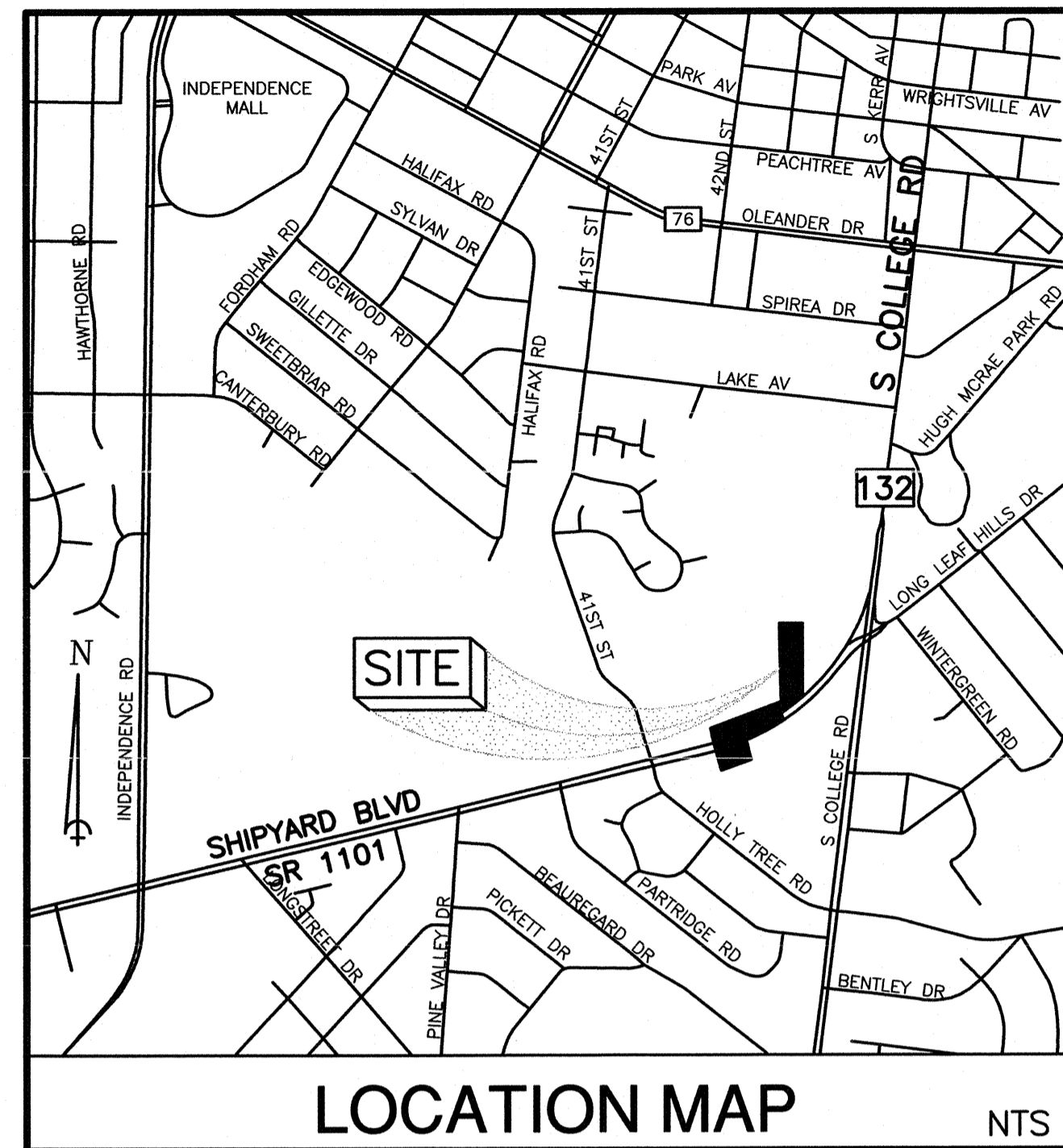


CAPE FEAR PUBLIC UTILITY AUTHORITY PUMP STATION 8 DESIGN

CFPUA CIP #14S283
CFPUA MAP #131611.002
SHIPYARD BOULEVARD
NEW HANOVER COUNTY
WILMINGTON, N. C.
15 JULY 2016



PROJECT LEGEND

	RIGHT-OF-WAY
	DISTURBED AREA LIMITS
	PROPOSED EASEMENT
	TEMPORARY SILT FENCE
	PROPOSED GRAVITY SEWER
	PROPOSED FORCEMAIN
	PROPOSED FINISH GRADE SPOT ELEVATION
	INLET PROTECTION
	EXISTING CONTOUR
	EXISTING TREE TO BE SAVED
	EXISTING TREE TO BE REMOVED

SURVEY LEGEND

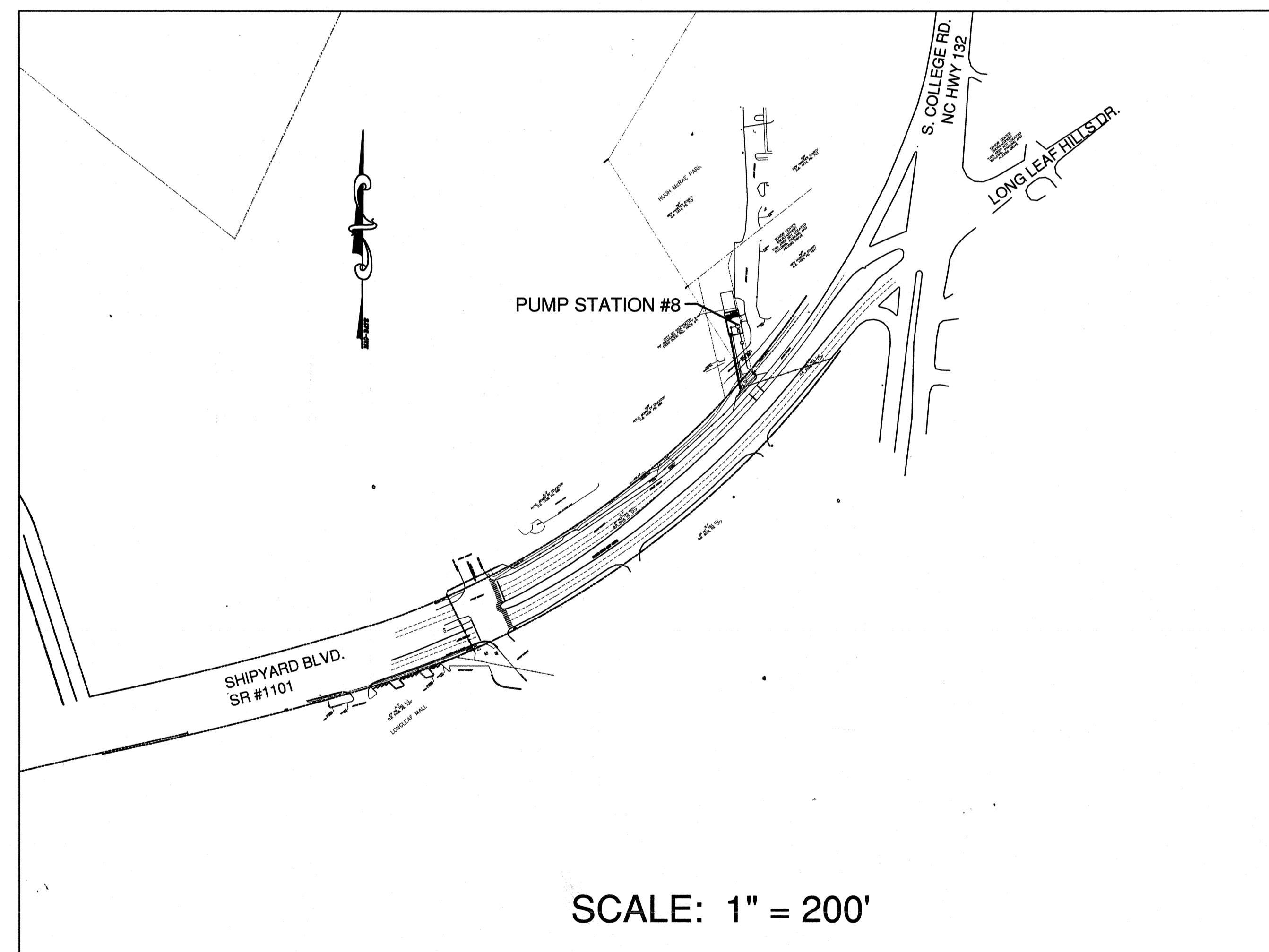
	RIGHT OF WAY
	EDGE OF PAVEMENT LINE
	EASEMENT LINE
	FENCE
	GUARD RAIL
	OVERHEAD POWER LINE
	UNDERGROUND CABLE TV LINE
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND FIBER OPTIC LINE
	UNDERGROUND GAS LINE
	UNDERGROUND TELEPHONE
	UNDERGROUND TRAFFIC SIGNAL
	UNDERGROUND WATER LINE
	STORM SEWER PIPE
	SANITARY SEWER PIPE
	FORCE MAIN PIPE
	UNDERGROUND TRAFFIC LINE

INDEX OF SHEETS

COVER SHEET	
C1:	EROSION CONTROL AND TREE REMOVAL PLAN
C2:	EROSION CONTROL AND TREE REMOVAL PLAN
C3:	NOTES AND DETAILS
PR1:	SSFM PLAN AND PROFILE
PR2:	SSFM PLAN AND PROFILE
PR3:	GRAVITY SEWER PLAN AND PROFILE
PR4:	LIFT STATION SITE PLAN
PR5:	LIFT STATION DETAILS
SSD-1:	SANITARY SEWER STANDARD DETAILS
SSD-2:	SANITARY SEWER STANDARD DETAILS
SSD-3:	SANITARY SEWER STANDARD DETAILS
SUPPLEMENTAL SHEETS:	
(1)	EXISTING LIFT STATION #8 AS BUILT DETAILS
(2)	EXISTING LIFT STATION #8 AS BUILT PROFILES

SEWER QUANTITIES FOR PROJECT

GRAVITY SANITARY SEWER:	130 LF 12"
GRAVITY SANITARY SEWER:	10 LF 18"
SANITARY SEWER FORCEMAIN:	1,130 LF 10"



DESIGN TEAM:

LEAD DESIGN ENGINEER
NORRIS & TUNSTALL

CONSULTING ENGINEERS, P.C.

902 MARKET STREET WILMINGTON, NC 28401
PHONE (910) 343-9653
FAX (910) 343-9604
office@nkteng.com
licence #C-3641

OWNER

CFPUA
JEFF THEBERGE PROJECT MANAGER
235 GOVERNMENT CENTER DR.
WILMINGTON, NC 28403
910 332-6673

ELECTRICAL

CHEATHAM & ASSOCIATES, PA
CONSULTING ENGINEERS
3412 ENTERPRISE DRIVE
WILMINGTON, NC 28405
910 452-4210

SURVEYOR

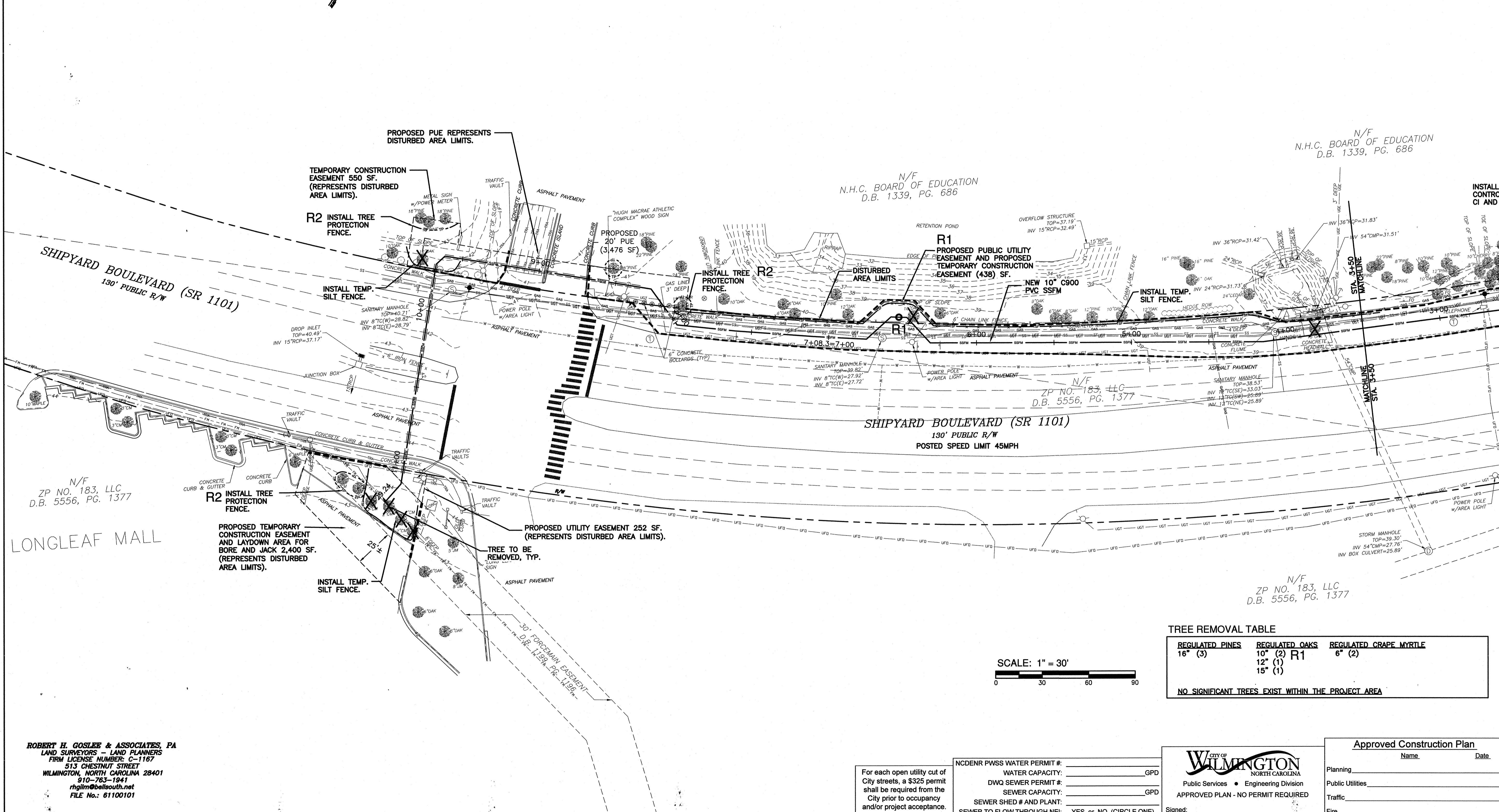
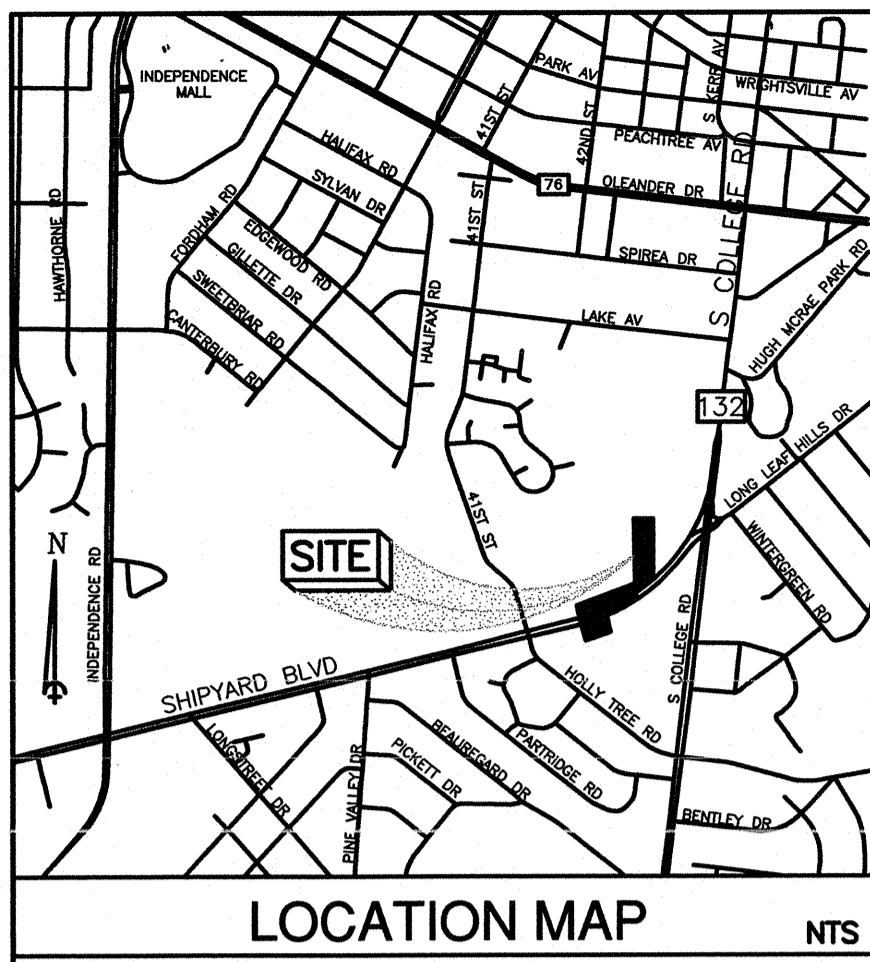
ROBERT H. GOSLEE & ASSOCIATES, PA
LAND SURVEYORS - LAND PLANNERS
FIRM LICENSE NUMBER: C-1167
513 CHESTNUT STREET
WILMINGTON, NORTH CAROLINA 28401
910-763-1941
rhgilm@bellsouth.net
FILE No.: 61100101

