

# GRANITE CREST SUBDIVISION PHASE IIIC (CD-21-01) ROLESVILLE, N.C.

MARCH 10, 2021  
MAY 27, 2021  
SEPTEMBER 16, 2021  
OCTOBER 28, 2021  
OCTOBER 29, 2021

OWNER / DEVELOPER:  
**HAL PERRY**  
**REAL ESTATE MARKETING & CONSULTING INC.**  
6200 FALLS OF NEUSE RD  
SUITE 102  
RALEIGH, NC 27609

SITE DATA	
OWNER / DEVELOPER:	REALSTATE MARKETING & CONSULTING INC. 6200 FALLS OF NEUSE RD; STE 102 RALEIGH, NC 27609
SITE ADDRESS:	SMOKE WILLOW WAY WILLOW TOWER COURT
WAKE COUNTY PIN #:	1759748924
ZONING DISTRICT:	R-2 SUD CLUSTER
SETBACKS:	FRONT=30' SIDE=12' REAR=25' CORNER=22'
TOTAL ACREAGE:	337,077 SF OR 7.7382 ACRES
EXISTING USE:	VACANT
PROPOSED USE:	SINGLE FAMILY HOMES
NO. OF LOTS:	19
LOT NUMBERS:	130-140 & 148-155
OPEN SPACE:	14,784 S.F. - 0.34 AC.
SMALLEST LOT:	11,300 S.F. - 0.26 AC.
PUBLIC WATER DISTRICT:	CITY OF RALEIGH
PUBLIC SEWER DISTRICT:	CITY OF RALEIGH
PROPOSED SEWER:	974 LF OF 8"
SEWER STUBS:	19
PROPOSED WATER:	264 LF OF 6" 162 LF OF 8" 628 LF OF 12"
WATER STUBS:	19
STREETS:	917 L.F.

### STORMWATER EXEMPTION NOTE

THE ORIGINAL PHASING PLAN FOR THE SUBJECT DEVELOPMENT WAS APPROVED **03/08/2005**. PER UDO 7.5.1.J(2) "ALL DEVELOPMENT AND REDEVELOPMENT PROJECTS FOR WHICH COMPLETE AND FULL APPLICATIONS WERE SUBMITTED AND ACCEPTED AS COMPLETE BY THE TOWN PRIOR TO THE EFFECTIVE DATE OF THIS ORDINANCE (08/03/2009) AND WHICH REMAIN VALID, UNEXPIRED, UNREVOKED AND NOT OTHERWISE TERMINATED AT THE TIME OF DEVELOPMENT OR REDEVELOPMENT SHALL BE EXEMPT FROM COMPLYING WITH ALL PROVISIONS OF THIS ORDINANCE DEALING WITH THE CONTROL AND/OR MANAGEMENT OF POST-CONSTRUCTION RUNOFF, BUT SHALL BE REQUIRED TO COMPLY WITH ALL OTHER APPLICABLE PROVISIONS.

A PHASED DEVELOPMENT PLAN SHALL BE DEEMED APPROVED PRIOR TO THE EFFECTIVE DATE OF THIS ORDINANCE IF IT HAS BEEN APPROVED BY ALL NECESSARY GOVERNMENT UNITS, IT REMAINS VALID, UNEXPIRED, UNREVOKED AND NOT OTHERWISE TERMINATED, AND IT SHOWS:

- (A) FOR THE INITIAL OR FIRST PHASE OF DEVELOPMENT: THE TYPE AND INTENSITY OF USE FOR A SPECIFIC PARCEL OR PARCELS. THIS SHALL INCLUDE, AT A MINIMUM, THE BOUNDARIES OF THE PROJECT AND A SUBDIVISION PLAN THAT HAS BEEN APPROVED.
- (B) FOR ANY SUBSEQUENT PHASE OF DEVELOPMENT: SUFFICIENT DETAIL SHOWING THAT IMPLEMENTATION OF THE REQUIREMENTS OF THIS ORDINANCE TO THAT PHASE OF DEVELOPMENT WOULD REQUIRE A MATERIAL CHANGE IN THAT PHASE OF THE PLAN."

### LOT DEVELOPMENT NOTE

LOT 132 SHALL NOT BE DEVELOPED UNTIL SUCH TIME THAT ACCESS TO A PUBLIC RIGHT-OF-WAY IS PROVIDED TO PIN 1759744853 (N/F MEYERS, JAMES & MEYERS, TERRI G) AND THE EXISTING 50' COR PUMP STATION ACCESS EASEMENT (BM2008 PG1173) CAN BE ABANDONED.

### IMPERVIOUS AREA SUMMARY

ROW	0.80 AC
19 LOTS (5,000 SF MIA PER LOT)	2.18 AC
TOTAL	2.98 AC

### SHEET INDEX

- CE-1 COVER SHEET
- CE-2 EXISTING CONDITIONS
- CE-3 SITE PLAN
- CE-4 UTILITY PLAN
- CE-5 GRADING & STORM DRAINAGE PLAN
- CE-6 SMOKE WILLOW WAY PLAN & PROFILE
- CE-7 GRANITE VIEW DR PLAN & PROFILE
- CE-8 WILLOW TOWER CT PLAN & PROFILE
- CE-9 SITE DETAILS
- CE-10 SEWER DETAILS
- CE-11 WATER DETAILS
- CE-12 SOIL & EROSION CONTROL PHASE 1 PLAN
- CE-13 SOIL & EROSION CONTROL PHASE 2 PLAN
- CE-14 SOIL & EROSION CONTROL DETAILS
- CE-15 NCG01 NOTES & DETAILS
- CE-16 NCG01 NOTES & DETAILS

### CIVIL ENGINEER:

**JAECO**

Consulting Engineers

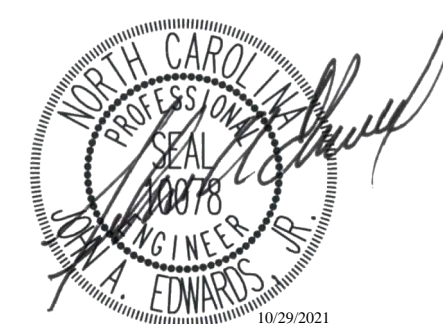
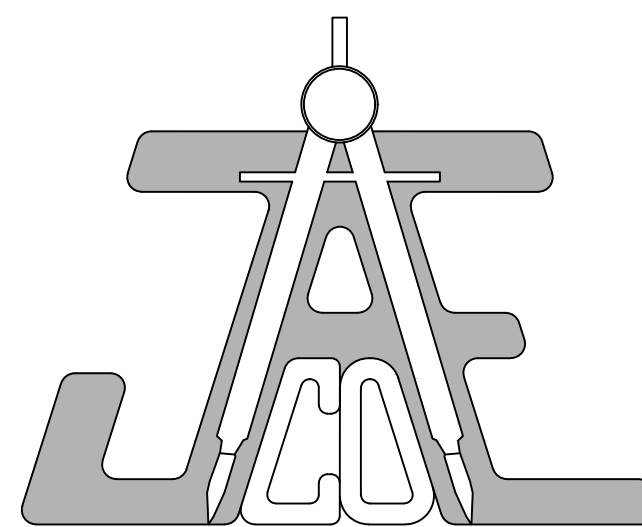
NC License F-0289

