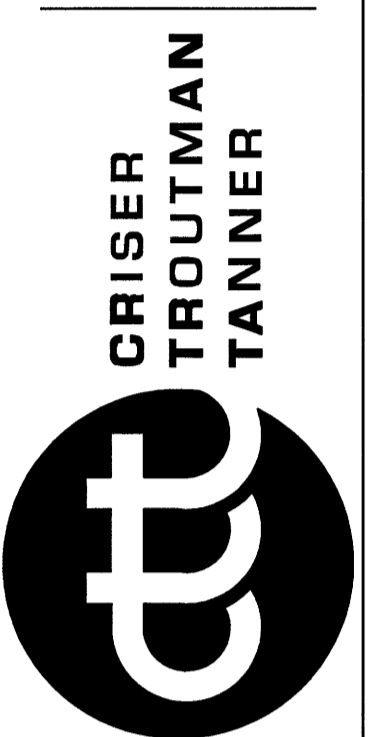




SPORTS CENTER

DATE	NO.	REVISIONS
10-10-18	11	TRC REVISIONS
10-15-18	12	GENERAL REVISIONS
11-15-18	13	GENERAL REVISIONS
11-15-18	14	GENERAL REVISIONS

CRISER TROUTMAN TANNER
CONSULTING ENGINEERS
3809 Peachtree Ave., Suite 102
Wilmington, NC 28403
910.387.2929 Ph.
910.387.2971 Fax
www.ctt-engineers.com
Firm License Number: F0113



PROJECT: **LANDFALL SPORTS CENTER**
ADDRESS: 1750 DRYSDALE DRIVE
WILMINGTON, NORTH CAROLINA 28405

DESIGNED BY: DEC
DRAWN BY: HWL
QUALITY CONTROL: DEC
SCALE: NOTED
FILE NUMBER: 7730.00
DATE: 08-26-16
COVER SHEET AND SITE INFORMATION
SHEET NUMBER: **C0**

EXISTING FITNESS CENTER
BUILDING FOOTPRINT = 15,603 SQ. FT.

EXISTING MECHANICAL YARD TO BE ENCLOSED
PROPOSED 510 SQ. FT. NEW ENCLOSED SPACE
(NO ADDED FOOTPRINT)

EXISTING MECHANICAL YARD TO BE ENCLOSED
PROPOSED 310 SQ. FT. NEW ENCLOSED SPACE
(NO ADDED FOOTPRINT)

NEW INTERNAL ADDITION: NEW FLAT ROOF & METAL ROOF
ADDITION FOOTPRINT = 913 SQ. FT.

NEW INTERNAL ADDITION: NEW FLAT ROOF
ADDITION FOOTPRINT = 515 SQ. FT.

EXISTING MECHANICAL YARD TO BE ENCLOSED
PROPOSED 703 SQ. FT. NEW ENCLOSED SPACE
(NO ADDED FOOTPRINT)

NEW ADDITION: NEW FLAT ROOF
ADDITION FOOTPRINT = 90 SQ. FT.

ADDED FOOTPRINTS TO PROPERTY (ITEMS 3, 4 & 6) = 1,518 SQ.FT.

9.7% INCREASE TO EXISTING FOOTPRINT

EXISTING POOL FACILITIES, RENOVATED INTO KID'S CAMP
EXISTING FOOTPRINT 2,512
PROPOSED 960 SQ. FT. NEW ENCLOSED SPACE
(NO ADDED FOOTPRINT)

PROPOSED NEW POOL FACILITIES BUILDING
NEW BUILDING FOOTPRINT=828 SQ.FT.

EXISTING MAINTENANCE BUILDING (ACCESSORY BLDG)
BUILDING FOOTPRINT 525 SQ.FT.

PROPOSED NEW MAINTENANCE BUILDING ADDITION
ADDED BUILDING FOOTPRINT 830 SQ.FT.

EXISTING BUILDING FOOTPRINTS (A+B+D): 18,640 SQ.FT.
PROPOSED ADDED BUILDING FOOTPRINTS: 3,176 SQ.FT.
TOTAL: 21,816 (17.03% INCREASE)

LEGEND

R-20 ZONE CODE

EXISTING SITE HARDSCAPE

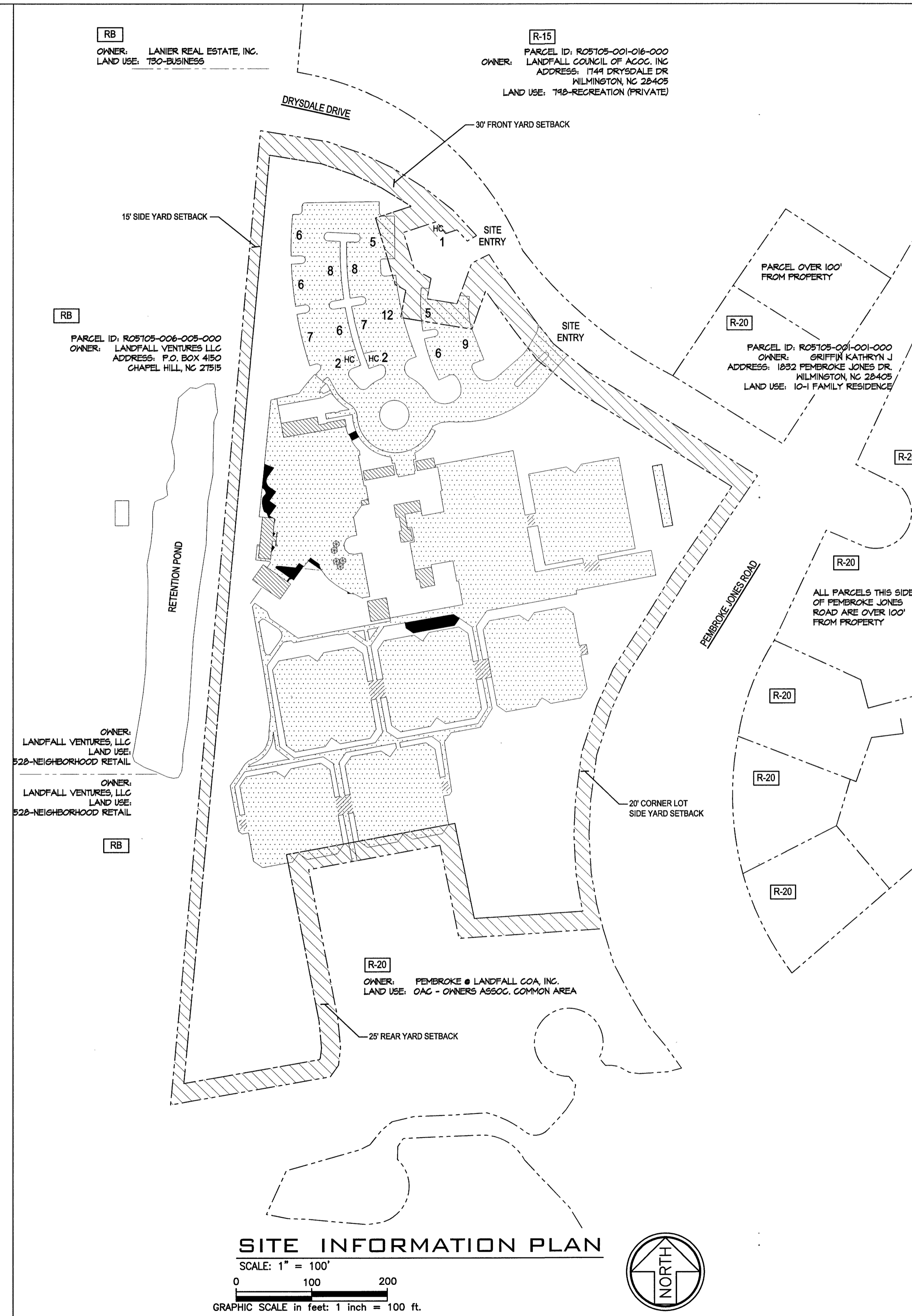
PROPOSED ADDED SITE HARDSCAPE

PROPOSED NEW ENCLOSED SPACES

SETBACK

AREA OF WORK

PROPERTY LINE



SITE INFORMATION PLAN

SCALE: 1" = 100'
GRAPHIC SCALE in feet: 1 inch = 100 ft.

DEVELOPMENT NAME: LANDFALL SPORTS CENTER
STREET ADDRESS: 1750 DRYSDALE DRIVE
WILMINGTON, NORTH CAROLINA 28405

NEW HANOVER COUNTY TAX PARCEL IDENTIFICATION #(PARID): R05705-005-012-000
ALT ID 315710.46.8820.000

TOTAL SITE ACRES: 12.24 ACRES (533,174 SF)
ZONING DISTRICT(S): R-20
CLASS: COM-COMMERCIAL
CAMA CLASSIFICATION: WATERSHED RESOURCE PROTECTION AREA DEVELOPED
MUNICIPAL AREA: WM
FLOOD ZONE: (ZONE X) MINIMAL FLOOD RISK

CLIENT (Owner or Developer): COUNTRY CLUB OF LANDFALL
Name(s): JESSI REUTTER
Address: 800 SUN RUNNER PLACE
WILMINGTON, NC 28405
910-256-8411
E-Mail Address: jessi.reutter@countrycluboflandfall.com

CONSULTANT/AGENT (Person to contact): DAVID E. CRISER
Address: 3809 PEACHTREE AVE., SUITE 102
WILMINGTON, NC 28403
910-397-2929 / 910-397-2971
E-Mail Address: dcriser@cttengineering.com

EXISTING BUILDINGS: 3
PROPOSED BUILDINGS: 1
TOTAL SITE BUILDINGS: 4

MAXIMUM ALLOWABLE BUILDING HEIGHT: 35 FT
TALLEST EXISTING BUILDING: 26 FT
TALLEST PROPOSED BUILDING: 19 FT
EXISTING BUILDING AREA: 18,640 SF
PROPOSED BUILDING AREA: 3,176 SF
TOTAL BUILDING AREA: 21,816 SF

REQUIRED YARD SETBACKS:
FRONT: 30'
SIDE: 15'
CORNER: 20'
REAR: 25'

YARD SETBACK AREA:
FRONT: 339'
SIDE: 50'
CORNER: 212'
REAR: 313'

PARKING
REQUIRED: MAX: 1 PER 200SF GFA (21,816 / 200) = 110
MIN: 1 PER 400SF GFA (21,816 / 400) = 55
EXISTING: REGULAR: 96
ACCESSIBLE: 5
TOTAL EXISTING PARKING: 101
PROPOSED: 0

BICYCLE PARKING
REQUIRED: FIRST 25 VEHICAL SPACES: 5 BICYCLE SPACES
NEXT 100 VEHICAL SPACES: 5 BICYCLE SPACES
TOTAL: 10 BICYCLE SPACES
EXISTING BICYCLE PARKING: 10 BICYCLE SPACES

IMPERVIOUS AREA
EXISTING
FITNESS CENTER: 15,603 SF
MAINTENANCE BLDG.: 525 SF
POOL FACILITIES: 2,512 SF
TOTAL (EX. BLDGS.): 18,640 SF
CONCRETE: 156,862 SF
ASPHALT: 49,650 SF
TOTAL EXIST. IMPERVIOUS: 225,152 SF

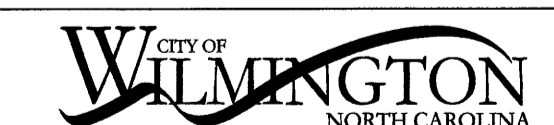
NEW ADDITIONS / BUILDINGS
FITNESS CENTER ADDITION: 1,518 SF
MAINTENANCE BLDG. ADDITION: 830 SF
POOL FACILITIES ADDITION: 0 SF
NEW POOL FACILITIES: 828 SF
TOTAL (NEW BLDGS.): 3,176 SF
CONCRETE: 2,202 SF
ASPHALT: 0 SF
TOTAL NEW IMPERVIOUS: 5,378 SF

LOT COVERAGE PERCENTAGE
ALLOWED: 50.00%
EXISTING: 42.23%
PROPOSED: 1.01%
TOTAL: 43.24%

DRAWING INDEX

SHT. NO.	TITLE
C0	COVER SHEET AND SITE INFORMATION
C1	PROPOSED SITE PLAN WITH EXISTING CONTOURS
C2	EXISTING SITE PLAN, TREE PROTECTION PLAN, AND PROPOSED SITE PLAN
C3	STORMWATER DEMO, GRADING, EROSION CONTROL AND STORMWATER PLANS
C4	UTILITY PLAN
C5	CIVIL DETAILS
C6	CIVIL DETAILS

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



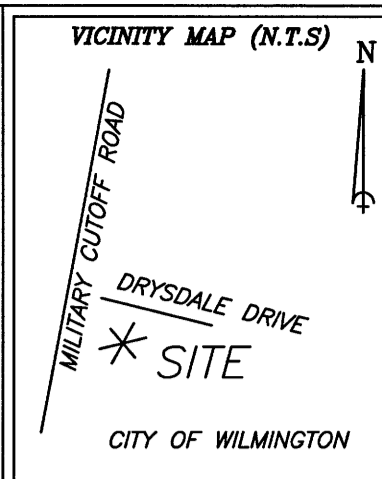
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: Permit #
Signed:

Approved Construction Plan

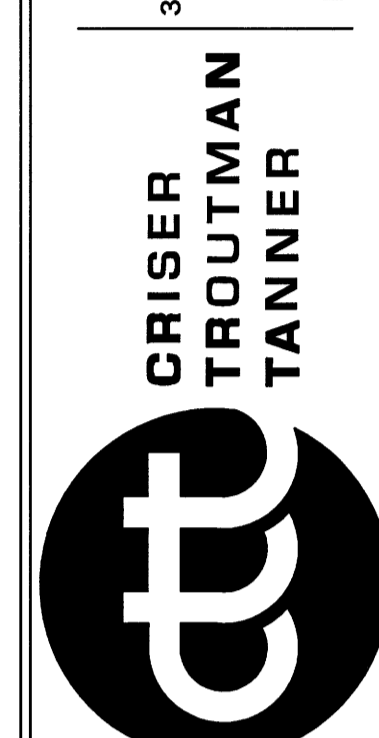
Name: Date:

Planning: Traffic: Fire:



DATE	REVISIONS
10-10-16	1 TRC REVISIONS
10-13-16	2 GENERAL REVISIONS
10-20-16	3 GENERAL REVISIONS
11-02-16	4 GENERAL REVISIONS

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Firm License Number: F0113



PROJECT: **LANDFALL SPORTS CENTER**
ADDRESS: 1750 DRYSDALE DRIVE
WILMINGTON, NORTH CAROLINA 28405

CONSTRUCTION SEQUENCE:

1. REQUEST PRE-CONSTRUCTION CONFERENCE WITH NEW HANOVER COUNTY INSPECTOR.
2. INSTALL EROSION CONTROL DEVICES.
3. INSTALL STORM DRAIN LINES AND INLET PROTECTION IN THE SAME EFFORT TO MINIMIZE SEDIMENT.
4. COMMENCE GRADING OPERATIONS.
5. REMOVE ACCUMULATED SEDIMENT.
6. STABILIZE ALL DISTURBED AREAS AS SOON AS FINAL GRADES ARE ESTABLISHED.
7. REMOVE TEMPORARY CONTROL DEVICES (SILT FENCE, ETC.) ONCE PERMANENT VEGETATIVE COVER IS ESTABLISHED.

GRADING NOTES:

1. INITIATE CONSTRUCTION SEQUENCE BEFORE BEGINNING CLEARING AND GRADING OPERATIONS.
2. CLEAR AREAS TO BE GRADED OF ALL VEGETATION. PROTECT VEGETATION BEYOND GRADING LIMITS.
3. STRIP TOPSOIL TO FULL AREAS TO BE GRADED AND STOCKPILE OR REMOVE FROM SITE.
4. COMPACT ALL FILL AREAS TO 95% OF MAXIMUM DENSITY.
5. ALL BANKS AND SWALE SIDE SLOPES SHALL BE GRADED WITH NO STEEPER THAN 3:1 SLOPES.
6. PROPOSED SPOT ELEVATIONS ARE SHOWN AT FINISHED GRADE.
7. OPERATOR SHALL VERIFY EXISTING TOPOGRAPHY IN RELATION TO THE PROPOSED GRADES TO ENSURE DRAINAGE IN THE DIRECTIONS INDICATED ON THE PLAN.

EROSION CONTROL:

1. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION AND IS SUBJECT TO A FINE.
2. ADDITIONAL DEVICES MAY BE REQUIRED AS AGREED UPON BY FIELD INSPECTOR, ENGINEER, AND OWNER.

