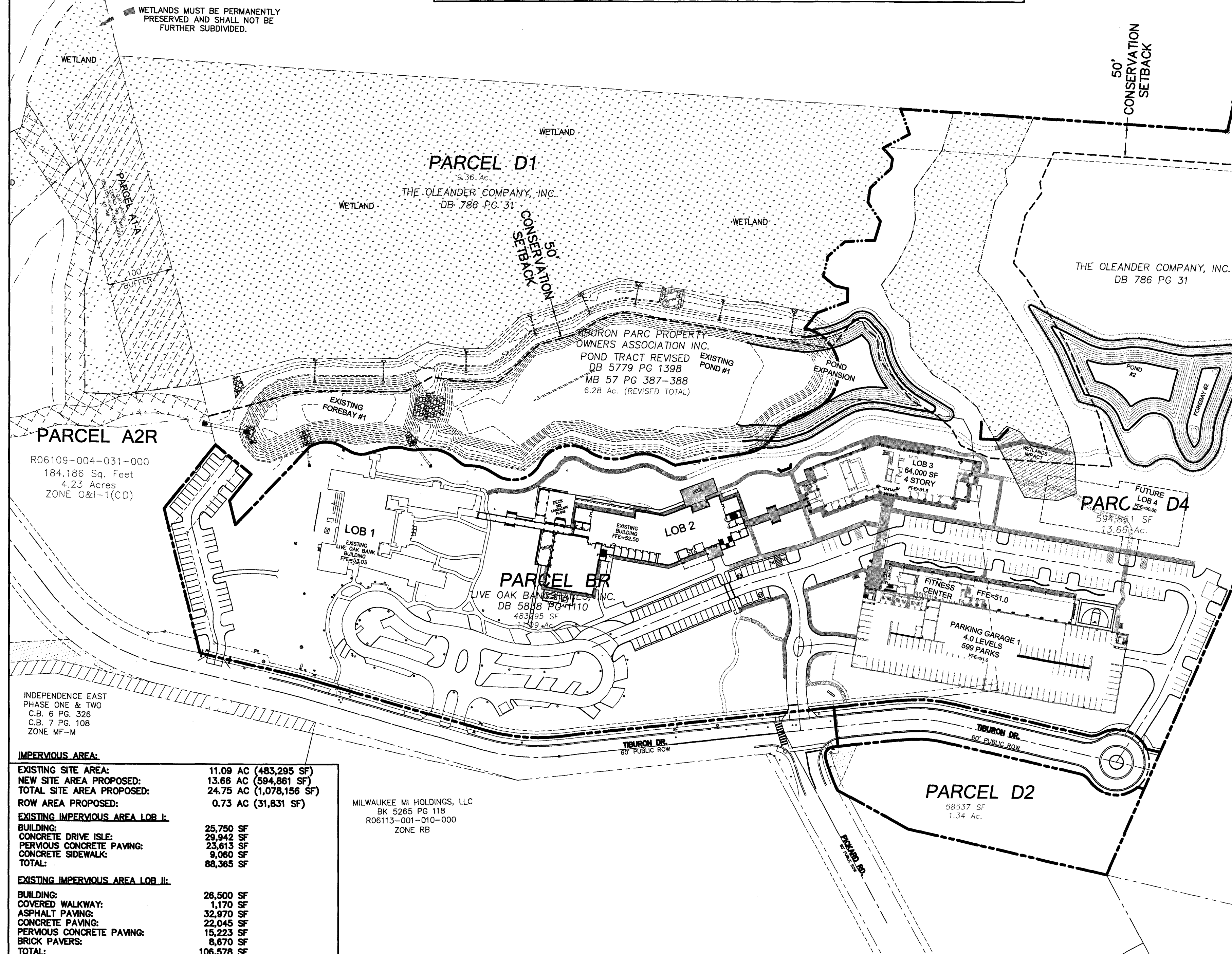


LEGEND

	PROPERTY LINE		WETLANDS
	DISTURBED AREA LIMITS		WETLANDS FILL
	PROPOSED CONTOUR		ASPHALT PAVING
	TEMPORARY SILT FENCE		COLORLED CONCRETE PAVING
	PROPOSED STORMDRAIN PIPE		COLORLED PEROVIOUS CONCRETE PAVING
	PROPOSED FINISH GRADE		MULTI-USE PATH (MUP)
	FLARED END SECTION WITH RIP-RAP ENERGY DISSIPATOR		COLORLED HEAVY DUTY CONCRETE
	DROP INLET WITH INLET PROTECTION (D1)		
	CURB INLET WITH INLET PROTECTION (C1)		
	JUNCTION BOX WITH INLET PROTECTION (JB)		
	PROPOSED FIRE HYDRANT		
	PROPOSED WATERLINE		
	PROPOSED SANITARY SEWER		
	EXISTING CONTOUR		
	EXISTING TREE TO BE REMOVED		
	EXISTING TREE TO BE SAVED AND PROTECTED		
	TREE PROTECTION FENCING		

NOTE:
 D1 TOP REFERS TO ELEVATION AT FLOW LINE
 D1 TOP REFERS TO ELEVATION AT GRATE



IMPERVIOUS AREA:	
EXISTING SITE AREA:	11.09 AC (483,295 SF)
NEW SITE AREA PROPOSED:	13.66 AC (594,861 SF)
TOTAL SITE AREA PROPOSED:	24.75 AC (1,078,156 SF)
ROW AREA PROPOSED:	0.73 AC (31,831 SF)
EXISTING IMPERVIOUS AREA LOB I:	
BUILDING:	25,750 SF
CONCRETE DRIVE ISLE:	29,942 SF
PERVIOUS CONCRETE PAVING:	23,613 SF
CONCRETE SIDEWALK:	9,080 SF
TOTAL:	88,385 SF
EXISTING IMPERVIOUS AREA LOB II:	
BUILDING:	28,500 SF
COVERED WALKWAY:	1,170 SF
ASPHALT PAVING:	32,970 SF
CONCRETE PAVING:	22,045 SF
PERVIOUS CONCRETE PAVING:	15,223 SF
BRICK PAVERS:	8,670 SF
TOTAL:	106,578 SF
EXISTING IMPERVIOUS AREA REMOVED LOB II:	
ASPHALT PAVING:	32,970 SF
CONCRETE PAVING:	2,973 SF
PERVIOUS CONCRETE PAVING:	5,900 SF
TOTAL IMPERVIOUS REMOVED:	41,843 SF
PROPOSED IMPERVIOUS AREA ADDED LOB 3 FITPARK:	
BUILDING LOB III:	17,665 SF (FOOTPRINT)
BUILDING PD I:	50,500 SF (FOOTPRINT)
BUILDING FITNESS CENTER:	11,435 SF (FOOTPRINT)
DRIVE ISLES (CONCRETE):	26,232 SF
PARKING (PERVIOUS CONCRETE):	17,886 SF
WALKWAYS/SIDEWALK:	22,055 SF
MUP (HALF):	15,781 SF
TOTAL:	148,554 SF
PROPOSED SITE TOTAL:	301,654 SF
PROPOSED SITE PERCENT IMPERVIOUS:	28.00%
PROPOSED IMPERVIOUS AREA ADDED ROW EXTENSION:	
ASPHALT, CONCRETE CURB AND GUTTER:	20,500 SF
MUP (HALF):	7,781 SF
PROPOSED SITE TOTAL:	23,281 SF
SITE TOTAL INCLUDING ROW:	324,835 SF

MILWAUKEE MI HOLDINGS, LLC
 BK 5265 PG 118
 ROB113-001-010-000
 ZONE RB

Approved Construction Plan

Name	Date
Planning <i>Eugene J. Tunstall</i>	2/1/18
Public Utilities	
Traffic <i>W. Meadows</i>	2-5-18
Fire <i>Greg Mize</i>	2-6-18

NCNDRN PWSS WATER PERMIT # _____
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT # _____
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

APPROVED STORMWATER MANAGEMENT PLAN

City of Wilmington
 Public Services • Engineering Division
 Date: 2/8/18 Permit # 20103423
 Signed: *[Signature]*

NEW ADDRESS ASSIGNMENTS:
 LOB 3 BUILDING 1805 TIBURON DR.
 FITPARK BUILDING 1811 TIBURON DR.

PRELIMINARY PLAN 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 preliminary plan does not constitute technical approval of a 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 preliminary plan shall be null and void.
- The use and development of the subject property shall be in accordance with the approved preliminary plan as submitted and approved.
- A 5-foot wide public access easement shall be provided for the portion of the multi-use path located on the subject site.
- Utilities shall be placed in appropriate locations relative to the public rights of way and co-location of water and sewer utilities with the required street trees (per the City TSSM) shall be pursued by the applicant and designer.
- A tree preservation plan and tree removal permit shall be required for this project and city staff shall issue these based on acceptable limits of clearing and tree preservation.
- All existing protected trees not located within the building foot print or impacted by essential site improvements, shall be preserved or mitigated.
- Trees designated to be preserved shall be properly protected during construction and tree protection fencing shall be noted on the construction plans. Tree clearing will be limited to essential site improvements within the project limits as shown on the approved site plan.
- If necessary, resource areas, buffers and setbacks per requirements of the LDC shall be shown and labeled on the Preliminary Plan.
- All existing and proposed public and non-municipal easements shall be added as necessary to the Preliminary Plan.
- An acceptable Preliminary Plan which adequately addresses all TRC/SRB comments shall be submitted for signature within thirty (30) calendar days of SRB approval.
- The applicant shall work with TRC to install adequate traffic calming measures within the proposed public right-of-way.
- All conditions and recommendations of the traffic impact analysis (TIA), as reviewed and approved by the Wilmington Metropolitan Planning Organization (WMPO), the NCDOT, and staff shall be implemented accordingly.
- All recommendations of the TIA shall be constructed prior to a Certificate of Occupancy being issued.
- All city, state and federal regulations shall be followed.

SITE DATA LIVE OAK BANK III													
USE:	OFFICE/PARKING DECK/FITNESS CENTER												
OWNER:	LIVE OAK BANCSHARES, INC.												
PARCEL ADDRESS:	1741 TIBURON DR.												
PARCEL ID#:	R06109-004-031-000												
MAP ID#:	313609.15.2860.000												
PARCEL ID#:	R06109-004-032-000												
MAP ID#:	313609.16.2484.000												
ZONING:	O&I-1 (CD)												
PARCEL AREA BR CURRENT:	11.09 AC (483,295 SF)												
PARCEL AREA BR PROPOSED:	24.75 AC (1,078,156 SF) (PARCEL BR+PARCEL D4 SEE SURVEY BY HANOVER DESIGN)												
ROW AREA PROPOSED:	0.73 AC (31,831 SF)												
WETLANDS:	1.78 AC												
WETLANDS TO BE IMPACTED:	0.20 AC												
CAMA LAND USE:	URBAN												
BUILDING SETBACKS O&I-1:	FRONT SETBACK: 20' INTERIOR SIDE SETBACK: 10' CORNER SIDE SETBACK: 20'												
BUILDING SETBACKS LOB III:	FRONT SETBACK: 280'± SIDE SETBACK EAST: 425'± SIDE SETBACK WEST: 950'± REAR SETBACK: 80'±												
BUILDING SETBACKS PARKING DECK I:	FRONT SETBACK: 22.87'± SIDE SETBACK EAST: 77'± SIDE SETBACK WEST: 957'± REAR SETBACK: 695'±												
MAX. LOT COVERAGE O&I-1:	40%												
PROPOSED LOT COVERAGE:	12.37%												
MAX. BUILDING HEIGHT O&I-1:	45' UP TO 75' WITH SPECIAL USE PERMIT, LOT COVERAGE AND SETBACK CONDITIONS												
BUILDING HEIGHT LOB III:	58'												
BUILDING HEIGHT PARKING DECK I:	45'												
BUILDING HEIGHT FITNESS CENTER:	45'												
EXISTING BUILDING:	LIVE OAK BANK I												
BUILDING SIZE:	34,059 SF												
BUILDING FOOTPRINT:	19,358 SF												
NUMBER OF STORIES:	2												
SQUARE FOOTAGE PER FLOOR:	FIRST FLOOR: 17,118 SF SECOND FLOOR: 14,608 SF SF												
EXISTING BUILDING:	LIVE OAK BANK II												
BUILDING SIZE:	55,140 SF (OFFICE 48,941 SF, CAFETERIA 3,912 SF, KITCHEN 2,287)												
BUILDING FOOTPRINT:	23,600 SF FOOTPRINT												
NUMBER OF STORIES:	3												
SQUARE FOOTAGE PER FLOOR:	1ST FLOOR: 17,347 SF OFFICE 2ND FLOOR: 3,912 SF CAFETERIA 3RD FLOOR: 2,287 SF KITCHEN												
PROPOSED BUILDING 1:	LIVE OAK BANK III												
BUILDING SIZE:	65,985 SF												
BUILDING FOOTPRINT:	17,665 SF												
NUMBER OF STORIES:	4												
SQUARE FOOTAGE PER FLOOR:	FIRST FLOOR: 17,164± SF SECOND FLOOR: 15,933± SF THIRD FLOOR: 16,414± SF FOURTH FLOOR: 16,414± SF												
CONSTRUCTION TYPE:	IB												
PROPOSED BUILDING 2:	PARKING DECK I (PD I)												
BUILDING SIZE:	185,967 SF												
BUILDING FOOTPRINT:	50,500 SF												
NUMBER OF STORIES:	4												
SQUARE FOOTAGE PER FLOOR:	FIRST FLOOR: 37,722± SF SECOND FLOOR: 49,415± SF THIRD FLOOR: 49,415± SF FOURTH FLOOR: 49,415± SF												
CONSTRUCTION TYPE:	IB												
OCCUPANCY:	599 SPACES (593 REGULAR/6 HC)												
PROPOSED BUILDING 3:	FITNESS CENTER												
BUILDING SIZE:	17,108 SF												
BUILDING FOOTPRINT:	11,435 SF												
NUMBER OF STORIES:	1												
SQUARE FOOTAGE PER FLOOR:	FIRST FLOOR: 11,151± SF SECOND FLOOR: 5,957± SF												
CONSTRUCTION TYPE:	VB												
OCCUPANCY:	80-90±												
PARKING:	1 PER 200 SF MAX., 1 PER 300 SF MIN. 170 MAX./114 MIN. 261 MAX./173 MIN. 320 MAX./213 MIN. 751 MAX./500 MIN.												
PROPOSED PARKING:	70 REG. 2 HC 72 TOTAL 42 REG. 0 HC 72 TOTAL 44 REGULAR 2 HC 46 TOTAL 587 REGULAR 12 HC 599 TOTAL 99 REGULAR 6 HC 105 TOTAL 842 REGULAR 22 HC 864 TOTAL												
ACCESSIBLE PARKING REQUIRED DECK (2%):	12 SPACES												
ACCESSIBLE PARKING REQUIRED SURFACE (254 SPACES):	7 SPACES												
TOTAL ACCESSIBLE PARKING REQUIRED:	19 SPACES												
TOTAL ACCESSIBLE PARKING PROVIDED:	22 SPACES												
TOTAL BICYCLE PARKING REQUIRED:	20 SPACES												
TOTAL BICYCLE PARKING PROVIDED:	30 SPACES (LOB I: 10/LOB II: 10) 10 SPACES (LOB 3 SEE PLAN)												
LANDSCAPING REQUIREMENTS (REFER TO LANDSCAPE PLAN)													
15 TREES PER DISTURBED ACRE REQUIRED DISTURBED AREA = AC X 15 = TREES													
INTERIOR LANDSCAPING O&I-1: 30% CANOPY COVER OF INTERIOR AREA OF PARKING FACILITY BASED ON AMOUNT OF PARKING AREA IMPERVIOUS SURFACE.													
STREETYARD LANDSCAPING: 18 MULTIPLIER 595-24X18=10,278 SF REQUIRED 10,278 SF PROVIDED													
FOUNDATION PLANTINGS: FACE OF BUILDING X LENGTH X 12% SOLID WASTE DISPOSAL DUMPSTER AREA PROVIDED													
WATER AND SEWER CAPACITY:													
EMPLOYEES (LOB3):	375 X 25 GPD PER EMPLOYEE=9,375 GPD												
FITNESS CENTER:	50 GPD PER 100 SF=8,554 GPD												
TOTAL:	17,929 GPD												
DISTURBED AREA:													
TOTAL DISTURBED AREA FOR LOB3 PROJECT:	12.94 AC												
TOTAL NEW DISTURBED AREA FOR LOB3 PROJECT:	10.36 AC												
SCALE: 1" = 100'													
0 100 200 300													
<table border="1"> <thead> <tr> <th>SYMBOL</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">REVISIONS</td> </tr> <tr> <td colspan="4" style="text-align: center;">©2017 NORRIS & TUNSTALL</td> </tr> </tbody> </table>		SYMBOL	DATE	DESCRIPTION	BY	REVISIONS				©2017 NORRIS & TUNSTALL			
SYMBOL	DATE	DESCRIPTION	BY										
REVISIONS													
©2017 NORRIS & TUNSTALL													

OVERALL SITE PLAN
LIVE OAK BANKING COMPANY 3/FITPARK

1741 TIBURON DRIVE
 WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANCSHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-966-1647
 910-960-5868

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.

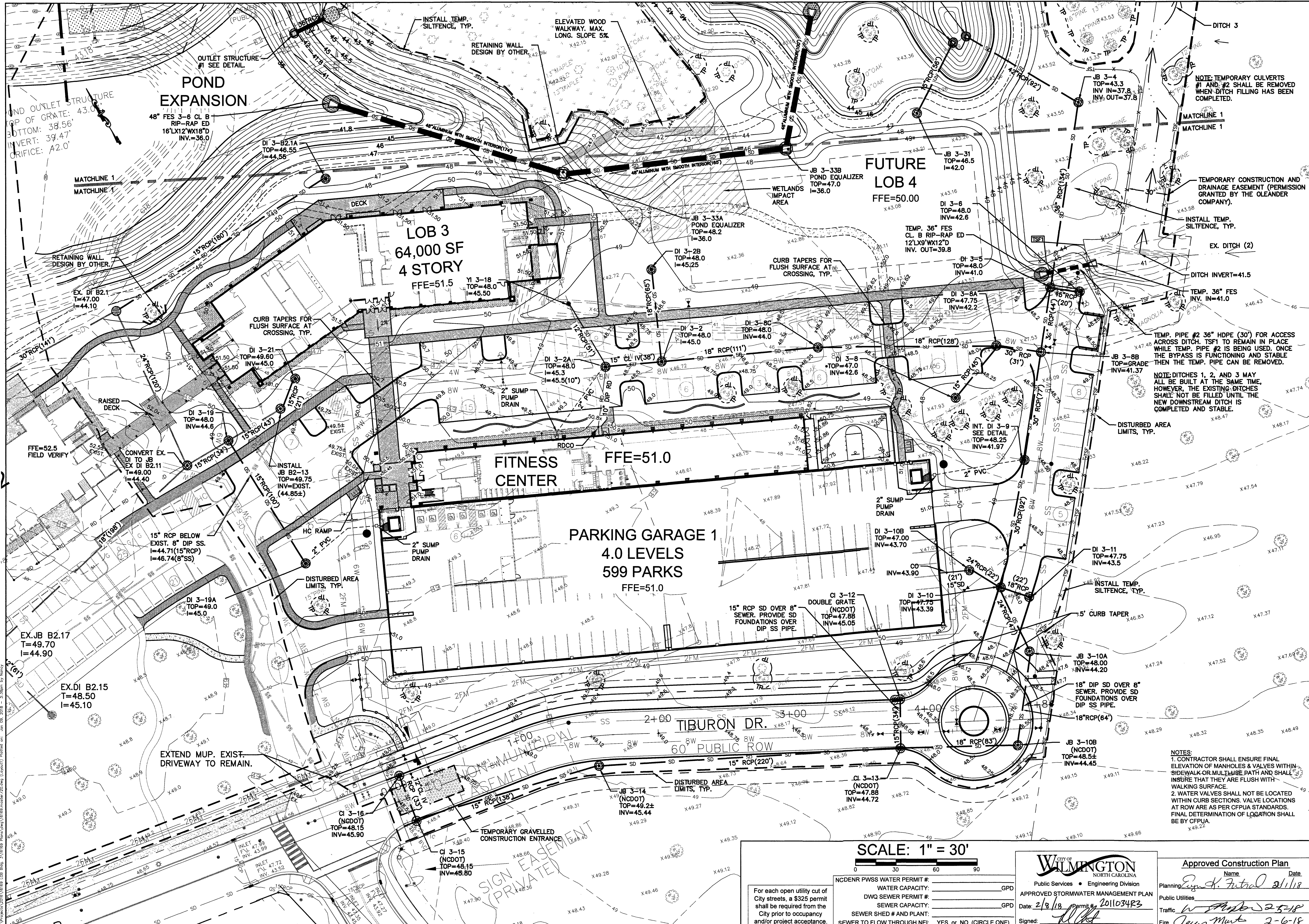
1429 ASHLITTLE RIVER RD. NW
 WILMINGTON, NC 28401
 PHONE (910) 345-5653

Licence #C-3641
16169

DES: JST
 GRP: JPN
 DRWN: NKS

DATE: 1/9/18

CO



GRADING, DRAINAGE AND EROSION CONTROL PLAN
 LIVE OAK BANKING COMPANY 3/FITPARK
 1741 TIBURON DRIVE
 WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANKING SHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-796-1647
 910-790-5868

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 1420 ASH-LITTLE RIVER RD. NW
 WILMINGTON, NC 28401
 PHONE (910) 343-9653
 LICENCE #C-3641

16169
 DES: JST
 CIB: JPN
 DRN: NKS
 DATE: 1/9/18
 NORTH CAROLINA PROFESSIONAL ENGINEERS SEAL
 1985

C2

SCALE: 1" = 30'

WILMINGTON NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 2/8/18 Permit #: 201103423
 Signed: [Signature]

Approved Construction Plan
 Name: [Signature] Date: 2/1/18
 Planning: [Signature]
 Public Utilities: [Signature]
 Traffic: [Signature]
 Fire: [Signature]

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

NCDENR PWSS WATER PERMIT #:
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT #:
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT:
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

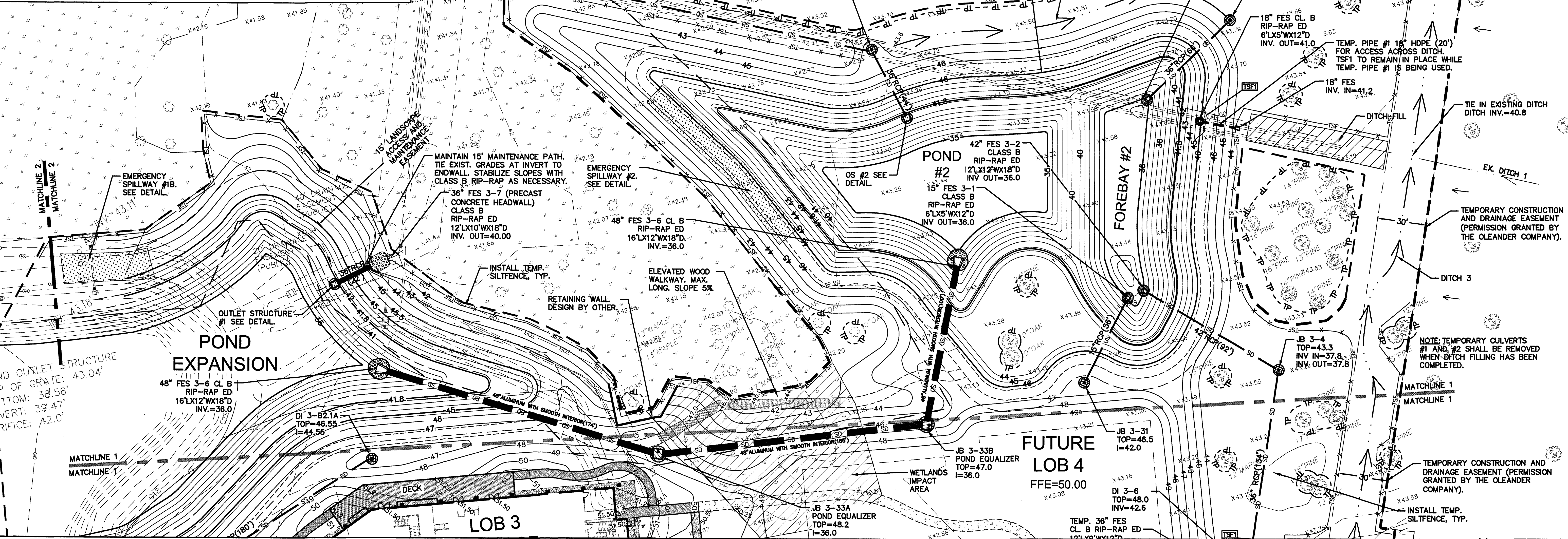
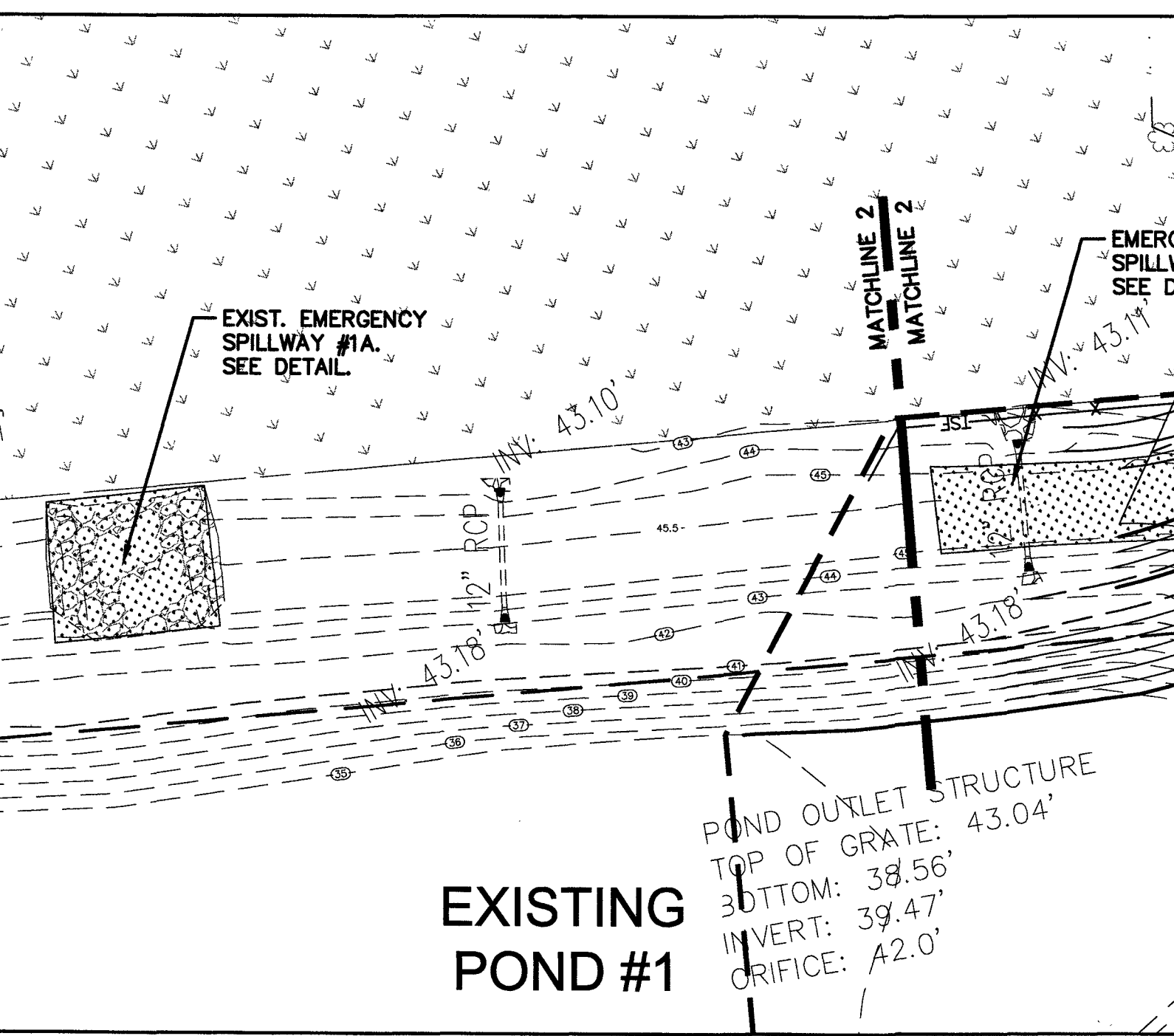


Approved Construction Plan
 Name: *Swack Trial* Date: *2/1/18*
 Planning: *Swack Trial*
 Public Utilities: *Swack Trial*
 Traffic: *Swack Trial* 2-5-18
 Fire: *Swack Trial* 2-6-18

SCALE: 1" = 30'
 0 30 60 90

NCDENR PWSS WATER PERMIT # _____
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT # _____
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH: YES or NO (CIRCLE ONE)

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

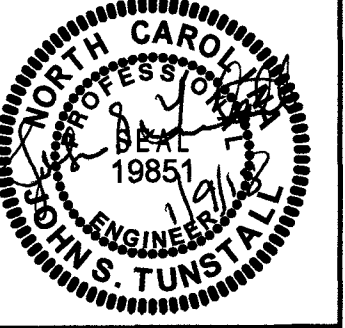


GRADING, DRAINAGE AND EROSION CONTROL PLAN
 LIVE OAK BANKING COMPANY 3/FITPARK
 1741 TIBURON DRIVE
 WILMINGTON, NORTH CAROLINA 28403

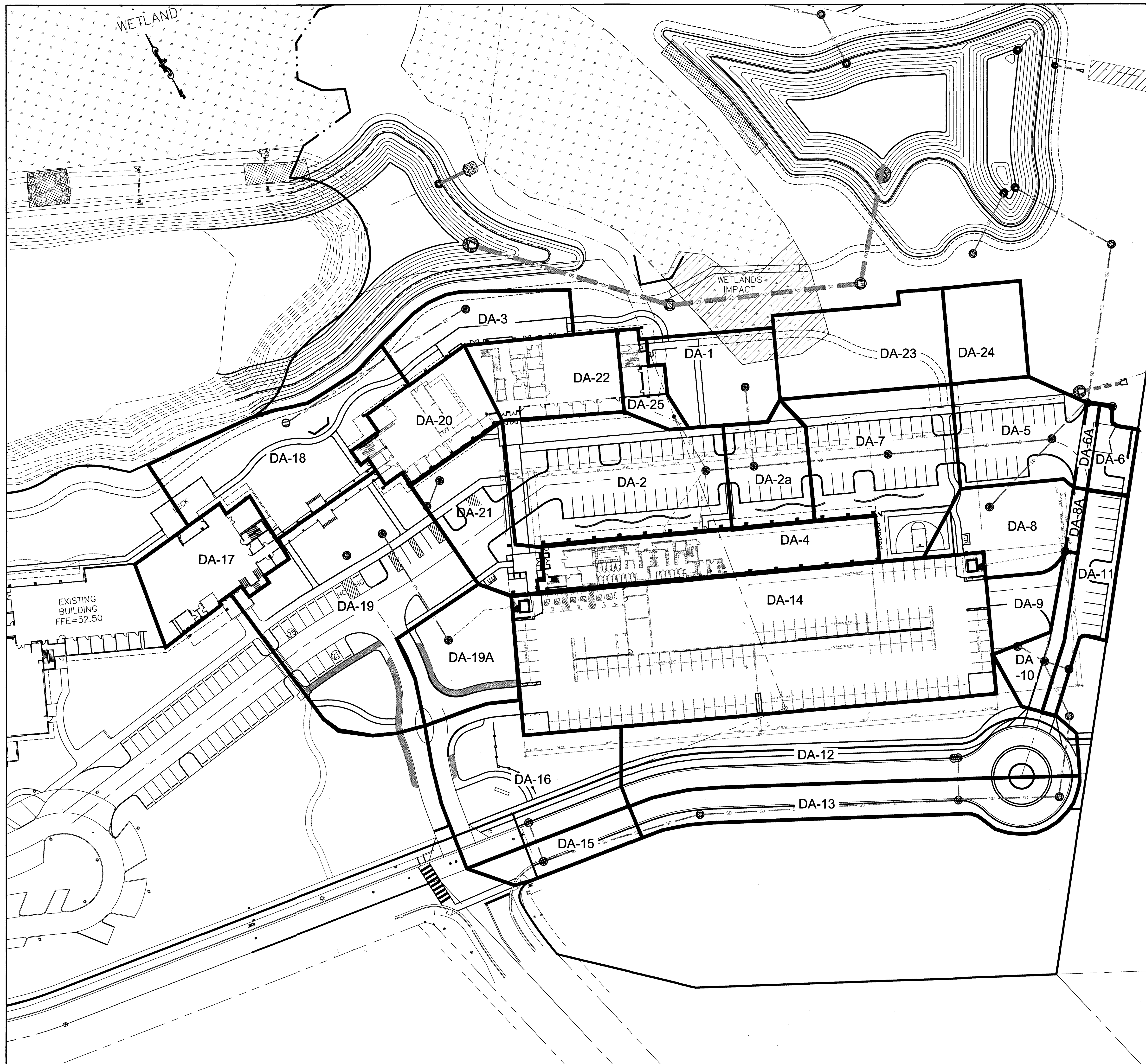
OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANKSHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-796-1647
 910-790-5668

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 902 MARKET STREET
 WILMINGTON, NC 28401
 PHONE (910) 343-9653

Licence #C-3641
16169
 DES. JST
 DR. JPN
 DRWN. NKS
 DATE 1/9/18



C2.1



Drainage Areas				
DA #	Imp. Conc.	Sidewalks	Bldg.	Total
1	0	2,004	0	7,631
2	9,410	1,958	0	19,262
2a	3,823	507	0	6,517
3	0	195	0	7,325
4	0	0	11,491	11,491
5	5,552	1,166	0	9,263
6	1,613	0	0	2,244
6a	840	0	0	840
7	8,320	1,757	0	15,851
8	549	0	0	7,408
8a	628	0	0	628
9	1,820	0	0	3,445
10	1,597	0	0	3,262
11	4,248	0	0	5,240
12	8,064	1,790	0	25,211
13	7,561	0	0	12,435
14	50,211	0	0	50,211
15	2,710	0	0	3,920
16	5,167	726	0	16,335
17	0	0	8,707	8,707
18	0	1,874	443	15,581
19	10,462	3,477	813	26,526
19A	2,020	656	0	8,497
20	0	0	8,008	8,008
21	2,530	1,741	0	8,495
22	0	0	8,082	8,082
23	0	0	11,064	11,064
24	0	0	5,534	5,534
25	0	135	1,640	2,781
Totals	127,125	17,986	55,781	311,794

SCALE: 1" = 40'

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

NCDENR PWSS WATER PERMIT #: _____
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT #: _____
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

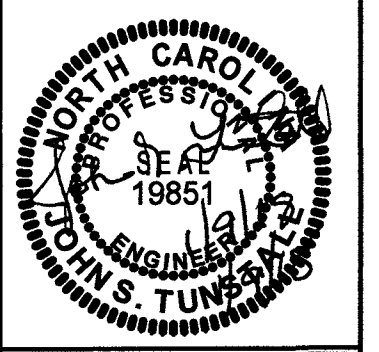
WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
 Date: 2/8/18 Permit # 201103423
 Planning: *E. K. Futral* 2/1/18
 Public Utilities: _____
 Traffic: *W. J. [Signature]* 2-5-18
 Fire: *Jerry [Signature]* 2-6-18
 Signed: *[Signature]*

DRAINAGE AREA PLAN
 LIVE OAK BANKING COMPANY 3/FITPARK
 1741 TIBURON DRIVE
 WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANKSHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-796-1647
 910-790-5888

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 902 MARKET STREET
 WILMINGTON, NC 28401
 PHONE (910) 343-9653
 1429 ASH-LITTLE RIVER RD. NW
 ASHLAND, NC 28620
 PHONE (910) 287-5900

Licence #C-3641
16169
 DES. JST
 CIP. JPN
 DRWT. NKS
 DATE 1/3/18



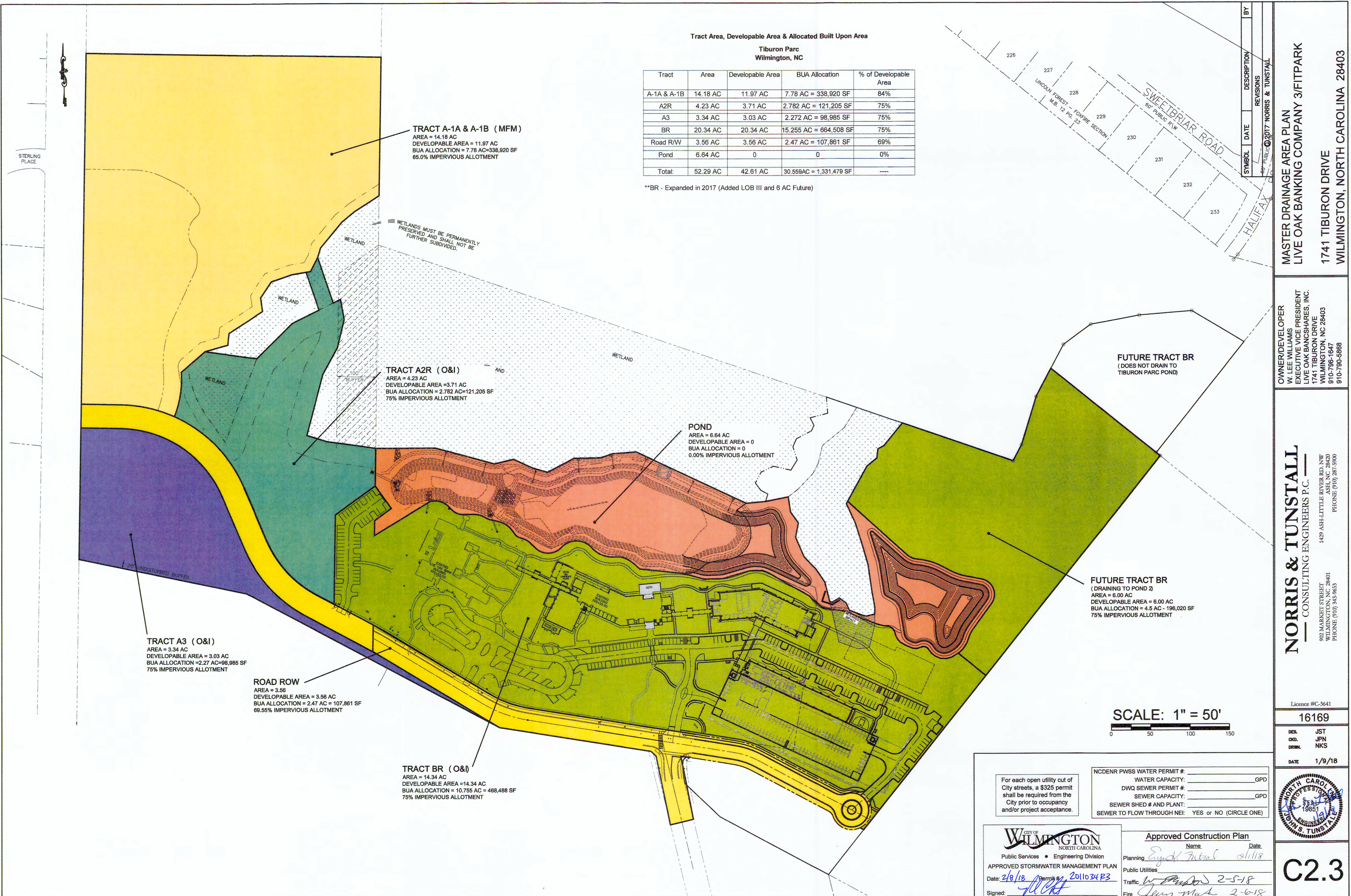
C2.2

Tract Area, Developable Area & Allocated Built Upon Area

Tiburon Parc
Wilmington, NC

Tract	Area	Developable Area	BUA Allocation	% of Developable Area
A-1A & A-1B	14.18 AC	11.97 AC	7.78 AC = 338,920 SF	84%
A2R	4.23 AC	3.71 AC	2.782 AC = 121,205 SF	75%
A3	3.34 AC	3.03 AC	2.272 AC = 98,985 SF	75%
BR	20.34 AC	20.34 AC	15.255 AC = 664,508 SF	75%
Road R/W	3.56 AC	3.56 AC	2.47 AC = 107,861 SF	69%
Pond	6.64 AC	0	0	0%
Total:	52.29 AC	42.61 AC	30.559 AC = 1,331,479 SF	---

**BR - Expanded in 2017 (Added LOB III and 6 AC Future)



TRACT A-1A & A-1B (MFM)
 AREA = 14.18 AC
 DEVELOPABLE AREA = 11.97 AC
 BUA ALLOCATION = 7.78 AC = 338,920 SF
 65.0% IMPERVIOUS ALLOTMENT

TRACT A2R (O&I)
 AREA = 4.23 AC
 DEVELOPABLE AREA = 3.71 AC
 BUA ALLOCATION = 2.782 AC = 121,205 SF
 75% IMPERVIOUS ALLOTMENT

POND
 AREA = 6.64 AC
 DEVELOPABLE AREA = 0
 BUA ALLOCATION = 0
 0.00% IMPERVIOUS ALLOTMENT

TRACT A3 (O&I)
 AREA = 3.34 AC
 DEVELOPABLE AREA = 3.03 AC
 BUA ALLOCATION = 2.27 AC = 98,985 SF
 75% IMPERVIOUS ALLOTMENT

ROAD ROW
 AREA = 3.56
 DEVELOPABLE AREA = 3.56 AC
 BUA ALLOCATION = 2.47 AC = 107,861 SF
 69.55% IMPERVIOUS ALLOTMENT

TRACT BR (O&I)
 AREA = 14.34 AC
 DEVELOPABLE AREA = 14.34 AC
 BUA ALLOCATION = 10.755 AC = 468,488 SF
 75% IMPERVIOUS ALLOTMENT

FUTURE TRACT BR
 (DRAINING TO POND 2)
 AREA = 6.00 AC
 DEVELOPABLE AREA = 6.00 AC
 BUA ALLOCATION = 4.5 AC = 196,020 SF
 75% IMPERVIOUS ALLOTMENT

SCALE: 1" = 50'

SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	
	02/17/2017	NORRIS & TUNSTALL	

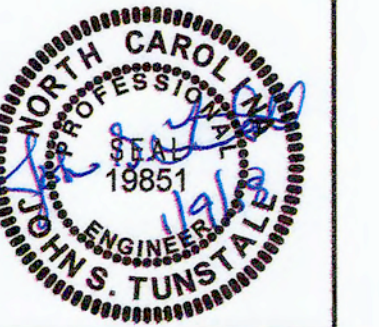
MASTER DRAINAGE AREA PLAN
 LIVE OAK BANKING COMPANY 3/FITPARK
 1741 TIBURON DRIVE
 WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANKSHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-786-1647
 910-790-5868

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 902 MARKET STREET
 WILMINGTON, NC 28401
 PHONE (910) 343-9653
 1429 ASH-LITTLE RIVER RD. NW
 ASH, NC 28620
 PHONE (910) 287-5900

Licence #C-3641

16169
 DES. JST
 CKD. JPN
 DRWN. NKS
 DATE 1/9/18



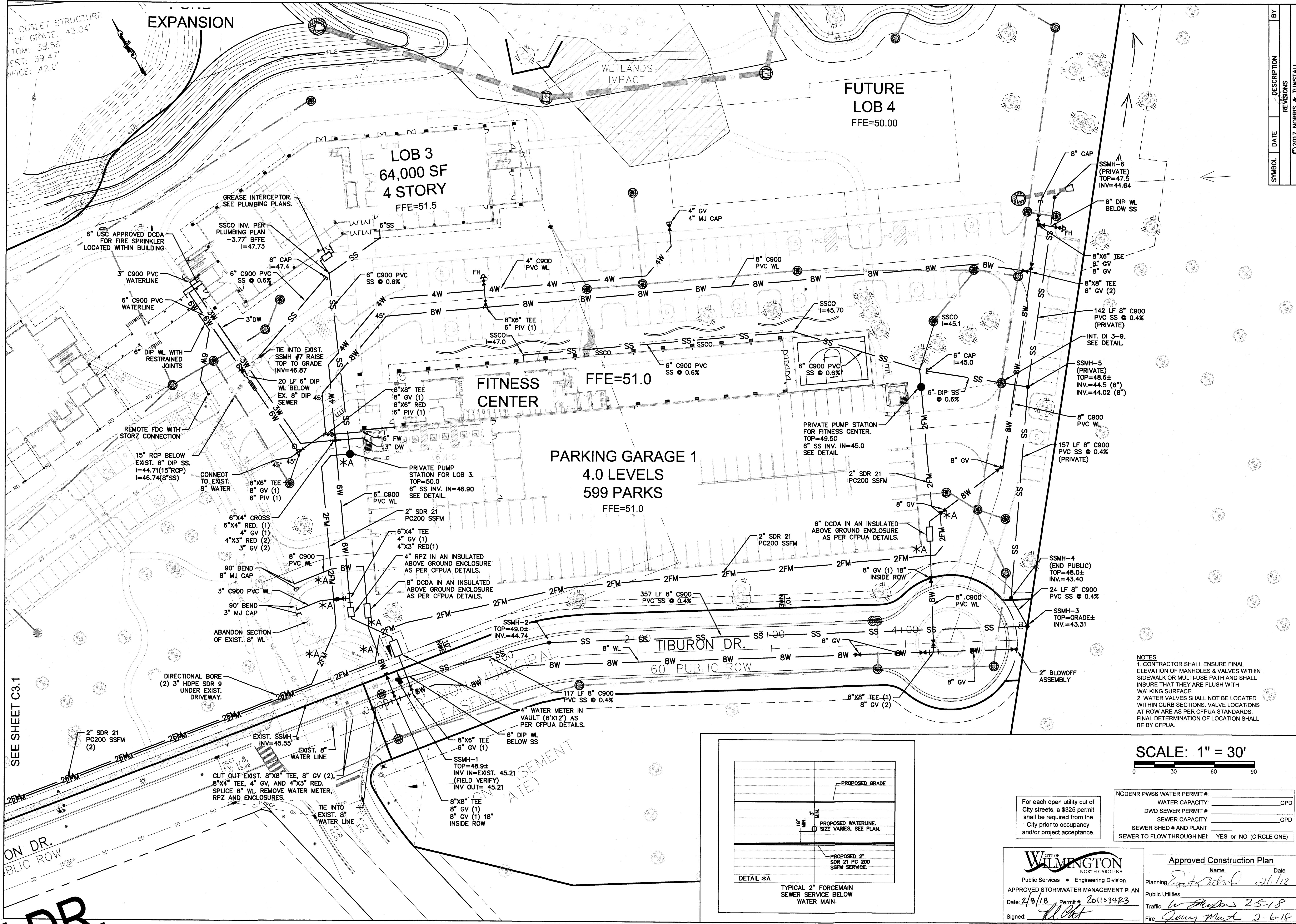
C2.3

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

NCDENR PWSS WATER PERMIT #: _____
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT #: _____
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 2/8/18 Permit #: 2011034B3
 Signed: [Signature]

