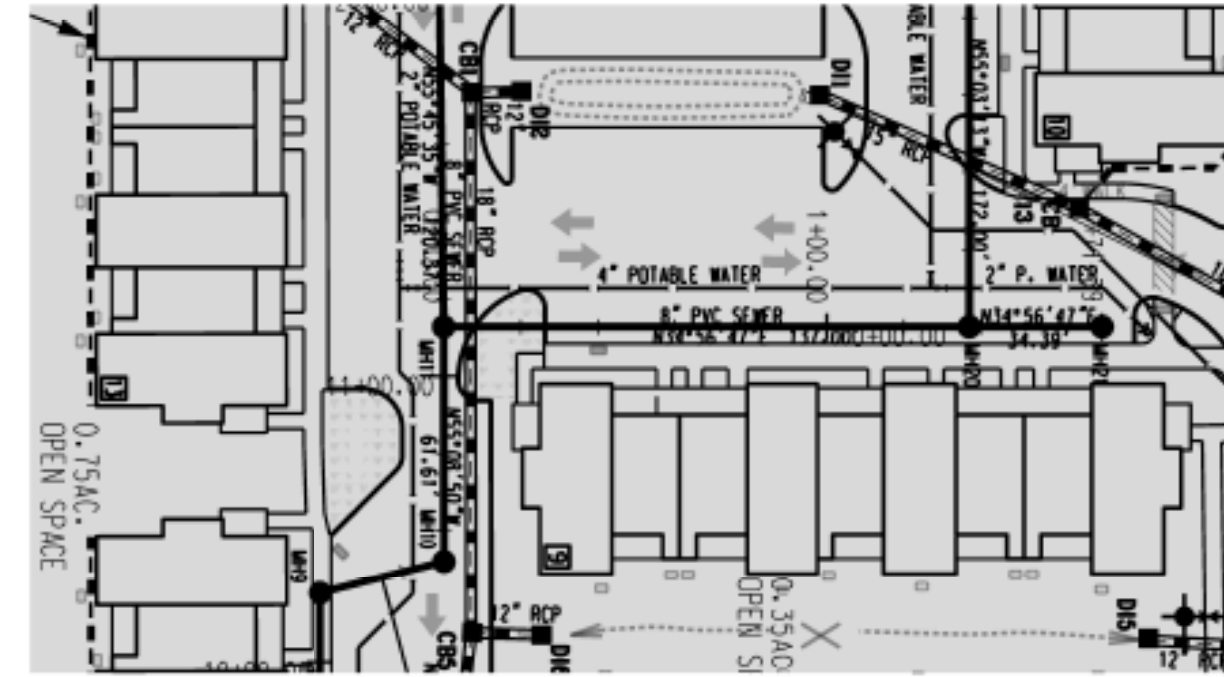

 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____



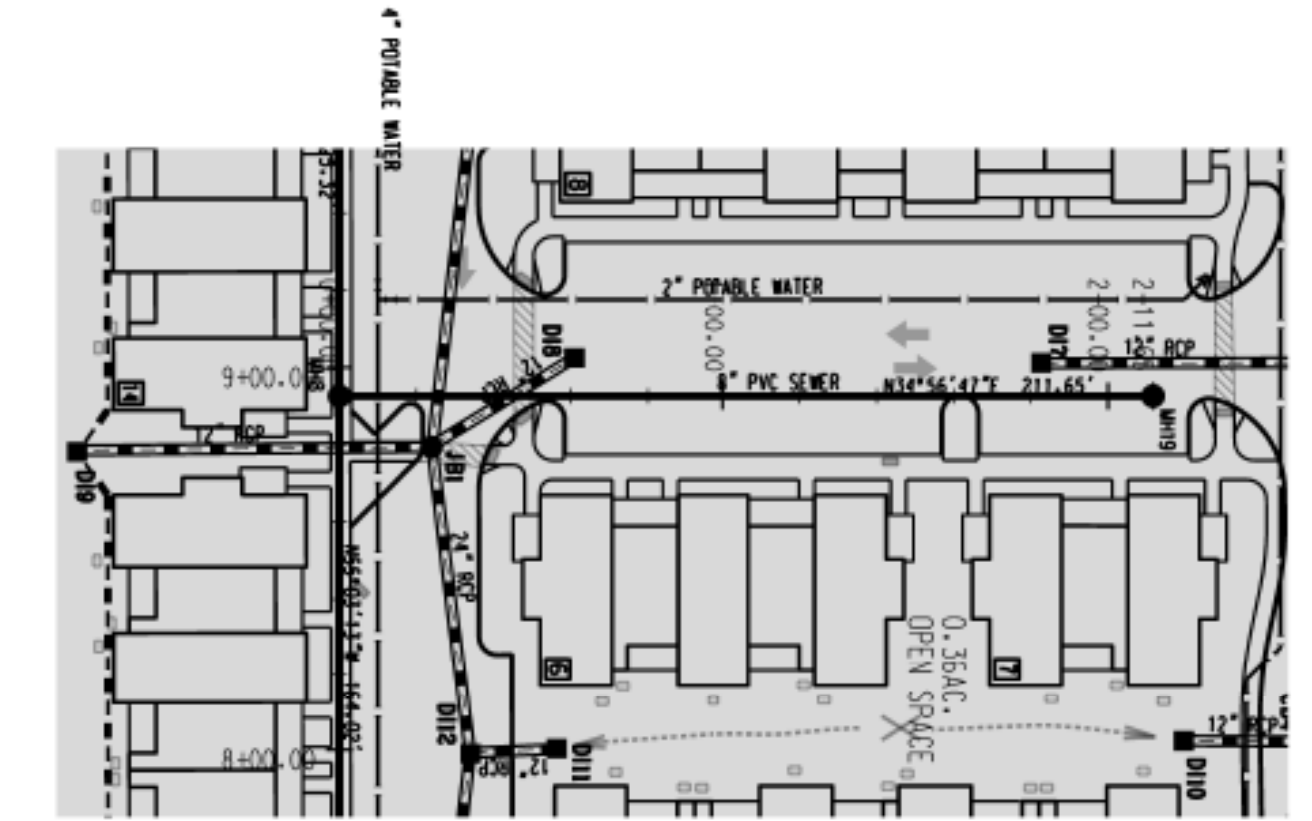
VILLAGE TOWNHOMES
 (FORMERLY ARBORETUM VILLAGE)
 CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
 OWNER: ARBORETUM VILLAGE, LLC
 ADDRESS: 10 S. CARDINAL DRIVE, WILMINGTON, N.C. 28403
 PHONE: _____
 DESIGNED BY: JHF
 DRAWN BY: GAG
 APPROVED BY: JHF
 DATE: 6/13/18
 SCALE: HOR: 1" = 50', VERT: 1" = 5'
 SHEET 19 OF 21