333 Wade Ave

Raleigh, N.C. 27605

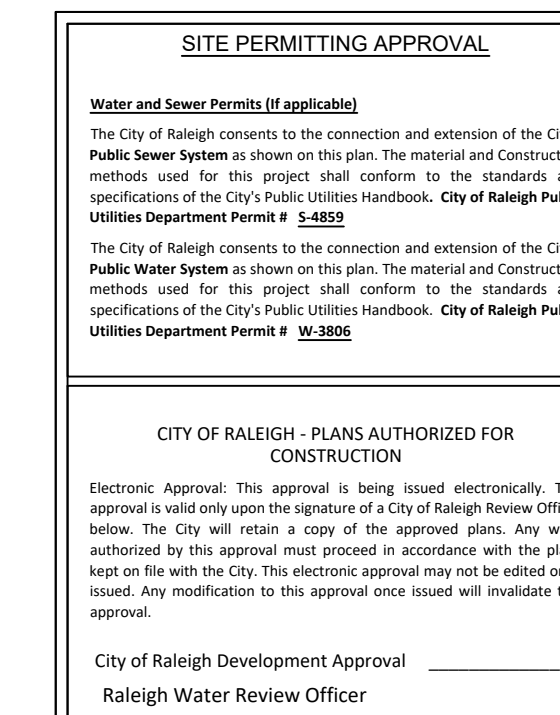
Phone (919) 828-4428

FAX (919) 828-4711

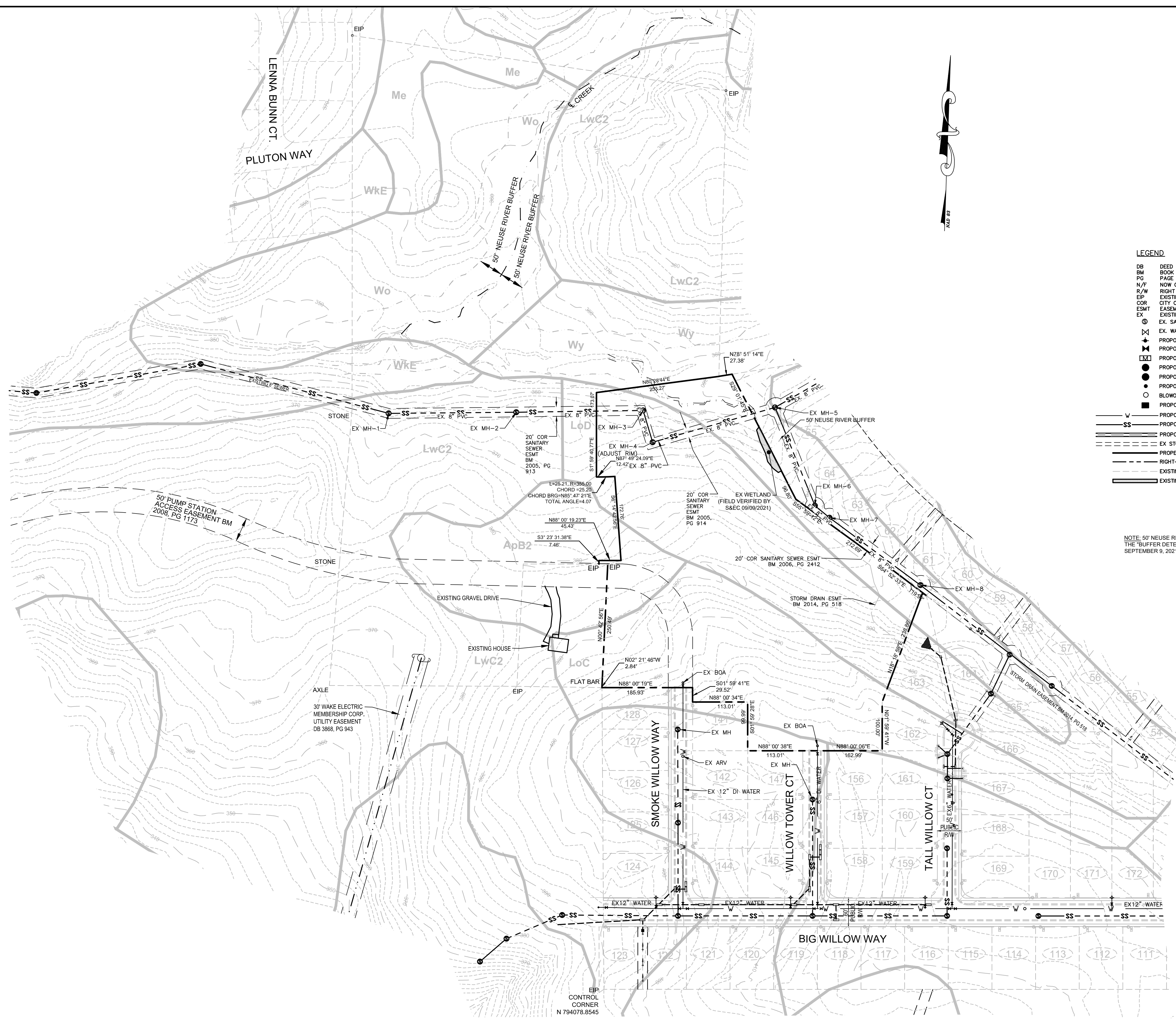


### ATTENTION CONTRACTORS:

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.

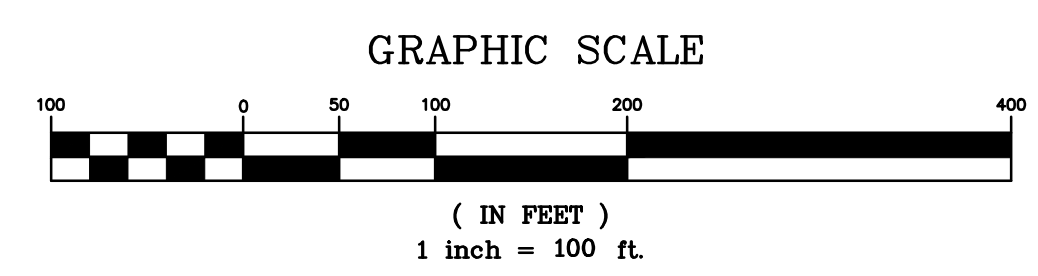


ALL UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.



- LEGEND**
- DB DEED BOOK
  - BM BOOK OF MAPS
  - PG PAGE
  - N/F NOW OR FORMERLY
  - R/W RIGHT OF WAY
  - EIP EXISTING IRON PIPE
  - COR CITY OF RALEIGH
  - ESMT EASEMENT
  - EX EXISTING
  - EX. SANITARY SEWER MANHOLE
  - ⊗ EX. WATER VALVE
  - ⊕ PROPOSED FIRE HYDRANT (FH)
  - ⊕ PROPOSED WATER METER (WM)
  - ⊕ PROPOSED MANHOLE (MH)
  - PROPOSED JUNCTION BOX (JB)
  - PROPOSED CLEANOUT (CO)
  - BLOWOFF ASSEMBLY (BOA)
  - PROPOSED CATCH BASIN (CB)
  - W — PROPOSED WATER LINE
  - SS — PROPOSED SANITARY SEWER
  - SS — PROPOSED STORM MAIN
  - — — EX STORM MAIN
  - — — PROPERTY LINE
  - — — RIGHT-OF-WAY
  - — — EXISTING LOT LINE
  - — — EXISTING WETLAND

NOTE: 50' NEUSE RIVER BUFFER SHOWN HEREIN IS BASED ON THE "BUFFER DETERMINATION LETTER" (NBRRO #21-286) ISSUED SEPTEMBER 9, 2021 AND FLAGGING OF THE SAME BY S&C.



REVISION	DATE	BY
PER TRC COMMENTS	05/27/21	TT
PER TRC COMMENTS	09/16/21	TT
PER TRC COMMENTS	10/29/21	TT
PER TRC COMMENTS	10/29/21	TT

**JOHN A. EDWARDS & COMPANY**  
 Consulting Engineers  
 NC License F-0289  
 333 Wade Ave., Raleigh, N.C. 27605  
 Phone: (919) 828-4428  
 Fax: (919) 828-4711  
 E-mail: info@jaeco.com

