

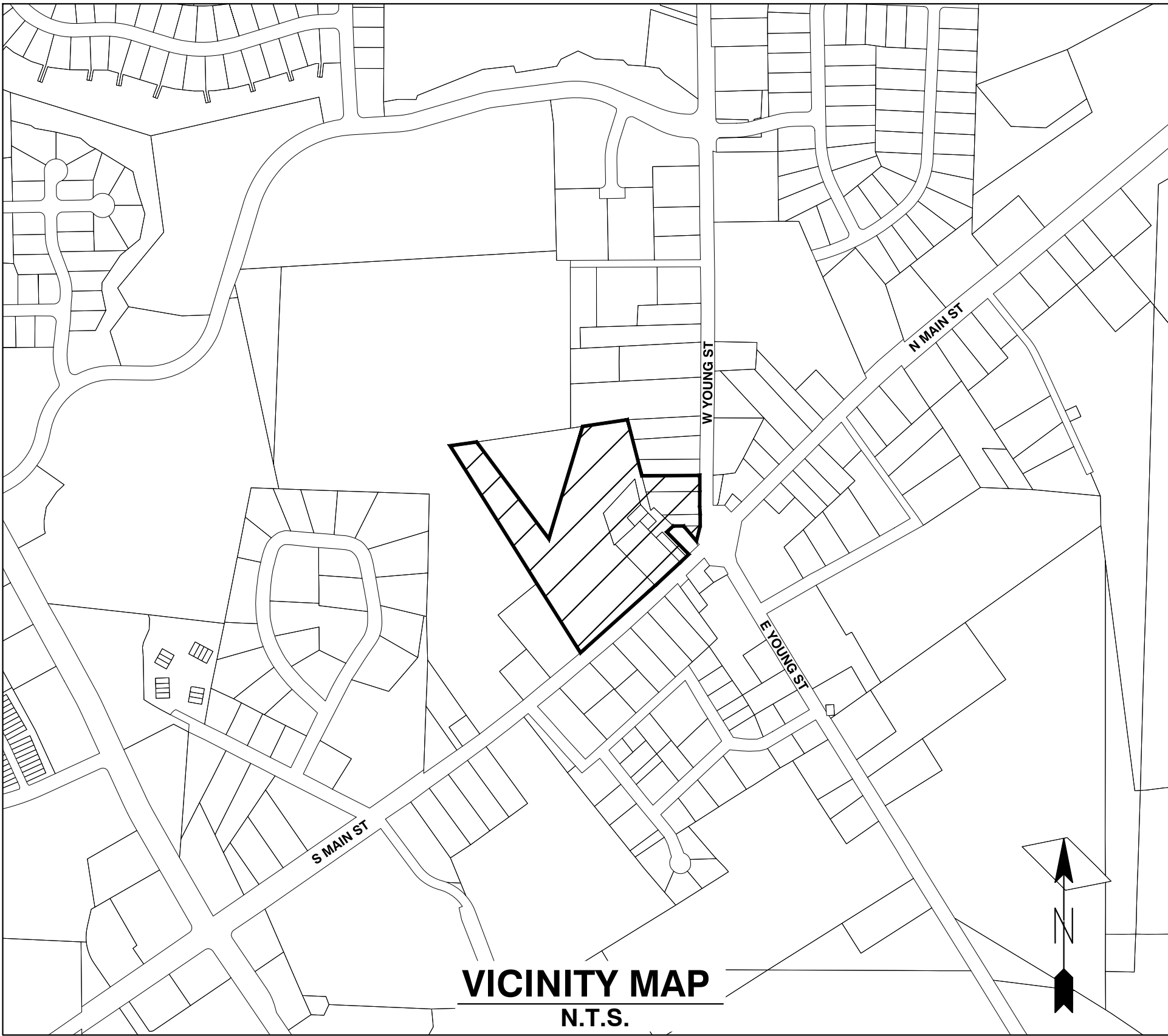
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT TOWN OF ROLESVILLE STANDARDS AND SPECIFICATIONS

SYMBOLS AND ABBREVIATIONS

ABC	AGGREGATE BASE COURSE		EXISTING CURB INLET
ALUM	ALUMINUM		EXISTING GRATE INLET/YARD INLET
AST2	ALUMINIZED STEEL – TYPE 2		EXISTING FLARED END SECTION
B-B	BACK TO BACK		EXISTING FIRE HYDRANT
BOA	BLOW-OFF ASSEMBLY		EXISTING BLOW-OFF ASSEMBLY
C&G	CURB AND GUTTER		EXISTING GATE VALVE
CFS	CUBIC FEET PER SECOND		EXISTING REDUCER
CI	CURB INLET		EXISTING WATER METER
CL	CENTER LINE		EXISTING SAN SEWER MANHOLE
COMP	CORRUGATED METAL PIPE		EXISTING CLEAN OUT
CO	CLEAN OUT		EXISTING POWER POLE
COM	COMMUNICATION		EXISTING TELEPHONE PEDESTAL
CONC	CONCRETE		EXISTING AREA LIGHT
DCV	DOUBLE CHECK VALVE		EXISTING SIGN
DDCV	DOUBLE DETECTOR CHECK VALVE		NEW CURB INLET
DI	DROP INLET		NEW GRATE INLET/YARD INLET
DIP	DUCTILE IRON PIPE		NEW FLARED END SECTION
EASE	EASEMENT		NEW FIRE HYDRANT
ELEC	ELECTRIC		NEW BLOW-OFF ASSEMBLY
EX	EXISTING		NEW GATE VALVE
FES	FLARED END SECTION		NEW REDUCER
FH	FIRE HYDRANT		NEW WATER METER
FM	FORCE MAIN		NEW TEE
FT	FEET		NEW PLUG
FT/SEC	FEET PER SEC		NEW MANHOLE
GALV	GALVANIZED		NEW CLEAN OUT
GV	GATE VALVE		NEW SIGN
HDPE	HIGH DENSITY POLYETHYLENE		IRON PIPE
L	LENGTH		BENCHMARK
LF	LINEAR FEET		TEMP SILT FENCE
MH	MANHOLE		TEMP TREE PROTECTION FENCE
PAVE	PAVEMENT		TEMP COMBINATION SILT/TREE PROTECTION FENCE
PE	FINISHED PAD ELEVATION		TEMP DIVERSION DITCH
PP	POWER POLE		DISTURBED LIMITS
PVC	POLYVINYL CHLORIDE		STREAM
R	RADIUS		EXISTING GAS LINE
R/W	RIGHT-OF-WAY		EXISTING COMMUNICATIONS LINE
RED	REDUCER		EXISTING UNDERGROUND TELEPHONE
RCP	REINFORCED CONCRETE PIPE		EXISTING UNDERGROUND ELECTRIC
RPZ	REDUCED PRESSURE ZONE		EXISTING OVERHEAD ELECTRIC
SS	SANITARY SEWER		EXISTING WATER LINE
STA	STATION		EXISTING SANITARY SEWER FORCE MAIN
TDD	TEMPORARY DIVERSION DITCH		EXISTING SANITARY SEWER
TELE	TELEPHONE		EXISTING STORM DRAINAGE
TSB	TEMPORARY SEDIMENT BASIN		NEW STORM DRAINAGE
UG	UNDERGROUND		NEW WATER LINE
WCR	WHEELCHAIR RAMP		NEW SANITARY SEWER
W/L	WATER LINE		NEW SANITARY SEWER FORCE MAIN
WM	WATER METER		NEW GAS MAIN
YI	YARD INLET		HANDICAPPED ACCESSIBLE ROUTE

NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF ROLESVILLE AND NCDOT

TOWN OF ROLESVILLE PROJECT NO. SITE PLAN APPLICATION NO. CUP-SB-21-01



OWNER:

TOWN OF ROLESVILLE
P.O. BOX 250
ROLESVILLE, NC 27571-0250

DEVELOPER:

KDM DEVELOPMENT CORPORATION
1080 PITTSFORD VICTOR RD, STE 202
PITTSFORD NY 14534-3805

CONTACT: KENYON BURHNAM
PHONE: 585-465-0099
EMAIL: KBURNHA2@U.ROCHESTER.EDU

CONSTRUCTION NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE MUNICIPALITY STANDARDS, SPECIFICATIONS, AND DETAILS. WORK IN THIS PROJECT SHALL ALSO CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS, THE ROAD AND BRIDGE STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, THE FINAL GEOTECHNICAL REPORT, AND GENERAL DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR TRENCH SAFETY DURING ALL PHASES OF CONSTRUCTION.
- THE LOCATION AND SIZE OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA ONE-CALL UTILITIES LOCATION SERVICE (ULOCAL) AT 1-800-632-4949 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE SITE.
- THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- TRAFFIC CONTROL ON PUBLIC STREETS SHALL BE IN CONFORMANCE WITH THE TRAFFIC CONTROL PLAN, THE 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES', AND AS FURTHER DIRECTED BY CITY AND STATE INSPECTORS.
- ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE THE MEETING WITH THE CITY ENGINEERING DIVISION.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS, THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER AND APPLICABLE MUNICIPALITY) AS REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
- THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
- MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACKFILL AROUND DRAINAGE STRUCTURES, OR IN UTILITY TRENCHES FOR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D698. STONE BACKFILL SHALL BE COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST AS SET OUT IN ASTM STANDARD D1557. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY.
- PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND ROADWAY PROFILES/SUPERELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
- THE CONTRACTOR SHALL REVIEW, VERIFY AND COORDINATE ALL DIMENSIONS SHOWN ON PLANS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER PRIOR TO STARTING PROJECT.
- ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5 FEET. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.
- ALL HANDICAP RAMPING, STRIPPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA REQUIREMENTS AND THE 'NORTH CAROLINA STATE BUILDING CODE, VOL. 1-C ACCESSIBILITY CODE.
- OWNER SHALL PROVIDE FENCING AND OTHER SAFETY MEASURES NECESSARY IN AND AROUND ANY PROPOSED STORMWATER MANAGEMENT MEASURES (PONDS, WETLANDS, ETC.) OBTAINING PROPER PERMITS SHALL BE THE RESPONSIBILITY OF THE OWNER.
- RETAINING WALLS EXCEEDING 30 INCHES IN HEIGHT SHALL INCLUDE FALL PROTECTION IN THE FORM OF A HANDRAIL OR FENCING ON THE HIGH SIDE OF THE RETAINING WALL.
- PROPER COMPACTION OF ALL FILL SOILS PLACED ON SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COMPACTION SHALL BE ADEQUATE TO SUPPORT THE PROPOSED USE OF AREAS IN WHICH FILL SOILS ARE PLACED. THE CONTRACTOR SHALL HIRE A GEOTECHNICAL ENGINEER TO TEST AND VERIFY THAT COMPACTION IS ADEQUATE FOR THE PROPOSED USE OF IN THE AREA OF FILL PLACEMENT.
- ALL ASPECTS OF THIS PROJECT SHALL BE IN FULL COMPLIANCE WITH CURRENT ADA STANDARDS. IF THE CONTRACTOR NOTES ANY ASPECTS OF THE PROJECT WHICH ARE NOT IN COMPLIANCE, THE ENGINEER SHALL BE NOTIFIED PRIOR TO ANY FURTHER WORK BEING PERFORMED. ANY WORK PERFORMED AFTER THE CONTRACTOR NOTES SUCH A NON COMPLIANCE IS SUBJECT TO REMOVAL AND REPAIR AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR OR OWNER SHALL EMPLOY A GEOTECHNICAL ENGINEER TO TEST ALL EMBANKMENTS AND FILL PLACEMENT FOR PROPER COMPACTION. PROPER COMPACTION SHALL BE PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS OR THESE PLANS, WHICHEVER IS MORE STRINGENT. EMBANKMENTS FOR PONDS SHALL BE PLACED IN 6 INCH LOOSE LAYERS AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF 4% OR TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698. THE CONTRACTOR SHALL TAKE PHOTOGRAPHS OF THE OUTLET STRUCTURE AT ALL AT ALL PHASES OF INSTALLATION AND SHALL RETAIN WITH GEOTECHNICAL TESTING DATA. THE CONTRACTOR SHALL ALSO RETAIN ALL SHIPPING RECORDS AND SPECIFICATIONS FOR THE OUTLET STRUCTURE MATERIALS AND STRUCTURES. ALL OF THE ABOVE DATA MAY BE REQUIRED AS PART OF THE MUNICIPALITY AS-BUILT PROCESS AND SHALL BE MADE AVAILABLE TO THE ENGINEER UPON REQUEST. THE CONTRACTOR AND OWNER SHALL HAVE DOCUMENTATION OF THESE TESTS AVAILABLE UPON REQUEST.
- RETAINING WALLS SHOWN HEREIN SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER WITH EXPERIENCE DESIGNING RETAINING WALLS. AT LEAST 14 DAYS PRIOR TO BEGINNING CONSTRUCTION OF RETAINING WALLS, THE CONTRACTOR SHALL CONTACT THE OWNER'S GEOTECHNICAL ENGINEER TO SCHEDULE AND COORDINATE ALL APPROPRIATE INSPECTIONS, TESTING, AND VERIFICATION NECESSARY DURING RETAINING WALL CONSTRUCTION. THE GEOTECHNICAL ENGINEER SHALL PROVIDE CONTINUOUS INSPECTION, TESTING AND VERIFICATION FOR THE DURATION OF RETAINING WALL CONSTRUCTION. PROPER SCHEDULING, EXECUTION, AND RECORD KEEPING FOR ALL REQUIRED INSPECTIONS, TESTING, AND VERIFICATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH RECORDS SHALL BE RETAINED AND SHALL BE PROVIDED TO THE OWNER AND BASS, NIXON & KENNEDY, INC. ALL MONITORING, TESTING, AND VERIFICATION SHALL CONFORM TO THE MOST RECENT VERSION OF THE NC BUILDING CODE CHAPTER 18, SECTION 1806 OR THE WALL DESIGN ENGINEER'S SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.



QUANTITY SUMMARY

PHASE NUMBER(S)	1
NUMBER OF LOT(S)	1
LOT NUMBER(S) BY PHASE	N/A
NUMBER OF UNITS	180
LIVABLE BUILDINGS	6
OPEN SPACE (AC)	2.32
NUMBER OF OPEN SPACE LOTS	N/A
PUBLIC WATER (LF)	875
PRIVATE SEWER (LF)	550
PUBLIC STREET (LF)	0
PUBLIC SIDEWALK (LF)	0

SHEET INDEX

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C2.1	UTILITY PLAN
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C3.3	EROSION CONTROL PLAN - STAGE 1
C3.4	EROSION CONTROL PLAN - STAGE 2
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C3.6	EROSION CONTROL DETAILS
C3.7	NCG01 PLAN
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A2.31	EXTERIOR ELEVATIONS - BLDG 3
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A2.51	EXTERIOR ELEVATIONS - BLDG 5
A2.61	EXTERIOR ELEVATIONS - BLDG 6
A2.62	EXTERIOR ELEVATIONS - BLDG 6
A2.71	EXTERIOR ELEVATIONS - BLDGS 1& 7
A2.72	EXTERIOR ELEVATIONS - BLDGS 1& 7
A2.81	EXTERIOR ELEVATIONS - BLDG 8

ENGINEER:

BNK

BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS

6310 CHAPEL HILL ROAD, SUITE 250
RALEIGH, NORTH CAROLINA 27607
TELEPHONE: (919) 851-4422
FAX: (919) 851-8968

CERTIFICATION NUMBERS: NCBELS (C-0110)
NCBOLA (C-0267)

CONTACT: MARTY D. BIZZELL, PE, CPESC
EMAIL: Marty.Bizzell@BNKinc.com



EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT

APPROVED

EROSION CONTROL ☐ S-

STORMWATER MGMT. ☐ S-

FLOOD STUDY ☐ S-

DATE _____



ENVIRONMENTAL CONSULTANT SIGNATURE



NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF ROLESVILLE AND NCDOT

TOWN OF ROLESVILLE PROJECT NO

BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919)851-4422 FAX: (919)851-8968
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

[illegible]

MIXED USE DEVELOPMENT

SHEET
C0.1

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

Public Water Distribution / Extension System

The City of Raleigh consents to the connection to its 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 #
Authorization to Construct See digital signature

Private Sewer Collection / Extension System

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 # S-4711 (P)
Authorization to Construct See digital signature

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 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*.

STANDARD UTILITY NOTES (as applicable):

- All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference: CORPUD Handbook, current edition)
- Utility separation requirements:
 - 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, remove sanitary sewer pipe shall be specified & installed to watertight specifications. However, the minimum separation shall not be less than 25' from a private well or 50' from a public well
 - 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
 - Where it is impossible to obtain proper separation, or anytime a sanitary sewer passes over a watermain, DIP materials or steel encasement extended 10' on each side of crossing must be specified & installed to watertight specifications
 - 5.0' minimum horizontal separation is required between all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer
 - 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)
 - All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required
- 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
- Contractor shall maintain continuous water & sewer service 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
- 3.0' minimum cover is required on all water mains & sewer forcemains. 4.0' minimum cover is required on all reuse mains
- It is the developer's responsibility to abandon or remove existing water & 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
- Install **3/4" copper** water services with meters located at ROW or within a 2'x2' Watertight Easement immediately adjacent. **NOTE: it is the applicant's responsibility to properly size the water service for each connection to provide adequate flow & pressure**
- Install **4" PVC** sewer services @ 1.0% minimum grade with cleanouts located at ROW or easement line & spaced every 75 linear feet maximum
- 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
- All environmental permits applicable to the project must be obtained from NCDWQ, USACE, &/or FEMA for any riparian buffer, wetland &/or floodplain impacts (respectively) prior to construction
- NCDOT / Railroad Encroachment Agreements are required for any utility work (including main extensions & service taps) within state or railroad ROW prior to construction
- Grease Interceptor / Oil Water Separator sizing calculations & installation specifications shall be approved by the CORPUD IOC Program Coordinator prior to issuance of a Building Permit. Contact Tim Besley at (919) 996-2334 or timothy.besley@raleighnc.gov for more information
- 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) 996-5923 or joanie.hartley@raleighnc.gov for more information

NOTES:

- FOR BUILDING SEWER PLUMBING THE FURTHEST MAIN UNDER SLAB UPSET 1.5' BELOW FFE.
- BACKFLOW PREVENTERS TO BE LOCATED INSIDE OF BUILDINGS.

NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF ROLESVILLE AND NCDOT

SCALE IN FEET

TOWN OF ROLESVILLE PROJECT NO.

B N K

BASS, NIXON & KENNEDY, INC.

CONSULTING ENGINEERS

6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607

TELEPHONE: (919) 981-4422 FAX: (919) 981-8988

CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0287)

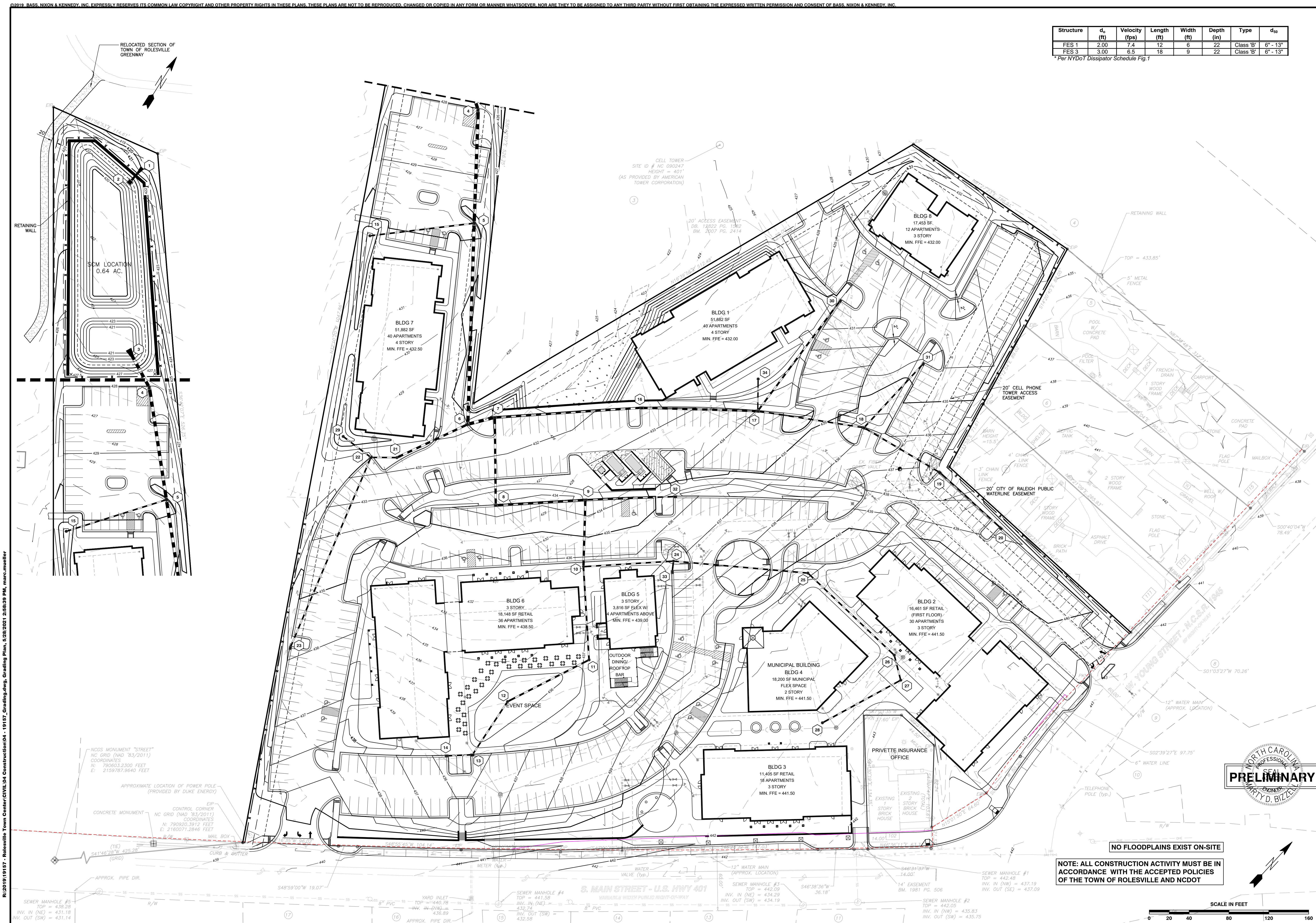
UTILITY PLAN

COBBLESTONE VILLAGE
MIXED USE DEVELOPMENT

SHEET
C2.1

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



Structure	d _s (ft)	Velocity (fps)	Length (ft)	Width (ft)	Depth (in)	Type	d ₅₀
FES 1	2.00	7.4	12	6	22	Class 'B'	6" - 13"
FES 3	3.00	6.5	18	9	22	Class 'B'	6" - 13"

* Per NYDOT Dissipator Schedule Fig.1



BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 851-1122 FAX: (919) 851-8888
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

NO.	DATE	DESCRIPTION	BY

PROGRESS	DATE	MRM	CHK BY

COBBLESTONE VILLAGE
MIXED USE DEVELOPMENT
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

SHEET C3.1

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

STORMDRAINAGE PIPE TABLE							
U.S. STRUCTURE	D.S. STRUCTURE	U.S. INVERT	D.S. INVERT	LENGTH	DIAMETER	MATERIAL	SLOPE
2	1	420.00	419.80	18.80	24	HDPE	1.06%
4	3	421.26	421.00	43.91	36	HDPE	0.60%
5	4	422.04	421.36	113.45	36	HDPE	0.60%
6	5	423.35	422.14	201.82	36	HDPE	0.60%
7	6	423.62	423.45	28.04	36	HDPE	0.60%
8	7	425.82	424.94	88.24	24	HDPE	1.00%
9	8	426.82	425.92	90.21	24	HDPE	1.00%
10	9	427.59	426.92	67.14	24	HDPE	1.00%
11	10	428.63	427.69	93.66	18	HDPE	1.00%
12	11	429.65	428.73	91.93	18	HDPE	1.00%
13	12	430.39	429.75	63.96	15	HDPE	1.00%

STORMDRAINAGE PIPE TABLE							
U.S. STRUCTURE	D.S. STRUCTURE	U.S. INVERT	D.S. INVERT	LENGTH	DIAMETER	MATERIAL	SLOPE
14	13	430.75	430.49	25.95	15	HDPE	1.00%
15	5	424.10	423.05	105.41	15	HDPE	1.00%
16	7	424.61	423.72	147.77	24	HDPE	0.60%
17	16	425.41	424.71	116.44	24	HDPE	0.60%
18	17	428.85	427.77	107.92	15	HDPE	1.00%
19	18	431.57	430.69	88.39	15	HDPE	1.00%
20	19	432.50	431.67	83.01	15	HDPE	1.00%
21	6	424.24	423.45	78.65	24	HDPE	1.00%
22	21	424.60	424.34	26.08	15	HDPE	1.00%
23	22	426.78	424.70	207.76	15	HDPE	1.00%
24	10	432.22	430.86	90.55	15	HDPE	1.50%

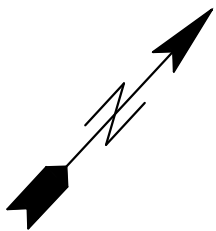
U.S. STRUCTURE	D.S. STRUCTURE	U.S. INVERT	D.S. INVERT	LENGTH	DIAMETER	MATERIAL	SLOPE
25	24	434.35	432.32	135.44	15	HDPE	1.50%
26	25	438.26	437.54	119.60	15	HDPE	0.60%
27	26	438.42	438.26	25.90	15	HDPE	0.60%
28	27	438.96	438.42	89.48	15	HDPE	0.60%
29	22	425.05	424.70	34.83	15	HDPE	1.00%
30	17	426.34	425.51	137.91	18	HDPE	0.60%
31	18	429.82	428.95	87.08	15	HDPE	1.00%
32	9	429.50	428.60	90.23	15	HDPE	1.00%
33	24	432.43	432.32	11.23	15	HDPE	1.00%
34	17	428.09	427.77	32.09	12	HDPE	1.00%

STRUCTURE NAME	INSERTION RIM ELEVATION (FLOWLINE)	STRUCTURE TYPE
1	422.45 INV. IN= 419.80 (2)	24" FES
2	425.18 INV. OUT= 420.00 (1)	RISER
3	424.83 INV. IN= 421.00 (4)	36" FES
4	428.06 INV. IN= 421.36 (5) INV. OUT= 421.26 (3)	NCDOT CURB INLET
5	429.99 INV. IN= 422.14 (6) INV. IN= 423.05 (15) INV. OUT= 422.04 (4)	NCDOT CURB INLET
6	430.99 INV. IN= 423.45 (7) INV. IN= 423.45 (21) INV. OUT= 423.35 (5)	NCDOT CURB INLET
7	431.10 INV. IN= 424.94 (8) INV. IN= 423.72 (16) INV. OUT= 423.62 (6)	NCDOT CURB INLET
8	433.95 INV. IN= 425.92 (9) INV. OUT= 425.82 (7)	NCDOT CURB INLET
9	433.95 INV. IN= 426.92 (10) INV. IN= 428.60 (32) INV. OUT= 426.82 (8)	NCDOT CURB INLET

STRUCTURE NAME	INSERTION RIM ELEVATION (FLOWLINE)	STRUCTURE TYPE
10	436.44 INV. IN= 427.69 (11) INV. IN= 430.86 (24) INV. OUT= 427.59 (9)	HDPE YARD INLET
11	437.44 INV. IN= 428.73 (12) INV. OUT= 428.63 (10)	HDPE YARD INLET
12	435.50 INV. IN= 429.75 (13) INV. OUT= 429.65 (11)	HDPE YARD INLET
13	436.00 INV. IN= 430.49 (14) INV. OUT= 430.39 (12)	NCDOT CURB INLET
14	436.00 INV. OUT= 430.75 (13)	NCDOT CURB INLET
15	428.50 INV. OUT= 424.10 (5)	HDPE YARD INLET
16	432.34 INV. IN= 424.71 (17) INV. OUT= 424.61 (7)	NCDOT CURB INLET
17	434.06 INV. IN= 427.77 (18) INV. IN= 425.51 (30) INV. IN= 427.77 (34) INV. OUT= 425.41 (16)	NCDOT CURB INLET
18	436.03 INV. IN= 430.69 (19) INV. IN= 428.95 (31) INV. OUT= 428.85 (17)	NCDOT CURB INLET

STRUCTURE NAME	INSERTION RIM ELEVATION (FLOWLINE)	STRUCTURE TYPE
19	437.51 INV. IN= 431.67 (20) INV. OUT= 431.57 (18)	NCDOT CURB INLET
20	438.65 INV. OUT= 432.50 (19)	NCDOT CURB INLET
21	431.60 INV. IN= 424.34 (22) INV. OUT= 424.24 (6)	HDPE YARD INLET
22	432.00 INV. IN= 424.70 (23) INV. IN= 424.70 (29) INV. OUT= 424.60 (21)	NCDOT CURB INLET
23	435.97 INV. OUT= 426.78 (22)	NCDOT CURB INLET
24	437.18 INV. IN= 432.32 (33) INV. IN= 432.32 (25) INV. OUT= 432.22 (10)	HDPE YARD INLET
25	440.83 INV. IN= 437.54 (26) INV. OUT= 434.35 (24)	HDPE YARD INLET
26	441.63 INV. IN= 438.26 (27) INV. OUT= 438.26 (25)	HDPE YARD INLET
27	441.50 INV. IN= 438.42 (28) INV. OUT= 438.42 (26)	HDPE YARD INLET

STRUCTURE NAME	INSERTION RIM ELEVATION (FLOWLINE)	STRUCTURE TYPE
28	441.72 INV. OUT= 438.96 (27)	HDPE YARD INLET
29	428.50 INV. OUT= 425.05 (22)	HDPE YARD INLET
30	430.24 INV. OUT= 426.34 (17)	NCDOT CURB INLET
31	434.19 INV. OUT= 429.82 (18)	NCDOT CURB INLET
32	435.81 INV. OUT= 429.50 (9)	NCDOT CURB INLET
33	437.54 INV. OUT= 432.43 (24)	NCDOT CURB INLET
34	431.00 INV. OUT= 428.09 (17)	HDPE YARD INLET



BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 881-4422 FAX: (919) 881-6888
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

BY	DATE	DESCRIPTION	NO.

03-19157	PROGRESS	MRM
JOB NO.	DATE	DRAWN BY
STORM DRAINAGE PIPE & STRUCTURE TABLE		
SCALE:	CHK BY: MDB	

COBBLESTONE VILLAGE
MIXED USE DEVELOPMENT
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

SHEET
C3.8



CONSTRUCTION SEQUENCE - STAGE 1

- ONCE THE EROSION AND SEDIMENT CONTROL PLAN APPROVAL AND NCG01 CERTIFICATE OF COVERAGE ARE OBTAINED, SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT, OBTAIN A LAND-DISTURBING PERMIT.
- INSTALL GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, SILT FENCE, SKIMMER SEDIMENT BASINS 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.
- CALL ENVIRONMENTAL CONSULTANT FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT TO OBTAIN A CERTIFICATE OF COMPLIANCE. BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE.
- STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
- STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, ALLEY PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
- CALL ENVIRONMENTAL CONSULTANT FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT PRIOR TO THE REMOVAL OF SKIMMER SEDIMENT BASIN #1.
- CONTINUE TO SOIL EROSION PLAN STAGE 2 ONCE SKIMMER BASIN #1 HAS BEEN REMOVED.

NOTE: WAKE COUNTY MUST GRANT PERMISSION TO CONVERT THE SEDIMENT BASIN OVER TO THE STORMWATER USE PRIOR TO COMPLETING ANY RELATED WORK.

TOTAL DISTURBED AREA = 11.0 AC

DENUDED AREA = 10.96 AC

REQUIRED WAKE COUNTY BASIN REMOVAL AND/OR CONVERSION SEQUENCE

- SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED OR CONVERTED TO A PERMANENT STORMWATER POND, INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
- UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SEDIMENT BASIN SURFACE FOR DRAW DOWN OF WATER IN BASIN FOR MAINTENANCE OR CLOSE OUT UNLESS INFEASIBLE. SEE REQUIREMENTS OF NCG01 PERMIT PART I, SECTION G, ITEM (4) ENTITLED "DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT" AND REFER TO WAKE COUNTY "FILTER BAG FOR Dewatering ACTIVITIES" CONSTRUCTION DETAIL.
- REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES, IF CULVERT PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
- PERFORM SEEDBED PREPARATION, SEED, MULCH AND ASPHALT TACK ANY RESULTING BARE AREAS IMMEDIATELY.
- INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
- WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL CONSULTANT 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. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.

SEDIMENT BASIN SUMMARY CHART

Sediment Basin Number	1	2	3
Drainage Area (acres)	3.42	4.61	0.6
Orifice (in)	(0.5)(7.22)(3.42)=12.35	(0.5)(7.22)(4.61)=16.64	(0.5)(7.22)(0.60)=2.17
Weir Size (ft)	10 x 1.5	10 x 1.5	10 x 1.5
Surface Area Required (SF)	(435)(12.35)=5,372	(435)(16.64)=7,238	(435)(2.17)=944
Volume Required (CF)	(1800)(3.42)= 6,156	(1800)(4.61)= 8,298	(1800)(0.60)= 1,080
Dimensions (ft)	see plans	see plans	see plans
Surface Area Provided (SF)	5,400	10,640	1,584
Volume Provided (CF)	13,572	27,636	2,563
Skimmer Size	4"	4"	3
Orifice Radius	0.5"	0.63"	0.25
Orifice Diameter	1.0"	1.25"	0.5
Drawdown Time (days)	4.62	3.98	3.74
Number of Baffles	3	3	3

Structure	d ₅₀ (ft)	Velocity (fps)	Length (ft)	Width (ft)	Depth (ft)	Type
FES 1	2.00	7.4	12	6	22	Class 'B' 6"-13"
FES 3	3.00	6.5	18	9	22	Class 'B' 6"-13"
DV DITCH 1"	1.25	5.3	5	4	9	Class 'A' 3"-6"
DV DITCH 2"	1.25	5.3	5	4	9	Class 'A' 3"-6"
DV DITCH 3"	1.25	5.3	5	4	9	Class 'A' 3"-6"
DV DITCH 4"	1.25	5.3	5	4	9	Class 'A' 3"-6"
PIPE 1"	1.25	5.3	5	4	9	Class 'A' 3"-6"
PIPE 2"	1.25	5.3	5	4	9	Class 'A' 3"-6"

*Per NYDOT Dissipator Schedule Fig.1

DITCH/CHANNEL CALCULATIONS									
DIVERSION DITCH ID	LENGTH (LF)	DA (Ac)	Q10 (CFS)	SLOPE (%)	V10 (FPS)	LINER * SC150	PERMISSIBLE SHEAR STRESS (PSF)	CALCULATED SHEAR STRESS (PSF)	
DV-1	296	1.02	2.34	2.00	2.01	SC150	2.00	0.78	
DV-2	495	1.00	2.30	2.60	2.29	SC150	2.00	0.84	
DV-3	442	0.52	1.19	1.80	0.92	SC150	1.80	0.29	
DV-4	167	0.08	0.13	2.90	0.96	SC150	1.80	0.38	

* NAG = NORTH AMERICAN GREEN OR EQUIVALENT

Skimmer Basin #1

Okay

3.42 Drainage Area (Acres)	12.35 Peak Flow from 10-year Storm (cfs)
6198 Required Volume (ft ³)	5372 Required Surface Area (ft ²)
51.8 Suggested Width (ft)	103.8 Suggested Length (ft)

54 Trial Top Width at Spillway Invert (ft)	100 Trial Top Length at Spillway Invert (ft)
3 Trial Depth (ft) (2 to 3.5 feet above grade)	42 Bottom Width (ft)
176 Bottom Length (ft)	3698 Bottom Area (ft ²)
13572 Actual Volume (ft ³)	5400 Actual Surface Area (ft ²)
10 Trial Weir Length (ft)	0.75 Suggested Trial Depth of Flow (ft)
39.0 Spillway Capacity (cfs)	

Skimmer Size (inches) 4.333 Head on Skimmer (feet) 1.25 Orifice Size (1/4 inch increments) 4.62 Dewatering Time (days) Required 3 to 5 days for Wake County

Skimmer Basin #2

Okay

4.61 Drainage Area (Acres)	16.64 Peak Flow from 10-year Storm (cfs)
8298 Required Volume (ft ³)	7238 Required Surface Area (ft ²)
60.2 Suggested Width (ft)	120.3 Suggested Length (ft)

56 Trial Top Width at Spillway Invert (ft)	190 Trial Top Length at Spillway Invert (ft)
3 Trial Depth (ft) (2 to 3.5 feet above grade)	44 Bottom Width (ft)
176 Bottom Length (ft)	7832 Bottom Area (ft ²)
27336 Actual Volume (ft ³)	10640 Actual Surface Area (ft ²)
20 Trial Weir Length (ft)	0.75 Suggested Trial Depth of Flow (ft)
39.0 Spillway Capacity (cfs)	

Skimmer Size (inches) 4.333 Head on Skimmer (feet) 1.25 Orifice Size (1/4 inch increments) 3.98 Dewatering Time (days) Required 3 to 5 days for Wake County

Skimmer Basin #3

Okay

0.6 Drainage Area (Acres)	2.17 Peak Flow from 10-year Storm (cfs)
1080 Required Volume (ft ³)	944 Required Surface Area (ft ²)
21.7 Suggested Width (ft)	43.4 Suggested Length (ft)

33 Trial Top Width at Spillway Invert (ft)	49 Trial Top Length at Spillway Invert (ft)
2 Trial Depth (ft) (2 to 3.5 feet above grade)	25 Bottom Width (ft)
40 Bottom Length (ft)	1000 Bottom Area (ft ²)
2563 Actual Volume (ft ³)	1584 Actual Surface Area (ft ²)
10 Trial Weir Length (ft)	0.75 Suggested Trial Depth of Flow (ft)
19.3 Spillway Capacity (cfs)	

Skimmer Size (inches) 0.25 Head on Skimmer (feet) 0.8 Orifice Size (1/4 inch increments) 3.74 Dewatering Time (days) Required 3 to 5 days for Wake County

LEGEND

- TEMP CONCRETE WASHOUT
- TEMP LOW SPOT SILT FENCE OUTLET
- ROCK CHECK DAM
- TEMP CONSTRUCTION ENTRANCE
- RIP-RAP DISSIPATOR
- TEMP DIVERSION DITCH (LINED-SEE DETAIL)
- TEMP SILT FENCE
- TEMP TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- SEDIMENT BASIN BAFFLE
- TEMP TREE PROTECTION & SILT FENCE COMBO



NO FLOODPLAINS EXIST ON-SITE

NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF ROLESVILLE AND NCDOT

SCALE IN FEET

TOWN OF ROLESVILLE PROJECT NO.

BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 881-4422 FAX: (919) 881-6986
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

EROSION CONTROL
PLAN - STAGE 1

COBBLESTONE
VILLAGE
MIXED USE DEVELOPMENT
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

SHEET
C3.3

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

1. BEGIN CONSTRUCTION OF ALL BUILDINGS.
2. STABILIZE SITE AS NEW DISTURBED AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH UNINGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
3. WHEN CONSTRUCTION OF PARKING LOTS ARE COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL ENVIRONMENTAL CONSULTANT FOR AN INSPECTION.
4. IF THE SITE IS APPROVED, REMOVE TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS, ETC., AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATORS, SHOULD NOW BE INSTALLED.
5. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT. OBTAIN A CERTIFICATE OF COMPLETION.

NOTE: WAKE COUNTY MUST GRANT PERMISSION TO CONVERT THE SEDIMENT BASIN OVER TO THE STORMWATER USE PRIOR TO COMPLETING ANY RELATED WORK.

TOTAL DISTURBED AREA = 10.96 AC

ENVIRONMENTAL CONSULTANT: JEEVAN NEUPANE (919-819-8907)

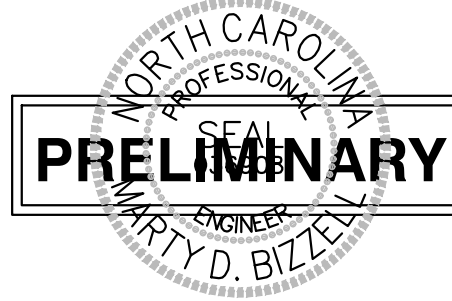
1. SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED OR CONVERTED TO A PERMANENT STORMWATER BASIN. SPLIT FLOW, SPLIT FLOW WITH DIVERSION, OR EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
2. UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SEDIMENT BASIN SURFACE FOR DRAIN DOWN OF WATER IN BASIN FOR MAINTENANCE OR CLOSE OUT UNLESS INFEASIBLE. SEE REQUIREMENTS OF NCG01 PERMIT PART II, SECTION G, ITEM 4) (E) ENTITLED "DRAIN DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT." PROVIDE A WAKE CONE "FILTER BAG FOR DRAINING ACTIVITIES" CONSTRUCTION DETAIL.
3. REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES, IF CULVERT 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 ASPHALT TACK 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 ENVIRONMENTAL CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVISE 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. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.

Skimmer Size (Inches)
1.5
2
2.5
3
4
5
6
8

CELL TOWER
SITE ID # NC 090247
HEIGHT = 401
(AS PROVIDED BY AMERICAN
TOWER CORPORATION)

* NAG = NORTH AMERICAN GREEN OF EQUIVALENT

	TEMP CONSTRUCTION ENTRANCE
	TEMP LOW SPOT SILT FENCE OUTLET
	TEMP INLET PROTECTION
	RIP-RAP DISSIPATOR
	TEMP SILT FENCE
	TEMP TREE PROTECTION FENCE
	LIMITS OF DISTURBANCE
	SEDIMENT BASIN BAFFLE
	TEMP TREE PROTECTION & SILT FENCE COMBO



NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF ROLESVILLE AND NCDOT

SCALE IN FEET

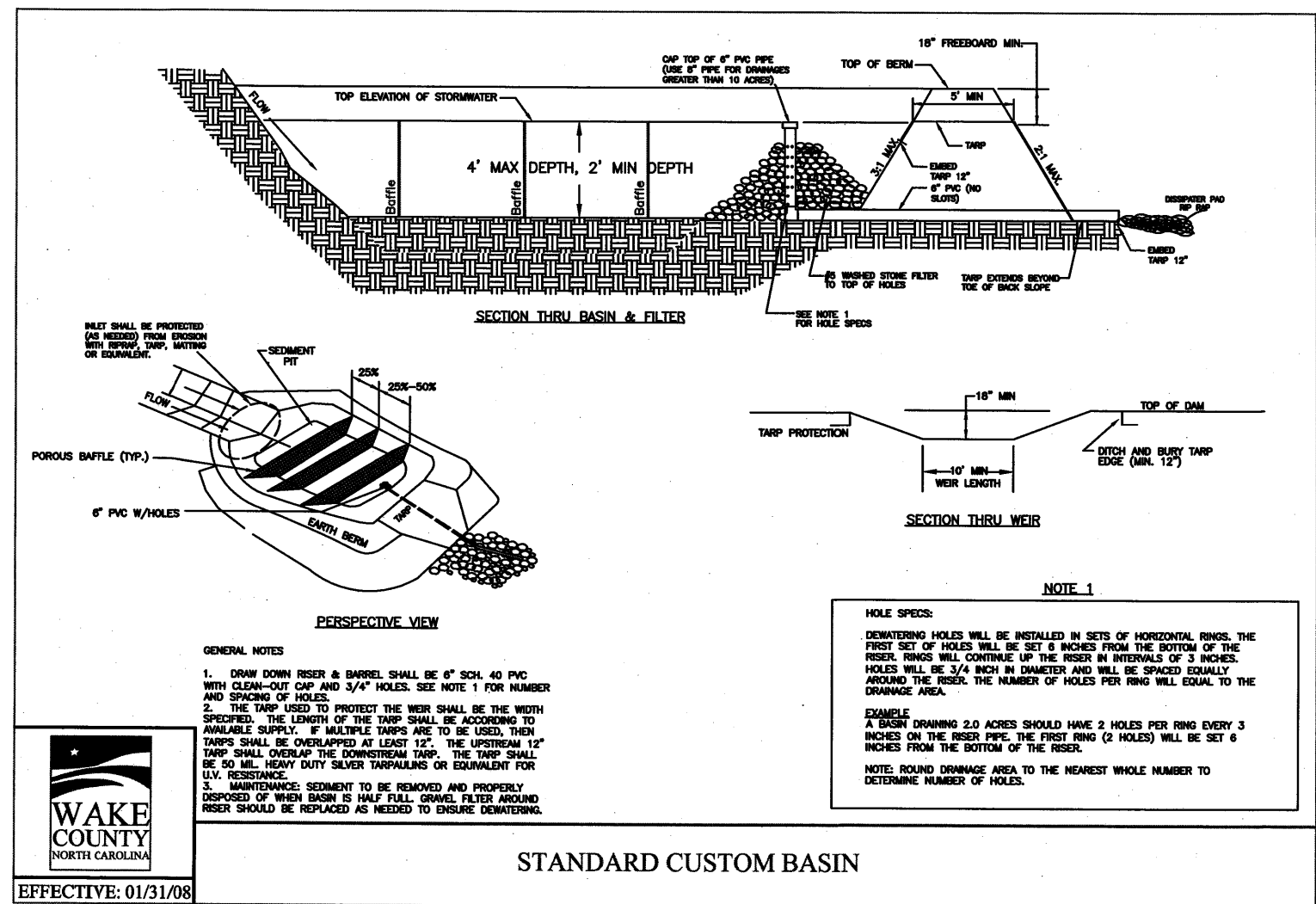
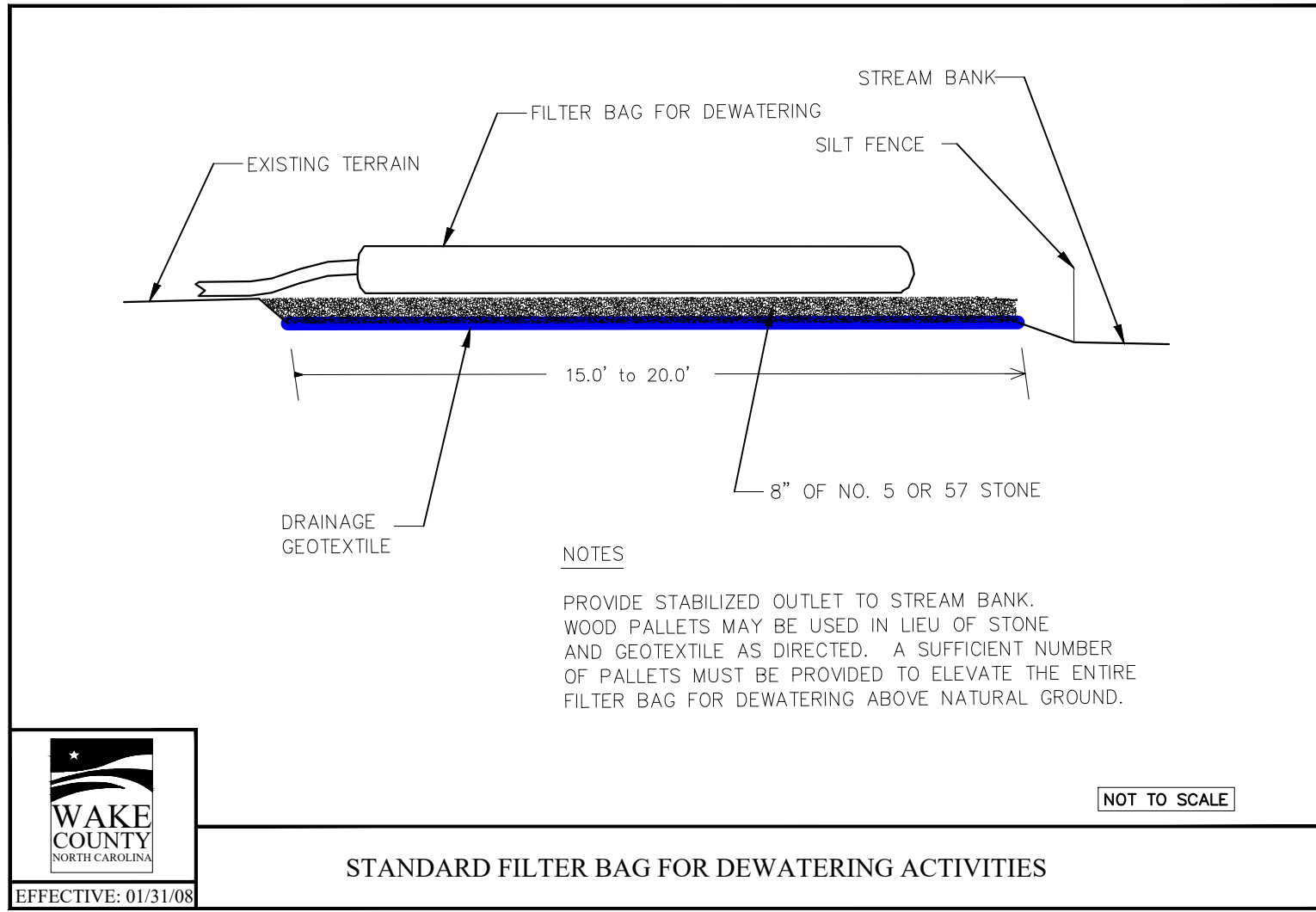
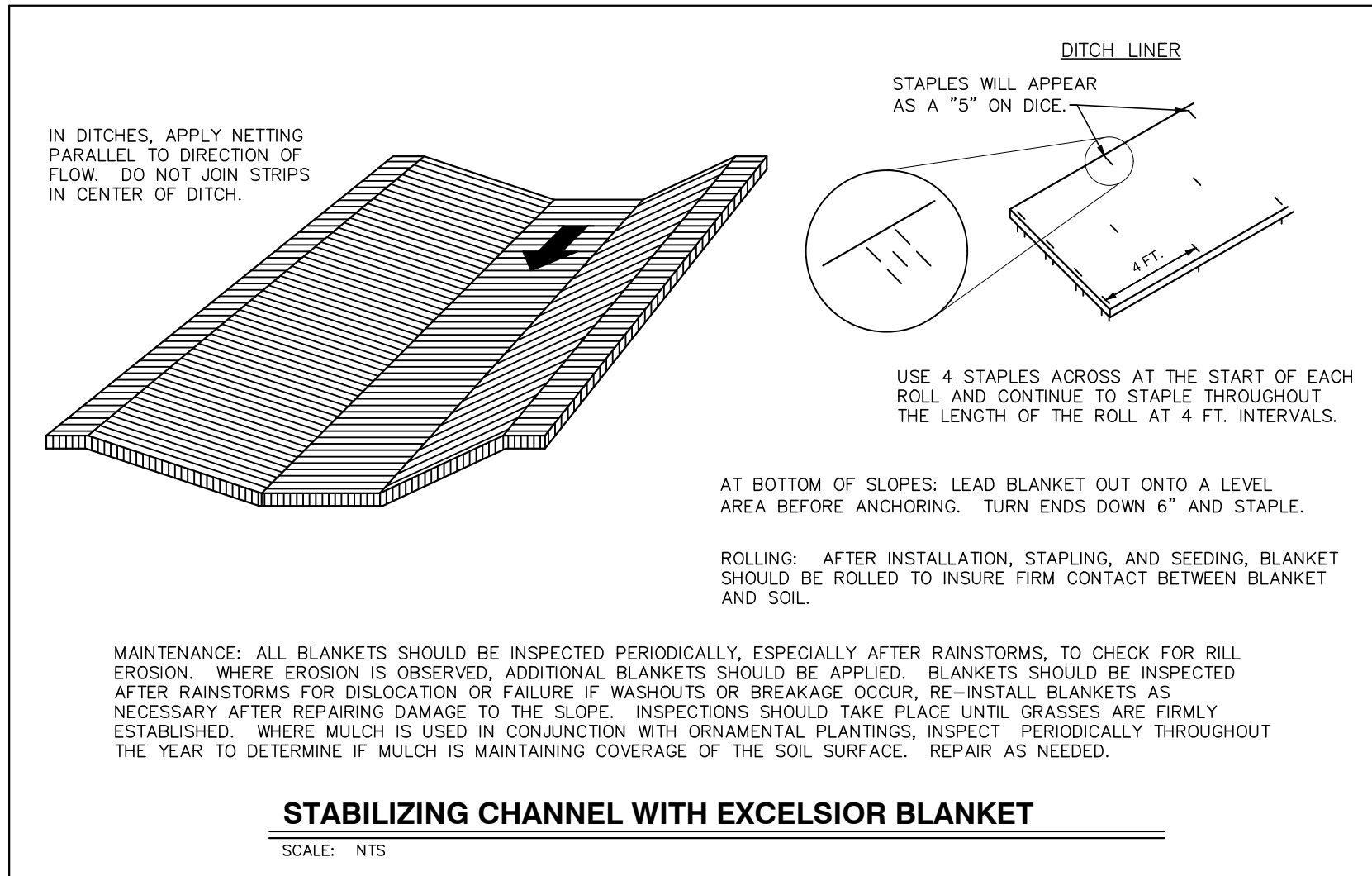
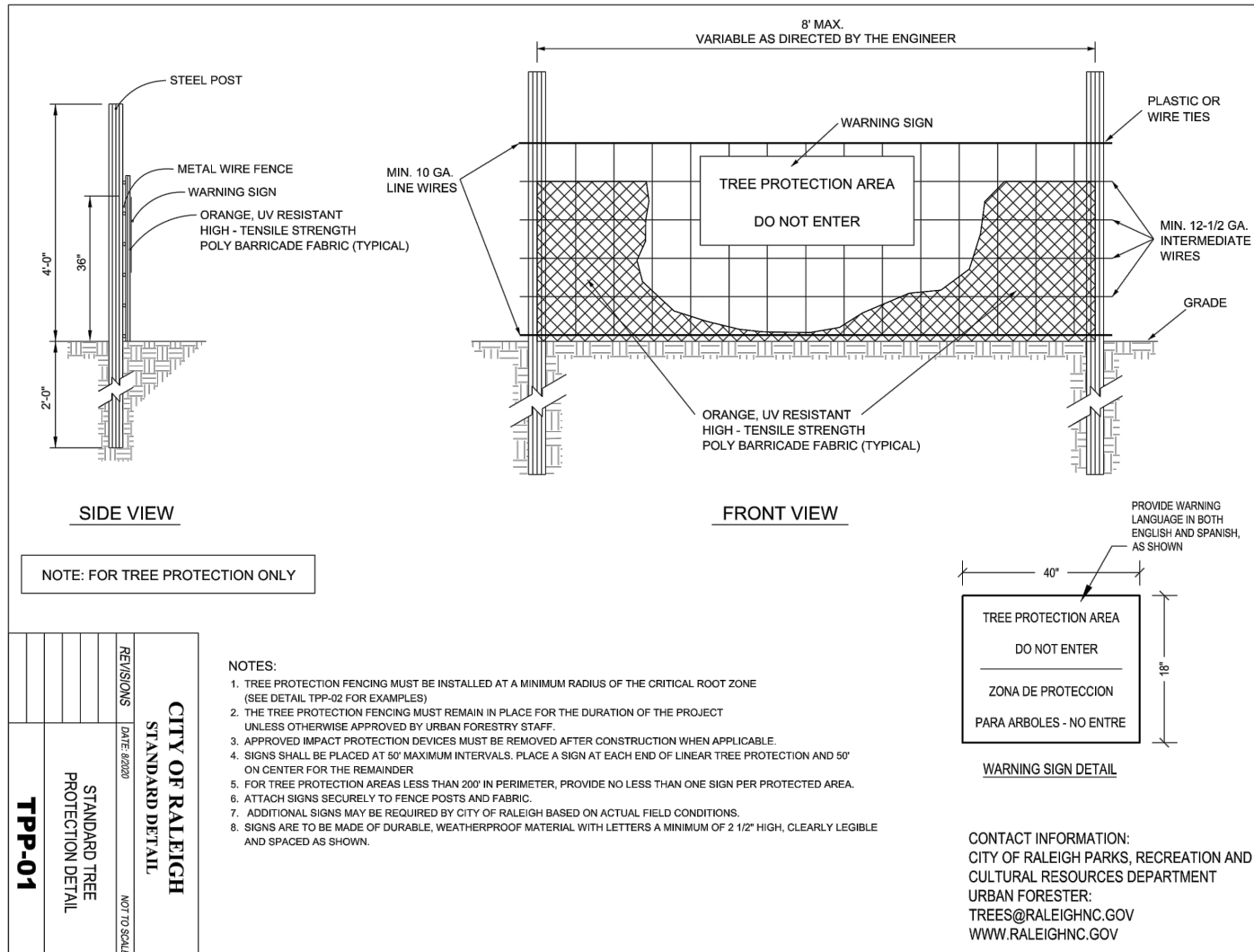
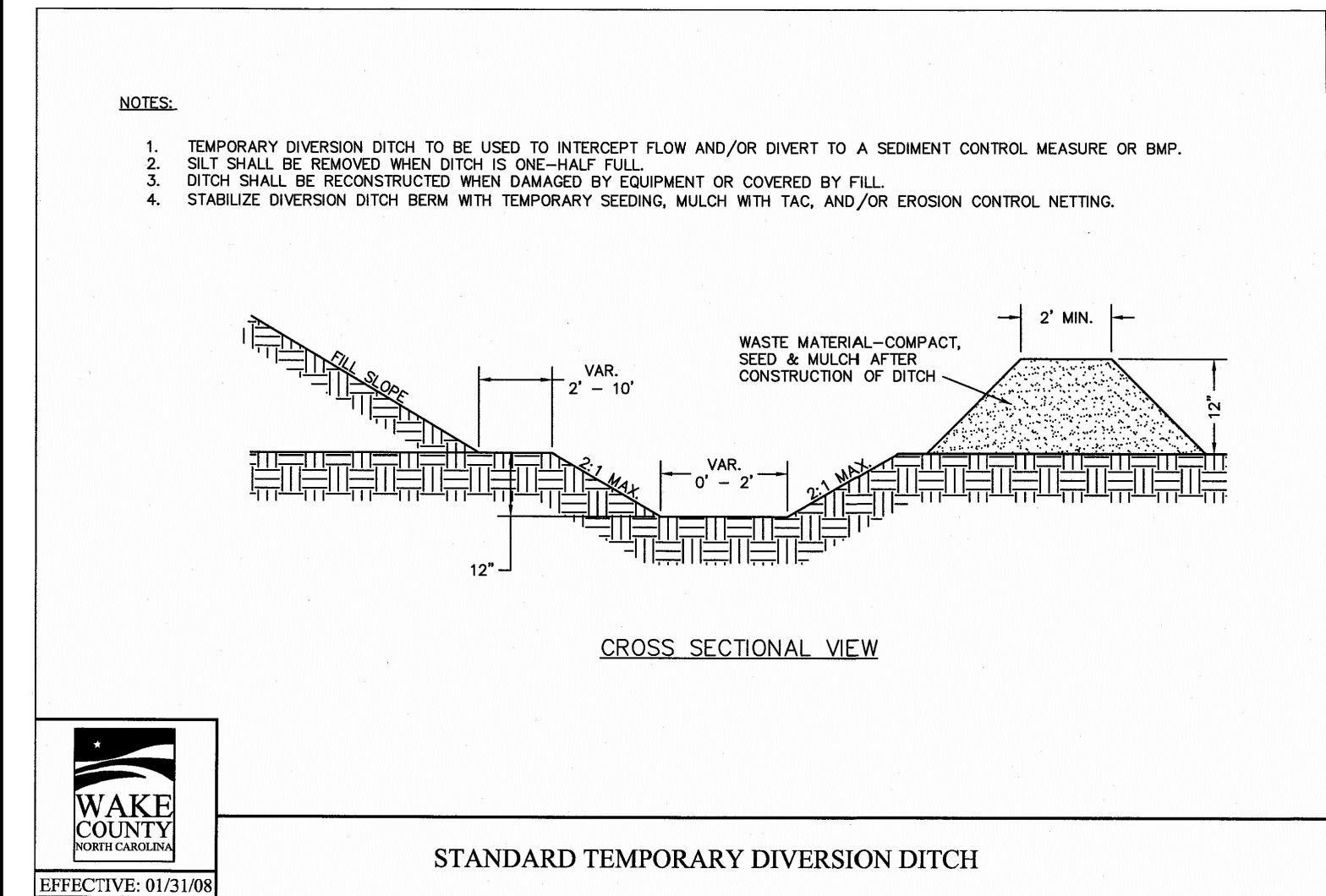
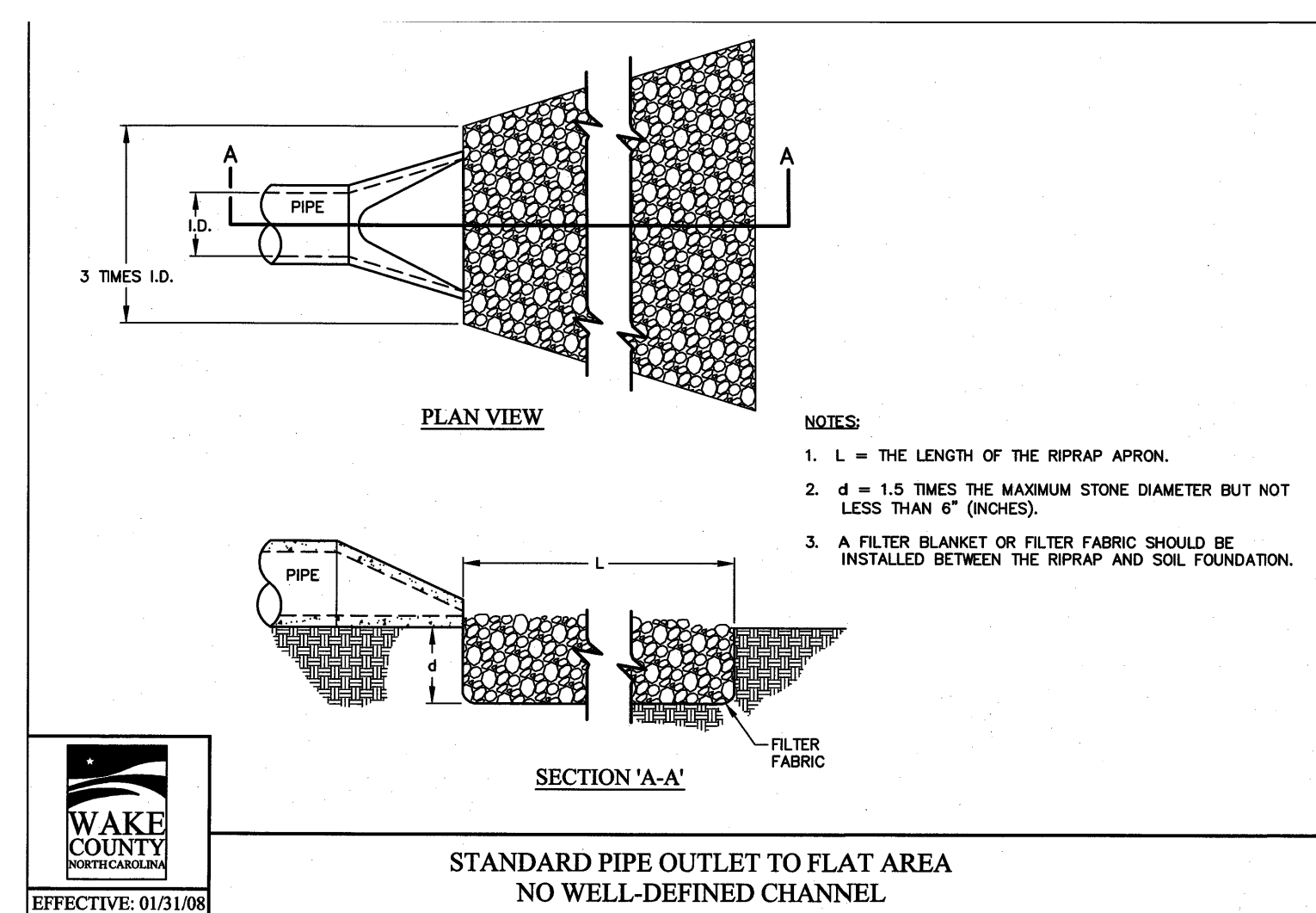
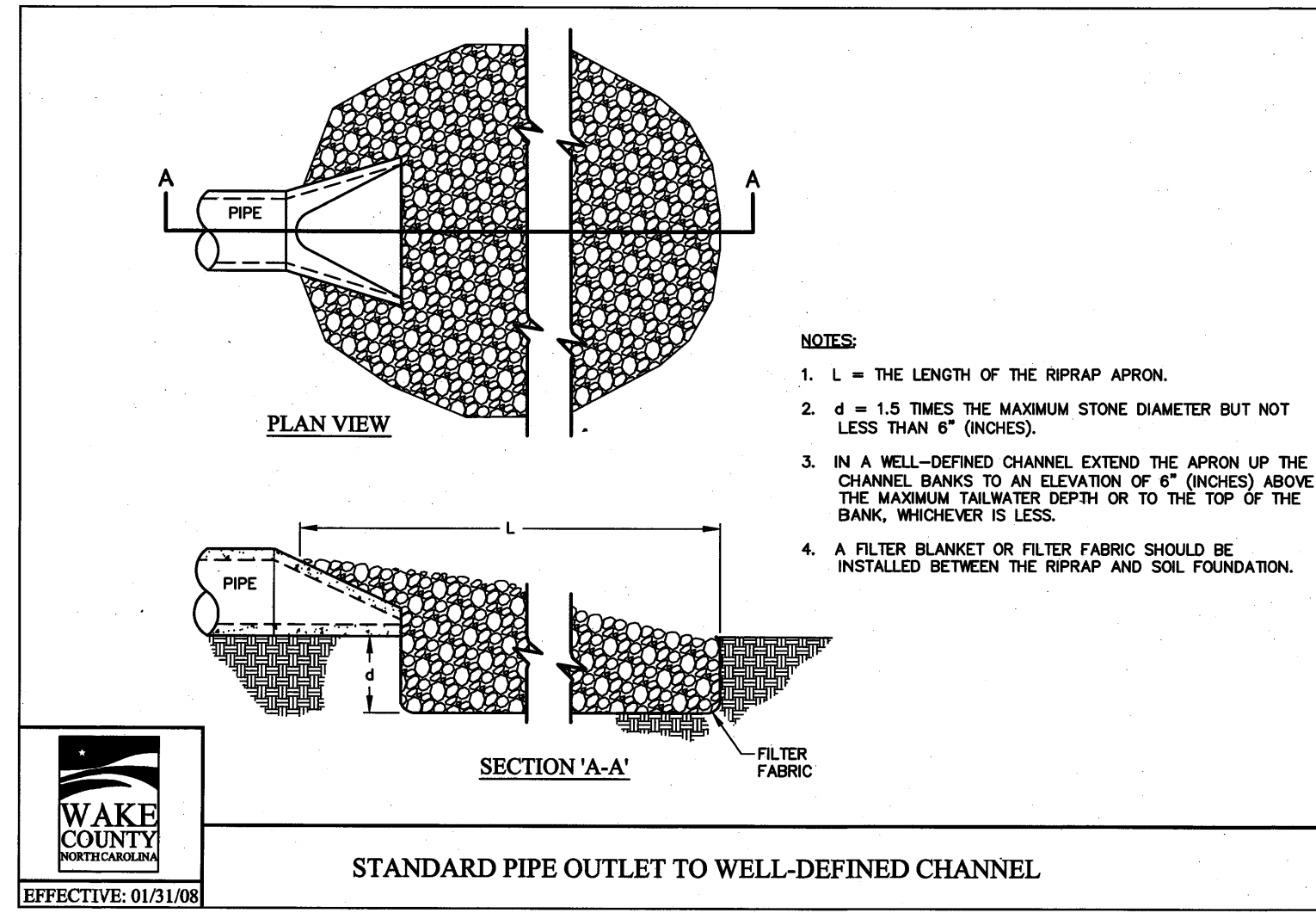
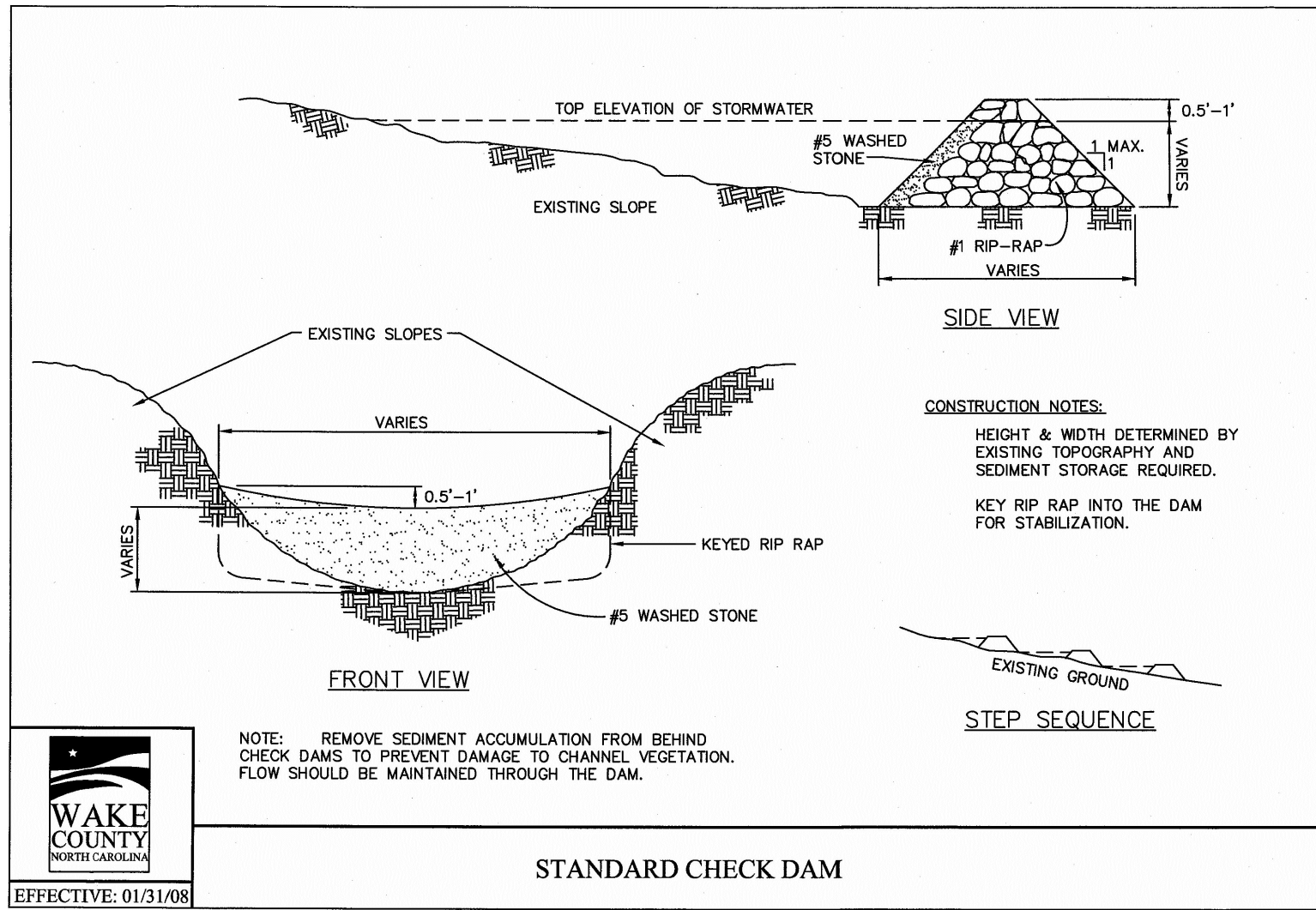
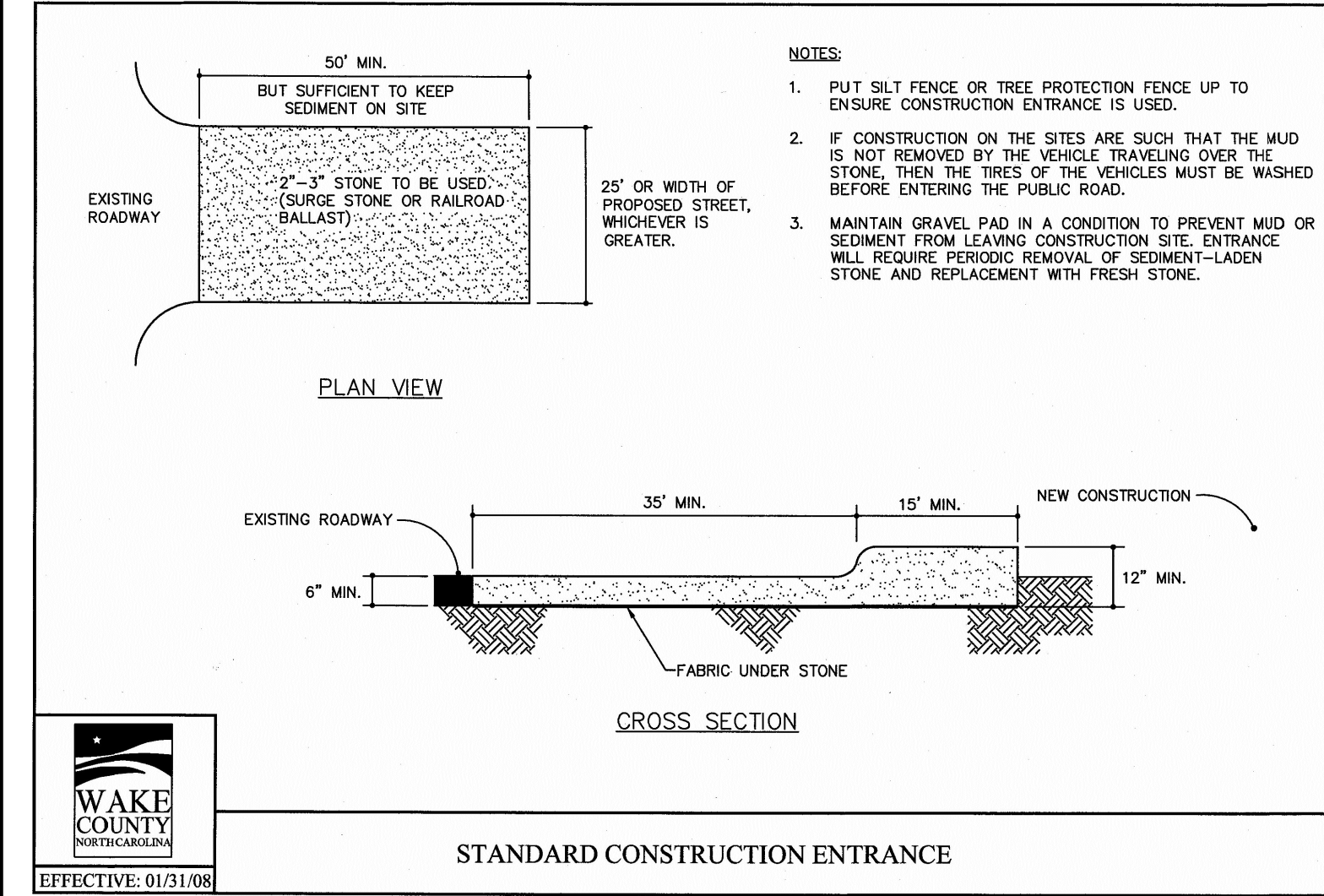
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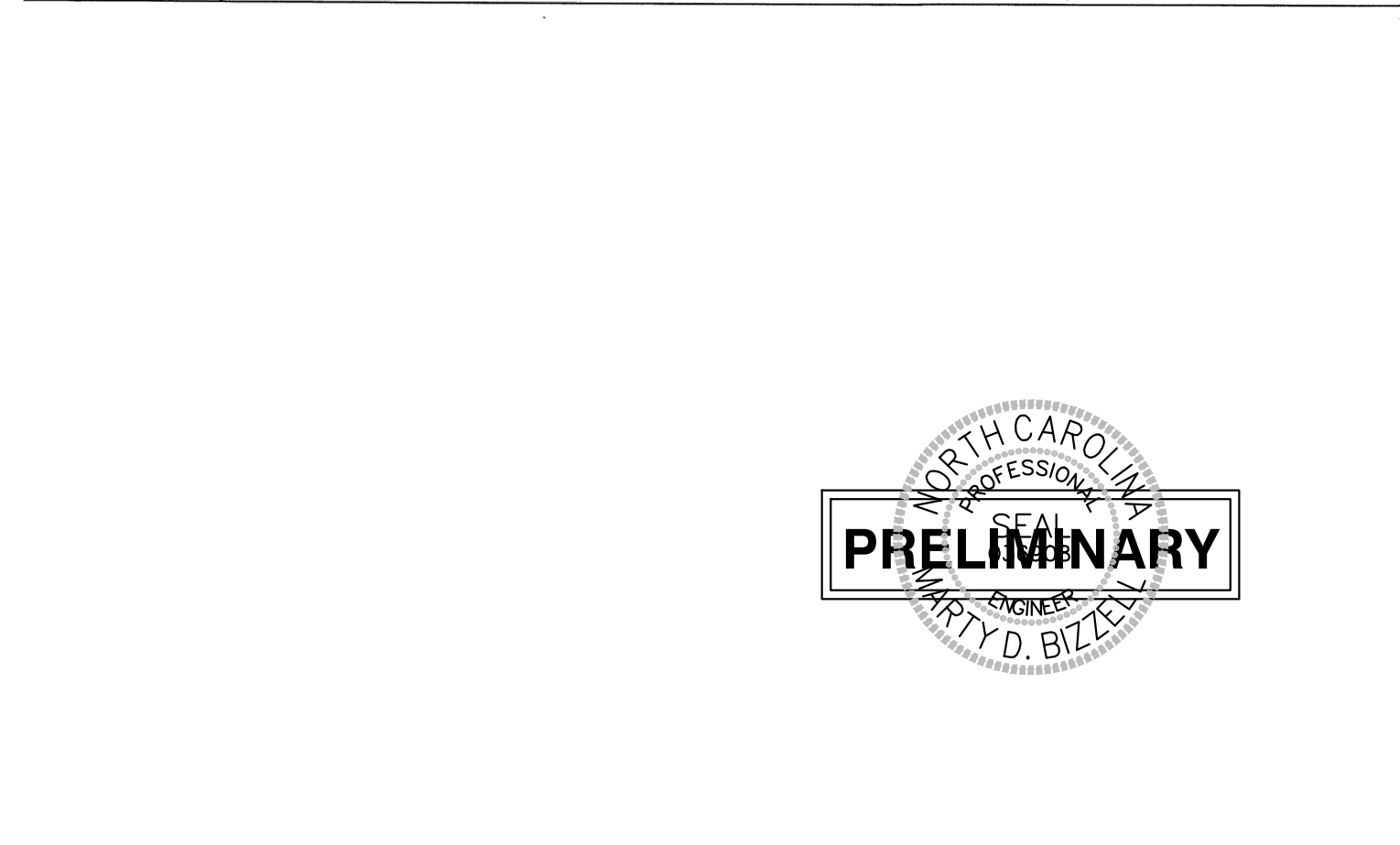
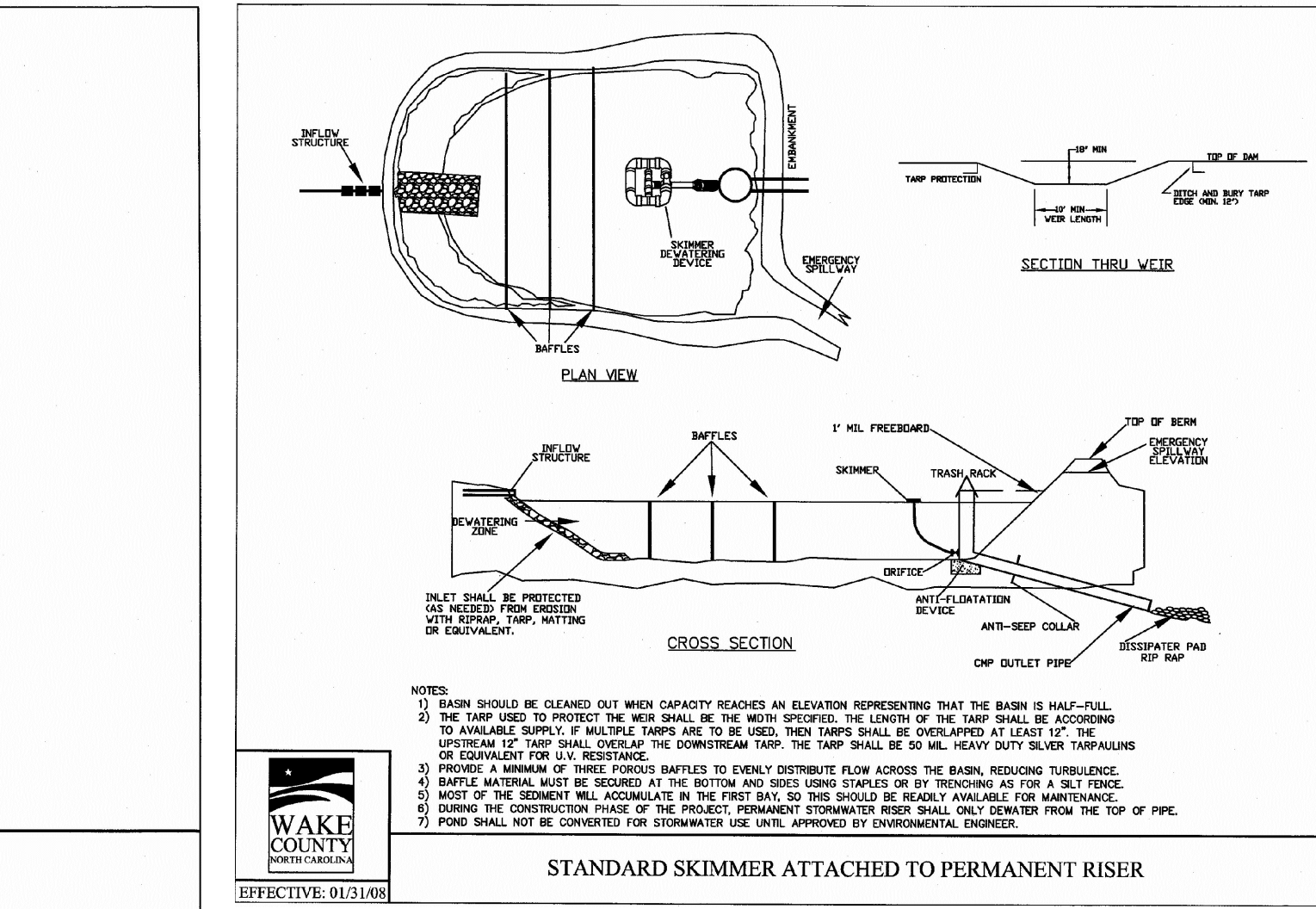
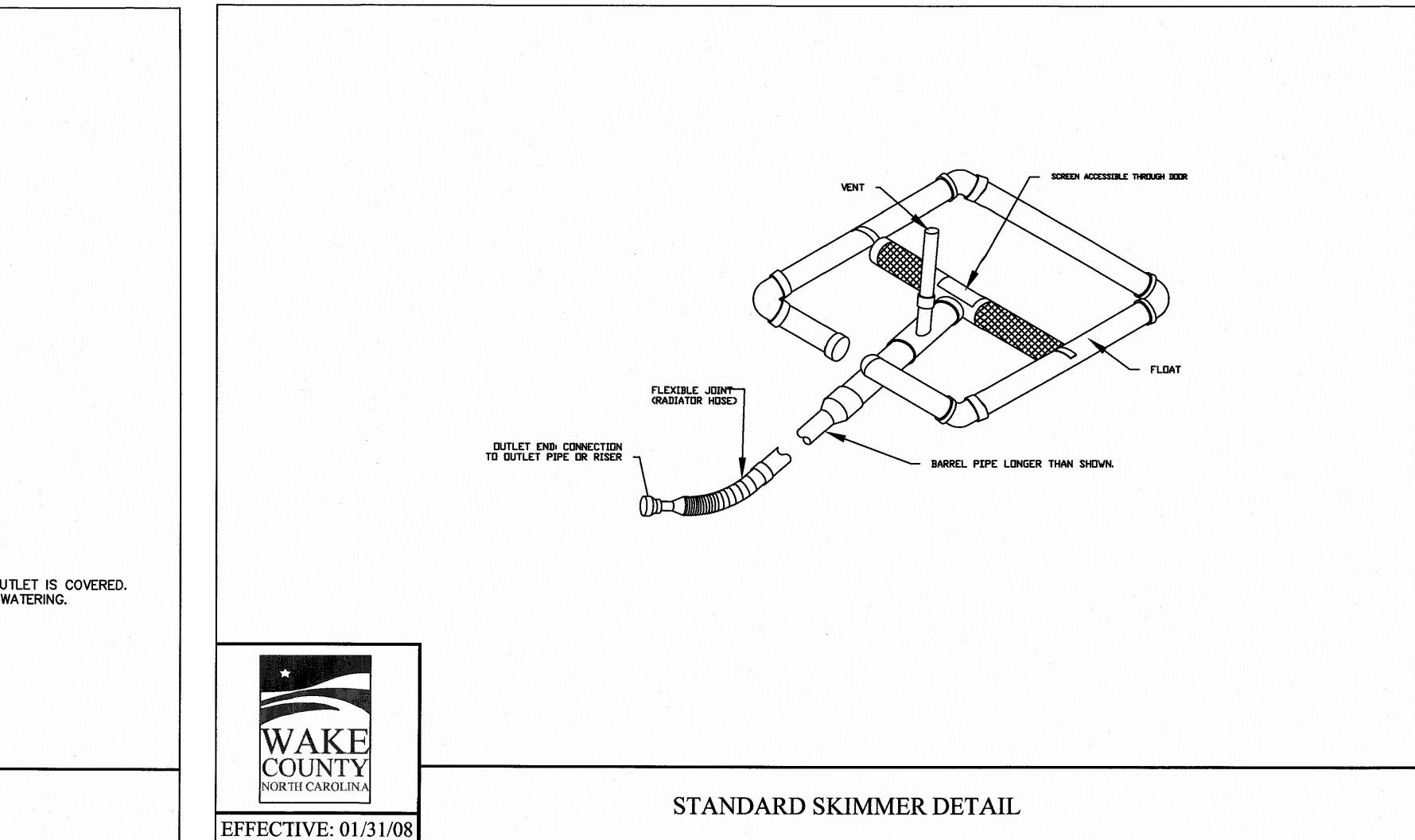
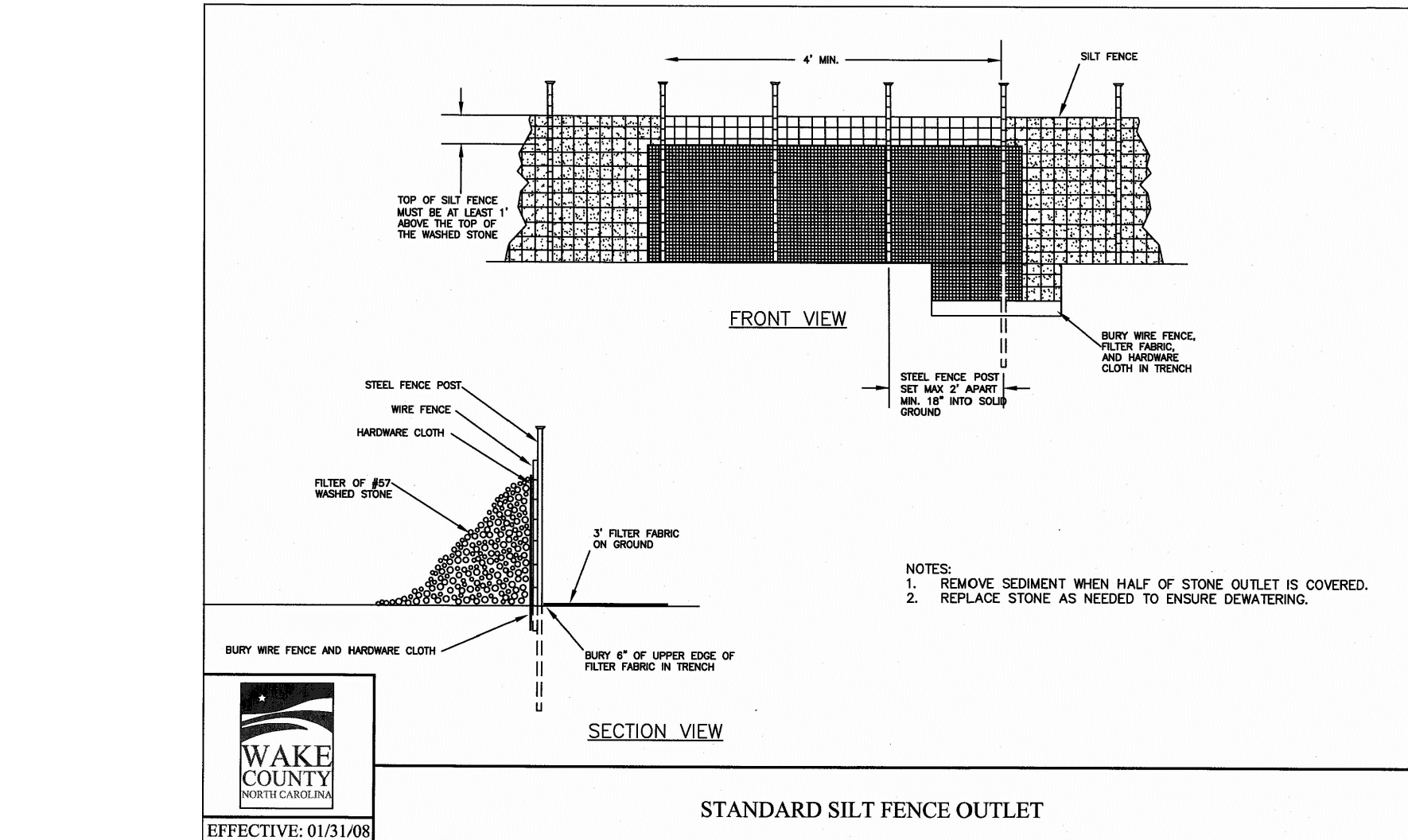
SHEET
C3.4

