

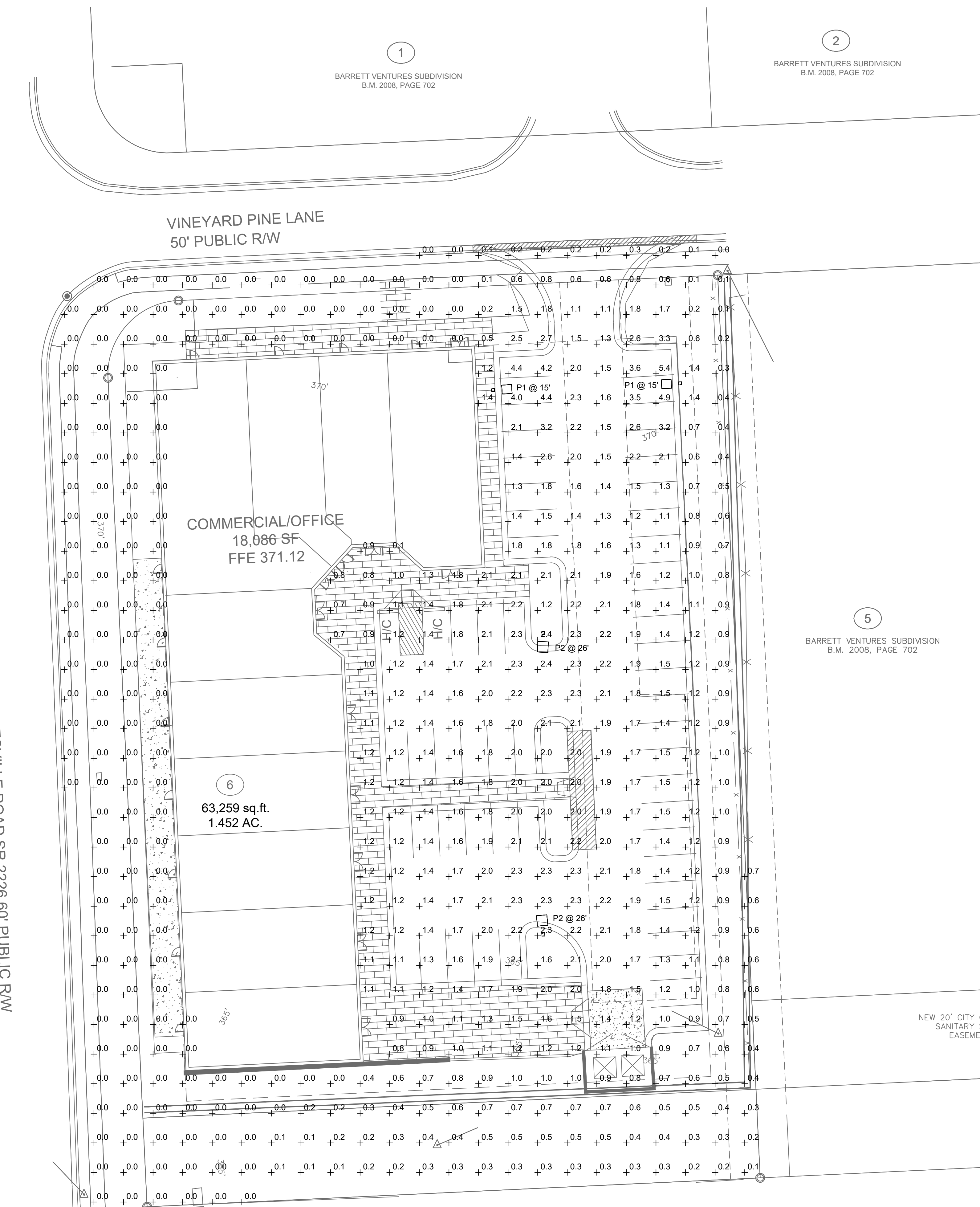






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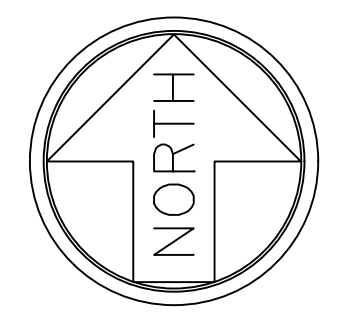
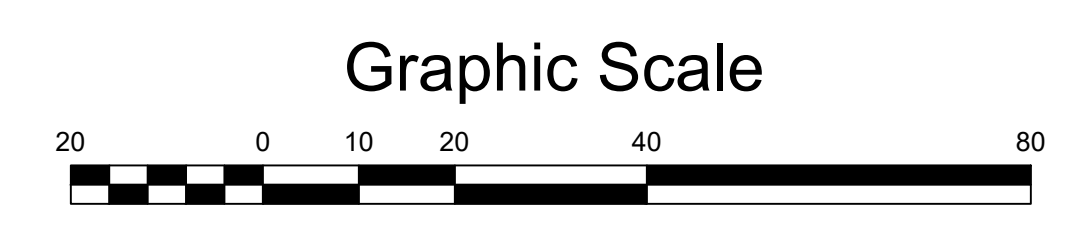
Symbol	Label	Image	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power	Notes
	P1		2	Lithonia Lighting	RSX1 LED P1 40K R4 HS	RSX LED Area Luminaire Size 1 P1 Lumen Package 4000K CCT Type R4 Distribution with HS shield	1	4725	1	51.34	MOUNTING HEIGHT/POLE HEIGHT AS INDICATED ON PLAN.
	P2		2	Lithonia Lighting	RSX2 LED P4 40K R5	RSX Area Fixture Size 2 P4 Lumen Package 4000K CCT Type R5 Distribution	1	2567	1	189.54	MOUNTING HEIGHT/POLE HEIGHT AS INDICATED ON PLAN.

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
PARKING LOT	+	1.8 fc	5.8 fc	0.9 fc	6.2:1	2.0:1
PROPERTY LINE	+	0.2 fc	0.8 fc	0.0 fc	N/A	N/A

NO.	DATE	BY	REVISION DESCRIPTION
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2			
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**Site Lighting Plan**  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina



Project No.  
Dwg No.  
**SL1**



FIXTURE TYPE "P1"



RSX1 LED Area Luminaire



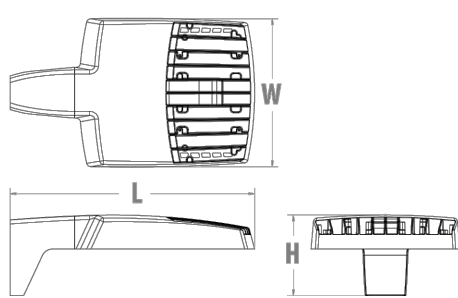
Category: \_\_\_\_\_  
Notes: \_\_\_\_\_  
Type: \_\_\_\_\_

Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX1 delivers 7,000 to 17,000 lumens allowing it to replace 70W to 400W HID luminaires. The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Specifications

EPA (ft²@0°): 0.57 ft² (0.05 m²)  
Length: 21.8" (55.4 cm) (SPA mount)  
Width: 13.3" (33.8 cm)  
Height: 3.0" (7.6 cm) Main Body  
7.2" (18.4 cm) Arm  
Weight (SPA mount): 22.0 lbs (10.0 kg)



Ordering Information

EXAMPLE: RSX1 LED P4 40K R3 MVOLT SPA DBXD

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX1 LED	P1	30K 3000K	R2 Type 2 Wide	MVOLT (120V-277V) <sup>1</sup>	SPA Square pole mounting (1.0" min. SQ pole for 1 at 90°, 1.5" min. SQ pole for 2, 3, 4 at 90°)
	P2	40K 4000K	R3 Type 3 Wide	HVOLT (347V-480V) <sup>1</sup>	RPA Round pole mounting (1.2" min. dia. RND pole for 1 at 90°, 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2, 3, 4 at 90°)
	P3	50K 5000K	R5 Type 5 Short	XVOLT (277V-480V) <sup>1</sup>	MA Mast arm adaptor (fits 2-3/8" OD horizontal tenon)
	P4		R4 Type 4 Wide		IS Adjustable slipfitter (fits 2-3/8" OD tenon) <sup>1</sup>
			R5 Type 5 Short		MA Mast arm adaptor (fits 2-3/8" OD tenon) <sup>1</sup>
			R4S Type 4 Short		IS Adjustable slipfitter (fits 2-3/8" OD tenon) <sup>1</sup>
			R5S Type 5 Short	120 <sup>1</sup> 277 <sup>1</sup>	WBA Wall bracket <sup>1</sup>
			R5S Type 5 Short	208 <sup>1</sup> 347 <sup>1</sup>	WBSAC Wall bracket with surface conduit box
			AAR Automotive Front Row		AASP Adjustable tilt arm square pole mounting <sup>1</sup>
			AAR90 Automotive Front Row Right Rotated		AAR90 Adjustable tilt arm square pole mounting <sup>1</sup>
			AAR90 Automotive Front Row Left Rotated		AAR90 Adjustable tilt arm with wall bracket <sup>1</sup>
					AAR90 Adjustable tilt arm with wall bracket <sup>1</sup>
					AAR90 Adjustable tilt arm wall bracket and surface conduit box <sup>1</sup>

Options

Shipped Installed	Shipped Separately (requires some field assembly)	Finish
HS House-side shield <sup>1</sup>	EGS External glare shield <sup>1</sup>	DBXD Dark Bronze
PE Photocontrol, button style <sup>1,2</sup>	EGFV External glare full visor (360° around light aperture) <sup>1</sup>	DBLX Black
PER7 Seven-wire twist-lock receptacle only (no cords) <sup>1,11,12</sup>	BS Bird spikes <sup>13</sup>	DNARZ Natural Aluminum
SF Single fuse (120, 277, 347) <sup>1</sup>		DNATD Textured Dark Bronze
DF Double fuse (208, 240, 480) <sup>1</sup>		DBLBD Textured Black
SP20XV 200V Surge pack (100V standard)		DNATD Textured Natural Aluminum
FAO Field adjustable output <sup>1</sup>		DNWGD Textured White
DMG 0-10V dimming extend out back of housing for external control (optional separate) <sup>1</sup>		

FIXTURE TYPE "P2"



RSX2 LED Area Luminaire



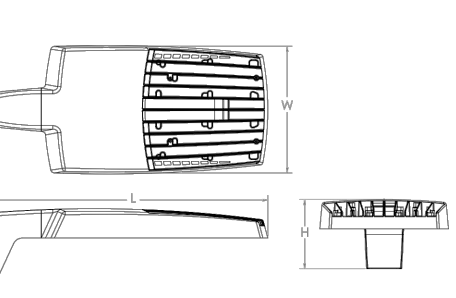
Category: \_\_\_\_\_  
Notes: \_\_\_\_\_  
Type: \_\_\_\_\_

Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX2 delivers 11,000 to 31,000 lumens allowing it to replace 250W to 1000W HID luminaires. The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Specifications

EPA (ft²@0°): 0.69 ft² (0.06 m²)  
Length: 29.3" (74.4 cm) (SPA mount)  
Width: 13.4" (34.0 cm)  
Height: 3.0" (7.6 cm) Main Body  
7.2" (18.3 cm) Arm  
Weight (SPA mount): 30.0 lbs (13.6 kg)



Ordering Information

EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DBXD

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX2 LED	P1	30K 3000K	R2 Type 2 Wide	MVOLT (120V-277V) <sup>1</sup>	SPA Square pole mounting (1.0" min. SQ pole for 1 at 90°, 1.5" min. SQ pole for 2, 3, 4 at 90°)
	P2	40K 4000K	R3 Type 3 Wide	HVOLT (347V-480V) <sup>1</sup>	RPA Round pole mounting (1.2" min. dia. RND pole for 1 at 90°, 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2, 3, 4 at 90°)
	P3	50K 5000K	R5 Type 5 Short	XVOLT (277V-480V) <sup>1</sup>	MA Mast arm adaptor (fits 2-3/8" OD horizontal tenon)
	P4		R4 Type 4 Wide		IS Adjustable slipfitter (fits 2-3/8" OD tenon) <sup>1</sup>
	P5		R4S Type 4 Short		IS Adjustable slipfitter (fits 2-3/8" OD tenon) <sup>1</sup>
	P6		R5 Type 5 Wide <sup>1</sup>	120 <sup>1</sup> 277 <sup>1</sup>	WBA Wall bracket <sup>1</sup>
			R5S Type 5 Short	208 <sup>1</sup> 347 <sup>1</sup>	WBSAC Wall bracket with surface conduit box
			AAR Automotive Front Row	240 <sup>1</sup> 480 <sup>1</sup>	AASP Adjustable tilt arm square pole mounting <sup>1</sup>
			AAR90 Automotive Front Row Right Rotated		AAR90 Adjustable tilt arm square pole mounting <sup>1</sup>
			AAR90 Automotive Front Row Left Rotated		AAR90 Adjustable tilt arm with wall bracket <sup>1</sup>
					AAR90 Adjustable tilt arm wall bracket and surface conduit box <sup>1</sup>

Options

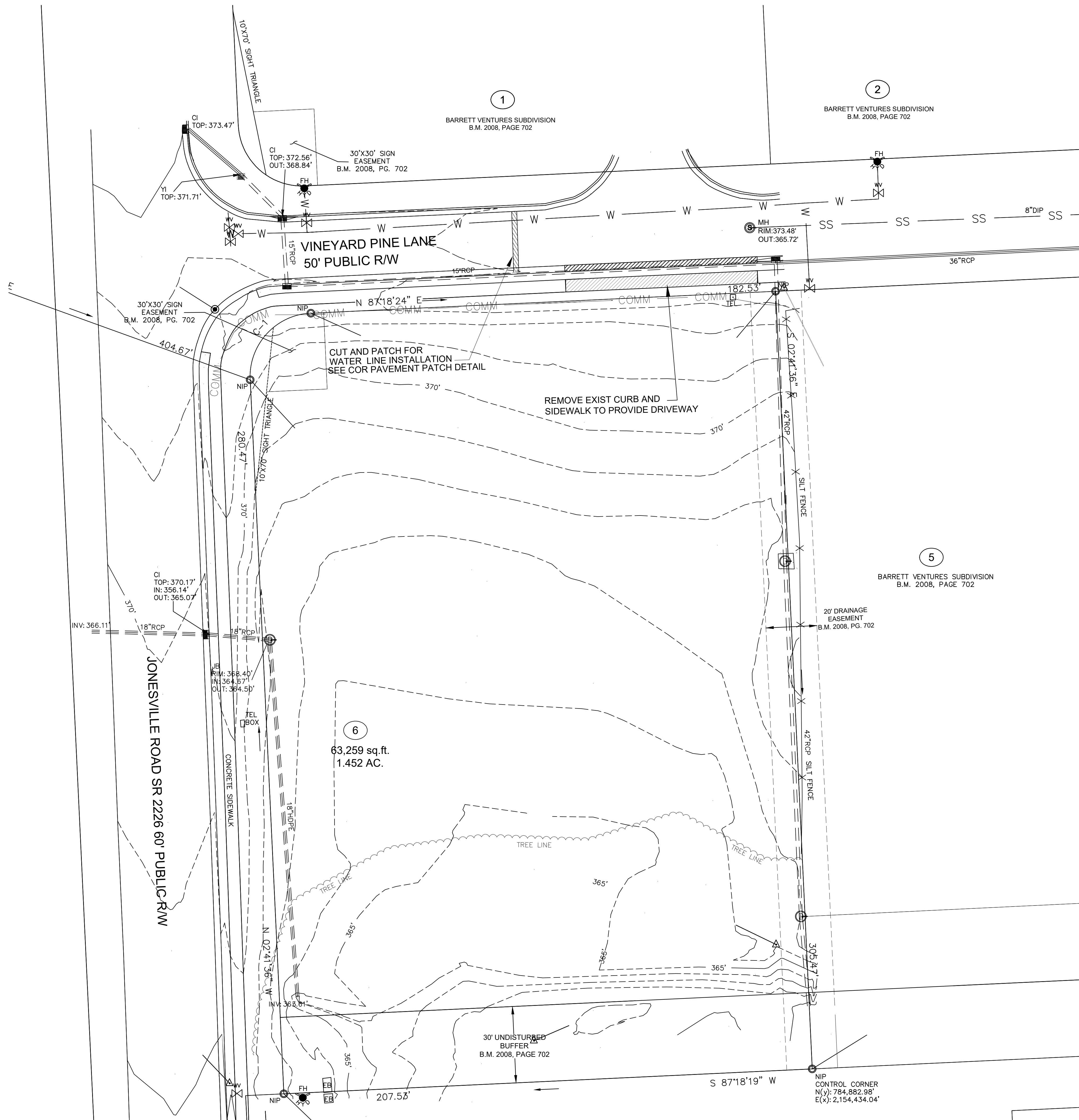
Shipped Installed	Shipped Separately (requires some field assembly)	Finish
HS House-side shield <sup>1</sup>	EGS External glare shield <sup>1</sup>	DBXD Dark Bronze
PE Photocontrol, button style <sup>1,2</sup>	EGFV External glare full visor (360° around light aperture) <sup>1</sup>	DBLX Black
PER7 Seven-wire twist-lock receptacle only (no cords) <sup>1,11,12</sup>	BS Bird spikes <sup>13</sup>	DNARZ Natural Aluminum
CE34 Conduit entry 3/4" NPT (Qty 2) <sup>1</sup>		DNATD Textured Dark Bronze
SF Single fuse (120, 277, 347) <sup>1</sup>		DBLBD Textured Black
DF Double fuse (208, 240, 480) <sup>1</sup>		DNATD Textured Natural Aluminum
SP20XV 200V Surge pack (100V standard)		DNWGD Textured White
FAO Field adjustable output <sup>1</sup>		
DMG 0-10V dimming extend out back of housing for external control (optional separate) <sup>1</sup>		
DS Dual switching <sup>14</sup>		

Ordering Information

**Accessories**

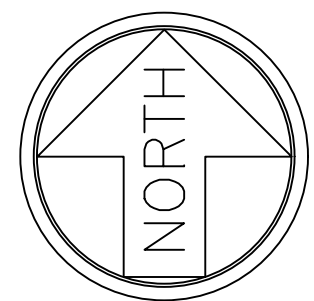
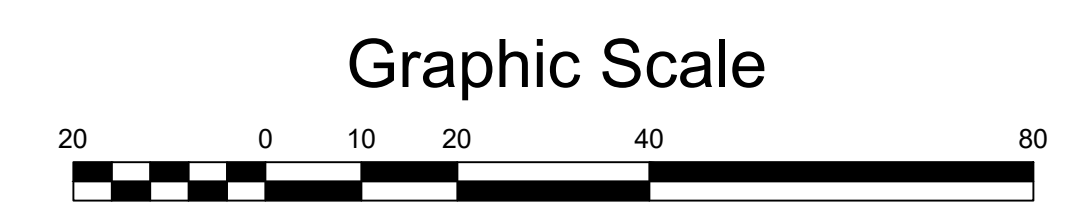
Notes: 1. Any Type 5 distribution, is not available with WBA. 2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). 3. HVOLT driver operates on any line voltage from 347-480V (50/60 Hz). 4. XVOLT driver operates on any line voltage from 277V-480V (50/60 Hz). XVOLT not available with fusing SF or DF. 5. Single fuse (SF) requires 120V, 277V or 347V Double fuse (DF) requires 208V, 240V, 480V. 6. Maximum dia. is 90° above horizontal. 7. In any field application, an accessory. 8. Requires MACT or 347V. 9. CDS option not available with WBA, WBSAC, AASP, AAR90, AAR90S, EGSD, EGFV and BS. 10. Compatible with standard twist-lock photocells for dusk to dawn operation or advanced control devices that provide 0-10V dimming signals. Wire Wires 5-wire to dimming leads on driver. Wires/Wire 5-wire to dimming leads on luminaire. Twisted photocell ordered and shipped as a separate line item from Acuity Brands Lighting. See accessories. 11. For units with option PER7, the mounting must be restricted to -45° from horizontal and per ANSI C136.30-2010. 12. Must be ordered with PER1. 13. Must be ordered with NLRAR2. For additional information on PER1, AAR90S, EGSD, EGFV and BS. 14. CDS option not available with WBA, WBSAC, AASP, AAR90, AAR90S, EGSD, EGFV and BS. 15. CDS option not available with WBA, WBSAC, AASP, AAR90, AAR90S, EGSD, EGFV and BS. 16. Must be ordered with factory pre-drilling. 17. Requires 1/2" hole back (347V). 18. Must be ordered with factory pre-drilling. 19. Requires 1/2" hole back (347V). 20. Must be ordered with factory pre-drilling. 21. Requires 1/2" hole back (347V). 22. Requires 1/2" hole back (347V). 23. Requires 1/2" hole back (347V). 24. Requires 1/2" hole back (347V). 25. Requires 1/2" hole back (347V). 26. Requires 1/2" hole back (347V). 27. Requires 1/2" hole back (347V). 28. Requires 1/2" hole back (347V). 29. Requires 1/2" hole back (347V). 30. Requires 1/2" hole back (347V). 31. 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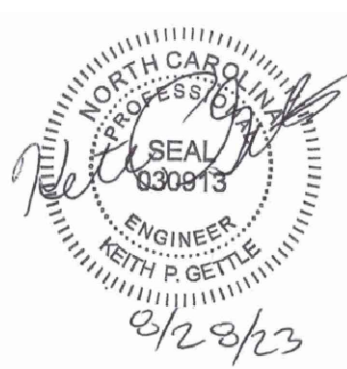
**SITE NOTES**

1. PROPERTY BOUNDARY AND EXISTING CONDITIONS INFORMATION TAKEN FROM A FIELD SURVEY BY CAWTHORNE, MOSS AND PANCIERA, ENTITLED "LOT 6, BARRETT VENTURES, 4502 VINEYARD PINE LANE."
2. NO FLOOD HAZARD AREAS WITHIN PROJECT BOUNDARY PER FEMA MAP 3720174700J.
3. ALL EXISTING ELEVATIONS, FEATURES, AND UTILITIES TO BE FIELD VERIFIED.



**Gettle Engineering and Design, PLLC**  
 3616 Waxwing Court,  
 Wake Forest, North Carolina 27587  
 (919) 210-3934 Firm License P-2538

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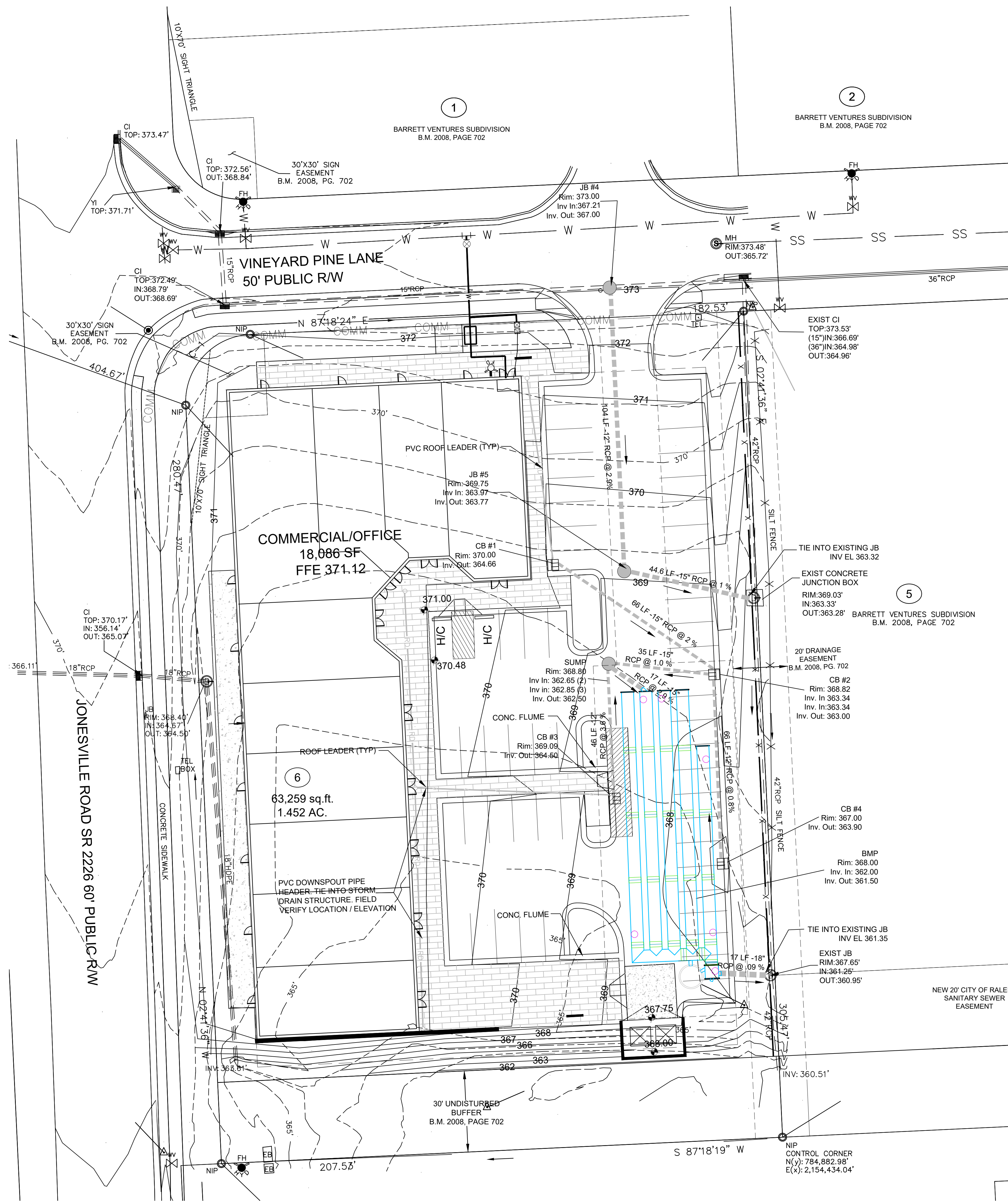
**Exist. Conditions & Demo Plan**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No. 23005  
 Dwg No. **C1**









**GENERAL GRADING AND STORM DRAINAGE SPECIFICATIONS**

**EXISTING CONDITIONS**

- INFORMATION ABOUT EXISTING UNDERGROUND FACILITIES AND SUBSURFACE CONDITIONS INDICATED ON THESE DRAWINGS IS NOT BASED ON AN EXHAUSTIVE INVESTIGATION OF SUCH FACILITIES OR CONDITIONS, AND THE ENGINEER MAKES NO WARRANTY TO ANY PARTY REGARDING THEM. EXISTING UTILITY LINE LOCATIONS SHOWN SHOULD BE CONSIDERED APPROXIMATE, AND ACTUAL UTILITIES AND CONDITIONS MAY DIFFER FROM THOSE INDICATED. IF DIFFERING UTILITIES OR CONDITIONS EXIST, THEY MAY BE ENCOUNTERED DURING THE COURSE OF THE PROJECT WORK, AND MAY IMPACT THE PROJECT SCOPE AND TIME REQUIREMENTS.

**PROTECTION AND SAFETY**

- PRIOR TO BEGINNING WORK, AND AS NEEDED DURING THE COURSE OF PROJECT WORK, CONTRACTOR SHALL NOTIFY ALL APPLICABLE UTILITY LOCATION SERVICES AND UTILITY PROVIDERS TO REASONABLY VERIFY THE LOCATION OF ALL KNOWN OR SUSPECTED UTILITIES. IN ACCORDANCE WITH STATE REGULATIONS, CONTRACTOR IS ADVISED THAT SOME UTILITY PROVIDERS DO NOT SUBSCRIBE TO ONE-CALL SERVICES, AND MUST BE CONTACTED SEPARATELY.
- CONTRACTOR SHALL PROVIDE ADEQUATE MEANS AND METHODS FOR PROTECTION OF ALL EXISTING UTILITIES AND SITE FEATURES WHICH ARE INTENDED TO REMAIN IN SERVICE OR IN PLACE.
- CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES DURING THE COURSE OF PROJECT WORK IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS. THE N.C. SUPPLEMENT TO THE MUTCD, ANY REGULATORY AGENCY REQUIREMENTS, AND PROJECT-SPECIFIC SAFETY CONSIDERATIONS.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY PROGRAMS AND MEASURES ON THE PROJECT SITE OR OTHERWISE RELATING TO THE PROJECT WORK, AND SHALL COMPLY WITH ALL SAFETY CODES AND REGULATIONS APPLICABLE THERETO, FOR THE PROTECTION OF WORKERS, VISITORS, AND THE GENERAL PUBLIC.