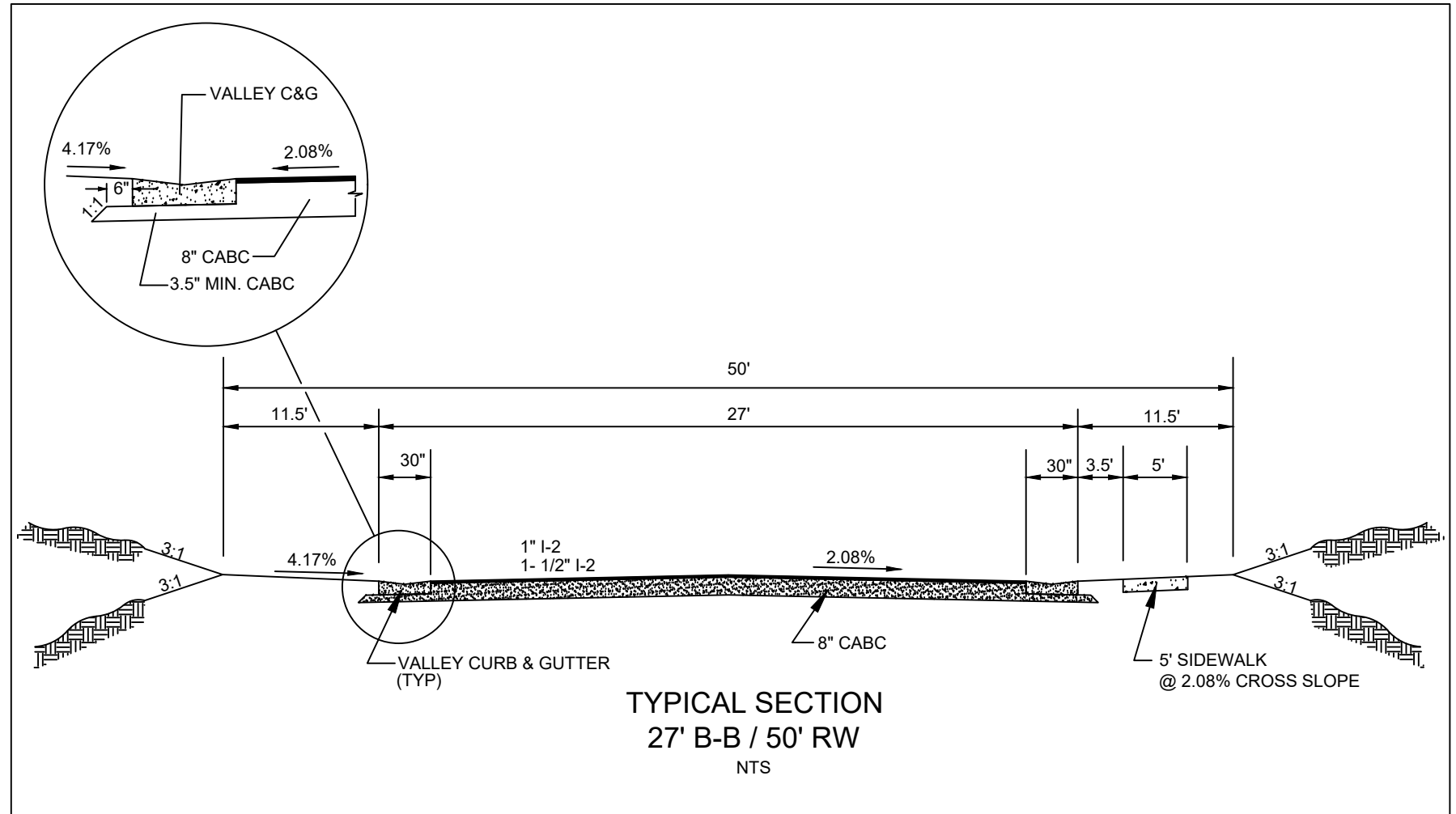
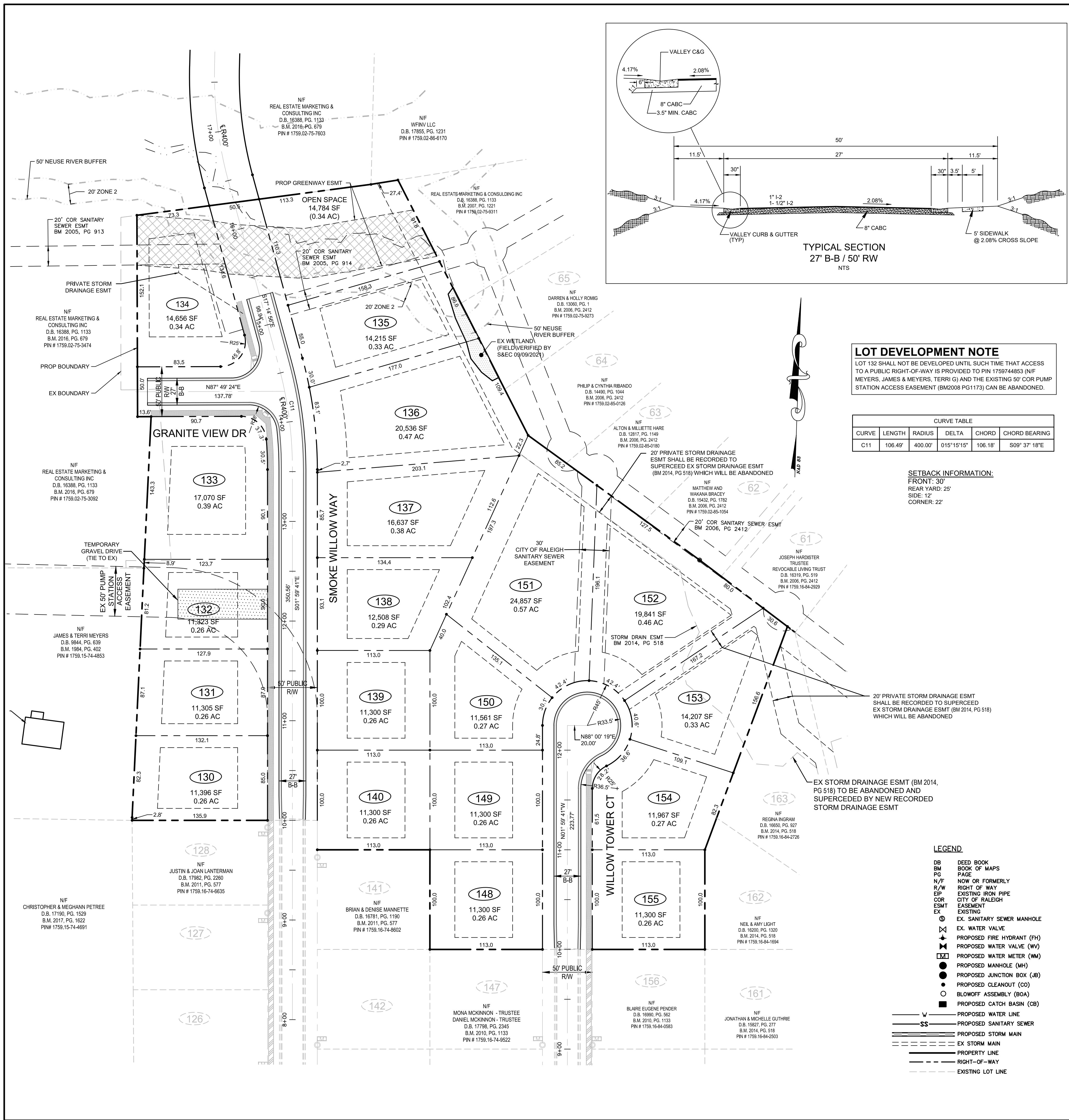
**GRANITE CREST SUBDIVISION**  
**PHASE IIIC**  
 NORTH CAROLINA  
 WAKE COUNTY  
 ROLESVILLE  
 EXISTING CONDITIONS

DATE	DRAWN BY	CHECKED BY
03-10-2021	FNM	JAE, JR.