GROUND STABILIZATION REQUIREMENTS		
Site Area Description	Stabilization	Timeframe Exceptions
Perimeter dikes, swales, ditches, and slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length & are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. SEDIMENT TRAPS SHALL BE CLEANED OUT WHEN THEY ARE HALF FULL.
3. 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.
4. CONSTRUCTION ENTRANCE TO BE CLEANED WHEN SEDIMENT ACCUMULATIONS ARE VISIBLE OR SEDIMENT IS DEPOSITED ON THE ASPHALT AND STONE WILL BE PERIODICALLY TOP DRESSED WITH 2 INCHES OF #4 STONE TO MAINTAIN 6" DEPTH.
5. SEDIMENT WILL BE REMOVED FROM BEHIND WATTLES WHEN IT BECOMES ABOUT 1/2 FULL AT THE WATTLE. THE WATTLE SHALL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.

SITE NOTES:

1. THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE THEMSELVES WITH FIELD CONSTRUCTION CONDITIONS.
2. BORROW MATERIAL: ALL BORROWED MATERIAL MUST COME FROM A LEGALLY OPERATED MINE OR OTHER SOURCE APPROVED BY NEW HANOVER COUNTY.
3. CLEARED, GRUBBED, STRIPPED, OR EXCAVATED SPOIL SHALL BE REMOVED FROM THE SITE OR USED IN LANDSCAPED ISLANDS.

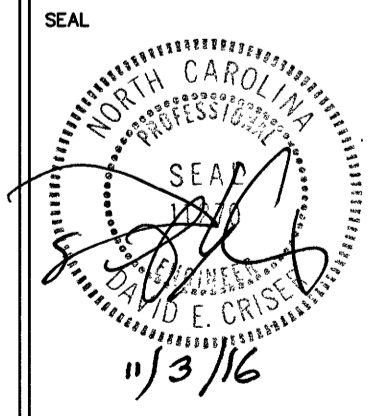
SEEDING SPECIFICATIONS:

LIME: APPLY 100 POUNDS PER 1,000 SQUARE FEET
 FERTILIZER: APPLY 20 POUNDS 8-8-8 PER 1,000 SQUARE FEET
 SEED (NON-NCDOT RIGHT OF WAY): PER ACRE
 NOVEMBER-MARCH
 BERMUDA (UNHULLED) 20 LBS.
 WINTER RYE (GRAIN) 50 LBS.
 FESCUE 80 LBS.
 MARCH-NOVEMBER
 BERMUDA (HULLED) 30 LBS.
 FESCUE 80 LBS.
 MULCH: APPLY 1-1/2 TONS/ACRE WHEAT STRAW (OR APPROVED EQUAL) ON ALL SEEDED AREAS.
 TACK: ALL SLOPES WITH STRAW MULCH EXCEEDING 3:1 TO HAVE ASPHALT TACK APPLIED AT THE RATE OF 225 GALLONS/ACRE.
 * AFTER SOIL PREPARATION AND SEEDING, INSTALL JUTE MATTING OR EQUAL ON ALL DISTURBED AREAS.
 * MAINTAIN SEEDED AREAS UNTIL MINIMUM GROWTH IS ESTABLISHED AND/OR FOR CONTRACT TIME.

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

NOTE:
EXISTING CONTOURS TAKEN FROM
NEW HANOVER COUNTY GIS DATA
CONTOUR PLAN
SCALE: 1" = 60'
0 60 120
GRAPHIC SCALE in feet: 1 inch = 60 ft.

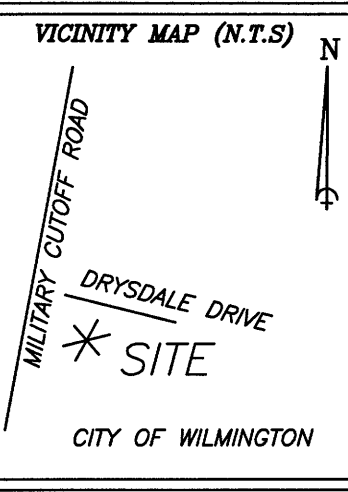
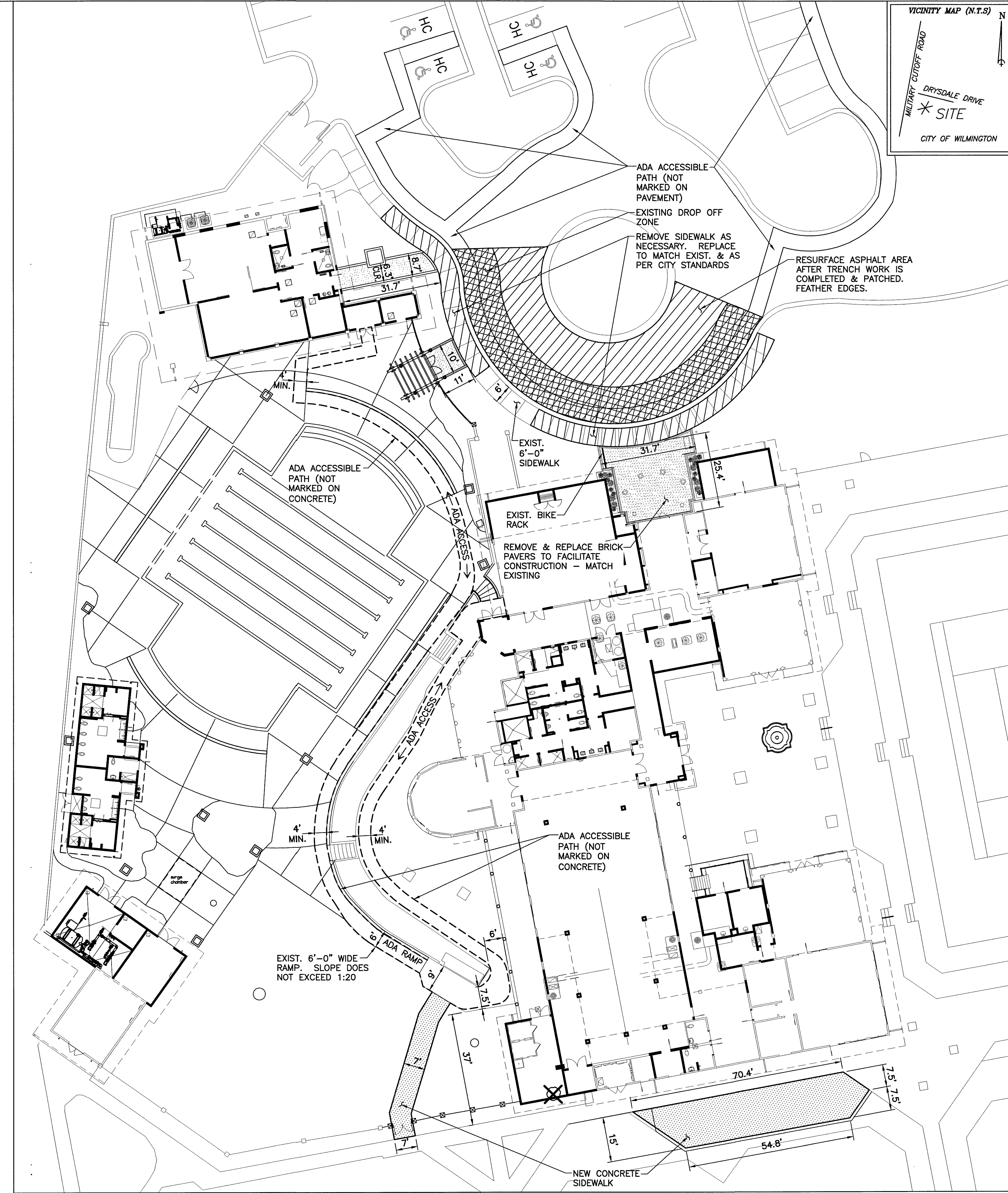
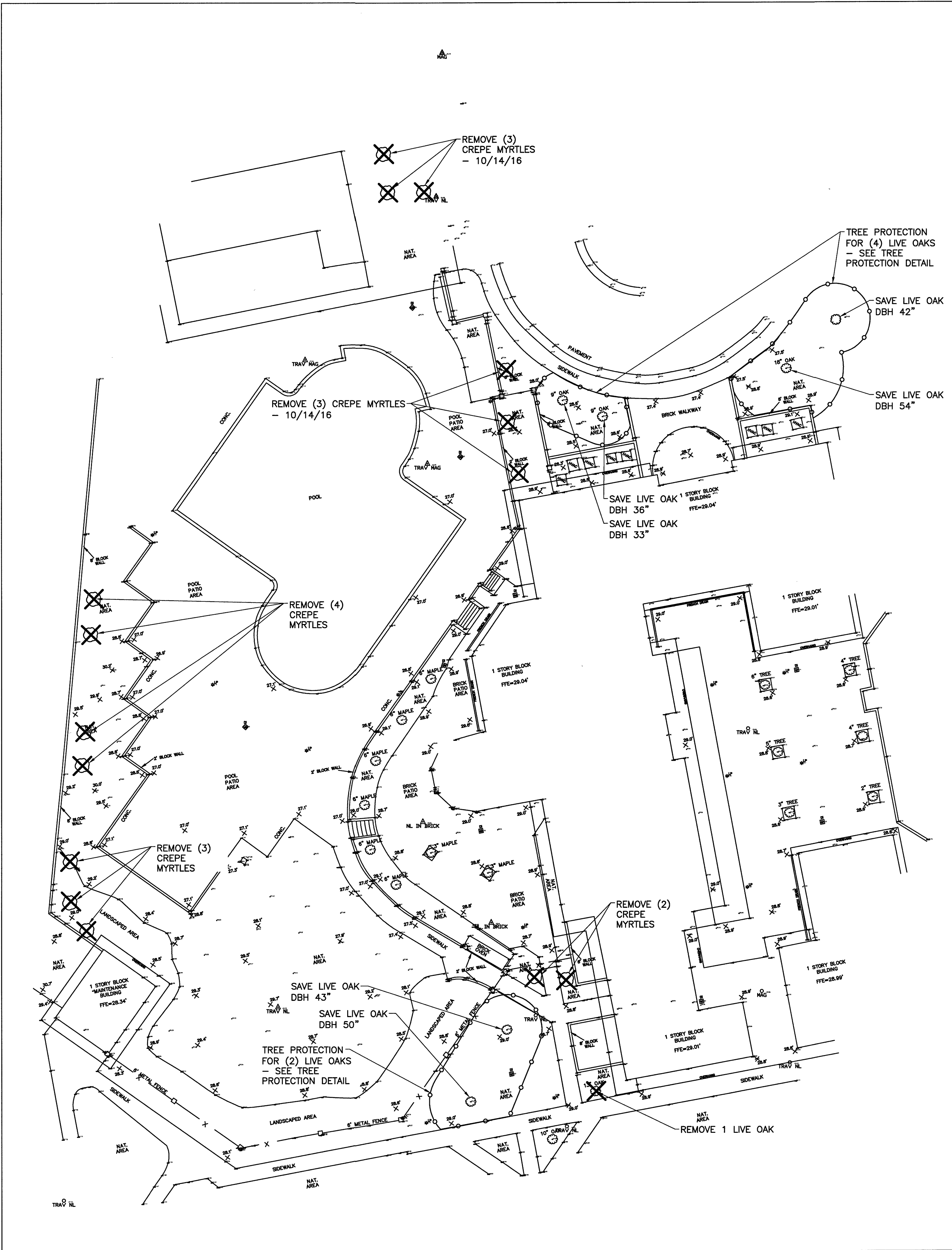
City of Wilmington
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____



Approved Construction Plan

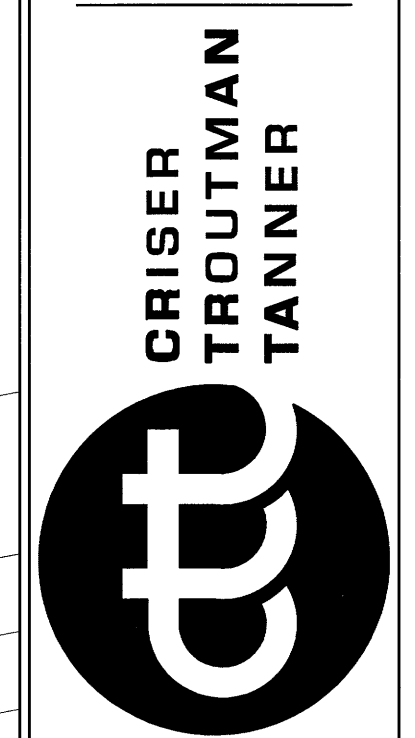
Name	Date
Planning	
Traffic	
Fire	

DESIGNED BY:	DEC
DRAWN BY:	HWL
QUALITY CONTROL:	DEC
SCALE:	NOTED
FILE NUMBER:	7730.00
DATE:	08-26-16
PROPOSED SITE PLAN WITH EXISTING CONTOURS	
SHEET NUMBER: C1	

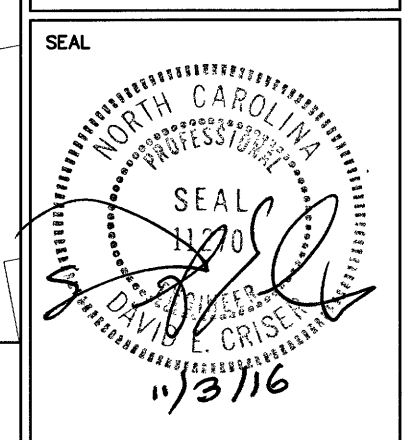


DATE	REVISIONS
8-25-16	1 GENERAL REVISION
10-12-16	2 TREE REMOVALS
10-12-16	3 TREE REMOVALS
10-12-16	4 TREE REMOVALS
10-26-16	5 GENERAL REVISIONS
11-03-16	6 GENERAL REVISIONS

CRISER TROUTMAN TANNER
CONSULTING ENGINEERS
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Wilmington, NC 28403
910.397.2929 Ph.
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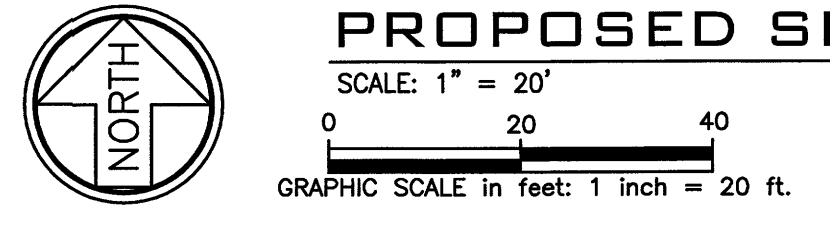
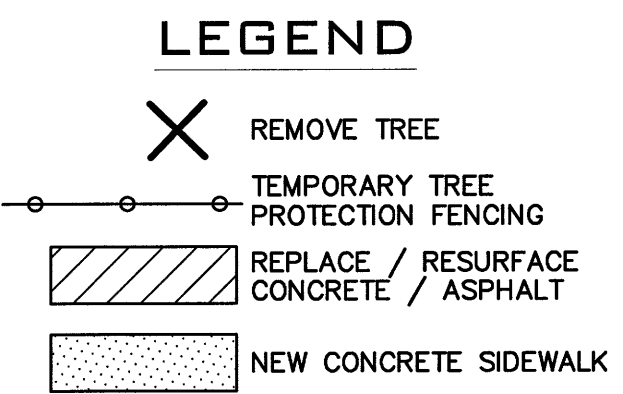
PROJECT: **LANDFALL SPORTS CENTER**
ADDRESS: 1750 DRYSDALE DRIVE
WILMINGTON, NORTH CAROLINA 28405



DESIGNED BY: DEC
DRAWN BY: HWL
QUALITY CONTROL: DEC
SCALE: NOTED
FILE NUMBER: 7730.00
DATE: 08-04-16
EXISTING SITE PLAN & TREE PROTECTION PLAN & PROPOSED SITE PLAN
SHEET NUMBER: **C2**

NOTE:
TOPOGRAPHICAL DATA BASED ON PRELIMINARY SURVEY BY GEOINOVATIONS. SURVEY NOT FINALIZED.

EXISTING SITE PLAN, TREE PROTECTION, & TREE REMOVAL PLAN
SCALE: 1" = 20'
0 20 40
GRAPHIC SCALE in feet: 1 inch = 20 ft.



PROPOSED SITE PLAN

SCALE: 1" = 20'
0 20 40
GRAPHIC SCALE in feet: 1 inch = 20 ft.

NOTES:

- CONTRACTOR TO REMOVE AND REPLACE ALL SURFACES (CONCRETE, ASPHALT, PAVERS, GRASS, POOL DECK, ETC.) DISTURBED FOR THE SITE WORK CONSTRUCTION.