**COMPLIANCE**

- ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE STANDARDS AND REQUIREMENTS OF THE CITY OF RALEIGH, TOWN OF ROLESVILLE, WAKE COUNTY SEDIMENTATION AND EROSION CONTROL OFFICE, AND THE N.C. STATE BUILDING CODES.

**GRADING**

- STRUCTURAL FILL IS DEFINED AS SOIL CLASSIFIED AS SM, SC, ML, AND CL, FREE OF VEGETATIVE MATTER, DEBRIS OR OTHER UNSUITABLE MATTER, FREE OF ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION, CAPABLE OF BEING COMPACTED TO THE REQUIRED DENSITY, AND WHICH HAS BEEN APPROVED FOR USE BY THE GEOTECHNICAL ENGINEER.
- OTHER SOIL NOT MEETING THE DEFINITION FOR STRUCTURAL FILL MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER FOR USE UNDER LIMITED CONDITIONS OR IN LIMITED AREAS.
- STRUCTURAL FILL SHALL GENERALLY BE PLACED AND COMPACTED WHEN THE SOIL'S MOISTURE CONTENT IS WITHIN 4 PERCENTAGE POINTS OF THE SOIL'S OPTIMUM MOISTURE CONTENT, IN LIFTS NOT TO EXCEED 8 INCHES LOOSE THICKNESS. THE IN-PLACE COMPACTED DENSITY SHALL BE AT LEAST 90 PCF. TIGHTER SPECIFICATIONS MAY BE REQUIRED FOR CERTAIN AREAS, SOIL TYPES, OR COMPACTION METHODS.
- STRUCTURAL ZONES SHALL INCLUDE ALL AREAS SUBJECT TO DIRECT BEARING PRESSURE PLUS 10 FEET HORIZONTAL PLUS A 1:1 DOWNWARD SLOPE IN ANY AREAS OF FILL.
- ALL SOIL UNDER PAVEMENTS, BUILDINGS, AND WALKWAYS, OR IN STRUCTURAL ZONES ASSOCIATED WITH THESE AREAS SHALL BE APPROVED IN-SITU SOIL OR STRUCTURAL FILL, COMPACTED TO AT LEAST 95% OF THE SOIL'S MAXIMUM DRY DENSITY (MDD) PER ASTM D-698. TIGHTER REQUIREMENTS MAY APPLY FOR CERTAIN AREAS.
- IN THE BUILDING AREA, THE REQUIRED DENSITY OF FILL SHALL BE 100% MDD, EXCEPT THE TOP 12 INCHES OF FILL SHALL BE AT LEAST 98% MDD. WHERE THE BUILDING WILL BE PLACED ON IN-SITU SOIL, THE SOIL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND COMPACTED TO AT LEAST 98% MDD.
- ALL EXCESS OR UNSUITABLE SOIL SHALL BE LEGALLY DISPOSED IN AN OFFSITE OR APPROVED ONSITE LOCATION.
- WHERE LANDSCAPED OR YARD AREAS ADJUT EXTERIOR BUILDING WALLS, FINISHED GROUND ELEVATIONS ADJACENT TO THE WALL SHALL BE AT LEAST 3 INCHES BELOW THE FINISHED FLOOR ELEVATION, AND SHALL SLOPE AWAY FROM THE BUILDING WITH POSITIVE DRAINAGE.

**TRENCHING AND BACKFILLING**

- WHERE ROCK OR OTHER HARD MATERIAL OCCURS AT THE DESIGNED TRENCH BOTTOM, OVEREXCAVATE TRENCH DEPTH 6 INCHES AND REPLACE OVEREXCAVATION MATERIAL WITH #67 STONE BEDDING.
- WHERE THE DESIGNED TRENCH BOTTOM CONSISTS OF UNSTABLE BEARING SOIL, UNDERCUT TRENCH BOTTOM AND REPLACE UNDERCUT MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
- BACKFILL SOIL SHALL BE STRUCTURAL FILL, PLACED AND COMPACTED IN ACCORDANCE WITH REQUIREMENTS FOR THE SPECIFIC AREA OF WORK, WITHOUT DAMAGING OR DISPLACING PIPE OR STRUCTURES

**Stormwater Summary**

	Square Feet	Acres
<b>Overall Site</b>	63,162.00	1.45
<b>Impervious Summary</b>		
Pre		
Parking Lot	0.00	0.00
Managed Pervious	63,162.00	1.45
<b>Total</b>		<b>1.45</b>
Post		
Parking Lot	29,394.00	0.67
Roof	18,086.00	0.42
Open Landscape	8,436.00	0.19
Managed Pervious	7,245.00	0.17
<b>Total</b>		<b>1.45</b>

**NOTIFICATIONS**

- NOTIFY THE ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING ANY STORM DRAINAGE OR STORMWATER IMPOUNDMENT BASIN WORK.
- NOTIFY THE APPLICABLE LOCAL GOVERNMENT AUTHORITIES IN ACCORDANCE WITH THEIR REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- NOTIFY THE GEOTECHNICAL ENGINEER AND TESTING SERVICE AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING ANY GRADING OR STORMWATER IMPOUNDMENT BASIN WORK.

**QUALITY CONTROL**

- ALL EARTHWORK OPERATIONS, INCLUDING TOPSOIL STRIPPING, STOCKPILING, EXCAVATION, FILLING, COMPACTING, TRENCHING, BACKFILLING, RETAINING WALLS, AND FINE-GRADING, SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER WHO SHALL VERIFY THE SUITABILITY OF SOIL MATERIALS, MONITOR EARTHWORK ACTIVITIES, DIRECT AND OBSERVE PROOFROLLING, AND PROVIDE COMPACTION AND STABILITY TESTING DURING THE PROGRESS OF THE WORK.
- NO SOIL SHALL BE PLACED IN A PERMANENT LOCATION UNLESS IT HAS BEEN APPROVED BY THE GEOTECHNICAL ENGINEER FOR THE INTENDED USE AND LOCATION.
- PRIOR TO PLACEMENT OF ANY FILL, THE SUBGRADE OR PREVIOUS LIFT OF FILL SHALL BE SUCCESSFULLY TESTED OR OTHERWISE APPROVED, AND DETERMINED TO BE READY FOR SUBSEQUENT WORK.
- PRIOR TO PLACEMENT OF ANY AGGREGATE, PAVING, SLABS, STRUCTURES, FOOTINGS, PIPING, OR OTHER WORK, SUBGRADES AND OTHER BEARING SURFACES SHALL BE SUCCESSFULLY TESTED OR OTHERWISE APPROVED, AND DETERMINED TO BE READY FOR SUBSEQUENT WORK.
- CONTRACTOR SHALL ALLOW AND PARTICIPATE IN SOIL TESTING ACTIVITIES, INCLUDING ACTIVE COORDINATION WITH THE GEOTECHNICAL ENGINEER AND FURNISHING PROOFROLLING EQUIPMENT, MATERIALS, AND MANPOWER AS NEEDED.

**CLEARING & GRUBBING**

- ALL VEGETATIVE MATERIAL DISLOCATED BY CLEARING AND GRUBBING ACTIVITIES SHALL BE COMPLETELY REMOVED FROM THE PROJECT SITE AND LEGALLY DISPOSED. NO ONSITE BURNING OF CLEARING WASTE SHALL OCCUR.
- ALL PAVEMENT, CURB, PIPE, STRUCTURES AND OTHER PHYSICAL SITE FEATURES THAT ARE INDICATED OR REQUIRED TO BE REMOVED SHALL BE LEGALLY DISPOSED IN AN OFFSITE LOCATION.

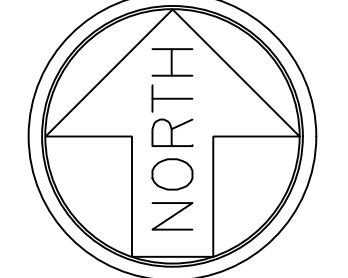
**STORM DRAINAGE SYSTEM**

- STORM DRAINAGE STRUCTURES SHALL CONFORM TO ROLESVILLE AND NCDOT STANDARDS, AND MAY BE CONSTRUCTED OF EITHER SOLID MASONRY OR PRE-CAST CONCRETE. "KNOCK-OUT" TYPE PRE-CAST STRUCTURES SHALL NOT BE USED WHERE THE DESIGNED PIPE CONFIGURATION WOULD REQUIRE REMOVAL OF STRUCTURAL CORNERS OR ALTERATION OF DESIGNED PIPE ENTRY ANGLES.
- STORM DRAINAGE PIPE LENGTHS SHOWN ARE APPROXIMATE, AS MEASURED FROM THE CENTER OF DRAINAGE STRUCTURES, AND TO THE END OF ANY FLARED END SECTION (FES), AS APPLICABLE.
- CONTRACTOR SHALL VERIFY AND COORDINATE EXACT POSITIONING OF STORM DRAINAGE PIPING AND STRUCTURES, AND SHALL MAKE ADJUSTMENTS AS NEEDED TO PROVIDE PROPER CONNECTIONS, STRUCTURE LOCATIONS, ORIENTATIONS, DIMENSIONS, ELEVATIONS, FRAME PLACEMENT, AND SURFACE DRAINAGE. REFER TO STORM DRAINAGE STRUCTURE DETAILS FOR DIMENSIONS, OFFSETS, CLEARANCES, SETBACKS FROM CURB, AND OTHER REQUIREMENTS. MODIFY STRUCTURES AS NEEDED TO ACCOMMODATE LARGE-DIAMETER PIPING, MULTIPLE PIPE PENETRATIONS, AND PIPE CONNECTION ANGLES.
- STORM DRAINAGE PIPING SHALL BE REINFORCED CONCRETE PIPE (RCP), CLASS III, CONFORMING TO ASTM C76, UNLESS OTHERWISE SPECIFIED. ALL JOINTS SHALL BE FULLY SEALED USING PREFORMED FLEXIBLE BUTYL RUBBER SEALING COMPOUND.

**SURFACE DRAINAGE**

- ALL SPOT ELEVATIONS SHOWN ARE FINISHED SURFACE ELEVATIONS. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER ELEVATION CONTOURS. ALL ELEVATIONS SHOWN ON CURB AND GUTTER REFER TO TOP OF CURB, UNLESS OTHERWISE INDICATED.
- ALL FINISHED PAVEMENT AND YARD SURFACES SHALL BE FINE-GRADED AND FINISHED TO HAVE POSITIVE SURFACE DRAINAGE TO A FREE-FLOWING DRAINAGE OUTLET, WITH NO IRREGULARITIES OR DEPRESSIONS THAT WOULD CAUSE UNINTENDED WATER PONDING.
- USE REVERSE-PITCH CURB AND GUTTER WHERE ADJACENT PAVEMENT SLOPES AWAY FROM CURB, AND STANDARD-PITCH CURB AND GUTTER ELSEWHERE, UNLESS OTHERWISE NOTED. PROVIDE POSITIVE DRAINAGE ALONG AND FROM ALL GUTTERS.
- TIE-INS TO EXISTING PAVEMENT, CURBS, WALKS, ETC. SHALL BE MADE WITH NEAT EDGES AND SMOOTH, GRADUAL TRANSITIONS THAT ARE SAFE, FUNCTIONAL, DURABLE, AND VISUALLY ACCEPTABLE TO THE OWNER AND REVIEW AUTHORITIES.

Graphic Scale



**Gettle Engineering and Design, PLLC**  
 3616 Waxwing Court,  
 Wake Forest, North Carolina 27587  
 Firm License P-2538  
 (919) 210-3934

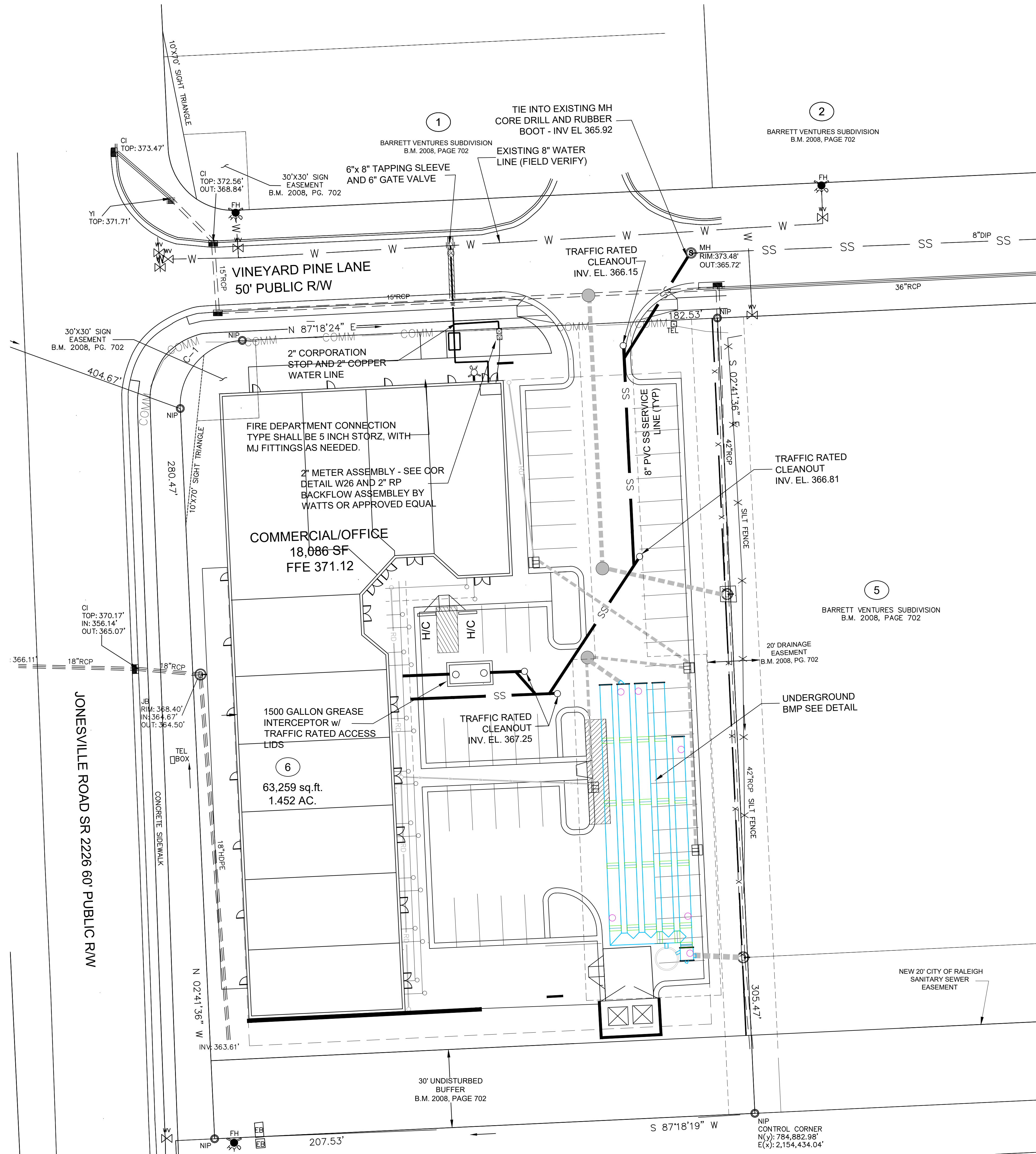
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**Grading and Stormwater Plan**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No.  
Dwg No. **C3**





**CITY OF RALEIGH UTILITY NOTES:**

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: COR PUD HANDBOOK, CURRENT EDITION)
2. UTILITY SEPARATION REQUIREMENTS:
  - a) A DISTANCE OF 100" SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25" FROM A PRIVATE WELL OR 50" FROM A PUBLIC WELL.
  - b) WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10". IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
  - c) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASUREMENT EXTENDED 10" ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
  - d) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
  - e) MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49).
  - f) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS. 4' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER AND SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
7. INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2x2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. (NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW AND PRESSURE).
8. INSTALL 4" PVC SEWER SERVICES AT 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE AND SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1'0" ABOVE THE NEXT UPSTREAM MANHOLE.
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDM, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
11. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS AND SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
12. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS AND INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT (919)996-2324 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
13. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. -THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 212-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

**SEPARATION NOTES:**

1. MINIMUM SEPARATION BETWEEN STORM DRAINAGE AND SANITARY SEWER IS 24 INCHES.
2. MINIMUM SEPARATION BETWEEN WATER AND STORM DRAINAGE IS 18 INCHES.
3. MINIMUM SEPARATION BETWEEN WATER AND SANITARY SEWER IS 18 INCHES.

**HYDRANT, METER, AND CLEAN-OUT NOTES:**

ALL HYDRANTS, METERS, AND SEWER SERVICES ARE SHOWN AT APPROXIMATE LOCATIONS. HYDRANTS, AND METERS, ARE TO BE PLACED WITHIN THE RIGHT-OF-WAY AS INDICATED ON CITY OF RALEIGH DETAIL. SEWER SERVICE SHALL BE PLACED INSIDE LOT AS SHOWN ON CITY OF RALEIGH DETAIL. CONTRACTOR SHALL VERIFY AND CONFIRM PROPER LOCATION ACCORDING TO MUNICIPALITY REQUIREMENTS PRIOR TO INSTALLATION. CONTRACTOR SHALL VERIFY PROPER LOCATION WITH MUNICIPALITY INSPECTOR PRIOR TO INSTALLATION.

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**ATTENTION CONTRACTORS**

The Construction Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the Public Works Department at (919) 996-2409, and the Public Utilities Department at (919) 996-4540 at least twenty four hours prior to beginning any of their construction.

Failure to notify both City Departments in advance of beginning construction, will result in the issuance of monetary fines, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

Failure to call for Inspection, Install a Downstream Plug, have Permitted Plans on the Jobsite, or any other Violation of City of Raleigh Standards will result in a Fine and Possible Exclusion from future work in the City of Raleigh.

**SITE PERMITTING APPROVAL**

Water and Sewer Permits (if applicable)  
 The City of Raleigh consents to the connection and extension of the City's Public Sewer System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook, City of Raleigh Public Utilities Department Permit # \_\_\_\_\_

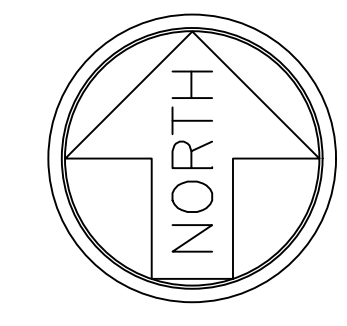
The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook, City of Raleigh Public Utilities Department Permit # \_\_\_\_\_

The City of Raleigh consents to the connection to its public sewer system and extension of the private sewer collection system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.  
 City of Raleigh Public Utilities Department Permit # \_\_\_\_\_

**CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION**

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization does not constitute, nor shall it be construed to permit any violation of City, State or Federal Law. All construction must be in accordance with all Local, State, and Federal rules and regulations.

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be added once issued. Any modification to this approval once issued will invalidate this approval.



Graphic Scale



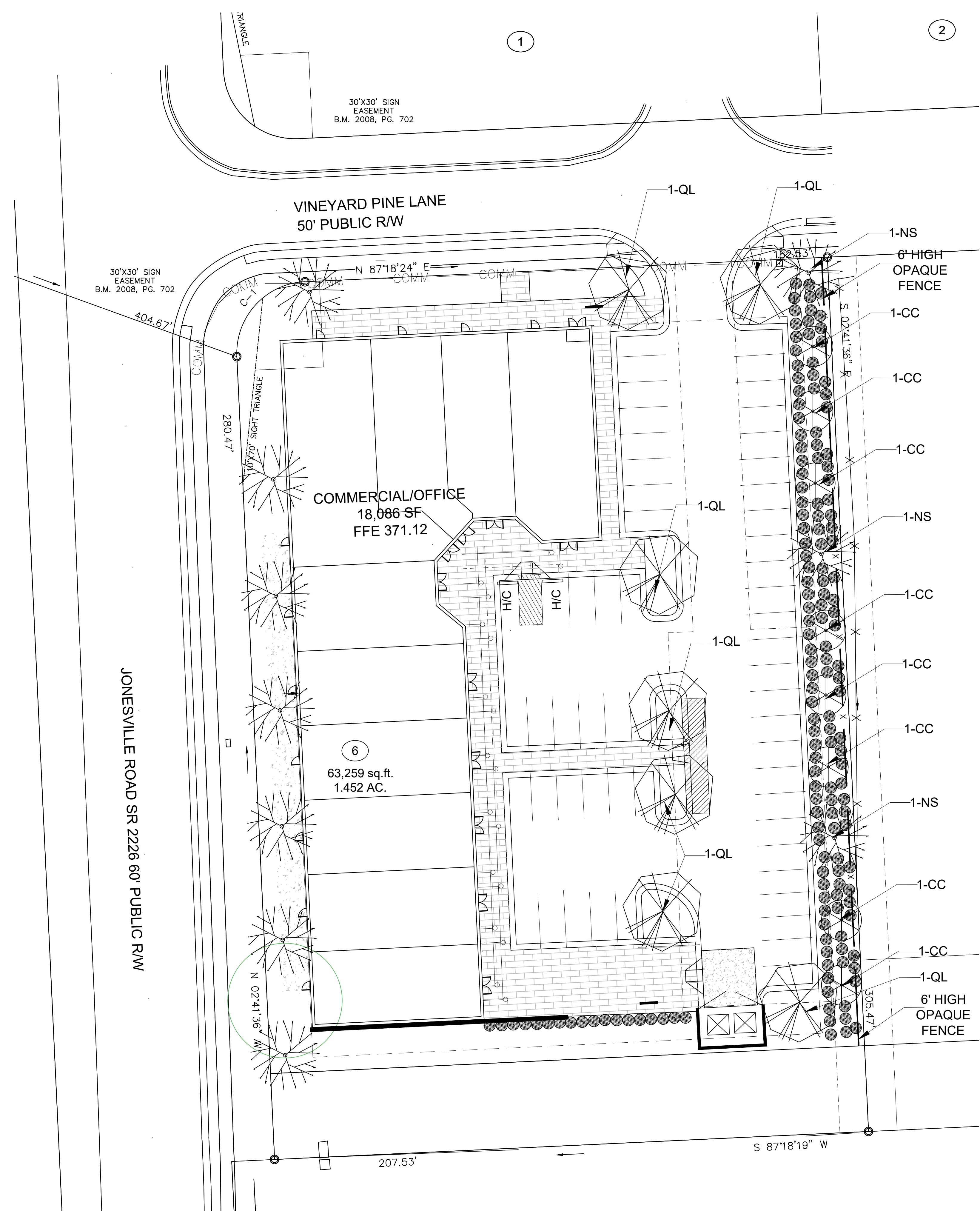
**Gettle Engineering and Design, PLLC**  
 3616 Waxwing Court,  
 Wake Forest, North Carolina 27587  
 (919) 210-3934 Firm License P-2538

**Utility Plan**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No. \_\_\_\_\_  
 Dwg No. **C4**

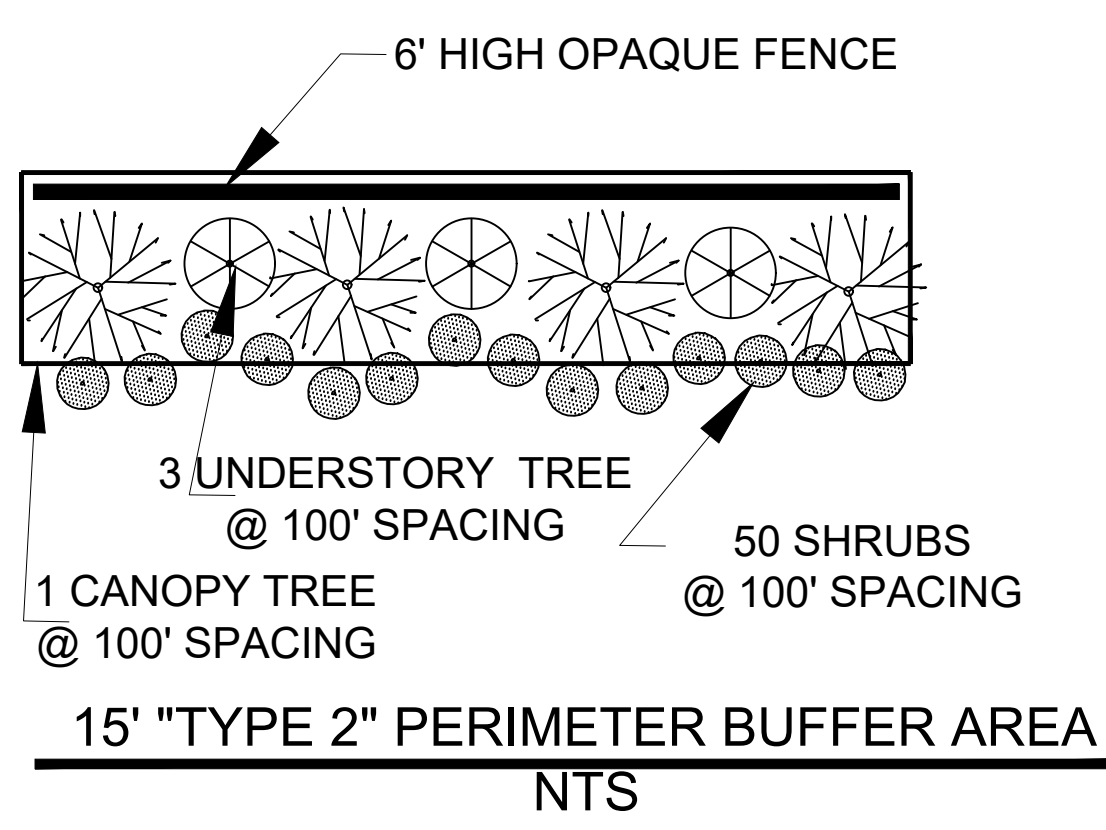
City of Raleigh Development Approval \_\_\_\_\_  
 City of Raleigh Review Officer \_\_\_\_\_