SEE NEXT
FOR CONTINUATION



SEE SHEET 7
FOR CONTINUATION

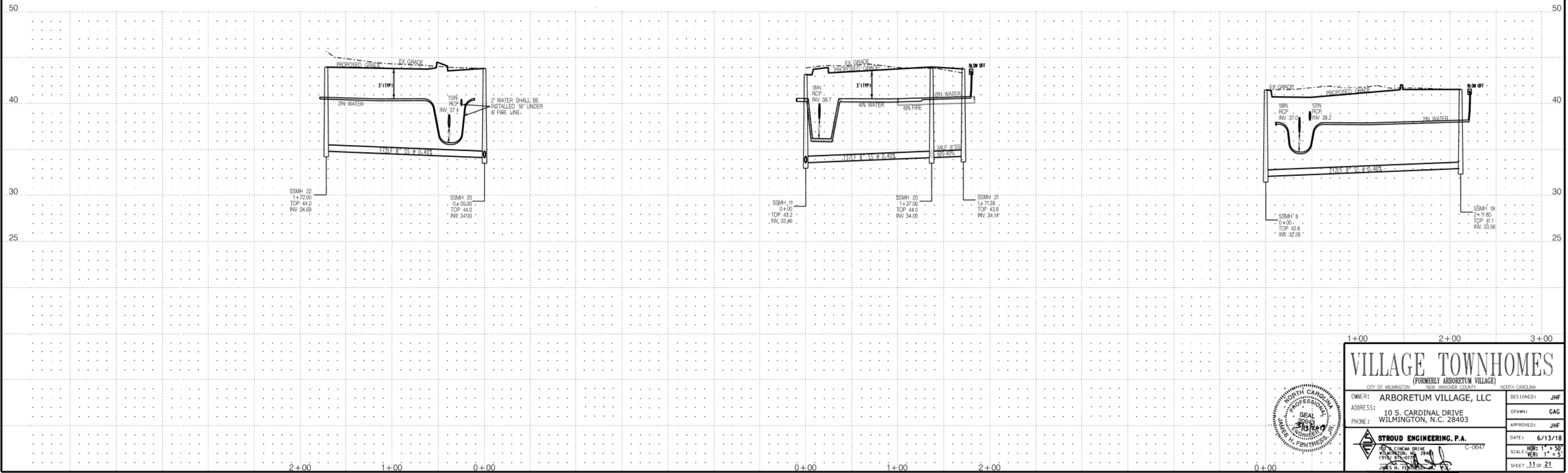


SEE SHEET 7
FOR CONTINUATION

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

Approved Construction Plan		
Name	Date	
Planning		
Traffic		
Fire		

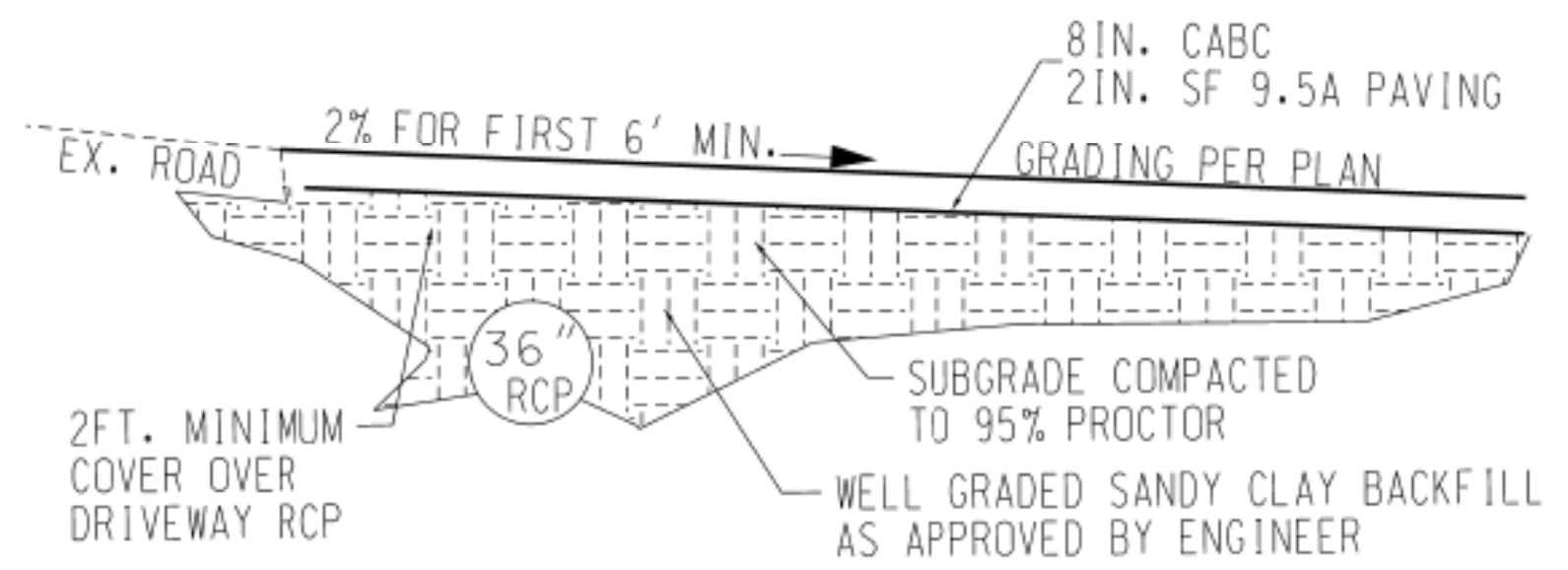

 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____



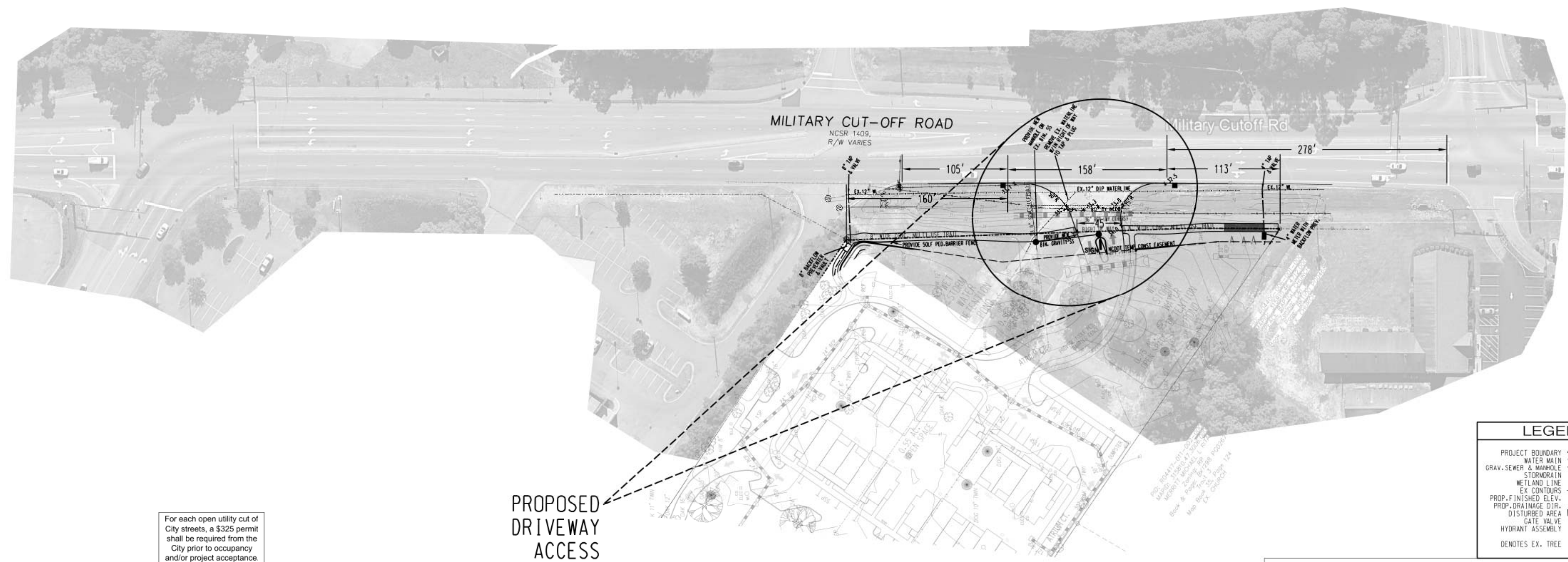
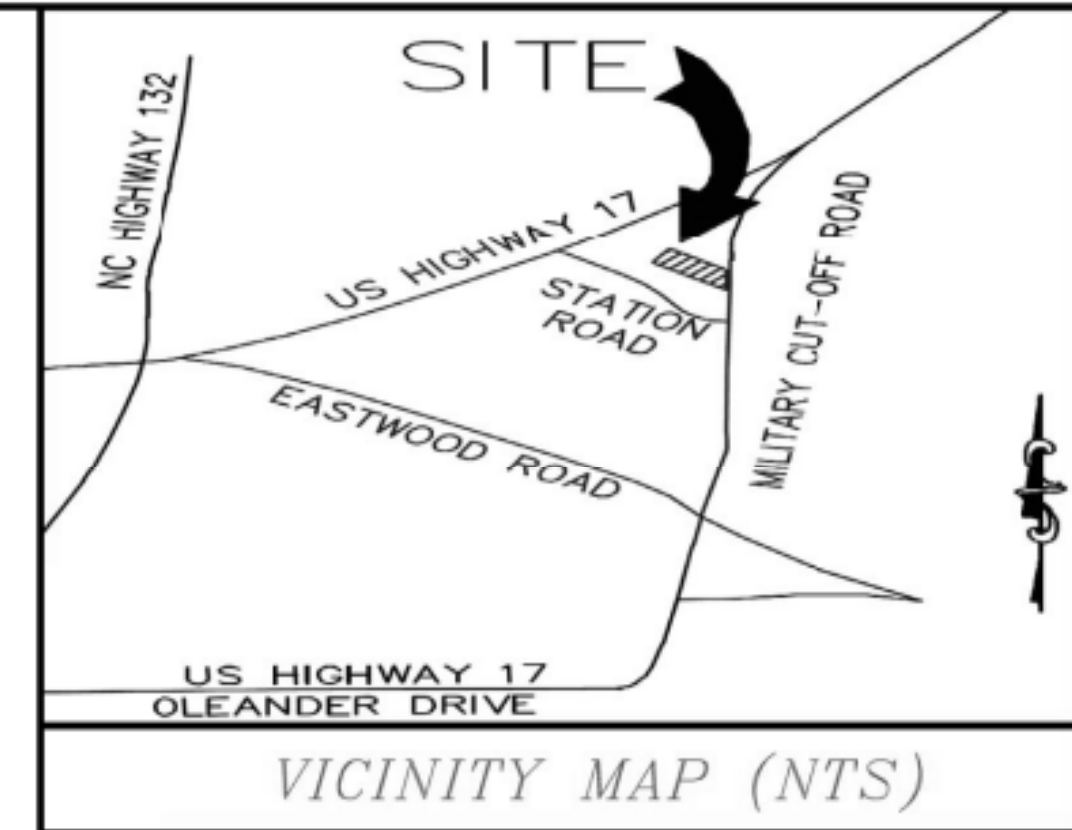
VILLAGE TOWNHOMES
 (FORMERLY ARBORETUM VILLAGE)
 CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: ARBORETUM VILLAGE, LLC	DESIGNED: JHF
ADDRESS: 10 S. CARDINAL DRIVE WILMINGTON, N.C. 28403	DRAWN: GAG
PHONE: _____	APPROVED: JHF
DATE: 6/13/18	SCALE: HOR: 1" = 50' VER: 1" = 5'
SHEET 11 OF 21	

STRUDD ENGINEERING, P.A.
 102 N. CINCINNATI DRIVE
 WILMINGTON, NC 28403
 JAMES H. FENTRESS, P.E.



DRIVEWAY PROFILE
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.

PROPOSED DRIVEWAY ACCESS

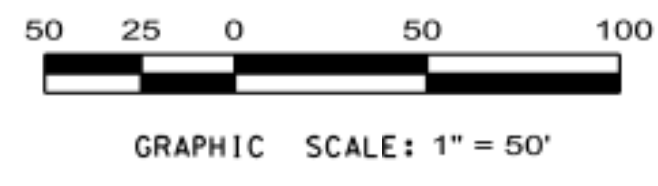
LEGEND	
PROJECT BOUNDARY	---
WATER MAIN	—●—
GRAV. SEWER & MANHOLE	—○—
STORMDRAIN	—■—
WETLAND LINE	—▲—
EX. CONTOURS	---
PROP. FINISHED ELEV.	—
PROP. DRAINAGE DIR.	→
DISTURBED AREA	▨
GATE VALVE	⊕
HYDRANT ASSEMBLY	⊕
DENOTES EX. TREE	⊙

- NOTE:**
- SPEED LIMIT ALONG NCSR 1409 (MILITARY CUTOFF) IS 45 MPH.
 - NCDOT REPORTS (2016) FOR NEW HANOVER COUNTY ALONG NCSR 1409 THAT THE ANNUAL AVERAGE DAILY TRAFFIC IS 28,000.