NOTE: SEE C1 FOR NOTES: CONSTRUCTION SEQUENCE, GRADING, MAINTENANCE PLAN, SITE, & SEEDING SPECIFICATIONS

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

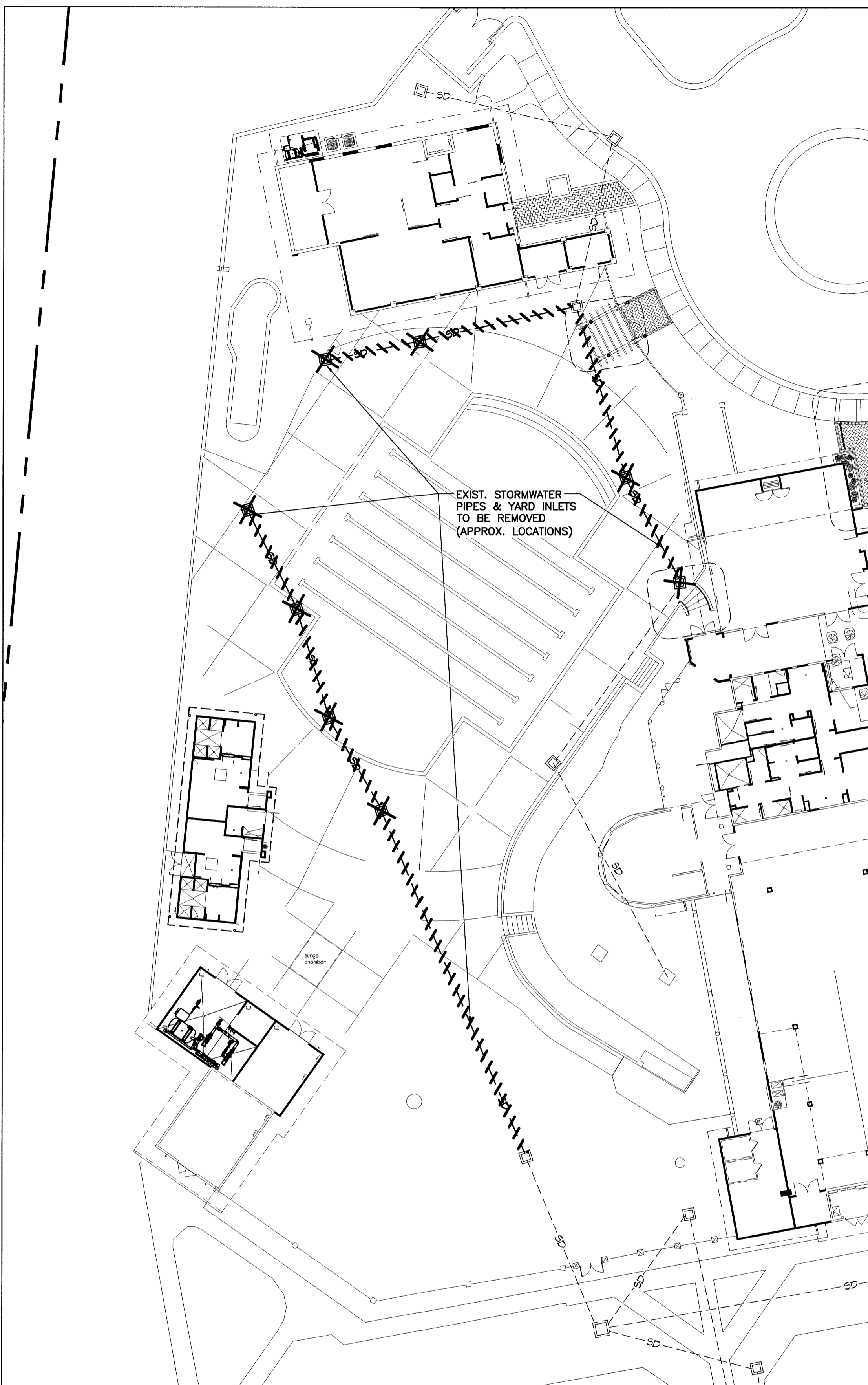
Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____
Signed: _____

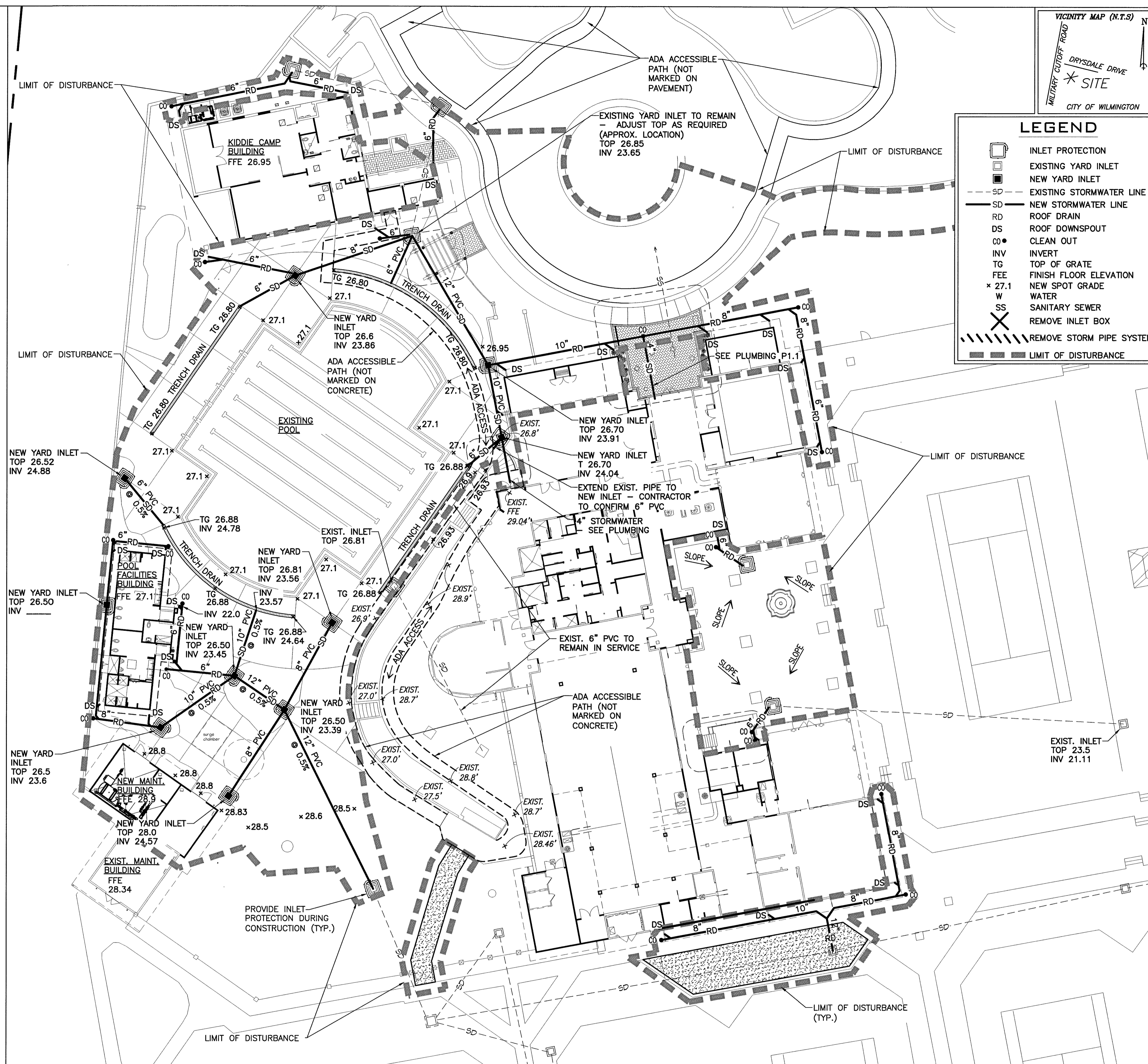


STORMWATER DEMOLITION PLAN

SCALE: 1" = 20'
 GRAPHIC SCALE in feet: 1 inch = 20 ft.

NOTES:

1. CONTRACTOR TO REMOVE AND REPLACE ALL SURFACES (CONCRETE, ASPHALT, PAVERS, GRASS, POOL DECK, ETC.) DISTURBED FOR THE SITE WORK CONSTRUCTION.
2. CONTRACTOR TO PROVIDE SOD OR RESTORE LANDSCAPE AREAS AS DIRECTED BY OWNER.
3. CONTRACTOR TO PREVENT EROSION AND SEDIMENTATION INTO THE POOL WATER.
4. CONTRACTOR TO SLOPE ALL AREAS FOR POSITIVE DRAINAGE.
5. CONTRACTOR TO CONFIRM ALL ELEVATIONS OF EXISTING UTILITIES AND YARD INLETS TO CONFIRM THAT PROPOSED GRADES AND SLOPES ARE CORRECT PRIOR TO CONSTRUCTION.



GRADING, EROSION CONTROL, AND STORMWATER PLAN

SCALE: 1" = 20'
 GRAPHIC SCALE in feet: 1 inch = 20 ft.

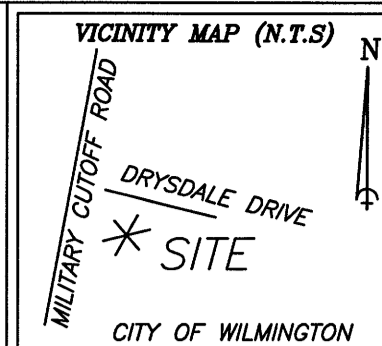
DISTURBED AREA = 0.98 ACRES

NOTE: SEE C1 FOR NOTES: CONSTRUCTION SEQUENCE, GRADING, MAINTENANCE PLAN, SITE, & SEEDING SPECIFICATIONS

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

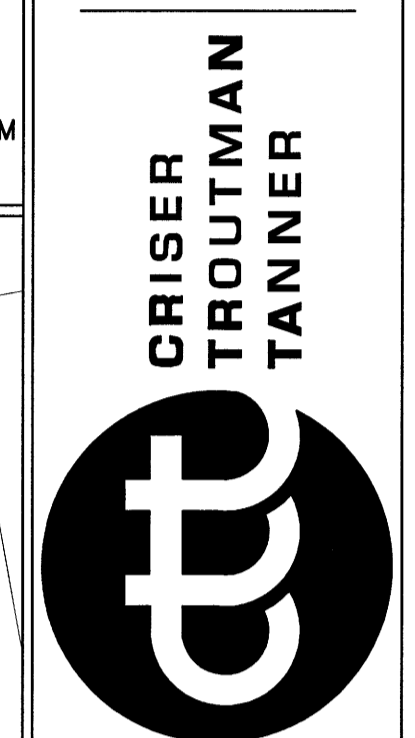
LEGEND

- INLET PROTECTION
- EXISTING YARD INLET
- NEW YARD INLET
- EXISTING STORMWATER LINE
- NEW STORMWATER LINE
- ROOF DRAIN
- ROOF DOWNSPOUT
- CLEAN OUT
- INVERT
- TOP OF GRATE
- FINISH FLOOR ELEVATION
- NEW SPOT GRADE
- WATER
- SANITARY SEWER
- REMOVE INLET BOX
- REMOVE STORM PIPE SYSTEM
- LIMIT OF DISTURBANCE

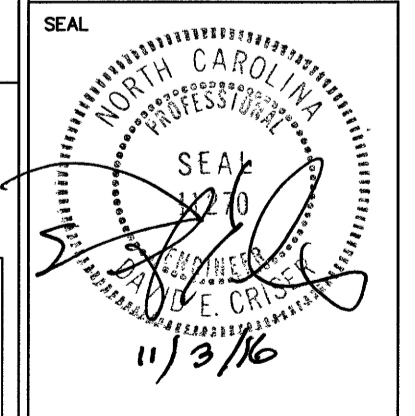


DATE	REVISIONS
8-26-16	1 GENERAL REVISION
10-10-16	2 GENERAL REVISIONS
10-13-16	3 GENERAL REVISIONS
11-03-16	5 GENERAL REVISIONS

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 3809 Peachtree Ave., Suite 102
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 910.397.2929 Ph.
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 Firm License Number: F0113



PROJECT: LANDFALL SPORTS CENTER
 ADDRESS: 1750 DRYSDALE DRIVE
 WILMINGTON, NORTH CAROLINA 28405

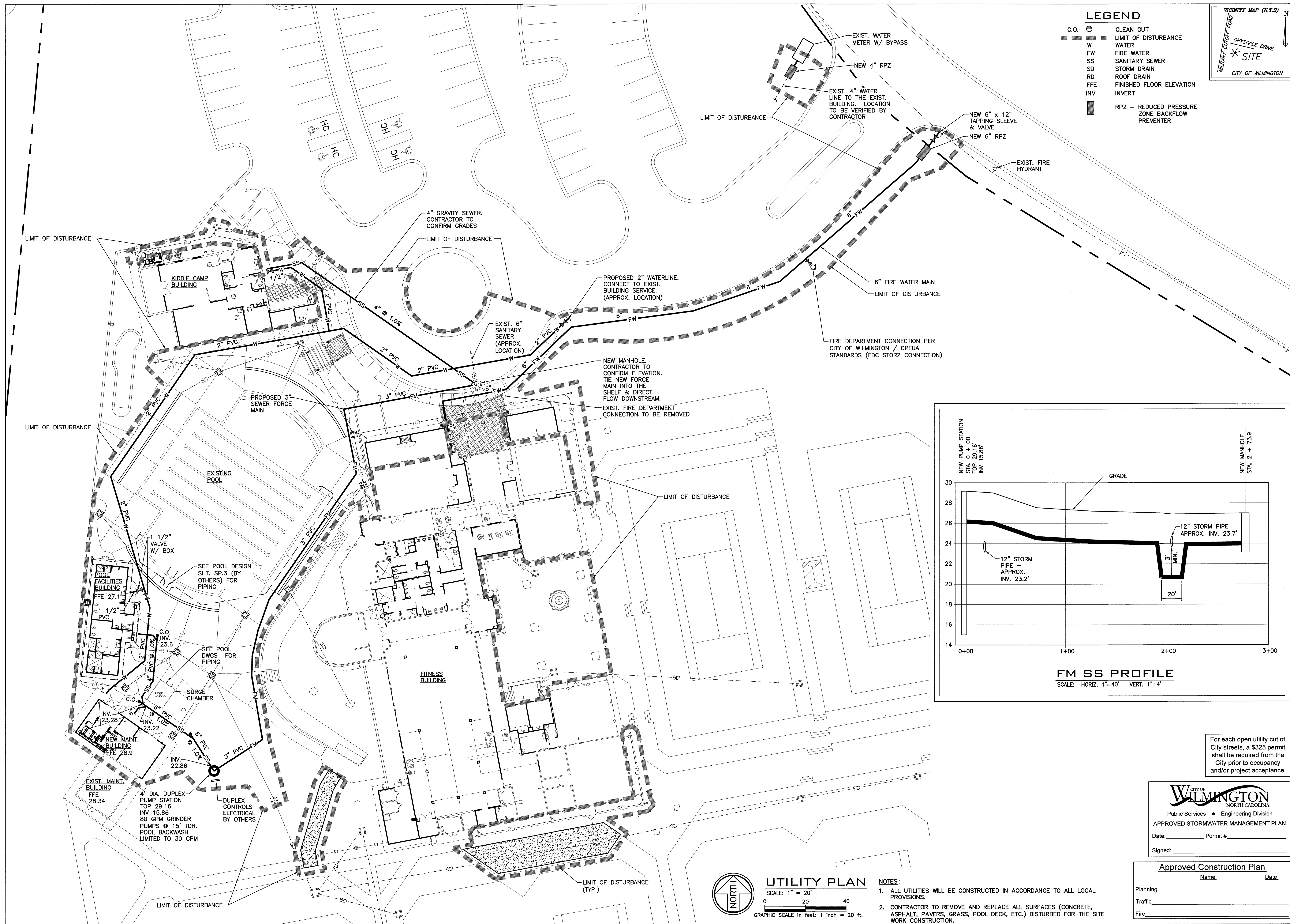


CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

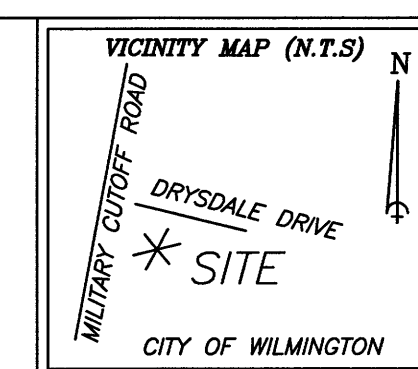
Name	Date
Planning	
Traffic	
Fire	

DESIGNED BY:	DEC
DRAWN BY:	HWL
QUALITY CONTROL:	DEC
SCALE:	NOTED
FILE NUMBER:	7730-00
DATE:	10-07-16
STORMWATER DEMO, GRADING, EROSION CONTROL, & STORMWATER PLANS	
SHEET NUMBER:	C3