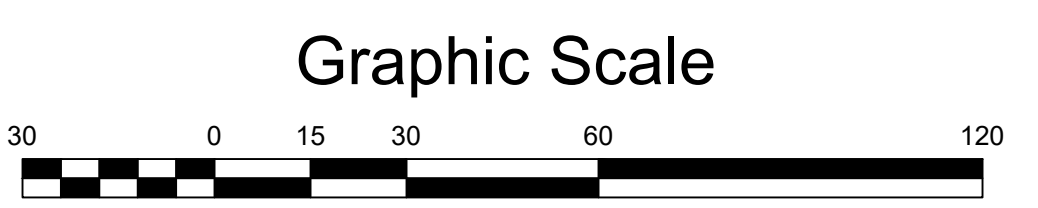
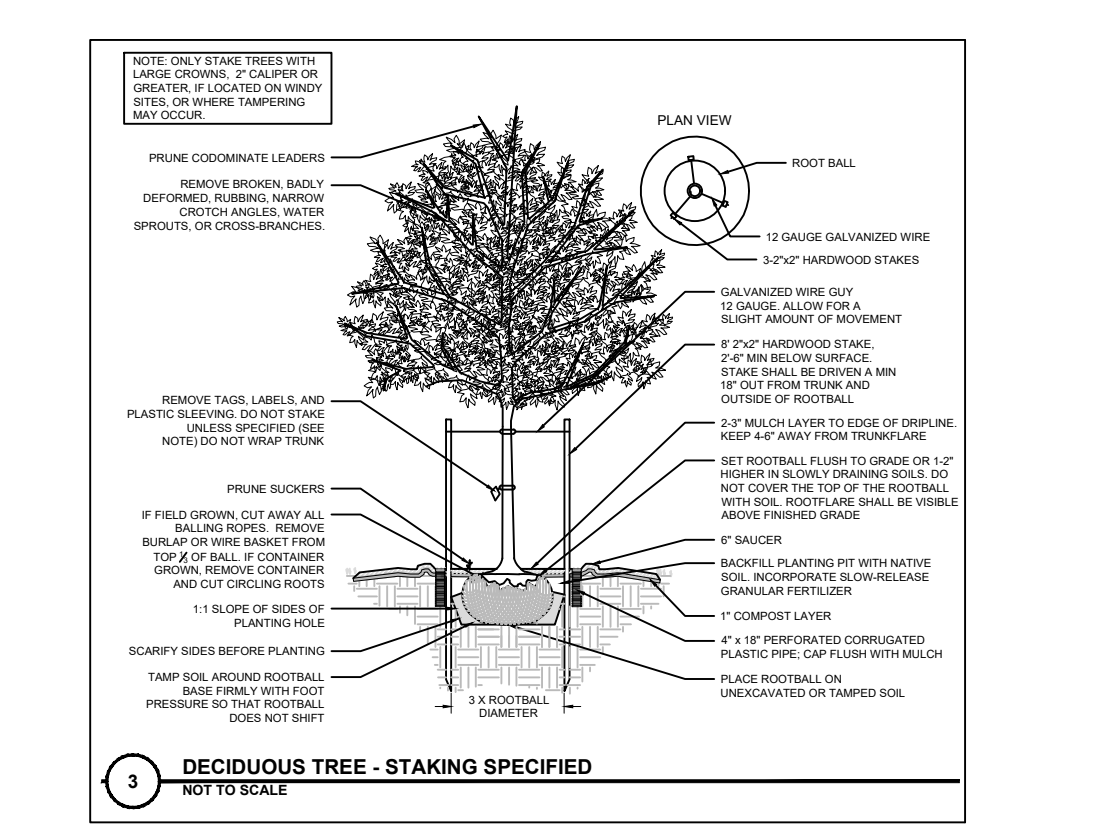
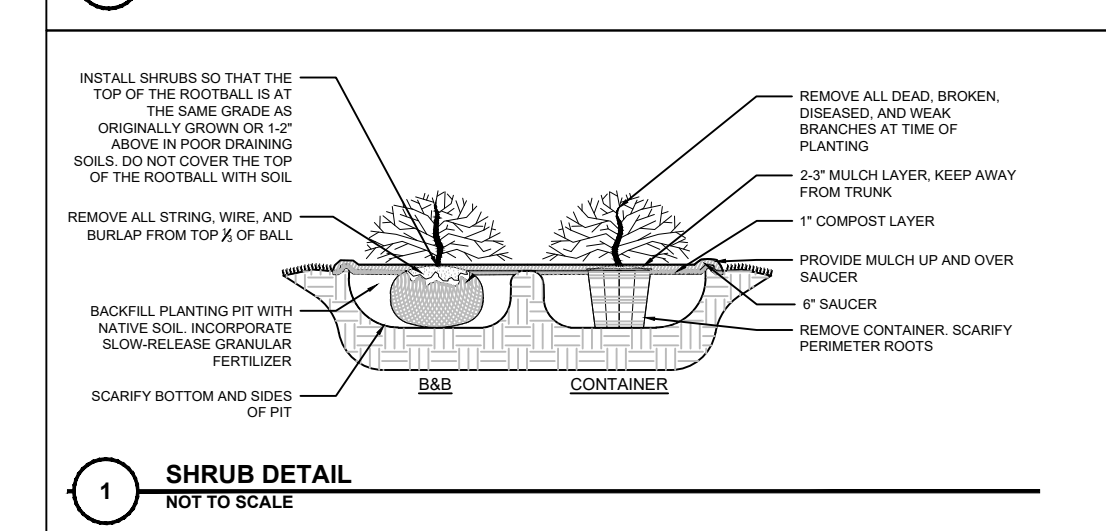
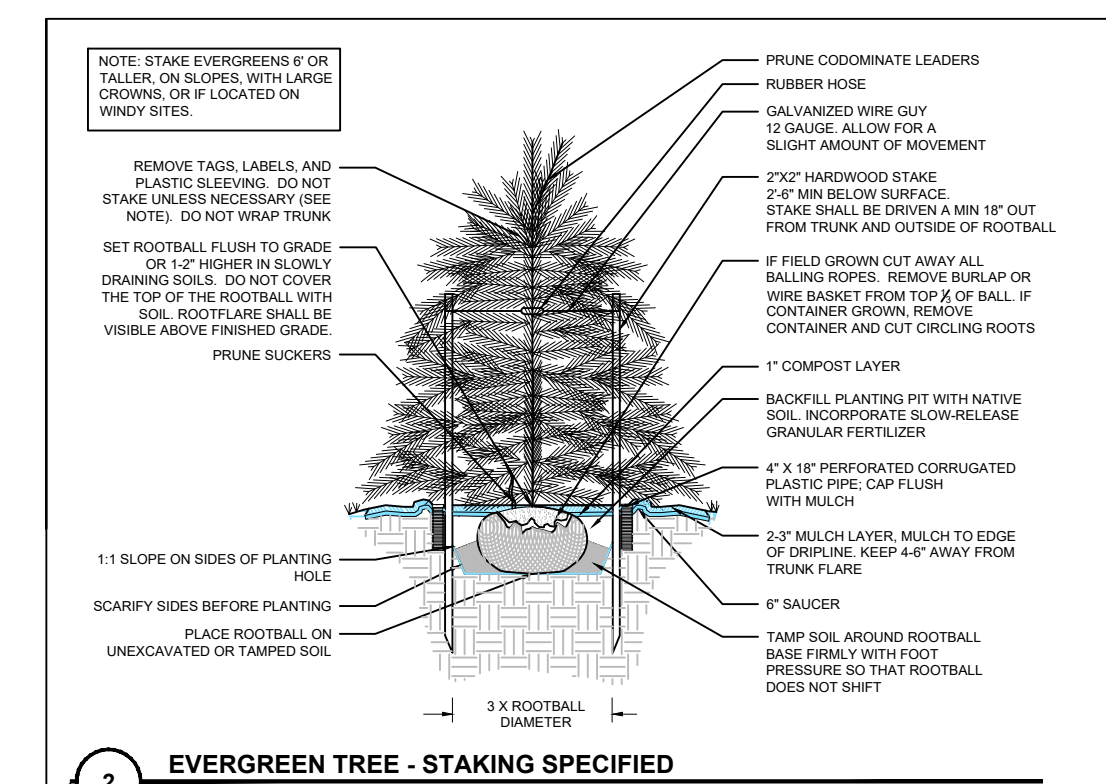
PLANT LIST								
KEY	COMMON NAME	BOTANICAL NAME	CAL	HGT	SPD	ROOT	REMARKS	QUAN
<b>CANOPY TREES:</b>								
QL	OVERCUP OAK	Quercus lyrata	2 1/2"	14'	7'	B&B	MATCHED	23
UP	CHINESE ELM	Ulmus Parvifolia	2 1/2"	14'	7'	B&B	MATCHED, (3) 40' O/C	14
<b>UNDERSTORY &amp; EVERGREEN TREES:</b>								
LIN	NATCHES CREPE MYRTLE	Lag. Indica 'Natchez'	-	8'	4'	B&B	SINGLE-STEM, 40' O/C	18
IEB	EMILY BRUNER HOLLY	Ilex x 'Emily Bruner'	-	8'	4'	B&B	FULL TO GROUND	20
<b>EVERGREEN SHRUBS:</b>								
IC	CARISSA HOLLY	Ilex Cornuta 'Carissa'	-	24"	18"	cont.	5' O/C	192
VJ	PRAQUE VIBURNUM	Viburnum x Fragense	-	4'	2'	cont.	FULL, 10' O/C	0
VA	SWEET VIBURNUM	Viburnum Awabuki 'Chindo'	-	4'	2'	cont.	FULL 10' O/C	0

NOTE: UNDERSTORY TREES LOCATED WITHIN 20' OF THE OVERHEAD ELECTRIC POWER LINE ALONG LIGON MILL TO HAVE A MAXIMUM HEIGHT OF 12'



**LANDSCAPE NOTES:**

- LS1 IS FOR PLANTING PURPOSES ONLY. FOR INFORMATION RELATING TO GRADING, REFER TO GRADING PLAN.
- VERIFICATION OF TOTAL QUANTITIES AS SHOWN IN THE PLANT LIST SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
- ALL PLANTS AND PLANTING PROCEDURES SHALL CONFORM TO ACCEPTED STANDARDS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN LATEST EDITION.
- ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.
- ALL TREES AND SHRUBS SHALL BE FULL WELL BRANCHED PLANTS WHICH ARE CHARACTERISTIC OF THE SPECIES.
- ALL PERMANENT GRASS IS TO BE BERMUDA.
- ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
- REMOVE ALL STRING AND WIRE FROM BASE OF ALL PLANT MATERIAL.
- MULCH ALL BEDS WITH 3" OF HARDWOOD MULCH, UNLESS OTHERWISE NOTED.
- IF SHRUB PLANTING BEDS DO NOT HAVE A MIN. 6" TOPSOIL THEN AMENDED WITH 3" PINE PARK TILLED INTO THE SOIL TO A DEPTH OF 8".
- ALL AREAS NOT COVERED WITH PAVING, GRAVEL, BUILDINGS OR PLANTING BEDS SHALL BE SEEDED AS SHOWN IN THE SEEDBED PREP. AND SEEDING SCHEDULE.
- LAWN AREAS SHALL BE RAKED TO REMOVE ROCKS, STICKS, ROOTS AND OTHER TRASH AND DEBRIS AND SHALL BE SMOOTH FOR EASE OF MOWING.
- ALL PLANTINGS OF TREES AND SHRUBS SHALL BE A MINIMUM 4' FROM EDGE OF PARKING SPACES.



**Gettle Engineering and Design, PLLC**  
 3616 Waxing Court,  
 Wake Forest, North Carolina 27587  
 (919) 210-3934 Firm License P-2538

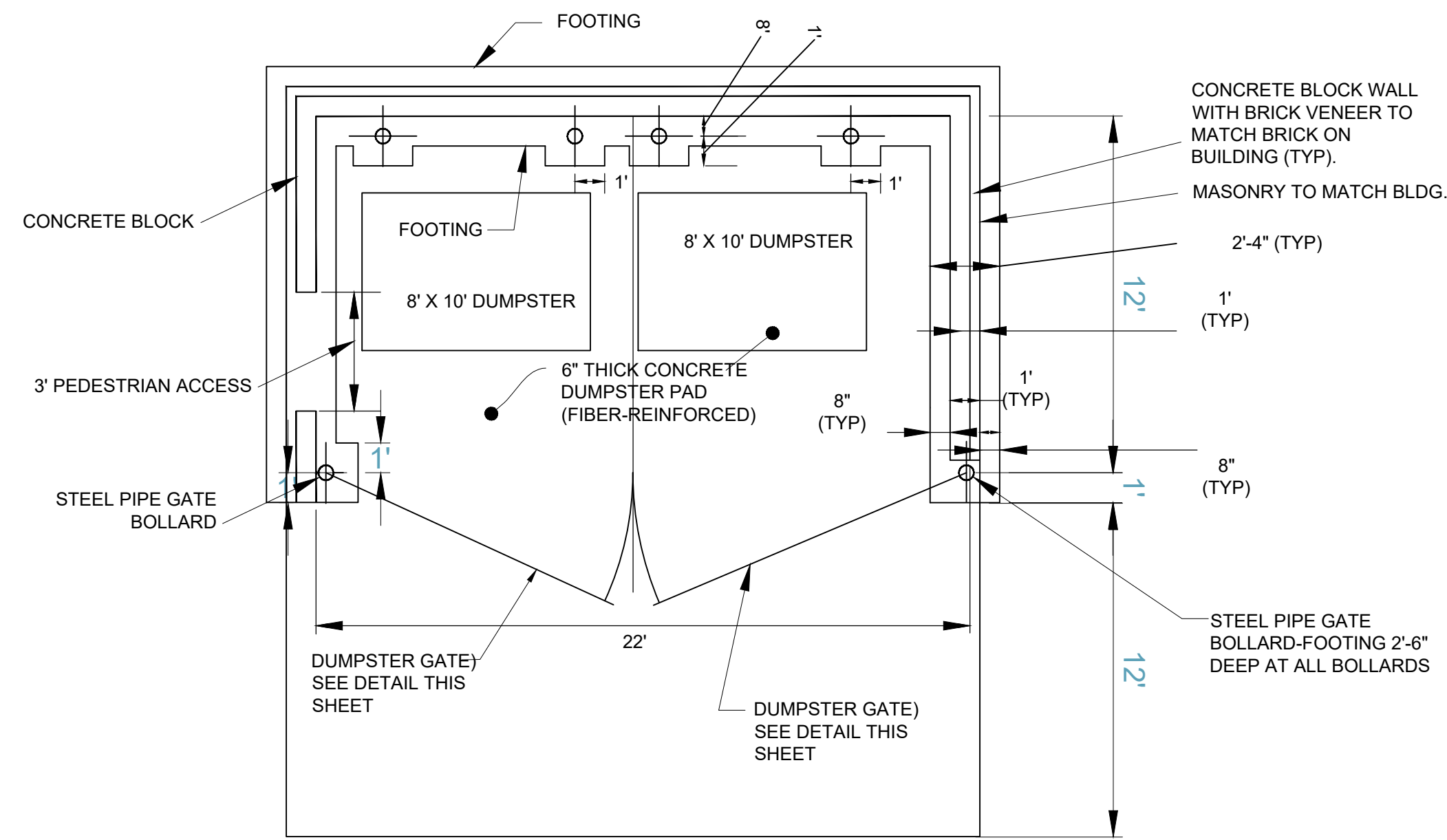
NO.	DATE	BY	REVISION DESCRIPTION
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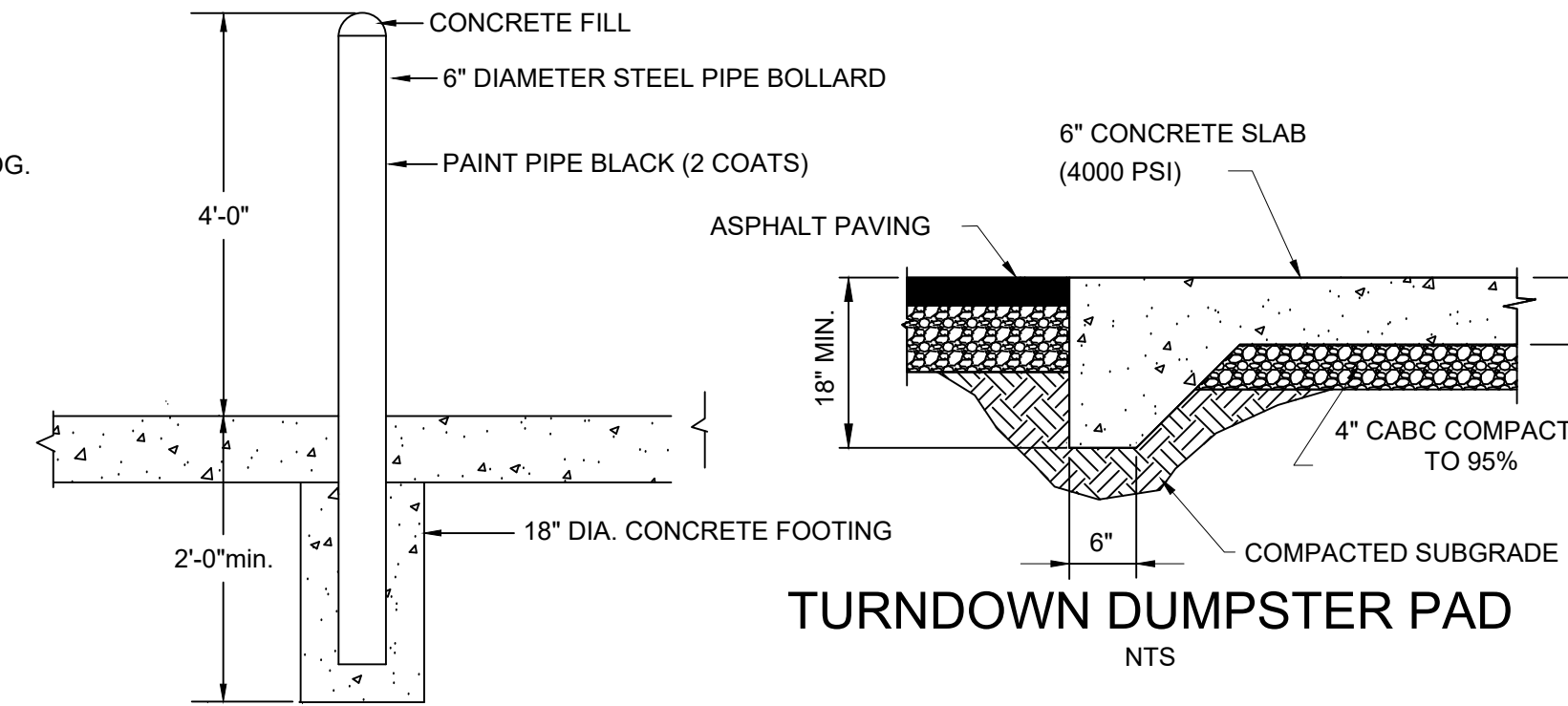
**Landscape Plan**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No.  
 Dwg No. **C5**



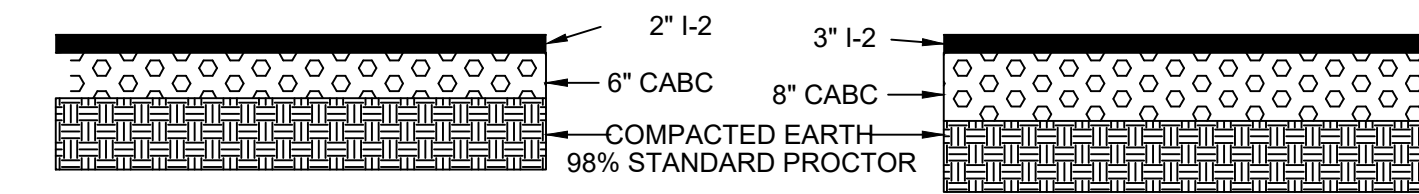


PLAN VIEW - DUMPSTER ENCLOSURE & PAD  
NTS



TURNDOWN DUMPSTER PAD  
NTS

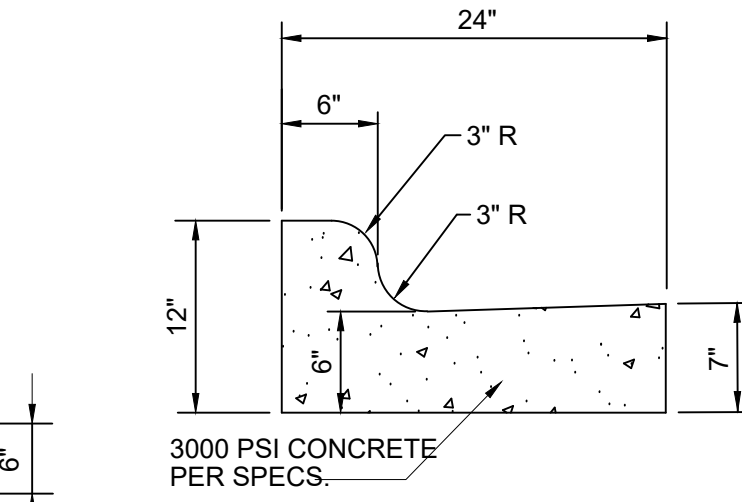
6" STEEL PIPE BOLLARD



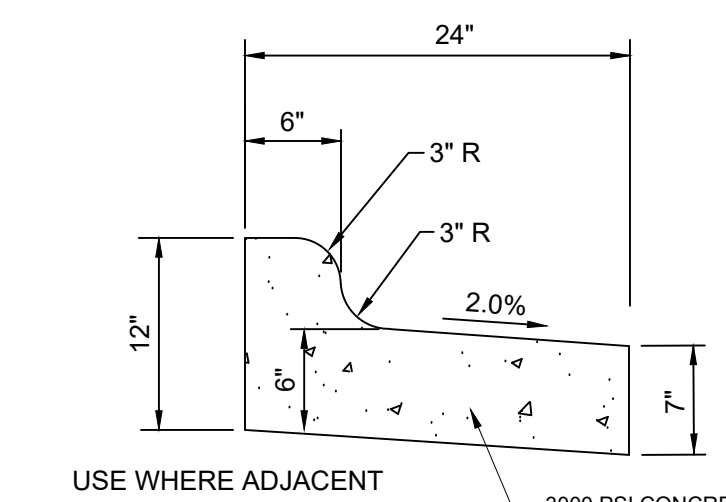
STANDARD PAVEMENT

HEAVY DUTY PAVEMENT

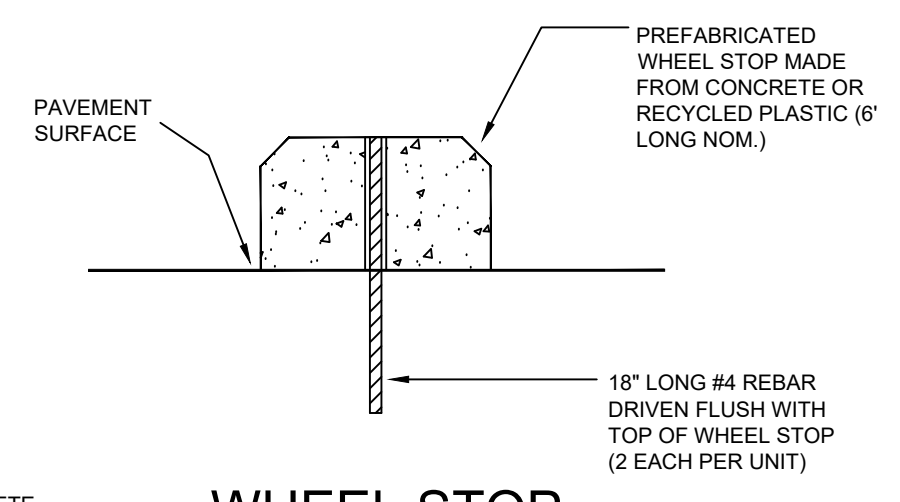
CONSTRUCTION PROCEDURES, MIX RATIOS, AGGREGATE SIZES, AND COMPACTED DENSITIES SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES 1995 EDITION.