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 PLAN - NO PERMIT REQUIRED
Signed: _____

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



SYMBOL	DATE	DESCRIPTION	BY
R2	5/11/17	ADDED TREE PROTECTION FENCING	
R1	2/24/17	REVISED FROM SET. 1.40 THRU 1.45 TO ADD 12" HOPE DIRECTIONAL DRILL. ADDED INV MH AT STA. 6+57. ADDED C&M TO BE REMOVED.	

EROSION CONTROL AND TREE REMOVAL PLAN
 PUMP STATION 8 DESIGN
 SHIPYARD BOULEVARD
 NEW HANOVER COUNTY
 WILMINGTON, N. C.

OWNER/DEVELOPER
 N.H.C. BOARD OF EDUCATION
 D.B. 1339, PG. 686

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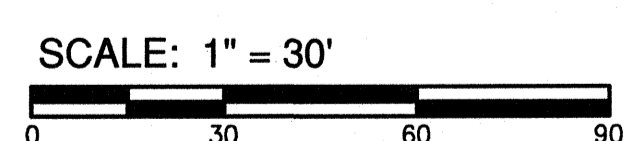
15048

DES.	CHK.	DRWN.	DATE
JST	JPN	NKS	7/15/16

DATE 7/15/16

TREE REMOVAL TABLE		
REGULATED PINES	REGULATED OAKS	REGULATED CRAPE MYRTLE
16" (3)	10" (2) R1 12" (1) 15" (1)	6" (2)

NO SIGNIFICANT TREES EXIST WITHIN THE PROJECT AREA



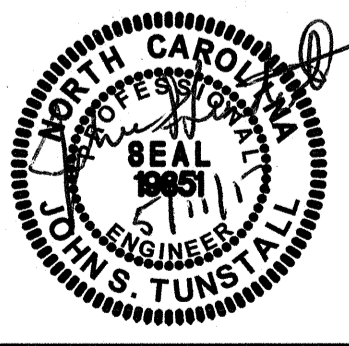
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 LAND SURVEYORS - LAND PLANNERS
 FIRM LICENSE NUMBER: C-1187
 513 CHESTNUT STREET
 WILMINGTON, NORTH CAROLINA 28401
 910-763-1941
 rhg@bellsouth.net
 FILE No.: 61100101

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

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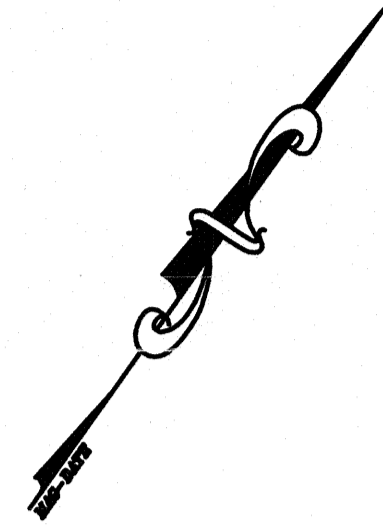
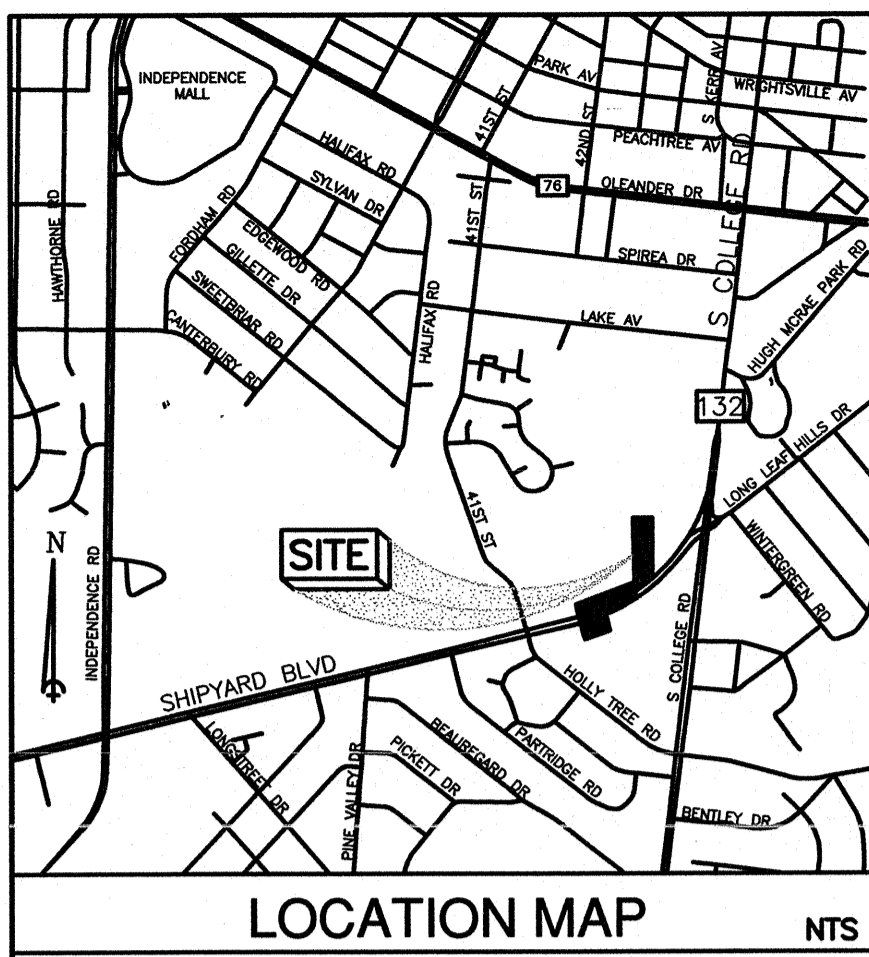
CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED PLAN - NO PERMIT REQUIRED
 Signed: _____

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



C1

E:\Projects\2015\15048_PSS Design (Task 2)\15048_Plan\15048-master.dwg, 5/11/2017 10:39:49 AM



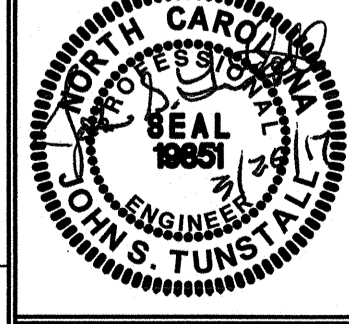
REVISIONS	DATE	DESCRIPTION	BY
R1	2/24/17	REVISED SSPM FROM STA. 1+00 THRU 5+00 WITH 12" HPIE DIRECTIONAL DRILL. ADDED ANY HPIE AT STA. 6+57. ADDED GAT. TO BE REVISIONS.	

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EROSION CONTROL AND TREE REMOVAL PLAN
PUMP STATION 8 DESIGN
 SHIPYARD BOULEVARD
 NEW HANOVER COUNTY
 WILMINGTON, N. C.

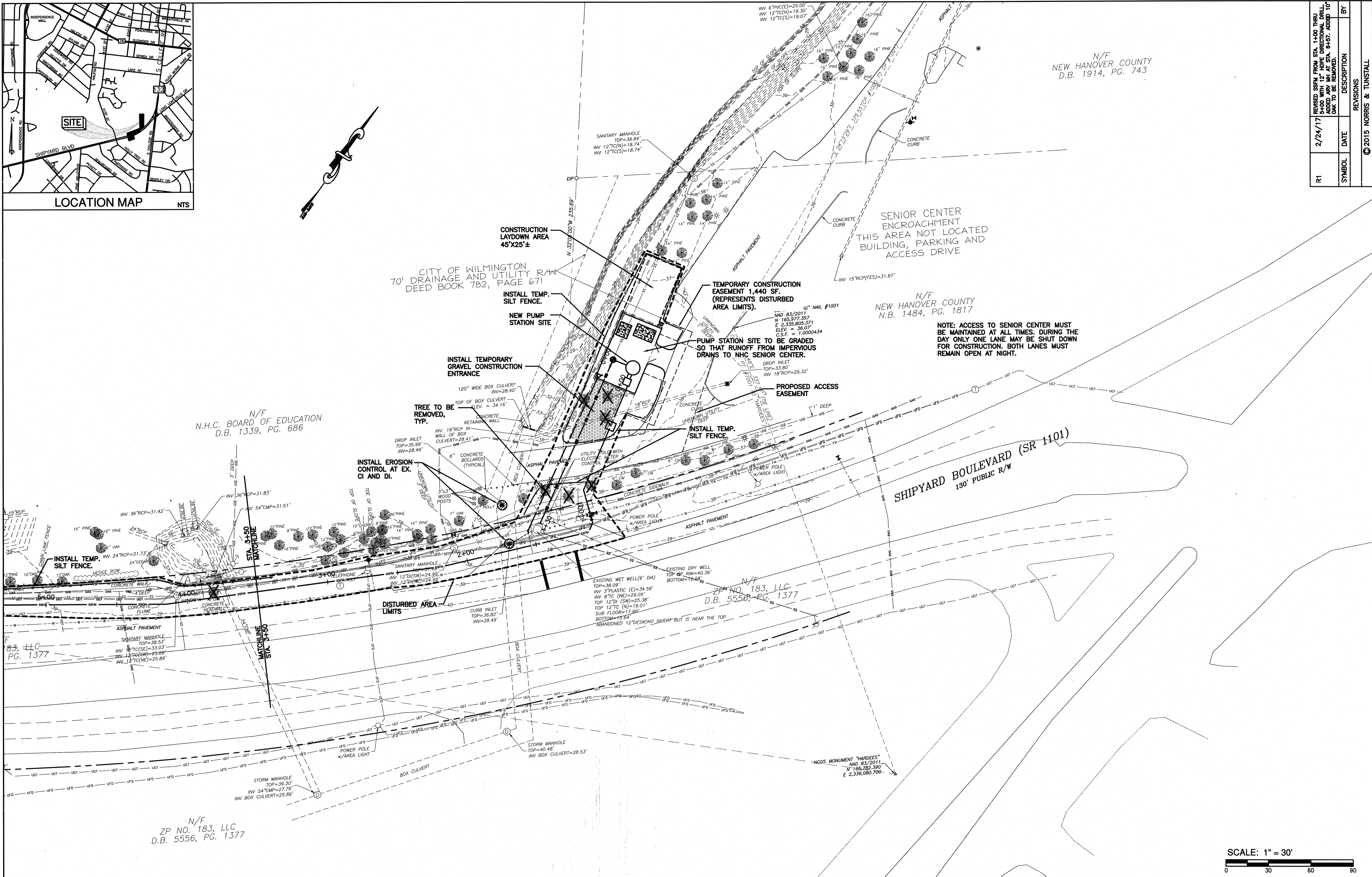
OWNER/DEVELOPER
 C/P/UA
 JEFF THEBERGE
 PROJECT MANAGER
 235 GOVERNMENT CENTER DR.
 WILMINGTON, NC 28403
 910 332-6873

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15048
 DES. JST
 C.D. JPN
 DRWN. NKS
 DATE 7/15/16



C2



ROBERT H. GOSLEE & ASSOCIATES, PA
 LAND SURVEYORS - LAND PLANNERS
 FIRM LICENSE NUMBER: C-1167
 513 CHESTNUT STREET
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 910-763-1941
 rhg@bellsouth.net
 FILE No.: 61100101

N/F
 ZP NO. 183, LLC
 D.B. 5556, PG. 1377

N/F
 N.H.C. BOARD OF EDUCATION
 D.B. 1339, PG. 686

N/F
 NEW HANOVER COUNTY
 D.B. 1914, PG. 743

N/F
 NEW HANOVER COUNTY
 N.B. 1484, PG. 1817

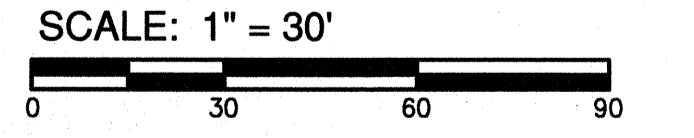
NOTE: ACCESS TO SENIOR CENTER MUST BE MAINTAINED AT ALL TIMES. DURING THE DAY ONLY ONE LANE MAY BE SHUT DOWN FOR CONSTRUCTION. BOTH LANES MUST REMAIN OPEN AT NIGHT.