LEGEND

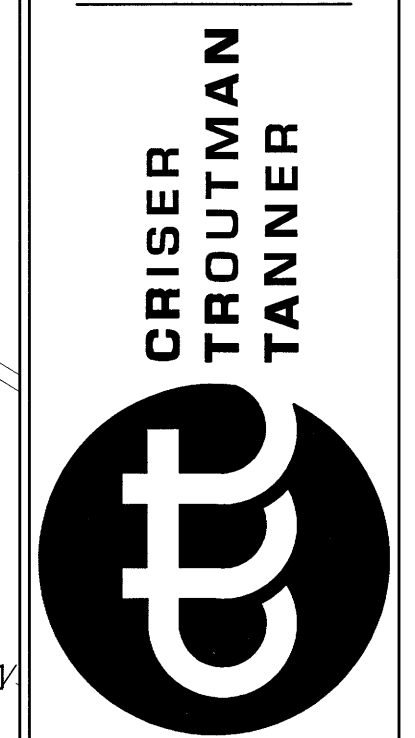
C.O.	CLEAN OUT
W	WATER
FW	FIRE WATER
SS	SANITARY SEWER
SD	STORM DRAIN
RD	ROOF DRAIN
FFE	FINISHED FLOOR ELEVATION
INV	INVERT
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER



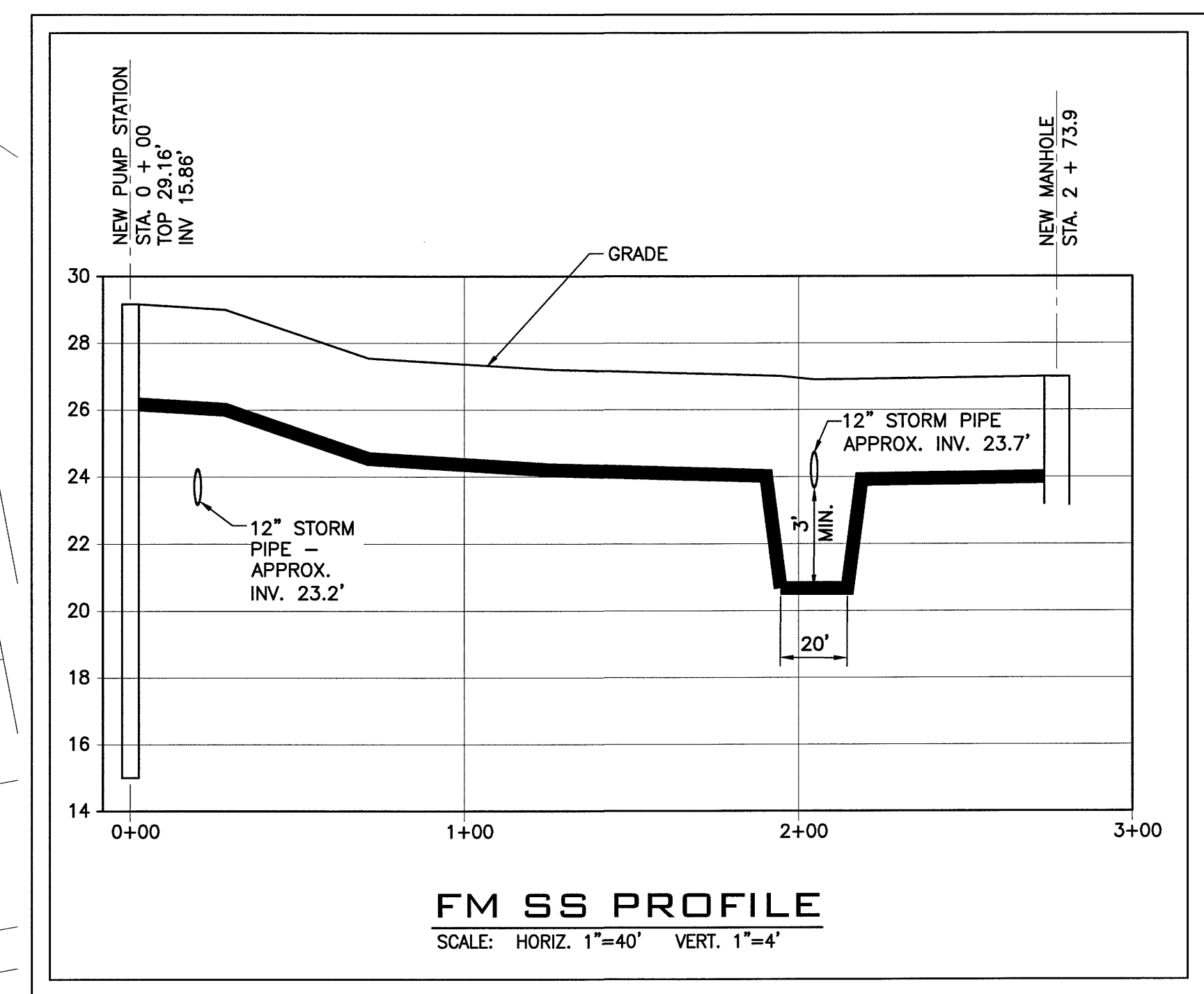
REVISIONS

DATE	BY	COMMENT
08-26-16	1	GENERAL REVISION
10-10-16	2	TRC REVISIONS
10-26-16	3	REVISED BASKETBALL COURT
11-03-16	4	GENERAL REVISIONS

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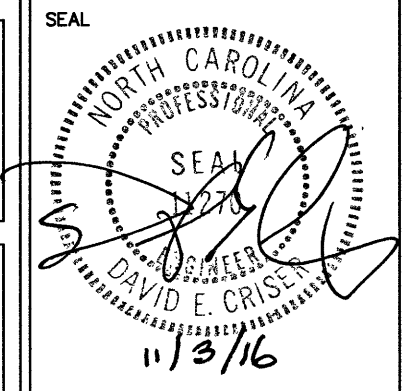


PROJECT: **LANDFALL SPORTS CENTER**
ADDRESS: 1750 DRYSDALE DRIVE
WILMINGTON, NORTH CAROLINA 28405



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

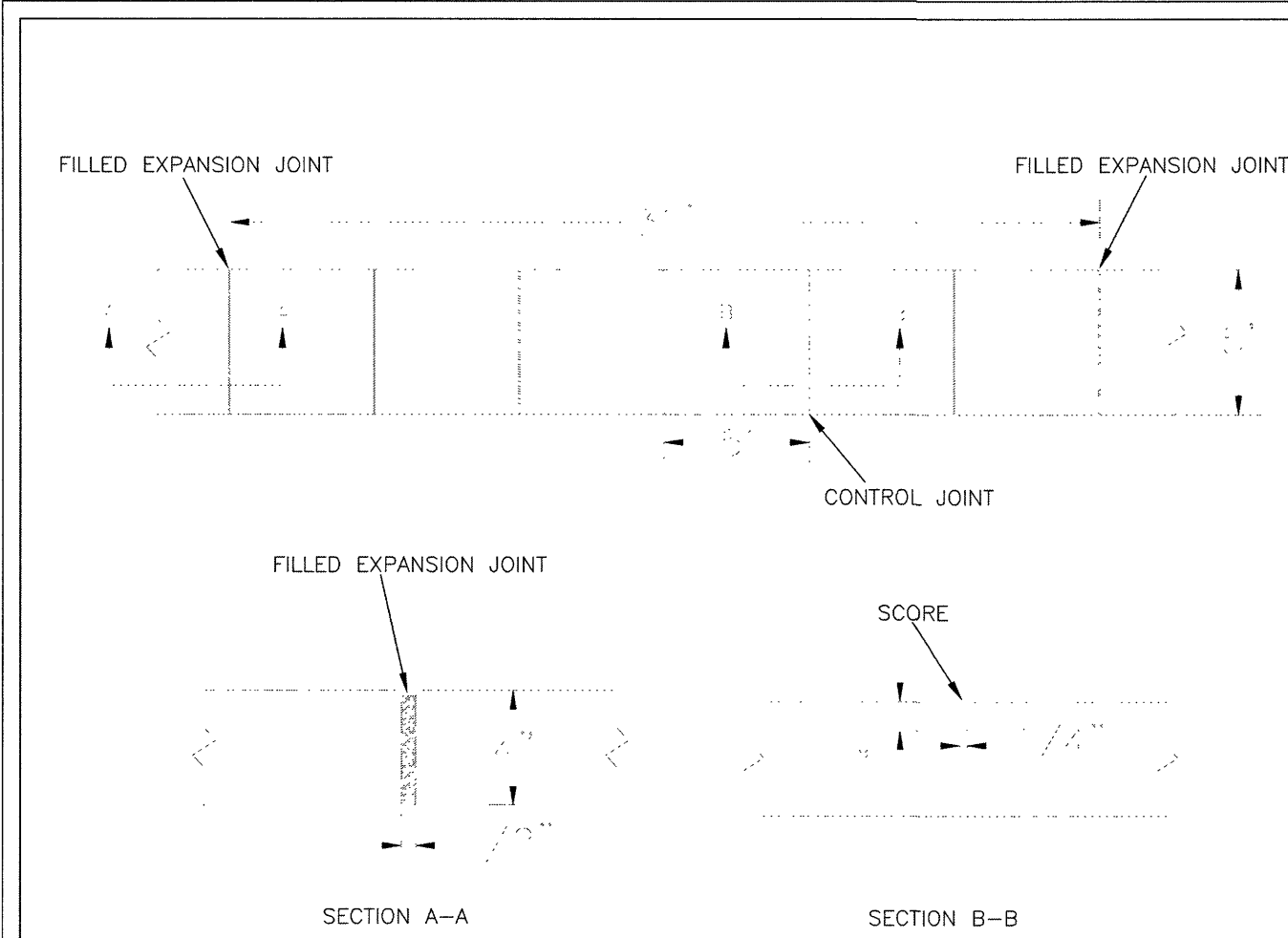


Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

DESIGNED BY: DEC
DRAWN BY: HWL
QUALITY CONTROL: DEC
SCALE: NOTED
FILE NUMBER: 7730.00
DATE: 08-04-16

UTILITY PLAN
SHEET NUMBER:
C4



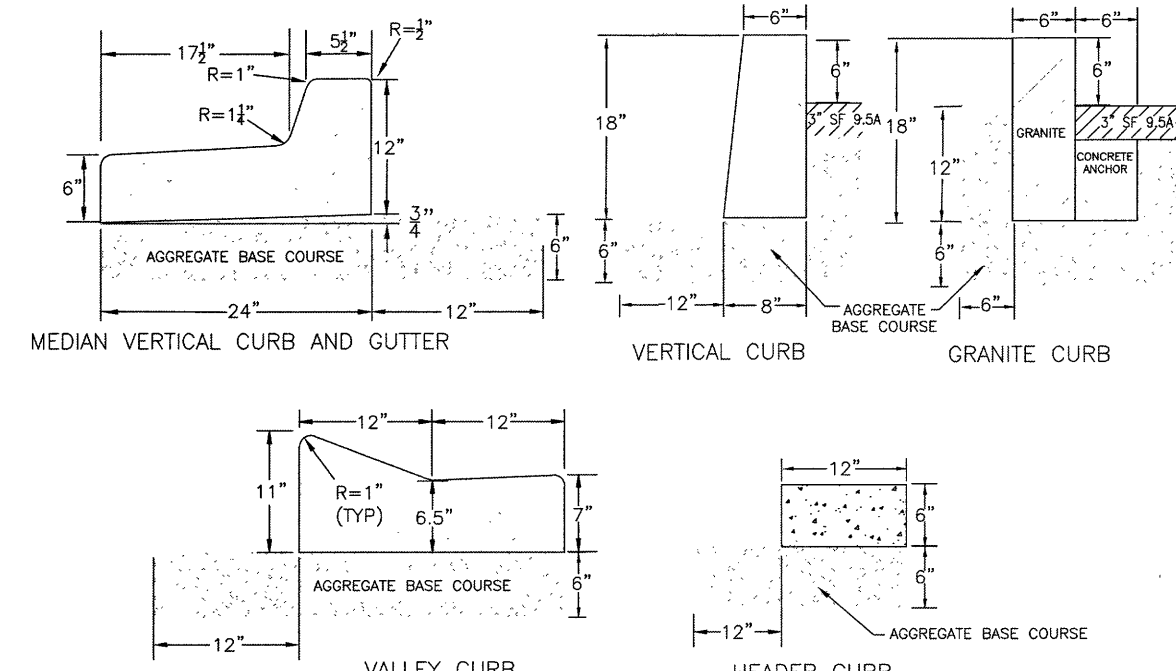
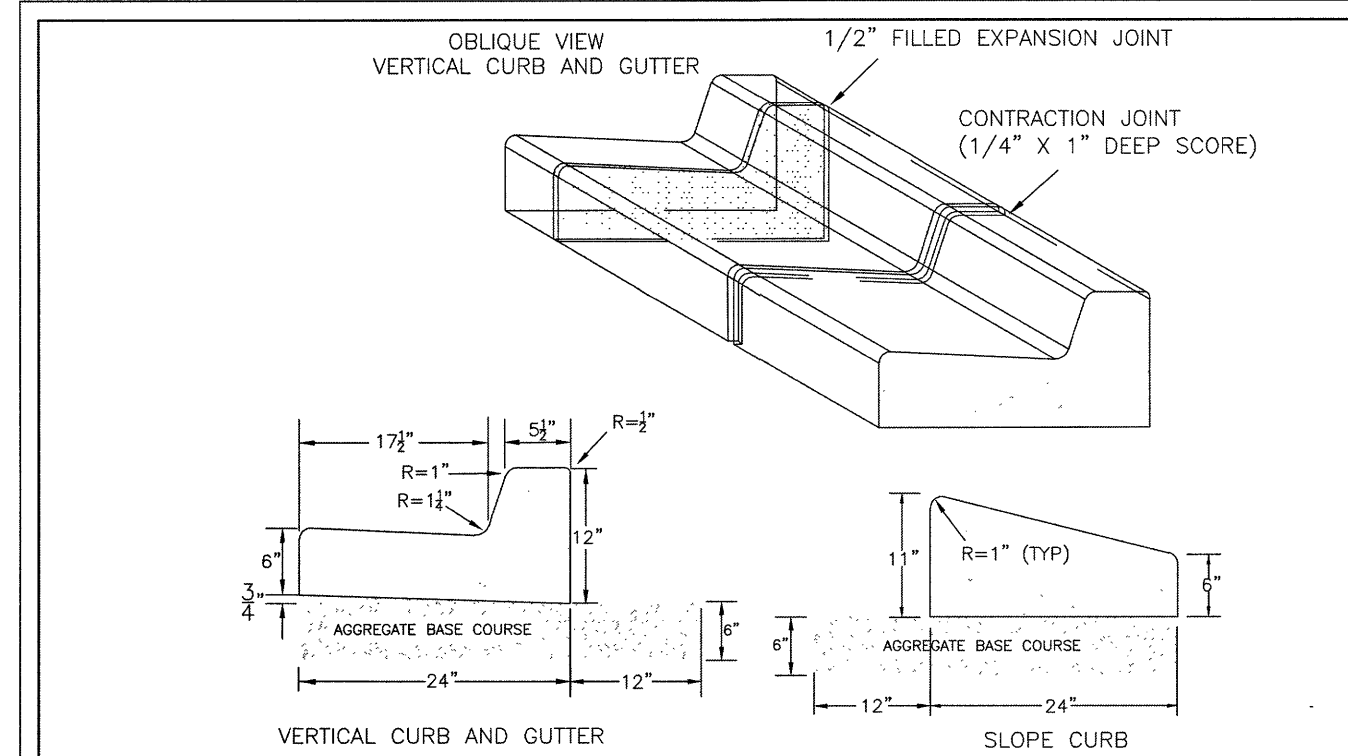
- NOTES:**
1. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
 2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
 3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
 4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3,000 PSI.
 5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL.
 6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.
 7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
 8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
 9. MIN GRADE FOR PROPER DRAINAGE IS 1/2" IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