Approved Construction Plan
 Name: [Signature] Date: 2/11/18
 Planning: [Signature]
 Public Utilities: [Signature]
 Traffic: [Signature] 2-5-18
 Fire: [Signature] 2-6-18



D OUTLET STRUCTURE
 OF GRATE: 43.04'
 FROM: 38.56'
 TO: 39.47'
 RISE: 42.0'

EXPANSION

WETLANDS
 IMPACT

**FUTURE
 LOB 4**
 FFE=50.00

LOB 3
 64,000 SF
 4 STORY
 FFE=51.5

**FITNESS
 CENTER**
 FFE=51.0

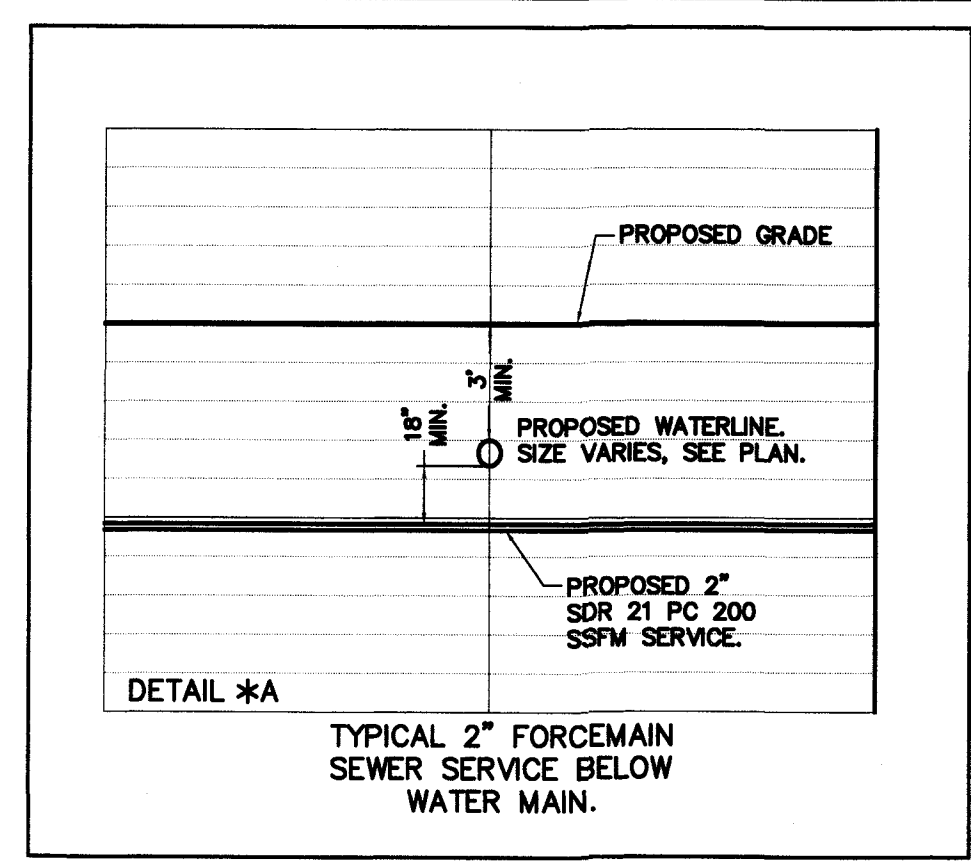
PARKING GARAGE 1
 4.0 LEVELS
 599 PARKS
 FFE=51.0

TIBURON DR.
 60' PUBLIC ROW

SCALE: 1" = 30'

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

NCDENR PWSS WATER PERMIT #:	_____
WATER CAPACITY:	_____ GPD
DWQ SEWER PERMIT #:	_____
SEWER CAPACITY:	_____ GPD
SEWER SHED # AND PLANT:	_____
SEWER TO FLOW THROUGH NET:	YES OR NO (CIRCLE ONE)



WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 2/8/18 Permit #: 201103423
 Signed: *[Signature]*

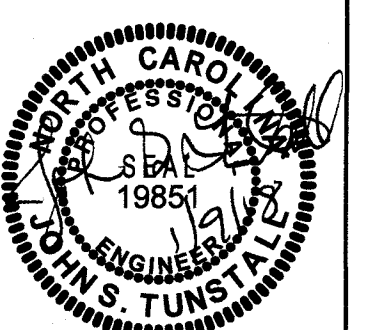
Approved Construction Plan
 Name: *[Signature]* Date: 2/1/18
 Planning: *[Signature]*
 Public Utilities: *[Signature]*
 Traffic: *[Signature]*
 Fire: *[Signature]*

SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	
		© 2017 NORRIS & TUNSTALL	

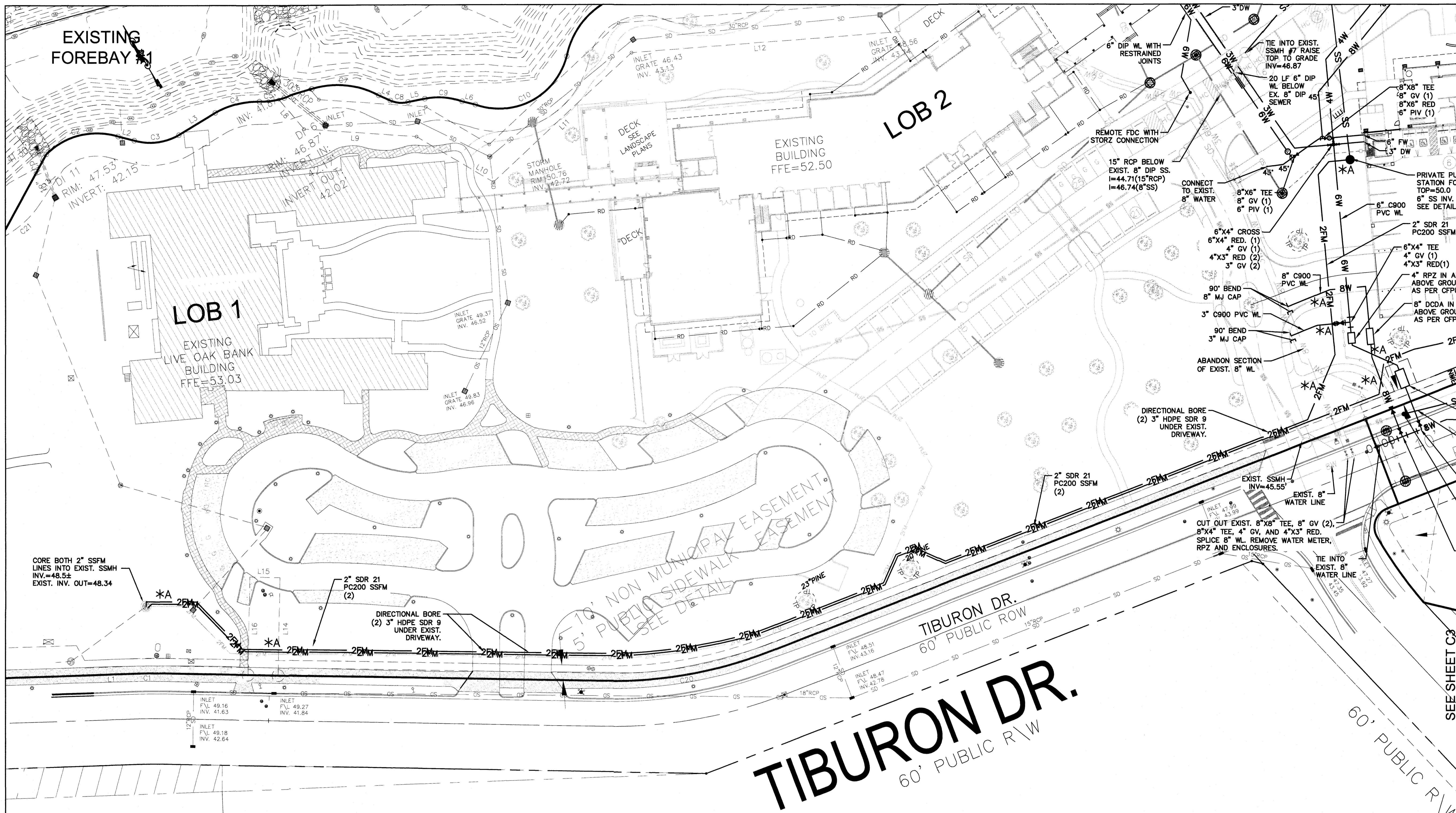
UTILITY PLAN
LIVE OAK BANKING COMPANY 3/FITPARK
 OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANKSHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-796-1647
 910-790-5666

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 1429 ASH-LITTLE RIVER RD. NW
 ASH, NC 28420
 WILMINGTON, NC 28401
 PHONE (910) 343-9653
 LICENCE #C-3641

16169
 DES: JST
 CIP: JPN
 DRWN: NKS
 DATE: 1/9/18

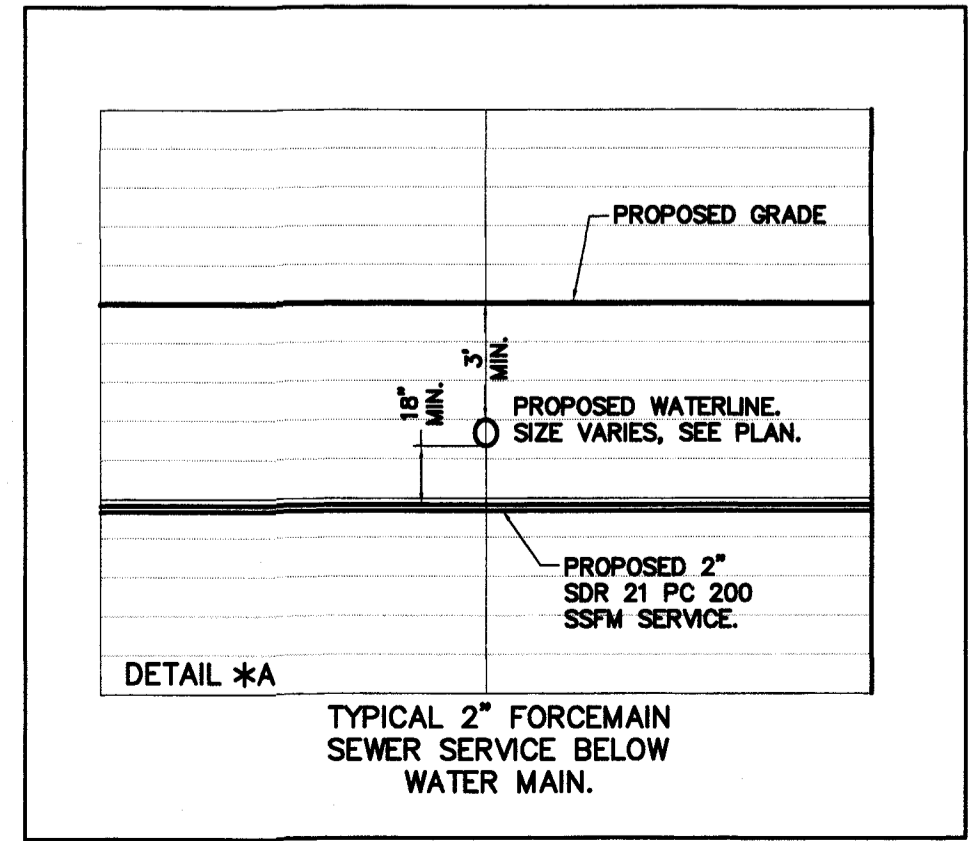


C3



SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
©2017 NORRIS & TUNSTALL			

NOTES:
 1. CONTRACTOR SHALL ENSURE FINAL ELEVATION OF MANHOLES & VALVES WITHIN SIDEWALK OR MULTI-USE PATH AND SHALL INSURE THAT THEY ARE FLUSH WITH WALKING SURFACE.
 2. WATER VALVES SHALL NOT BE LOCATED WITHIN CURB SECTIONS. VALVE LOCATIONS AT ROW ARE AS PER CFPWA STANDARDS. FINAL DETERMINATION OF LOCATION SHALL BE BY CFPWA.



SCALE: 1" = 30'
 0 30 60 90

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

NCDENR PWSS WATER PERMIT #: _____ GPD
 WATER CAPACITY: _____
 DWQ SEWER PERMIT #: _____ GPD
 SEWER CAPACITY: _____
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

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

City of Wilmington, North Carolina
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 2/8/18 Permit # 2011034P3

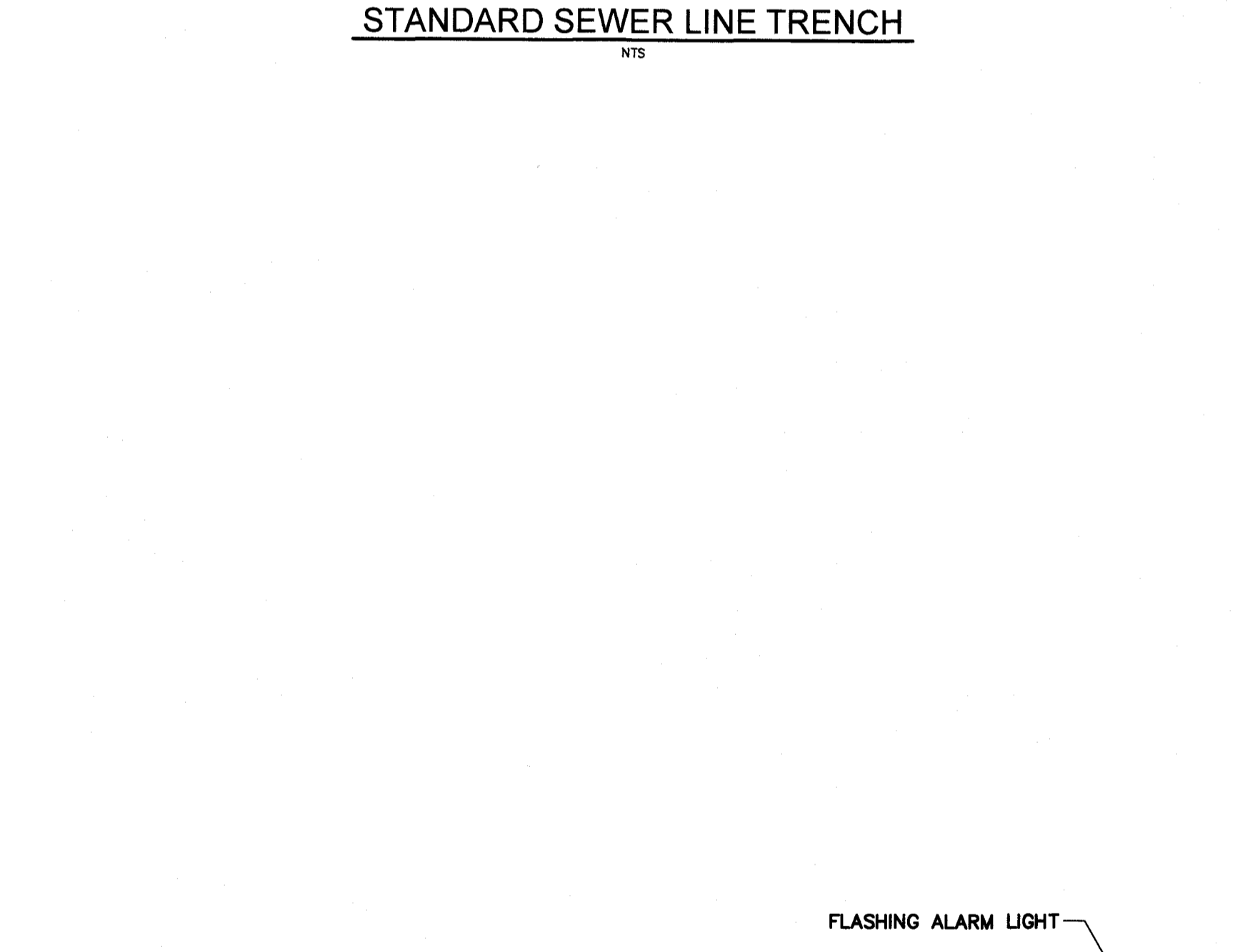
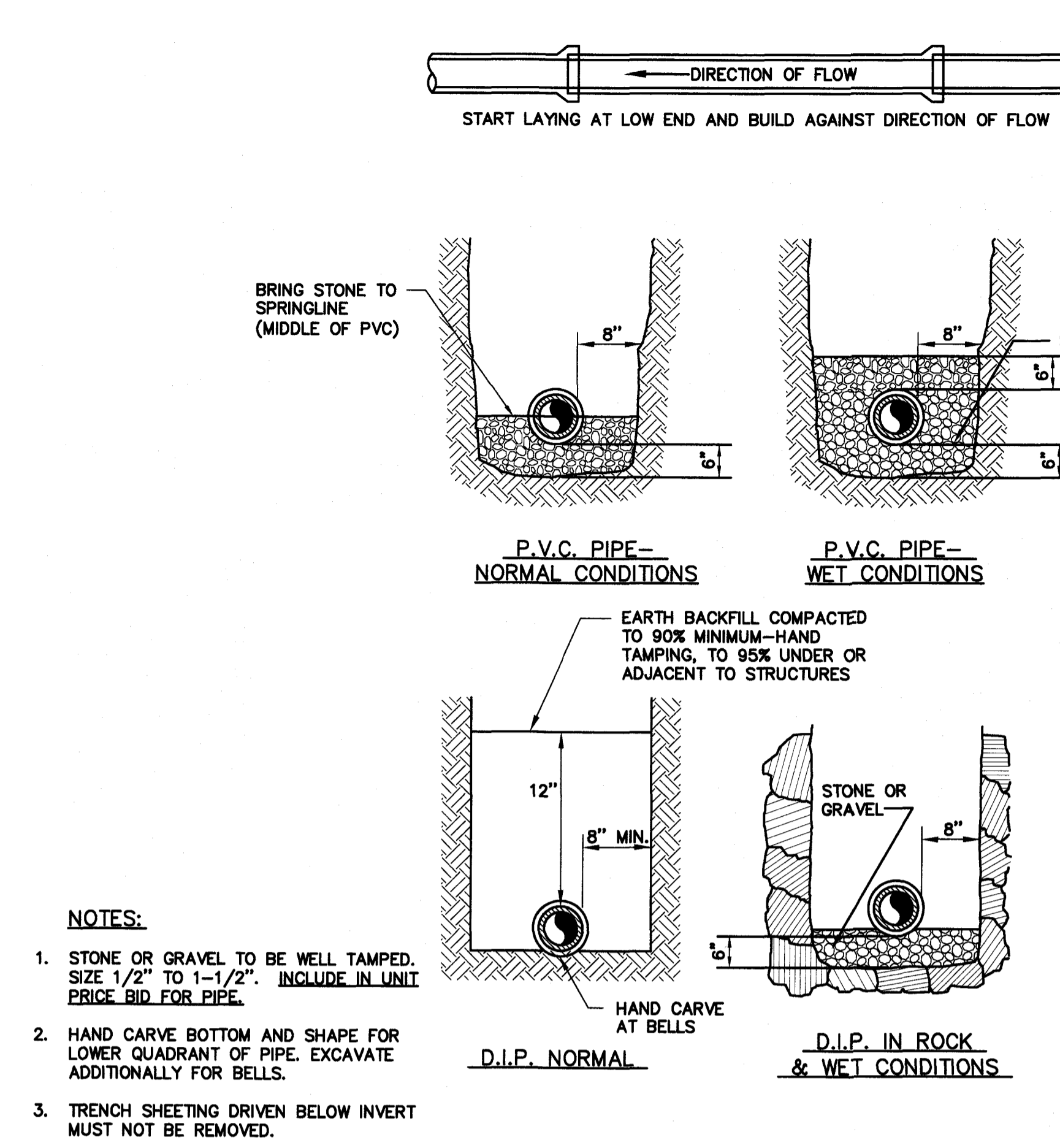
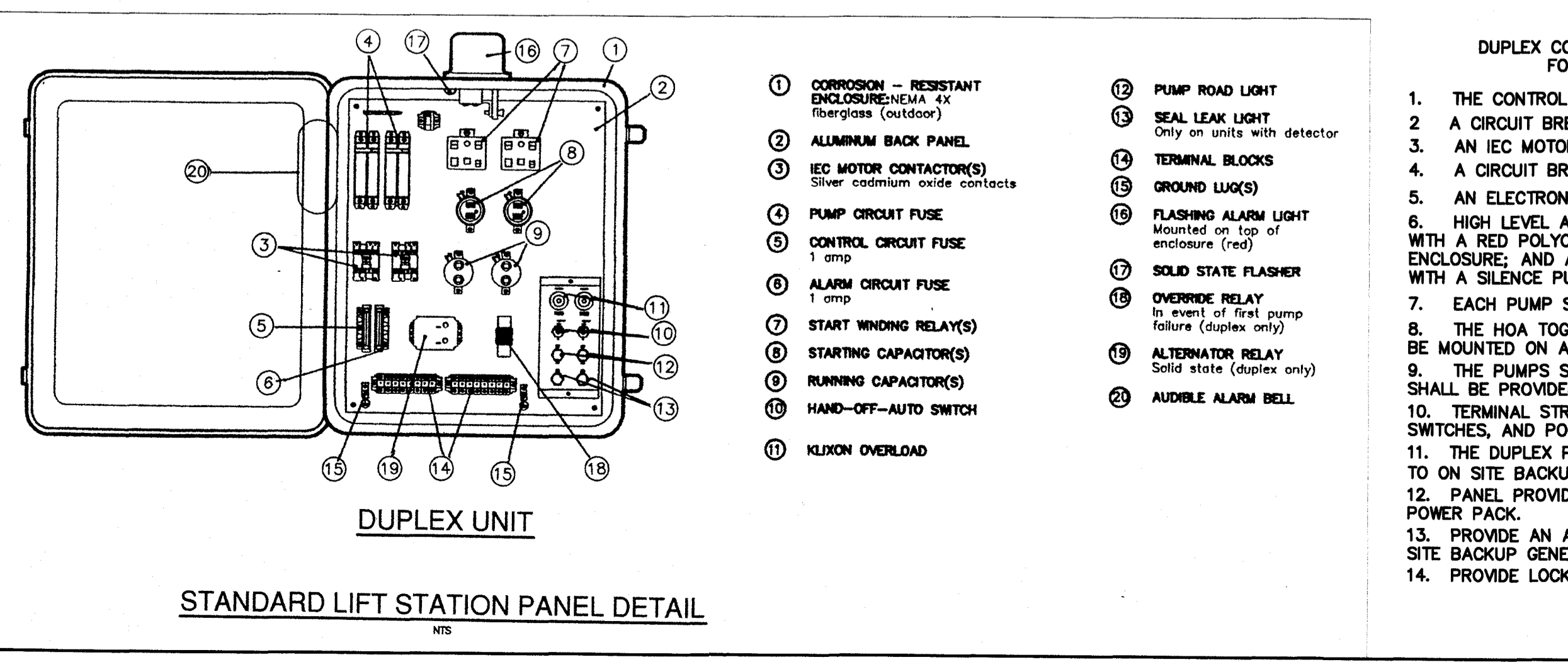
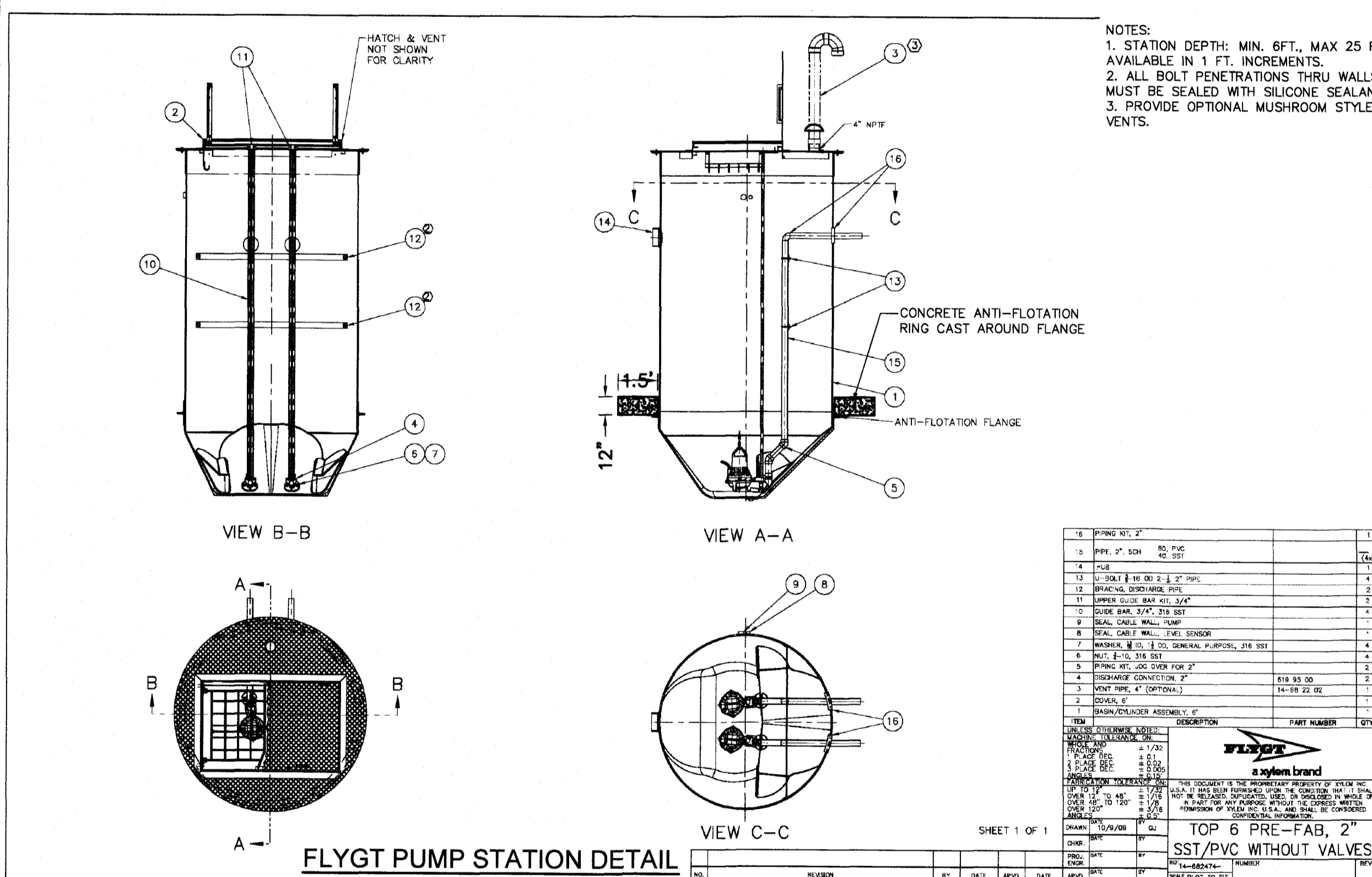
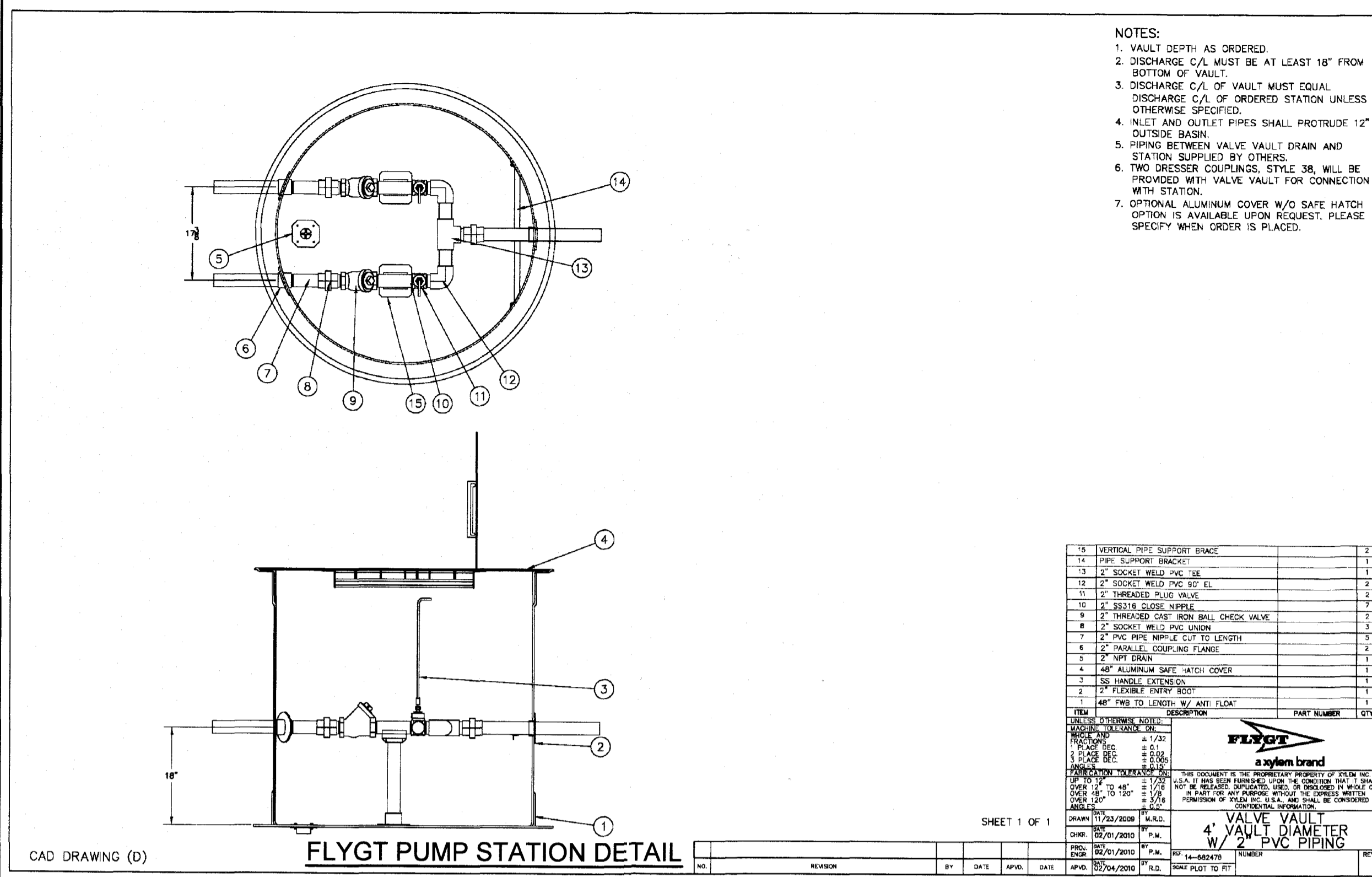
UTILITY PLAN
 LIVE OAK BANKING COMPANY 3/FITPARK
 1741 TIBURON DRIVE
 WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANKSHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-796-1647
 910-790-5868

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 902 MARKET STREET
 WILMINGTON, NC 28401
 PHONE (910) 343-9653
 1429 ASH-LITTLE RIVER RD NW
 ASH, NC 28420
 PHONE (910) 287-5900

Licence #C-3641
 16169
 DES: JUST
 CIP: JPN
 DRWL: NKS
 DATE: 1/3/18

C3.1



LIVE OAK BANK 3
FLYGT TOP PRE-ENGINEERED FIBERGLASS PACKAGE LIFT STATION (SEE SPECIFICATIONS)

ITEM	ELEVATION PUMP STA.
TOP ELEV.	50.00
INFLUENT PIPE (INVERT)	46.90
HIGH WATER ALARM	46.25
START LAG PUMP	45.50
START LEAD PUMP	44.75
PUMP OFF	44.00
BOTTOM OF WETWELL	42.00
BOTTOM OF STATION SLAB	PER DETAIL
WET WELL DIAMETER	6.00

ITEM	VALUE PUMP STA.
DESIGN FLOW	25 GPM/MIN.
DESIGN HEAD (FROM PUMP CURVE)	34 FT.
REQUIRED FLOW	25 GPM/MIN.
REQUIRED HEAD (TDH)	34 FT.
VOLTAGE	460
PHASE	3 PHASE
HORSEPOWER	2 HP
RPM	3450 RPM

PREFERRED PUMP IS A FLYGT GRINDER PUMP STATION M-3068

AN AUTO DIALER AND CONNECTION TO ON SITE BACKUP GENERATOR ARE REQUIRED. AN AUTOMATIC TRANSFER SWITCH SHALL BE PROVIDED FOR GENERATOR CONNECTION.

FITPARK
FLYGT TOP PRE-ENGINEERED FIBERGLASS PACKAGE LIFT STATION (SEE SPECIFICATIONS)

ITEM	ELEVATION PUMP STA.
TOP ELEV.	49.50
INFLUENT PIPE (INVERT)	45.00
HIGH WATER ALARM	44.35
START LAG PUMP	43.70
START LEAD PUMP	43.05
PUMP OFF	42.40
BOTTOM OF WETWELL	40.40
BOTTOM OF STATION SLAB	PER DETAIL
WET WELL DIAMETER	6.00

ITEM	VALUE PUMP STA.
DESIGN FLOW	25 GPM/MIN.
DESIGN HEAD (FROM PUMP CURVE)	48 FT.
REQUIRED FLOW	25 GPM/MIN.
REQUIRED HEAD (TDH)	48 FT.
VOLTAGE	460
PHASE	3 PHASE
HORSEPOWER	2 HP
RPM	3450 RPM

PREFERRED PUMP IS A FLYGT GRINDER PUMP STATION M-3068

AN AUTO DIALER AND CONNECTION TO ON SITE BACKUP GENERATOR ARE REQUIRED. AN AUTOMATIC TRANSFER SWITCH SHALL BE PROVIDED FOR GENERATOR CONNECTION.

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

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

Approved Construction Plan
Name: _____ Date: _____
Planning: _____
Public Utilities: _____
Date: 2/8/18 Permit: 2011034R3
Traffic: _____
Fire: _____

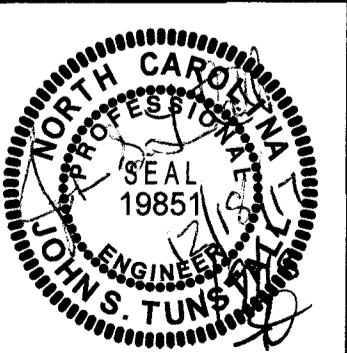
SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	
		©2017 NORRIS & TUNSTALL	

UTILITY PLAN
LIVE OAK BANKING COMPANY 3/FITPARK
1741 TIBURON DRIVE
WILMINGTON, NORTH CAROLINA 28403

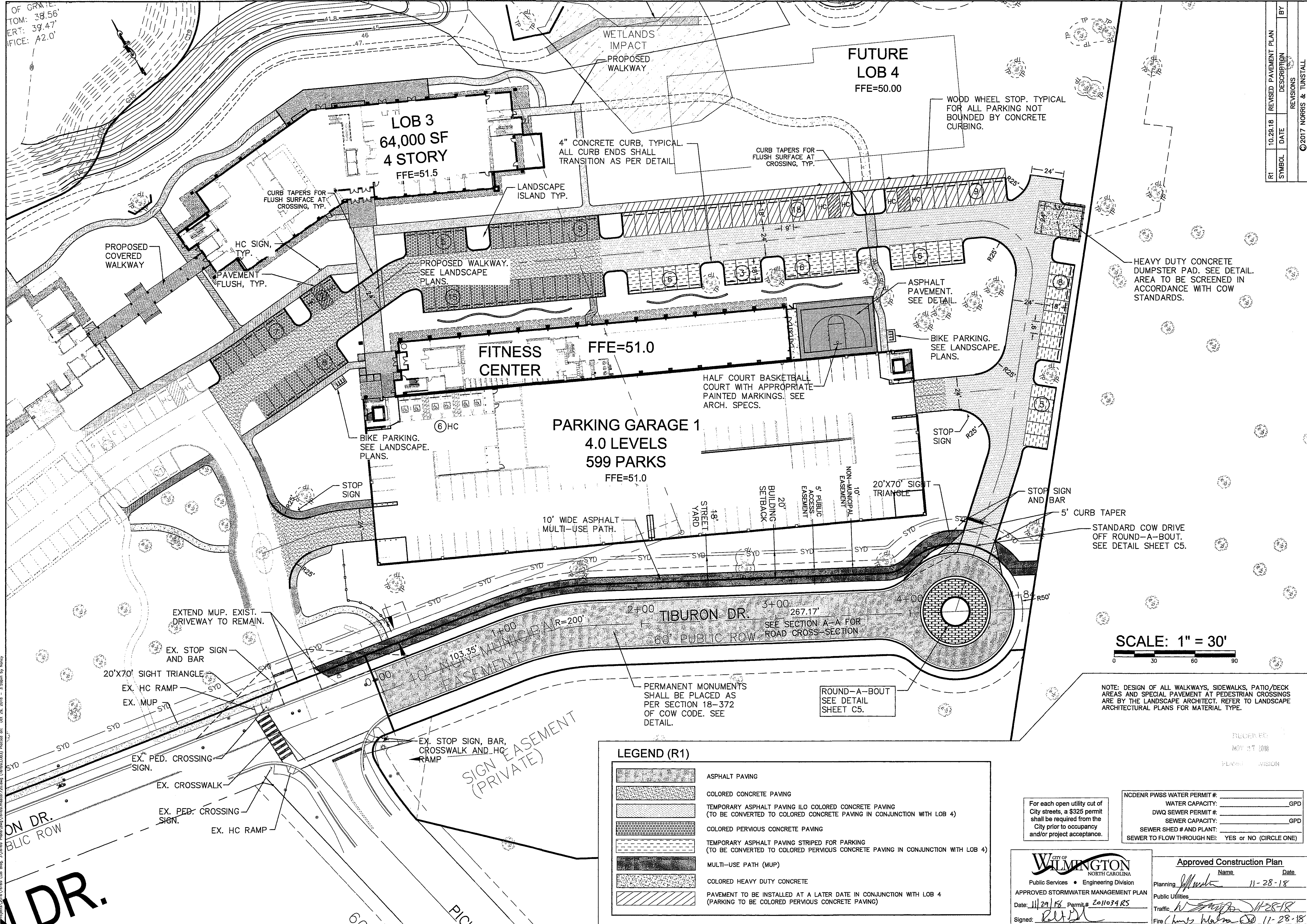
OWNER/DEVELOPER
W. LEE WILLIAMS
EXECUTIVE VICE PRESIDENT
LIVE OAK BANKSHARES, INC.
1741 TIBURON DRIVE
WILMINGTON, NC 28403
910-798-1647
910-790-5668

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASH-LITTLE RIVER RD. NW
WILMINGTON, NC 28401
PHONE (910) 343-9653

License #C-3641
16169
DES. JUST
CRD. JPN
DRWN. NKS
DATE 12/18/17



C3.2



REVISED PAVEMENT PLAN	BY
10.29.18	REVISIONS
DATE	DESCRIPTION
SYMBOL	

LAYOUT PLAN
 LIVE OAK BANKING COMPANY 3/FITPARK
 1741 TIBURON DRIVE
 WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANKSHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-786-1647
 910-790-5868

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 1429 ASHLITTLE RIVER RD. NW
 ASH, NC 28402
 PHONE (910) 281-5900

License #C-3641

16169

DES. JST
 CDR. JPN
 DRWN. NKS

DATE 1/9/18

RECEIVED
 NOV 30 2018
 PLANNING DIVISION

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

NCDENR PWSS WATER PERMIT #: _____
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT #: _____
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

Approved Construction Plan
 Name: _____ Date: _____
 Planning: *J. Williams* 11-28-18
 Public Utilities: _____
 Traffic: *W. Williams* 11-28-18
 Fire: *Chris Walker* 11-28-18

C4

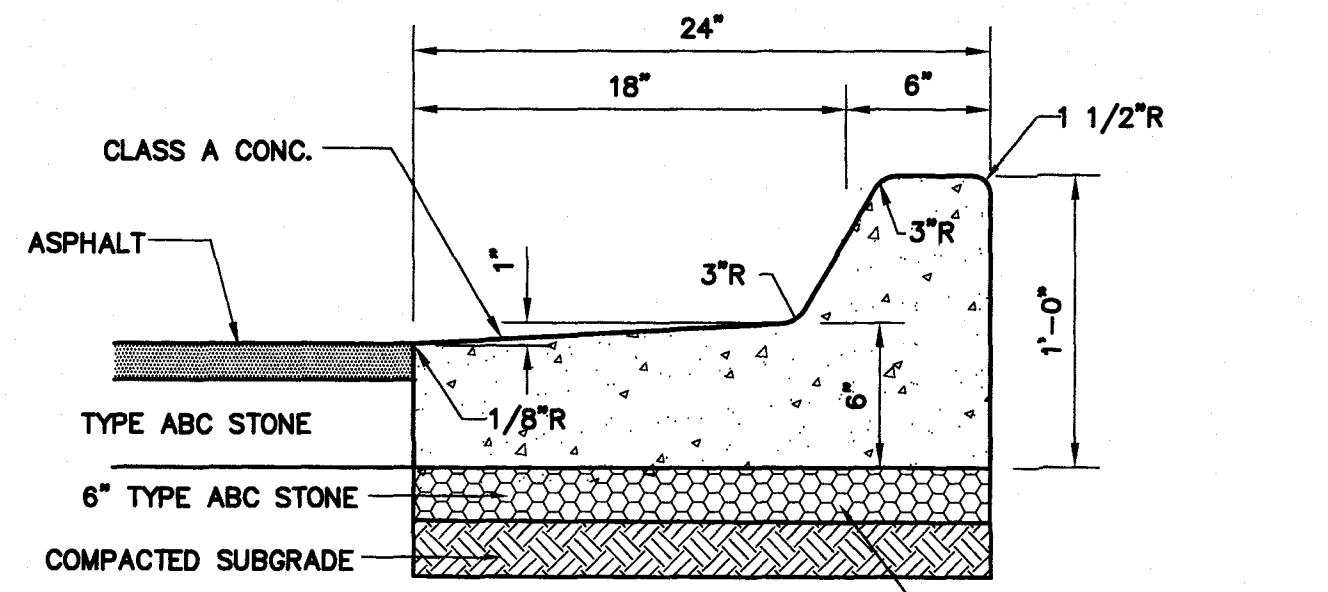
LEGEND (R1)

	ASPHALT PAVING
	COLORED CONCRETE PAVING
	TEMPORARY ASPHALT PAVING I/O COLORED CONCRETE PAVING (TO BE CONVERTED TO COLORED CONCRETE PAVING IN CONJUNCTION WITH LOB 4)
	COLORED PERVIOUS CONCRETE PAVING
	TEMPORARY ASPHALT PAVING STRIPED FOR PARKING (TO BE CONVERTED TO COLORED PERVIOUS CONCRETE PAVING IN CONJUNCTION WITH LOB 4)
	MULTI-USE PATH (MUP)
	COLORED HEAVY DUTY CONCRETE
	PAVEMENT TO BE INSTALLED AT A LATER DATE IN CONJUNCTION WITH LOB 4 (PARKING TO BE COLORED PERVIOUS CONCRETE PAVING)

City of WILMINGTON NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 11/29/18 Permit # 2011034 RS
 Signed: *[Signature]*

RECEIVED
 NOV 30 2018
 PLANNING DIVISION

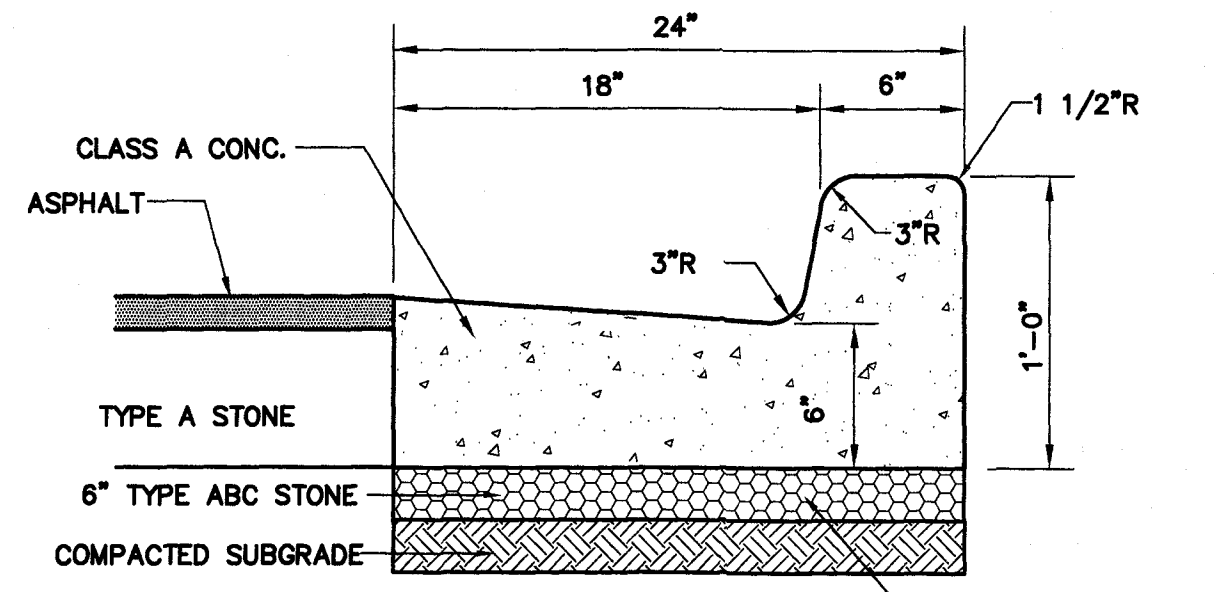
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 I:\Projects\2018\16169_Plan\16169_Plan.dwg, 3/16/18 P:\16169_Plan\16169_Plan.dwg, 10/24/2018 3:58:00 PM



NOTE: CURB TYPE DEPENDS ON GRADES SHOWN ON GRADING PLAN. GRADES INDICATING FALL AWAY FROM CURB SHALL BE SPILL OFF TYPE CURB. GRADES INDICATING CURB ACCEPTING FLOW SHALL BE FLOW LINE TYPE.