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

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1. SEEDS PREPARATION
2. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL, 3 INCHES DEEP OVER ENTIRE AREA. TOPSOIL SHOULD BE AVAILABLE.
3. RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
4. REMOVE ALL LOOSE ROCKS, ROOTS, AND OTHER OBSTRUCTIONS LEAVING A FLAT, REASONABLY FIRM AND UNIFORM SURFACE.
5. APPLY AGRICULTURAL FERTILIZER AND MULCH UNIFORMLY. (SEE BELOW).
6. PHOSPHATE UNIFORMLY AND MIX WITH SOIL. (SEE BELOW).
7. ANCHOR TACK WITH PLUGS OF ASPHALT OR DAMPED FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 1 INCHES DEEP.
8. SEED ON A FRESHLY PREPARED SEEDBED AND COVER LIGHTLY WITH SEEDING EQUIPMENT OR CULPLICK AFTER SEEDING.
9. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
10. ANCHOR AND FERTILIZER REPAIRS SHOULD BE MADE TO REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON. IF POSSIBLE, REPAIRS SHOULD BE MADE WITHIN 14 DAYS OF THE REPAIRS FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
11. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE OF SEEDING AND FERTILIZER RATES. SEEDING AND FERTILIZER COVER IS ESTABLISHED.
12. APPLY AGRICULTURAL FERTILIZER 2 TONS/ACRE
FERTILIZER 10-10-10 ANALYSIS AT 800-1,000 LBS./ACRE
13. SUPER PHOSPHATE 400 LBS/ACRE OF 20% ANALYSIS SUPER PHOSPHATE
14. MULCH = 2 TONS (APPROX. 80 BALES) SMALL STRAIN STRAW/ACRE
15. ANCHOR - TACK WITH LIQUID ASPHALT AT 400 GALS/ACRE OR DAMPED ASPHALT AT 300 GALLONS/ACRE