DATE: OCTOBER, 2010
 DRAWN: PBJSR
 CHECKED: DEC
 SCALE: NOT TO SCALE

STANDARD DETAIL
SIDEWALK

CITY OF WILMINGTON
 NORTH CAROLINA
 CITY OF WILMINGTON ENGINEERING
 PO BOX 1810
 WILMINGTON N.C. 28402
 (910) 341-7807

SD 3-10



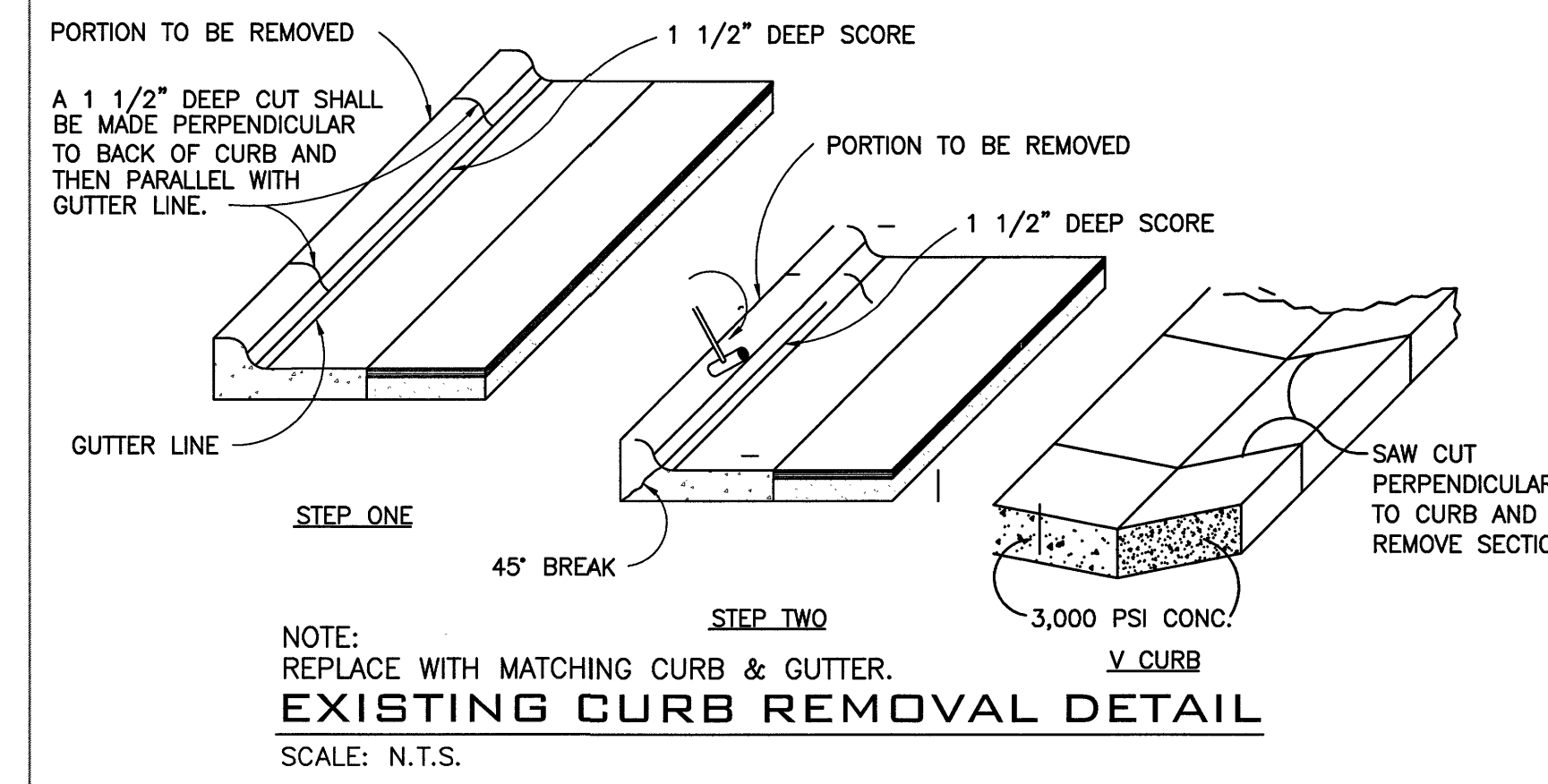
- NOTES:**
1. EXPANSION JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
 2. 50' MAX EXPANSION JOINT SPACING, 10' MAX CONTRACTION JOINT SPACING
 3. MINIMUM INSTALLATION LENGTH IS 5 FT.
 4. CONCRETE TO BE 3000 PSI MIN
 5. VERTICAL CURB AND GUTTER BASE CAN BE SLOPED 3/4" OR USE A FLAT BASE

DATE: AUGUST, 2011
 DRAWN: PBJSR
 CHECKED: DEC
 SCALE: NOT TO SCALE

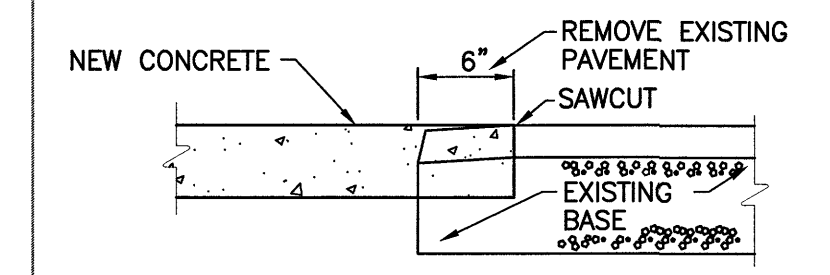
STANDARD DETAIL
CURBING

CITY OF WILMINGTON
 NORTH CAROLINA
 CITY OF WILMINGTON ENGINEERING
 PO BOX 1810
 WILMINGTON N.C. 28402
 (910) 341-7807

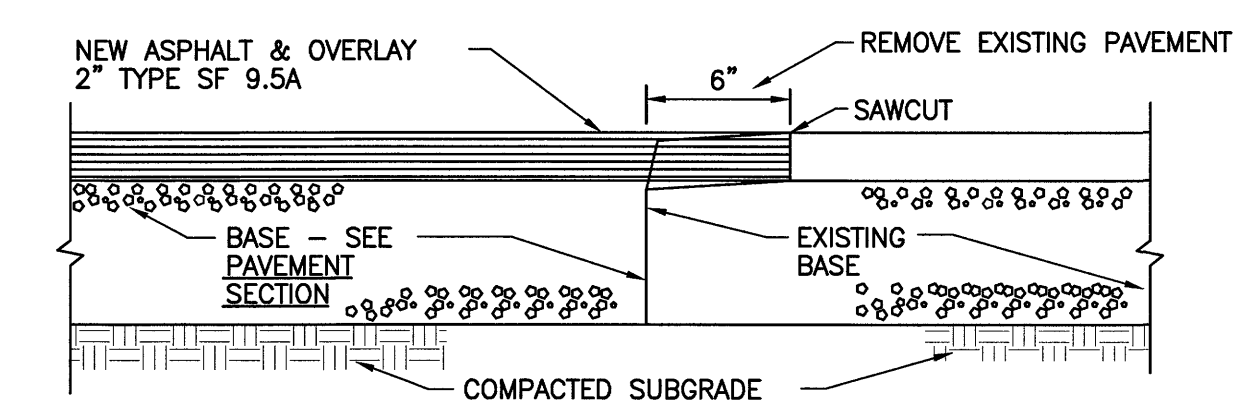
SD 3-11



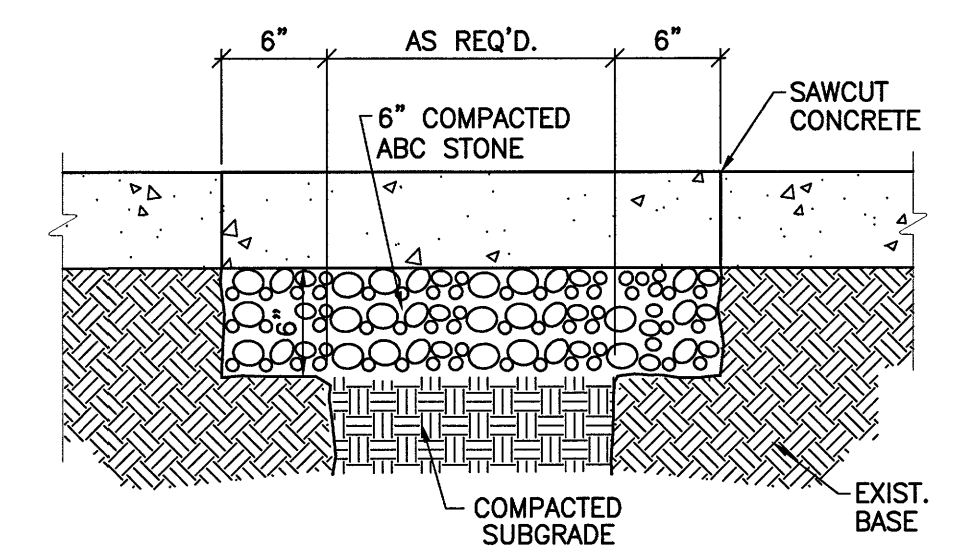
EXISTING CURB REMOVAL DETAIL
 SCALE: N.T.S.



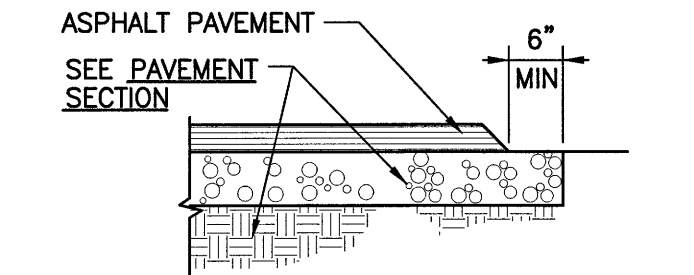
EXISTING PAVEMENT & NEW CONCRETE JOINT DETAIL
 SCALE: N.T.S.



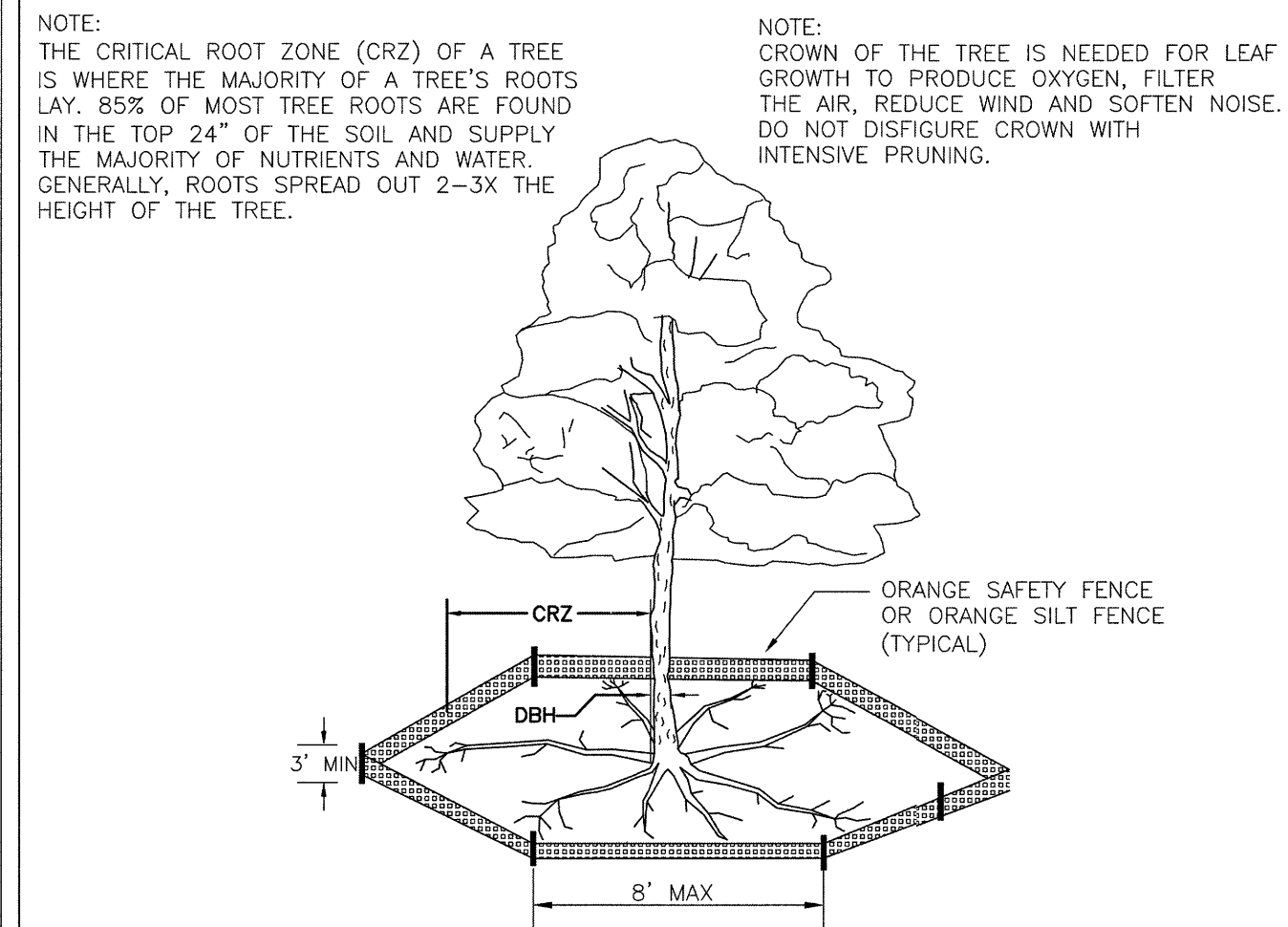
EXISTING & NEW PAVEMENT JOINT DETAIL
 SCALE: N.T.S.



CONCRETE REPAIR DETAIL
 SCALE: N.T.S.



EDGE OF PAVEMENT
 SCALE: N.T.S.



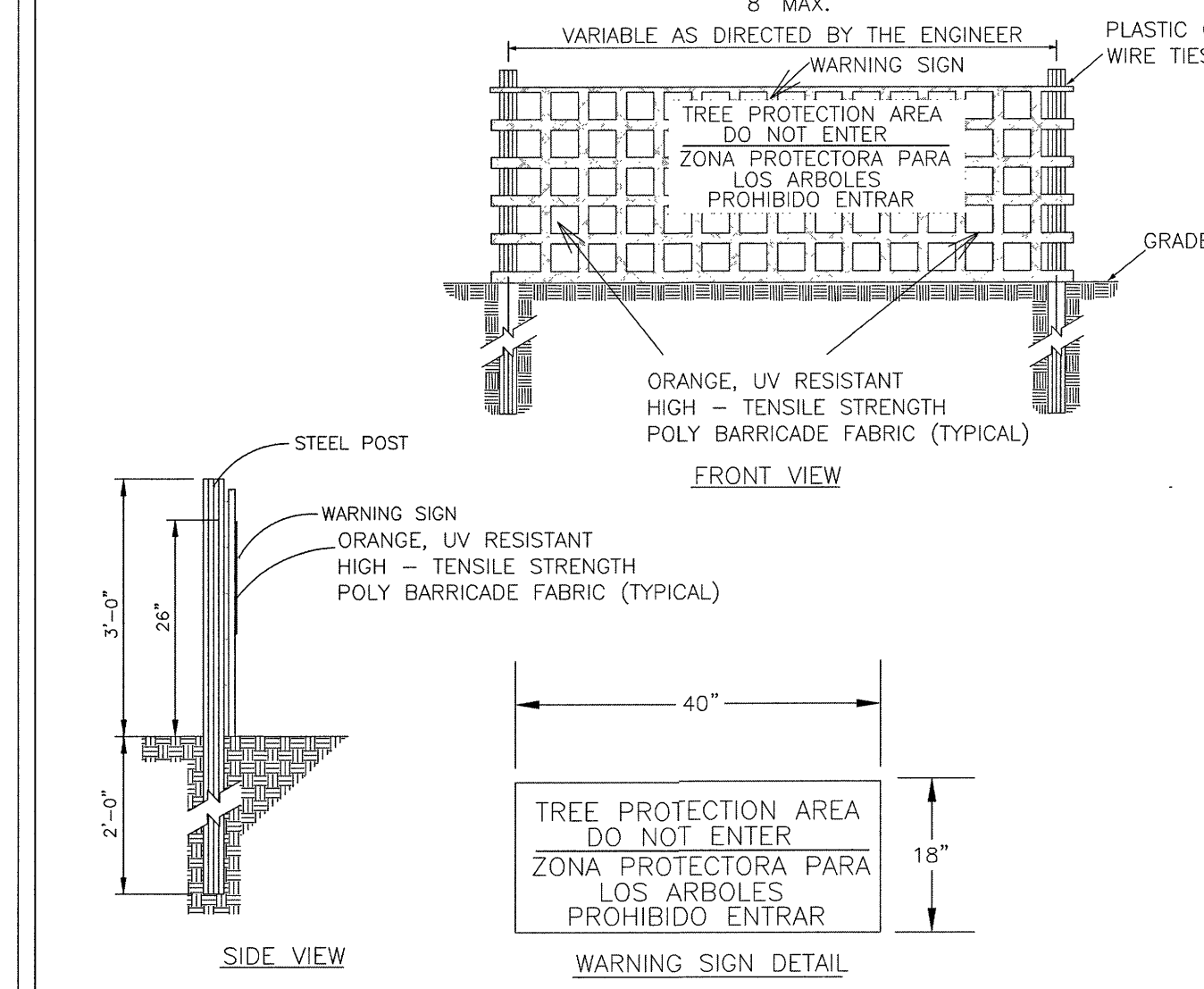
- NOTES:**
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
 2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
 3. IF CONSTRUCTION OCCURS 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.
 4. 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.
 5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO 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.
 6. 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.