NOT TO SCALE

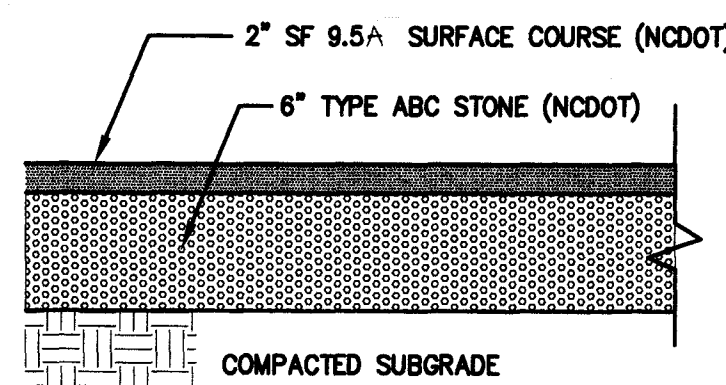
1 24" CURB AND GUTTER SECTION (SPILL-OFF)



NOTE: CURB TYPE DEPENDS ON GRADES SHOWN ON GRADING PLAN. GRADES INDICATING FALL AWAY FROM CURB SHALL BE SPILL OFF TYPE CURB. GRADES INDICATING CURB ACCEPTING FLOW SHALL BE FLOW LINE TYPE.

NOT TO SCALE

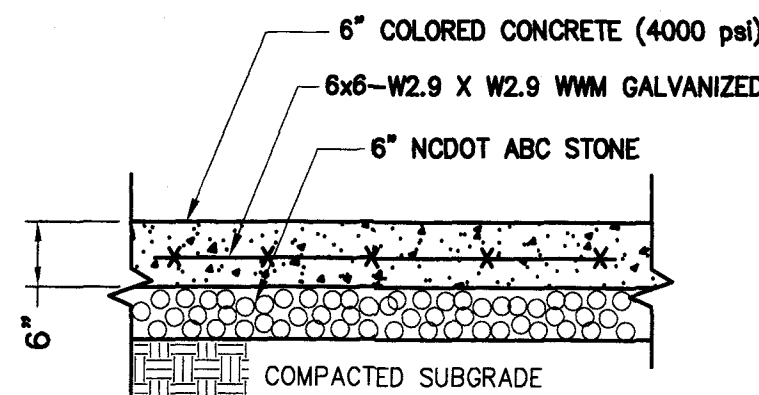
2 24" CURB AND GUTTER SECTION (FLOW-LINE)



NOTE: PAVEMENT SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE w/OWNER & GEOTECHNICAL ENGINEER TO DETERMINE ACTUAL PAVEMENT SECTION.

NOT TO SCALE

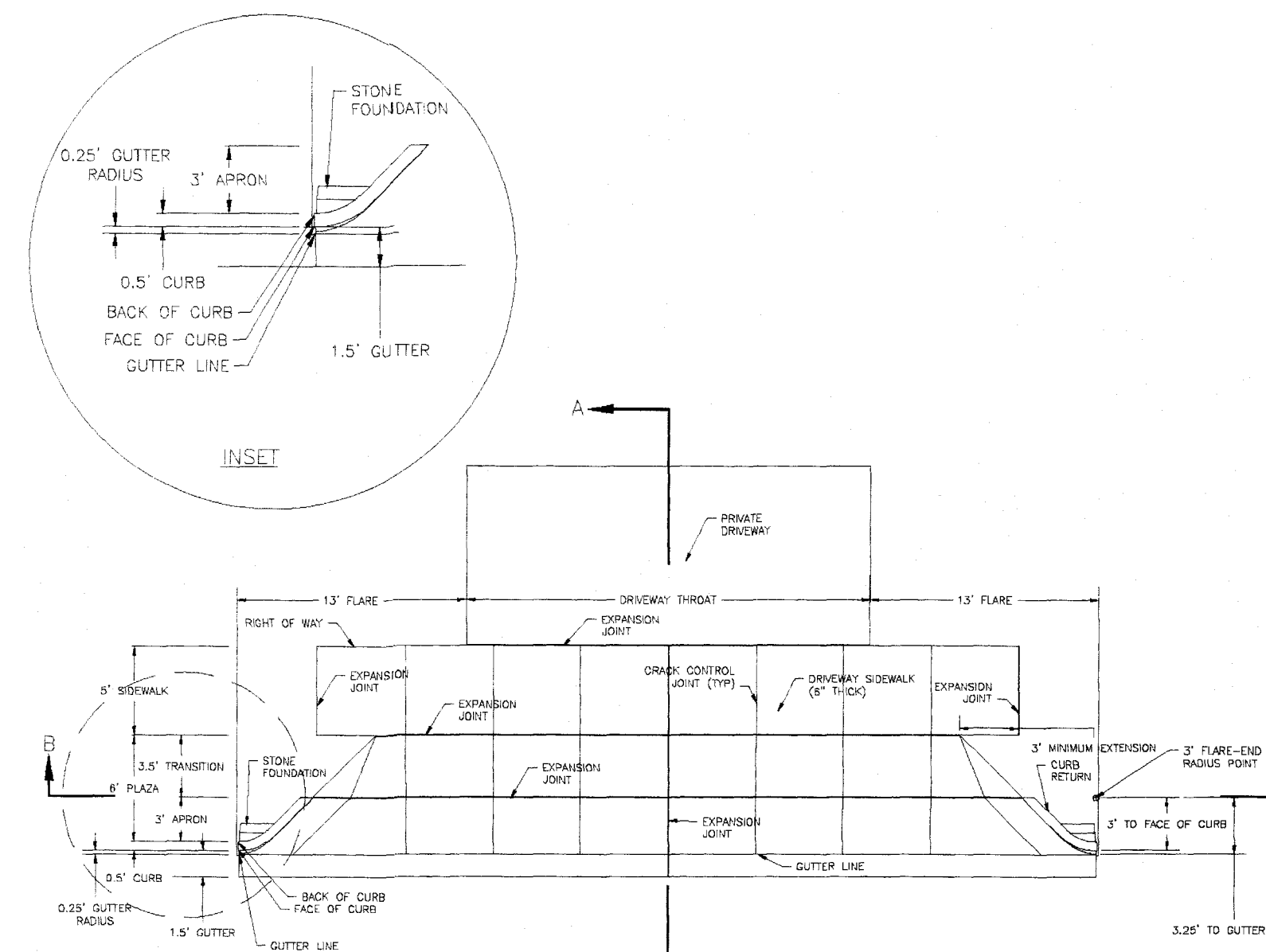
3 ASPHALT PAVEMENT SECTION



NOTES:
1. CONTROL JOINTS SHALL BE EVERY 15 FT. (MAX.) AND EXPANSION JOINTS SHALL BE EVERY 50 FT. (MAX.)
2. PAVEMENT SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. THE PAVING CONTRACTOR SHALL COORDINATE WITH OWNER REPRESENTATIVE AND GEOTECHNICAL ENGINEER TO DETERMINE ACTUAL PAVEMENT SECTION.
3. MATCH COLOR OF EXISTING CONCRETE ON SITE.

NOT TO SCALE

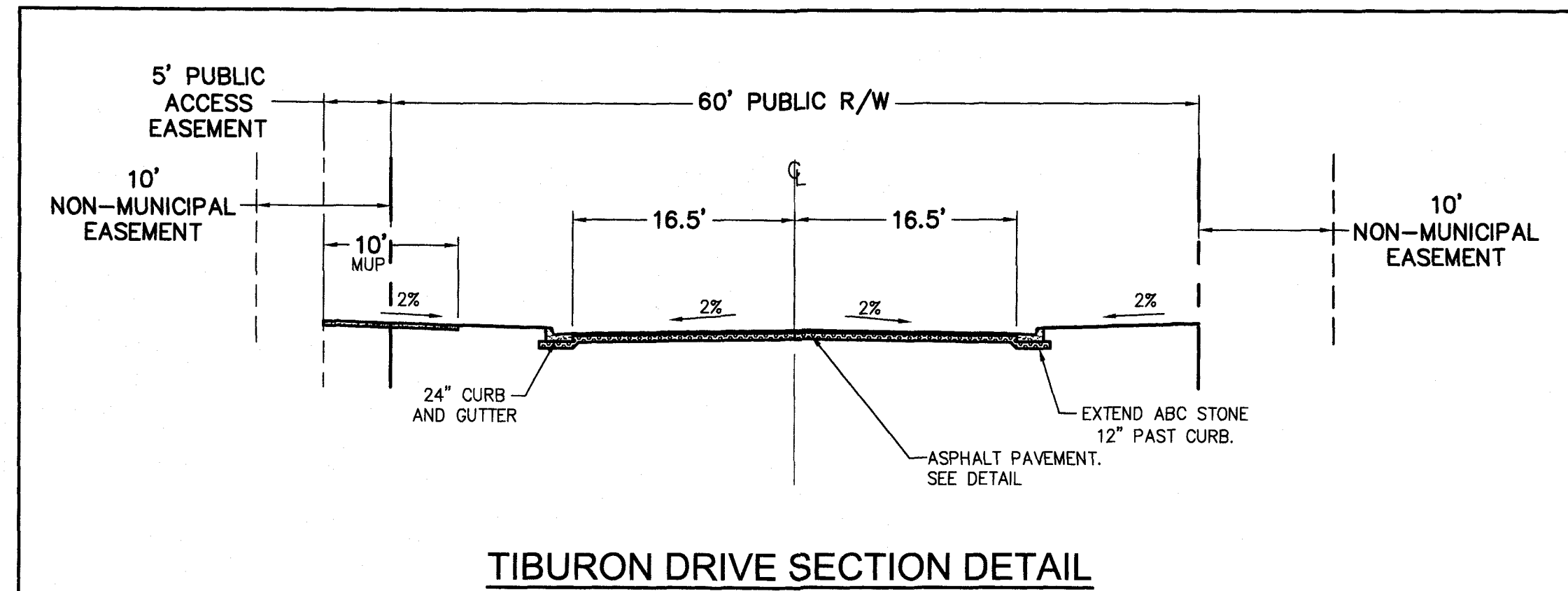
4 HEAVY DUTY CONCRETE PAVEMENT SECTION



NOTES:
EXPANSION JOINTS: 1/2" WIDE, FALL-SOUTH, 30" MAX. SPACING
CONTROL JOINTS: 1/2" WIDE, 30" MAX. SPACING

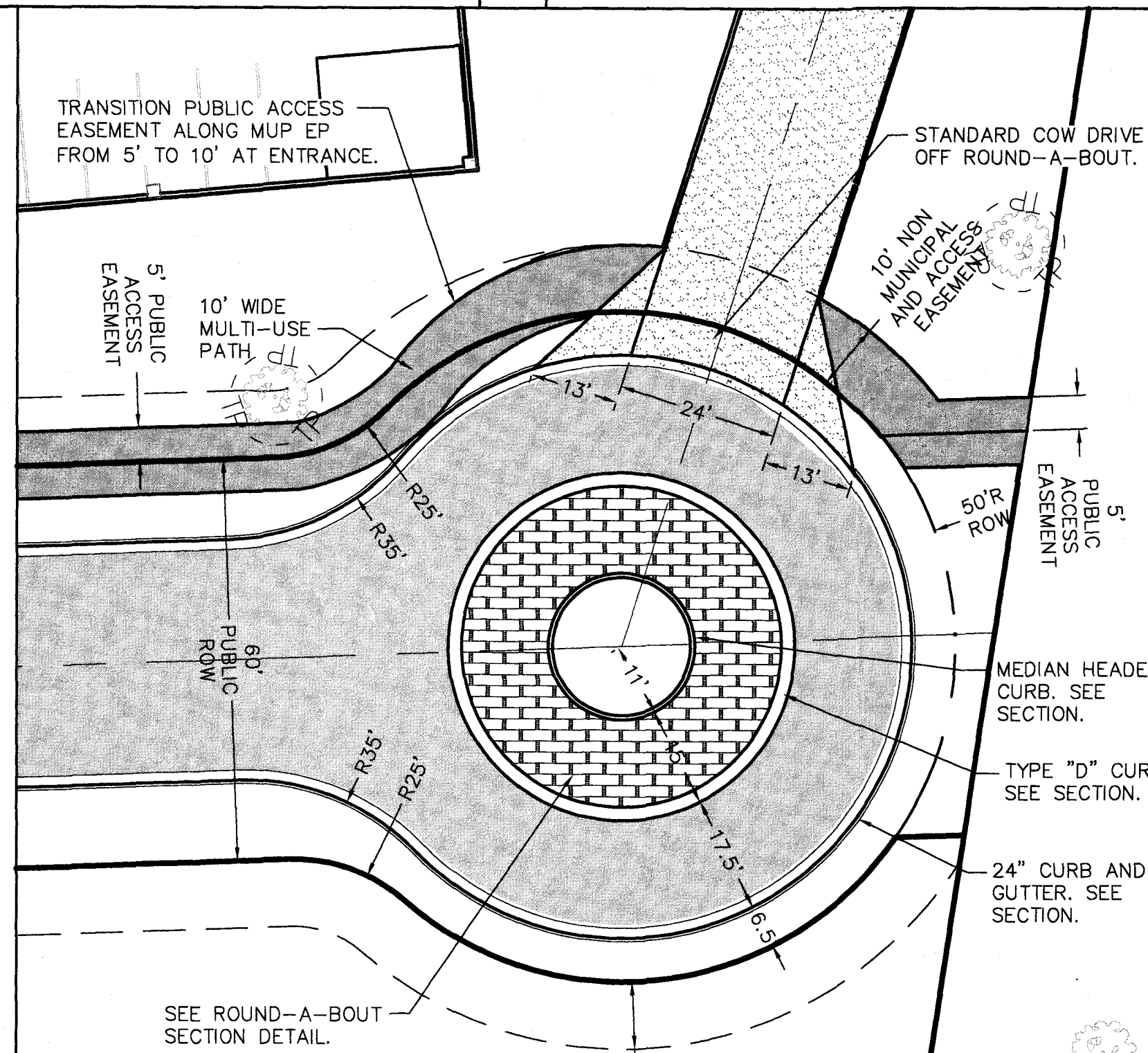
NOT TO SCALE

5 STANDARD CITY OF WILMINGTON DRIVE WAY DETAIL



TIBURON DRIVE SECTION DETAIL

6 TIBURON DRIVE SECTION DETAIL



SEE ROUND-A-BOUT SECTION DETAIL.

SCALE: 1"=20'

7 ROUND-A-BOUT DETAIL

CITY OF WILMINGTON STANDARD NOTES:

- CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING AT 1-800-632-4949.
- 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.
- ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
- ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
- INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
- ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
- TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
- IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. POSTED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
- CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
- A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
- ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS, AND CURBING WILL BE REPLACED.
- CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
- PROJECT SHALL COMPLY WITH CFPWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 343-3910 FOR INFORMATION.
- IF THE CONTRACTOR DESIRES CFPWA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- ANY IRRIGATION SYSTEM SUPPLIED BY CFPWA WATER SHALL COMPLY WITH CFPWA CROSS CONNECTION CONTROL REGULATIONS. CALL 332-6558 FOR INFORMATION.
- ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USFCCOCHR OR ASSE.
- WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED SINGLE STRAND COPPER WIRE INSTALLED THE ENTIRE LENGTH AND SECURED TO ALL VALVES. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
- THE NUMBER AND SPACING OF DRIVEWAYS FOR ALL INTERCONNECTED SITES WILL BE DETERMINED BY THE COMBINED FRONTAGE OF THE INTERCONNECTED PROPERTIES.
- UNDERGROUND FIRE LINE MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC ROW TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
- A LANDSCAPE PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEER DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT.
- IF AN IRRIGATION SYSTEM IS PLANNED FOR THE SITE, UTILIZE MOISTURE SENSORS.
- ALL PROPOSED VEGETATION WITHIN THE SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'.

UTILITY NOTES FOR FIRE HYDRANTS:

- FIRE HYDRANTS MUST BE WITHIN 150' OF THE FIRE DEPARTMENT CONNECTION.
- THE FIRE DEPARTMENT CONNECTION MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
- LANDSCAPING AND PARKING CANNOT BLOCK OR IMPEDE THE FIRE DEPARTMENT CONNECTIONS OR FIRE HYDRANTS. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANT CONNECTION AND THE FIRE HYDRANT.
- FIRE HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
- NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS.
- NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING DELIVERED TO THE JOB SITE.
- THE CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.
- UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
- A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
- HYDRANTS SHALL BE OF SUFFICIENT NUMBERS TO ACCOMMODATE BASE FIRE FLOW REQUIREMENTS OF THE STRUCTURE.
- BUILDING CONSTRUCTION TYPE:

Approved Construction Plan

Name: *[Signature]* Date: *[Date]*

Planning: *[Signature]* 2-5-18

Traffic: *[Signature]* 2-5-18

Fire: *[Signature]* 2-6-18

City of Wilmington
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 2/8/18
Scale: 2011034123
Signed: *[Signature]*

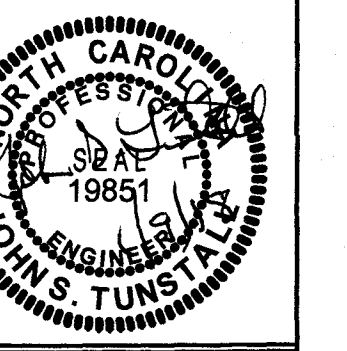
SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
©2017 NORRIS & TUNSTALL			

NOTES AND DETAILS
LIVE OAK BANKING COMPANY 3/FITPARK
1741 TIBURON DRIVE
WILMINGTON, NORTH CAROLINA 28403

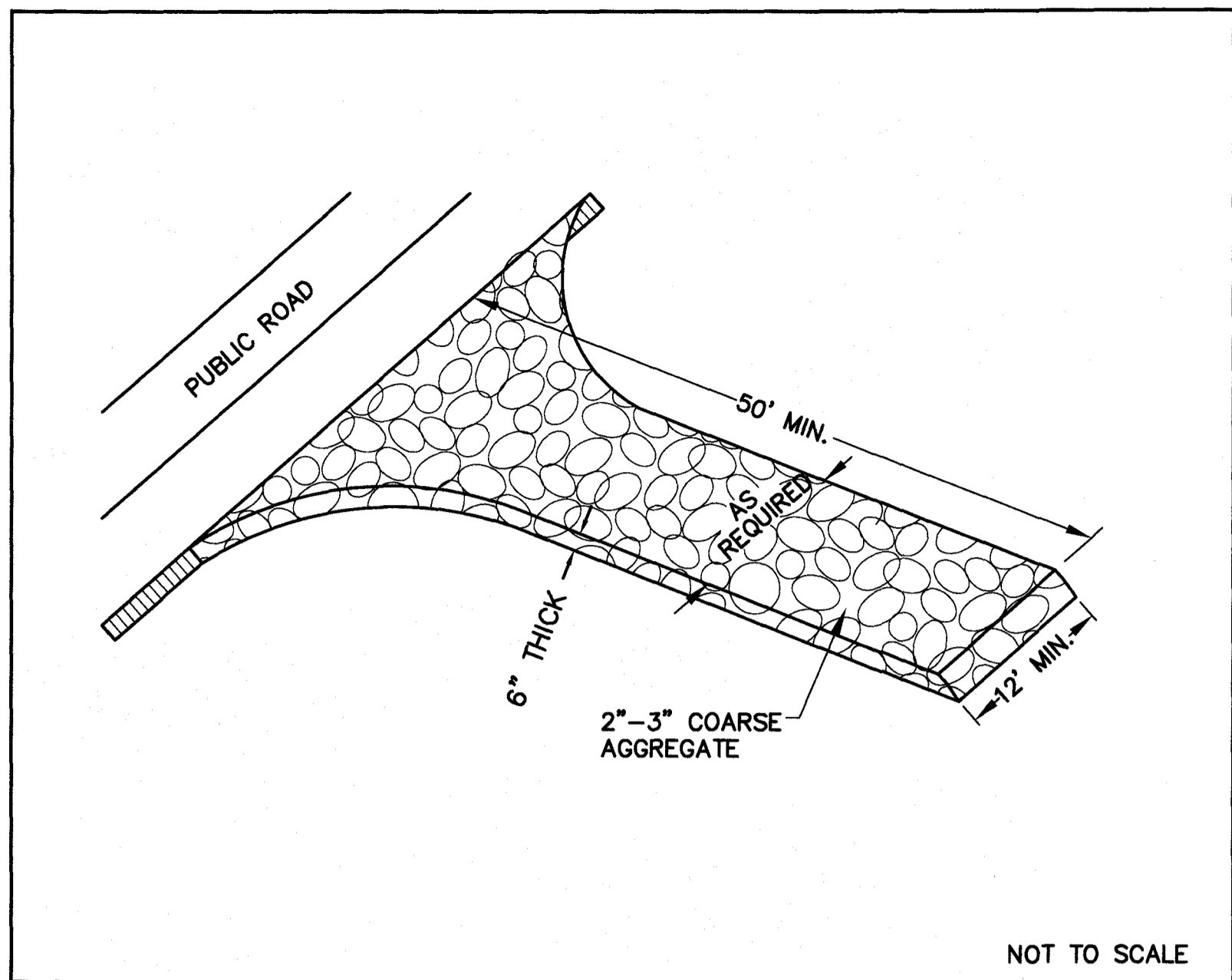
OWNER/DEVELOPER
W. LEE WILLIAMS
EXECUTIVE VICE PRESIDENT
LIVE OAK BANKSHARES, INC.
1741 TIBURON DRIVE
WILMINGTON, NC 28403
910-796-1647
910-790-5668

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASHLITTLE RIVER RD., NW
WILMINGTON, NC 28401
PHONE: (910) 343-5900

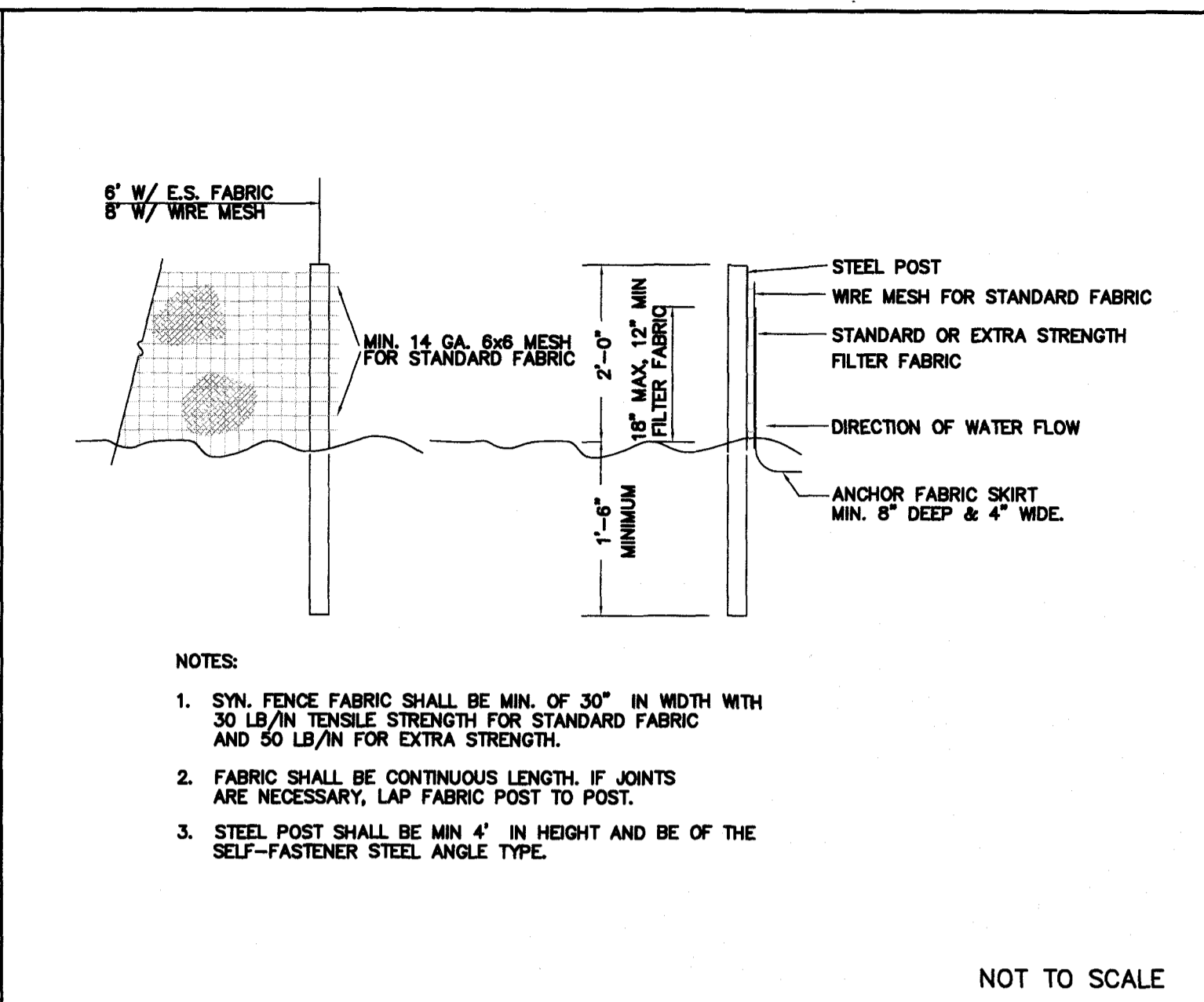
License #C-3641
16169
DES. JST
CDR. JPN
DRWL. NKS
DATE 1/3/18



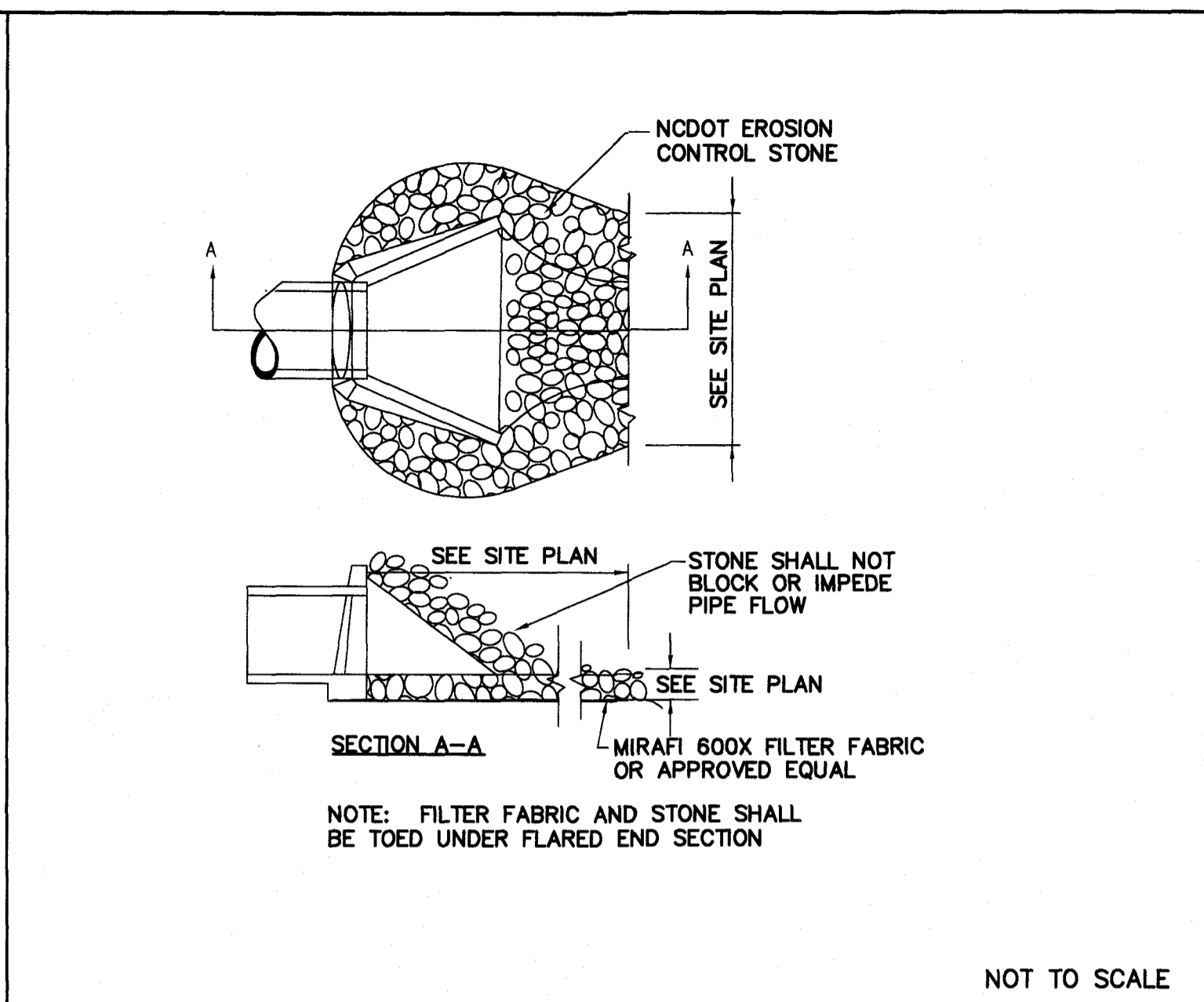
C5



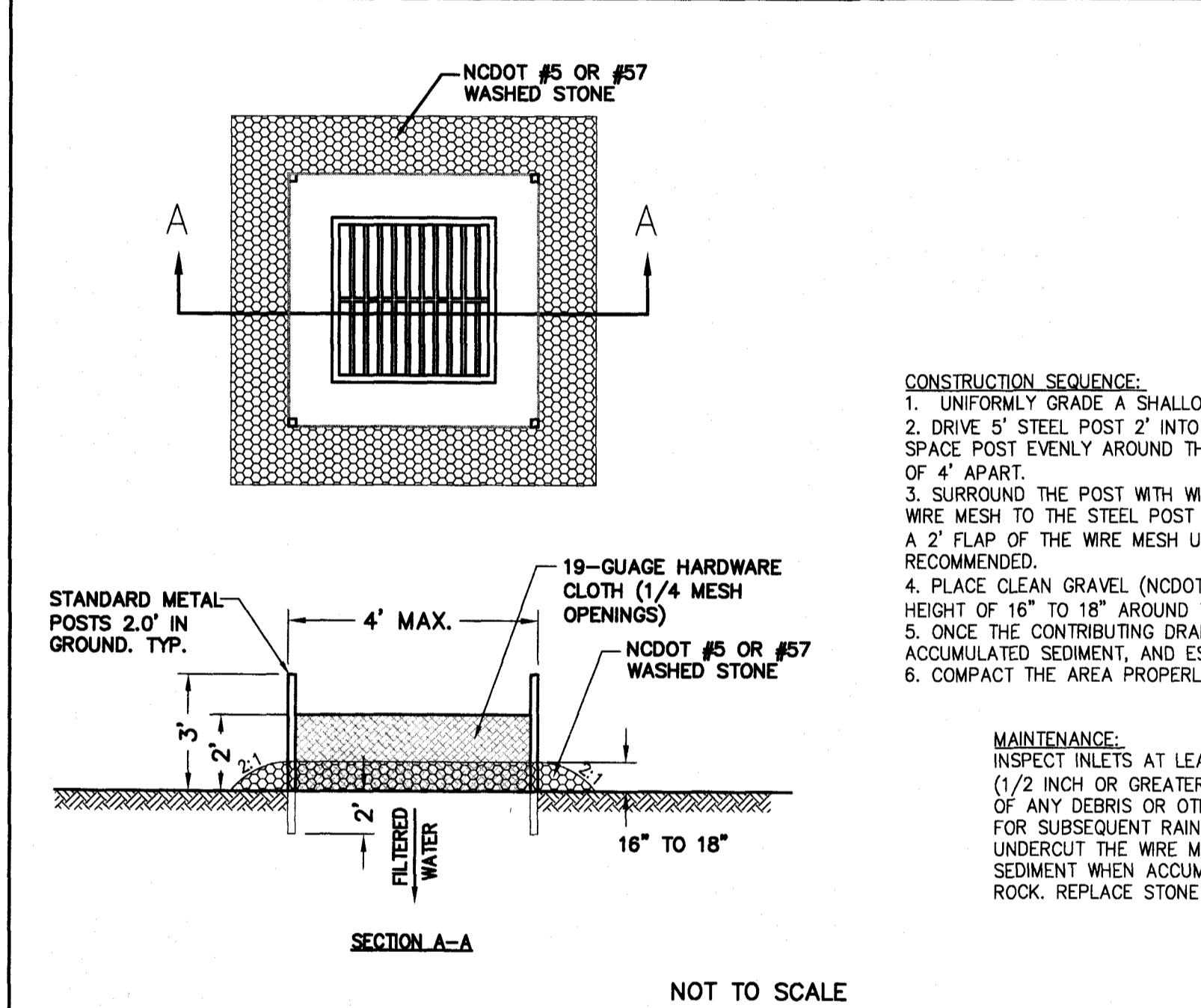
1 TEMPORARY GRAVELLED CONSTRUCTION ENTRANCE NOT TO SCALE



2 TEMPORARY SILT FENCE NOT TO SCALE



3 ENERGY DISSIPATOR NOT TO SCALE



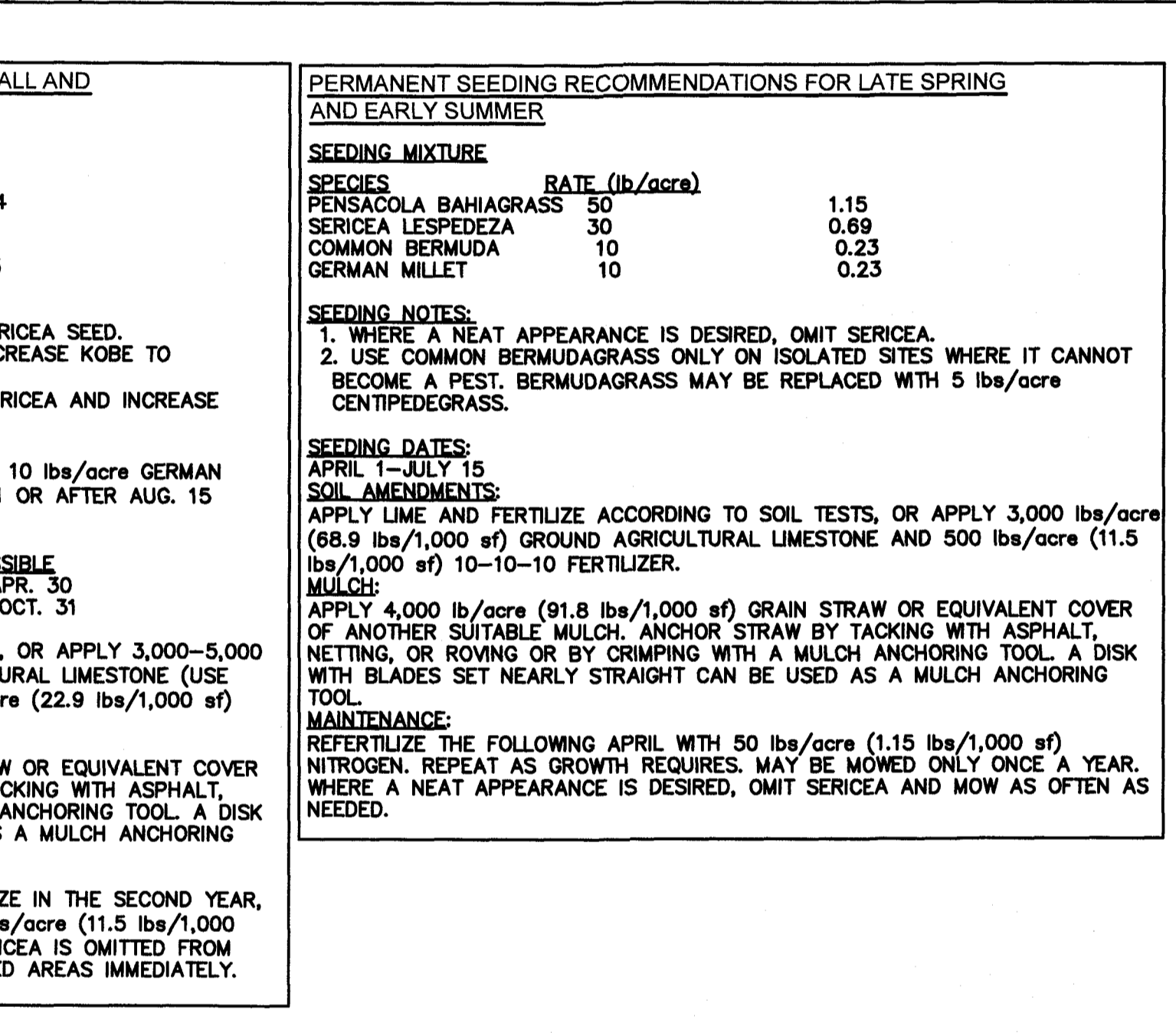
4 HARDWARE CLOTH AND GRAVEL INLET PROTECTION NOT TO SCALE

PERMANENT SEEDING RECOMMENDATIONS FOR FALL AND EARLY SPRING

SPECIES	RATE (lb/acre)	
TALL FESCUE	80	1.84
PENSACOLA BAHIAGRASS	50	1.15
SERICA LESPEDeza	30	0.69
KOBE LESPEDeza	10	0.23

PERMANENT SEEDING RECOMMENDATIONS FOR LATE SPRING AND EARLY SUMMER

SPECIES	RATE (lb/acre)	
PENSACOLA BAHIAGRASS	50	1.15
SERICA LESPEDeza	30	0.69
COMMON BERMUda	10	0.23
GERMAN MILLET	10	0.23



5 PERMANENT SEEDING SPECS.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

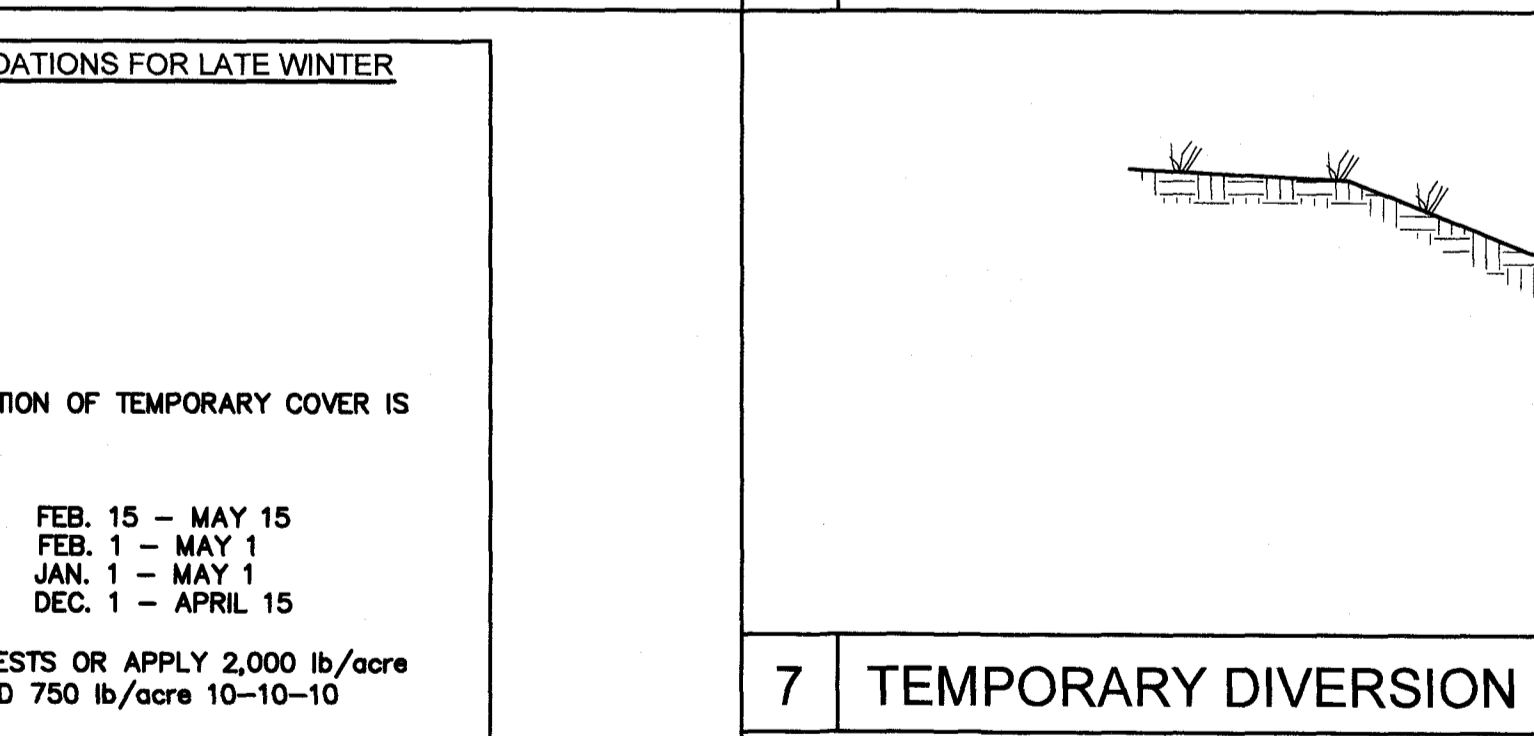
SPECIES	RATE (lb/acre)
RYE (GRAIN)	120

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SPECIES	RATE (lb/acre)
RYE (GRAIN)	120
ANNUAL LESPEDeza	50

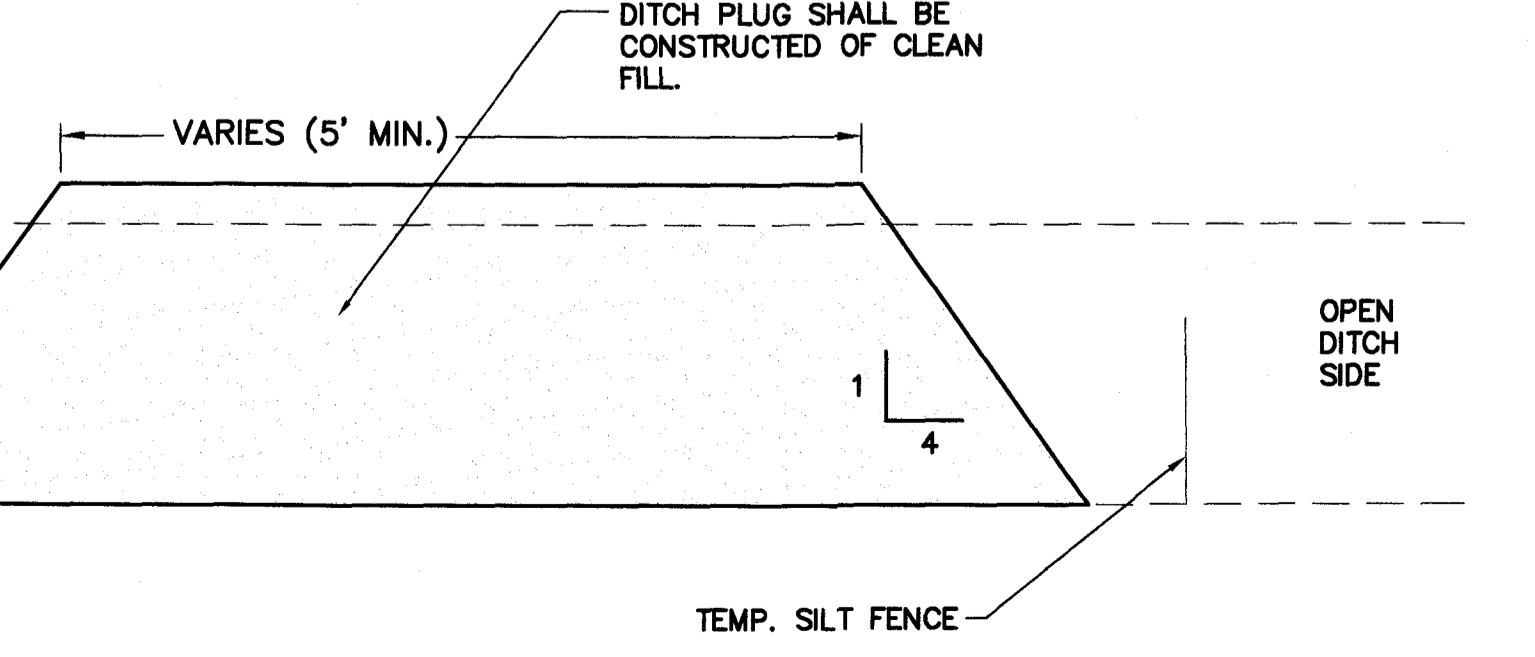
TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

SPECIES	RATE (lb/acre)
GERMAN MILLET	40



7 TEMPORARY DIVERSION DITCH

6 TEMPORARY SEEDING SPECS.



8 DITCH PLUG DETAIL NOT TO SCALE

EROSION CONTROL NOTES AND MAINTENANCE PLAN:

- ALL EROSION AND SEDIMENT 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.
- ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.
- SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND WATTLES, BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.
- DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.
- SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL STAKE SPACING WILL BE 6 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE, THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF-FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.
- SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. THE ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR WHEN THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND KEPT CLEAN.
- SEDIMENT WILL BE REMOVED FROM THE SEDIMENT BASIN WHEN THE DESIGN STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. THE ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR IF THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED FROM BAFFLES WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND WILL BE KEPT CLEAN.
- LAND QUALITY REQUIRES: ALL SEEDING AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED, ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN, TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 14 WORKING DAYS. WATER QUALITY REQUIRES: ALL SEEDING AREAS WILL BE FERTILIZED, RESEED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, ALL SLOPES STEEPER THAN 3:1 HORIZONTAL TO 1:1 VERTICAL (3:1) AND ALL HIGH QUALITY WATER (HOW) ZONES SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN SEVEN (7) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY. ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN FOURTEEN (14) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
- FLOCCULANTS WILL BE USED TO ADDRESS TURBIDITY ISSUES. THE PUMPS, TANKS, HOSES AND INJECT SYSTEMS WILL BE CHECKED FOR PROBLEMS OR TURBID DISCHARGES DAILY.
- BASIN OUTLET STRUCTURES AND SKIMMERS SHALL WITHDRAW WATER FROM THE SURFACE.

CONSTRUCTION SEQUENCE:

- UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
- DRIVE 5' STEEL POST 2' INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4' APART.
- SURROUND THE POST WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POST AT THE TOP, MIDDLE AND BOTTOM, PLACING A 2' FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
- PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16" TO 18" AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
- ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
- COMPACT THE AREA PROPERLY AND STABILIZE IT WITH GROUND COVER.

