

PROPERTY ADDRESS:
1069 MILITARY CUTOFF RD.
PARCEL #R05100-003-065-000
MAP ID #315706498929000

RENAISSANCE PARK (EXISTING)

TRACT "A"	21.35 AC
TRACT "A-1" R	2.16 AC
TRACT "A-2" R	1.40 AC
TRACT "A-3"	2.55 AC
FUTURE PUBLIC RW (ACCESS EASEMENT)	0.73 AC
REMAINDER OF TRACT "A"	14.51 AC
SW-A (2.49 AC)	
SW-B (2.35 AC)	
REMAINDER (9.67)	

RENAISSANCE PARK (PROPOSED)

TRACT "A"	21.35 AC
TRACT "A-1" R	2.16 AC
TRACT "A-2" R	1.40 AC
TRACT "A-3"	2.55 AC
FUTURE PUBLIC RW (R)	1.69 AC
REMAINDER OF TRACT "A" (R)	13.55 AC
SW-A (2.49 AC)	
SW-B (2.35 AC)	
TRACT "A-4" (3.16 AC)	
TRACT "A-5" (5.55 AC)	

THIS PROPERTY IS LOCATED IN ZONE "C" AREAS OF MINOR FLOODING ACCORDING TO FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 370168-0010-0126 DATE SEPTEMBER 3, 1992.

NOTE: ALL LOTS DEPICTED ON THIS PLAN MEET OR EXCEED THE MINIMUM AREA AND DIMENSIONAL REQUIREMENTS OF THE ZONING DISTRICT IN WHICH LOCATED.

LANDFALL ASSOCIATES
DEED BOOK 1514 PAGE 1564

ZONING R-15

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

NC DENR PWSS WATER PERMIT #: _____ GPD

WATER CAPACITY: _____ GPD

DWQ SEWER PERMIT #: _____

SEWER CAPACITY: _____ GPD

SEWER SHED # AND PLANT: _____

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

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

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

SUBDIVISION REVIEW PLAN
RENAISSANCE II OFFICE BUILDING
WILMINGTON, NORTH CAROLINA

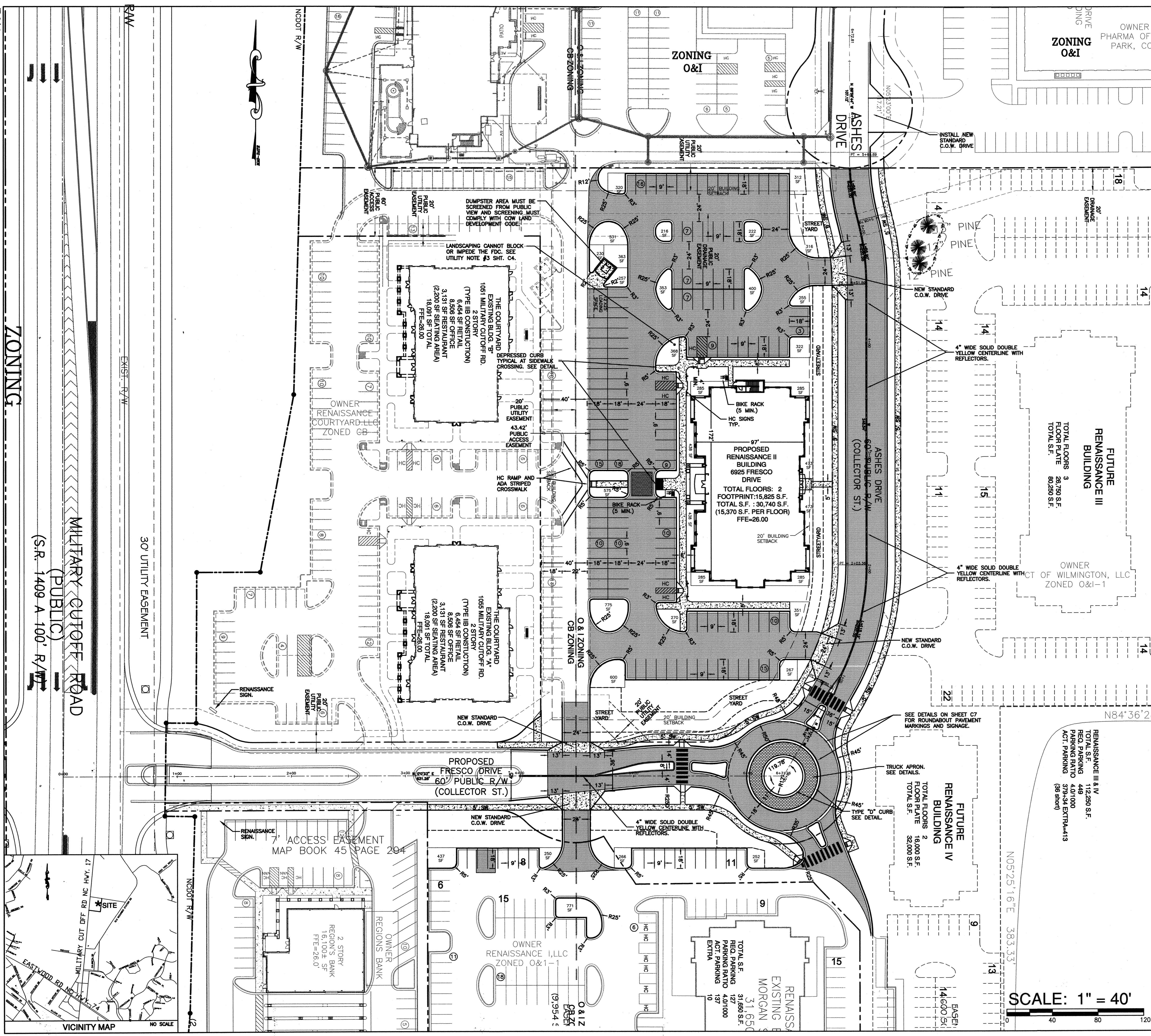
OWNER:
TCT OF WILMINGTON, LLC
1123 MILITARY CUTOFF RD.
WILMINGTON, N.C. 28405
(910) 258-7704

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

16009

DES. JST
C.D. JPN
DRWL. NKS
DATE 2/23/16

CO



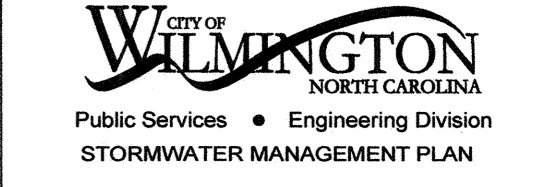
SITE DATA TABLE	
USE:	PROFESSIONAL OFFICE
SITE AREA:	3.16 ACRES (137,428 SF)
ACCESS EASEMENT WITHIN SITE:	.80 ACRES (34,718 SF)
PARCEL ID#:	R05100-003-085-000
MAP ID#:	315706.49.8929.000
DISTURBED AREA:	4.48 ACRES
ZONING:	O & I-1
CAMA LAND USE:	RESOURCE PROTECTION
BUILDING SETBACKS (REQUIRED):	FRONT SETBACK: 20' INTERIOR SIDE SETBACK: 130' CORNER SIDE SETBACK: 20' REAR SETBACKS: 20'
BUILDING SETBACKS (PROPOSED):	FRONT SETBACK: 136' INTERIOR SIDE SETBACK: 187'± CORNER SIDE SETBACK: 110'± REAR SETBACKS: 187'±
MAX. BUILDING LOT COVERAGE:	40%
PROPOSED BUILDING LOT COVERAGE:	11%
MAX. BUILDING HEIGHT:	45'
BUILDING CONSTRUCTION TYPE:	IB
BUILDING MATERIAL:	BRICK, CALCIUM SILICATE MASONRY UNITS, HARD COAT STUCCO AT PARAPET
BUILDING HEIGHT:	43' (2 STORY)
BUILDING SQUARE FOOTAGE:	30,740 SF TOTAL (15,370 PER FLOOR)
PARKING REQ'D: OFFICE:	200/SF MAX, 300/SF MIN.
TOTAL PARKING REQ'D:	154 MAX/102 MIN. REQUIRED
PROPOSED PARKING PROV'D:	146 (INCLUDES 5 HC)
PROPOSED IMPERVIOUS AREA:	BUILDING: 15,825 SF (ROOF AREA) ASPHALT, CURB & GUTTER: 51,678 SF SIDEWALK: 4,150 SF TOTAL: 71,653 SF
EXISTING IMPERVIOUS AREA WITHIN ACCESS EASEMENT:	TOTAL IMPERVIOUS AREA: 96,653 SF % SITE IMPERVIOUS AREA: 70% AREA WITHIN NEW R/W: 46,000 SF IMPERVIOUS AREA WITHIN NEW R/W: 38,635 SF
LANDSCAPING:	FOUNDATION PLANTINGS (12%): FRONT: 45' X 156' X .12 = 842 SF REQD. 876 SF PROVIDED SIDE (2): 45' X 104' X .12 = 562 SF REQD. 570 (2) SF PROVIDED REAR: 45' X 156' X .12 = 842 SF REQD. 846 SF PROVIDED TOTAL REQUIRED=2,808 SF TOTAL PROVIDED=2,862 SF
LANDSCAPING REQ'D INTERIOR:	ASPHALT, CONCRETE CURB & GUTTER: 51,678 SF 14% REQUIRED: 7,335 SF (14%) X (51,678) = 7,235 SF
STREETLANDSCAPING:	PRIMARY: PROPOSED PUBLIC R/W FRESCO DR. 3,918 SF PROVIDED 18' MULTIPLYER (241'-24) X 18' = 3,906 SF SECONDARY: ASHES DR. 3,763 SF PROVIDED 9' MULTIPLYER (451'-48) X 9' = 3,627 SF

SITE DATA TABLE - EXISTING RENAISSANCE I, PHASE I	
USE:	OFFICE
SITE AREA:	2.16 ACRES
DISTURBED AREA:	O & I-1 AND CB
ZONING:	RESOURCE PROTECTION
CAMA LAND USE:	RESOURCE PROTECTION
BUILDING SETBACKS (EXISTING):	FRONT: 230' SIDE: 33' NORTH, 11' SOUTH REAR: 45'
BUILDING HEIGHT:	32' (2 STORY)
BUILDING SQUARE FOOTAGE:	31,650 SF (15,825 SF EACH FLOOR)
PARKING REQ'D:	O & I ZONE
PARKING GROUP (OFFICE):	200/SF MAX, 300/SF MIN. 158 MAX/105 MIN. REQUIRED
PROPOSED PARKING PROV'D:	137 REGULAR (6 ARE HC)
IMPERVIOUS AREA-PHI DRAINAGE AREA:	EXISTING BUILDING: 15,825 SF (ROOF AREA) EXISTING ASPHALT/CURB & GUTTER: 68,955 SF EXISTING SIDEWALKS/CONCRETE PADS: 6,850 SF TOTAL EXISTING IMPERVIOUS AREA: 91,625 SF TOTAL
STREETLANDSCAPING:	(331'-24) X 18' = 5,928 SF REQUIRED INTERIOR LANDSCAPE PROVIDED: 1,976 SF PROVIDED

TREE REMOVAL TABLE	
REGULATED PINES	
12" (2)	
15" (1)	

LEGEND	
PROPERTY LINE	---
ASPHALT PAVEMENT	▨
CONCRETE	▩

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



Date: _____ Permit # _____
Signed: _____
Approved Construction Plan
Name: _____ Date: _____

Planning: _____
Traffic: _____
Fire: _____

NC DENR PWSS WATER PERMIT #: _____ GPD
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____ GPD
SEWER CAPACITY: _____ GPD
SEWER SIZES # AND PLANT: _____
SEWER TO FLOW THROUGH NET: YES or NO (CIRCLE ONE)

LAYOUT PLAN
RENAISSANCE II OFFICE BUILDING
WILMINGTON, NORTH CAROLINA

OWNER: TCT OF WILMINGTON, LLC
1123 MILITARY CUTOFF RD.
WILMINGTON, N.C. 28405
(910) 256-7704

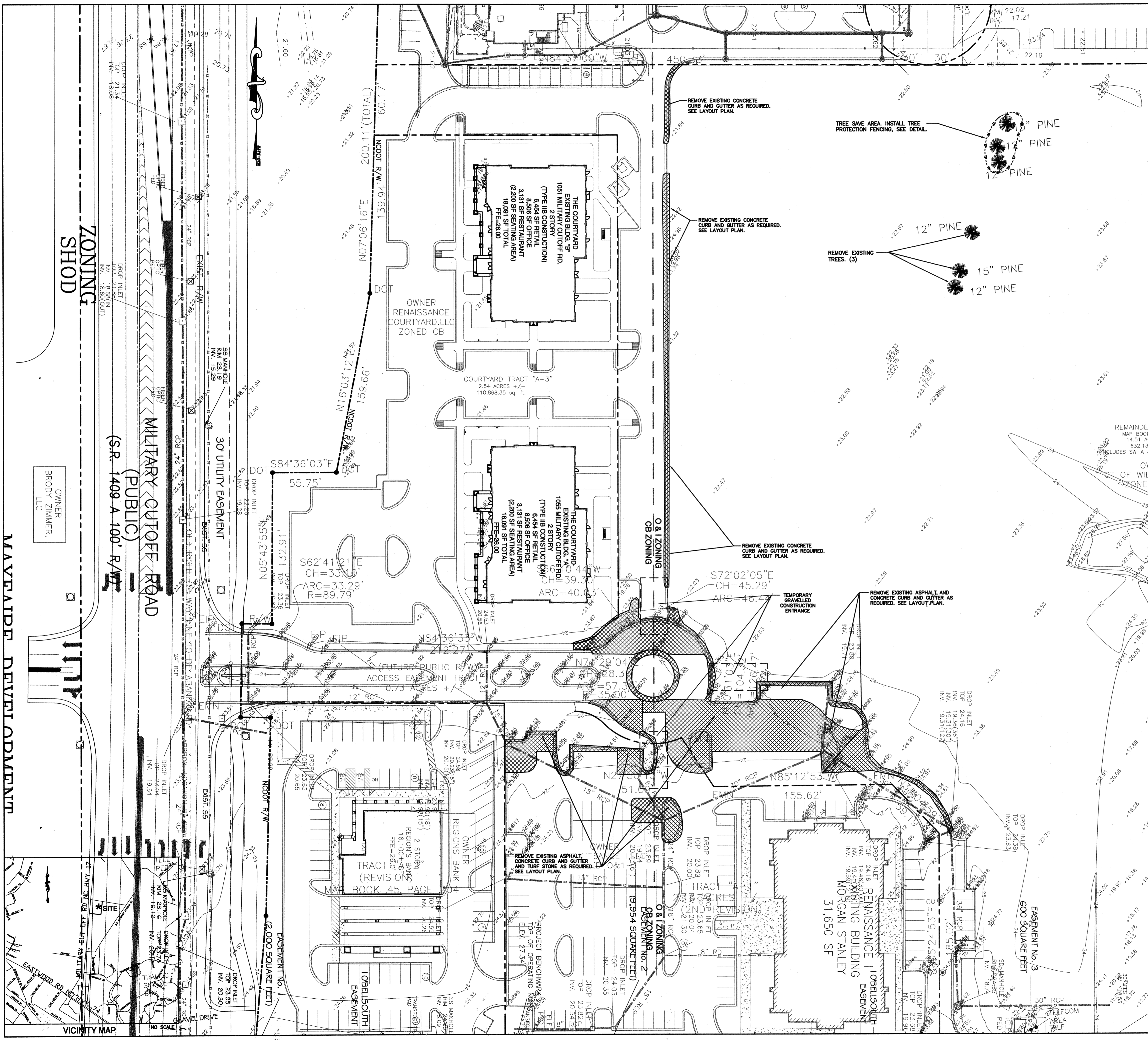
NORRIS & TUNSTALL
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902 MARKET STREET
WILMINGTON, NC 28401
PHONE (910) 343-9653
license # C-3641

DES. JUST
C.D. JPN
DRWL. NKS
DATE 2/23/16

16009

SCALE: 1" = 40'

C1



- DEMOLITION NOTES**
1. THE DEMOLITION WORK LIMITS SHOWN ARE APPROXIMATE. THE SITE WORK CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING AND FIELD DETERMINING THE EXACT DEMOLITION LIMITS. QUESTIONS DURING BIDDING SHALL BE DIRECTED TO THE OWNER'S / DEVELOPER'S GENERAL CONTRACTOR. REMOVE THE EXISTING SITE FEATURES WITHIN THE DEMOLITION WORK LIMITS. SAWCUT, REMOVE, REPAIR, PATCH, REPLACE AND ABANDON AS REQUIRED THE EXISTING CONCRETE CURB AND GUTTER, EXISTING CONCRETE, EXISTING ASPHALT PAVEMENT, EXISTING SITE FEATURES AND EXISTING UTILITIES AS REQUIRED WITHIN THE DEMOLITION LIMITS. REPAIR AND PATCH THE AREA WITH NEW ASPHALT PAVEMENT UP TO THE EXISTING ADJACENT ASPHALT PAVEMENT GRADE. INSTALL THE NEW ASPHALT PAVEMENT AND NEW 24" CONCRETE CURB AND GUTTER FOR POSITIVE DRAINAGE. THE GENERAL CONTRACTOR, SITE WORK CONTRACTOR AND LANDSCAPE CONTRACTOR SHALL COORDINATE THE DEMOLITION WORK, REPAIR WORK AND REMOVAL, STORAGE AND REPLACEMENT OF THE EXISTING LANDSCAPING PRIOR TO BEGINNING ANY DEMOLITION OR CONSTRUCTION ACTIVITIES.
 2. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIARIZED WITH FIELD DEMOLITION CONDITIONS.
 3. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE SITE GRADES PRIOR TO BEGINNING CONSTRUCTION. CONTACT THE ENGINEER FOR DIRECTION AS REQUIRED DURING CONSTRUCTION.
 4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL DEMOLISHED DEBRIS ASSOCIATED WITH THE PROJECT.
 5. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST GENERATED BY THE WORK, INCLUDING BUT NOT LIMITED TO DEMOLITION AND CONSTRUCTION ACTIVITIES, SITE VEHICULAR TRAFFIC AND RELATED OPERATIONS.
 6. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND IDENTIFYING ALL EXISTING UTILITIES. ANY UTILITIES ENCOUNTERED THAT HAVE NOT BEEN IDENTIFIED NEED TO BE BROUGHT TO THE ATTENTION OF THE OWNER.
 7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF DISCONNECTING AND ABANDONING ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES UNLESS OTHERWISE NOTED. ALL EXISTING UTILITIES AND ASSOCIATED PIPING, ETC. NOT IN USE ON THE SITE SHALL BE PROPERLY ABANDONED AND REMOVED AS REQUIRED. COORDINATE WITH THE OWNER.
 8. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING UTILITIES THAT REMAIN IN SERVICE OR ARE WITHIN THE PUBLIC RIGHT OF WAY DURING DEMOLITION.
 9. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REMOVAL OR RELOCATION OF ANY EXISTING UTILITY POLES / GUY LINES AND LIGHT POLES WITH THE OWNER AND THE APPLICABLE UTILITY COMPANY AS REQUIRED.
 10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A TRAFFIC CONTROL PLAN AND DEVICES DURING CONSTRUCTION WORK IN ACCORDANCE WITH THE MUTCD, NCDOT AND CITY OF WILMINGTON STANDARDS.
 11. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS AND SLOPES ON AND OFF SITE IN ACCORDANCE WITH THE EROSION CONTROL MEASURES SPECIFIED ON THE PLANS AND IN THE SPECIFICATIONS. IN ADDITION TO THE EROSION CONTROL MEASURES SPECIFIED, THE CONTRACTOR SHALL INSTALL EROSION CONTROL BLANKETS / TURF REINFORCEMENT MATS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION AS REQUIRED WHERE NORMAL SEED / SOIL STABILIZATION IS UNSUCCESSFUL. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE WHO IS RESPONSIBLE FOR PROVIDING THE PERMANENT STABILIZATION MEASURES AND THE TYPE OF PERMANENT MEASURES PRIOR TO BEGINNING DEMOLITION AND CONSTRUCTION. THE PERMANENT STABILIZATION MEASURES SHALL BE IN PLACE AND ACCEPTABLE TO THE OWNER'S REPRESENTATIVE AND ENGINEER PRIOR TO PROJECT CLOSEOUT. COORDINATE INSPECTION WITH THE OWNER AND ENGINEER PRIOR TO PROJECT CLOSEOUT.

TREE REMOVAL TABLE

REGULATED PINES
12" (2)
15" (1)

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

WILMINGTON
Public Services • Engineering Division
STORMWATER MANAGEMENT PLAN

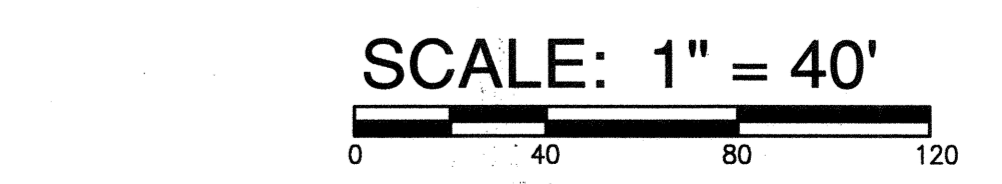
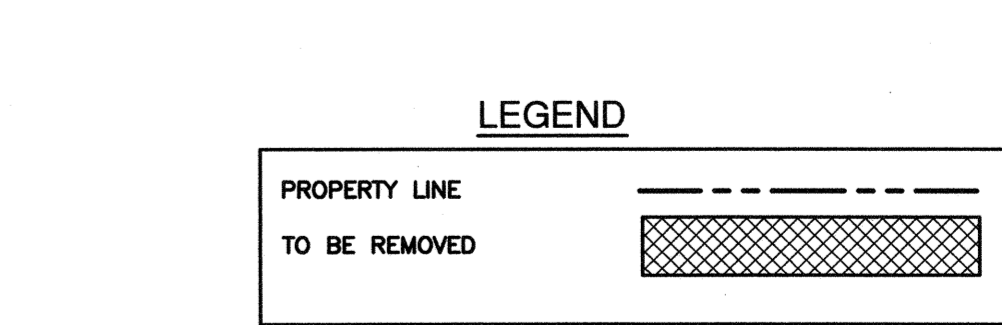
Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

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)



BY	REVISIONS
	SYMBOL
	DATE
	DESCRIPTION

EXISTING SITE CONDITIONS AND DEMOLITION PLAN
RENAISSANCE II OFFICE BUILDING
WILMINGTON, NORTH CAROLINA

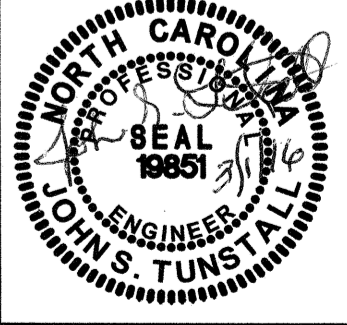
OWNER:
TCT OF WILMINGTON, LLC
1123 MILITARY CUTOFF RD.
WILMINGTON, N.C. 28405
(910) 256-7704

NORRIS & TUNSTALL
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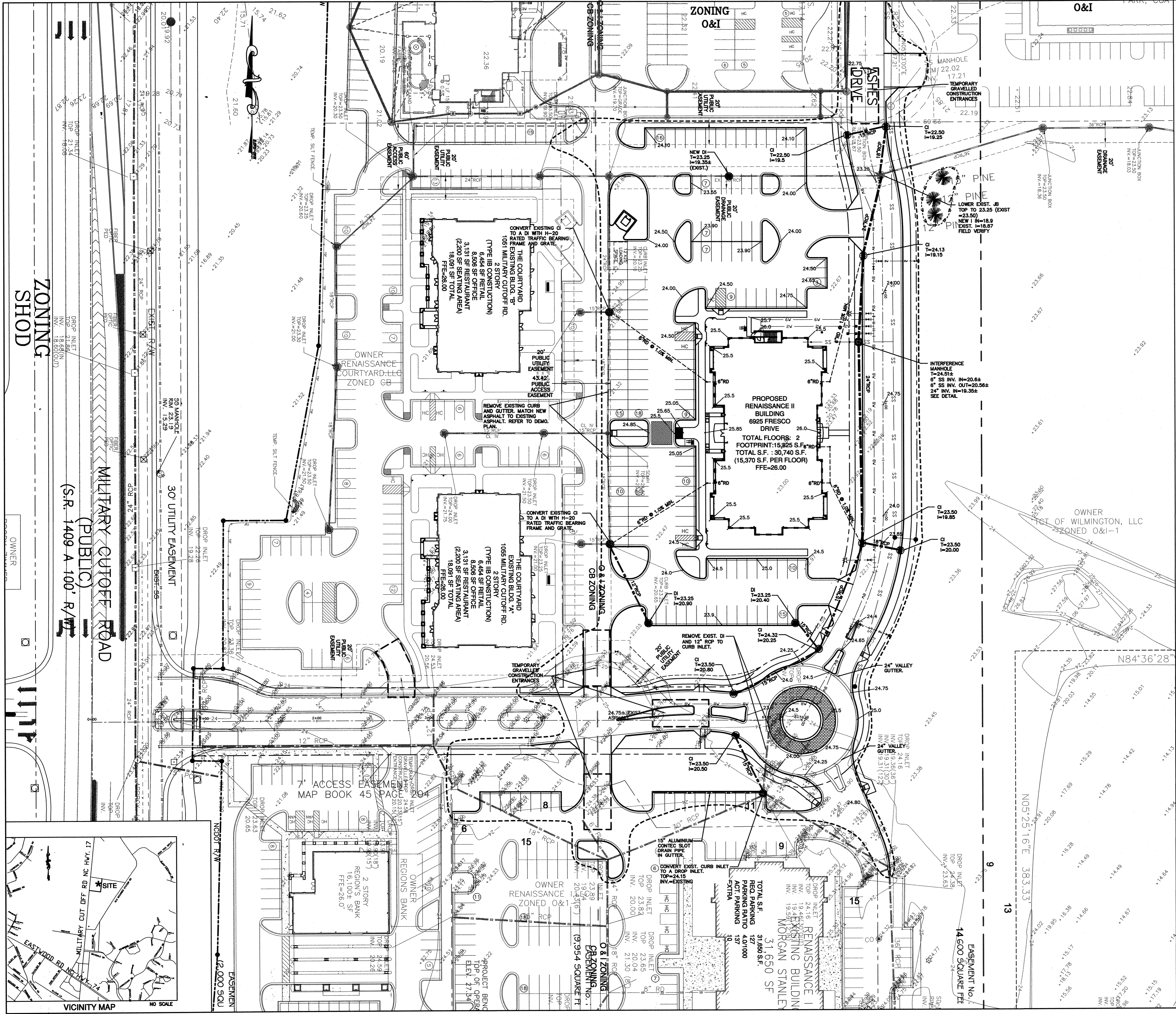
DES. JUST
CKD. JPN
DWL. NKS

DATE 2/23/16



C2

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ZONING SHOD
MILITARY CUTOFF ROAD
 (PUBLIC)
 (S.R. 1409 A 100' R/W)

City of WILMINGTON
 Public Services • Engineering Division
STORMWATER MANAGEMENT PLAN

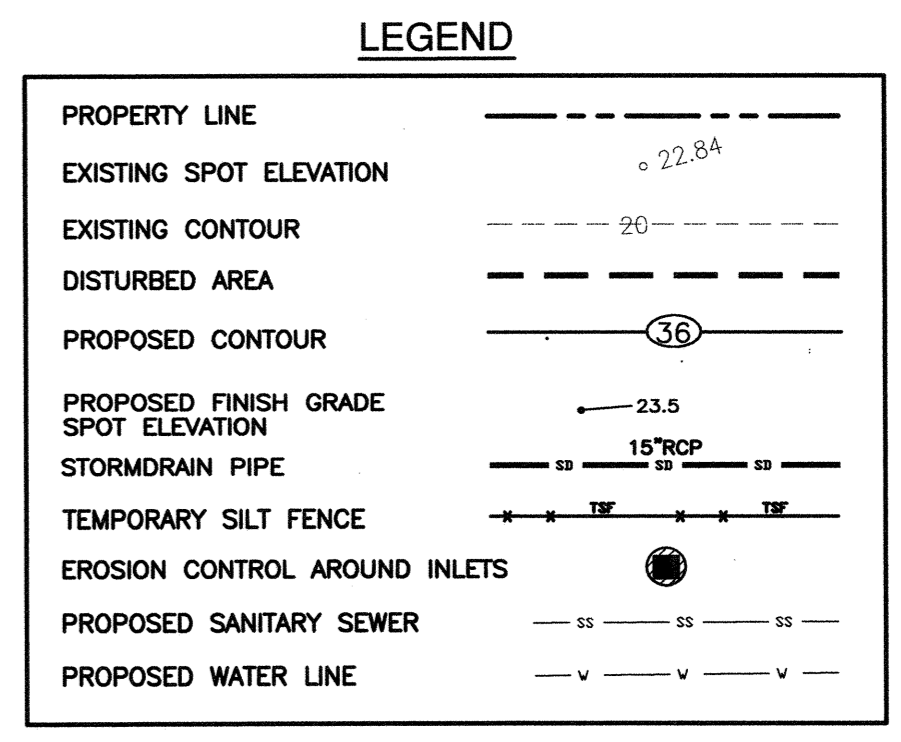
Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

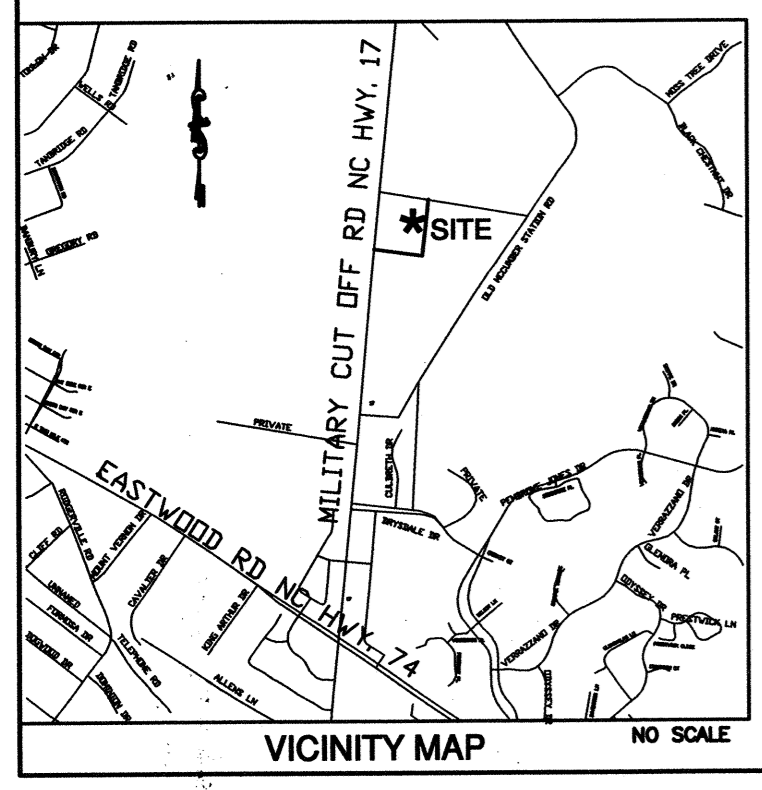
Planning	_____	Name	_____	Date	_____
Traffic	_____				
Fire	_____				

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)

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SCALE: 1" = 40'



SYMBOL	DATE	DESCRIPTION

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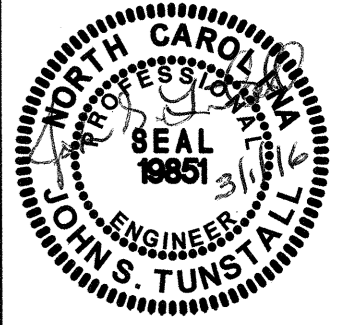
**GRADING, DRAINAGE AND
 EROSION CONTROL PLAN**
RENAISSANCE II OFFICE BUILDING
WILMINGTON, NORTH CAROLINA

OWNER:
 TCT OF WILMINGTON, LLC
 1123 MILITARY CUTOFF RD.
 WILMINGTON, N.C. 28405
 (910) 256-7704

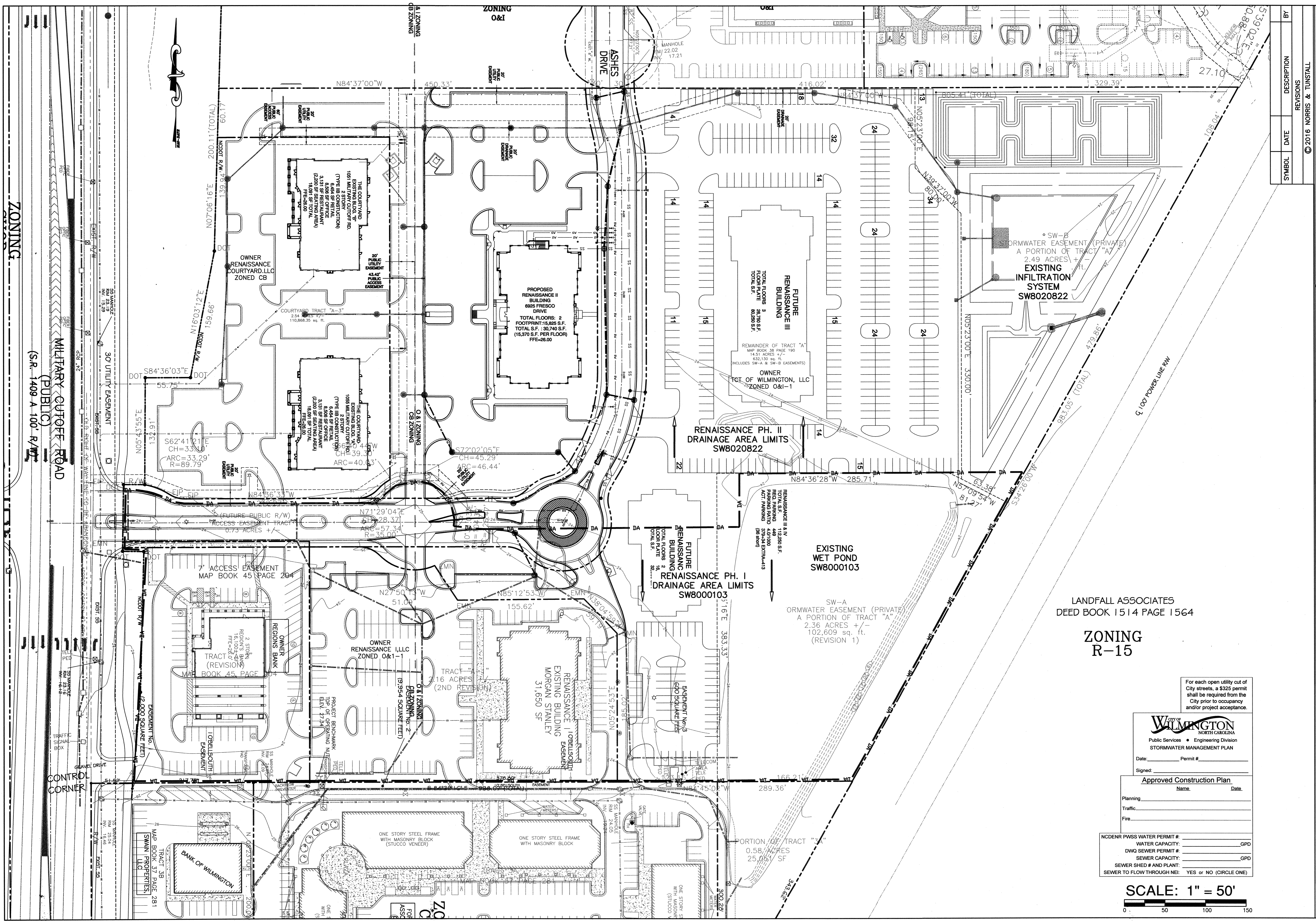
NORRIS & TUNSTALL
CONSULTING ENGINEERS, P.C.
 902 MARKET STREET
 WILMINGTON, NC 28401
 PHONE (910) 343-9653

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 DRWN. NKS
 DATE: 2/23/16



C3



BY	DESCRIPTION
	REVISIONS
	DATE
	SYMBOL

DRAINAGE AREA PLAN
RENAISSANCE II OFFICE BUILDING
WILMINGTON, NORTH CAROLINA

OWNER:
 TCT OF WILMINGTON, LLC
 1123 MILITARY CUTOFF RD.
 WILMINGTON, N.C. 28405
 (910) 256-7704

NORRIS & TUNSTALL
CONSULTING ENGINEERS, P.C.
 902 MARKET STREET
 WILMINGTON, NC 28401
 PHONE (910) 343-9653
 licence #C-3641

LANDFALL ASSOCIATES
 DEED BOOK 1514 PAGE 1564

ZONING
R-15

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

City of WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____
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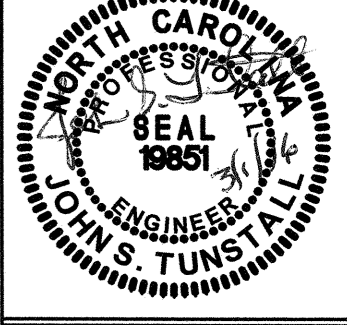
Approved Construction Plan
 Name: _____ Date: _____

Planning _____
 Traffic _____
 Fire _____

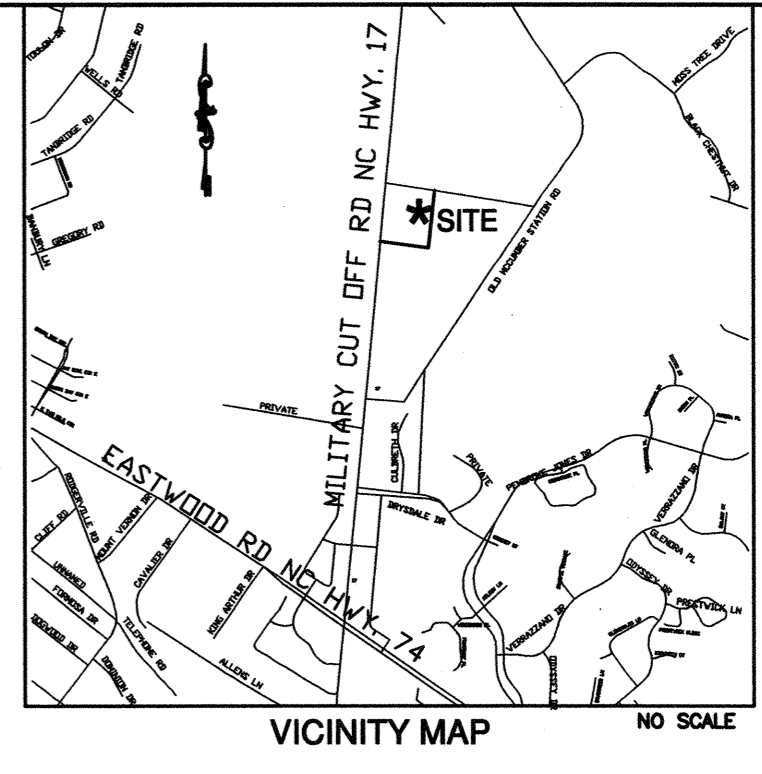
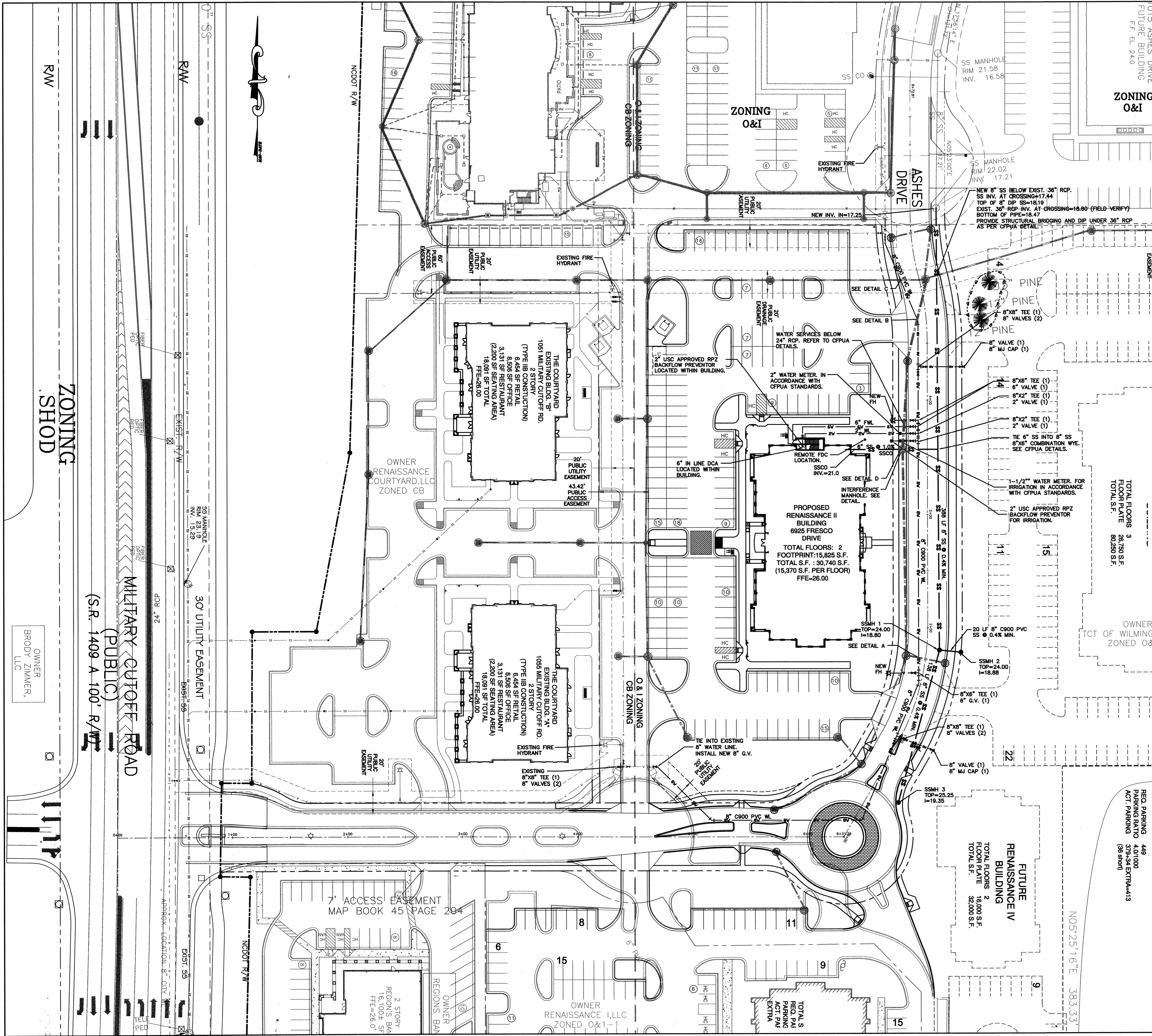
NCDENR PWSS WATER PERMIT #: _____ GPD
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT #: _____ GPD
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