SEEDING SCHEDULE			
PERMANENT SEEDING - SHOULDERS, SIDE DITCHES, SLOPES (MAX. 3:1)			
DATE	TREE TYPE	PLANTING RATE	
AUG. 15 - NOV. 1	TALL FESCUE	200 LBS./ACRE	
NOV. 1 - MAR. 1	TALL FESCUE AND AND ABRUZZI RYE *(NURSE CROP)	200 LBS./ACRE 25 LBS./ACRE	
MAR. 1 - APR. 15	TALL FESCUE	200 LBS./ACRE	
APR. 15 - JUN. 30	HULLED COMMON BERMUDAGRASS	15 LBS./ACRE	
PERMANENT SEEDING - SLOPES (3:1 TO 2:1)			
AUG. 15-NOV.1	TALL FESCUE AND SERICEA LESPEDEZA (UNHULLED, UNSCARIFIED)	200 LBS./ACRE 60 TO 70 LBS./ACRE	
NOV. 1-MAR.1	TALL FESCUE AND SERICEA LESPEDEZA (UNHULLED, UNSCARIFIED) AND ABRUZZI RYE	200 LBS./ACRE 60 TO 70 LBS./ACRE 25 LBS./ACRE	
MAR. 1-JUNE 1	TALL FESCUE AND SERICEA LESPEDEZA (SCARIFIED)	200 LBS./ACRE 40 TO 50 LBS./ACRE	
MAY 1-JUNE 30	WEEDING LOVEGRASS AND SERICEA LESPEDEZA (SCARIFIED)	10 LBS./ACRE 40 TO 50 LBS./ACRE	
MAR. 15-JUNE 30	HULLED COMMON BERMUDAGRASS AND SERICEA LESPEDEZA (SCARIFIED)	15 LBS./ACRE 40 TO 50 LBS./ACRE	

TEMPORARY SEEDING

JUNE 1-SEPT. 1	TALL FESCUE	200 LBS/ACRE
	OR BROWNTOP MILLET * (NURSE CROP)	35 LBS/ACRE
	OR SORGHUM-SUDAN HYBRIDS * (NURSE CROP)	30 LBS/ACRE

CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR
ADDITIONAL INFORMATION CONCERNING ALTERNATIVES FOR RESTORATION OF
DENuded AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL
UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.

*NURSE CROP/TEMPORARY-RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED
PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW OVER 12"
IN HEIGHT BEFORE MOWING, OTHERWISE FESCUE MAY BE SHADED OUT.

SHEET

C3.6

COBBLESTONE VILLAGE

MIXED USE DEVELOPMENT

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

03-19157

PROGRESS

DATE

MRM

DRAWN BY

JOB NO.

EROSION CONTROL DETAILS

SCALE: N.T.S.

CHK BY: MGB

NO.

DATE

DESCRIPTION

BY

REVISIONS

BASS, NIXON & KENNEDY, INC.

CONSULTING ENGINEERS

6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607

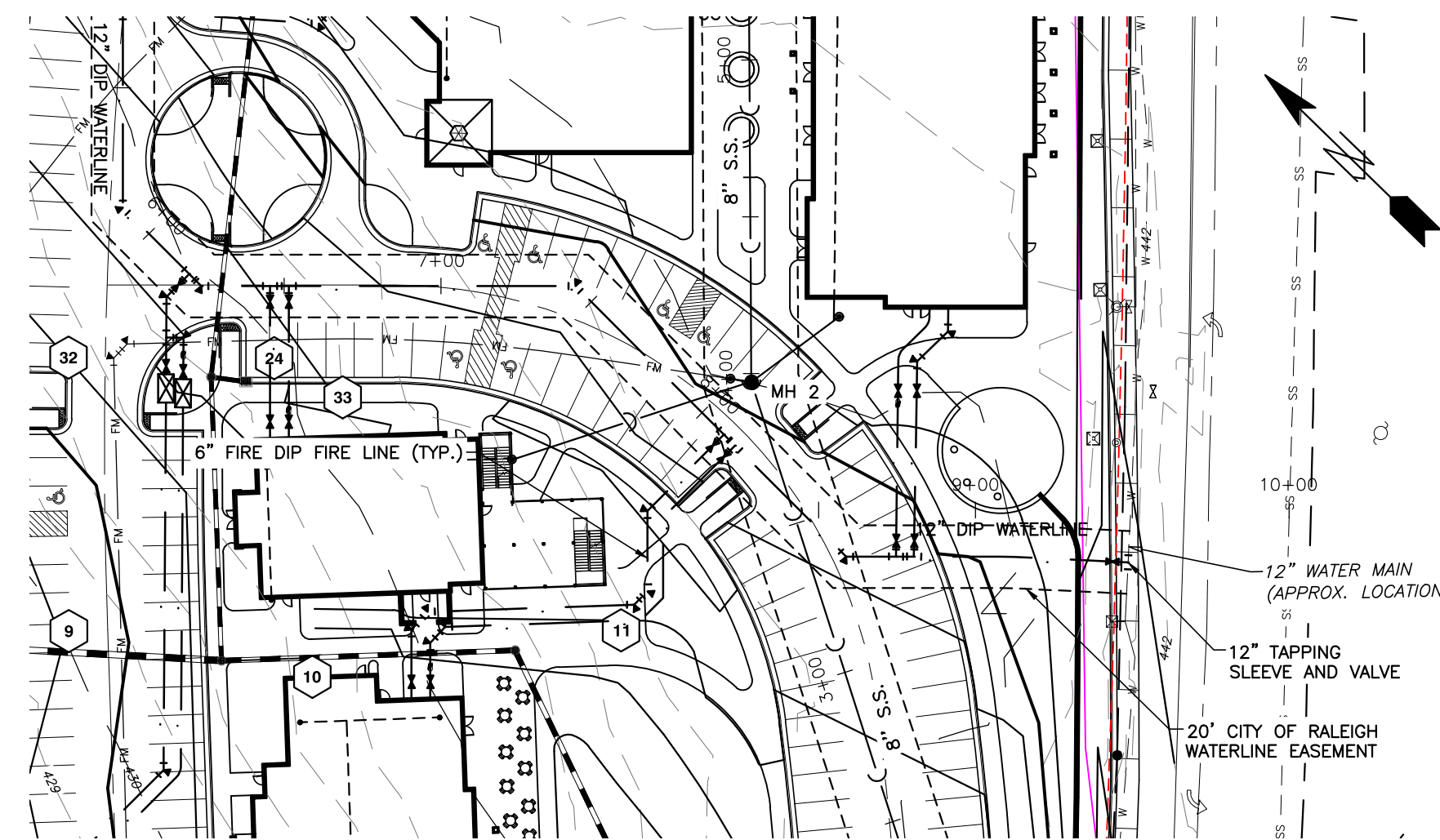
TELEPHONE: (919)651-4422 FAX: (919)651-6968

CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

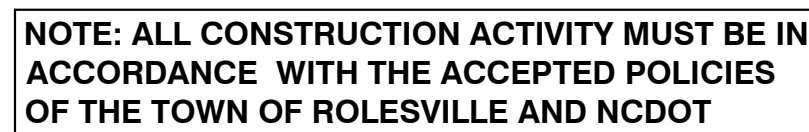
B

N

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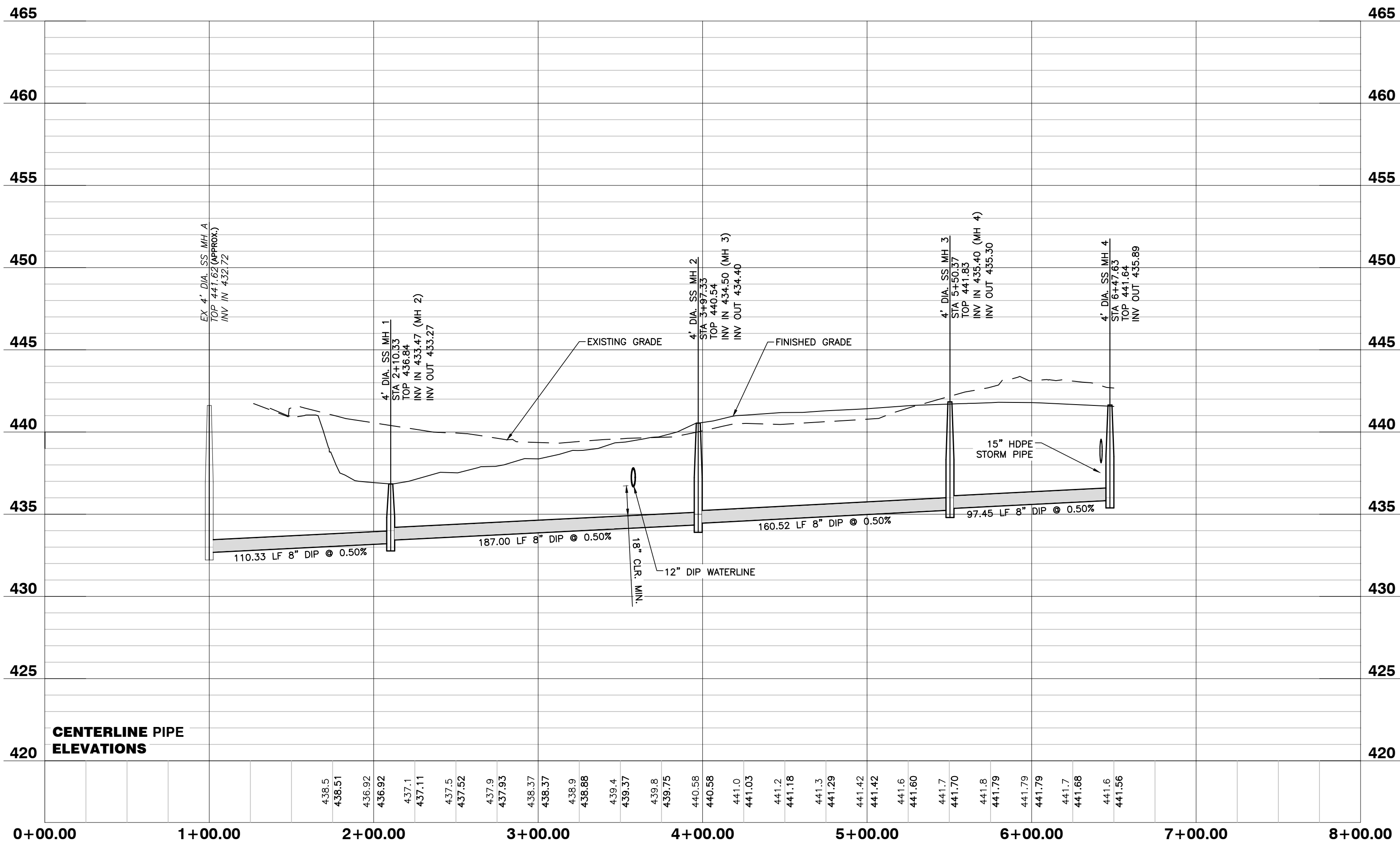
NO FLOODPLAINS EXIST ON-SITE



SHEET
C4.1



SANITARY SEWER PROFILE



NO FLOODPLAINS EXIST ON-SITE

NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF ROLESVILLE AND NCDOT

Private Sewer Collection / Extension System
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 # S-4711 (P)
Authorization to Construct See digital signature

BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 881-1422 FAX: (919) 881-8988
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

NO.	DATE	DESCRIPTION	BY

03-19157	PROGRESS	MRM
JOB NO.	DATE	DRAWN BY
SANITARY SEWER PROFILE		
SCALE: 1" = 50' H; 1" = 5' V CHK BY: MDB		

COBBLESTONE VILLAGE
MIXED USE DEVELOPMENT
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

SHEET
C4.2

1. A/C UTILITIES, TRANSFORMERS AND OTHER MECHANICAL OR UTILITY EQUIPMENT, NOT SHOWN ON THE PLAN, SHALL BE LOCATED BY THE CONTRACTOR BY ADJUSTING PLANTINGS SHOWN IN CLOSE PROXIMITY TO EQUIPMENT OR BY THE ADDITION OF MAX MYRTLES @ 24" HT., 5' OC (SEE CONTRACT NOTES FOR EXISTING ACCESSIBILITY AND PLANTING PROXIMITY, ETC.). DUMPSTER IS SCREENED FROM OFF-SITE VIEWS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO PLANTING.
3. MULCH SHALL BE 3" DEEP MULCH UNLESS OTHERWISE NOTED.
4. VERIFICATION OF TOTAL QUANTITIES AS SHOWN IN THE PLANT LIST AND ON THE PLAN SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. ANY DISCREPANCIES BETWEEN PLANT LIST AND PLANTING PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION.
5. ALL TREES, SHRUBS, GROUNDERCOVER, ETC. SHALL CONFORM TO THE STANDARD SPECIFICATIONS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERMEN.
6. ALL ROOTBALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO PLANTING.
7. B&B AS LISTED UNDER "ROOT" IN THE PLANT LIST INDICATES BALD & BURLAPPED.
8. ALL PLANTS/PLANTINGS SHALL BE MULCHED IMMEDIATELY AFTER PLANTING AND WATERED.
9. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THEY BORE TO PREVIOUS EXISTING GRADE (UNLESS OTHERWISE NOTED).
10. ALL TREES AND SHRUBS SHALL REQUIRE MULCH RINGS AT THEIR BASE IF LEFT WITH LAWN AREAS.
11. MULCH EDGES AND PROPOSED PLANTINGS SHALL NOT DISTURB ANY EXISTING GROUPS OF TREES TO REMAIN. EDGES ARE SHOWN FOR ADJACENT AREAS ONLY, BUT ARE TO INDICATE SMOOTH, CLEAN CURVES.
12. CULVERTS, RIP-RAP STRUCTURES, AND OTHER STORMWATER DEVICES SHALL BE SCREENED WITH EVERGREEN SHRUBS. IF STRUCTURES ARE NOT SHOWN ON THE PLAN, INSTALL MAX MYRTLES @ 24" HT., 5' OC.
13. A 6" BUMPER OVERFLOW, FROM THE BACK OF CURB, SHALL BE ALLOTTED FOR MATURING SHRUBS.
14. TREE PROTECTION FENCING SHALL BE MAINTAINED UNTIL THE SITE WORK IS COMPLETED. THE FENCING SHALL BE REMOVED PRIOR TO THE FINAL SITE INSPECTION FOR THE CERTIFICATE OF OCCUPANCY (C.O.). THE SITE SHALL BE STABILIZED AND SEEDED PRIOR TO THE ISSUANCE OF A (C.O.).