MAINTENANCE:

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REMOVE SEDIMENT WHEN ACCUMULATION REACHES HALF THE DEPTH OF ROCK. REPLACE STONE WHEN IT NO LONGER DRAINS AS DESIGNED.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL AND EARLY SPRING

SPECIES	RATE (lb/acre)
RYE (GRAIN)	120

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SPECIES	RATE (lb/acre)
RYE (GRAIN)	120
ANNUAL LESPEDeza	50

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

SPECIES	RATE (lb/acre)
GERMAN MILLET	40

9 DITCH #1, #2, #3 CROSS 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.

NCDENR PWSS WATER PERMIT #: _____

WATER CAPACITY: _____ GPD

DWQ SEWER PERMIT #: _____

SEWER CAPACITY: _____ GPD

SEWER SHED # AND PLANT: _____

SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

City of WILMINGTON, NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: 1/8/18 Permit #: 2011034R3

Approved Construction Plan

Name: _____ Date: 2/1/18

Public Utilities

Traffic: _____ 2-5-18

Fire: _____ 2-6-18

Signed: _____

NOT TO SCALE

NOTES AND DETAILS
LIVE OAK BANKING COMPANY 3/FITPARK
1741 TIBURON DRIVE
WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
W. LEE WILLIAMS
EXECUTIVE VICE PRESIDENT
LIVE OAK BANKSHARES, INC.
1741 TIBURON DRIVE
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910-796-1647
910-790-5868

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CONSULTING ENGINEERS P.C.
1429 ASH-LITTLE RIVER RD. NW
WILMINGTON, NC 28401
PHONE (910) 343-9653

Licence #C-3641

16169

DES. JST
ORD. JPN
DRWN. NKS

DATE 12/18/17

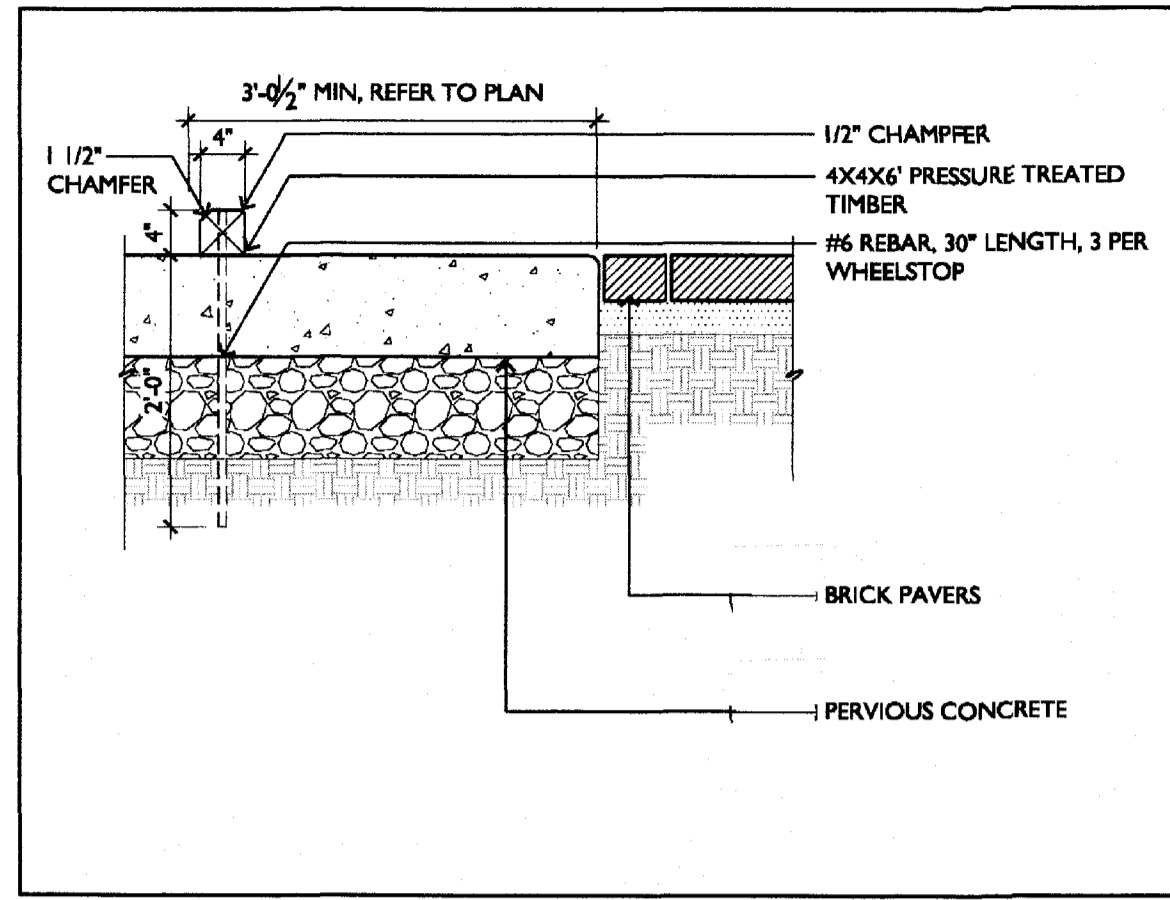
Seal of the State of North Carolina, Professional Engineer, License No. 19855, Norris & Tunstall, Inc.

SYMBOL DATE DESCRIPTION BY

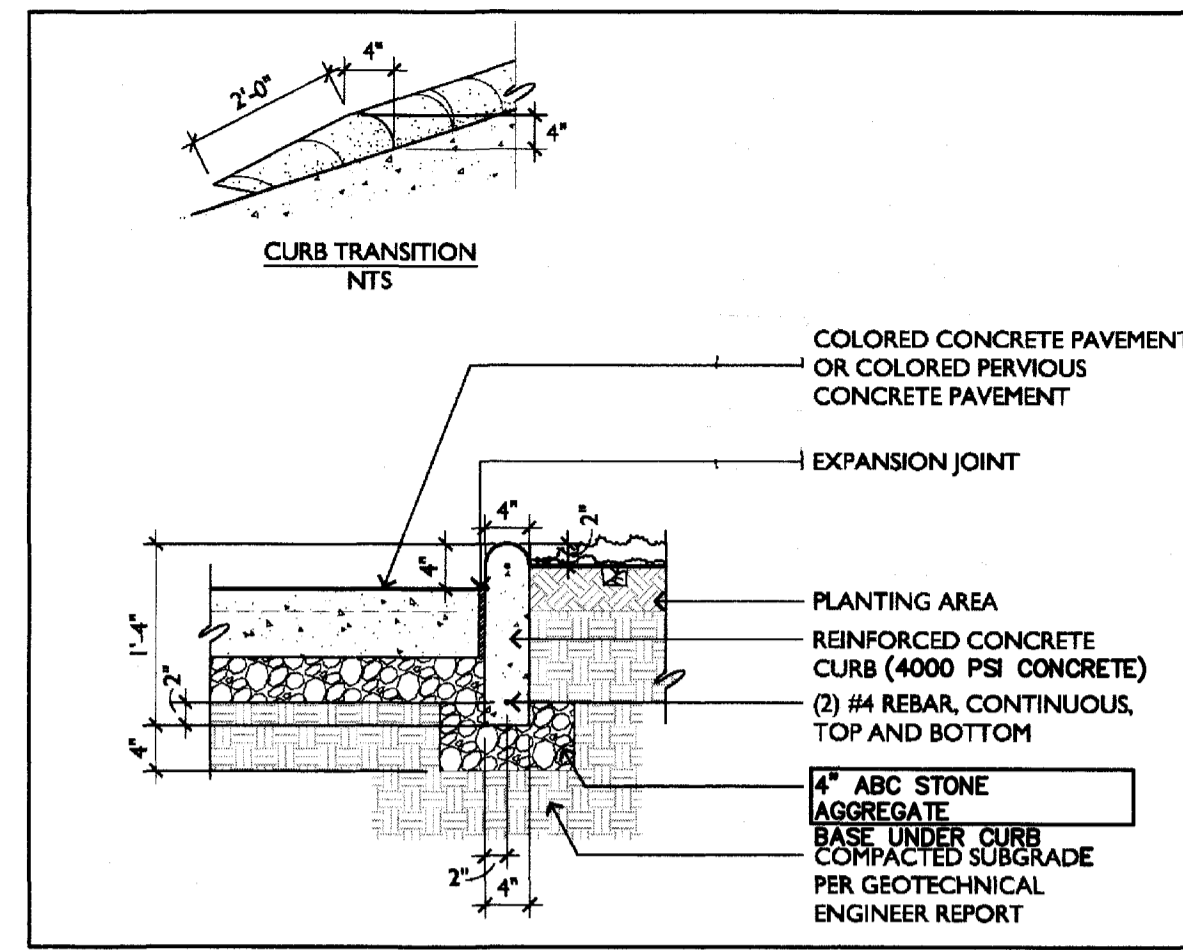
REVISIONS

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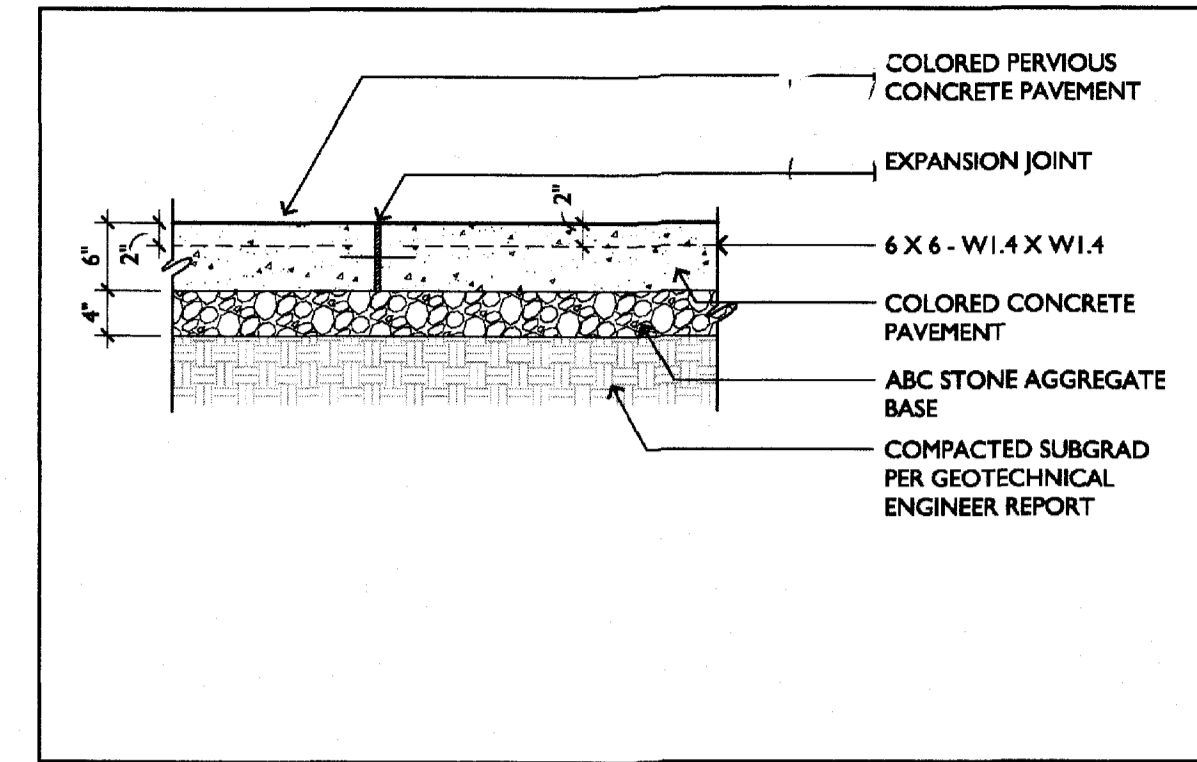
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NOT TO SCALE



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1 WOOD WHEEL STOP DETAIL

2 CONCRETE CURB DETAIL

3 COLORED CONCRETE PAVEMENT DETAIL

SITE WORK NOTES:

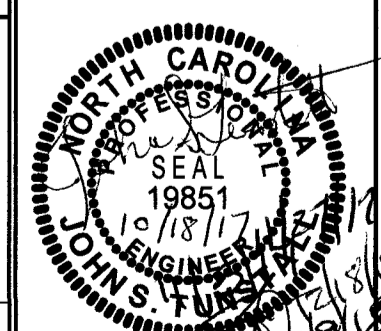
1. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH FIELD CONSTRUCTION CONDITIONS.
2. CONTRACTOR SHALL COORDINATE WORK WITH NCDOT AND LOCAL RIGHT OF WAYS WITH PROPER AUTHORITIES AND SHALL MEET ANY REQUIREMENTS AS TO TRAFFIC CONTROL AND CONNECTION TO EXISTING STREETS.
3. CLEARING AND GRUBBING: REMOVE ALL TREES AS REQUIRED UNLESS OTHERWISE NOTED TO REMAIN, STUMPS, ROOTS, SHRUBBERY, ASPHALT, CONCRETE, STRUCTURES, BURIED UTILITIES, STORAGE TANKS, ETC. WITHIN LIMITS OF CONSTRUCTION.
4. STRIPPING: BEFORE EXCAVATING OR FILLING, REMOVE ALL TOPSOIL, WOOD, LEAVES, AND ANY OTHER UNSUITABLE MATERIAL.
5. MUCKING: REMOVE ANY SOFT, ORGANIC SILT MATERIALS AND EXISTING BURIED CONSTRUCTION DEBRIS AS REQUIRED AND FILL TO SUBGRADE ELEVATIONS WITH A CLEAN SELECT-FILL COMPACTED AS SPECIFIED.
6. DISPOSAL: CLEARED, GRUBBED, STRIPPED OR EXCAVATED SPOIL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES.
7. BORROW MATERIAL: THE CONTRACTOR SHALL FURNISH BORROW MATERIAL REQUIRED FROM OFF SITE AND OBTAIN ALL REQUIRED PERMITS ASSOCIATED WITH BORROW OPERATIONS.
8. FILL AND COMPACTION: AFTER STRIPPING THOSE AREAS DESIGNATED TO RECEIVE FILL SHOULD BE PROFFOLLED. THE TOP 8" OF SUBGRADE SHALL BE COMPACTED TO AT LEAST 98% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT. ANY AREA WHICH PUMPS OR RUTS EXCESSIVELY SHOULD BE UNDERCUT AND REPLACED WITH A CLEAN, SILTY OR CLAYEY SAND HAVING A UNIFIED SOIL CLASSIFICATION OF SP, SM, OR SC. FILL MATERIAL 5" OUTSIDE OF BUILDING AREAS SHALL THEN BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED TO 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. FILL MATERIALS WITHIN BUILDING AREAS TO A LINE OUTSIDE THE BUILDING AREAS SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED TO 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IN AREAS WHERE NO STRUCTURAL FILL IS TO BE PLACED THE UPPER 12 INCHES OF IN-PLACE SUBGRADE SHOULD BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IF THE MATERIAL IS TOO DRY TO COMPACT TO THE REQUIRED DENSITY EACH LAYER SHALL BE WETTED IN ACCORDANCE WITH COMPACTION REQUIREMENTS. IF THE MATERIAL IS TOO WET TO SECURE PROPER COMPACTION, IT SHALL BE HARROWED REPEATEDLY OR OTHERWISE AERATED WITH SUITABLE EQUIPMENT UNTIL OPTIMUM MOISTURE CONTENT IS OBTAINED. FILL SHALL BE PLACED IN SUCH A MANNER THAT THE SURFACE WILL DRAIN READILY AT ALL TIMES. SEE STRUCTURAL NOTES AND SOILS REPORT FOR ADDITIONAL REQUIREMENTS.
9. LAYOUT: THE CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION.
11. EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION FROM SURVEY BY HANOVER DESIGN SERVICES, P.A. AND PROVIDED BY OWNER.
12. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.
13. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF RELOCATION OR DISCONNECTION OF ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES.
14. ALL PAVEMENT AND BASE MATERIALS AND WORKMANSHIP SHALL CONFORM TO NCDOT STANDARDS.
15. WATER AND SEWER SERVICES SHALL BE INSTALLED TO MEET LOCAL AND STATE PLUMBING CODES. METER AND TAPS SHALL MEET ALL LOCAL REQUIREMENTS.
16. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.
17. SEE SOILS REPORT FOR ADDITIONAL REQUIREMENTS.
18. CONTRACTOR SHALL NOTE THAT EARTHWORK QUANTITIES ARE HIS RESPONSIBILITY. PLANS DO NOT REPRESENT A BALANCED EARTHWORK CONDITION.
19. REINF. CONC. PIPE SHALL BE CLASS III W/RUBBER GASKETED JOINT OR "RAM NECK". INSTALL PER MANUFACTURER'S REQUIREMENTS.
20. USE WHITE LANE MARKING PAINT FOR ALL PAVEMENT MARKINGS. PAINT SHALL BE A CHLORINATED RUBBER ALKYL, FS TT-P-115, TYPE III, FACTORY MIXED, QUICK DRYING, NON-BLEEDING.
21. REFER TO THE PLUMBING DRAWINGS FOR LOCATION AND INVERTS OF NEW WASTE, WATER AND ROOF DRAIN LINES.

NOTES AND DETAILS
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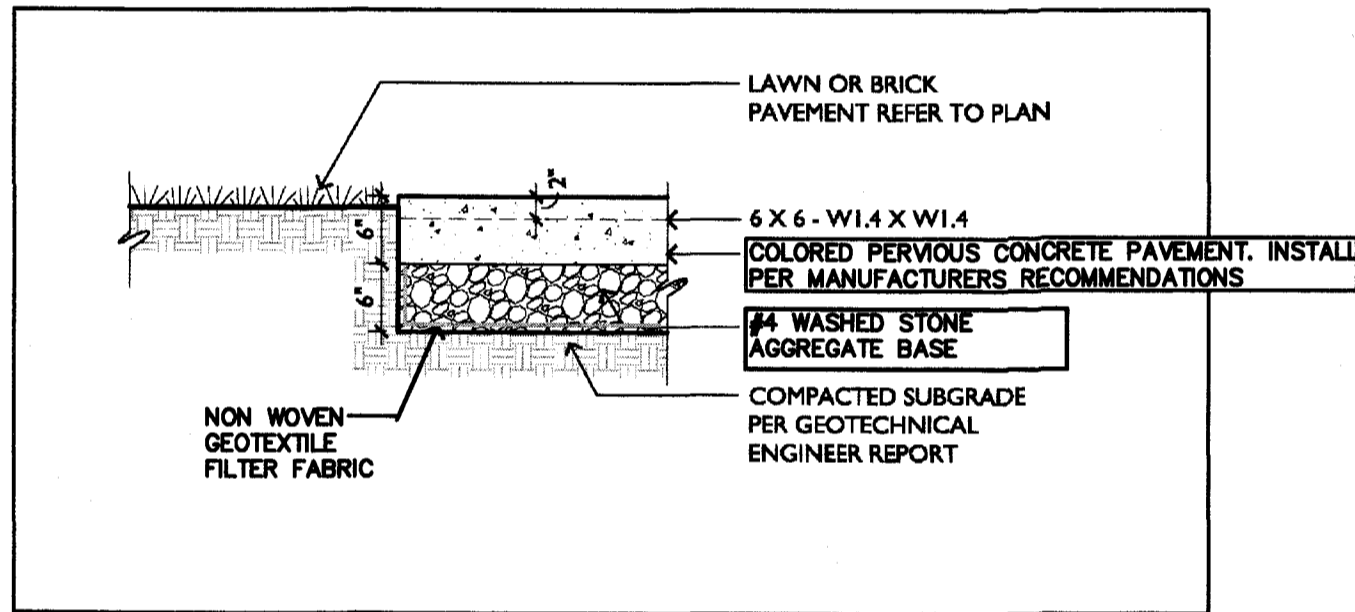
NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
PHONE (910) 287-5900

902 MARKET STREET
WILMINGTON, NC 28401
PHONE (910) 343-9653

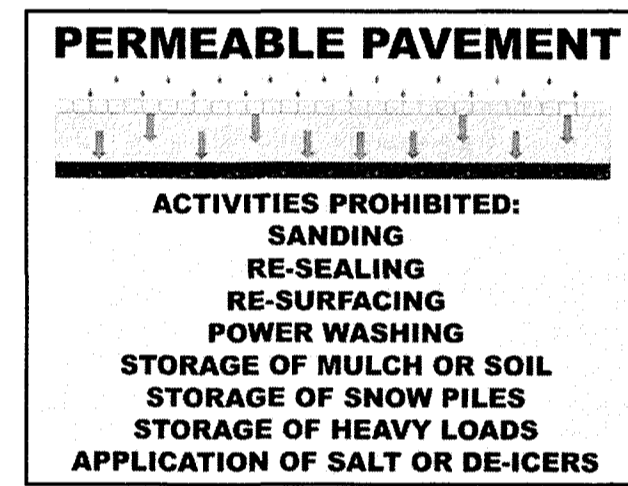


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DES. JST
CHK. JPN
DRWN. NKS
DATE 10/13/17

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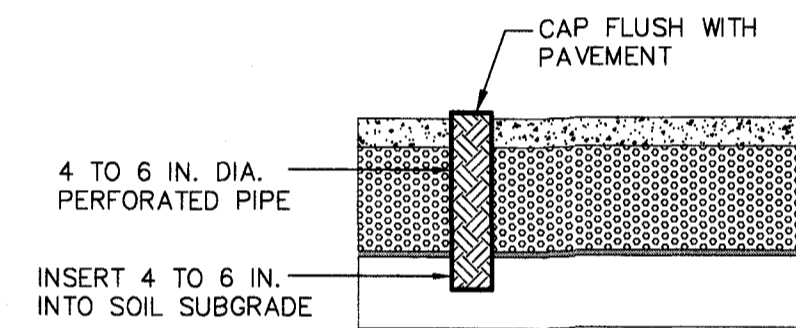


NOT TO SCALE



NOTES:
1. THE PERMEABLE PAVEMENT SIGN IS BASED ON AN 18" X 24" STANDARD SIZE FOR SIGN PRODUCTION.
2. A HIGH-RESOLUTION IMAGE FILE CAN BE PROVIDED BY THE DWG FOR USE IN FABRICATING THE SIGN. THE GRAPHIC IS IN COLOR BUT COLOR SIGNS ARE NOT REQUIRED.

NOT TO SCALE



PERVIOUS PAVEMENT OBSERVATION WELL NOTES:
1. THE OBSERVATION WELL SHALL BE PLACED AT THE LOW END OF THE SUBGRADE SLOPE.
2. OBSERVATION WELLS SHALL BE FITTED WITH A LOCKABLE CAP INSTALLED PLACED EVEN WITH THE PAVEMENT SURFACE TO FACILITATE QUARTERLY INSPECTION AND MAINTENANCE.
3. THE OBSERVATION WELL SHALL CONSIST OF A RIGID 4 TO 6 IN. DIAMETER PERFORATED PVC PIPE.

NOT TO SCALE

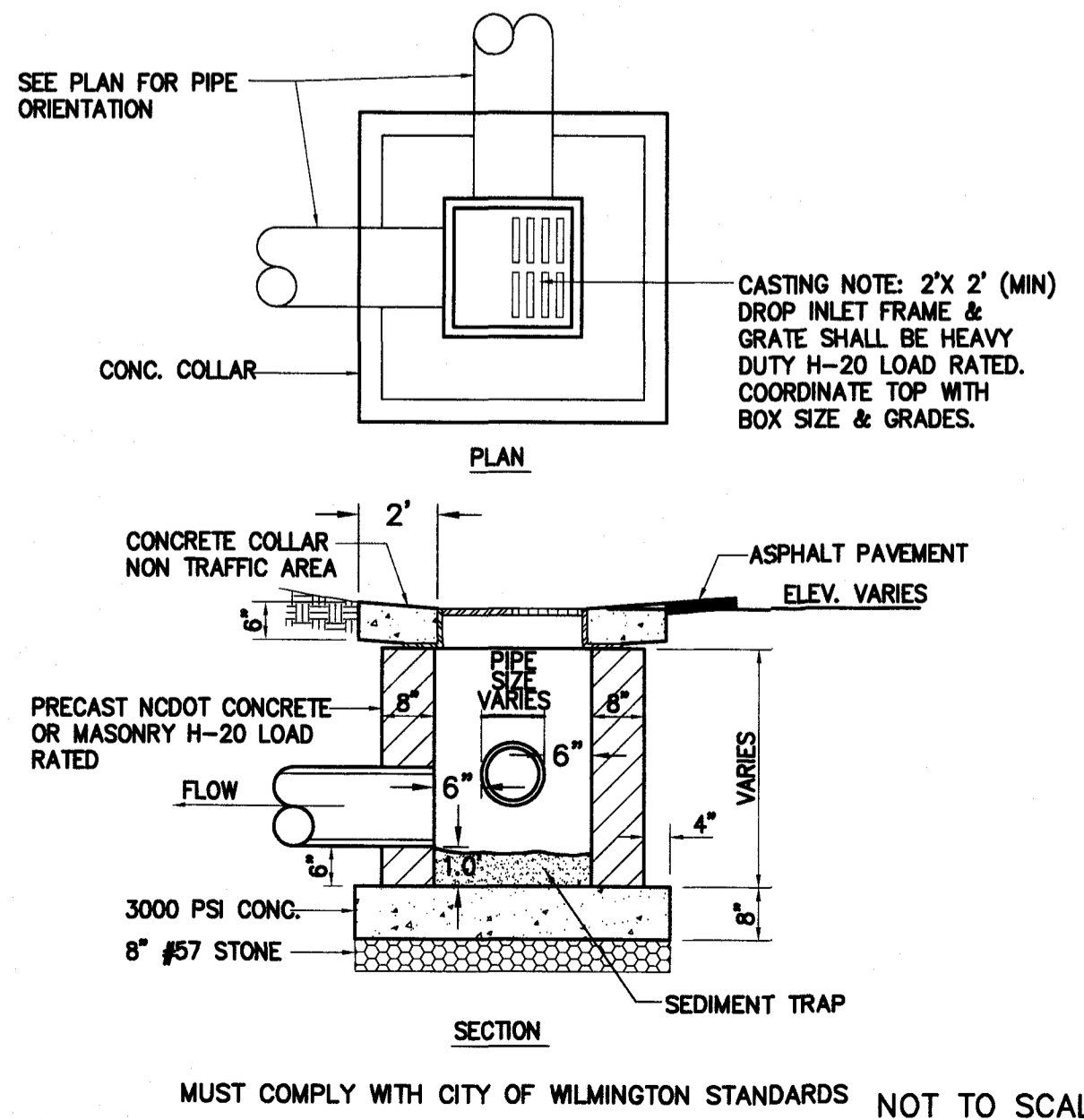
PERMEABLE PAVEMENT CONSTRUCTION SEQUENCE:

- The following is a typical construction sequence to properly install pervious concrete. The means and methods of installation shall be determined by the contractor and shall be installed per the manufacturer recommendations, product standards and industry guidelines.
- Step 1. Construction of the permeable pavement shall only begin after the entire contributing drainage area has been stabilized. The proposed site should be checked for existing utilities prior to any excavation. Do not install the system in rain or snow.
 - Step 2. Temporary erosion and sediment (E&S) controls (silt fence) are needed during installation to divert stormwater away from the permeable pavement area until it is completed. The proposed permeable pavement area must be kept free from sediment during the entire construction process. Construction materials that are contaminated by sediments must be removed and replaced with clean materials.
 - Step 3. Where possible, excavators or backhoes should work from the sides to excavate the aggregate layer to its appropriate design depth and dimensions.
 - Step 4. In-situ soil testing shall be done after excavation to verify existing infiltration rate. Soils testing shall be conducted by an appropriately qualified professional, the testing can be done by the contractor, the designer, or a third party hired by owner. The results of the testing shall be given to the designer of record for review. If results show a lower infiltration rate than the rate of design the depth of aggregate must be revised.
 - Step 5. The native soils along the bottom and sides of the permeable pavement system should be scarified or tilled to a depth of 3 to 4 inches prior to the placement of the filter layer or filter fabric.
 - Step 6. Filter fabric should be installed on the bottom and the sides of the aggregate layer.
 - Step 7. Place observation wells as shown on plans.
 - Step 8. Inspect all aggregate prior to placement. Ensure aggregate is clean, free of fines and conform to the plans and specifications. All aggregate shall be spread (not dumped). Moisture and spread the washed stone without driving on the soil subgrade, being careful not to damage the observation wells. Follow compaction recommendations by the permeable pavement manufacturer or that from industry guidelines.
 - Step 9. Ensure edge restraints and barriers between permeable pavement are installed per design.
 - Step 10. Contractor is to follow standard installation procedures for the specific type of pervious pavement that is being installed. For this project pervious concrete will be installed. Only certified and experienced contractors shall install the pervious concrete and installation shall be per the manufacturer recommendations, product standards and industry guidelines. Pervious concrete shall be constructed in accordance with the latest version of ACI 522.1, Specifications for Pervious Concrete.
 - Step 11. After installation, protect the installed pervious concrete until project completion, including routing construction traffic away from the installed pervious concrete. Contractor shall provide protection techniques including mats, plastic sheeting and barriers to ensure the pervious concrete remains protected until project completion.

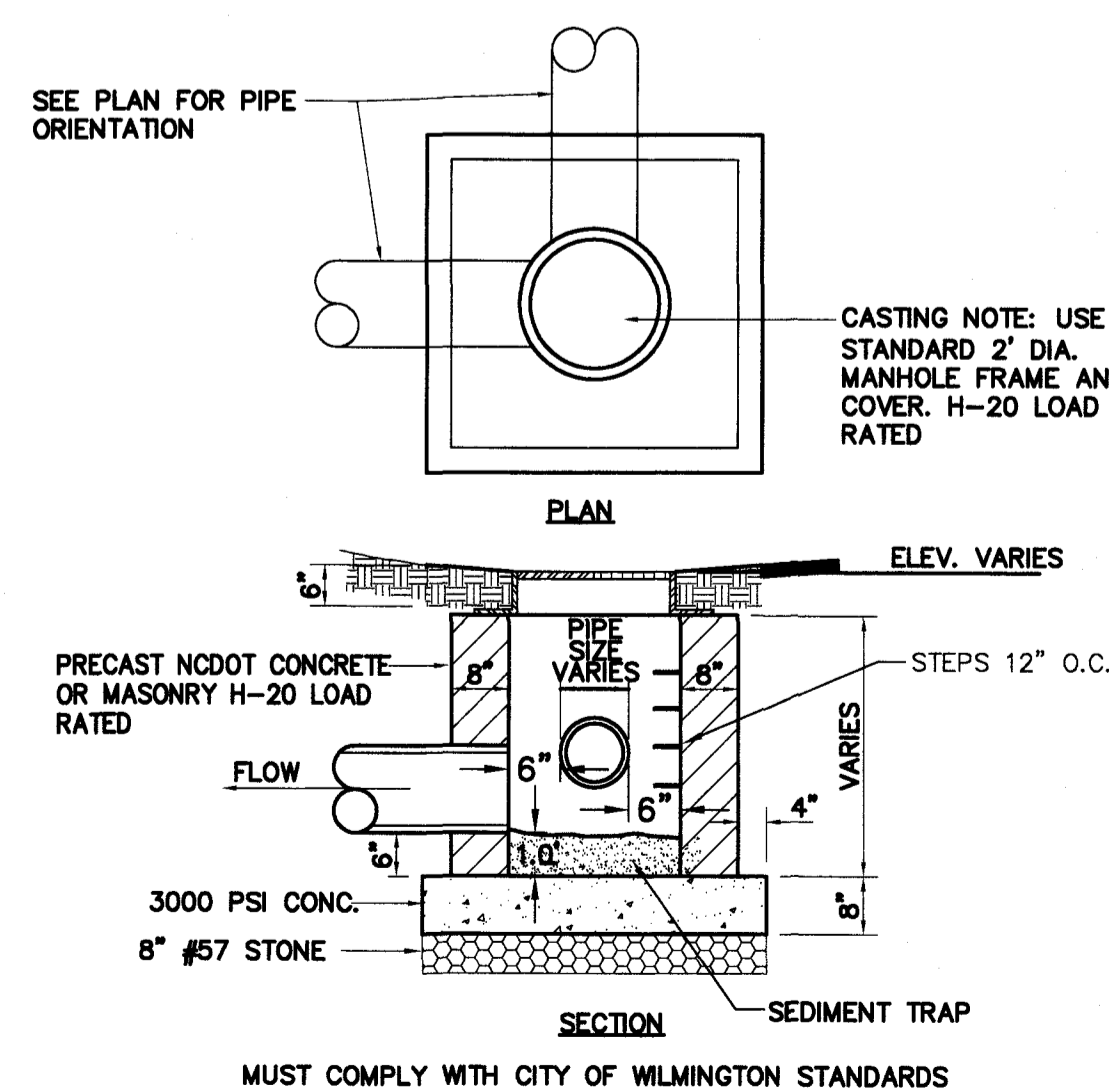
4 COLORED PERVIOUS CONCRETE PAVEMENT DETAIL

5 PERMEABLE PAVEMENT SIGNAGE DETAIL

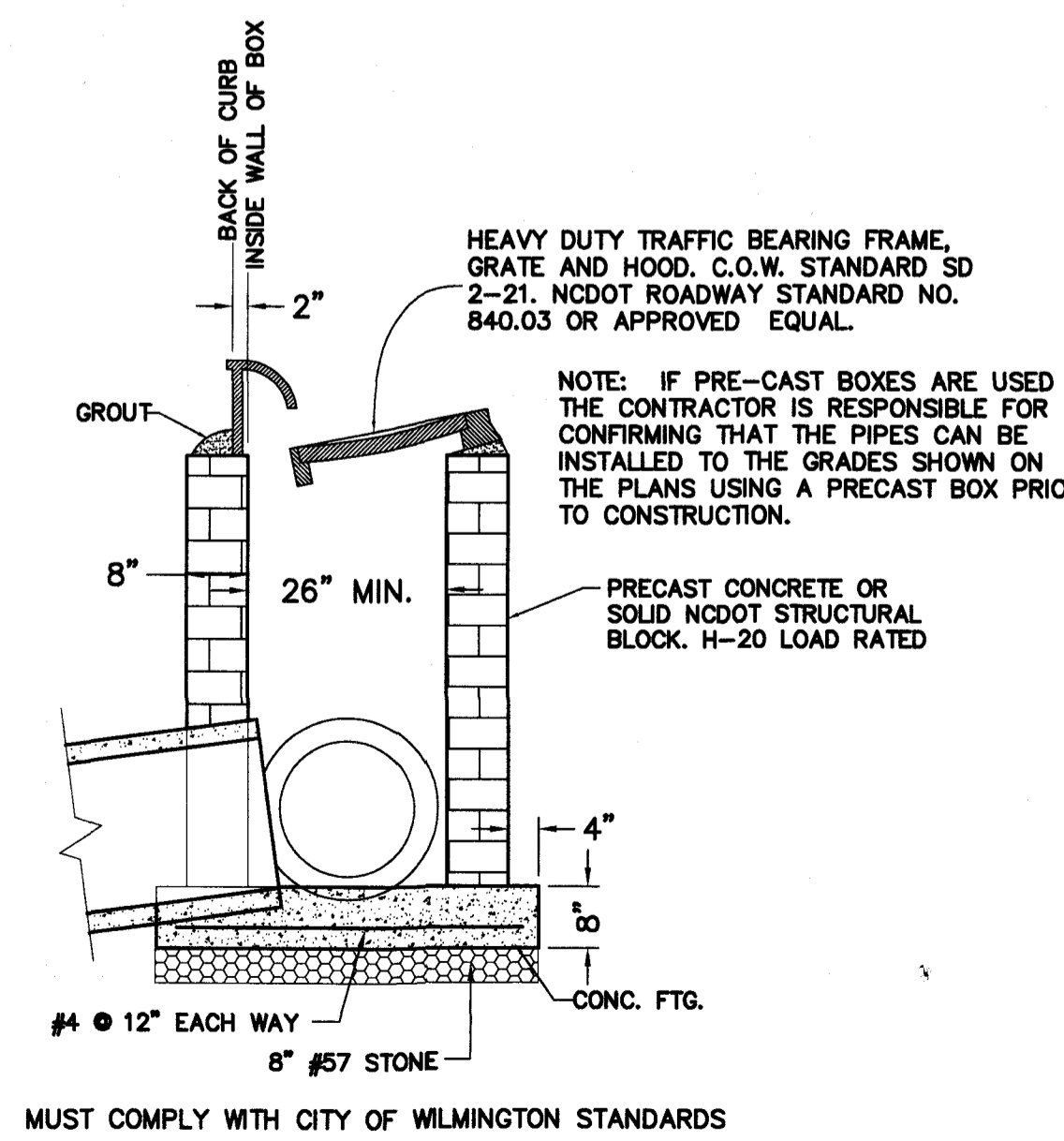
6 PERVIOUS PAVEMENT OBSERVATION WELL DETAIL



NOT TO SCALE



NOT TO SCALE



NOT TO SCALE

7 DROP INLET DETAIL

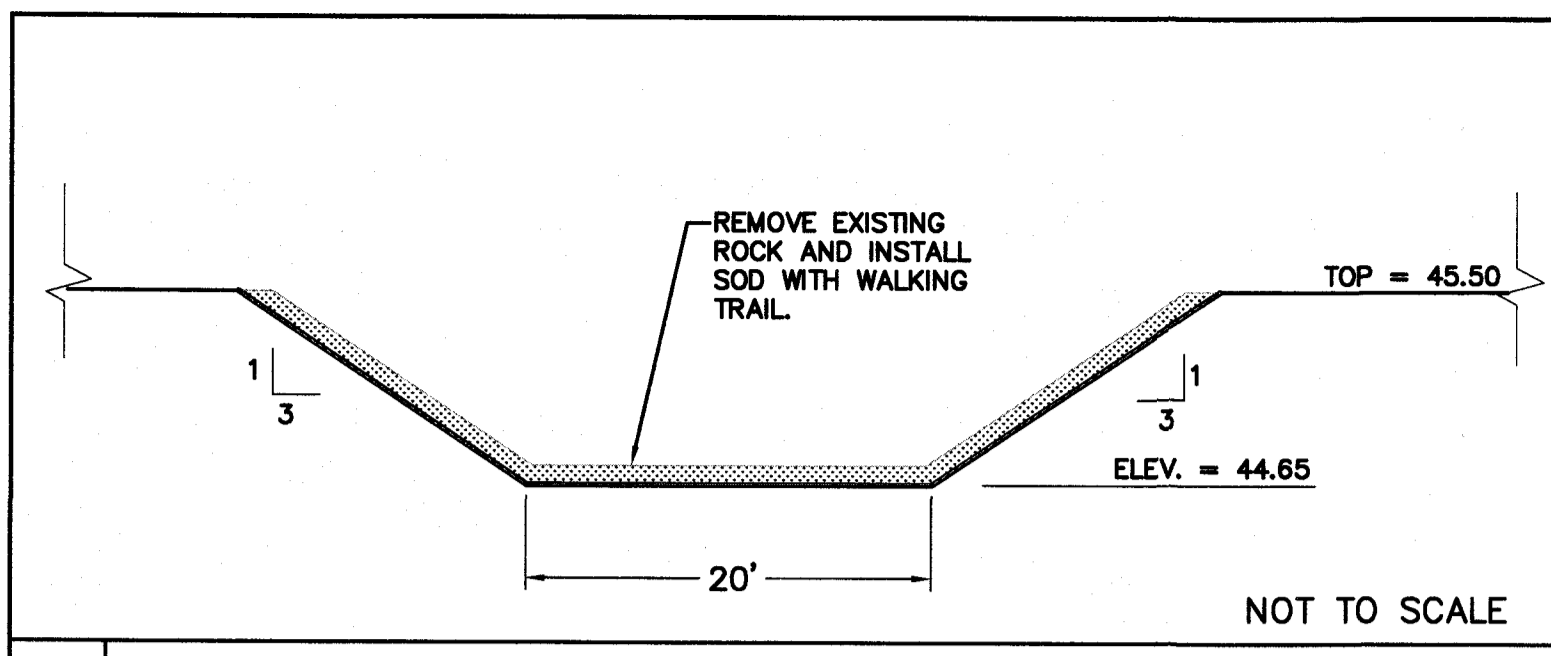
8 JUNCTION BOX DETAIL

9 CATCH BASIN DETAIL

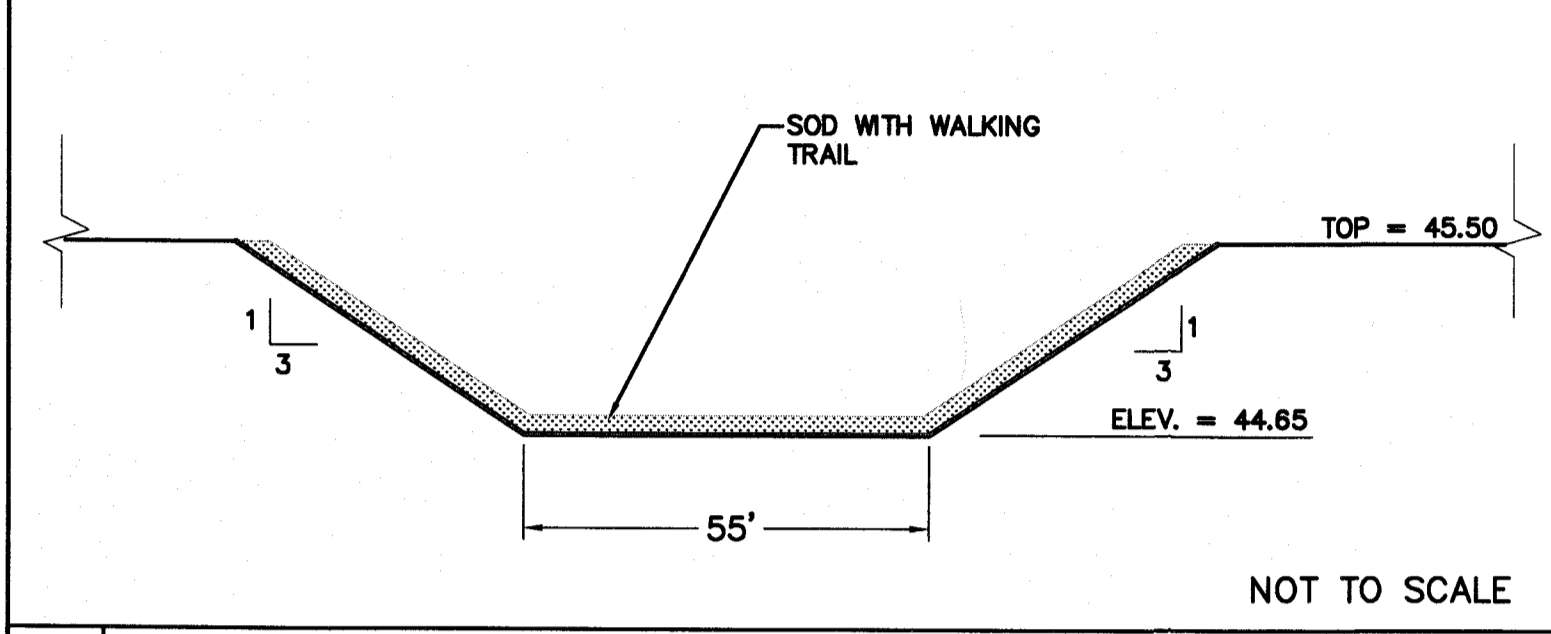
City of WILMINGTON, NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 2/8/18 Permit #: 2011034R3
Signed: [Signature]

Approved Construction Plan
Name: [Name] Date: 2/11/18
Planning: [Signature] 2/11/18
Traffic: [Signature] 2/5/18
Fire: [Signature] 2-6-18