SCALE: 1" = 50'
 0 50 100 150

16009
 DES. JUST
 ORD. JPN
 DRAWN. NKS
 DATE 2/23/16



C3.1



SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

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UTILITY PLAN

RENAISSANCE II OFFICE BUILDING
WILMINGTON, NORTH CAROLINA

OWNER:
TCT OF WILMINGTON, LLC
1123 MILITARY CUTOFF RD.
WILMINGTON, N.C. 28405
(910) 256-7704

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

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

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

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name: _____ Date: _____

Planning: _____

Traffic: _____

Fire: _____

INCENR PWSS WATER PERMIT #: _____ GPD

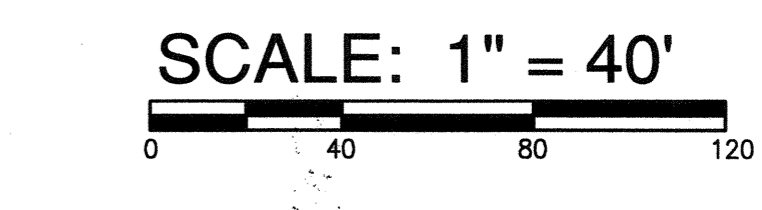
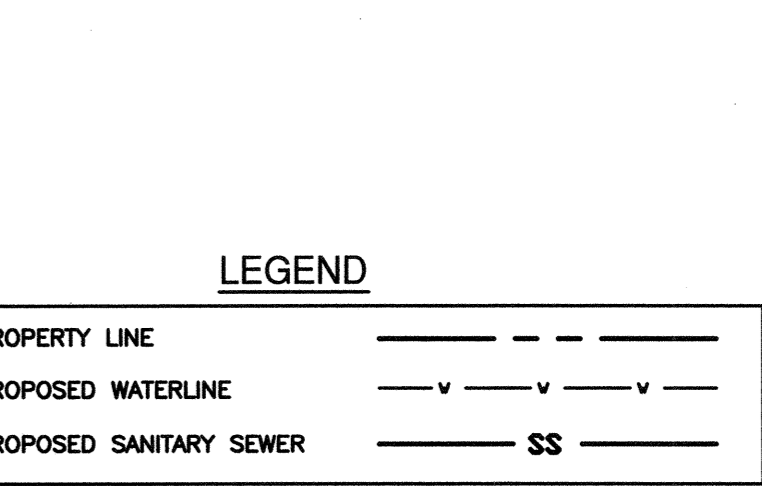
WATER CAPACITY: _____ GPD

DWG SEWER PERMIT #: _____

SEWER CAPACITY: _____ GPD

SEWER SHED # AND PLANT: _____

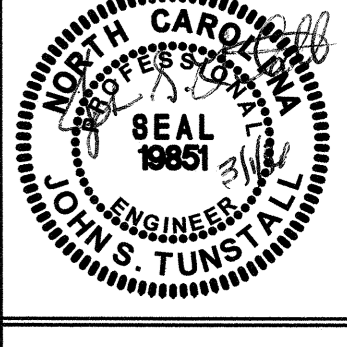
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)



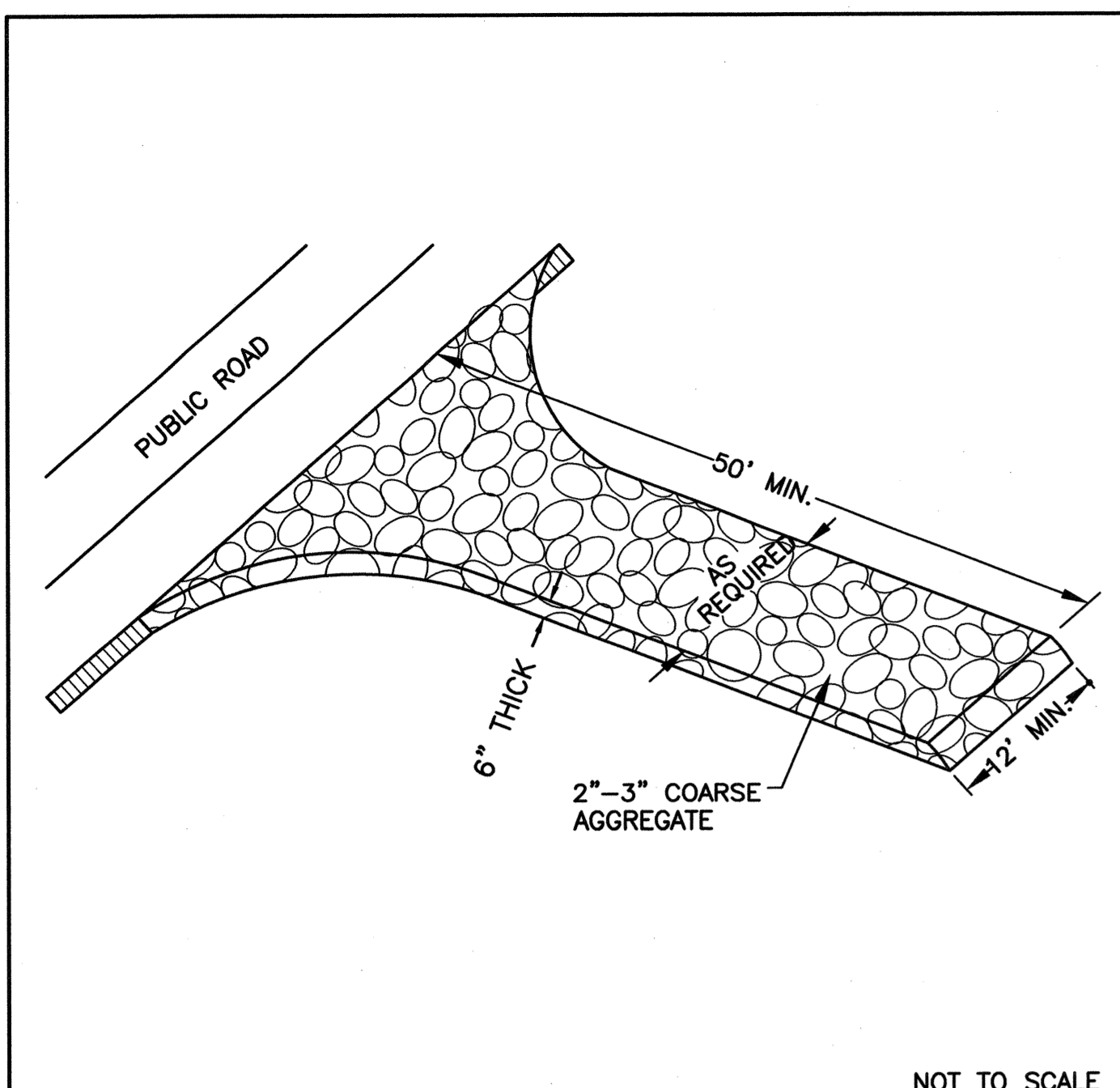
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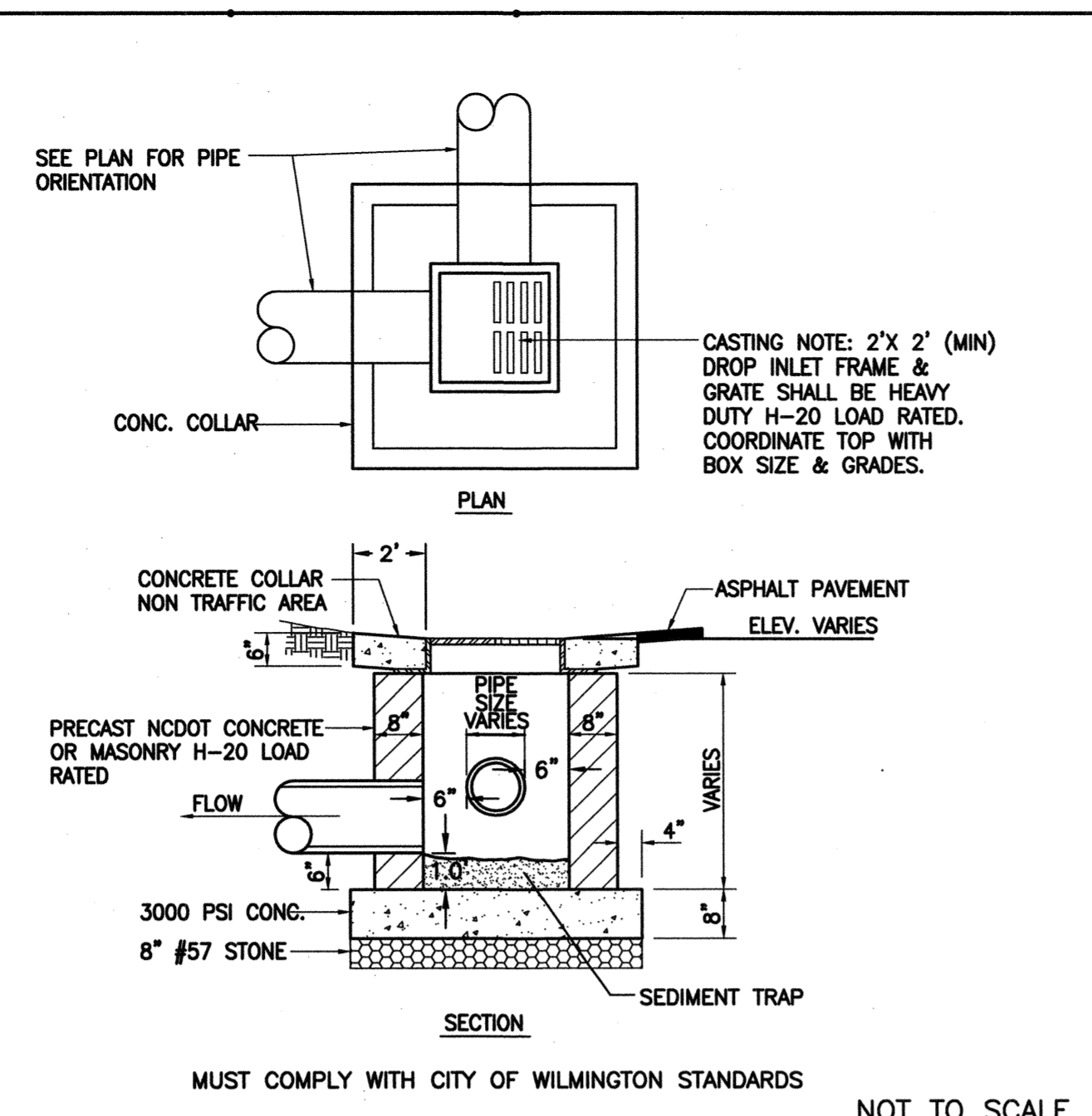


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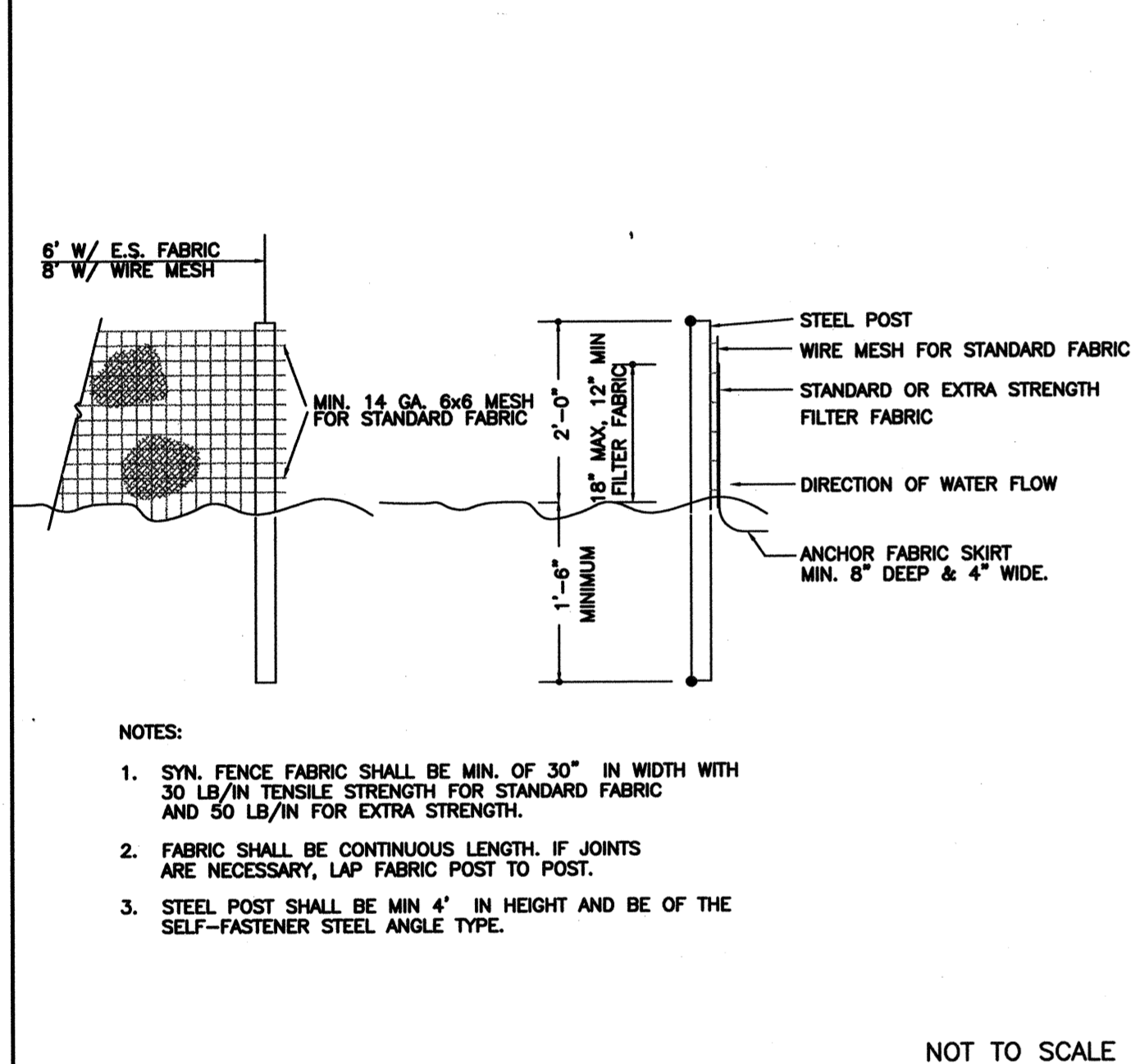
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1 TEMPORARY GRAVELLED CONSTRUCTION ENTRANCE



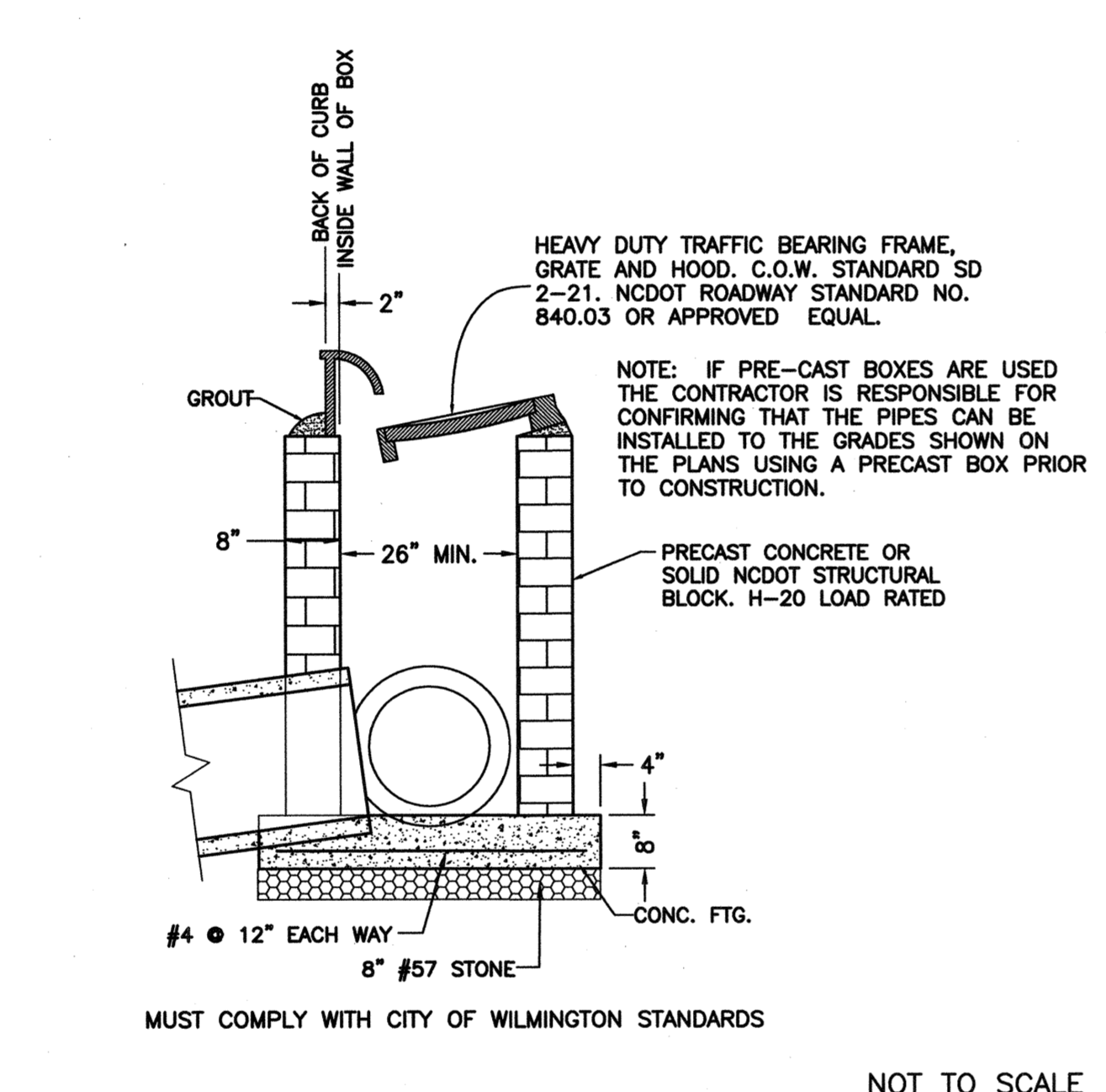
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2 DROP INLET DETAIL



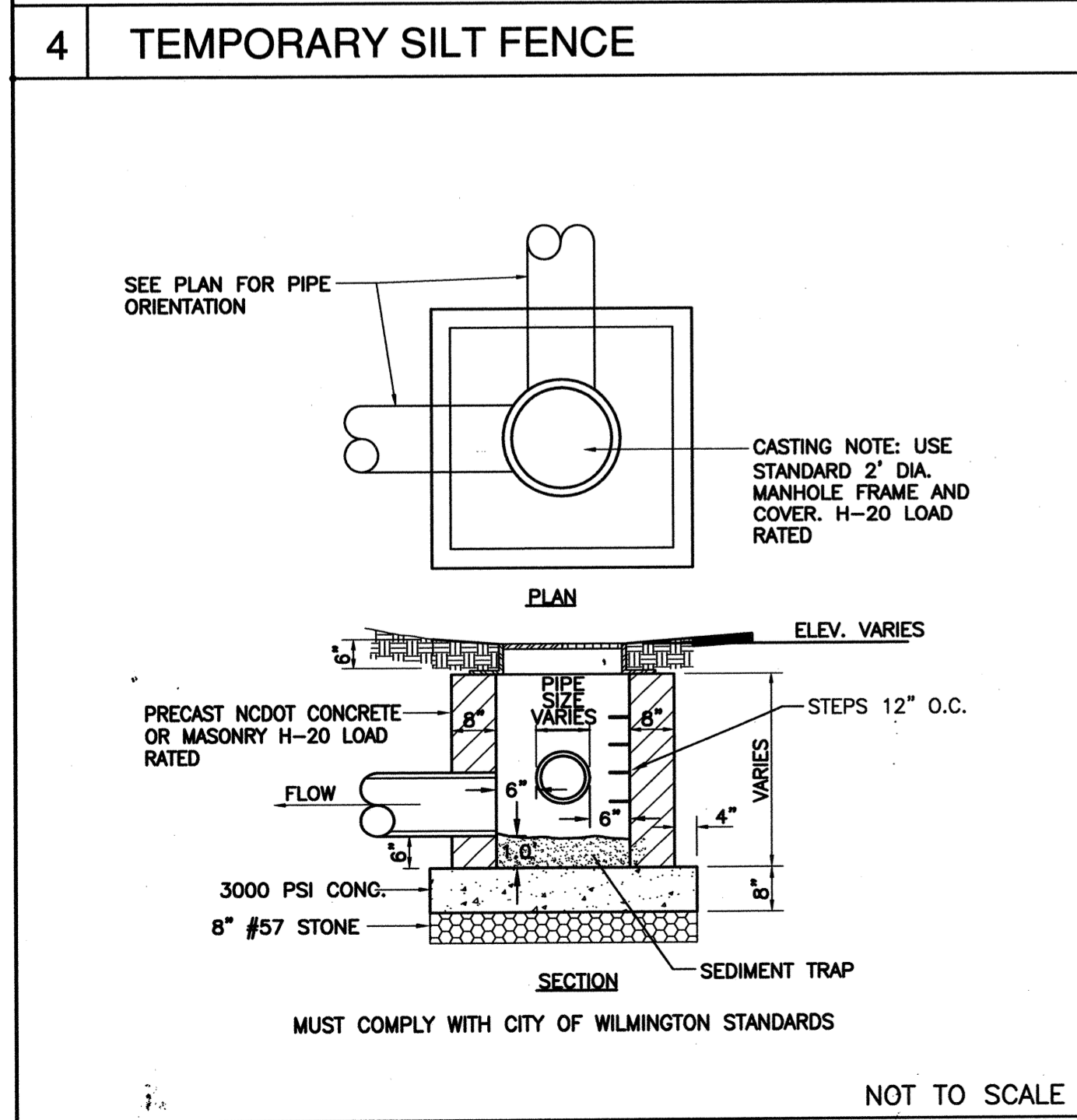
NOT TO SCALE

4 TEMPORARY SILT FENCE



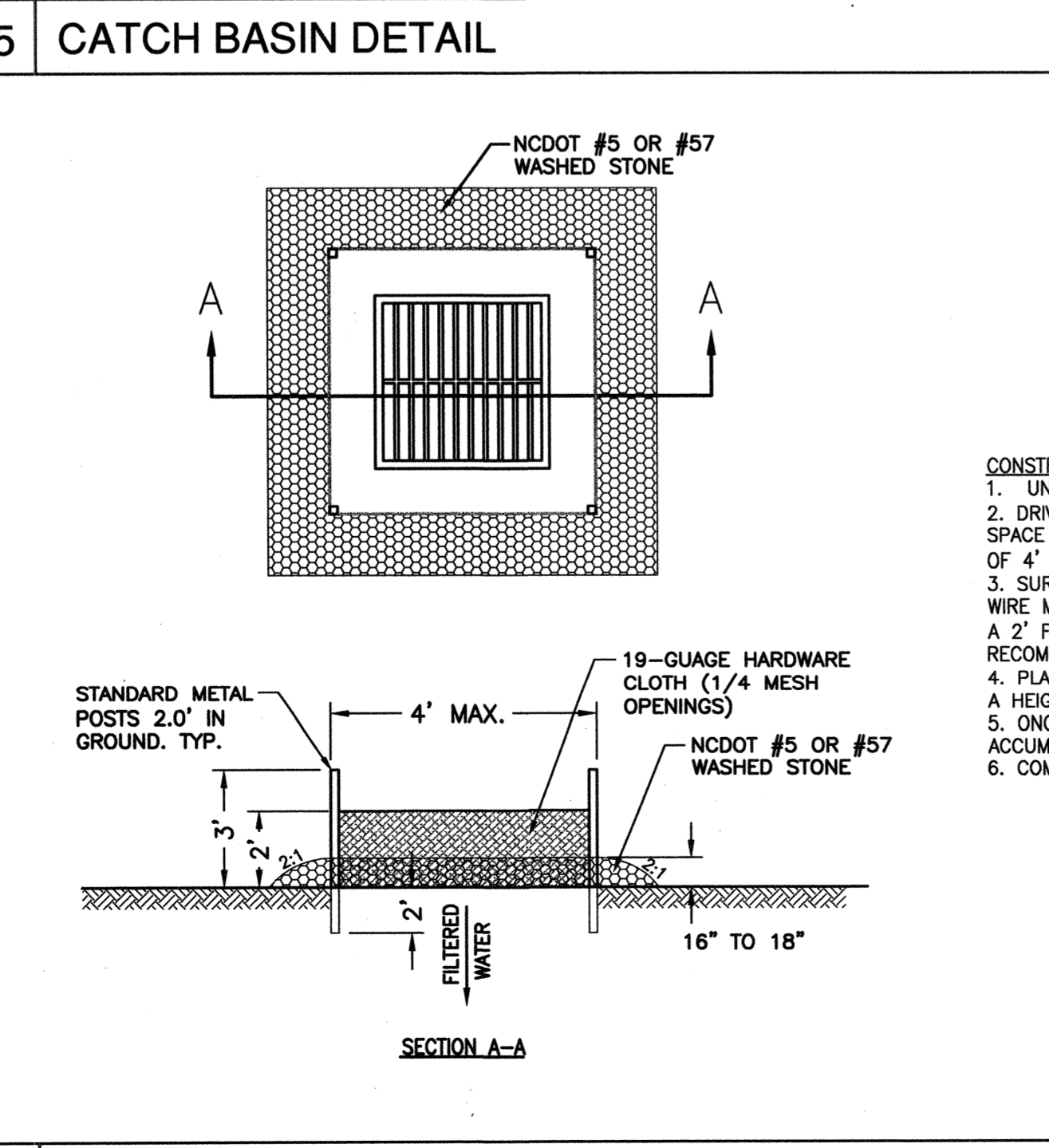
NOT TO SCALE

5 CATCH BASIN DETAIL



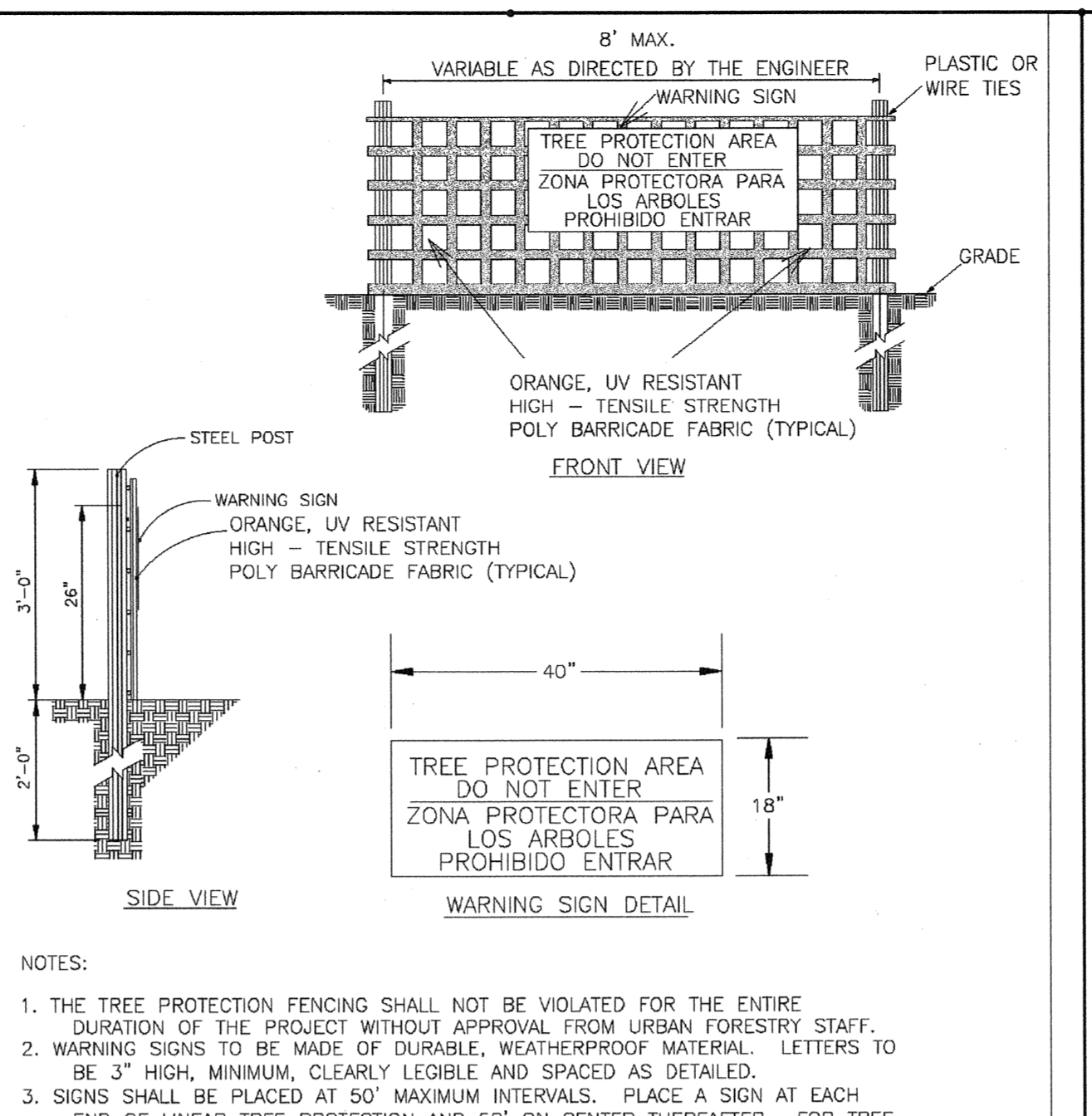
NOT TO SCALE

7 JUNCTION BOX DETAIL



NOT TO SCALE

8 HARDWARE CLOTH AND GRAVEL INLET PROTECTION



NOT TO SCALE

1 TREE PROTECTION

- NOTES:**
- THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
 - WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
 - SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
 - ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCING AND SIGNS THROUGHOUT DURATION OF PROJECT.
 - TREE PROTECTION FENCING AND SIGNS SHALL BE REMOVED AFTER CONSTRUCTION.
 - ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.
- NOTE:** THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.
- NOTE:** CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE.
- NOTES:**
- PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
 - CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
 - IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
 - WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
 - FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT PROTECT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES, DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
 - FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

1 TREE PROTECTION

- 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" 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 PREVENT 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.

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 WATLES, BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.
 - 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.
 - 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 15 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" VERTICAL (3:1) AND ALL HIGH QUALITY WATER (HOW) ZONES SHALL BE HARROWED TEMPORARILY 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.

TEMPORARY/PERMANENT GRASS SPECIFICATION:

- 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.
GRAIN STRAW & HAY AT 75 TO 100 LBS PER 1000 S.F.
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 SEEDING AREAS AND MAKE NECESSARY REPAIRS OR RESEED WITHIN THE PLANTING SEASON, IF POSSIBLE. IF GRASS STAND SHOULD BE OVER 60% 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 GRASS
*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 SEEDING 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.

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.
- 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.
- STRIPPING: BEFORE EXCAVATING OR FILLING, REMOVE ALL TOPSOIL, WOOD, LEAVES, AND ANY OTHER UNSUITABLE MATERIAL.
- 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.
- DISPOSAL: CLEARED, GRUBBED, STRIPPED OR EXCAVATED SPOIL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES.
- BORROW MATERIAL: THE CONTRACTOR SHALL FURNISH BORROW MATERIAL REQUIRED FROM OFF SITE AND OBTAIN ALL REQUIRED PERMITS ASSOCIATED WITH BORROW OPERATIONS.
- FILL AND COMPACTATION: AFTER STRIPPING THOSE AREAS DESIGNATED TO RECEIVE FILL SHOULD BE PROOFTOLLED, 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 IN 6 INCH LAYERS 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 COMPACTATION 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.
- 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 ARNOLD CARSON 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.
- WATER AND SEWER SERVICES SHALL BE INSTALLED TO MEET LOCAL AND STATE PLUMBING CODES. METER AND TAPS SHALL MEET ALL LOCAL REQUIREMENTS.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.
- SEE SOILS REPORT FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL NOTE THAT EARTHWORK QUANTITIES ARE HIS RESPONSIBILITY. PLANS DO NOT REPRESENT A BALANCED EARTHWORK CONDITION.
- REINF. CONC. PIPE SHALL BE CLASS III W/RUBBER GASKETED JOINT OR "RAM NECK". INSTALL PER MANUFACTURER'S REQUIREMENTS.
- 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.
- REFER TO THE PLUMBING DRAWINGS FOR LOCATION AND INVERTS OF NEW WASTE, WATER AND ROOF DRAIN LINES.

NOTES AND DETAILS

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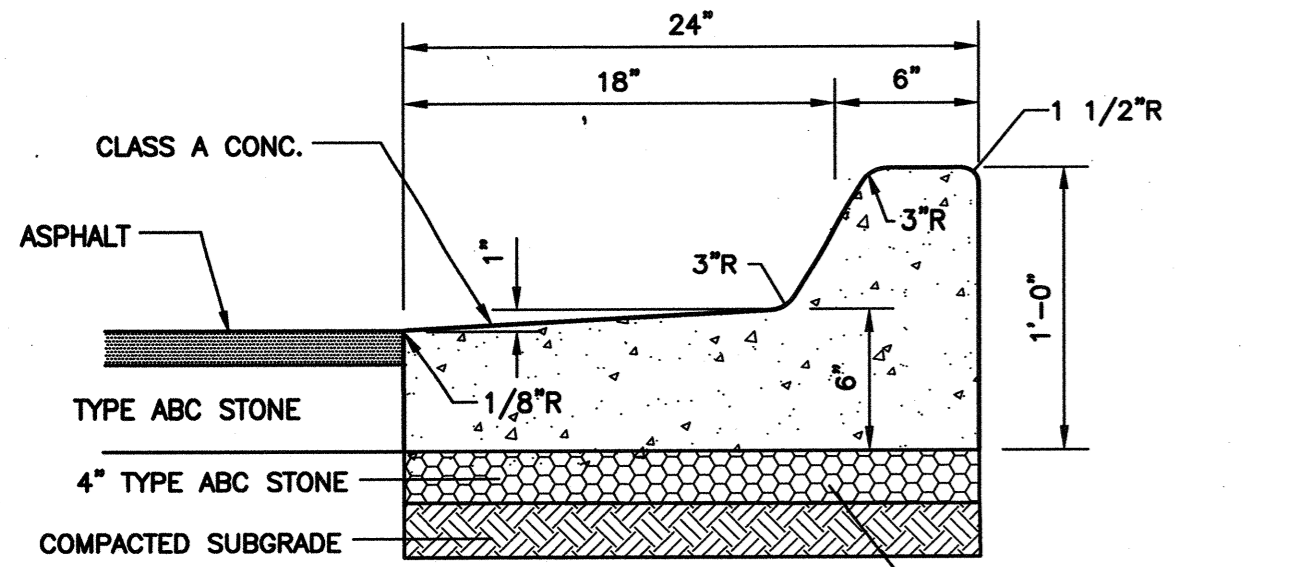
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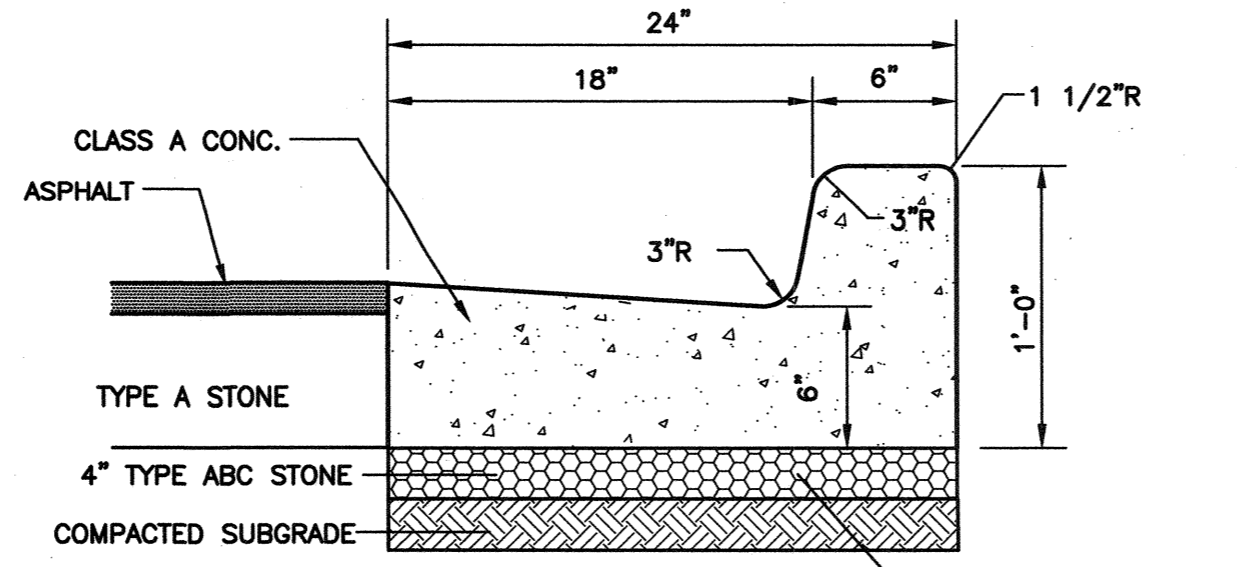
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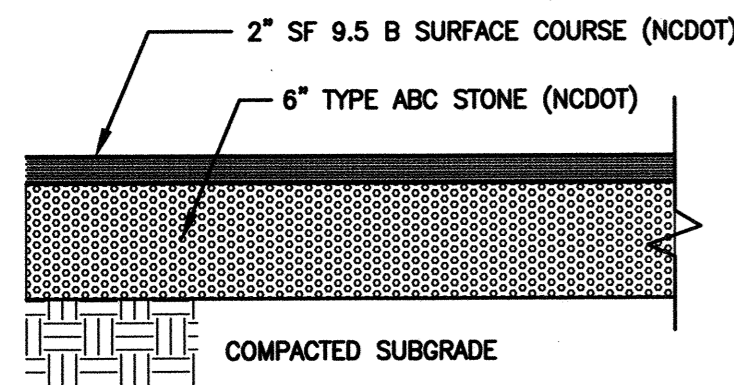
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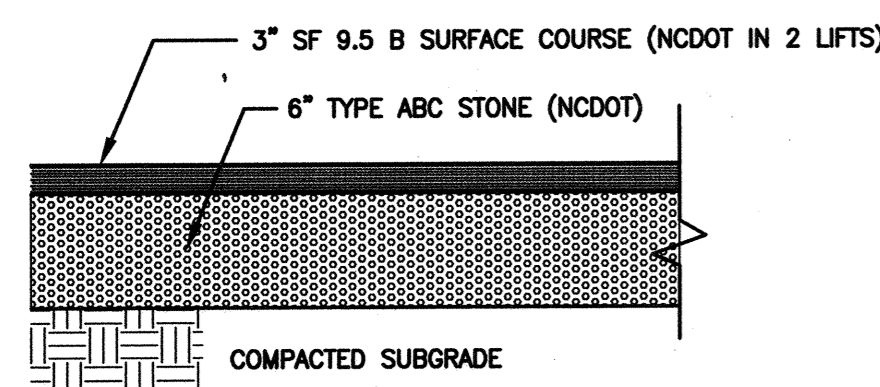
1 24" CURB AND GUTTER SECTION (SPILL-OFF)

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



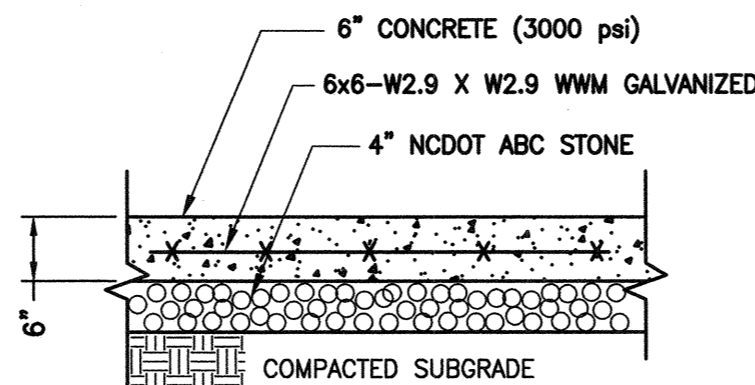
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4 ON SITE ASPHALT PAVEMENT SECTION



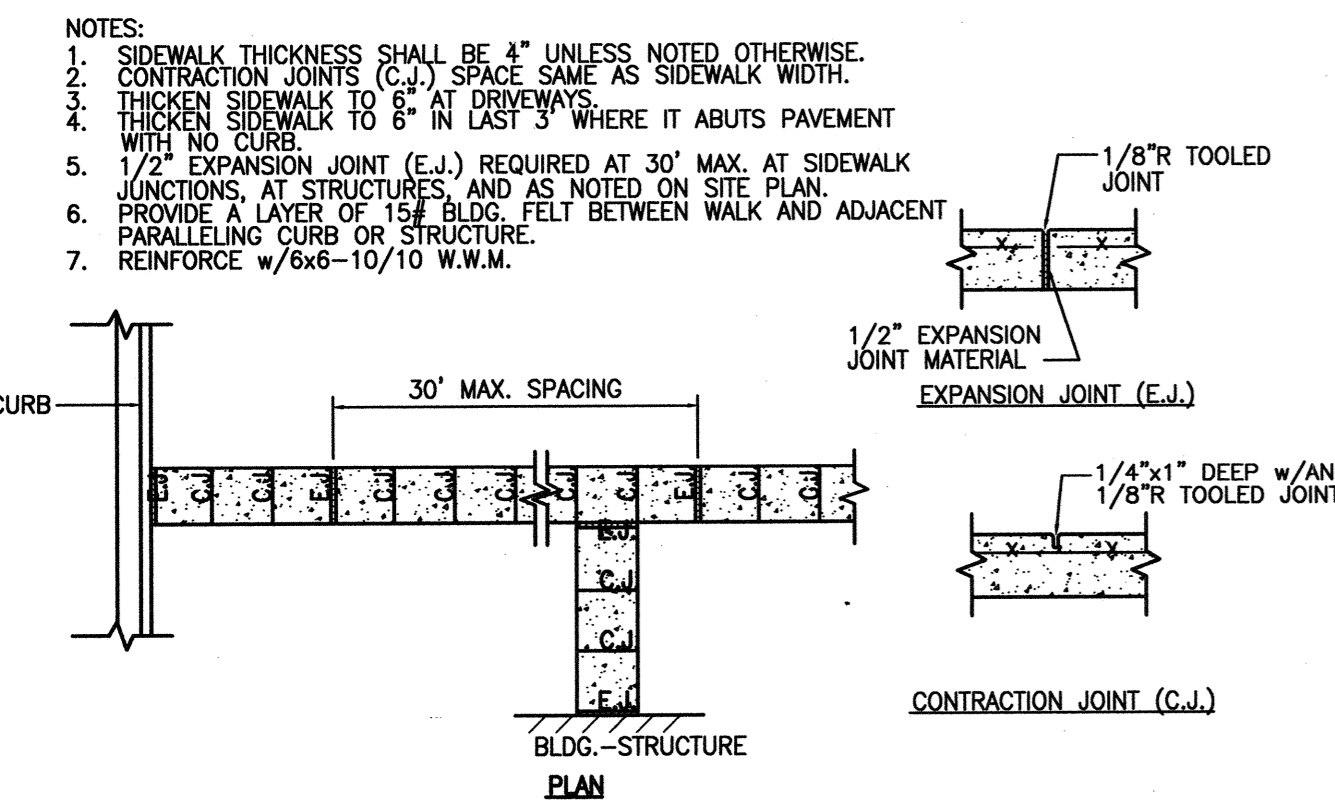
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5 STREET SECTION ASPHALT PAVEMENT SECTION