SCALE: 1" = 100'  
 SHEET: CE-1

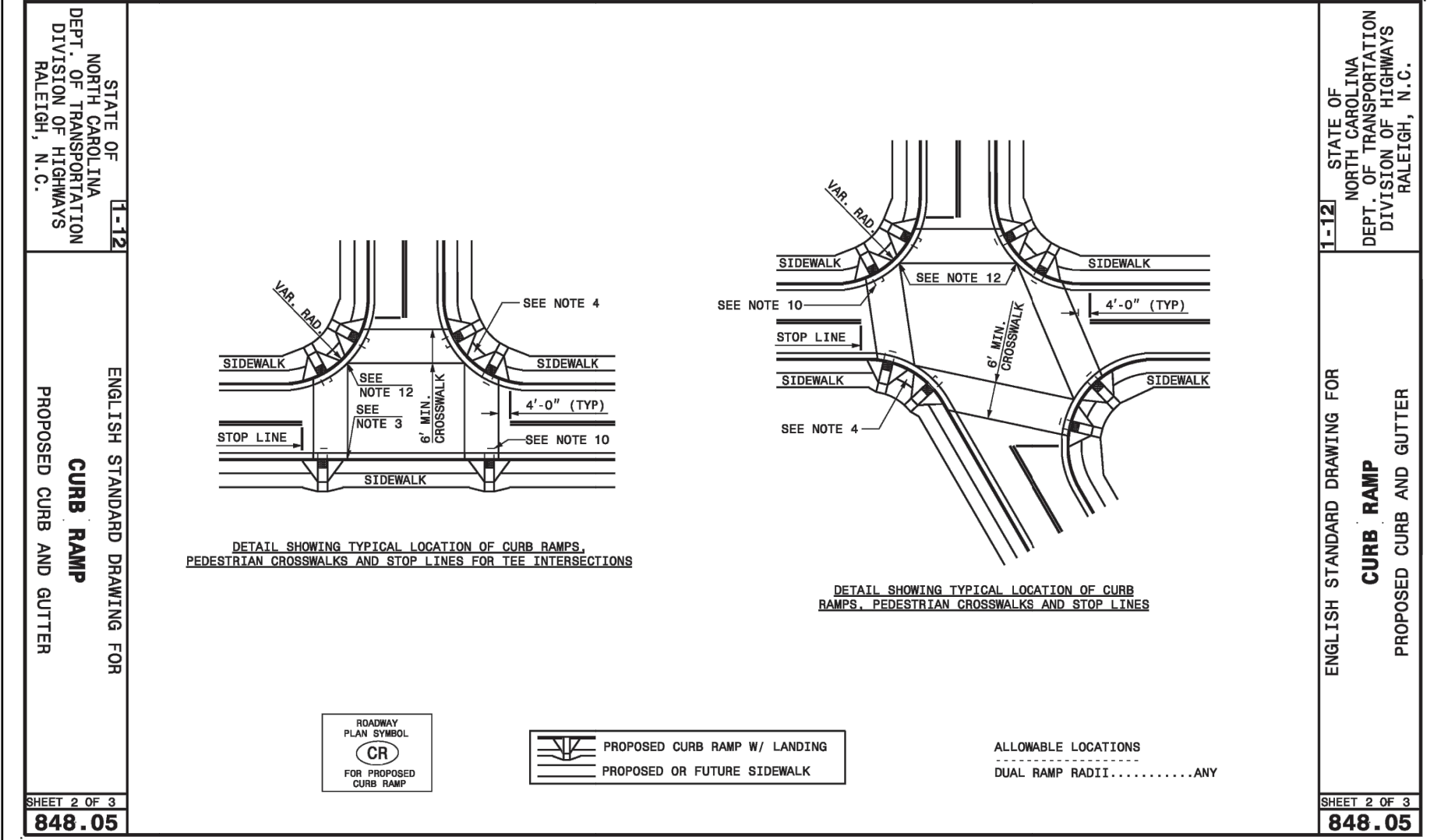
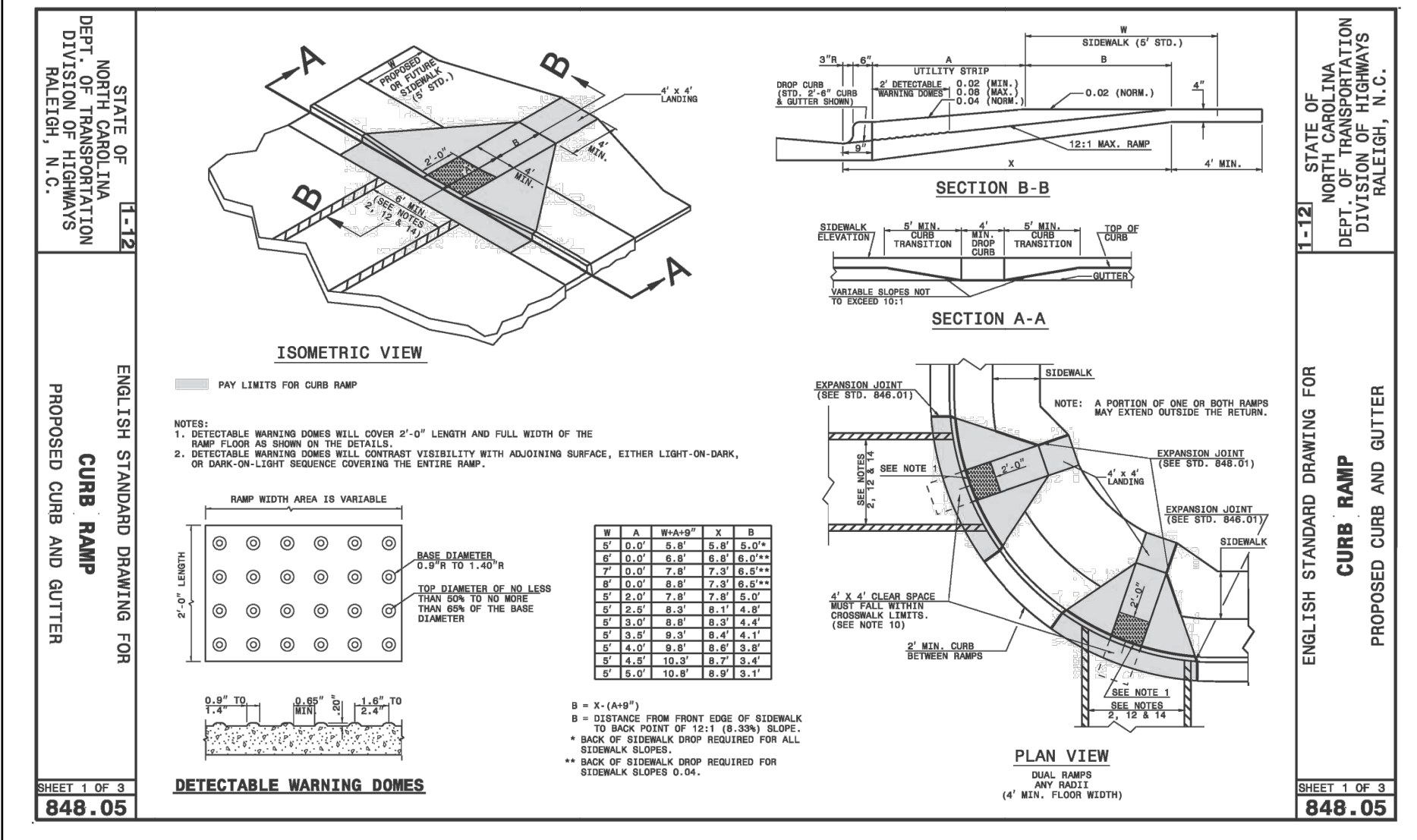


**LOT DEVELOPMENT NOTE**  
 LOT 132 SHALL NOT BE DEVELOPED UNTIL SUCH TIME THAT ACCESS TO A PUBLIC RIGHT-OF-WAY IS PROVIDED TO PIN 1759744853 (N/F MEYERS, JAMES & MEYERS, TERRI G) AND THE EXISTING 50' COR PUMP STATION ACCESS EASEMENT (BM2008 PG1173) CAN BE ABANDONED.

CURVE	LENGTH	RADIUS	DELTA	CHORD	CHORD BEARING
C11	106.49'	400.00'	015°15'15\"/>		

**SETBACK INFORMATION:**  
 FRONT: 30'  
 REAR YARD: 25'  
 SIDE: 12'  
 CORNER: 22'

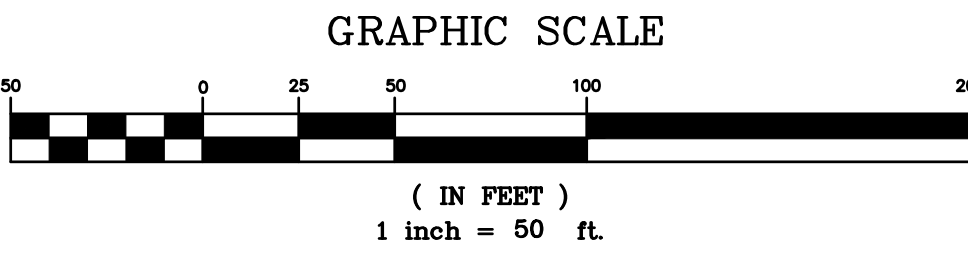
- LEGEND**
- DB DEED BOOK
  - BM BOOK OF MAPS
  - PG PAGE
  - N/F NOW OR FORMERLY
  - R/W RIGHT OF WAY
  - EP EXISTING IRON PIPE
  - COR CITY OF RALEIGH
  - ESMT EASEMENT
  - EX EXISTING
  - EX. SANITARY SEWER MANHOLE
  - ⊕ EX. WATER VALVE
  - ⊕ PROPOSED FIRE HYDRANT (FH)
  - ⊕ PROPOSED WATER VALVE (WV)
  - ⊕ PROPOSED WATER METER (WM)
  - PROPOSED MANHOLE (MH)
  - PROPOSED JUNCTION BOX (JB)
  - PROPOSED CLEANOUT (CO)
  - BLOWOFF ASSEMBLY (BOA)
  - PROPOSED CATCH BASIN (CB)
  - V — PROPOSED WATER LINE
  - SS — PROPOSED SANITARY SEWER
  - — PROPOSED STORM MAIN
  - — EX STORM MAIN
  - — PROPERTY LINE
  - — RIGHT-OF-WAY
  - — EXISTING LOT LINE



- NOTES:**
- CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
  - LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
  - COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4'x4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
  - SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
  - REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
  - TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
  - CONSTRUCT CURB RAMPS A MINIMUM OF 4' WIDE.
  - CONSTRUCT THE RUNNING SLOPE OF THE RAMP 0.33% MAXIMUM.
  - ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
  - CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
  - CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
  - CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4'x4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5'x5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
  - USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA. MEDIAN ISLANDS WILL BE A MINIMUM OF 6' WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGH THE ISLAND.
  - SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5'x5' LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
  - CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
  - PLACE A 1/2\"/>