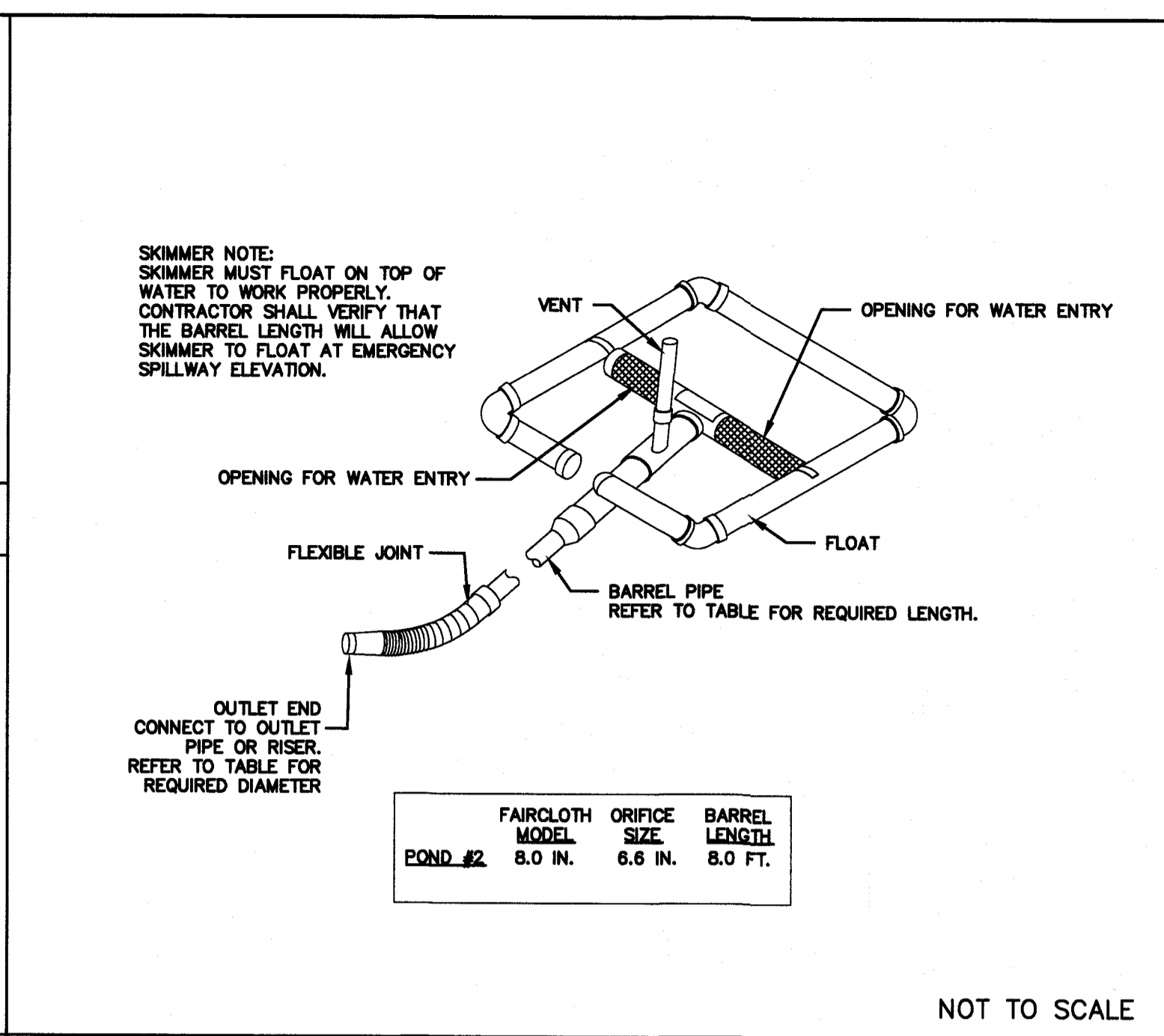
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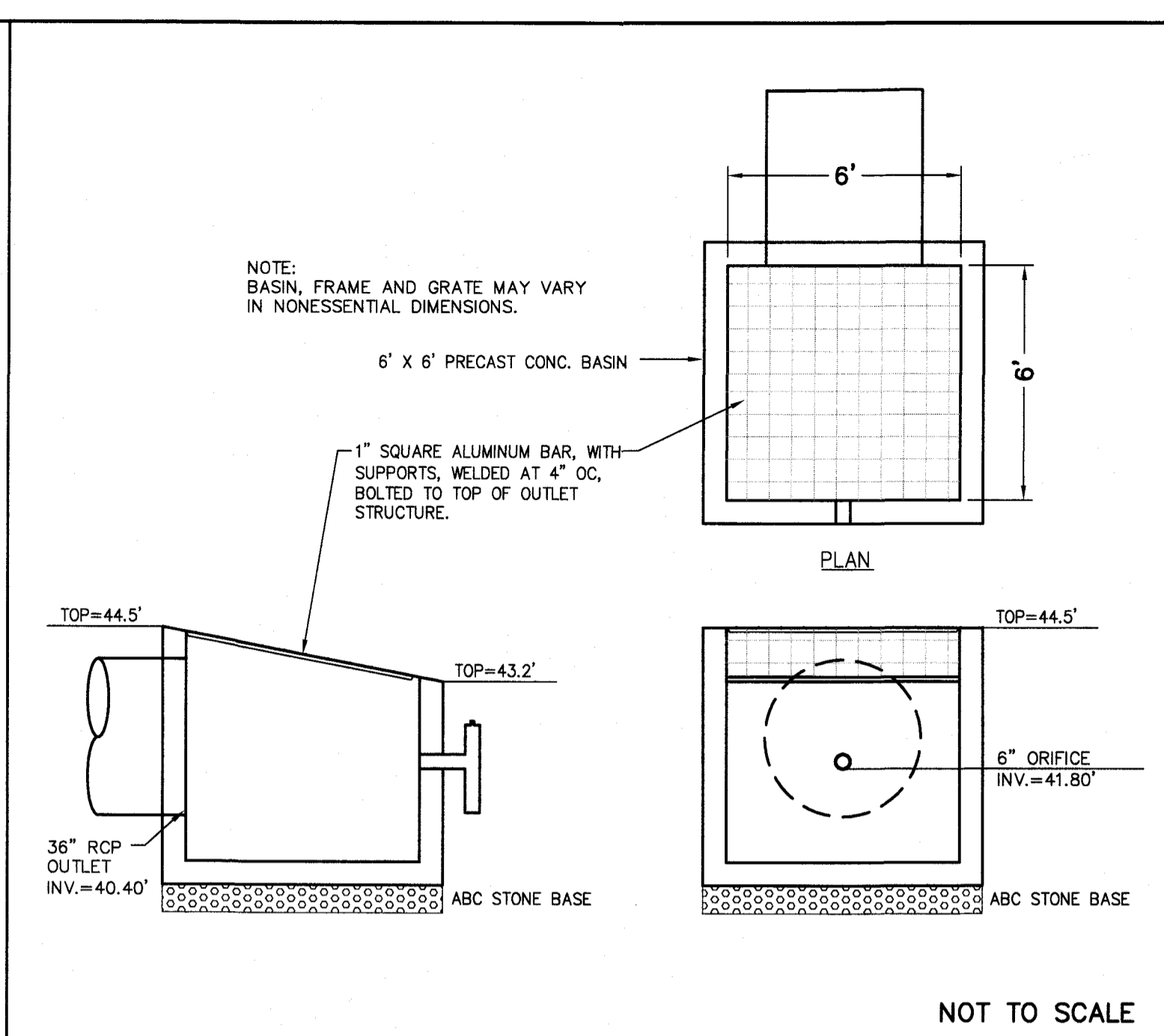
1a EXISTING EMERGENCY SPILLWAY #1A DETAIL



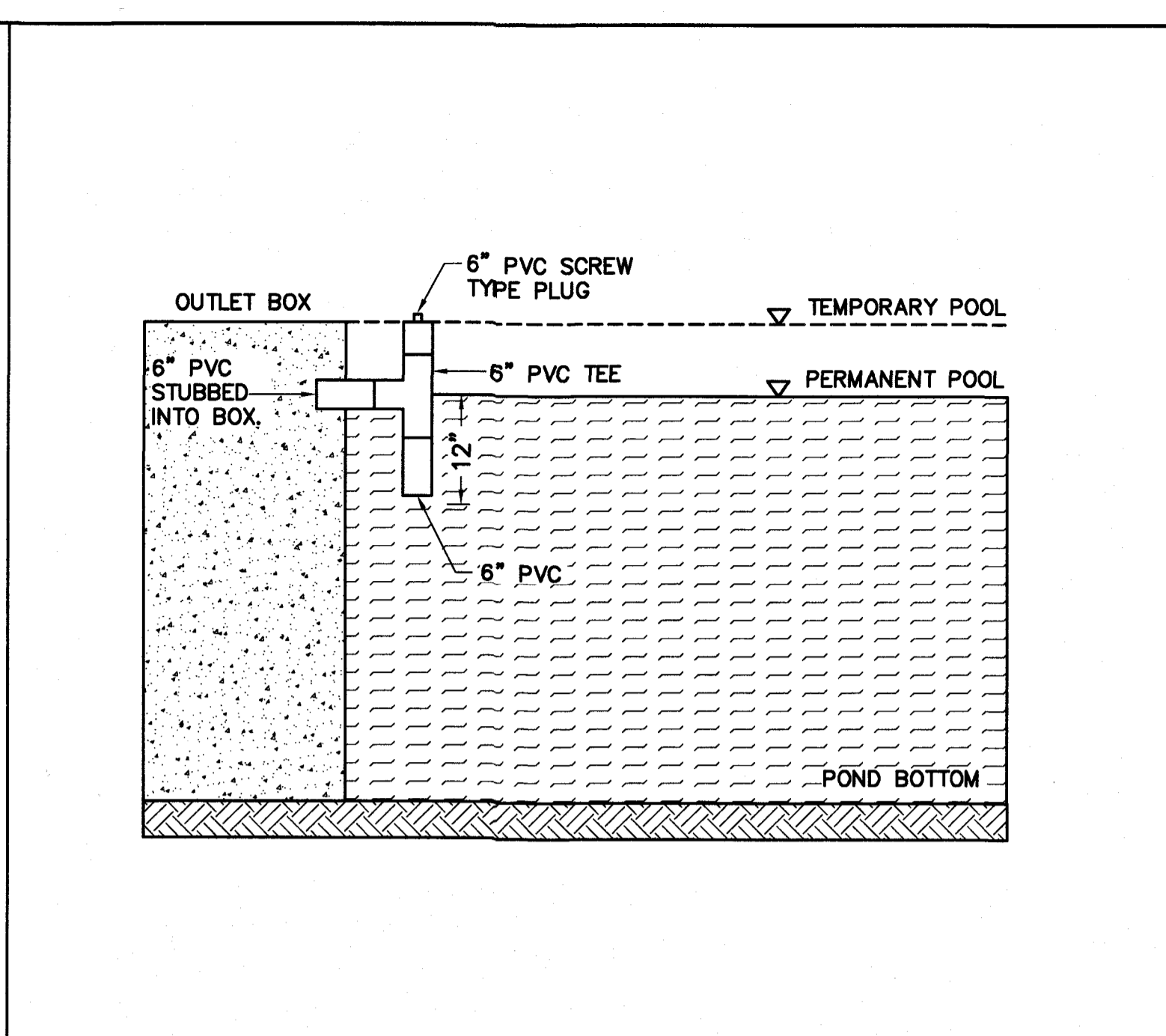
1b EMERGENCY SPILLWAY #1B DETAIL



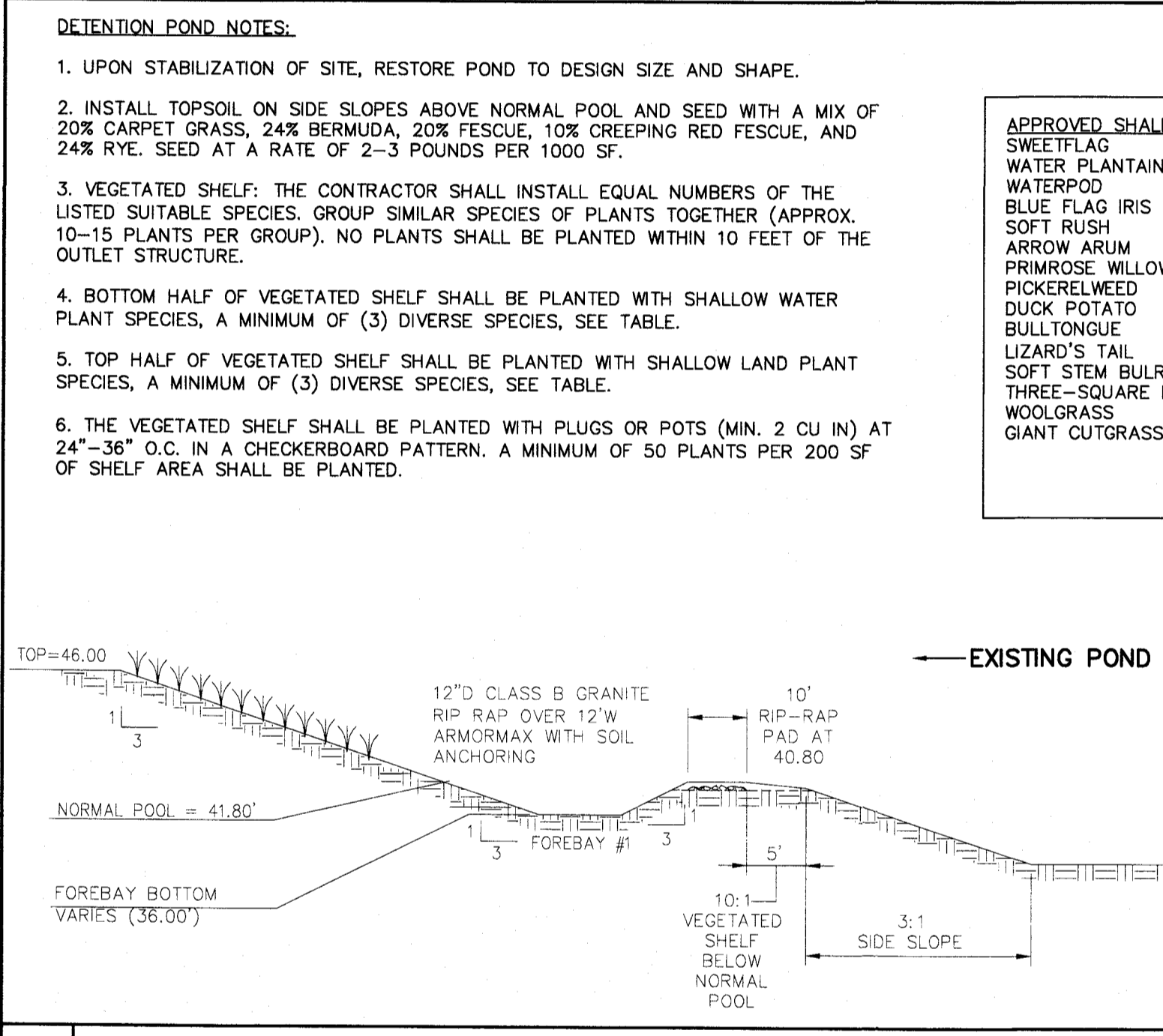
2 STANDARD SKIMMER DETAIL



3 DETENTION POND #1 OUTLET STRUCTURE



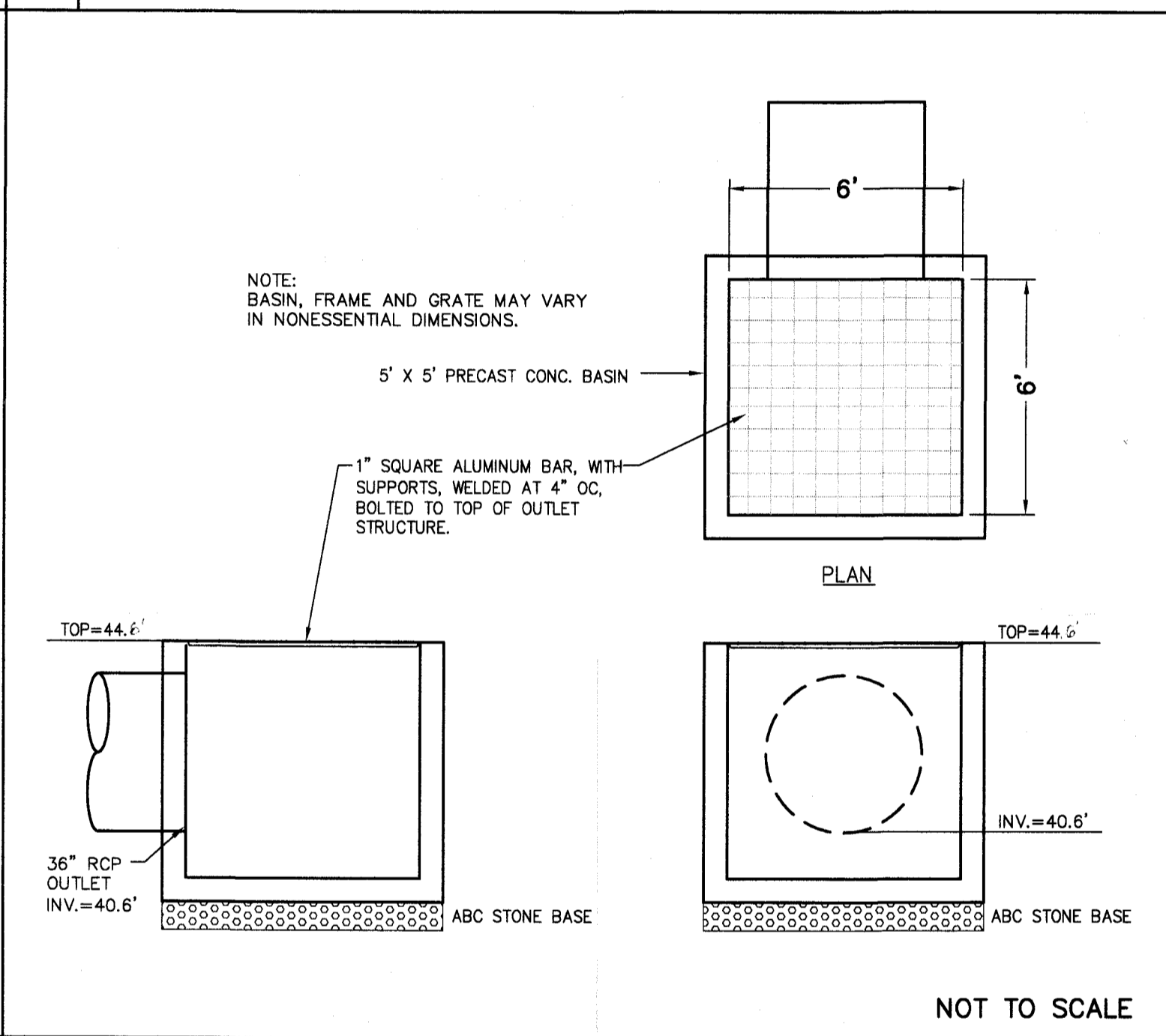
4 SUBMERGED ORIFICE OUTLET CONFIGURATION



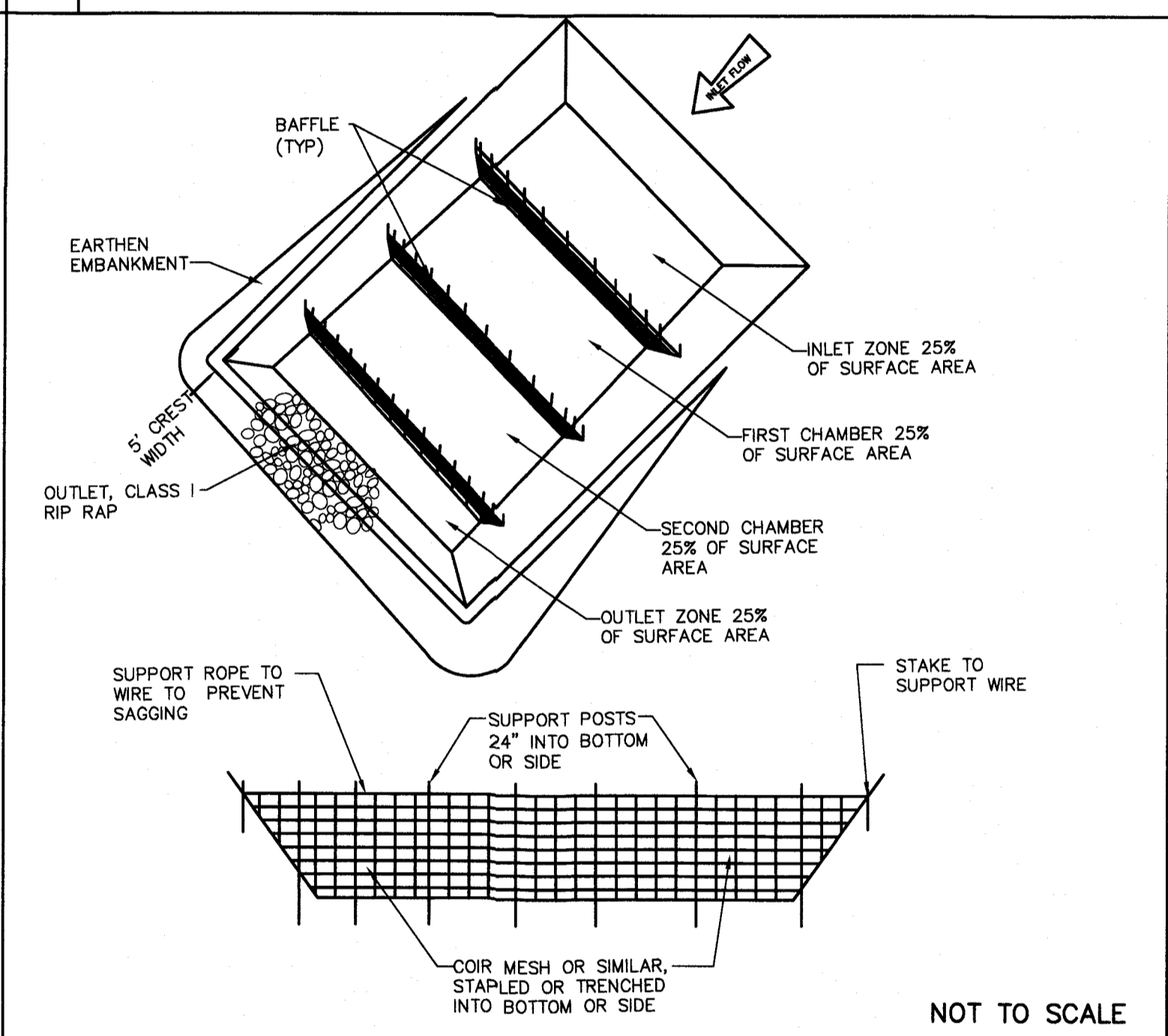
5 POND #1 CROSS SECTION

APPROVED SHALLOW WATER PLANTS	APPROVED SHALLOW LAND PLANTS	EXIST. FOREBAY 1 SURFACE AREAS	EXPANDED POND SURFACE AREAS
SWEETFLAG	SWAMP MILKWEED	39=15,987	35=71,248
WATERPLANTAIN	QUILL SEDGE	40=17,787	36=79,036
WATERPOD	WHITE TURTLEHEAD	41=19,520	37=83,367
BLUE FLAG IRIS	DWARF JOE-PYE WEED	42=21,436	38=87,841
SOFT RUSH	JOE-PYE WEED	43=23,436	39=92,467
ARROW ARUM	SPOTTED TRUMPETWEED	44=25,457	40=97,217
PRIMROSE WILLOW	SCARLET ROSE MALLOW		41=102,127
PICKERELWEED	HALBERDLEAF ROSEMALLOW		41.8=112,224
DUCK POTATO	SEASHORE MALLOW		42=114,560
BULL TONGUE	CARDINAL FLOWER		43=121,558
LIZARD'S TAIL	LONGLEAF LOBELIA		44=127,540
SOFT STEM BULRUSH	GREAT BLUE LOBELIA		45=133,560
THREE-SQUARE BULRUSH	STARRUSH		45.5=166,000
WOOLGRASS	WHITETOP		
GIANT CUTGRASS	NARROW PLUMEGRASS		

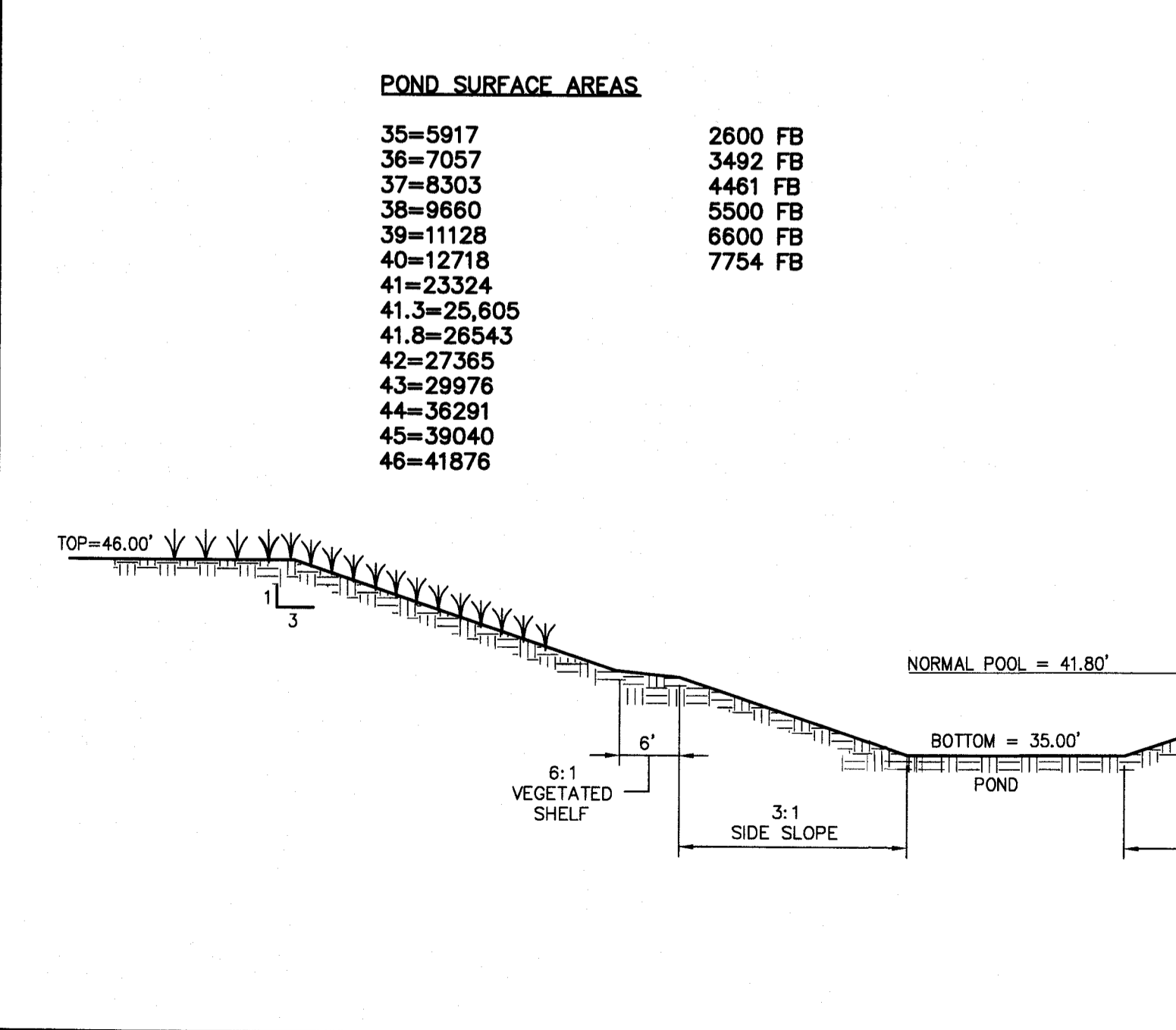
6 DETENTION POND #2 OUTLET STRUCTURE



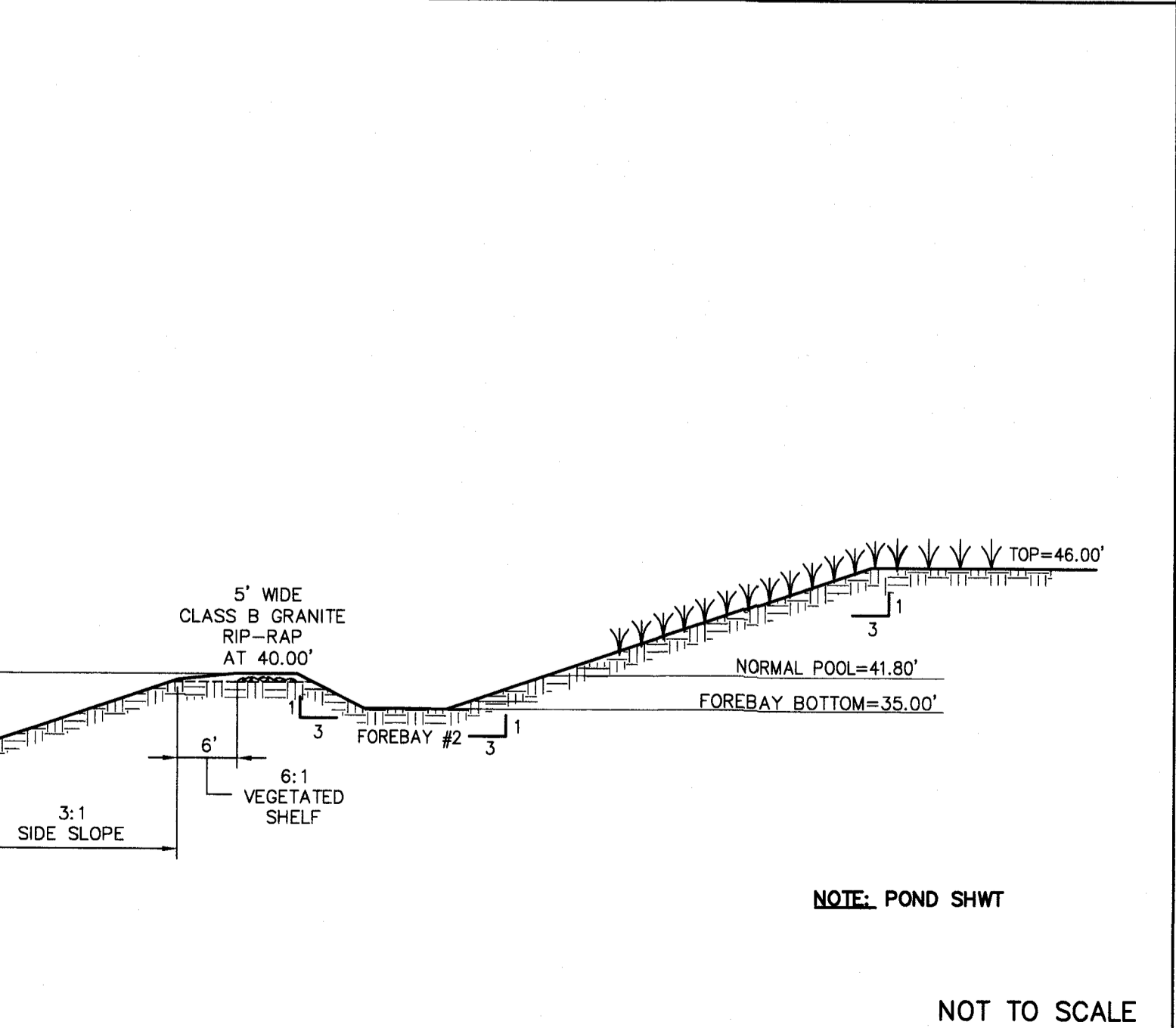
6 DETENTION POND #2 OUTLET STRUCTURE



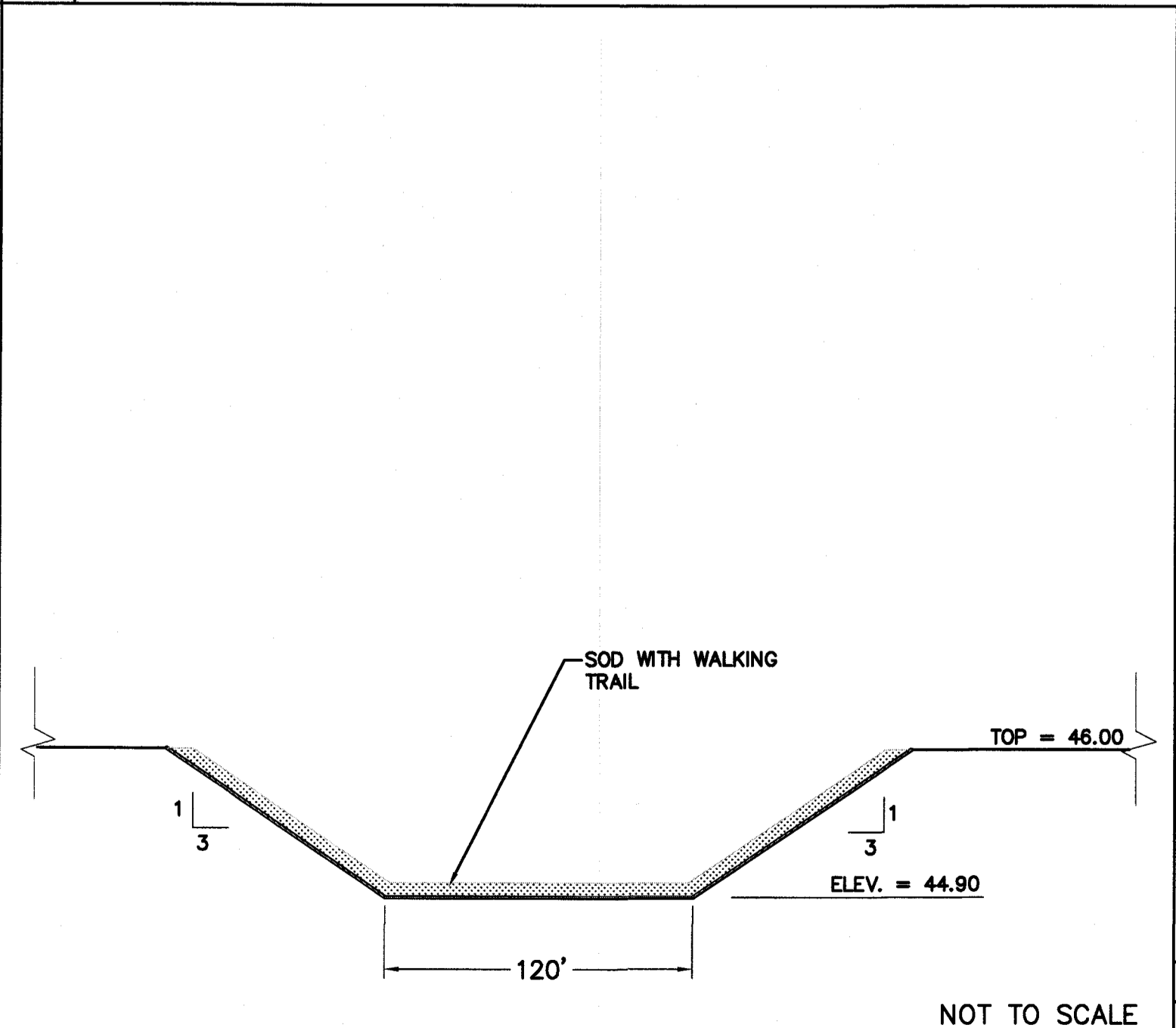
7 BAFFLE DETAIL



8 POND #2 CROSS SECTION



9 EMERGENCY SPILLWAY #2 DETAIL



10 BAFFLE STAKE SPACING DETAIL

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

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

Approved Construction Plan
Name: *Eugene J. ...* Date: *12/18/17*
Planning: *W. ...* Traffic: *W. ...* Fire: *...*

Signed: *[Signature]*

SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
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NOTES AND DETAILS
LIVE OAK BANKING COMPANY 3/FITPARK
1741 TIBURON DRIVE
WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
W. LEE WILLIAMS
EXECUTIVE VICE PRESIDENT
LIVE OAK BANKSHARES, INC.
1741 TIBURON DRIVE
WILMINGTON, NC 28403
910-796-1647
910-790-5868

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASH-LITTLE RIVER RD. NW
WILMINGTON, NC 28403
PHONE: (910) 343-9635

16169
DES. JST
ORD. JPN
DRWL. NKS
DATE 12/18/17

910 MARKET STREET
WILMINGTON, NC 28401
PHONE: (910) 343-9635

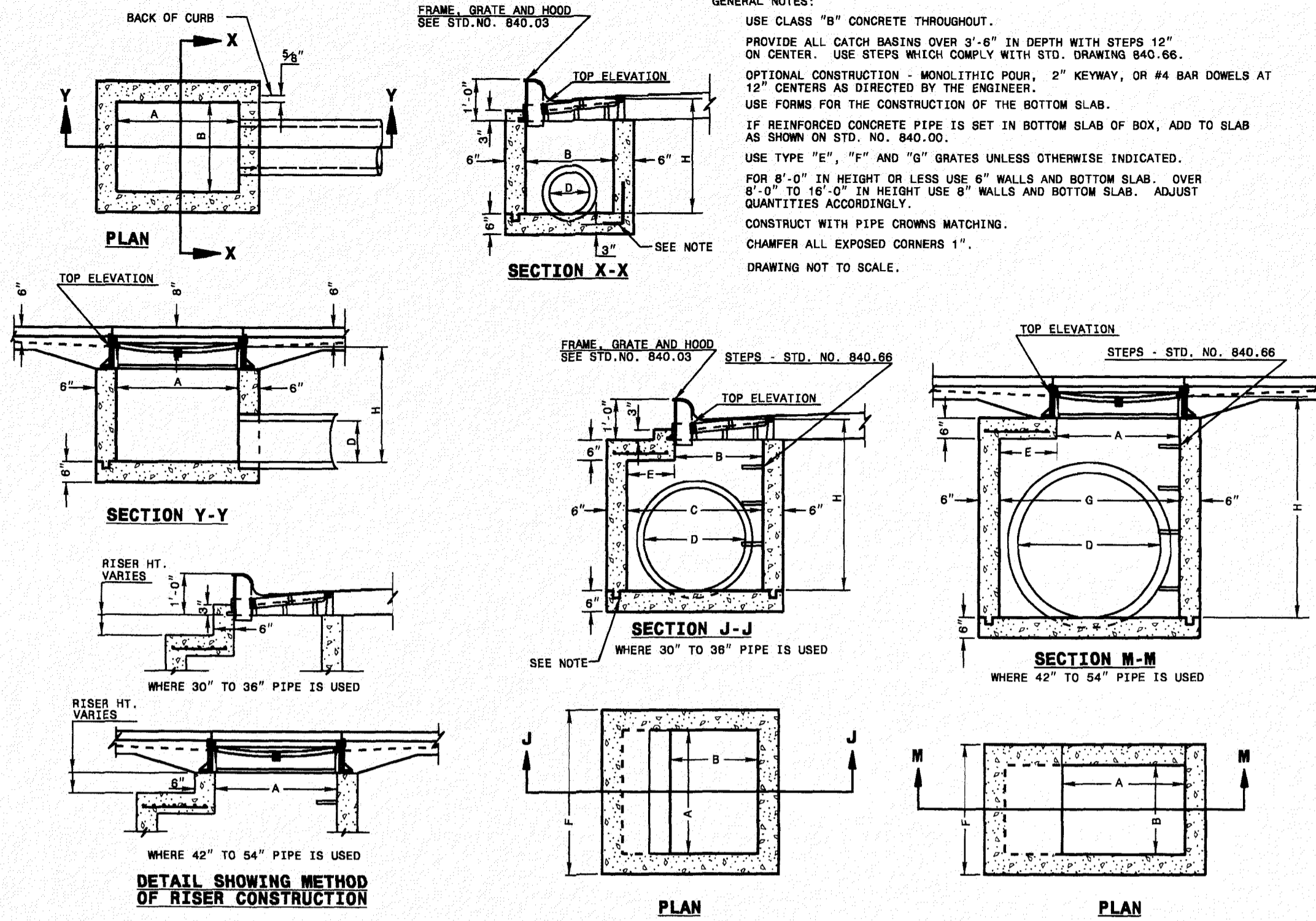
1985
NORTH CAROLINA
Professional Engineer
Eugene J. ...

C8

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 1 OF 2
840.02



GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB, OVER 8'-0" TO 16'-0" IN HEIGHT USE 9" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

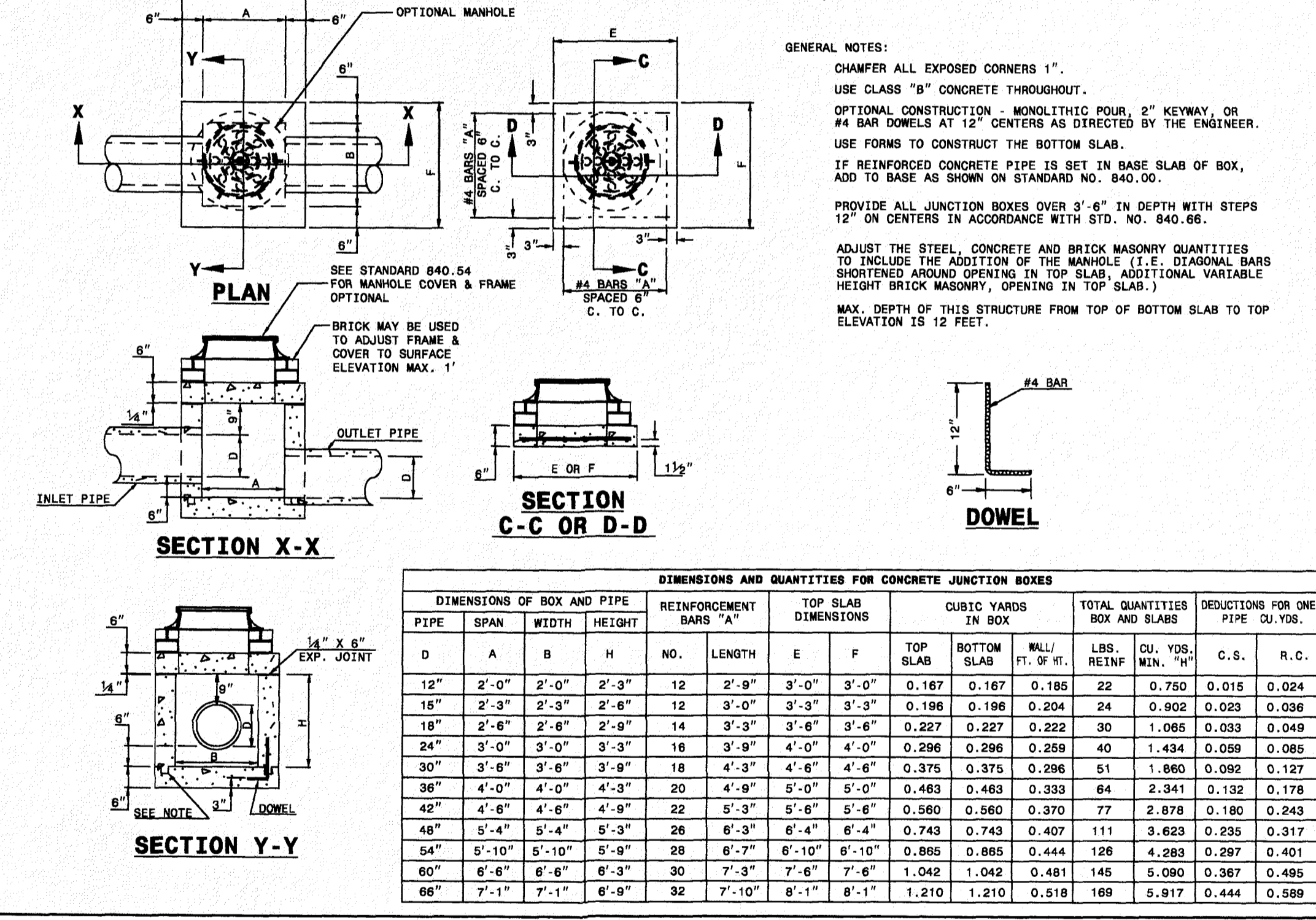
ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 1 OF 2
840.02

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

SHEET 1 OF 1
840.31



GENERAL NOTES:
CHAMFER ALL EXPOSED CORNERS 1".
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.
PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB).
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX		TOTAL QUANTITIES FOR BOX AND SLAB		DEDUCTIONS FOR ONE PIPE (CU. YDS.)				
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	LBS. REIN.	CU. YDS. CONC.	C.S.	R.C.	
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.185	22	0.750	0.015	0.024
16"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.232	30	1.065	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.296	0.296	0.289	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51	1.880	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.407	111	3.623	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"	0.865	0.865	0.444	126	4.283	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145	5.080	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169	5.917	0.444	0.589

STATE OF NORTH CAROLINA
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

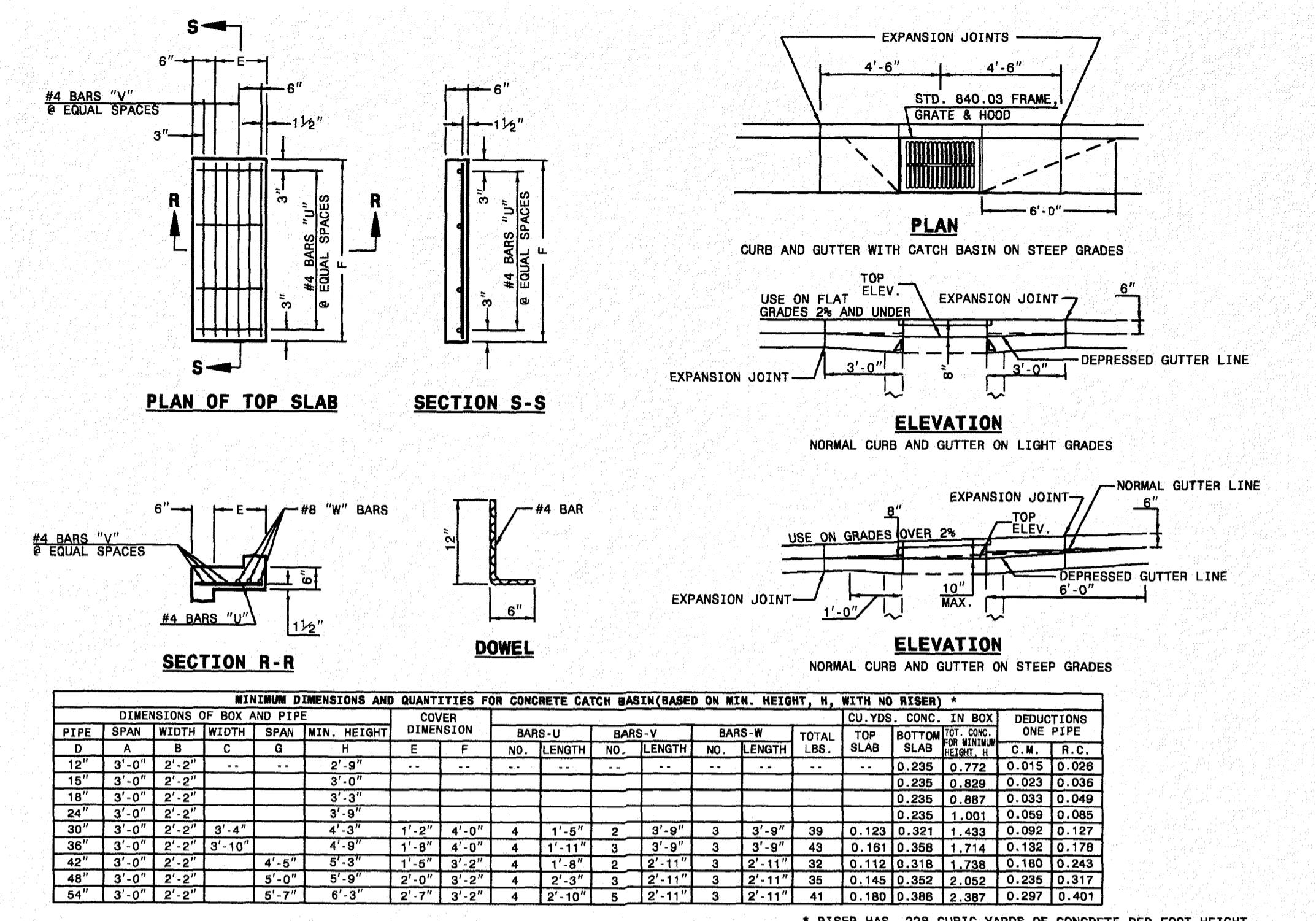
ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

SHEET 1 OF 1
840.31

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 2 OF 2
840.02



MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H, WITH NO RISER) *										COVER		CU. YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE			
PIPE	SPAN	WIDTH	HEIGHT	MIN. HEIGHT	DIMENSION	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
12"	3'-0"	2'-2"	2'-2"	2'-9"	3'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
15"	3'-0"	2'-2"	2'-2"	3'-0"	3'-0"	4	1'-5"	2	3'-9"	3	3'-9"	43	0.181	0.356	1.714	0.132	0.178
18"	3'-0"	2'-2"	2'-2"	3'-0"	3'-0"	4	1'-5"	2	3'-9"	3	3'-9"	32	0.112	0.318	1.298	0.100	0.243
24"	3'-0"	2'-2"	2'-2"	3'-0"	3'-0"	4	1'-5"	2	3'-9"	3	3'-9"	36	0.145	0.392	2.052	0.235	0.317
30"	3'-0"	2'-2"	2'-2"	3'-0"	3'-0"	4	1'-5"	2	3'-9"	3	3'-9"	41	0.180	0.386	2.387	0.297	0.401