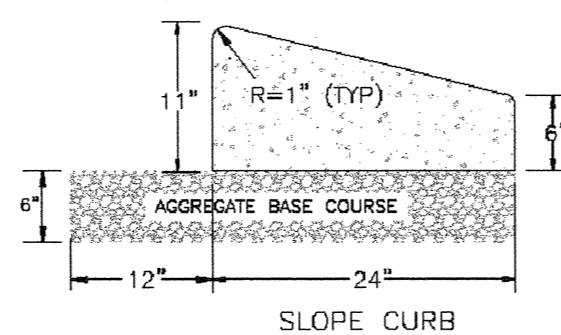
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6 HEAVY DUTY CONCRETE PAVEMENT SECTION



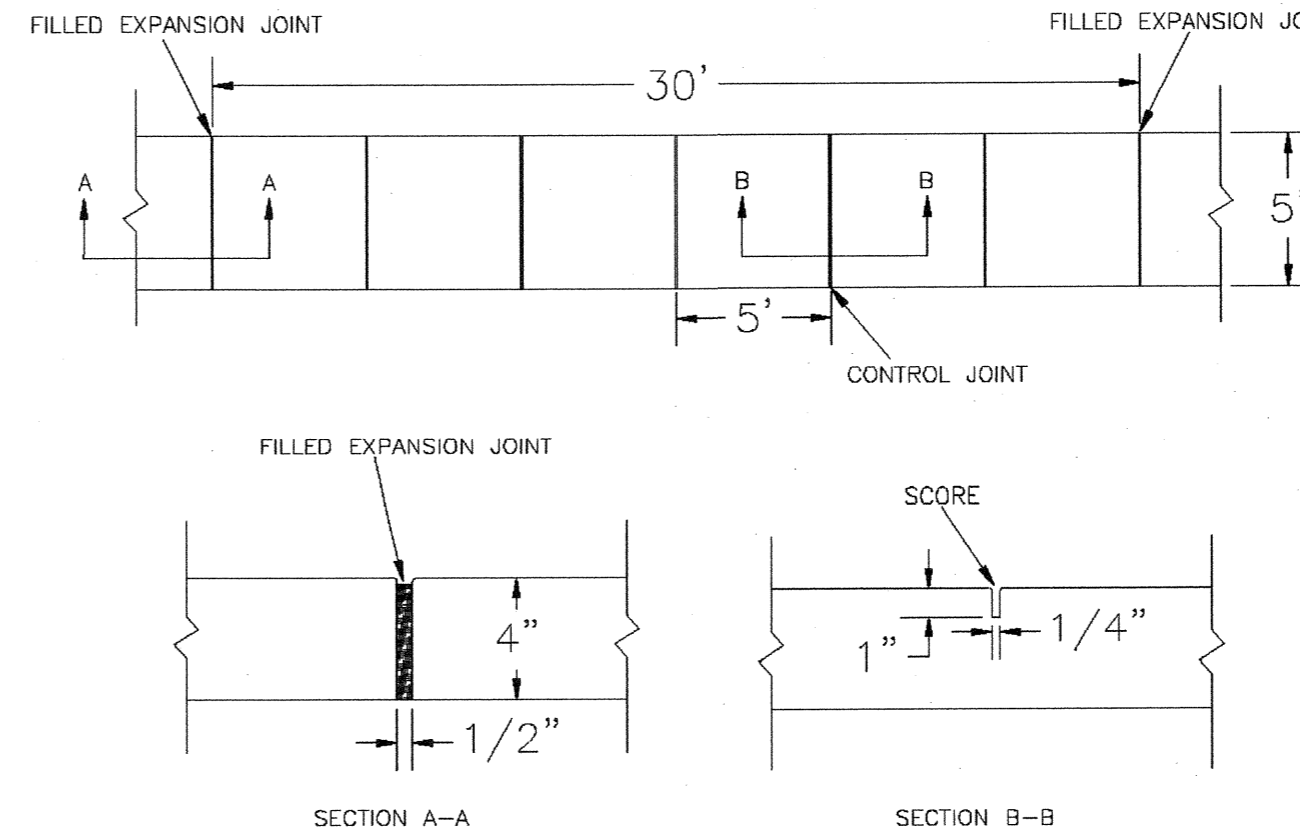
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7 SIDEWALK JOINT DETAIL

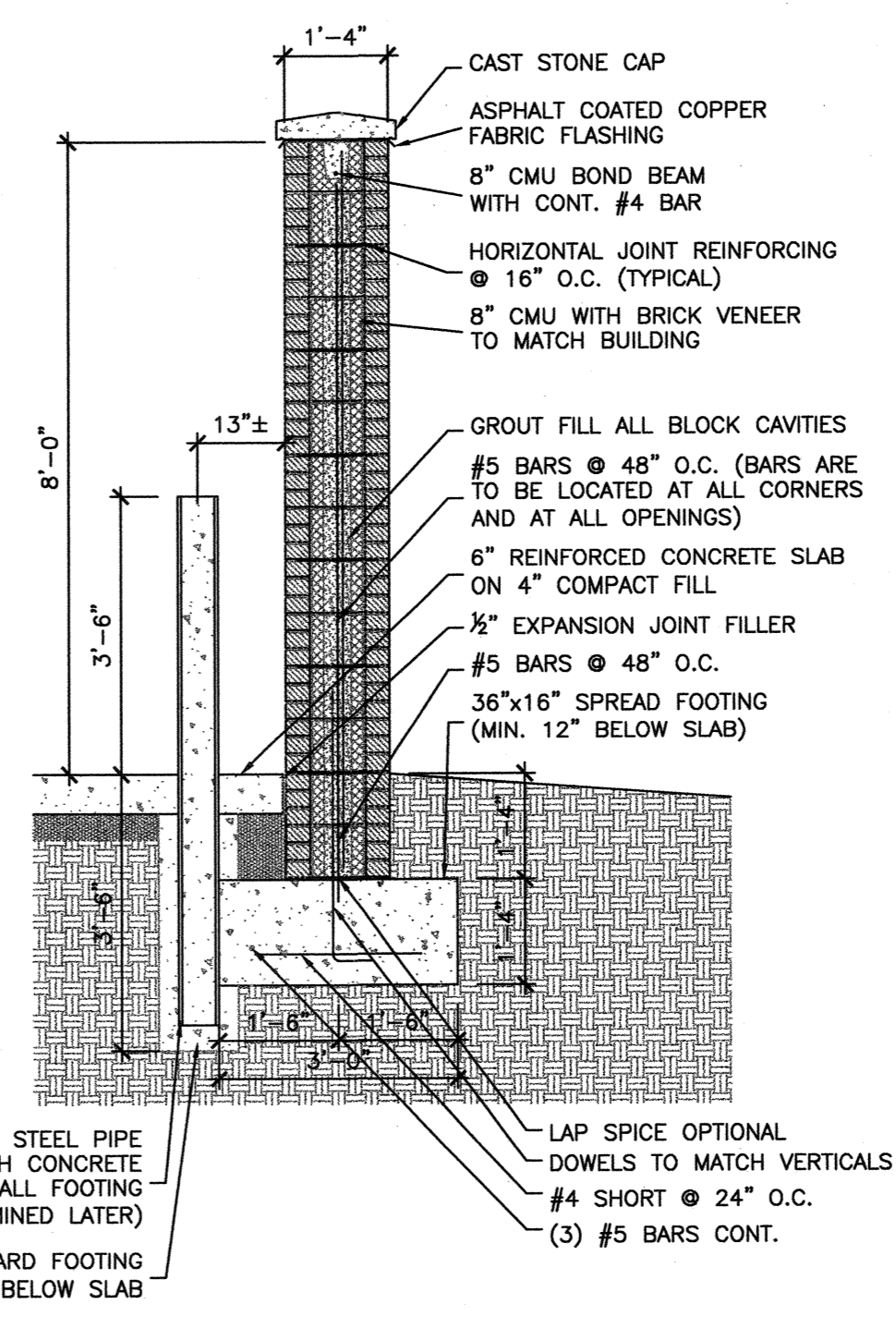


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8 SLOPE CURB



3 STANDARD SIDEWALK DETAIL



NOT TO SCALE

9 DUMPSTER SCREENING 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.

APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

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 KAREN DIXON AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
- PROJECT SHALL COMPLY WITH CFPUA 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 CFPUA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 332-8558 FOR INFORMATION.
- ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCOHR 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 PLAN.
- 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'.

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: IIB

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

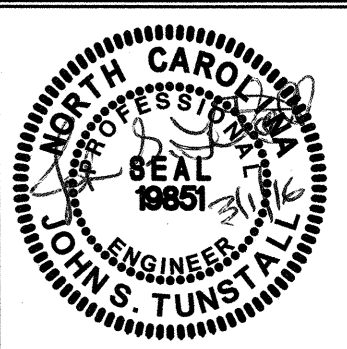
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REVISIONS			
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NOTES AND DETAILS

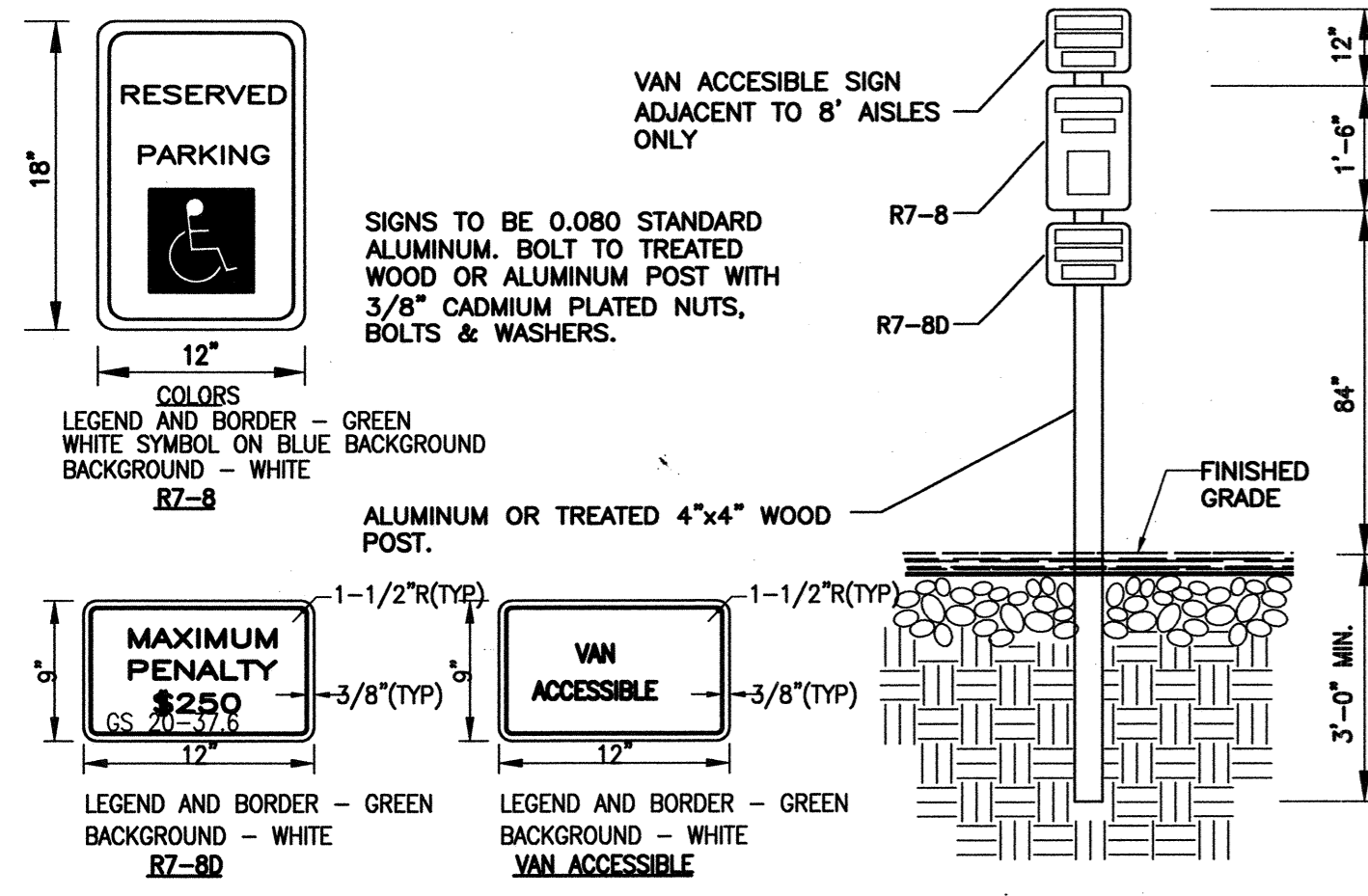
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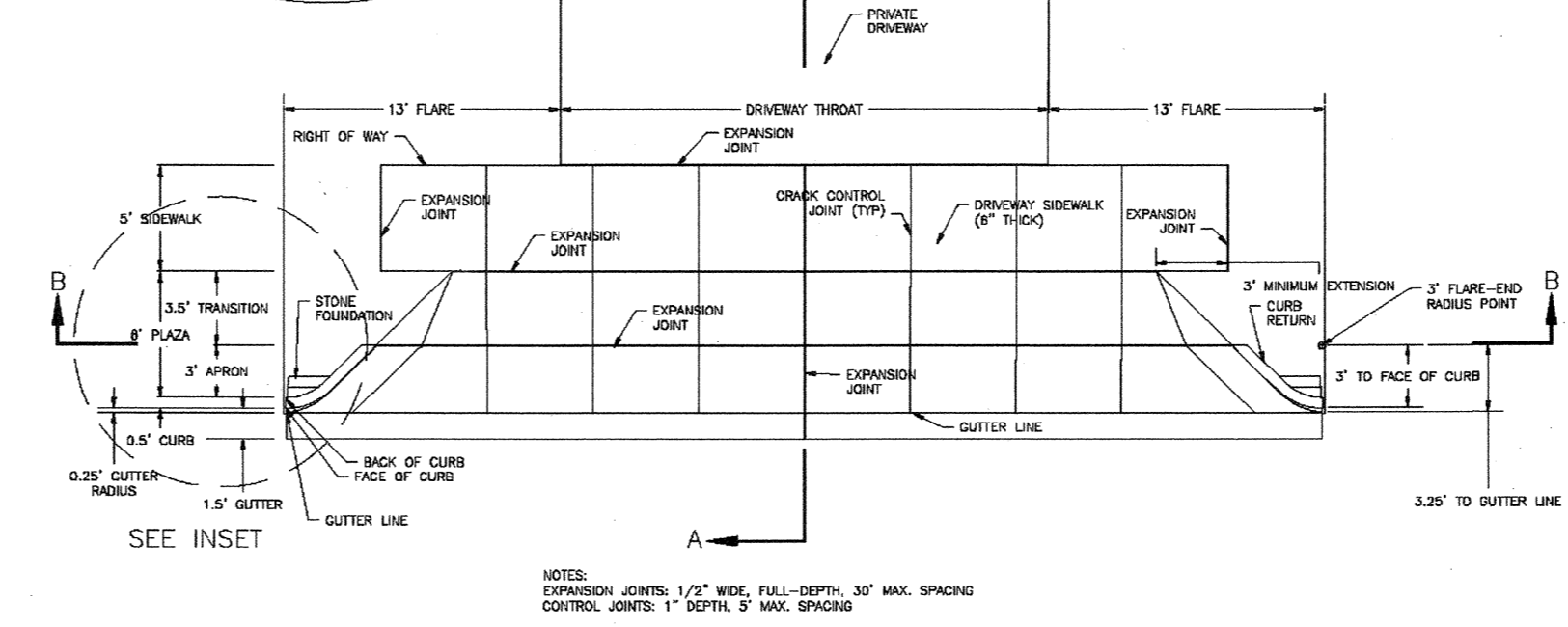
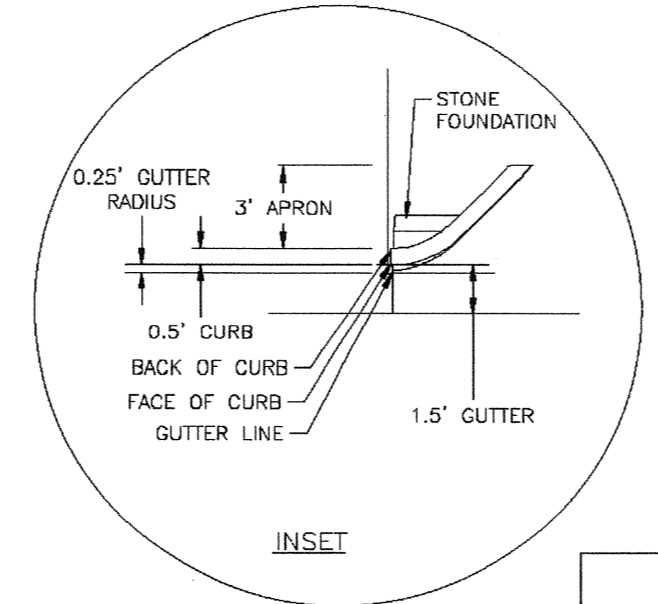


TYPICAL HANDICAPPED SIGN DETAIL
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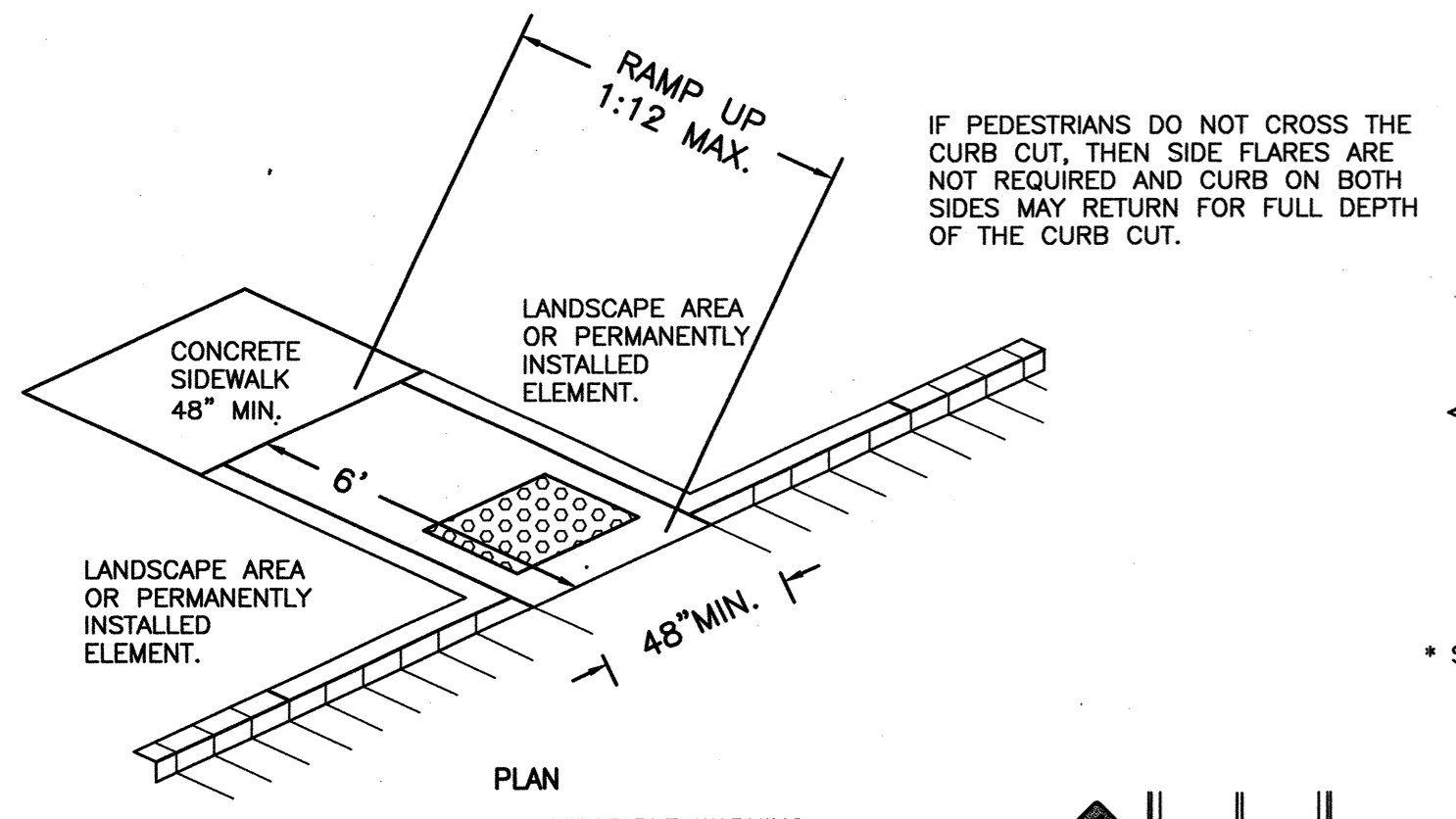
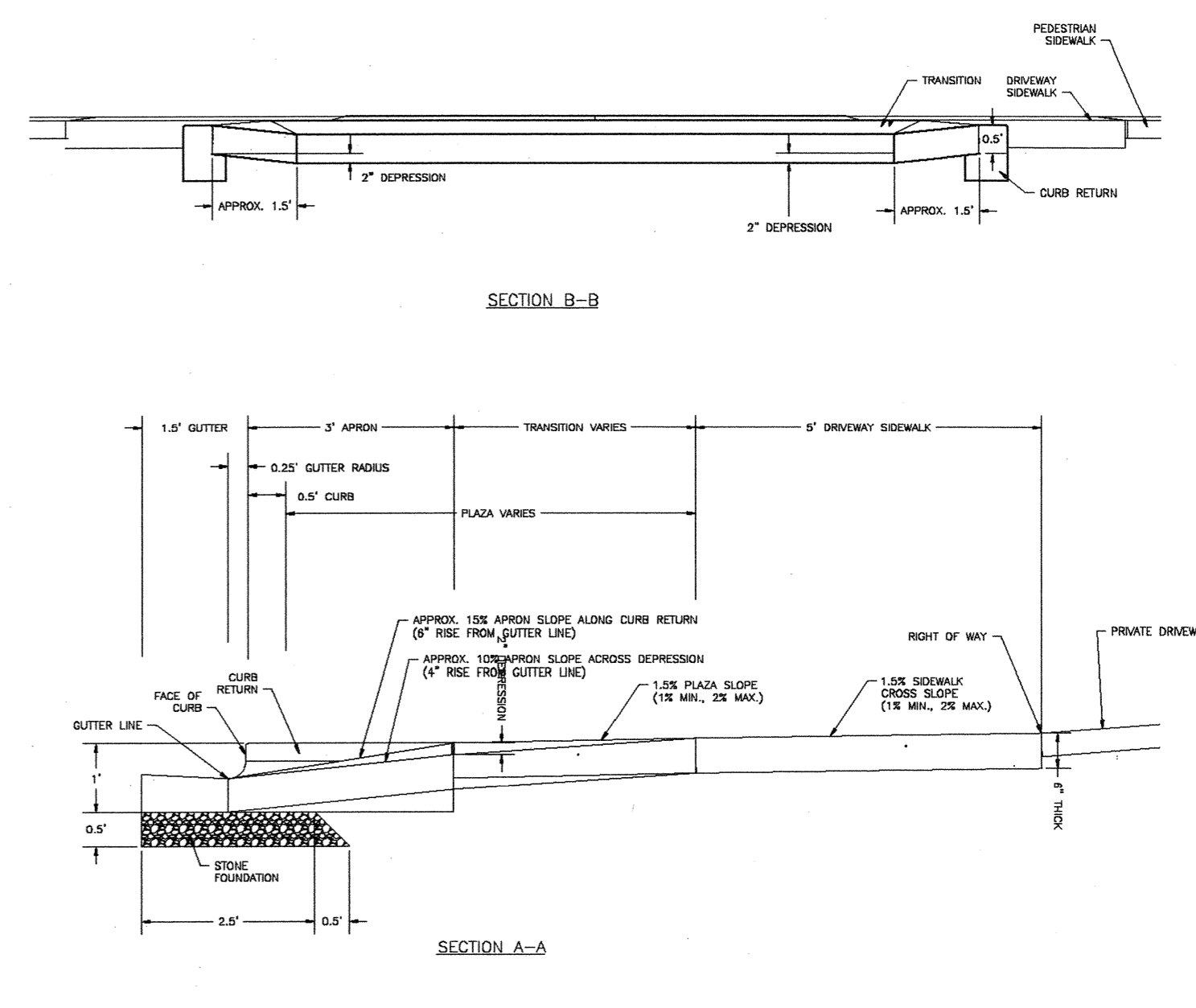
NOTE:

- RAMP SHALL HAVE A DETECTABLE WARNING COMPLYING WITH ADA GUIDELINES.
- THE DETECTABLE WARNINGS AT CURB RAMPS SHALL BE 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
- MARKED CROSSINGS THAT ARE RAISED TO THE SAME LEVEL AS THE ADJOINING SIDEWALK SHALL BE PRECEDED BY A 24 INCH DEEP DETECTABLE WARNING EXTENDING THE FULL WIDTH OF THE MARKED CROSSING.
- DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN (23 MM), A HEIGHT OF NOMINAL 0.2 IN (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 IN (60 MM) AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHOULD CONTRAST BY AT LEAST 70% - REFER TO ADA GUIDELINES FOR DEFINITION OF "CONTRAST".
- THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.

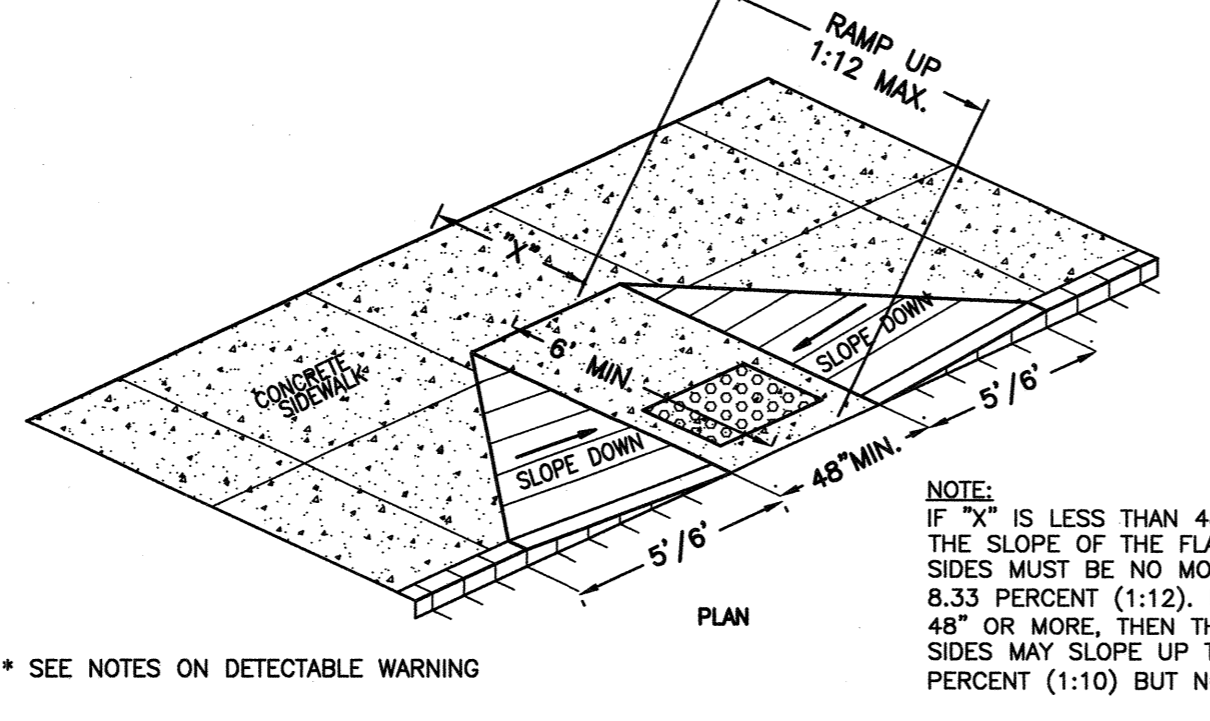
NOTES ON DETECTABLE WARNING FOR WHEEL CHAIR RAMPS



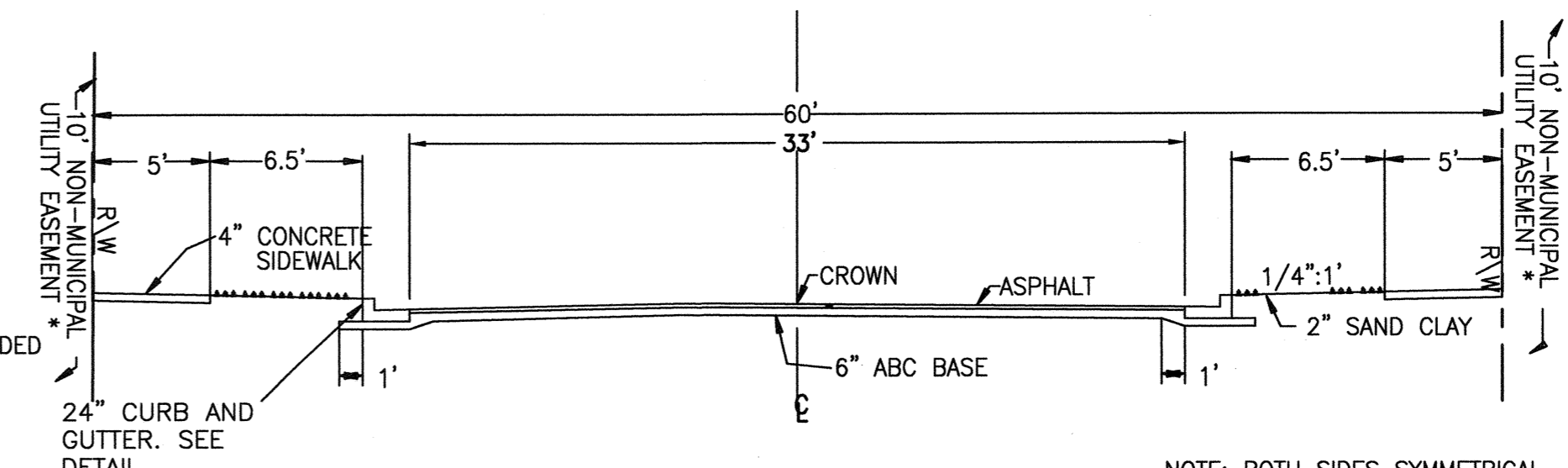
STANDARD CITY OF WILMINGTON DRIVE WAY DETAIL



SIDEWALK, CURB CUT AND WHEEL CHAIR RAMP DETAIL
NOT TO SCALE



SIDEWALK, CURB CUT AND WHEEL CHAIR RAMP DETAIL
NOT TO SCALE



STREET SECTION DETAIL
NTS

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

CITY OF WILMINGTON
Public Services • Engineering Division
STORMWATER MANAGEMENT PLAN

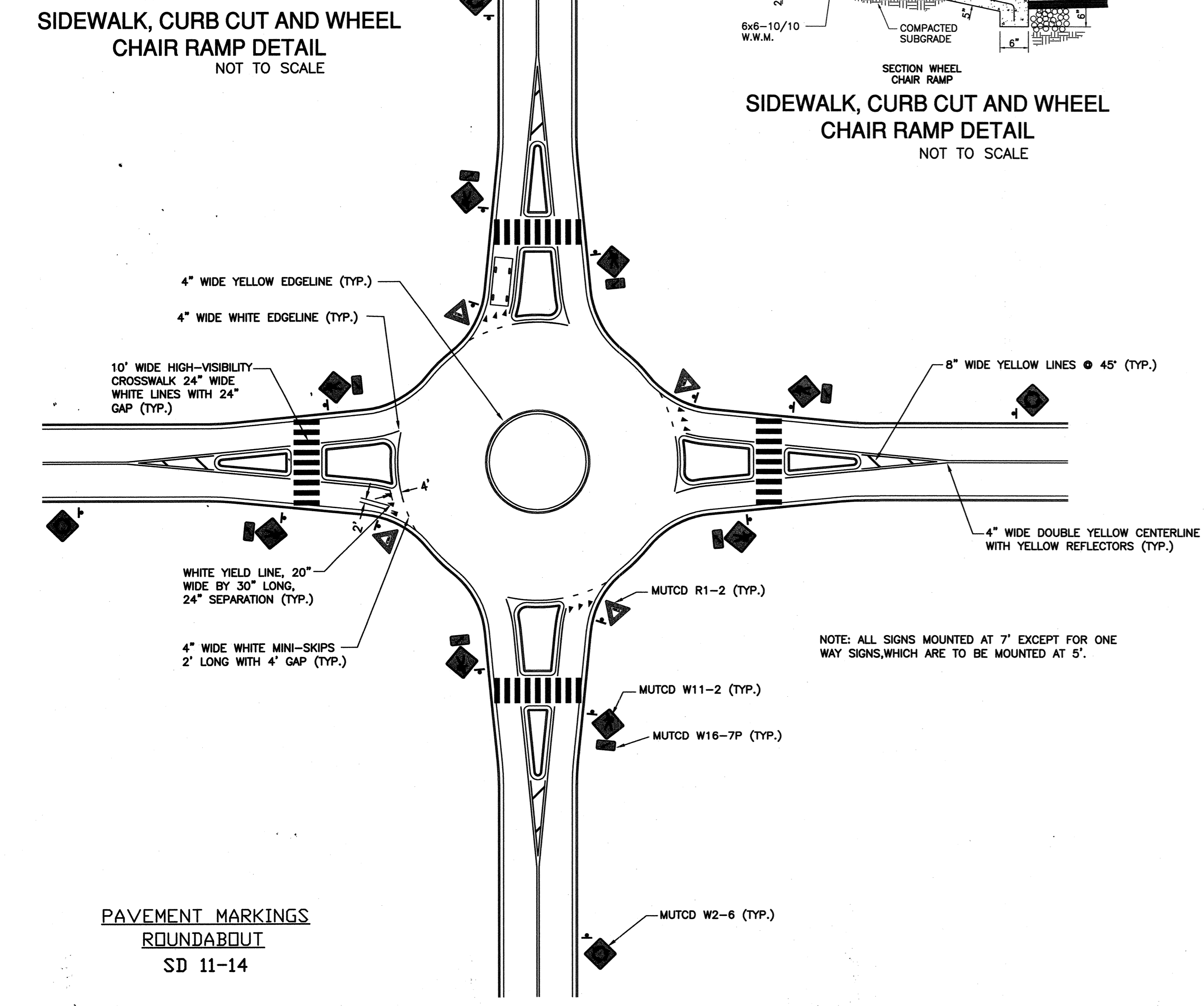
Date: _____ Permit # _____

Signed: _____

Approved Construction Plan
Name: _____ Date: _____

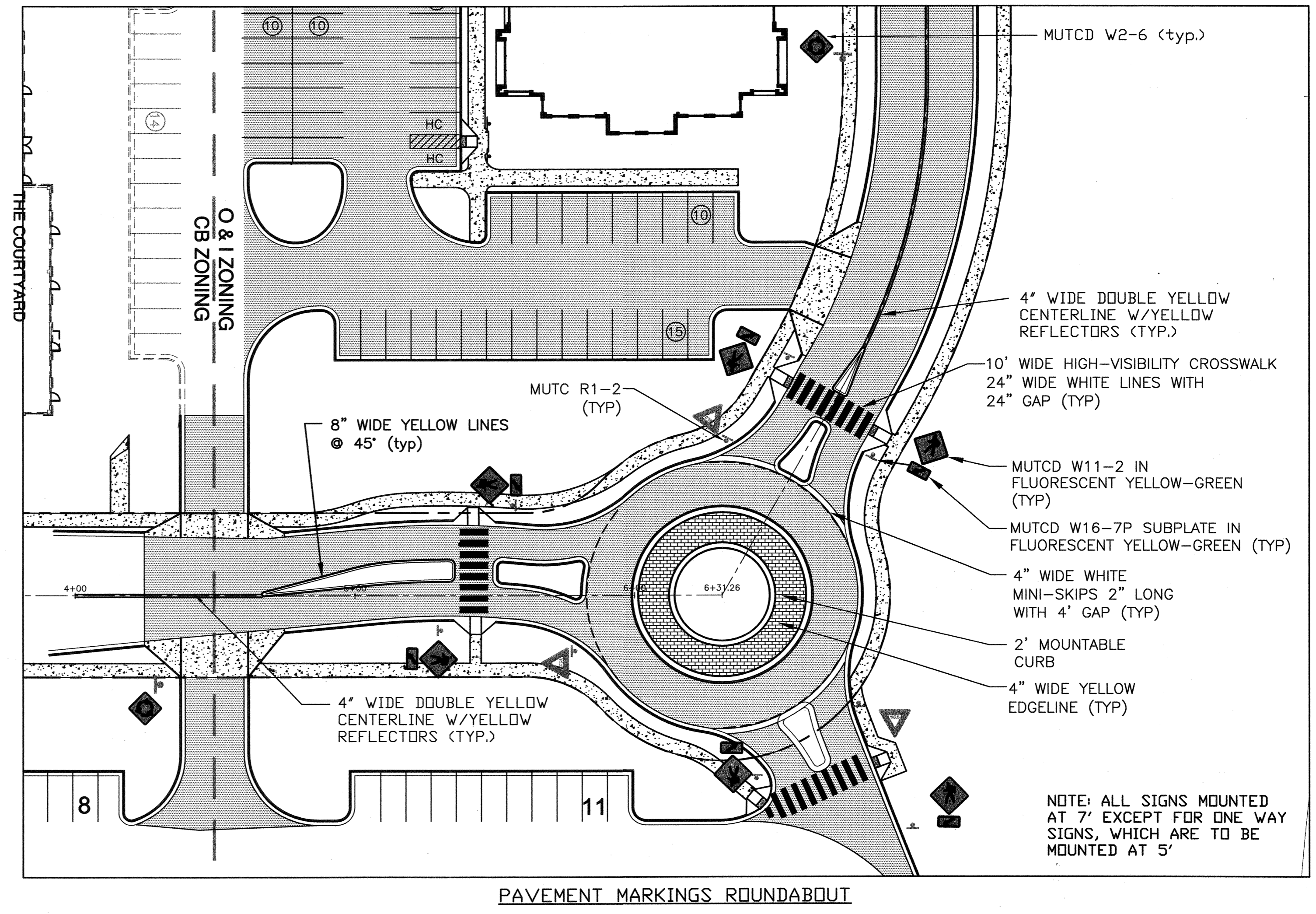
Planning: _____
Traffic: _____
File: _____

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



PAVEMENT MARKINGS ROUNDABOUT
SD 11-14

NOTE: ALL SIGNS MOUNTED AT 7' EXCEPT FOR ONE WAY SIGNS, WHICH ARE TO BE MOUNTED AT 5'.



PAVEMENT MARKINGS ROUNDABOUT

NOTE: ALL SIGNS MOUNTED AT 7' EXCEPT FOR ONE WAY SIGNS, WHICH ARE TO BE MOUNTED AT 5'.