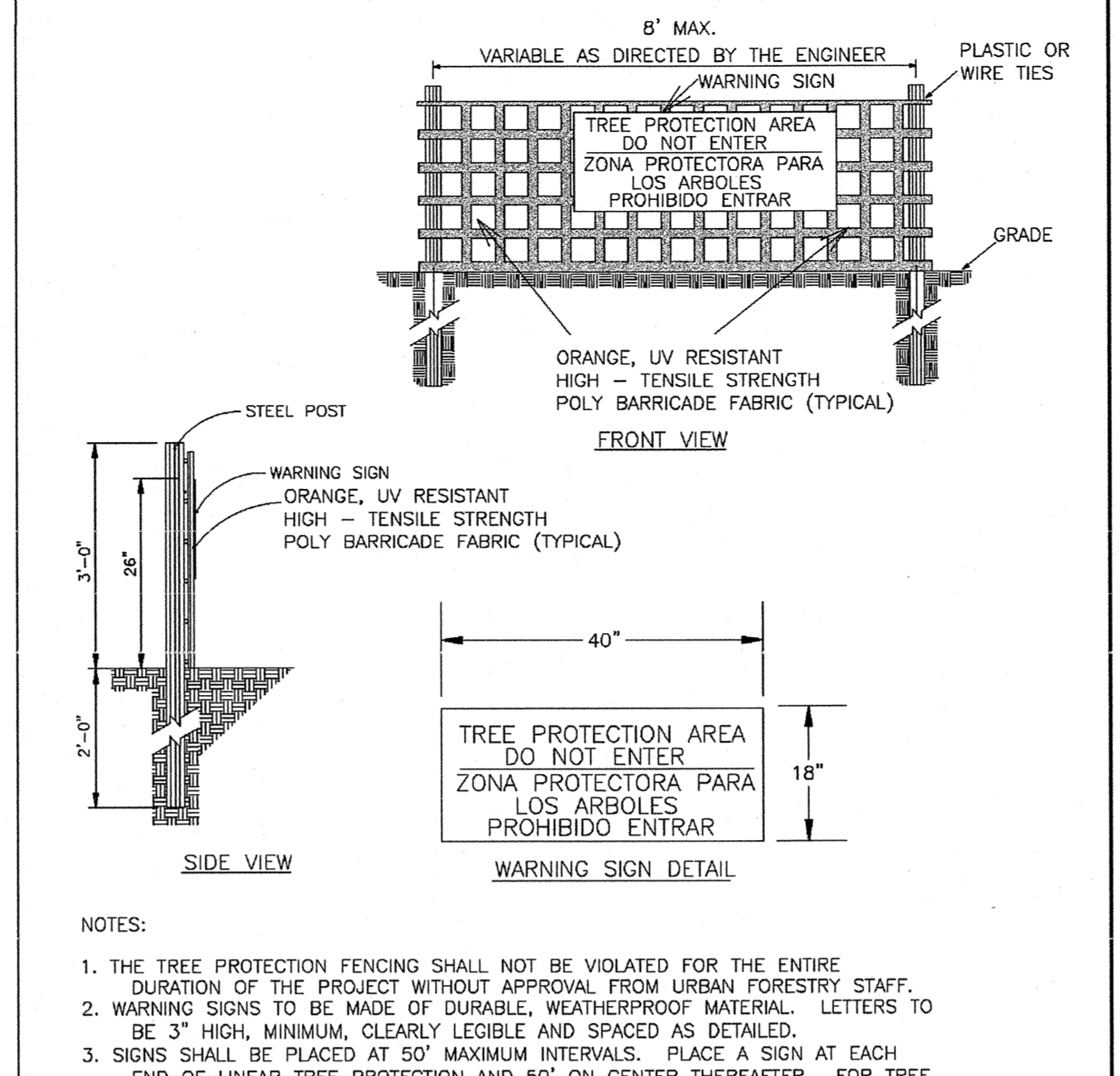
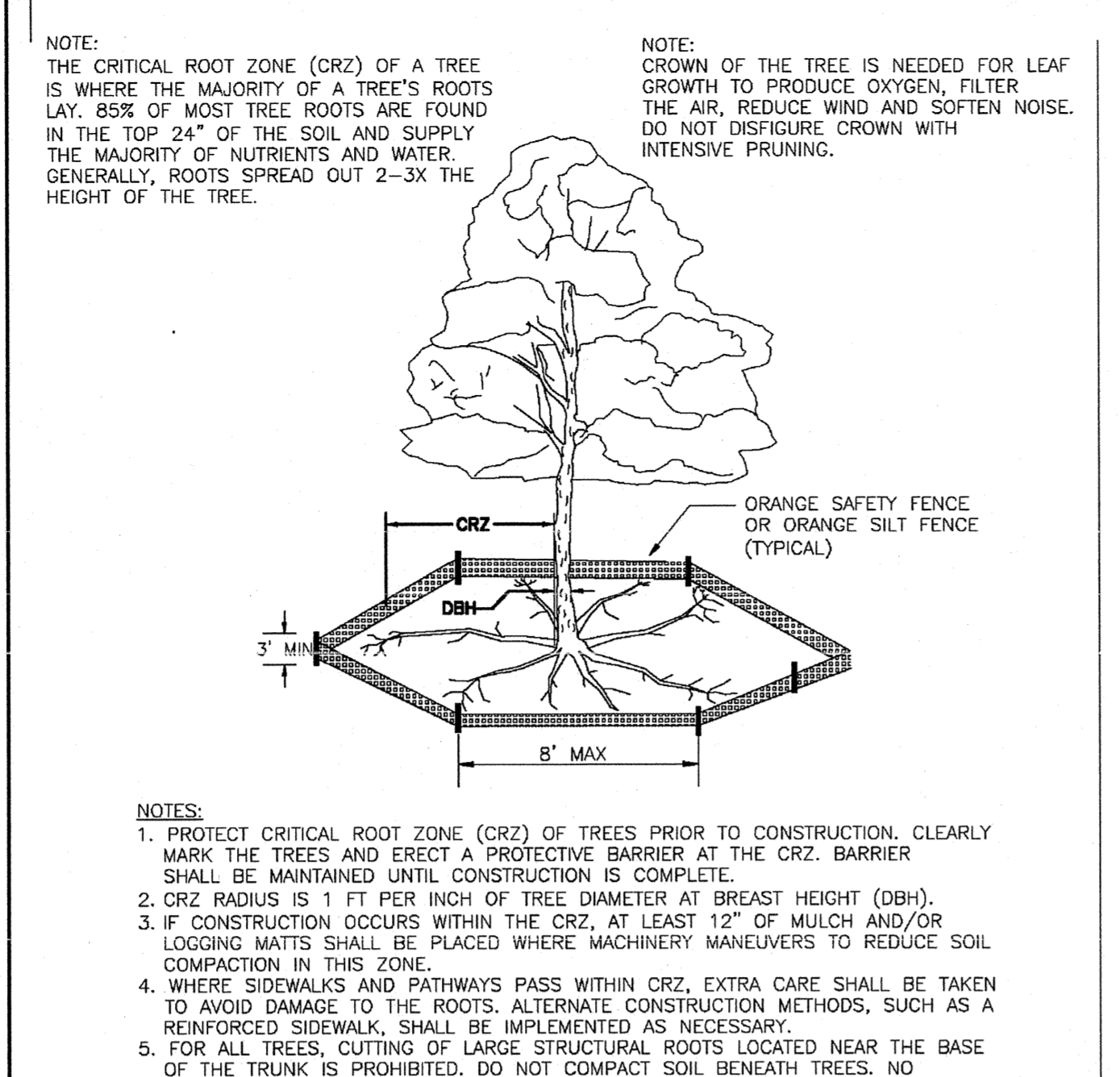
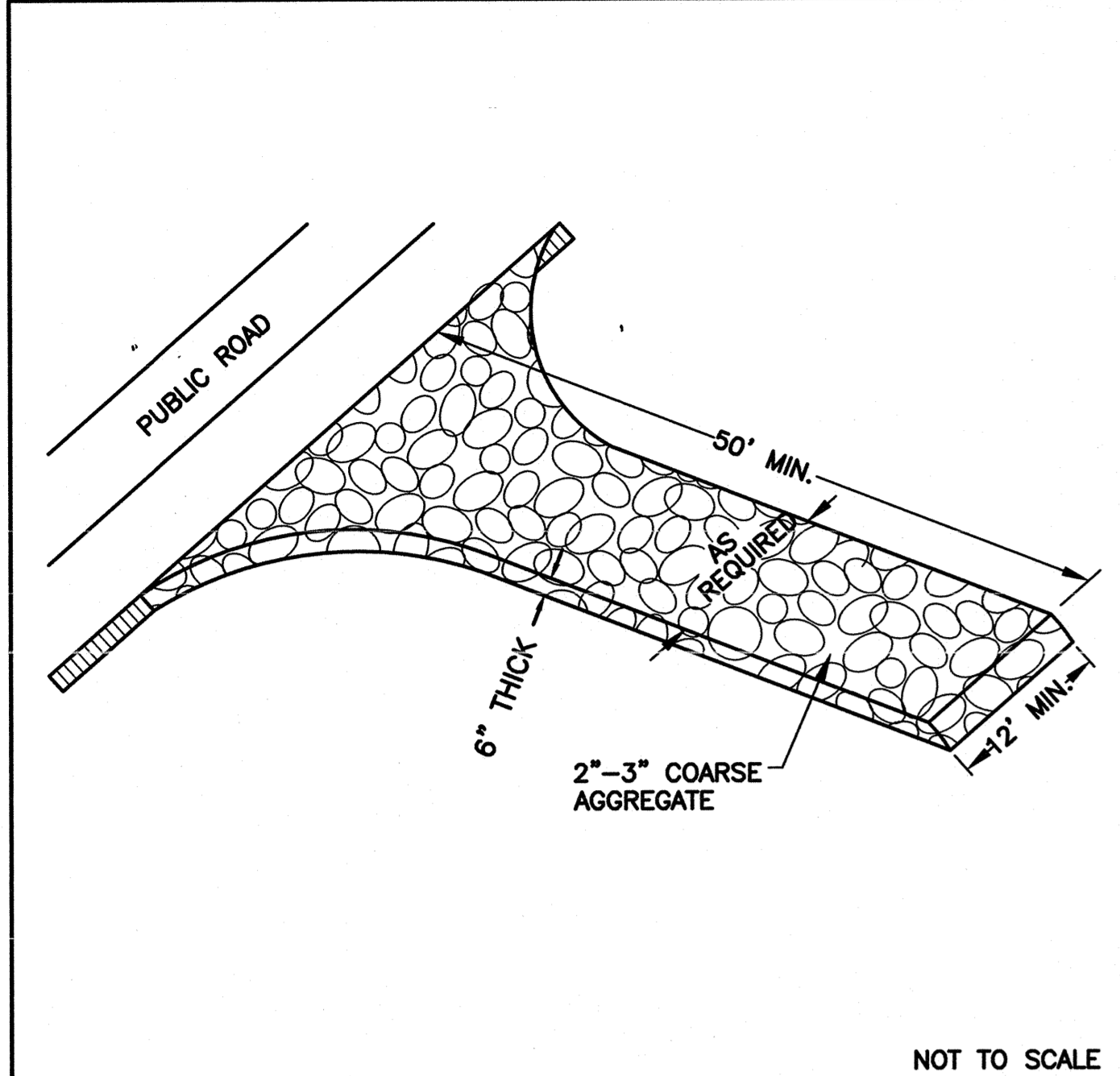
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WATER CAPACITY:	GPD
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CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
APPROVED PLAN - NO PERMIT REQUIRED
 Signed: _____

Approved Construction Plan	
Name	Date
Planning	
Public Utilities	
Traffic	
Fire	





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 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 BAKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BAKING 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 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 BAKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BAKING 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.
- LAND QUALITY REQUIRES:** ALL SEEDED 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 15 WORKING DAYS.
- WATER QUALITY REQUIRES:** ALL SEEDED 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' HORIZONTAL TO 1' VERTICAL (3:1) AND ALL HIGH QUALITY WATER (HQW) 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.

SITE WORK NOTES:

- THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH FIELD CONSTRUCTION CONDITIONS.
- CONTRACTOR SHALL COORDINATE WORK WITHIN NCDOT AND LOCAL RIGHT OF WAYS WITH PROPER AUTHORITIES AND SHALL MEET ANY REQUIREMENTS AS TO TRAFFIC CONTROL AND CONNECTION TO EXISTING STREETS.
- EARTH WORK AND GRADING: SEE PROJECT SPECIFICATIONS.
- LAYOUT: THE CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION.
- EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION FROM SURVEY BY ROBERT H. GOSLEE AND ASSOC. AND PROVIDED BY OWNER.
- THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF RELOCATION OR DISCONNECTION OF ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES.
- ALL PAVEMENT AND BASE MATERIALS AND WORKMANSHIP SHALL CONFORM TO NCDOT STANDARDS.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.
- SEE SOILS REPORT FOR ADDITIONAL REQUIREMENTS.
- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS.
- RIP THE ENTIRE AREA TO A 6 INCH DEPTH.
- REMOVE ALL ROCKS, ROOTS AND OTHER OBSTRUCTIONS LEAVING SURFACES SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME AND FERTILIZER UNIFORMLY AND MIX WITH SOIL.
LIME: 45 LBS. PER 1000 S.F.
PHOSPHOROUS: 20 LBS. PER 1000 S.F.
FERTILIZER: 17 LBS. PER 1000 S.F.
- CONTINUE TILLAGE UNTIL A WELL PULVERIZED, FIRM, UNIFORM SEED BED IS PREPARED 4-6 INCHES DEEP.
- SEED ON A FRESHLY PREPARED SEED BED AND COVER SEED LIGHTLY. 2 - 3 LBS PER 1000 S.F. (SEE MIXTURE BELOW)
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH. WOOD CHIPS AT 500 LBS. PER 1000 S.F. JUTE & MESH AS PER MANUFACTURER
- ASPHALT FOR ANCHORING MULCH SHALL BE TYPE SS-1 EMULSION AND APPLIED AT A RATE OF 1000 GAL. PER ACRE FOR SLOPE STABILIZATION, AND 150 GAL. PER TON OF STRAW FOR ANCHORING STRAW.
- INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEED WITHIN THE PLANTING SEASON, IF POSSIBLE. IF GRASS STAND SHOULD BE OVER 80% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
- CONSULT CONSERVATION INSPECTOR ON MAINTENANCE, TREATMENT, AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.
- SEED FOR TEMPORARY AND PERMANENT APPLICATIONS SHALL BE:
20% CARPET GRASS
28% BERMUDA GRASS
20% TURF FESCUE
10% CREEPING RED FESCUE
20% ANNUAL RYE GRAIN
*BERMUDA SEED SHALL BE HULLED FOR WARM WEATHER PLANTING. PURITY OF SEED SHALL BE A MIN. OF 98% AND GERMINATION SHALL BE A MIN. OF 85%.

ALL DISTURBED AREA SHALL BE SEEDED WITHIN 7-14 DAYS OF THE COMPLETION OF GRADING. SEE EROSION CONTROL AND MAINTENANCE NOTES. CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDATED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS, OTHER SEEDING SCHEDULES MAY BE POSSIBLE.

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 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 KAREN DIXON 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 USCFCOCHR 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 910-343-0896 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 AND 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'.

