

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
CMP	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 UNDERGROUD 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

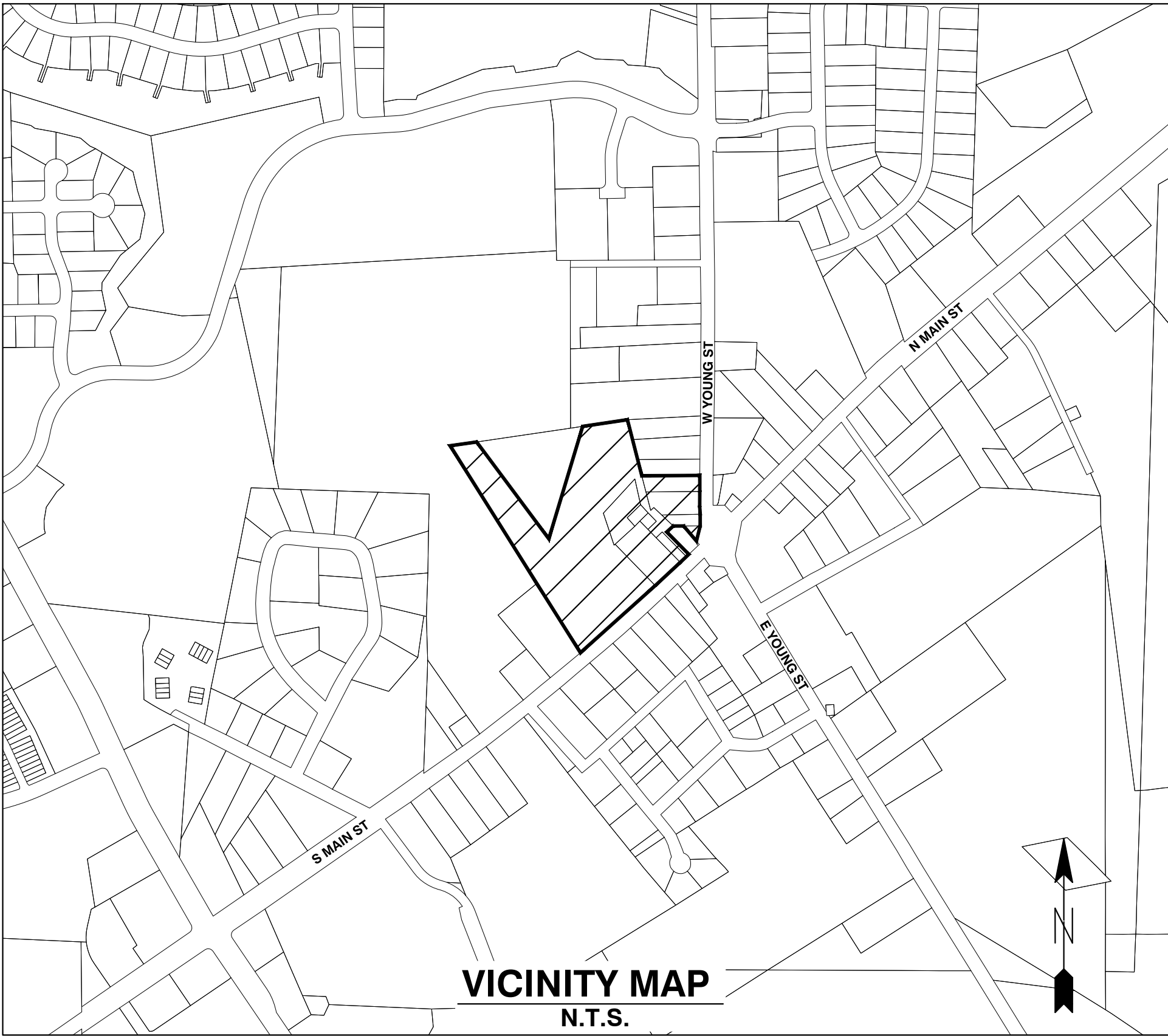
COBBLESTONE VILLAGE MIXED USE DEVELOPMENT

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION DRAWINGS

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

CASE NO. SP21-01



Public
Water Distribution / Extension System
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 # W-3879

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 constructions 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-4962 (P)

Authorization to Construct See digital signature

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 #** W-3879

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 #** S-4962 (P)

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 constructions 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

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____
Raleigh Water Review Officer

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

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

SHEET INDEX

COVER	
C0.1	EXISTING CONDITIONS & DEMOLITION PLAN
C1.1	SITE PLAN
C1.2	OPEN SPACE PLAN
C2.1	UTILITY PLAN
C3.1	GRADING AND DRAINAGE PLAN
C3.2	BMP DETAILS
C3.3	EROSION CONTROL PLAN - STAGE 1
C3.4	EROSION CONTROL PLAN - STAGE 2
C3.5	EROSION CONTROL DETAILS
C3.6	EROSION CONTROL DETAILS
C3.7	NCG01 PLAN
C3.8	STORM DRAINAGE PIPE & STRUCTURE TABLE
C4.1	PUBLIC WATERLINE PROFILE
C4.2	SANITARY SEWER PROFILE
C4.3	S. MAIN ST. - U.S. 401 WIDENING CROSS SECTIONS
L1.1	LANDSCAPE PLAN
L1.2	LANDSCAPE DETAILS
SL-101	LIGHTING PLAN
C5.1	DETAILS
C5.2	DETAILS
C5.3	DETAILS
C5.4	DETAILS
C5.5	DETAILS
C5.6	DETAILS

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 (ULOCOS) 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 INCONSISTENCIES OR 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 AFFRANGE 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 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, STRIPING, 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 (POND, 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 POND, 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)	1.92
NUMBER OF OPEN SPACE LOTS	N/A
PUBLIC WATER (LF)	875
PRIVATE SEWER (LF)	550
PUBLIC STREET (LF)	0
PUBLIC SIDEWALK (LF)	255

EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT

APPROVED

EROSION CONTROL ☐ S-
STORMWATER MGMT. ☐ S-
FLOOD STUDY ☐ S-
DATE _____



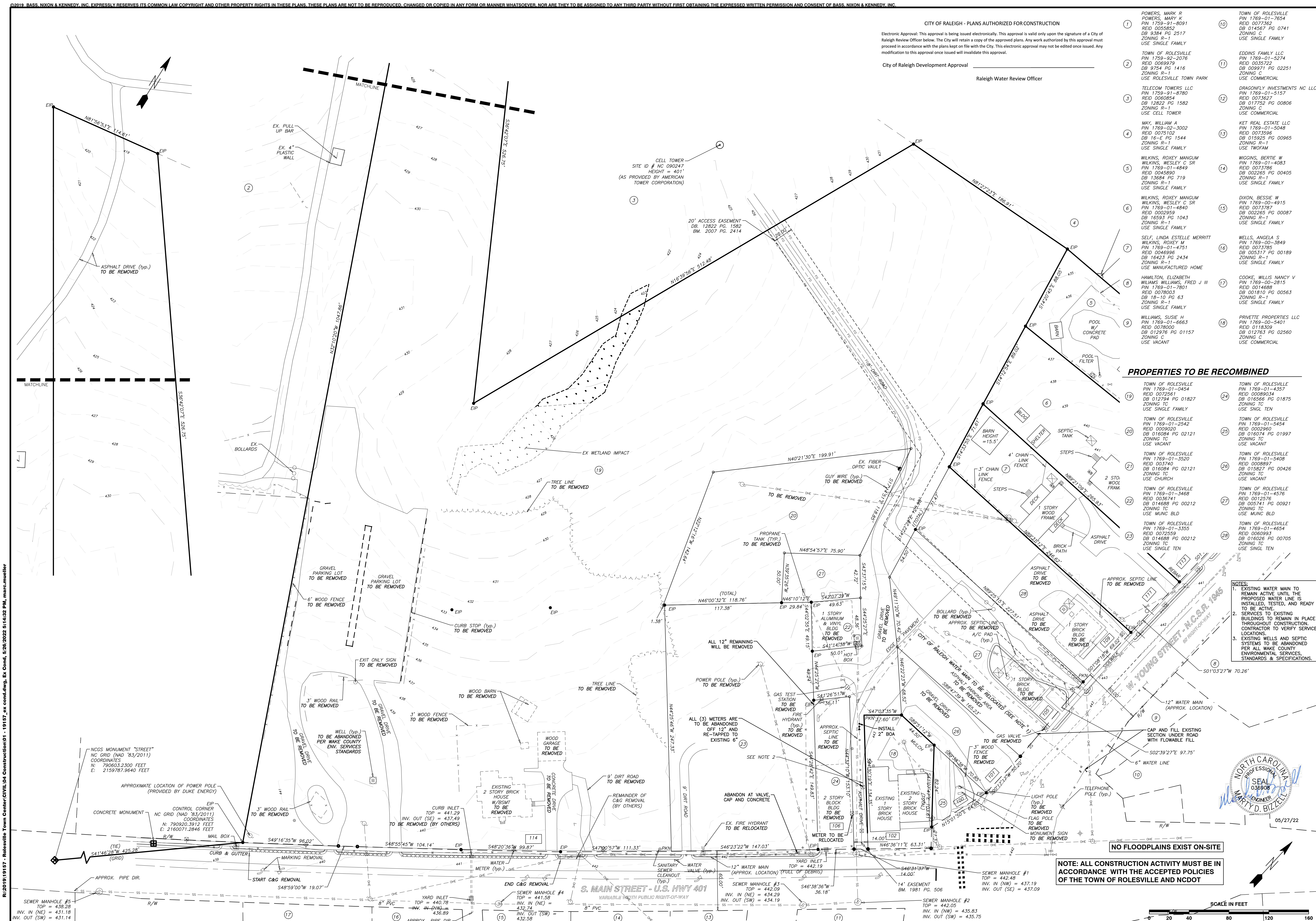
ENVIRONMENTAL CONSULTANT SIGNATURE

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval

Raleigh Water Review Officer

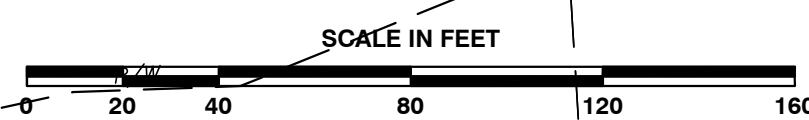


PROPERTIES TO BE RECOMBINED

- | | | | |
|----|--|----|--|
| 19 | TOWN OF ROLESVILLE
PIN 1769-01-0454
REID 0009020
DB 012794 PG 01827
ZONING TC
USE SINGLE FAMILY | 24 | TOWN OF ROLESVILLE
PIN 1769-01-3457
REID 0008934
DB 016566 PG 01875
ZONING TC
USE SINGL TEN |
| 20 | TOWN OF ROLESVILLE
PIN 1769-01-2542
REID 0009020
DB 016084 PG 02121
ZONING TC
USE VACANT | 25 | TOWN OF ROLESVILLE
PIN 1769-01-5454
REID 0002960
DB 016074 PG 01997
ZONING TC
USE VACANT |
| 21 | TOWN OF ROLESVILLE
PIN 1769-01-3520
REID 003740
DB 016084 PG 02121
ZONING TC
USE CHURCH | 26 | TOWN OF ROLESVILLE
PIN 1769-01-5408
REID 0008897
DB 016084 PG 00426
ZONING TC
USE VACANT |
| 22 | TOWN OF ROLESVILLE
PIN 1769-01-3468
REID 0036741
DB 014688 PG 00212
ZONING TC
USE MUNC BLD | 27 | TOWN OF ROLESVILLE
PIN 1769-01-4576
REID 0012576
DB 005741 PG 00921
ZONING TC
USE MUNC BLD |
| 23 | TOWN OF ROLESVILLE
PIN 1769-01-3353
REID 0022559
DB 014688 PG 00212
ZONING TC
USE SINGLE TEN | 28 | TOWN OF ROLESVILLE
PIN 1769-01-4654
REID 0008993
DB 016026 PG 00705
ZONING TC
USE SINGL TEN |

- NOTES:
- EXISTING WATER MAIN TO REMAIN ACTIVE UNTIL THE PROPOSED WATER LINE IS INSTALLED, TESTED, AND READY TO BE ACTIVE.
 - SERVICES TO EXISTING BUILDINGS TO REMAIN IN PLACE THROUGHOUT CONSTRUCTION. CONTRACTOR TO VERIFY SERVICE LOCATIONS.
 - EXISTING WELLS AND SEPTIC SYSTEMS TO BE ABANDONED PER ALL WAKE COUNTY ENVIRONMENTAL SERVICES, STANDARDS & SPECIFICATIONS.

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



BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 881-4422 FAX: (919) 881-8888
CERTIFICATION NUMBERS: NCBELS (C-0267)

PROGRESS DRAWN BY
DATE
JOB NO.

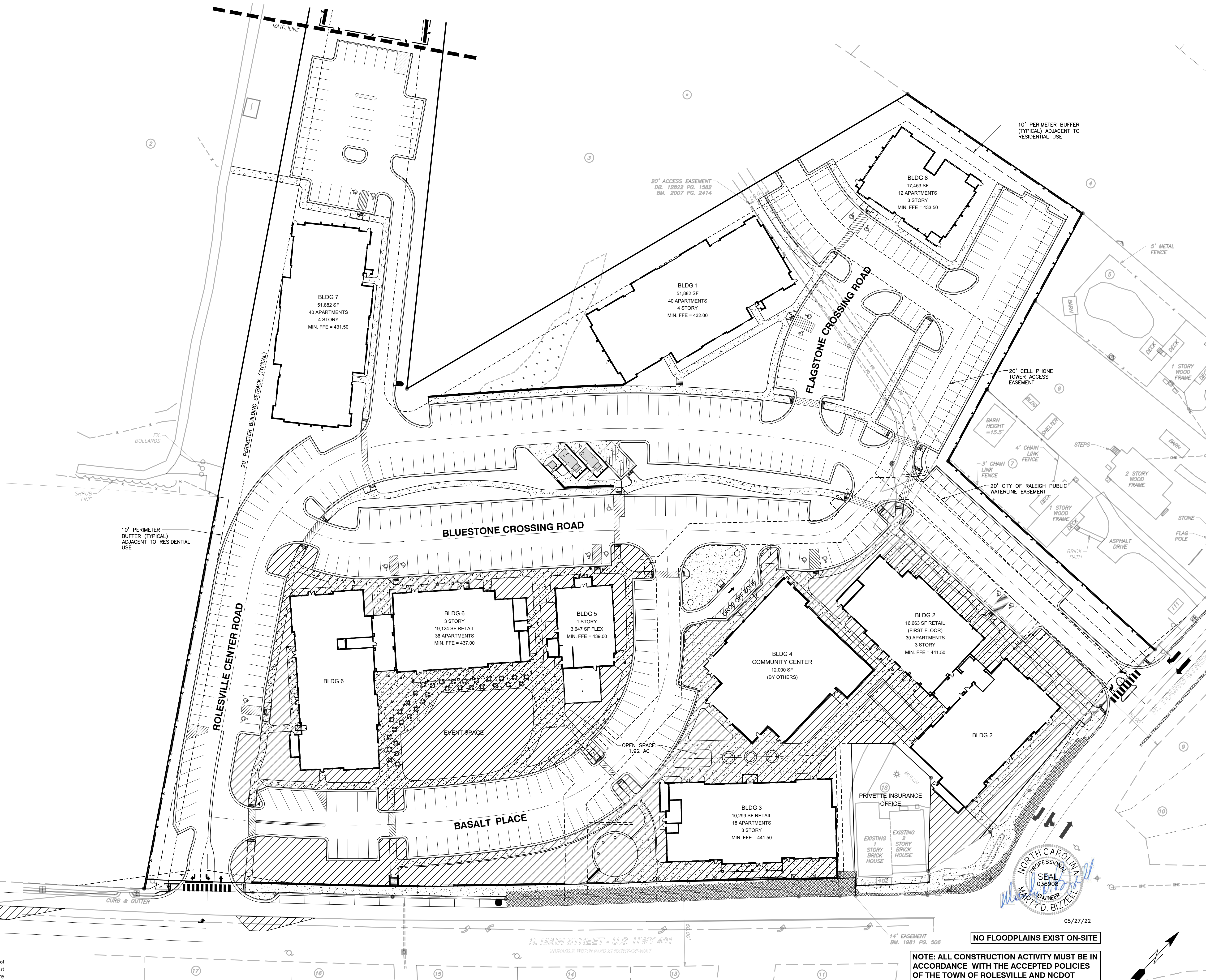
EXISTING CONDITIONS & DEMOLITION PLAN
SCALE: 1" = 40'

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

SHEET
C0.1

TOWN OF ROLESVILLE PROJECT NO.

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



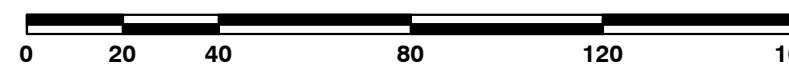
Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with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

Raleigh Water Review Officer

NO FLOODPLAINS EXIST ON-SITE

05/27/22

SCALE IN FEET



SHEET
C1.2

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval

Raleigh Water Review Officer

Public

Water Distribution / Extension System

The City of Raleigh consents to the connection to its public water system 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 # W-3879
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-4962 (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.

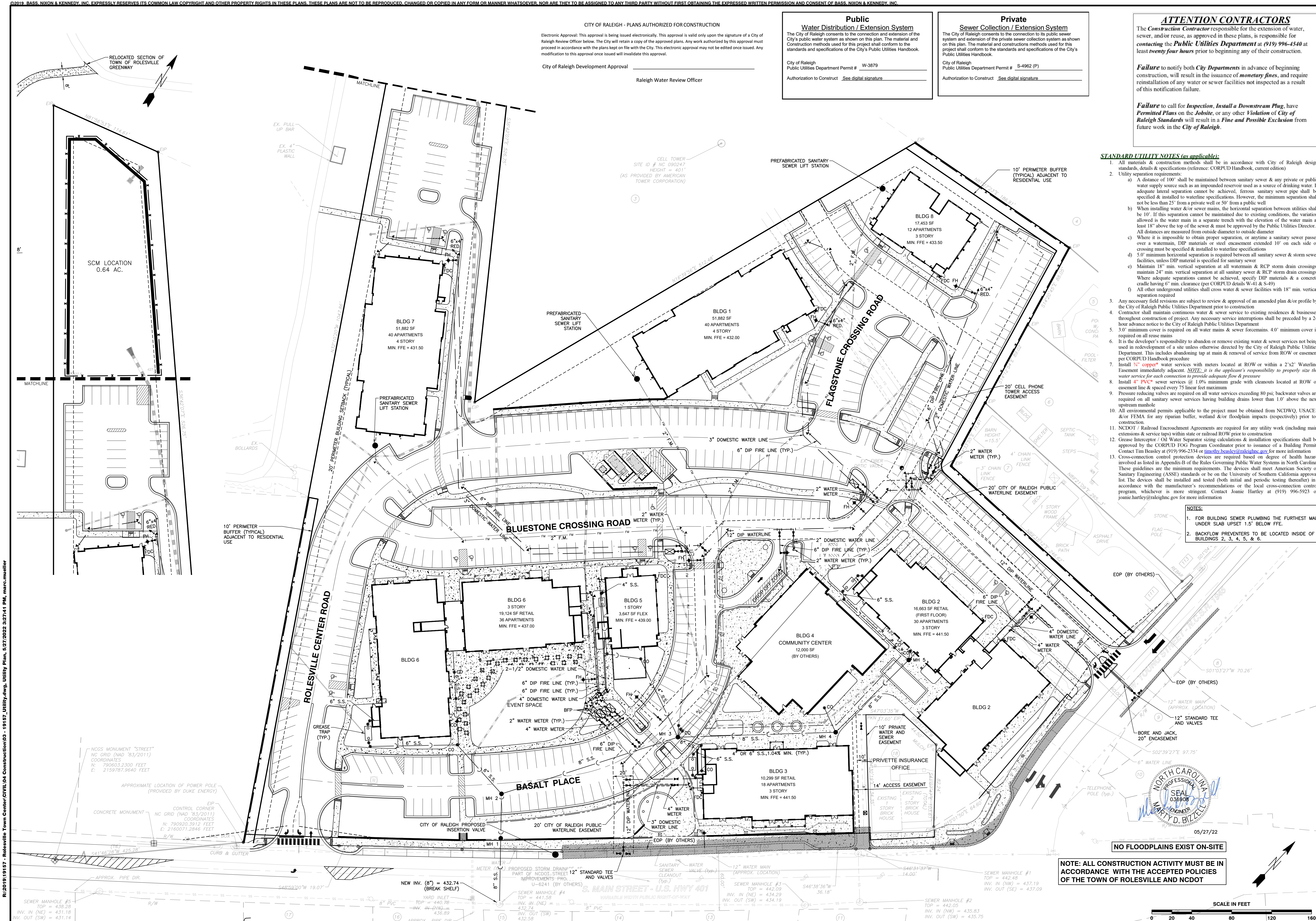
Failure to call for Inspection, Install a Downstream Plug, have Permitted Plans on the Jobsite, or any other Violation of City of Raleigh Standards will result in a Fine and Possible Exclusion from future work in the City of Raleigh.

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 wateline 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 wateline 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' Wateline 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 FOG 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 2, 3, 4, 5, & 6.



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

SCALE IN FEET

BASS, NIXON & KENNEDY, INC.

CONSULTING ENGINEERS

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

TELEPHONE: (919) 981-4422 FAX: (919) 981-4888

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

UTILITY PLAN

NO. DATE DESCRIPTION REVISIONS

BY

COBBLESTONE VILLAGE

MIXED USE DEVELOPMENT

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

SHEET

C2.1

TOWN OF ROLESVILLE PROJECT NO.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

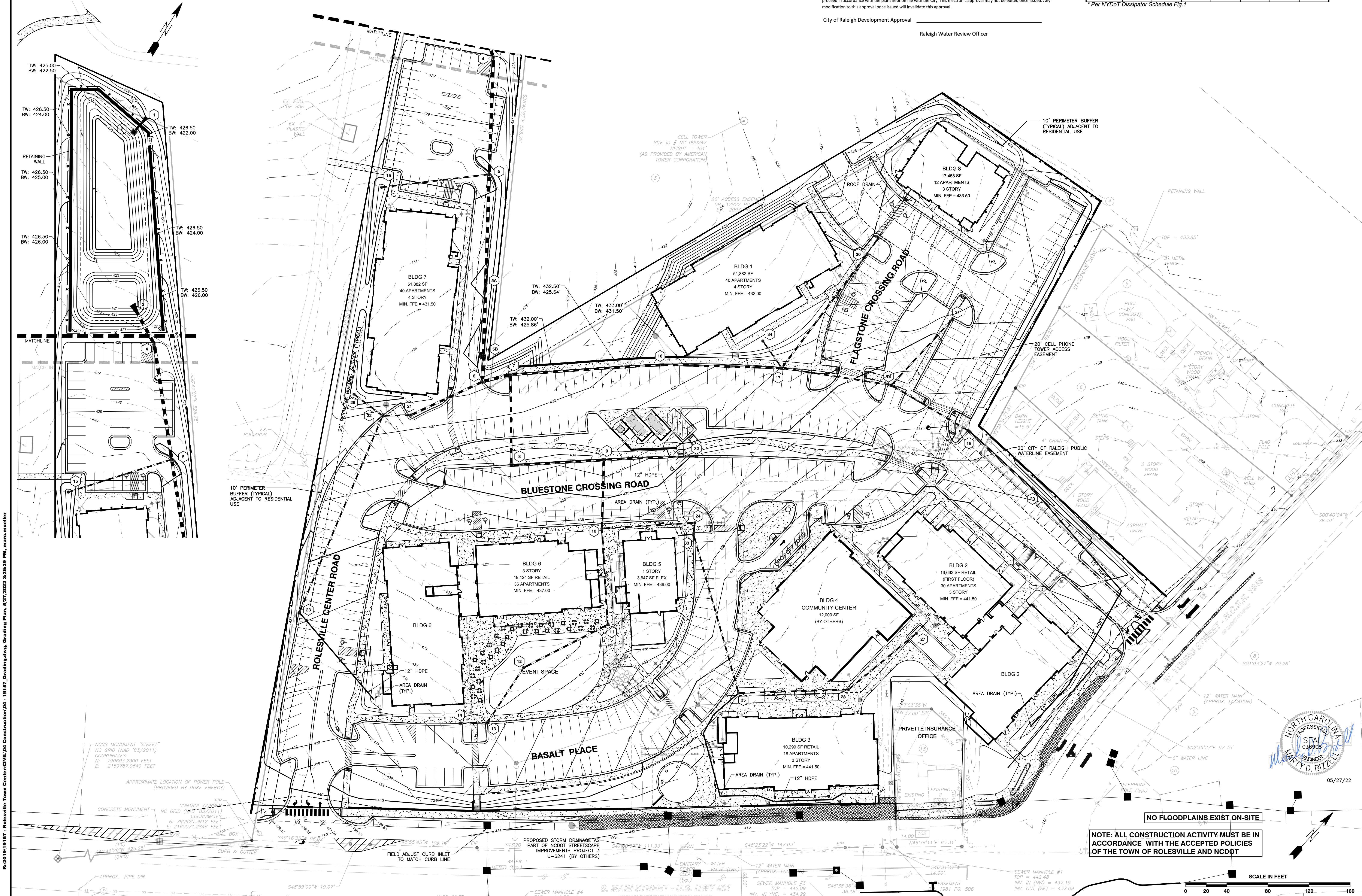
City of Raleigh Development Approval

Raleigh Water Review Officer

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

R:\2019\19157 - Rolesville Town Center CIVIL\04 Construction\04 - 19157_Grading.dwg, Grading Plan, 5/27/2023 3:26:39 PM, marc.mueller



BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 851-1122 FAX: (919) 851-6868
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

NO.	DATE	DESCRIPTION	BY

PROGRESS	MRM
03-19157	DRAWN BY
JOB NO.	DATE
GRADING PLAN	
SCALE: 1" = 40'	CHK BY: MDB

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

SHEET C3.1

TOWN OF ROLESVILLE PROJECT NO.

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



CONSTRUCTION SEQUENCE - STAGE 1

- ONCE THE EROSION AND SEDIMENT CONTROL PLAN APPROVAL AND NC01 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 NC01 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 DRAINING 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 (cfs)	(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"

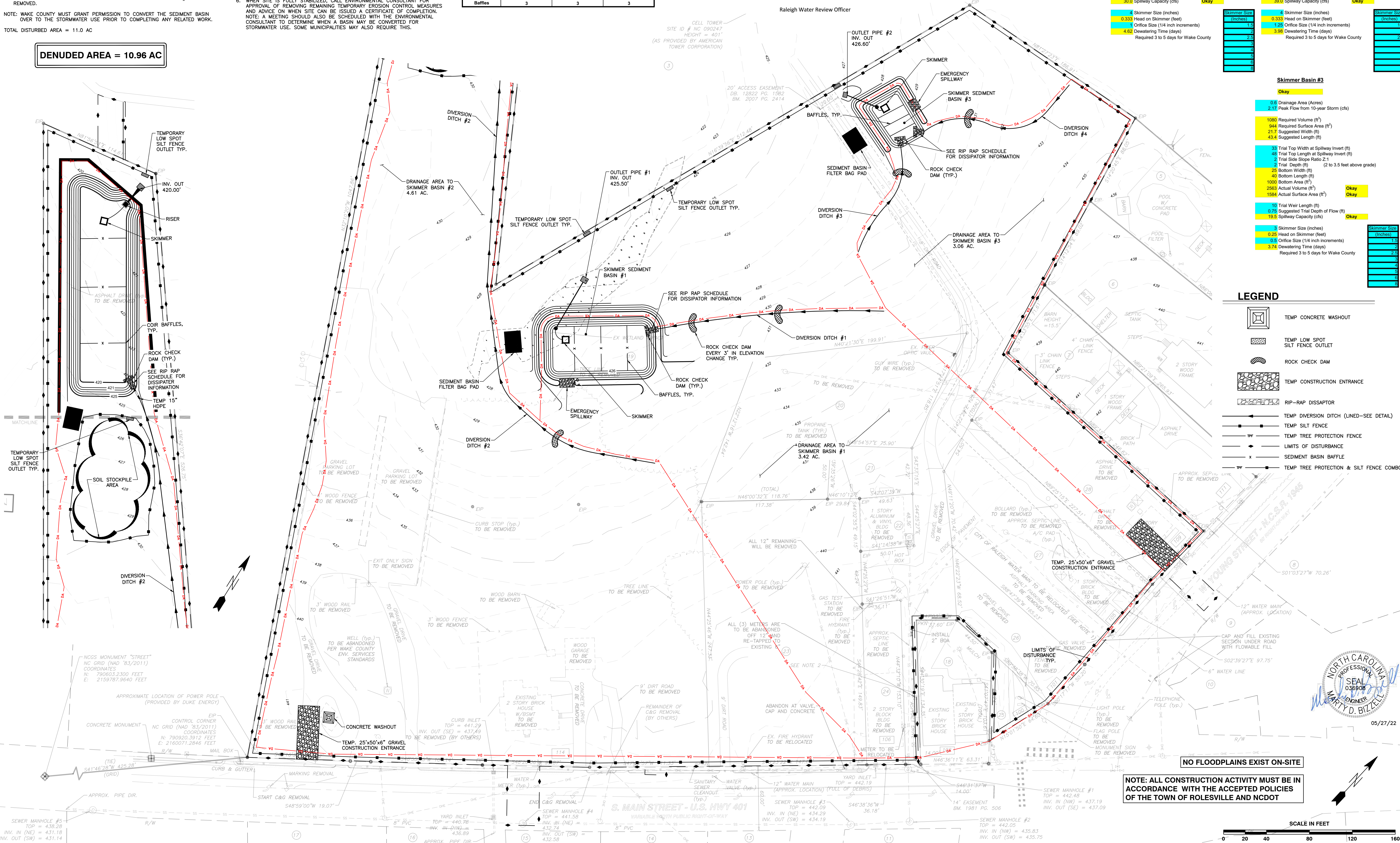
* Per NYDOT Dissipator Schedule Fig.1

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer _____



DITCH/CHANNEL CALCULATIONS									
DIVERSION DITCH ID	LENGTH (LF)	DA (Ac)	Q10 (CFS)	SLOPE (%)	V10 (FPS)	LINER * SC	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)
6156 Required Volume (ft³)	5372 Required Surface Area (ft²)
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 Side Slope Ratio 2:1	3 Trial Depth (ft) (2 to 3.5 feet above grade)
42 Bottom Width (ft)	176 Bottom Length (ft)
3696 Bottom Area (ft²)	13572 Actual Volume (ft³)
5400 Actual Surface Area (ft²)	10 Trial Weir Length (ft)
0.75 Suggested Trial Depth of Flow (ft)	39.0 Spillway Capacity (cfs)
4 Skimmer Size (inches)	0.333 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 (ft³)	7238 Required Surface Area (ft²)
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 Side Slope Ratio 2:1	3 Trial Depth (ft) (2 to 3.5 feet above grade)
44 Bottom Width (ft)	176 Bottom Length (ft)
7832 Bottom Area (ft²)	27636 Actual Volume (ft³)
10640 Actual Surface Area (ft²)	20 Trial Weir Length (ft)
0.75 Suggested Trial Depth of Flow (ft)	39.0 Spillway Capacity (cfs)
4 Skimmer Size (inches)	0.333 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 (ft³)	944 Required Surface Area (ft²)
21.7 Suggested Width (ft)	45.4 Suggested Length (ft)
33 Trial Top Width at Spillway Invert (ft)	49 Trial Top Length at Spillway Invert (ft)
2 Trial Side Slope Ratio 2:1	2 Trial Depth (ft) (2 to 3.5 feet above grade)
23 Bottom Width (ft)	40 Bottom Length (ft)
1000 Bottom Area (ft²)	2563 Actual Volume (ft³)
1584 Actual Surface Area (ft²)	10 Trial Weir Length (ft)
0.75 Suggested Trial Depth of Flow (ft)	19.3 Spillway Capacity (cfs)
4 Skimmer Size (inches)	0.333 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	

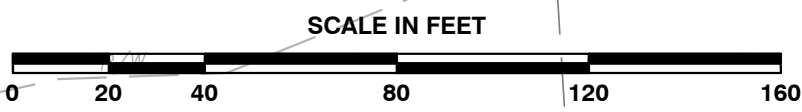
LEGEND

- 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



1. BEGIN CONSTRUCTION OF ALL BUILDINGS.
2. STABILIZE SITE AS NEW DISTURBED AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, 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. REMAINING PERMANENT 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)

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 CLOSURE IS REQUIRED OR CONVERTED TO A PERMANENT STORMWATER POND. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
2. UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SEDIMENT BASIN SURFACE FOR DRAINAGE OF WATER IN BASIN FOR MAINTENANCE OR CLOSE OUT UNLESS FEASIBLE. MEET REQUIREMENTS OF NCCO1 PERMIT PART II, SECTION 10 ITEM 4 (ENTITLED "REMOVAL OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT" AND REFER TO WAKE COUNTY "FILTER BAG FOR DRAINAGE 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 ANCHOR TACKLE ANY RESULTING BARE AREAS IMMEDIATELY.
5. INSTALL VEGETATION 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. NOISE MONITORING SHOULD BE SOUGHT WHEN SOUGHT WITH ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN CAN BE CONVERTED FOR STORMWATER USE. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.