STANDARD 24" CURB & GUTTER SECTION  
NTS

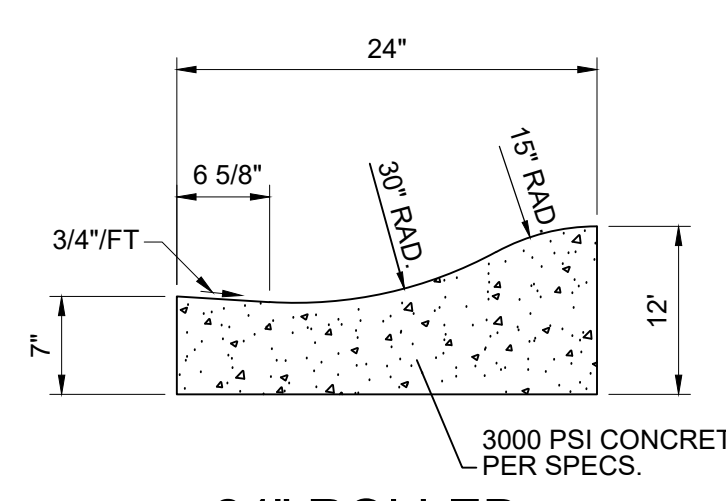


24" REVERSE PITCH CURB & GUTTER SECTION  
NTS

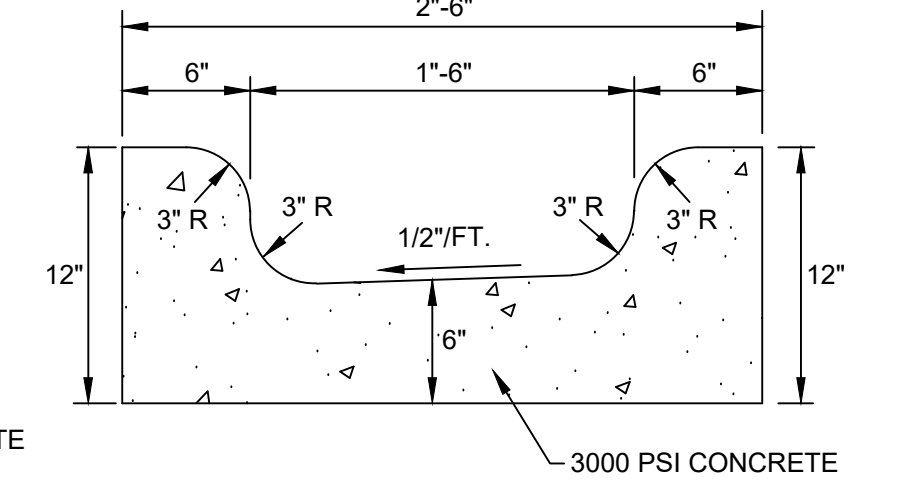


WHEEL STOP  
NTS

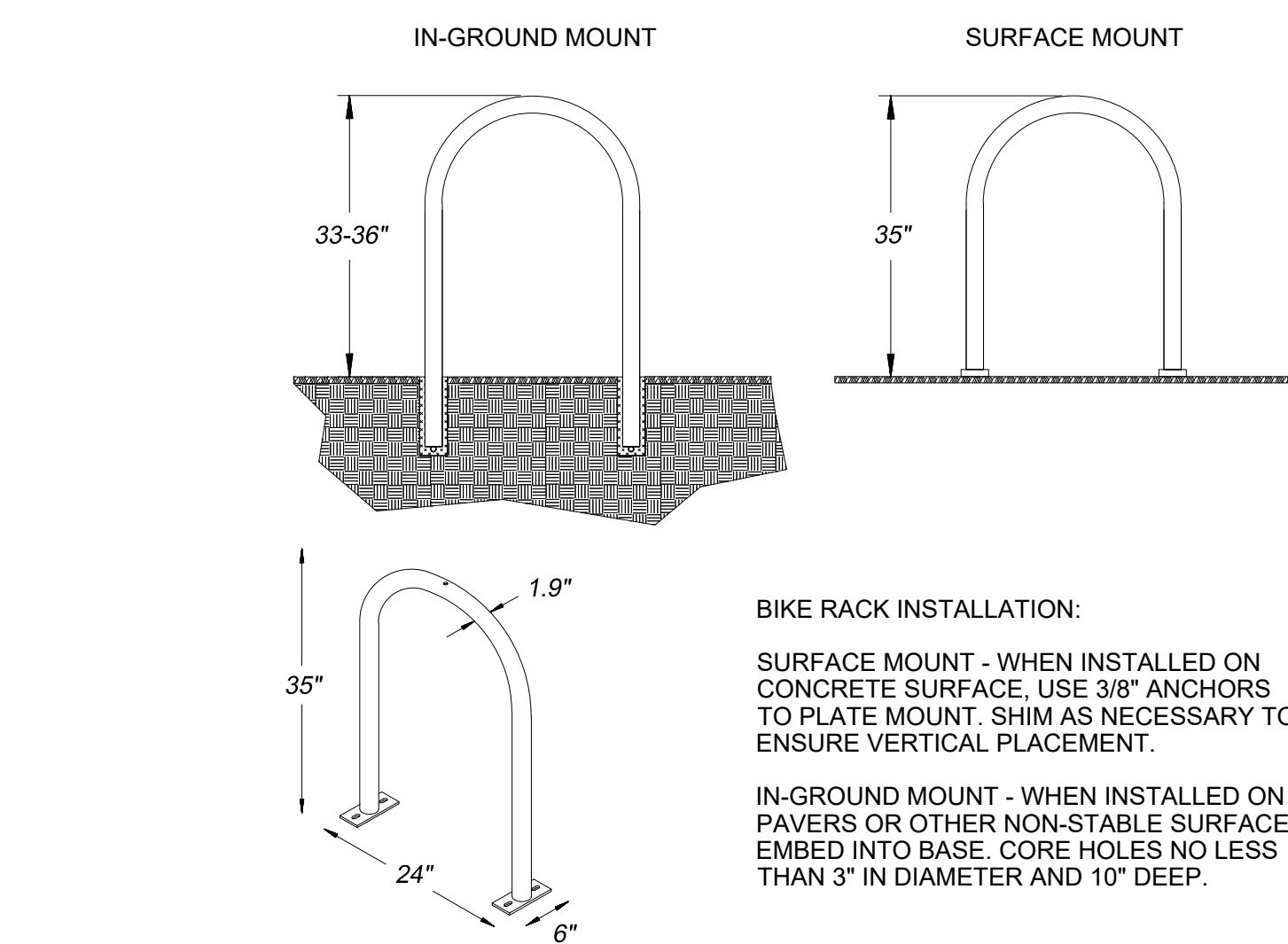
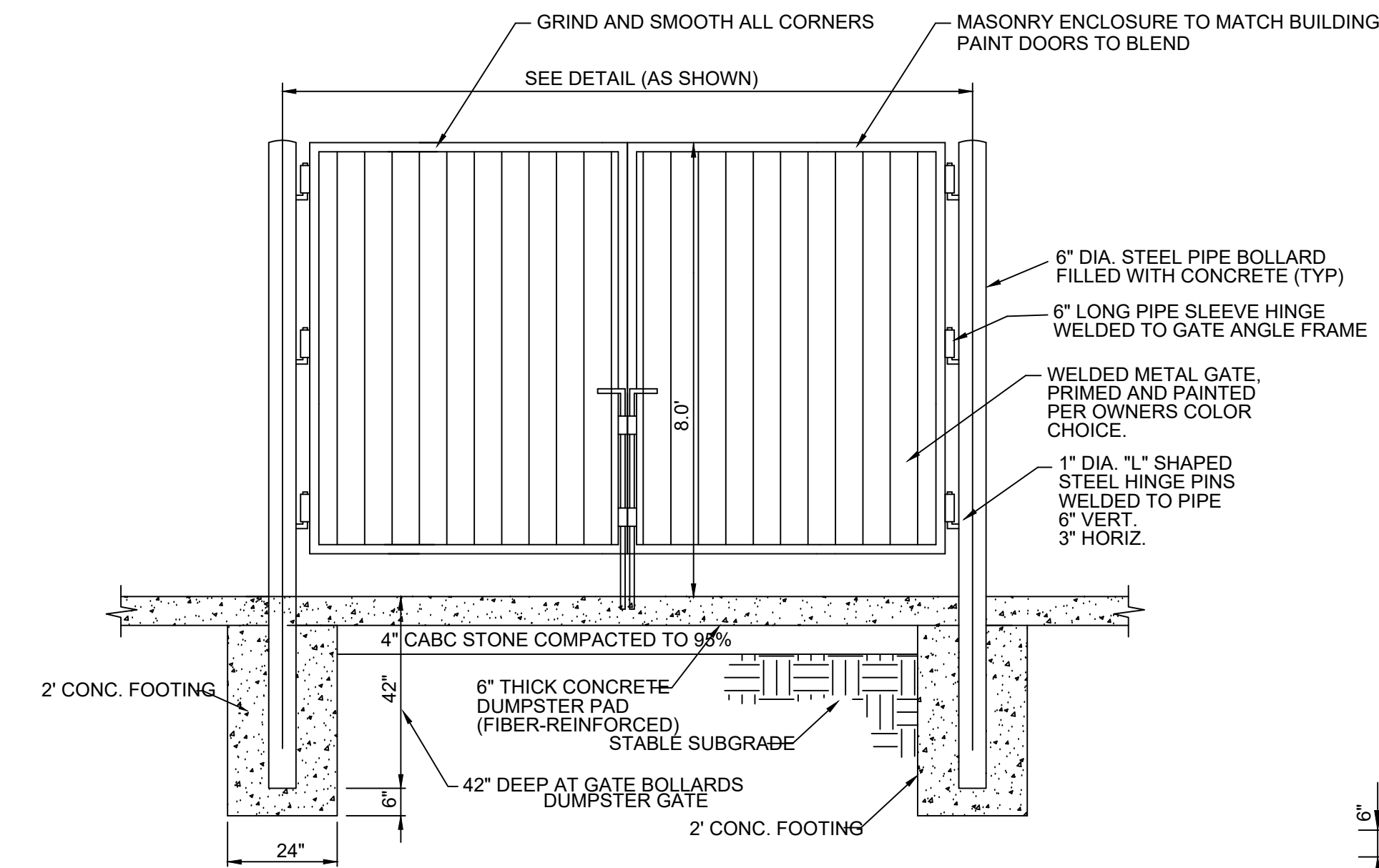
- CURB AND GUTTER NOTES:
- 10' MAXIMUM BETWEEN CONSTRUCTION JOINTS.
  - 15' MAXIMUM BETWEEN CONSTRUCTION JOINTS ON MACHINE POURS.
  - 1/2" EXPANSION JOINT EVERY 90'.
  - 3000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.
  - LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1028-2 OF NCDOT STANDARDS & SPECIFICATIONS FOR ROADS AND STRUCTURES.
  - ALL CONSTRUCTION JOINTS SHALL BE FILLED WITH JOINT FILLER AND SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01. THE JOINT MATERIAL SHALL CONFORM TO SECTION 1028-2 OF NCDOT'S STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
  - ABC STONE REQUIRED UNDER ALL CURB & GUTTER.



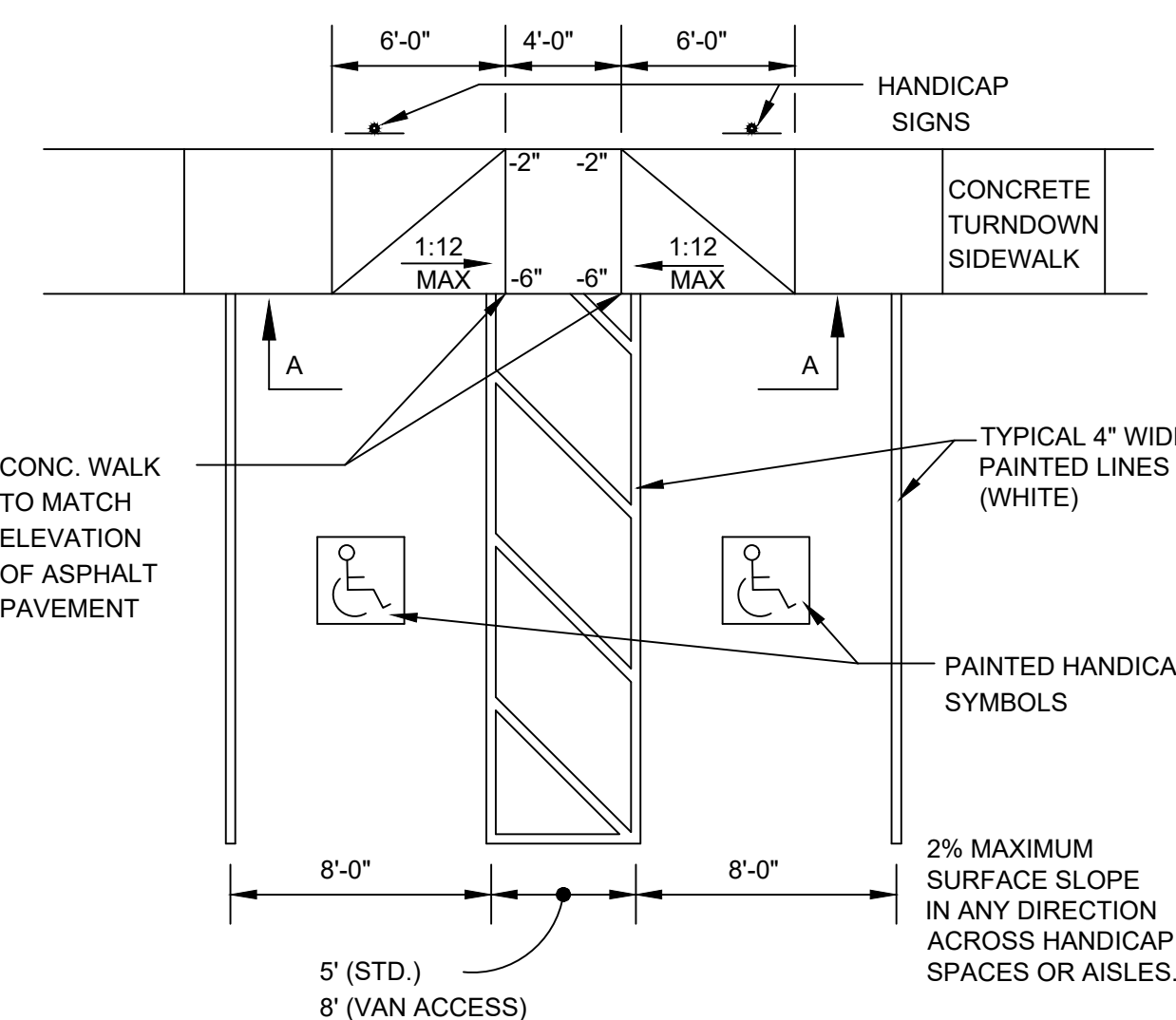
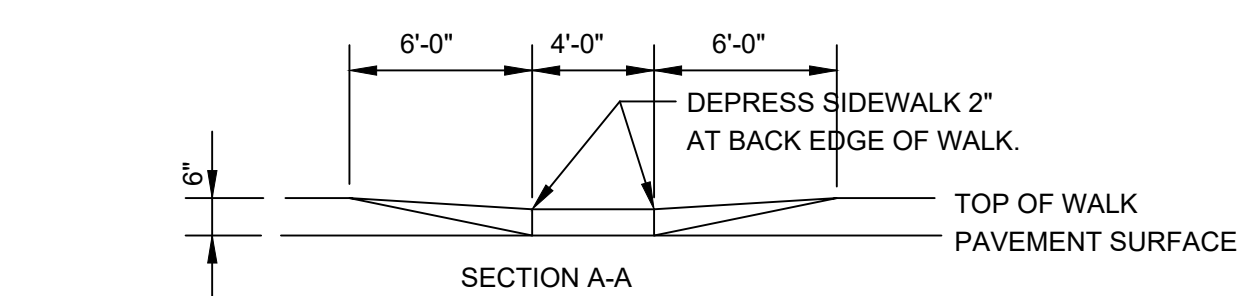
24" ROLLED CURB SECTION  
NTS



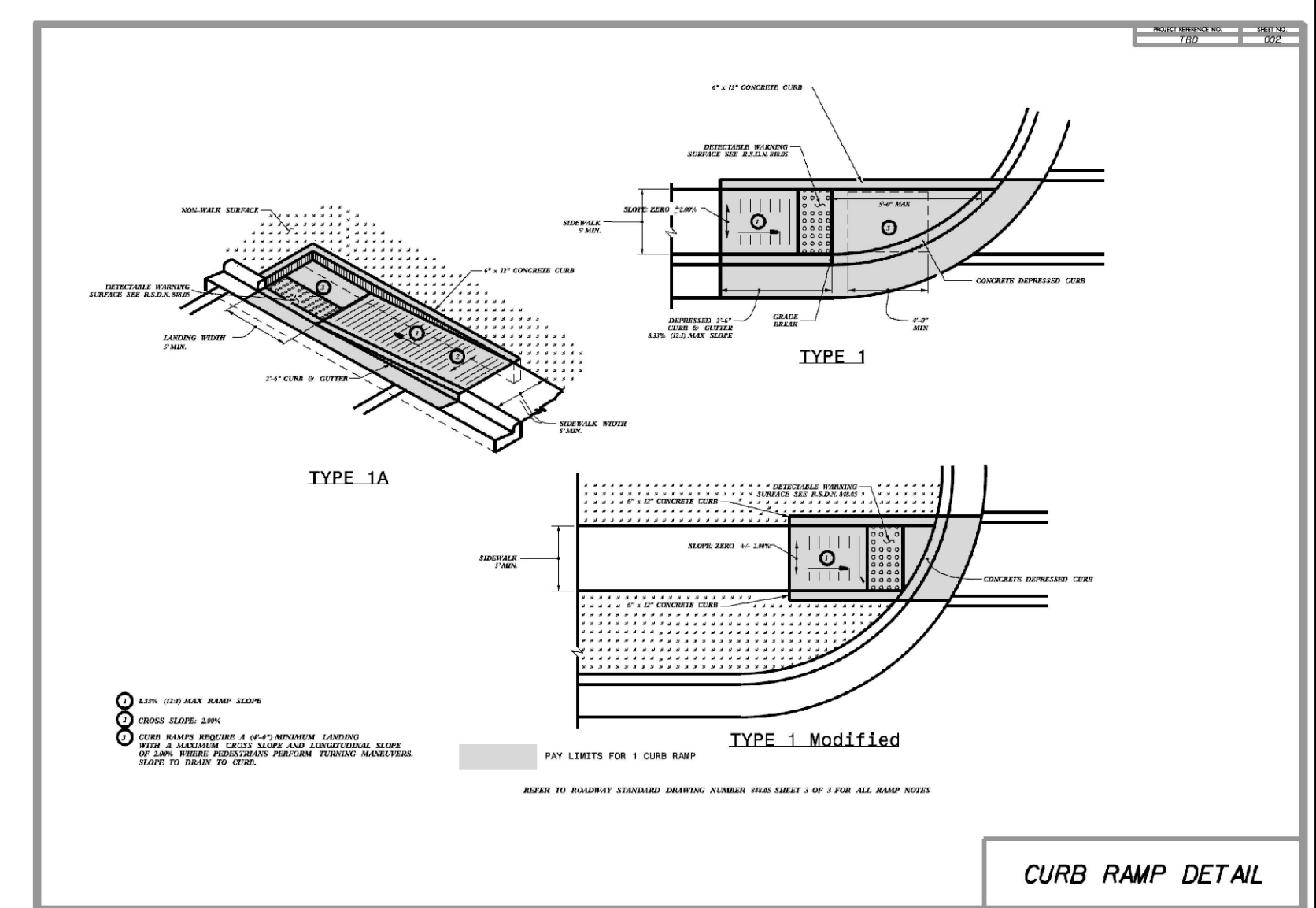
CONCRETE FLUME DETAIL  
NTS



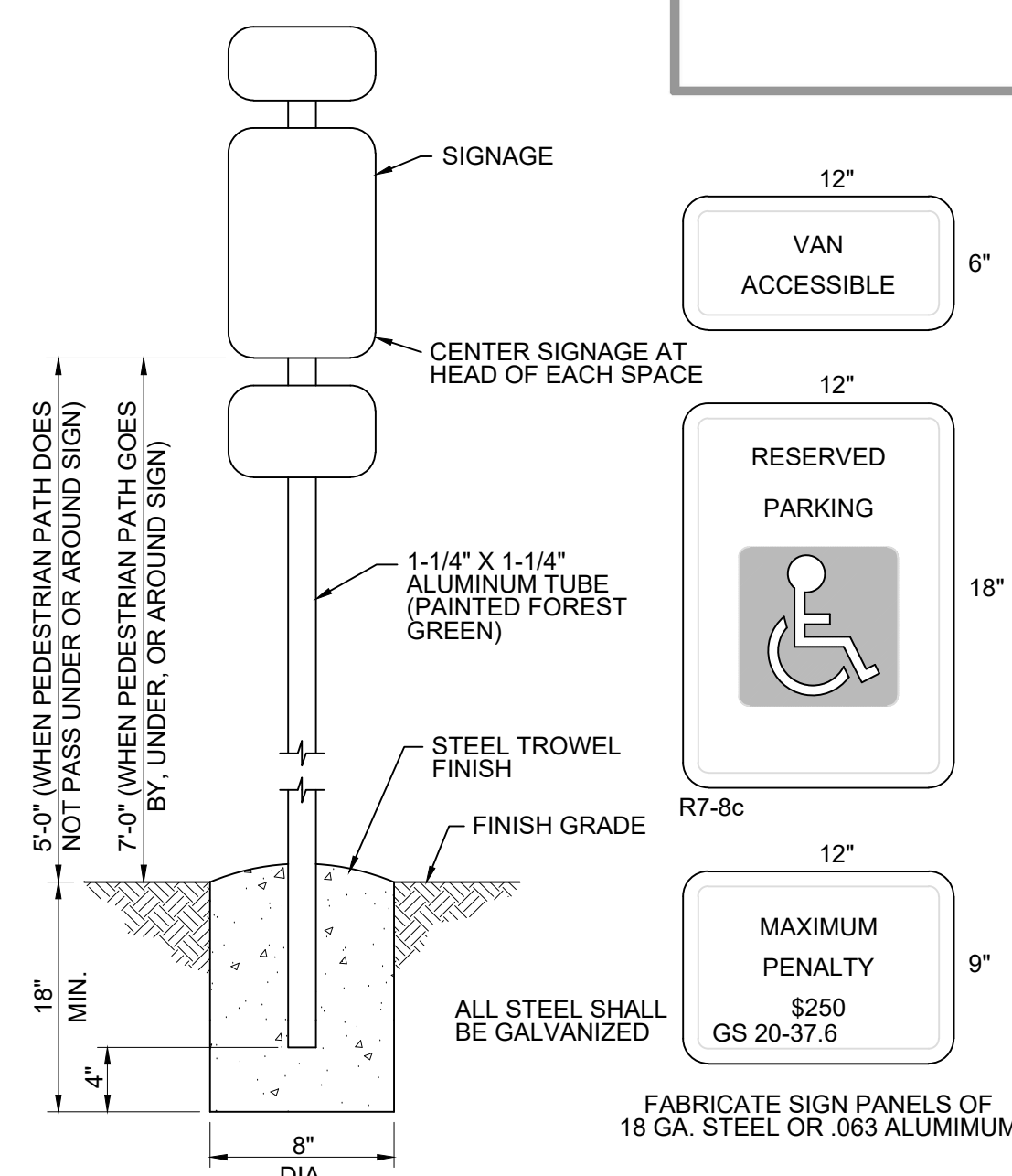
STANDARD BIKE RACK  
NTS



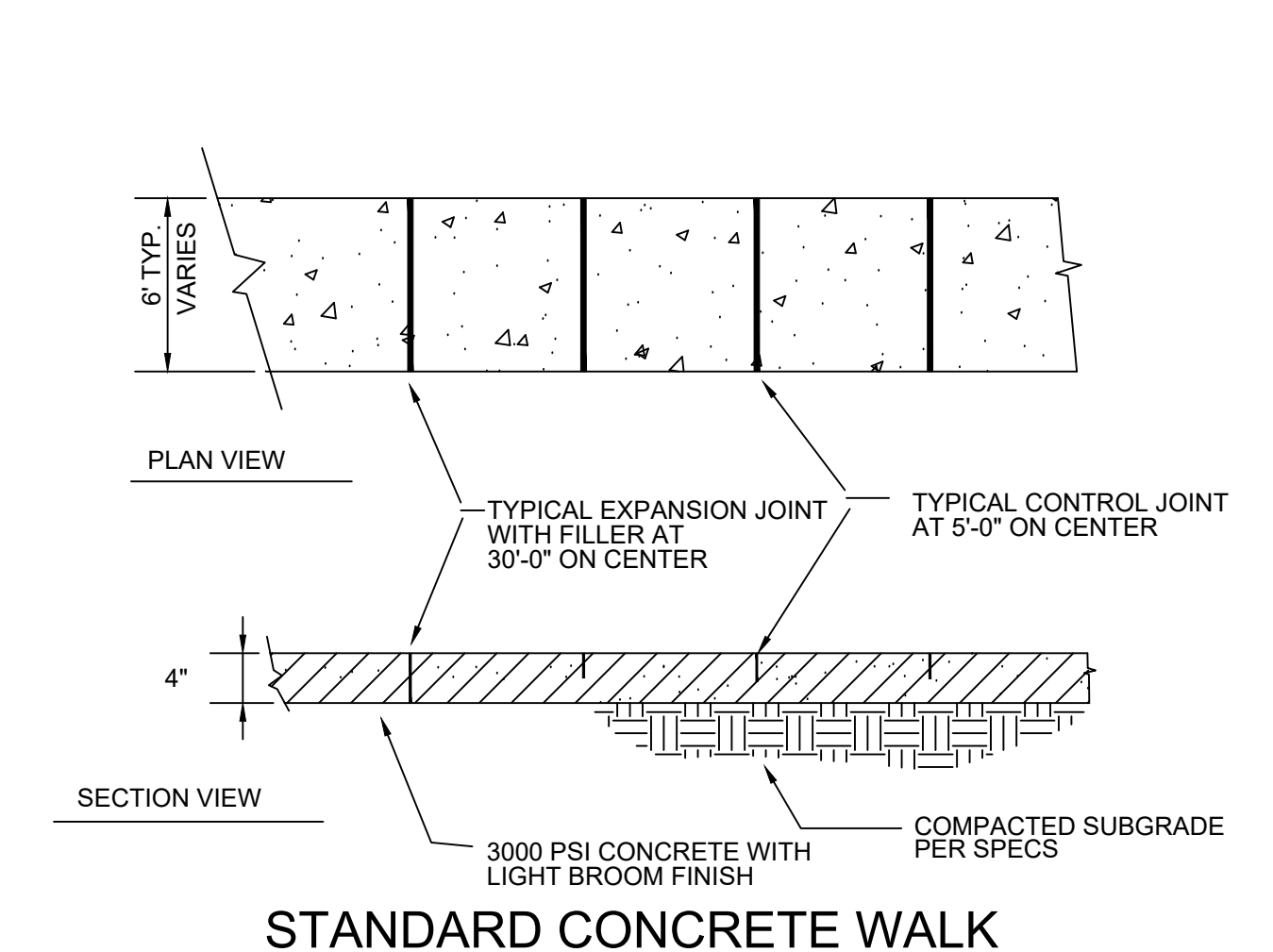
HANDICAP PARKING AND RAMP  
TYPE B  
NTS



CURB RAMP DETAIL



DETAIL HANDICAP SIGNAGE  
NTS



STANDARD CONCRETE WALK

NO.	DATE	BY	REVISION DESCRIPTION
1			
2			
3			
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5			
6			
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8			





BACK OF CURB  
SEE STD. NO. 840.03

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

SECTION X-X  
SECTION Y-Y  
SECTION J-J  
SECTION M-M

FRAME, GRATE AND HOOD  
SEE STD. NO. 840.03

STEPS - STD. NO. 840.66

TOP ELEVATION

WHERE 30" TO 36" PIPE IS USED

WHERE 42" TO 54" PIPE IS USED

DETAIL SHOWING METHOD OF RISER CONSTRUCTION

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

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

SHEET 1 OF 2  
840.02

2" WEEP HOLES

GENERAL NOTES:  
USE CLASS "B" CONCRETE THROUGHOUT.  
PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.  
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.  
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.  
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.  
CONSTRUCT WITH PIPE CROWNS MATCHING.  
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.  
INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.  
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 70M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.  
CHAMFER ALL EXPOSED CORNERS 1".  
DRAWING NOT TO SCALE.

PLAN  
WITH GRATE & FRAME REMOVED

SECTION X-X  
SECTION Y-Y

BRICK COPING (INCIDENTAL)  
TOP ELEVATION  
STD. 840.16 FRAME & GRATE

DOWEL (SEE NOTE)

DOWEL

DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	C.W.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.222	0.592	0.015	0.026
15"	3'-0"	2'-3"	2'-3"	0.222	0.709	0.023	0.036
18"	3'-0"	2'-6"	2'-6"	0.222	0.814	0.029	0.049
24"	3'-0"	3'-0"	3'-0"	0.222	0.925	0.032	0.065

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

ROADWAY STANDARD DRAWING FOR  
CONCRETE DROP INLET  
12" THRU 30" PIPE

SHEET 1 OF 1  
840.14

EXPANSION JOINTS

STD. 840.03 FRAME, GRATE & HOOD

CURB AND GUTTER WITH CATCH BASIN ON STEEP GRADES

TOP ELEV. EXPANSION JOINT

USE ON FLAT GRADES 2% AND UNDER

EXPANSION JOINT

DEPRESSED GUTTER LINE

EXPANSION JOINT

NORMAL CURB AND GUTTER ON LIGHT GRADES

EXPANSION JOINT

TOP ELEV.

USE ON GRADES OVER 2%

EXPANSION JOINT

DEPRESSED GUTTER LINE

EXPANSION JOINT

NORMAL CURB AND GUTTER ON STEEP GRADES

PLAN OF TOP SLAB  
SECTION S-S  
SECTION R-R

#4 BARS "V" @ 6" EQUAL SPACES

#8 BARS "U" @ 11 1/2"

#4 BARS "V" @ 6" EQUAL SPACES

#8 BARS "U" @ 11 1/2"

#4 BARS "V" @ 6" EQUAL SPACES

#8 BARS "U" @ 11 1/2"

DOWEL

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H, WITH NO RISER) *																		
DIMENSIONS OF BOX AND PIPE				COVER DIMENSION			BARS - U			BARS - V			CUB. YDS. CONC. IN BOX		DEDUCTIONS FOR ONE PIPE			
PIPE	SPAN	WIDTH	HEIGHT	A	B	C	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	TOTAL	TOP SLAB	BOTTOM SLAB	C.W.	R.C.	
12"	3'-0"	2'-2"	2'-0"	2'-0"	2'-0"	2'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
15"	3'-0"	2'-2"	2'-3"	2'-3"	2'-3"	2'-3"	4	1'-5"	3	3'-9"	3	3'-9"	43	0.167	0.358	1.714	0.132	0.178
18"	3'-0"	2'-2"	2'-6"	2'-6"	2'-6"	2'-6"	4	1'-5"	3	2'-11"	3	2'-11"	39	0.112	0.318	1.738	0.150	0.243
24"	3'-0"	2'-2"	3'-0"	3'-0"	3'-0"	3'-0"	4	1'-5"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
30"	3'-0"	2'-2"	3'-4"	3'-4"	3'-4"	3'-4"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	3'-10"	3'-10"	3'-10"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.167	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"	4'-6"	4'-6"	4'-6"	4'-6"	4	1'-5"	3	2'-11"	3	2'-11"	39	0.112	0.318	1.738	0.150	0.243
48"	3'-0"	2'-2"	5'-0"	5'-0"	5'-0"	5'-0"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
48"	3'-0"	2'-2"	5'-6"	5'-6"	5'-6"	5'-6"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"	6'-3"	6'-3"	6'-3"	6'-3"	4	2'-10"	3	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

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

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

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

SHEET 2 OF 2  
840.02

OPTIONAL MANHOLE

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

PLAN

SECTION X-X  
SECTION C-C OR D-D

DOWEL

DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX		TOTAL QUANTITIES FOR ONE BOX AND SLAB		DEDUCTIONS FOR ONE PIPE CULV.		
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL	LBS. REIN.	CUL. YDS. MIN. "H"	R.C.	
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.195	22	0.750	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30	1.065	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.296	0.296	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-0"	5'-0"	5'-3"	24	5'-9"	6'-0"	6'-0"	0.663	0.663	0.407	111	3.623	0.235	0.317
54"	5'-6"	5'-6"	5'-9"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.407	111	3.623	0.235	0.317
60"	6'-0"	6'-0"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-0"	7'-0"	7'-3"	32	7'-9"	8'-1"	8'-1"	1.210	1.210	0.518	169	5.917	0.444	0.589

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

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

SHEET 1 OF 1  
840.31

MANHOLE RING & COVER  
DEWEY BROS. MH-RCR3

CONCRETE SLAB  
3000 PSI

2" DIA.