1 TEMPORARY GRAVELLED CONSTRUCTION ENTRANCE

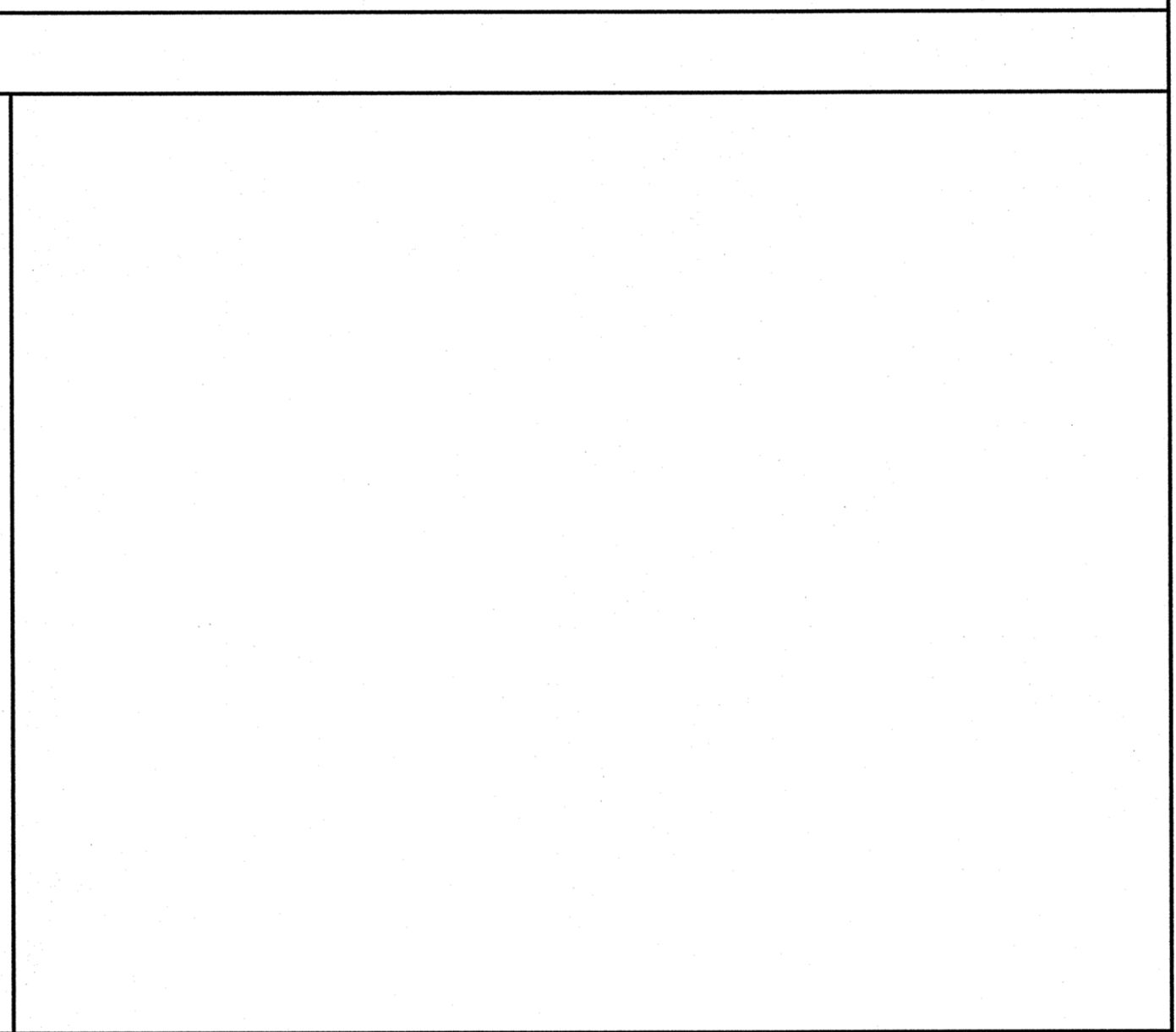
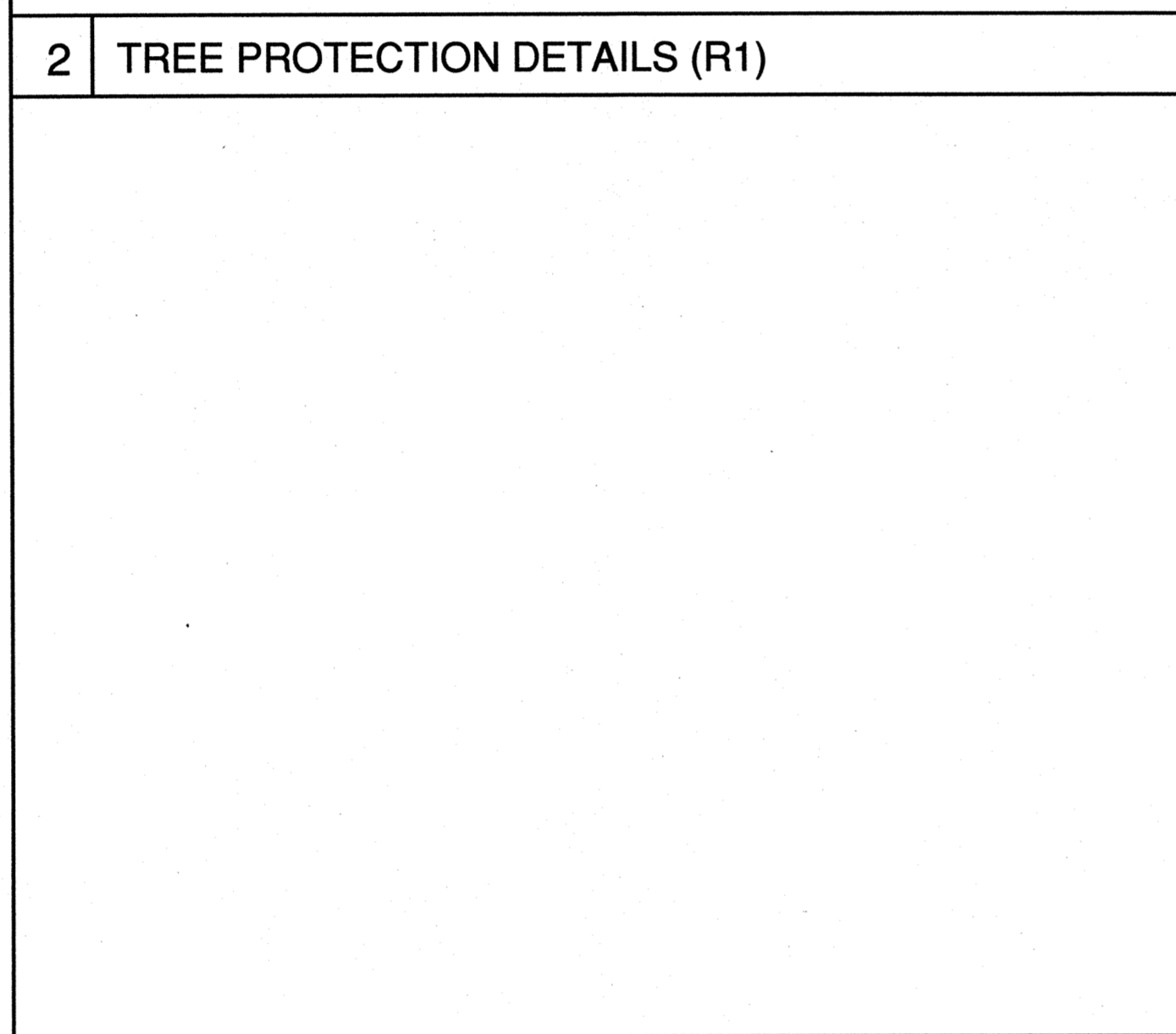
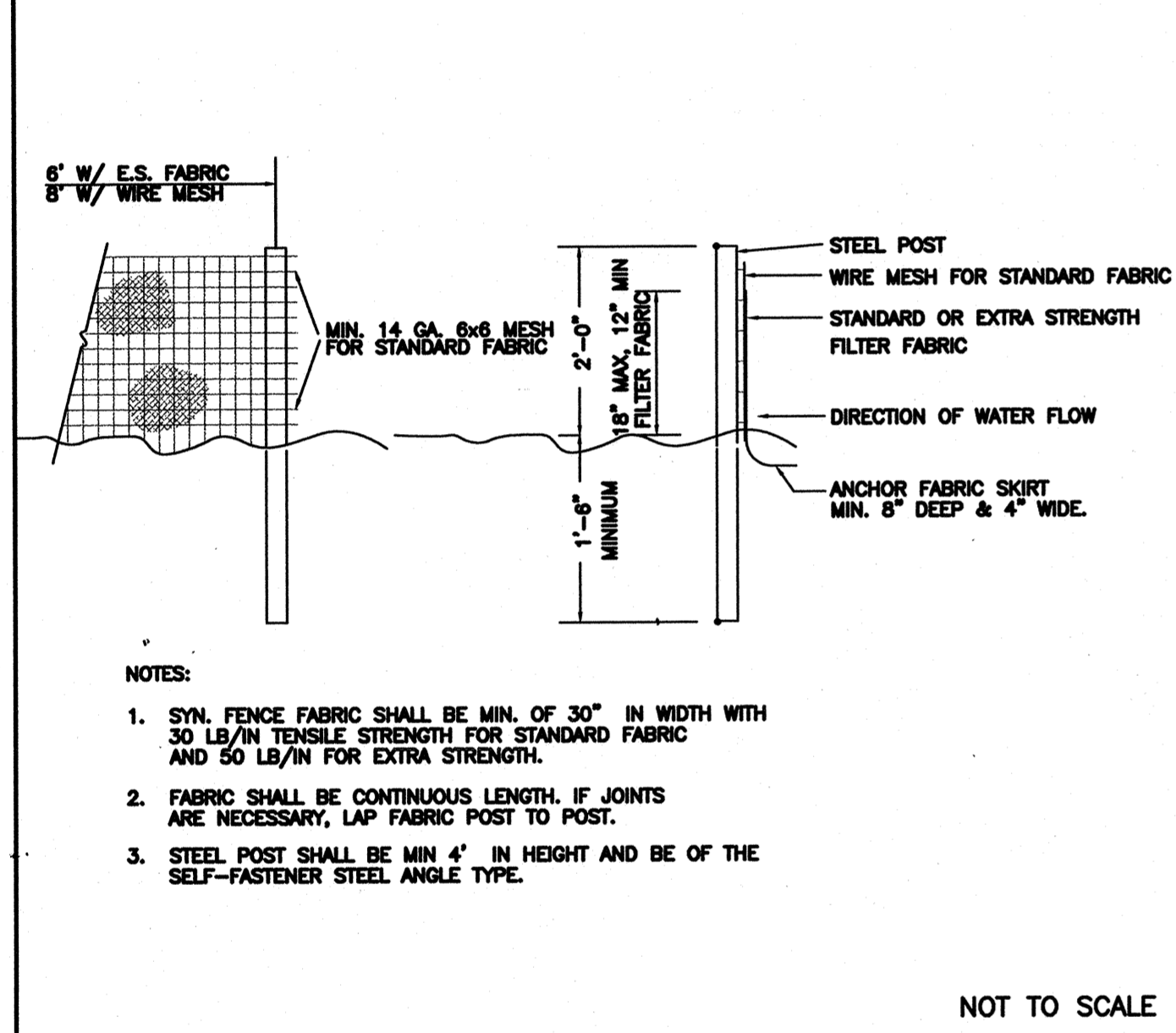
NOT TO SCALE

2 TREE PROTECTION DETAILS (R1)

3 TEMPORARY SILT FENCE

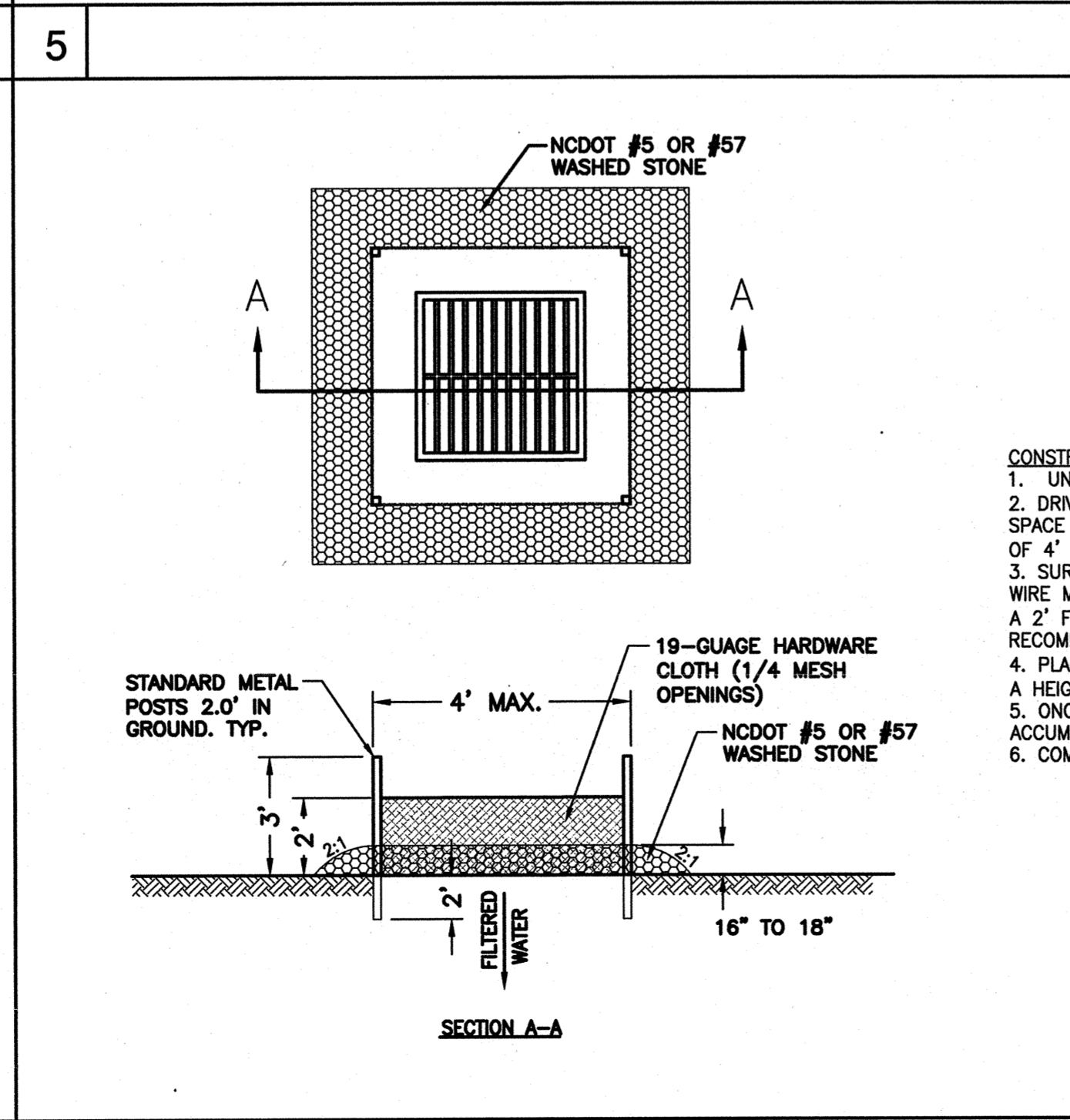
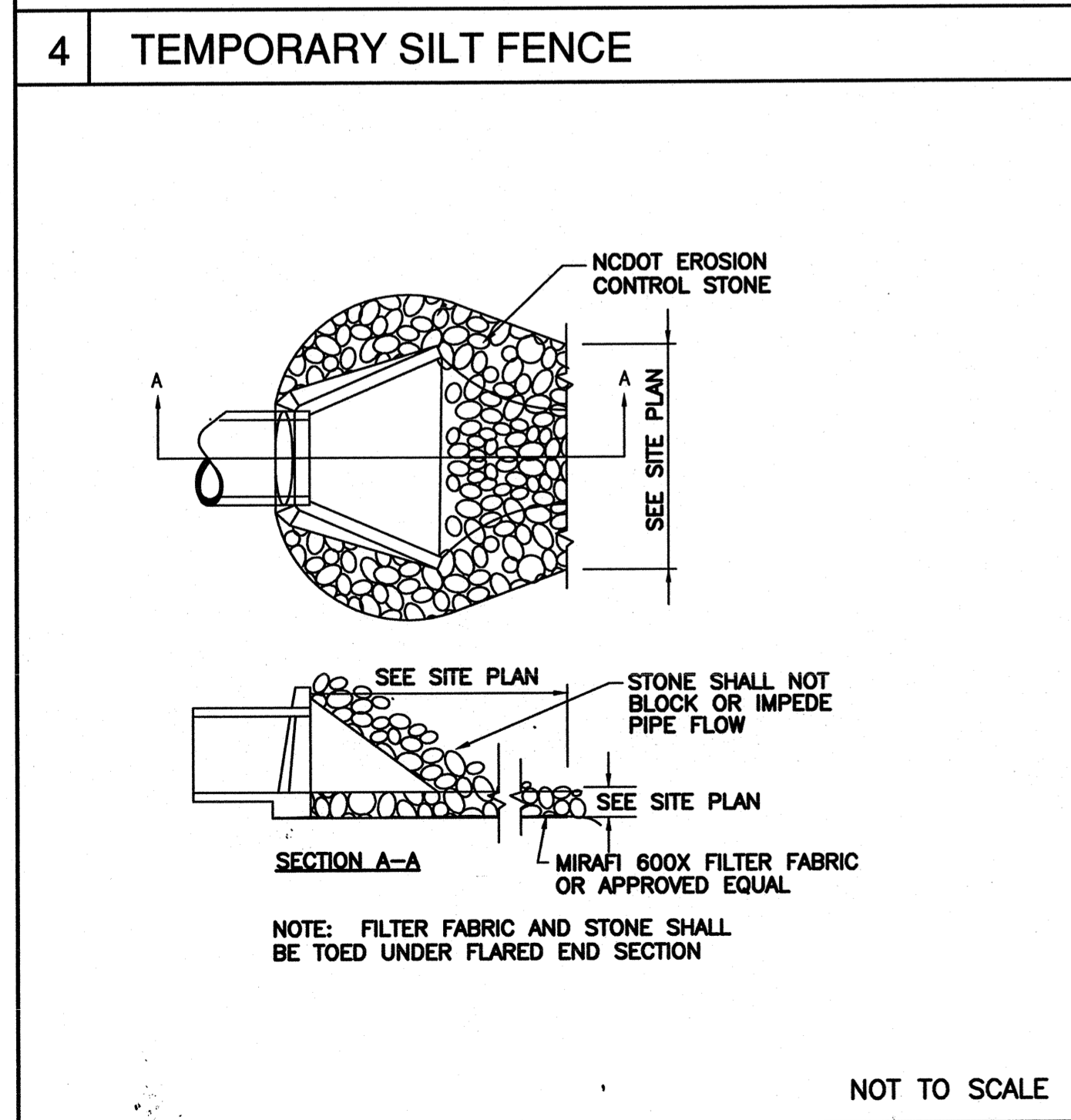
4 TEMPORARY SILT FENCE

5



6

6



7 ENERGY DISSIPATOR

NOT TO SCALE

8 HARDWARE CLOTH AND GRAVEL INLET PROTECTION

NOT TO SCALE

8

7 ENERGY DISSIPATOR

8 HARDWARE CLOTH AND GRAVEL INLET PROTECTION

7 ENERGY DISSIPATOR

8 HARDWARE CLOTH AND GRAVEL INLET PROTECTION

8

NOTES AND DETAILS

PUMP STATION 8 DESIGN

SHIPYARD BOULEVARD

NEW HANOVER COUNTY

WILMINGTON, N. C.