6. 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.

3	Drainage Area (Acres)	
3	Peak Flow from 10-year Storm (cfs)	
2	Required Volume (ft ³)	
5	Required Surface Area (ft ²)	
1	Suggested Width (ft)	
2	Suggested Length (ft)	
8	Trial Top Width at Spillway Invert (ft)	
8	Trial Top Length at Spillway Invert (ft)	
1	Trial Side Slope Ratio 2:1	
1	Trial Depth (ft)	(2 to 3.5 feet)
6	Bottom Width (ft)	
8	Bottom Length (ft)	
8	Bottom Area (ft ²)	
0	Actual Volume (ft ³)	0
0	Actual Surface Area (ft ²)	0
1	Trial Weir Length (ft)	
1	Suggested Trial Depth of Flow (ft)	
0	Spillway Capacity (cfs)	0
1	Skimmer Size (inches)	
1	Head on Skimmer (feet)	
5	Orifice Size (1/4 inch increments)	
0	Dewatering Time (days)	
1	Required 3 to 5 days for Wake Cou	

4 Skimmer Size (inches)

Sediment Basin Number	1	2
Drainage Area (acres)	1.74	6.99
Q10(Cfs)	(0.5)(7.22)(1.74)=6.28	(0.5)(7.22)(6.99)=25.23
Surface Area (ft ²)	10 x 1.5	10 x 1.5
Required (SF)	(435)(6.28)=2,732	(435)(25.23)=10,975
Volume Required (CF)	(1800)(1.74)=3,132	(1800)(6.99)=12,582
Dimensions (ft)	see plans	see plans
Set Area Provided (SF)	2,800	11,000
Volume Provided (CF)	5,640	27,500
Skimmer Size	4"	4"
Orifice Radius	0.4"	0.75
Orifice Diameter	0.75"	1.5
Draindown Time (Days)	4.18	4.2
Number of Baffles	3	3

DIVERSION DITCH ID	LENGTH (LF)	DA (Ac)	Q10 (CFS)	SLOPE (%)	V10 (FPS)	LINER *	PERMISSIBLE	CALCULATED
							SHEAR STRESS (PSF)	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	0.94
DV-3	442	0.52	1.19	1.80	0.92	SC150	1.80	0.29
DV-4	167	0.06	0.13	2.90	0.96	SC150	1.80	0.38

* NAG = NORTH AMERICAN GREEN OR EQUIVALENT

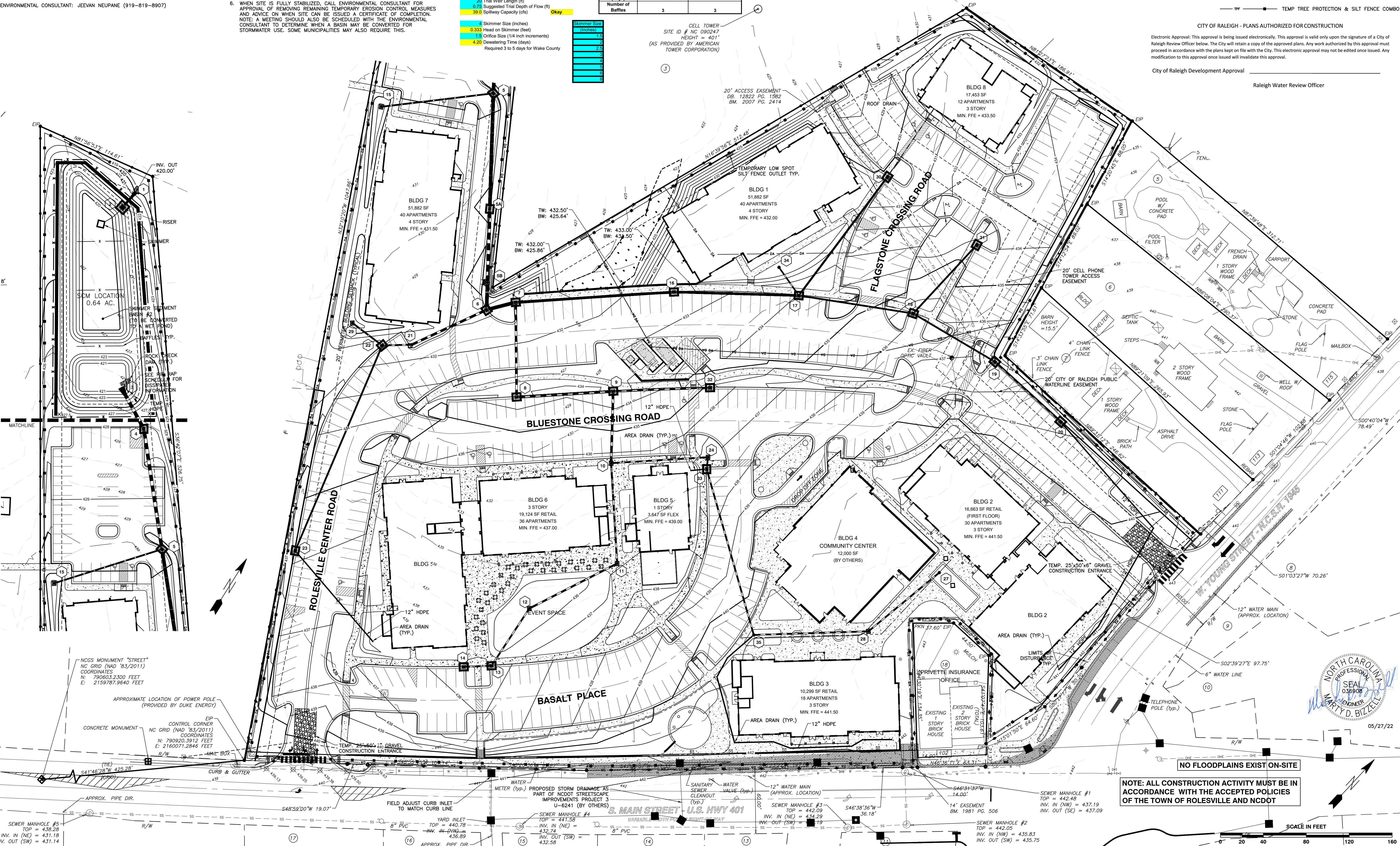
	TEMP CONSTRUCTION ENTRANCE
	TEMP LOW SPOT SILT FENCE OUTLET
	TEMP INLET PROTECTION
	RIP-RAP DISSIPATOR
	TEMP SILT FENCE
	TEMP TREE PROTECTION FENCE
	LIMITS OF DISTURBANCE
	SEDIMENT BASIN BAFFLE
	TEMP TREE PROTECTION & SILT FENCE COMBO

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval

Raleigh Water Review Officer



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.

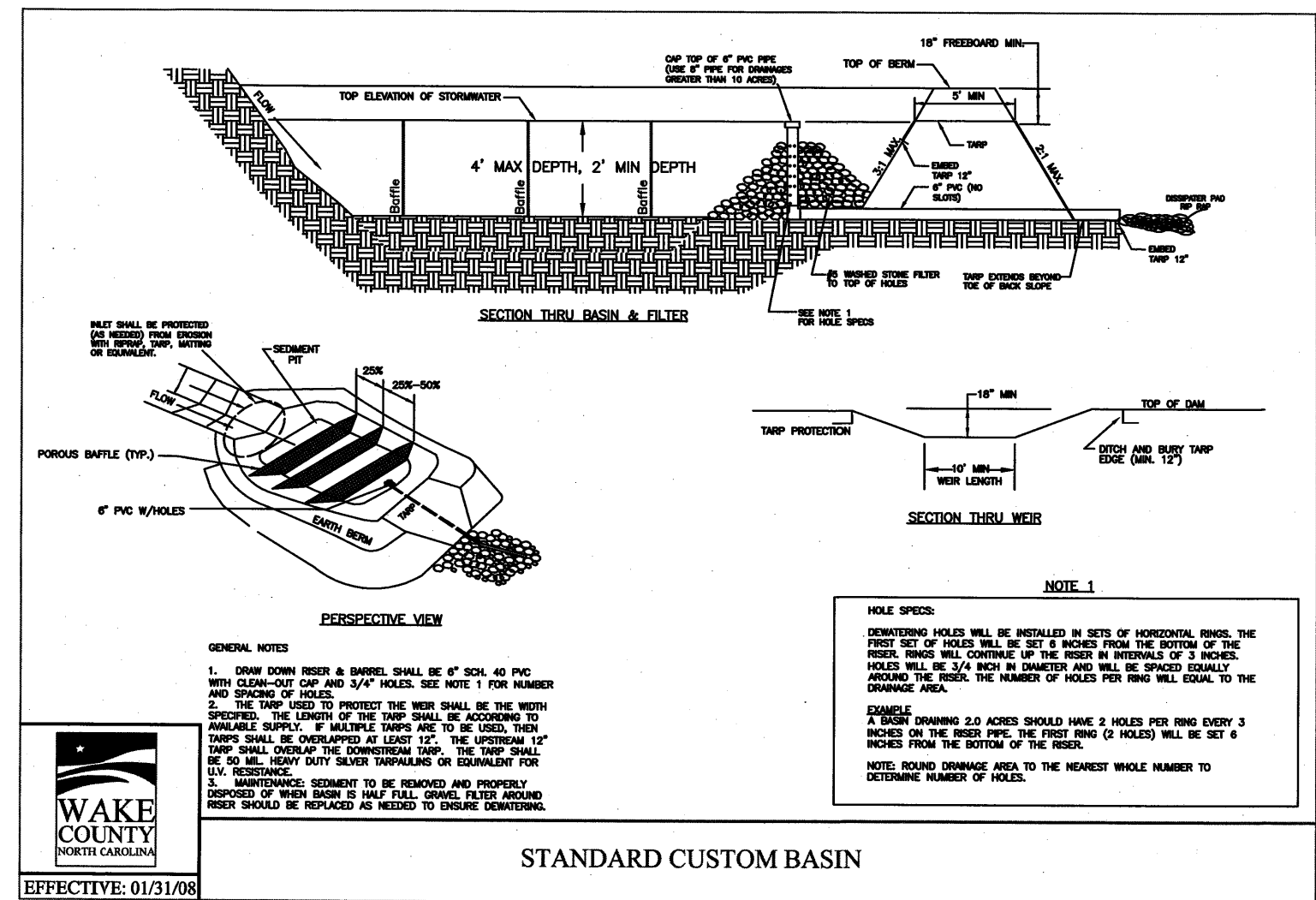
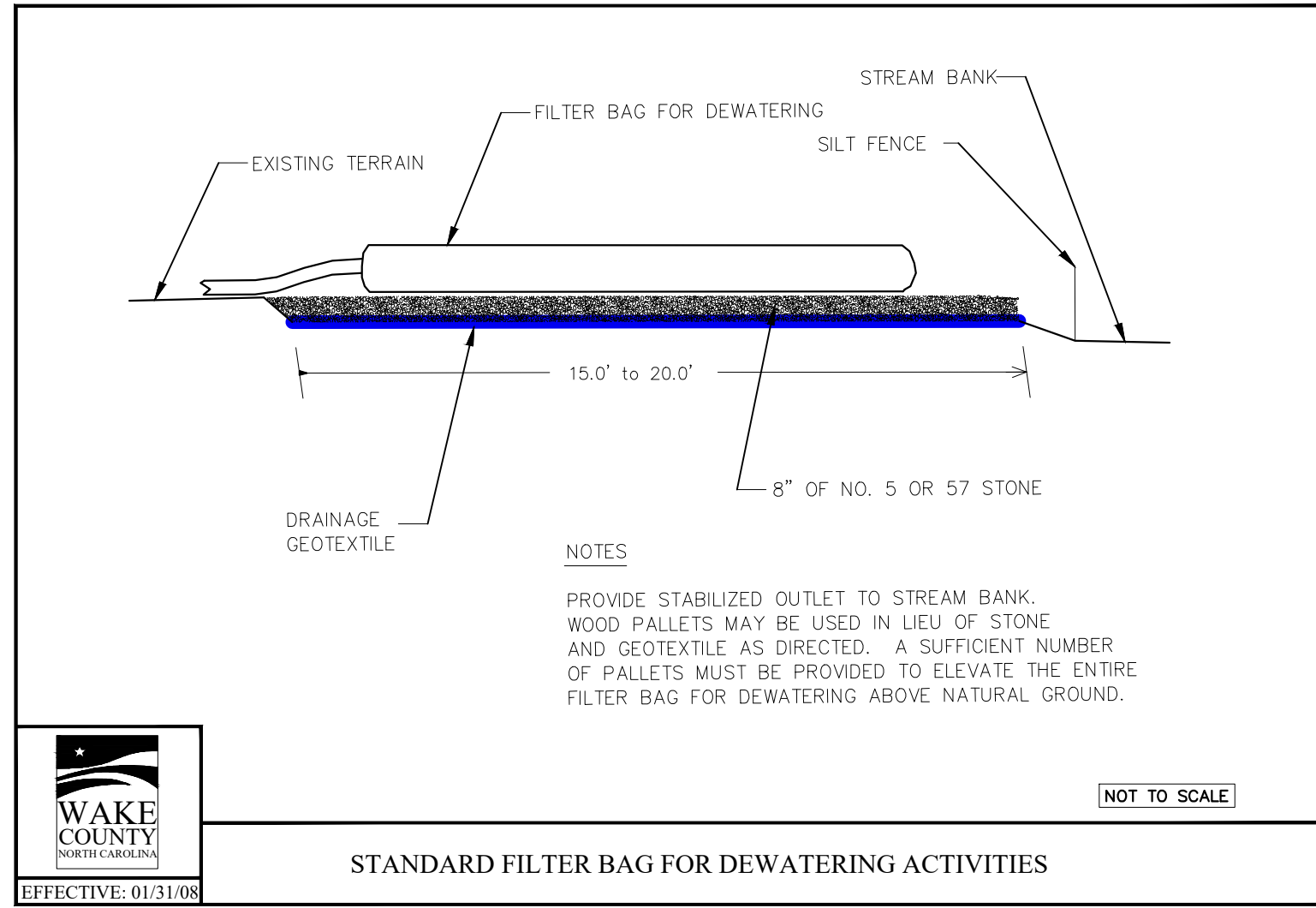
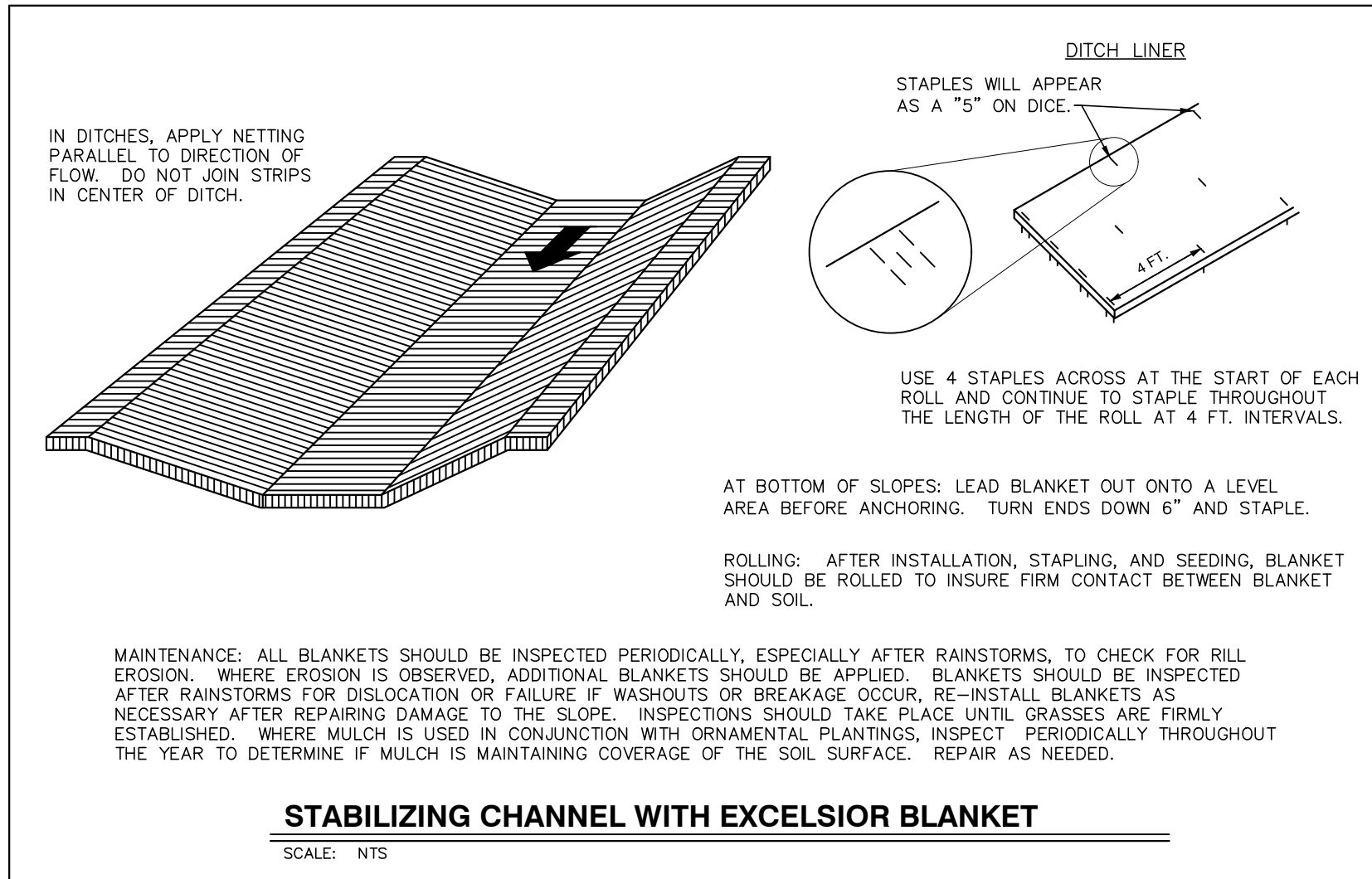
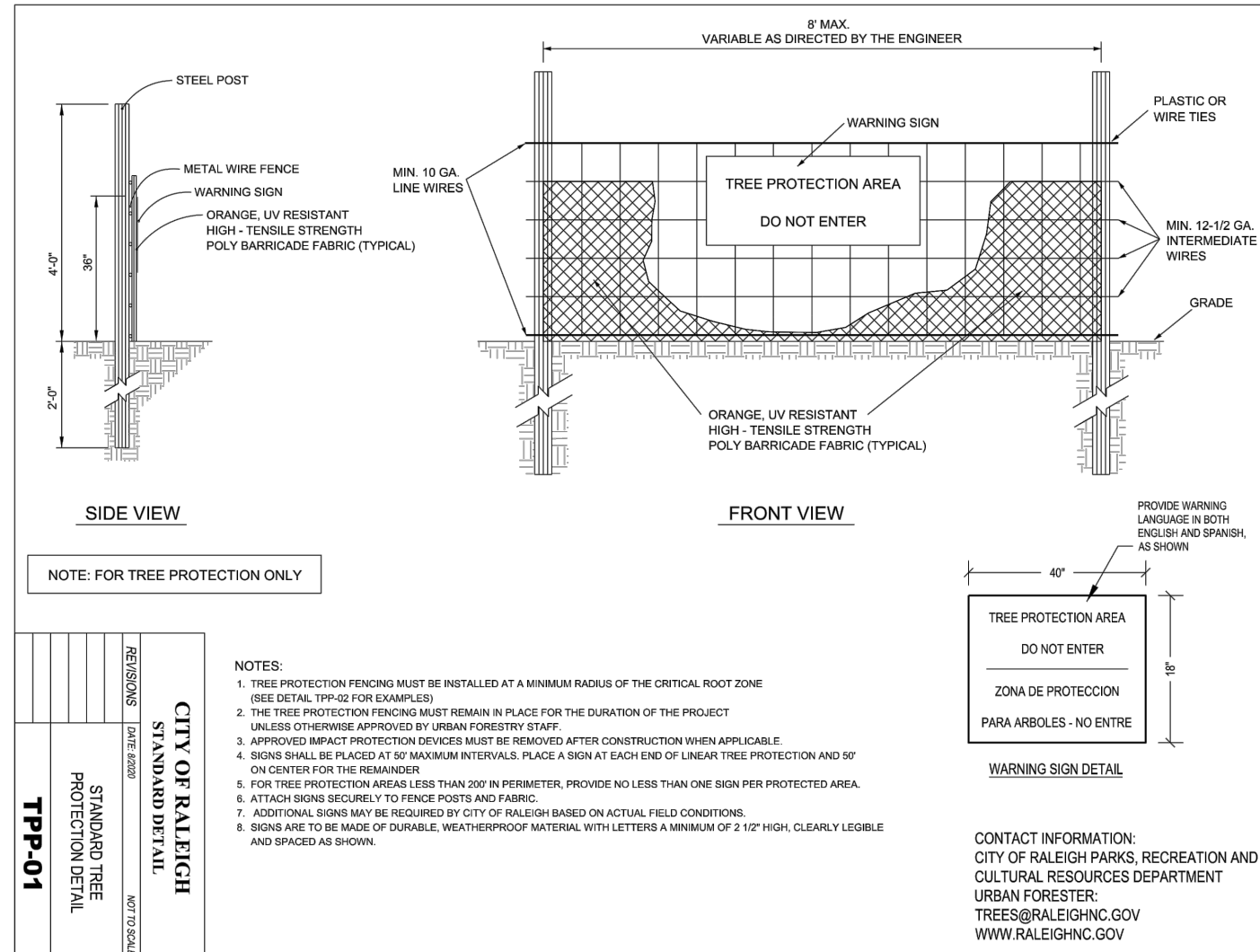
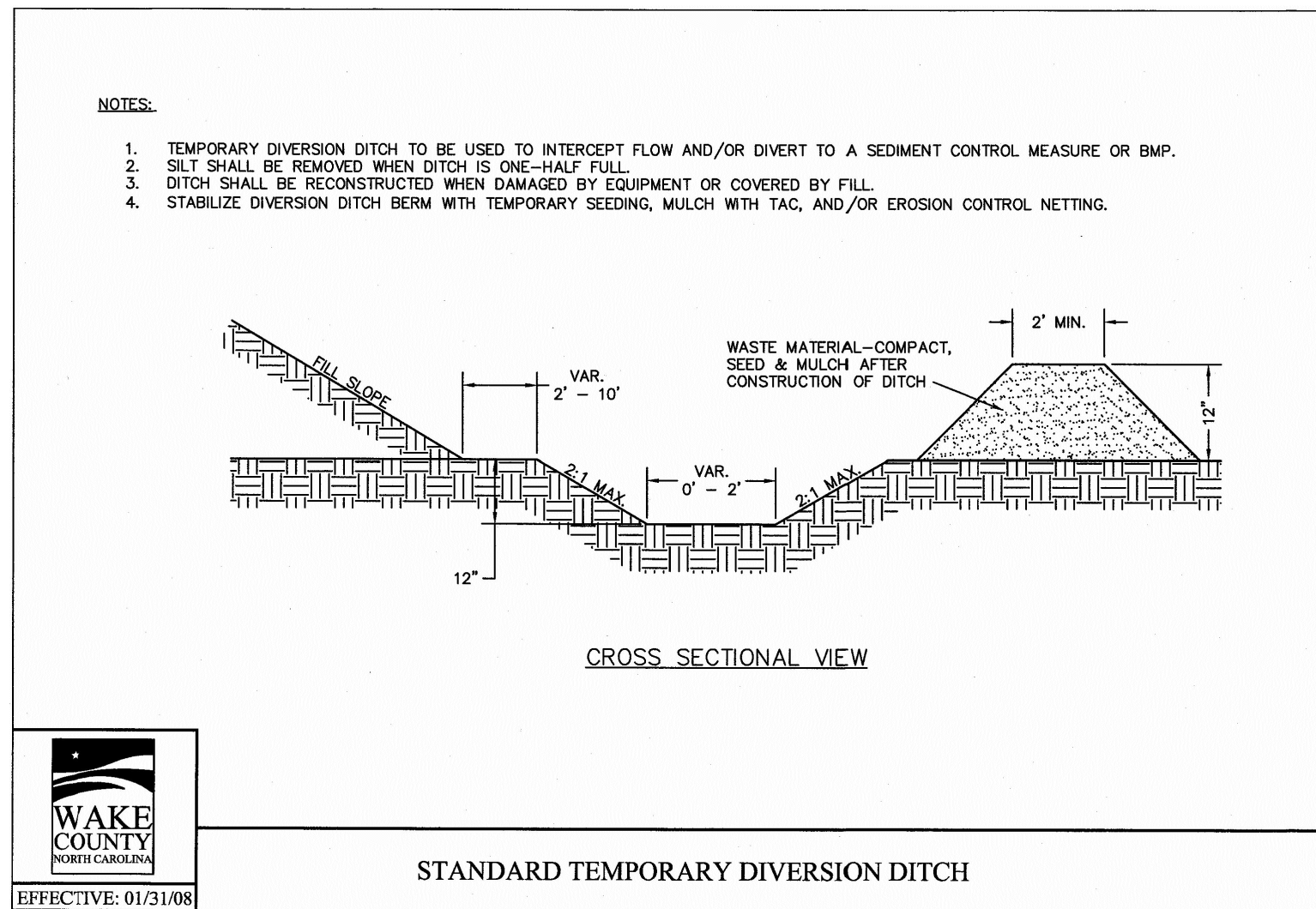
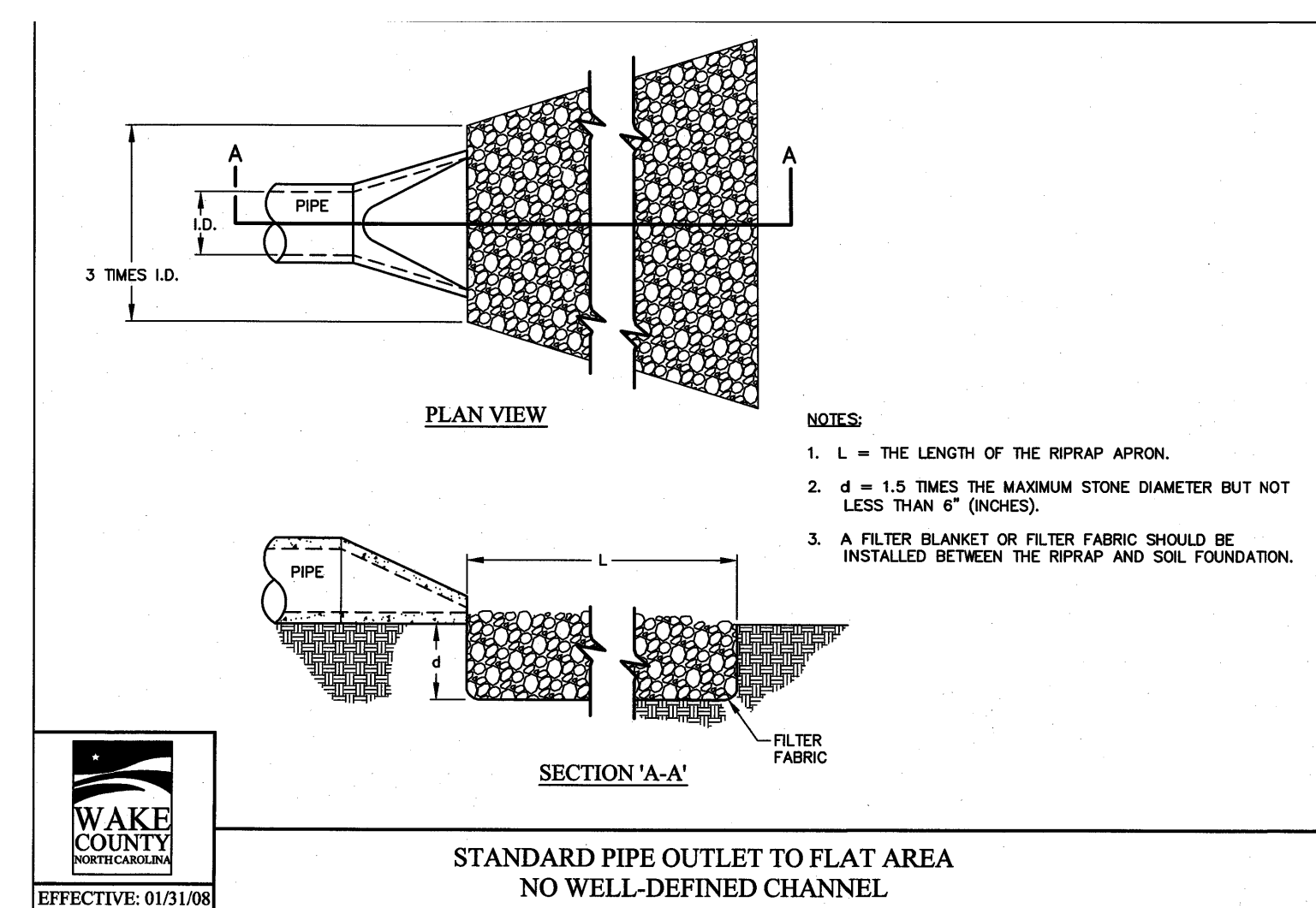
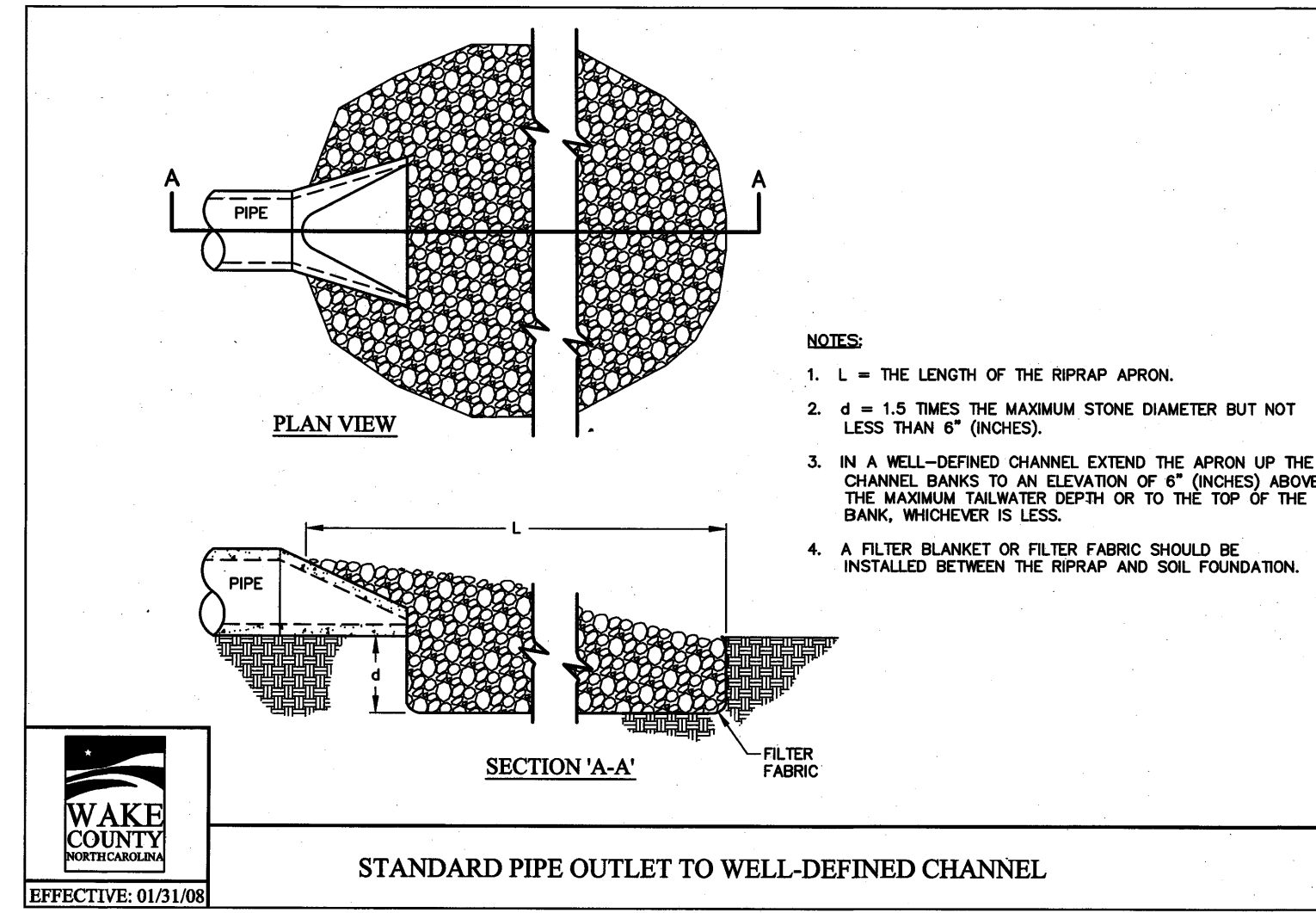
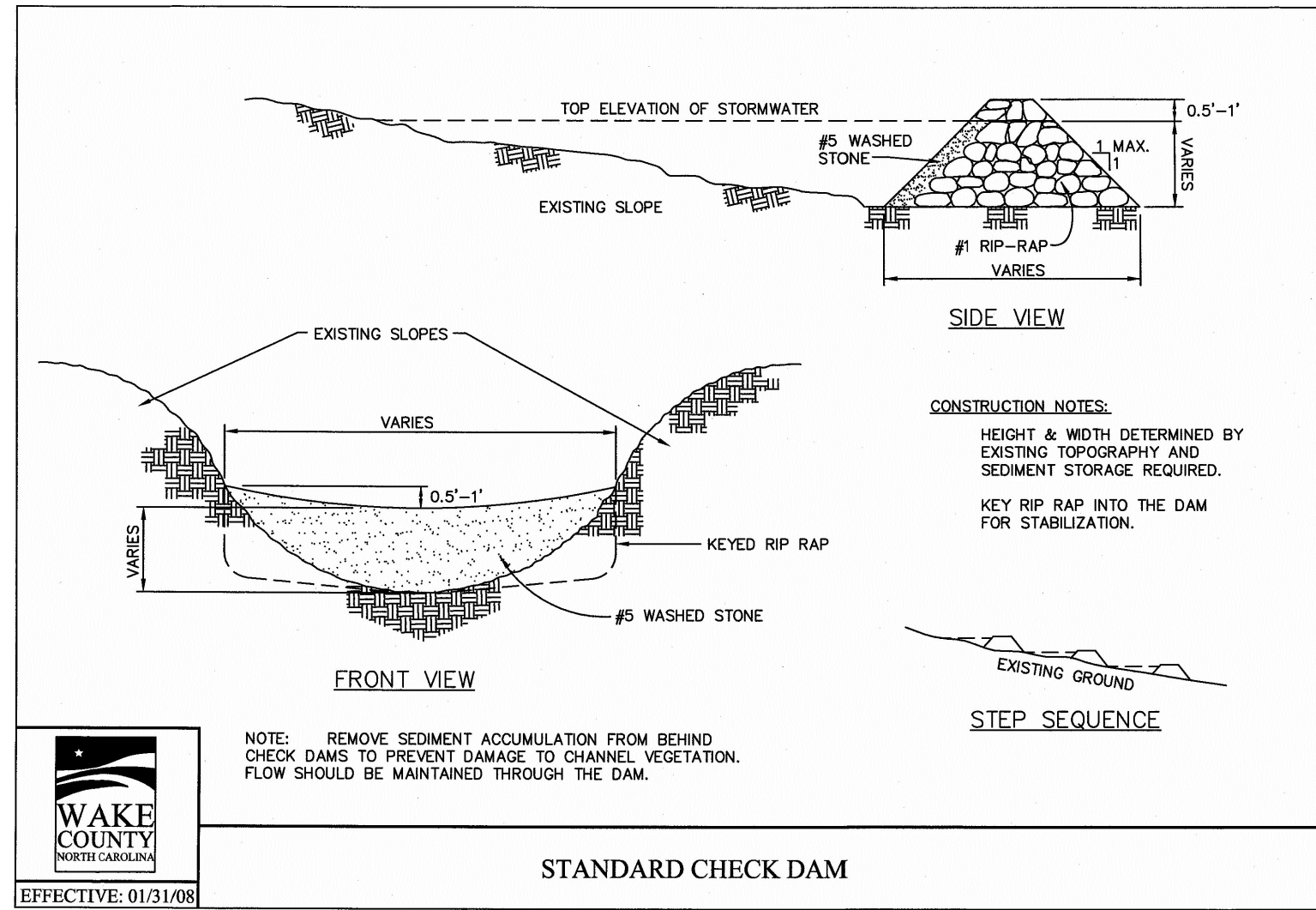
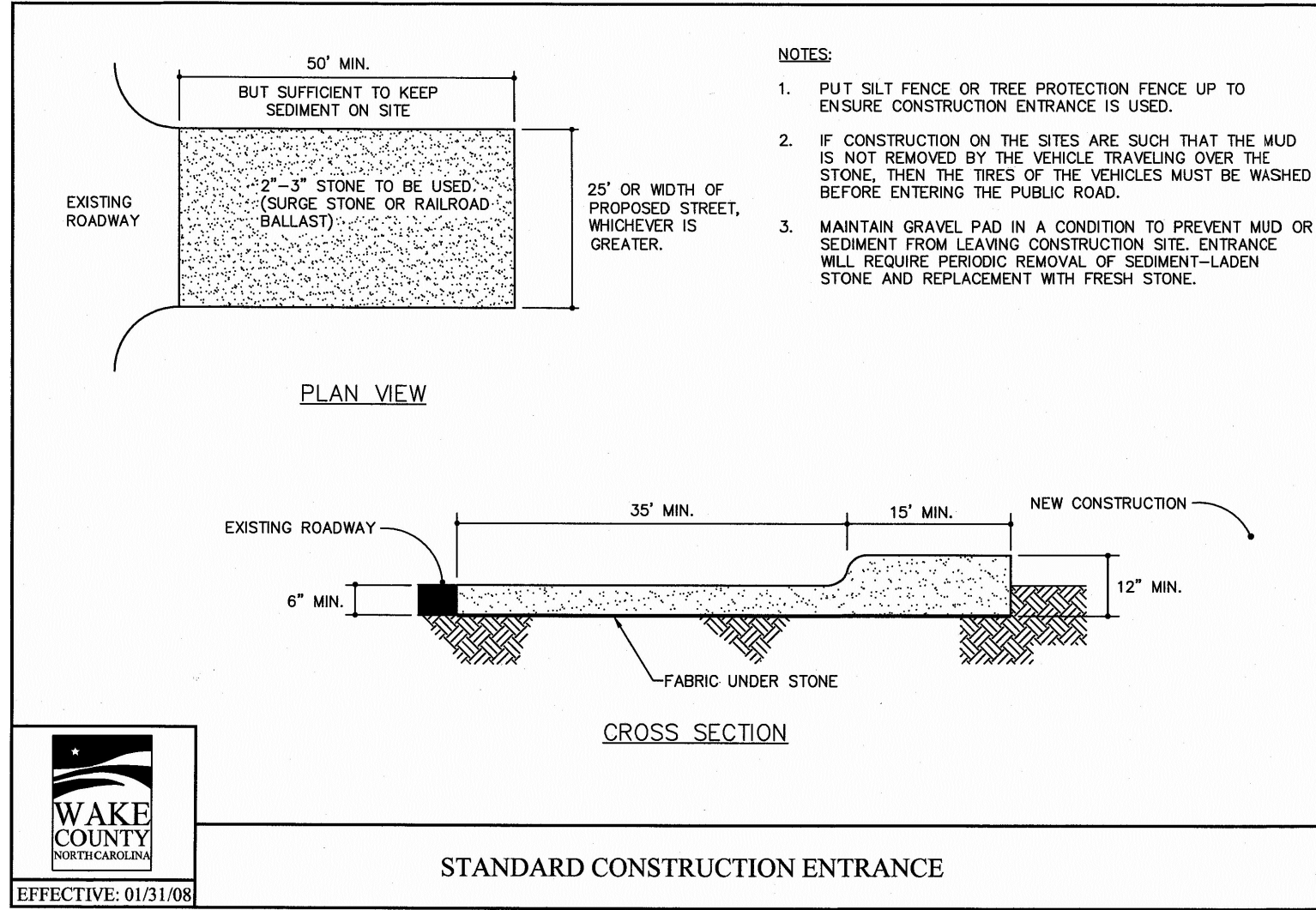
BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919)851-4422 FAX: (919)851-8968
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