CONCRETE SLAB  
3000 PSI

1" OF 1/2 CEMENT PLASTER

MANHOLE STEPS  
DEWEY BROS.  
MH-ST-5 @ 15" O.C.  
18 STEPS  
2 FT. FROM TOP

4'-0" x 4'-0"

TO STORM FILTER

FROM SITE

VARIES  
8" THICK WALLS FOR 12" DEPTH OR LESS  
12" DEPTH OR MORE

WALL

2'-0"

8"

SUMP DETAIL  
NTS

Gettle Engineering and Design, PLLC  
3616 Waxwing Court,  
Wake Forest, North Carolina 27587  
(919) 210-3934  
Firm License P-2538

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

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

SHEET 1 OF 1  
840.31

Storm Drainage Details  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No.  
Dwg No.  
D2

Professional Engineer  
North Carolina  
Professional Engineer  
No. 10013  
Date: 2/20/23

1 DATE COMMENT  
2 DATE COMMENT  
3 DATE COMMENT  
4 DATE COMMENT  
5 DATE COMMENT  
6 DATE COMMENT  
7 DATE COMMENT  
8 DATE COMMENT  
NO. DATE REVISION DESCRIPTION



**PROJECT SUMMARY**

**CALCULATION DETAILS**

- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 489 LF

**STORAGE SUMMARY**

- STORAGE VOLUME REQUIRED = 7634 CF
- PIPE STORAGE VOLUME = 7,777 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 7,777 CF

**PIPE DETAILS**

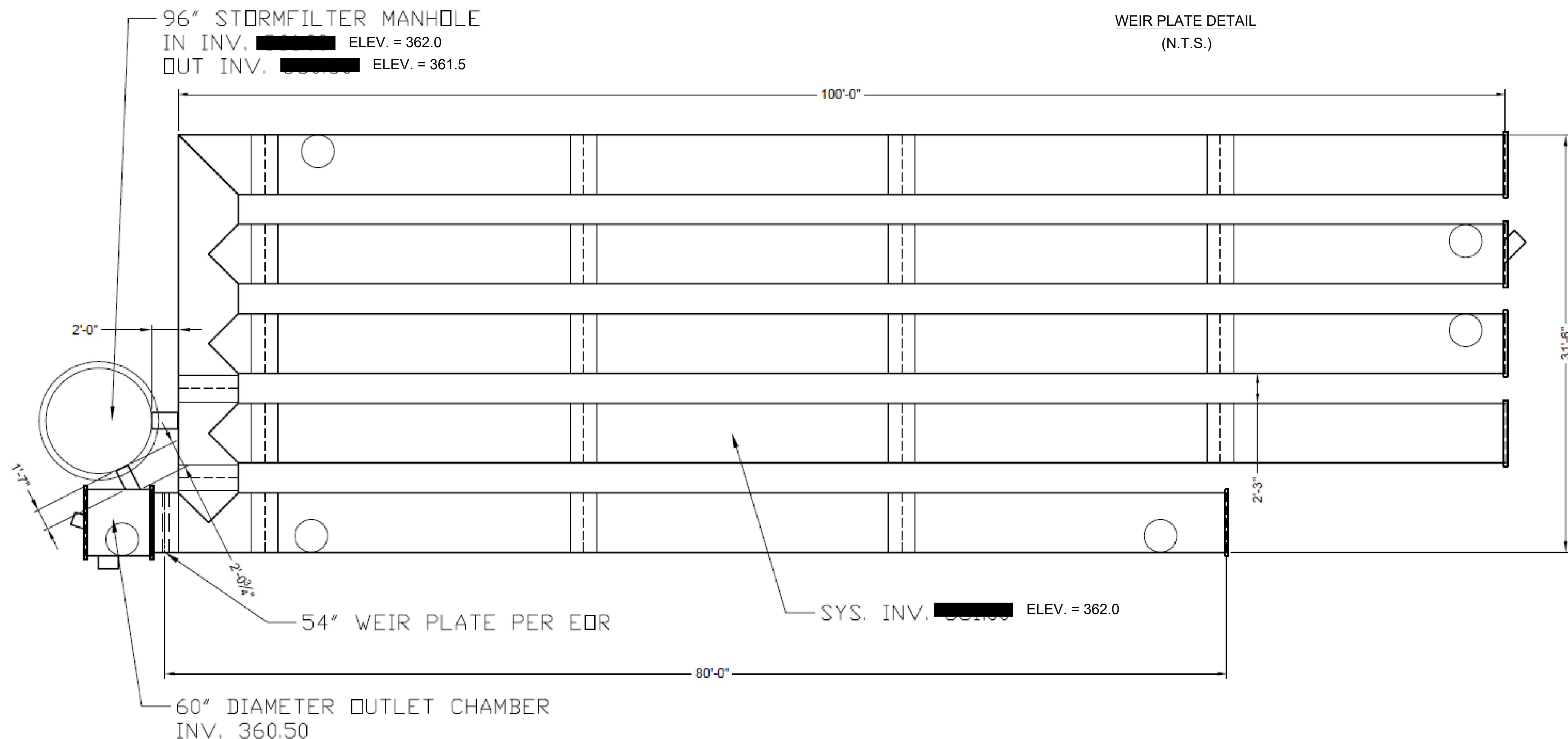
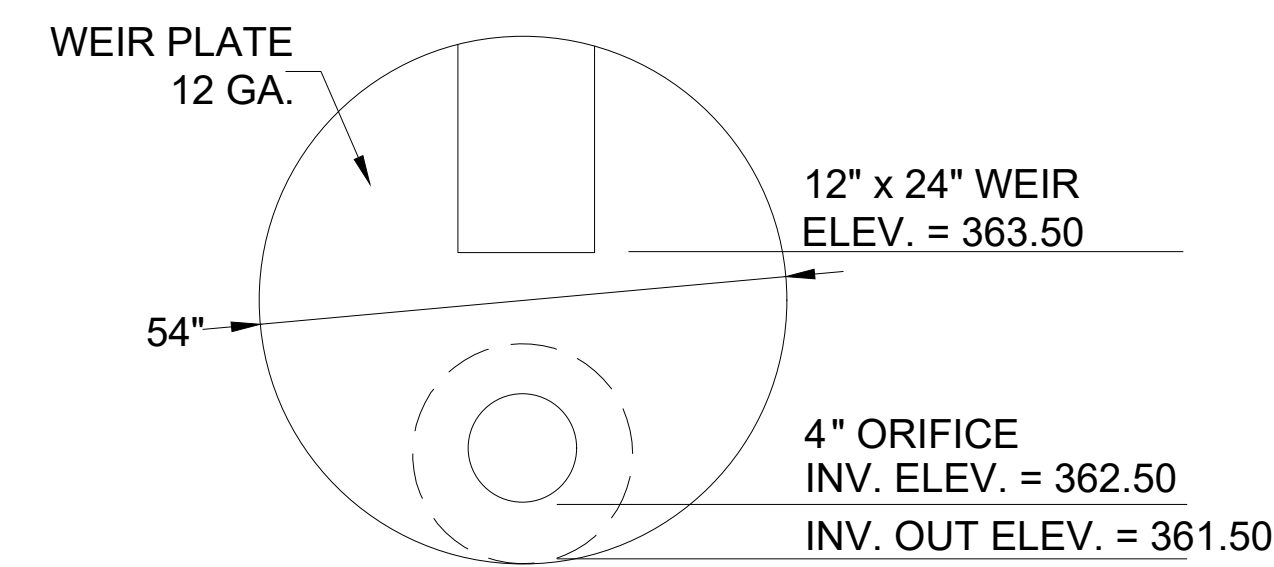
- DIAMETER = 54"
- CORRUGATION = 5x1
- GAGE = 14
- COATING = ALT2
- WALL TYPE = SOLID
- BARREL SPACING = 27"

**BACKFILL DETAILS**

- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"

**NOTES**

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2 3/4" x 1/2" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.



**ASSEMBLY**  
SCALE: 1" = 10'

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DATE	REVISION DESCRIPTION	BY

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ENGINEERED SOLUTIONS LLC  
www.ContechES.com  
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069  
800-338-1122 513-645-7000 513-645-7993 FAX

**CONTECH**  
CMP DETENTION SYSTEMS  
CONTECH  
DYODS  
DRAWING

Jonesville Road Rolesville Commercial Site  
CMP System  
Rolesville, NC  
DETENTION SYSTEM

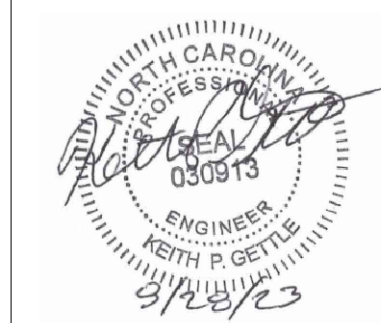
PROJECT No.: 24294	SEQ. No.: 35777	DATE: 8/2/2023
DESIGNED: DYD	DRAWN: DYD	
CHECKED: DYD	APPROVED: DYD	
SHEET NO.: 1	1	

Pre and Post Summary Table

	Pre	Post
Q1	1.38	0.94
Q10	4.74	1.82

**Gettle Engineering and Design, PLLC**  
3616 Waxwing Court,  
Wake Forest, North Carolina 27587  
(919) 210-3934 Firm License P-2538

NO.	DATE	COMMENT	BY
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**Storm Filter Details**  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No.  
Dwg No.  
**D3**

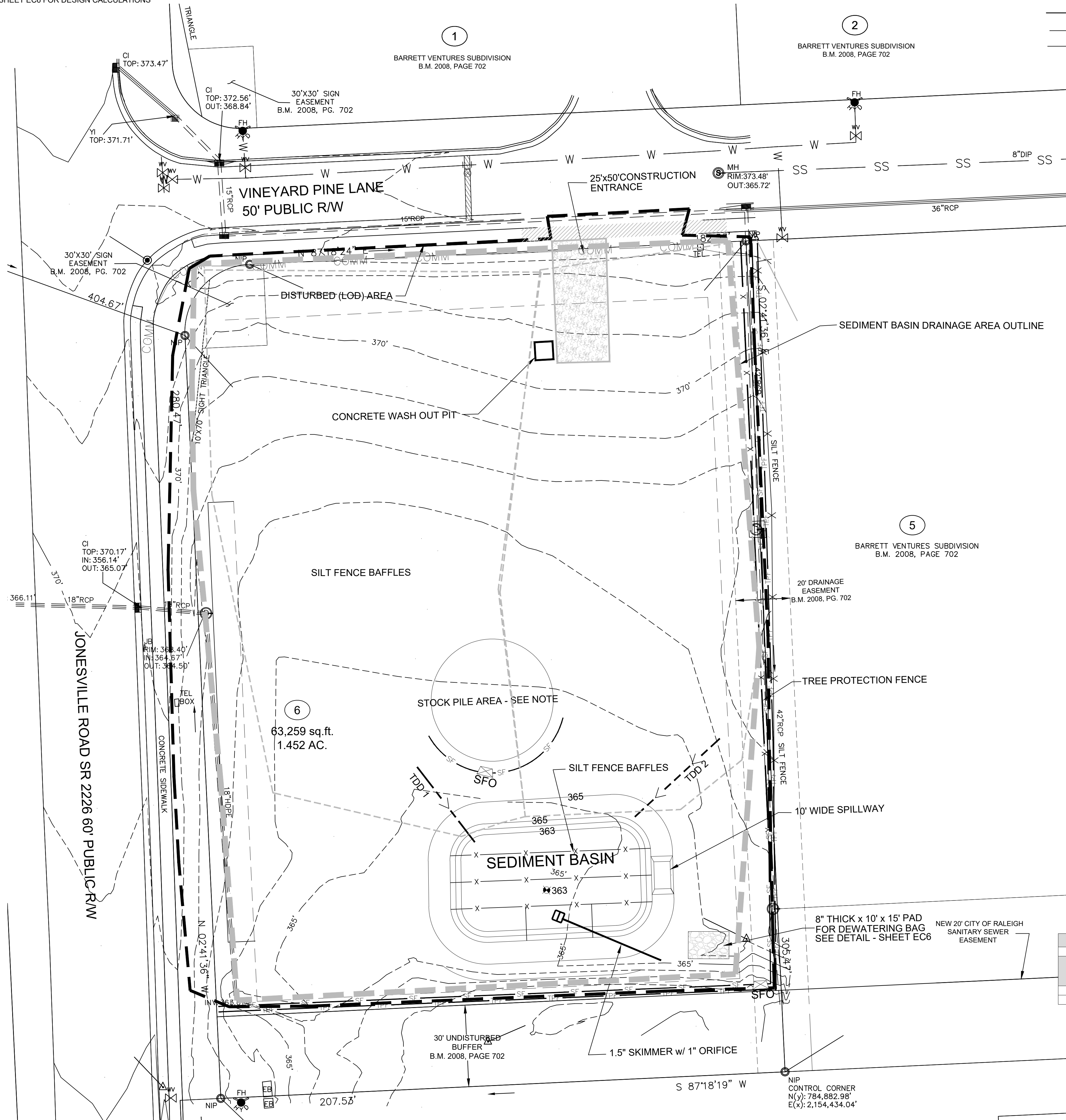






BASIN NUMBER	DRAIN AREA (ACRES)	BASIN SIZE	Q10 FLOW (CFS)	BASIN SURFACE AREA (SF)	REQUIRED SURFACE AREA (SF)	BASIN VOLUME (CF)	REQUIRED BASIN VOLUME (CF)	SPILLWAY LENGTH (FT)	SKIMMER / ORIFICE DIAMETER (IN.)	TOP OF BERM ELEV.	EMERGENCY SPILLWAY ELEV.	BOTTOM OF BASIN
1	1.83	44' x 74'	5.06	4264	2201	7499	3294	10	1.5 / 1	408.5	408	406

SEE SHEET EC6 FOR DESIGN CALCULATIONS



### LINE AND SYMBOL LEGEND

- SILT FENCE OUTLET
- LIMITS OF DISTURBANCE
- SILT FENCE
- TEMPORARY DIVERSION
- TREE PROTECTION FENCE
- STONE FILTER

### GENERAL NOTES:

- INSTALL POLYACRYLAMIDE IMPREGNATED STRAW WATTLES (ie: TERRA TUBES) DIRECTLY BELOW STORM WATER OUTFALL. PLACE EROSION CONTROL LINER UNDERNEATH A SERIES OF WATTLES (SEE DETAIL)
- SURROUND THE SKIMMER WITH A BAFFLE AND "KEY" BOTH ENDS INTO THE SIDE OF THE BASIN. INSTALL A TARP UNDERNEATH THE SKIMMER, COVERING THE ENTIRE AREA AROUND THE SKIMMER. PROVIDE A 6"-8" BLOCK TO PLACED UNDER THE SKIMMER ALLOWING THE DEVICE TO REST ON AFTER DEWATERING.
- INSTALL STANDARD GRAVEL YARD INLET PROTECTION UNTIL CURB IS INSTALLED. INSTALL STANDARD GRAVEL BAG CURB INLET PROTECTION AT ALL CURB INLETS.

### EROSION CONTROL CONSTRUCTION SEQUENCE - PHASE 1

- SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL WATERSHED MANAGER. OBTAIN A LAND DISTURBING PERMIT.
- INSTALL TREE PROTECTION FENCE.
- INSTALL EROSION CONTROL MEASURES INCLUDING GRAVEL CONSTRUCTION ENTRANCE /EXIT, SEDIMENT TRAPPING MEASURES, STABILIZATION AT PIPE OUTLETS, AND OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
- CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEVAN NEUPANE (919) 819-8907, FOR AN ONSITE INSPECTION TO OBTAIN A CERTIFICATE OF COMPLIANCE.
- BEGIN CLEARING AND GRUBBING. PERFORM ROUGH GRADING. INSTALLING AND MAINTAINING TEMPORARY DIVERSIONS AS NECESSARY. SEED AND MULCH PERIMETER SLOPES AS SOON AS POSSIBLE.
- STABILIZE DISTURBED AREAS WITHIN 14 WORKING DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. STABILIZATION CONSISTS OF EITHER TEMPORARY MULCHING OR PERMANENT VEGETATION ON AREAS THAT ARE NOT PAVED.
- REGULARLY INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.
- KEEP MUD AND DEBRIS OFF THE PUBLIC STREETS AT ALL TIMES. IF MUD OR DEBRIS IS TRACKED FROM THE SITE, USE A SHOVEL AND BROOM TO REMOVE IT IMMEDIATELY. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR STOP WORK ORDER) MAY BE TAKEN.
- IF IT IS DETERMINED DURING THE COURSE OF CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE DESPITE PROPER IMPLEMENTATION AND MAINTENANCE OF THE APPROVED EROSION CONTROL PLAN, THE PERSON RESPONSIBLE FOR THE LAND-DISTURBING ACTIVITY IS OBLIGATED TO TAKE ADDITIONAL PROTECTIVE ACTION.
- CONTINUE TO PHASE 2 EROSION CONTROL ACTIVITIES.

### STOCKPILE DESIGN CRITERIA

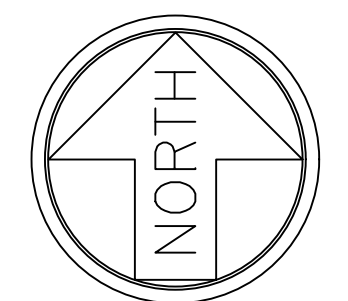
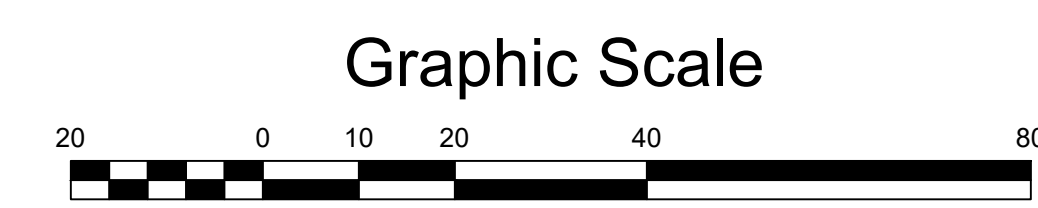
- STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.
- A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT).
- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
- STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
- STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
- STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.
- ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.
- OFF-SITE SPOIL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY LUDO AND STATE REGULATIONS. ALL SPOIL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY WAKE COUNTY OF ANY OFFSITE DISPOSAL OF SOIL, PRIOR TO DISPOSAL. FILL OF FEMA FLOODWAYS AND ON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).
- SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
- THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

DRAINAGE AREA TO BASIN = 50,530 SF (1.16 AC)

TOTAL DENUDED AREA 60,361 SF (1.39 AC)

### Channel Design Calculations

Channel	Drain Area, ac	Channel Length, ft	Channel Drop, ft	C	Q2		Channel Slope, ft/ft	n	Side Slope:1	Bottom Width, ft	Depth of Flow, ft	Velocity, fps	Liner
					I, in/hr	Flow cfs							
TDD1	0.48	218	7	0.55	5.76	1.5	0.0321	0.024	3.00	2.0	#NAME?	#NAME?	#NAME?
TDD2	0.39	198	7	0.55	5.76	1.2	0.0354	0.020	3.00	2.0	#NAME?	#NAME?	#NAME?



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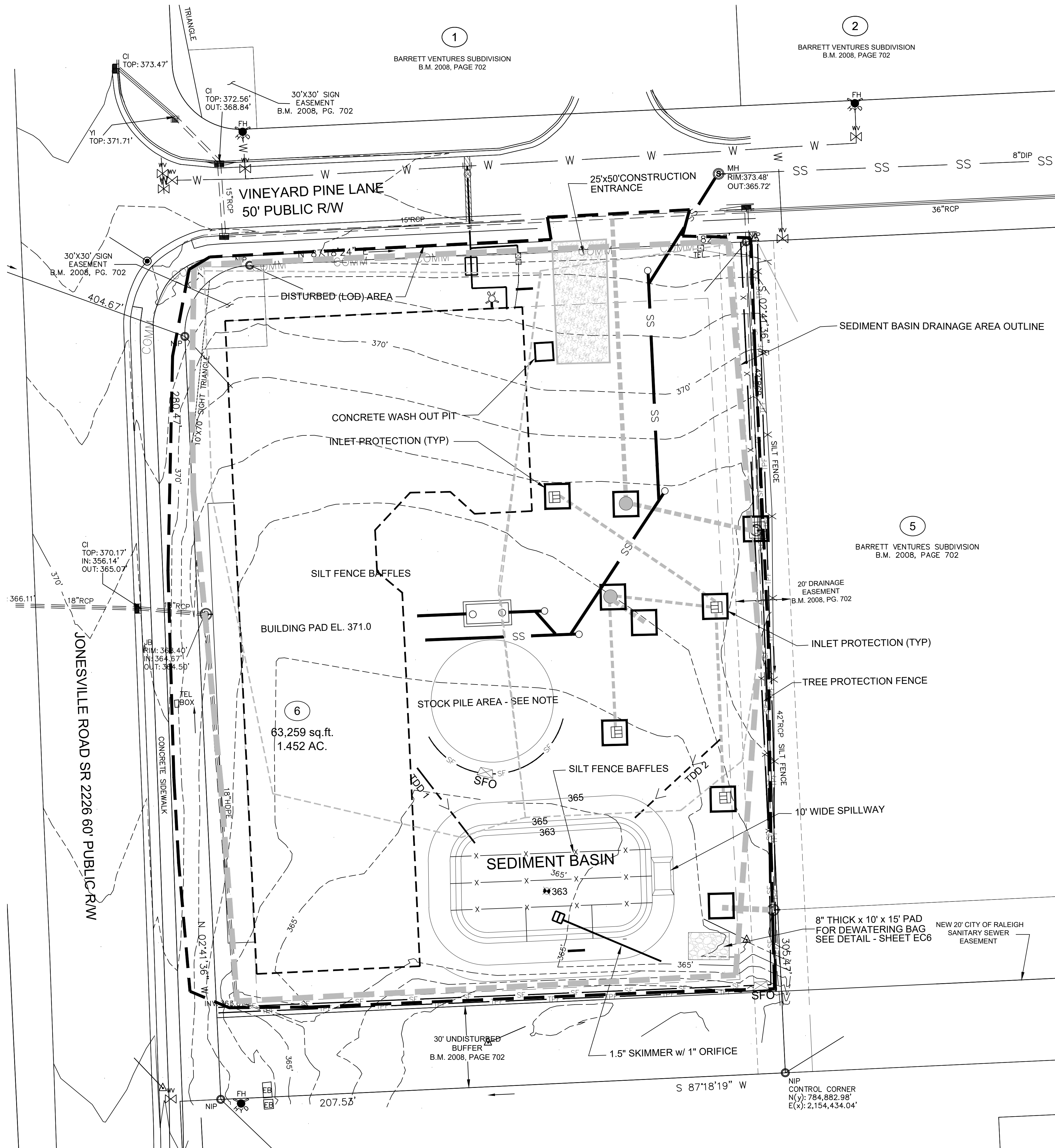
**Erosion Control Phase 1**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No.  
 Dwg No.  
**EC1**

NO.	DATE	COMMENT	BY
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**EROSION CONTROL CONSTRUCTION SEQUENCE - PHASE 2**

1. INSTALL THE STORM DRAINAGE SYSTEM AND INLET PROTECTION, PROTECTING PIPE OPENINGS AND UNCOVERED STRUCTURES AS SHOWN.
2. INSTALL SANITARY SEWER SYSTEM AND WATER LINE PIPING PER UTILITY PLAN. ENSURE EXISTING UTILITIES ARE PROTECTED DURING CONSTRUCTION ACTIVITIES.
3. STABILIZE DISTURBED AREAS WITHIN 14 WORKING DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. STABILIZATION CONSISTS OF EITHER TEMPORARY MULCHING OR PERMANENT VEGETATION ON AREAS THAT ARE NOT PAVED.
4. REGULARLY INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.
5. KEEP MUD AND DEBRIS OFF THE PUBLIC STREETS AT ALL TIMES. IF MUD OR DEBRIS IS TRACKED FROM THE SITE, USE A SHOVEL AND BROOM TO REMOVE IT IMMEDIATELY. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR STOP WORK ORDER) MAY BE TAKEN.
6. IF IT IS DETERMINED DURING THE COURSE OF CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE DESPITE PROPER IMPLEMENTATION AND MAINTENANCE OF THE APPROVED EROSION CONTROL PLAN, THE PERSON RESPONSIBLE FOR THE LAND DISTURBING ACTIVITY IS OBLIGATED TO TAKE ADDITIONAL PROTECTIVE ACTION.
7. CONTINUE TO PHASE 3 ACTIVITIES.

**LINE AND SYMBOL LEGEND**

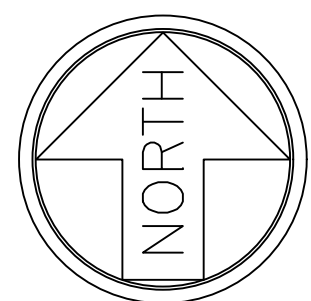
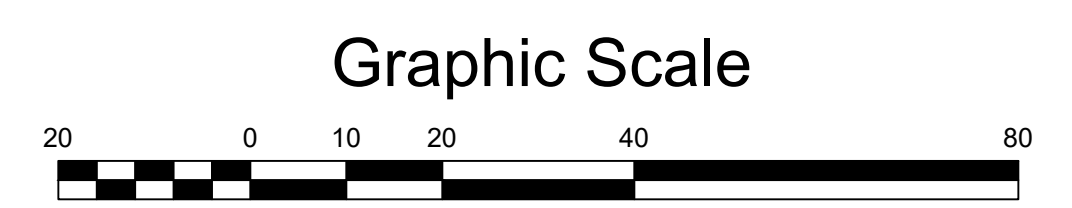
- SFO
- LIMITS OF DISTURBANCE
- SILT FENCE
- TEMPORARY DIVERSION
- STONE FILTER

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NO	DATE	BY	REVISION DESCRIPTION
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**Erosion Control Phase 2**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina



Project No.  
Dwg No.  
**EC2**





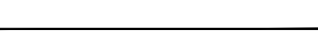
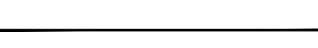

CONSTRUCTION SEQUENCE - PHASE 3

1. CONSTRUCT CONCRETE CURB IN ROADWAYS AND PARKING LOT. PLACE AND COMPACT STONE IN THE ROADWAYS AND PARKING LOT. REMOVE THE GRAVEL ENTRANCE.
2. COMPLETE FINE GRADING AND STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE.
3. ONCE THE SITE IS STABILIZED AND APPROVAL FROM STORMWATER INSPECTIONS TO SCHEDULE THE REMOVAL OF THE SEDIMENT BASIN (SEE NOTES BELOW). DEWATER SEDIMENT BASIN USING A SILT BAG AND MUCK OUT REMAINING SEDIMENT.
2. BEGIN INSTALLATION OF THE BMP AND ASSOCIATED STRUCTURES. CONTACT PROJECT ENGINEER TO INSPECT DURING INSTALLATION PROCESS. SURVEY INVERT ELEVATIONS FOR AS-BUILT INFORMATION REQUIRED BY THE TOWN OF ROLESVILLE AND WAKE COUNTY.
3. GRADE ANY REMAINING AREAS TO FINAL GRADE. UPON COMPLETION THE GROUND COVER SHALL BE PROVIDED AS FOLLOWS:
  - A. STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
  - B. STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 30 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
  - C. FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF FOURTEEN (14) DAYS.
  - D. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN FOURTEEN (14) CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
  - E. ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN FOURTEEN (14) CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.
4. ONCE THE BMP INSTALLATION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEVAN NEUPANE AT (919) 819-8907, TO SCHEDULE A STORMWATER INSPECTION.