OWNER/DEVELOPER

CERIA

JEFF THEBERGE

PROJECT MANAGER

235 GOVERNMENT CENTER DR.

WILMINGTON, NC 28403

910 352-6673

NORRIS & TUNSTALL

CONSULTING ENGINEERS, P.C.

902 MARKET STREET

WILMINGTON, NC 28401

PHONE (910) 343-9653

FAX (910) 343-9804

office@nrteng.com

license #C-3641

15048

DES. JST

CON. JPN

DRWN. NKS

DATE 4/25/17

APPROVED CONSTRUCTION PLAN

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

APPROVED PLAN - NO PERMIT REQUIRED

Approved Construction Plan

REVISIONS

SYMBOL	DATE	DESCRIPTION	BY
R1	5/11/17	ADDED TREE PROTECTION DETAILS	

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C3

CALL 811 (3) WORKING DAYS BEFORE YOU DIG.

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

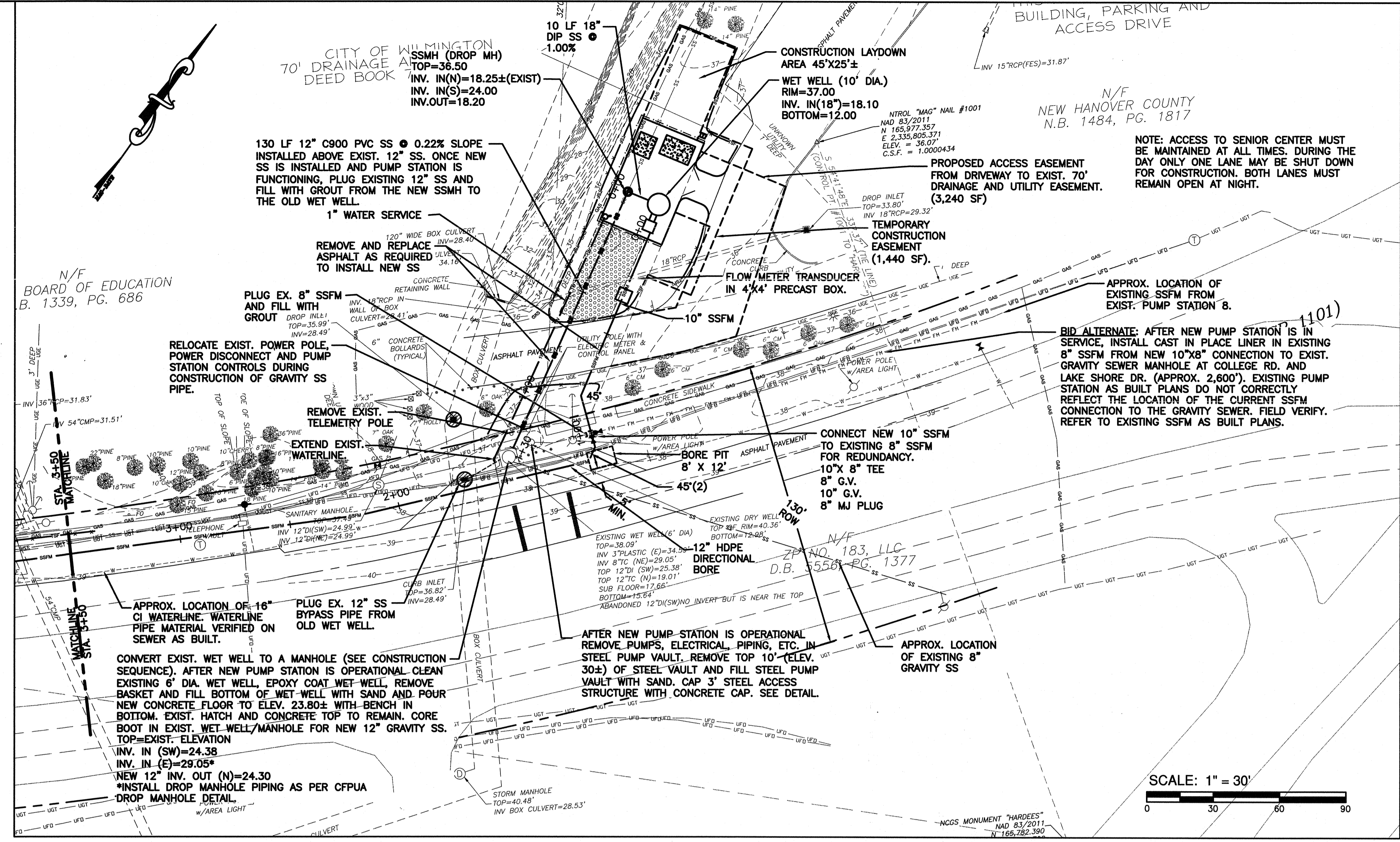
WILMINGTON

NORTH CAROLINA

Public Services • Engineering Division

APPROVED PLAN - NO PERMIT REQUIRED





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

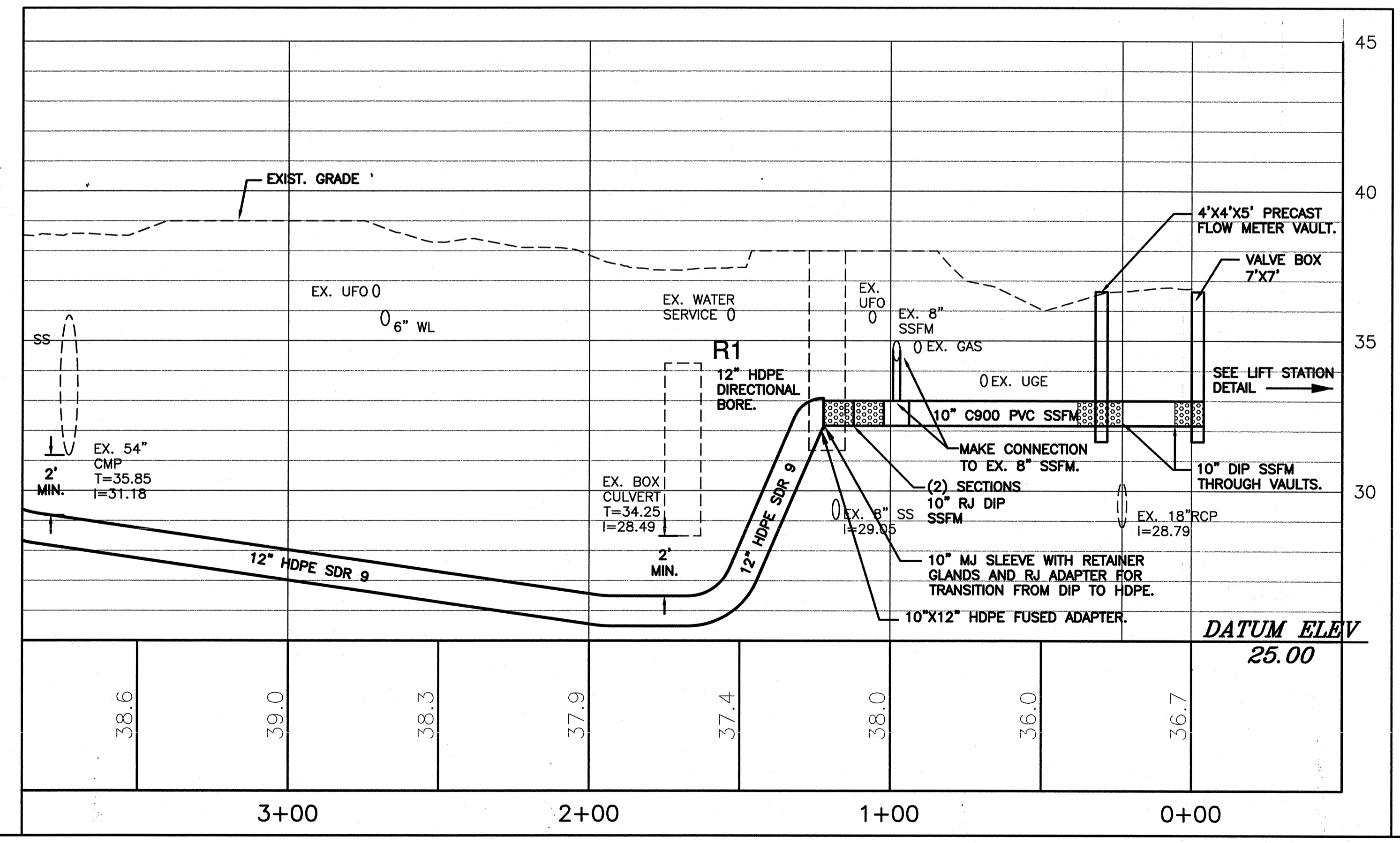
NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER FLOW # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

Approved Construction Plan
Name: _____ Date: _____

Planning _____
Public Utilities _____
Traffic _____
Fire _____

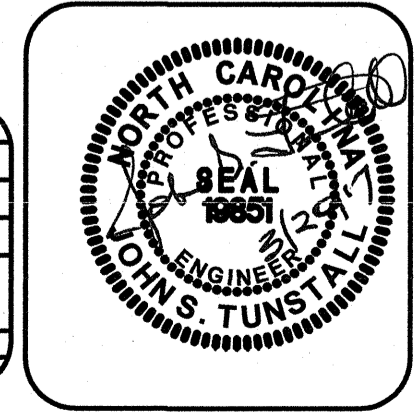
Signed: _____

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED PLAN - NO PERMIT REQUIRED



SCALE: 1" = 30' HORIZONTAL
1" = 3" VERTICAL

REV NO.	DESCRIPTION	DATE
R1	REVISED SSFM FROM STA. 1+00 THRU 5+00 WITH 12" HDPE DIRECTIONAL DRILL ADDED ARV MH AT STA. 6+57. REV. PIPE MATERIAL FOR BORE AND JACK.	2/24/17

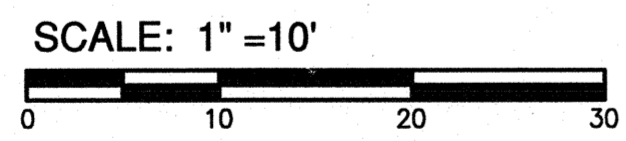
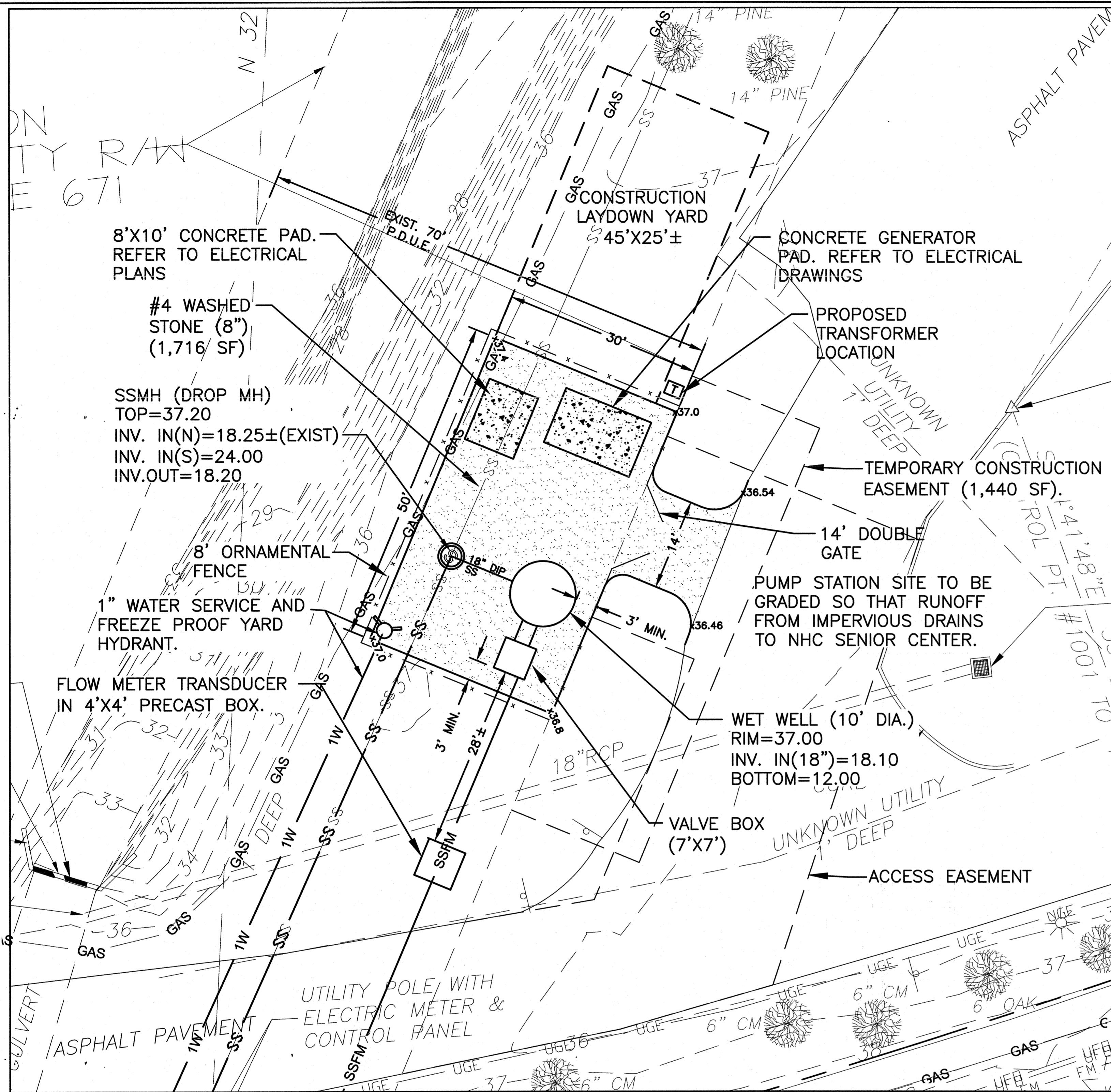