03-19157	PROGRESS	MRM
JOB NO.	DATE	DRAWN BY
EROSION CONTROL PLAN - STAGE 2		
SCALE: 1" = 40'		CHK BY: MDB

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

SHEET
C3.4

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval

Raleigh Water Review Officer

05/27/22

**COBBLESTONE
VILLAGE
MIXED USE DEVELOPMENT**

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

19157	PROGRESS	MRN
3 NO.	DATE	DRAWN

EROSION CONTROL DETAILS

CHK BY: [redacted]

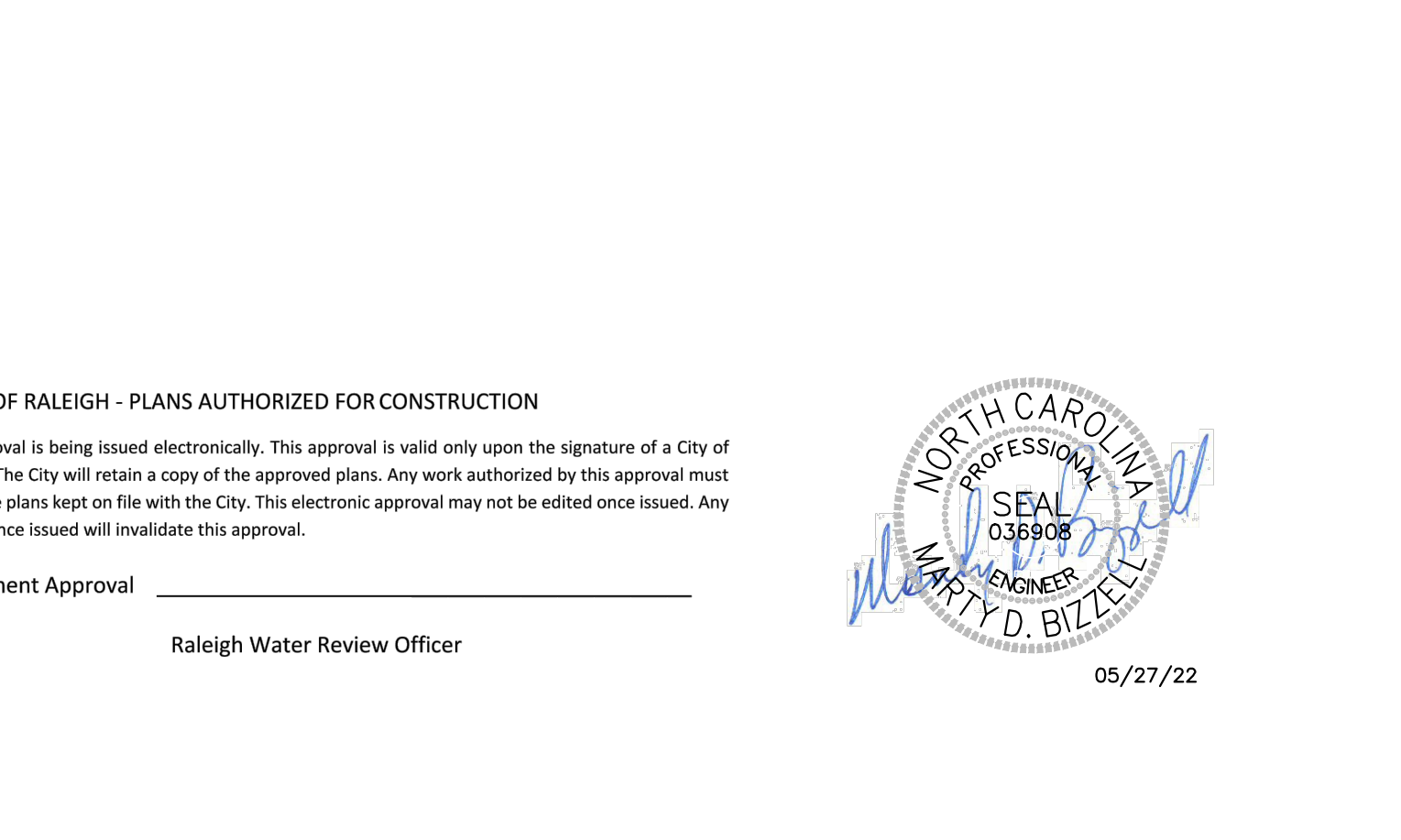
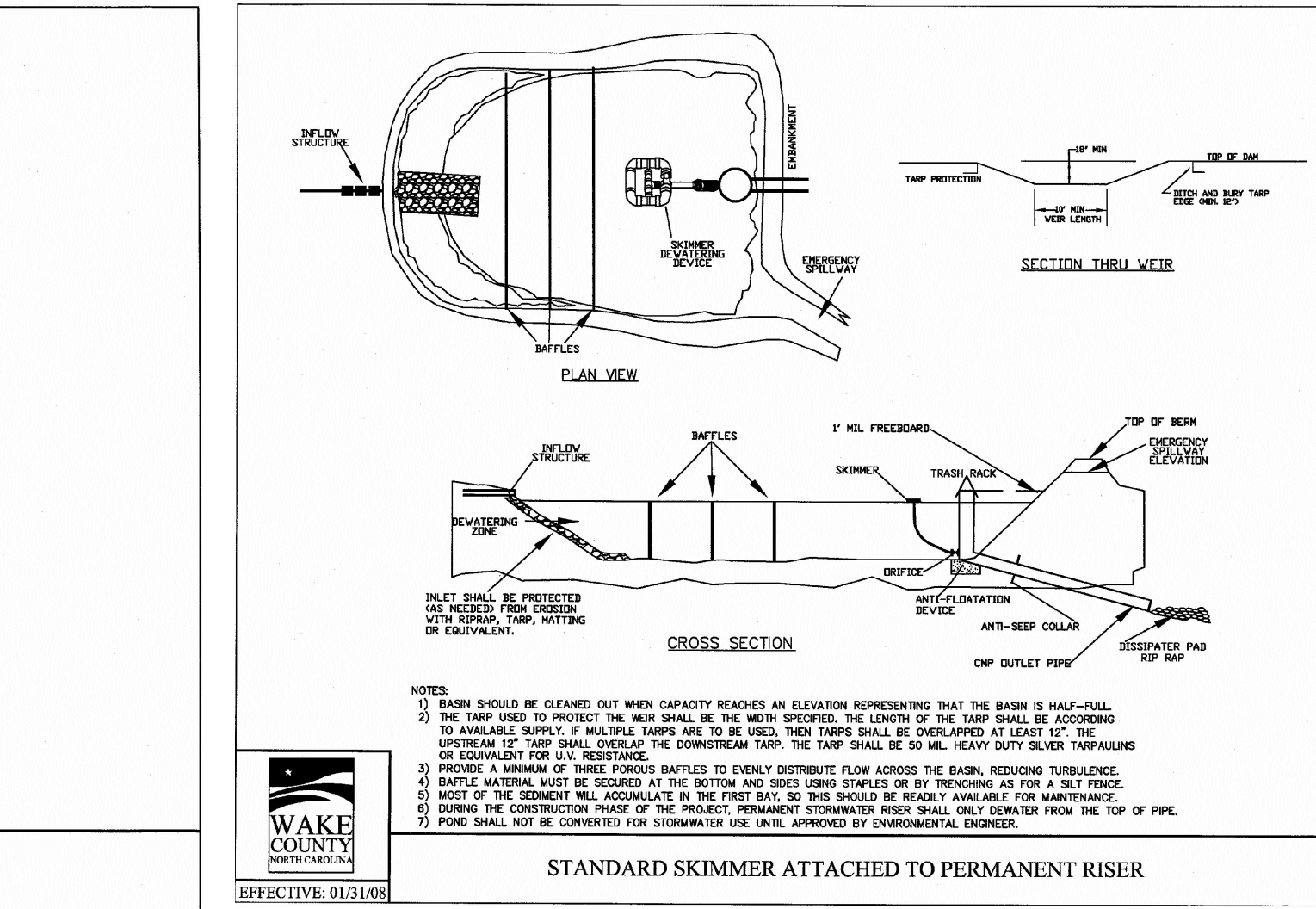
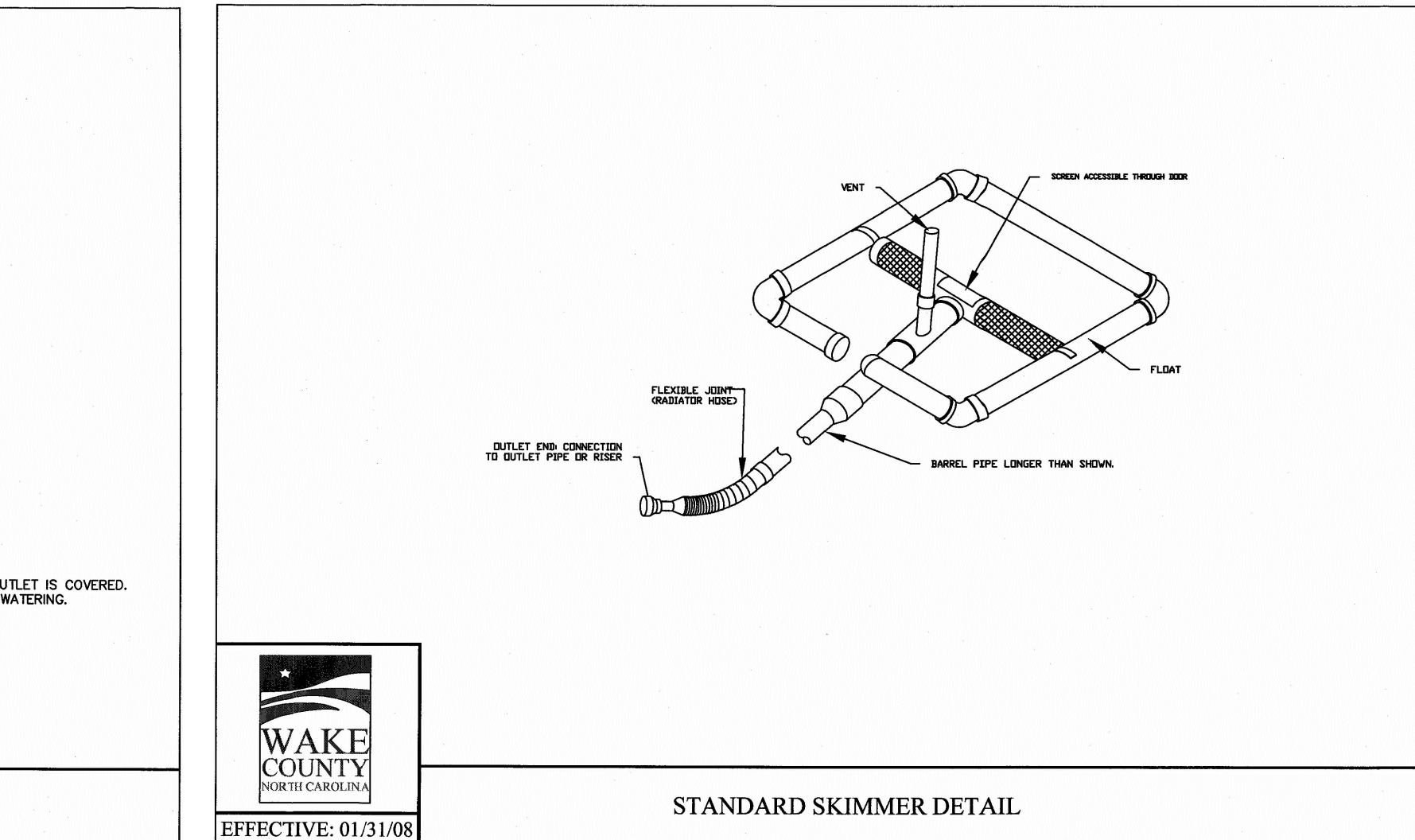
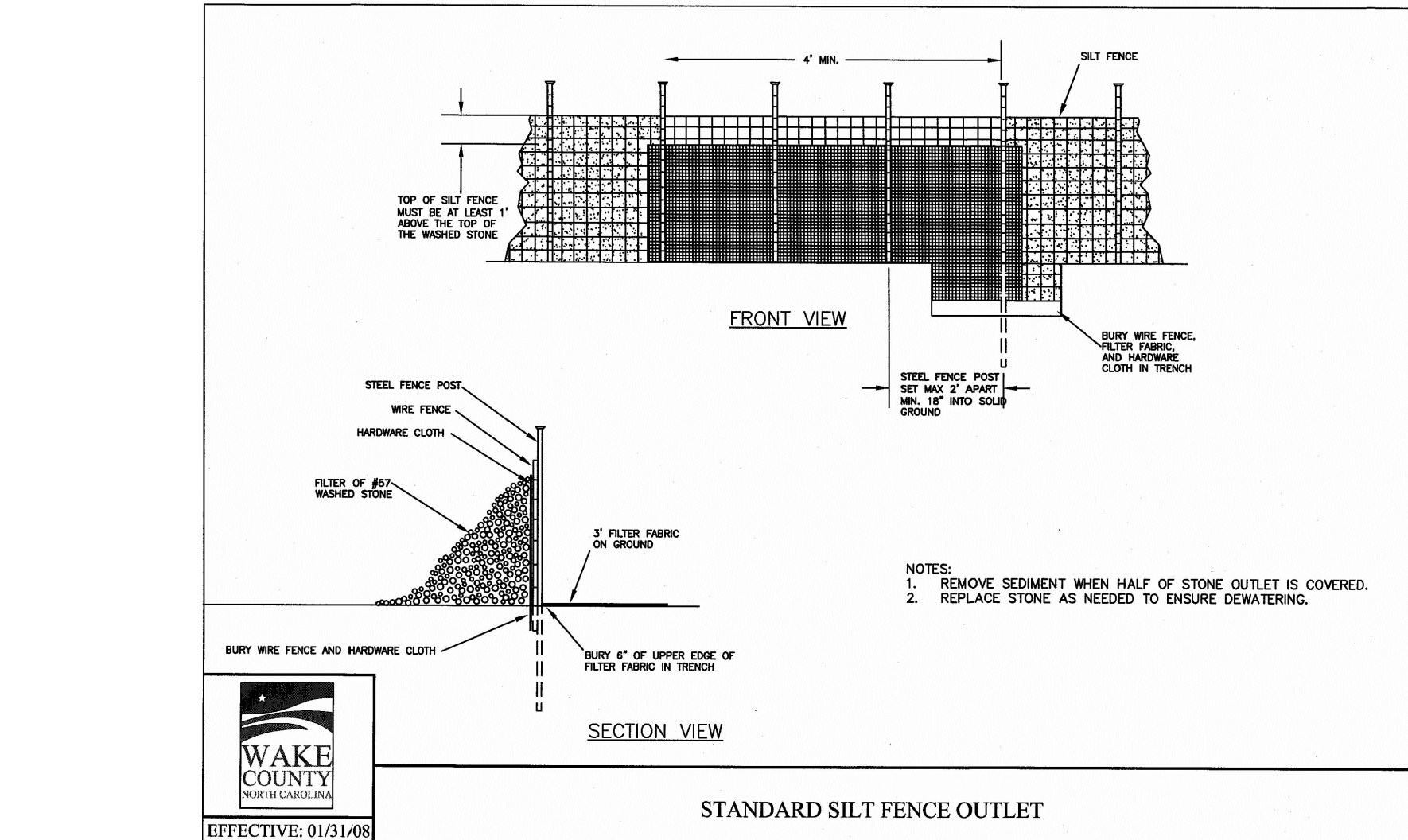
[illegible]

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)

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

B|N|K

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



1. **SEEDING PREPARATION**
2. **CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER AVERAGE SOIL CONDITIONS, IF AVAILABLE.**
3. **SPREAD ENTIRE AREA OF 100 TO 150 SQUARE INCHES.**
4. **REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.**
5. **APPLY AGRICULTURAL LIMESTONE TO SOIL TO CORRECT ACIDITY. PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW).**
6. **APPLY 100 LBS PER ACRE OF 10-10-10 FERTILIZER FIRM, REASONABLY UNIFORM. SEEDING IS PREPARED 4 TO 6 INCHES DEEP.**
7. **SEED ON FRESHLY PREPARED SEEDBED AND COVER LIGHTLY WITH SEEDING EQUIPMENT OR CULPICKET AFTER SEEDING.**
8. **MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.**
9. **IF THERE ARE ANY PROBLEMS WITH GERMINATION OF SEEDS WITHIN THE PLANTING SEASON, IF POSSIBLE, RESEED IMMEDIATELY. IF NOT POSSIBLE, RESEED IN THE FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.**
10. **CONSULT CONSERVATION INSPECTOR ON MAINTENANCE OF SEEDING AND FERTILIZER RATES. IF MAINTENANCE COVER IS ESTABLISHED.**
11. **APPLY AGRICULTURAL LIMESTONE 2 TONS/ACRE
FERTILIZER 10-10-10 ANALYSIS AT 100-1,000 LBS/ACRE**
12. **SUPER PHOSPHATE 200 LBS/ACRE OF 20% ANALYSIS SUPER PHOSPHATE**
13. **MULCH - 2 TONS OF 80 BAUALLY SMALL GRAIN STRAW/ACRE**
14. **ANCHOR - TACK WITH LIQUID ASPHALT AT 400 GAL/ACRE OR DRAPIED ASPHALT AT 300 GALLONS/ACRE**

*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.