Approved Construction Plan		
Name	Date	
Planning		
Traffic		
Fire		

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

PROFESSIONAL ENGINEER
NORTH CAROLINA
SEAL 20643
JAMES H. FENTRESS, JR.
DATE: 5/2/2018

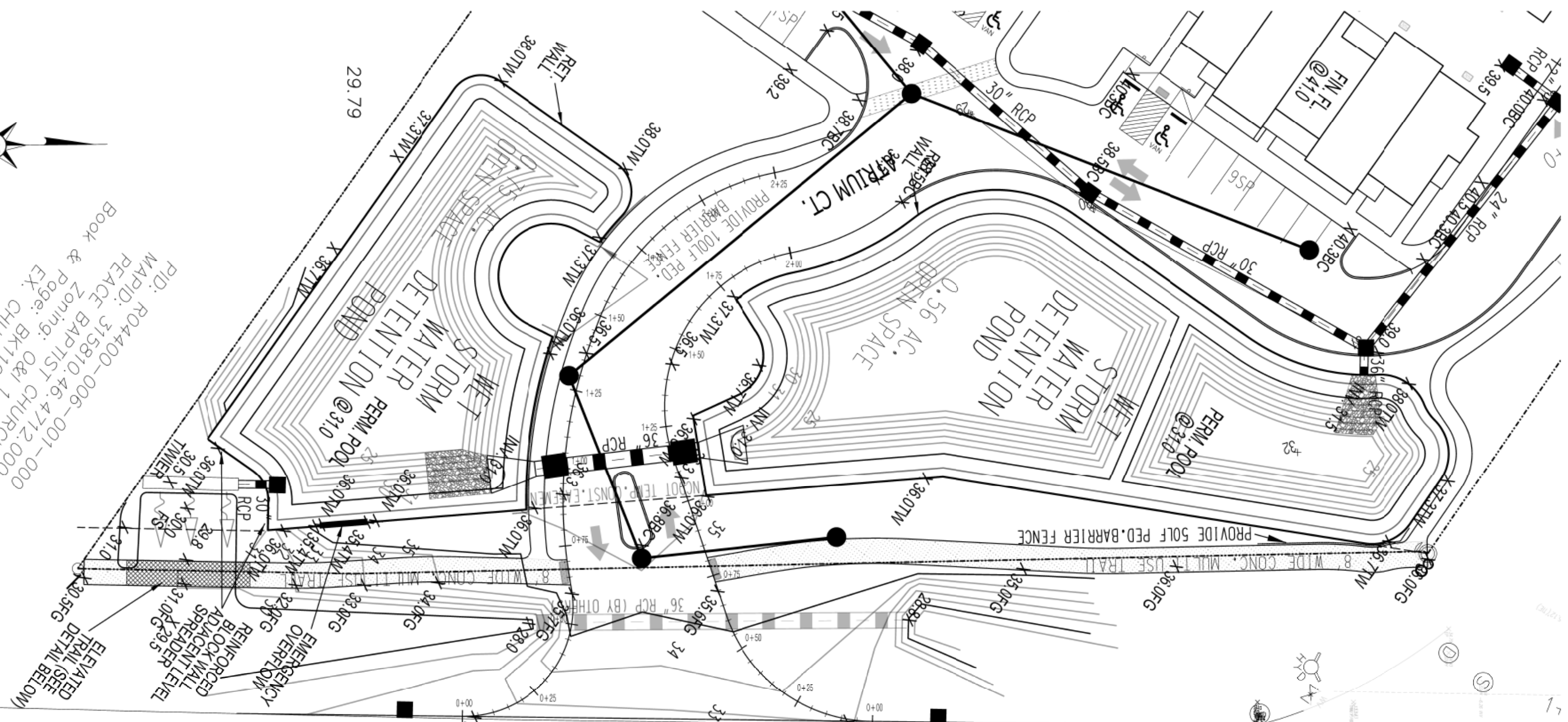


ARBORETUM VILLAGE
CITY OF WILMINGTON NEW HANOVER COUNTY NORTH CAROLINA
OWNER: ARBORETUM VILLAGE, LLC
ADDRESS: 0 S. CARDINAL DRIVE WILMINGTON, N.C. 28403
PHONE: 910-520-0254
DESIGNED: JHF
DRAWN: KBN
APPROVED: JHF
DATE: 5/2/2018
SCALE: 1" = 50'
SHEET 17 OF 21

PROJECT NO.: PW 1312

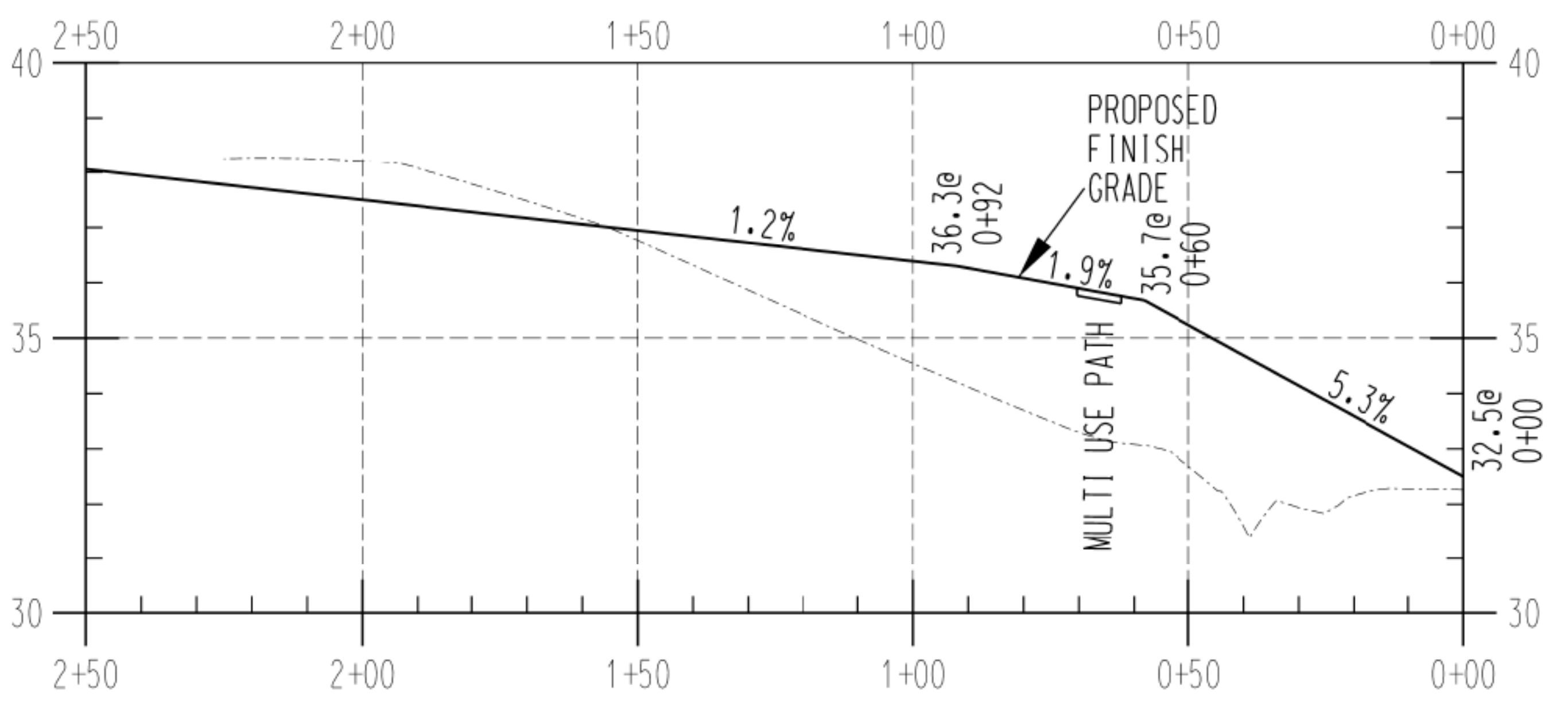


PID: R04400-006-001-000
 MAPID: 315810.46.4712.000
 REAGE BAPTIST CHURCH
 EX: BK100 PG0468
 Book & Page: O&I 1
 Book & Page: BK100 PG0468