PERIMETER BUFFERS (10' TYPICAL):

WEST (1) - 352 LF = 4 TREES / 100 LF = 14 TREES REQUIRED/PROVIDED
= 40 SHRUBS / 100 LF = 141 SHRUBS REQUIRED/PROVIDED
= 352 LF MIN. 6' TALL FENCE REQUIRED

NORTH (2) - 187 LF = 4 TREES / 100 LF = 8 TREES REQUIRED/PROVIDED
= 40 SHRUBS / 100 LF = 75 SHRUBS REQUIRED/PROVIDED
= 187 LF MIN. 6' TALL FENCE REQUIRED

NORTHEAST (3) - 249 LF = 4 TREES / 100 LF = 10 TREES REQUIRED/PROVIDED
= 40 SHRUBS / 100 LF = 100 SHRUBS REQUIRED/PROVIDED
= 249 LF MIN. 6' TALL FENCE REQUIRED

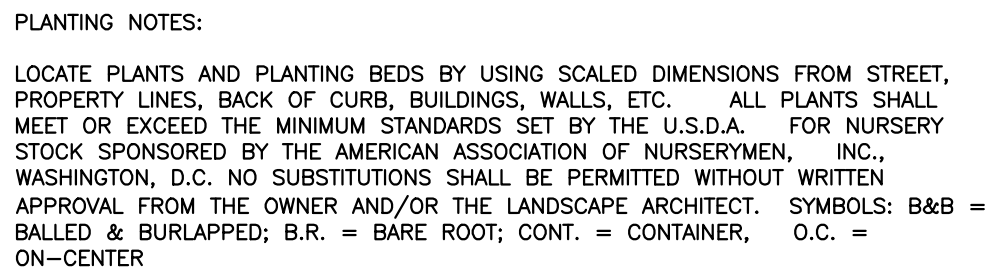
EAST (4) - 247 LF = 4 TREES / 100 LF = 10 TREES REQUIRED/PROVIDED
= 40 SHRUBS / 100 LF = 100 SHRUBS REQUIRED/PROVIDED
= 247 LF MIN. 6' TALL FENCE REQUIRED

STREET YARDS:

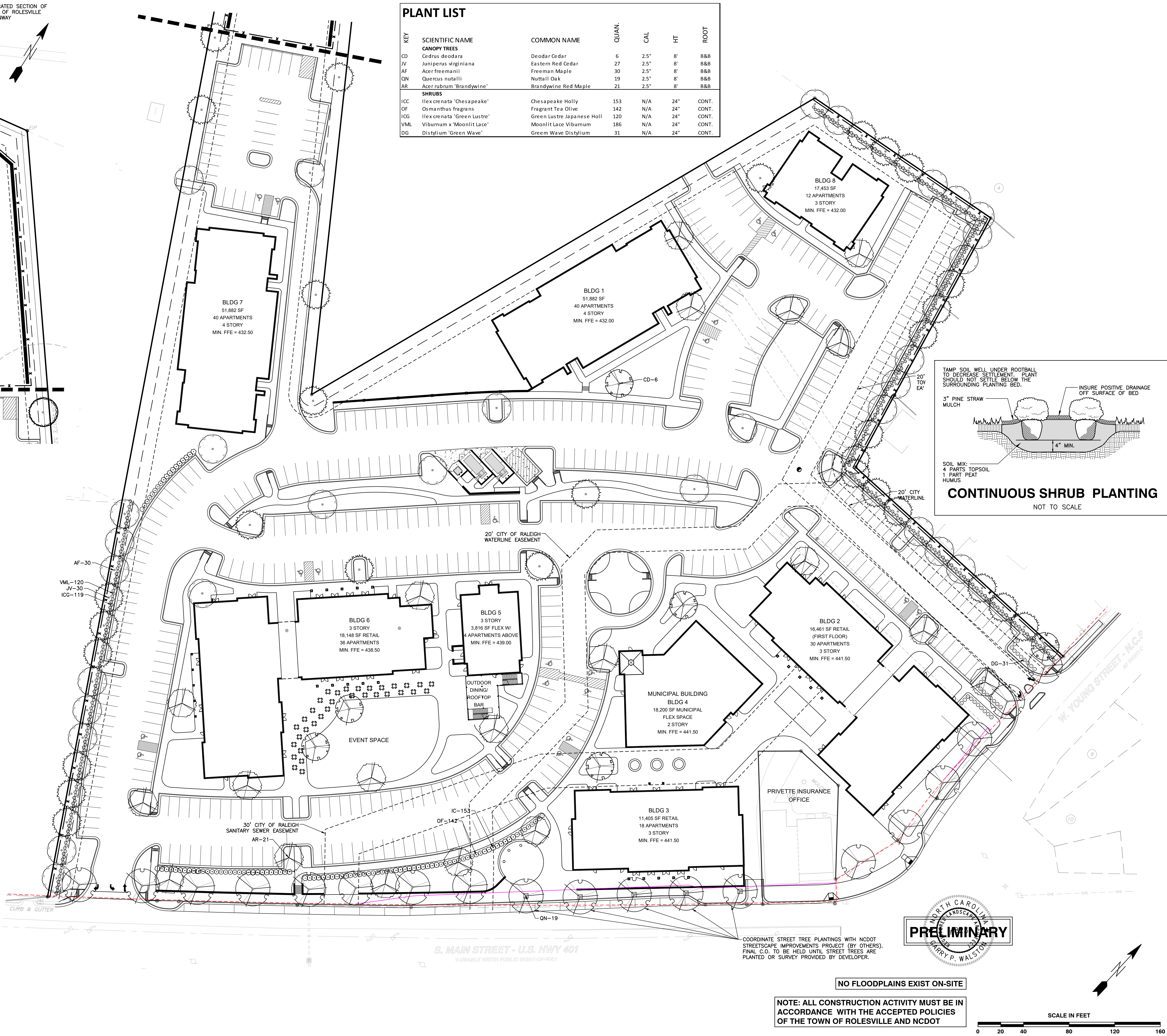
MAIN ST - 595 LF = 1 TREE / 50 LF = 12 TREES REQUIRED/PROVIDED

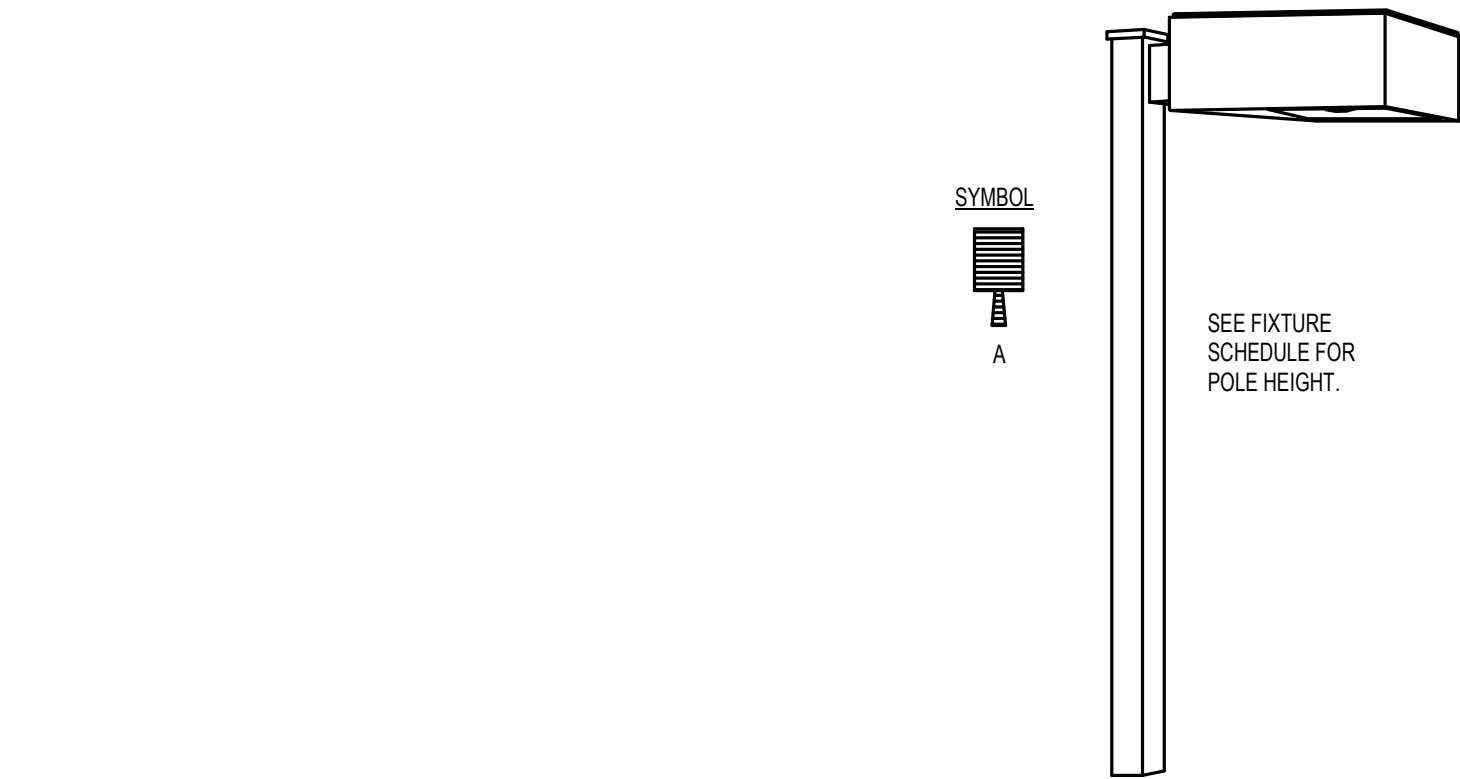
WEST YOUNG ST - 242 LF = 1 TREE / 50 LF = 5 TREES REQUIRED/PROVIDED

VEHICULAR USE AREA COVERAGE: 1 TREE WITHIN 60' OF EACH PARKING SPACE

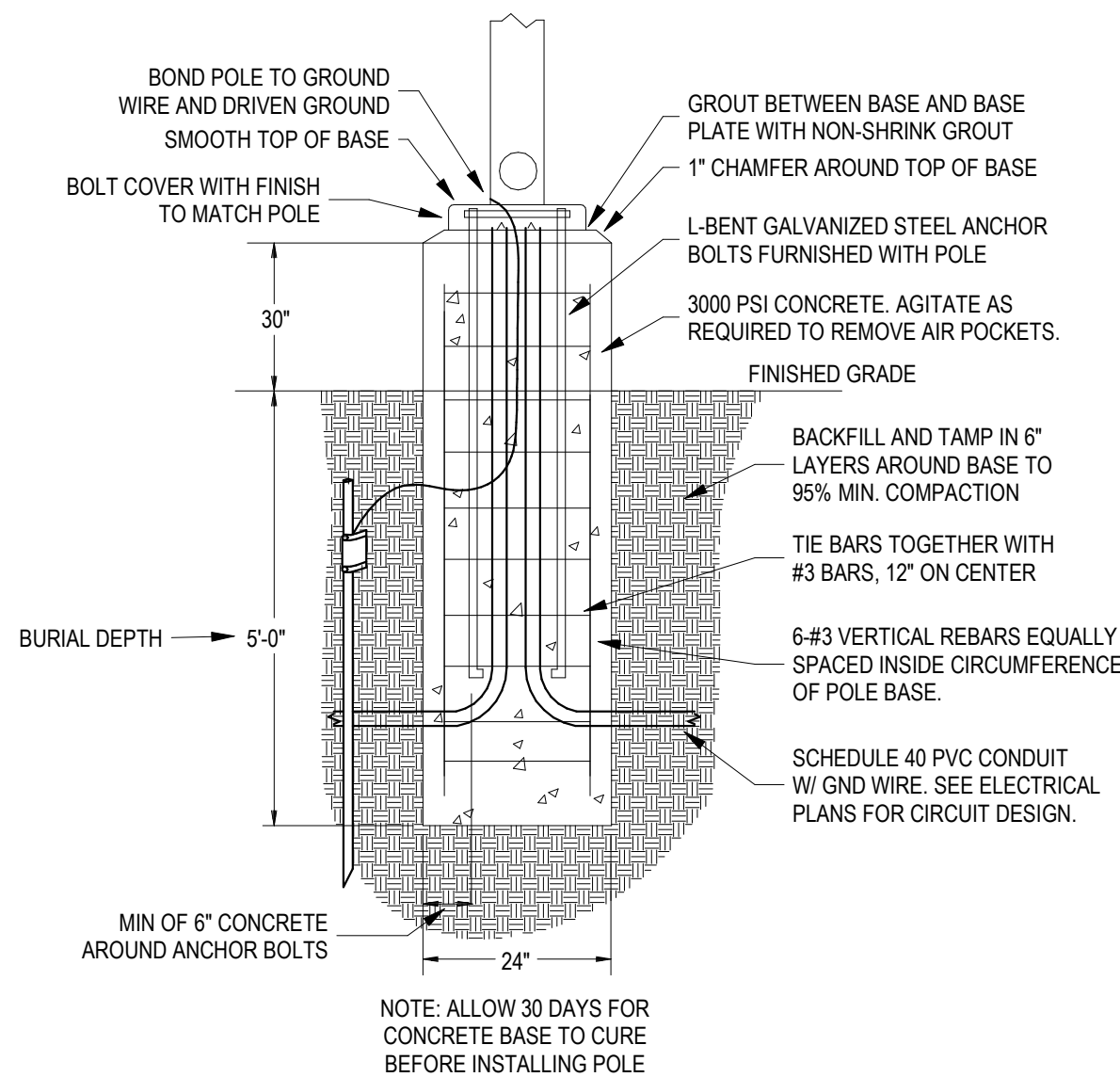


KET	SCIENTIFIC NAME	COMMON NAME	QUAN	CAL	HT	ROOT
CD	CANOPY TREES					
CD	Cedrus deodara	Deodar Cedar	6	2.5"	8'	B&B
JV	Juniperus virginiana	Eastern Red Cedar	27	2.5"	8'	B&B
AF	Acer freemanii	Freeman Maple	30	2.5"	8'	B&B
QV	Quercus nuttalli	Nuttall Oak	19	2.5"	8'	B&B
AR	Acer rubrum 'Brandywine'	Brandywine Red Maple	21	2.5"	8'	B&B
	SHRUBS					
ICC	Ilex crenata 'Chesapeake'	Chesapeake Holly	153	N/A	24"	CONT.
OF	Osmunda cinnamomea	Fragrant Tea Olive	142	N/A	24"	CONT.
ICC	Ilex crenata 'Green Lustre'	Green Lustre Japanese Holly	120	N/A	24"	CONT.
VML	Viburnum x 'Moonlit Lace'	Moonlit Lace Viburnum	186	N/A	24"	CONT.
GD	Distylium 'Green Wave'	Green Wave Distylium	31	N/A	24"	CONT.





2 **FIXTURE "A" DETAIL 4**
SCALE: N.T.S

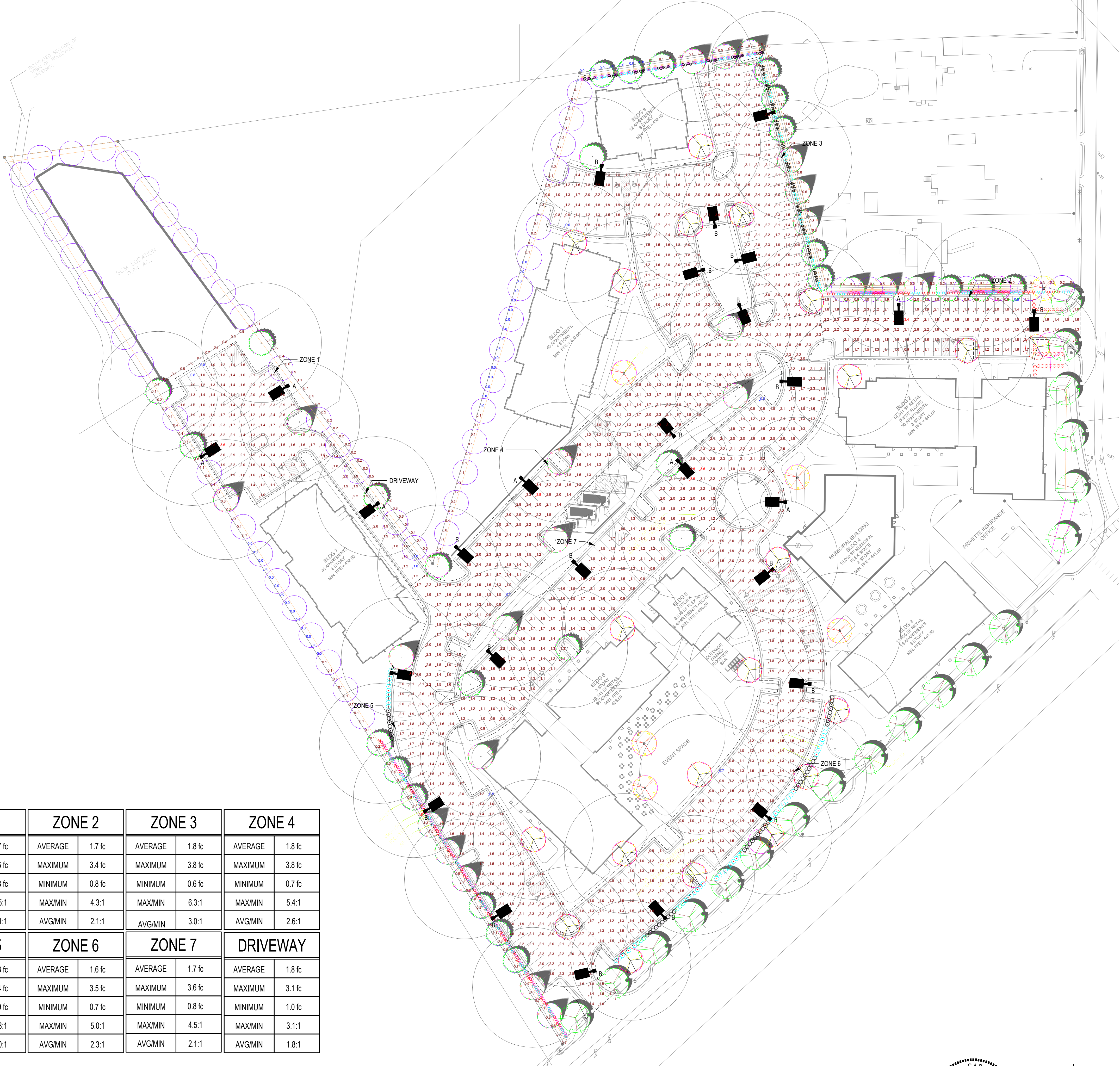


3 **SITE LIGHTING POLE BASE DETAIL - 5'(30" AFG)**
SCALE: N.T.S.