05/27/22

TOWN OF F
MIX
SHEET
C3.6

05/27/22

05/27/22

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

Raleigh Water Review Officer

STORMDRAINAGE STRUCTURE TABLE		
STRUCTURE NAME	INSERTION RIM ELEVATION (FLOWLINE)	STRUCTURE TYPE
28	441.00 INV. IN= 435.41 (27) INV. OUT= 435.31 (35)	HDPE YARD INLET
29	428.50 INV. OUT= 425.05 (22)	HDPE YARD INLET
30	430.12 INV. OUT= 426.34 (17)	NCDOT CURB INLET
31	434.05 INV. OUT= 429.82 (18)	NCDOT CURB INLET
32	435.72 INV. OUT= 429.50 (9)	NCDOT CURB INLET
33	437.87 INV. IN= 432.53 (35) INV. OUT= 432.43 (24)	NCDOT CURB INLET
34	430.03 INV. OUT= 428.09 (17)	HDPE YARD INLET
35	441.08 INV. IN= 434.24 (28) INV. OUT= 434.14 (33)	HDPE YARD INLET

05/27/22

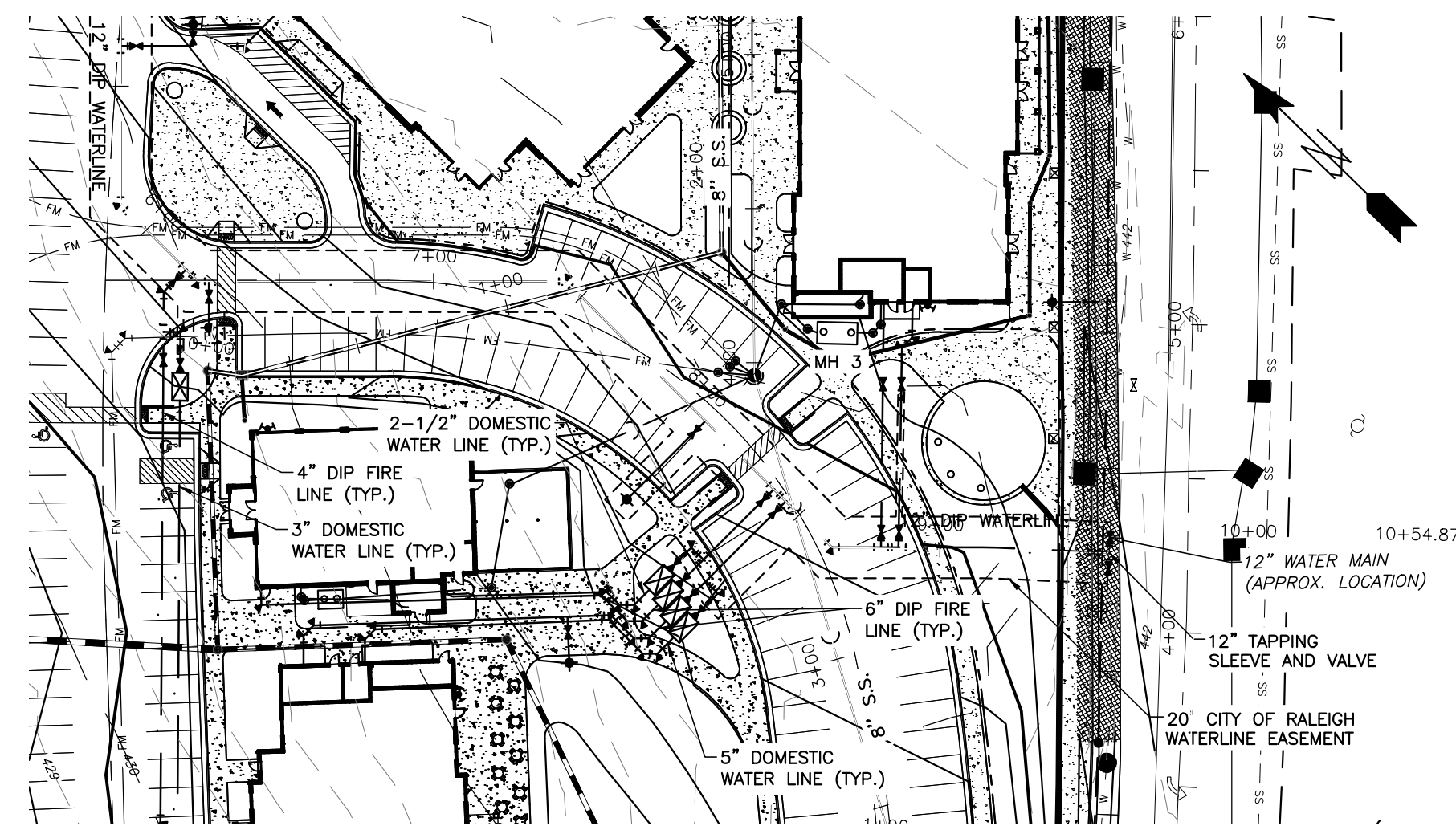
BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS

6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 851-4422 FAX: (919) 851-8968
CERTIFICATION NUMBERS: NCBELS (C-0110); NCGBLA (C-0267)

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



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

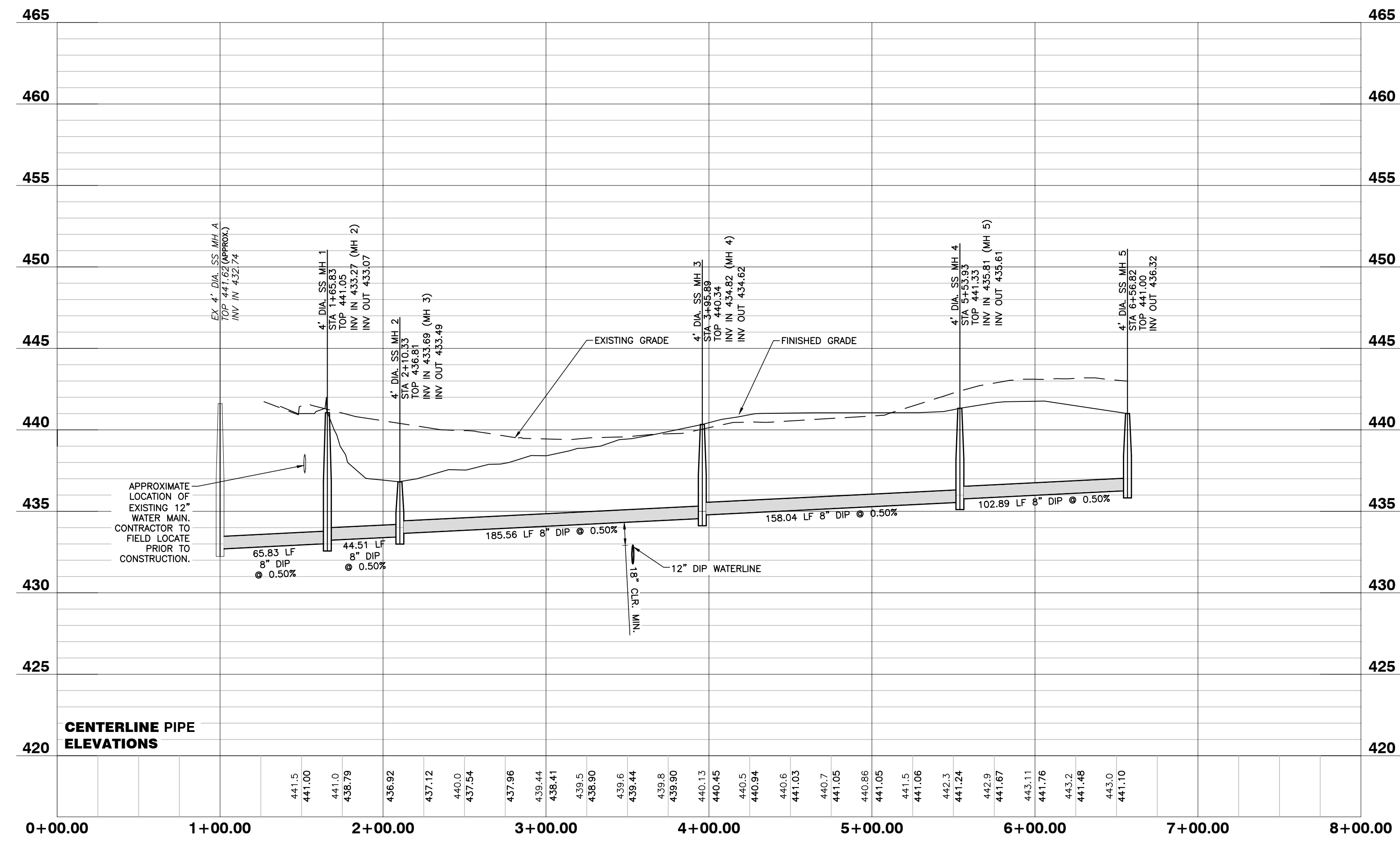
CENTERLINE PIPE ELEVATIONS

Station	15" HDPE STORM PIPE	12" DIP WATERLINE	18" DIP	2" FORCE MAIN	8" DIP SANITARY SEWER PIPE
0+00.00	443.05				
1+00.00	444.7				
2+00.00	441.46				
3+00.00	440.64				
4+00.00	443.41				
5+00.00	439.98				
6+00.00	442.8				
7+00.00	442.6				
8+00.00	439.69				
9+00.00	442.1				
10+00.00	439.47				
11+00.00	441.42				
12+00.00	436.38				
13+00.00	440.6				
14+00.00	438.96				
15+00.00	439.8				
16+00.00	438.67				
17+00.00	437.5				
18+00.00	437.84				
19+00.00	437.28				
20+00.00	437.74				
21+00.00	438.60				
22+00.00	437.1				
23+00.00	437.5				
24+00.00	439.45				
25+00.00	437.5				
26+00.00	438.68				
27+00.00	436.44				
28+00.00	371.16				
29+00.00	435.8				
30+00.00	163.53				
31+00.00	435.2				
32+00.00	438.24				
33+00.00	434.7				
34+00.00	437.77				
35+00.00	434.61				
36+00.00	437.56				
37+00.00	434.9				
38+00.00	437.55				
39+00.00	435.7				
40+00.00	438.11				
41+00.00	436.6				
42+00.00	438.81				
43+00.00	437.84				
44+00.00	439.29				
45+00.00	438.4				
46+00.00	439.60				
47+00.00	439.0				
48+00.00	438.50				
49+00.00	439.4				
50+00.00	438.69				
51+00.00	439.70				
52+00.00	439.80				
53+00.00	439.5				
54+00.00	438.59				
55+00.00	439.6				
56+00.00	438.45				
57+00.00	439.6				
58+00.00	439.55				
59+00.00	439.84				
60+00.00	439.96				
61+00.00	440.1				
62+00.00	440.97				
63+00.00	442.1				
64+00.00	441.88				
65+00.00	442.3				

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

05/27/22

SHEET C4.1	COBBLESTONE VILLAGE MIXED USE DEVELOPMENT TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
------------------------------	--



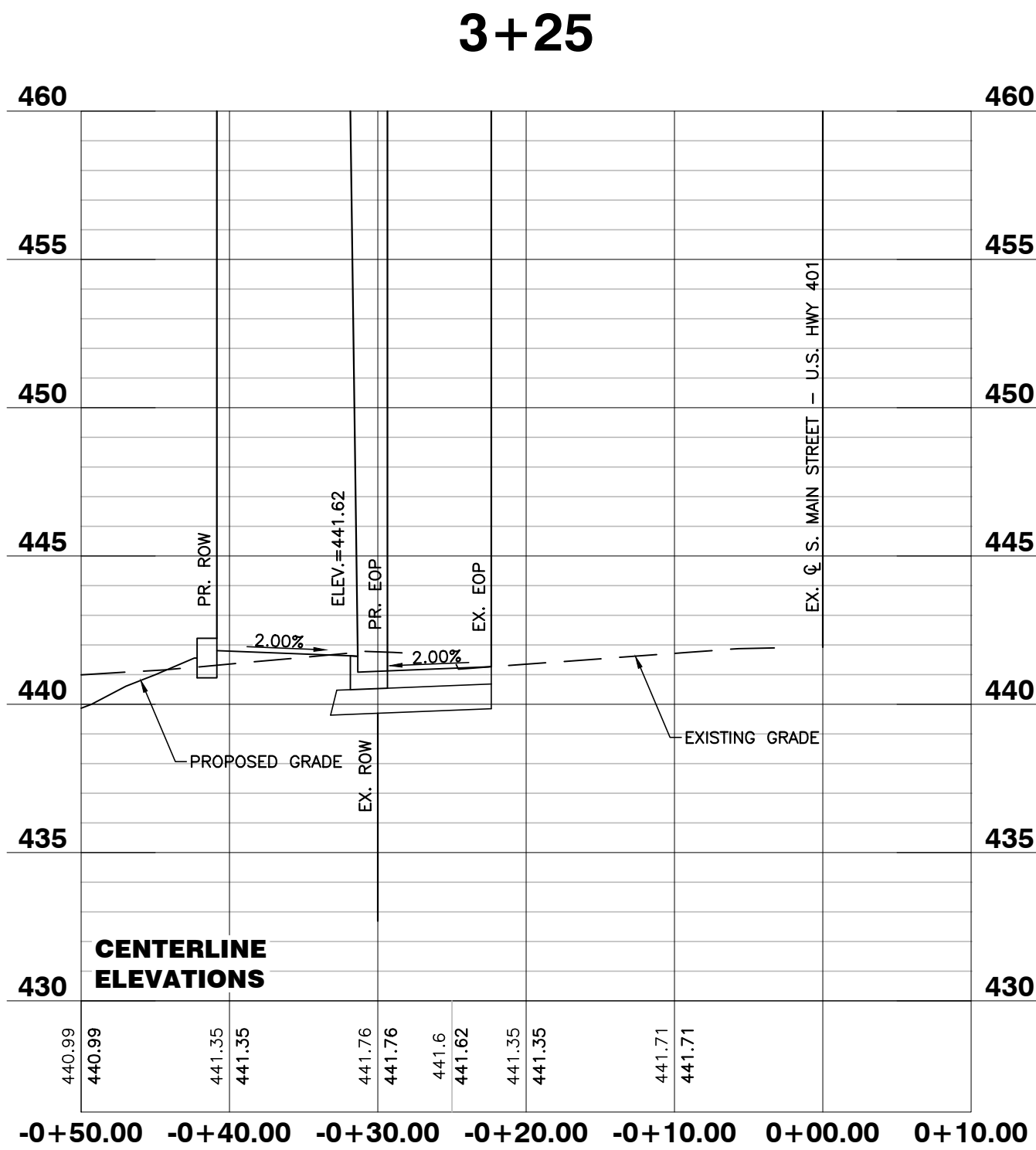
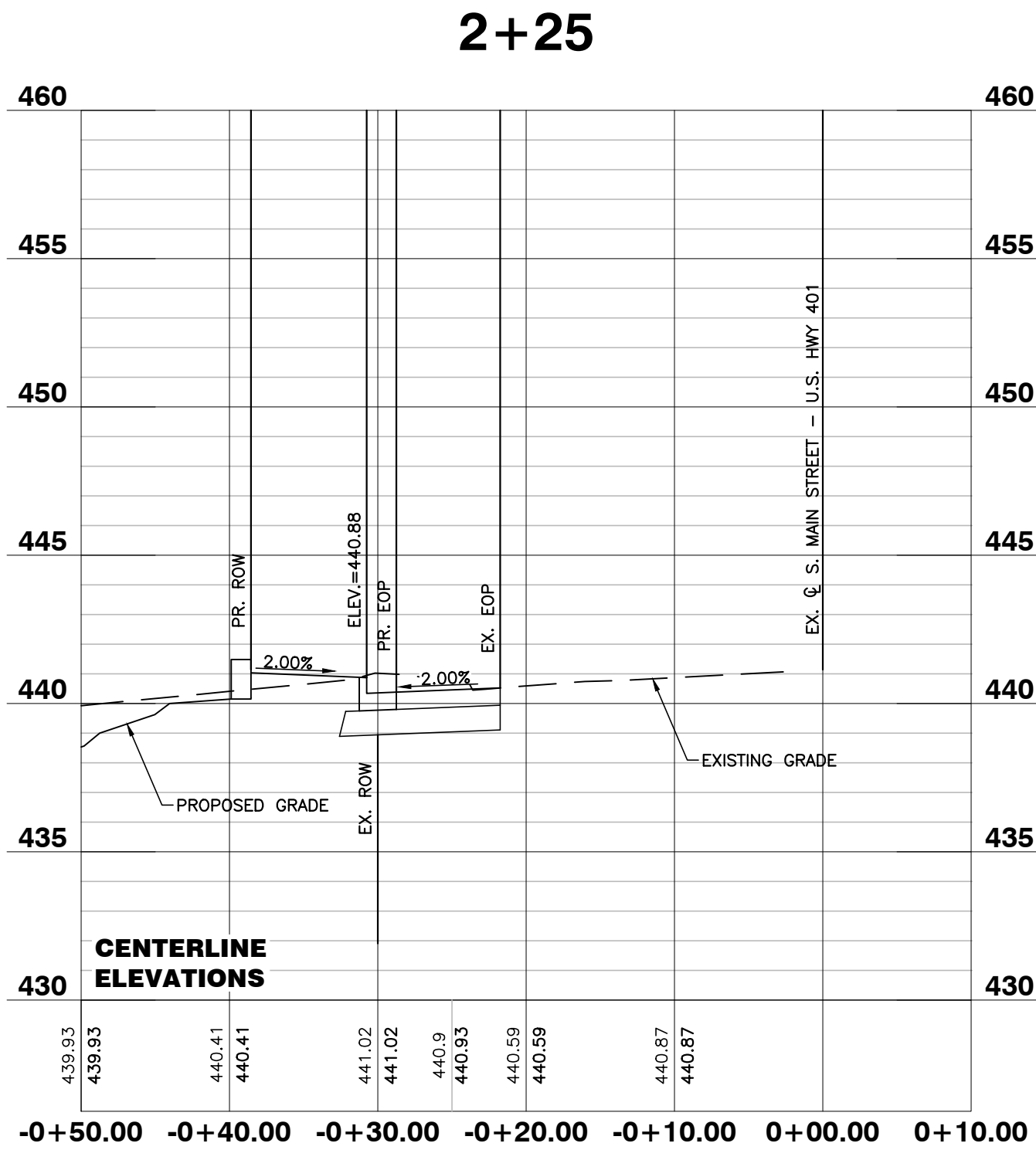
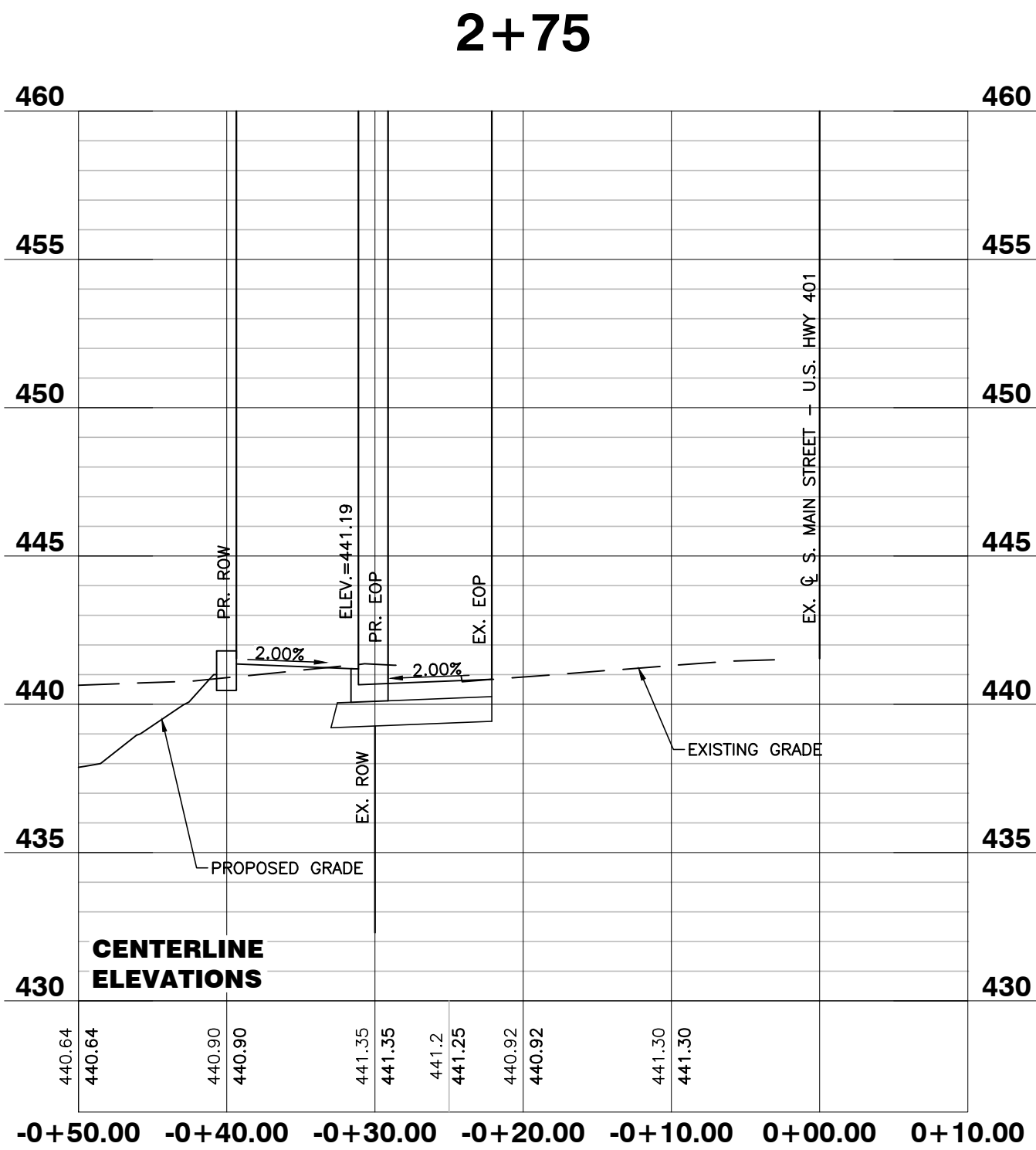
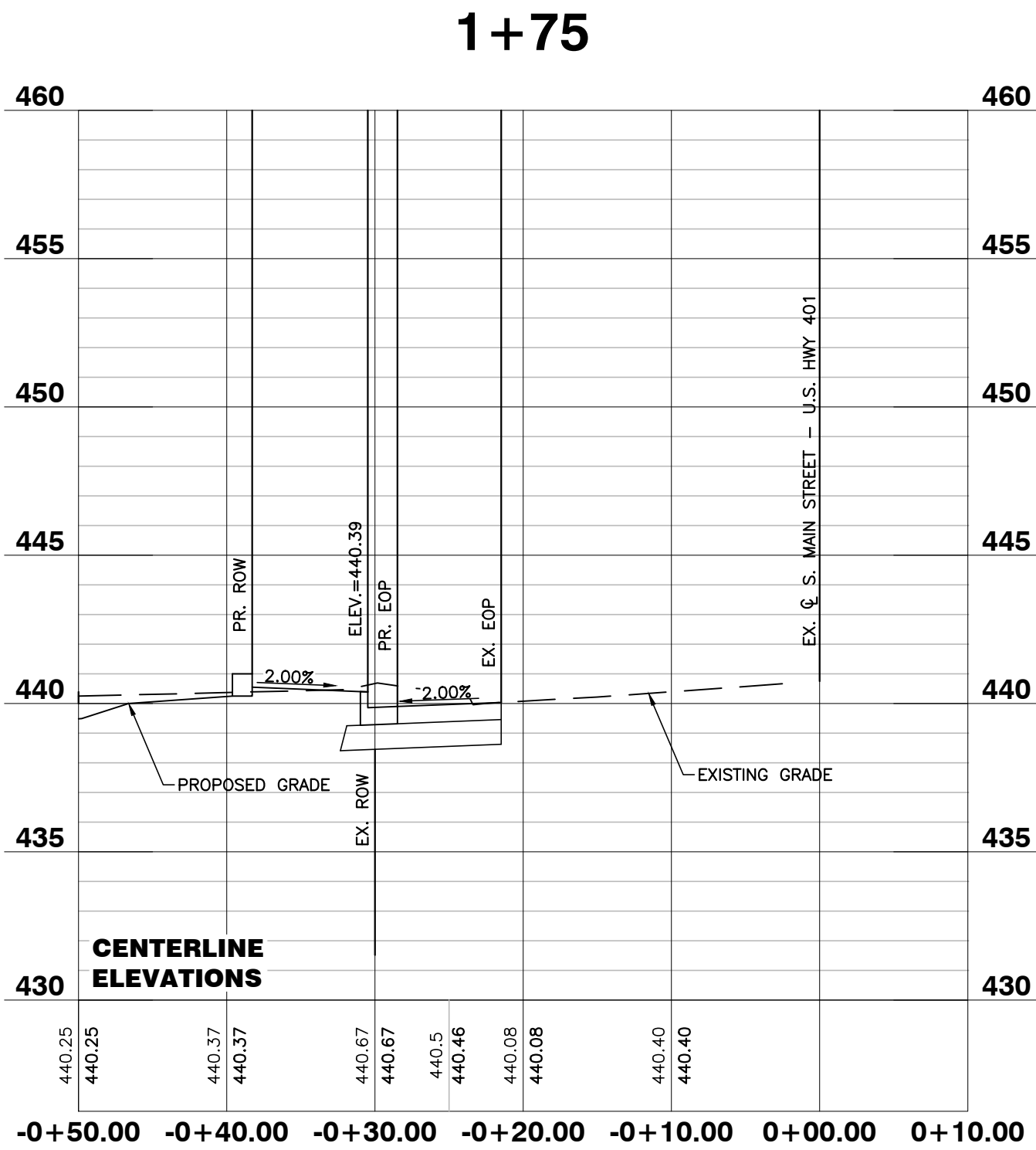
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SHEET
C4.2



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

NO FLOODPLAINS EXIST ON-SITE

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



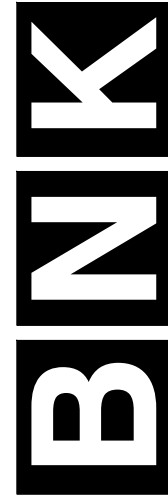
05/27/22

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

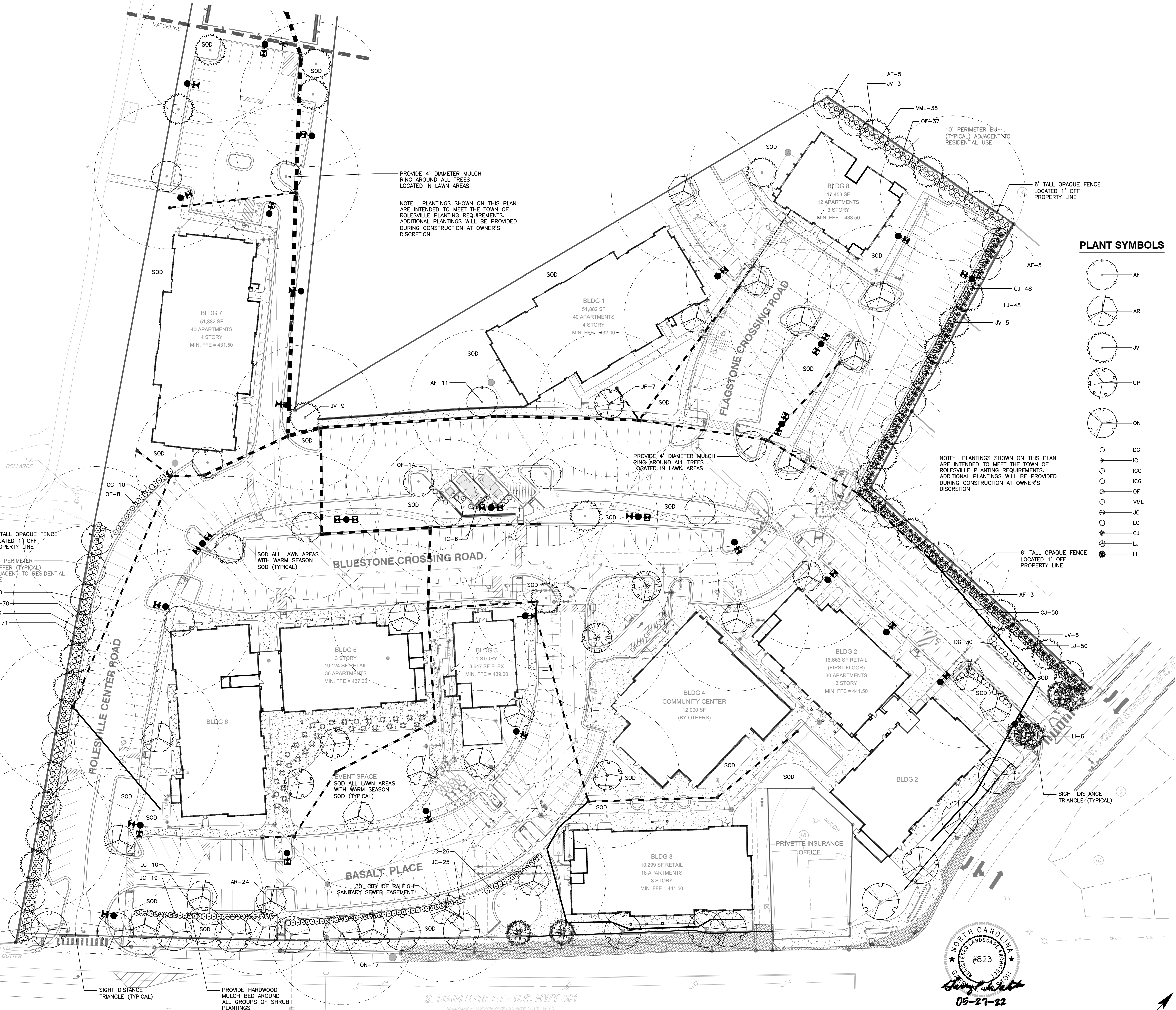
03-19157 PROGRESS MRM
JOB NO. DATE DRAWN BY
S. MAIN ST. - U.S. 401
WIDENING CROSS SECTIONS
SCALE: 1" = 50' H; 1" = 5' V CHK BY: MDB

NO.	DATE	DESCRIPTION	BY

BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 881-1422 FAX: (919) 881-8888
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)



SHEET C4.3



PLANT LIST							
KEY	SCIENTIFIC NAME	COMMON NAME	QUAN.	CAL	HT	ROOT	USE
CANOPY TREES							
AF	Acer freemanii	Freeman Maple	32	2.5"	8'	B&B	Buffer/VUA
AR	Acer rubrum 'Brandywine'	Brandywine Red Maple	24	2.5"	8'	B&B	VUA
JV	Juniperus virginiana	Eastern Red Cedar	29	2.5"	8'	B&B	Buffer
QN	Quercus nuttallii	Nuttall Oak	17	2.5"	8'	B&B	Street Tree
UP	Ulmus parvifolia 'Allee'	Allee Elm	25	2.5"	8'	B&B	VUA
UNDERSTORY TREES							
U	Lagerstroemia Indica 'Tonto'	Crepe Myrtle	6	1.5"	6'	B&B	Street
SHRUBS							
CJ	Cleyera japonica	Japanese Cleyera	98		24"	CONT.	Buffer
DG	Distylium 'Green Wave'	Green Wave Distylium	30		24"	CONT.	VUA
IC	Ilex crenata 'Sky Pencil'	Sky Pencil Holly	6	36"		CONT.	Dumpster
ICC	Ilex crenata 'Chesapeake'	Chesapeake Holly	10	24"	24"	CONT.	VUA Screen
IC	Ilex crenata 'Green Lustre'	Green Lustre Japanese Holly	71	24"		CONT.	Buffer
ICJ	Juniperus chinensis 'Suyabrook Gold'	Suyabrook Gold Juniper	48		24"	CONT.	VUA Screen
LC	Loropetalum chinense 'Daruma'	Daruma Loropetalum	36	24"		CONT.	VUA Screen
U	Ligustrum japonicum	Wax Ligustrum	106	24"		CONT.	Buffer
OX	Osmanthus fragrans	Fragrant Tea Olive	59	24"		CONT.	Buffer/Screen
VM	Viburnum x Moonlit Lace'	Moonlit Lace Viburnum	108	24"		CONT.	Buffer

NOTE: PLANTINGS SHOWN ON THIS PLAN
ARE INTENDED TO MEET THE TOWN OF
ROLESVILLE PLANTING REQUIREMENTS.
ADDITIONAL PLANTINGS WILL BE PROVIDED
DURING CONSTRUCTION AT OWNER'S
DISCRETION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