**IMPERVIOUS AREA SUMMARY**

ROW	0.80 AC
19 LOTS (5,000 SF MIA PER LOT)	2.18 AC
<b>TOTAL</b>	<b>2.98 AC</b>



**STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**

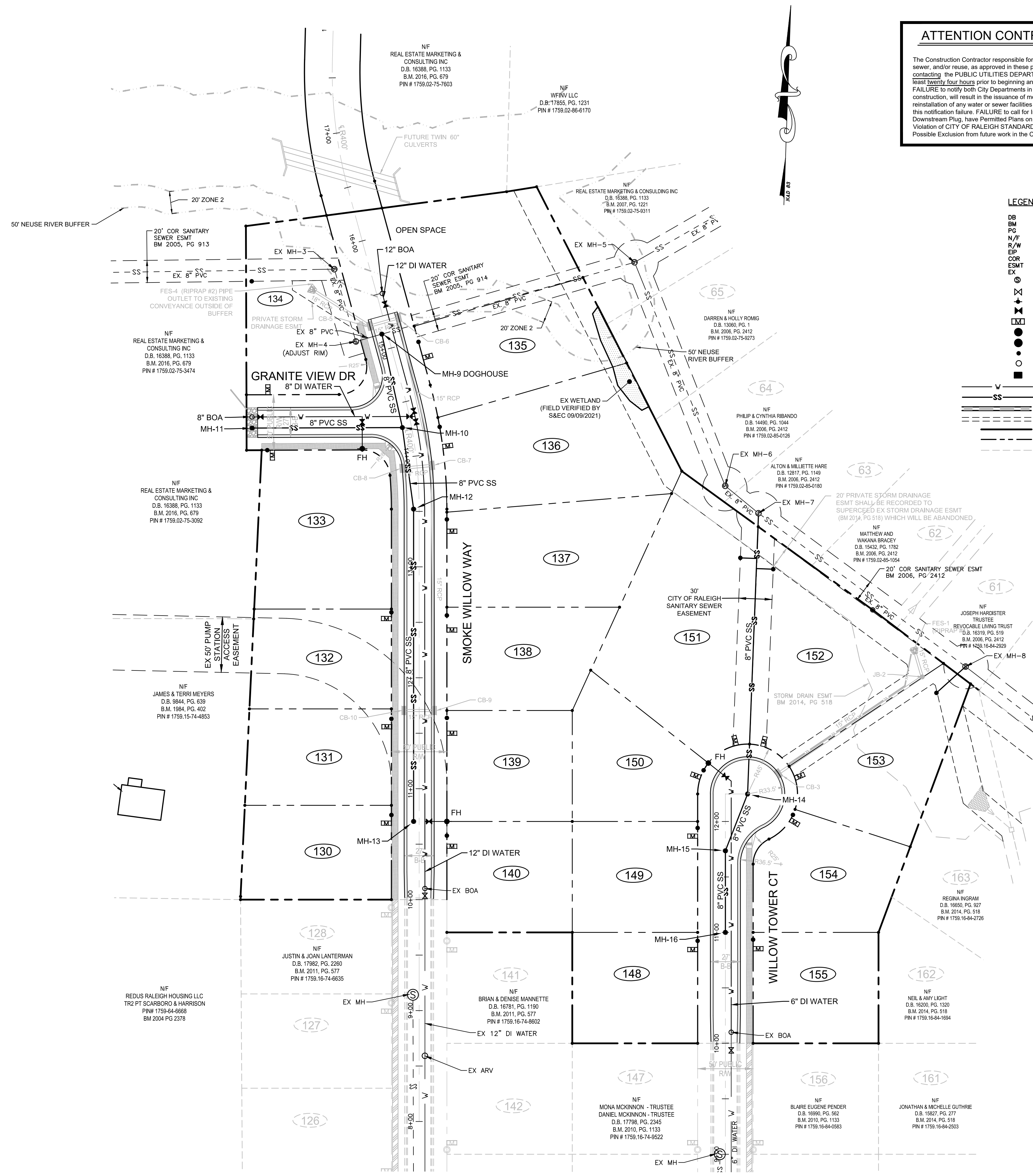
**JOHN A. EDWARDS & COMPANY**  
 Consulting Engineers  
 NC License F-0288  
 333 Wade Ave., Raleigh, N.C. 27605  
 Phone: (919) 828-4428  
 Fax: (919) 828-4711  
 E-mail: info@jaeco.com

**GRANITE CREST SUBDIVISION PHASE IIIIC**  
 WAKE COUNTY  
 NORTH CAROLINA  
 SITE PLAN

**REVISION**

DATE	REVISION
09/27/21	PER TRC COMMENTS
10/29/21	PER TRC COMMENTS
10/29/21	PER TRC COMMENTS

**DATE:** 03-10-2021  
**SCALE:** 1" = 50'  
**BY:** JAE, JR.  
**CHECKED BY:** JAE, JR.  
**FILE NO:**  
**SHEET:** CE-2



**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) 996-4545 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 reinstatement 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.

- LEGEND**
- DB DEED BOOK
  - BM BOOK OF MAPS
  - PG PAGE
  - N/F NOW OR FORMERLY
  - R/W RIGHT OF WAY
  - EP EXISTING IRON PIPE
  - COR CITY OF RALEIGH
  - ESMT EASEMENT
  - EX EXISTING
  - ⊙ EX. SANITARY SEWER MANHOLE
  - ⊕ EX. WATER VALVE
  - ⊕ PROPOSED FIRE HYDRANT (FH)
  - ⊕ PROPOSED WATER VALVE (WV)
  - ⊕ PROPOSED WATER METER (WM)
  - PROPOSED MANHOLE (MH)
  - PROPOSED JUNCTION BOX (JB)
  - PROPOSED CLEANOUT (CO)
  - BLOWOFF ASSEMBLY (BOA)
  - PROPOSED CATCH BASIN (CB)
  - PROPOSED WATER LINE
  - PROPOSED SANITARY SEWER
  - PROPOSED STORM MAIN
  - EX STORM MAIN
  - PROPERTY LINE
  - RIGHT-OF-WAY
  - EXISTING LOT LINE

- UTILITY NOTES:**
- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
  - UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
- UTILITY SEPARATION:**
- Water & Sewer Mains
    - Minimum lateral separation 10'
    - Separate ditches with 18" min. vertical distance
  - Water & storm drainage lines 18" min.
  - Sanitary sewer & storm drain lines 18" min.
  - Minimum cover over water mains shall be 3.0'

**PIPE MATERIAL:**

**WATER MAINS** - SHALL BE DUCTILE IRON WATER PIPE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**SEWER MAINS** - SHALL BE PVC OR DIP GRAVITY SANITARY SEWER PIPE, ASTM D-3034 SDR 35, TYPE PSM OR EQUAL AS SPECIFIED BY THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**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 # 5-4859

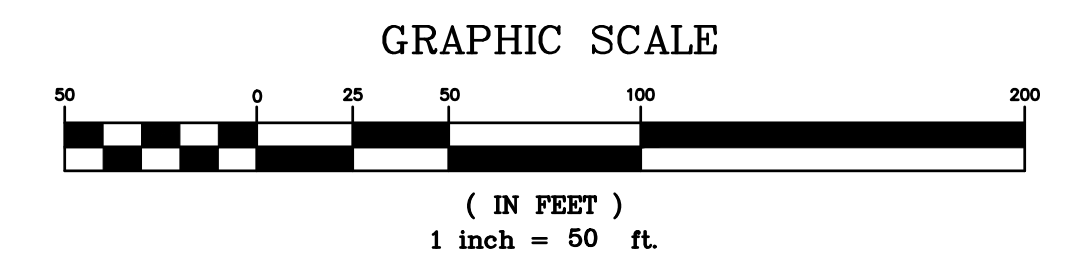
The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook, City of Raleigh Public Utilities Department Permit # 30-2855

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

- 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, ferrous 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 & sewer mains, the horizontal separation between utilities shall be 10'. If this separation cannot be maintained due to existing conditions, the variation allowed in 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 18" 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 15" 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
  - Developer shall provide 15 days advance notice to owner for any work required within an existing City of Raleigh Utility Easement traversing private property
  - 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 service with 5/8" meter located within private ROW. 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 service @ 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 Stephen Calverley at (919) 996-2334 or Stephen.calverley@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



DATE	02/27/21	REVISION	PER TRC COMMENTS
	09/16/21		PER TRC COMMENTS
	10/29/21		PER TRC COMMENTS
	10/29/21		PER TRC COMMENTS

BY: [Signature]

DATE: 03-10-2021

SCALE: 1" = 50'

FILE NO: [Blank]