NORRIS & TUNSTALL
CONSULTING ENGINEERS, INC.
902 MARKET STREET WILMINGTON, NC 28401
PHONE (910) 343-9623 FAX (910) 343-9604
License PC-5920

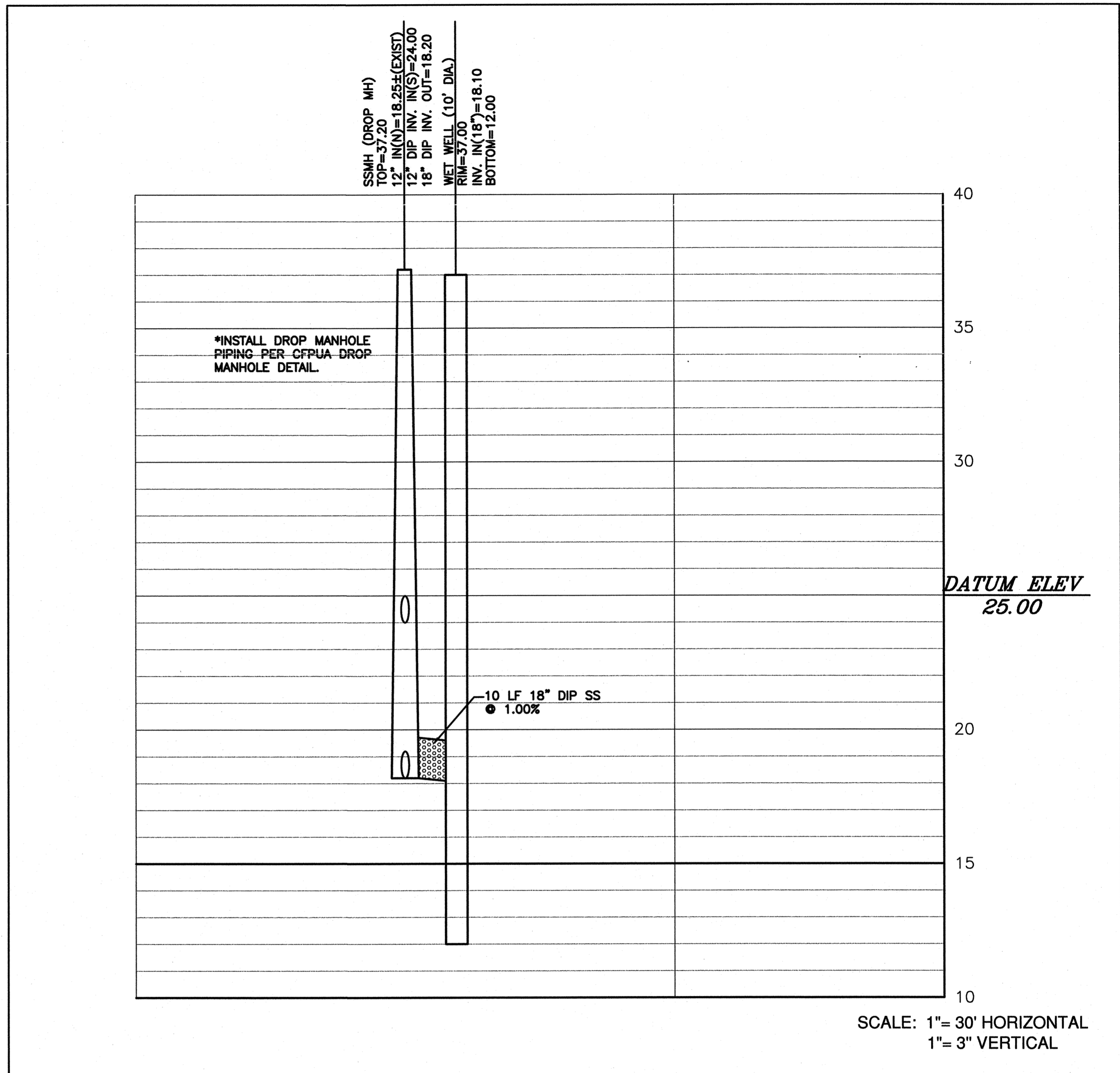
PLAN AND PROFILE
PUMP STATION 8 DESIGN
SHIPYARD BOULEVARD
NEW HANOVER COUNTY

DATE: 7/15/16
SCALE: 1" = 30'
1" = 3"
DRAWN: NKS
CHECKED: JST
PROJECT NO: 15048

SHEET NO:
PR2

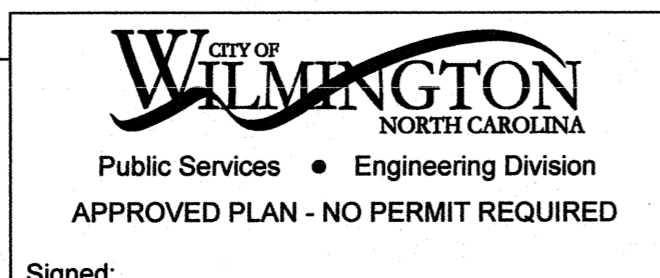


NOTE: ACCESS TO SENIOR CENTER MUST BE MAINTAINED AT ALL TIMES. DURING THE DAY ONLY ONE LANE MAY BE SHUT DOWN FOR CONSTRUCTION. BOTH LANES MUST REMAIN OPEN AT NIGHT.



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

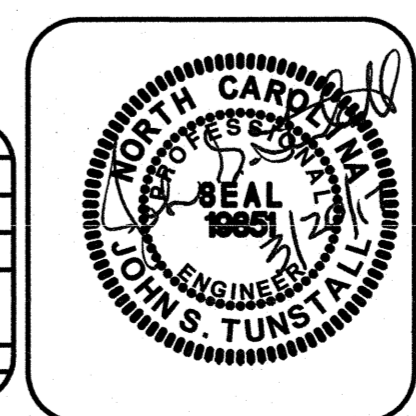
NCDENR PWSS WATER PERMIT #: _____ GPD
WATER CAPACITY: _____
DWQ SEWER PERMIT #: _____ GPD
SEWER CAPACITY: _____
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)



Approved Construction Plan

Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

REV. NO.	DESCRIPTION	DATE
R1	REVISED SSFM FROM STA. 1+00 THRU 5+00 WITH 12" HDPE DIRECTIONAL DRILL ADDED ARV MH AT STA. 6+57	2/24/17

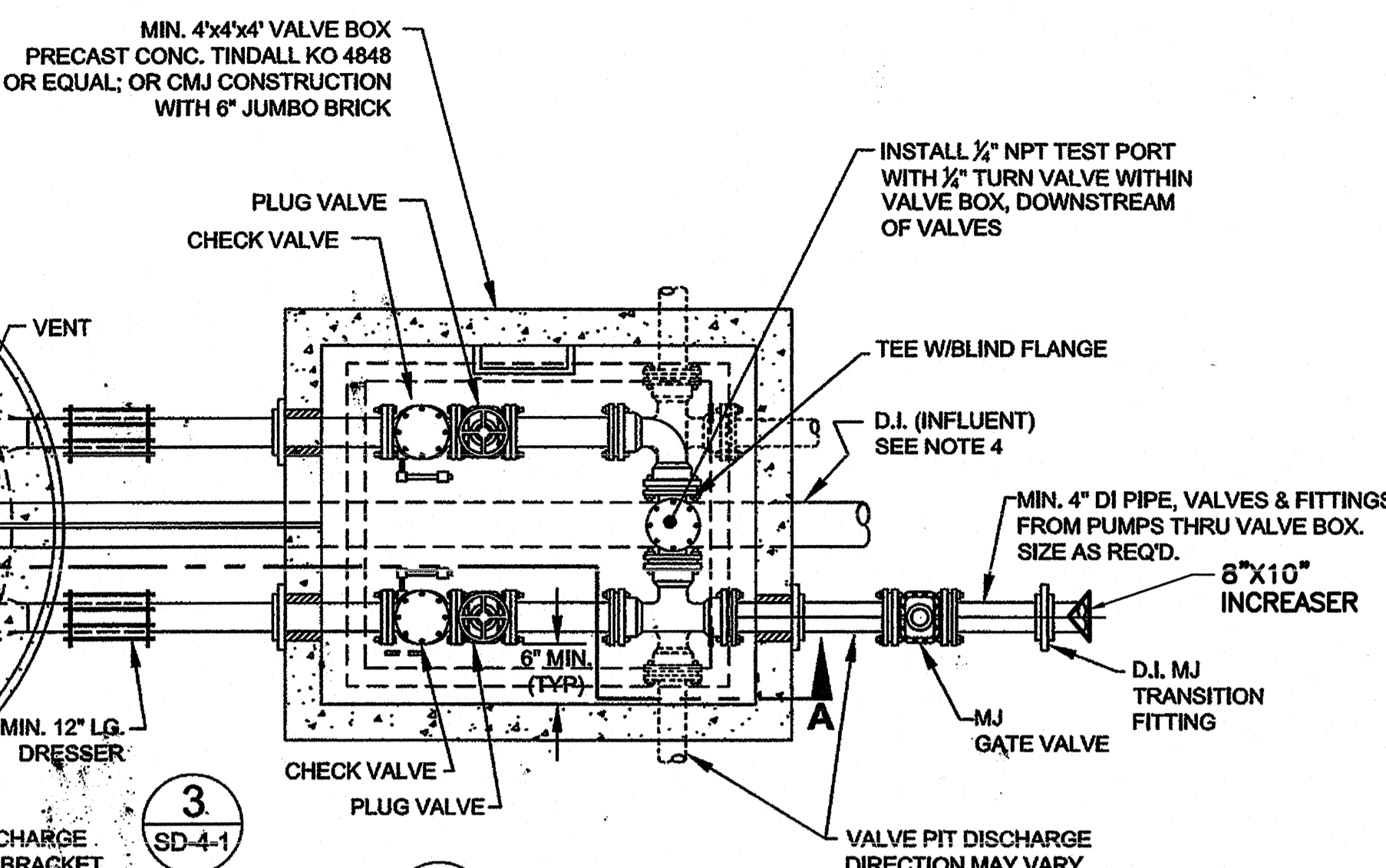


NORRIS & TUNSTALL
CONSULTING ENGINEERS, INC.
802 MARKET STREET WILMINGTON, NC 28401 PHONE (910) 343-0853 FAX (910) 343-0804
PLAN AND PROFILE
PUMP STATION 8 DESIGN
SHIPYARD BOULEVARD
NEW HANOVER COUNTY

DATE: 7/15/16
SCALE: 1" = 30' HORIZONTAL, 1" = 3' VERTICAL
DRAWN: NKS
CHECKED: JST
PROJECT NO: 15048

SHEET NO:
PR4

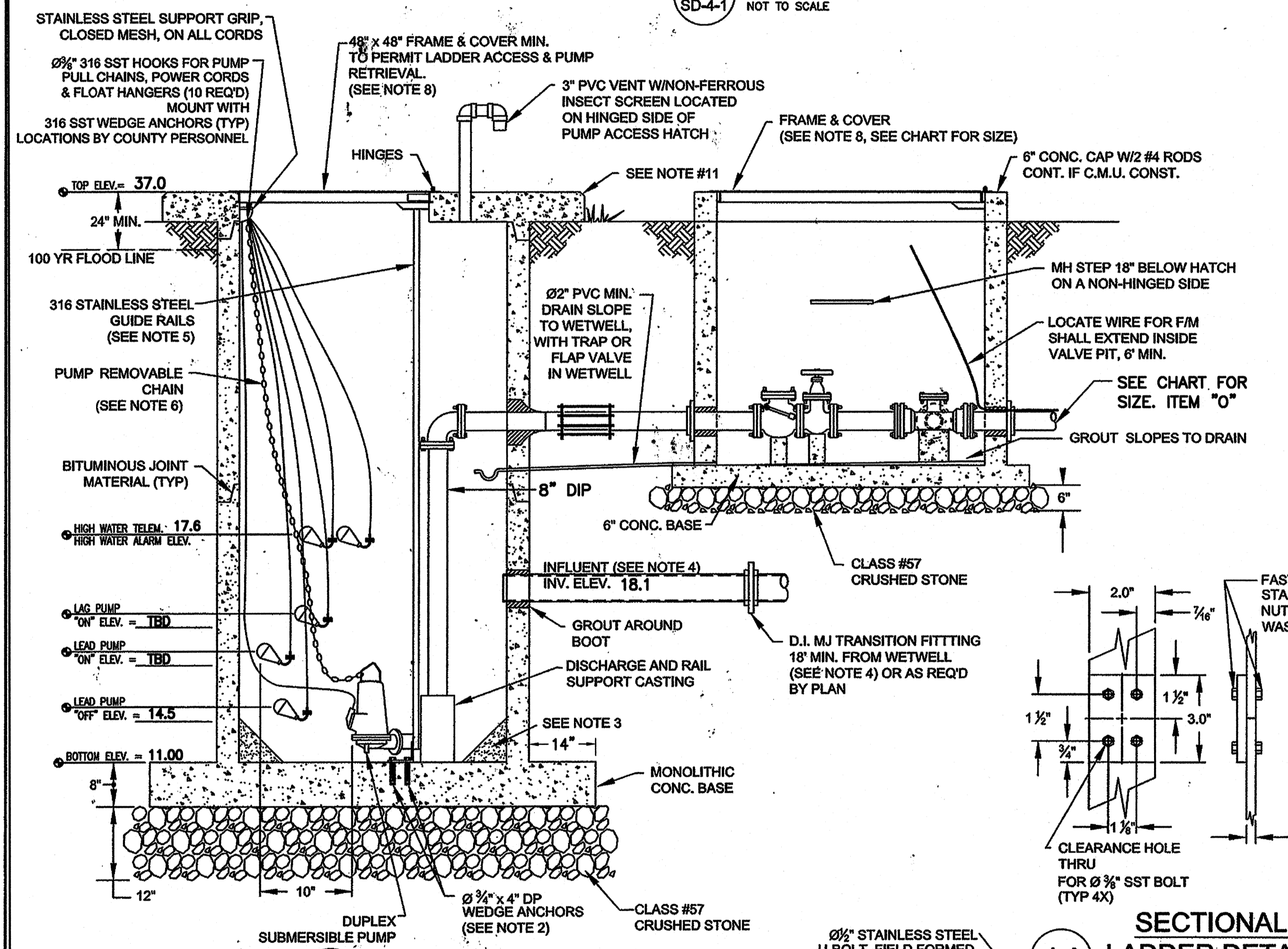
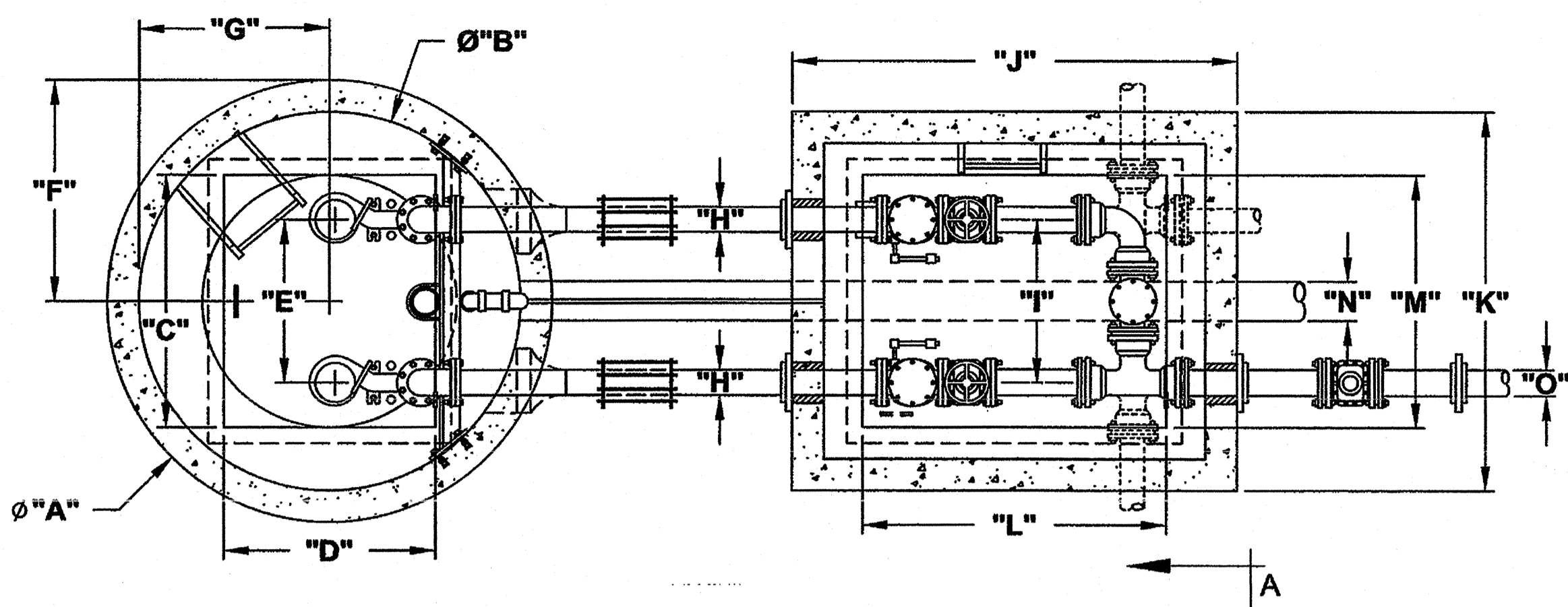
NCDCNR PWSS WATER PERMIT # _____
 DWQ SEWER PERMIT # _____
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)