DATE: JAN, 2015
 DRAWN BY: JSR
 CHECKED BY: RDG, P.E.
 SCALE: NOT TO SCALE

STANDARD DETAIL
TREE PROTECTION DURING CONSTRUCTION

CITY OF WILMINGTON
 NORTH CAROLINA
 CITY OF WILMINGTON ENGINEERING
 PO BOX 1810
 WILMINGTON, NC 28402
 (910) 341-7807

SHEET 1 of 2
 SD 15-09



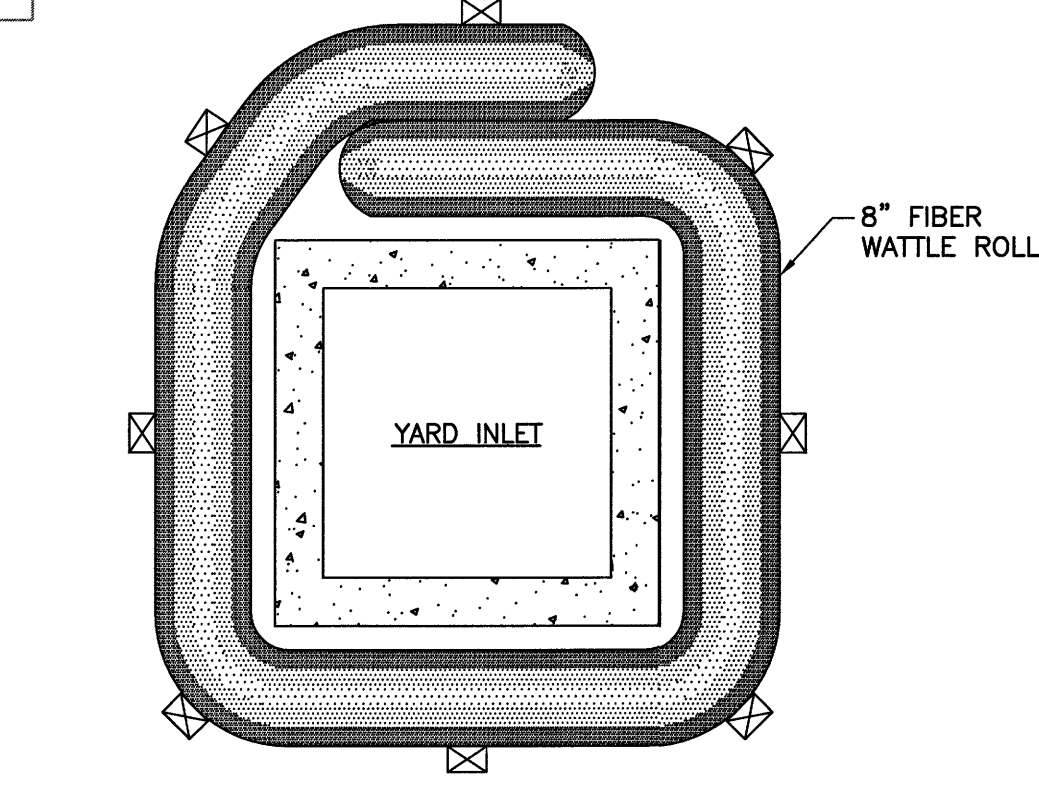
- NOTES:**
1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
 2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
 3. SIGNS SHALL BE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

DATE: JAN, 2015
 DRAWN BY: JSR
 CHECKED BY: RDG, P.E.
 SCALE: NOT TO SCALE

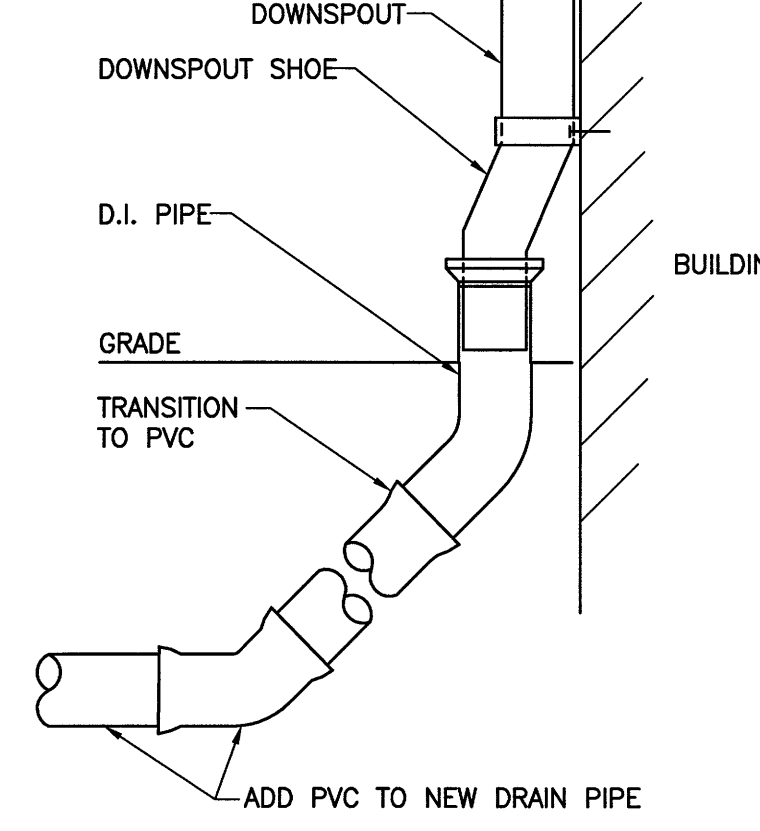
STANDARD DETAIL
TREE PROTECTION DURING CONSTRUCTION

CITY OF WILMINGTON
 NORTH CAROLINA
 CITY OF WILMINGTON ENGINEERING
 PO BOX 1810
 WILMINGTON, NC 28402
 (910) 341-7807

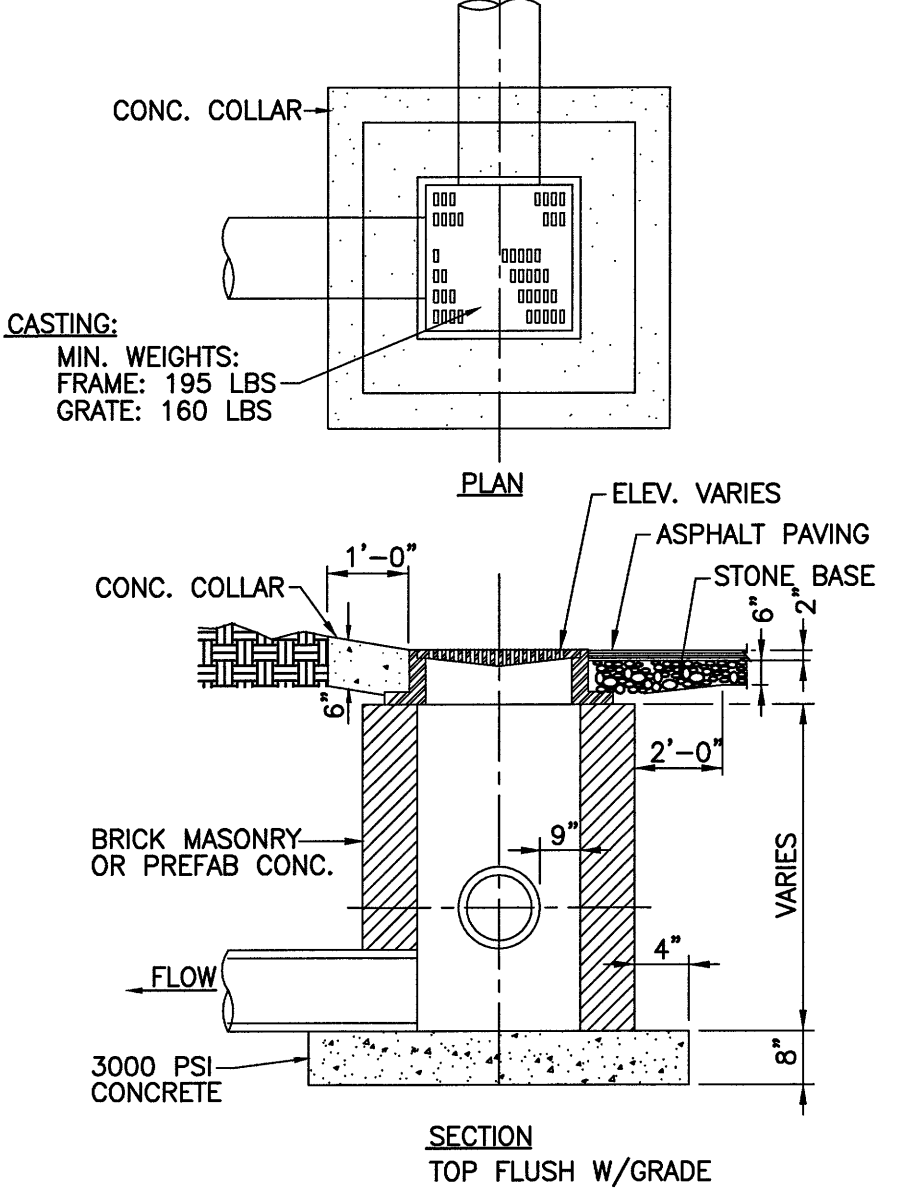
SHEET 2 of 2
 SD 15-09



INLET PROTECTION DETAIL
 SCALE: N.T.S.



ROOF DRAIN DETAIL
 SCALE: N.T.S.



DROP INLET
 SCALE: N.T.S.

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

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

Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

Name _____ Date _____

Planning _____
 Traffic _____
 Fire _____

DATE	BY	REVISIONS
10-10-10	COMMIT	GENERAL REVISIONS
10-15-10	TRC	GENERAL REVISIONS
11-02-10	TRC	GENERAL REVISIONS
11-02-10	TRC	GENERAL REVISIONS

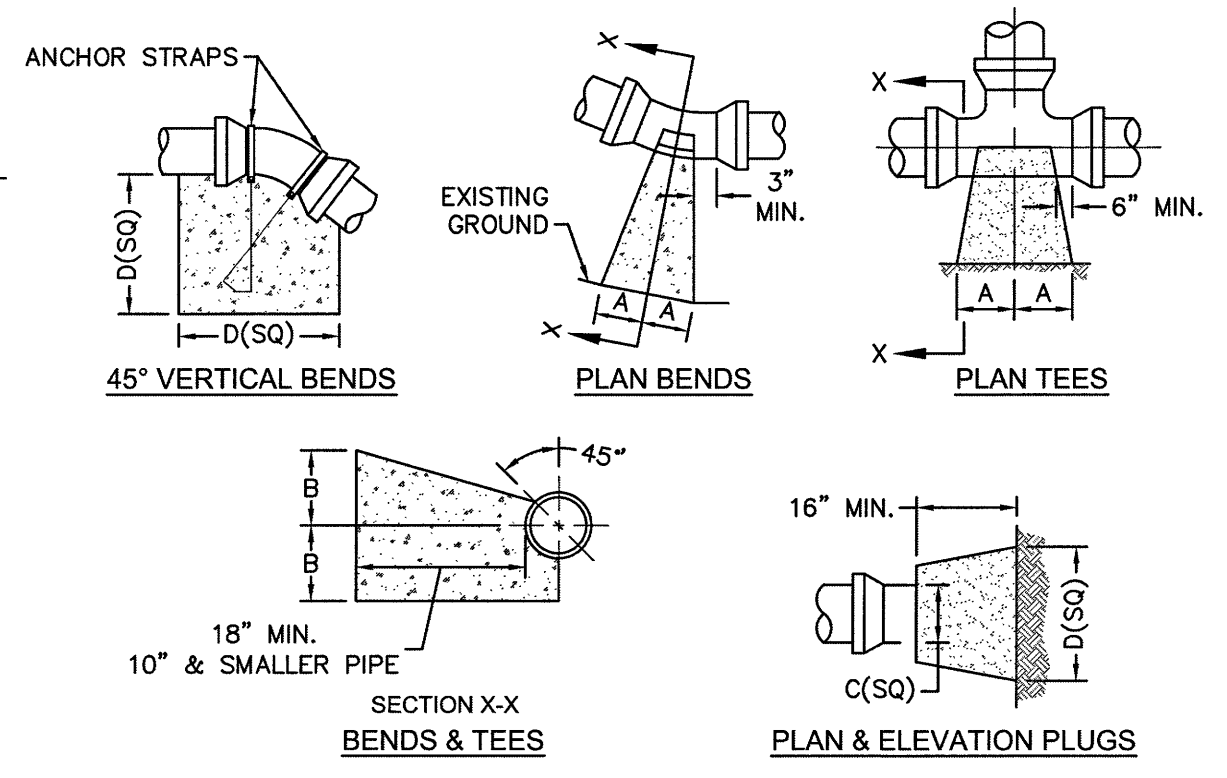
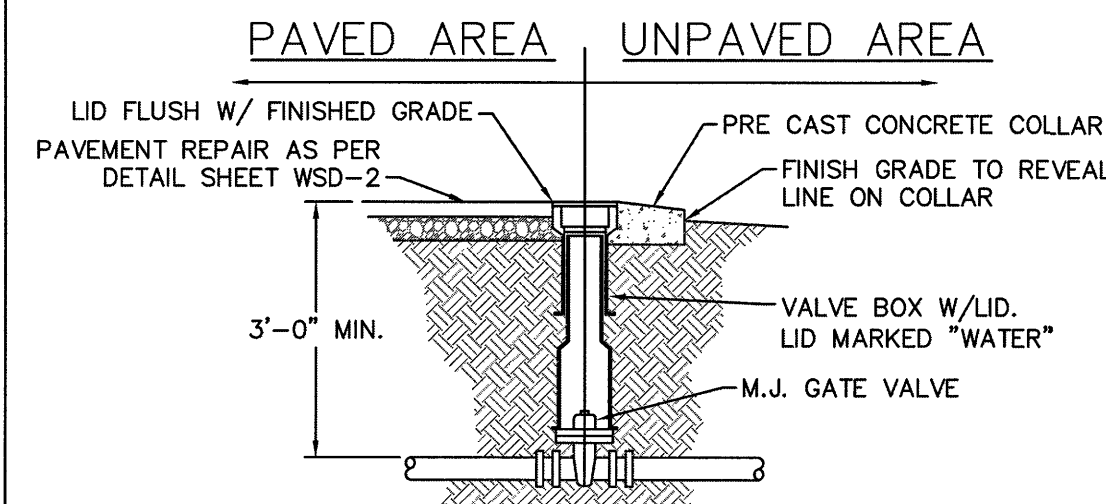
CRISER TROUTMAN TANNER
 CONSULTING ENGINEERS
 3809 Peachtree Ave., Suite 102
 Wilmington, NC 28403
 910.397.2929 Ph.
 910.397.2971 Fax
 www.ctcteengineering.com
 Firm License Number: F0113