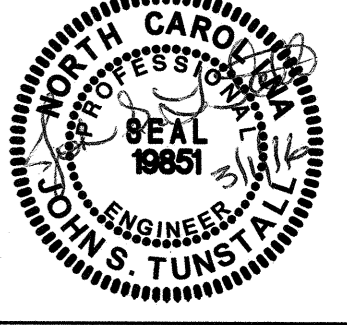
SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

NOTES AND DETAILS

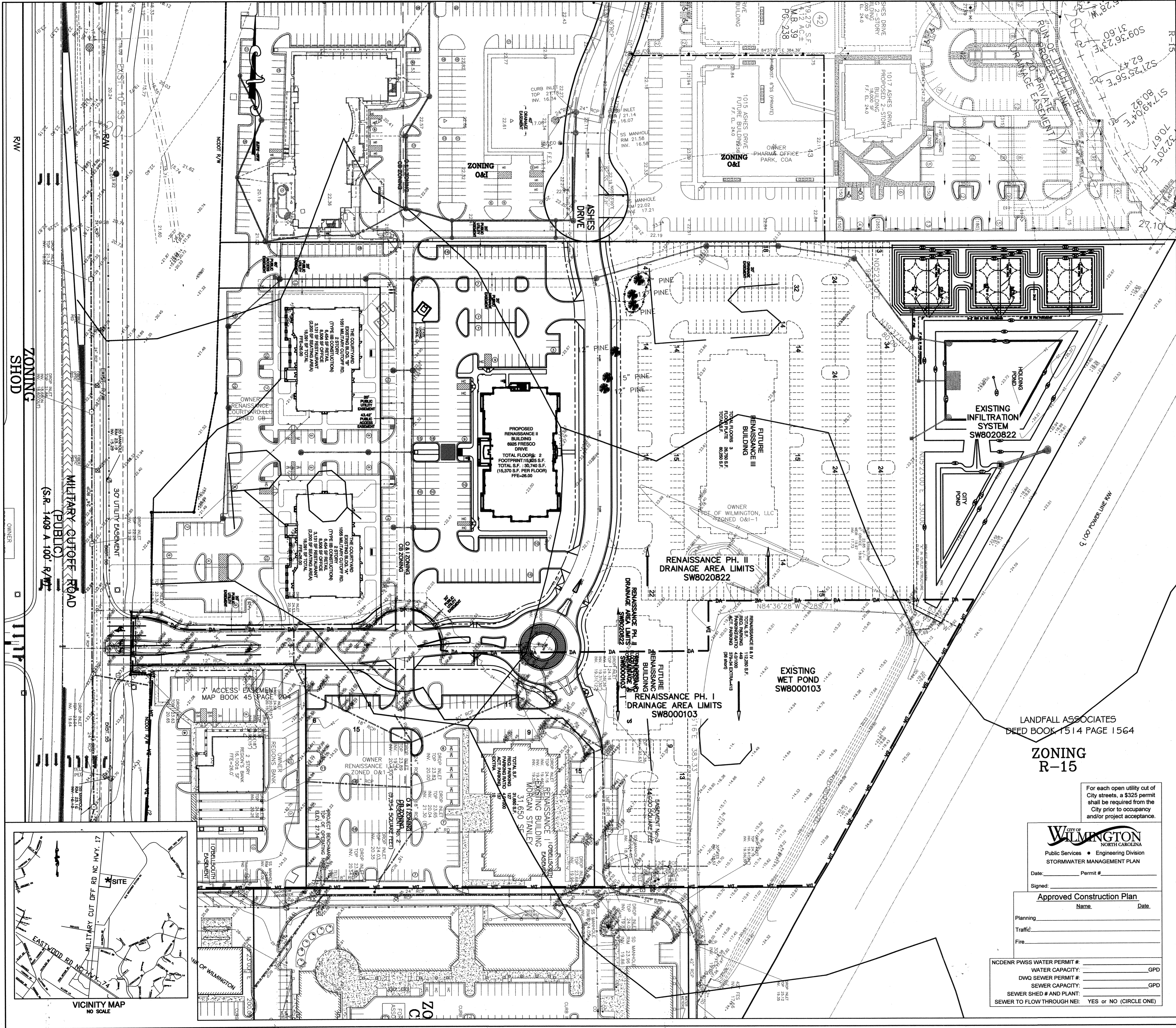
OWNER:
TCT OF WILMINGTON, LLC
1123 MILITARY CUTOFF RD.
WILMINGTON, N.C. 28405
(910) 256-7704

NORRIS & TUNSTALL
CONSULTING ENGINEERS, P.C.
902 MARKET STREET
WILMINGTON, NC 28401
PHONE (910) 343-9653
license #C-3641

16009
DES. JST
CHK. JPN
DRWN. NKS
DATE 2/23/16



C7



SITE DATA TABLE	
USE:	OFFICE
SITE AREA:	3.15 ACRES TOTAL (137,426 SF)
ACCESS EASEMENT WITHIN SITE:	.80 ACRES (34,718 SF)
PARCEL ID#:	R05100-003-065-000
MAP ID#:	315706.49.8929.000
DISTURBED AREA:	0 & 1-1
ZONING:	RESOURCE PROTECTION
CAMA LAND USE:	FRONT SETBACK: 20'
BUILDING SETBACKS (REQUIRED):	INTERIOR SIDE SETBACK: 10'
	CORNER SIDE SETBACK: 20'
	REAR SETBACKS: 20'
BUILDING SETBACKS (PROPOSED):	FRONT SETBACK: 20'
	INTERIOR SIDE SETBACK: 187'±
	CORNER SIDE SETBACK: 110'±
	REAR SETBACKS: 130'±
MAX. BUILDING LOT COVERAGE:	40%
PROPOSED BUILDING LOT COVERAGE:	11%
MAX. BUILDING HEIGHT:	45'
BUILDING CONSTRUCTION TYPE:	IB
BUILDING:	43' (2 STORY)
BUILDING HEIGHT:	30,740 SF TOTAL
BUILDING SQUARE FOOTAGE:	(15,370 PER FLOOR)
PARKING REQ'D: OFFICE:	200/SF MAX, 300/SF MIN.
TOTAL PARKING REQ'D:	154 MAX/102 MIN. REQUIRED
PROPOSED PARKING PROV'D:	146 (INCLUDES 5 HC)
BICYCLE PARKING REQ'D:	10 SPACES
BICYCLE PARKING PROV'D:	10 SPACES
PROPOSED IMPERVIOUS AREA:	
BUILDING:	15,825 SF (ROOF AREA)
ASPHALT, CURB & GUTTER:	51,678 SF
SIDEWALK:	4,150 SF
TOTAL:	71,653 SF
EXISTING IMPERVIOUS AREA WITHIN ACCESS EASEMENT:	25,000 SF
TOTAL IMPERVIOUS AREA:	96,653 SF
% SITE IMPERVIOUS AREA:	70%
AREA WITHIN NEW R/W:	46,000 SF
IMPERVIOUS AREA WITHIN NEW R/W:	38,635 SF
LANDSCAPING:	
FOUNDATION PLANTINGS (12%):	
FRONT: 45' X 156' X .12 = 842 SF REQD.	876 SF PROVIDED
SIDE (2): 45' X 104' X .12 = 562 SF REQD.	570 SF PROVIDED
REAR: 45' X 156' X .12 = 842 SF REQD.	946 SF PROVIDED
TOTAL REQUIRED=2,808 SF TOTAL PROVIDED=2,962 SF	
LANDSCAPING REQ'D INTERIOR:	
ASPHALT, CONCRETE CURB & GUTTER	51,678 SF
14% REQUIRED	
(14%) X (51,678) = 7,235 SF	7,300 SF PROVIDED
STREET/ROAD LANDSCAPING:	
PRIMARY: PROPOSED PUBLIC R/W FRESCO DR.	3,918 SF PROVIDED
18' MULTIPLYER	
(241'-24) X 18' = 3,906 SF	
SECONDARY: ASHES DR.	
9' MULTIPLYER	
(451'-48) X 9' = 3,627 SF	3,783 SF PROVIDED

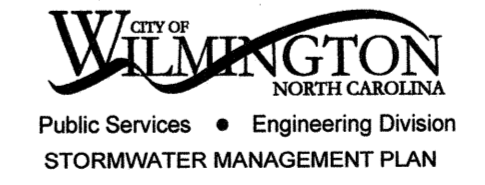
SITE DATA TABLE - EXISTING RENAISSANCE I, PHASE I	
USE:	OFFICE
SITE AREA:	2.16 ACRES
DISTURBED AREA:	0 & 1-1 AND CB
ZONING:	RESOURCE PROTECTION
CAMA LAND USE:	FRONT SETBACKS: 33' NORTH, 11' SOUTH
BUILDING SETBACKS (EXISTING):	REAR: 45'
BUILDING HEIGHT:	32' (2 STORY)
BUILDING SQUARE FOOTAGE:	31,650 SF (15,825 SF EACH FLOOR)
PARKING REQ'D:	0 & 1 ZONE
PARKING GROUP (OFFICE):	200/SF MAX, 300/SF MIN.
	158 MAX/105 MIN. REQUIRED
PROPOSED PARKING PROV'D:	137 REGULAR (6 ARE HC)
IMPERVIOUS AREA-PHI DRAINAGE AREA:	
EXISTING BUILDING:	15,825 SF (ROOF AREA)
BUILDING/SIDEWALKS/CURB & GUTTER:	68,950 SF
EXISTING SIDEWALKS/CONCRETE PADS:	6,850 SF
TOTAL EXISTING IMPERVIOUS AREA:	91,625 SF TOTAL
STREET/ROAD LANDSCAPING:	
(331'-24) X 18' = 5,526 SF REQUIRED	5,526 SF PROVIDED
INTERIOR LANDSCAPE PROVIDED:	1,876 SF PROVIDED

SITE INVENTORY MAP DATA	
PREPARER:	NORRIS, KUSKE & TUNSTALL ENGINEERS
SOIL TYPE:	Ro, La, To
MILITARY CUT-OFF RD:	SHOD
100 YEAR FLOOD BOUNDARY:	OUTSIDE 100 YEAR FLOOD BOUNDARY
FLOOD ZONE:	THIS SITE IS LOCATED IN ZONE "C" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY-PANEL NUMBER 370168 0085 E, DATED: 3 SEPT. 1992.
CONSERVATION OVERLAY DISTRICT:	NONE WITHIN SITE
HISTORICAL SITE:	NONE
CEMETARY:	NONE
FORESTED AREA:	VARIOUS (OAK, GUM, TULIP) SEE PLAN
WETLANDS:	NONE WITHIN SITE
ENDANGERED SPECIES/HABITAT:	NONE REPORTED

LANDFALL ASSOCIATES
DEED BOOK 1514 PAGE 1564

ZONING R-15

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



Date: _____ Permit # _____

Signed: _____
Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

NC DENR PWSS WATER PERMIT #: _____ GPD

WATER CAPACITY: _____ GPD

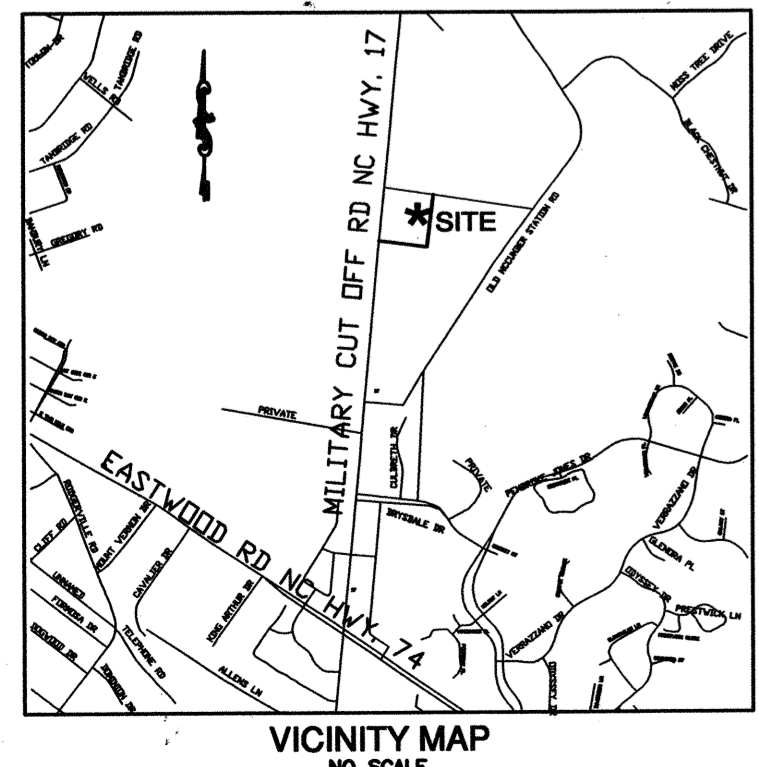
DWQ SEWER PERMIT #: _____ GPD

SEWER CAPACITY: _____ GPD

SEWER SHED # AND PLANT: _____

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

SCALE: 1" = 60'



SYMBOL	DATE	DESCRIPTION
		REVISIONS

© 2016 NORRIS & TUNSTALL

**INVENTORY SITE PLAN
RENAISSANCE II OFFICE BUILDING
WILMINGTON, NORTH CAROLINA**

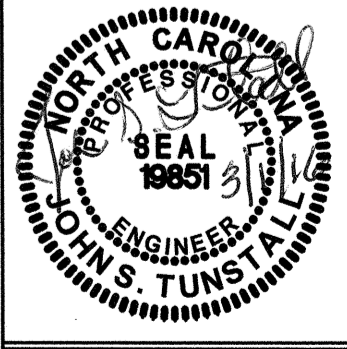
OWNER:
TCT OF WILMINGTON, LLC
1123 MILITARY CUTOFF RD.
WILMINGTON, N.C. 28405
(910) 256-7704

**NORRIS & TUNSTALL
CONSULTING ENGINEERS, P.C.**

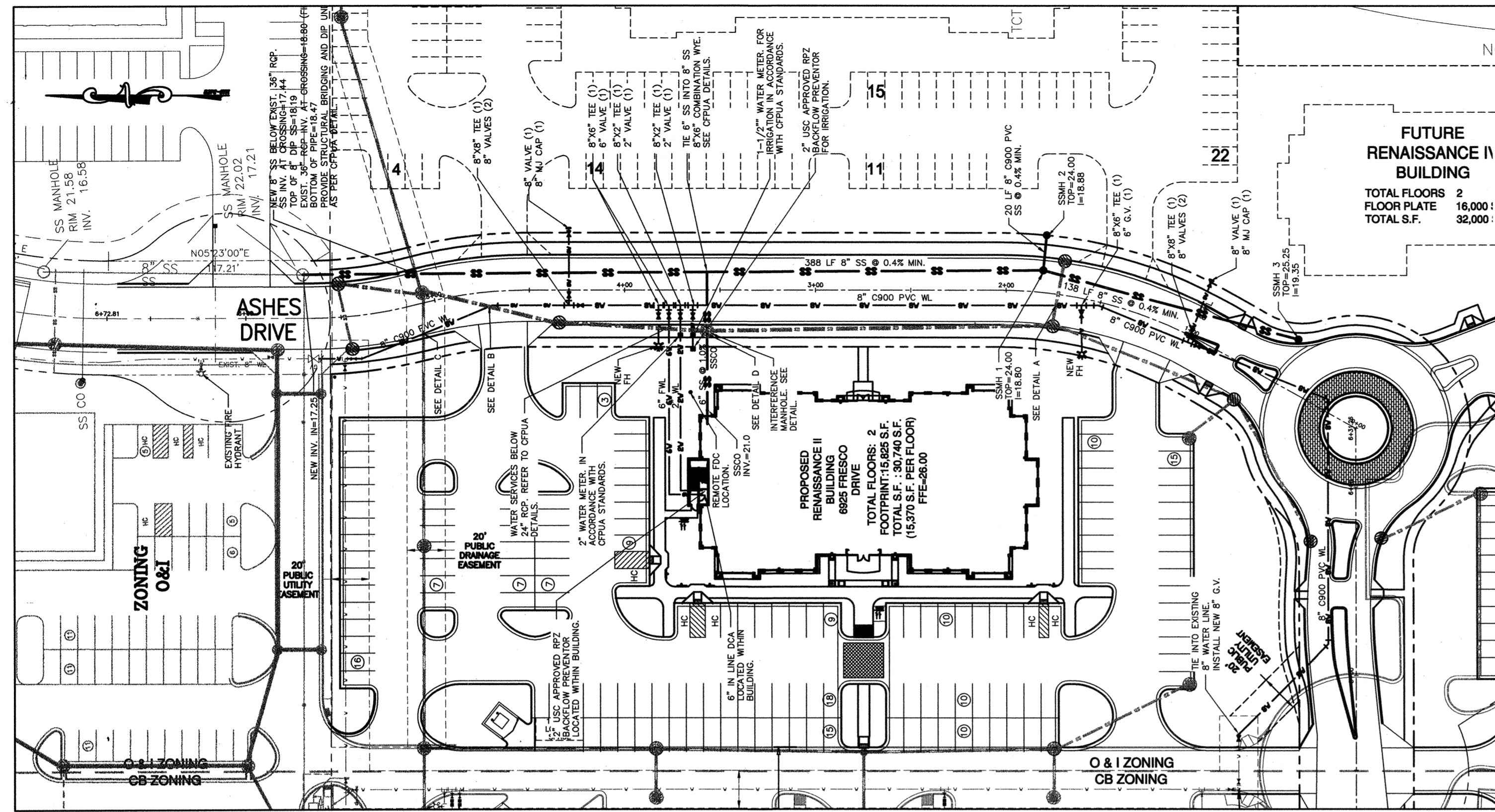
1429 ASH-LITTLE RIVER RD, NW
ASH, NC 28420
PHONE (910) 343-9653
licence #C-3641

16009

DES. JUST
CHKD. JPN
DRWN. NKS
DATE 2/23/16

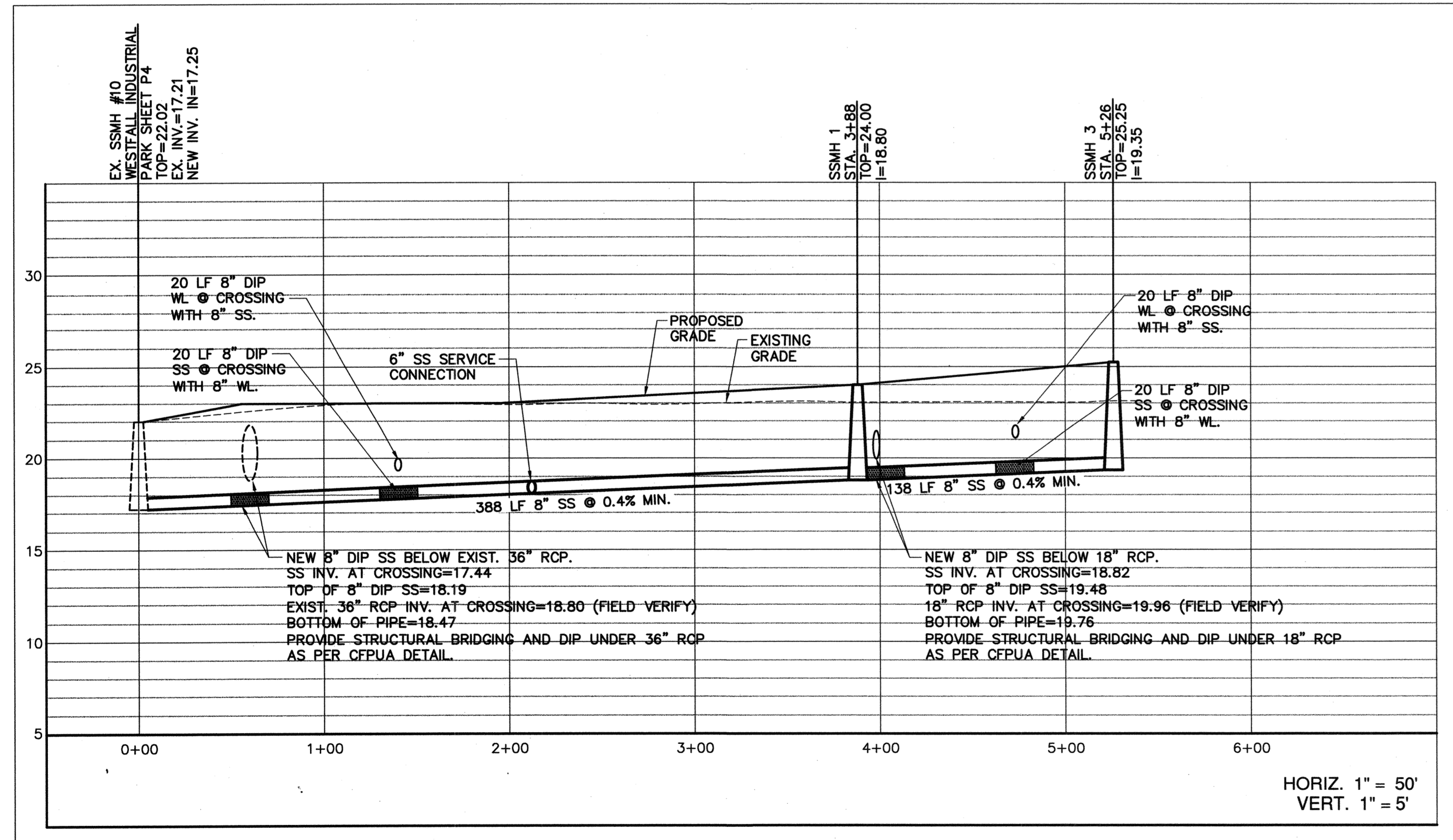


11



SCALE: 1" = 50'

FUTURE RENAISSANCE II BUILDING
 TOTAL FLOORS 2
 FLOOR PLATE 16,000
 TOTAL S.F. 32,000

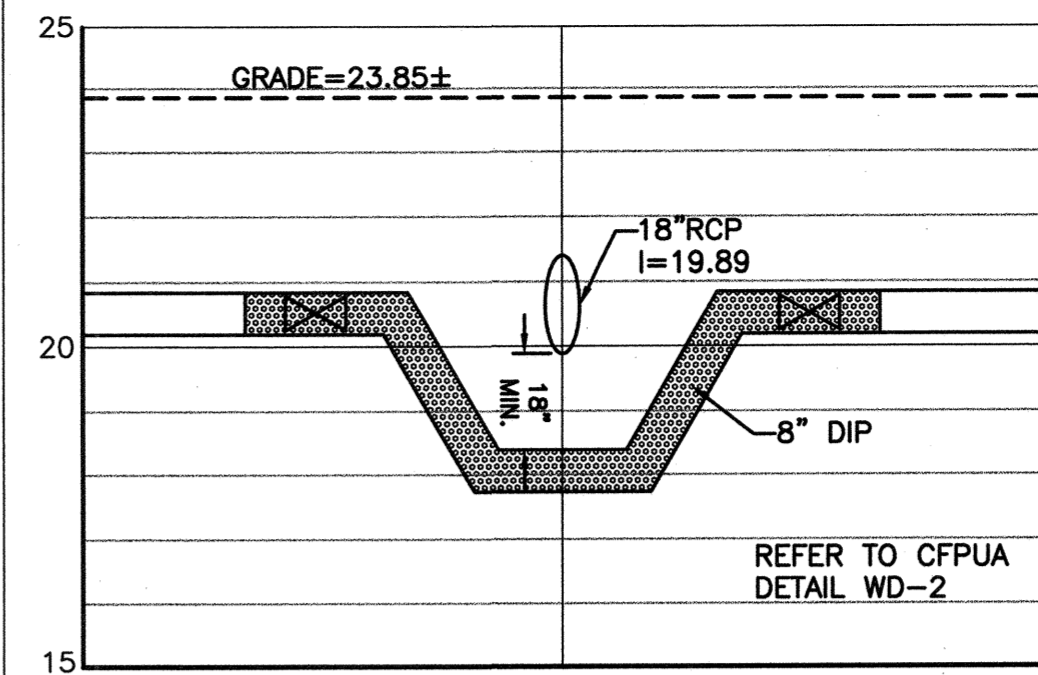


HORIZ. 1" = 50'
 VERT. 1" = 5'

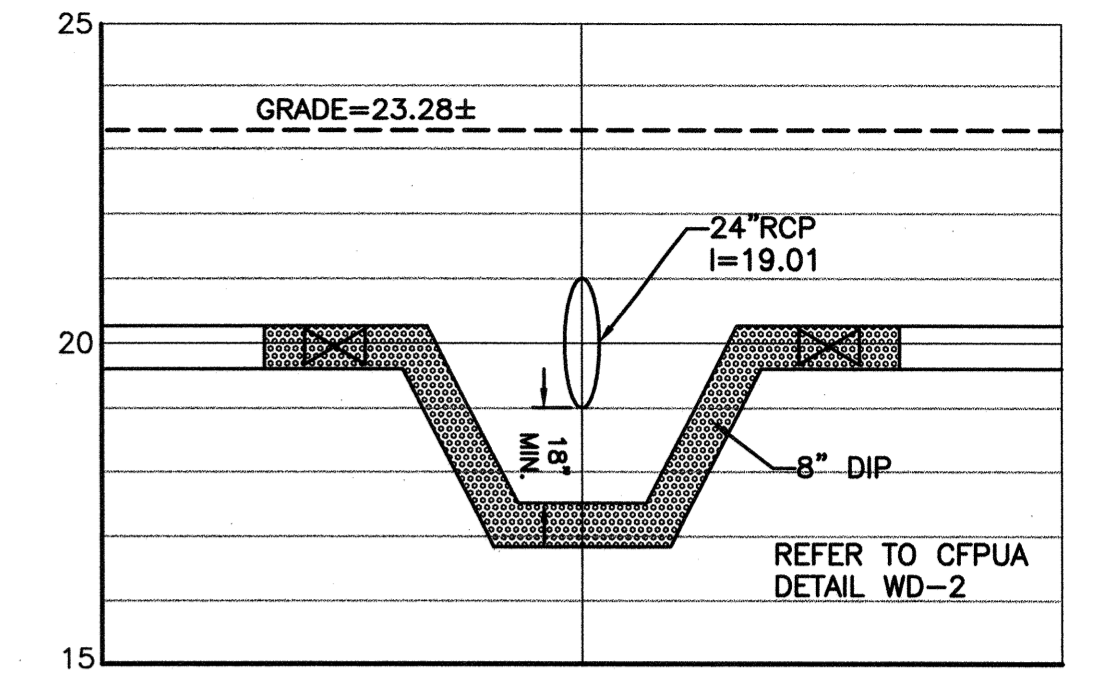
- UTILITY NOTES:**
1. MAINTAIN A 24" MINIMUM SEPARATION BETWEEN THE PROPOSED OR EXISTING STORM DRAIN AND THE PROPOSED OR EXISTING WATER LINE OR SEWER LINE. SEE DETAILS.
 2. SANITARY SEWERS MUST MAINTAIN A MINIMUM SEPARATION FROM WATER LINES OF 10 FEET LATERALLY OR 18 INCHES VERTICALLY (WATER OVER SEWER). IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE OR ANYTIME THE SEWER IS OVER THE WATER MAIN, BOTH THE WATER MAIN AND SEWER MUST BE CONSTRUCTED OF FERROUS PIPE COMPLYING WITH PUBLIC WATER SUPPLY DESIGN STANDARDS AND BE PRESSURE TESTED TO 150 PSI TO ASSURE WATER TIGHTNESS BEFORE BACKFILLING OR EITHER THE WATER MAIN OR THE SEWER LINE MAY BE ENCASED IN A WATER TIGHT CARRIER PIPE WHICH EXTENDS 10 FEET ON BOTH SIDES OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATER MAIN. THE CARRIER PIPE SHALL BE OF MATERIALS APPROVED BY THE REGULATORY AGENCY FOR USE IN WATER MAIN CONSTRUCTION.
 3. RESTRAINING/BLOCKING: THE PLUGS, CAPS, TEES AND BENDS DEFLECTING 22-1/2 DEGREES OR MORE EITHER VERTICALLY OR HORIZONTALLY ON WATER LINES 8 INCHES IN DIAMETER OF LARGER SHALL BE PROVIDED WITH THRUST BLOCKING OR "MEGALUG" RETAINER GLAND AT EACH JOINT, INSTALLED PER MANUFACTURER'S REQUIREMENTS.

- 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.

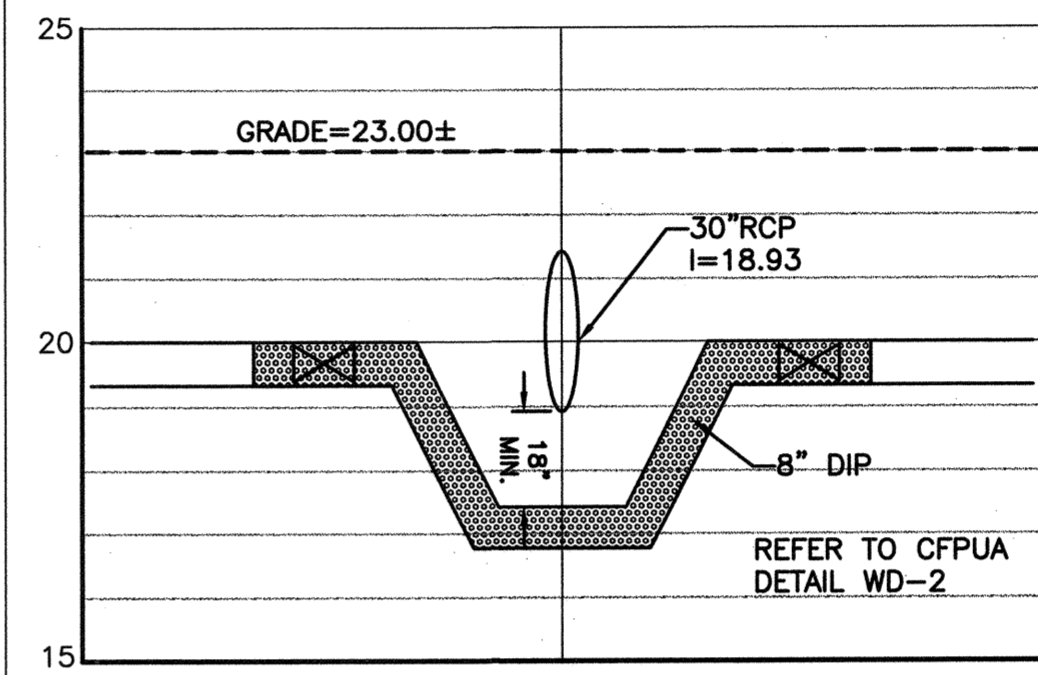
REV. NO.	DESCRIPTION	DATE



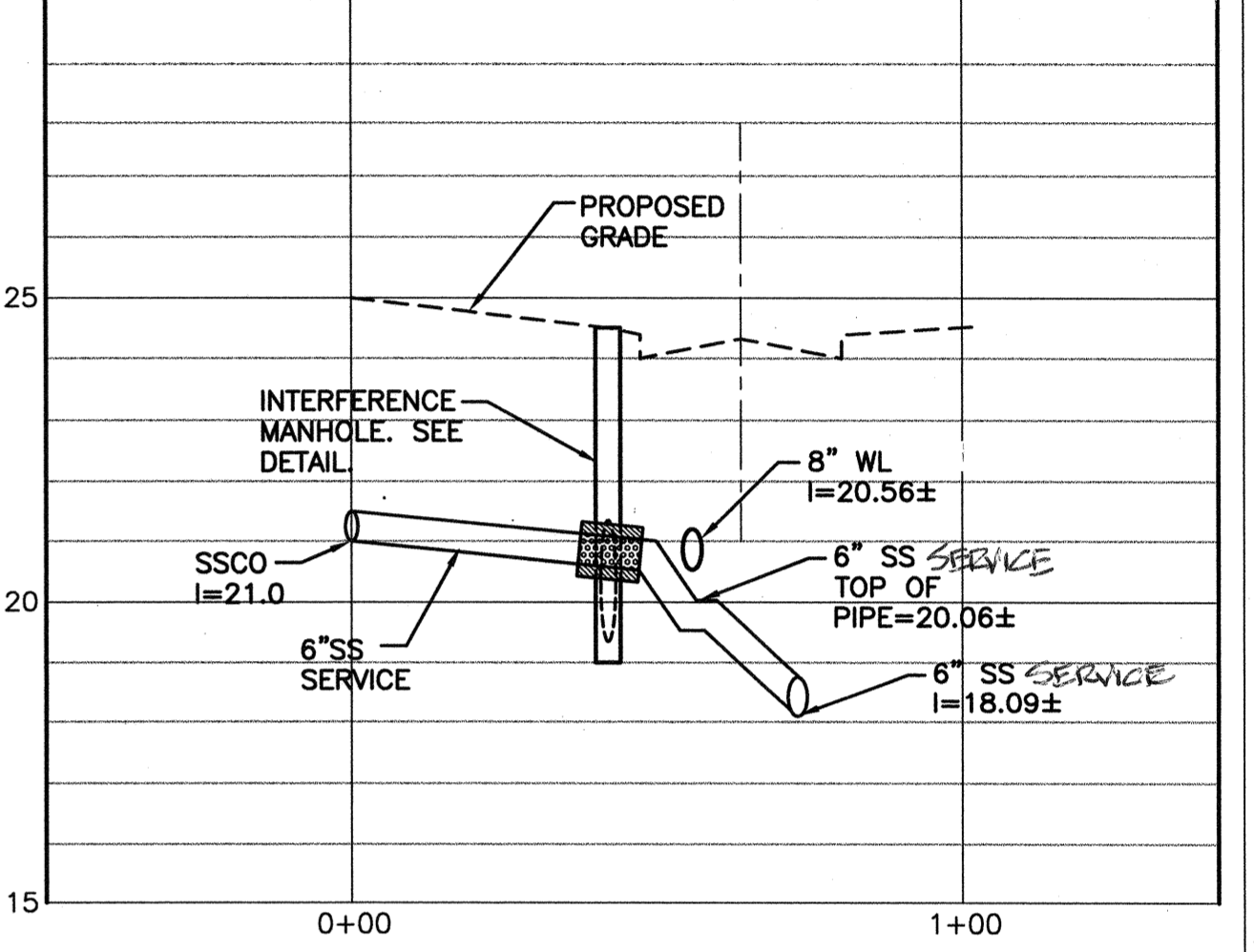
WATER/STORMDRAIN CROSSING "A"



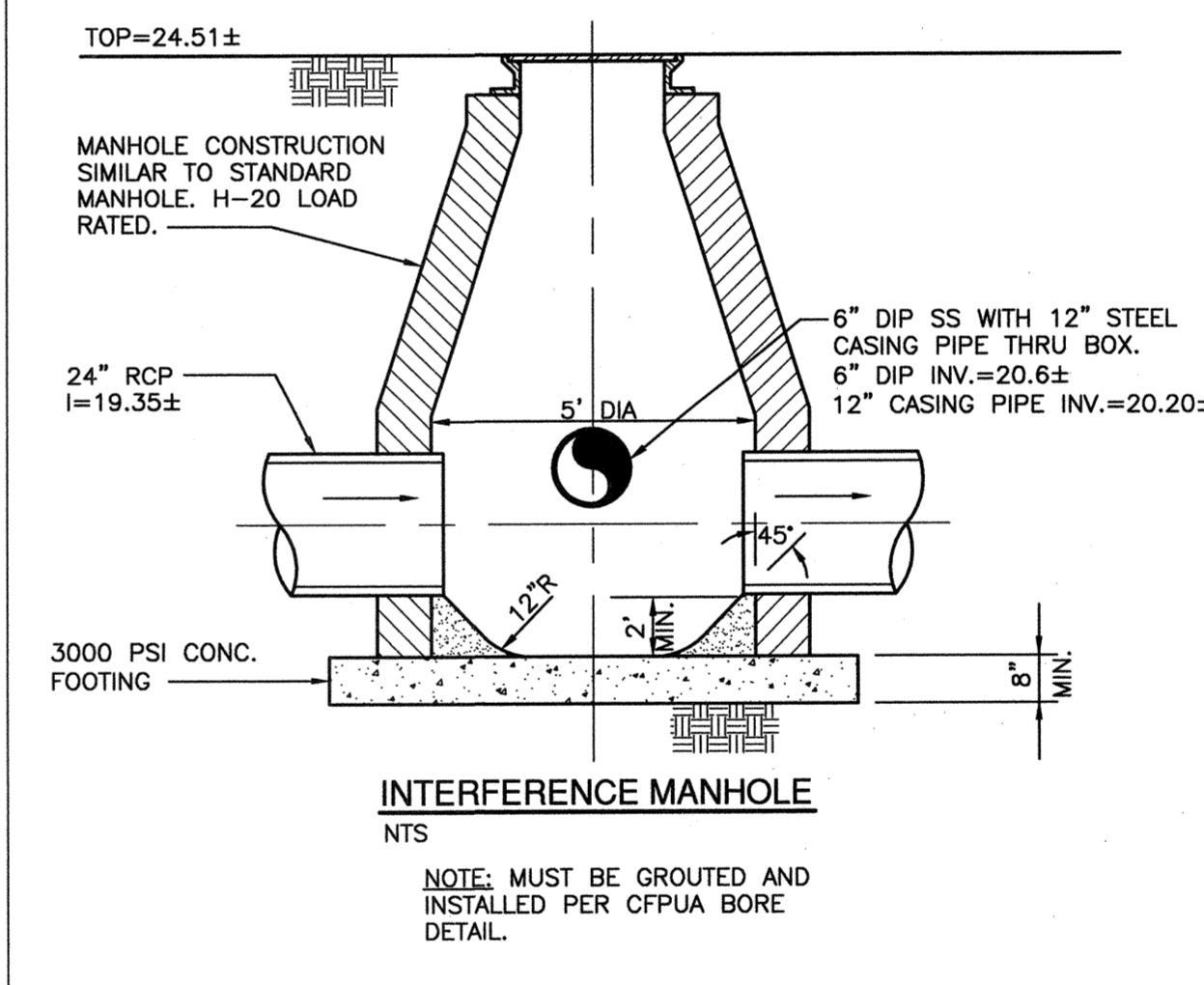
WATER/STORMDRAIN CROSSING "B"



WATER/STORMDRAIN CROSSING "C"



SEWER/STORMDRAIN/WATER CROSSING "D"



INTERFERENCE MANHOLE NTS

NOTE: MUST BE GROUTED AND INSTALLED PER CFPUA BORE DETAIL.

HORIZ. 1" = 30'
 VERT. 1" = 3'

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

Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

Name: _____ Date: _____

Planning: _____
 Traffic: _____
 Fire: _____

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)



NORRIS & TUNSTALL CONSULTING ENGINEERS, INC.
 802 MARKET STREET WILMINGTON, NC 28401 PHONE (910) 343-0953 FAX (910) 343-0904

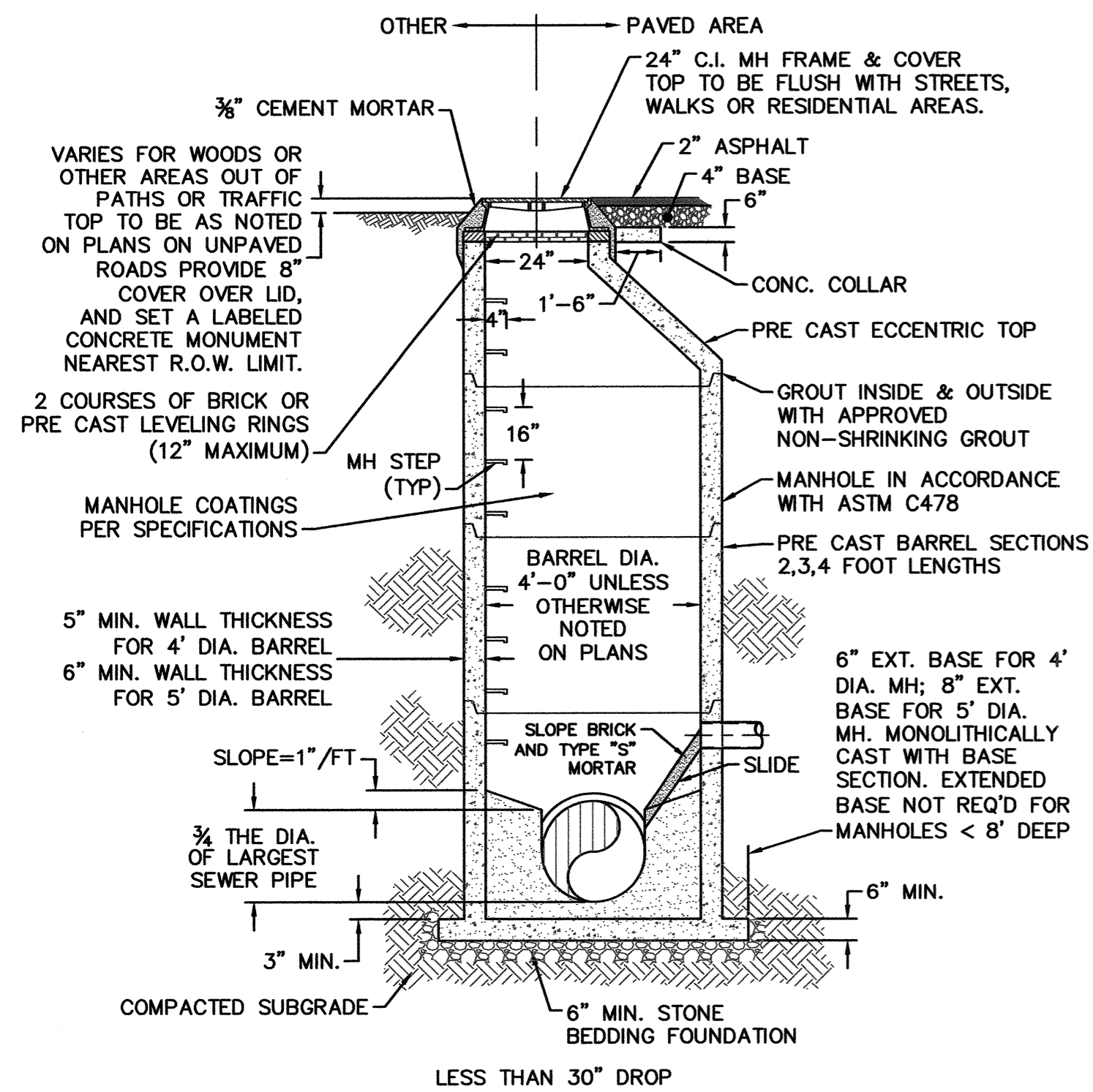
RENAISSANCE II OFFICE BUILDING WATERLINE LAYOUT AND SANITARY SEWER PLAN & PROFILE

DATE: 2/22/16
 SCALE: 1" = 50'
 1" = 5'

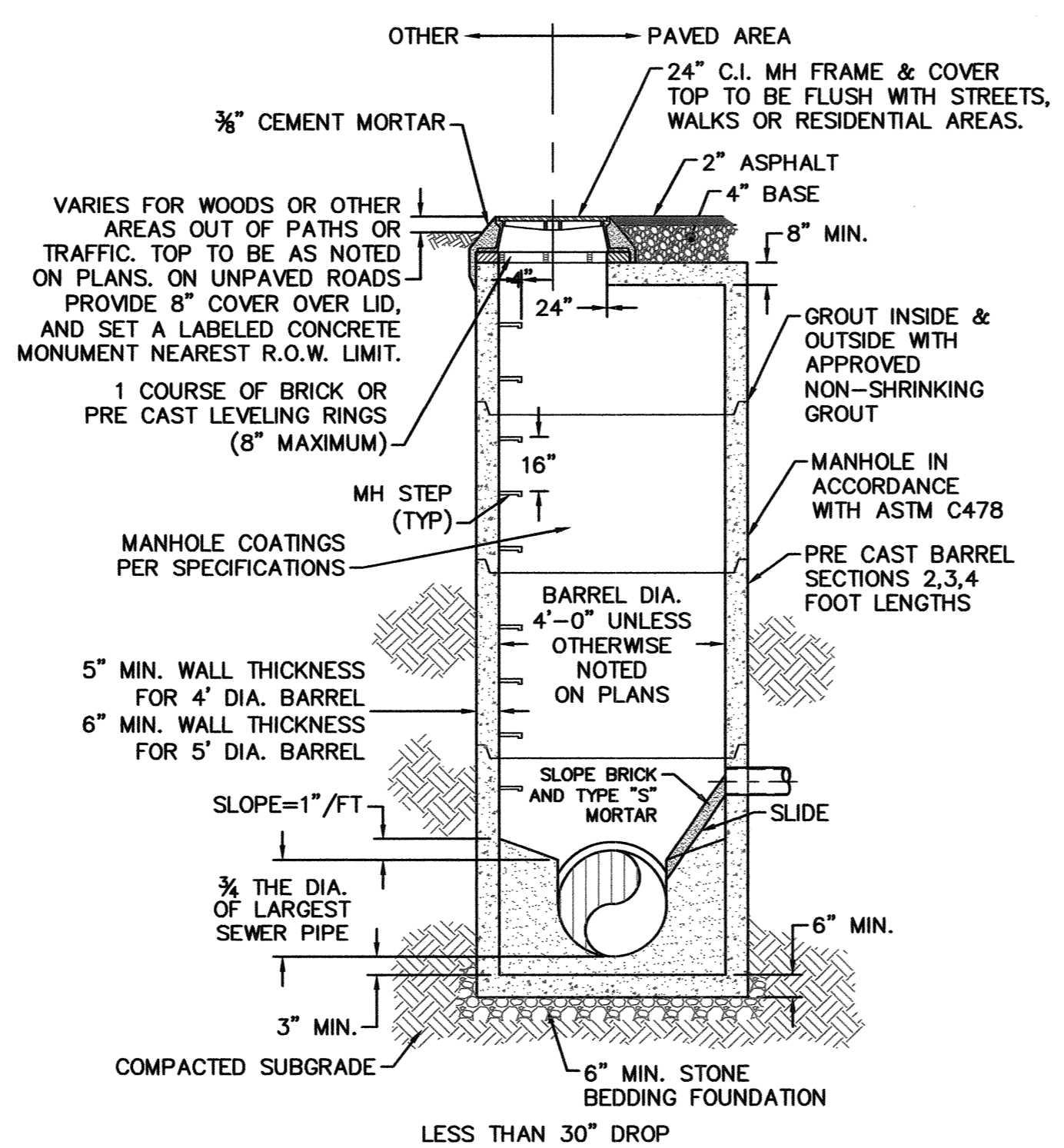
DRAWN: NKS
 CHECKED: JST
 PROJECT NO: 16009