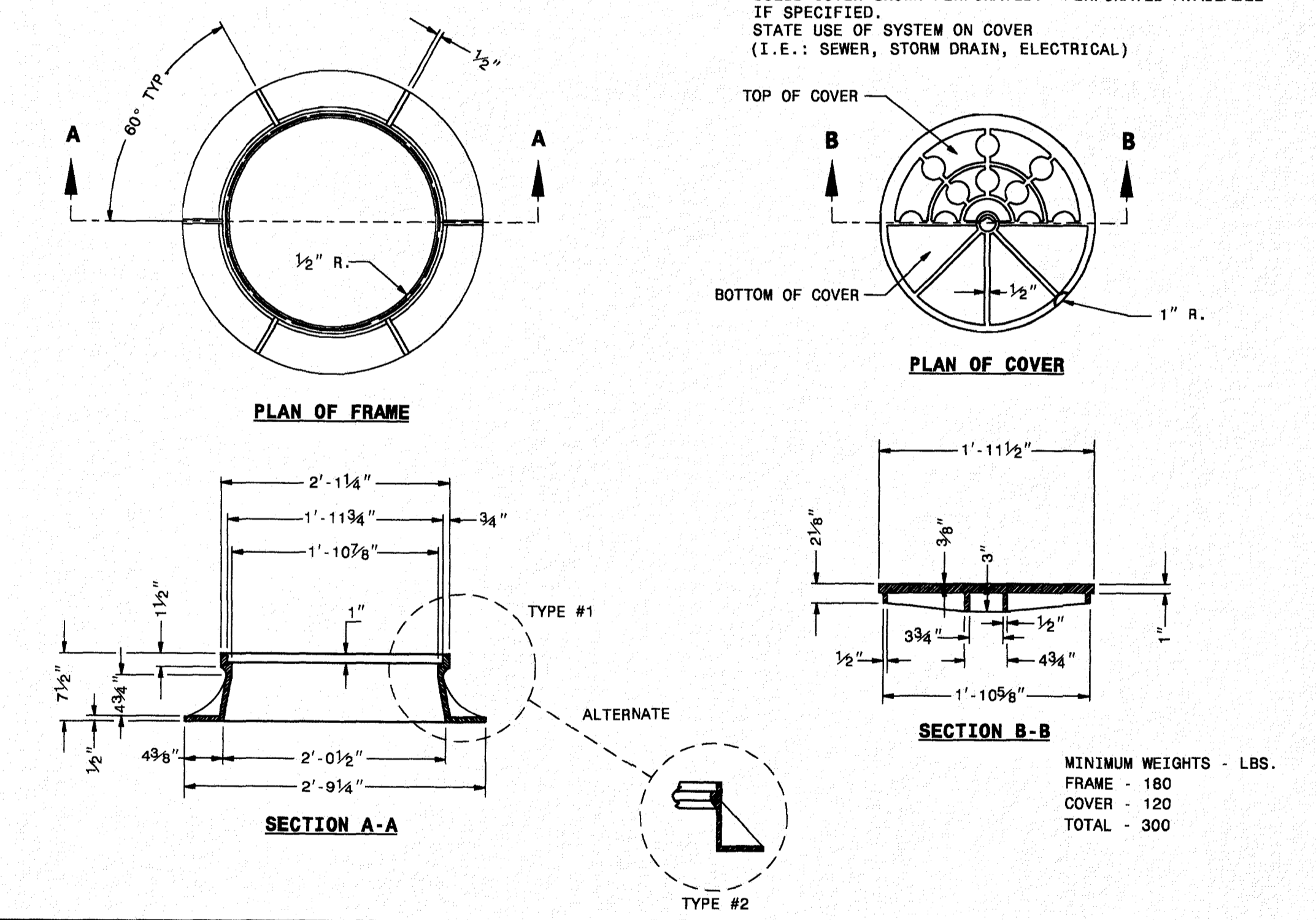
* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

SHEET 2 OF 2
840.02

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
MANHOLE FRAME AND COVER
12" THRU 66" PIPE

SHEET 1 OF 1
840.54



SOLID COVER SHOWN PERFORATED. PERFORATED AVAILABLE IF SPECIFIED.
STATE USE OF SYSTEM ON COVER (I.E.: SEWER, STORM DRAIN, ELECTRICAL)

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
MANHOLE FRAME AND COVER

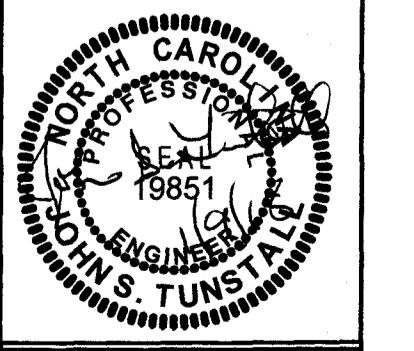
SHEET 1 OF 1
840.54

NOTES AND DETAILS (WITHIN PUBLIC ROW)
LIVE OAK BANKING COMPANY 3/FITPARK
1741 TIBURON DRIVE
WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
W. LEE WILLIAMS
EXECUTIVE VICE PRESIDENT
LIVE OAK BANKSHARES, INC.
1741 TIBURON DRIVE
WILMINGTON, NC 28403
910-798-1647
910-790-5888

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
902 MARKET STREET, 28401
WILMINGTON, NC 28401
PHONE (910) 345-9653
1429 ASH-LITTLE RIVER RD. NW
WILMINGTON, NC 28403
PHONE (910) 351-5900

Licence #C-3641
16169
DES. JST
ORD. JPN
DRWL. NKS
DATE 1/3/18



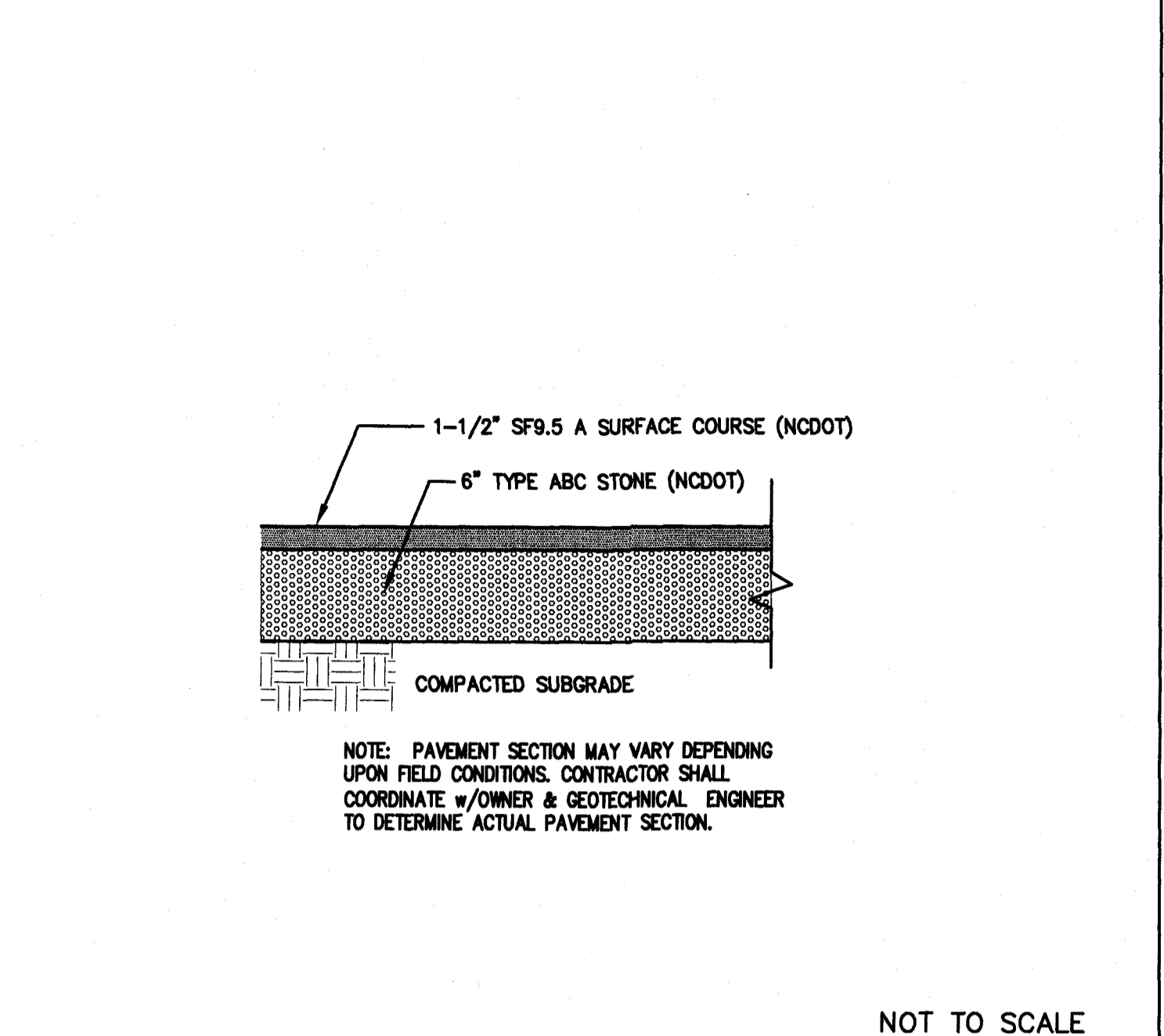
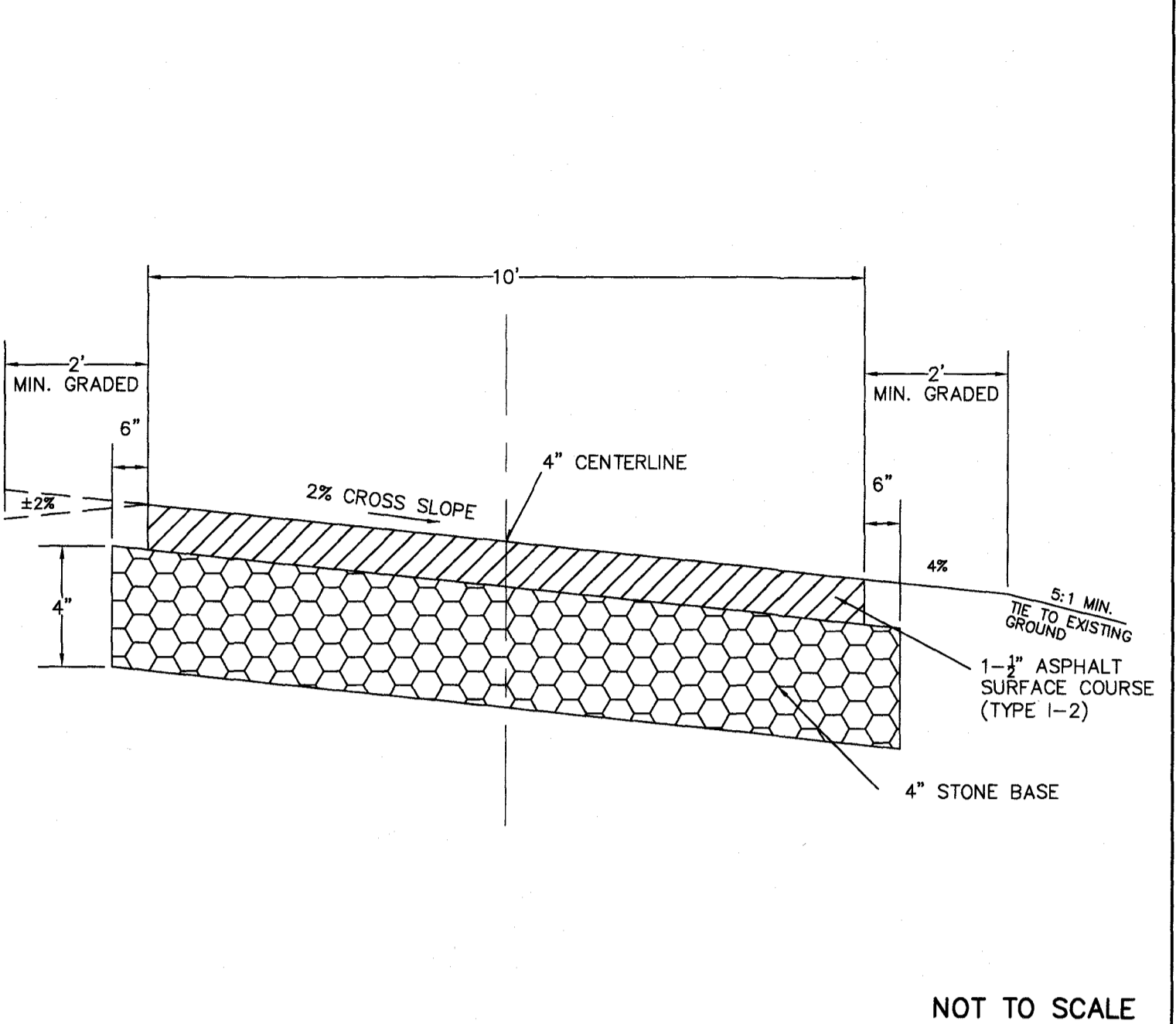
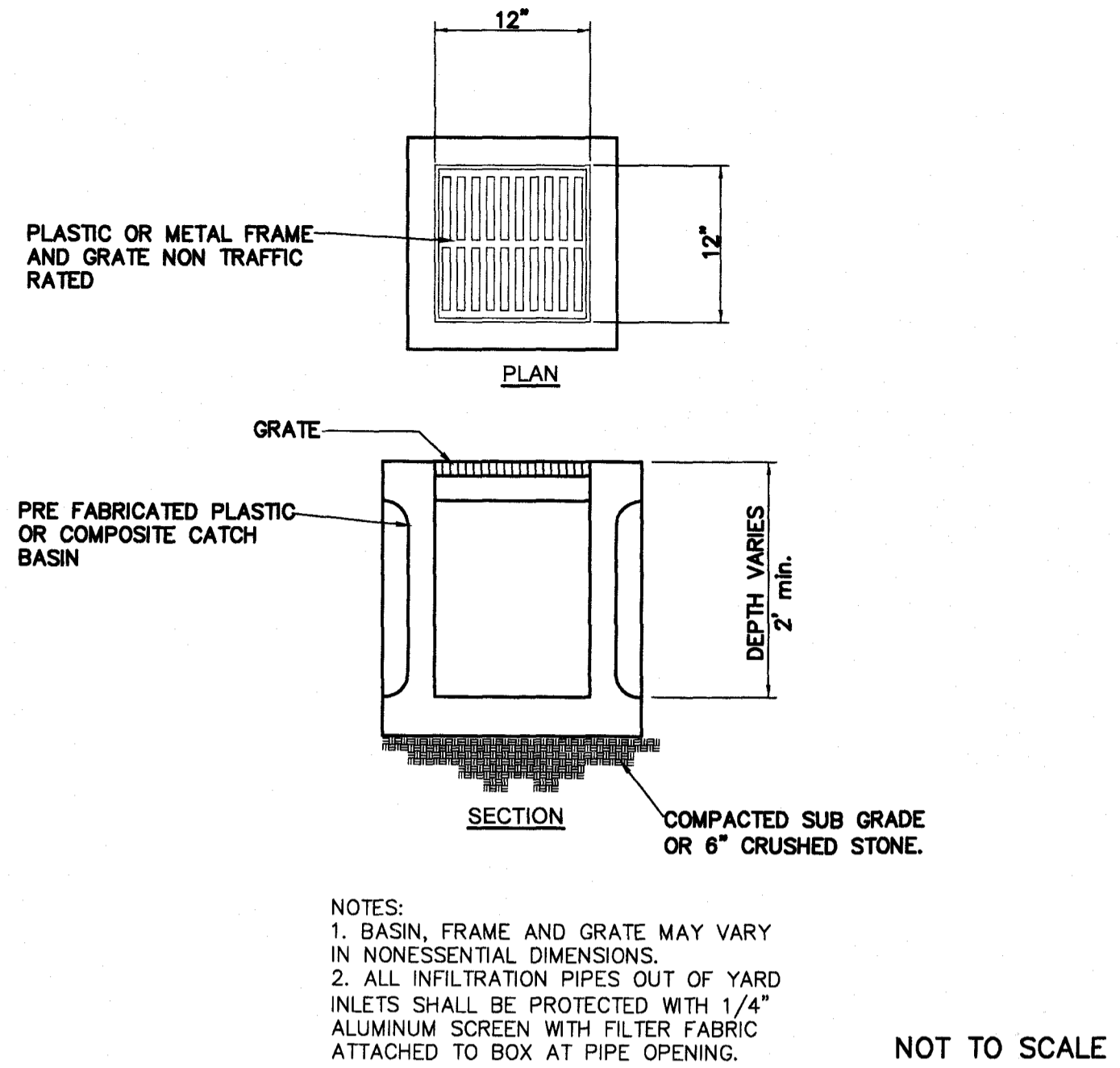
C8.1

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date 2/8/18 Permit # 201103423
Signed: [Signature]

Approved Construction Plan
Name: [Name] Date: [Date]
Planning: [Signature] 2/1/18
Traffic: [Signature] 2-5-18
Fire: [Signature] 2-6-18

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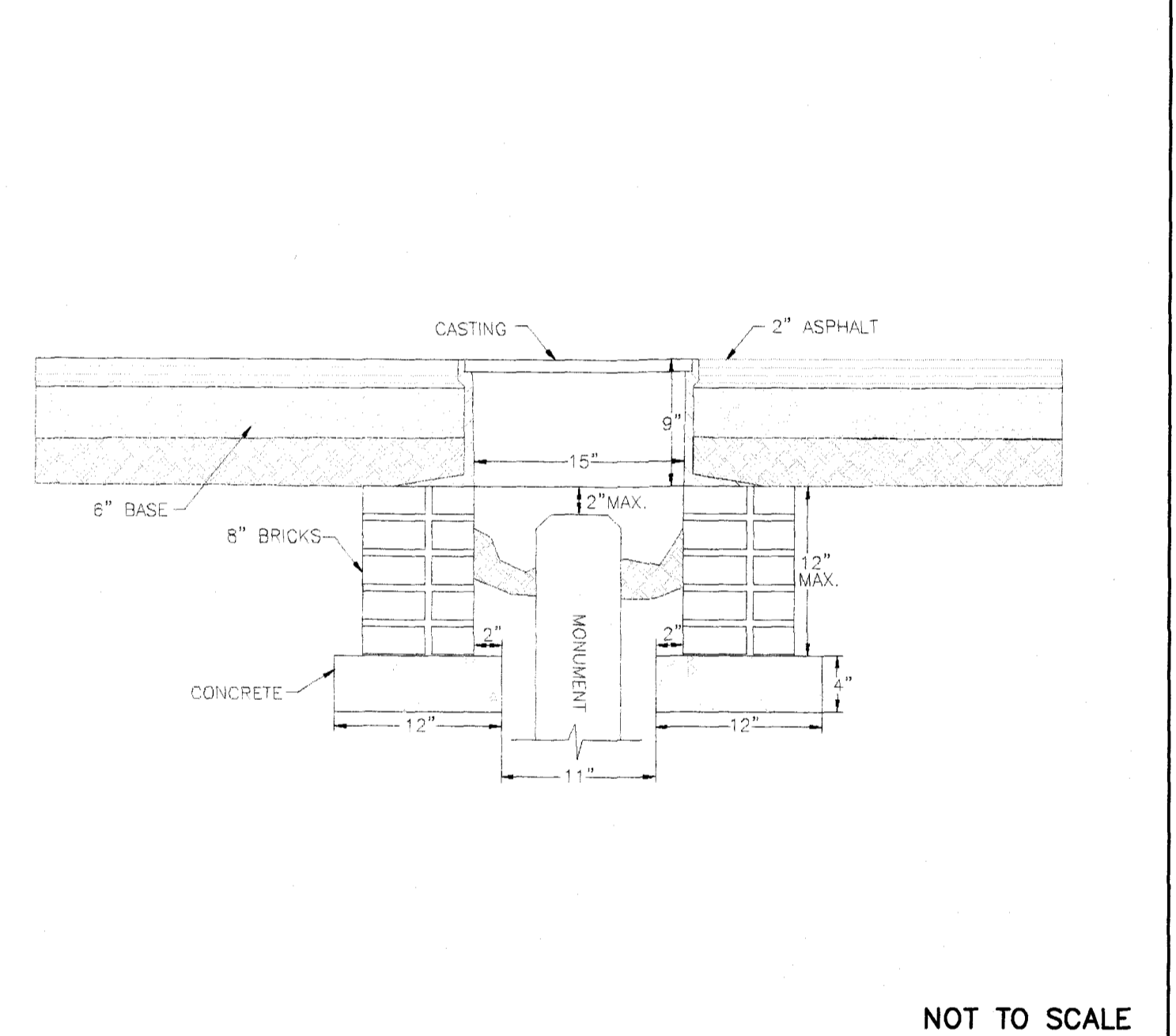
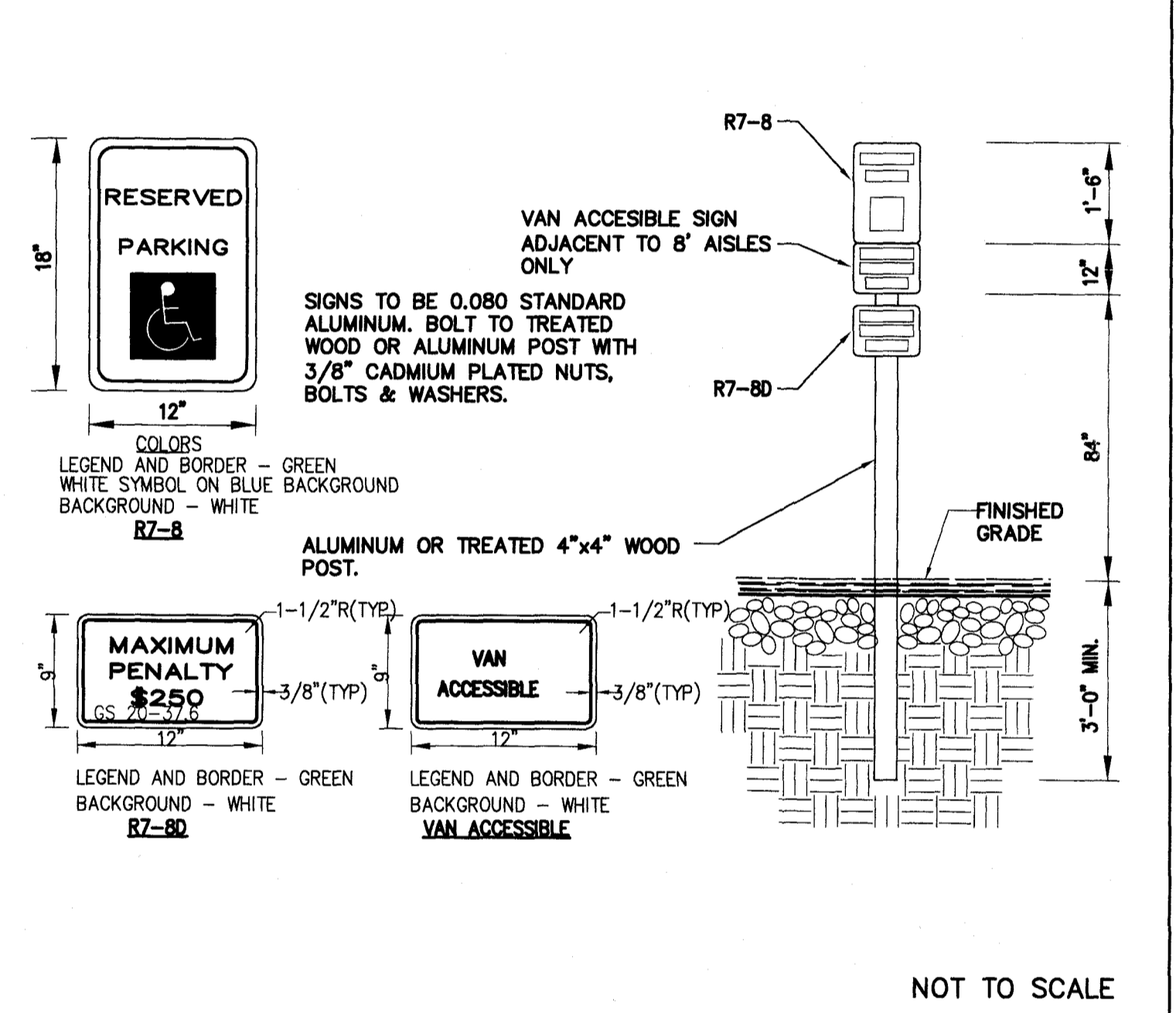
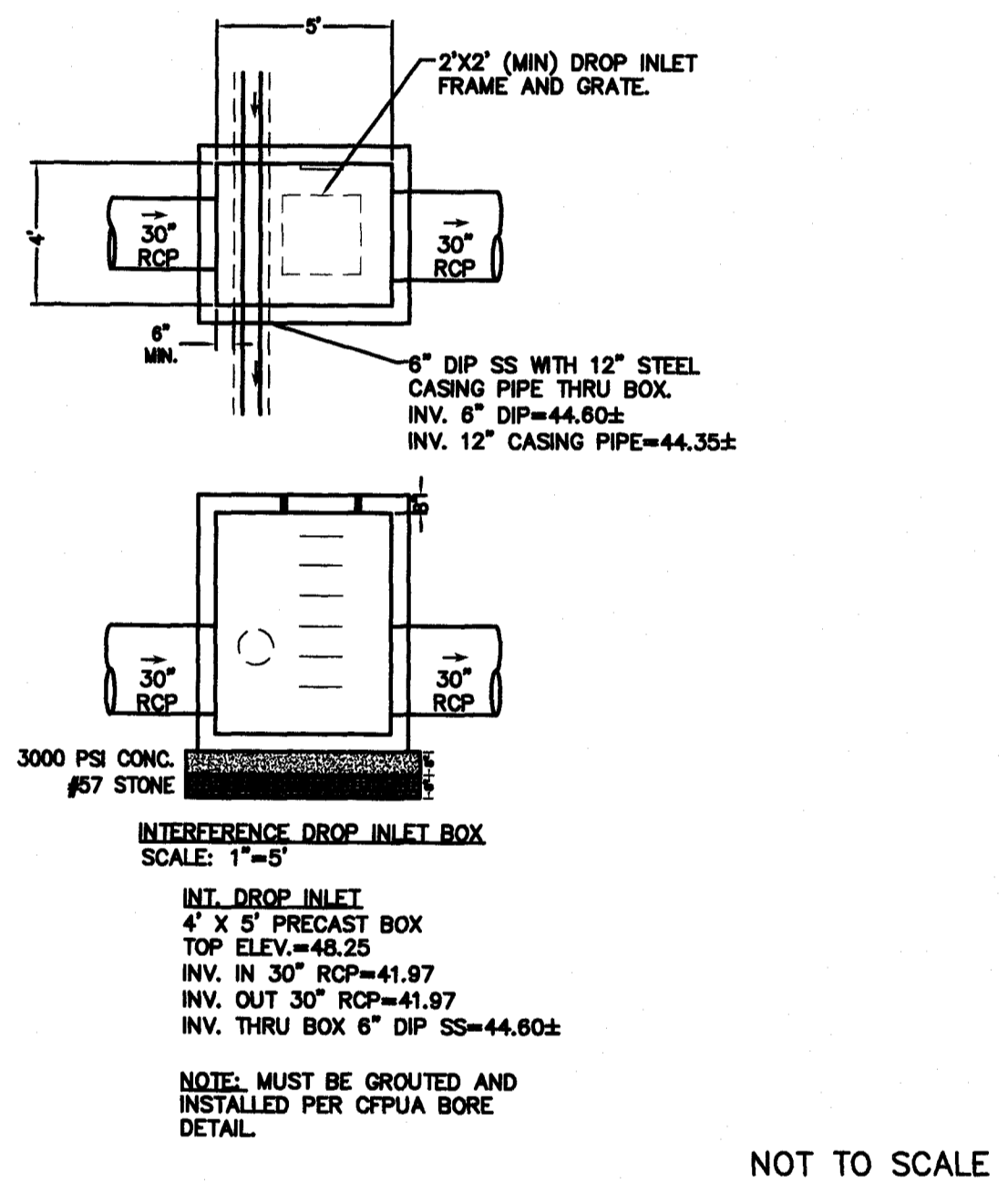
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



1 YARD INLET DETAIL

2 MULTI-USE PATH (MUP) TYPICAL SECTION

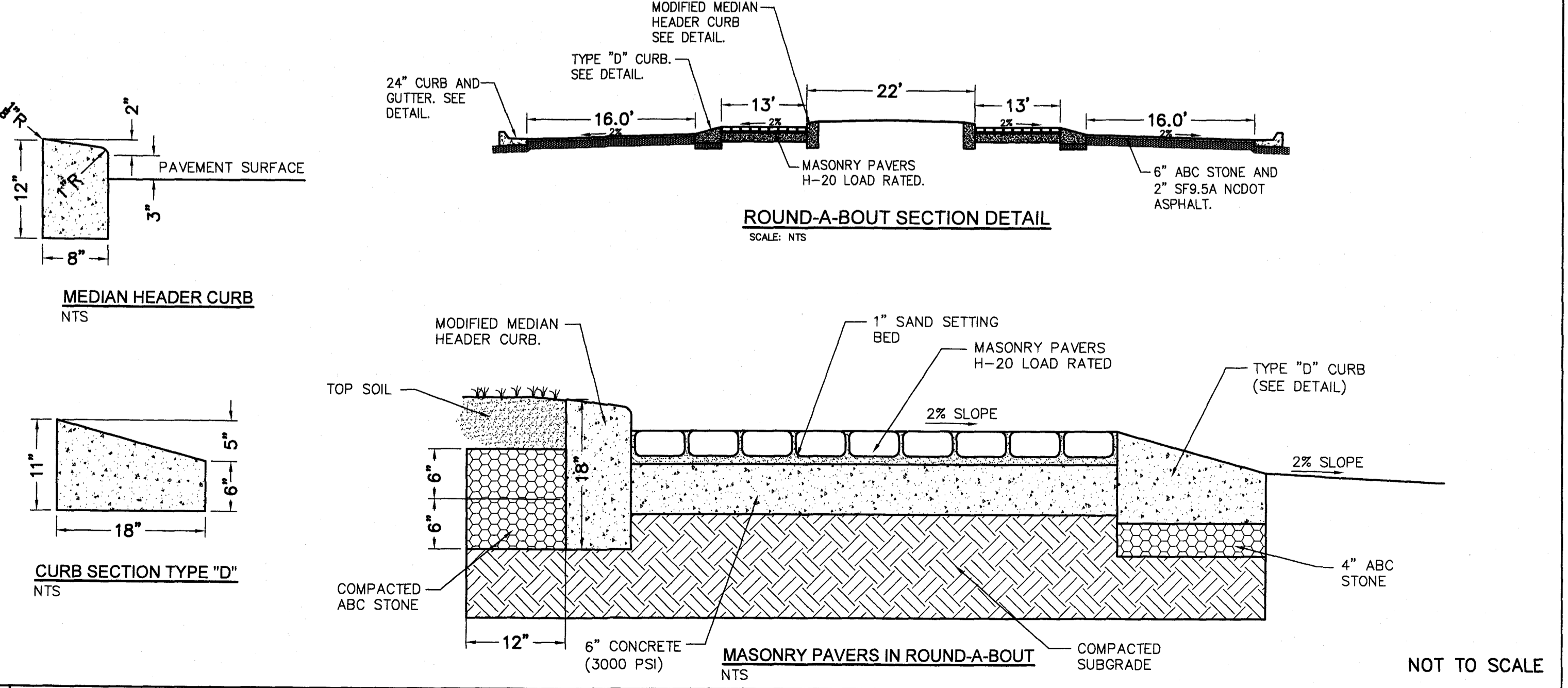
3 ASPHALT PAVEMENT SECTION FOR BASKETBALL COURT



4 INTERFERENCE DROP INLET DETAIL

5 TYPICAL HANDICAPPED SIGN DETAIL

6 COW MONUMENT BASE DETAIL



7 ROUND-A-BOUT DETAIL

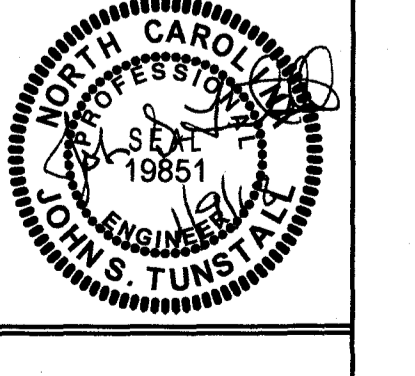
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NOTES AND DETAILS
 LIVE OAK BANKING COMPANY 3/FITPARK
 1741 TIBURON DRIVE
 WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
 W. LEE WILLIAMS
 EXECUTIVE VICE PRESIDENT
 LIVE OAK BANKSHARES, INC.
 1741 TIBURON DRIVE
 WILMINGTON, NC 28403
 910-796-1647
 910-790-5868

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 902 MARKET STREET
 WILMINGTON, NC 28401
 PHONE (910) 343-9653
 1429 ASH-LITTLE RIVER RD. NW
 ASH, NC 28420
 PHONE (910) 287-5900

Licence #C-3641
16169
 DES. JUST
 C.D. JPN
 DRWL. NKS
 DATE 1/3/18

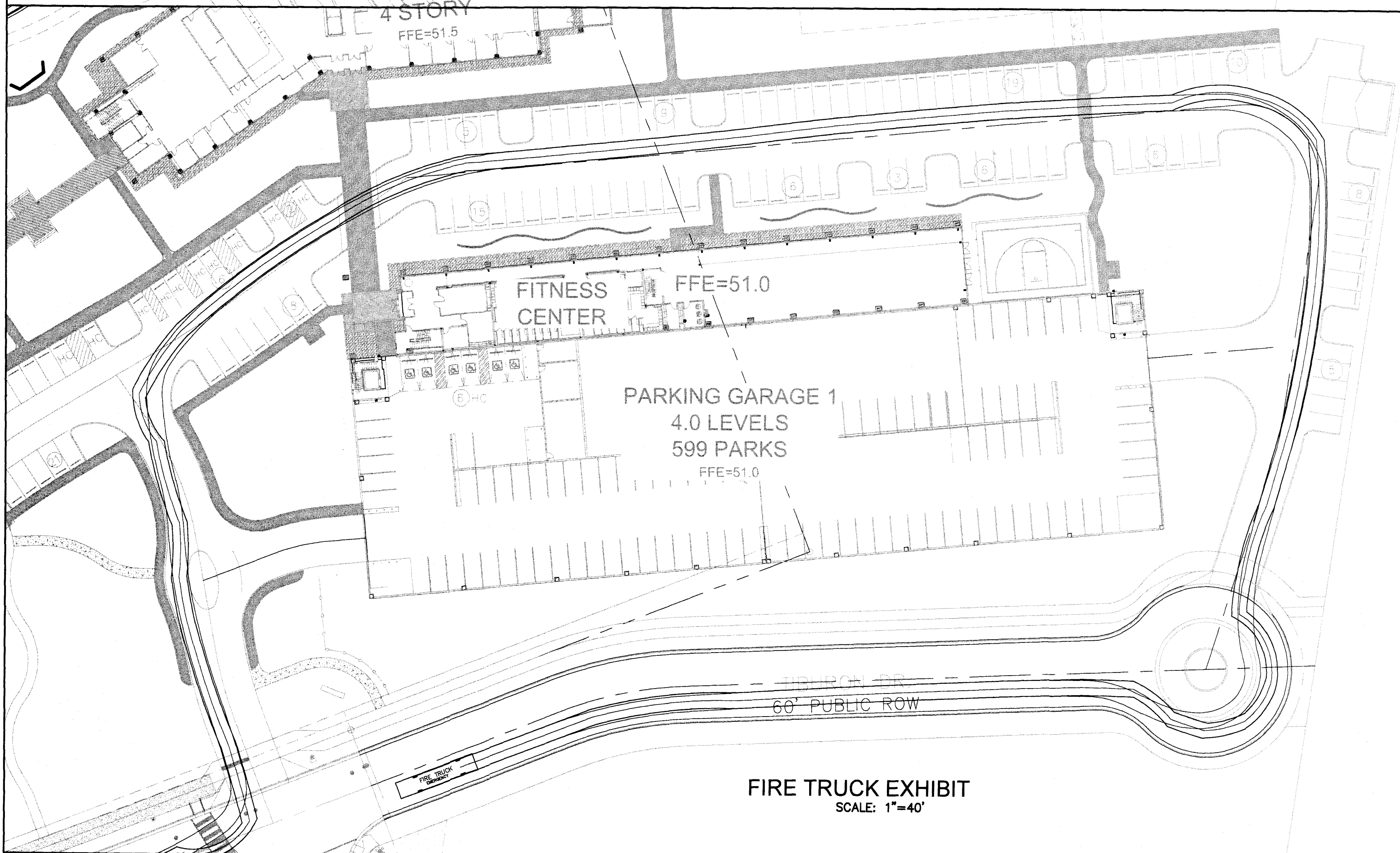
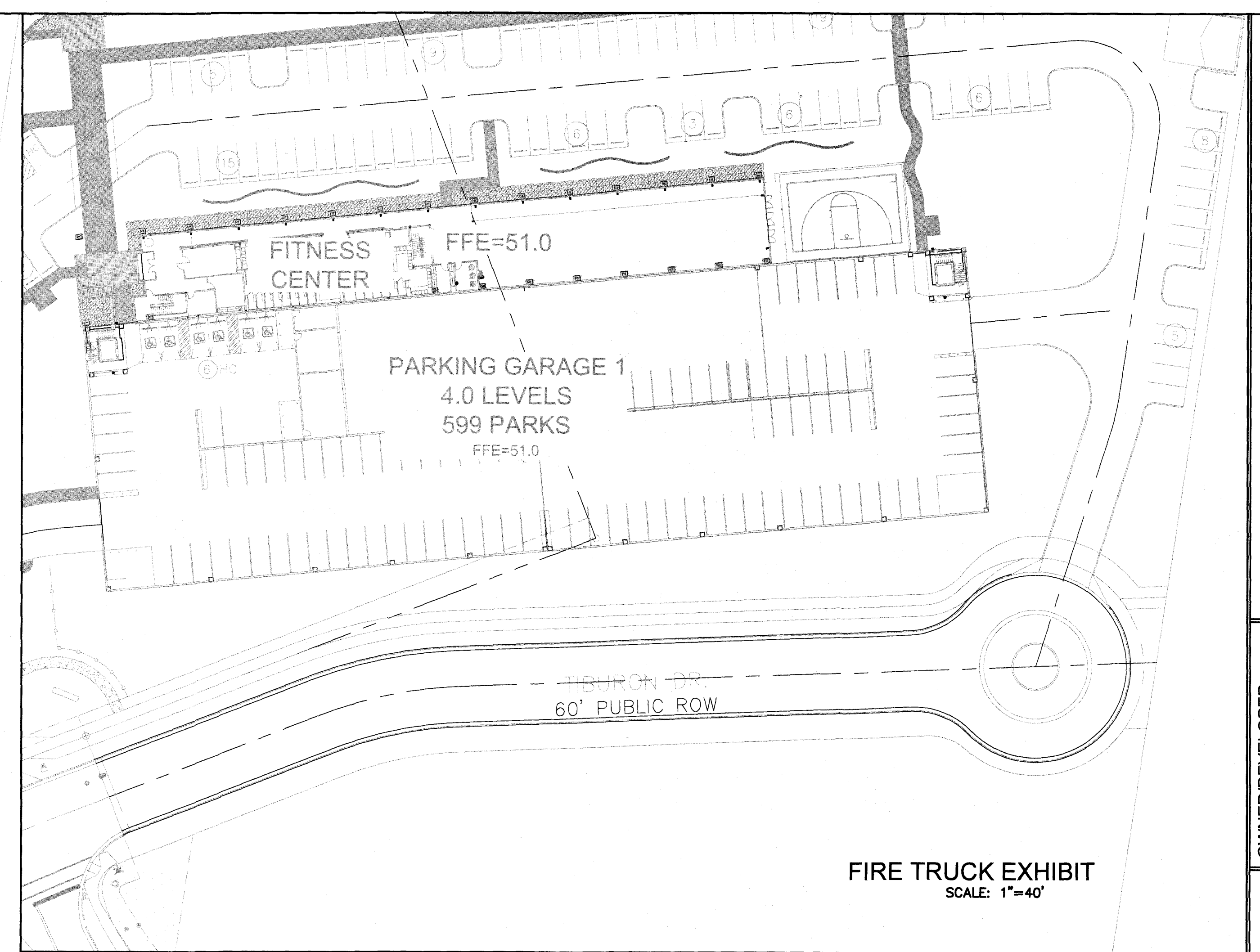
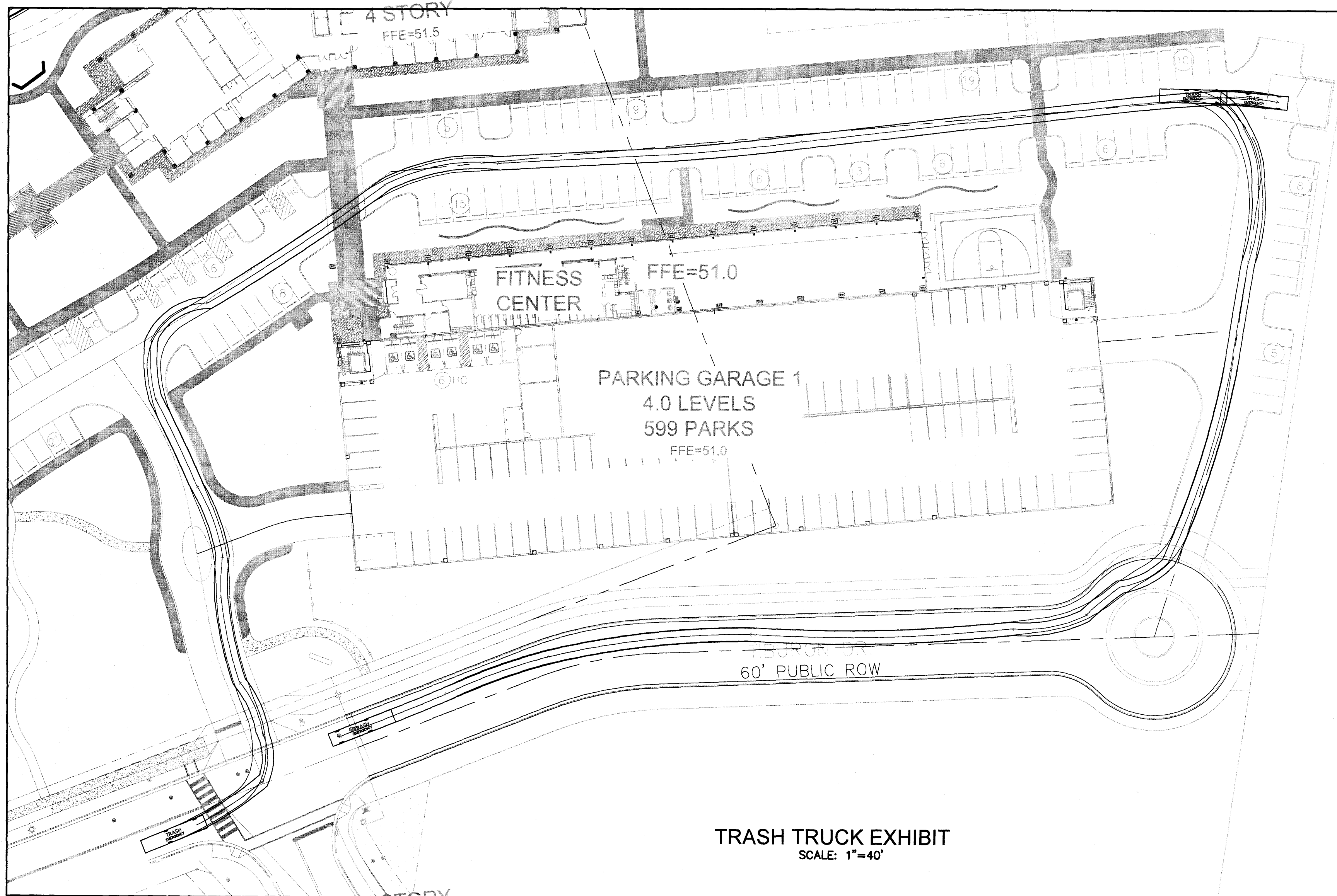


CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 2/8/18 Permit # 2011034R3
 Signed: *[Signature]*

Approved Construction Plan
 Name: *[Signature]* Date: 2/1/18
 Planning: *[Signature]*
 Traffic: *[Signature]* 2-5-18
 Fire: *[Signature]* 2-6-18

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

C9

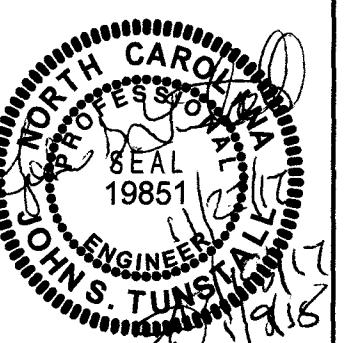


VEHICLE EXHIBIT
LIVE OAK BANKING COMPANY 3/FITPARK
1741 TIBURON DRIVE
WILMINGTON, NORTH CAROLINA 28403

OWNER/DEVELOPER
W. LEE WILLIAMS
EXECUTIVE VICE PRESIDENT
LIVE OAK BANKSHARES, INC.
1741 TIBURON DRIVE
WILMINGTON, NC 28403
910-796-1647
910-790-5688

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1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
PHONE (910) 287-5900
902 MARKET STREET
WILMINGTON, NC 28401
PHONE (910) 343-9633