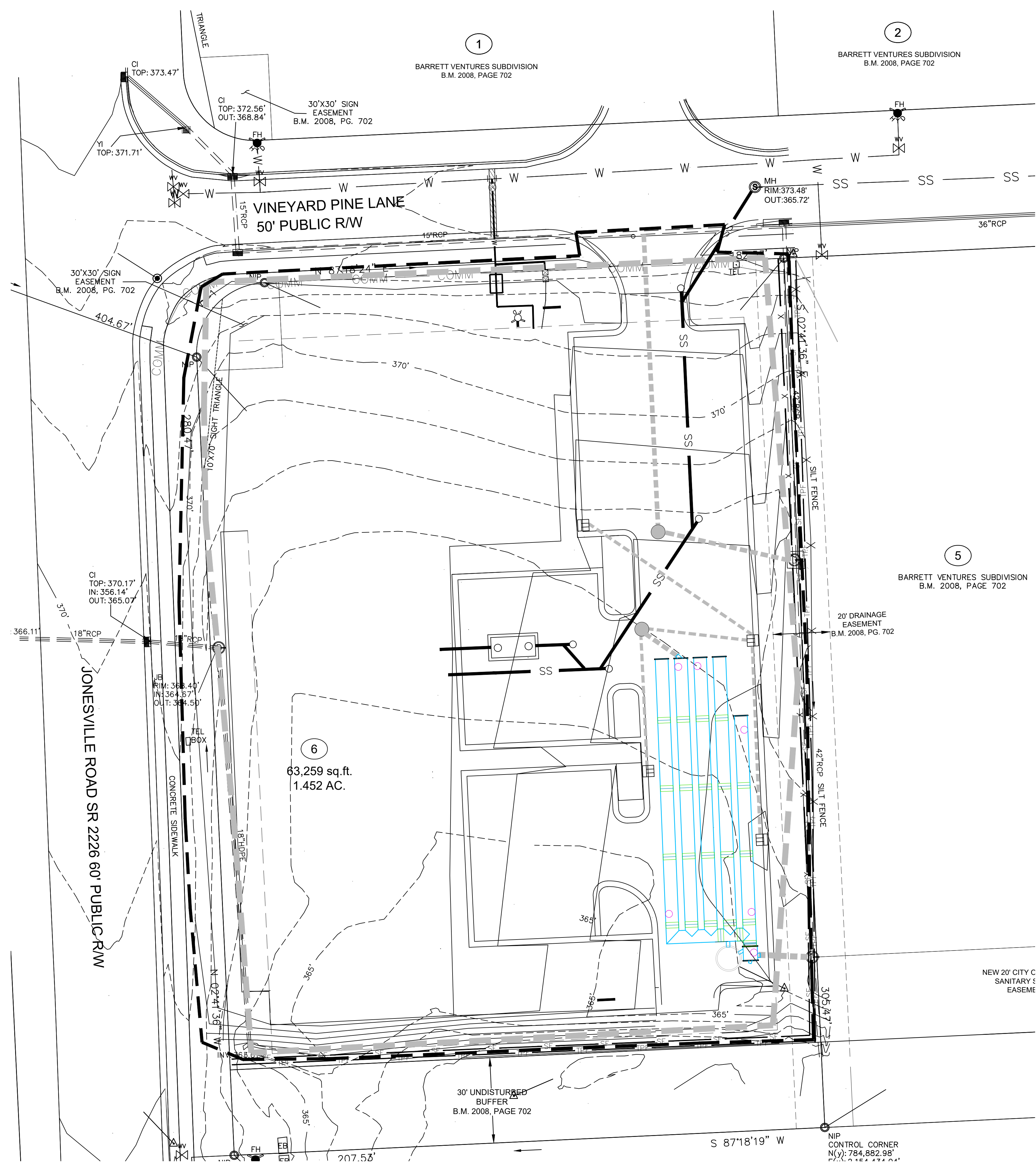
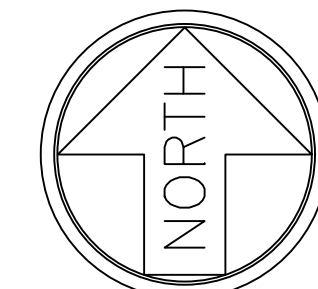
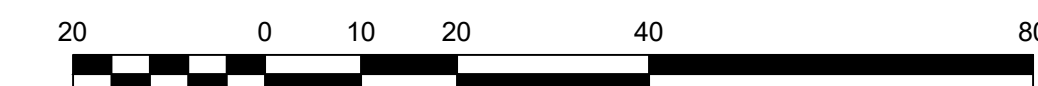
REQUIRED WAKE COUNTY BASIN REMOVAL SEQUENCE

1. SCHEDULE A SITE MEETING WITH THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEVAN NEUPANE AT (919) 819-8907, TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
2. CONTACT NCDQD - RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDQD-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ON SITE. THE EMAIL SHOULD INCLUDE: EASC JURISDICTION; WAKE COUNTY, WAKE COUNTY PROJECT, NAME, NUMBER, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING: A) REASON FOR CONVERSION, B) BASIN #, C) DEWATERING METHOD, AND D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01. (KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION)
3. AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDQD-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON > DAY 11, WHICHEVER IS SOONER, REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
4. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
5. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
6. WHEN SITE IS FULLY STABILIZED, CALL WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEVAN NEUPANE AT (919) 819-8907, FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION. NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE.

LINE AND SYMBOL LEGEND

-  SILT FENCE OUTLET
-  LIMITS OF DISTURBANCE
-  SILT FENCE
-  TEMPORARY DIVERSION
-  STONE FILTER

Graphic Scale



Gettle Engineering and Design, PLLC

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(919) 210-3934 Firm License P-2538

Erosion Control Phase 3

Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No.

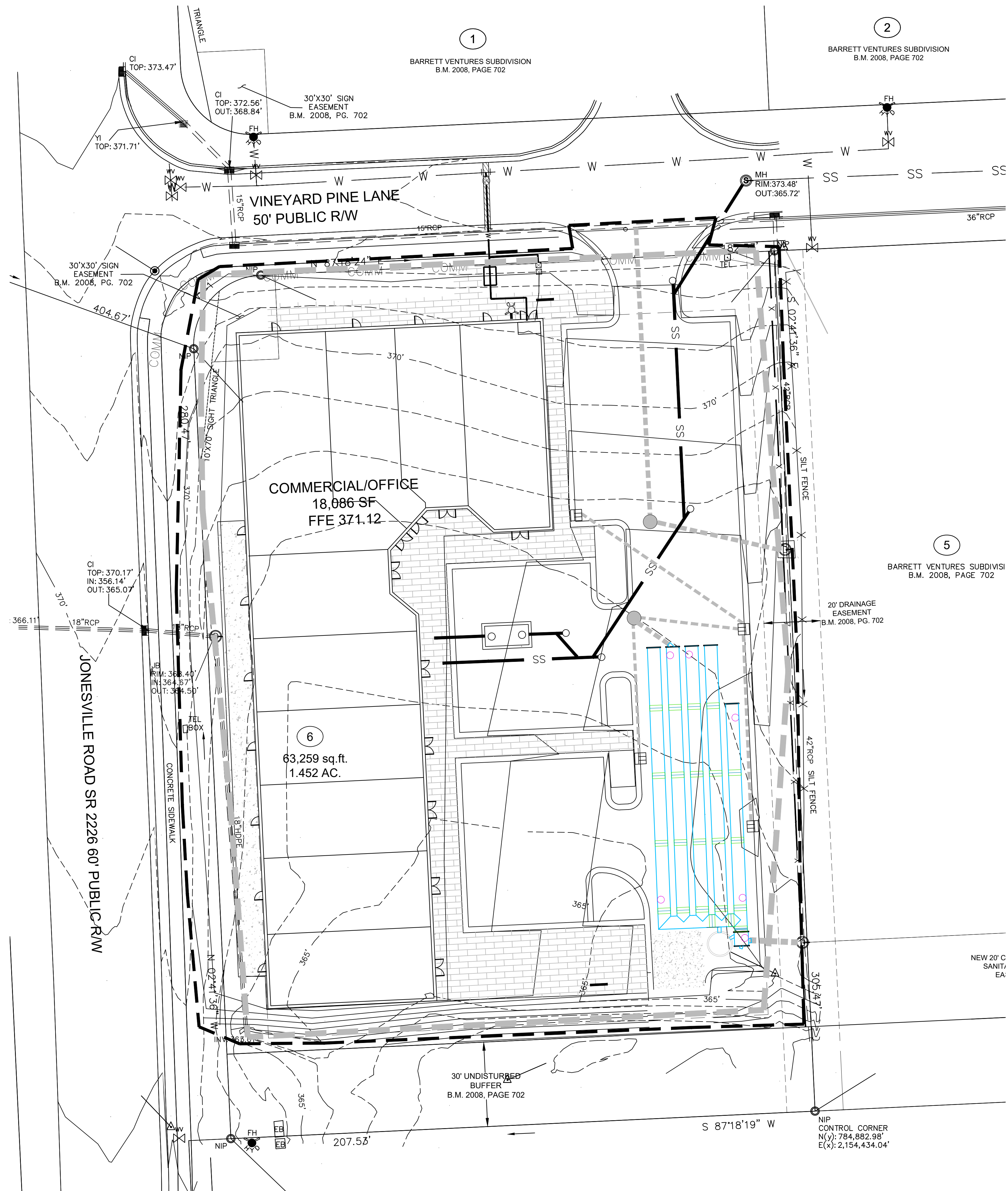
Dwg No.

EC3

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**CONSTRUCTION SEQUENCE - PHASE 4**

1. ENSURE THE SITE IS COMPLIANT WITH THE NCG01 SELF INSPECTION AND GROUND STABILIZATION AND MATERIAL HANDLING.
2. FOR ALL AREAS OF MODERATE AND / OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF FOURTEEN (14) DAYS.
3. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN FOURTEEN (14) CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
4. REMOVE SILT FENCE AND TREE PROTECTION FENCING WHEN GRADING ACTIVITIES ARE COMPLETE AND THE PROJECT SITE IS STABILIZED.
5. ONCE THE BMP INSTALLATION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT JEEVAN NEUPANE AT (919) 819-8907 TO SCHEDULE A STORMWATER FINAL INSPECTION. BMP CERTIFICATIONS AND AS-BUILT PLANS MUST BE PROVIDED TO WAKE COUNTY / TOWN OF ROLESVILLE PRIOR TO FINAL PLATTING.
6. ONCE THE STORMWATER FINAL INSPECTION IS APPROVED, CLOSE THE GRADING PERMIT AND OBTAIN A CERTIFICATE OF COMPLETION.

**NPDES NOTES**

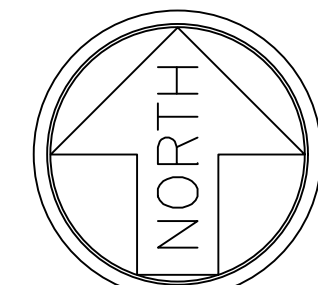
1. THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.
2. THIS PAGE CAN BE APPROVED BY THE CITY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.
3. THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.
4. THE CITY / COUNTY IS NOT AUTHORIZED TO ENFORCE THIS PAGE OF THE PLANS AND IT IS NOT A PART OF THE APPROVED PLANS FOR PURPOSES OF ENFORCEMENT ACTION UNDER THE CITY / COUNTY CODE.
5. DOCUMENTATION REQUIRED UNDER THE SITE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY SHALL BE SUBMITTED TO WAKE COUNTY.

**NPDES GROUND STABILIZATION SCHEDULE**

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS	APPLICABLE AREA ON THIS SITE
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED	NONE
SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH	AS SHOWN
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)	REMAINDER OF SITE

**LINE AND SYMBOL LEGEND**

- SILT FENCE OUTLET
- LIMITS OF DISTURBANCE
- SILT FENCE
- TEMPORARY DIVERSION
- STONE FILTER



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 3616 Waxwing Court,  
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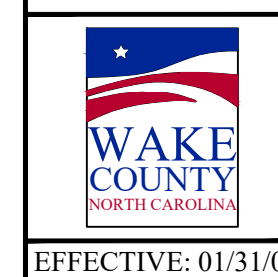
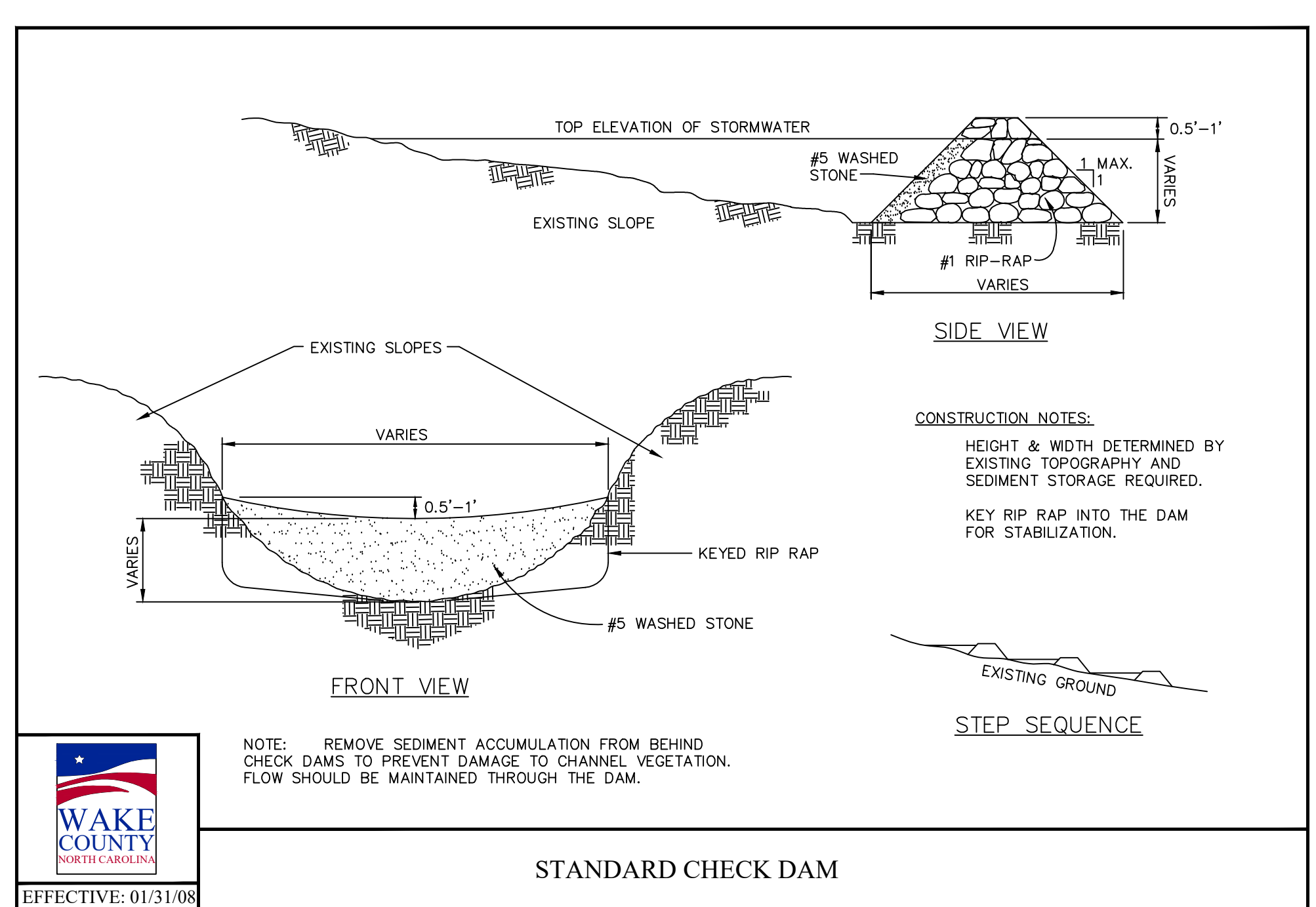
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**Erosion Control Phase 4**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

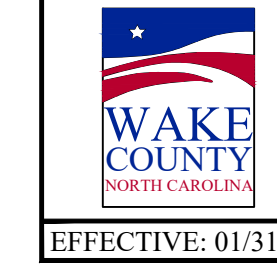
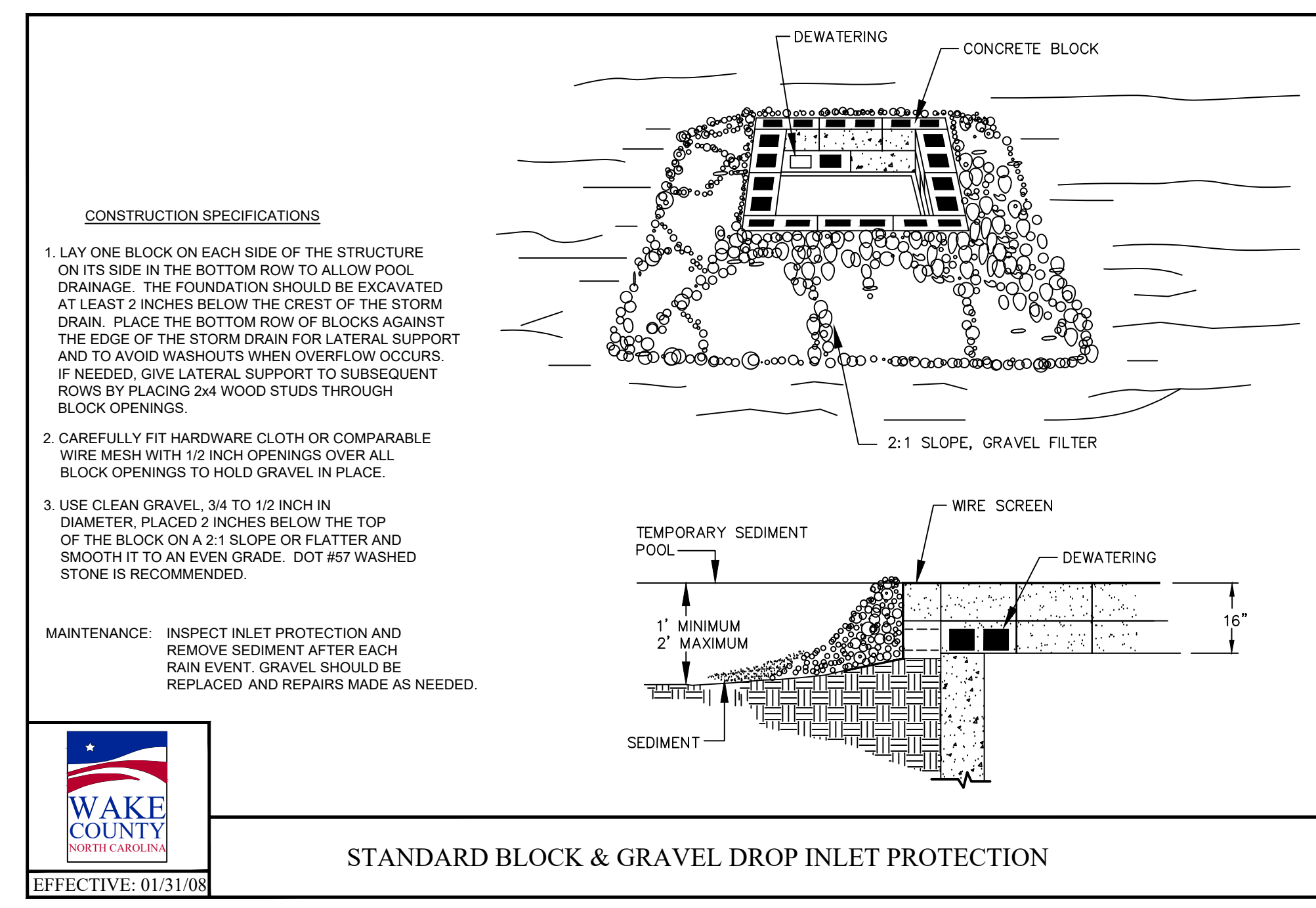
Project No.  
 Dwg No.  
**EC4**





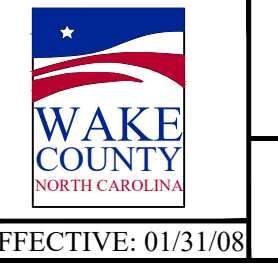
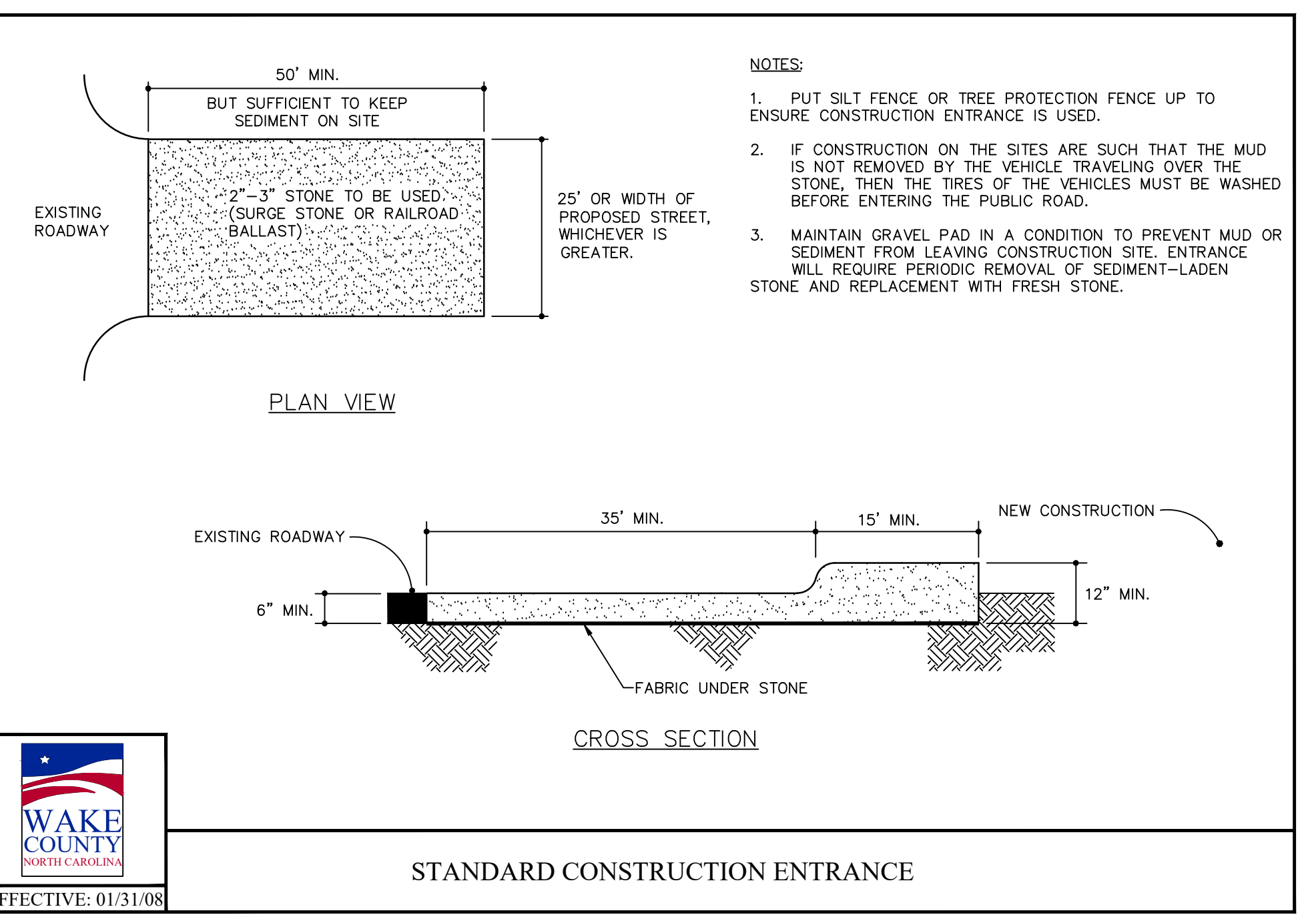
STANDARD CHECK DAM

EFFECTIVE: 01/31/08



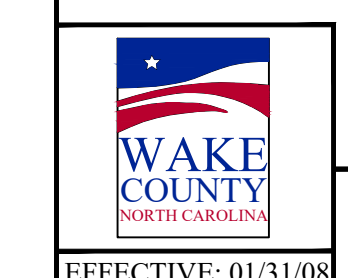
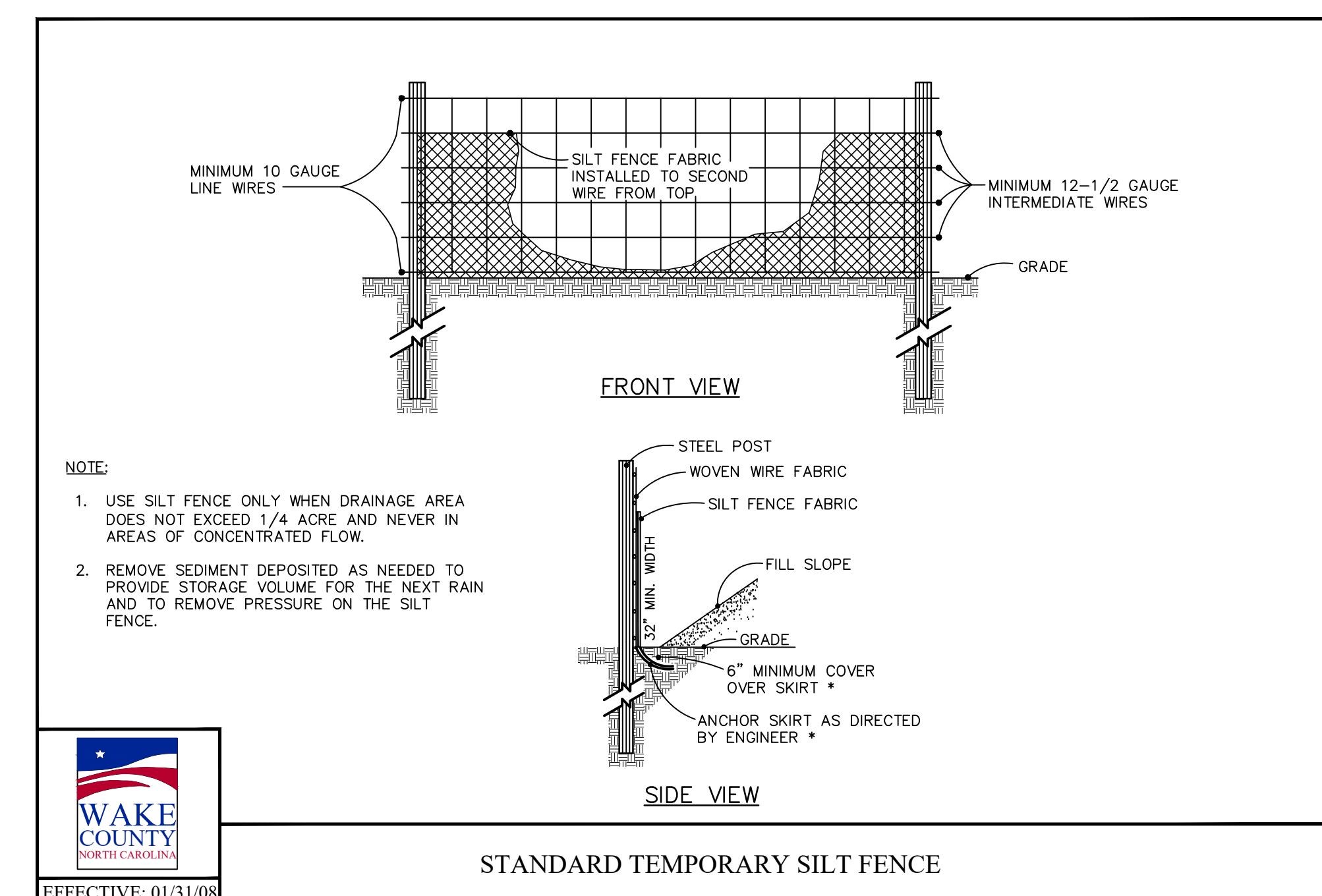
STANDARD BLOCK & GRAVEL DROP INLET PROTECTION