SHEET: CE-3

PROJECT: GRANITE CREST SUBDIVISION PHASE IIIC

LOCATION: NORTH CAROLINA, WAKE COUNTY, ROLESVILLE

UTILITY PLAN

DESIGNER: JOHN A. EDWARDS & COMPANY

CONSULTING ENGINEERS

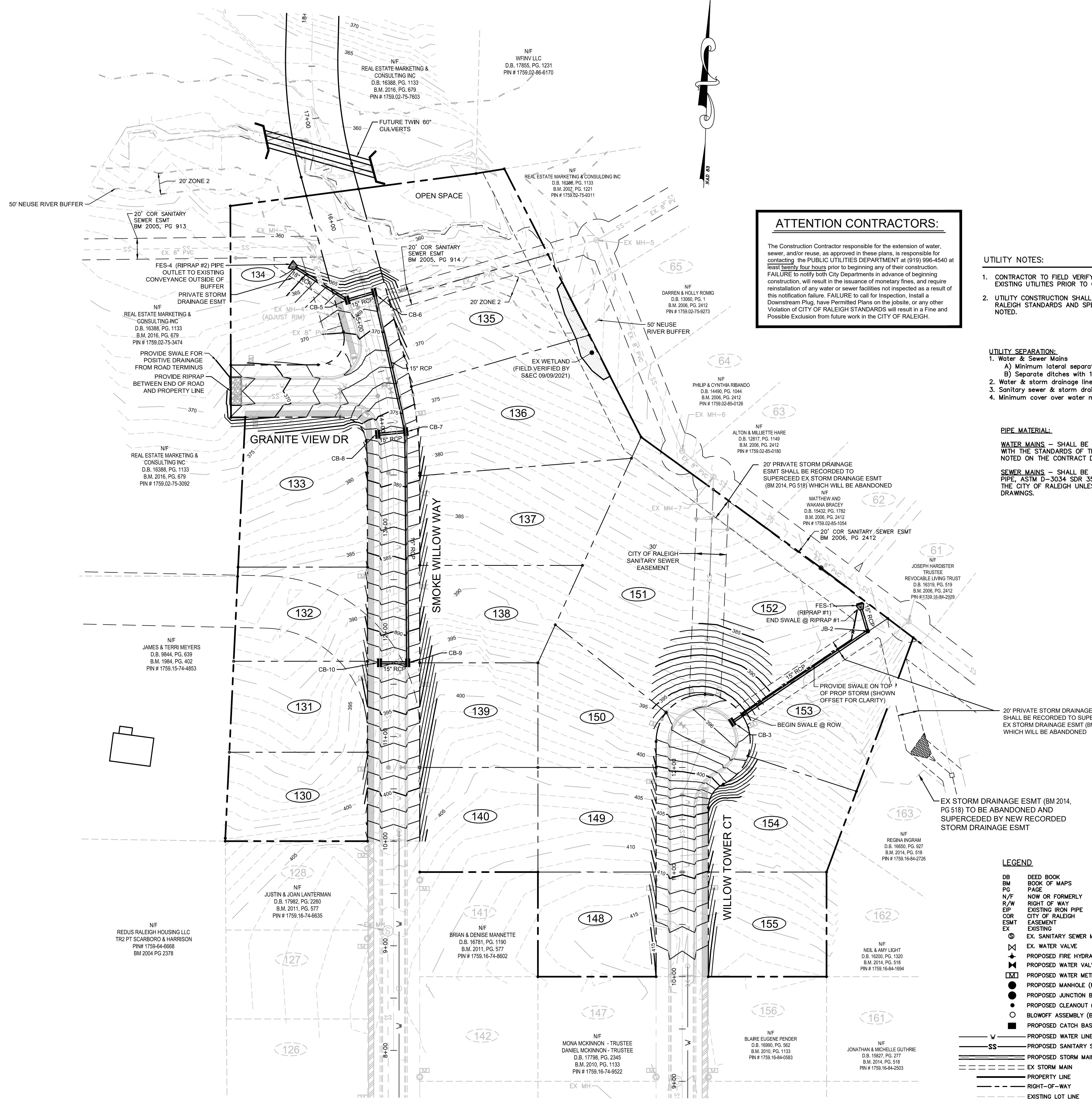
NC License F-02689

333 Wade Ave., Raleigh, N.C. 27605

Phone: (919) 828-4428

Fax: (919) 828-4711

E-mail: info@jaeco.com



### STRUCTURE TABLE

STRUCTURE ID	TYPE	RIM	INVERT IN (U/S STR.)	INVERT OUT (D/S STR.)	PIPE OUT
CB-3	CB (DOUBLE)	395.55		386.13 (JB-2)	156.00LF 15" RCP @ 1.00%
CB-5	CB	368.49	363.35 (CB-6)	363.10 (FES-4)	58.03LF 18" RCP @ 1.03%
CB-6	CB	368.48	363.75 (CB-7)	363.65 (CB-5)	27.01LF 15" RCP @ 1.11%
CB-7	CB	376.49	370.50 (CB-9) 371.50 (CB-8)	370.39 (CB-6)	136.43LF 15" RCP @ 4.87%
CB-8	CB	376.49		372.00LF 15" RCP @ 2.96%	
CB-9	CB	392.00	387.23 (CB-10)	387.00 (CB-7)	220.94LF 15" RCP @ 7.47%
CB-10	CB	392.00		387.50 (CB-9)	27.00LF 15" RCP @ 1.00%
FES-1	FES	385.68	384.16 (JB-2)		
FES-4	FES	364.79	362.50 (CB-5)		
JB-2	MH	387.03	384.58 (CB-3)	384.38 (FES-1)	21.57LF 15" RCP @ 1.00%

**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 **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.

- UTILITY NOTES:**
- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
  - UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.

### IMPERVIOUS AREA SUMMARY

ROW	0.80 AC
19 LOTS (5,000 SF MIA PER LOT)	2.18 AC
<b>TOTAL</b>	<b>2.98 AC</b>

- UTILITY SEPARATION:**
- Water & Sewer Mains
    - Minimum lateral separation 10'
    - Separate ditches with 18" min. vertical distance
  - Water & storm drainage lines 18" min.
  - Sanitary sewer & storm drain lines 18" min.
  - Minimum cover over water mains shall be 3.0'

**PIPE MATERIAL:**

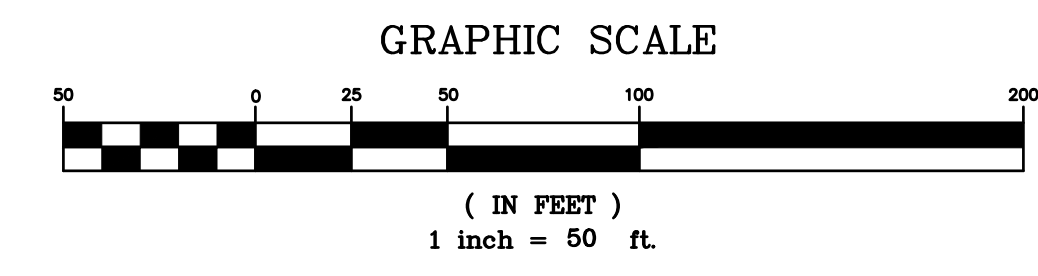
**WATER MAINS** - SHALL BE DUCTILE IRON WATER PIPE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**SEWER MAINS** - SHALL BE PVC OR DIP GRAVITY SANITARY SEWER PIPE, ASTM D-3034 SDR 35, TYPE PSM OR EQUAL AS SPECIFIED BY THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

### RIPRAP SCHEDULE

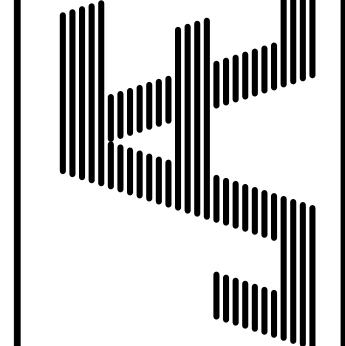
	W <sub>min</sub> [FT]	W <sub>max</sub> [FT]	L <sub>s</sub> [FT]	d <sub>50</sub> [IN]	d <sub>max</sub> [IN]	THICKNESS [IN]
#1	4	7.5	5	3	4.5	12
#2	4.5	8.5	6	3	5	12