SHEET NO: PR1

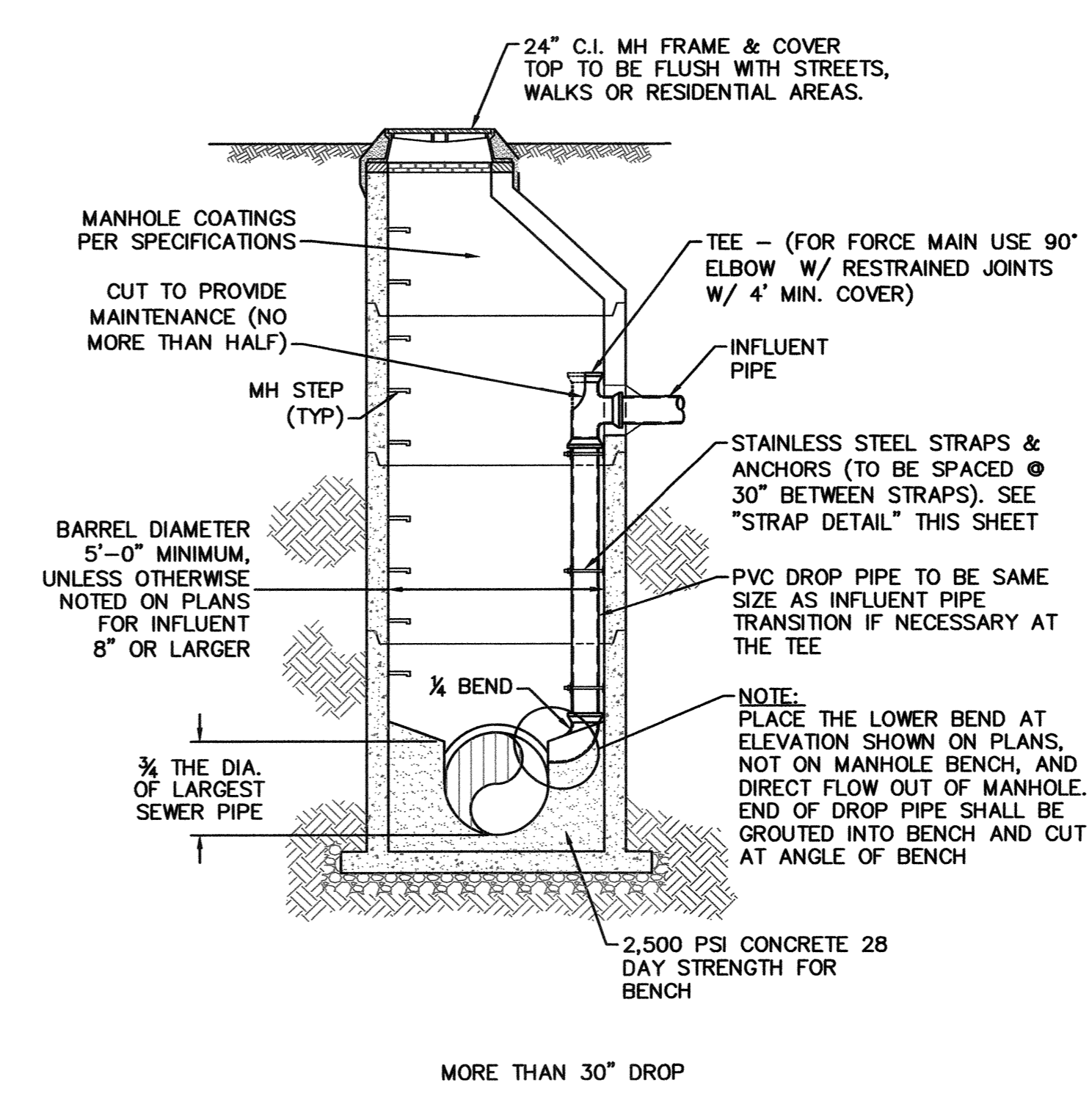
ASHES DRIVE



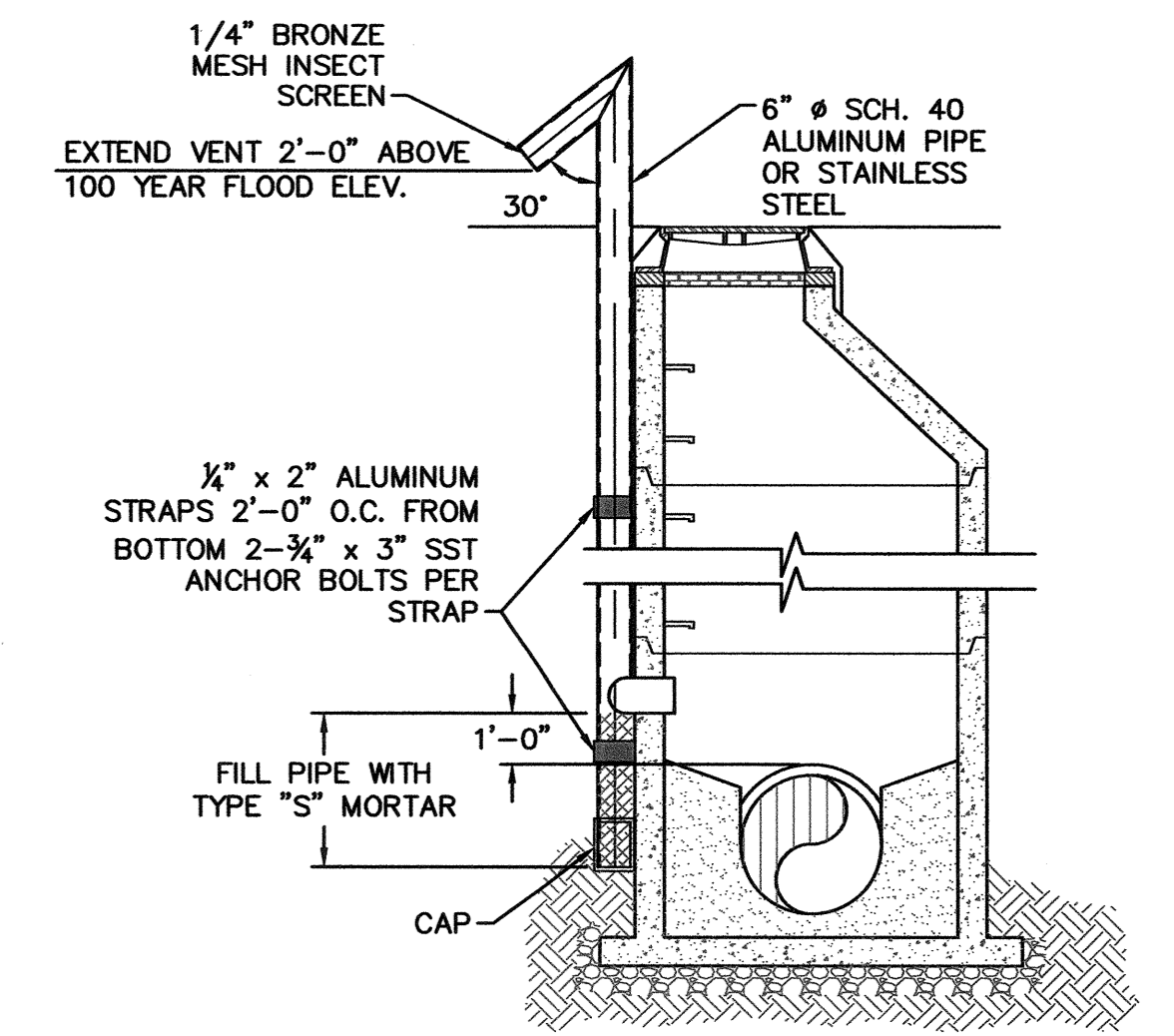
SD-1 PRECAST CONCRETE OFFSET MANHOLE TYPICAL
NOT TO SCALE



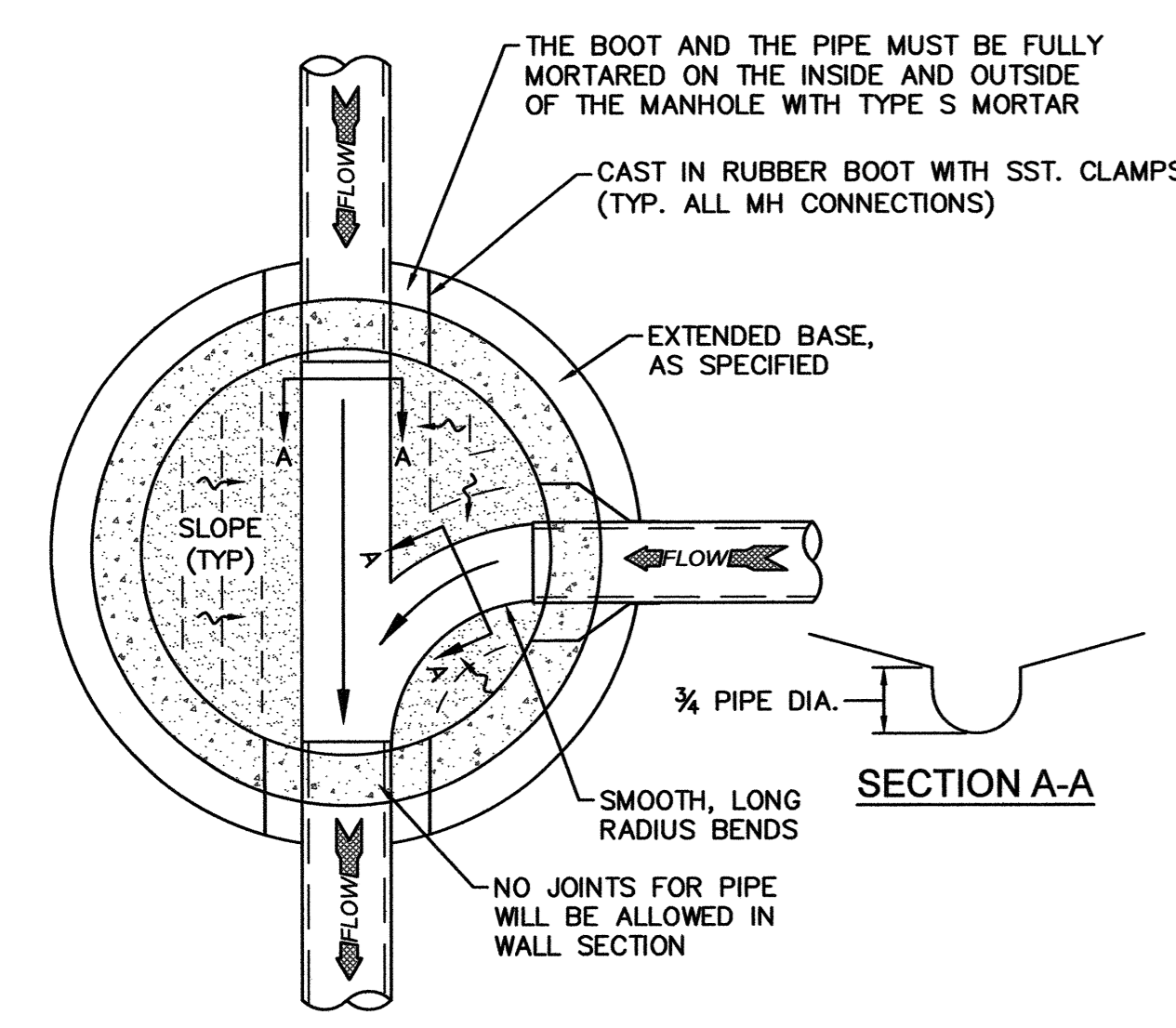
SD-2 PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL
NOT TO SCALE



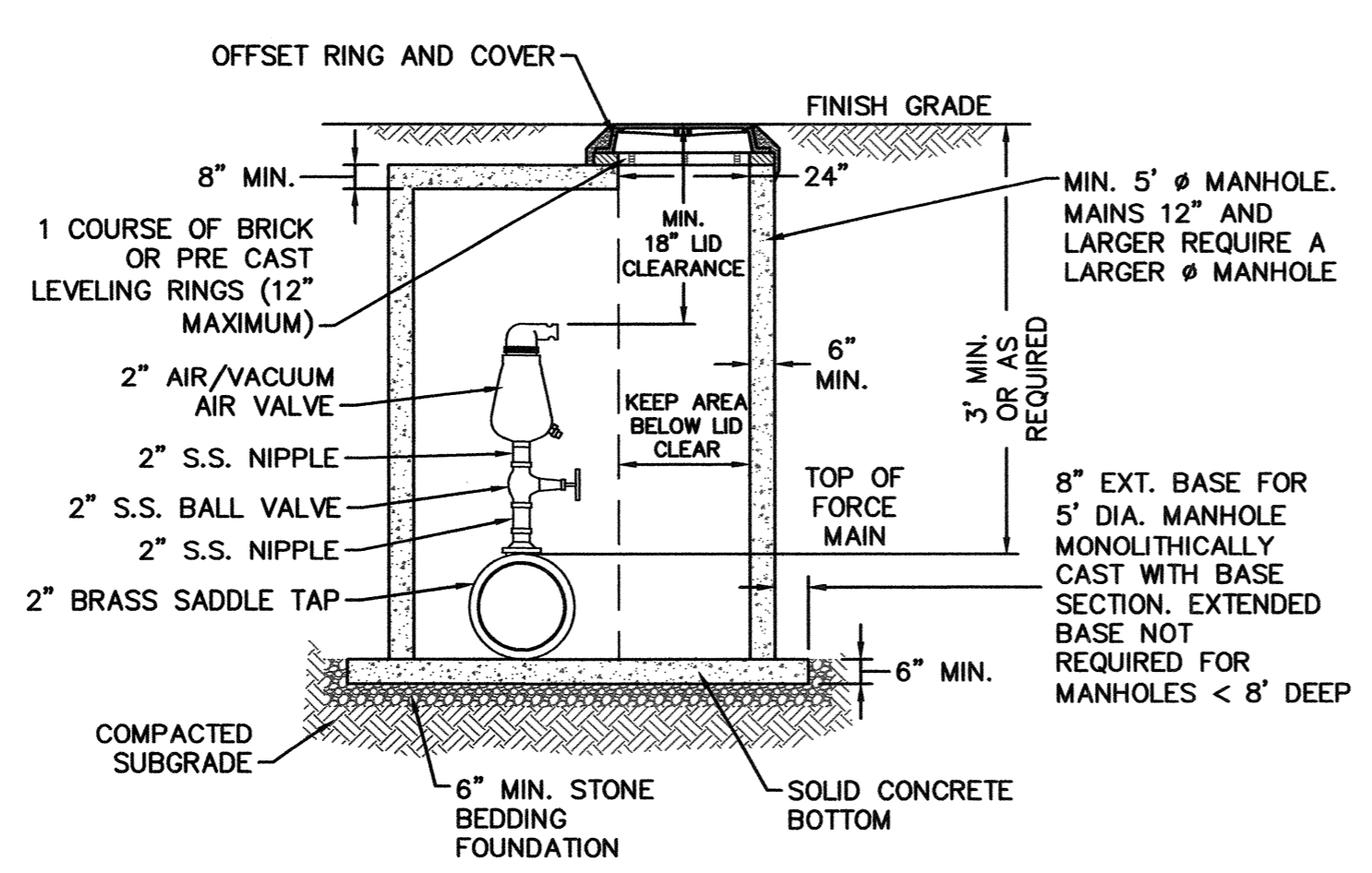
SD-3 DROP MANHOLE
NOT TO SCALE



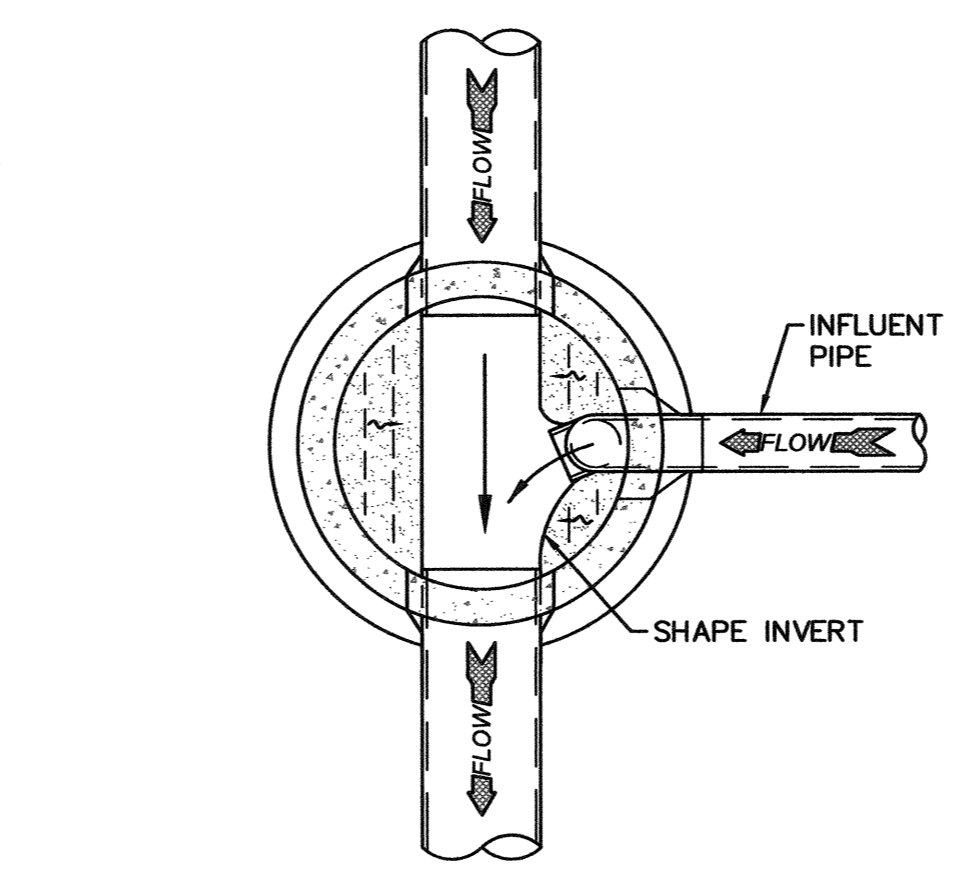
SD-4 STANDARD VENT MANHOLE
NOT TO SCALE



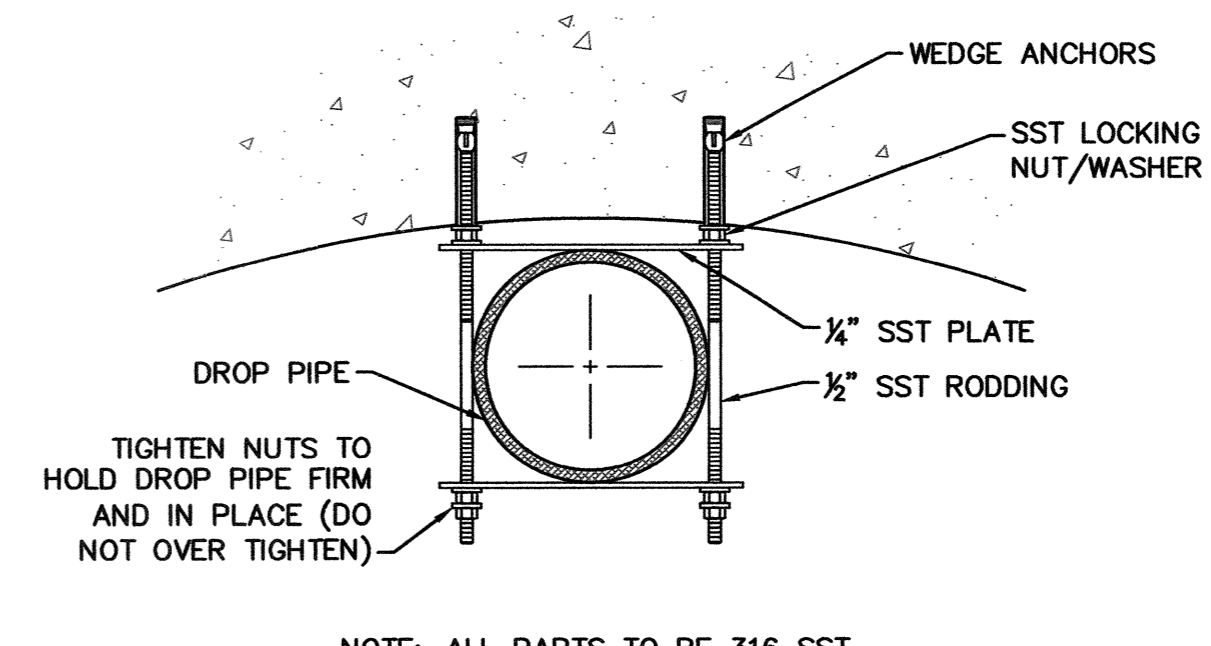
SD-5 MANHOLE FLOOR PLAN
NOT TO SCALE



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



SD-7 DROP MANHOLE FLOOR PLAN
NOT TO SCALE



SD-8 STRAP DETAIL
NOT TO SCALE

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

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

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

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

THESE DETAILS ARE A WORK PRODUCT OF CFPUA FOR SEWER SYSTEM DESIGN AND CONSTRUCTION AND HAVE BEEN REVIEWED AND APPROVED FOR CONTENT AND GENERAL CONFORMANCE WITH THE SEWER DESIGN FOR THIS PROJECT.

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

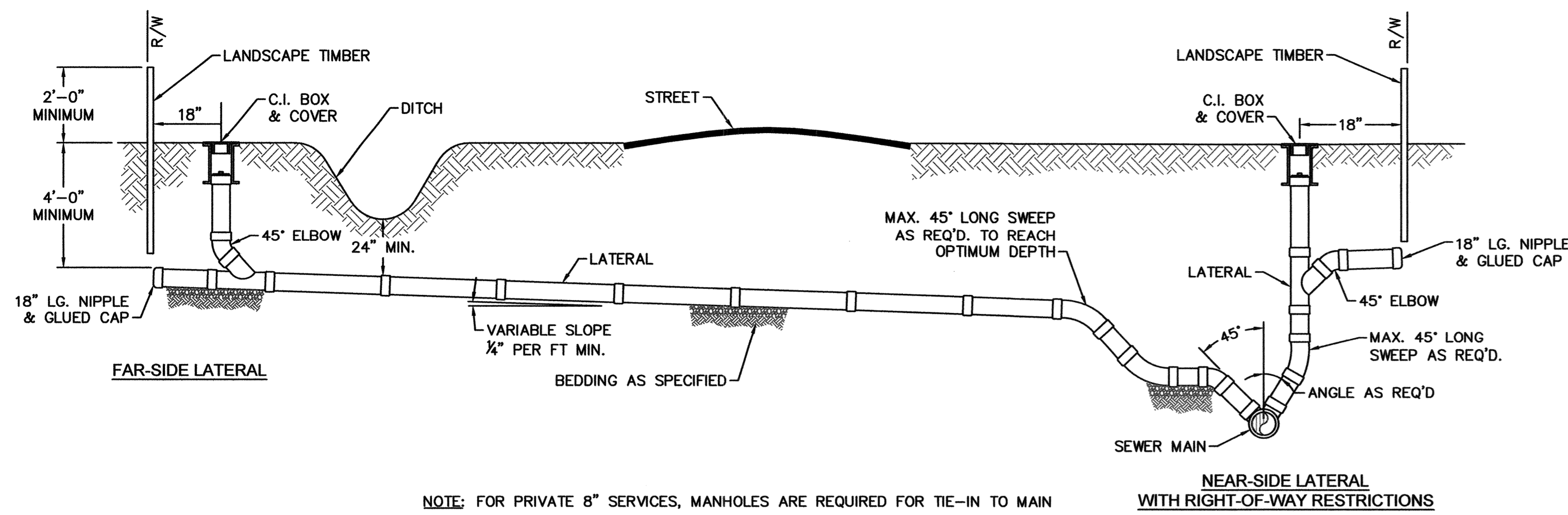
CFPUA SANITARY SEWER

STANDARD DETAILS

ENGINEER
JOHN S. TUNSTALL

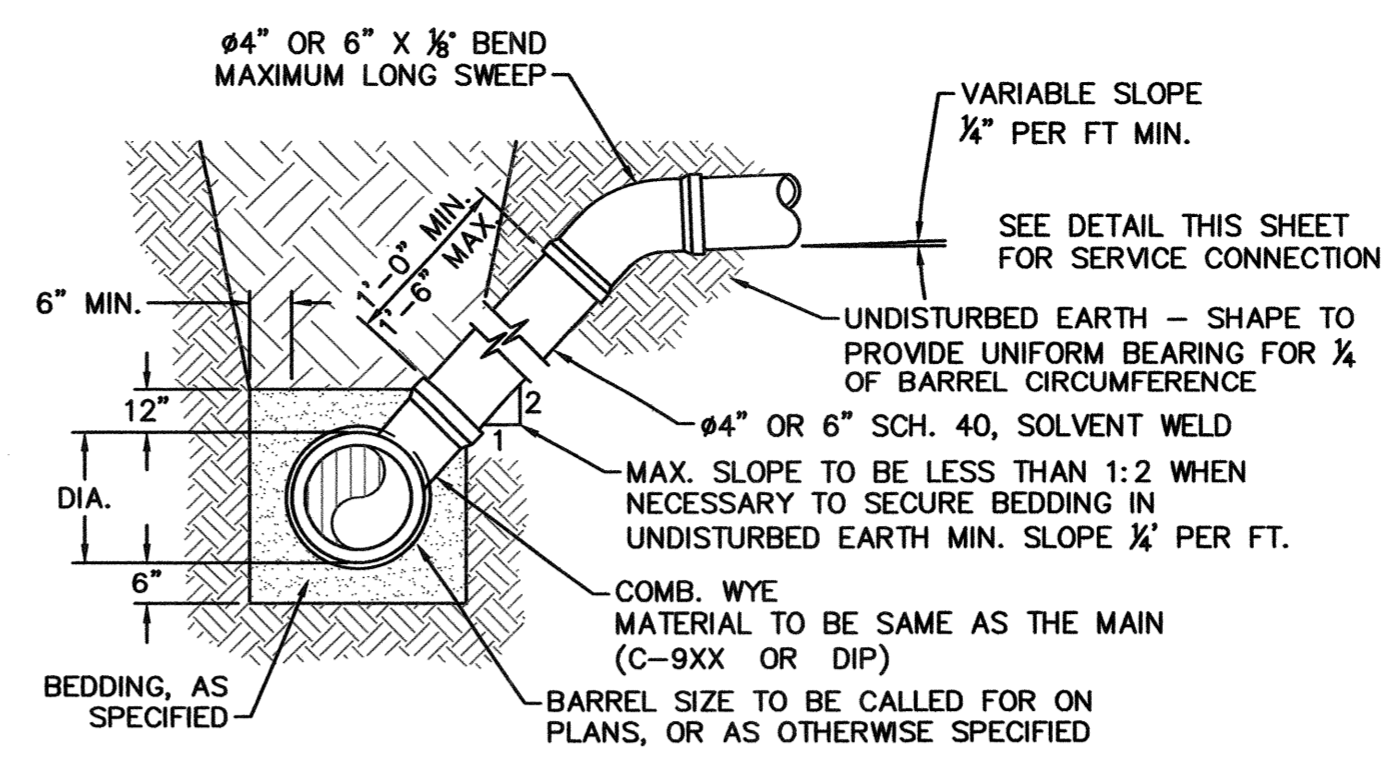
CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DATE:
1/9/12
SCALE:
N/A
DRAWN BY:
CFPUA
CHECKED BY:
CFPUA
PROJECT NO.:
16009
SHEET NO.:
SSD-1



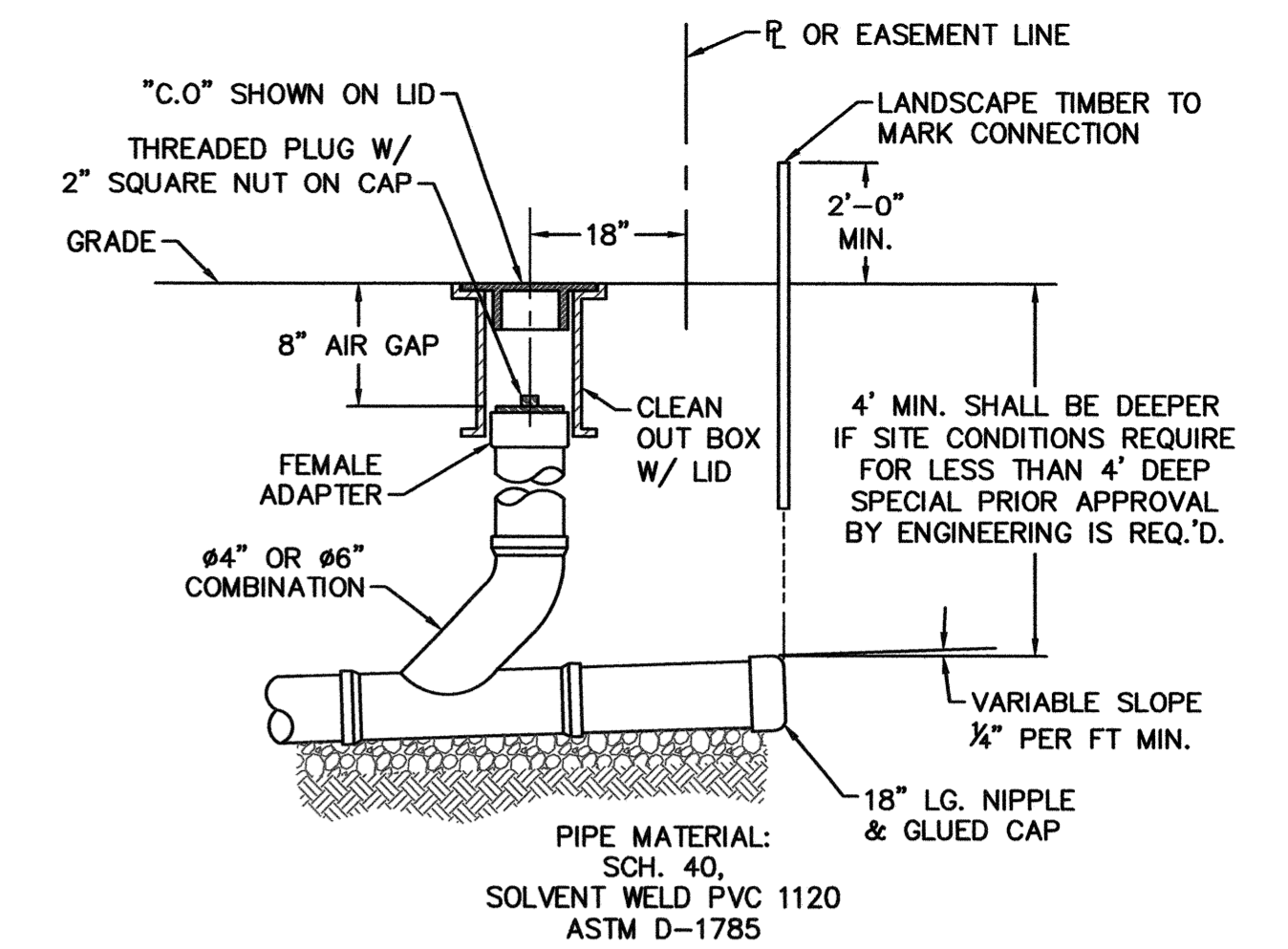
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN

SD-19 STANDARD SERVICE CONNECTION TO SANITARY SEWER
NOT TO SCALE



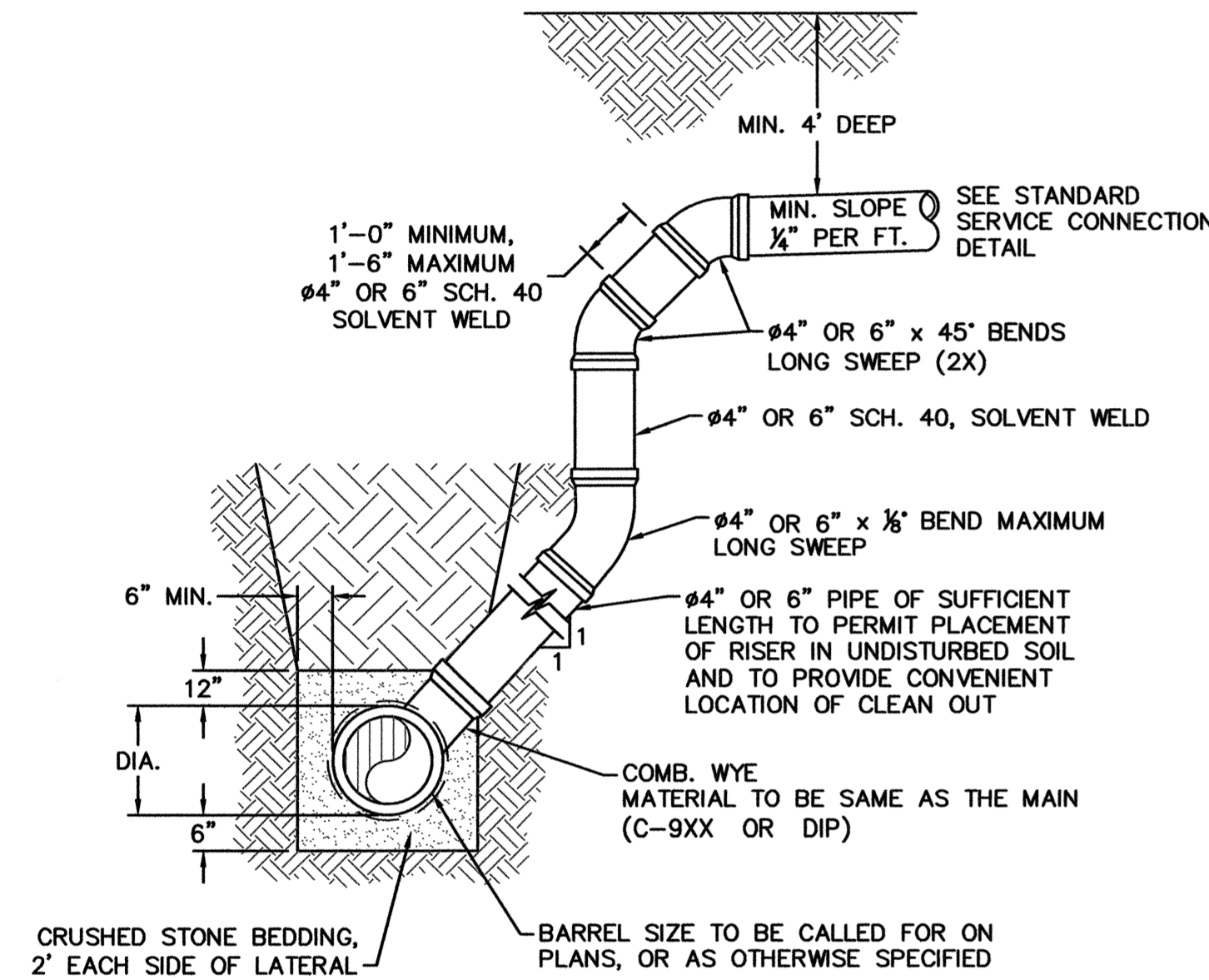
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

SD-10 STANDARD SERVICE LATERAL
NOT TO SCALE



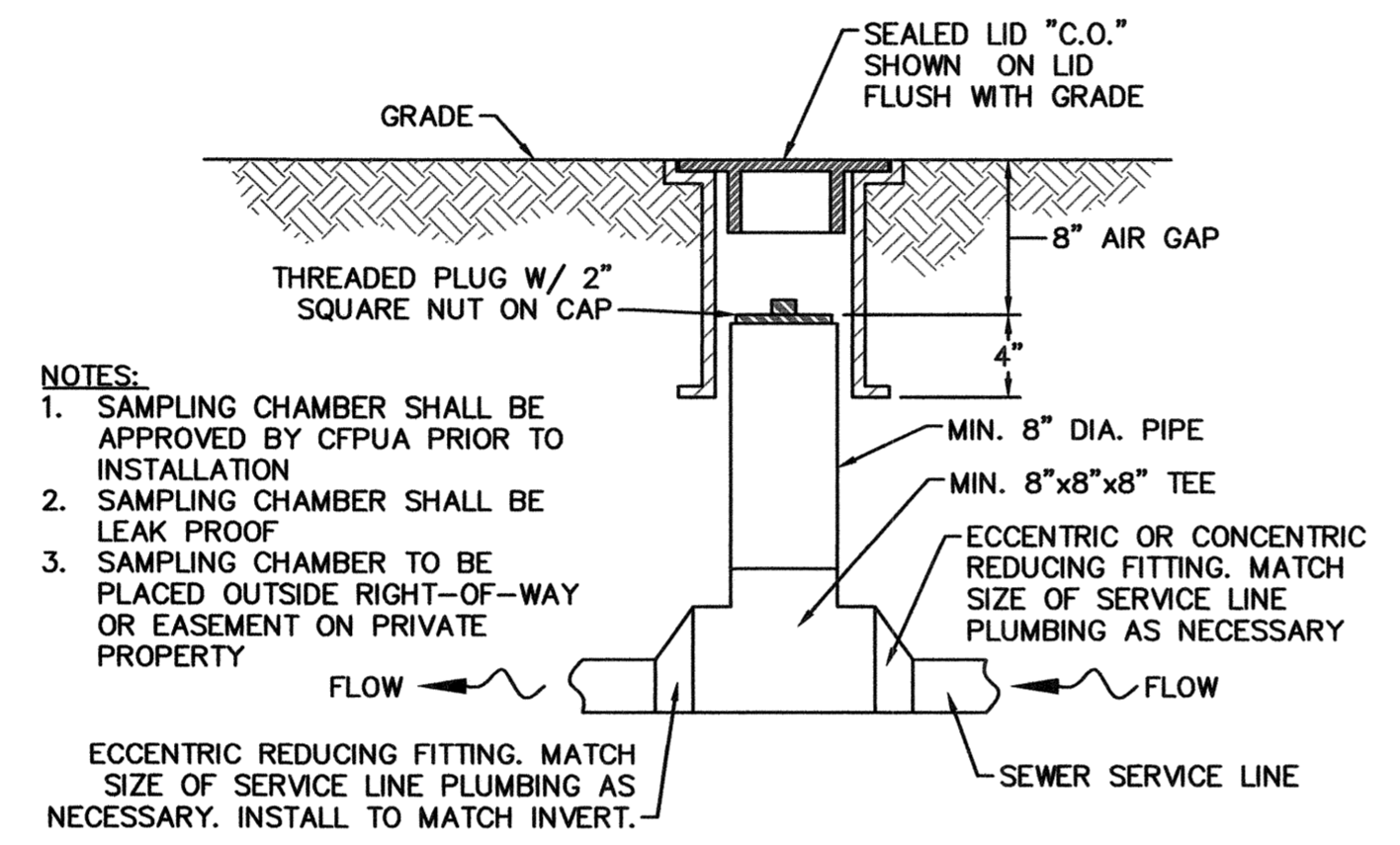
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

SD-11 SERVICE CONNECTION AND CLEAN-OUT
NOT TO SCALE



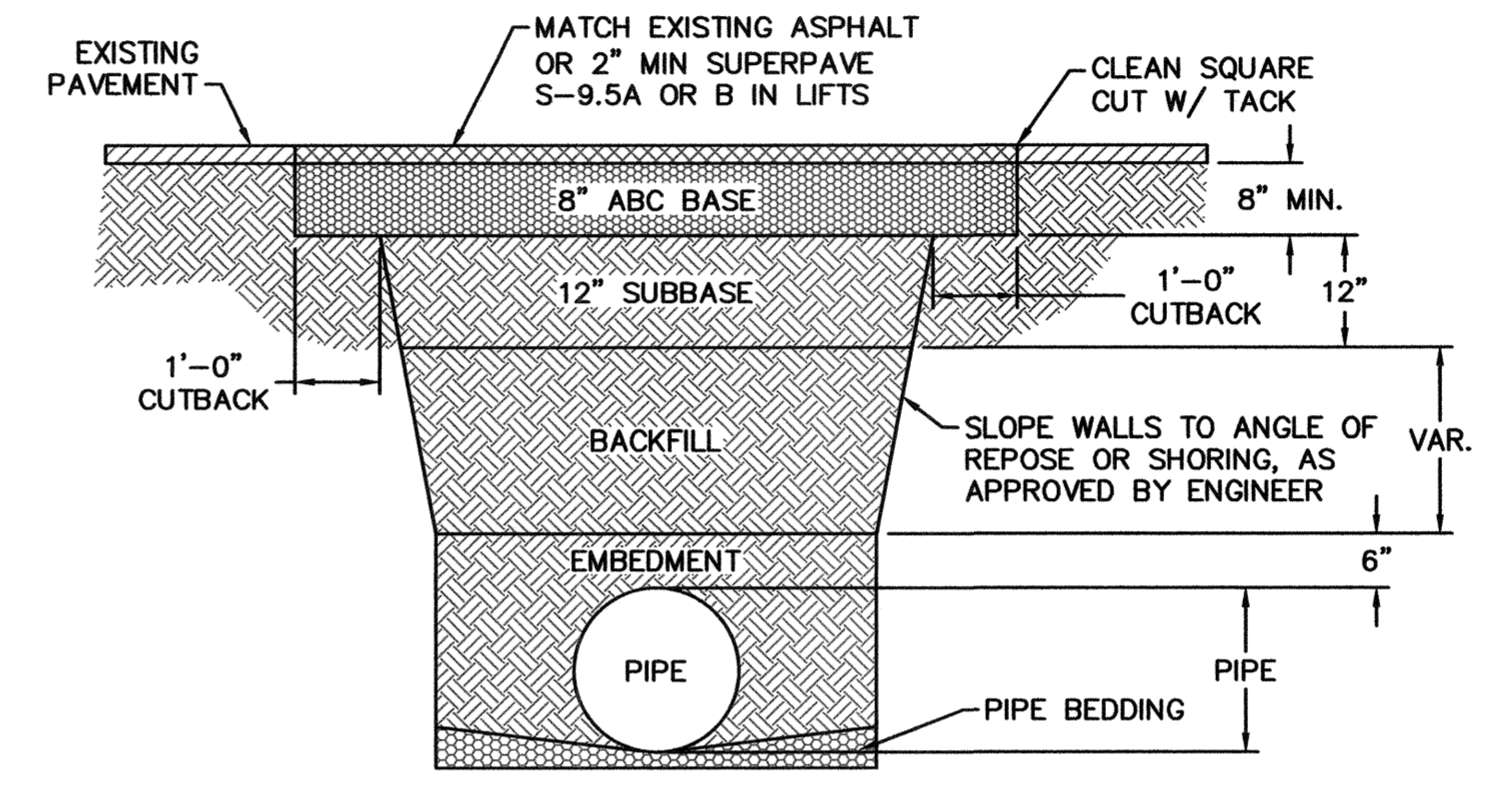
NOTES:
1. SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION.
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

SD-12 DEEP SERVICE LATERAL
NOT TO SCALE



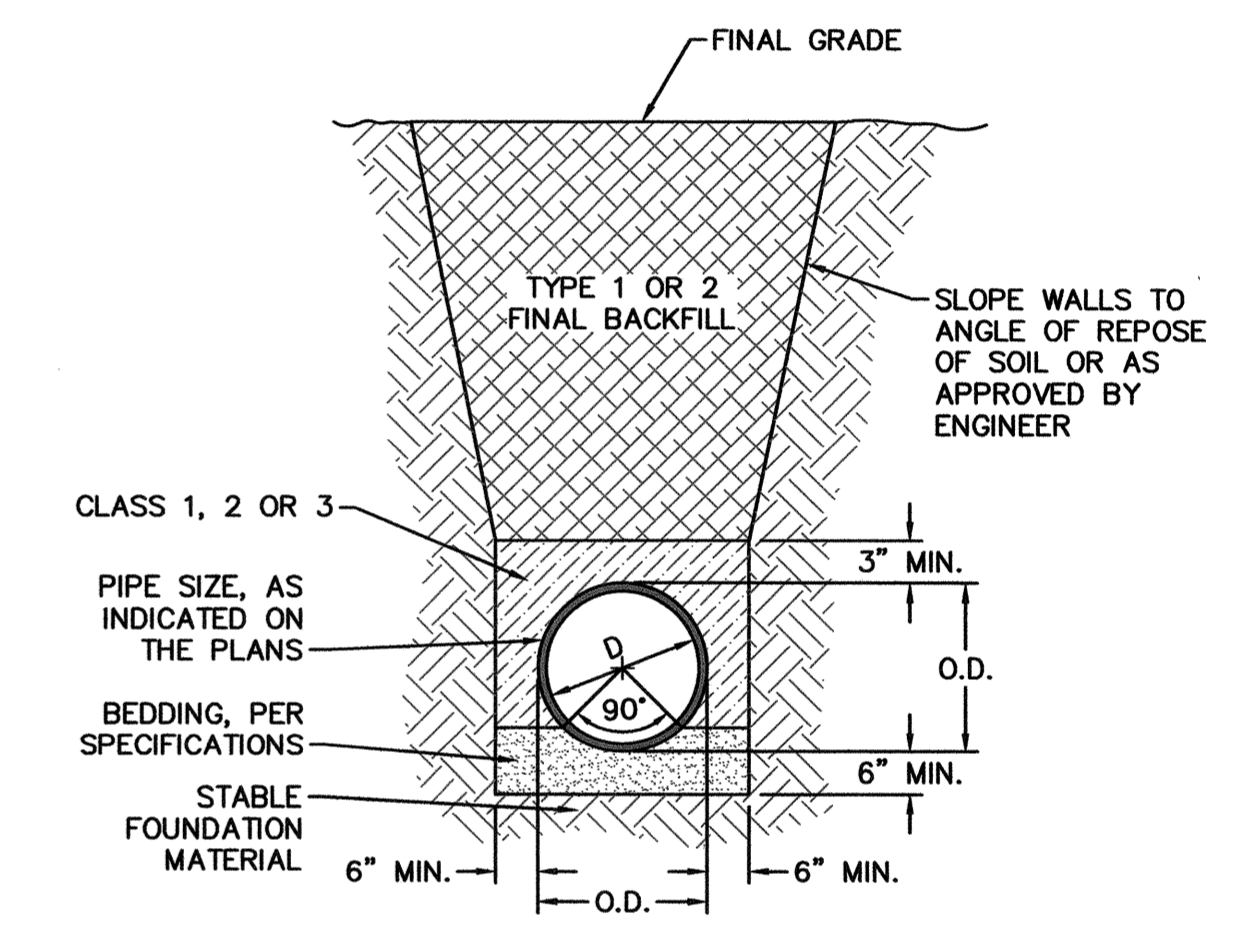
NOTES:
1. SAMPLING CHAMBER SHALL BE APPROVED BY CFPUA PRIOR TO INSTALLATION.
2. SAMPLING CHAMBER SHALL BE LEAK PROOF.
3. SAMPLING CHAMBER TO BE PLACED OUTSIDE RIGHT-OF-WAY OR EASEMENT ON PRIVATE PROPERTY.
ECCENTRIC REDUCING FITTING. MATCH SIZE OF SERVICE LINE PLUMBING AS NECESSARY. INSTALL TO MATCH INVERT.