EFFECTIVE: 01/31/08



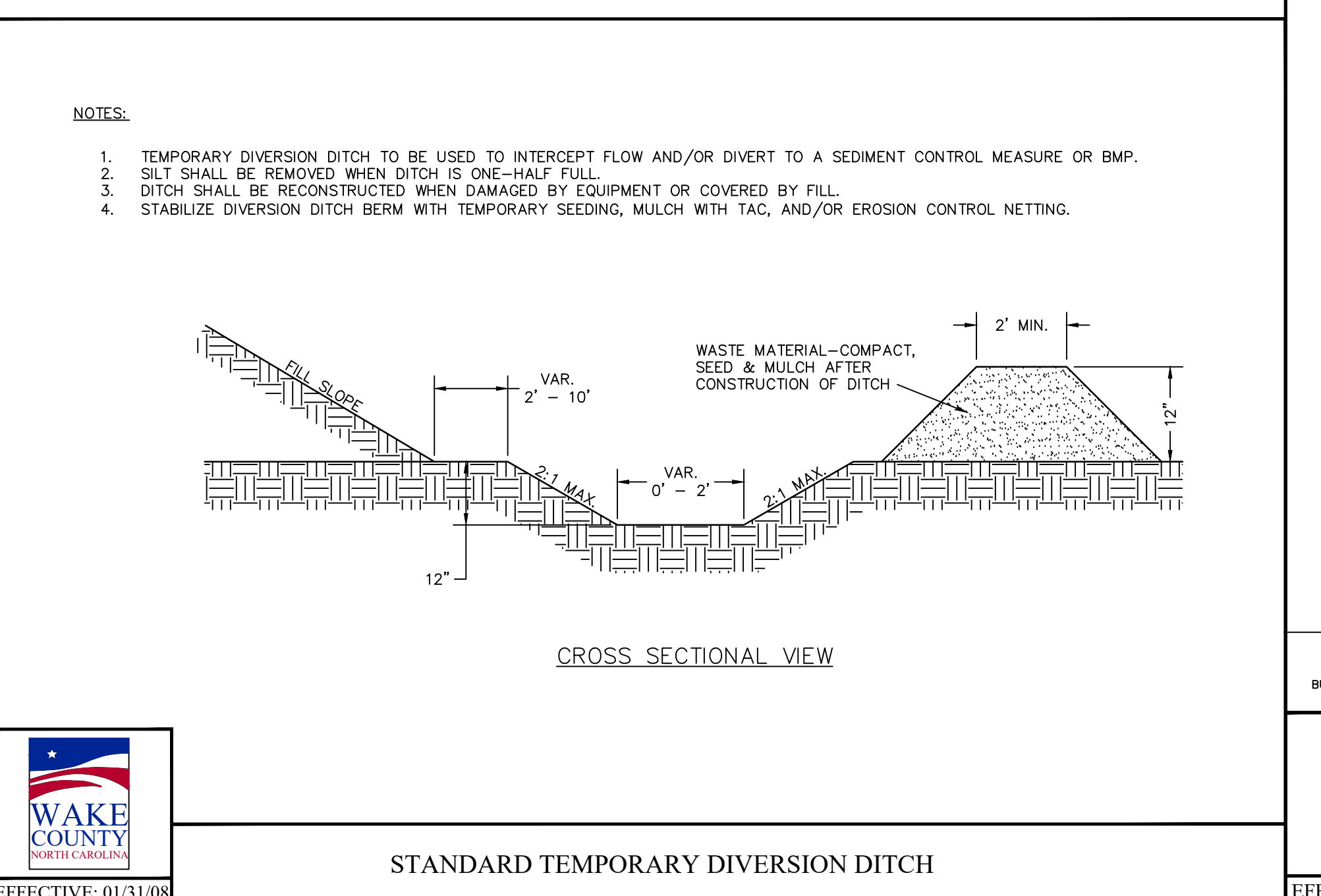
STANDARD CONSTRUCTION ENTRANCE

EFFECTIVE: 01/31/08



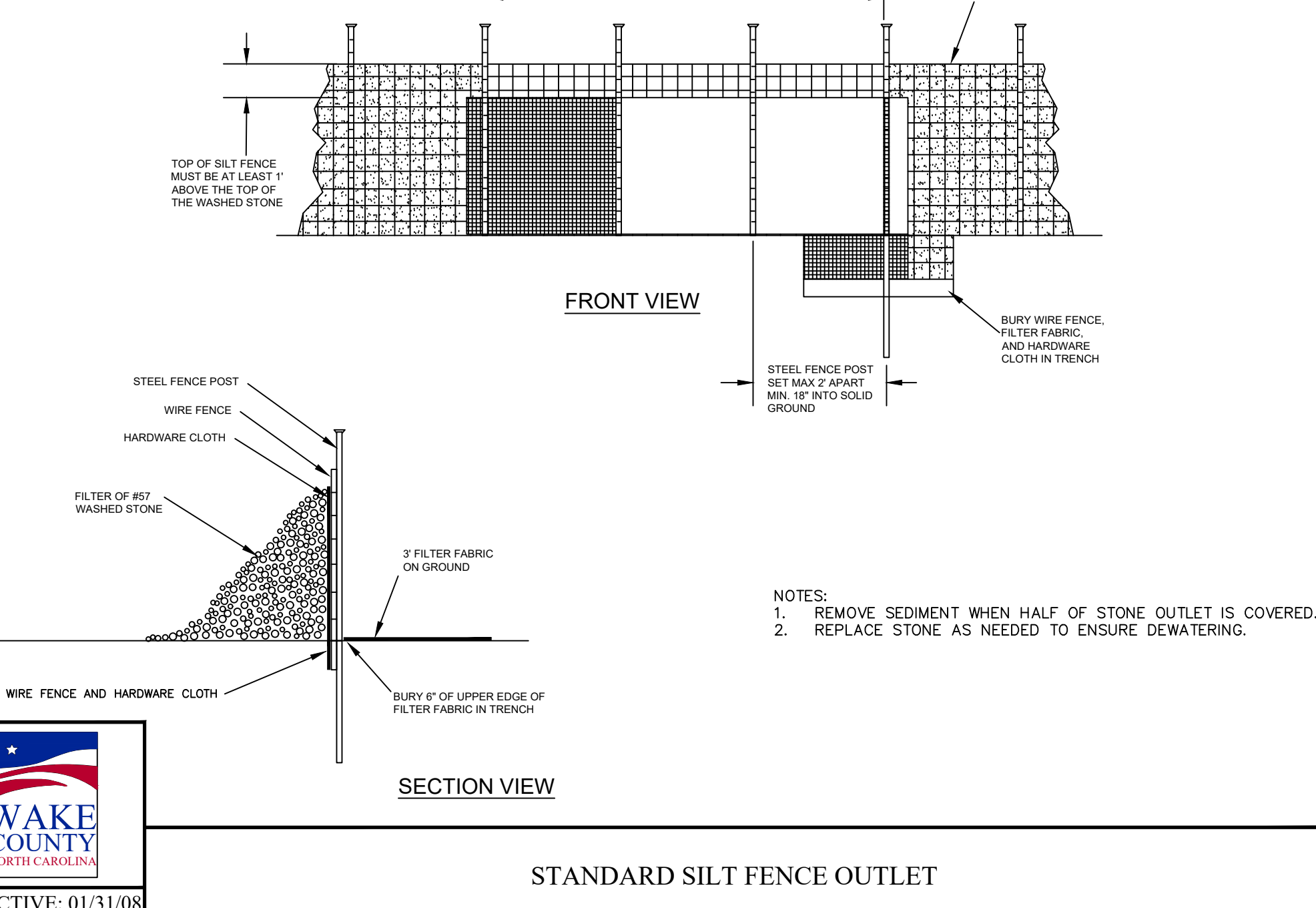
STANDARD TEMPORARY SILT FENCE

EFFECTIVE: 01/31/08



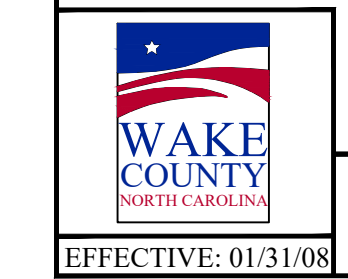
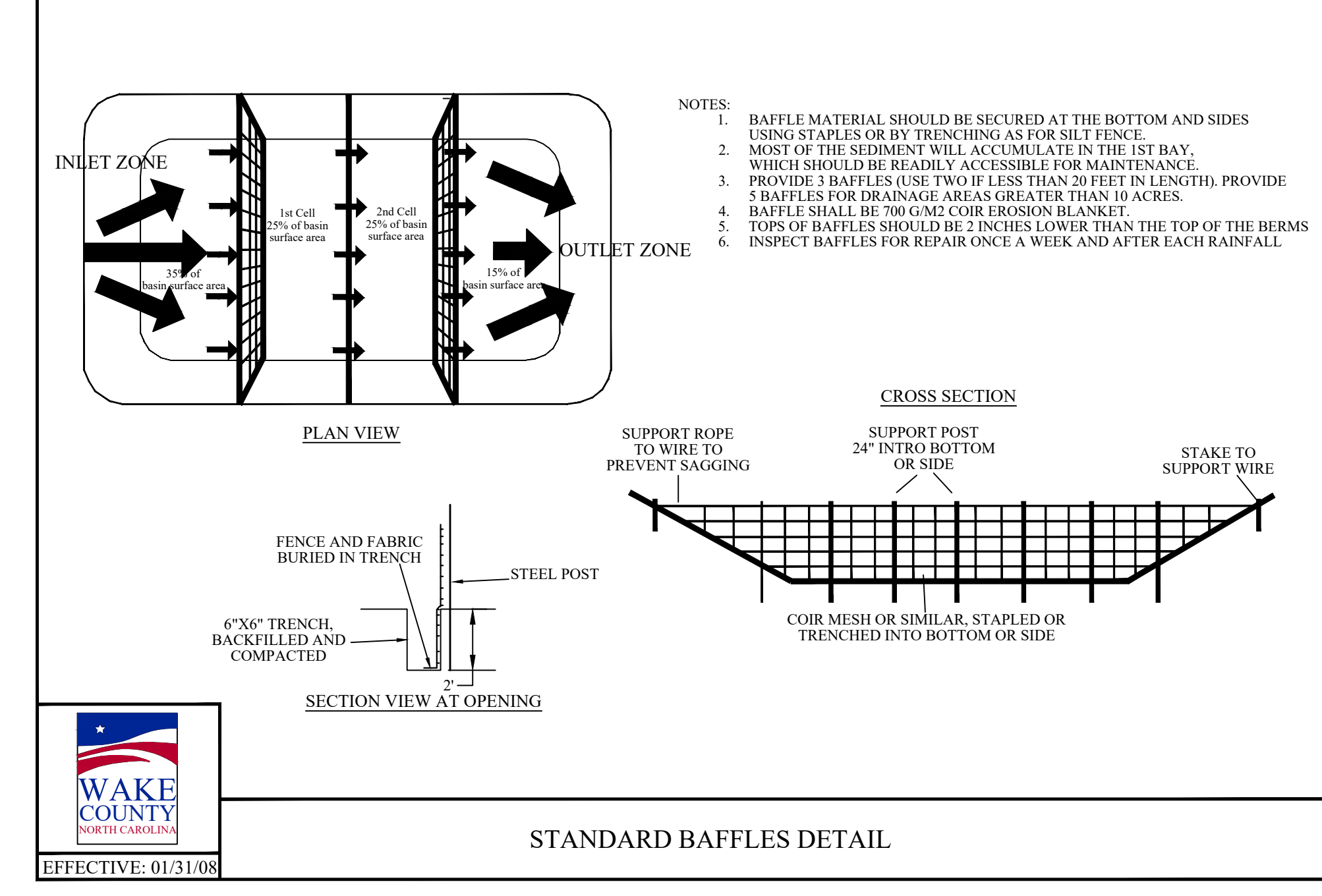
STANDARD TEMPORARY DIVERSION DITCH

EFFECTIVE: 01/31/08



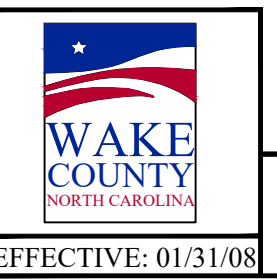
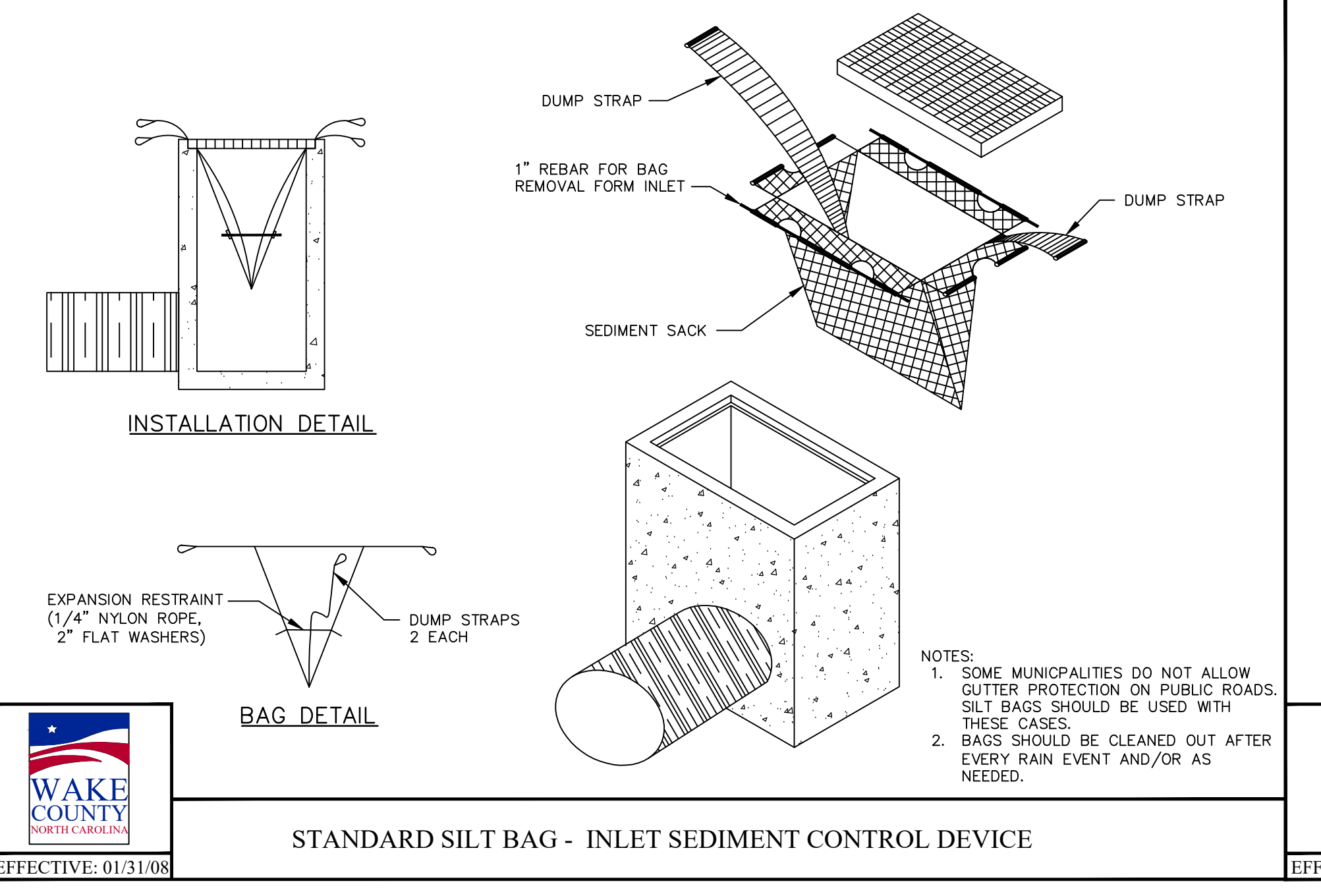
STANDARD SILT FENCE OUTLET

EFFECTIVE: 01/31/08



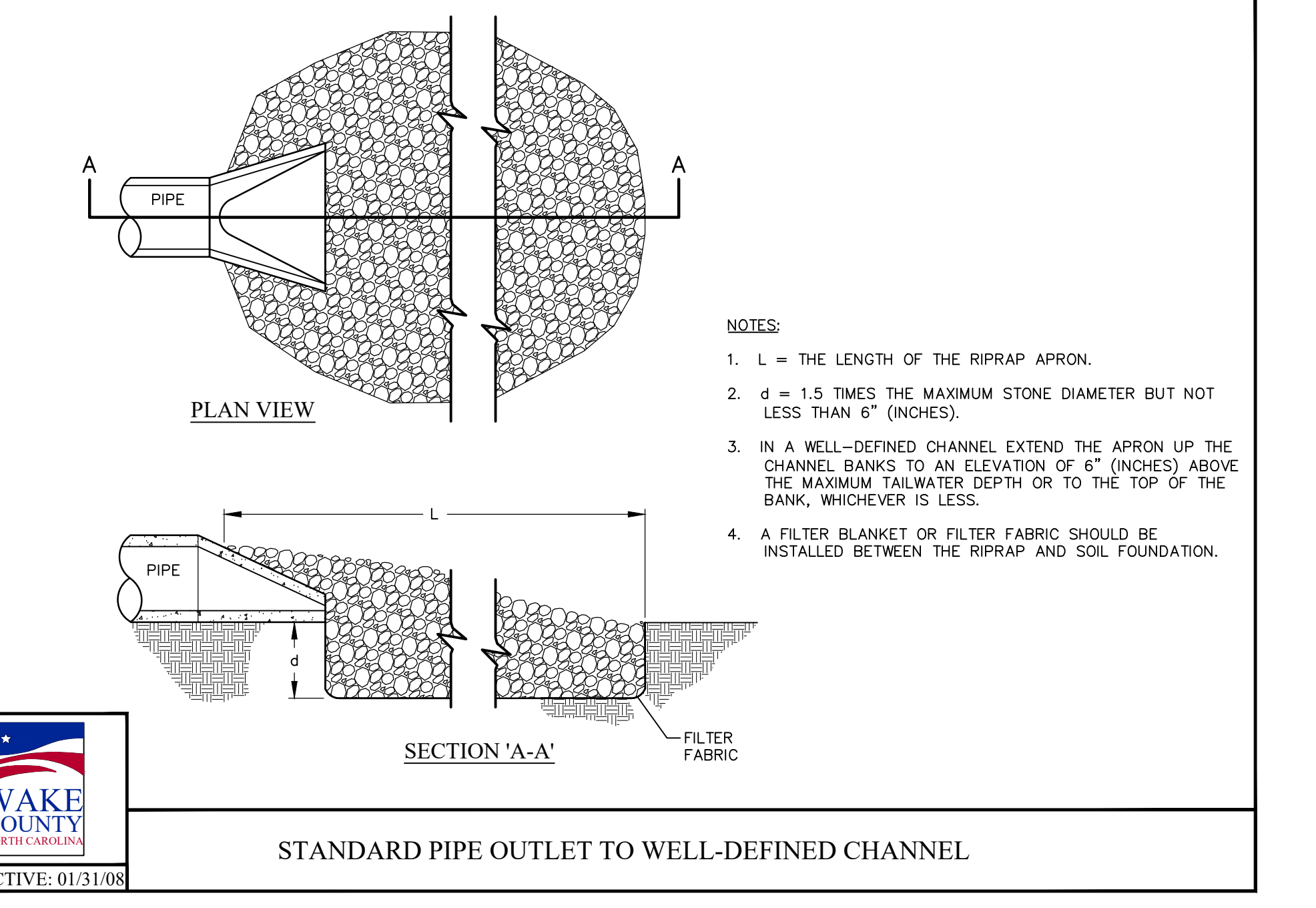
STANDARD BAFFLES DETAIL

EFFECTIVE: 01/31/08



STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE

EFFECTIVE: 01/31/08



STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL

EFFECTIVE: 01/31/08

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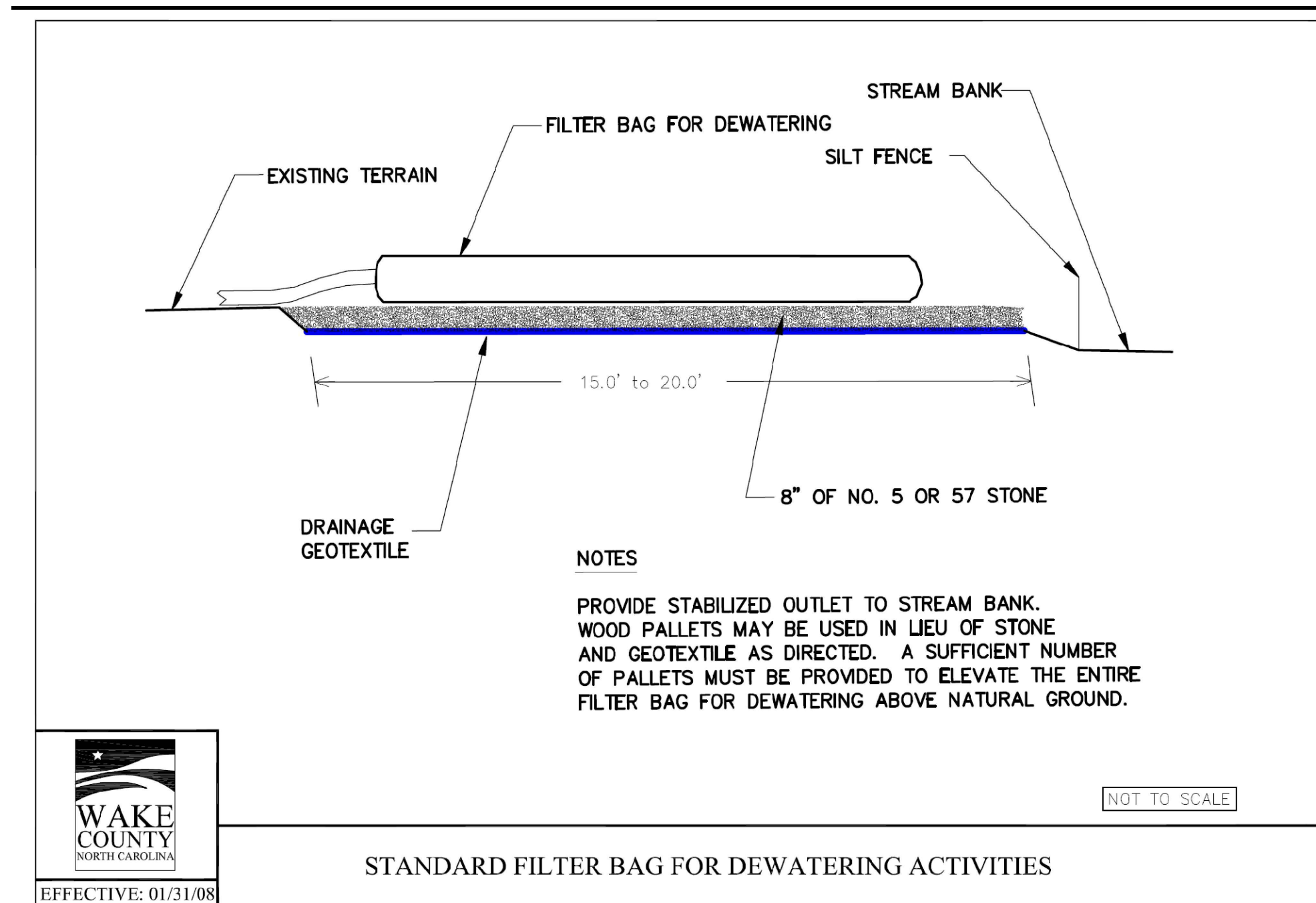
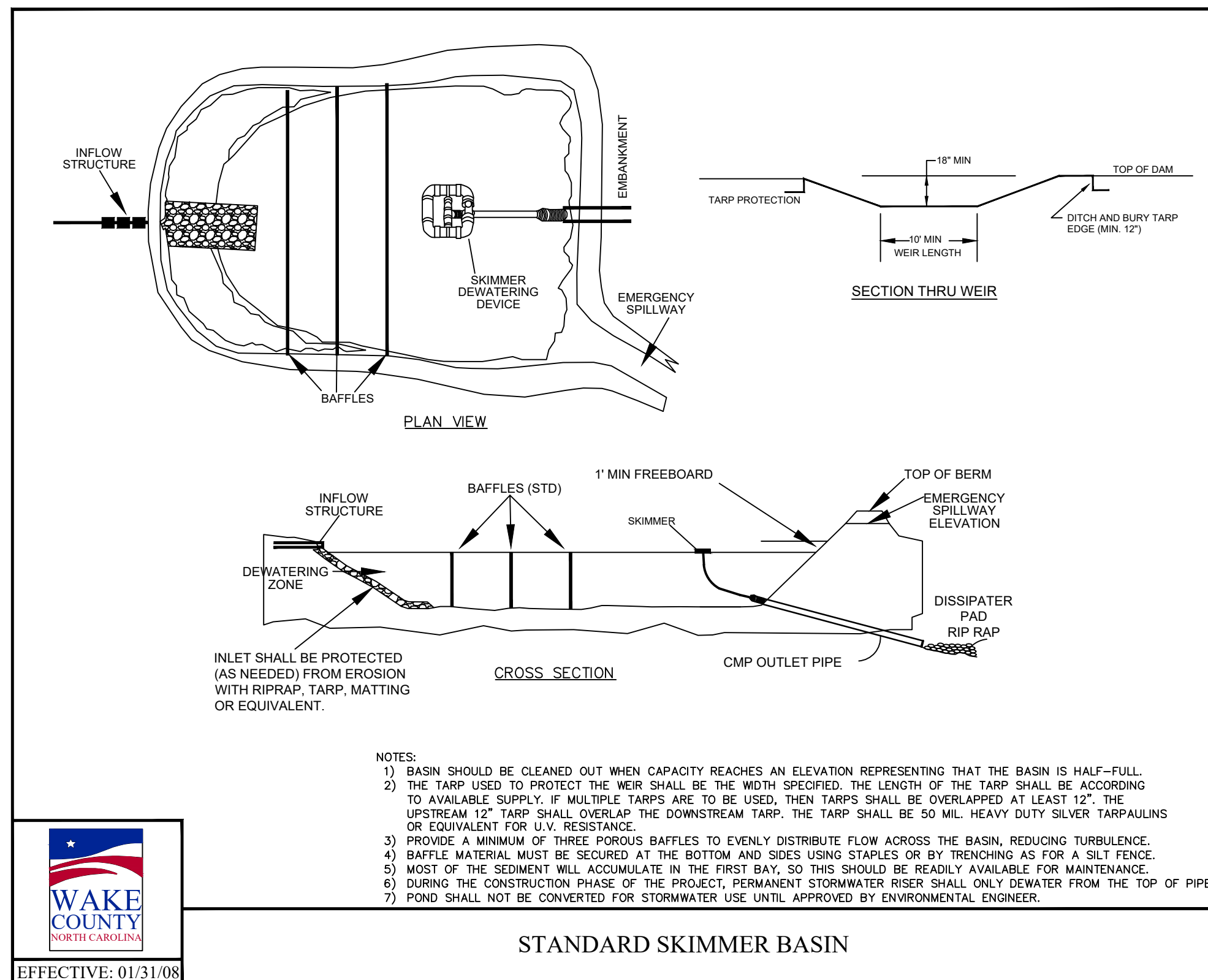


**Erosion Control Details**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No.  
 Dwg No.  
**EC5**

**Gettle Engineering and Design, PLLC**  
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**MIXTURE:**

AGRICULTURAL LIMESTONE:	2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS)
FERTILIZER:	1,000 LBS/ACRE - 10-10-10
SUPERPHOSPHATE:	500 LBS/ACRE - 20% ANALYSIS
MULCH:	2 TONS/ACRE - SMALL GRAIN STRAW
ANCHOR:	ASPHALT EMULSION AT 300 GALS/ACRE