Licence #C-3641
16169
DES. JST
CHK. JPN
DRWN. NKS
DATE 11/27/17



C10

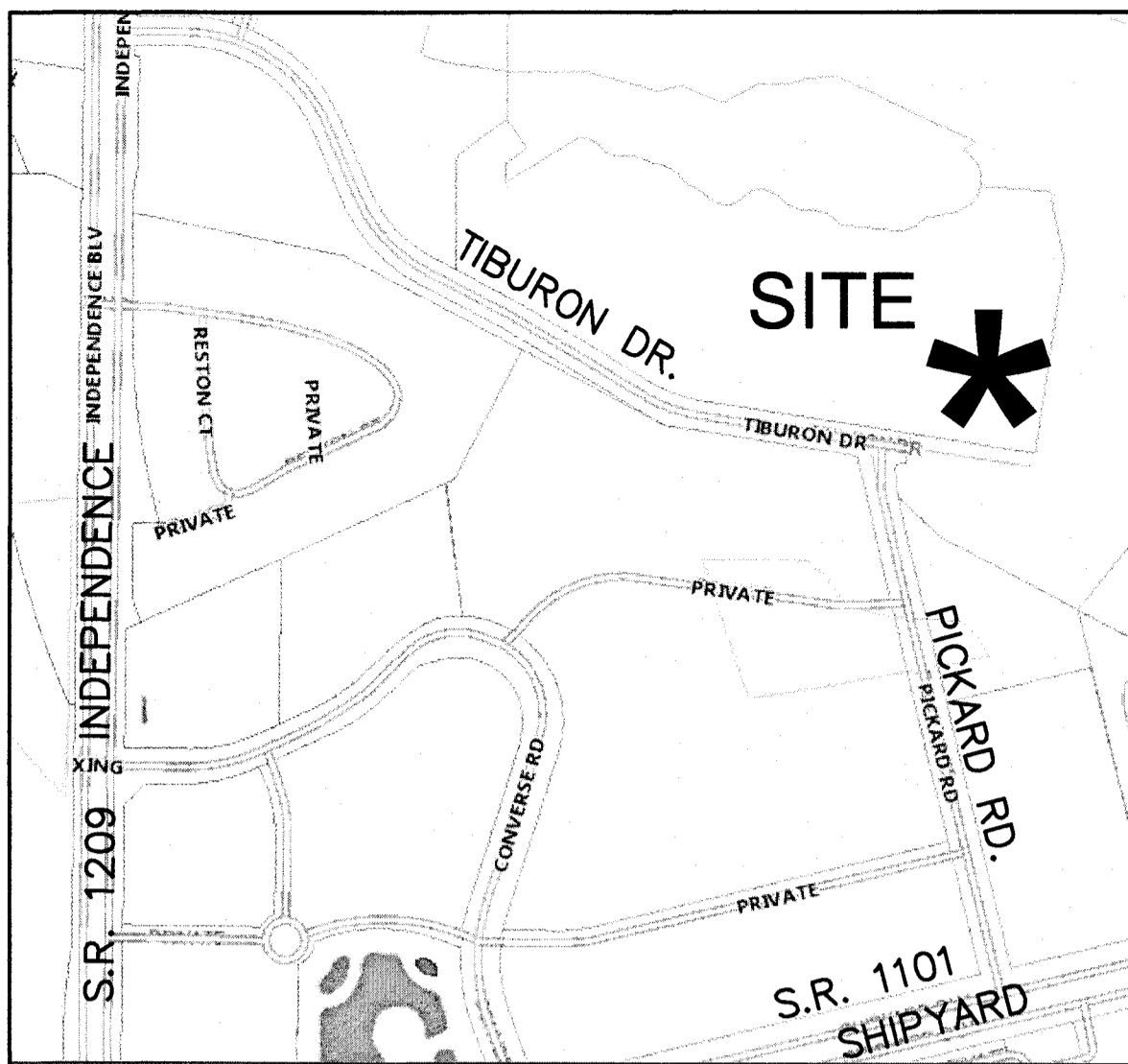
CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 2/8/18 Permit # 2011034R3
Signed: *[Signature]*

Approved Construction Plan
Name: *[Signature]* Date: 2/1/18
Planning: *[Signature]*
Traffic: *[Signature]*
Fire: *[Signature]*

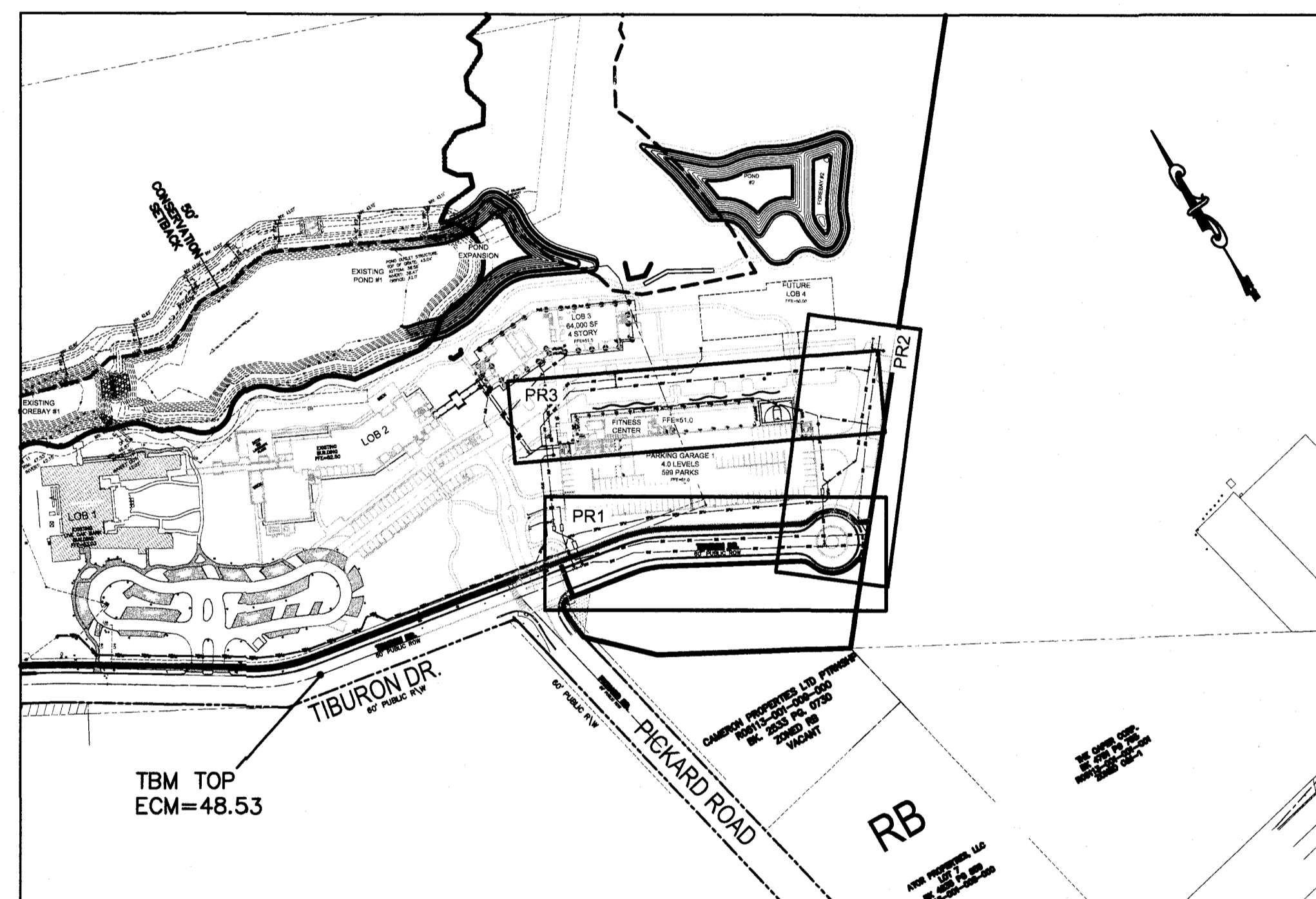
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

LIVE OAK BANKING COMPANY 3/FITPARK

WILMINGTON, NC
NEW HANOVER COUNTY



LOCATION MAP NTS



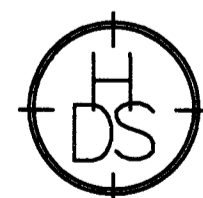
SCALE: 1" = 200'



OWNER/DEVELOPER
W. LEE WILLIAMS
EXECUTIVE VICE PRESIDENT
LIVE OAK BANCSHARES, INC.
1741 TIBURON DRIVE
WILMINGTON, NC 28403
910-796-1647
910-790-5868

SITE SURVEYOR:
HANOVER DESIGN SERVICES, P.A.
LAND SURVEYORS ENGINEERS LAND PLANNERS

1123 FLORAL PARKWAY
WILMINGTON, N.C. 28403
PHONE: 910 343-8002
FAX: 910 343-9941



CITY OF
WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 2/8/18 Permit # 2011034R3
Signed: *[Signature]*

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

NCDENR PWSS WATER PERMIT # _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT # _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

Approved Construction Plan
Name _____ Date _____
Planning: *[Signature]* 2/1/18
Traffic: *[Signature]* 2-5-18
Fire: *[Signature]* 2-6-18

INDEX OF SHEETS

COVER SHEET
PR1: WATER/SEWER/ROAD PLAN AND PROFILE LINE 1
PR2: WATER/SEWER PLAN AND PROFILE LINE 2
PR3: WATER PLAN AND PROFILE LINE 3
WSD-1 CFPWA WATER DISTRIBUTION SYSTEM STANDARD DETAILS
WSD-2 CFPWA WATER DISTRIBUTION SYSTEM STANDARD DETAILS
SSD-1: SANITARY SEWER STANDARD DETAILS
SSD-2: SANITARY SEWER STANDARD DETAILS
SSD-3: SANITARY SEWER STANDARD DETAILS

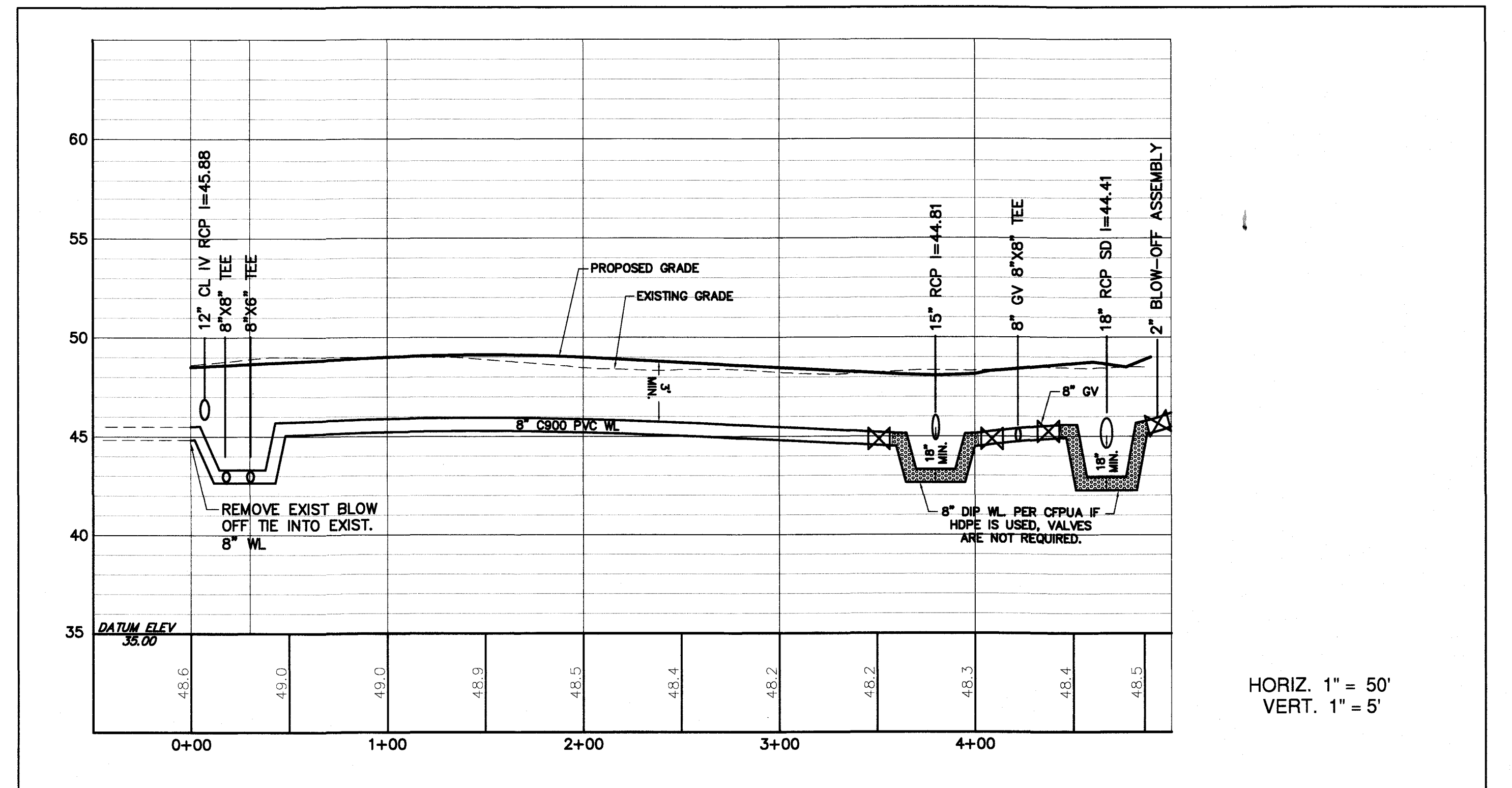
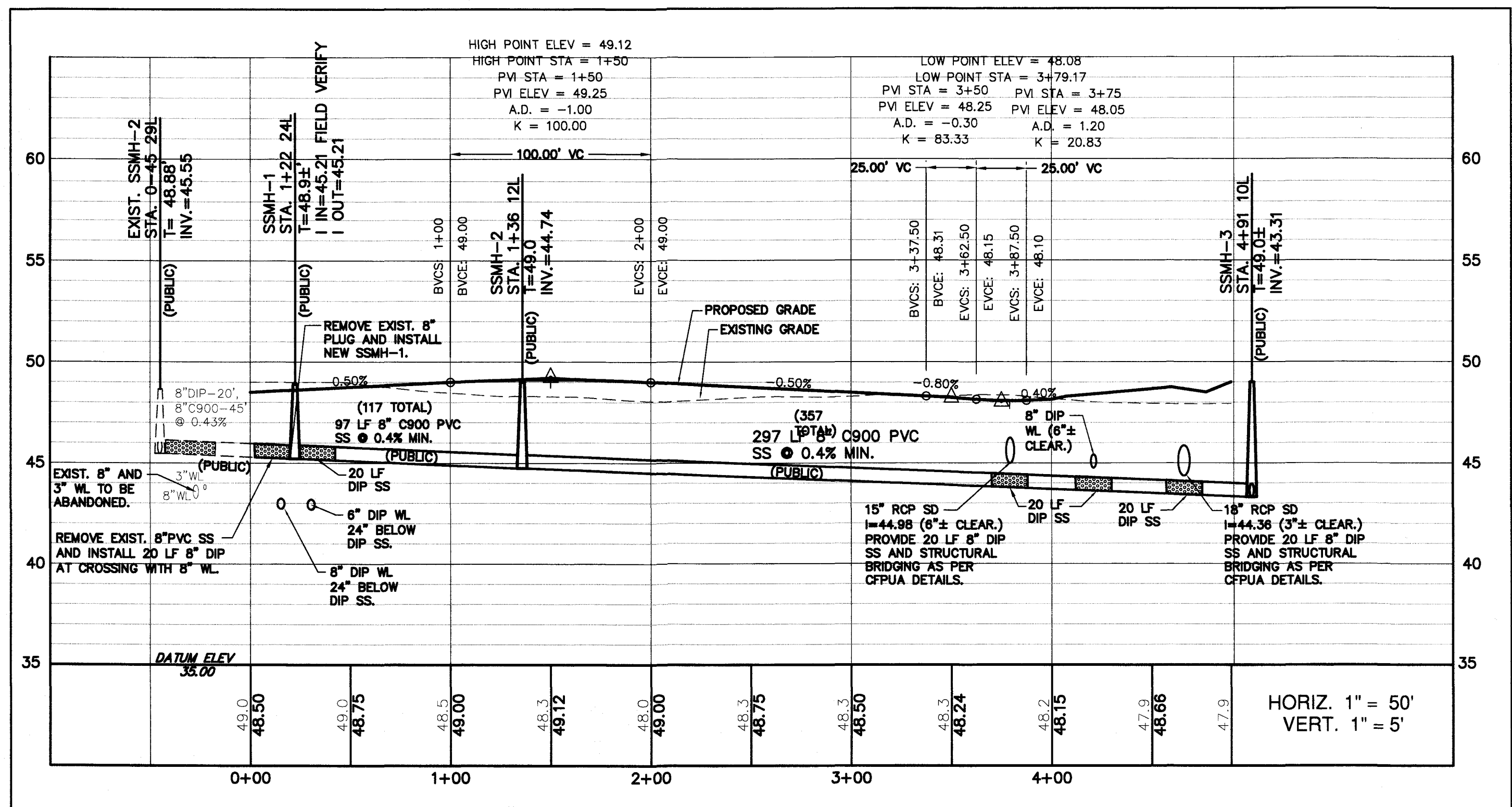
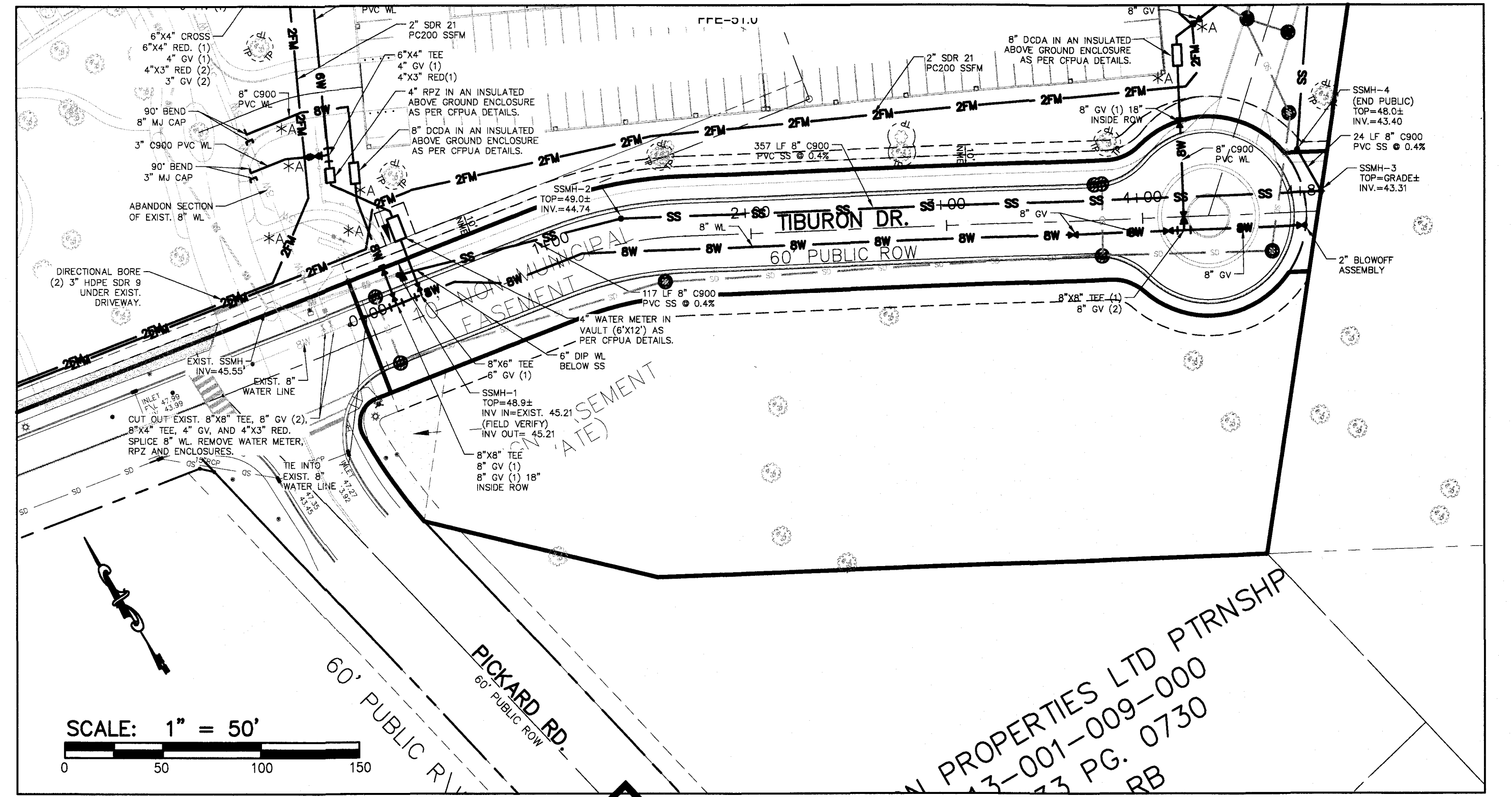
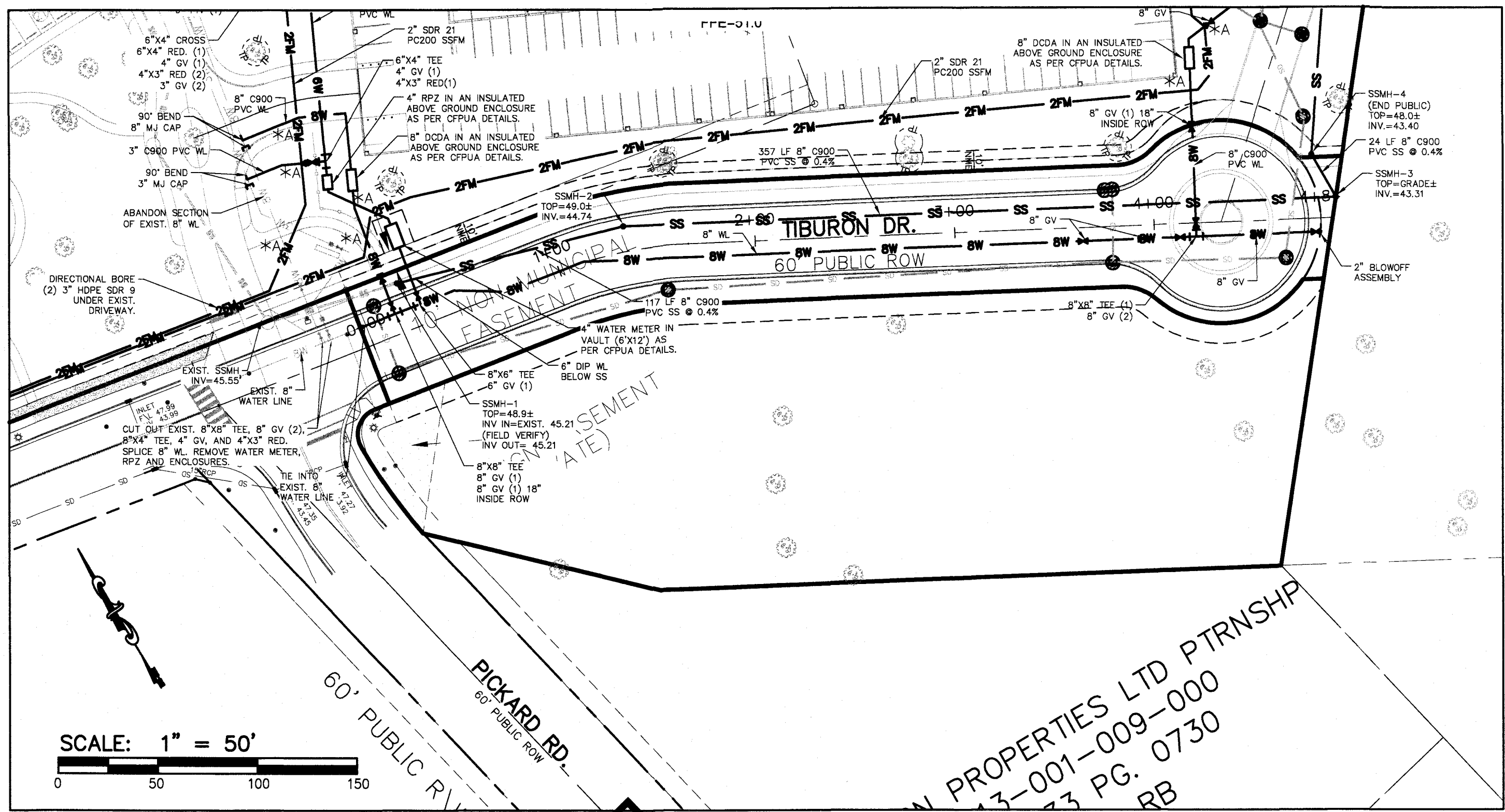
PUBLIC WATER:
546 LF 8" WATER LINE
30 LF 6" WATER LINE

PUBLIC SEWER:
505 LF 8" SEWER LINE

PRIVATE WATER:
1,078 LF 8" WATER LINE
490 LF 6" WATER LINE SERVICES
365 LF 4" WATER LINE SERVICES
241 LF 3" WATER LINE SERVICES

PRIVATE SEWER:
293 LF 8" SANITARY SEWER
652 LF 6" SANITARY SEWER SERVICES
2,463 LF 2" SEWER FORCEMAIN SERVICES

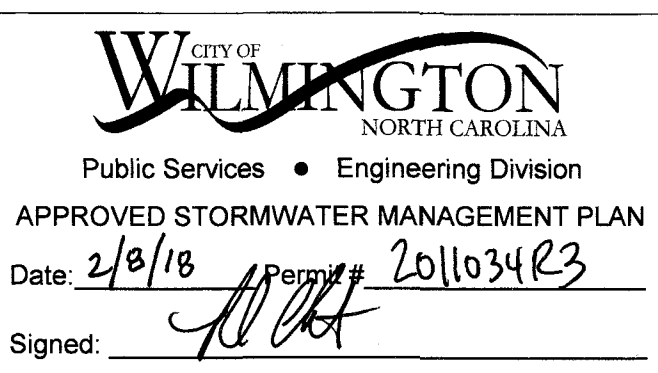
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CONSULTING ENGINEERS P.C.
902 MARKET STREET WILMINGTON, NC 28401
PHONE (910) 343-9653
1429 ASH-LITTLE RIVER RD. NW ASH, NC 28420
PHONE (910) 287-5900



SANITARY SEWER AND ROAD PROFILE LINE 1

WATER LINE PROFILE LINE 1

CFPUA STANDARD SEWER NOTES:
 1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
 2. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
 3. ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50 DIP WITH PROTECTO 401 CERAMIC EPOXY LINING.
 4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
 5. NO FLEXIBLE COUPLINGS SHALL BE USED.
 6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.
 7. 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.

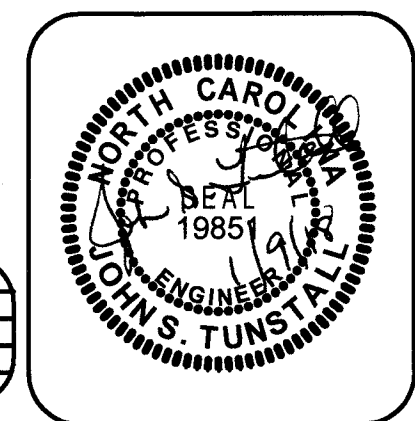


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NCDENR PWSS WATER PERMIT #: _____ GPD
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT #: _____ GPD
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

Approved Construction Plan
 Name: _____ Date: _____
 Planning: [Signature] 2-11-18
 Traffic: [Signature] 2-5-18
 Fire: [Signature] 2-6-18

REV NO.	DESCRIPTION	DATE

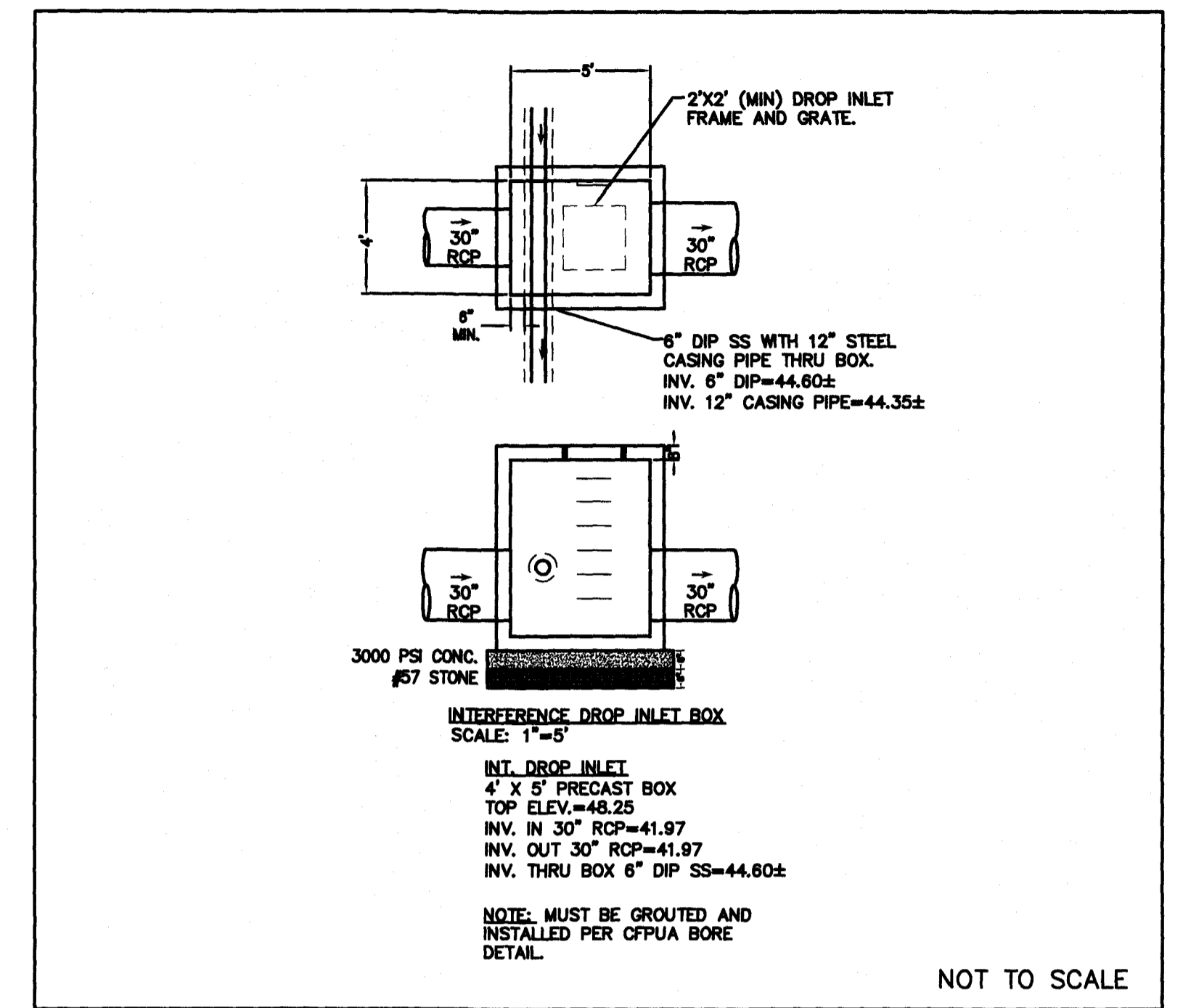
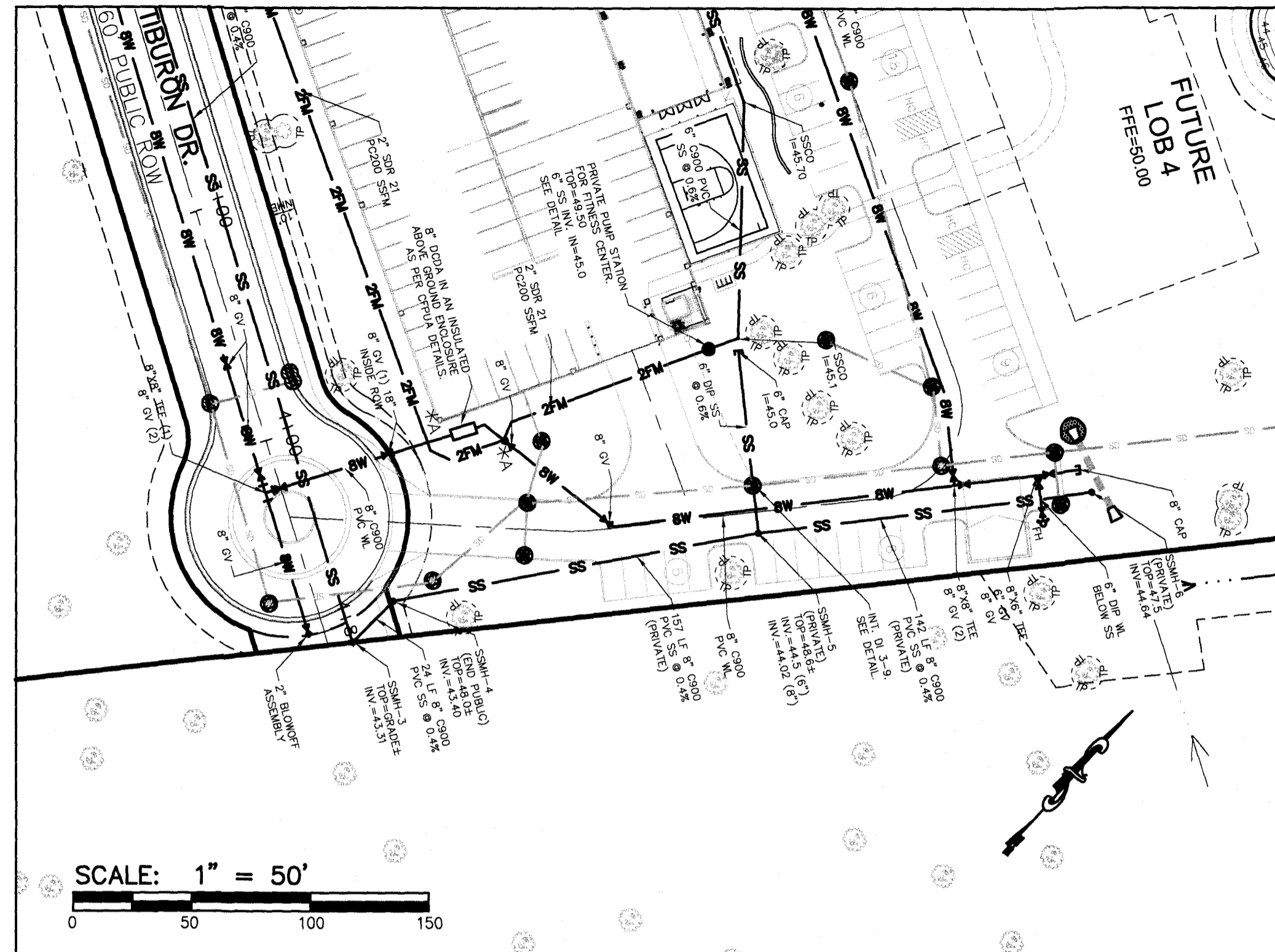
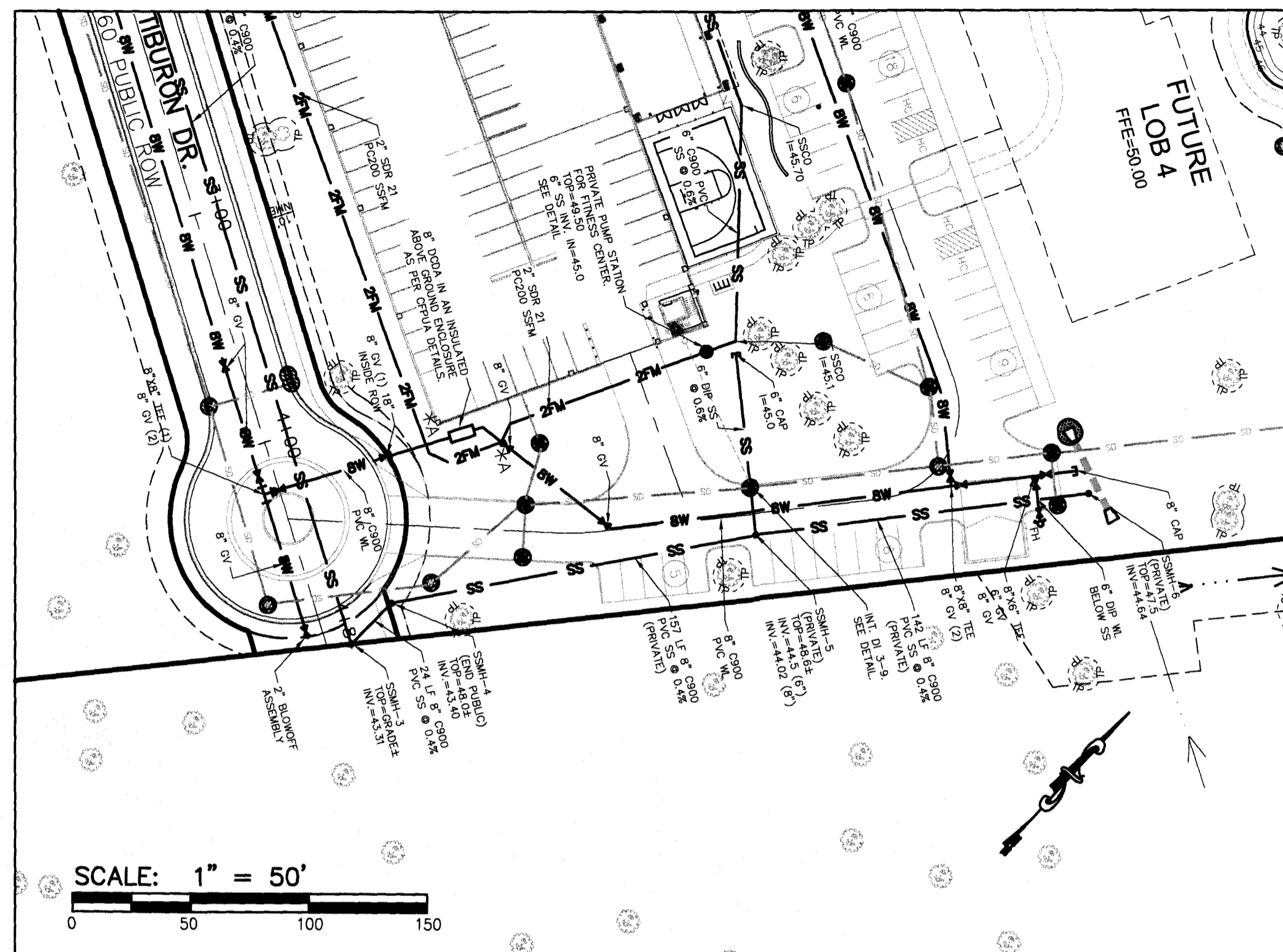


NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 902 MARKET STREET WILMINGTON, NC 28401
 1429 ASH-LITTLE RIVER RD. NW ASH, NC 28420
 PHONE: (910) 343-9653 License: RC-3641 PHONE: (910) 287-5900

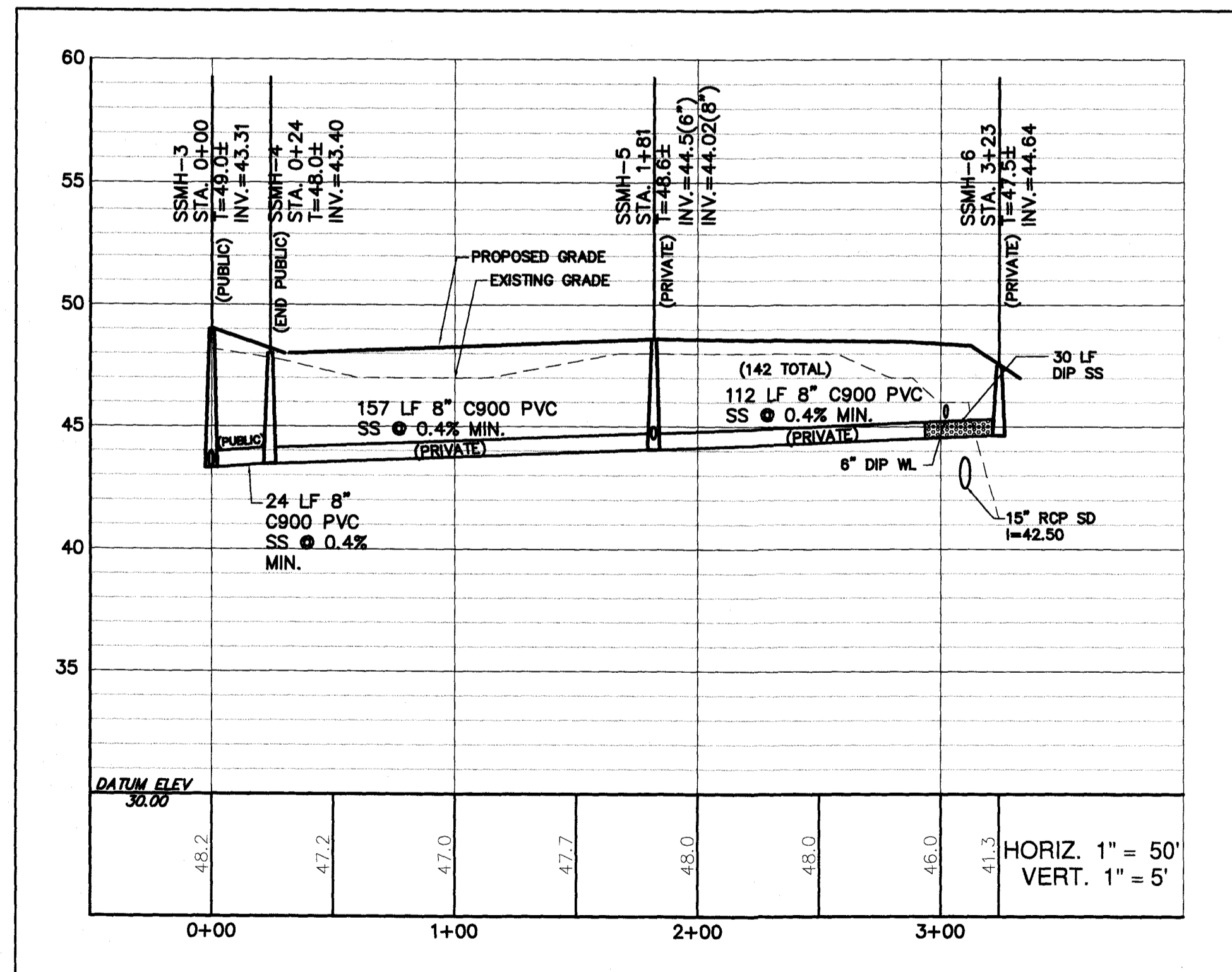
LIVE OAK BANKING COMPANY 3/FITPARK
 SANITARY SEWER AND ROAD
 PLAN & PROFILE

DATE: 1/3/18
 SCALE: 1" = 50'
 1" = 5'
 DRAWN: NKS
 CHECKED: JST
 PROJECT NO: 16169

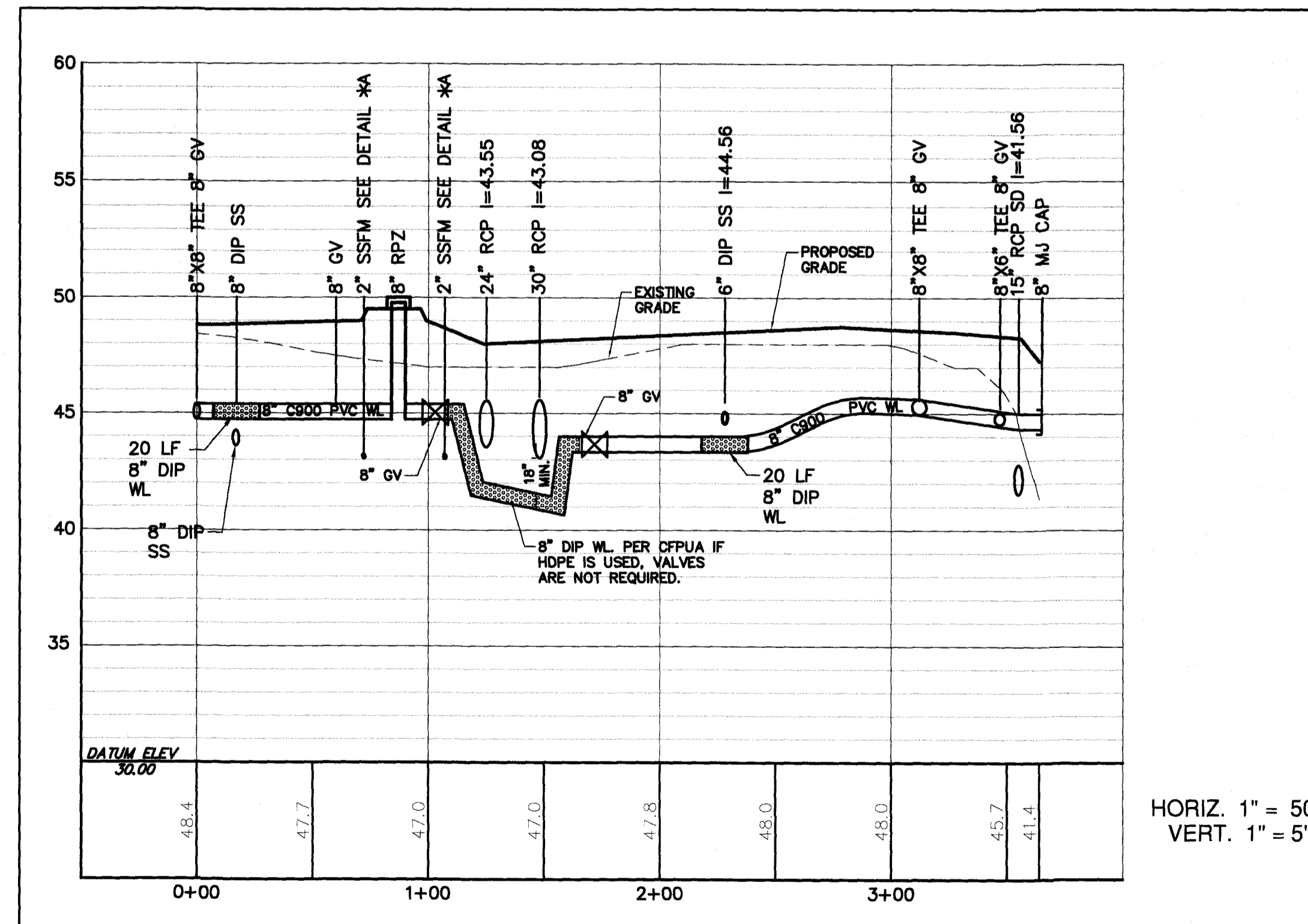
SHEET NO:
PR1



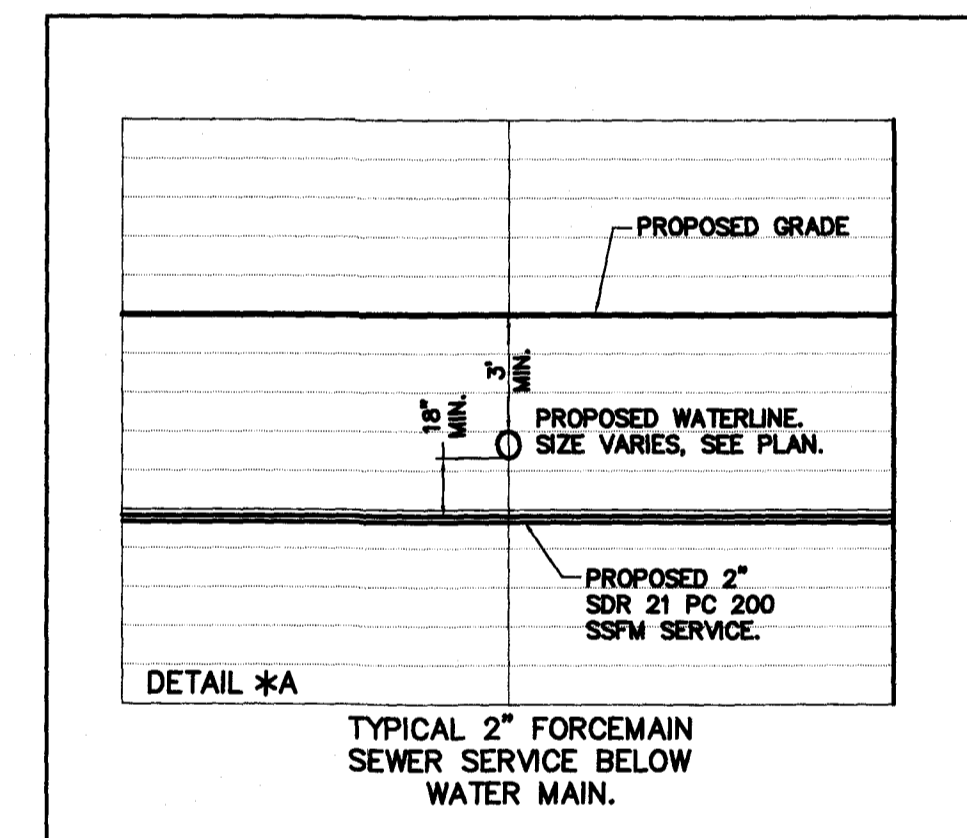
INTERFERENCE DROP INLET DETAIL



SANITARY SEWER PROFILE LINE 2



WATER LINE PROFILE LINE 2



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

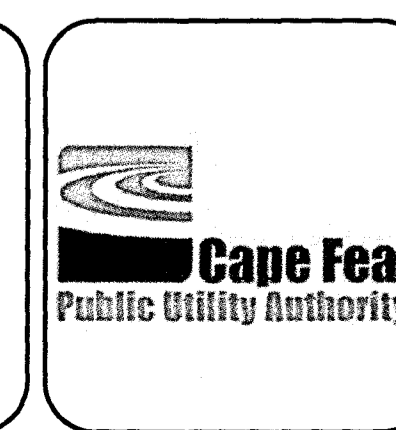
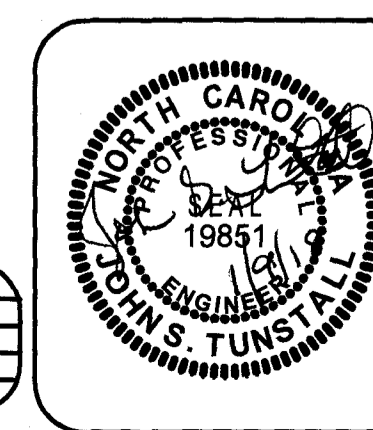
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