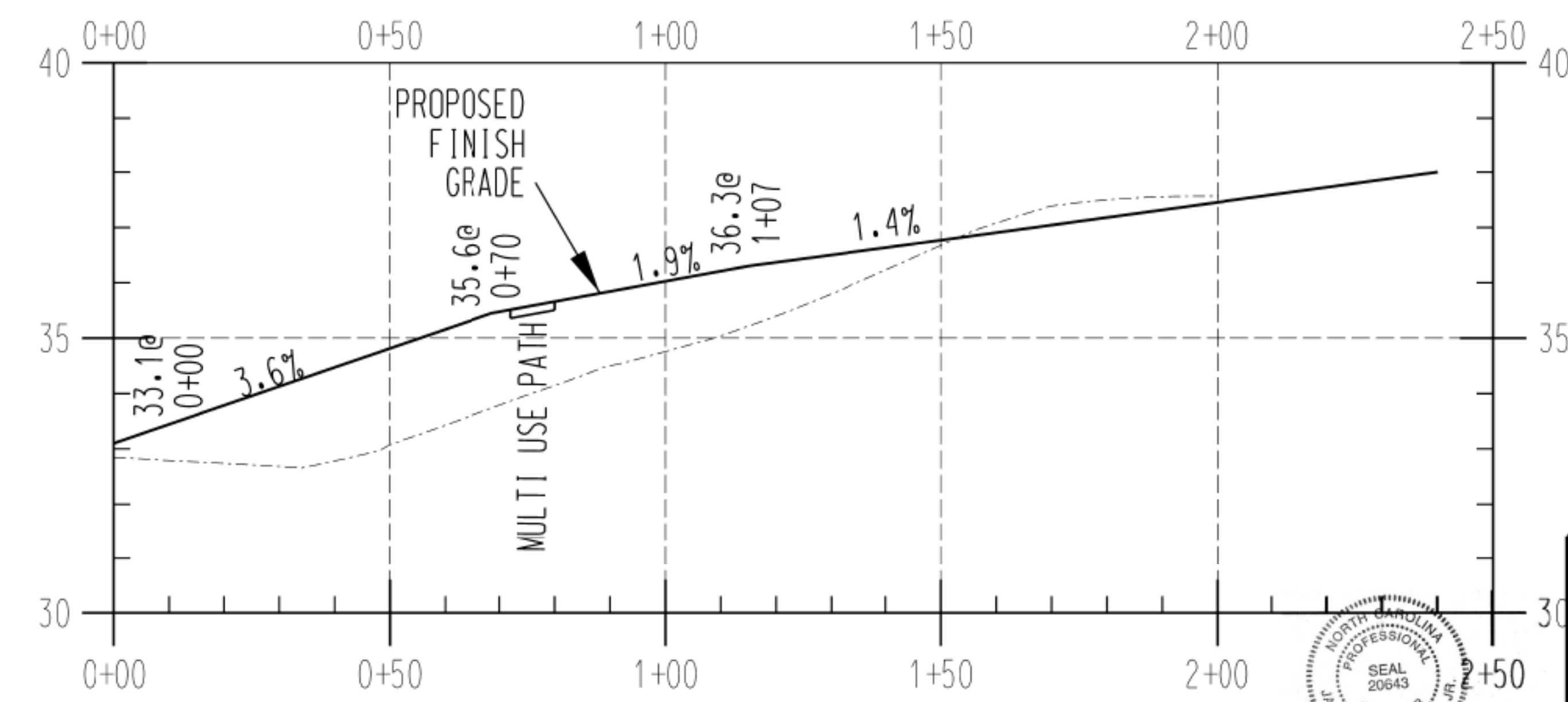


MILITARY CUT-OFF ROAD
 NCSR 1409,
 R/W VARIES

DRIVEWAY LEFT EDGE OF PAVEMENT



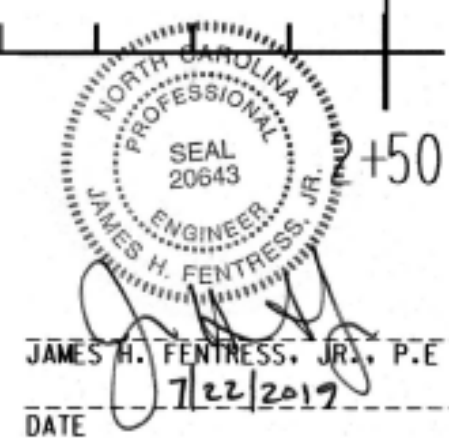
DRIVEWAY RIGHT EDGE OF PAVEMENT



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

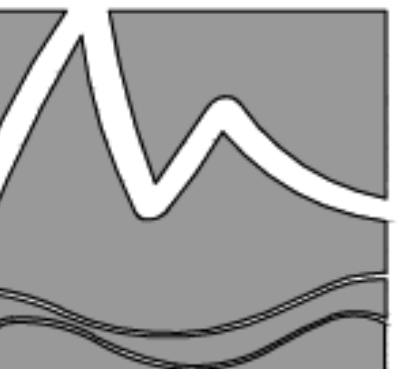
Approved Construction Plan	
Name	Date
Planning	
Traffic	
Fire	

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



VILLAGE TOWNHOMES
 (FORMERLY ARBORETUM VILLAGE)
 CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
 OWNER: ARBORETUM VILLAGE, LLC
 ADDRESS: 10 S. CARDINAL DRIVE, WILMINGTON, N.C. 28403
 PHONE: _____
STROUD ENGINEERING, P.A.
 102 D CINEMA DRIVE, WILMINGTON, NC 28403
 (910) 815-0775
 JAMES H. FENTRESS, JR., P.E.
 DATE: 7/22/2017

DESIGNED: JHF	DATE: 02/11/19
DRAWN: JHF	SCALE: HOR: 1" = 20'
APPROVED: JHF	VER: 1" = 2'
SHEET 18 OF 21	



**MIHALY
LAND DESIGN**
PLANNING + LANDSCAPE ARCHITECTURE
330 MILITARY CUTOFF RD., Suite A3
Wilmington, NC 28405 910.392.4355



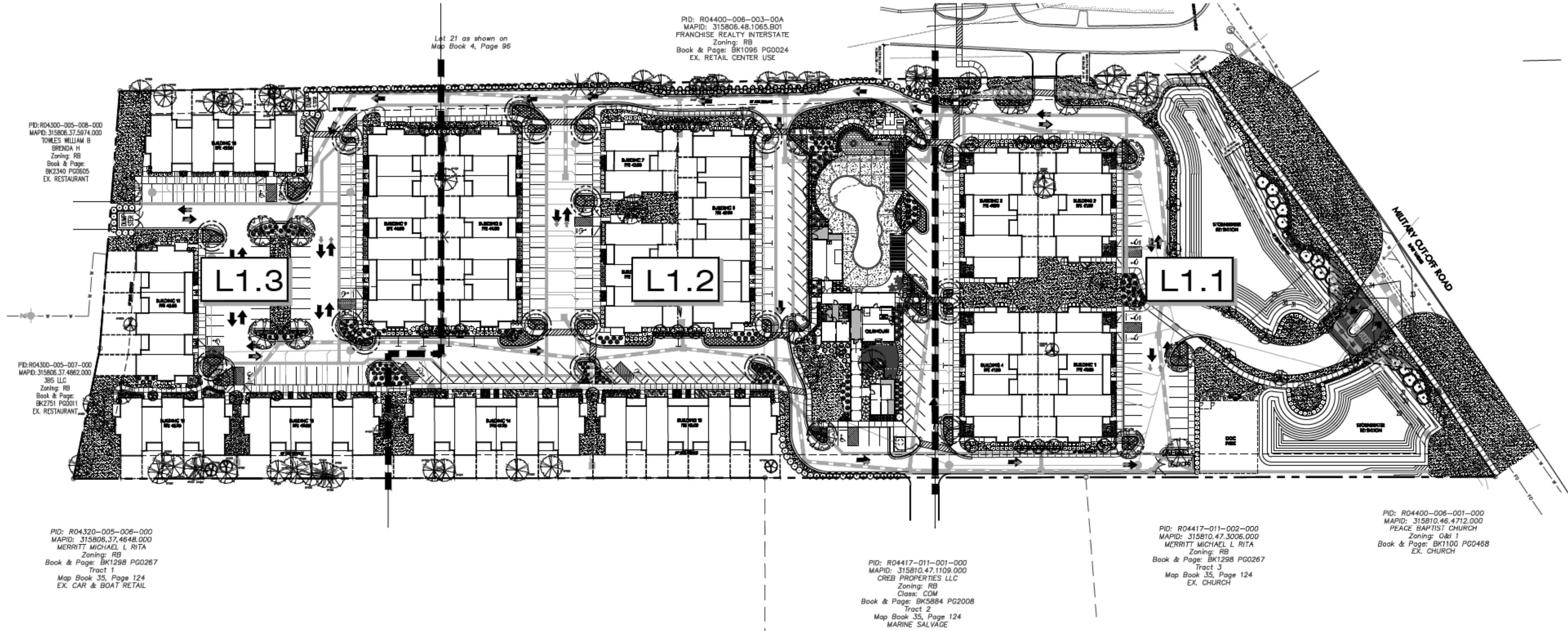
Revisions
2019-04-22: REVISE PLAN PER COW COMMENTS.
2019-05-23: REVISE PER COW COMMENTS AND UPDATED TREE SURVEY
2019-08-27: REVISE PER COW COMMENTS

CLIENT
TRIBUTE PROPERTIES
10 S. CARDINAL DRIVE
WILMINGTON, NC

PROJECT
VILLAGE TOWNHOMES
194 MILITARY CUTOFF ROAD
WILMINGTON, NC
LANDSCAPE PLAN

CONSTRUCTION DOCUMENT
REVISIONS SHEET

Date: 2019-03-22
Phase:
Job Number: 830-04
Designed by: MLD
Drawn by: MAS
Checked by: JWM
Sheet Title:
PLANTING PLAN - OVERALL
Sheet Number:
L3.0
of 4 sheets



SITE DATA	
ADDRESS	294 MILITARY CUTOFF ROAD
PARCEL ID	R04300-005-001-000
PROPOSED USE	MF-M (MULTI-FAMILY MEDIUM DENSITY)
EXISTING ZONING	MHP (MOBILE HOME PARK)
TOTAL SITE AREA	8.55 AC (372,438 SF)
CAMA LAND USE	URBAN TRANSITION

LANDSCAPE REQUIREMENTS

REQUIRED	PROVIDED
PARKING LOT CANOPY COVERAGE (100,343 SF X 20%)	21,069 SF, 80 TREES
FOUNDATION PLANTING 12% FACADE AREA (ADD. TO PARKING/DRIVE AISLE)	24,088 SF 84 LARGE TREES

BUILDING #	EAST	WEST
BUILDING #1	996 SF (117.0 LF x 28'-1" HT x .12)	992 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #2	886 SF (99.0 LF x 28'-1" HT x .12)	932 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #3	996 SF (117.0 LF x 28'-1" HT x .12)	892 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #4	996 SF (117.0 LF x 28'-1" HT x .12)	932 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #5	978 SF (117.0 LF x 28'-1" HT x .12)	628 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #6	978 SF (117.0 LF x 28'-1" HT x .12)	828 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #7	214 SF (83.0 LF x 28'-1" HT x .12)	242 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #8	978 SF (117.0 LF x 28'-1" HT x .12)	784 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #9	978 SF (117.0 LF x 28'-1" HT x .12)	778 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #10	457 SF (155.5 LF x 28'-1" HT x .12)	426 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #11	169 SF (80 LF x 28'-1" HT x .12)	397 SF 996 SF (117.0 LF x 28'-1" HT x .12)
BUILDING #12	996 SF (117.0 LF x 28'-1" HT x .12)	784 SF 996 SF (117.0 LF x 28'-1" HT x .12)
BUILDING #13	918 SF (153.0 LF x 28'-1" HT x .12)	908 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #14	918 SF (153.0 LF x 28'-1" HT x .12)	864 SF 169 SF (80 LF x 28'-1" HT x .12)
BUILDING #15	149 SF (82 LF x 22'-0" HT x .12)	410 SF 28 SF (25 LF x 22'-0" HT x .12)
BUILDING #16	190 SF (79 LF x 22'-0" HT x .12)	394 SF

STREET YARD PLANTING

PRIMARY STREET/ADJ.	6,900 SF (885 LF x 18')	7,147 SF
MILITARY CUTOFF	12 (1,600 SF)	20 PROPOSED TREES
TREES REQUIRED	89 (6,600 SF)	109 PROPOSED SH-RUBS

TREE REQUIREMENTS PER DISTURBED ACRE

REQUIRED:	8.60 ACRES DISTURBED x 10 TREES = 129 TREES REQUIRED
TREE CREDITS:	147 EXISTING TREE CREDITS
PROVIDED:	111 TREES PLANTED - REFER TO PLANTING LEGEND
TOTAL:	268 TREES PROVIDED