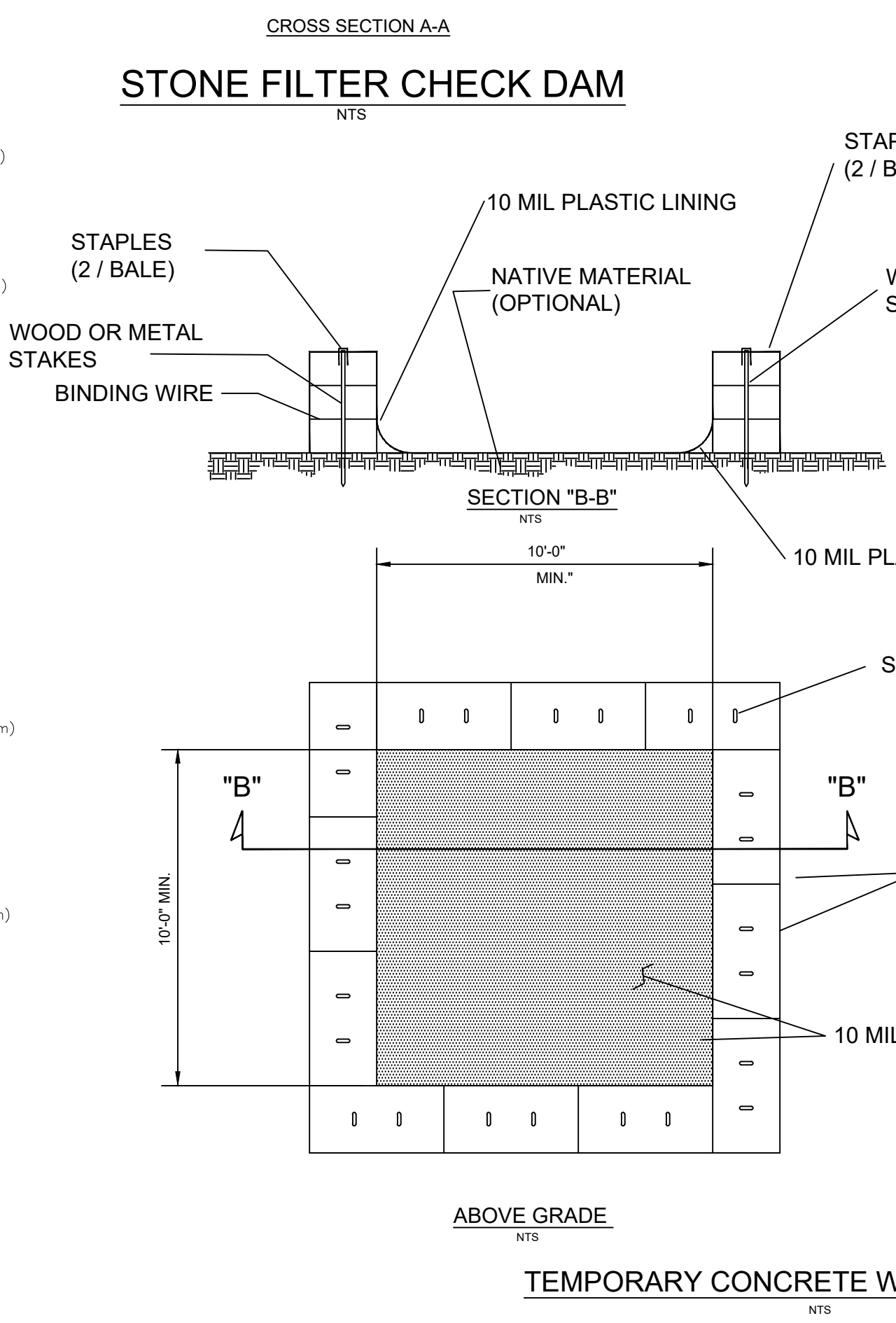
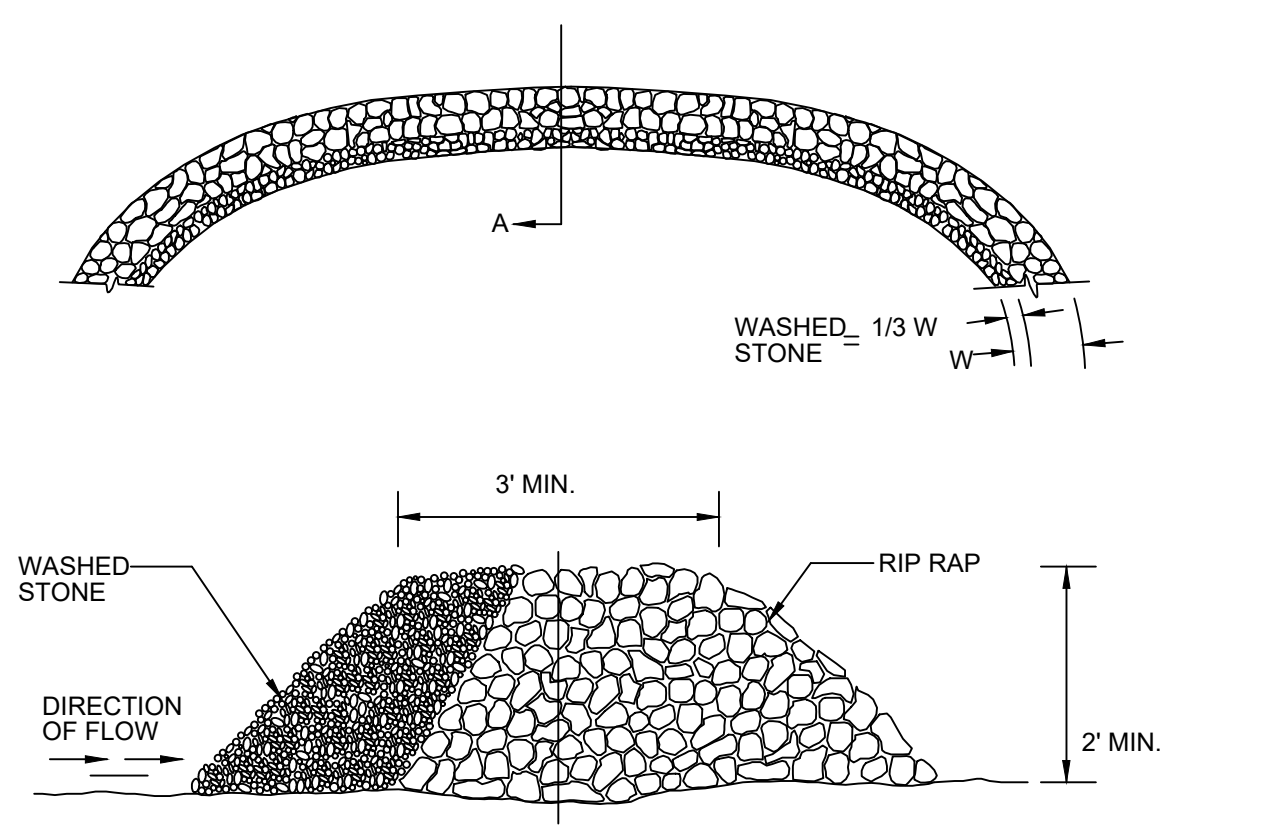
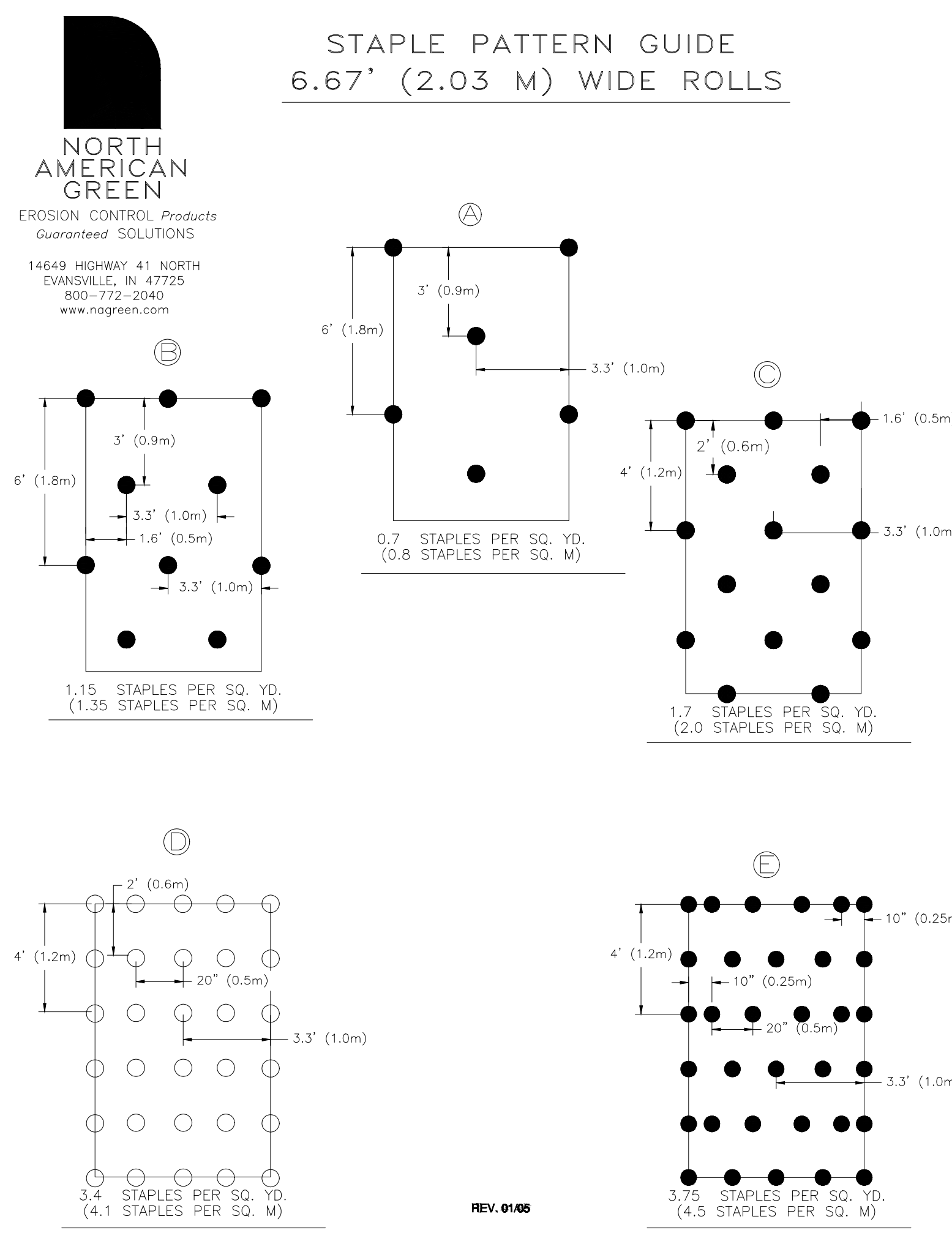
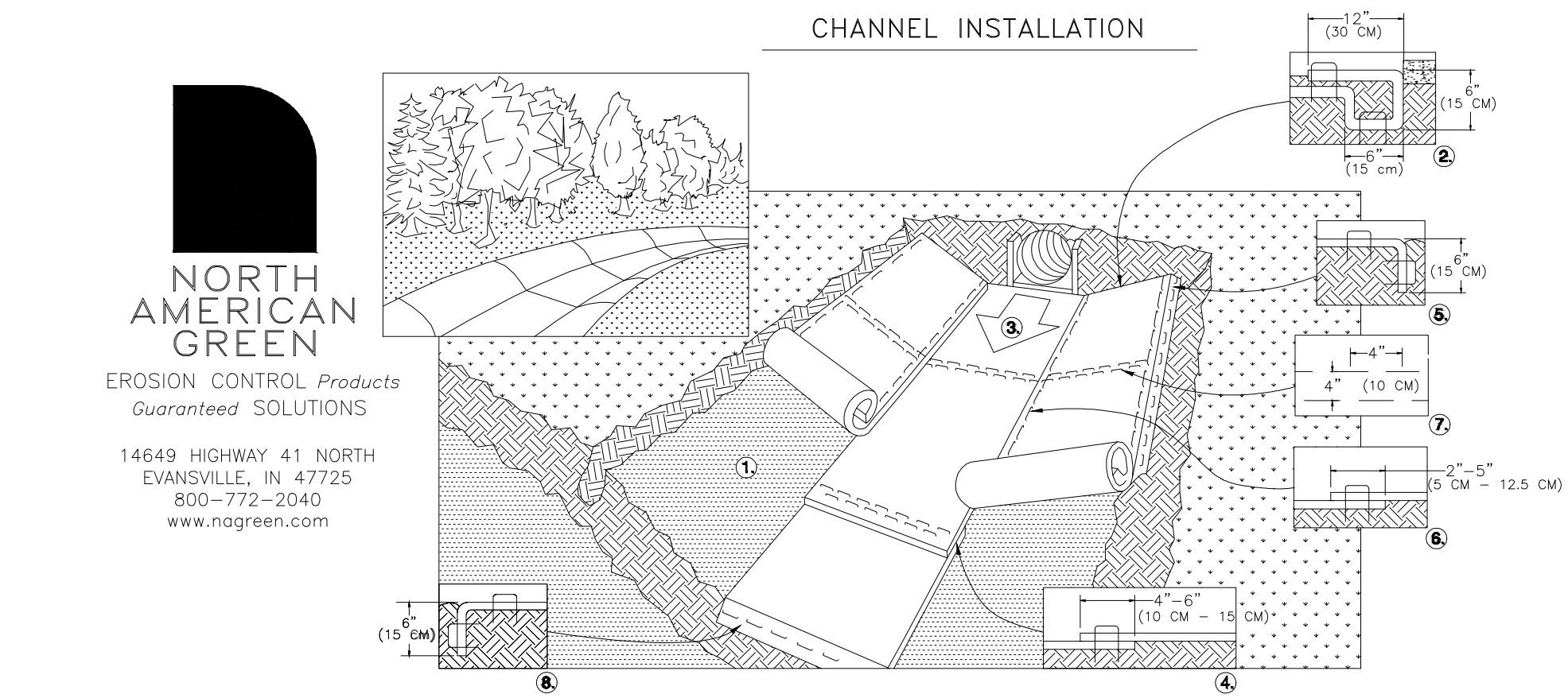
**SEEDING SCHEDULE**

FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1):

DATE	TYPE	PLANTING RATE
AUG 15 - NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1 - MAR 1	TALL FESCUE & ABRUZZI RYE	300 LBS/ACRE
MAR 1 - APR 15	TALL FESCUE	300 LBS/ACRE
APR 15 - JUN 30	HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUL 1 - AUG 15	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS**	125 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)

FOR SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1):

DATE	TYPE	PLANTING RATE
MAR 1 - JUN 1	SERICEA LESPEDEZA (SCARIFIED) AND 50 LBS/ACRE (SERICEA LESPEDEZA); USE THE FOLLOWING COMBINATIONS:	
MAR 1 - APR 15	ADD TALL FESCUE	120 LBS/ACRE
MAR 1 - JUN 30	OR ADD WEEPING LOVE GRASS	10 LBS/ACRE
MAR 1 - JUN 30	OR ADD HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUN 1 - SEPT 1	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS**	120 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)
SEPT 1 - MAR 1	SERICEA LESPEDEZA (UNHULLED - UNSCARIFIED) AND TALL FESCUE	70 LBS/ACRE (SERICEA LESPEDEZA); 120 LBS/ACRE (TALL FESCUE)
NOV 1 - MAR 1	AND ABRUZZI RYE	25 LBS/ACRE



**CONCRETE WASH OUT AREA NOTES:**

- ACTUAL LAYOUT DETERMINED IN THE FIELD - SEE EC1 PLAN FOR LOCATION.
- THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 90 FEET OF THE FACILITY.
- LOCATE THE WASHOUT AREA AT LEAST 50-FEET FROM SENSITIVE AREAS SUCH AS STORM DRAINS, OPEN DITCHES OR WATER BODIES, INCLUDING WETLANDS.
- THE PLASTIC LINING MATERIAL SHOULD BE A MIN OF 10 MIL POLYETHYLENE MATERIAL AND FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT MAY COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
- WHEN THE FACILITY IS NO LONGER REQUIRED THE HARDENED CONCRETE, SLURRIES AND LIQUIDS SHALL BE PROPERLY DISPOSED OF OFF-SITE. MATERIAL USED TO CONSTRUCT THE FACILITY SHALL BE PROPERLY DISPOSED OF OFF-SITE. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY FACILITY SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

**SIGN- (SEE NOTE 2)**

**REV. 01/05**

**CRITICAL POINTS**

A. OVERLAPS AND SEAMS  
B. PROJECTED WATER LINE  
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

**NOTE:**

\* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

\*\* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECPS.

**REV. 01/05**

**NORTH AMERICAN GREEN**

EROSION CONTROL SOLUTIONS

Guaranteed SOLUTIONS

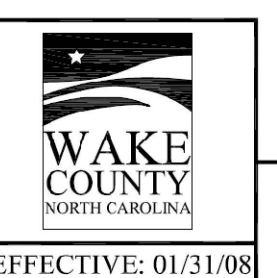
14649 HIGHWAY 41 NORTH  
EVANSVILLE, IN 47725  
800-772-2040  
www.nagreen.com

**NORTH AMERICAN GREEN**

EROSION CONTROL Products

Guaranteed SOLUTIONS

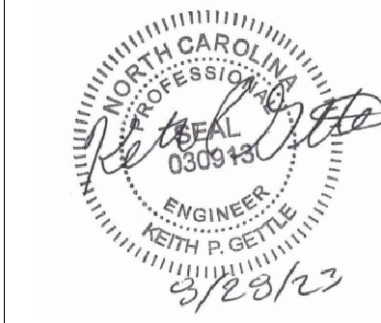
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**Erosion Control Details**

Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No.  
Dwg No.  
**EC6**



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

**Temporary and Permanent Groundcover\***

STABILIZATION TIMEFRAMES (Effective Aug. 1, 2015)	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 12' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 40' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

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

**GROUND STABILIZATION SPECIFICATION**  
 Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below.

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

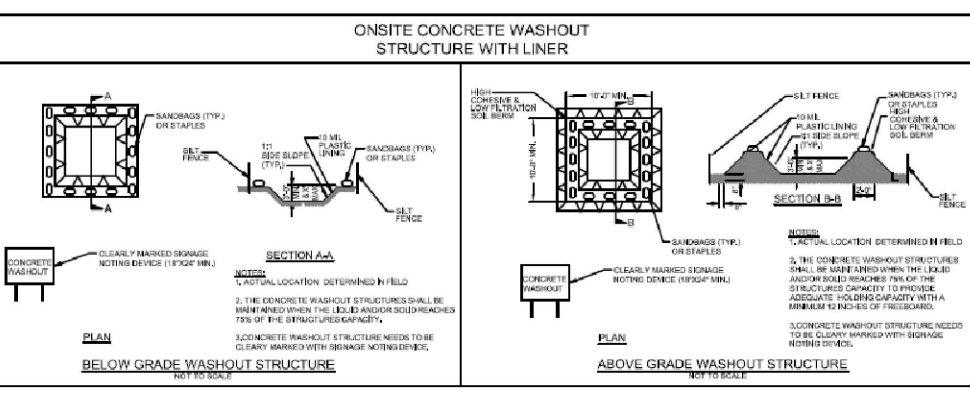
**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

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



**EQUIPMENT AND VEHICLE MAINTENANCE**

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



**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

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

**CONCRETE WASHOUTS**

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

**PAINT AND OTHER LIQUID WASTE**

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

**PORTABLE TOILETS**

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

**EARTHEN STOCKPILE MANAGEMENT**

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

**HERBICIDES, PESTICIDES AND RODENTICIDES**

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

**HAZARDOUS AND TOXIC WASTE**

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

**NCG01 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 03/01/19**

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

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

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

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

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

**SECTION B: RECORDKEEPING**  
**1. EASC Plan Documentation**  
 The approved EASC plan as well as any approved deviation shall be kept on the site. The approved EASC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the EASC plan shall be documented in the manner described:

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

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

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

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

**SECTION C: REPORTING**  
**1. Occurrences that must be reported**  
 Permittees shall report the following occurrences:

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

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

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



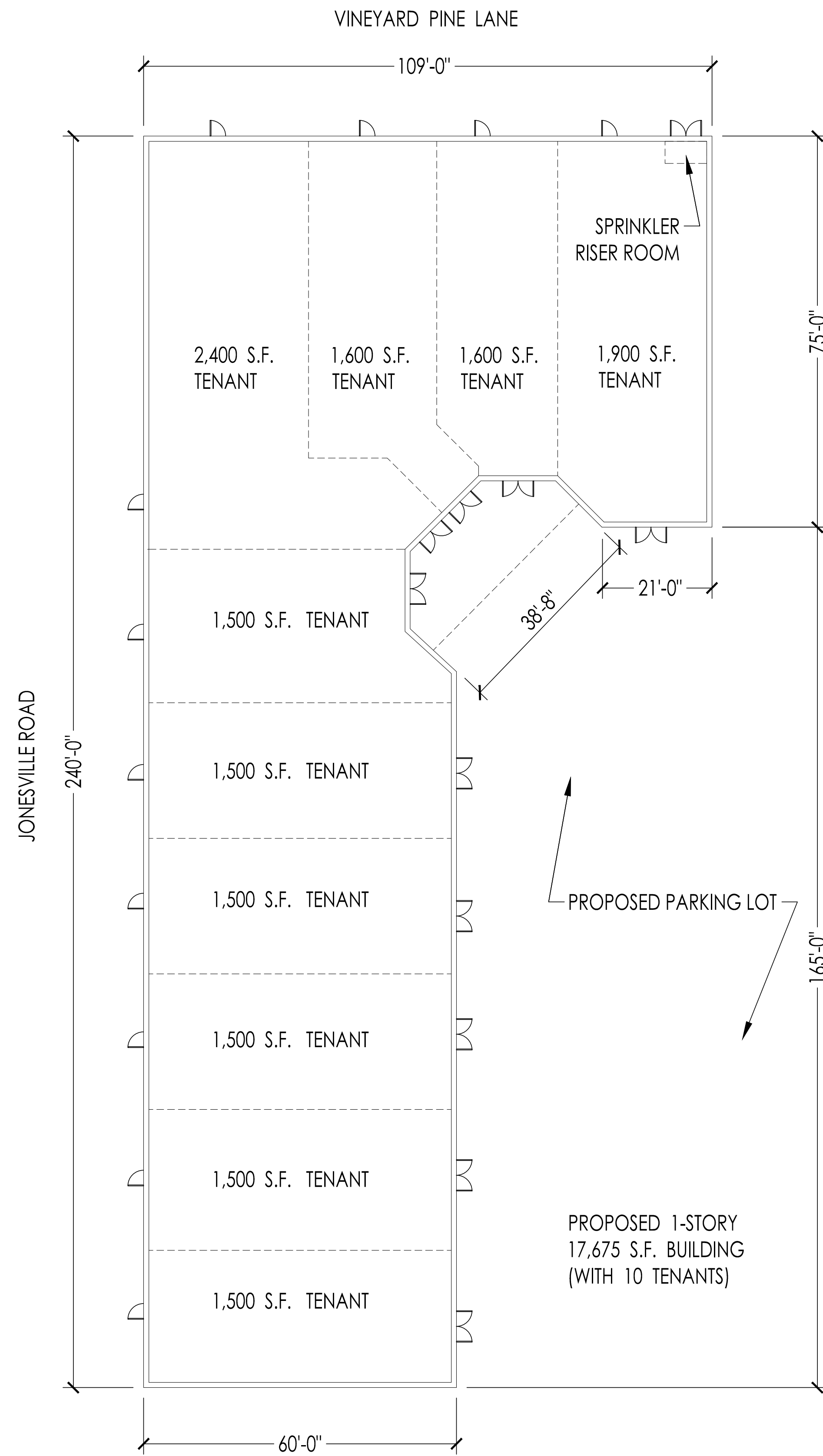
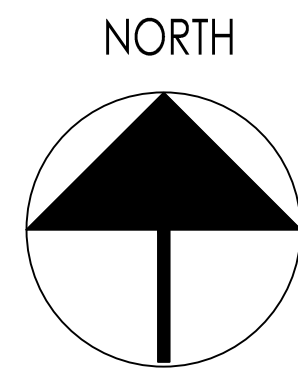
**NCG01 Requirements**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina



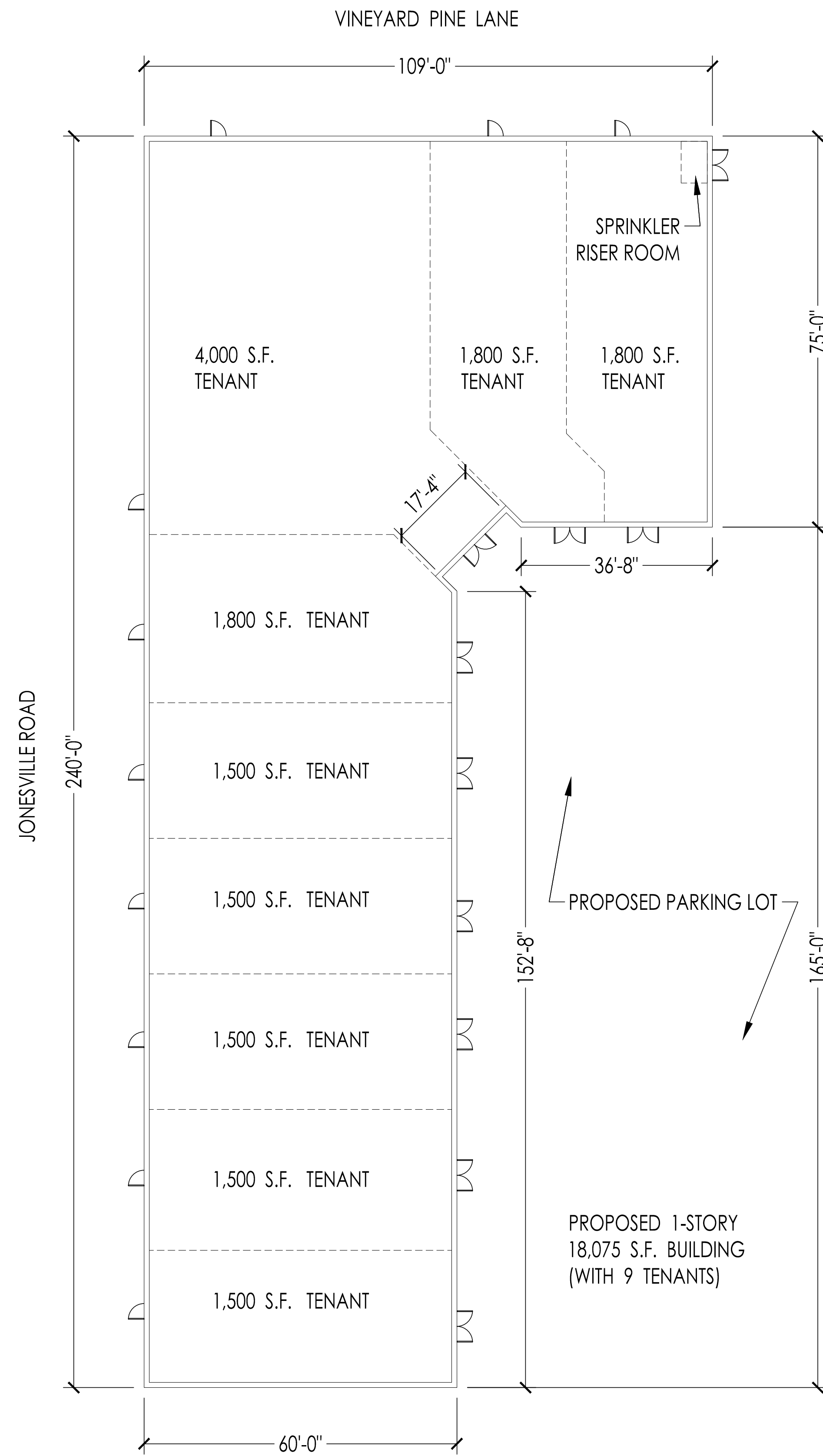
**NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING EFFECTIVE: 03/01/19**

Project No.  
 Dwg No.  
**EC7**





PROPOSED FLOOR PLAN - OPTION D



PROPOSED FLOOR PLAN - OPTION C



REDLINE

6601 Six Forks Road, Suite 130  
Raleigh, NC 27615  
© 919.878.1660

PROJECT NO: 23-039  
DRAWN BY: JKS  
CHECKED BY: JDB

PRELIMINARY  
NOT FOR CONSTRUCTION

NCSBC 2018

Jonesville Road Commercial Building  
4502 Vineyard Pine Lane  
Rolesville, NC

Owner:  
MR Development LLC  
10121 Capital Blvd, Ste. 105  
Wake Forest, NC 27587  
Tel: 330.573.4030  
Contact: Omar El-Kaissi

Architect:  
REDLINE Design Group, PA  
6601 Six Forks Rd, Ste. 130  
Raleigh, NC 27615  
Tel: 919.878.1660  
Contact: Jon Steindorf

Civil Engineer:  
C&O Engineers, Inc.  
4932 B Windy Hill Drive  
Raleigh, NC 27609  
Tel: 919.625.7655  
Contact: George McIntyre, PE

DATE: 04/03/2023  
REVISIONS:

DRAWING TITLE:  
FLOOR  
PLAN STUDIES

SHEET NO:  
A1.1