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

NO FLOODPLAINS EXIST ON-SITE

SCALE IN FEET

80 120 160

COBBLESTONE VILLAGE

MIXED USE DEVELOPMENT

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

157	PROGRESS	GI
NO.	DATE	DRAWN

LANDSCAPE PLAN

10' CHK BY:GPW

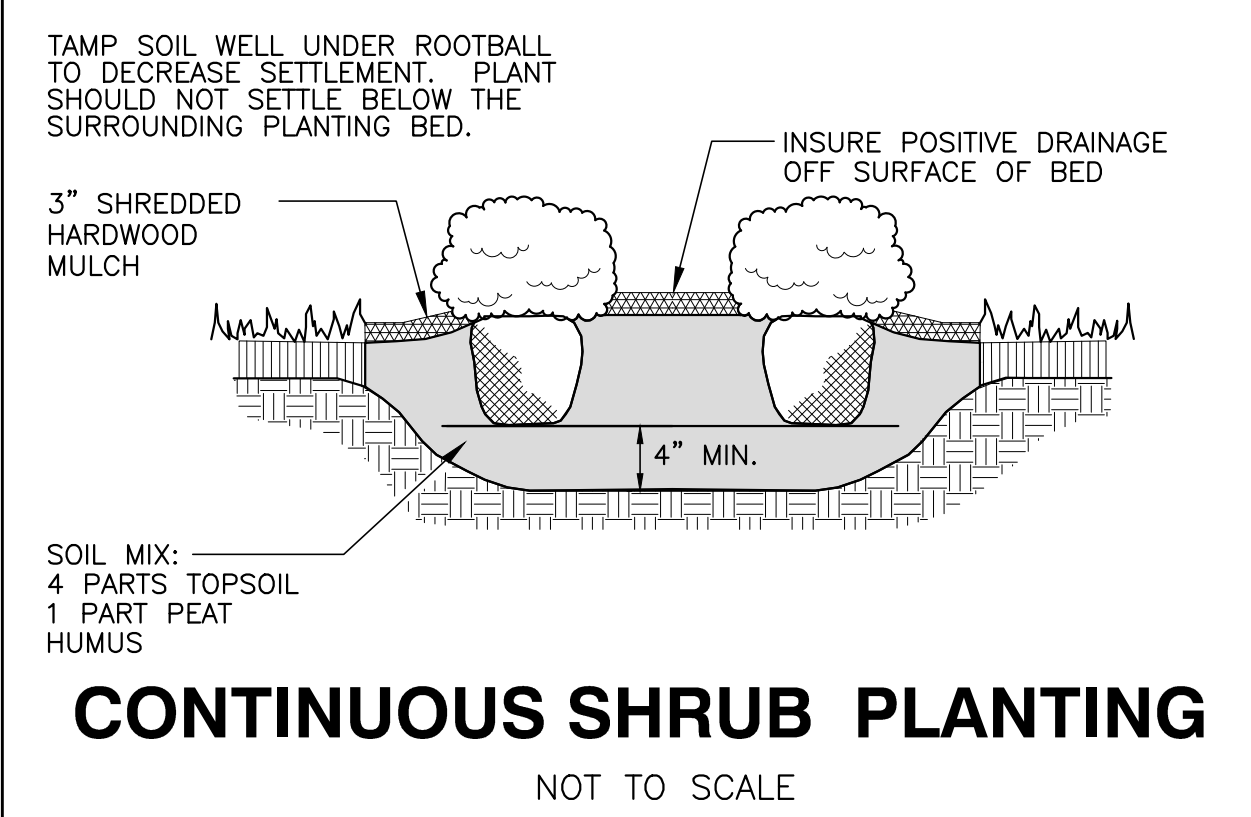
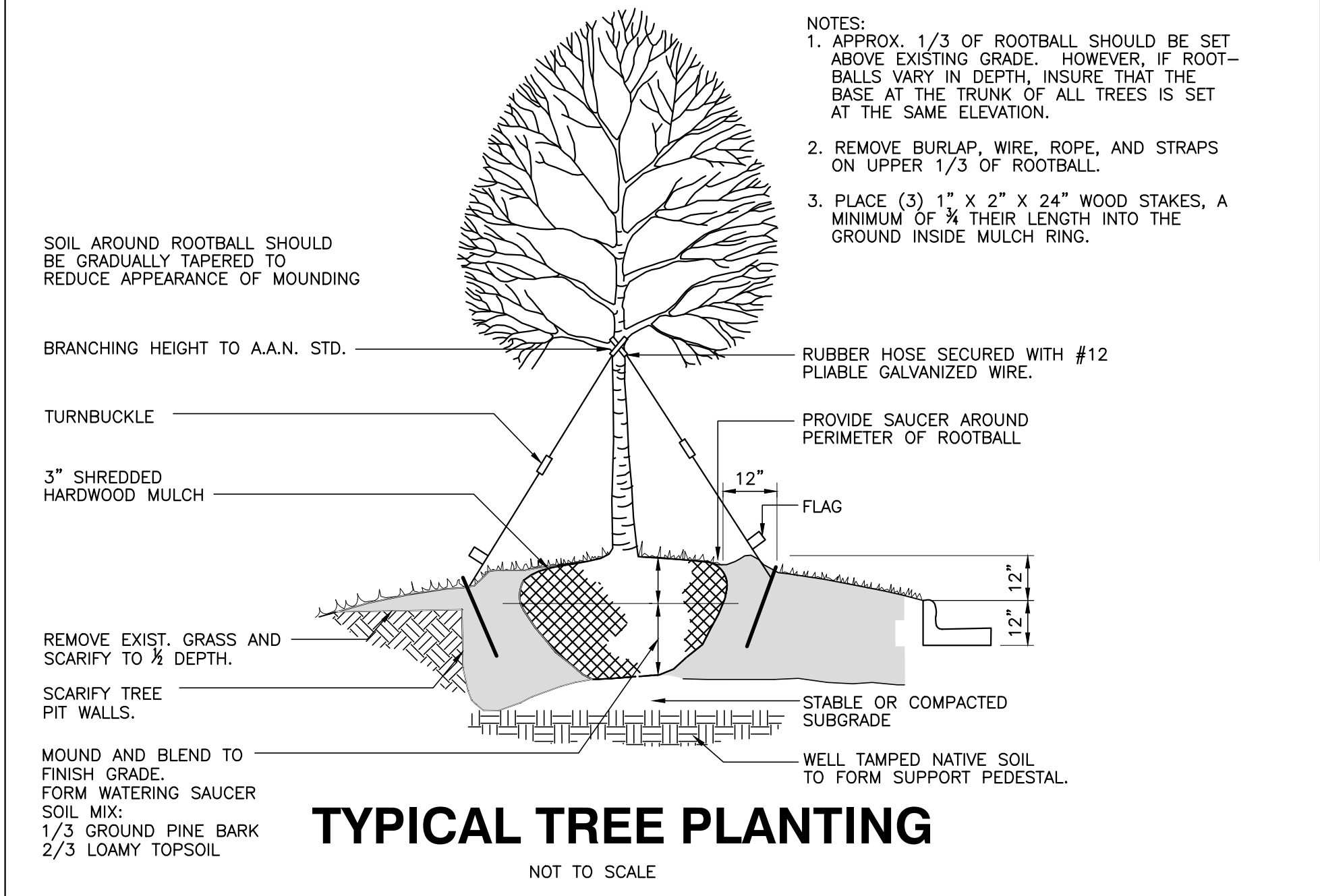
CHK BY:GPW

		DEVISIONS		
	NO.	DATE	DESCRIPTION	BY
	3	05-12-22	PER TOR COMMENTS	GW
	2	04-20-22	PER TOR COMMENTS	GW
	1	5-25-21	PER TOR COMMENTS	GW

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); NCBOCLA (C-0267)

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



GENERAL NOTES

1. A/C UNITS, TRANSFORMERS AND OTHER MECHANICAL OR UTILITY EQUIPMENT, NOT SHOWN ON THE PLAN, SHALL BE SCREENED FROM VIEW EITHER BY ADJUSTING PLANTINGS SHOWN IN CLOSE PROXIMITY TO EQUIPMENT OR BY THE ADDITION OF WAX MYRTLES @ 24" HT. 5" OC (SEE GENERAL NOTES FOR EQUIPMENT 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 SHREDED HARDWOOD 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 ARCHITECT. ANY DISCREPANCIES BETWEEN PLANT LIST AND PLANTING PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION.
5. ALL TREES, SHRUBS, GROUNDCOVER, ETC. SHALL CONFORM TO ACCEPTED STANDARDS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSEMEN.
6. ALL ROOTBALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO PLANTING.
7. B&B AS LISTED UNDER "ROOT" IN THE PLANT LIST INDICATES BALLED & 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 WITHIN LAWN AREAS.
11. MULCH EDGES AND PROPOSED PLANTINGS SHALL NOT DISTURB ANY EXISTING GROUNDS OF TREES TO REMAIN. EDGES ARE SHOWN FOR APPROXIMATION ONLY, BUT ARE TO INDICATE SMOOTH, CLEAN CURVES.
12. CULVERTS, RIP-RAP STRUCTURES, AND OTHER STORMWATER DEVICES SHALL BE SCREENED WITH MULCH AND SHRUBS. IF STRUCTURES ARE NOT SHOWN ON THE PLAN, INSTALL WAX MYRTLES @ 24" HT. 5" OC.
13. A 2' BUMPER OVERHANG, FROM THE BACK OF CURB, SHALL BE ALLOTTED FOR MATURE SHRUBS.
14. TREE PROTECTION FENCING SHALL BE MAINTAINED UNTIL ALL 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..
15. UNLESS OTHERWISE NOTED ON THE PLAN, ALL DISTURBED AREAS ARE TO BE SEEDED WITH WARM SEASON GRASS, INCLUDING PARKING LOT PERIMETERS AND PARKING LOT ISLANDS..
16. PERIMETER BUFFER AREAS ARE TO BE MULCHED TO A DEPTH OF THREE INCHES.

LANDSCAPE CALCULATIONS

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) - 240 LF = 4 TREES / 100 LF = 10 TREES REQUIRED/PROVIDED
= 40 SHRUBS / 100 LF = 96 SHRUBS REQUIRED/PROVIDED
= 240 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

PLANTING NOTES:

LOCATE PLANTS AND PLANTING BEDS BY USING SCALED DIMENSIONS FROM STREET,
PROPERTY LINES, BACK OF CURB, BUILDINGS, WALLS, ETC. ALL PLANTS SHALL
MEET OR EXCEED THE MINIMUM STANDARDS SET BY THE U.S.D.A. FOR NURSERY
STOCK SPOONED BY THE AMERICAN ASSOCIATION OF NURSERMEN, INC.,
WASHINGTON, D.C. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT WRITTEN
APPROVAL FROM THE OWNER AND/OR THE LANDSCAPE ARCHITECT. SYMBOLS: B&B =
BALLED & BURLAPPED; B.R. = BARE ROOT; CONT. = CONTAINER, O.C. =
ON-CENTER

STREET TREE PLANTINGS TO BE COORDINATED IN CONCURRENCE WITH NCDOT
STREETSCAPE IMPROVEMENT PROJECT ALONG S. MAIN AND YOUNG STREET(S).

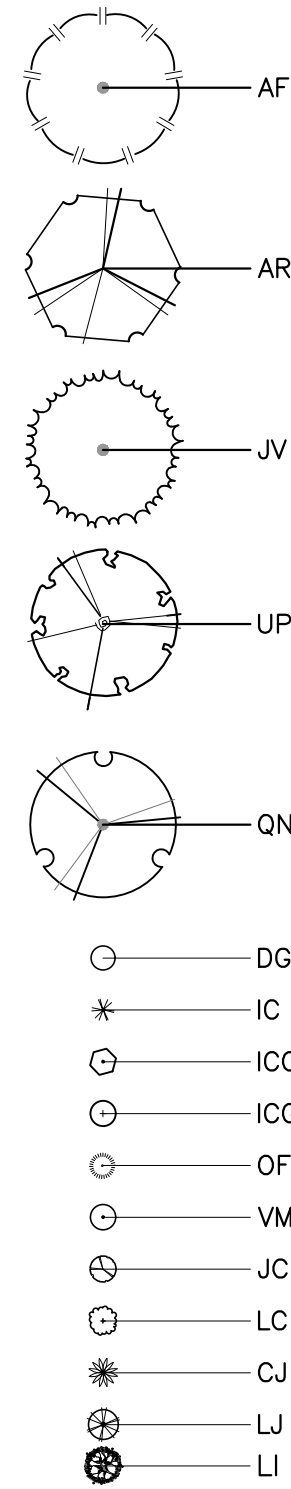
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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 edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

PLANT SYMBOLS



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); NCBOBA (C-0267)

03-19157	PROGRESS	GW
JOB NO.	DATE	DRAWN BY
LANDSCAPE DETAILS		
3	05-12-22	PER TOR COMMENTS
2	04-20-22	PER TOR COMMENTS
1	5-25-21	PER TOR COMMENTS
NO.	DATE	DESCRIPTION
		REVISIONS
SCALE: N.T.S.		CHK BY: GFW

SHEET

L1.2

COBBLESTONE VILLAGE

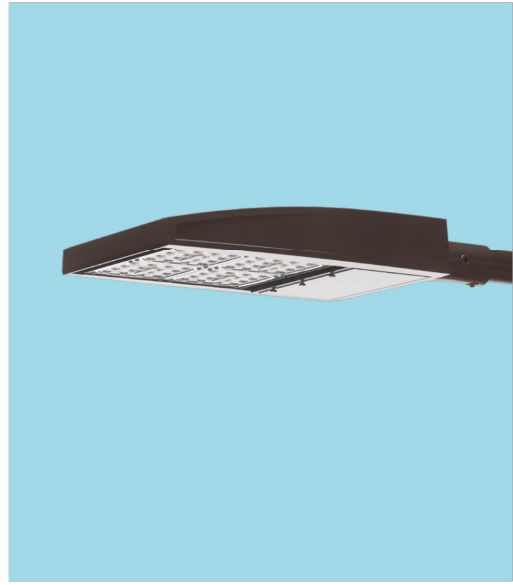
MIXED USE DEVELOPMENT

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

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



Outdoor Lighting
Shoebox LED



The energy-efficient Shoebox LED combines a decorative, contemporary style with versatility and ample lighting effect that is perfect for streets, parking lots, commercial buildings and residential communities. The Shoebox LED provides excellent color rendition along with a controlled light pattern that reduces glare and keeps the light directed only where you want it. Available in black, dark bronze, gray or white with one to four fixtures per pole.

LED (Light Emitting Diode)	150, 220, 420, 530 watts
Mounting heights	25', 30', 35'
Colors	Black Bronze Gray White
Poles	Fiberglass (1 or 2 fixtures per pole) Decorative tapered metal Decorative square metal

Note: 35' pole available in black or bronze only.

For additional information, visit us at duke-energy.com/OutdoorLighting or call us toll free at 866.769.6417.



Outdoor Lighting
Shoebox LED

Light source: LED (white)				
Replacement for* LED Wattage 150 – 250-watt HPS and metal halide; LED Wattage 205 – up to 400-watt metal halide; LED Wattage 530 – 1,000-watt metal halide				
Warm-up and restrike time: Instant on (no warm-up or restrike time)				
Wattage	BUG Rating	Light Pattern	Lumens	Color Temp
LED 150	B5-U0-G3	IESNA Type V (circular)	19580	4,000K
LED 150	B3-U0-G4	IESNA Type IV (forward throw)	18459	
LED 150	B2-U0-G3	IESNA Type III (oval)	19006	
LED 220	B5-U0-G3	IESNA Type V (circular)	25870	
LED 220	B3-U0-G4	IESNA Type IV (forward throw)	24390	
LED 220	B2-U0-G4	IESNA Type III (oval)	25114	
LED 420	B5-U0-G5	IESNA Type V (circular)	48514	
LED 420	B3-U0-G5	IESNA Type IV (forward throw)	43765	
LED 530	B5-U0-G5	IESNA Type V (circular)	60296	
LED 530	B3-U0-G5	IESNA Type IV (forward throw)	54395	

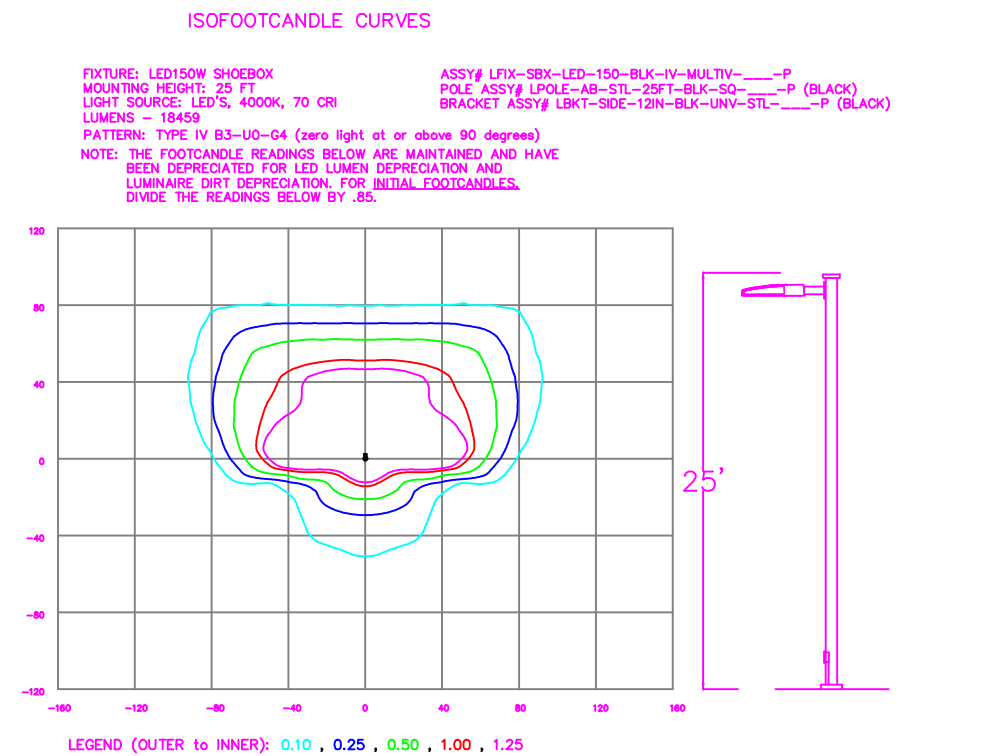
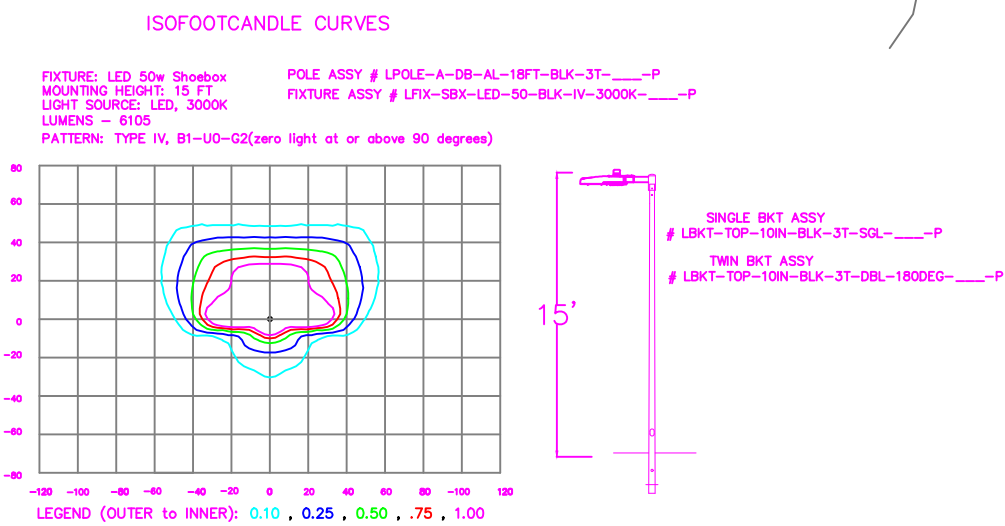
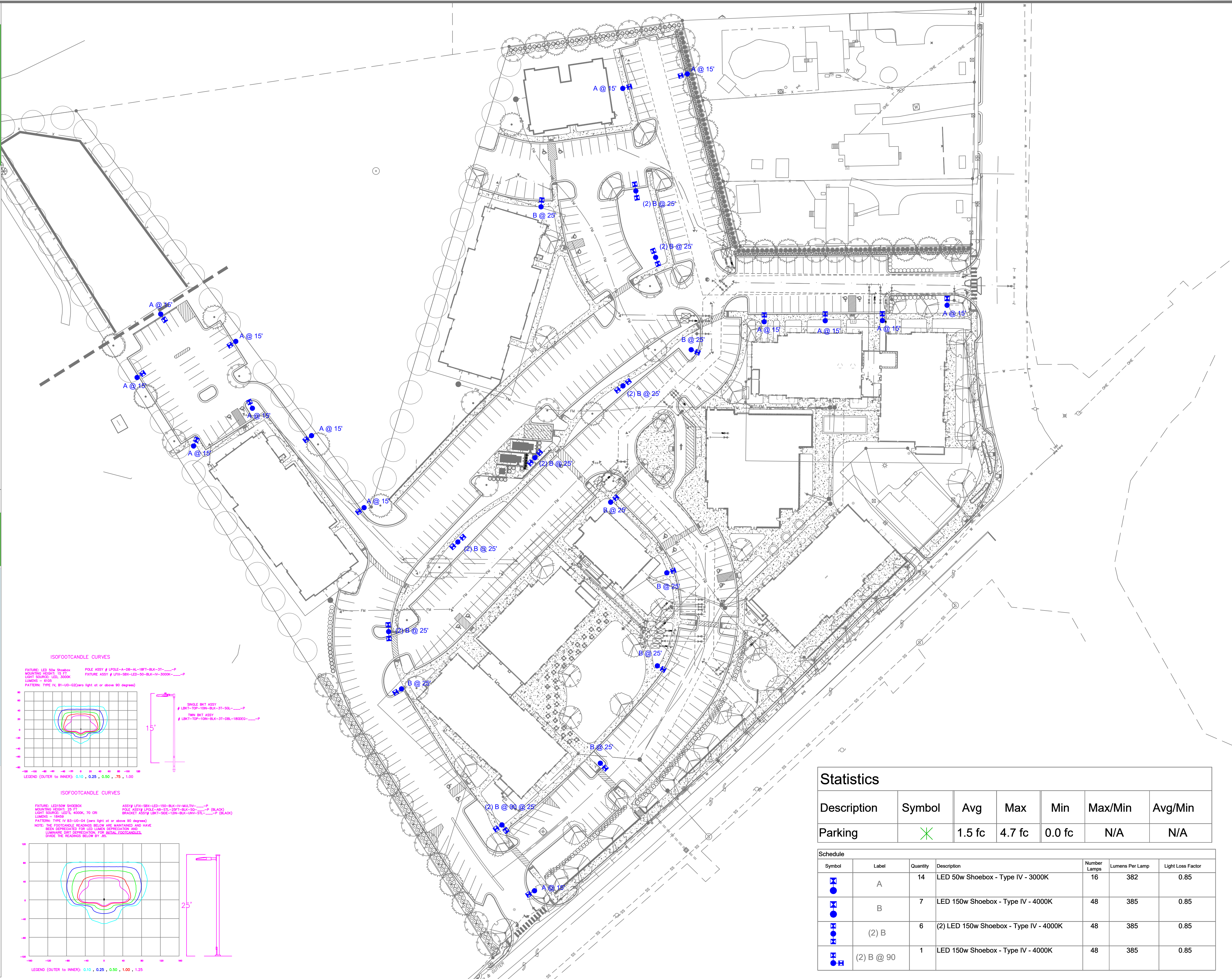
* These are approximate replacement suggestions; actual conditions could be different.

Poles available:	Mounting height	Color
Round tapered decorative metal*	35'	Black Bronze
Decorative square metal*	25' and 30'	Black Bronze Gray White
Fiberglass	30'	Black (1 or 2 fixtures per pole) Gray (1 or 2 fixtures per pole)

Features	Benefits
Little or no installation cost	Frees up capital for other projects
Design services by lighting professionals included	Meets industry standards and lighting ordinances
Maintenance included	Eliminates high and unexpected repair bills
Electricity included	Less expensive than metered service
Warranty included	Worry-free
One low monthly cost on your electric bill	Convenience and savings for you
Turnkey operation	Provides hassle-free installation and service
Backed by over 40 years of experience	A name you can trust today ... and tomorrow

*2" raised foundation available when required on metal poles only.

©2019 Duke Energy Corporation 193519 12/19



Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Parking	X	1.5 fc	4.7 fc	0.0 fc	N/A	N/A

Schedule						
Symbol	Label	Quantity	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor
A	A	14	LED 50w Shoebox - Type IV - 3000K	16	382	0.85
B	B	7	LED 150w Shoebox - Type IV - 4000K	48	385	0.85
(2) B	(2) B	6	(2) LED 150w Shoebox - Type IV - 4000K	48	385	0.85
(2) B @ 90	(2) B @ 90	1	LED 150w Shoebox - Type IV - 4000K	48	385	0.85

LIGHTING DESIGN TOLERANCE

The calculated footcandle light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (follage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.



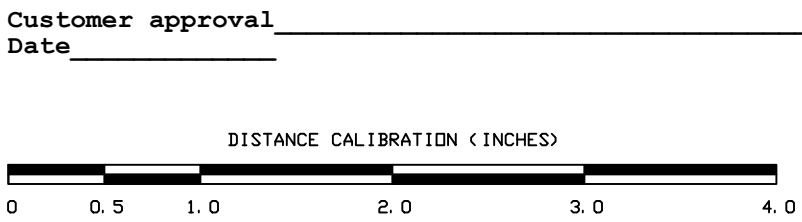
PROPRIETARY & CONFIDENTIAL

This document together with the concepts and designs presented herein, presented as an instrument of service, is the sole property of Duke Energy, and is intended only for the specific purpose and prospective client as stated in the title block of this drawing. Any use, copying, reproduction or disclosure of the drawing, design or any information contained herein by the prospective customer or other entities, including without limitation, architects, engineers, or equipment manufacturers is hereby expressly prohibited and shall not be permitted absent prior written consent from, and payment of compensation to Duke Energy. Duke Energy disclaims any liability or responsibility for any unauthorized use of or reliance on this document.