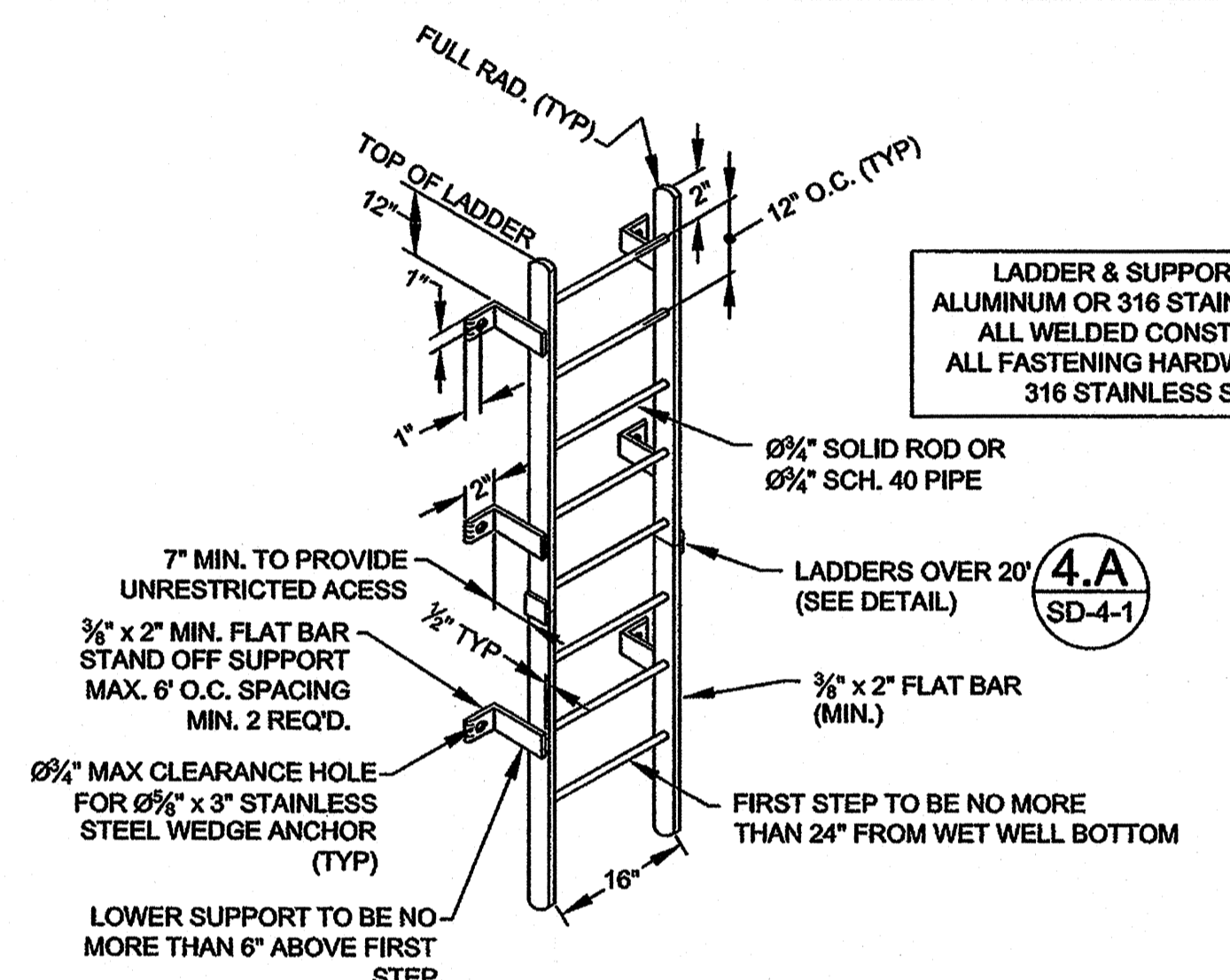
1 PLAN
 SD-4-1
 NOT TO SCALE

PUMP INFORMATION	
MANUFACTURER	MYERS
MODEL #	4VCX WITH VFD
HORSEPOWER	50
PHASE	3
VOLTS	VARIABLE
GPM @	VARIABLE
TDH	12
IMPELLER DIAMETER	

ITEM	DIM.	DESCRIPTION
"A"	12' ±	OUTSIDE DIAMETER OF WET WELL
"B"	10'	INSIDE DIAMETER OF WET WELL
"C"	48"	ACCESS HATCH LENGTH (48" MIN.)
"D"	48"	ACCESS HATCH WIDTH (32" MIN.)
"E"	4'	CL PUMP TO CL PUMP DIMENSION
"F"	7'	CL HATCH TO OUTSIDE OF WET WELL
"G"	6'	CL HATCH TO INSIDE OF WET WELL
"H"	8"	PIPE DIAMETER
"I"	36"	CL PIPE TO CL PIPE DIMENSION 30" MIN (4") 36" MIN (6")
"J"	84"	VALVE PIT WIDTH 60" MIN (4") 84" MIN (6")
"K"	84"	VALVE PIT LENGTH 60" MIN (4") 84" MIN (6")
"L"	60"	ACCESS HATCH LENGTH (48" MIN)
"M"	60"	ACCESS HATCH WIDTH (48" MIN)
"N"	18"	INFLUENT PIPE SIZE
"O"	10"	FORCE MAIN PIPE SIZE (4" MIN)

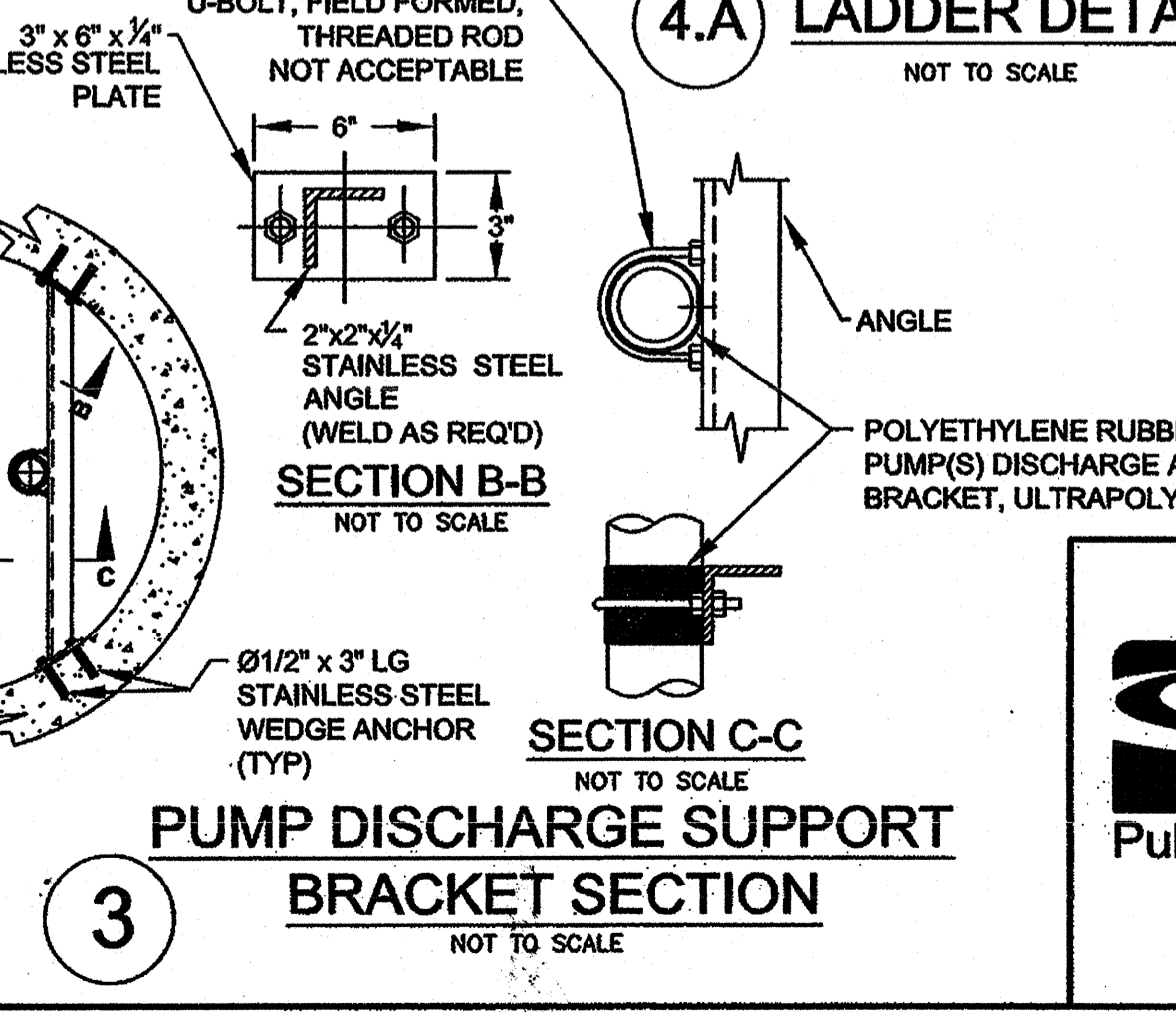


2 SECTION A-A
 NOT TO SCALE

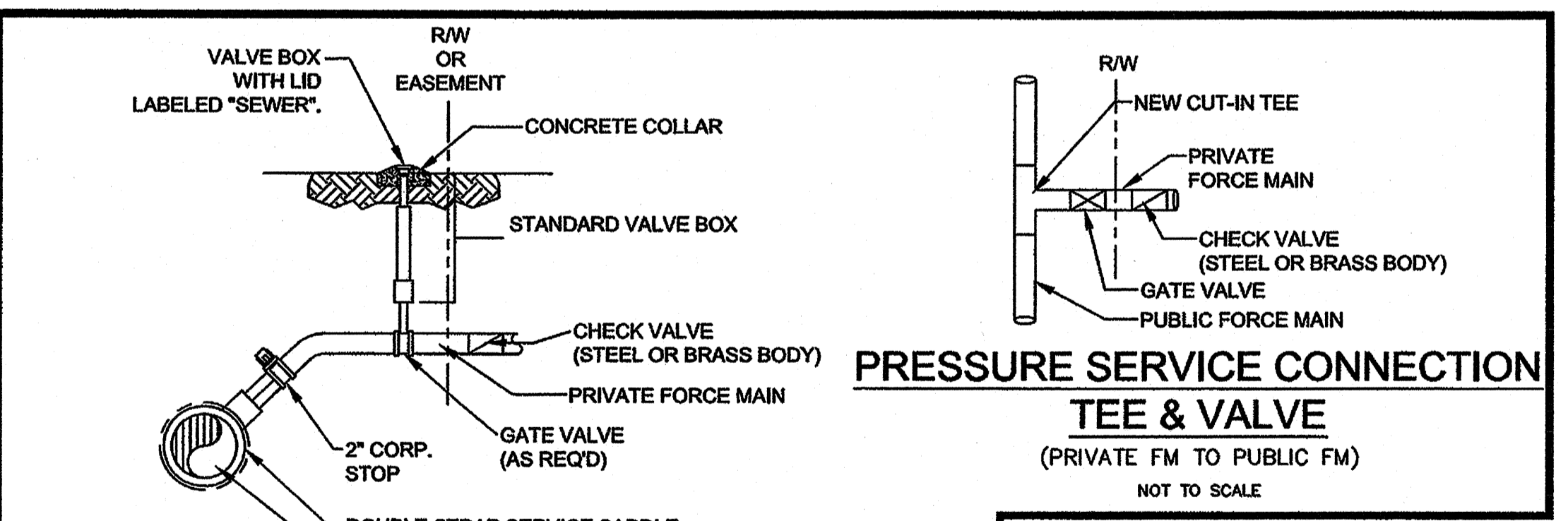


4 ACCESS LADDER DETAIL
 NOT TO SCALE

- NOTES:**
- UNLESS OTHERWISE SPECIFIED, ALL METAL WET WELL COMPONENTS, HARDWARE, AND FASTENERS, SHALL BE CAST IRON, DUCTILE IRON, OR 316 STAINLESS STEEL OR BETTER.
 - UNLESS OTHERWISE SPECIFIED, ALL CONCRETE FASTENERS TO BE 316 STAINLESS STEEL WEDGE ANCHORS (TYP).
 - CONCRETE FILLET IN BOTTOM OF WET WELL TO START 10" FROM THE ULTIMATE PUMP SIZE AND BASE AT 45° (TYP) ALL AROUND.
 - INFLUENT TO ENTER WET WELL CENTERED BETWEEN AND PARALLEL TO PUMP DISCHARGE PIPES. PROVIDE ONE 18" JOINT DIP AT WET WELL.
 - ONE PIECE SCHD. 40, 316 STAINLESS STEEL GUIDE RAILS. DIAMETER PER MANUFACTURERS RECOMMENDATIONS. TWO PIECE RAILS WITH INTERMEDIATE (MID 1/2) SUPPORT, FOR LENGTHS GREATER THAN 18 FEET.
 - PUMP REMOVABLE CHAIN AND RELATED LIFTING HARDWARE TO BE 3/8" MIN. 316-L STAINLESS STEEL 2000 LB MIN. WORKLOAD LIMIT. LENGTH TO EXTEND 4" ABOVE HATCH.
 - PUMP DISCHARGE SUPPORT BRACKET FOR DUCTILE IRON, OVER 10" MIN. ONE REQ'D. MIDWAY.
 - ACCESS HATCHES SHALL BE PAD LOCKABLE FRAME & COVER, WITH 1/2" ALUMINUM PLATE AND 1/2" THICK x 3" WIDE STAINLESS STEEL HINGES MIN. AND POSITIVE LOCKING DOOR RESTRAINT. HINGE ON DISCHARGE SIDE OF WET WELL AND VALVE BOX, (HALLIDAY PROD. OR EQUAL, SIZE AS REQ'D).
 - PLUG VALVES TO BE DEZURIK (FIG. 118) ECCENTRIC, CAST IRON BODY AWWA C504 WITH 4" HAND WHEEL & NON RISING STEM. SWING CHECK VALVES TO BE MUELLER IRON BODY, BRONZE MOUNTED AWWA C508 WITH OUTSIDE SPRING & LEVER.
 - ELEVATION OF TOP OF WET WELL AND ELEC. CONDUITS SHALL BE 2.0 FEET ABOVE THE 100 YEAR FLOOD ELEVATION.
 - CONCRETE PAD (36" MINIMUM WIDTH W/45° CHAMFER) AROUND OUTSIDE DIAMETER OF WET WELL.