- LEGEND**
- DB DEED BOOK
  - BM BOOK OF MAPS
  - PG PAGE
  - N/F NOW OR FORMERLY
  - R/W RIGHT OF WAY
  - EX EXISTING IRON PIPE
  - COR CITY OF RALEIGH
  - ESMT EASEMENT
  - EX EXISTING
  - EX. SANITARY SEWER MANHOLE
  - ⊕ EX. WATER VALVE
  - ⬇ PROPOSED FIRE HYDRANT (FH)
  - ⬆ PROPOSED WATER VALVE (WV)
  - ⊕ PROPOSED WATER METER (WM)
  - PROPOSED MANHOLE (MH)
  - PROPOSED JUNCTION BOX (JB)
  - PROPOSED CLEANOUT (CO)
  - BLOWOFF ASSEMBLY (BOA)
  - PROPOSED CATCH BASIN (CB)
  - V — PROPOSED WATER LINE
  - SS — PROPOSED SANITARY SEWER
  - — PROPOSED STORM MAIN
  - — EX. STORM MAIN
  - — PROPERTY LINE
  - — RIGHT-OF-WAY
  - — EXISTING LOT LINE



REVISION	DATE	BY	TT
PER TRC COMMENTS	05/27/21		
PER TRC COMMENTS	09/16/21		
PER TRC COMMENTS	10/28/21		
PER TRC COMMENTS	10/29/21		

**JOHN A. EDWARDS & COMPANY**  
 Consulting Engineers  
 NC License F-02689  
 333 Wade Ave., Raleigh, N.C. 27605  
 Phone: (919) 828-4428  
 Fax: (919) 828-4711  
 E-mail: info@jaeco.com

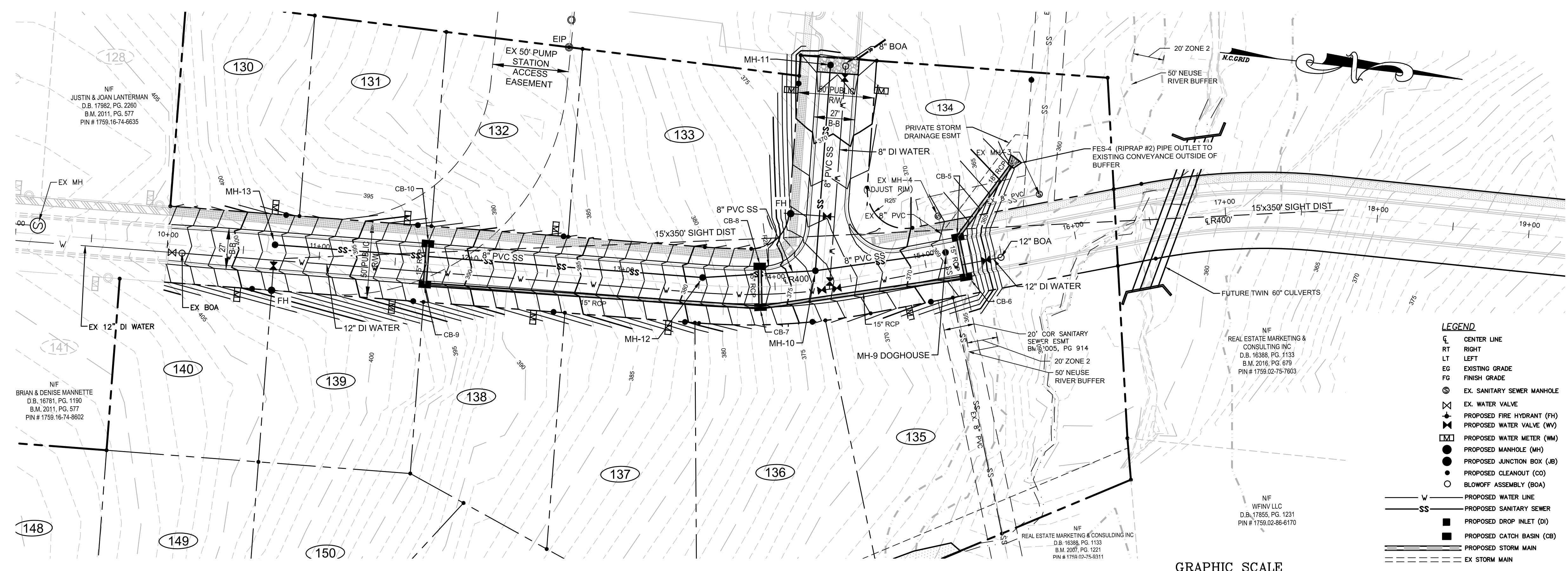


**GRANITE CREST SUBDIVISION  
 PHASE IIIIC  
 GRADING & STORMDRAINAGE PLAN**

NORTH CAROLINA  
 WAKE COUNTY  
 ROLESVILLE

DATE: 03-10-2021  
 DRAWN BY: JAE  
 FILE NO: CE-4

SHEET: **CE-4**



- UTILITY NOTES:**
- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
  - UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
- UTILITY SEPARATION:**
- Water & Sewer Mains
    - Minimum lateral separation 10'
    - Separate ditches with 18" min. vertical distance
  - Water & storm drainage lines 18" min.
  - Sanitary sewer & storm drain lines 18" min.
  - Minimum cover over water mains shall be 3.0'

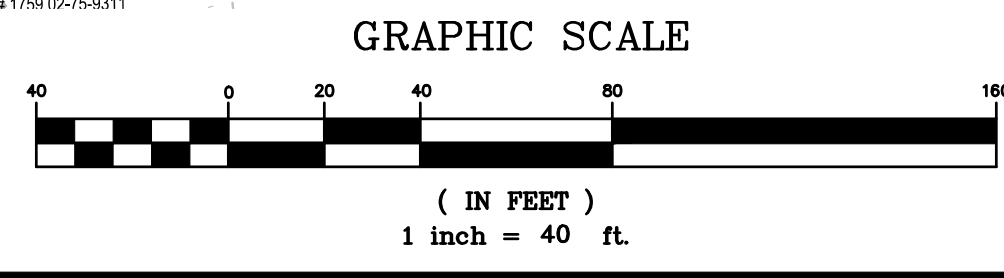
**PIPE MATERIAL:**

**WATER MAINS** - SHALL BE DUCTILE IRON WATER PIPE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**SEWER MAINS** - SHALL BE PVC OR DIP GRADY SANITARY SEWER PIPE, ASTM D-3034 SDR 35, TYPE PSM OR EQUAL AS SPECIFIED BY THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

ALL MATERIALS AND CONSTRUCTION STANDARDS TO BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.

- LEGEND**
- CL CENTER LINE
  - RT RIGHT
  - LT LEFT
  - EG EXISTING GRADE
  - FG FINISH GRADE
  - EX SANITARY SEWER MANHOLE
  - EX WATER VALVE
  - PROPOSED FIRE HYDRANT (FH)
  - PROPOSED WATER VALVE (WV)
  - PROPOSED WATER METER (WM)
  - PROPOSED MANHOLE (MH)
  - PROPOSED JUNCTION BOX (JB)
  - PROPOSED CLEANOUT (CO)
  - BLOWOFF ASSEMBLY (BOA)
  - PROPOSED WATER LINE
  - PROPOSED SANITARY SEWER
  - PROPOSED DROP INLET (DI)
  - PROPOSED CATCH BASIN (CB)
  - PROPOSED STORM MAIN
  - EX STORM MAIN



SMOKE WILLOW WAY  
27' B-B / 50' RW

**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 # 24822.

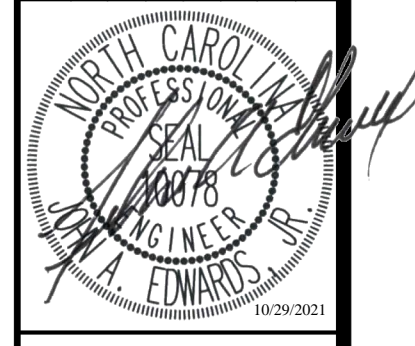
The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook, City of Raleigh Public Utilities Department Permit # 24822.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