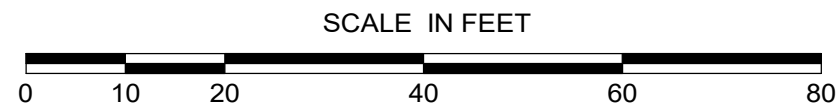
ZONE 1		ZONE 2		ZONE 3		ZONE 4	
AVERAGE	1.7 fc	AVERAGE	1.7 fc	AVERAGE	1.8 fc	AVERAGE	1.8 fc
MAXIMUM	3.6 fc	MAXIMUM	3.4 fc	MAXIMUM	3.8 fc	MAXIMUM	3.8 fc
MINIMUM	0.8 fc	MINIMUM	0.8 fc	MINIMUM	0.6 fc	MINIMUM	0.7 fc
MAX/MIN	4.5:1	MAX/MIN	4.3:1	MAX/MIN	6.3:1	MAX/MIN	5.4:1
AVG/MIN	2.1:1	AVG/MIN	2.1:1	AVG/MIN	3.0:1	AVG/MIN	2.6:1

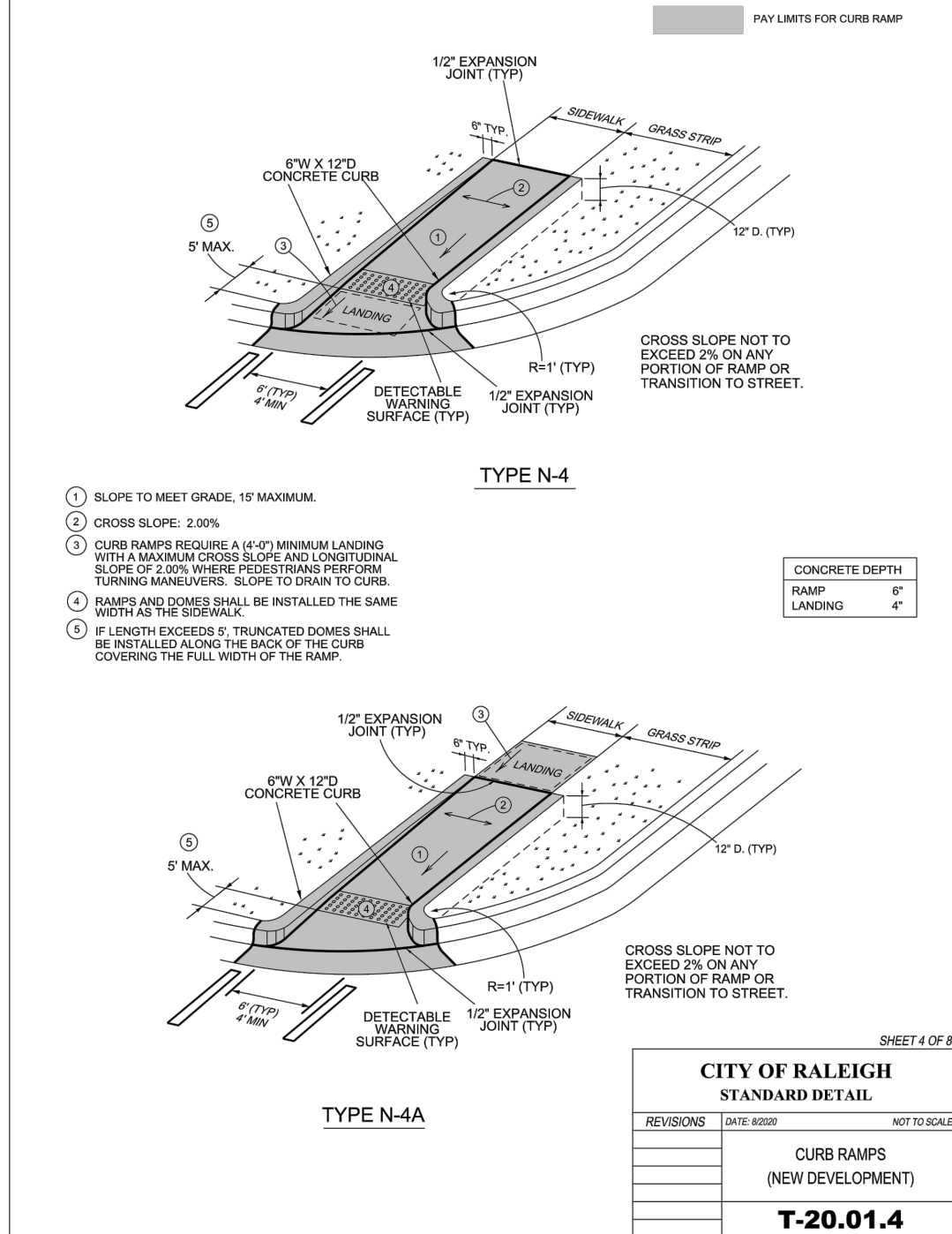
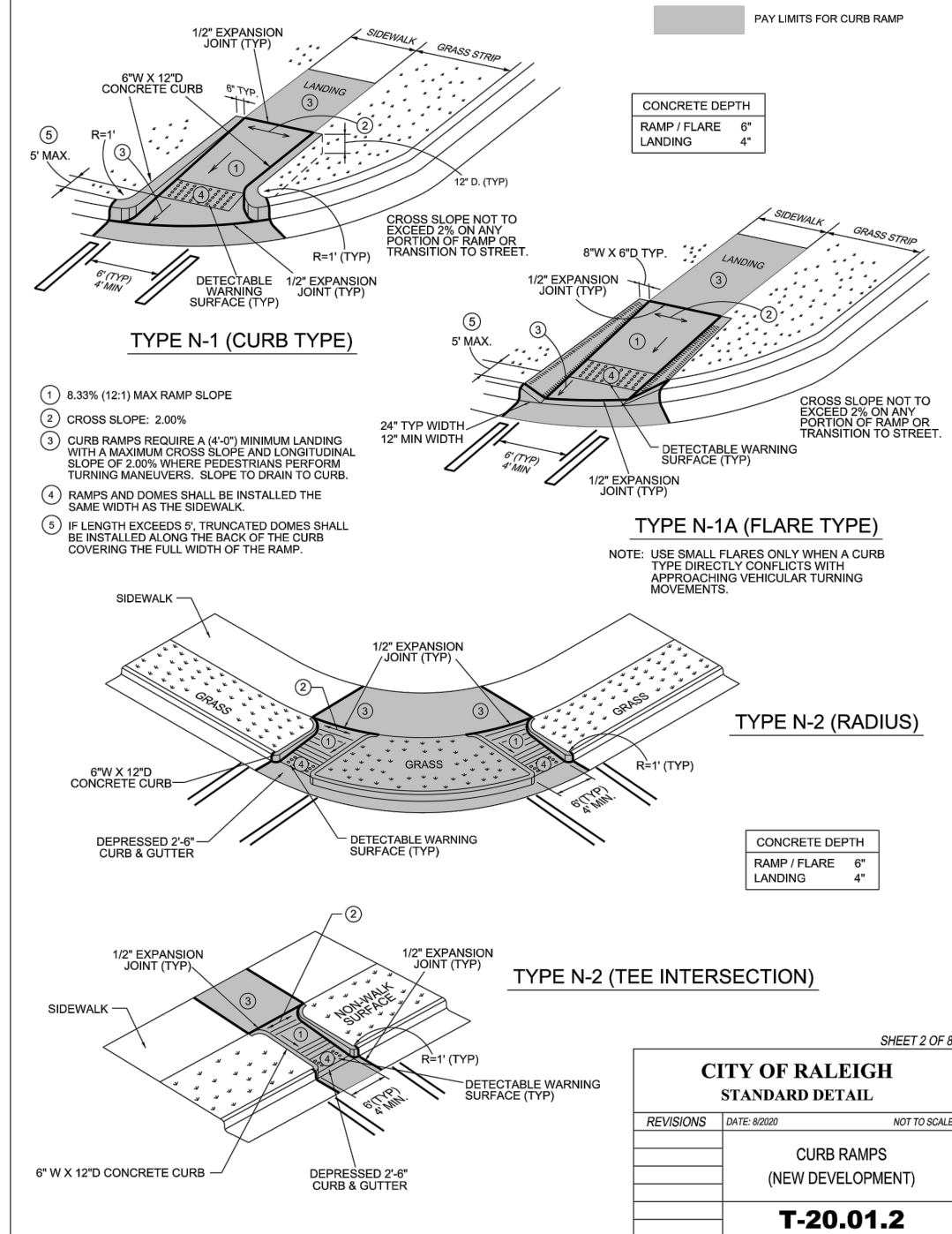
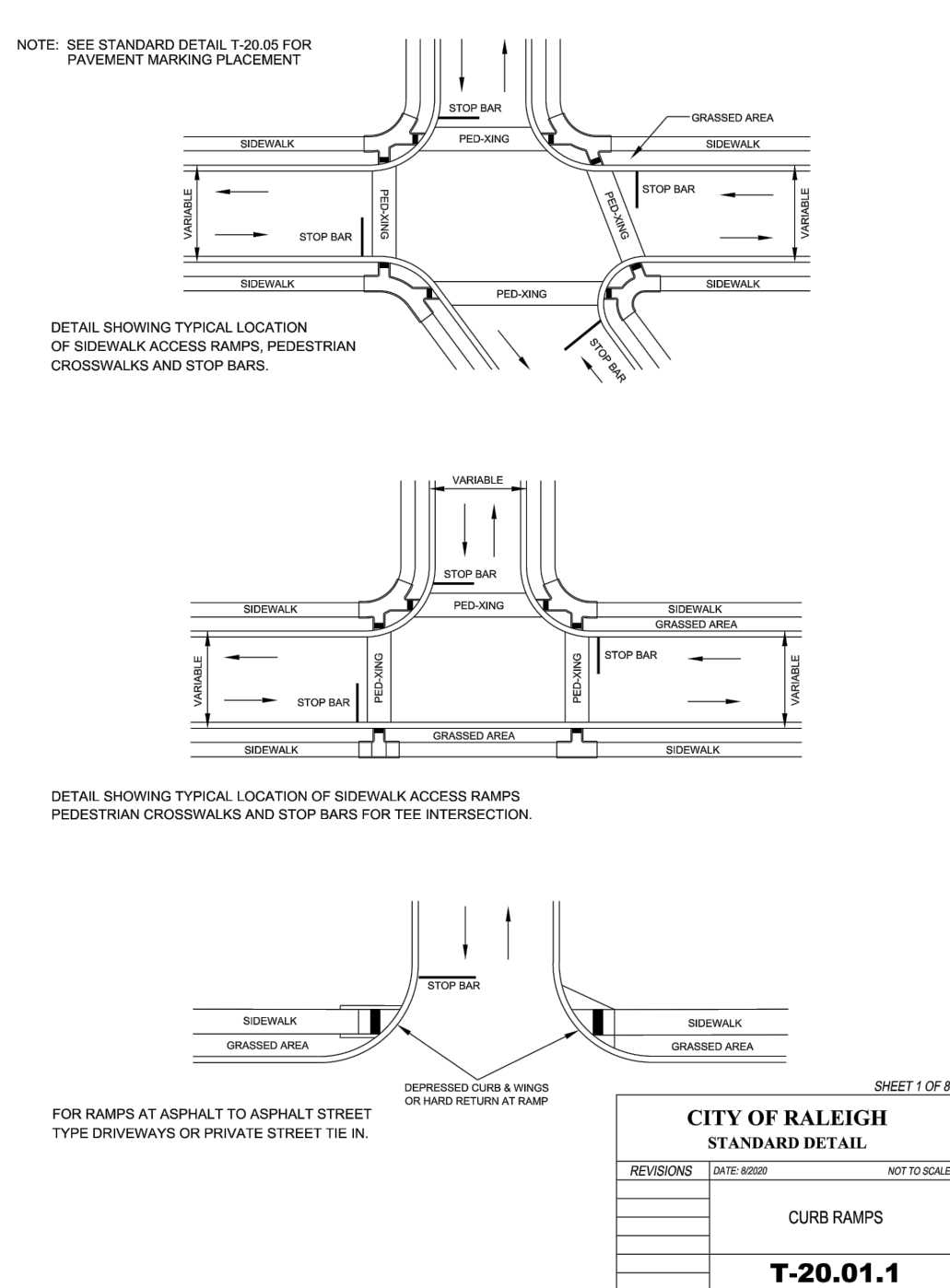
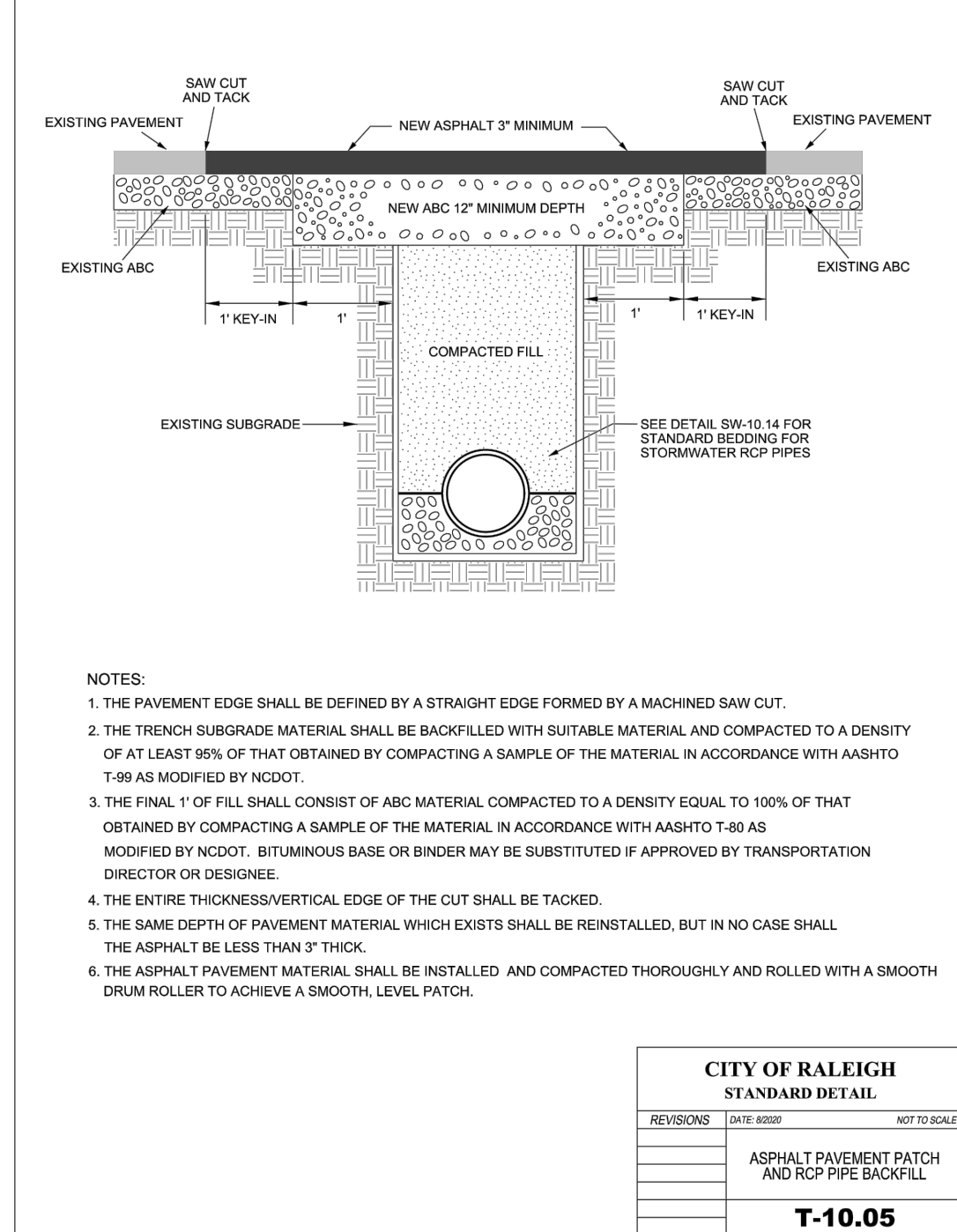
ZONE 5		ZONE 6		ZONE 7		DRIVEWAY	
AVERAGE	1.8 fc	AVERAGE	1.6 fc	AVERAGE	1.7 fc	AVERAGE	1.8 fc
MAXIMUM	3.4 fc	MAXIMUM	3.5 fc	MAXIMUM	3.6 fc	MAXIMUM	3.1 fc
MINIMUM	0.9 fc	MINIMUM	0.7 fc	MINIMUM	0.8 fc	MINIMUM	1.0 fc
MAX/MIN	3.8:1	MAX/MIN	5.0:1	MAX/MIN	4.5:1	MAX/MIN	3.1:1
AVG/MIN	2.0:1	AVG/MIN	2.3:1	AVG/MIN	2.1:1	AVG/MIN	1.8:1

LIGHTING FIXTURE SCHEDULE				
TYPE MARK	DESCRIPTION	MANUFACTURER	MODEL	WATTAGE
A	GALLEON AREA AND ROADWAY LUMINAIRE (3) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS	EATON - STREETWORKS	GAN-AF-03-LED-U-T3R	166.0 W
B	GALLEON AREA AND ROADWAY LUMINAIRE (3) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS	EATON - STREETWORKS	GAN-AF-03-LED-U-T4W	166.0 W



1 **SITE LIGHTING**
SCALE: 1" = 50'-0"





- ## CITY OF RALEIGH CURB RAMPS GENERAL NOTES
1. CITY OF RALEIGH STANDARD CURB RAMPS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND PUBLIC RIGHT OF WAY ACCESS GUIDELINES (PROWAG).
 2. CURB RAMPS SHALL BE PROVIDED AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIDEWALK ACCESS RAMPS SHALL BE LOCATED AS INDICATED IN THE DETAIL, HOWEVER, THE LOCATION MAY BE ADJUSTED IN COORDINATION WITH THE CITY OF RALEIGH WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT.
 3. DOUBLE WHEELCHAIR RAMPS ARE TO BE INSTALLED AT ALL PUBLIC STREET INTERSECTIONS WHERE SIDEWALK IS REQUIRED.
 4. THE WALKING SURFACE SHALL BE SLIP RESISTANT. THE COLOR FOR THE DETECTABLE WARNING AREA SHALL BE YELLOW FOR CONTRAST.
 5. NO SLOPE ON THE SIDEWALK ACCESS RAMP SHALL EXCEED 1" (FT) 12" (1:12) IN RELATIONSHIP TO THE GRADE OF THE STREET.
 6. IN NO CASE SHALL THE WIDTH OF THE SIDEWALK ACCESS RAMP BE LESS THAN 48" ALL RAMPS SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.
 7. USE CLASS A (3000 PSI) CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NONSKID SURFACE.
 8. A 1/2" EXPANSE JOINT INSTALLED FULL DEPTH WILL BE REQUIRED WHERE THE CONCRETE SIDEWALK ACCESS RAMP JOINS THE CURBS AND ALSO WHERE NEW CONCRETE ABUTS EXISTING CONCRETE.
 9. CURB RAMPS SHOULD BE PLACED PARALLEL TO THE DIRECTION OF TRAFFIC.