*NOTE: PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

TREE CREDIT CALCULATIONS

QUANTITY	SIZE	TREE	TOTAL DBH
5	8"	OAK	40'
4	9"	OAK	36'
4	10"	OAK	40'
5	11"	OAK	55'
6	12"	OAK	72'
1	13"	OAK	13'
3	15"	OAK	45'
3	16"	OAK	48'
2	17"	OAK	34'
3	18"	OAK	54'
3	19"	OAK	57'
2	22"	OAK	44'
2	23"	OAK	46'
2	24"	OAK	48'
1	28"	OAK	28'
1	30"	OAK	30'
1	31"	OAK	31'
1	32"	OAK	32'
1	60"	OAK	60'
1	6"	DOGWOOD	6'
1	10"	HOLLY	10'
1	5"	ORNAMENTAL	5'
1	10"	HOLLY	10'
2	8"	HARDWOOD	16'
2	10"	HARDWOOD	20'
1	13"	HARDWOOD	13'
1	14"	HARDWOOD	14'
1	15"	GUM	9'
1	9"	GUM	15'
2	12"	PINE	24'
1	19"	PINE	19'
1	22"	PINE	22'
1	24"	PINE	24'
1	10"	CRAPE	10'
TOTAL			1015' DBH

MITIGATION CALCULATIONS

QUANTITY	SIZE	COMMON NAME	% MITIGATION
2	9"	DOGWOOD	100
10	10"	DOGWOOD	100
1	11"	OAK	100
1	12"	PINE	100
1	15"	PINE	100
2	16"	PINE	100
1	22"	PINE	100
1	10"	CYPRESS	100
1	9"	DOGWOOD	100

REMOVED SIGNIFICANT TREES (NON-ESSENTIAL SITE IMPROVEMENTS)

QUANTITY	SIZE	COMMON NAME	% MITIGATION
2	9"	OAK	100
1	11"	OAK	100
1	12"	PINE	100
1	15"	PINE	100
2	16"	PINE	100
1	22"	PINE	100
1	10"	CYPRESS	100
1	9"	DOGWOOD	100

137' x 1 = 137/3 = 46 TREES

TOTAL TREES REQUIRED FOR MITIGATION = 53 TREES
TOTAL TREE CREDITS = 169 TREE CREDITS
TREE CREDITS USED TO SATISFY MITIGATION = 53 TREE CREDITS

GENERAL PLANTING NOTES

- THIS WORK INCLUDES, BUT IS NOT LIMITED TO THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT, FINAL GRADING, SEEDING, SOIL AMENDMENTS, ETC., AS MAY BE REQUIRED FOR A COMPLETE INSTALLATION.
- QUANTITIES SHOWN IN PLAN LISTS ARE FOR CONVENIENCE ONLY. PLANS SHALL GOVERN.
- THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANT LOCATIONS OR INSUFFICIENT PLANT QUANTITIES DUE TO DIFFERENCES IN PLAN AND ACTUAL FIELD CONDITIONS.
- ALL TREE AND SHRUB MATERIAL SPECIFIED MUST MEET STANDARD INDUSTRY SPECIFICATIONS FOR THE CONTAINER SIZE INDICATED. DOWNIZING OR SUBSTITUTION OF PLANT MATERIAL WITHOUT PRIOR APPROVAL OF LANDSCAPE ARCHITECT WILL NOT BE ALLOWED.
- ALL LANDSCAPE AREAS SHALL BE GRADED TO A SMOOTH EVEN SURFACE PRIOR TO ANY PLANT INSTALLATION. ALL PLANT MATERIALS SHALL BE INSTALLED USING GOOD HORTICULTURAL PRACTICES IN ACCORDANCE WITH THE PLANS AND DETAILS.
- TREES SHALL NOT BE PLANTED CLOSER THAN FOUR (4) FEET FROM ANY WALKWAY OR PUBLIC SIDEWALK EXCEPT WHERE TREE WELLS OR PARKWAYS ARE PROVIDED IN THE SIDEWALK AREA. ALL TREE PLANTED WITHIN FIVE (5) FEET OF WALKS OR PUBLIC UTILITIES SHALL RECEIVE DEEP ROOT BARRIERS.
- TREE LOCATIONS SHOWN ON PLAN MAY REQUIRE ADJUSTMENT IN THE FIELD, WHENEVER FEASIBLE. TREES SHOULD BE PLANTED AT A MINIMUM OF TEN (10) FEET FROM ALL UNDERGROUND UTILITIES, STREETLIGHTS, HYDRANTS, AND OUT OF DRAINAGE FLOW LINES. SHOULD THIS NOT BE POSSIBLE, CONTACT THE LANDSCAPE ARCHITECT FOR DECISION ON PLACEMENT.
- ALL TREES IN TURF AREAS SHALL HAVE 12" MIN. CLR. CIRCUMFERENCE AROUND THE TRUNK BASE. PROVIDE 2" MIN. THK. MULCH AT BASE OF TRUNK.
- GROUNDCOVER TYPE SHOWN SHALL BE PLANTED IN ALL SHRUB AREAS AS SPECIFIED ON PLANS. GROUNDCOVER SHALL BE PLANTED AT 9" ON-CENTER UNIFORM TRIANGULAR SPACING, AND SHALL BE CONTINUOUS UNDER ALL TREE AND SHRUB MASSES AS SHOWN ON PLAN.
- MATURE PLANTINGS SHALL NOT INTERFERE WITH UTILITIES AND TRAFFIC SIGHT LINES.
- ALL PLANTING AREAS SHALL BE MULCHED WITH PINESTRAW, EXCEPT FOR AREAS PLANTED WITH GROUNDCOVER. ALL AREAS PLANTED WITH GROUNDCOVER SHALL BE MULCHED WITH HARDWOOD MULCH.

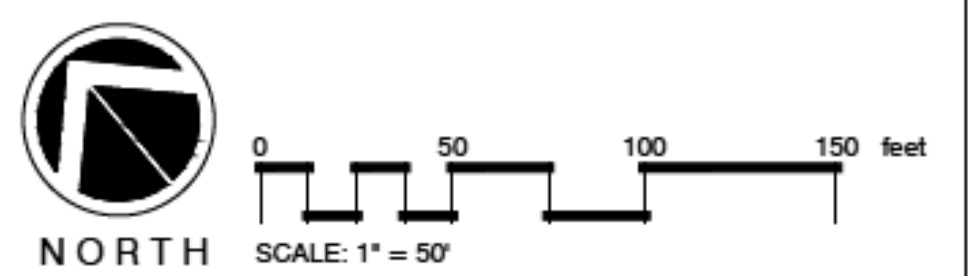
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Date: _____ Permit # _____
Signed: _____

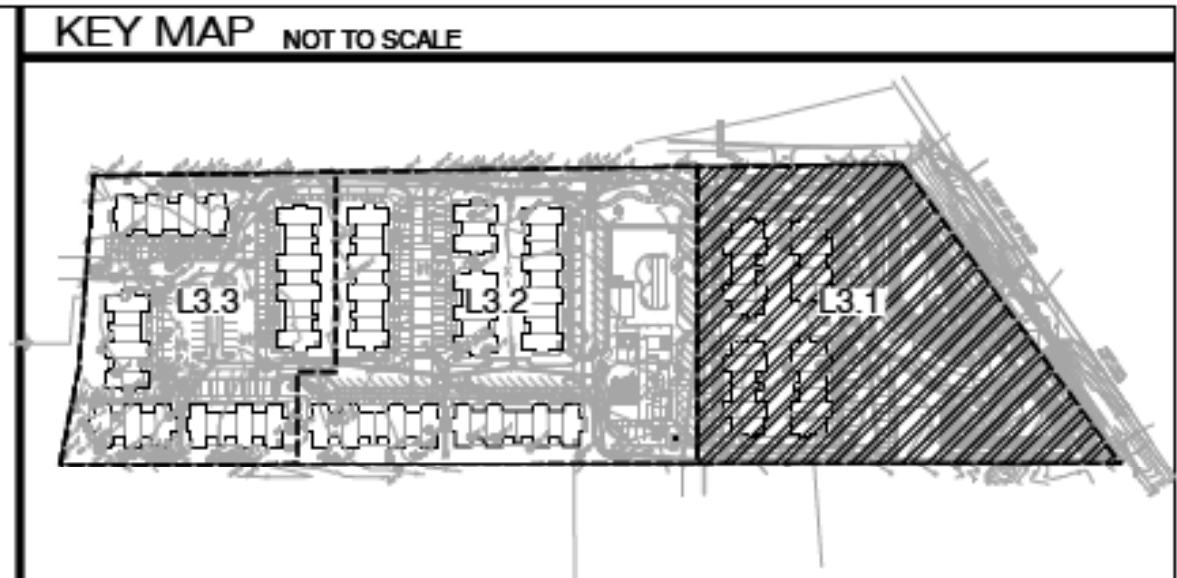
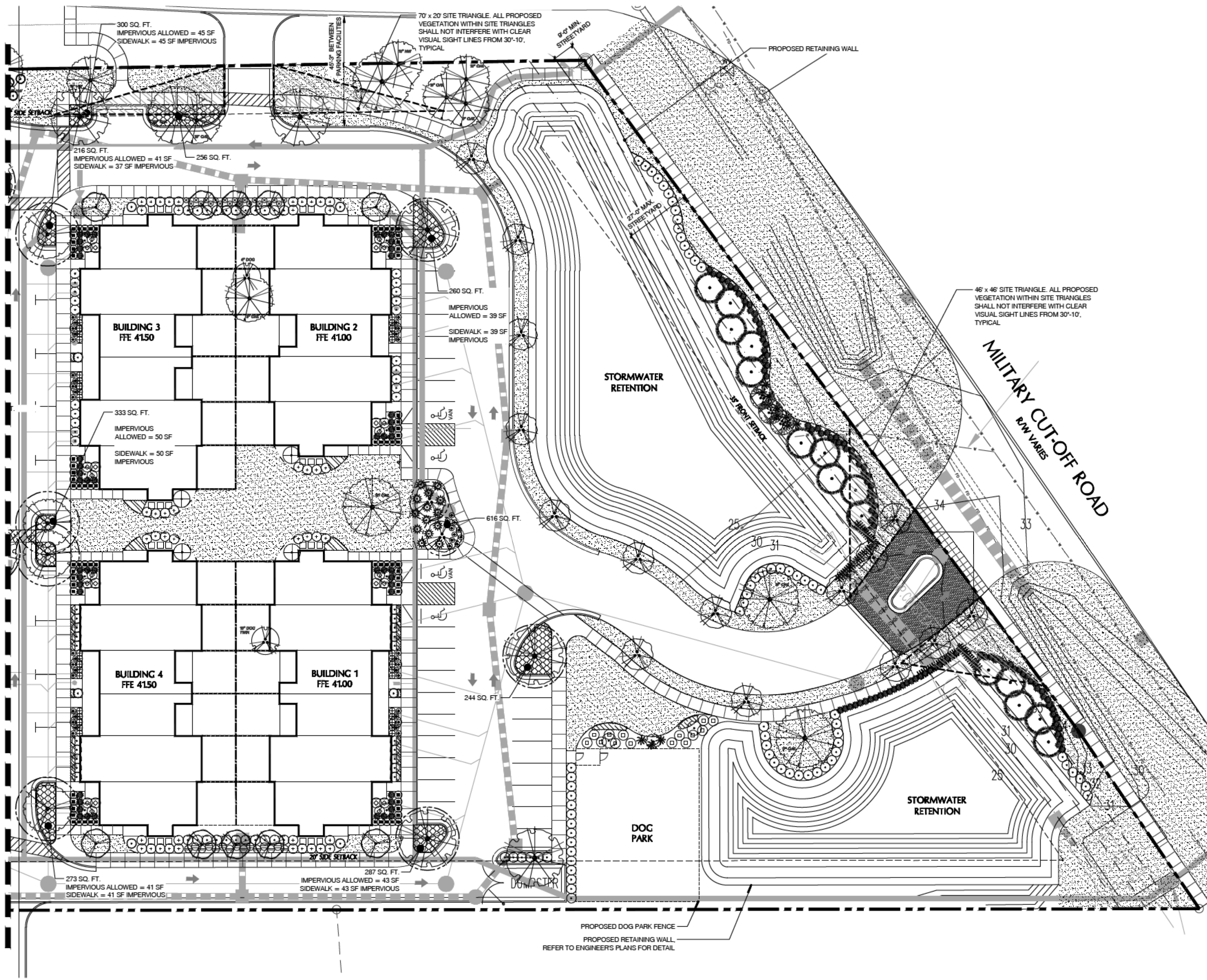
Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	