SD-13 SAMPLING CHAMBER
NOT TO SCALE

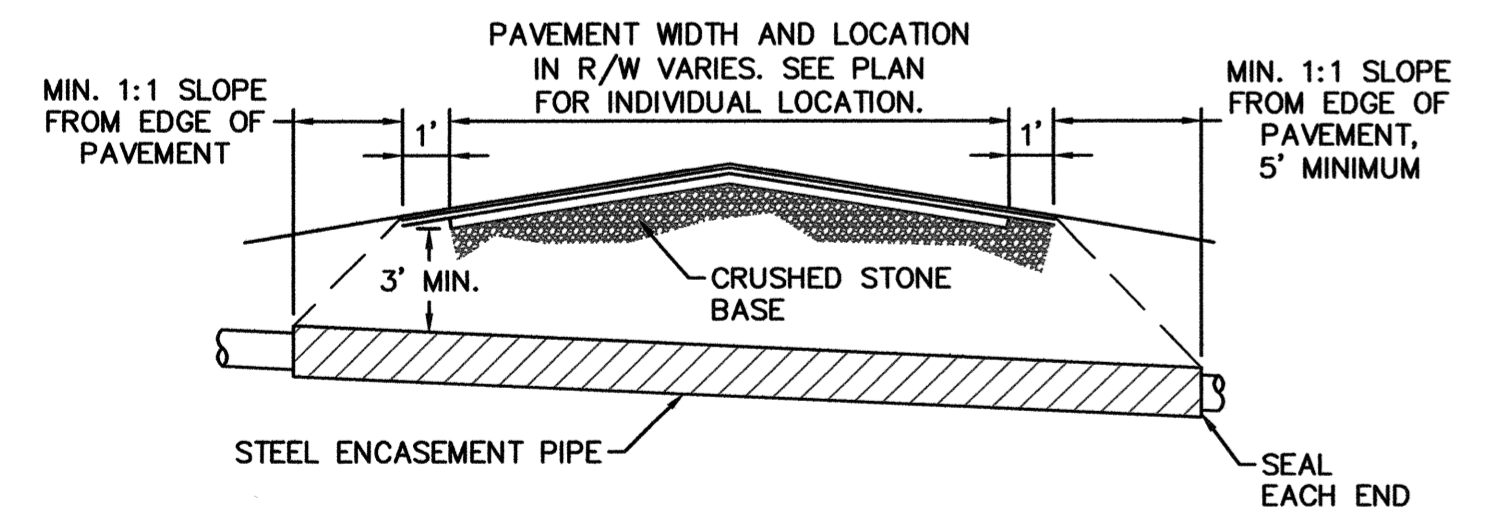


NOTES:
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
3. 8-INCH OF ABC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

SD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED
NOT TO SCALE

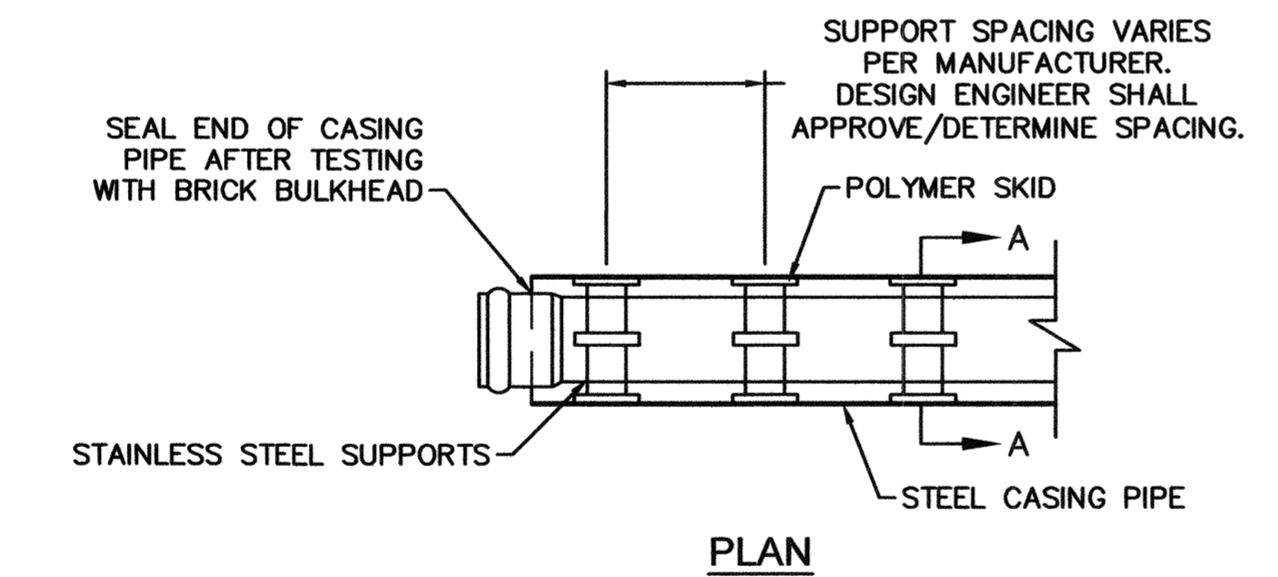


SD-15 TYPICAL TRENCH DETAIL
NOT TO SCALE

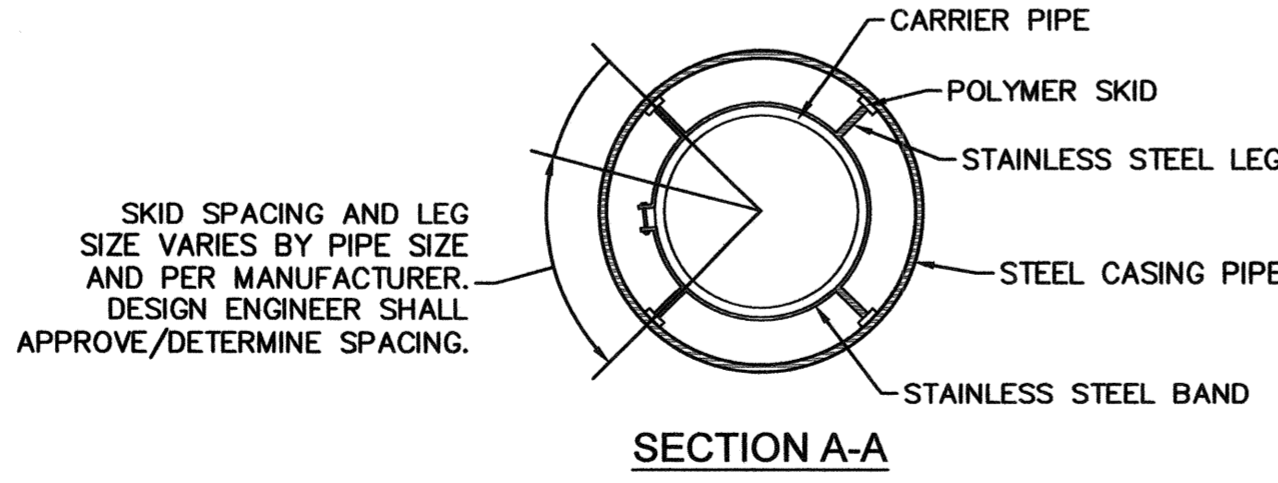


NOTES:
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

SD-16 TYPICAL BORING/ JACKING DETAIL
NOT TO SCALE



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



NOTE: ALL STAINLESS STEEL PARTS TO BE 316 SST.
SD-17 PIPE CASING SUPPORT DETAIL
NOT TO SCALE

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

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

THESE DETAILS ARE A WORK PRODUCT OF CFPUA FOR SEWER SYSTEM DESIGN AND CONSTRUCTION AND HAVE BEEN REVIEWED AND APPROVED FOR CONTENT AND GENERAL CONFORMANCE WITH THE SEWER DESIGN FOR THIS PROJECT.

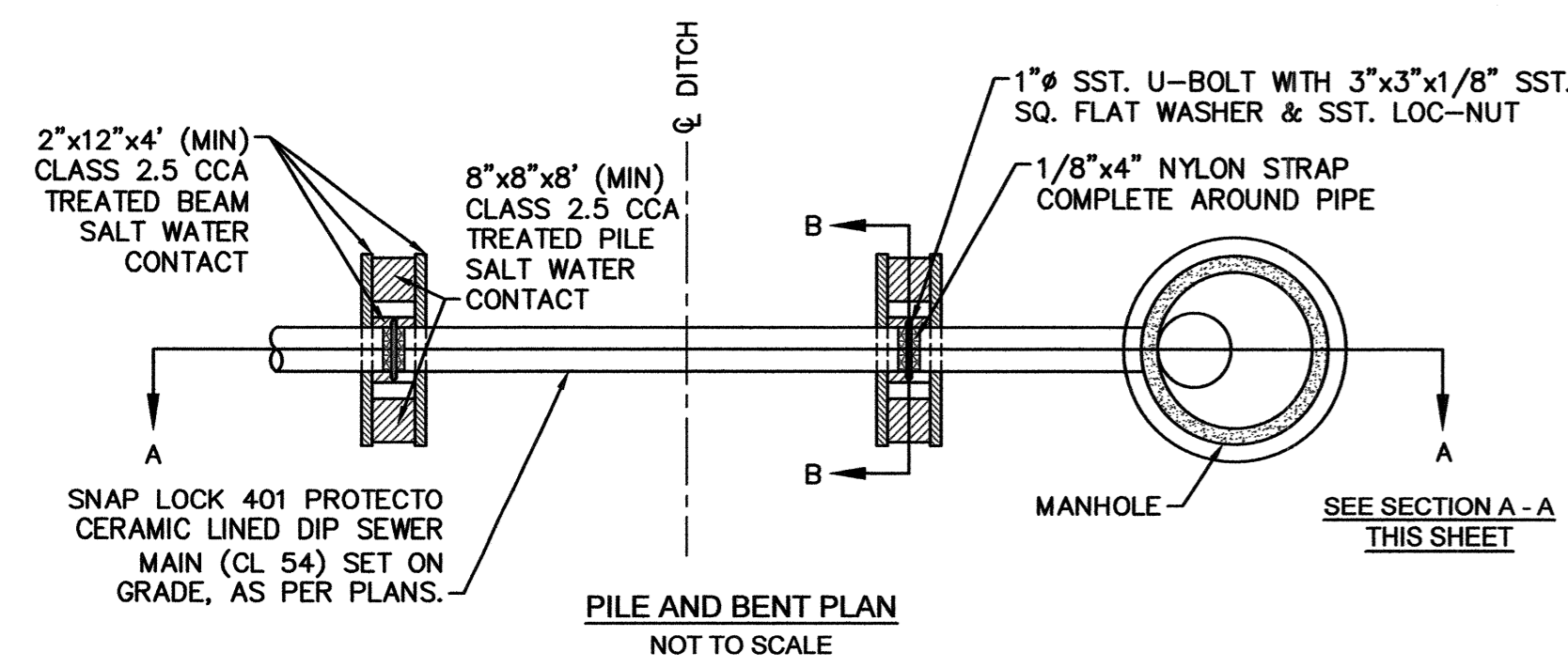
REV:	DESCRIPTION:	DATE:
1	SAMPLING CHAMBER REVISED	10/26/12
2	Revised Multiple Details	02/15/16

CFPUA SANITARY SEWER

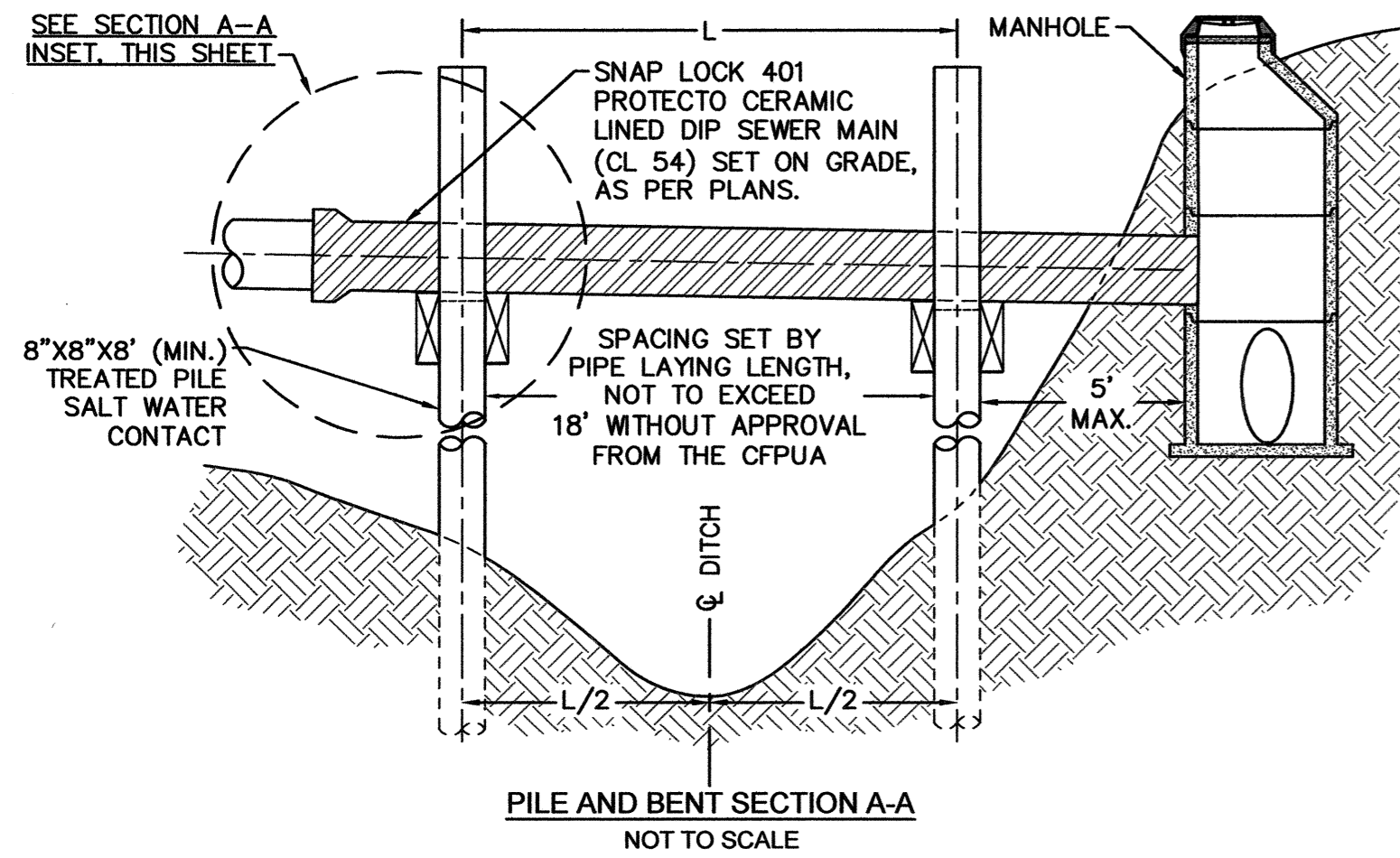
STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6660

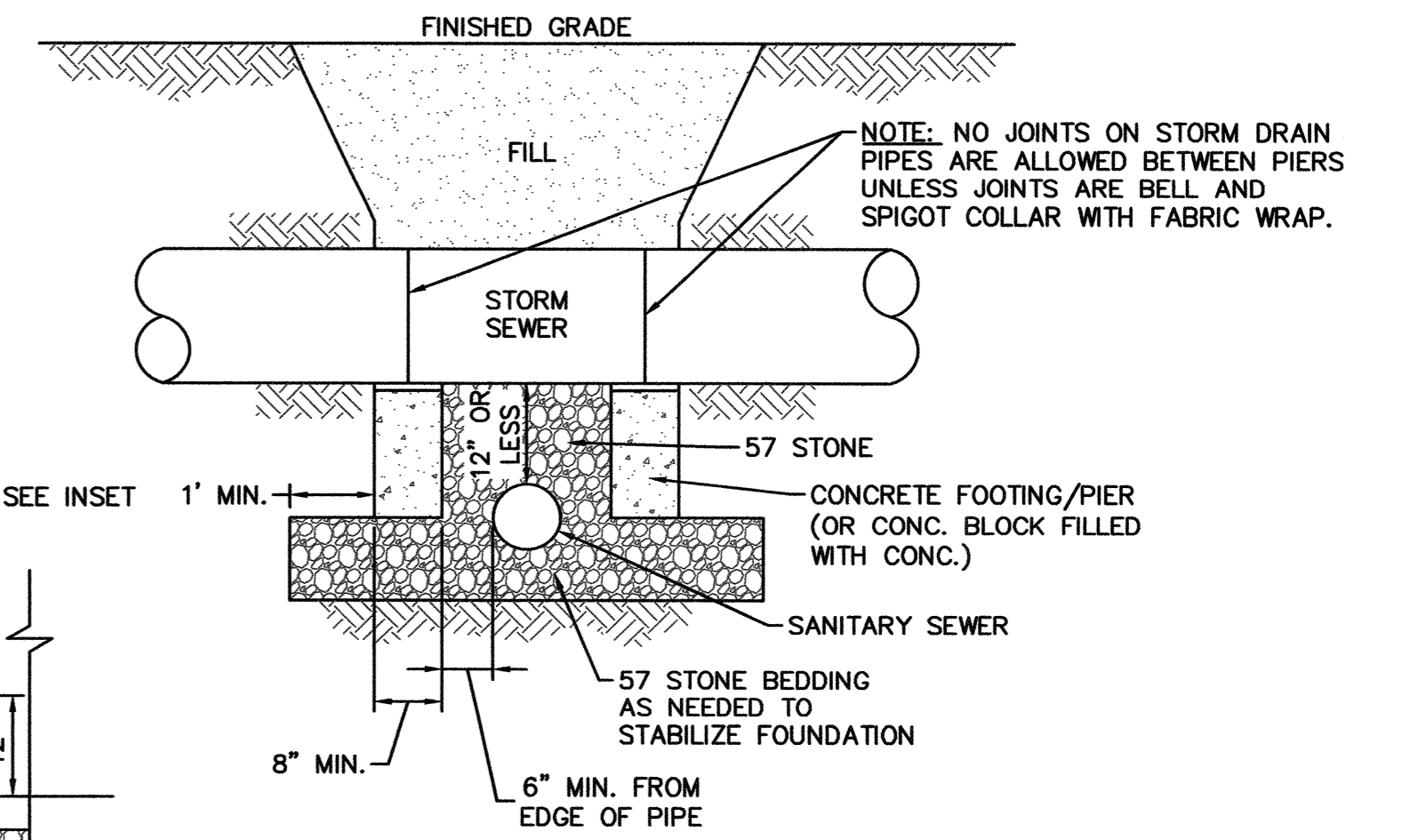
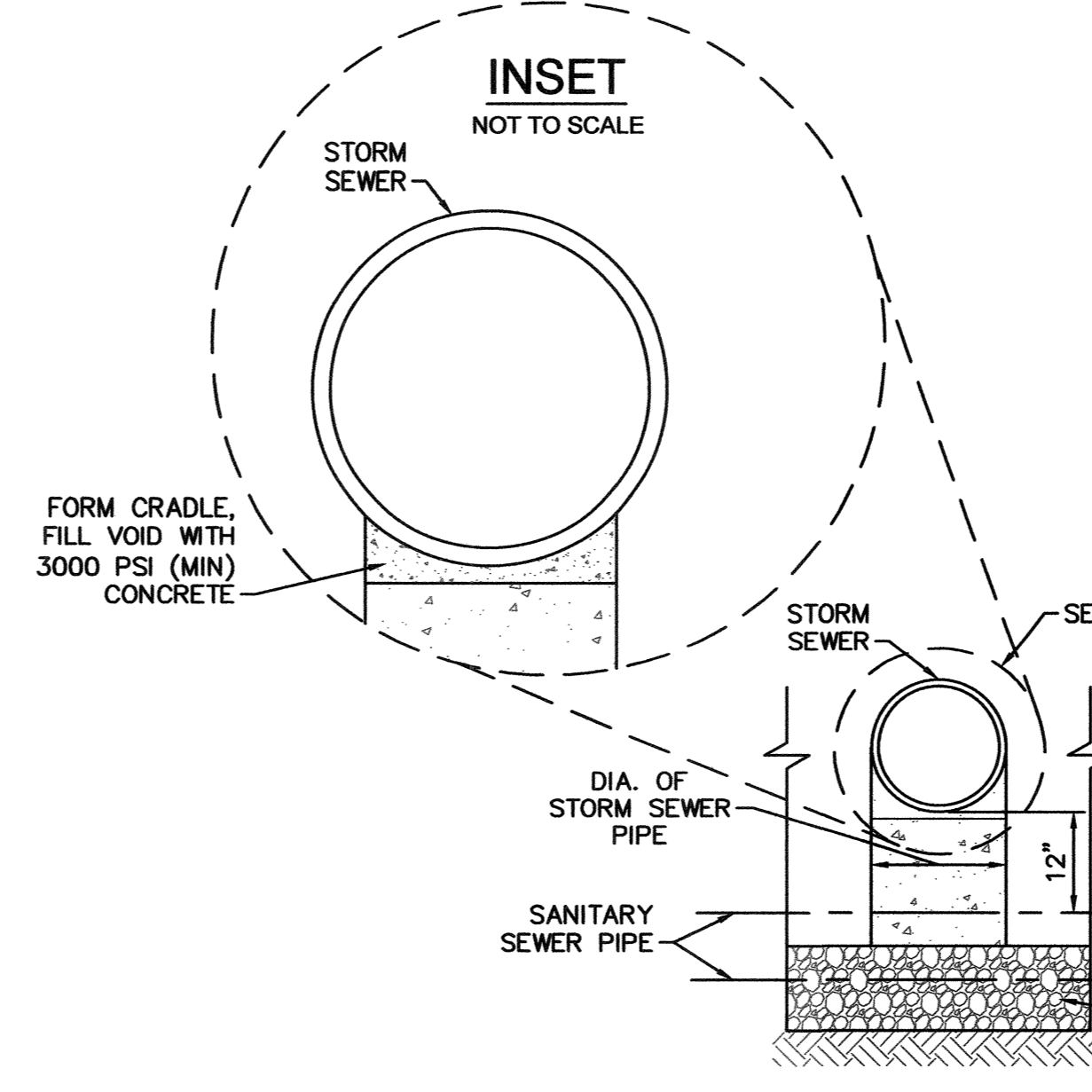
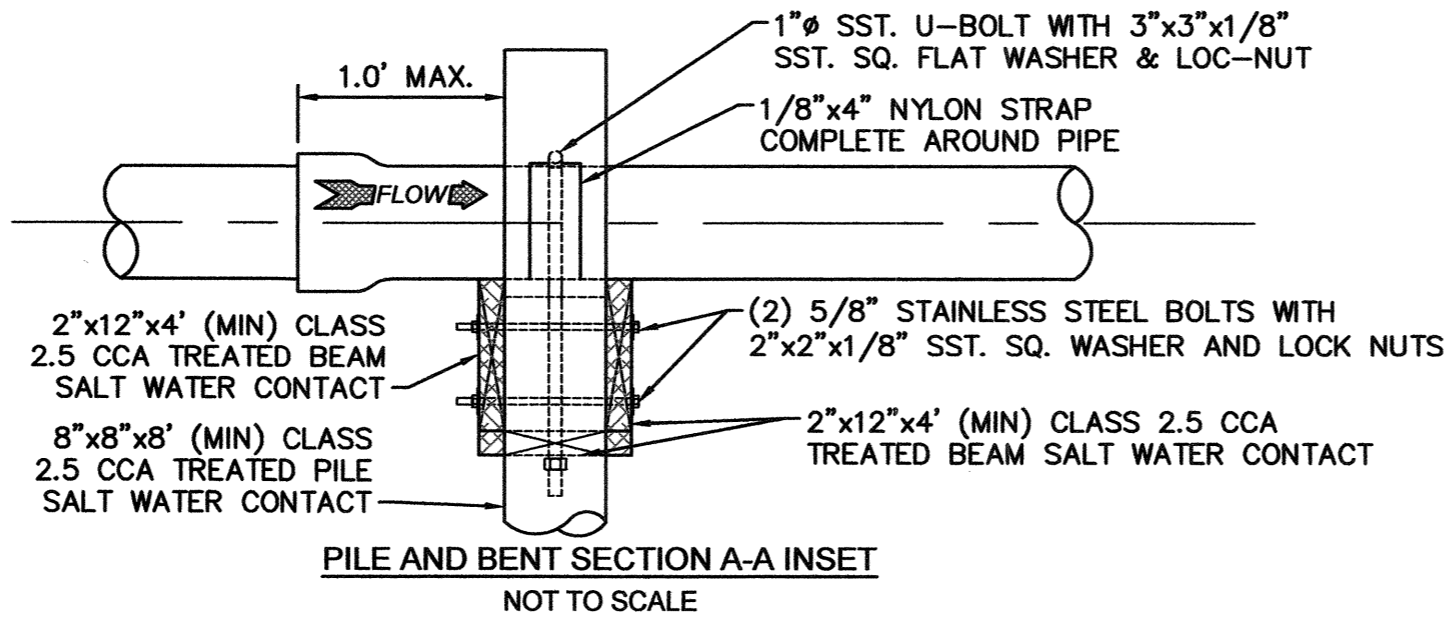
DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.: 16009
SHEET NO.: SSD-2



- NOTES:
1. PILES AND PILE DRIVING SHALL CONFORM TO NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2002, SECTIONS 445, 450, 1082-2 & 1084-2.
 2. CENTERLINE OF BOLTS TO BE A MINIMUM OF 3" FROM OUTSIDE EDGE OF TIMBER. BOLTS TO BE A MINIMUM OF 3" CENTERLINE TO CENTERLINE.
 3. ALL STAINLESS STEEL SHALL BE 316. STAINLESS STRAP TO BE COLD FORMED.
 4. PILE SHALL NOT OBSTRUCT FLOW OR CAUSE EROSION OF DITCH/STREAM BANK.
 5. MIN. CLASS 54 DIP-ENGINEER MUST DESIGN LOADING.
 6. DESIGN SHALL BE APPROVED BY CFPUA.



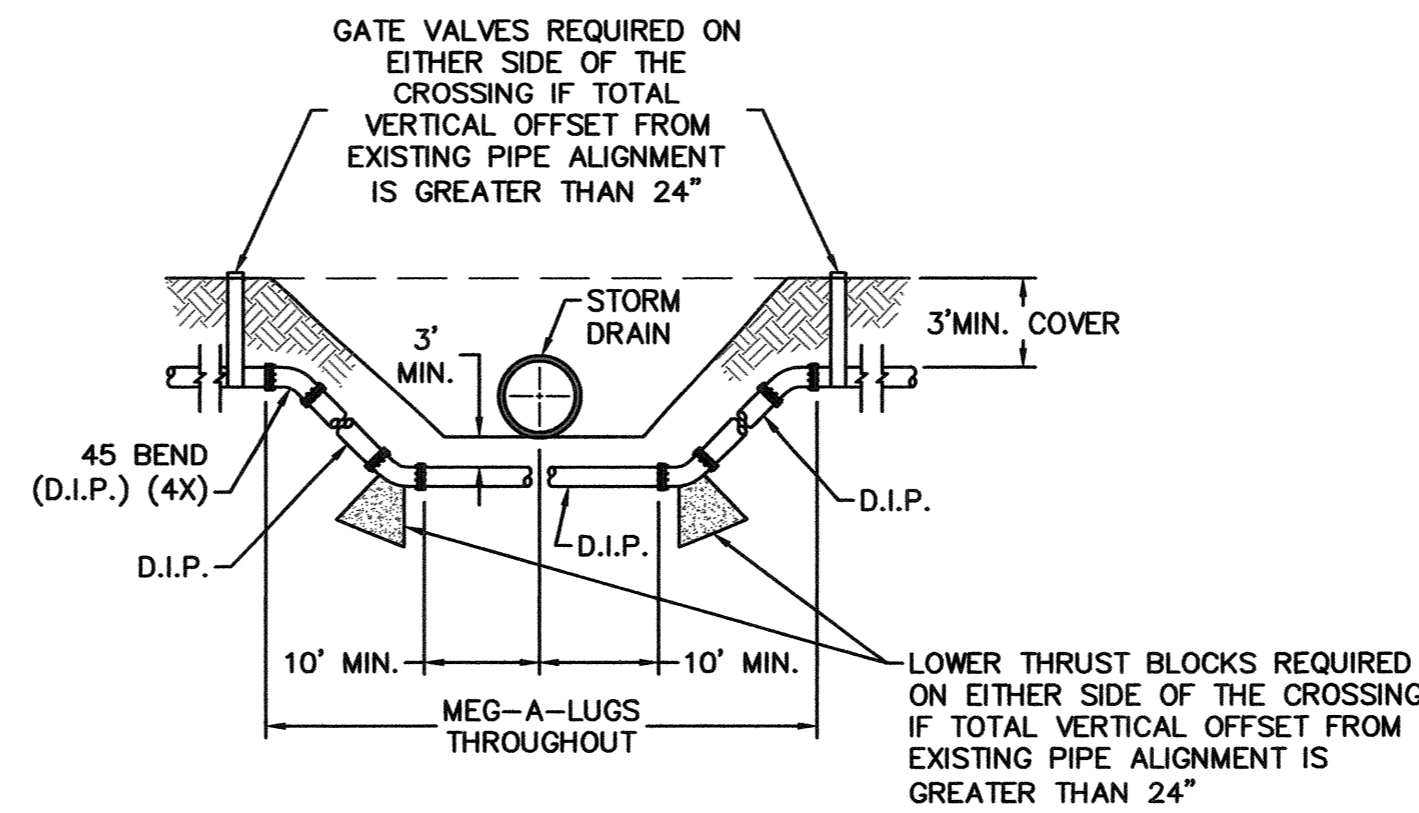
SD-20 PILE AND BENT DETAIL NOT TO SCALE



- THE FOLLOWING MUST BE FOLLOWED IN THE CASES OF GRAVITY SEWER UNDER STORM DRAIN:
- A SEPARATION OF LESS THAN 12" BETWEEN STORM DRAIN AND GRAVITY SEWER, STORM DRAIN MUST BE BRIDGED.
 - A SEPARATION OF 12" TO LESS THAN 24" BETWEEN STORM DRAIN AND GRAVITY SEWER, GRAVITY SEWER CAN BE DIP OR STORM DRAIN CAN BE BRIDGED. (PER DWR REGULATIONS)
 - A SEPARATION OF 24" OR GREATER BETWEEN STORM DRAIN AND GRAVITY SEWER REQUIRES NO BRIDGING OR DIP.

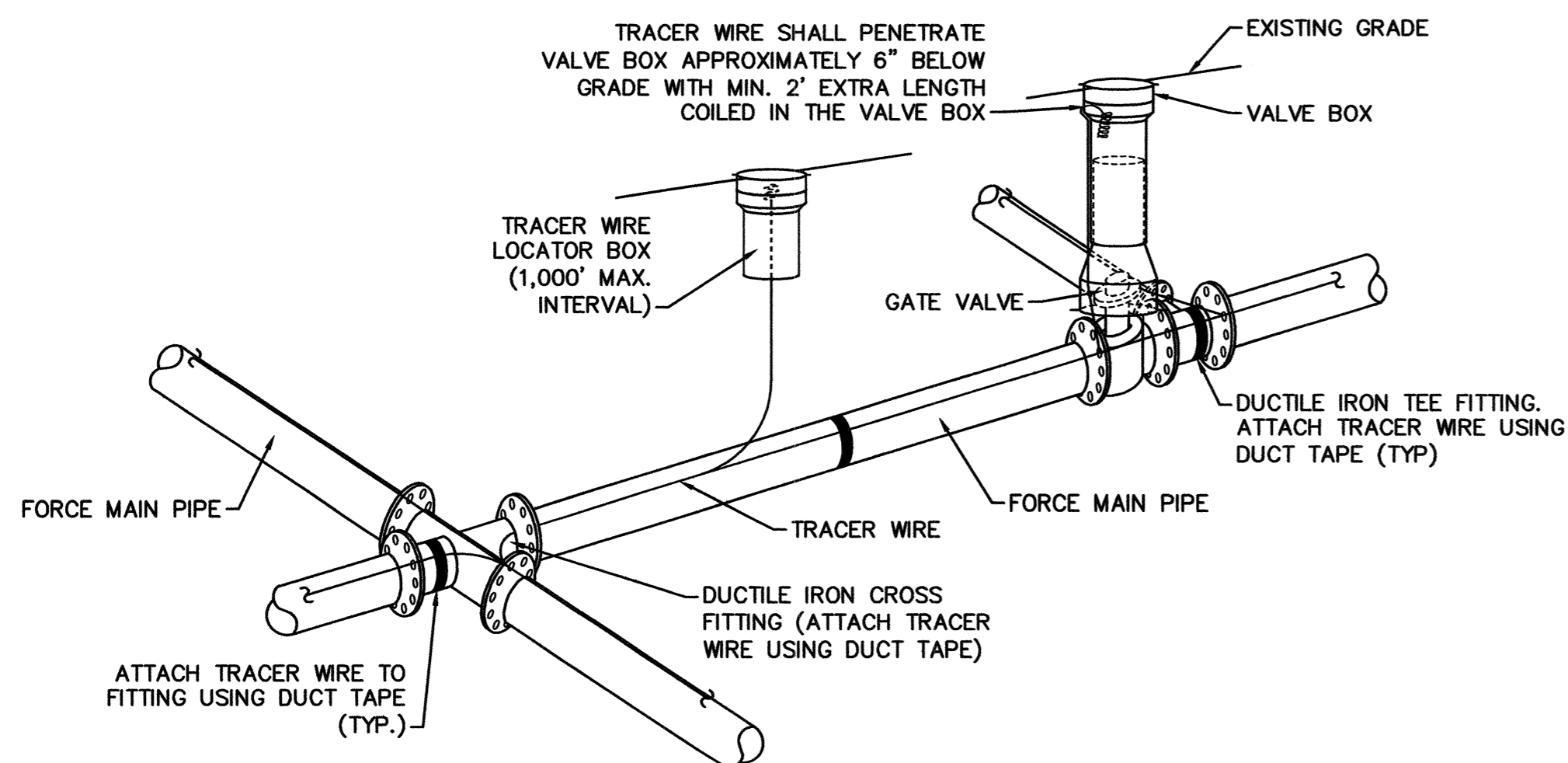
STRUCTURAL BRIDGING DETAIL FOR STORMWATER OVER GRAVITY SEWER INSTALLATIONS WITH LESS THAN 12" SEPARATION

SD-24 NOT TO SCALE



NOTE: USE D.I.P. (CL50 OR BETTER)

SD-18 FORCE MAIN DITCH AND STORM DRAIN CROSSING NOT TO SCALE



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

SD-21 TRACER WIRE DETAIL NOT TO SCALE

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

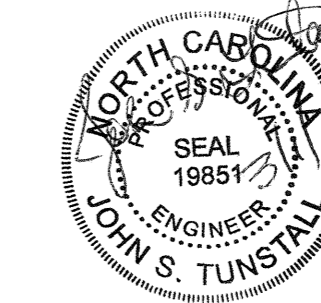
THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

THESE DETAILS ARE A WORK PRODUCT OF CFPUA FOR SEWER SYSTEM DESIGN AND CONSTRUCTION AND HAVE BEEN REVIEWED AND APPROVED FOR CONTENT AND GENERAL CONFORMANCE WITH THE SEWER DESIGN FOR THIS PROJECT.