NCDENR PWSS WATER PERMIT # _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT # _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 2/8/18 Permit # 201624 R3
Signed: [Signature]

Approved Construction Plan
Name _____ Date _____
Planning: [Signature] 2/1/18
Traffic: [Signature] 2-5-18
Fire: [Signature] 2-6-18

REV. NO.	DESCRIPTION	DATE

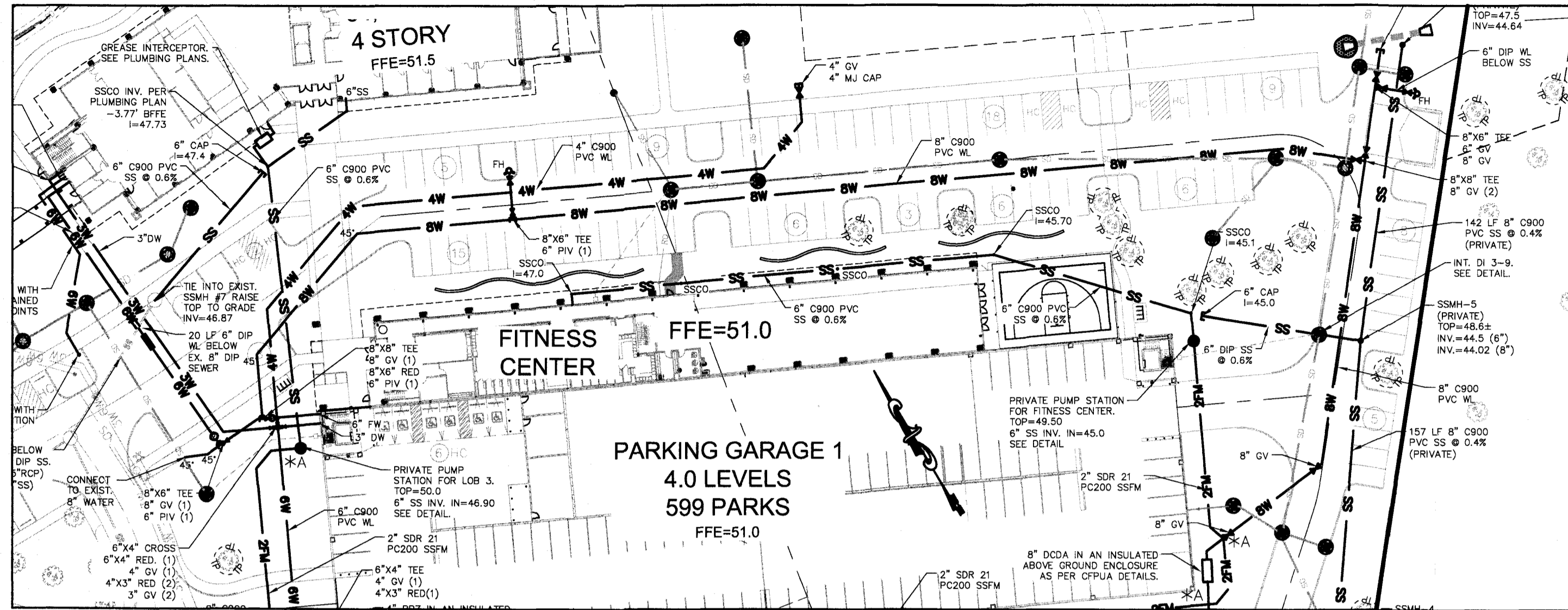


NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
902 MARKET STREET WILMINGTON, NC 28401
1429 ASH-LITTLE RIVER RD. NW WILMINGTON, NC 28420
PHONE (910) 343-9653 License #C-3641 PHONE (910) 287-5900

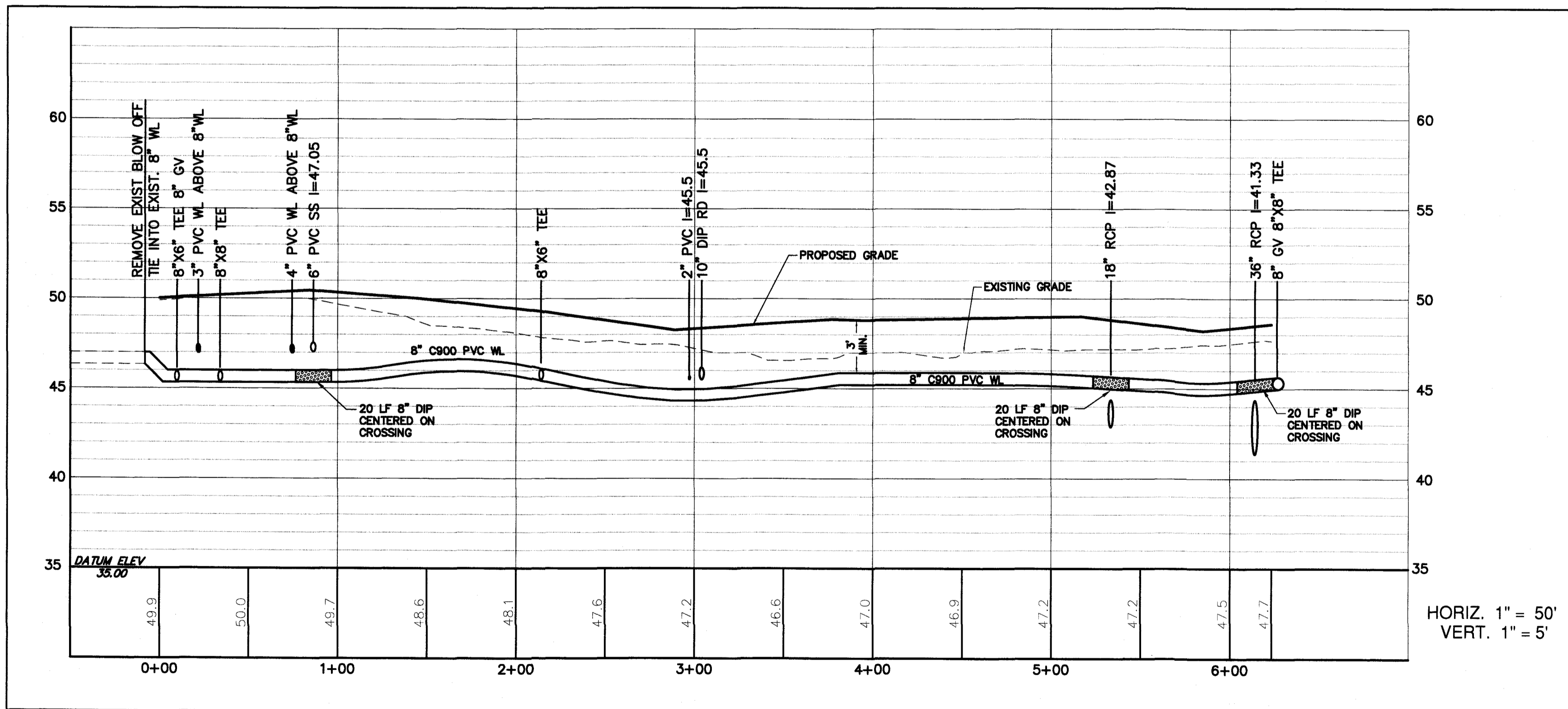
LIVE OAK BANKING COMPANY 3/FITPARK
WATER LINE
PLAN & PROFILE

DATE: 1/9/18
SCALE: 1" = 50'
DRAWN: NKS
CHECKED: JST
PROJECT NO: 16169

SHEET NO:
PR2



SCALE: 1" = 50'
 0 50 100 150



WATER LINE PROFILE LINE 3

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

HORIZ. 1" = 50'
 VERT. 1" = 5'

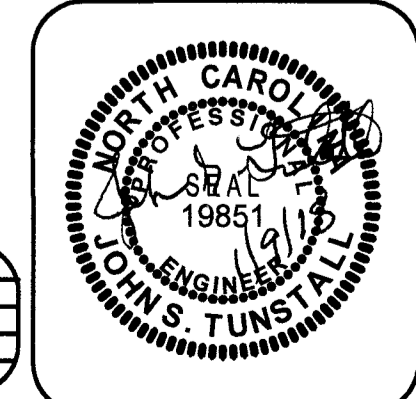
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

NCDENR PWSS WATER PERMIT # _____
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT # _____
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 2/8/18 Permit # 201103423
 Signed: *[Signature]*

Approved Construction Plan
 Name: _____ Date: _____
 Planning: *[Signature]* 2/1/18
 Traffic: *[Signature]* 2-5-18
 Fire: *[Signature]* 2-6-18

REV NO.	DESCRIPTION	DATE



NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 902 MARKET STREET WILMINGTON, NC 28401
 1429 ASH-LITTLE RIVER RD. NW ASH, NC 28420
 PHONE (910) 343-9653 License #C-3641 PHONE (910) 287-5900

DATE: 1/9/18
 SCALE: 1" = 50'
 1" = 5'
 DRAWN: NKS
 CHECKED: JST
 PROJECT NO: 16169

SHEET NO:
PR3

LIVE OAK BANKING COMPANY 3/FITPARK
 WATER LINE
 PLAN & PROFILE

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 PLANT 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. DOWNSIZING 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 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.
- GROUND COVER TYPE SHOWN SHALL BE PLANTED IN ALL SHRUB AREAS AS SPECIFIED ON PLANS. GROUND COVER SHALL BE PLANTED AT 8" 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 AREAS PLANTED WITH GROUND COVER SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH. ALL REMAINING AREAS SHALL BE MULCHED WITH PINE STRAW.

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
 DATE 7/24/18 **PERMIT # 201107424**

LANDSCAPE REQUIREMENTS

REQUIRED	PROVIDED
PARKING LOT INTERIOR CANOPY COVERAGE 42,587 SF (30%)	14,716 SF* 24 TREES, 5 EXISTING TREES = 1,283 SF 19 PROPOSED LARGE SHADE TREES = 13,433 SF

* CANOPY COVERAGE PROVIDED PARTIALLY BY EXISTING TREES. EXISTING CANOPY COVERAGE CALCULATIONS ARE BASED ON AREA OF DRIP LINE OVERHANGING PARKING FACILITY.

STREET YARD PLANTING	REQUIRED	PROVIDED
TIBURON DRIVE (571 LF x 18')	10,278 SF 17 (11 600 SF)	14,418 SF 56 EXISTING CANOPY TREES
SHRUBS REQUIRED	102 (6/ 600 SF)	102

FOUNDATION PLANTING	REQUIRED	PROVIDED
FITPARK	12% FACADE AREA (ADJ. TO PARKING/DRIVE AISLE)	
NORTH SIDE (160LF x 45' x .12) + (220 x 33' x .12)	1,735 SF	4,930 SF
EAST SIDE (138 x 33' x .12)	546 SF	2,837 SF
SOUTH SIDE (409 x 33' x .12)	1,619 SF	3,669 SF
WEST SIDE (50 x 45' x .12) + (77 x 33' x .12)	575 SF	3,566 SF

LOB III	REQUIRED	PROVIDED
SOUTH SIDE (222 LF x 60.75' x .12)	1,618 SF	2,394 SF

PRESERVED TREES ONSITE

QUANTITY	SIZE	COMMON NAME	CREDITS
24	2"	PINE	7
21	2"	OAK	21
61	3"	OAK	61
7	4"	PINE	7
1	4"	MAGNOLIA	1
1	5"	MAGNOLIA	2
12	5"	PINE	12
6	5"	OAK	6
17	6"	PINE	34
5	6"	OAK	10
1	7"	OAK	2
12	8"	PINE	24
5	8"	OAK	10
2	9"	OAK	4
6	10"	OAK	12
10	10"	PINE	20
1	12"	MAPLE	3
3	12"	PINE	9
5	13"	PINE	15
1	13"	OAK	3
6	14"	PINE	18
8	15"	PINE	24
5	16"	PINE	15
1	17"	PINE	18
1	20"	PINE	4
1	24"	PINE	4

TOTAL CREDITS FOR PRESERVED TREES : 374

TREE MITIGATION REQUIREMENTS - ALL TREES LISTED BELOW ARE LOCATED WITHIN THE BUILDING 4 BUILDING PAD

QUANTITY	SIZE	COMMON NAME	% MITIGATION
1	12"	PINE	50
2	15"	PINE	50
1	16"	PINE	50
1	17"	PINE	50
3	18"	PINE	50

140' x .5 = 70'/3 = 23.33 TREES REQUIRED FOR MITIGATION

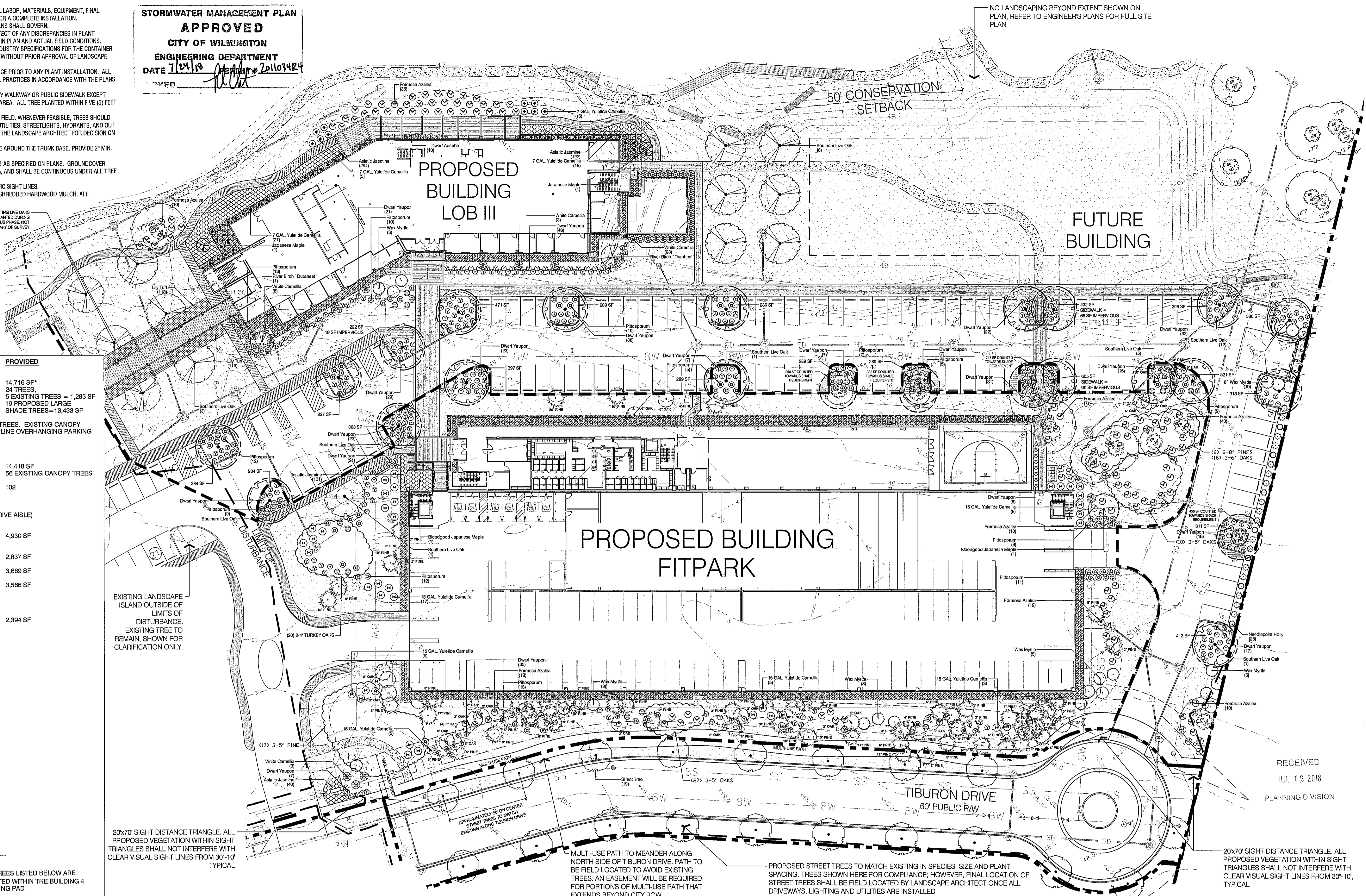
QUANTITY	SIZE	COMMON NAME	% MITIGATION
2	10"	OAK	100
1	10"	OAK	100
2	11"	OAK	100
1	12"	OAK	100
1	12"	OAK	100
1	18"	OAK	100

94' / 3 = 31.33 TREES REQUIRED FOR MITIGATION
 23.33 + 31.33 = 55 TREES REQUIRED FOR MITIGATION

TOTAL CREDITS FOR PRESERVED TREES : 374
 PRESERVED TREE CREDITS FULFILLING MITIGATION REQUIREMENT: 55

OVERALL TREE REQUIREMENTS (15 TREES/DISTURBED ACRE)

REQUIRED: 12.94 ACRES DISTURBED x 15 TREES = 194 TREES REQUIRED
 PROVIDED: 374 TREE CREDITS (EXISTING RETAINED TREES)
 54 TREES PROPOSED - REFER TO PLANTING LEGEND
 TOTAL: 428 TREES PROVIDED



PLANT SCHEDULE OVERALL

LANDSCAPE TREES	BOTANICAL NAME / COMMON NAME	CONT.	CAL.	RANGE	QTY
Asac	Bloodgood / Bloodgood Japanese Maple	B & B	3" CAL.	8-10' HT	2
Asax	Azalea parviflora / Japanese Maple	B & B	2" CAL.	6-8' HT	2
Asax	Blotch / Blotch 'Dusheath'	B & B	3" CAL.	10-12' HT	2
Asax	Southern Live Oak	B & B	4" CAL.	10-12' HT	20
Asax	Southern Live Oak	B & B	9" CAL.	14-16' HT	9
Asax	Street Tree	B & B	22" CAL.	10-12' HT	19

SMALL SHADE TREES

BOTANICAL NAME / COMMON NAME	CONT.	CAL.	RANGE	QTY
Black / Holly / Holly	B & B	6" HT	8-10' HT	1
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10
Asax	Asax / Japanese Maple	7" HT	8-10' HT	10

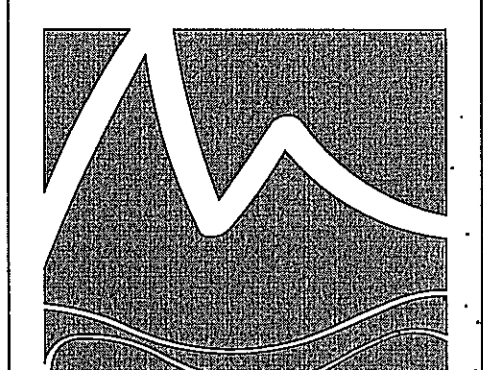
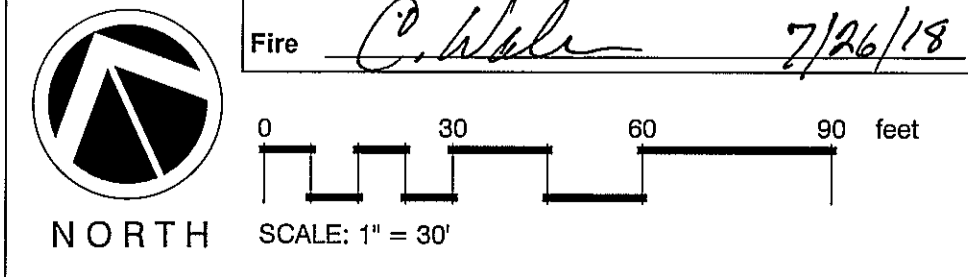
SHRUBS

BOTANICAL NAME / COMMON NAME	SIZE	RANGE	QTY
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10
Asax	Asax / Japanese Maple	7" HT	10

SYMBOL LEGEND

5 MAG	EXISTING TREE TO REMAIN WITH TREE PROTECTION FENCING
1" OAK	EXISTING PINE AND OAK TREES
LARGE SHADE TREE	LARGE SHADE TREE COUNTED TOWARD PARKING LOT SHADE REQUIREMENTS (707 SF)
EXISTING SHADE TREE	EXISTING SHADE TREE COUNTED TOWARD PARKING LOT SHADE REQUIREMENTS

Approved Construction Plan
 Name: Eugene J. Futral Date: 7.23.18
 Planning: [Signature]
 Traffic: [Signature] 7-26-18
 Fire: [Signature] 7/26/18



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



Revisions
 2017-12-18: REVISED PLAN PER COMMENTS FROM COV.
 2017-12-28: REVISED PLAN PER COMMENTS FROM COV.
 2018-02-07: ADDED STREET TREES ALONG TIBURON PER CITY REQUEST
 2018-07-11: REVISED PLAN PER FIELD LOCATED TREES. CALCULATIONS REVISED ACCORDINGLY.

CLIENT
LIVE OAK BANK
 1741 TIBURON DRIVE
 WILMINGTON, NC

PROJECT
LIVE OAK BANK
 BUILDING 3 AND FITPARK
 TIBURON DRIVE
 LANDSCAPE PLANS

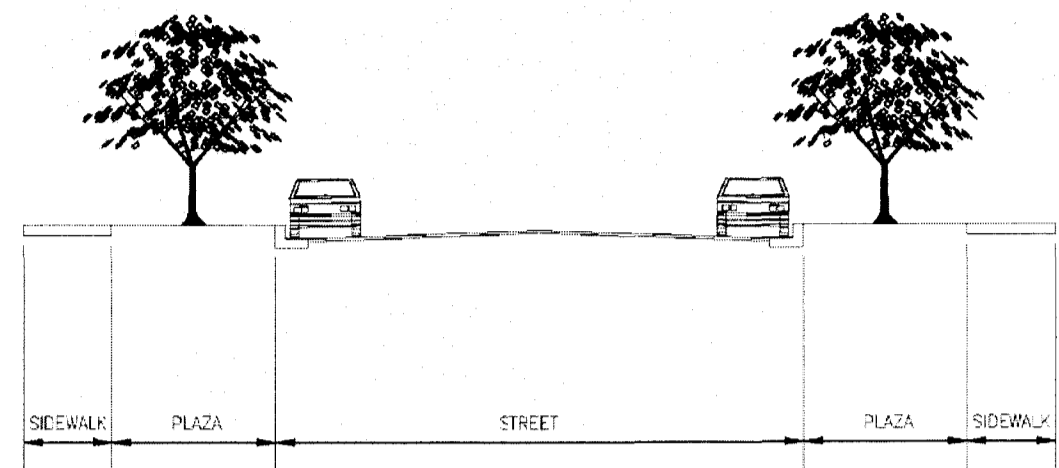
Date: 11/27/2017
 Phase: CD
 Job Number: 560-07
 Designed by: MLD
 Drawn by: ALM
 Checked by: JWM

Sheet Title:
PLANTING PLAN - OVERALL

Sheet Number:
L1.0
 of 1 sheets

RESIDENTIAL STREET TREE STANDARDS

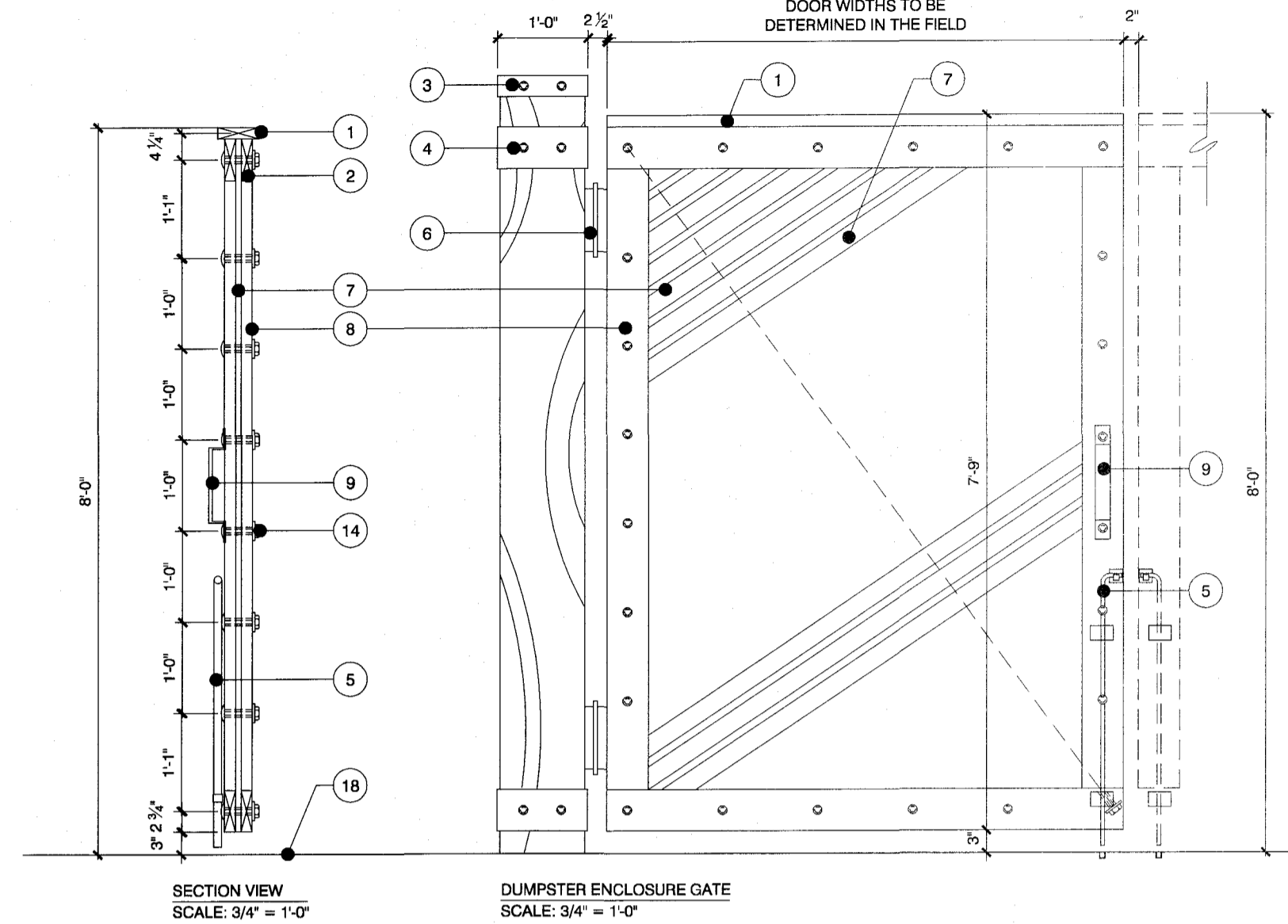
1. Street trees shall be installed along residential streets after all driveways have been installed.
2. The developer shall notify Landscape Designer prior to installation to ensure proper tree selection and spacing.
3. Each tree shall be a minimum of two (2) caliper inches.
4. Phasing of a project shall be permitted, however, Street Trees on the same block shall be planted at the same time to avoid size irregularities.
5. Trees within the same block shall be the same species.



RECOMMENDED STREET TREE SPACING ACCORDING TO PLAZA WIDTHS

Plaza Width	Recommended Tree Spacing	Example Species
4'-6"	25'-30' SPACING	ex. CREPE MYRTLE, HOLLY
6'-8"	35'-40' SPACING	ex. JAPANESE MAPLE, ZELKOVA
GREATER THAN 8'	50' SPACING	ex. DARLINGTON OAK, RED MAPLE

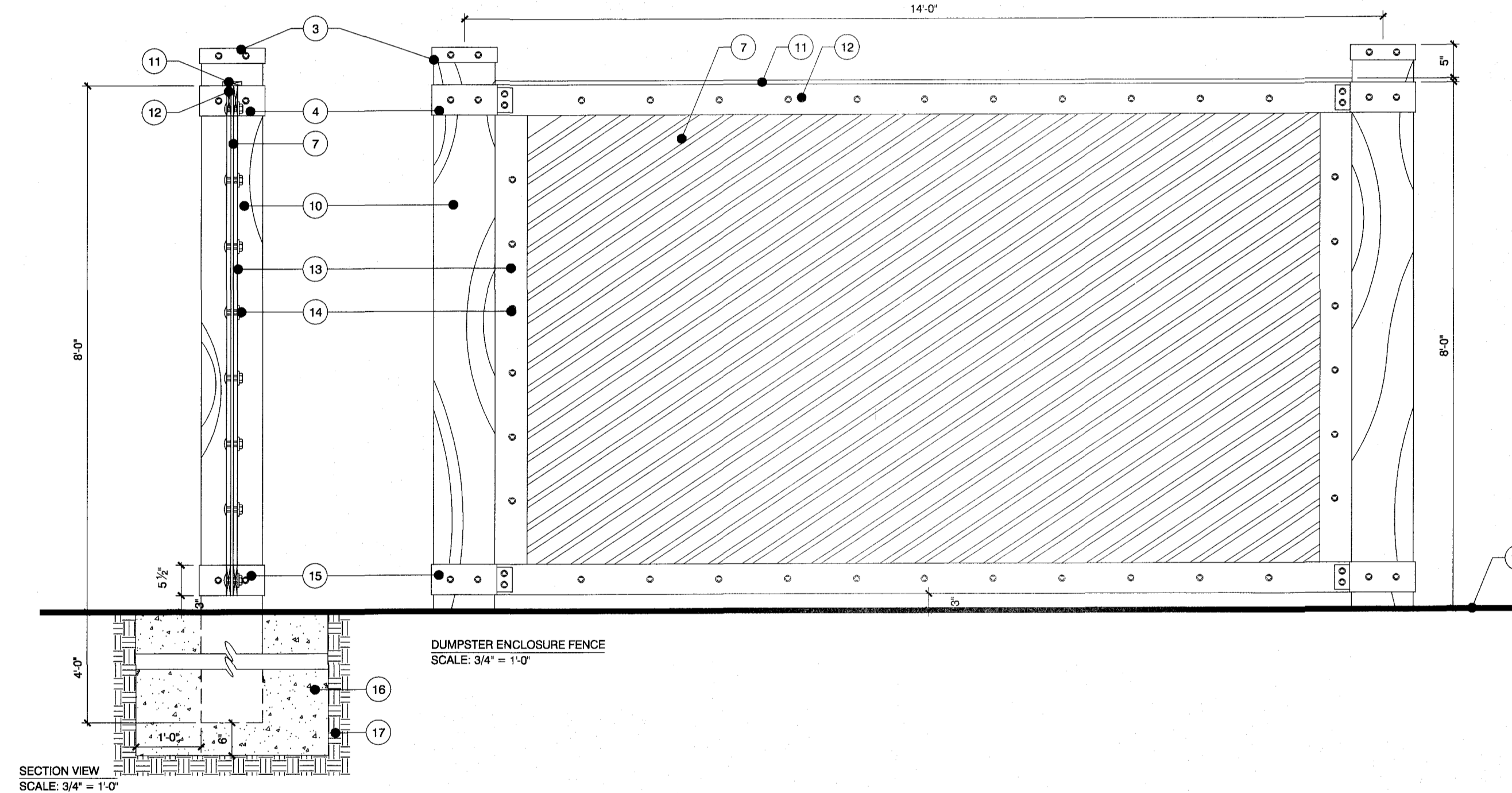
SD 15-17 STREET TREE STANDARDS



LEGEND

1. 2x6 CAP
2. 2x6 RAIL
3. METAL POST CAP
4. METAL BAND
5. STAINLESS STEEL DROP BAR
6. STAINLESS STEEL BLOCK HINGES
7. 1"x4" SLATS
8. 2x6 WOOD FRAME
9. CAST IRON HANDLE
10. 12x12 WOOD COLUMN TO MATCH BUILDING
11. 1x4 CAP
12. 1x6 RAIL
13. 1x6 WOOD FRAME
14. LAG BOLT
15. METAL SUPPORT
16. CONCRETE FOOTING
17. COMPACTED SUBGRADE
18. FINISH GRADE

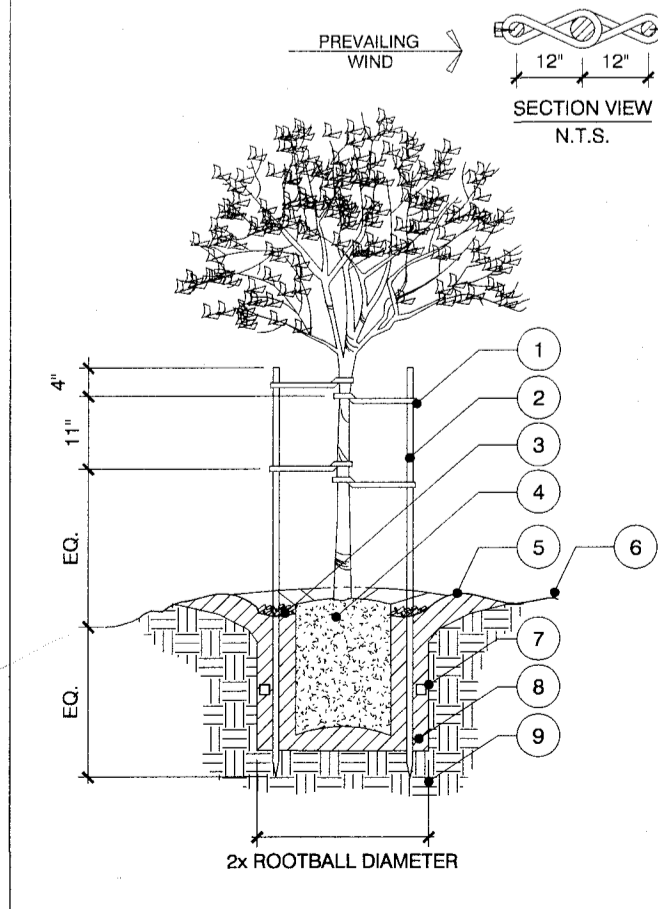
NOTE: DUMPSTER ENCLOSURE SHALL MATCH LIVE OAK BANK CAMPUS STANDARD IN DESIGN, MATERIAL AND FINISH



SECTION VIEW SCALE: 3/4" = 1'-0"

4 DUMPSTER ENCLOSURE

Approved Const. Plan
 Planning: *[Signature]* Date: 2/9/18
 Public Utilities: _____
 Traffic: _____
 File: _____

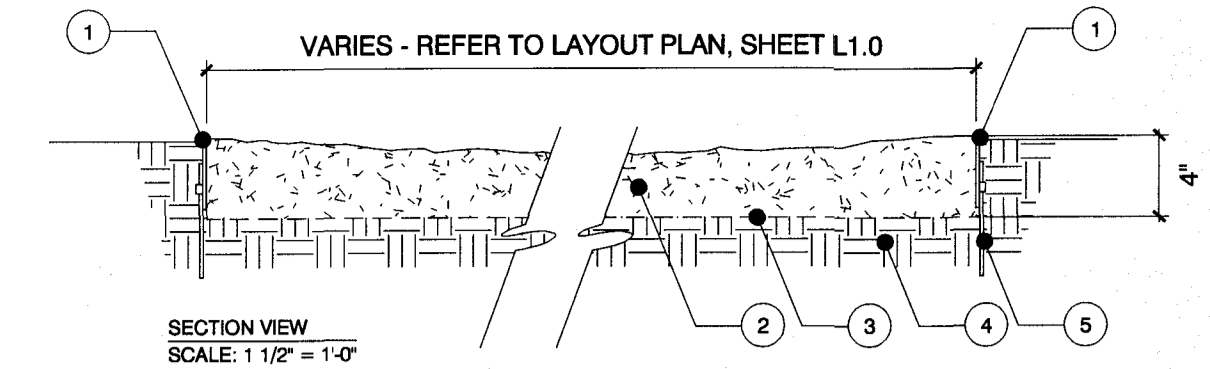


LEGEND

1. 24" CORDED BLACK RUBBER TREE TIE. LOOP AT TRUNK AND NAIL TO STAKE
2. 2 1/2" DIA. x 12' LONG TREATED LODGEPOLE PINE STAKE
3. 3" LAYER OF MULCH
4. ROOT BALL
5. 3" WATER BASIN
6. FINISH GRADE
7. FERTILIZER TABLET - REFER TO SCHEDULE FOR QUANTITY, THIS SHEET
8. TOPSOIL & NATIVE BACKFILL MIXTURE
9. NATIVE SUBGRADE

NOTES:
 - SCARIFY ROOT BALLS OF PLANTS WITH CIRCLING ROOTS.
 - HEAVILY ROOT BOUND SHRUBS WILL NOT BE ACCEPTED

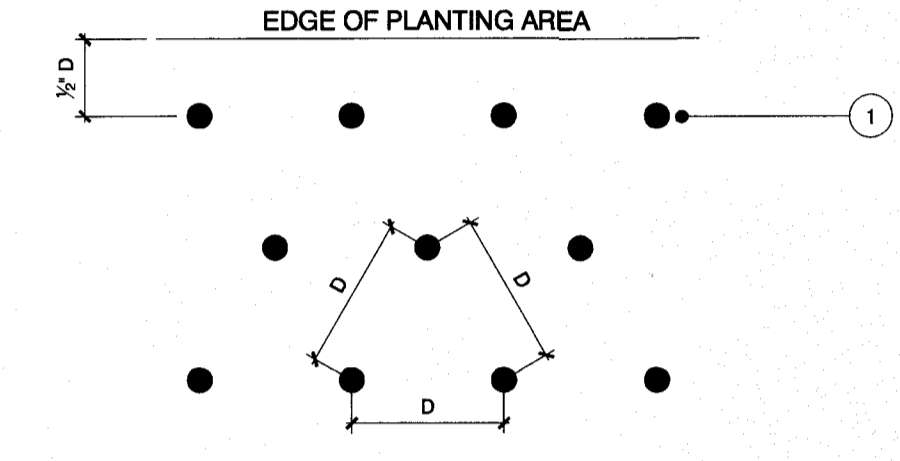
5 TREE PLANTING AND STAKING



LEGEND

1. BORDER GUARD STEEL EDGING SIZE: 3/8" X 4" X 16' COLOR: BLACK AVAILABLE FROM: BORDER CONCEPTS (800.845.3343)
2. MULCH PATH MULCH: SHREDDED HARWOOD MULCH
3. FILTER FABRIC
4. COMPACTED SUBGRADE
5. 1/8"x15" STEEL STAKE

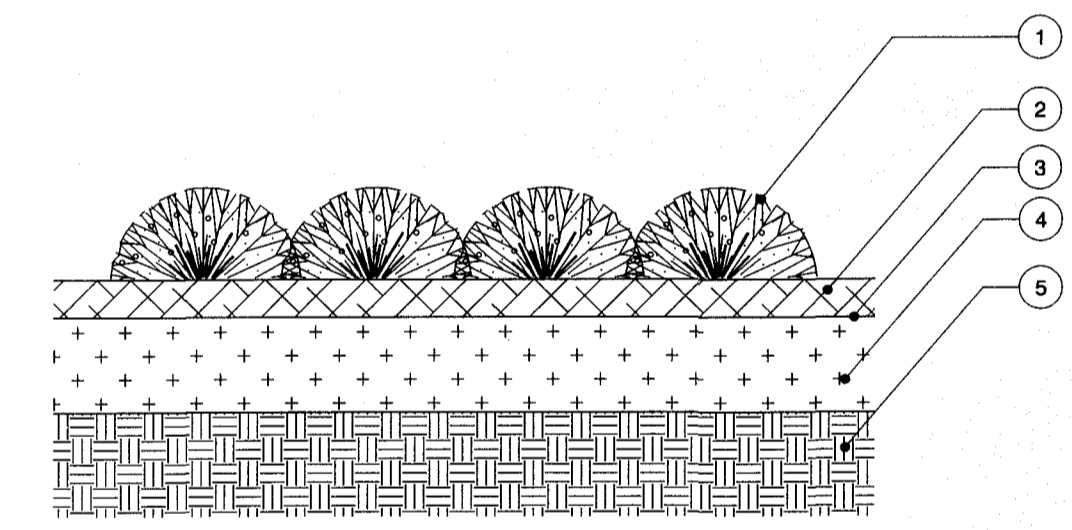
1 MULCH PATH



LEGEND

1. GROUNDCOVER OR SHRUB PLANTING LOCATION
- NOTE:
 - D - AS NOTED ON PLAN

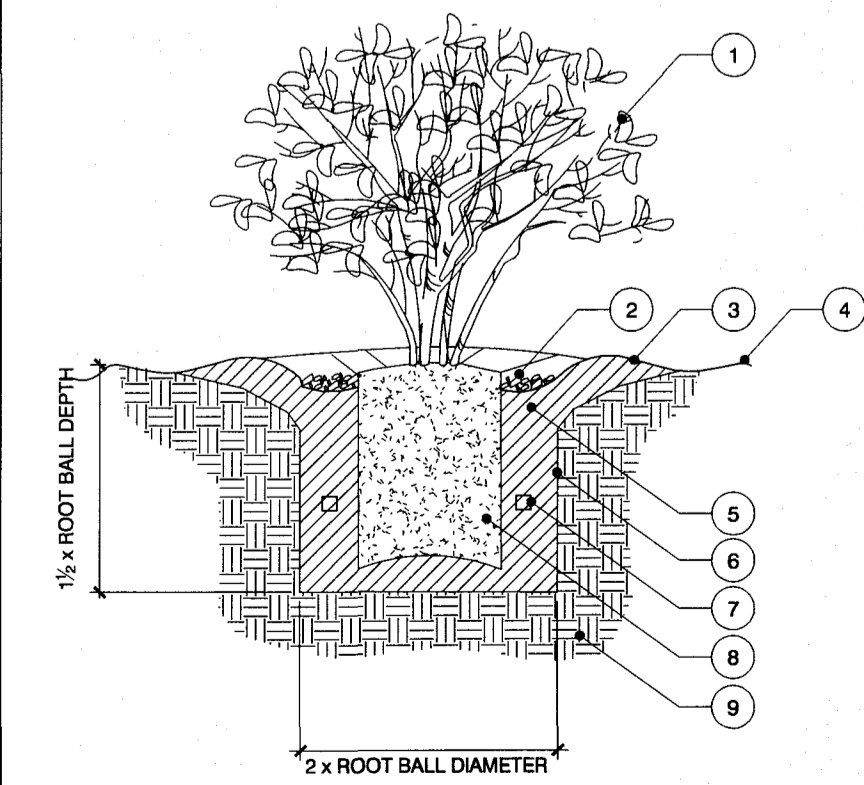
2 GROUNDCOVER SPACING



LEGEND

1. GROUND COVER PLANT FROM FLAT - REFER TO PLANTING PLAN AND TO DETAIL 4, THIS SHEET FOR SPACING INFORMATION
2. 3" LAYER OF MULCH
3. FINISH GRADE
4. TOPSOIL AND NATIVE BACKFILL
5. COMPACTED SUBGRADE

3 GROUNDCOVER PLANTING



LEGEND

1. SHRUB
2. 3" LAYER OF MULCH
3. 3" WATER BASIN
4. FINISH GRADE
5. TOPSOIL & NATIVE BACKFILL MIXTURE
6. SCARIFY EDGE OF PIT
7. FERTILIZER TABLETS
8. ROOT BALL
9. NATIVE SUBGRADE

NOTES:
 - SCARIFY ROOT BALLS OF PLANTS WITH CIRCLING ROOTS.
 - HEAVILY ROOT BOUND SHRUBS WILL NOT BE ACCEPTED

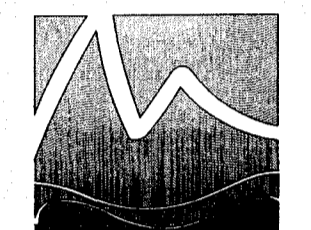
4 SHRUB PLANTING



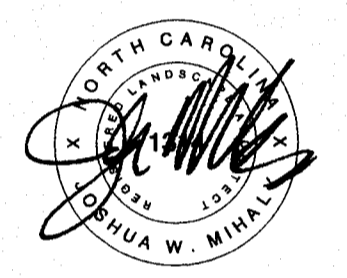
LIVE OAK BANK BUILDING 3



101 N. THIRD STREET SUITE 500
 WILMINGTON, NORTH CAROLINA 28401
 TEL. 910.790.9901 FAX 910.790.3111
 WWW.LS3P.COM



MIHALY LAND DESIGN
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REVISIONS:

No.	Description	Date
3	ADDENDUM 1	FEB. 2, 2018

PROJECT: 7101-170100
 DATE: 13 OCT 2017
 DRAWN BY: ALMMAS
 CHECKED BY: JWM

CONSTRUCTION DETAILS - LIVE OAK BANK BUILDING 3

L2.1