3 PUMP DISCHARGE SUPPORT BRACKET SECTION
 NOT TO SCALE



PRESSURE SERVICE CONNECTION TAPPING SADDLE
 (PRIVATE FM TO PUBLIC FM)
 NOT TO SCALE

PRESSURE SERVICE CONNECTION TEE & VALVE
 (PRIVATE FM TO PUBLIC FM)
 NOT TO SCALE

- SITE LAYOUT NOTES:**
- ALL STRUCTURES TO BE PARALLEL AND PERPENDICULAR TO EACH OTHER.
 - PROVIDE 3" MIN. SEPARATION BETWEEN ALL STRUCTURES, AND TO FENCE.
 - ALL TOP OF SLAB ELEV. TO BE UNIFORM.
 - AREA INSIDE FENCE TO HAVE 4" #57 M WASHED STONE.
 - UTILITY METER BASE TO BE LOCATED OUTSIDE OF FENCE.
 - ACCESS DRIVE AND TURN AROUND (WHERE REQ'D.) TO BE 6' ABC, MINIMUM.
 - FENCE GATE MUST ALLOW DIRECT IN LINE ACCESS TO WET WELL.



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WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED PLAN - NO PERMIT REQUIRED

Approved Construction Plan

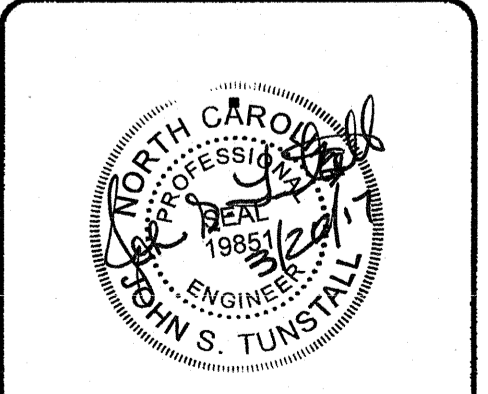
Name _____ Date _____

Planning _____

Public Utilities _____

Traffic _____

Fire _____



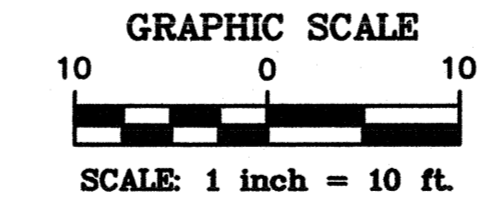
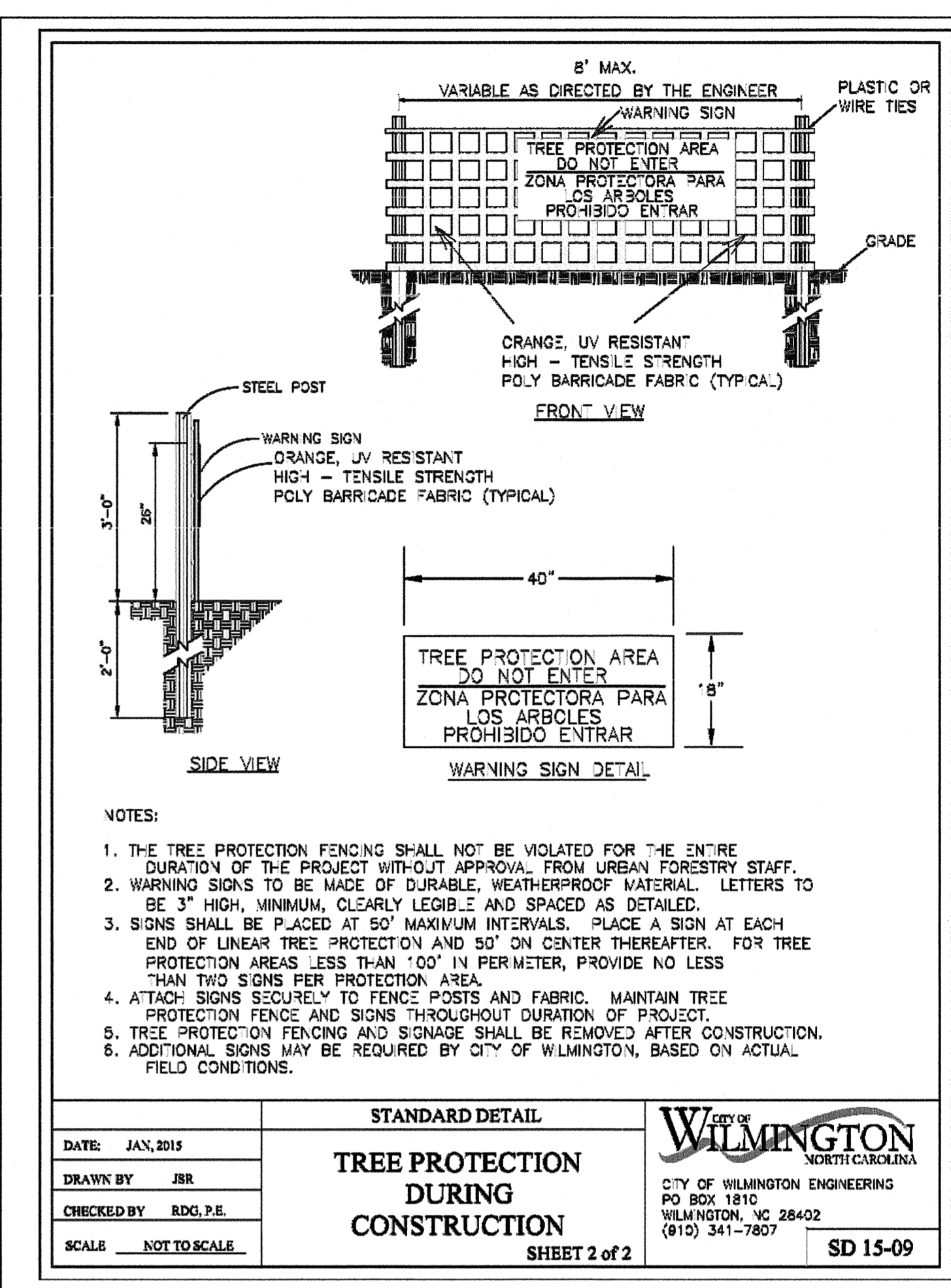
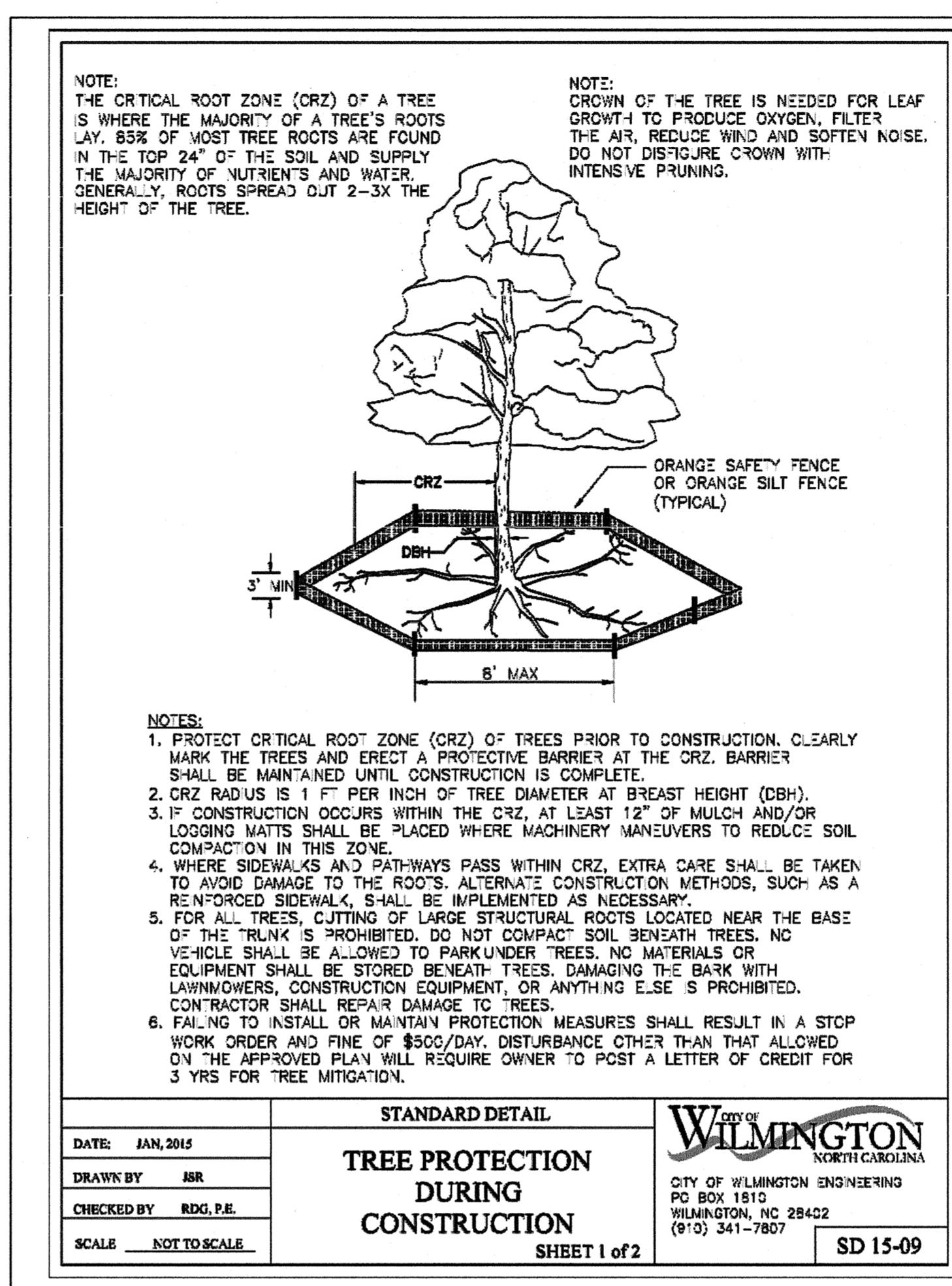
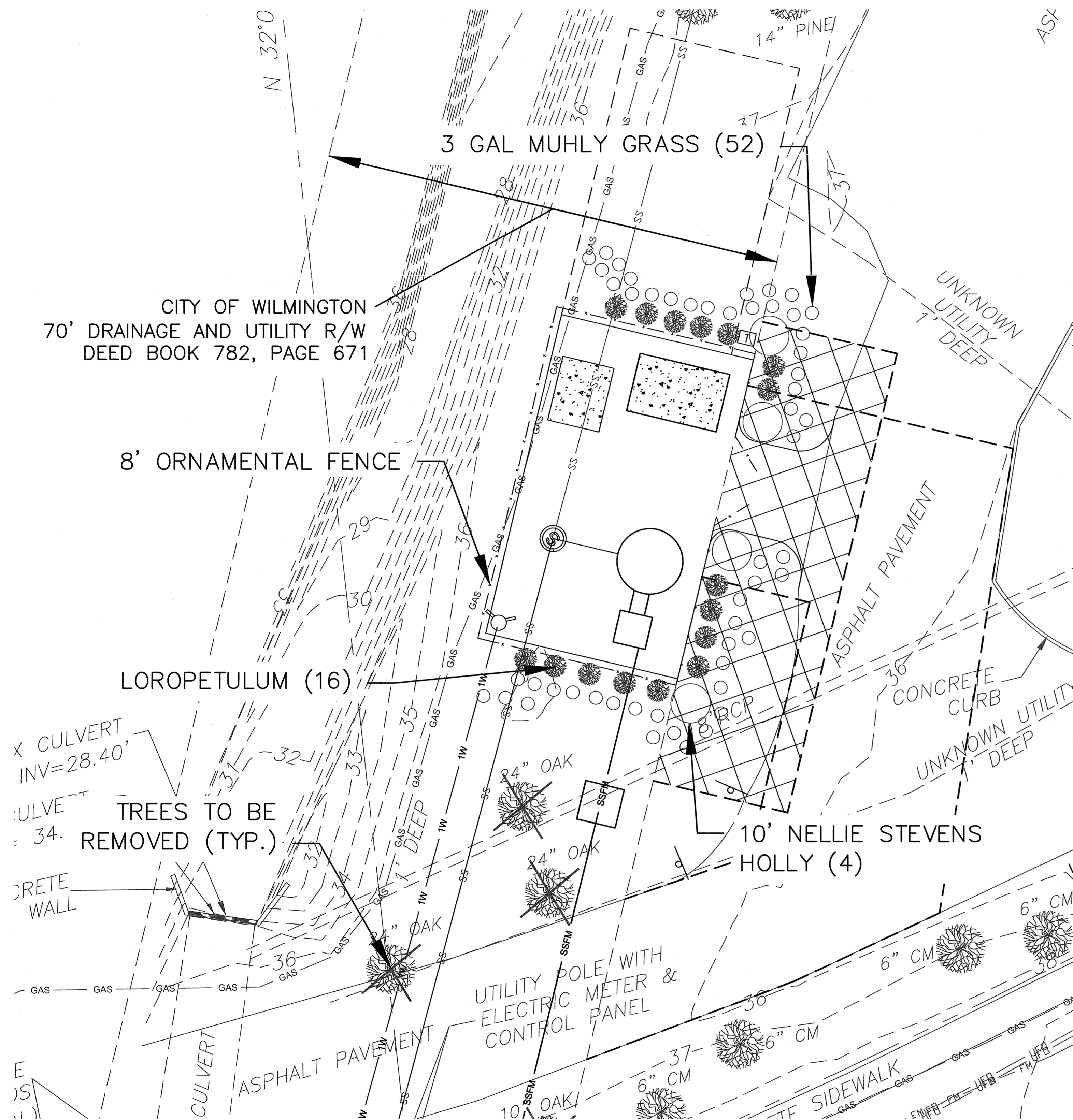
PUMP STATION / SITE PLAN STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
PUMP STATION / SITE PLAN STANDARD DETAILS
SD-4

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

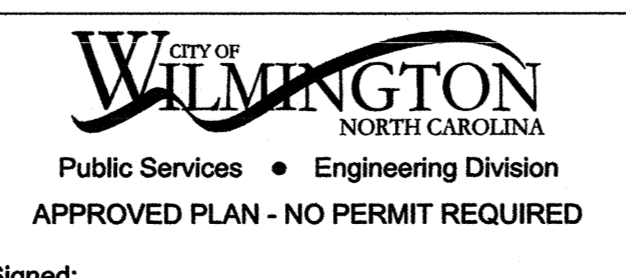
DATE: 6/28/16
 SCALE: N/A
 DRAWN BY: j.karabin
 CHECKED BY: _____
 PROJECT NO.: 15048

SHEET NO.: PR5



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



Approved Construction Plan

Name _____ Date _____

Planning _____
Public Utilities _____
Traffic _____
Fire _____

REV:	DESCRIPTION:	DATE:

PUMP STATION 8 DESIGN
SHIPYARD BOULEVARD
NEW HANOVER COUNTY
WILMINGTON, N.C.

LANDSCAPE PLAN

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

DATE: 05/25/2017
SCALE: NA
DRAWN BY: JDH
CHECKED BY: _____
PROJECT NO.: _____

SHEET NO:
L1