REV:	DESCRIPTION:	DATE:
1	ADDED NOTES TO THE STRUCTURAL BRIDGING DETAIL	03/11/15
2	Revised Tracer Wire Detail	10/20/15
3	Revised Force Main Ditch and Storm Drain Crossing Detail	02/15/16

CFPUA SANITARY SEWER

STANDARD DETAILS



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

DATE:
1/9/12
SCALE:
N/A
DRAWN BY:
CFPUA
CHECKED BY:
CFPUA
PROJECT NO.:
16009

SHEET NO.:
SSD-3

LINE	DIRECTION	DISTANCE
L1	N05°43'55"E	12.72'
L2	S84°47'46"E	2.73'
L3	S62°47'46"E	53.61'
L4	S84°35'39"E	67.41'
L5	N05°26'18"E	28.32'
L6	S84°37'00"E	20.00'
L7	S05°26'18"W	28.28'
L8	S84°35'39"E	122.56'
L9	N60°26'00"E	59.05'
L10	N84°32'32"W	6.37'
L11	N05°23'00"E	10.00'
L12	S84°32'32"E	9.71'
L13	N05°23'27"E	384.07'
L14	N84°37'00"W	171.49'
L15	N05°23'00"E	20.00'
L16	S84°37'00"E	171.49'
L17	N05°23'27"E	49.16'
L18	S84°37'00"E	247.42'
L19	S05°23'00"W	20.00'
L20	N84°37'00"W	227.42'
L21	S05°23'27"E	445.68'
L22	S84°37'00"E	28.88'
L23	S05°23'00"W	20.00'
L24	N84°37'00"W	49.45'
L25	S60°26'00"W	54.84'
L26	N84°35'39"W	220.06'
L27	N62°47'46"W	52.53'
L28	N05°43'55"E	7.68'

LINE	DIRECTION	DISTANCE
L29	N84°37'00"W	68.89'
L30	S05°23'00"W	37.87'
L31	N31°05'43"W	30.48'
L32	N75°17'31"W	82.48'
L33	N84°37'00"W	133.71'
L34	S78°50'58"W	140.68'
L35	N84°37'23"W	235.72'
L36	S05°24'53"W	20.00'
L37	S84°37'23"E	238.64'
L38	N78°50'58"E	140.68'
L39	S84°37'00"E	129.17'
L40	S75°17'31"E	72.72'
L41	N31°05'43"E	49.41'
L42	N05°23'00"E	33.64'

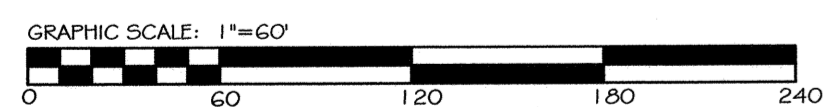
- LEGEND:
- EMN EXISTING MAG NAIL
 - EIP EXISTING IRON PIPE
 - DOT NC DOT RW DISC
 - PROPERTY CORNER
 - EXISTING CONCRETE MONUMENT
 - UTILITY EASEMENT

THIS PROPERTY IS LOCATED IN ZONE "C" AREAS OF MINIMAL FLOODING ACCORDING TO FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 370168 001 01 28 DATE SEPTEMBER 3, 1992.

NOTE: ALL LOTS DEPICTED ON THIS PLAT MEET OR EXCEED THE MINIMUM AREA AND DIMENSIONAL REQUIREMENTS OF THE ZONING DISTRICT IN WHICH LOCATED.

SURVEY REFERENCE

MAP BOOK 38 PAGE 190
 BOOK 2518 PAGE 0877
 MAP BOOK 39 PAGE 233
 MAP BOOK 45 PAGE 204
 MAP BOOK 46 PAGE 159
 MAP BOOK 39 PAGE 238

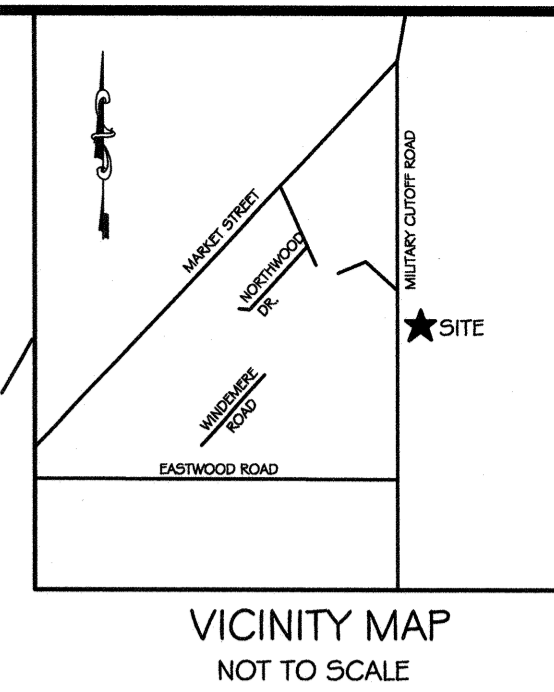
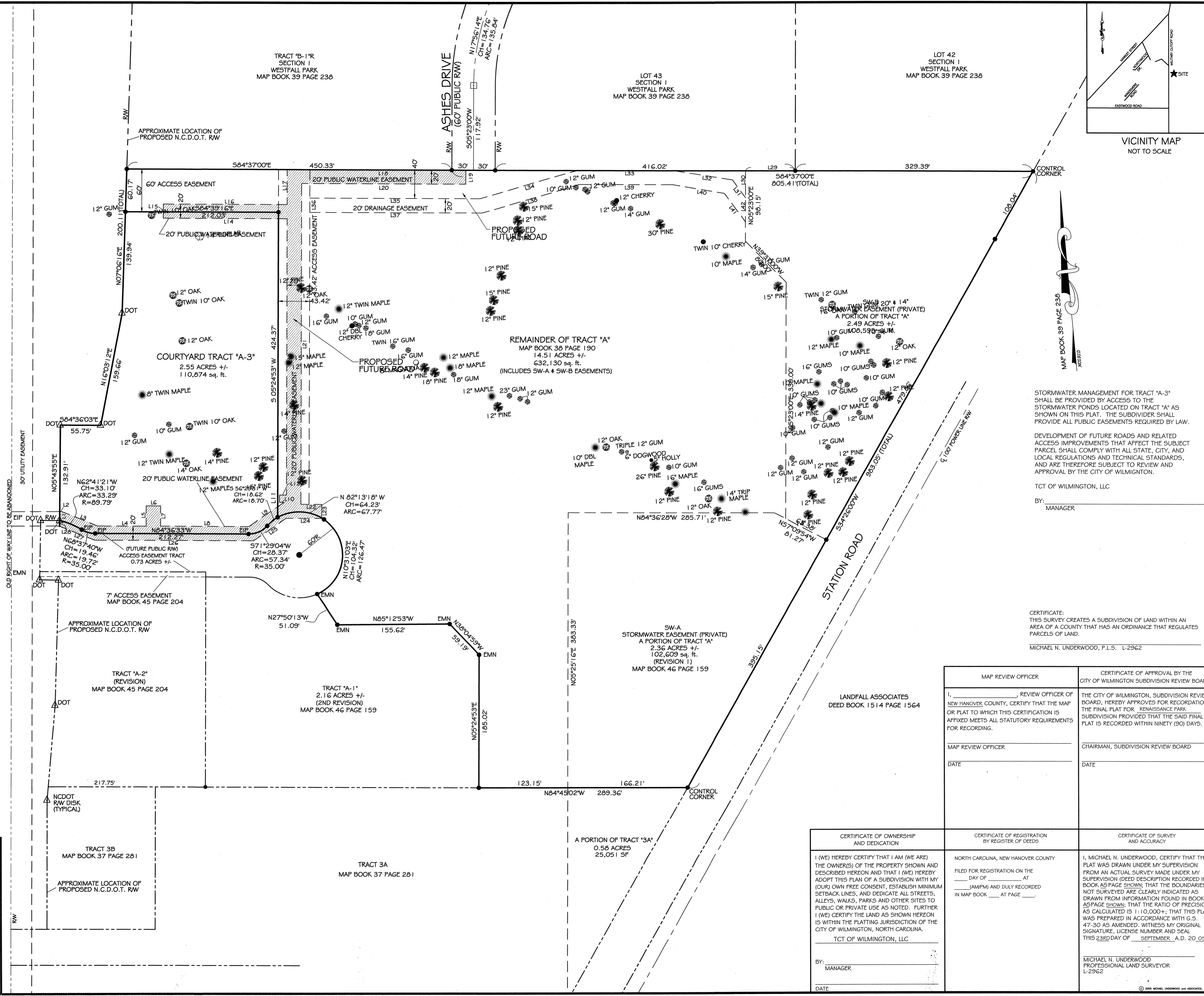


MAP FOR RECORD:
COURTYARD @ RENAISSANCE PARK
 COURTYARD TRACT "A-3"
 2.55 ACRES +/-
 110,874 sq. ft.
 WILMINGTON TOWNSHIP
 WILMINGTON, NORTH CAROLINA

OWNER: TCT OF WILMINGTON, LLC
 1410 COMMONWEALTH DRIVE
 WILMINGTON, NC 28403

MICHAEL UNDERWOOD and ASSOCIATES, PA
 102 CINEMA DRIVE, SUITE C
 WILMINGTON, NC 28403
 PHONE: 910-315-0650
 FAX: 910-315-2393
 E-MAIL: mu@muassoc.com

SURVEYED: DCAL APPROVED: MINJ
 DRAWN BY: BKL DATE: 08-24-2005
 CHECKED BY: WC SCALE: 1"=60'



STORMWATER MANAGEMENT FOR TRACT "A-3" SHALL BE PROVIDED BY ACCESS TO THE STORMWATER PONDS LOCATED ON TRACT "A" AS SHOWN ON THIS PLAT. THE SUBDIVIDER SHALL PROVIDE ALL PUBLIC EASEMENTS REQUIRED BY LAW.

DEVELOPMENT OF FUTURE ROADS AND RELATED ACCESS IMPROVEMENTS THAT AFFECT THE SUBJECT PARCEL SHALL COMPLY WITH ALL STATE, CITY, AND LOCAL REGULATIONS AND TECHNICAL STANDARDS, AND ARE THEREFORE SUBJECT TO REVIEW AND APPROVAL BY THE CITY OF WILMINGTON.

TCT OF WILMINGTON, LLC
 BY: MANAGER

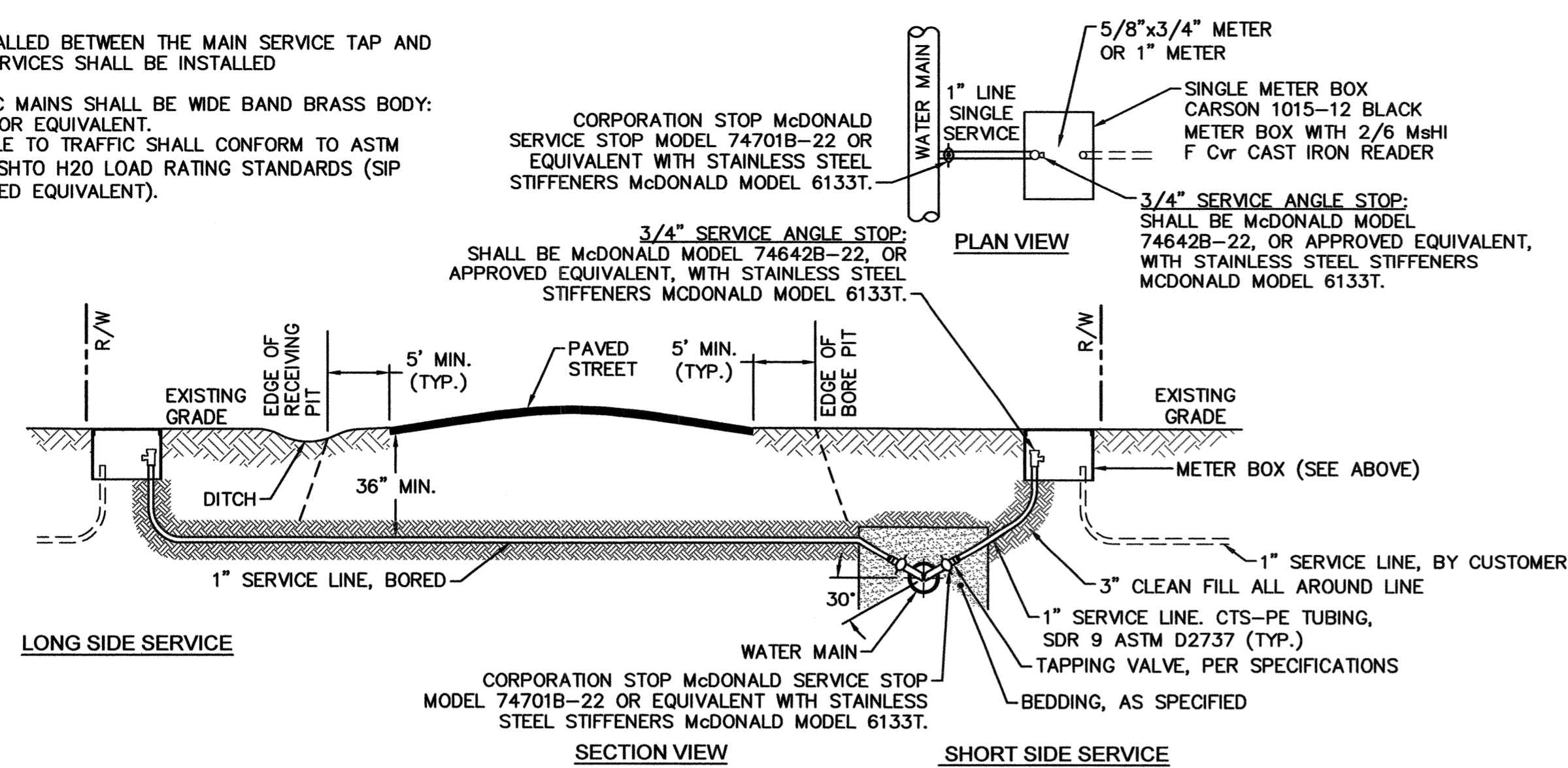
CERTIFICATE:
 THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN AN AREA OF A COUNTY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.
 MICHAEL N. UNDERWOOD, F.L.S. L-2962

MAP REVIEW OFFICER	CERTIFICATE OF APPROVAL BY THE CITY OF WILMINGTON SUBDIVISION REVIEW BOARD
I, _____, REVIEW OFFICER OF NEW HANOVER COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.	THE CITY OF WILMINGTON, SUBDIVISION REVIEW BOARD, HEREBY APPROVES FOR REGORDATION THE FINAL PLAT FOR RENAISSANCE PARK SUBDIVISION PROVIDED THAT THE SAID FINAL PLAT IS RECORDED WITHIN NINETY (90) DAYS.
MAP REVIEW OFFICER	CHAIRMAN, SUBDIVISION REVIEW BOARD
DATE	DATE

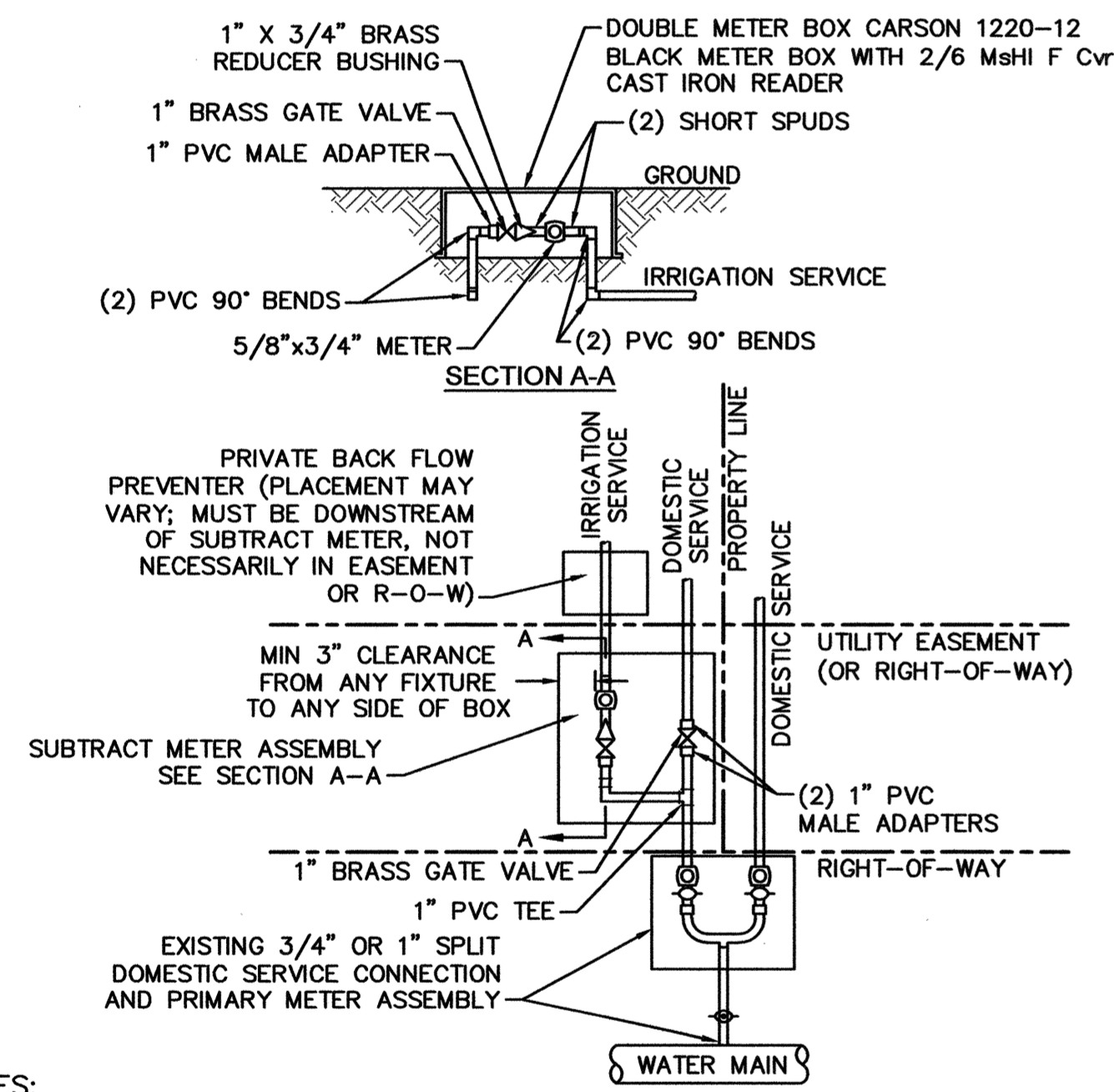
CERTIFICATE OF OWNERSHIP AND DEDICATION	CERTIFICATE OF REGISTRATION BY REGISTER OF DEEDS	CERTIFICATE OF SURVEY AND ACCURACY
I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I (WE) HEREBY ADOPT THIS PLAN OF A SUBDIVISION WITH MY (OUR) OWN FREE CONSENT. ESTABLISH MINIMUM SETBACK LINES, AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS AND OTHER SITES TO PUBLIC OR PRIVATE USE AS NOTED. FURTHER I (WE) CERTIFY THE LAND AS SHOWN HEREON IS WITHIN THE PLATTING JURISDICTION OF THE CITY OF WILMINGTON, NORTH CAROLINA. TCT OF WILMINGTON, LLC	NORTH CAROLINA, NEW HANOVER COUNTY FILED FOR REGISTRATION ON THE _____ DAY OF _____ AT _____ (AM/PM) AND DULY RECORDED IN MAP BOOK _____ AT PAGE _____	I, MICHAEL N. UNDERWOOD, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION. DEED DESCRIPTION RECORDED IN BOOK AS PAGE SHOWN; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK AS PAGE SHOWN; THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 23RD DAY OF _____ SEPTEMBER, A.D. 20_05_.
By: MANAGER		MICHAEL N. UNDERWOOD PROFESSIONAL LAND SURVEYOR L-2962
DATE		

F:\Civil\Projects\2003\03285\DWG\SURVEY\COURTYARD\TRAC TA-3_SIBD.11.17.05.dwg, 2/17/2016 12:19:54 PM

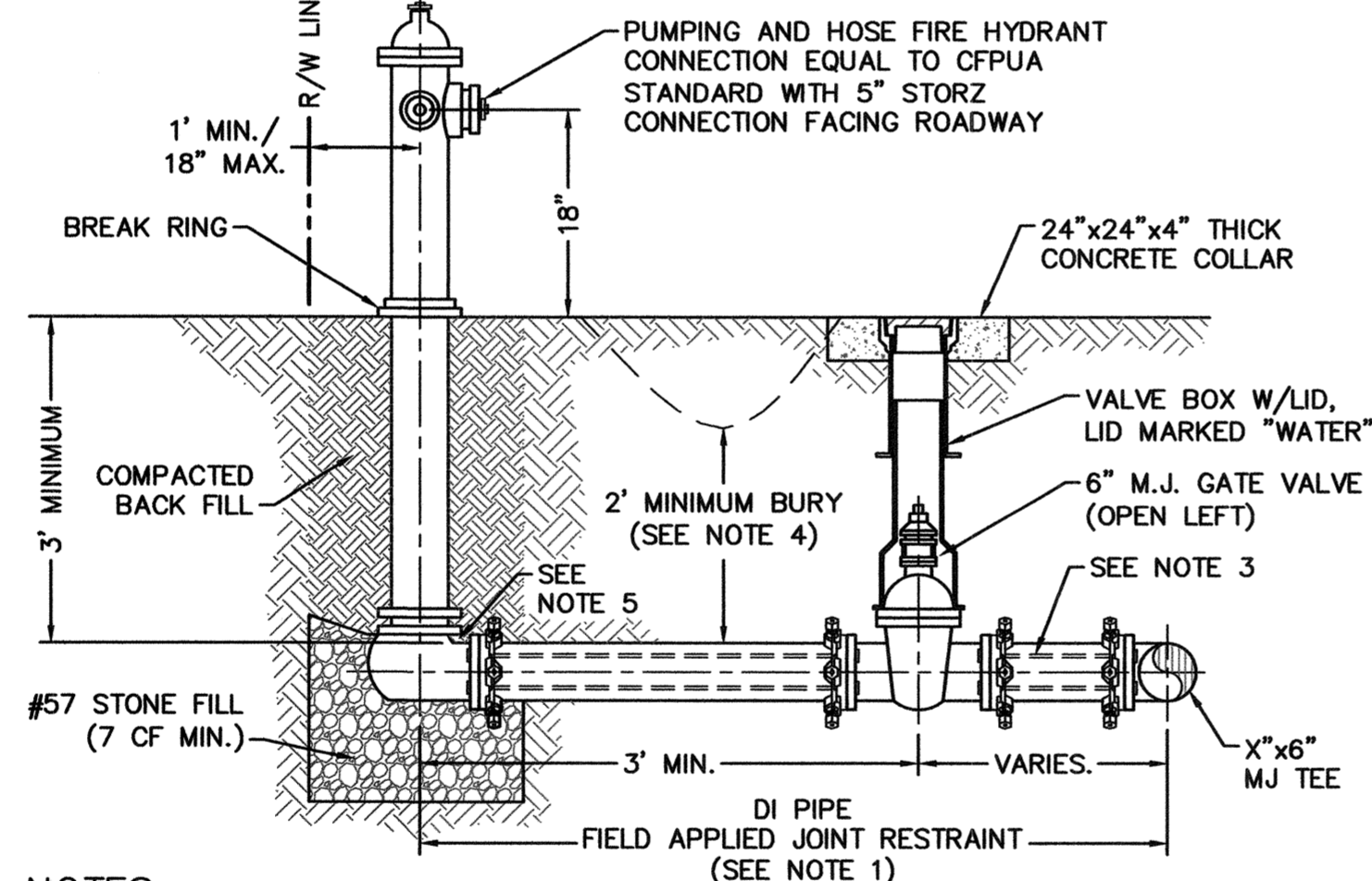
- NOTES:**
1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: SADDLE McDONALD 3801 OR EQUIVALENT.
 3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO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



WD-18 SINGLE SERVICE CONNECTION
NOT TO SCALE



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



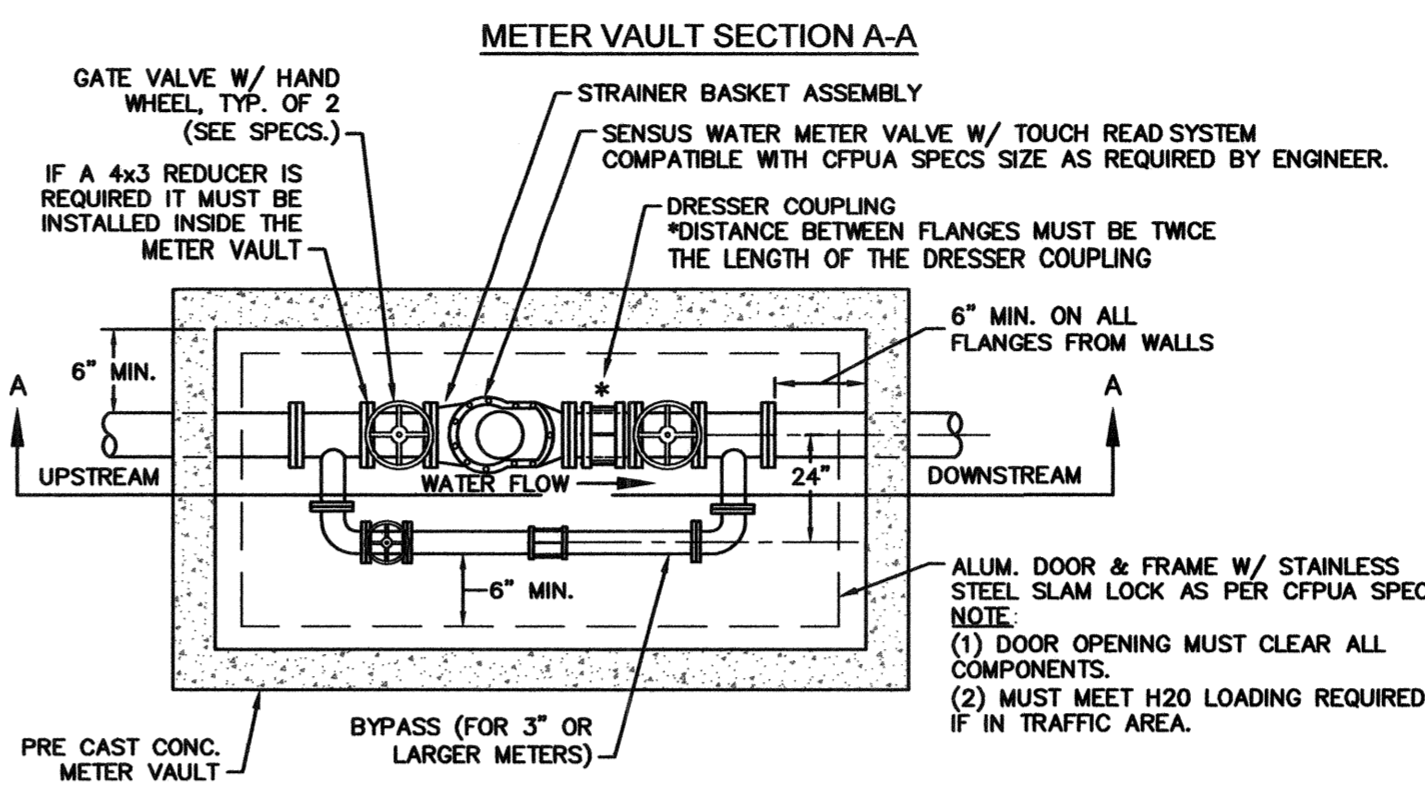
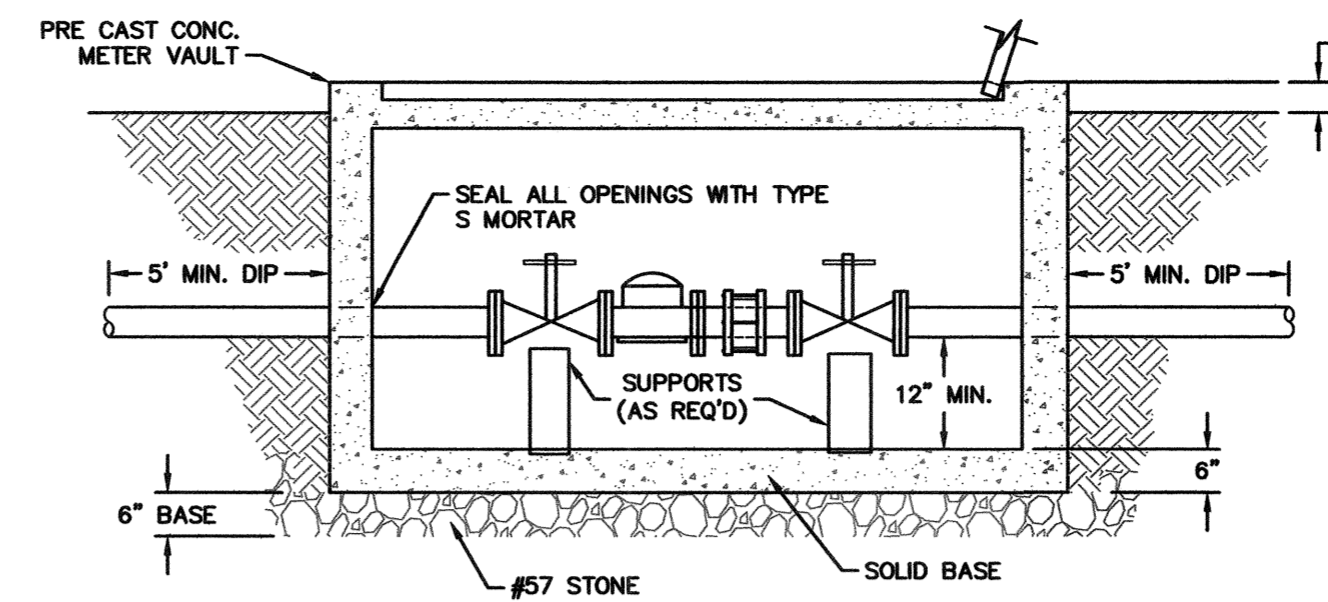
- NOTES:**
1. JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI PIPE AS MANUFACTURED BY EBAA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
 2. WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARDNESS AND FASTENERS.
 3. CONTINUOUS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

WD-10 FIRE HYDRANT ASSEMBLY
NOT TO SCALE

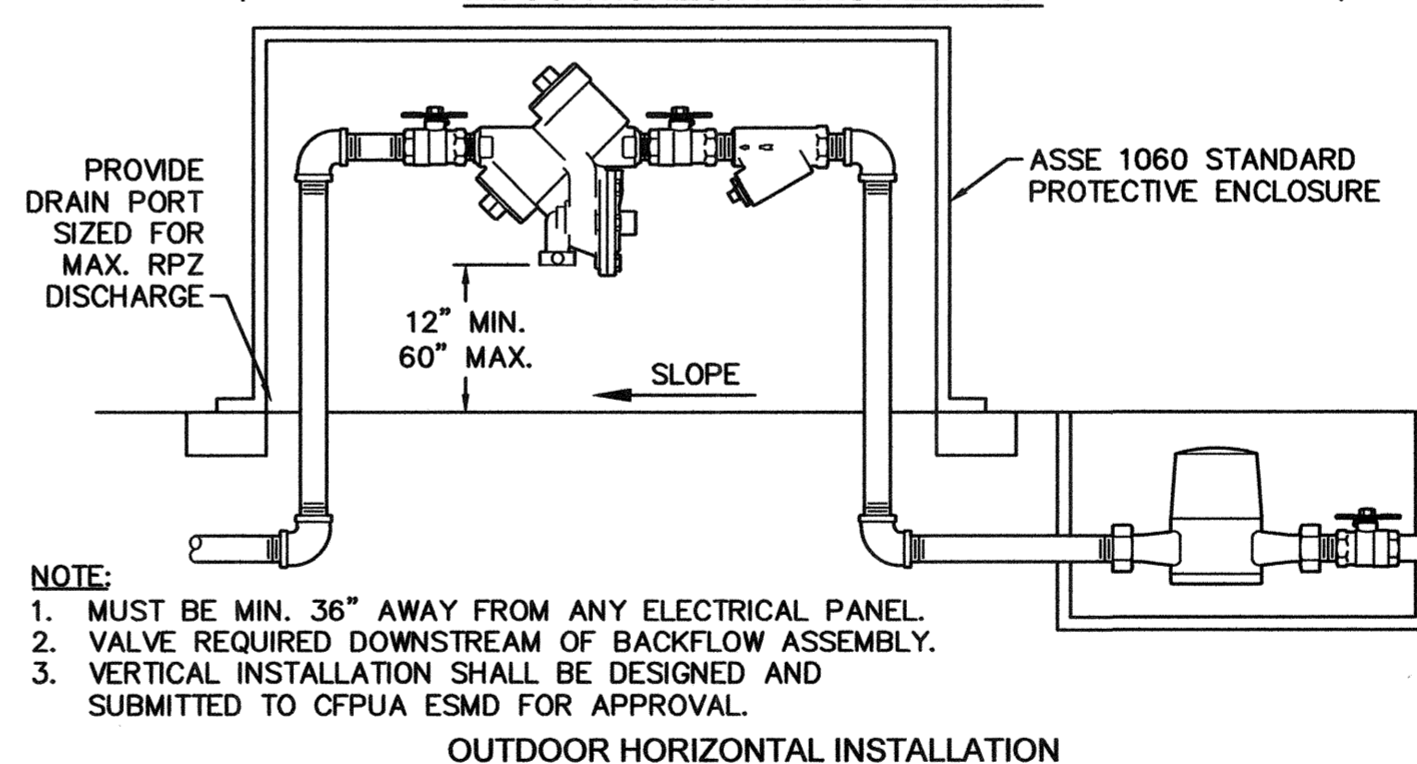
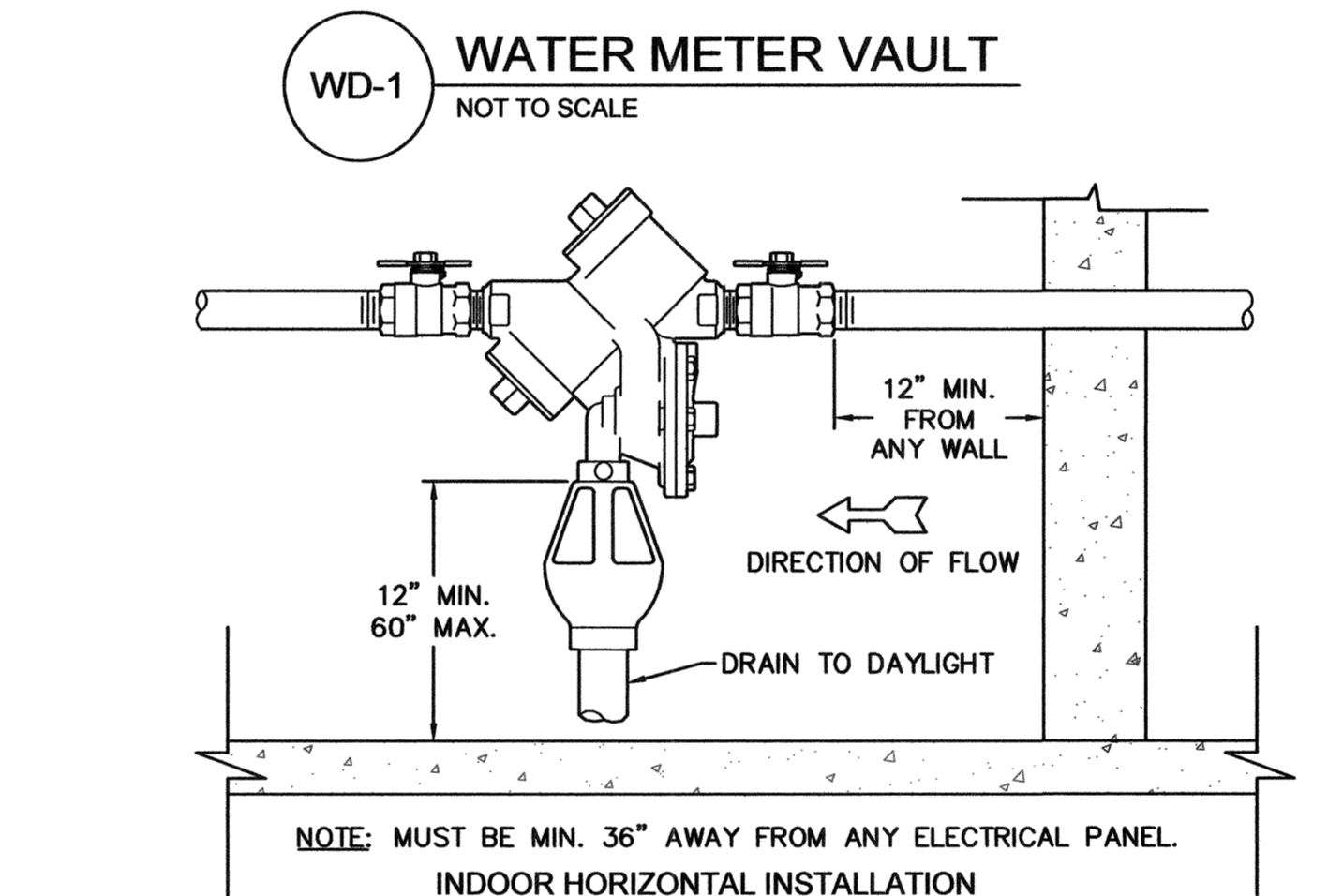
WD-19 STANDARD NOTES
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

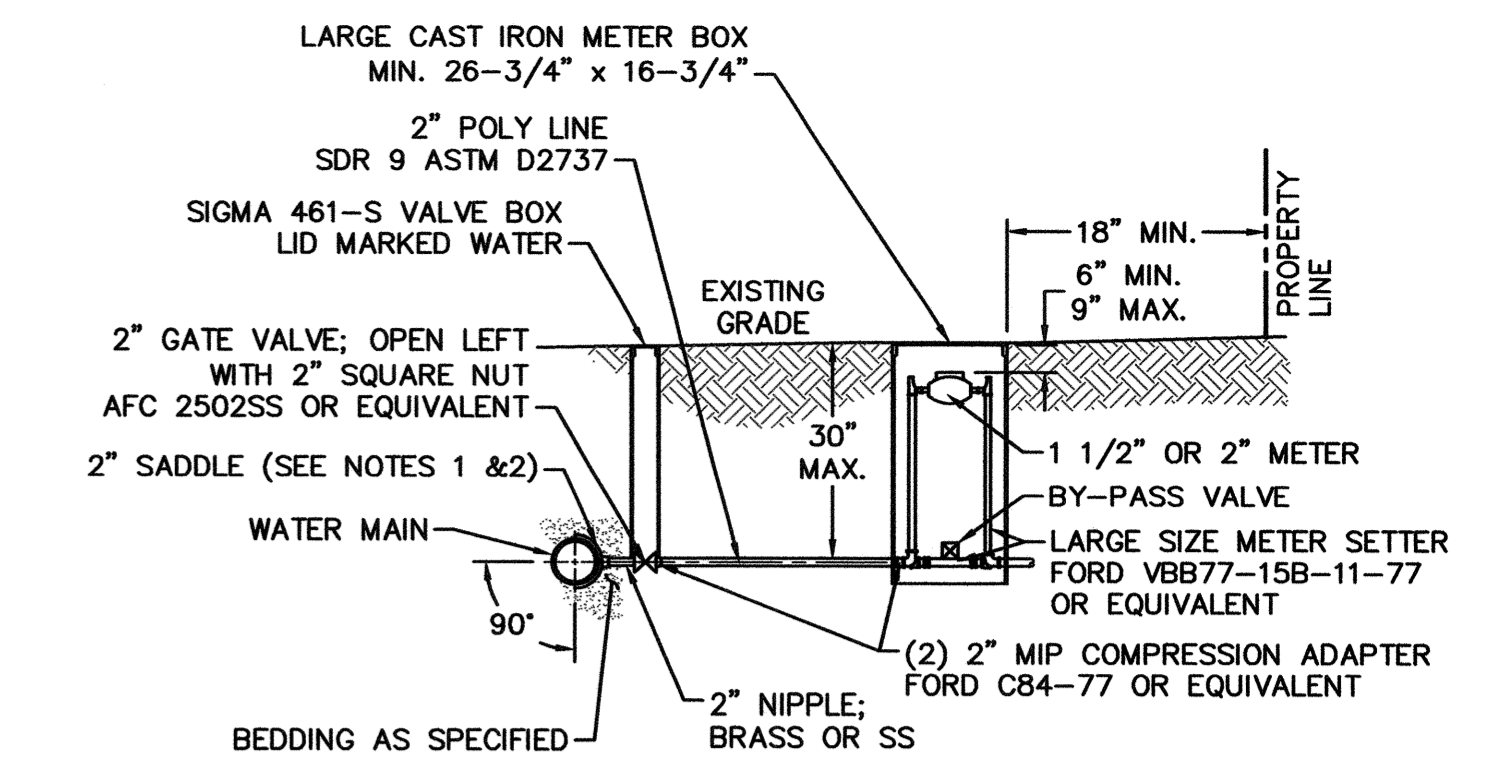
1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
2. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END 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.