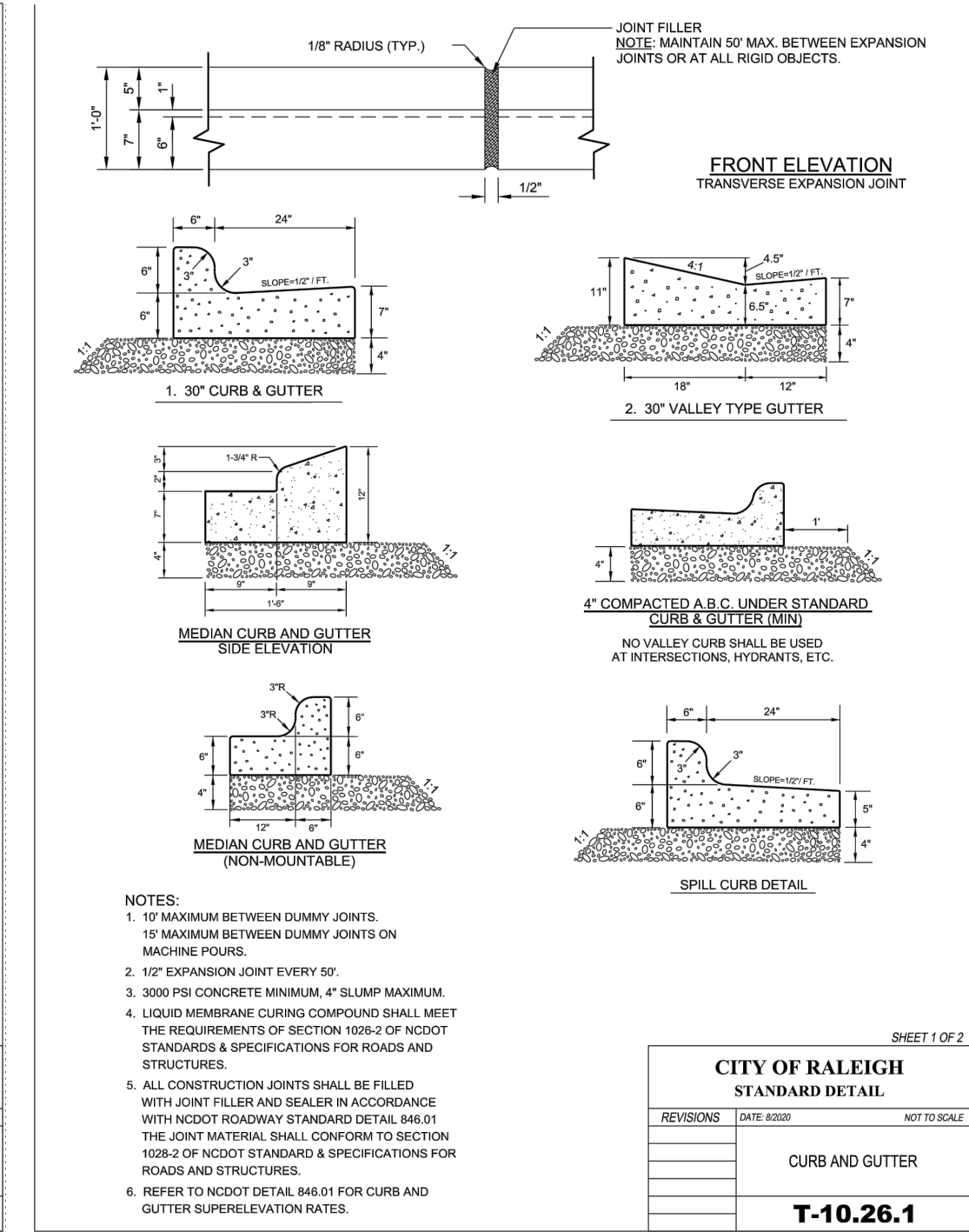
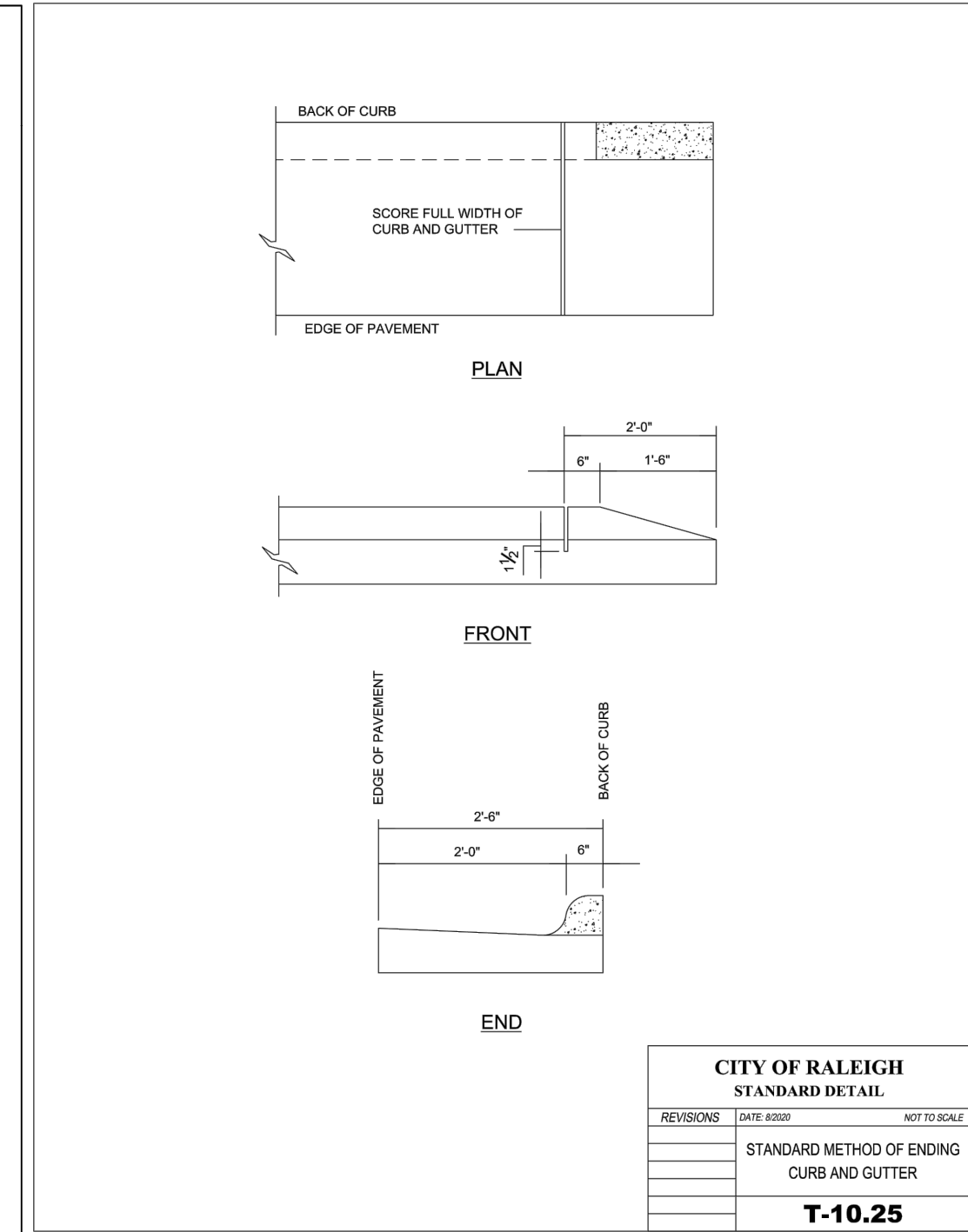
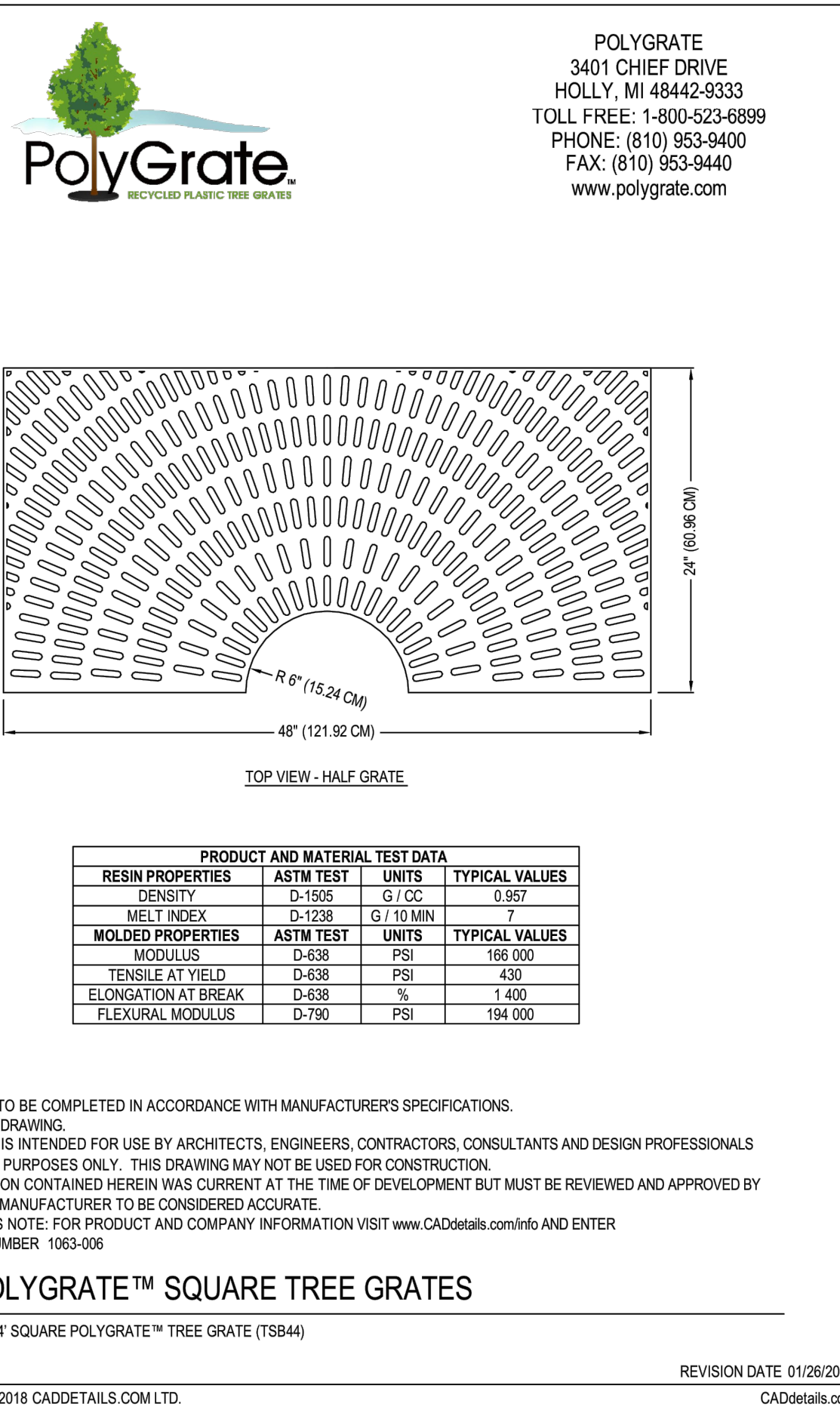
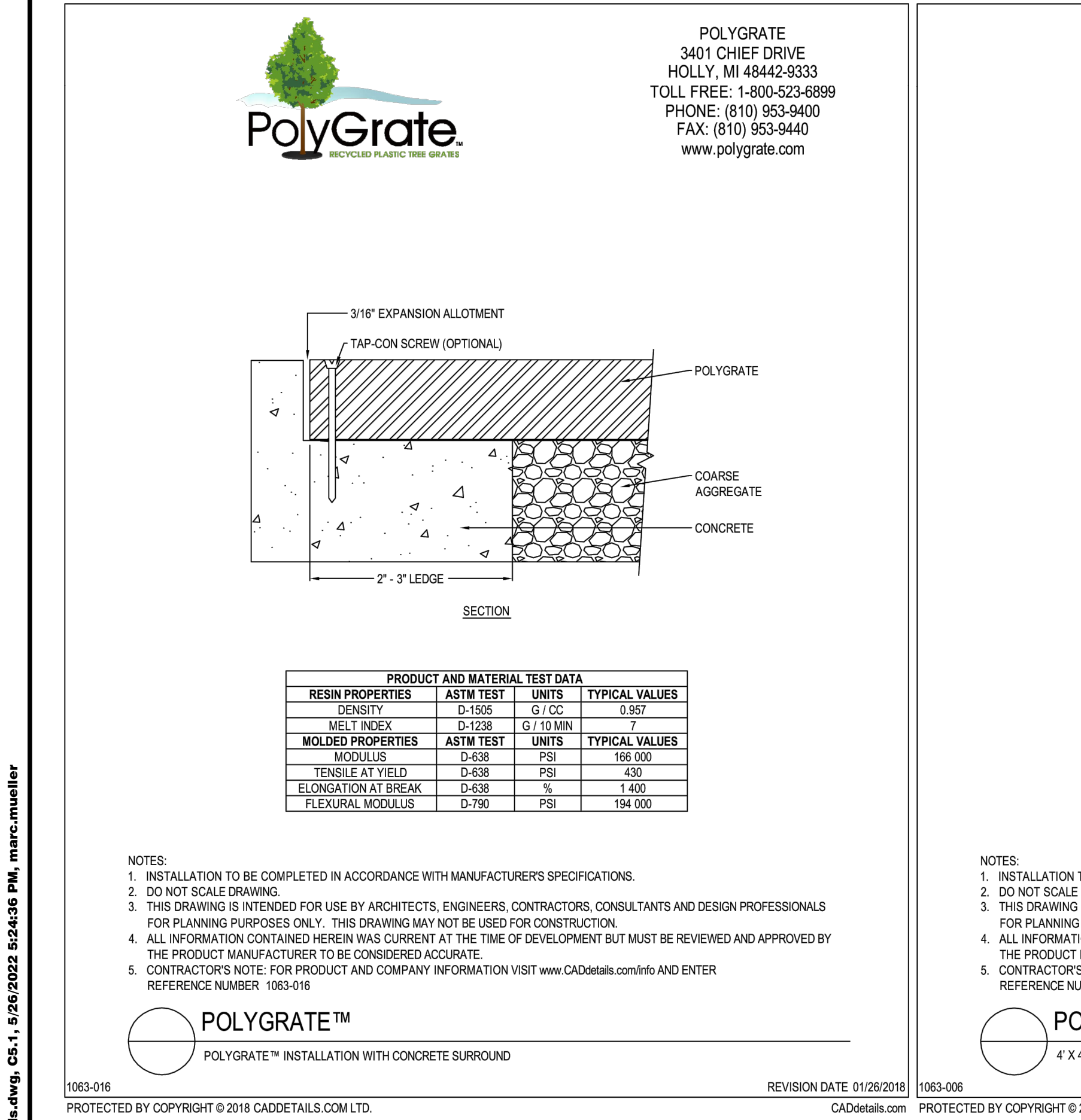
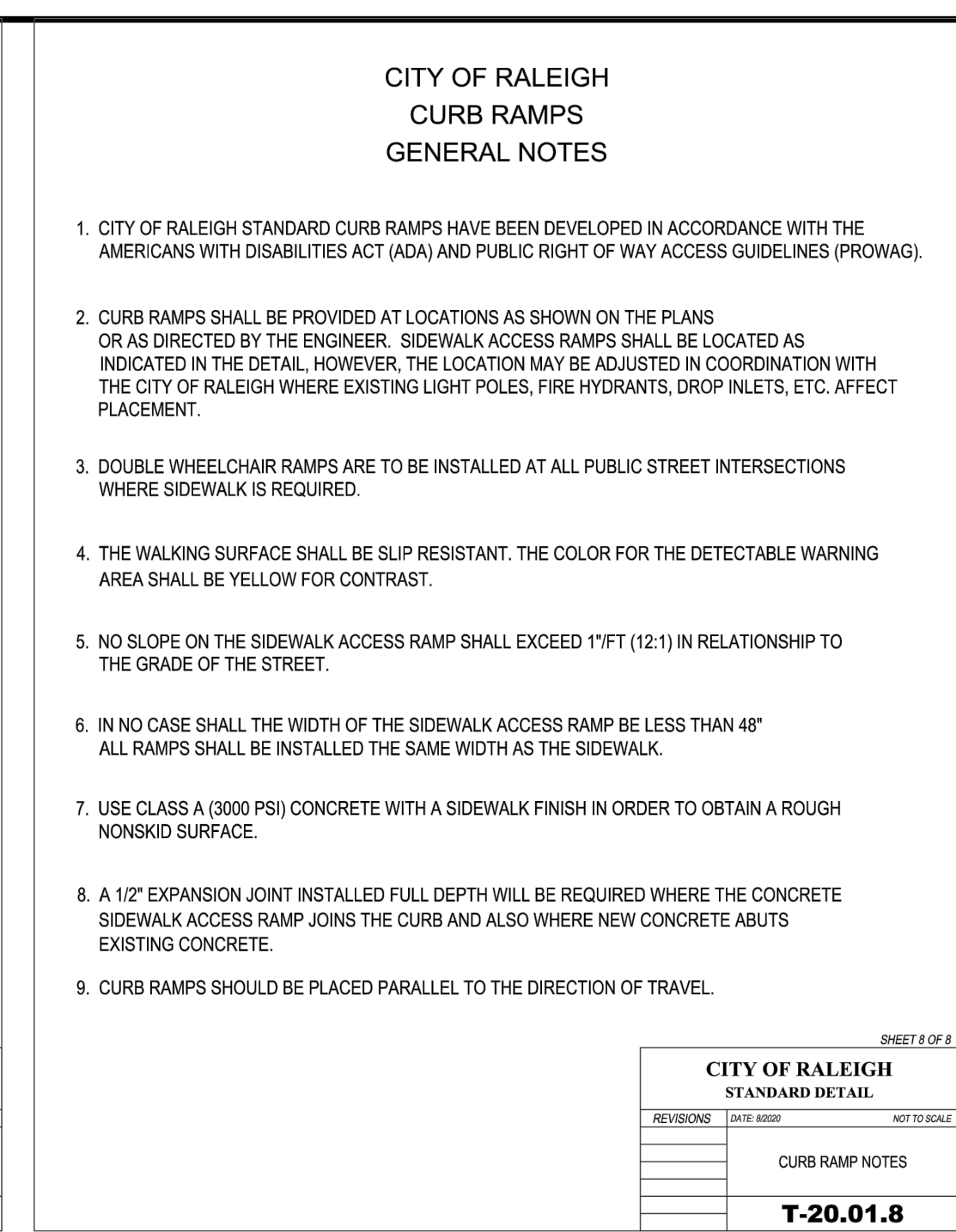
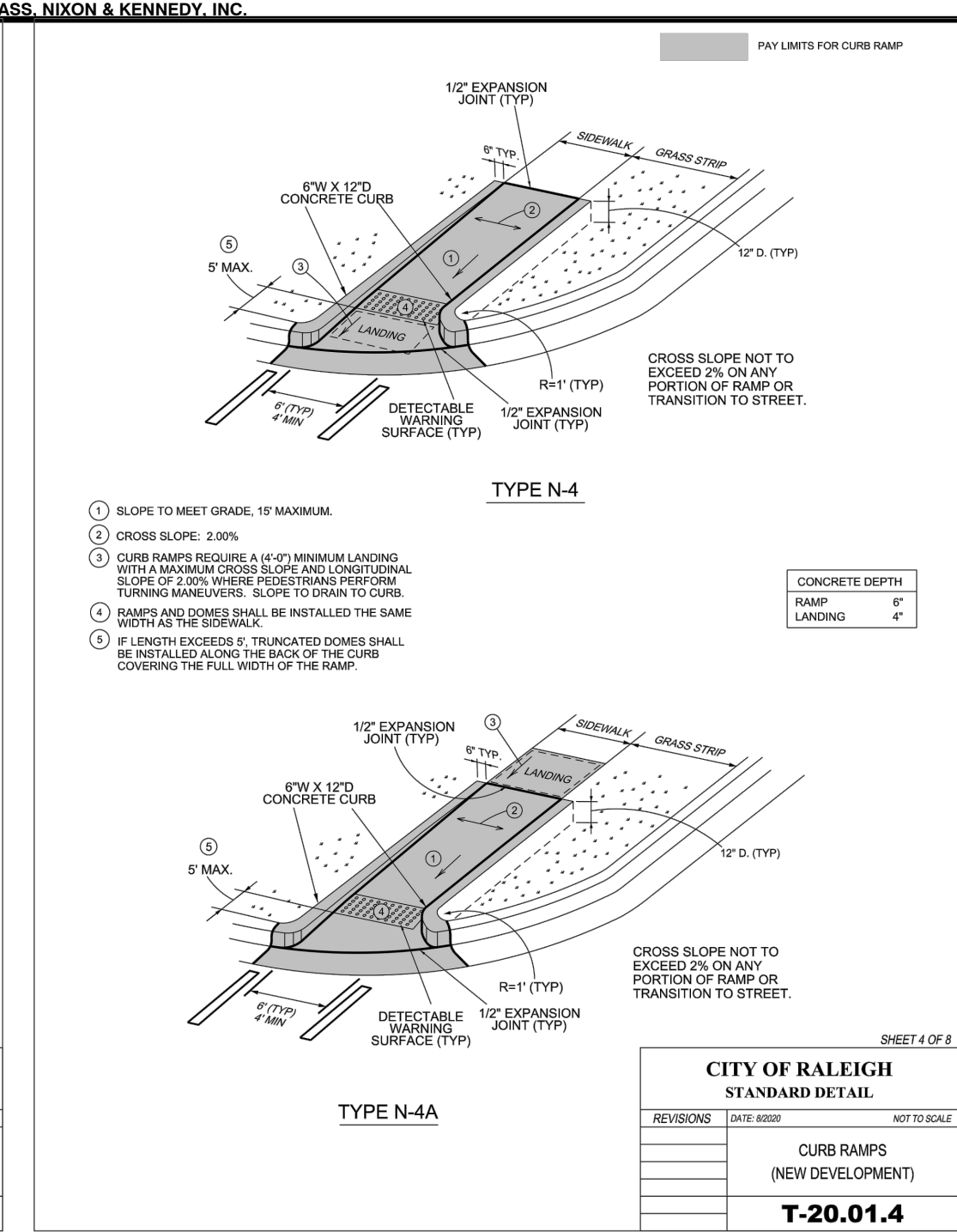
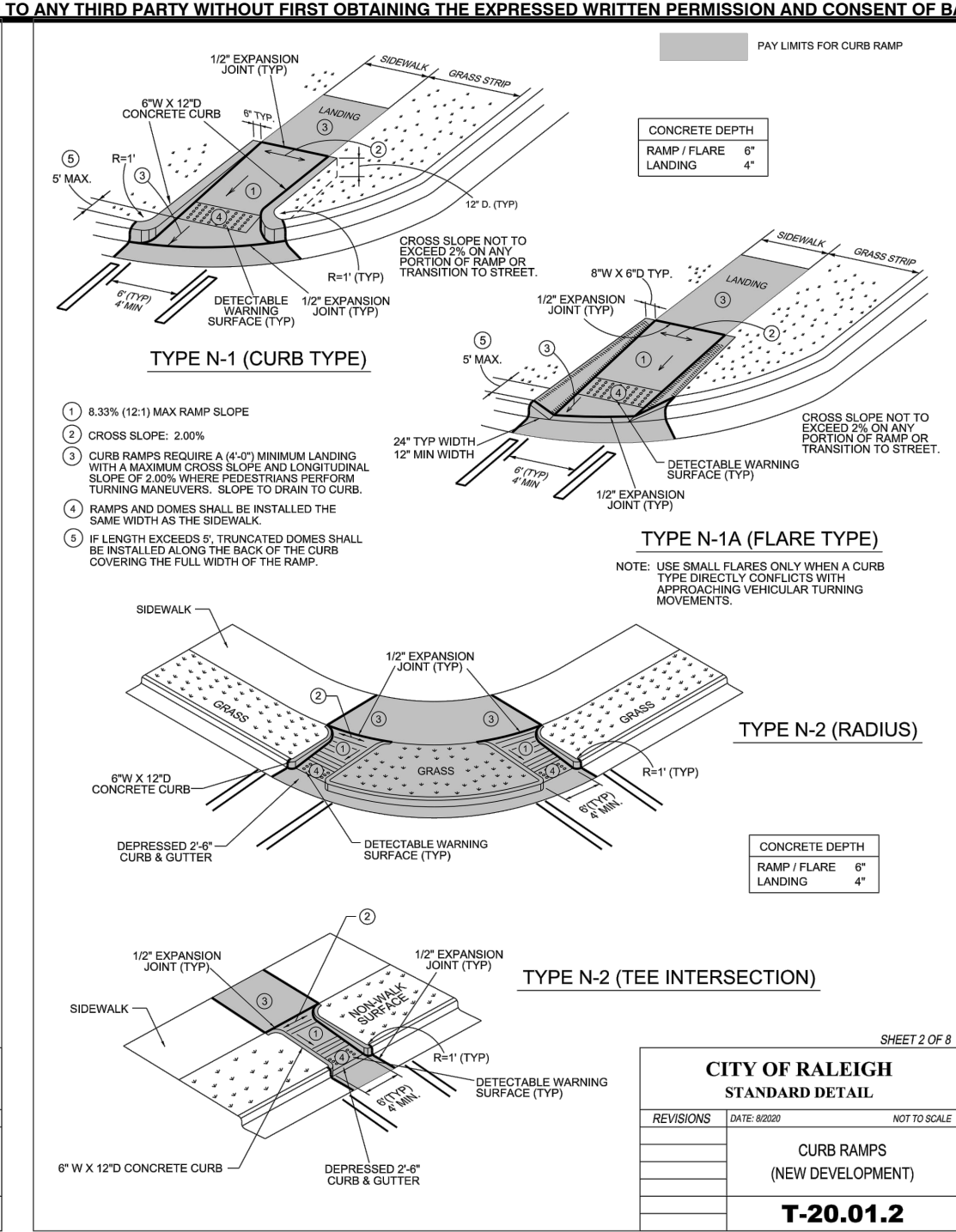
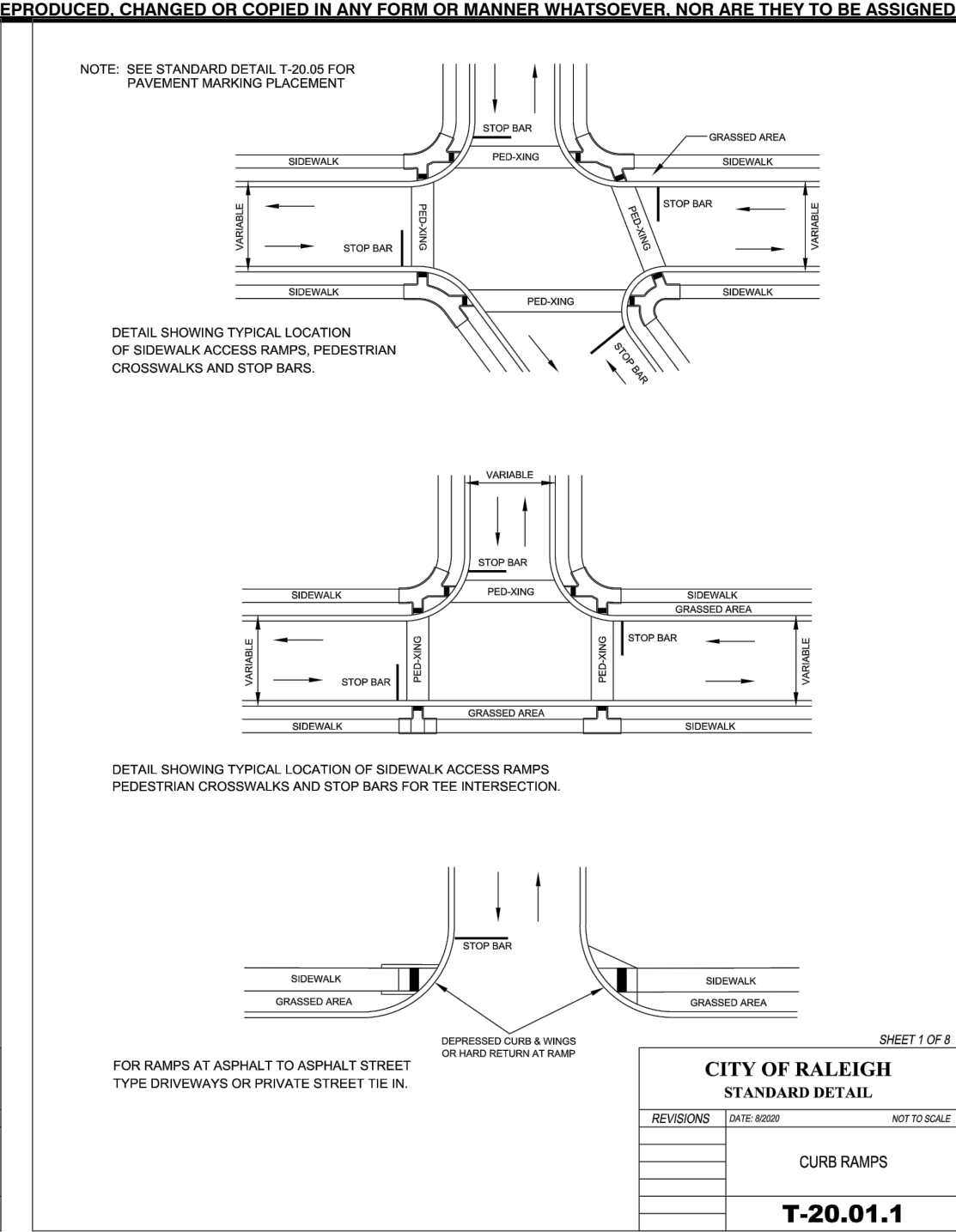
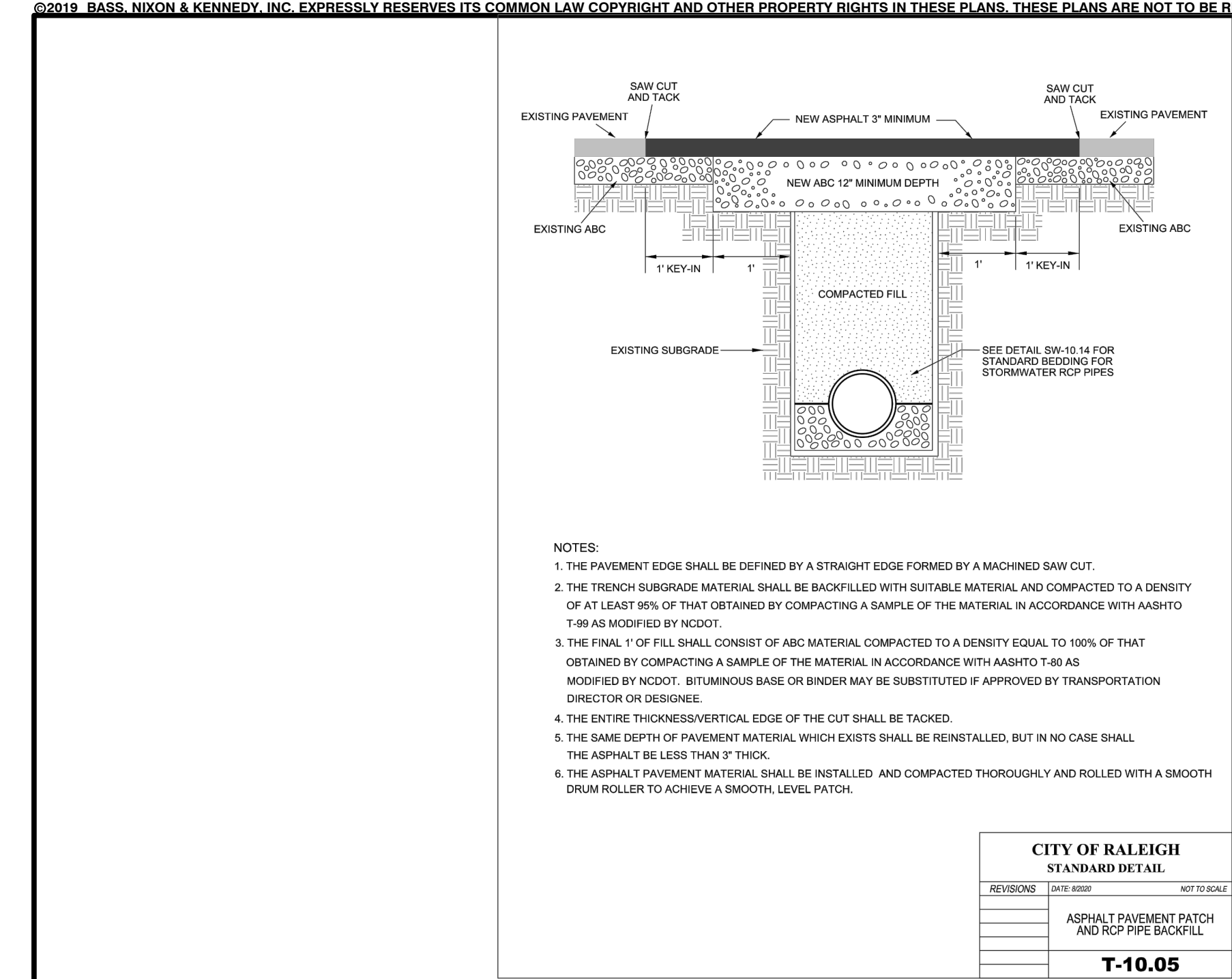
COBBLESTONE VILLAGE