MATCHLINE - SEE SHEET L3.2

MATCHLINE - SEE SHEET L3.2



PLANT SCHEDULE L3.1

TREES	BOTANICAL / COMMON NAME	CONT	CAL	RANGE	QTY
	Carica c. 'Rosal Parry' TM / Rosal Parry Redstart	25 GAL	2'-0" GAL	6'-6" HT	10
	Existing Flowering Tree	EXISTING			1
	Existing Tree	EXISTING			4
	Asplenium / American Holly	8 & 8	2'-0" GAL	9'-10" HT	15
	Lagotis / 'Natchez' / Natchez Orange Myrtle	8 & 8	2'-0" GAL	9'-10" HT	17
	Magnolia / 'Star Magnolia'		2'-0" GAL	9'-10" HT	3
	Quercus virginiana / Southern Live Oak	8 & 8	2'-0" GAL	10'-12" HT	6
	Ulmus p. 'Emer It' / Aliso Elm	8 & 8	2'-0" GAL	10'-14" HT	4
SHRUBS	BOTANICAL / COMMON NAME	SIZE	RANGE	QTY	
	Acacia l. 'Formosa' / Formosa Acacia	3 gal	10'-0" HT	1	
	Bassia m. 'Waldington' / 3 gal. Broomwood	3 gal	10'-10" HT	35	
	Carolina s. 'Miss No Yaw' / White Carolina	7 gal	24'-30" HT	7	
	Chrysopsis / 'Oryza'	3 gal	10'-0" HT	40	
	Desmodium / 'True Fern Yucca Holly'	8 & 8	7'-8" HT	11	
	Desmodium / 'True Fern Yucca'	3 gal	10'-10" HT	72	
	Ligustrum / 'Nectariniensis' / Wax Leaf Ligustrum	7 gal	20'-30" HT	84	
	Ligustrum japonicum / True Fern Ligustrum	8 & 8	6'-8" HT	7	
	Muscadine s. 'Adagio' / Adagio Bala Coco	3 gal	10'-0" HT	15	
	Muscadine s. 'Crimson Queen' / Crimson Queen Silver Coco	3 gal	24'-30" HT	12	
	Muhlenbergia capillaris / Pink Muhly	3 gal	10'-0" HT	150	
	Nandina domestica 'Fire Power' / Firepower Nandina	3 gal	10'-10" HT	21	
	Nandina domestica 'Natchez Dwarf' / Dwarf Natchez Nandina	7 gal	24'-30" HT	24	
	Philadelphus / 'Pinnatifidus'	3 gal	10'-0" HT	14	
	Podocarpus neriifolius / 'Stately Yew'	7 gal	3'-4" HT	44	
	Rosa x 'Magellan' / Red Cliff Rose	3 gal	12'-15" HT	45	
	Salix / 'Dwarf Palmetto'	3 gal	10'-0" HT	14	
	Viburnum s. 'Cherry' / Cherry Viburnum	15 gal	3'-4" HT	4	
GROUND COVER	BOTANICAL / COMMON NAME	SIZE	RANGE	SPACING	QTY
	Hebe / 'Shade de Oro' / Shade de Oro Display	1 gal	10'-10" HT	12" x 12"	77
	Lonicera / 'Lily Turf'	1 gal	10'-10" HT	12" x 12"	236
	Trichostema s. 'Asahi' / Asahi Japanese	1 gal	6'-12" HT	12" x 12"	1,363
SCREENS	BOTANICAL / COMMON NAME	SIZE	RANGE	SPACING	QTY
	Eriogonum / 'Cottage Gold'	50"			

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Revisions
2019-04-22: REVISE PLAN PER COW COMMENTS.
2019-05-23: REVISE PER COW COMMENTS AND UPDATED TREE SURVEY
2019-08-27: REVISE PER COW COMMENTS

CLIENT
TRIBUTE PROPERTIES
10 S. CARDINAL DRIVE
WILMINGTON, NC

PROJECT
VILLAGE TOWNHOMES
194 MILITARY CUT-OFF ROAD
WILMINGTON, NC
LANDSCAPE PLAN

APPROVED STORMWATER MANAGEMENT PLAN

Date: 2019-03-22
Phase:
Job Number: 830-04
Designed by: MLD
Drawn by: MAS
Checked by: JWM
Sheet Title: PLANTING PLAN

Sheet Number:
L3.1
of 4 sheets

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

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SYMBOL LEGEND

- PROPERTY BOUNDARY
- MATCHLINE
- EXISTING TREES TO REMAIN
- 6' HIGH TOWNHOME YARD FENCE
- 8' HIGH TOWNHOME YARD FENCE
- TREES UTILIZED TO MEET PARKING LOT ISLAND SHADE REQUIREMENTS
- SITE TRIANGLE, TYP.

Approved Construction Plan

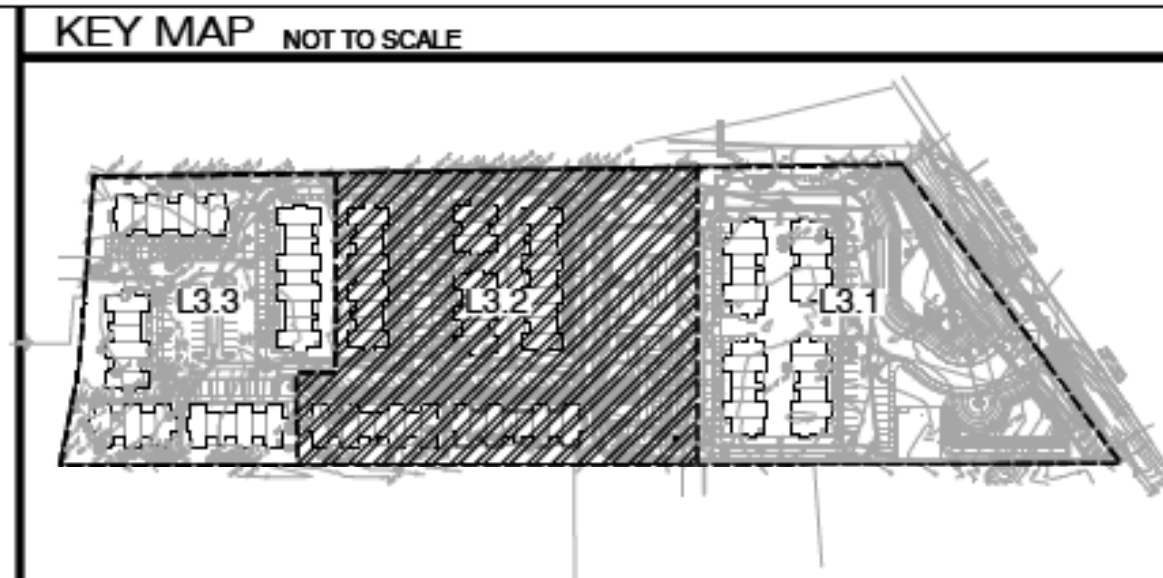
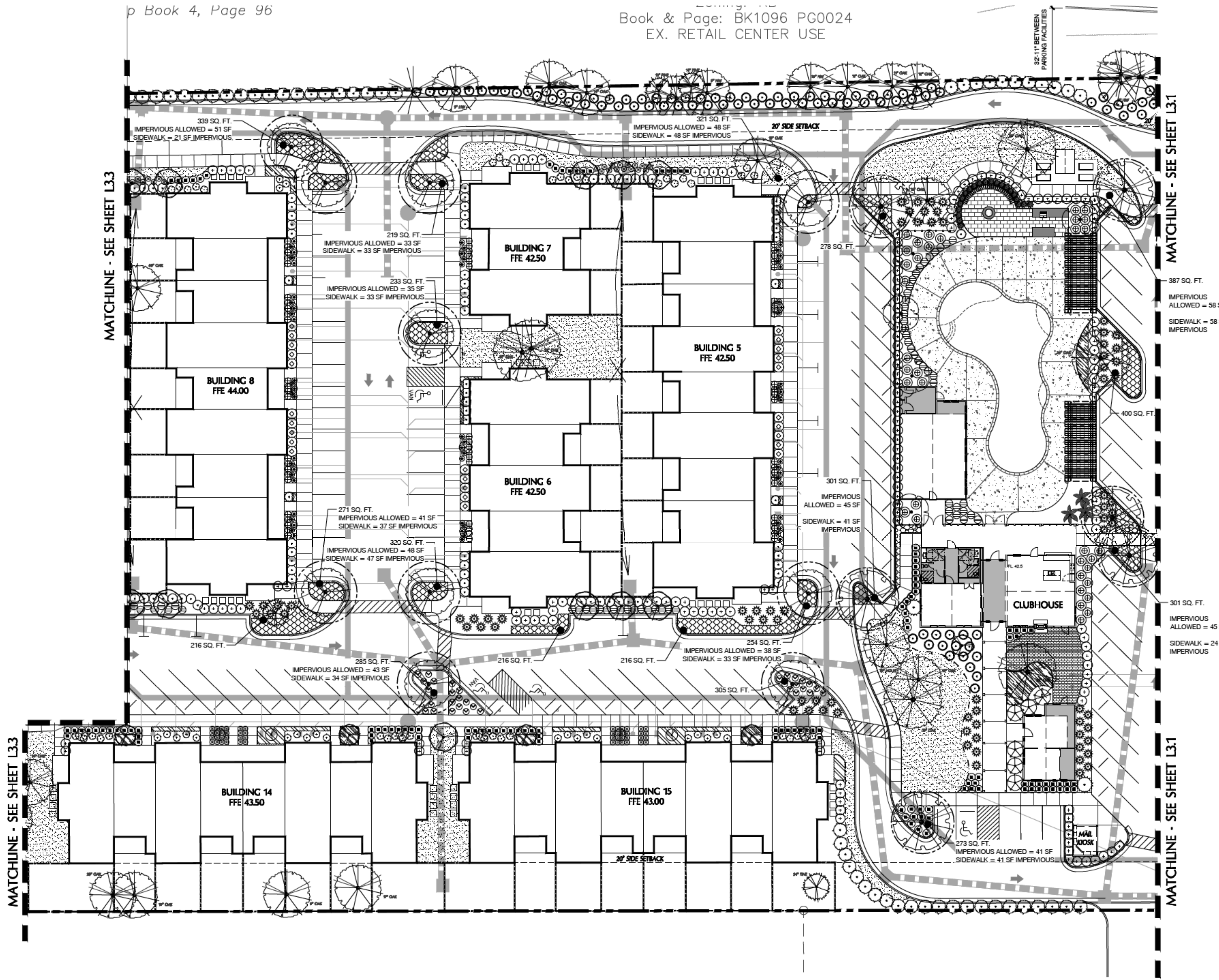
Name _____ Date _____