CRISER TROUTMAN TANNER

PROJECT: **LANDFALL SPORTS CENTER**
 ADDRESS: 1750 DRYSDALE DRIVE
 WILMINGTON, NORTH CAROLINA 28405

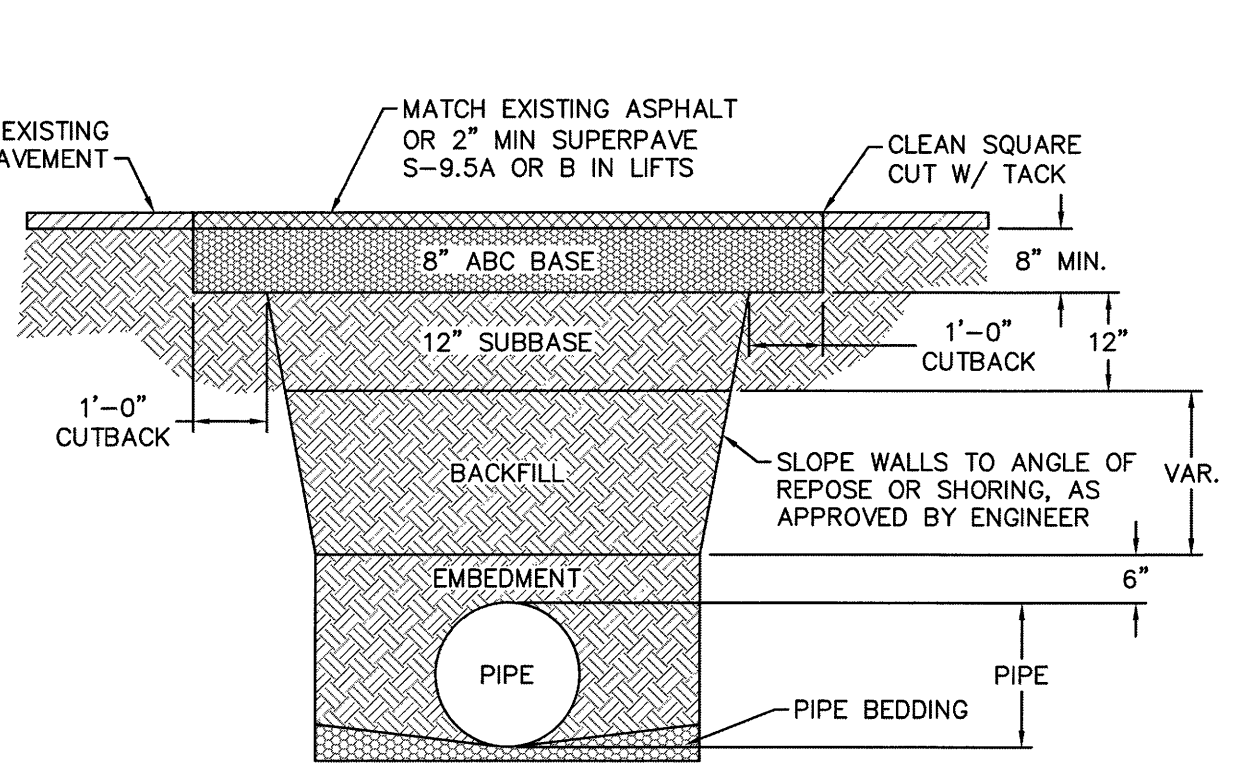
SEAL

DESIGNED BY: DEC
DRAWN BY: HWL
QUALITY CONTROL: DEC
SCALE: NOTED
FILE NUMBER: 7730.00
DATE: 08-26-16
CIVIL DETAILS
SHEET NUMBER: C5



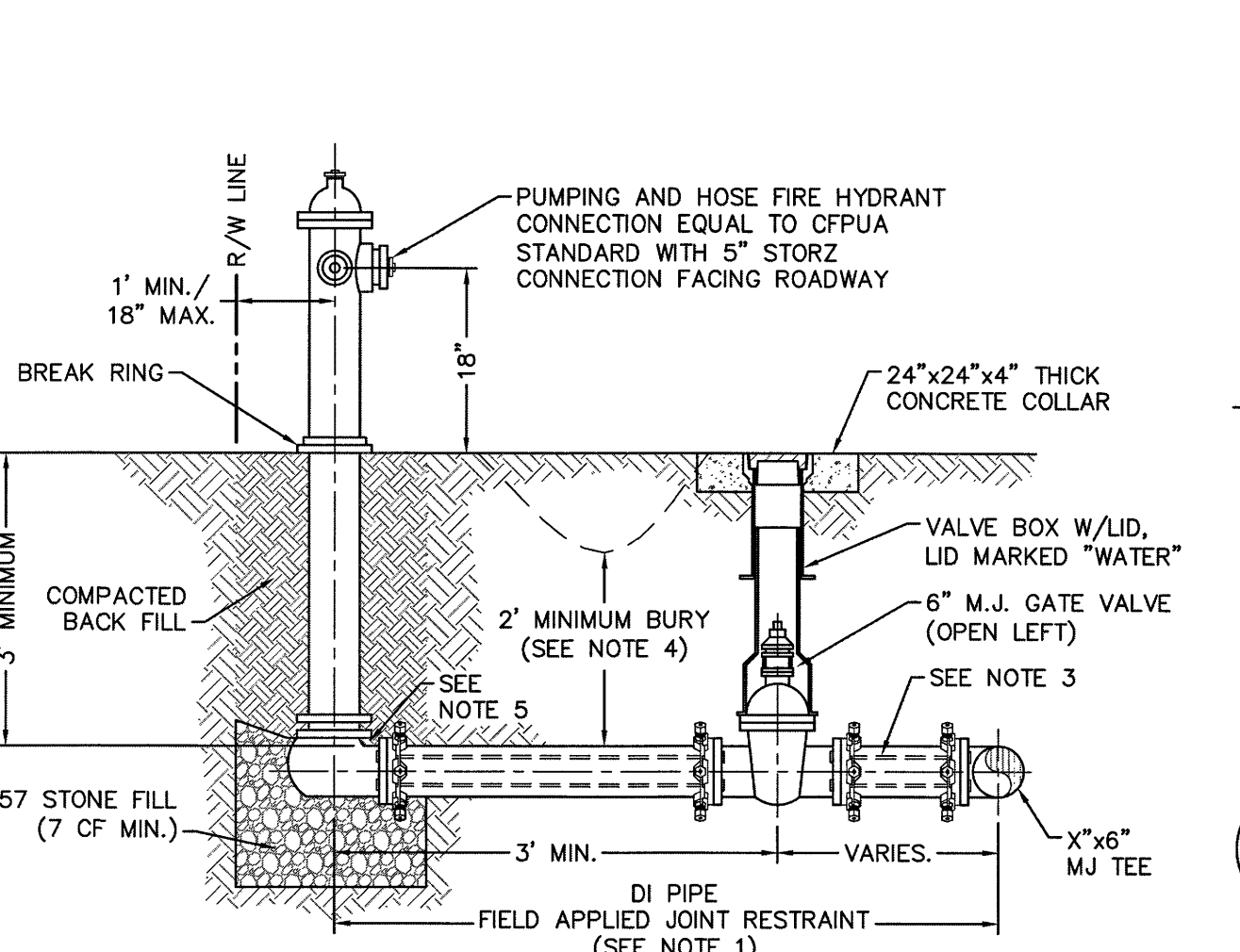
SIZE	90 BENDS		45 BENDS		22-1/2 BENDS		TEES/PLUGS		45 VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14"	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.

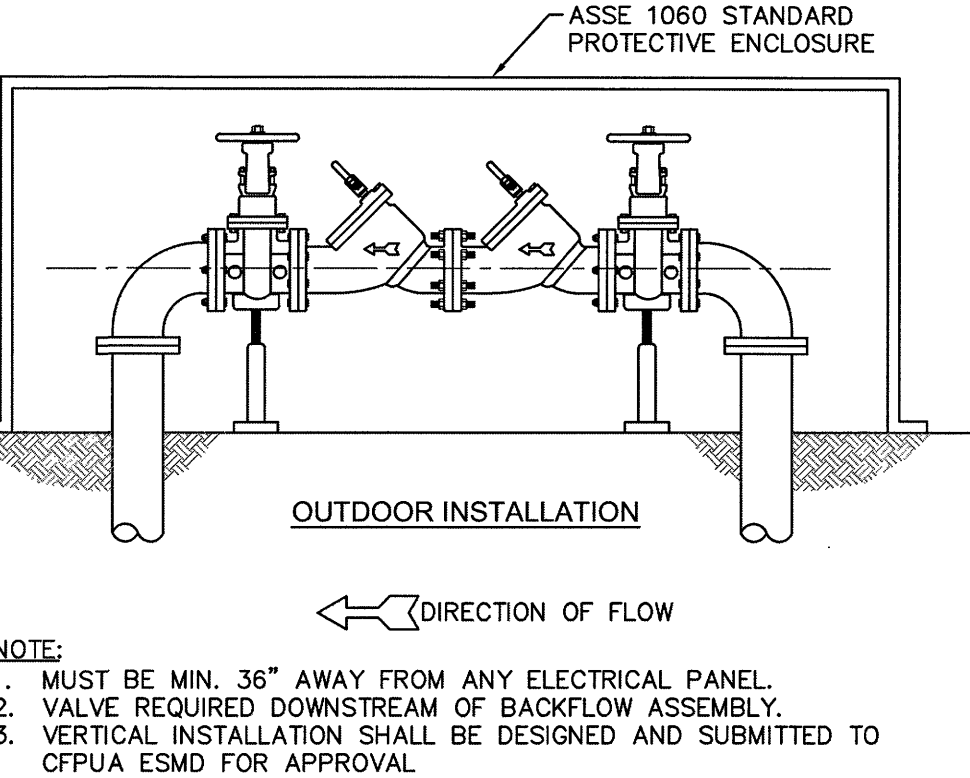


- NOTES:
 1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
 2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
 3. 8-INCH OF 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%.

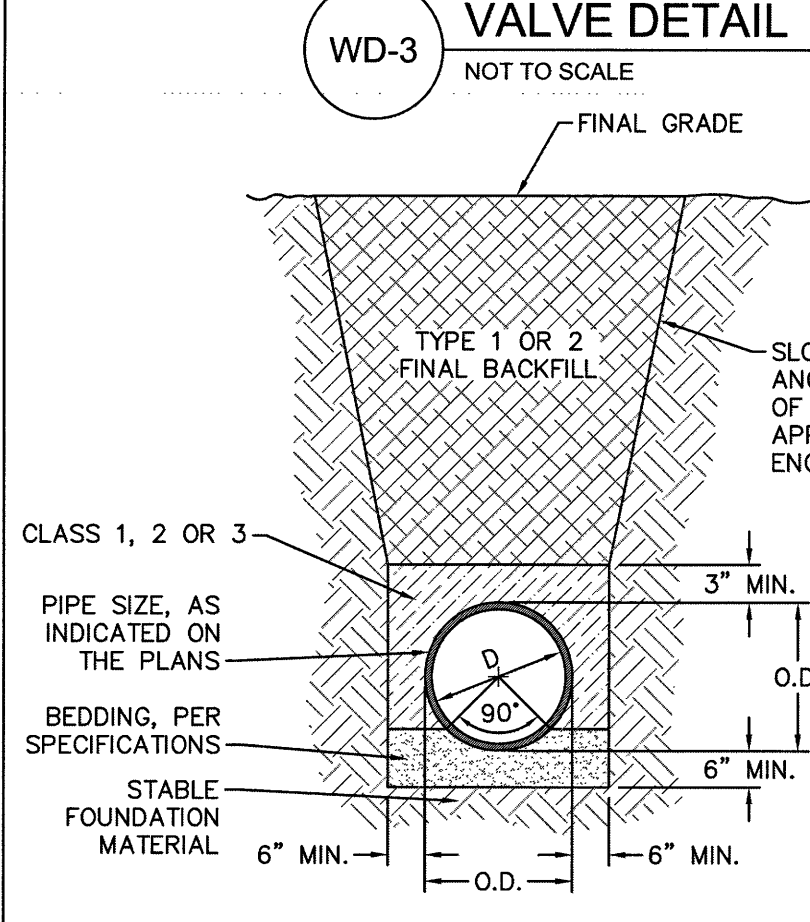
(FOR PRIVATE ROADS AND PAVED AREAS, CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)



- 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 HARNESS 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.

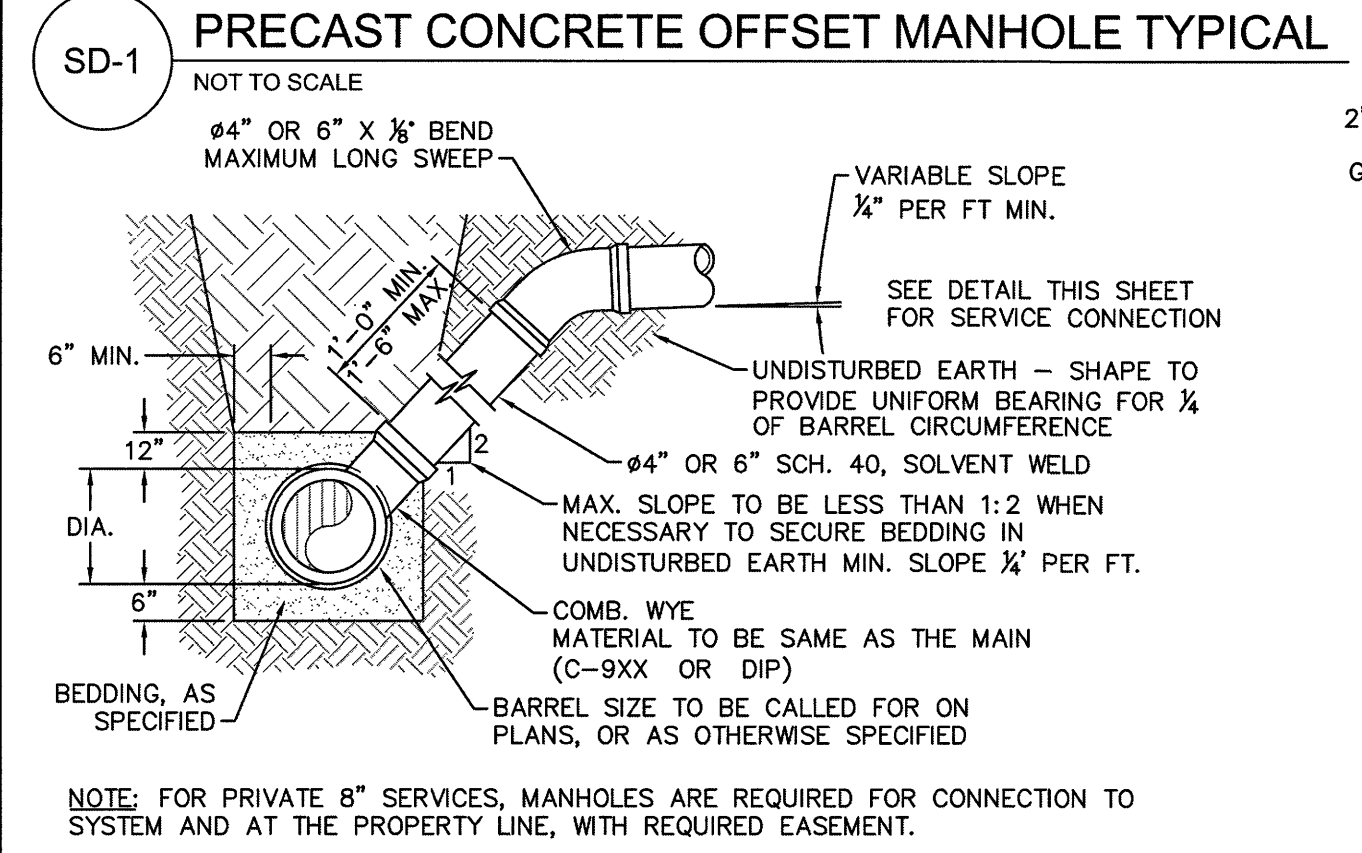
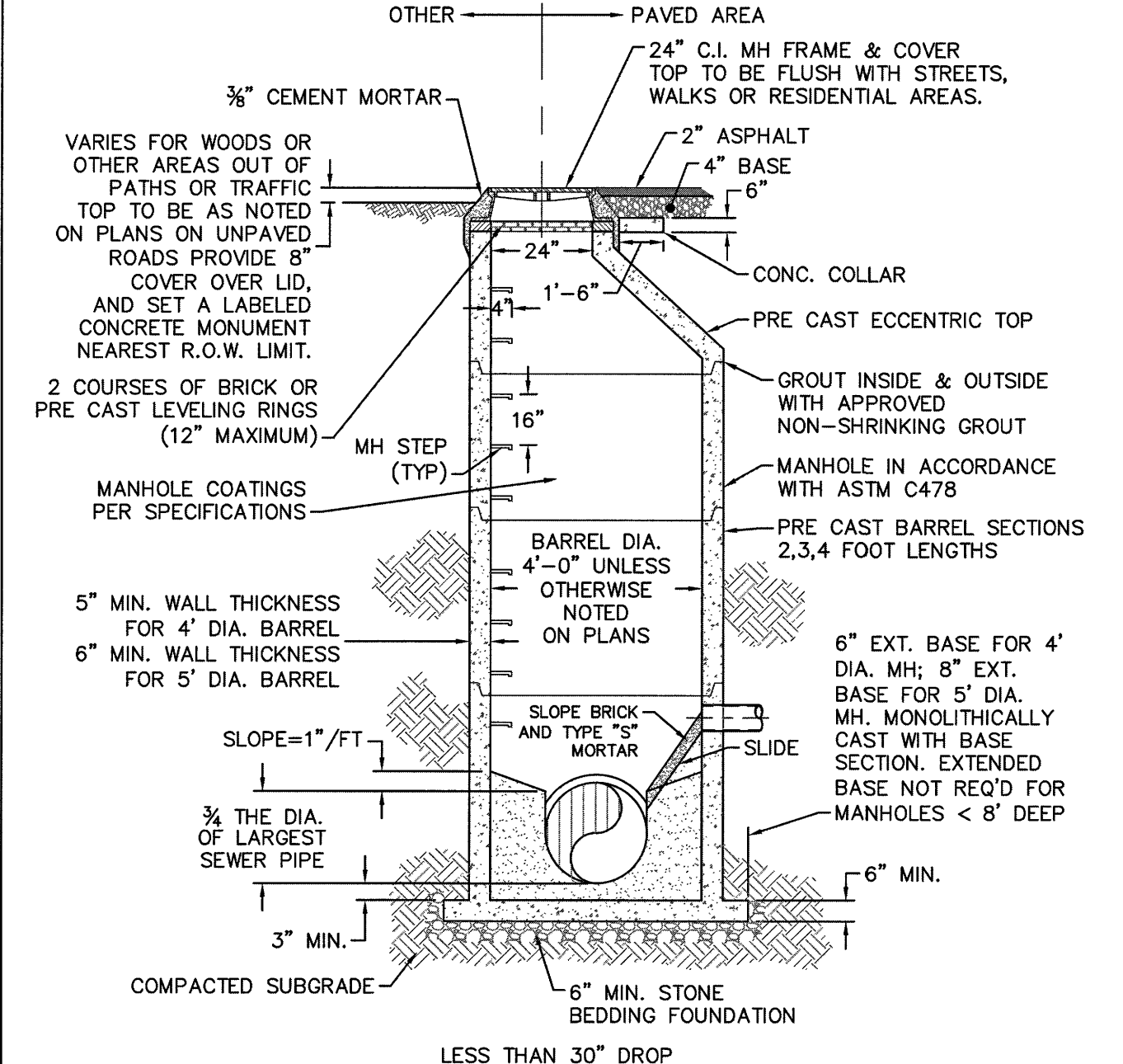