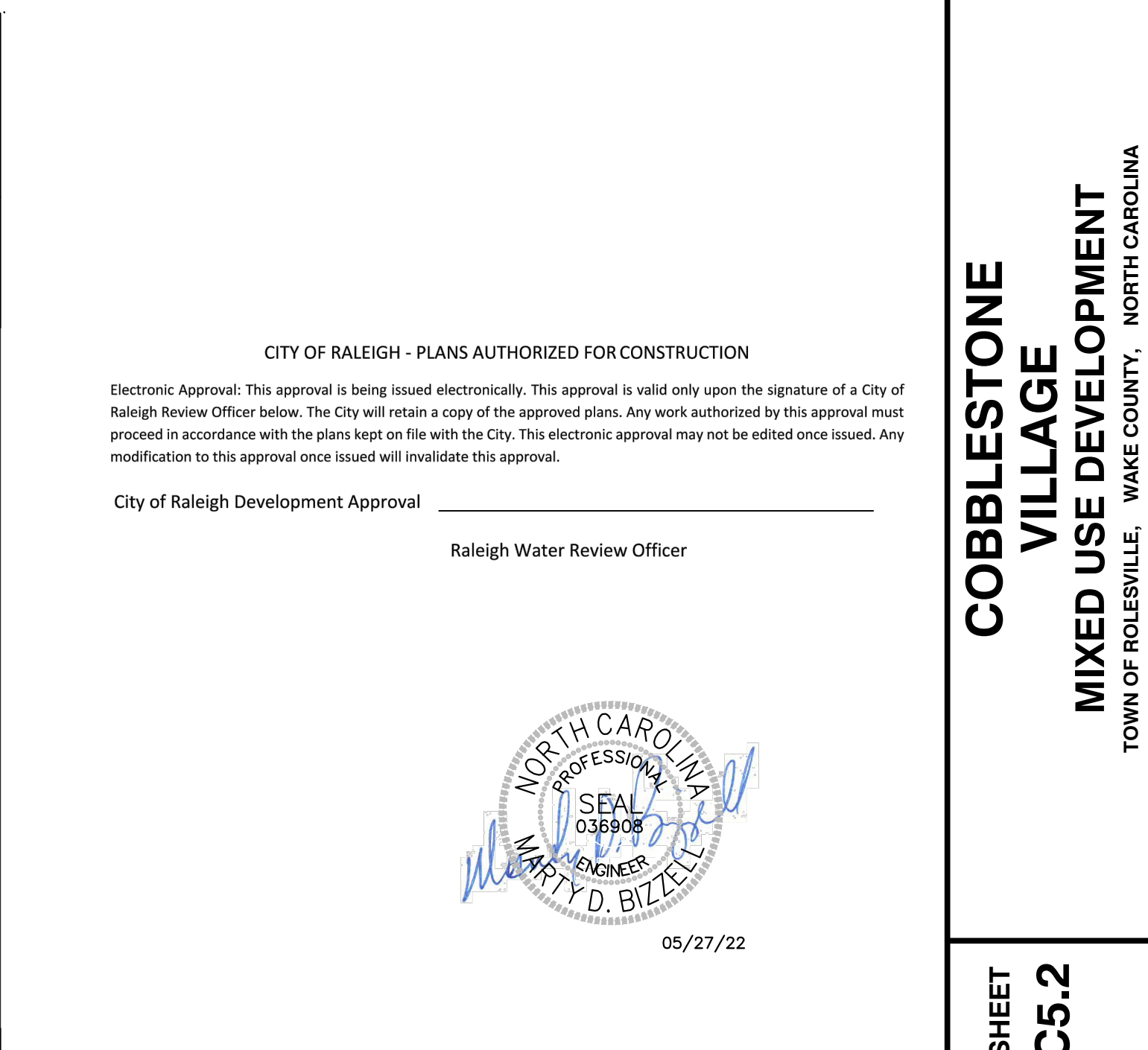
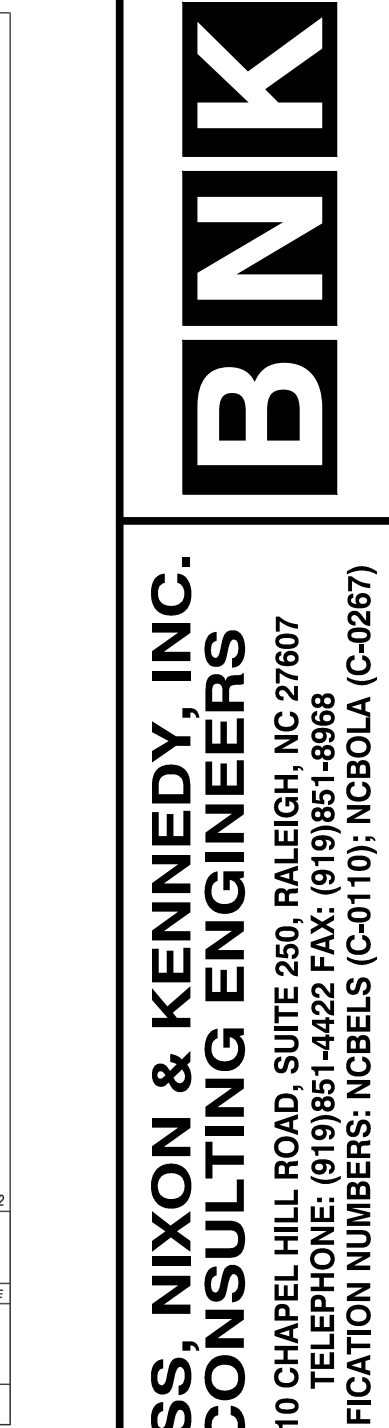
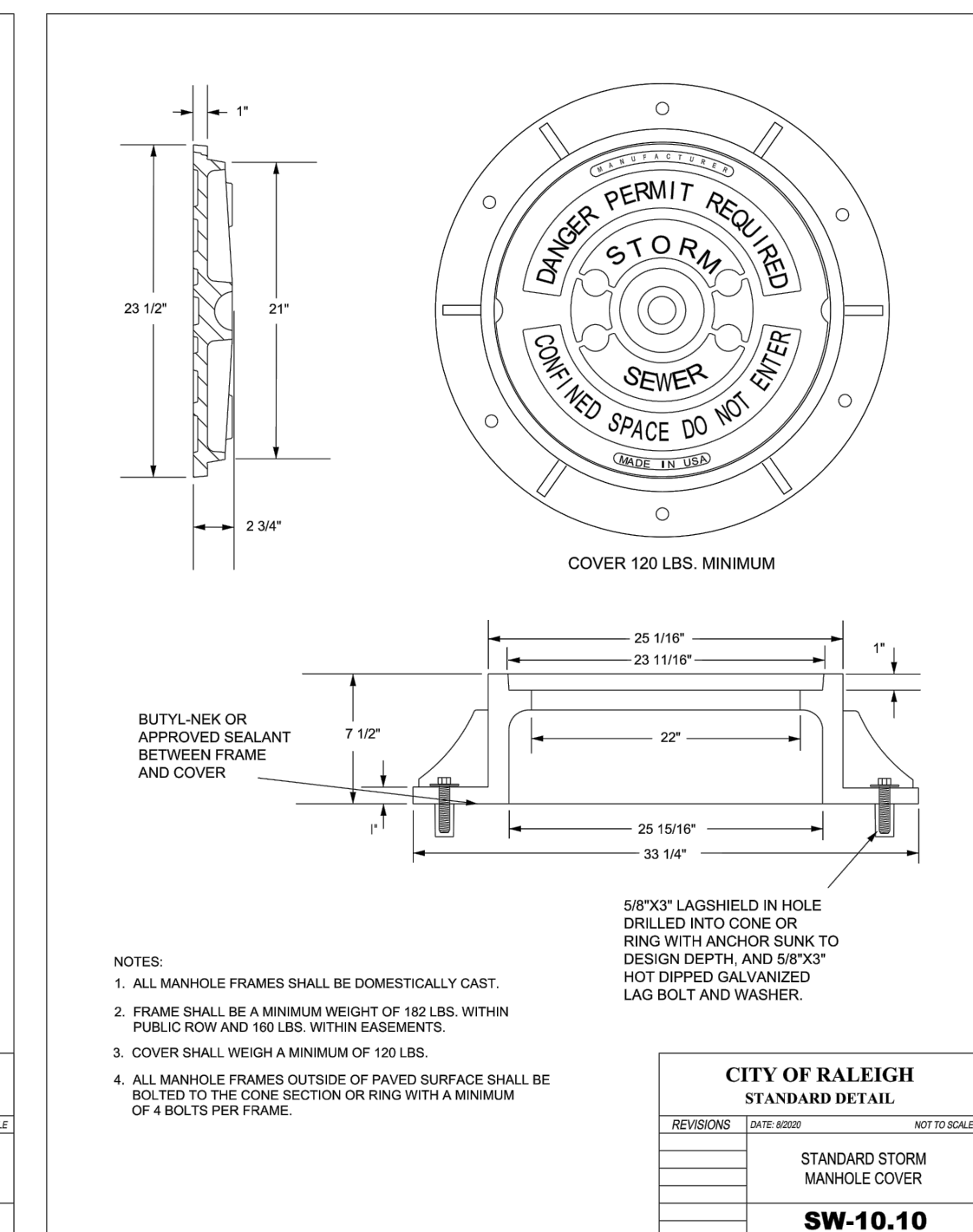
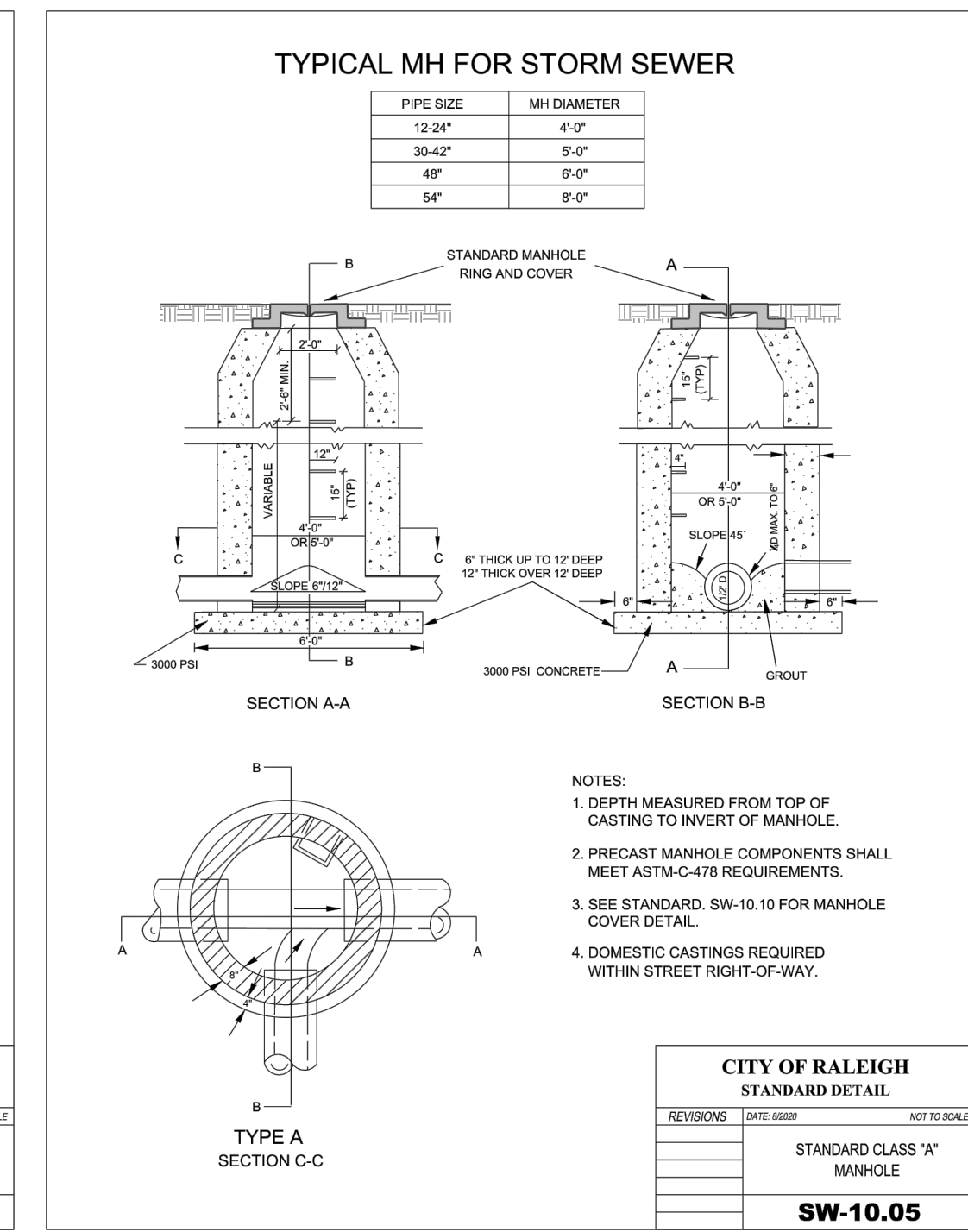
Rolesville, NC	
SITE LIGHTING PLAN	
Designed by	DEP LIGHTING SOLUTIONS
Reviewed by	T. Ferguson Scale 1" = 50'
Date	02/14/2022 Size "Arch D"
Description LED Shoebox	
Drawing No.	22-0047A Sht. 1 OF 1

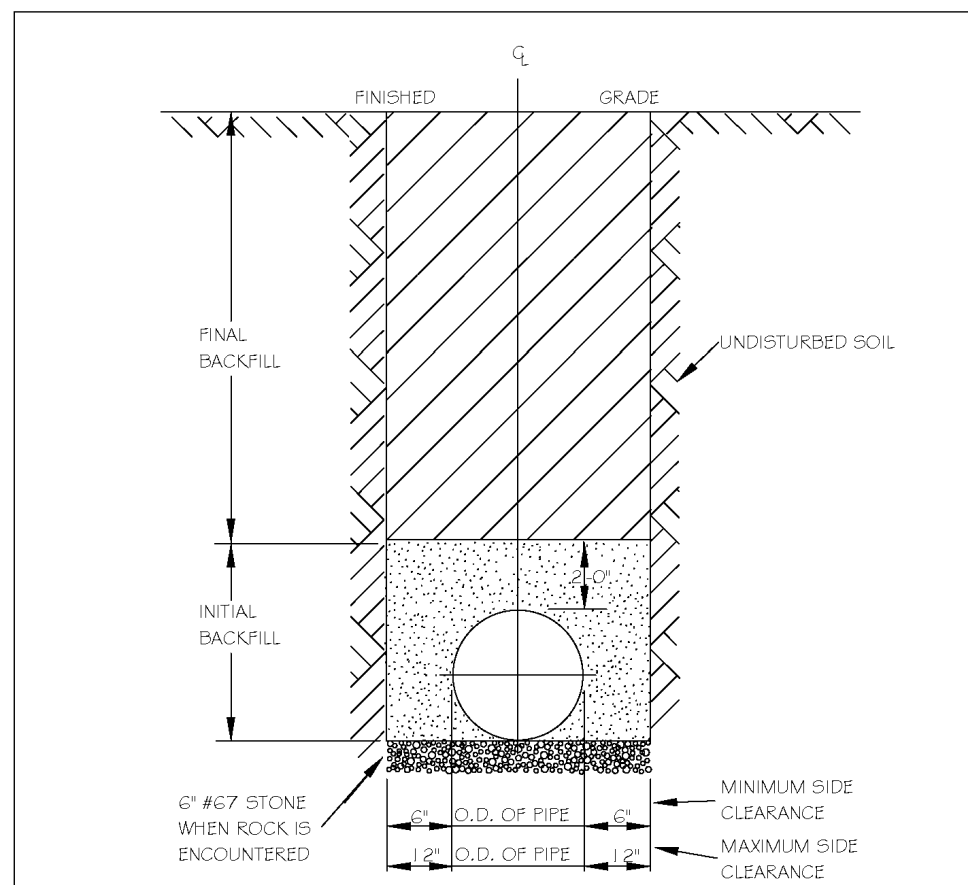
Rev A	02/14/22	LED Shoebox	NJ
REV#	DATE	REVISION	BY



R:\2019\19157 - Rolesville Town Center CIVIL\04 Construction\07 - 19157_Details.dwg, CS1, 5/26/2022 5:54:36 PM, marc.mueller

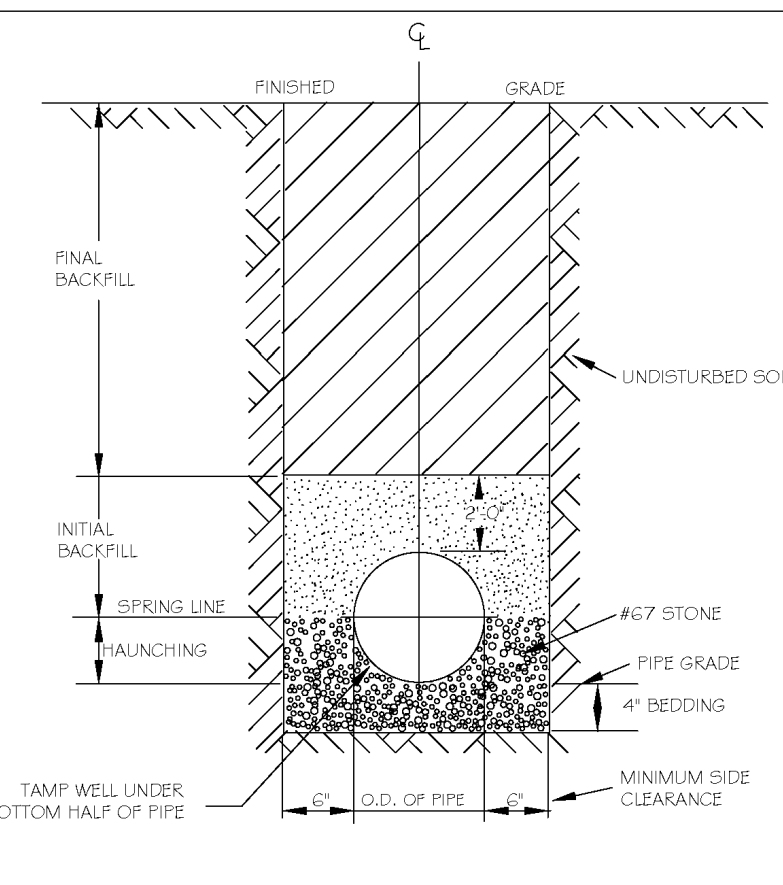






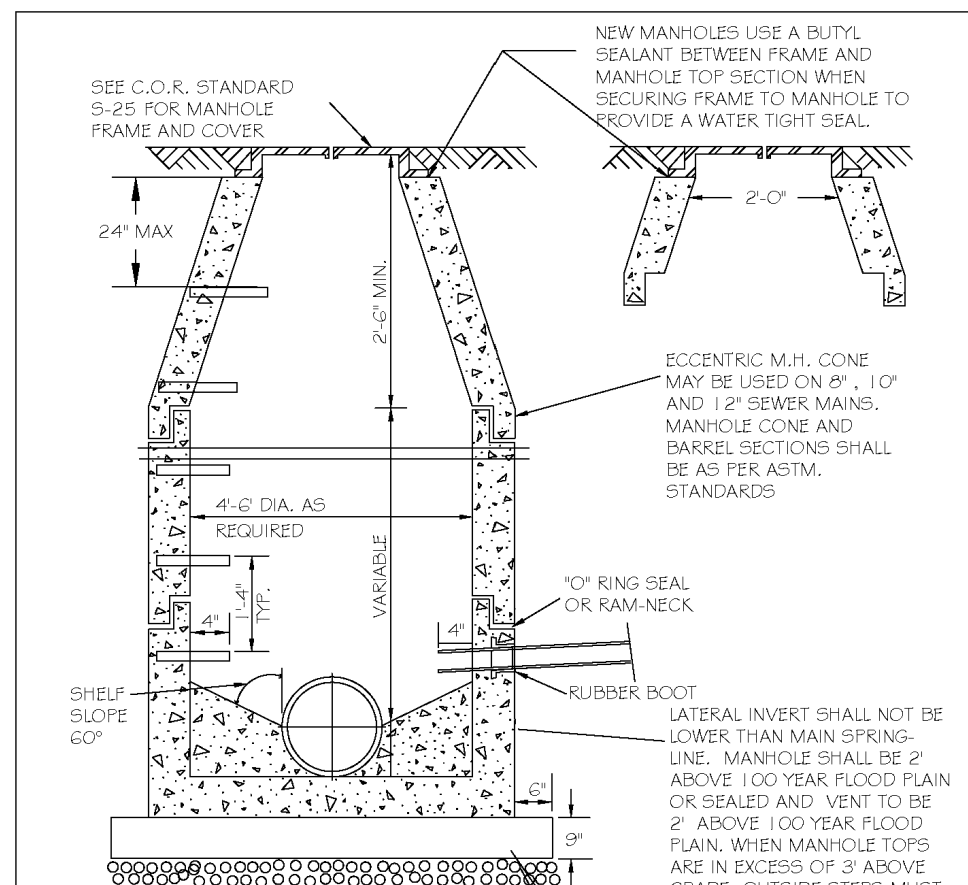
- NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
 2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
 3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
 4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.
 5. ACHIEVE 90% COMPACTION IN NON-TRAFFIC AREAS, AND 95% COMPACTION IN TRAFFIC AREAS.
 6. IF IN BASEMENT AT TOPSOIL, AND 1/2" CLEAN SELECT FILL MAY BE REQUIRED.
 7. NO BOULDERS 20" IN DIAMETER OR GREATER ALLOWED IN FINAL BACKFILL.

CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-4	1	3-3-99			
	REV	3-30-00			



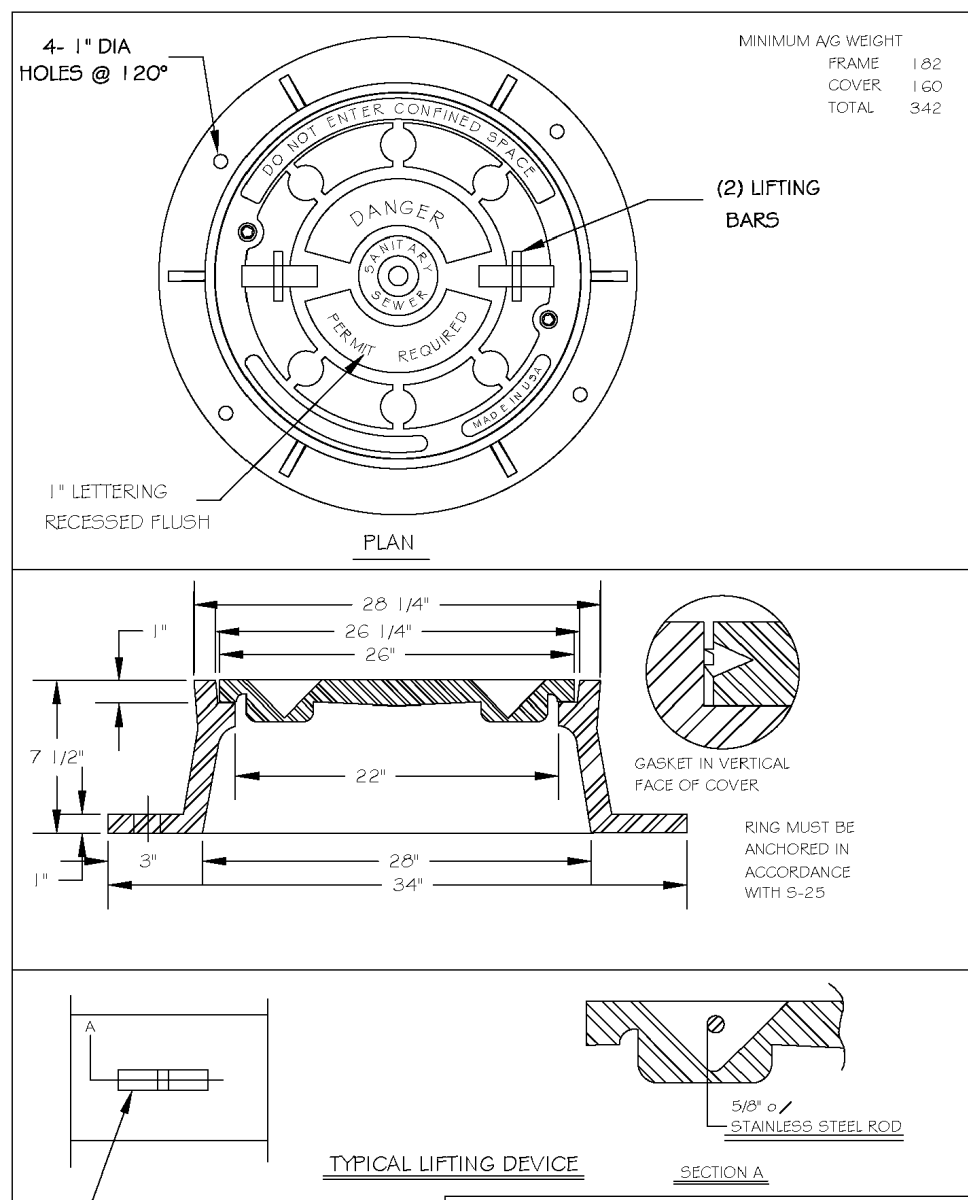
- NOTES:
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
 2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
 3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
 4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-5	1	3-3-99			
	REV	3-30-00			

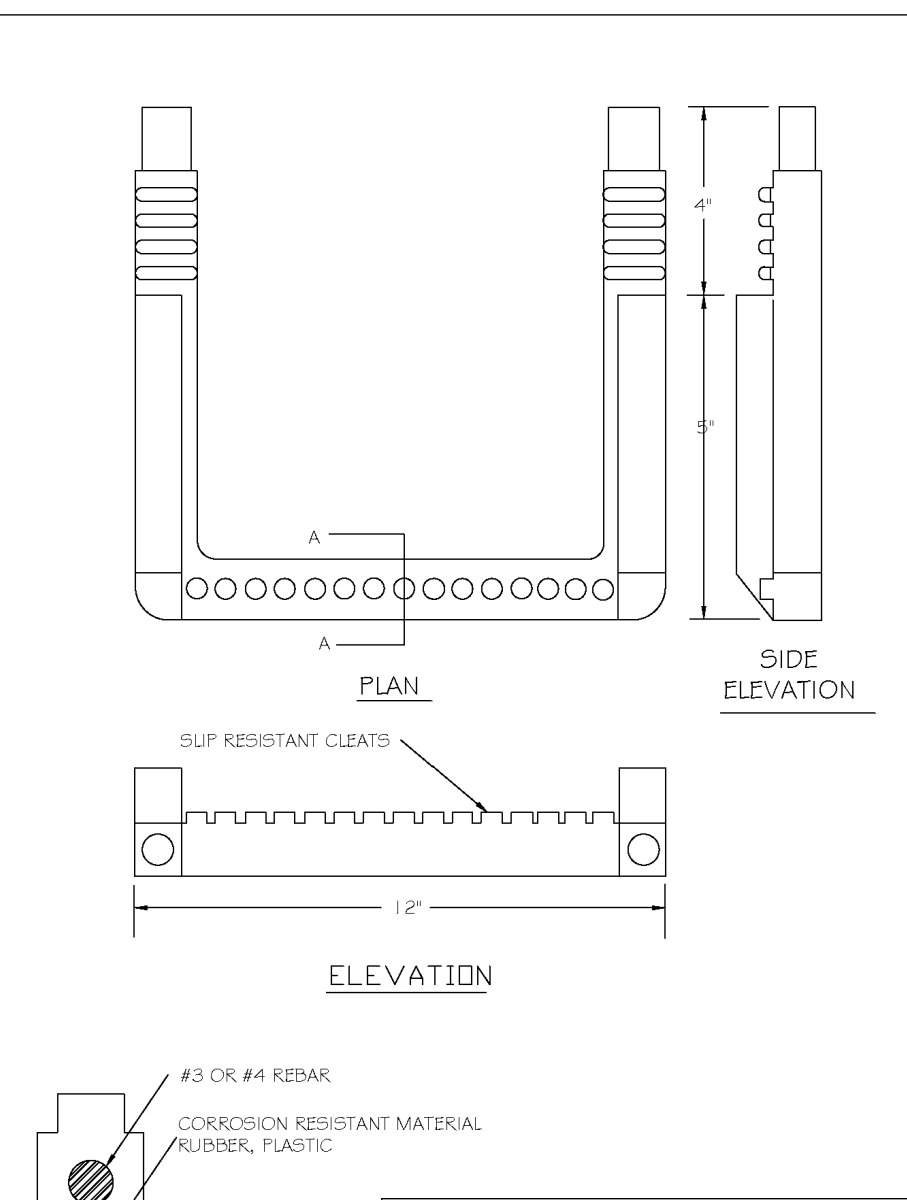


- NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
 2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
 3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
 4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

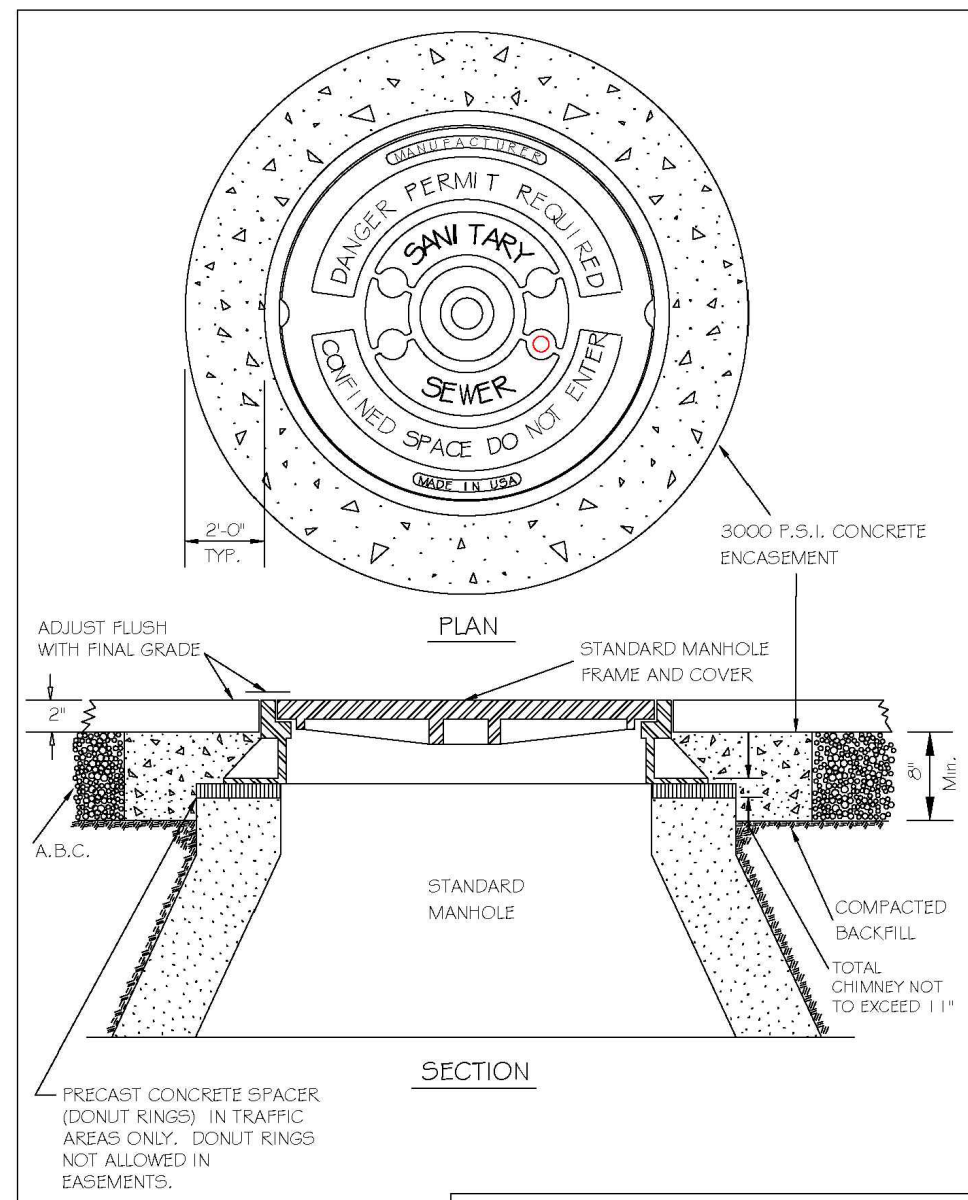
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD PRECAST SANITARY SEWER MANHOLE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-20	1	3-3-99			
	REV	3-30-00			