Planning _____

Traffic _____

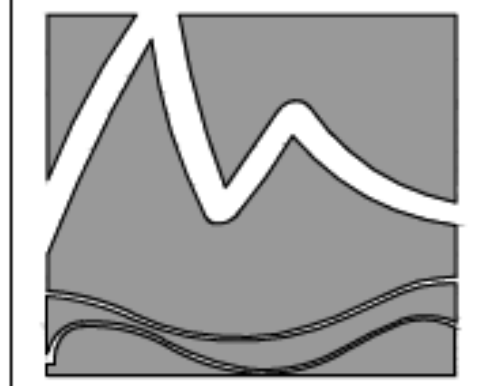
Fire _____

0 20 40 60 feet
NORTH SCALE: 1" = 20'



PLANT SCHEDULE L3.2

TREES	BOTANICAL / COMMON NAME	CONT	CAL	RANGE	QTY
	Acacia palmata / Green Leaf Japanese Maple	15 gal	2" CAL	5'-6" HT	5
	Banksia laevis / Pinks Palm	8 & B	2" CAL	6'-7" HT	5
	Cercis c. 'Riverside' TM / River Parrot Redbud	25 GAL	2" CAL	6'-8" HT	11
	Existing Tree	EXISTING			4
	Existing Tree	EXISTING			10
	Quercus virginiana / Southern Live Oak	8 & B	2" CAL	10'-12" HT	6
	Sabal palmetto / Cabbage Palmetto	8 & B		8'-12" H	8
	Ulmus p. 'Emerit' / Aliso Elm	8&B	2" CAL	12'-14" HT	10
SHRUBS	BOTANICAL / COMMON NAME	SIZE	RANGE	QTY	
	Azalea l. 'Femosa' / Femosa Azalea	3 gal	18"-24" HT	89	
	Azalea s. 'Foster' / Foster Azalea	3 gal	12"-18" HT	28	
	Bassia m. 'Whitegreen' / B gal, Brownwood	3 gal	15"-18" HT	68	
	Camellia s. 'Mex No Yaki' / White Camellia	7 gal	24"-30" HT	5	
	Cleyera japonica / Cleyera	3 gal	18"-24" HT	40	
	Hydrangea m. 'Minko Blue' / Minko Blue Hydrangea	3 gal	18"-24" HT	41	
	Ilex vomitoria 'Nana' / Dwarf Yaupon	3 gal	15"-18" HT	123	
	Ligustrum l. 'Racematum' / Wax Leaf Ligustrum	7 gal	30"-36" HT	33	
	Ligustrum japonicum / True Form Ligustrum	8&B	5'-6" HT	21	
	Miconia s. 'Adagio' / Adagio Bicolor Grass	3 gal	18"-24" HT	29	
	Muhlenbergia capillaris / Pink Muhly	3 gal	18"-24" HT	21	
	Myrica caroliniana / Wax Myrtle	10 gal	24"-30" HT	28	
	Nandina domestica 'Fire Power' / Firepower Nandina	3 gal	15"-18" HT	70	
	Nandina domestica 'Hatsue Dwarf' / Dwarf Heavenly Nandina	7 gal	24"-30" HT	25	
	Osmanthus fragrans / Sweet Olive	25 gal	5'-6" HT	2	
	Pittosporum tobira 'Wheeler's Dwarf' / Dwarf Pittosporum	3 gal	12"-15" HT	38	
	Podocarpus macrophyllum / Sheehy Yew	7 gal	5'-6" HT	143	
	Platanus x 'Minko' / MB Indian Hawthorn	7 gal	24"-30" HT	35	
	Platanus hybridus / Needle Palm	15 gal	5'-6" HT	6	
	Rosa x 'Minko' / Red Duff Rose	3 gal	12"-15" HT	68	
	Sabal minor / Dwarf Palmetto	3 gal	18"-24" HT	76	
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	RANGE	SPACING	QTY
	Liriodendron / Giant Liriodendron	1 GAL	12"-18" HT	24" c.c.	190
	Liriodendron / Lily Turf	1 gal	12"-15" HT	12" c.c.	472
	Trichostema s. 'Annie' / Annie's Jewel	1 gal	6"-12" HT	12" c.c.	2,188
SOILS	BOTANICAL / COMMON NAME	SIZE	RANGE	SPACING	QTY
	Erasmia sphaeroides / Conspicuous God	1 gal			



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VILLAGE TOWNHOMES
194 MILITARY CUTOFF ROAD
WILMINGTON, NC
LANDSCAPE PLAN

REVISIONS
DOCUMENT
REVIEWED

Date: 2019-03-22
Phase:
Job Number: 830-04
Designed by: MLD
Drawn by: MAS
Checked by: JWM

Sheet Title:
PLANTING PLAN

Sheet Number:
L3.2
of 4 sheets

Approved Construction Plan

Name _____ Date _____

Planning _____

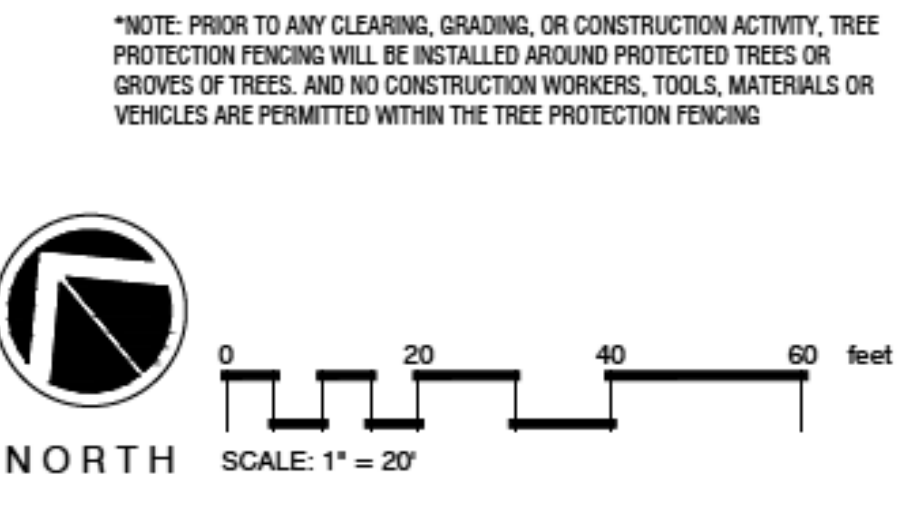
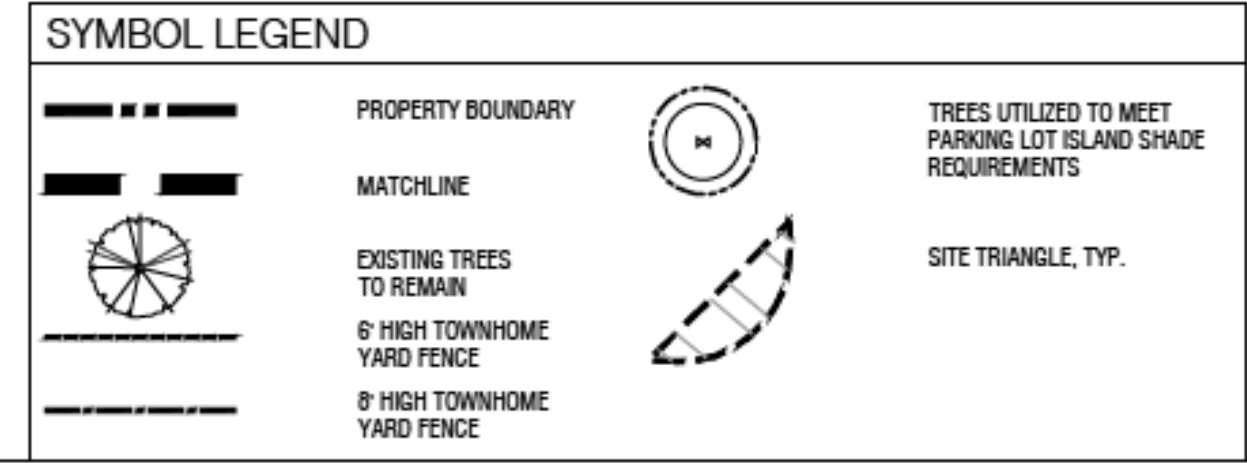
Traffic _____