WD-7 DOUBLE CHECK VALVE ASSEMBLY NOT TO SCALE

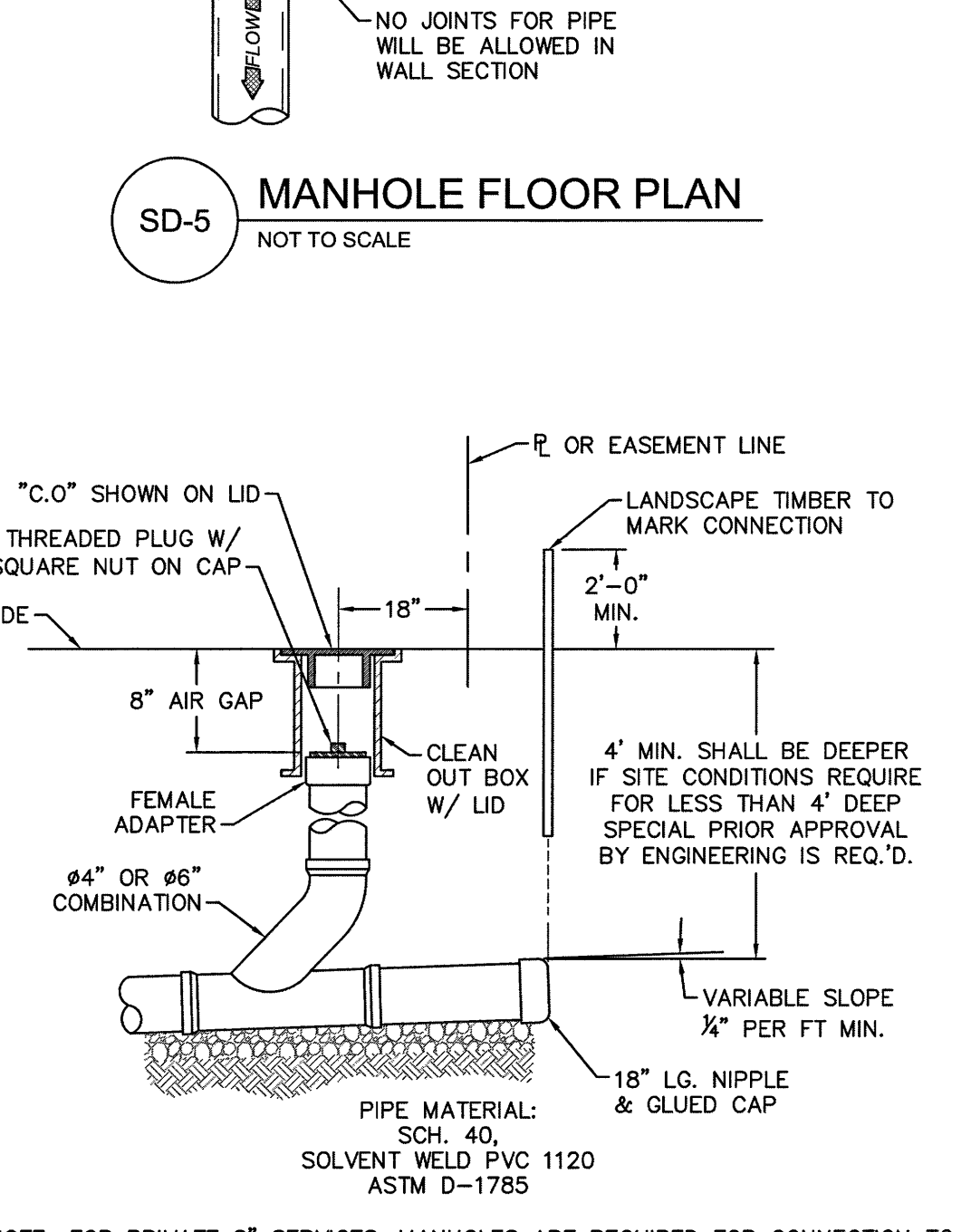
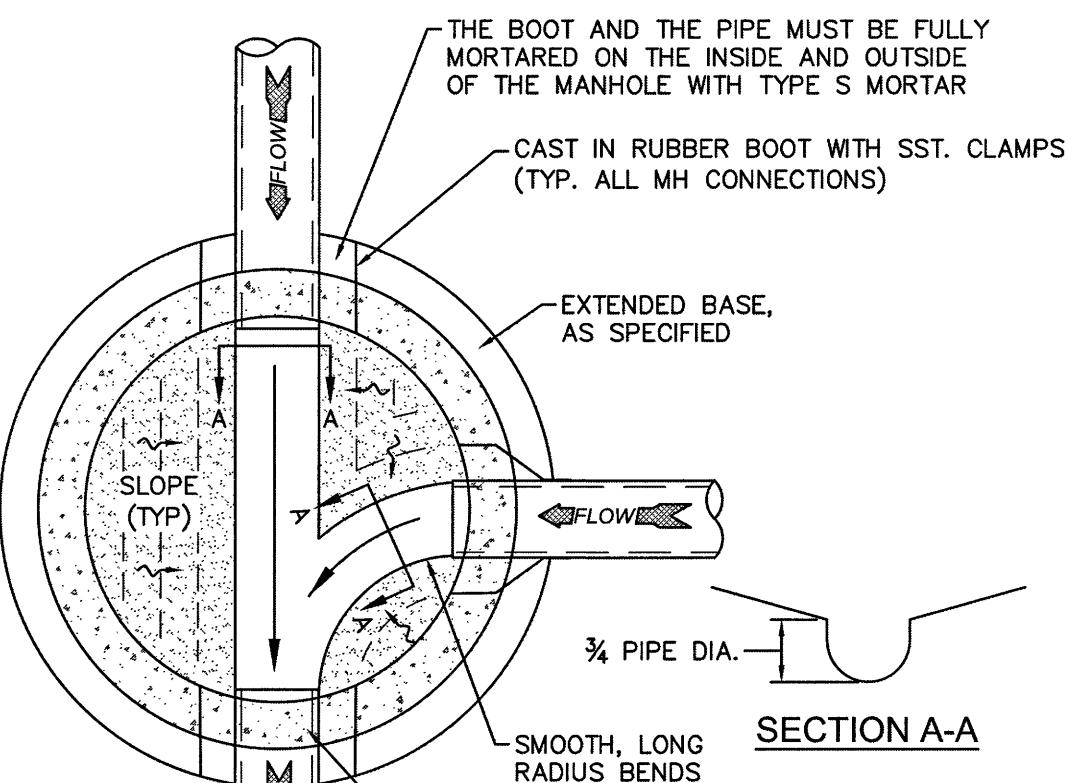


WD-13 TYPICAL TRENCH DETAIL NOT TO SCALE

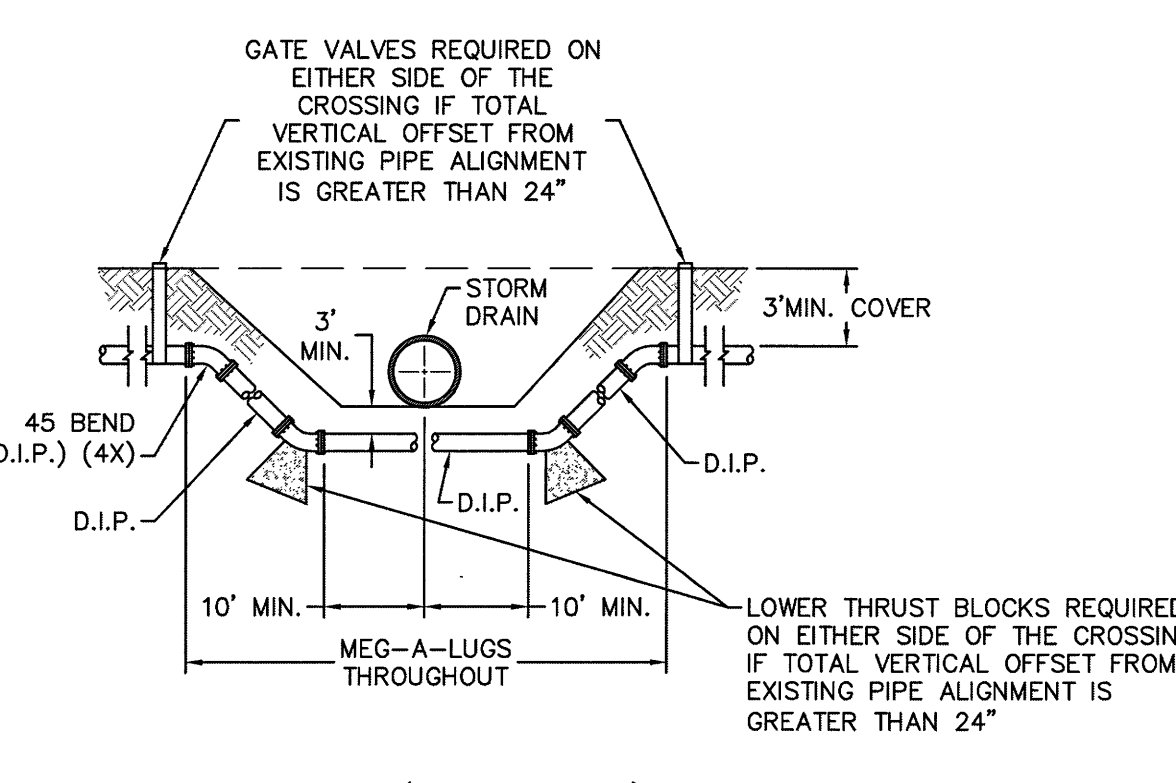
CFPUA STANDARD SEWER DETAILS (DOWNLOADED FROM WWW.CFPUA.ORG ON AUG 04, 2016)



SD-10 STANDARD SERVICE LATERAL NOT TO SCALE



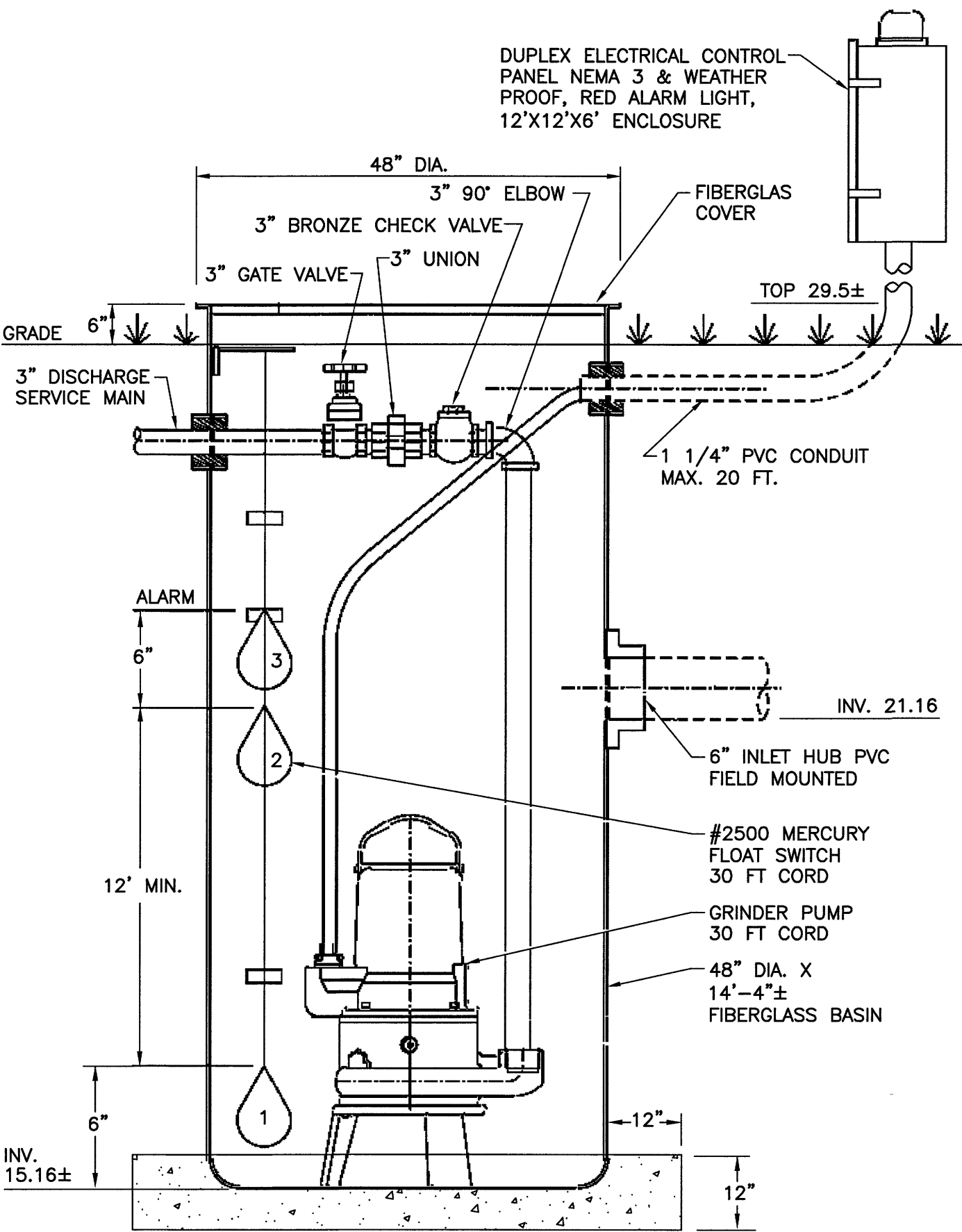
SD-11 SERVICE CONNECTION AND CLEAN-OUT NOT TO SCALE



- 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).

- 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 CUT-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.

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



LIFT STATION DETAIL SCALE: N.T.S.

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

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

Name _____ Date _____

Planning _____
 Traffic _____
 Fire _____

REVISIONS

NO.	DATE	COMMENT
1	10-13-16	GENERAL REVISIONS
2	11-03-16	GENERAL REVISIONS

CRISER TROUTMAN TANNER CONSULTING ENGINEERS
 3809 Peachtree Ave., Suite 102
 Wilmington, NC 28403
 910.397.2929 Ph.
 910.397.2974 Fax
 www.cttengineering.com
 Firm License Number: FO113

CRISER TROUTMAN TANNER

LANDFALL SPORTS CENTER
 ADDRESS: 1750 DRYSDALE DRIVE
 WILMINGTON, NORTH CAROLINA 28405

DESIGNED BY: DEC
 DRAWN BY: HWL
 QUALITY CONTROL: DEC
 SCALE: NOTED
 FILE NUMBER: 7730.00
 DATE: 08-26-16

SHEET NUMBER: **C6**