WD-1 WATER METER VAULT
NOT TO SCALE

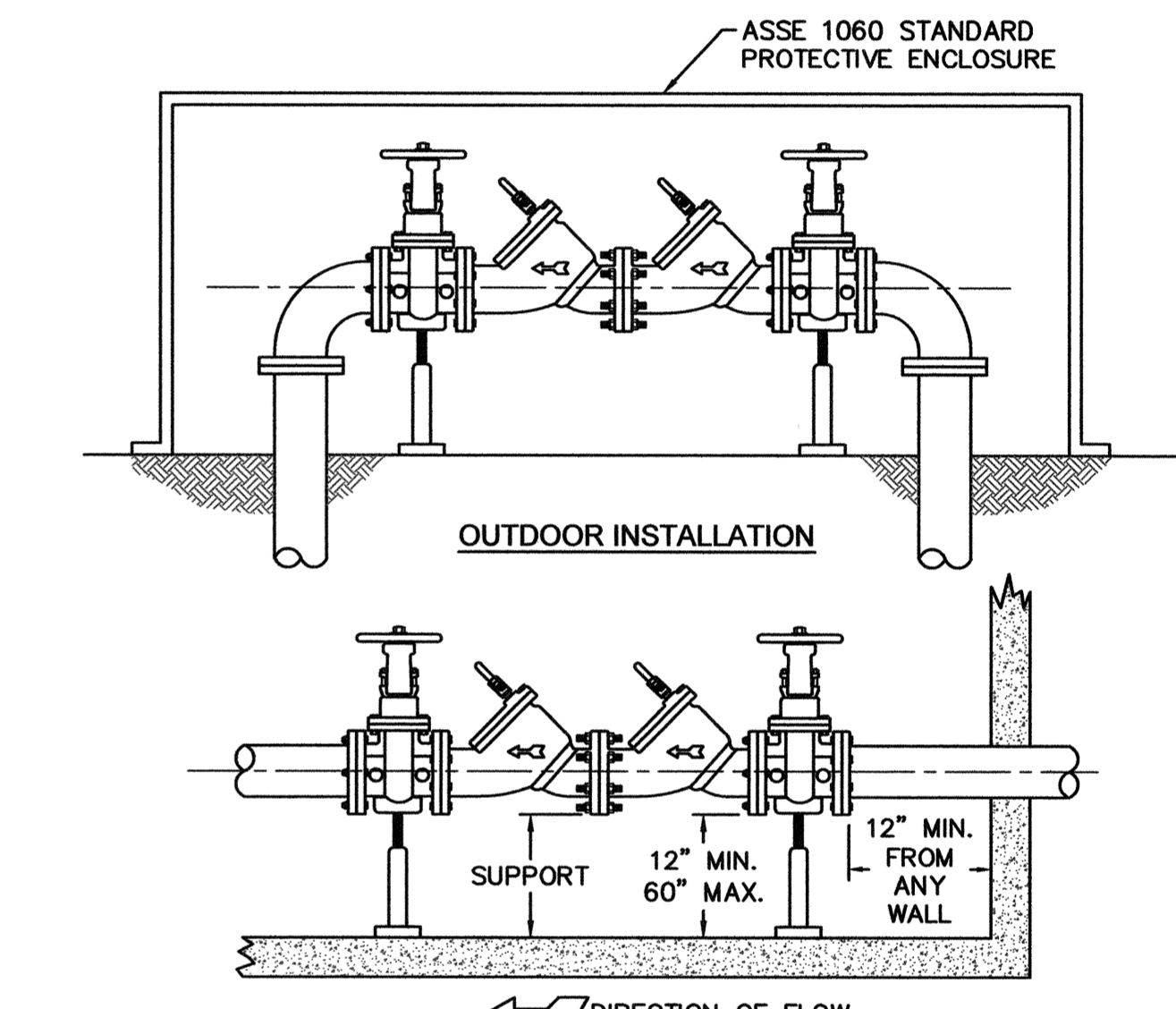


WD-12 REDUCED PRESSURE PRINCIPLE ASSEMBLY
NOT TO SCALE



- NOTES:**
1. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.
 3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).
 4. METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANSI/SCTE 77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17x30 OR APPROVED EQUIVALENT).
 5. NON-TRAFFIC METER BOXES SHALL BE SIGMA MB2203 OR APPROVED EQUIVALENT.
 6. 3\"/>

WD-11 LARGE METER
NOT TO SCALE



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

WD-7 DOUBLE CHECK VALVE ASSEMBLY
NOT TO SCALE

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

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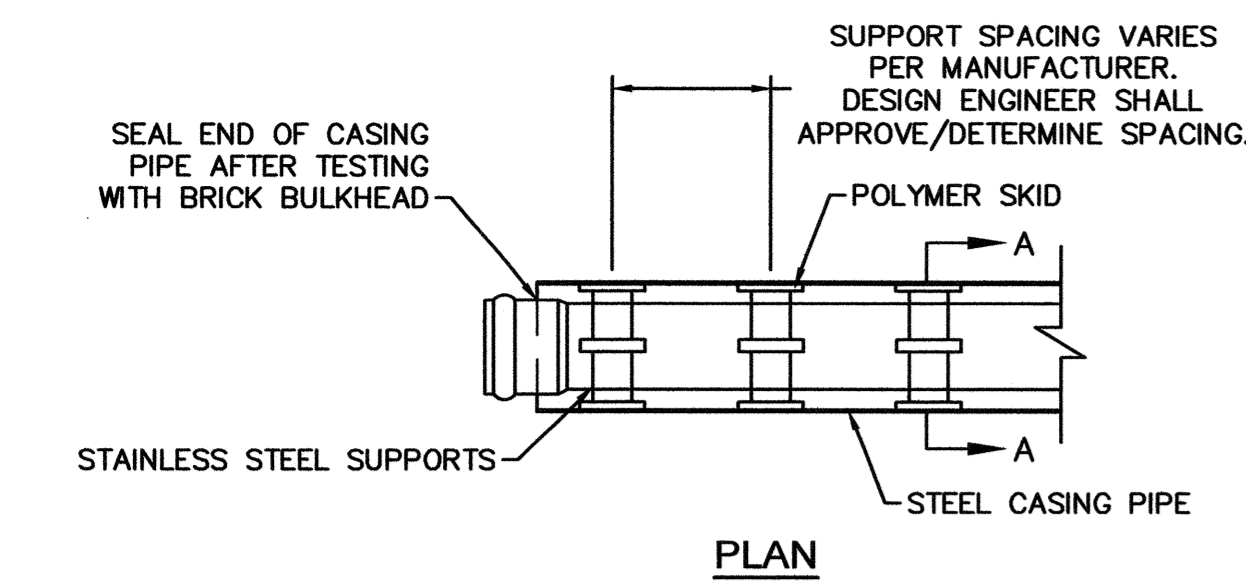
REV:	DESCRIPTION:	DATE:
1	Single Service Connection, Double Service Connection, and Large Meter Revised	10/26/12
2	Single Service Connection and Fire Hydrant Details Revised	7/23/13
3	Fire Hydrant Detail Revised	01/03/14
4	Revised Fire Hydrant Assembly To Show 5\"/>	

CFPUA WATER DISTRIBUTION SYSTEM

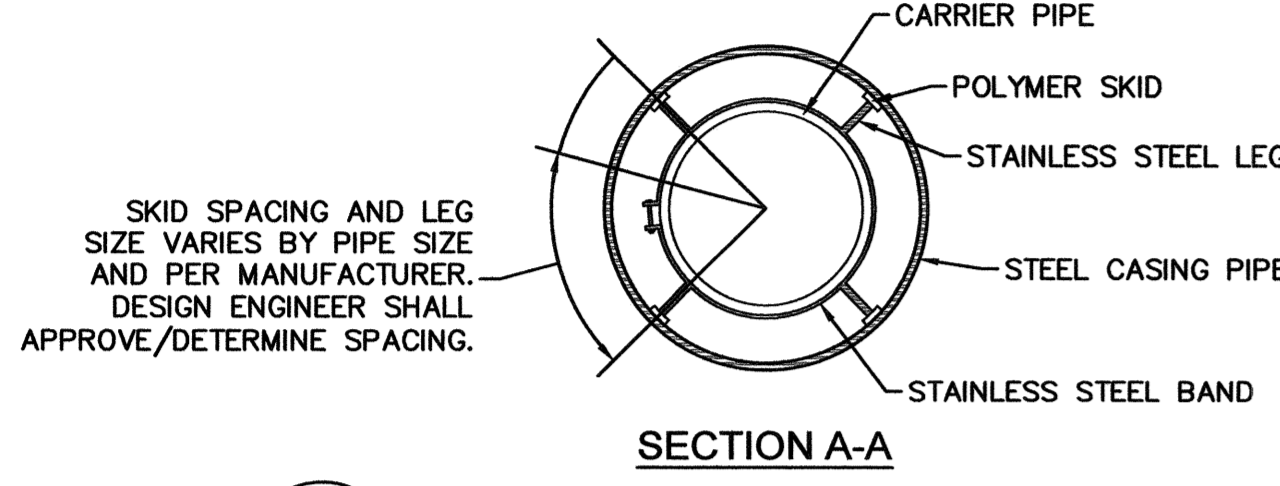
STANDARD DETAILS

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

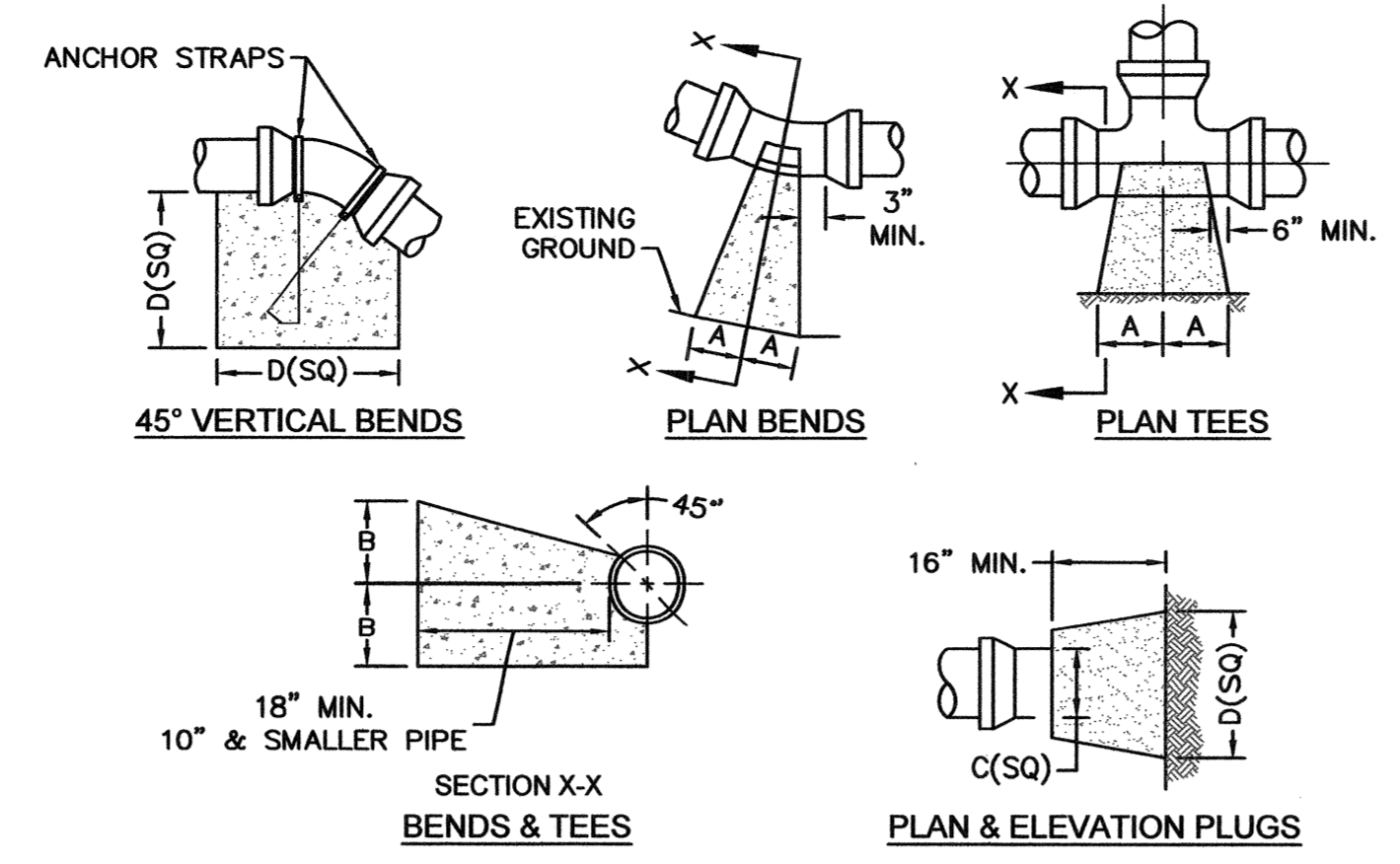
DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.: 16009
SHEET NO.: WSD-1



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



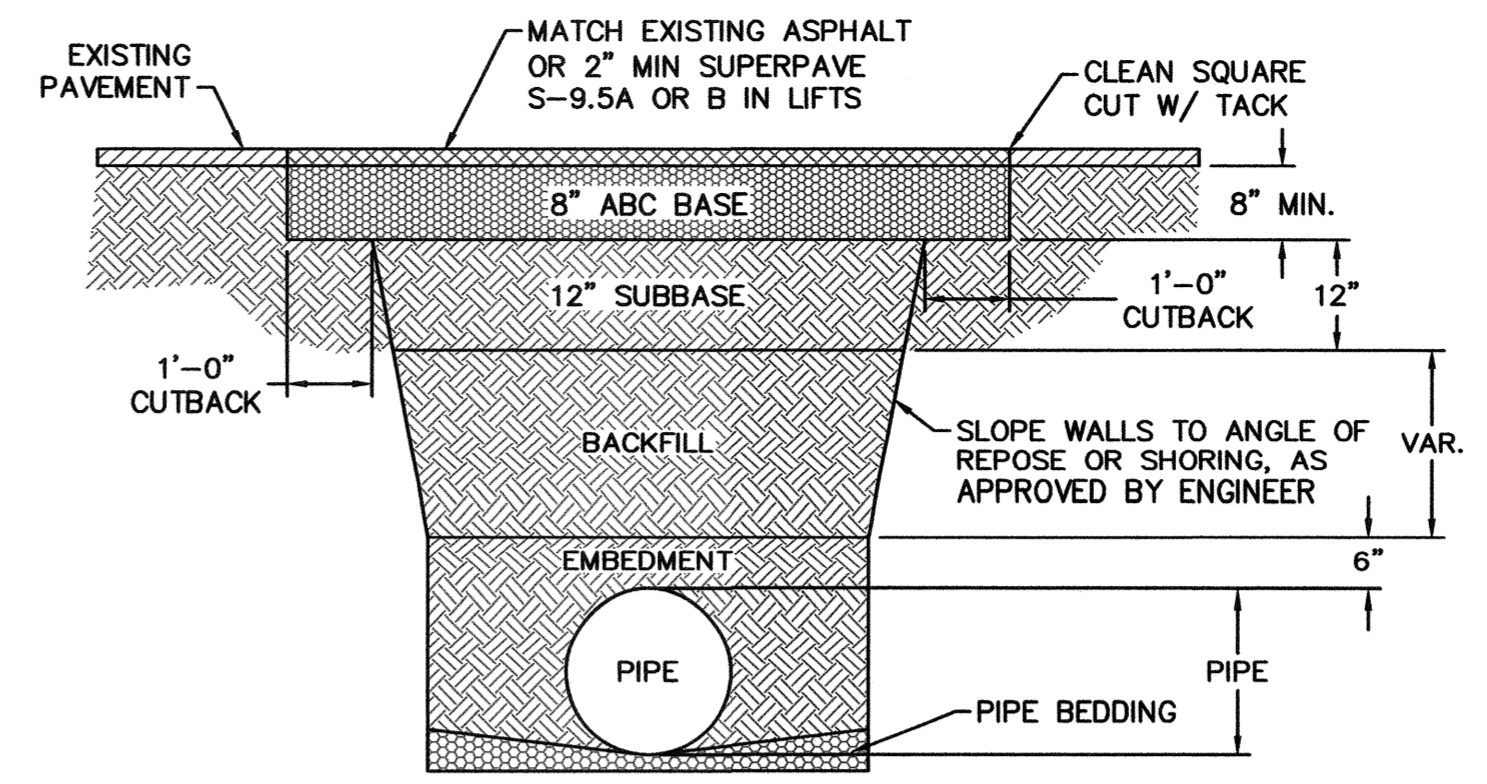
WD-15 PIPE CASING SUPPORT DETAIL
NOT TO SCALE



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

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

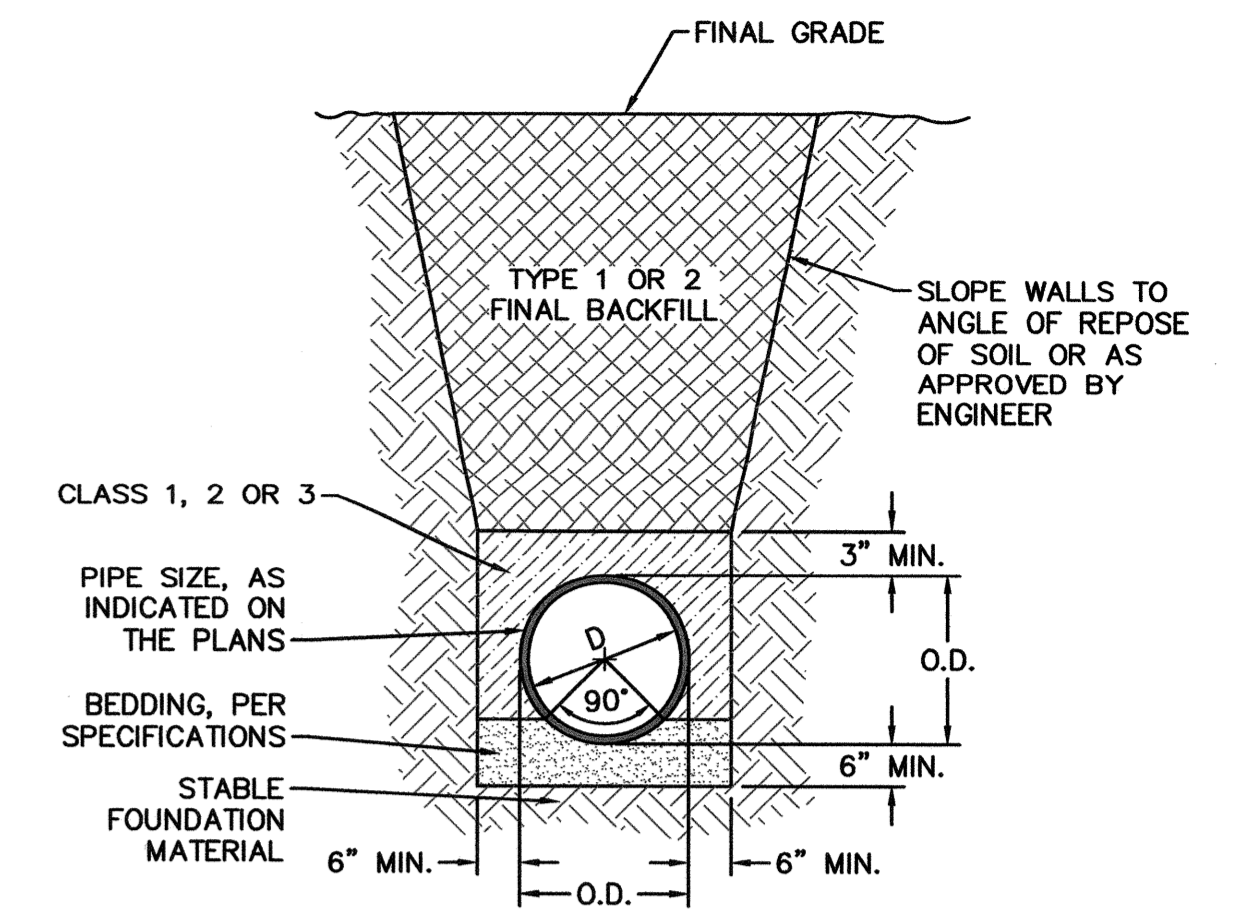
WD-4 THRUST BLOCK DETAIL
NOT TO SCALE



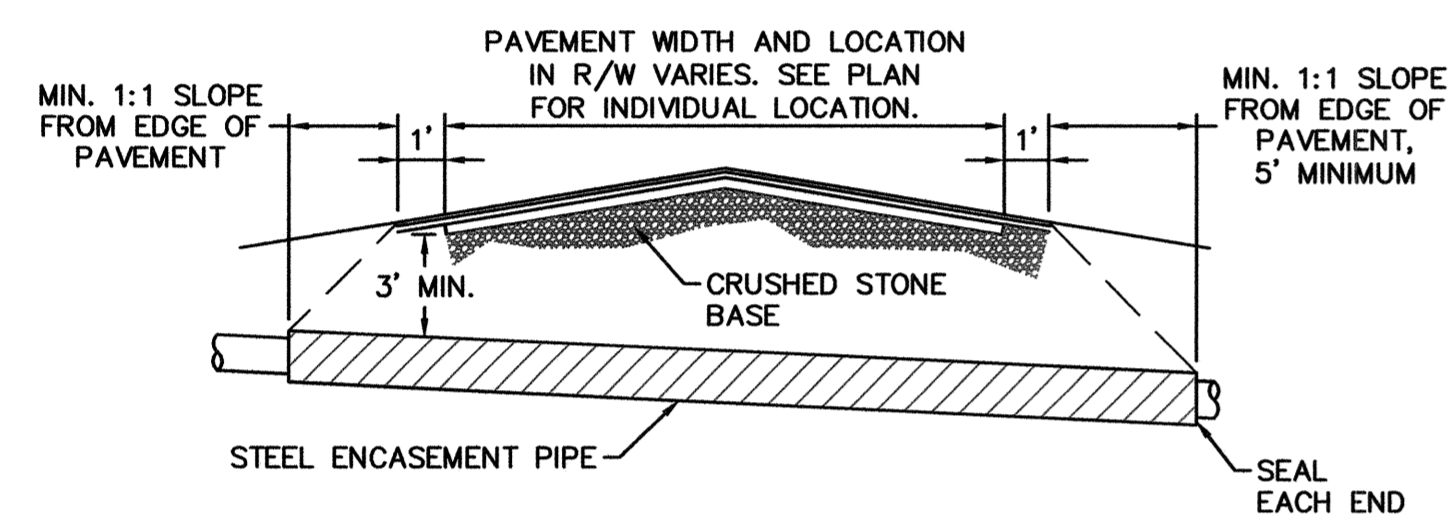
NOTES:
 1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
 2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC.).
 3. 8-INCH OF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

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

WD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED
NOT TO SCALE

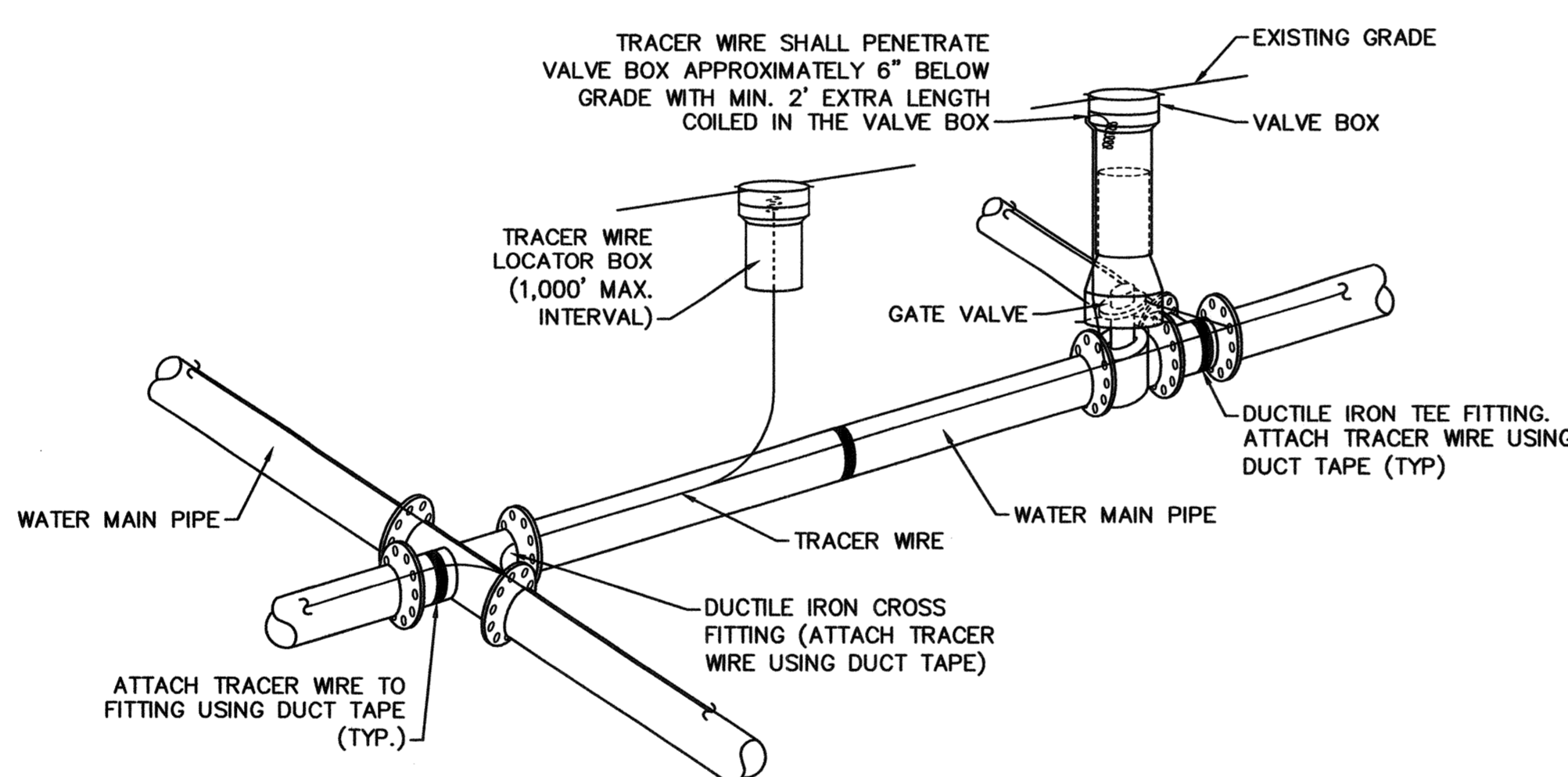


WD-13 TYPICAL TRENCH DETAIL
NOT TO SCALE



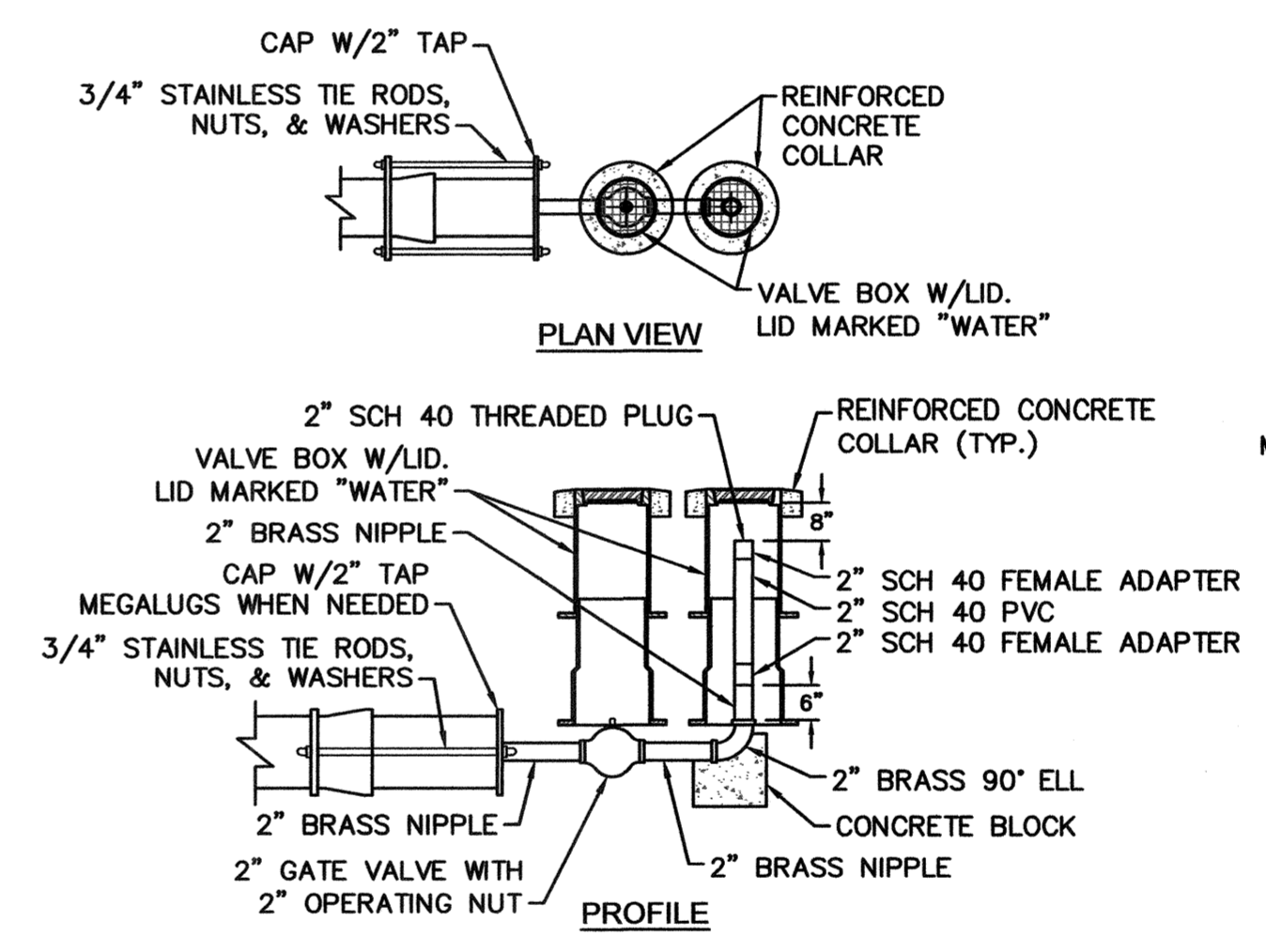
NOTES:
 1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.
 2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

WD-16 TYPICAL BORING/ JACKING DETAIL
NOT TO SCALE

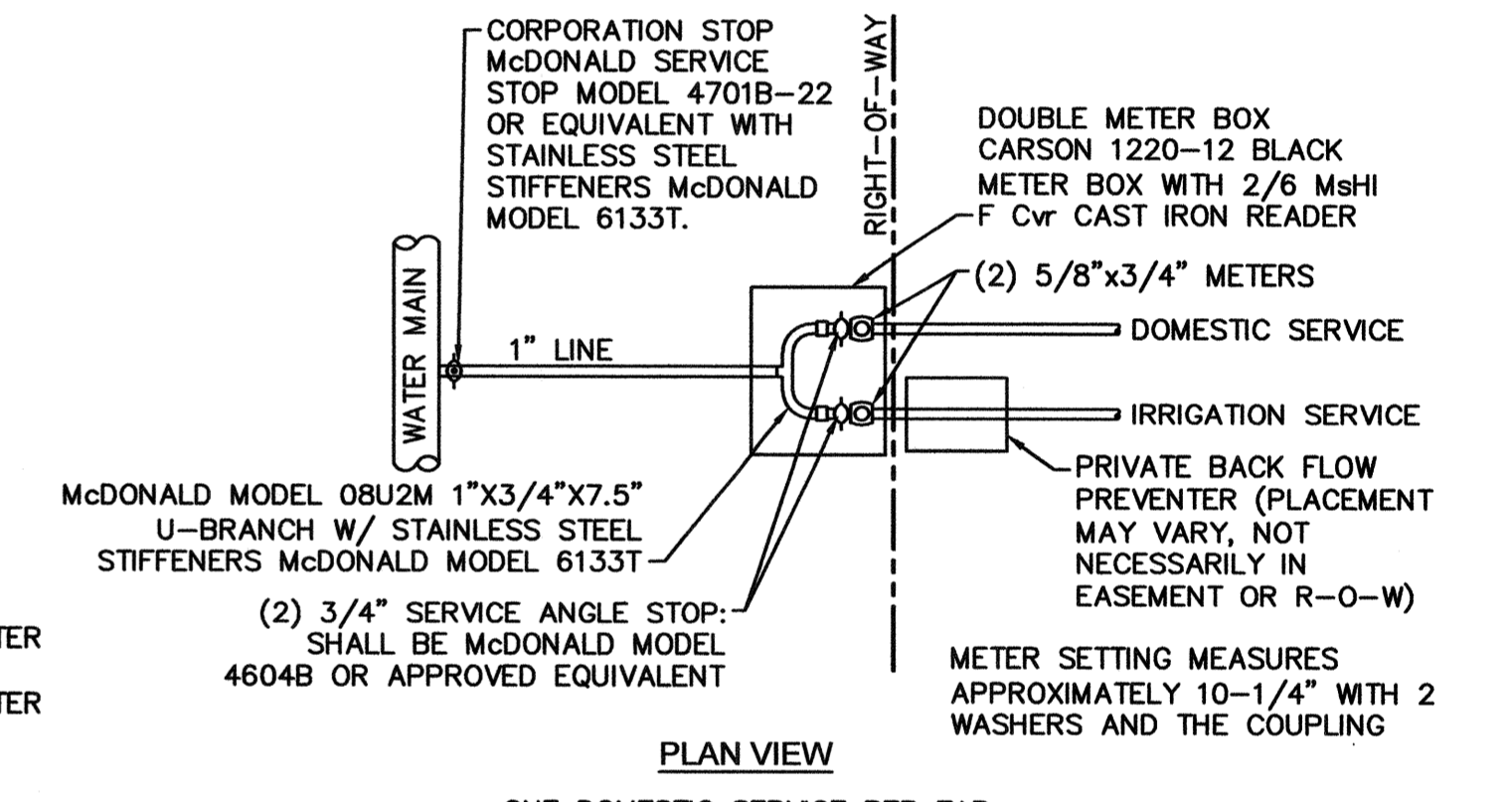


NOTES:
 1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.
 2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12 FOOT INTERVALS ALONG THE PIPE.
 3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH DUCT TAPE.
 4. ALL SPLICES IN THE WIRE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

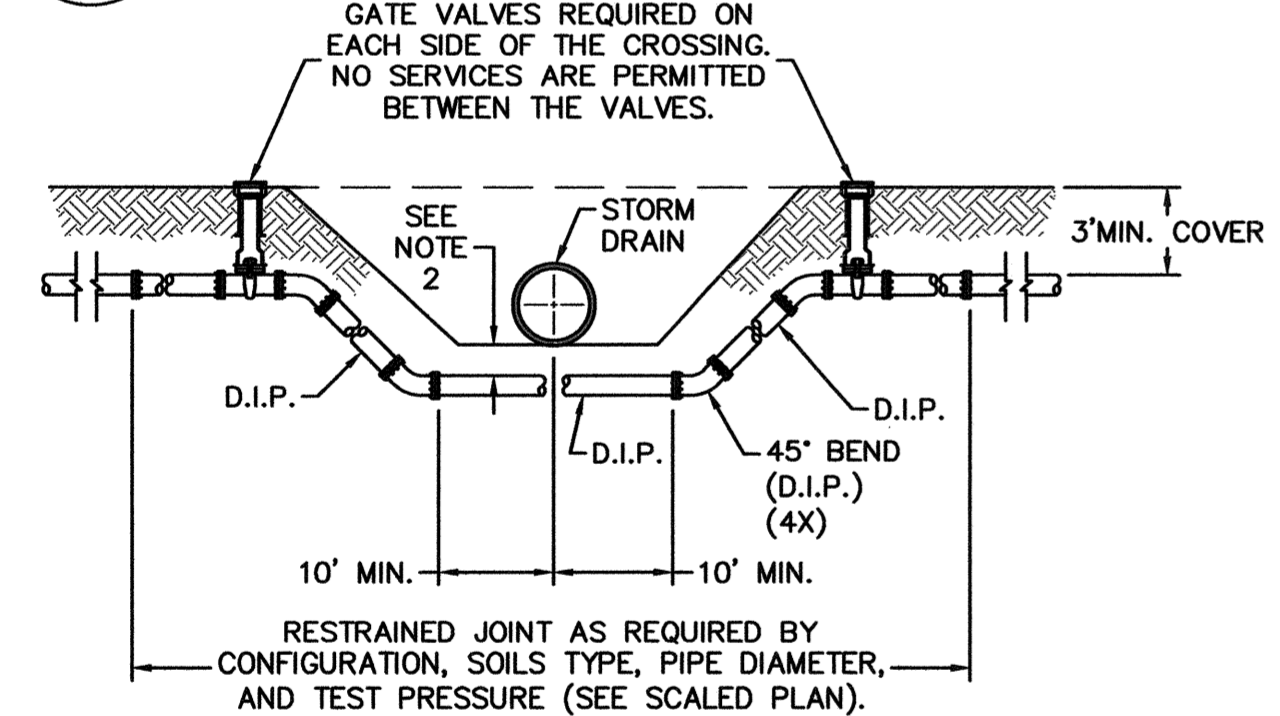
WD-17 TRACER WIRE DETAIL
NOT TO SCALE



WD-5 2" BLOW-OFF
NOT TO SCALE

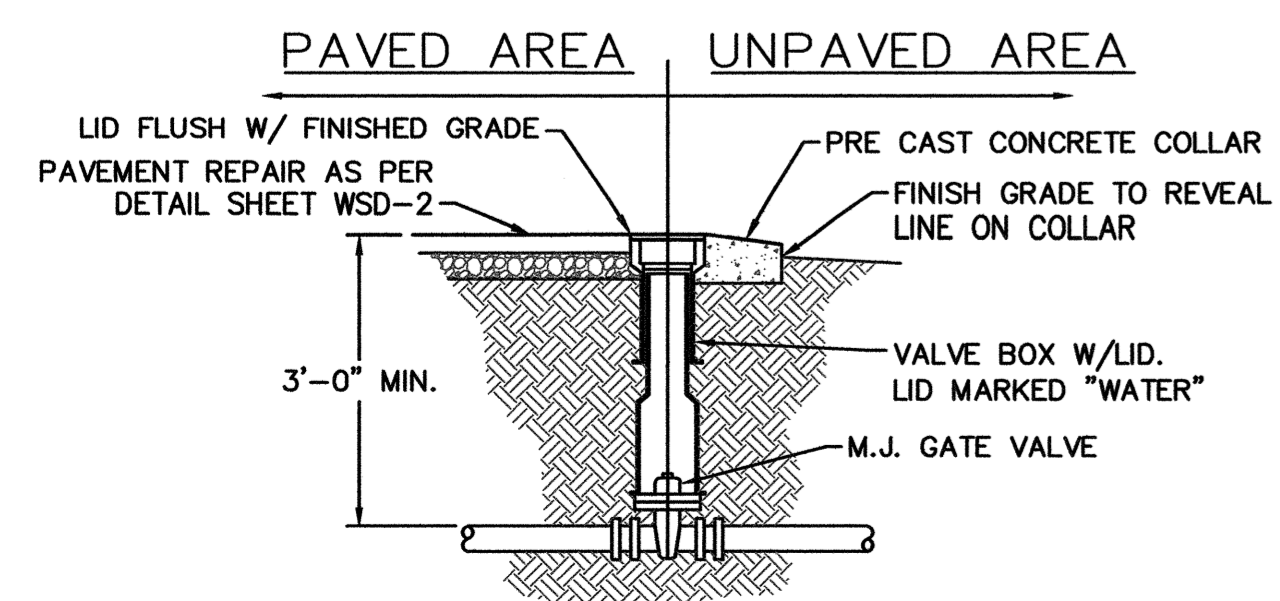


WD-9 DOUBLE SERVICE CONNECTION
NOT TO SCALE

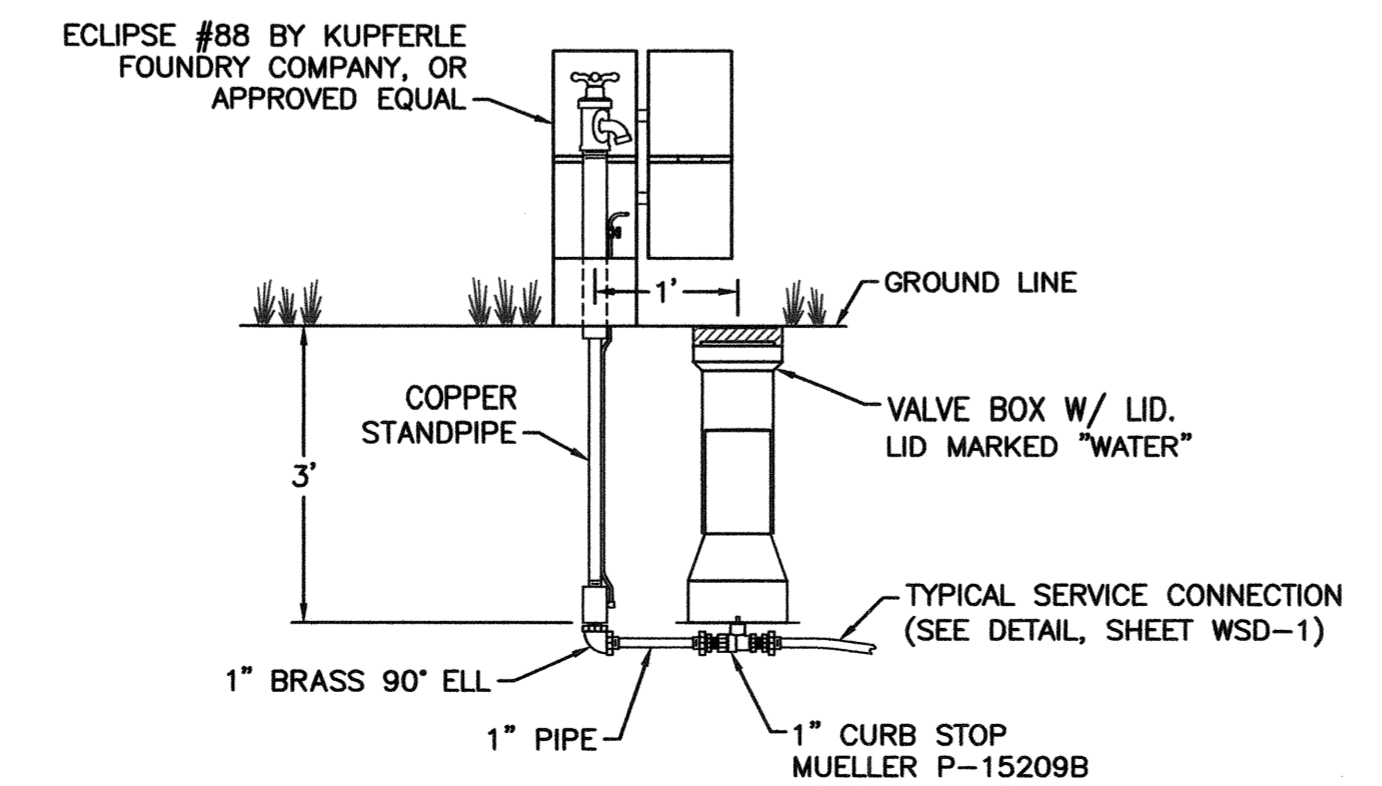


NOTES:
 1. USE PRESSURE CLASS 350 DIP, UNLESS SPECIFIED OTHERWISE.
 2. MINIMUM DEPTH REQUIRED, UNLESS SPECIFIED OTHERWISE BY CFPWA:
 a. IN DOT R/W, 36" MIN. TYPICAL, OR 24" MIN. WHEN CROSSING A DITCH LINE.
 b. ALL OTHER LOCATIONS, 30" MIN.
 c. WHEN STORM DRAIN INVERT IS BURIED AT OR BELOW ABOVE DEPTHS,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

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



WD-3 VALVE DETAIL
NOT TO SCALE

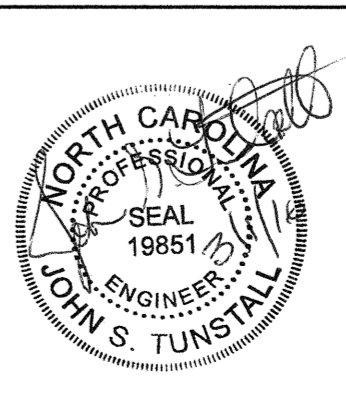


WD-6 SAMPLING STATION
NOT TO SCALE

THESE DETAILS ARE A WORK PRODUCT OF CFPWA FOR SEWER SYSTEM DESIGN AND CONSTRUCTION AND HAVE BEEN REVIEWED AND APPROVED FOR CONTENT AND GENERAL CONFORMANCE WITH THE SEWER DESIGN FOR THIS PROJECT.

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

CFPWA WATER DISTRIBUTION SYSTEM



STANDARD DETAILS

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

DATE: 1/9/12
 SCALE: N/A
 DRAWN BY: CFPWA
 CHECKED BY: CFPWA
 PROJECT NO.: 16009

SHEET NO.: WSD-2