Fire _____

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

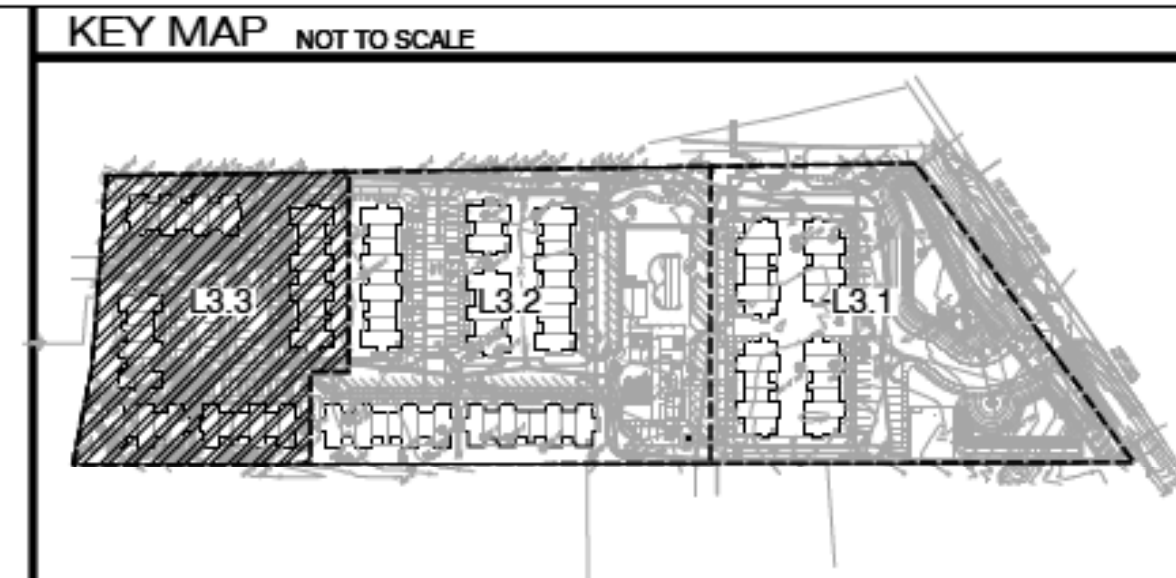
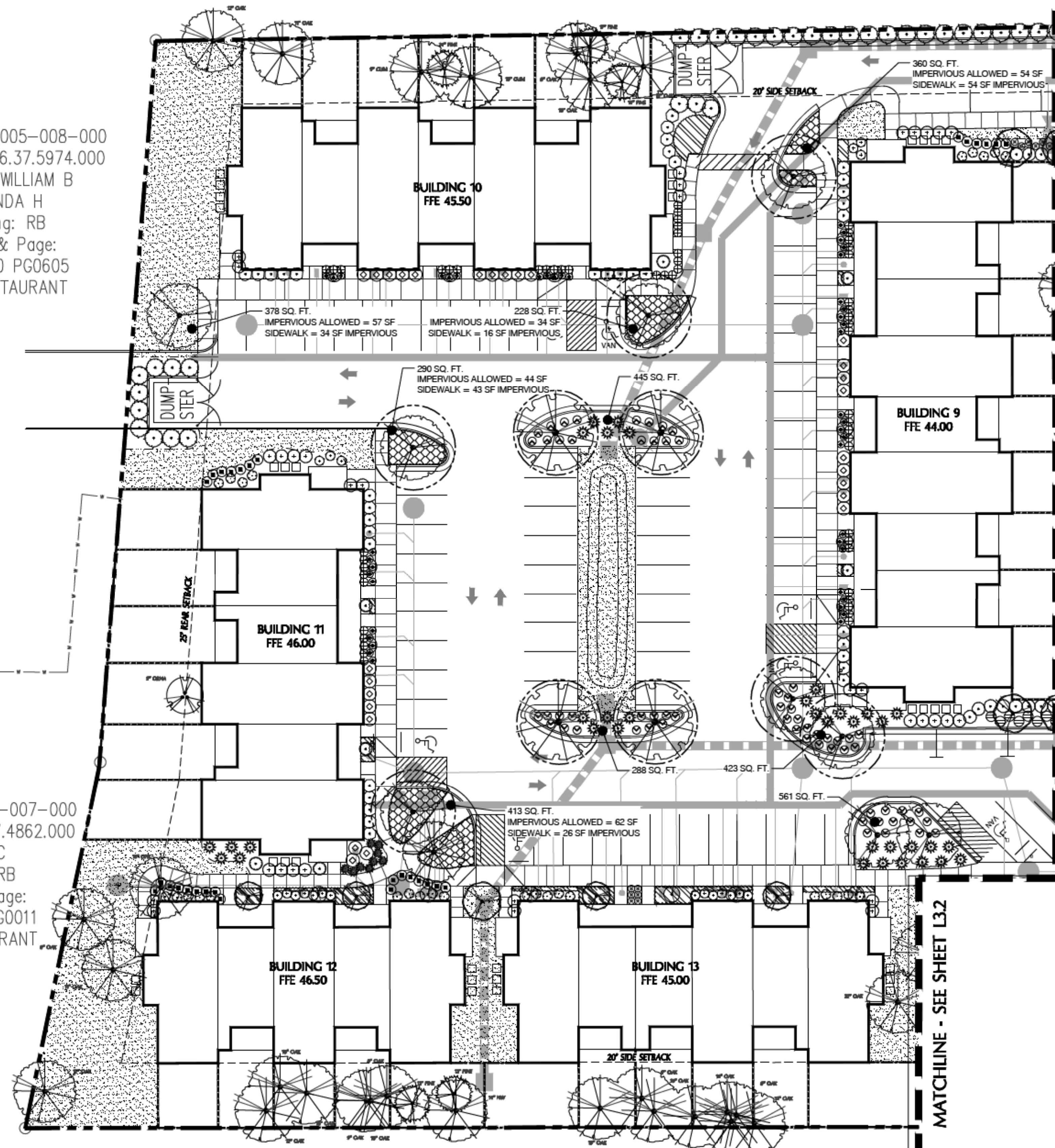
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 MAPID: 315806.37.5974.000
 TOWLES WILLIAM B
 BRENDA H
 Zoning: RB
 Book & Page:
 BK2340 PG0605
 EX. RESTAURANT

PID: R04300-005-007-000
 MAPID: 315806.37.4862.000
 3BS LLC
 Zoning: RB
 Book & Page:
 BK2751 PG0011
 EX. RESTAURANT



PLANT SCHEDULE L3.3

TREES	BOTANICAL / COMMON NAME	CONT	CAL	RANGE	QTY
	Acer palmatum / Green Leaf Japanese Maple	15 gal	2" CAL	5-6' HT	4
	Cercis c. 'Forest Parrot' TM / Forest Parrot Redbud	25 GAL	2" CAL	6-8' HT	3
	Existing Flowering Tree	EXISTING			1
	Existing Pine	EXISTING			5
	Existing Tree	EXISTING			9
	Quercus virginiana / Southern Live Oak	8 & 8	3" CAL	10-12' HT	4
	Ulmus p. 'Emer II' / Allee Elm	8&8	3" CAL	12-14' HT	9
SHRUBS	BOTANICAL / COMMON NAME	SIZE	RANGE	QTY	
	Azalea x 'Fashion' / Fashion Azalea	3 gal	12-18" HT	20	
	Buxus m. 'Wintergreen' / 3 gal. Boxwood	3 gal	15-18" HT	55	
	Camellia s. 'Mine No Yuki' / White Camellia	7 gal	24-30" HT	7	
	Cleyera japonica / Cleyera	3 gal	18-24" HT	35	
	Hydrangea m. 'Nikko Blue' / Nikko Blue Hydrangea	3 gal	18-24" HT	29	
	Ilex vomitoria 'Nana' / Dwarf Yaupon	3 gal	15-18" HT	30	
	Ligustrum j. 'Recurvifolium' / Wax leaf ligustrum	7 gal	30-36" HT	12	
	Ligustrum japonicum / Tree Form Ligustrum	8&8	6-8' HT	17	
	Miscanthus s. 'Adagio' / Adagio Eulalia Grass	3 gal	18-24" HT	6	
	Muhlenbergia capillaris / Pink Muhly	3 gal	18-24" HT	9	
	Myrica cerifera / Wax Myrtle	10 gal	24-30" HT	33	
	Nandina domestica 'Fire Power' / Firepower Nandina	3 gal	15-18" HT	13	
	Nandina domestica 'Harbour Dwarf' / Dwarf Heavenly Bamboo	7 gal	24-30" HT	27	
	Pittosporum tobira 'Wheeler's Dwarf' / Dwarf Pittosporum	3 gal	12-15" HT	62	
	Podocarpus macrophyllus maki / Shubby Yew	7 gal	3-4' HT	33	
	Rosa x 'Meigalpio' / Red Drift Rose	3 gal	12-15" HT	44	
	Sabal minor / Dwarf Palmetto	3 gal	18-24" HT	35	
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	RANGE	SPACING	QTY
	Liriope gigantea / Giant Liriope	1 GAL	12-18" HT	24" o.c.	51
	Liriope muscari / Lily Turf	1 gal	12-15" HT	12" o.c.	331
	Trachelospermum a. 'Asiatic' / Asiatic Jasmine	1 qt	6-12" HT	12" o.c.	671
SOD/SEED	BOTANICAL / COMMON NAME	SIZE	RANGE	SPACING	QTY
	Eremochloa ophiuroides / Centipede Sod	sod			



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 10 S. CARDINAL DRIVE
 WILMINGTON, NC

PROJECT
VILLAGE TOWNHOMES
 194 MILITARY CUTOFF ROAD
 WILMINGTON, NC
 LANDSCAPE PLAN

CONSTRUCTION DOCUMENT
 REVIEW SET

Date: 2019-03-22
 Phase:
 Job Number: 830-04
 Designed by: MLD
 Drawn by: MAS
 Checked by: JWM

Sheet Title: PLANTING PLAN

Sheet Number:
L3.3
 of 4 sheets

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

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

Approved Construction Plan

Name: _____ Date: _____

Planning: _____
 Traffic: _____
 Fire: _____