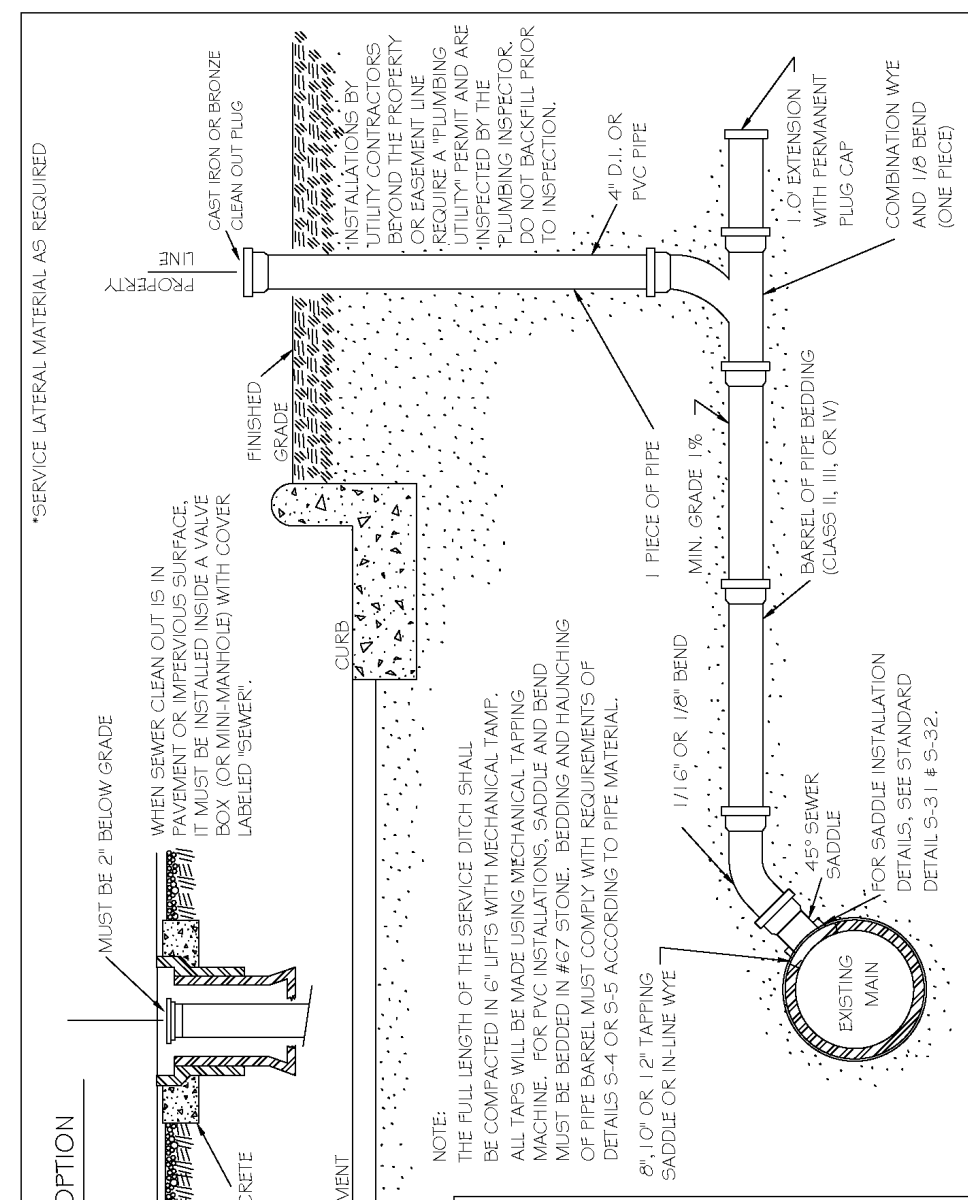
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
MANHOLE FRAME AND WATERTIGHT COVER					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-26	1	3-3-99			
	REV	3-30-00			



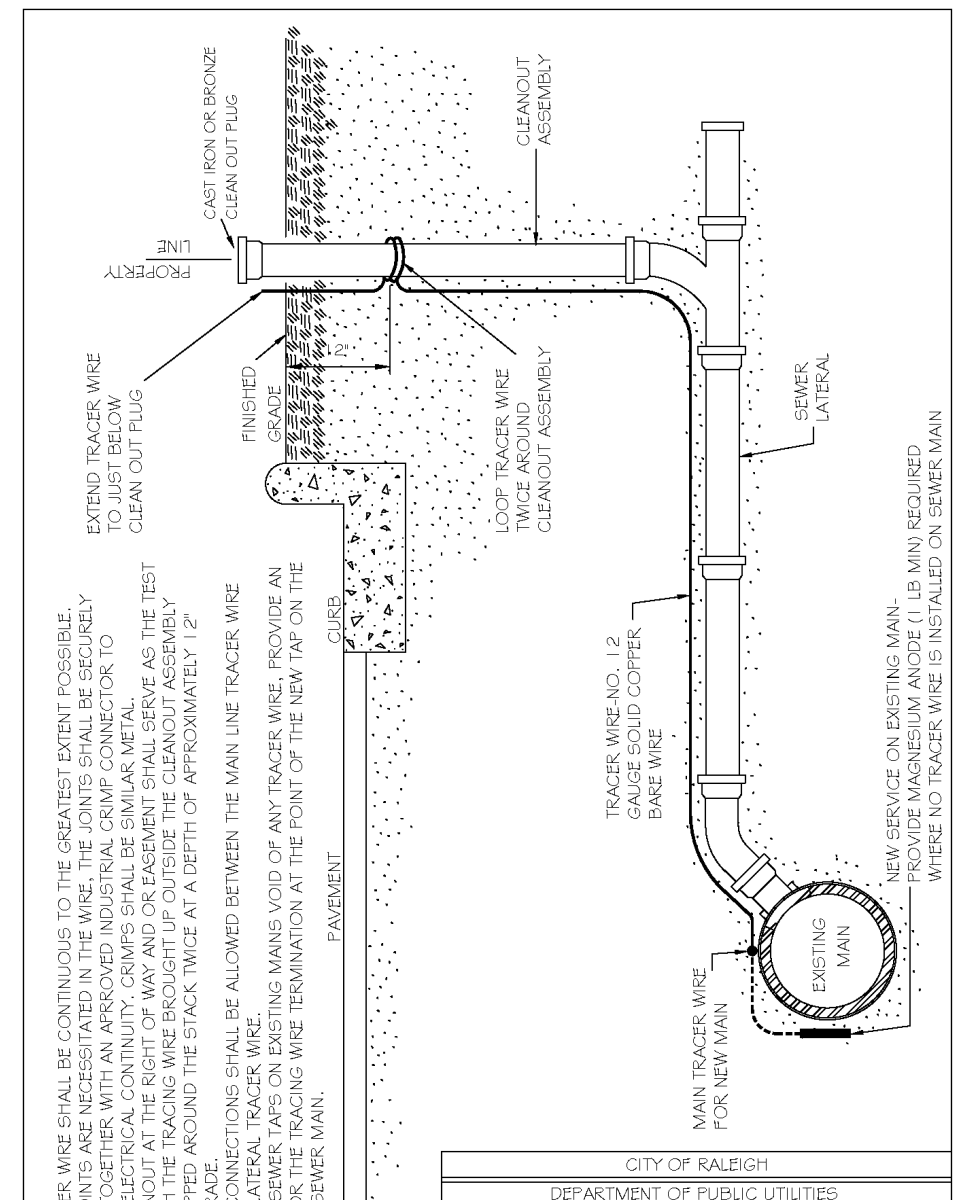
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD SLP RESISTANT MANHOLE STEP DETAIL					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-28	1	3-30-00			
	REV	3-30-00			



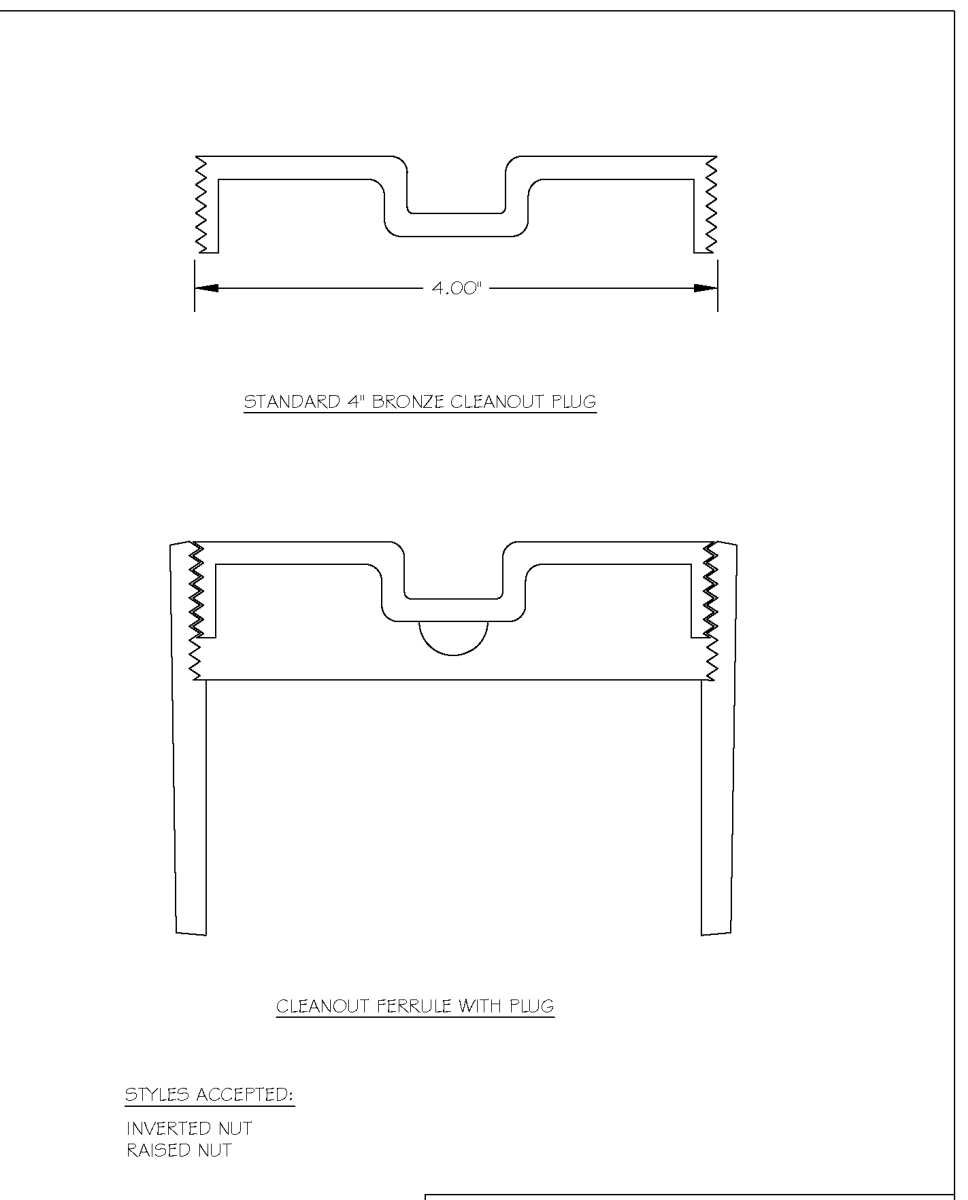
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE FRAME AND COVER DETAIL WITHIN PAVED SURFACES					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-29	1	3-3-99			
	REV	3-30-00			



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TYPICAL SANITARY SEWER LATERAL TRACER WIRE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-30	1	3-3-99			
	REV	3-30-00			



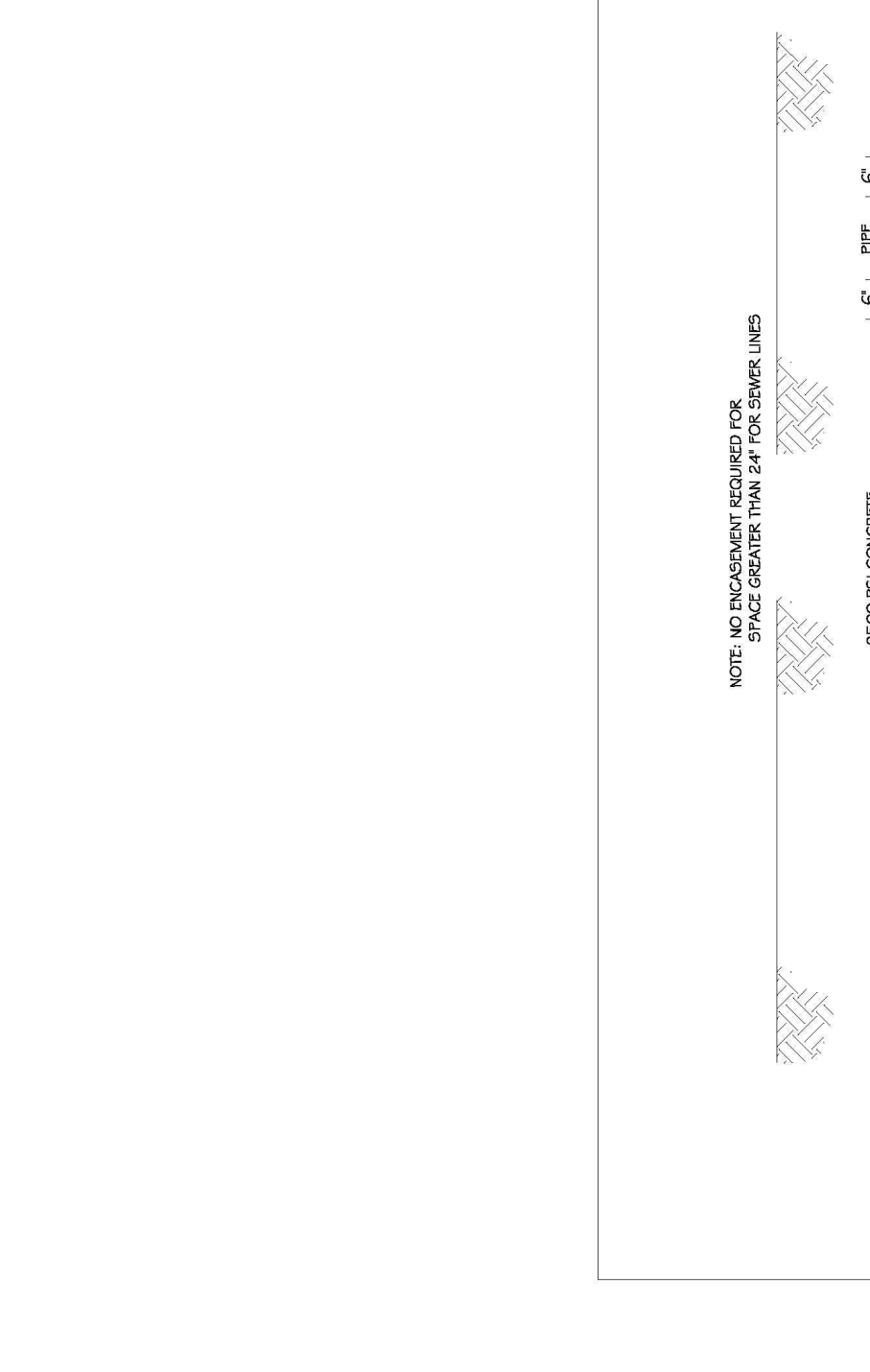
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TYPICAL SANITARY SEWER LATERAL TRACER WIRE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-30A	1	3-3-99			
	REV	3-30-00			



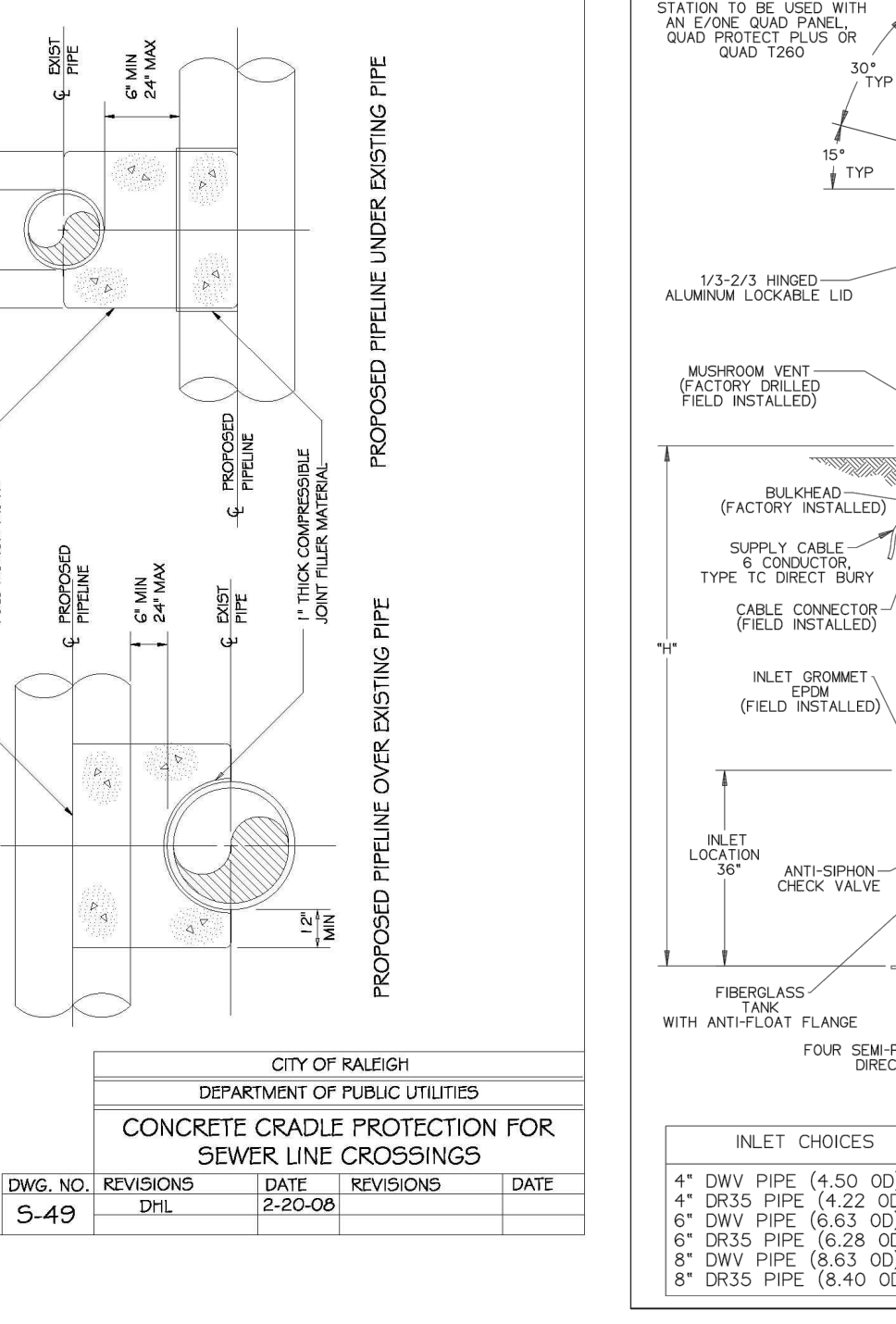
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
4" CLEANOUT PLUG					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-34	1	3-3-99			
	REV	3-30-00			



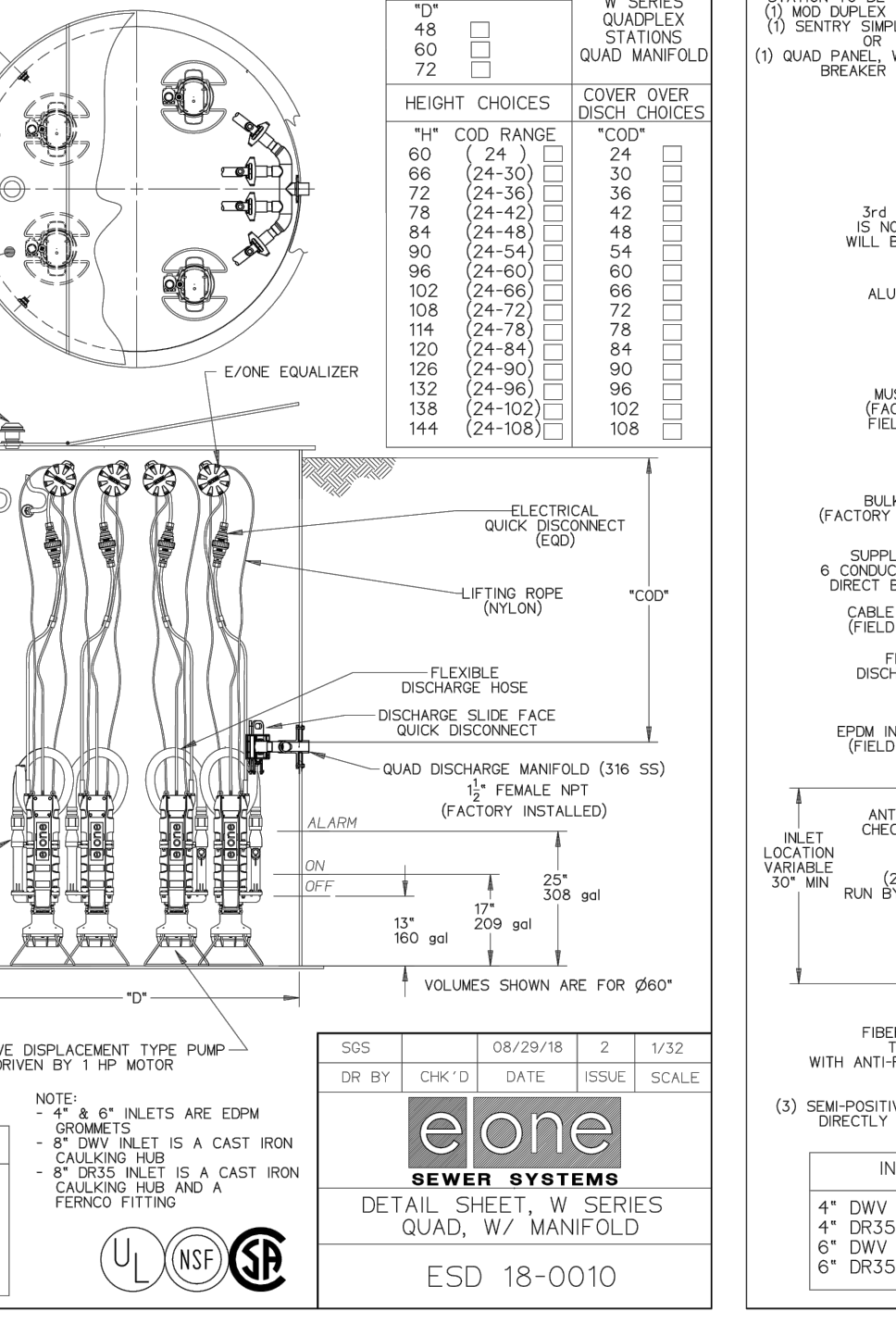
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
CONCRETE CRADLE PROTECTION FOR SEWER LINE CROSSINGS					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-49	1	2-20-08			
	REV	2-20-08			



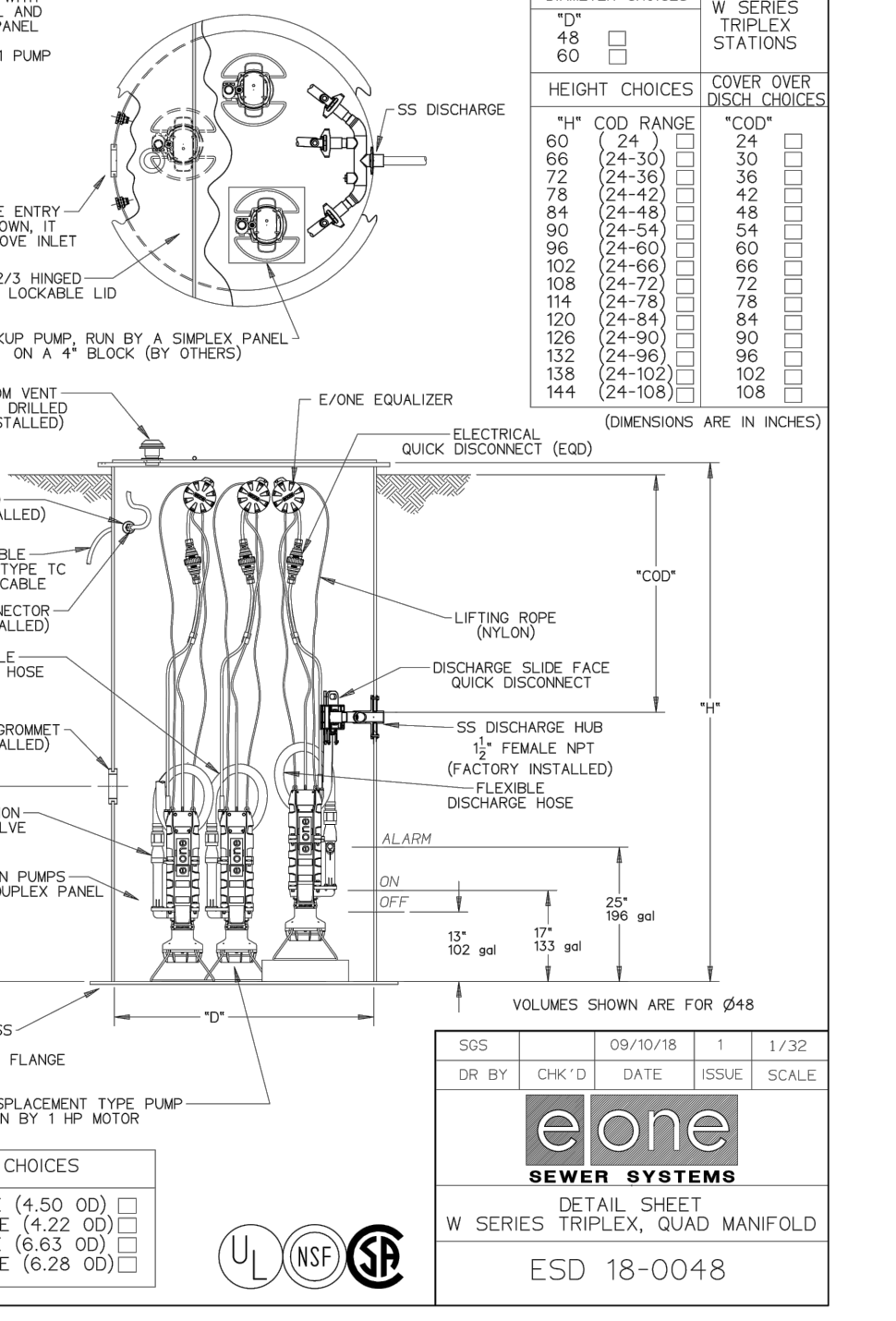
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE FRAME AND COVER DETAIL WITHIN PAVED SURFACES					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-29	1	3-3-99			
	REV	3-30-00			



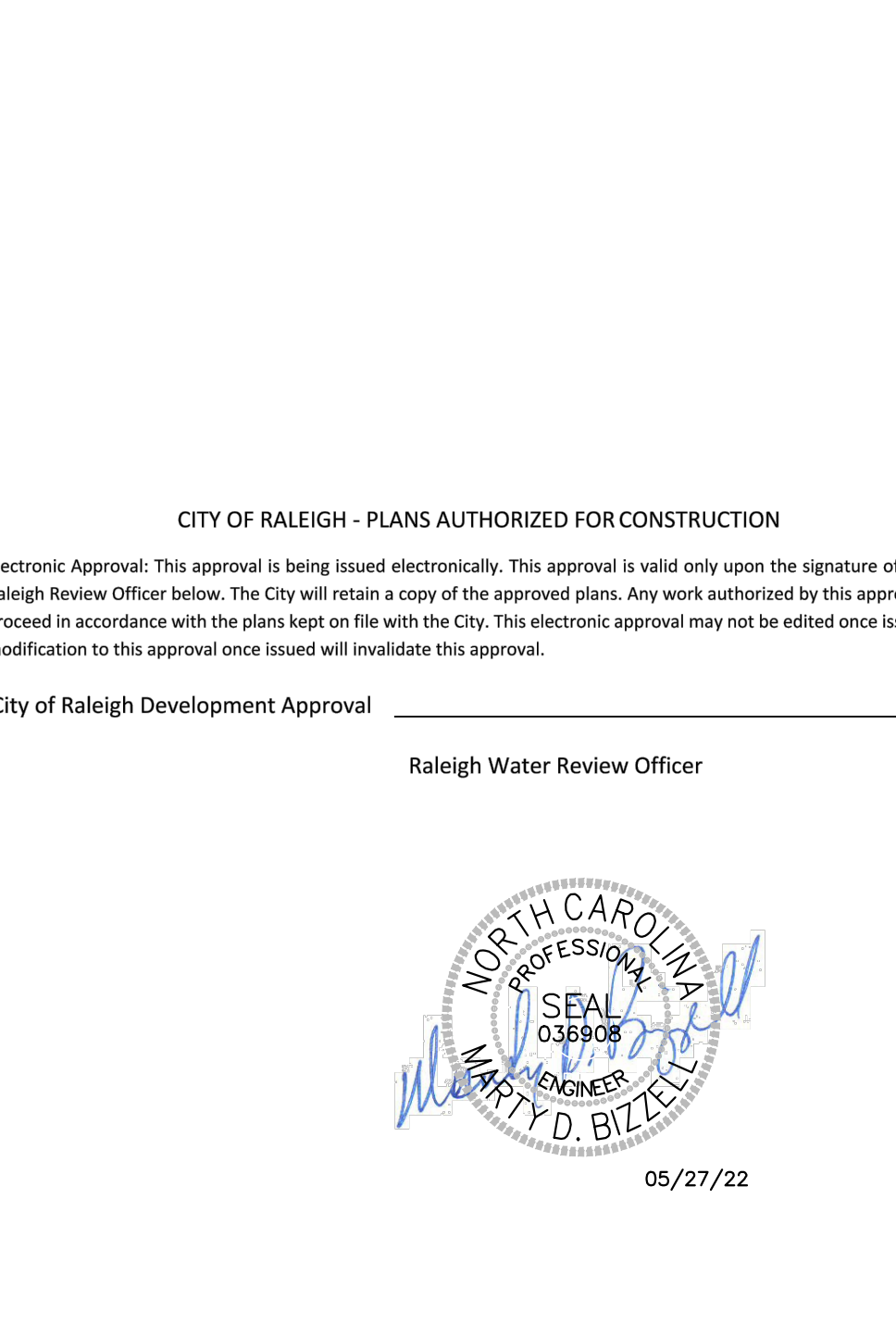
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE FRAME AND COVER DETAIL WITHIN PAVED SURFACES					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-29	1	3-3-99			
	REV	3-30-00			



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TYPICAL SANITARY SEWER LATERAL TRACER WIRE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-30	1	3-3-99			
	REV	3-30-00			



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TYPICAL SANITARY SEWER LATERAL TRACER WIRE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-30A	1	3-3-99			
	REV	3-30-00			



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
4" CLEANOUT PLUG					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-34	1	3-3-99			
	REV	3-30-00			

BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6810 CHASE HILL ROAD, SUITE 250, RALEIGH, NC 27607
TELEPHONE: (919) 851-1122 FAX: (919) 851-8888
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

PROGRESS	DATE	DESCRIPTION	BY
03-19-17			
JOB NO.			
SCALE:	NT.S.		
CHK BY:	MD.B		

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

SHEET C5.3