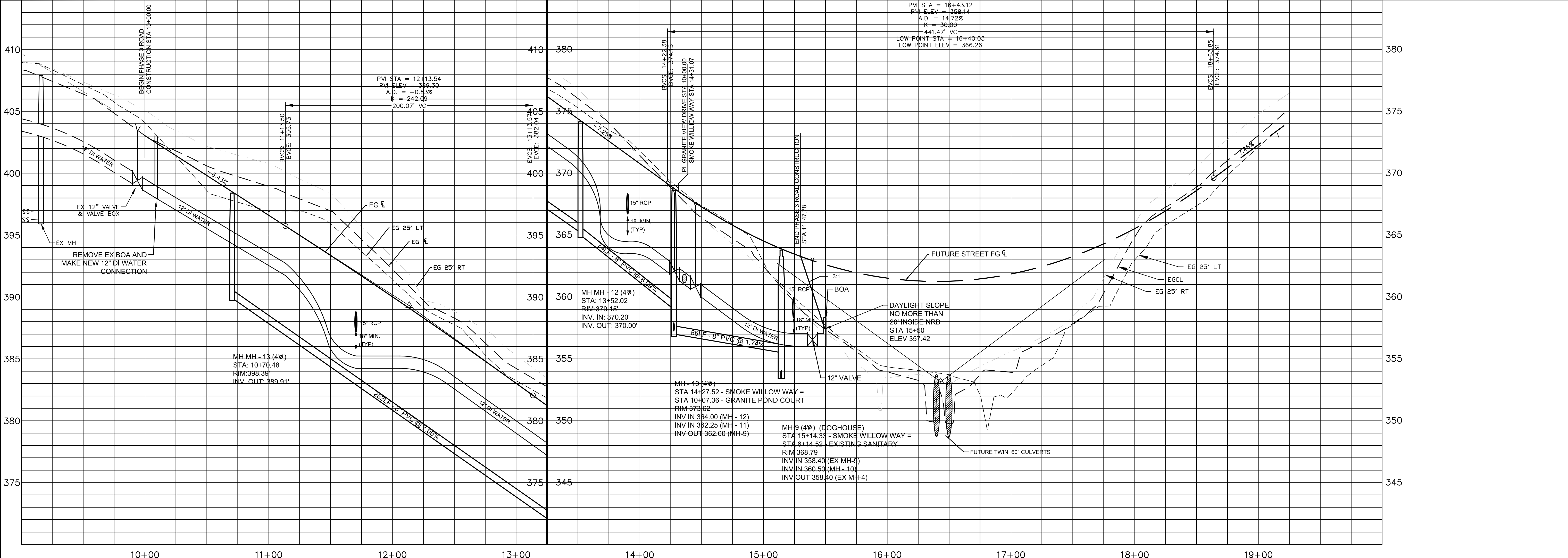
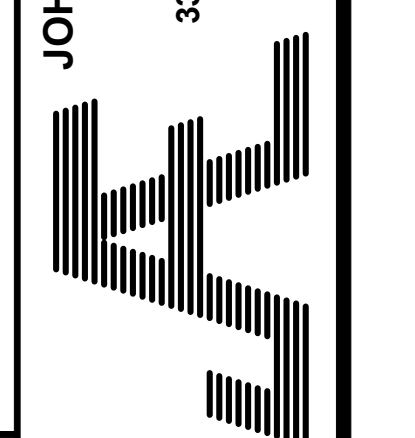
Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with 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

BY	DATE	REVISION
TT	05/27/21	PER TRC COMMENTS
TT	09/16/21	PER TRC COMMENTS
TT	10/28/21	PER TRC COMMENTS
TT	10/29/21	PER TRC COMMENTS



**JOHN A. EDWARDS & COMPANY**  
Consulting Engineers  
NC License F-0289  
333 Wade Ave., Raleigh, N.C. 27605  
Phone: (919) 828-4428  
Fax: (919) 828-4771  
E-mail: info@jaeco.com



**GRANITE CREST SUBDIVISION**  
PHASE III C  
ROLESVILLE WAKE COUNTY NORTH CAROLINA

SMOKE WILLOW WAY PLAN & PROFILE

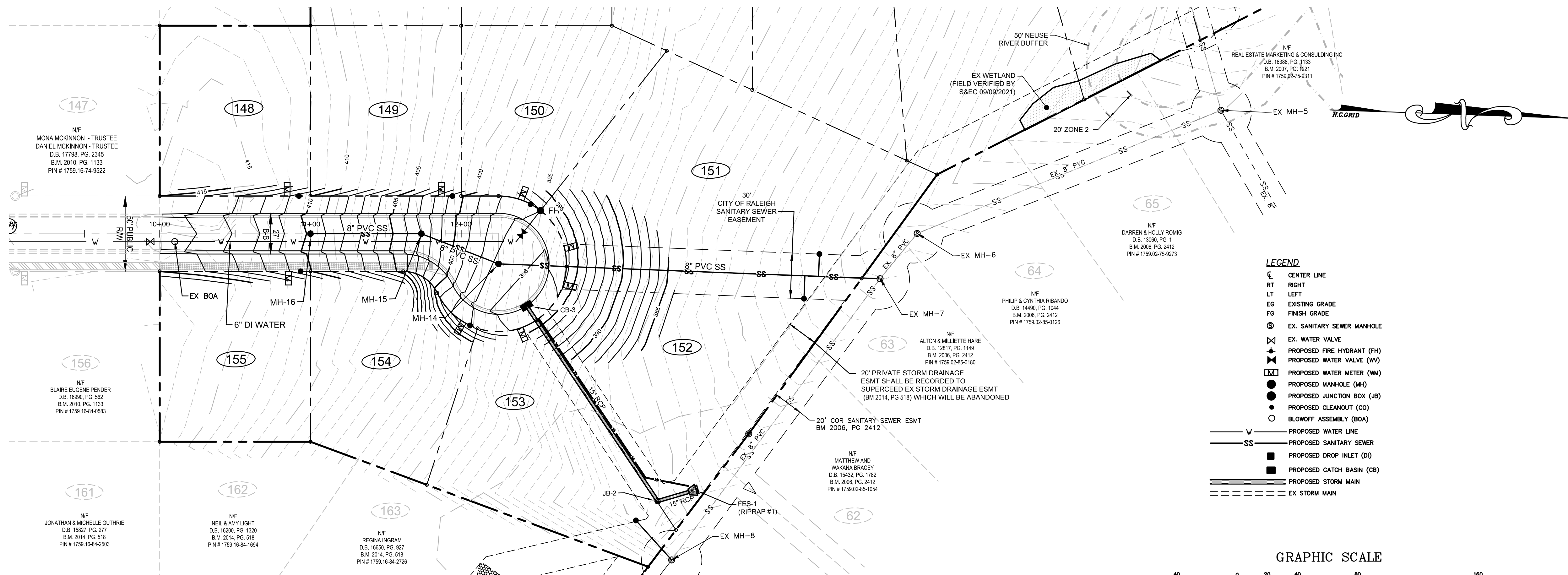
SCALE: VERT. 1" = 4'  
HORIZ. 1" = 40'

DATE: 03-10-2021

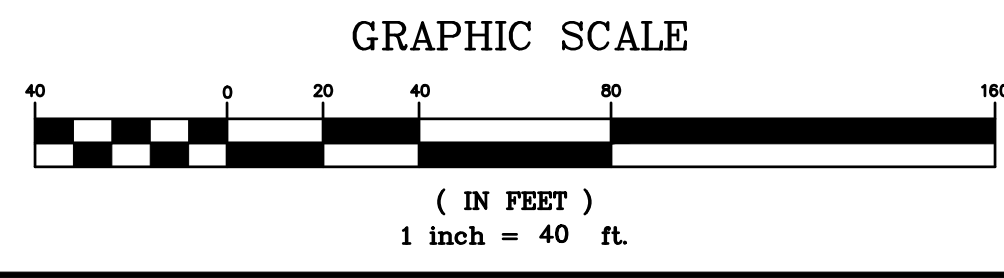
FILE NO: FNM

DESIGNER: JAE, JR.

SHEET: CE-5



- LEGEND**
- CL CENTER LINE
  - RT RIGHT
  - LT LEFT
  - EG EXISTING GRADE
  - FG FINISH GRADE
  - SS EX. SANITARY SEWER MANHOLE
  - EX. WATER VALVE
  - PROPOSED FIRE HYDRANT (FH)
  - PROPOSED WATER VALVE (WV)
  - PROPOSED WATER METER (WM)
  - PROPOSED MANHOLE (MH)
  - PROPOSED JUNCTION BOX (JB)
  - PROPOSED CLEANOUT (CO)
  - BLOWOFF ASSEMBLY (BOA)
  - PROPOSED WATER LINE
  - PROPOSED SANITARY SEWER
  - PROPOSED DROP INLET (DI)
  - PROPOSED CATCH BASIN (CB)
  - PROPOSED STORM MAIN
  - EX STORM MAIN



**UTILITY NOTES:**

- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.

**UTILITY SEPARATION:**

- Water & Sewer Mains
  - Minimum lateral separation 10'
  - Separate ditches with 18" min. vertical distance
- Water & storm drainage lines 18" min.
- Sanitary sewer & storm drain lines 18" min.
- Minimum cover over water mains shall be 3.0'

**PIPE MATERIAL:**

**WATER MAINS** - SHALL BE DUCTILE IRON WATER PIPE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**SEWER MAINS** - SHALL BE PVC OR DIP GRAVITY SANITARY SEWER PIPE, ASTM D-3034 SDR 35, TYPE PSM OR EQUAL AS SPECIFIED BY THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

ALL MATERIALS AND CONSTRUCTION STANDARDS TO BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.

**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 # 54852.

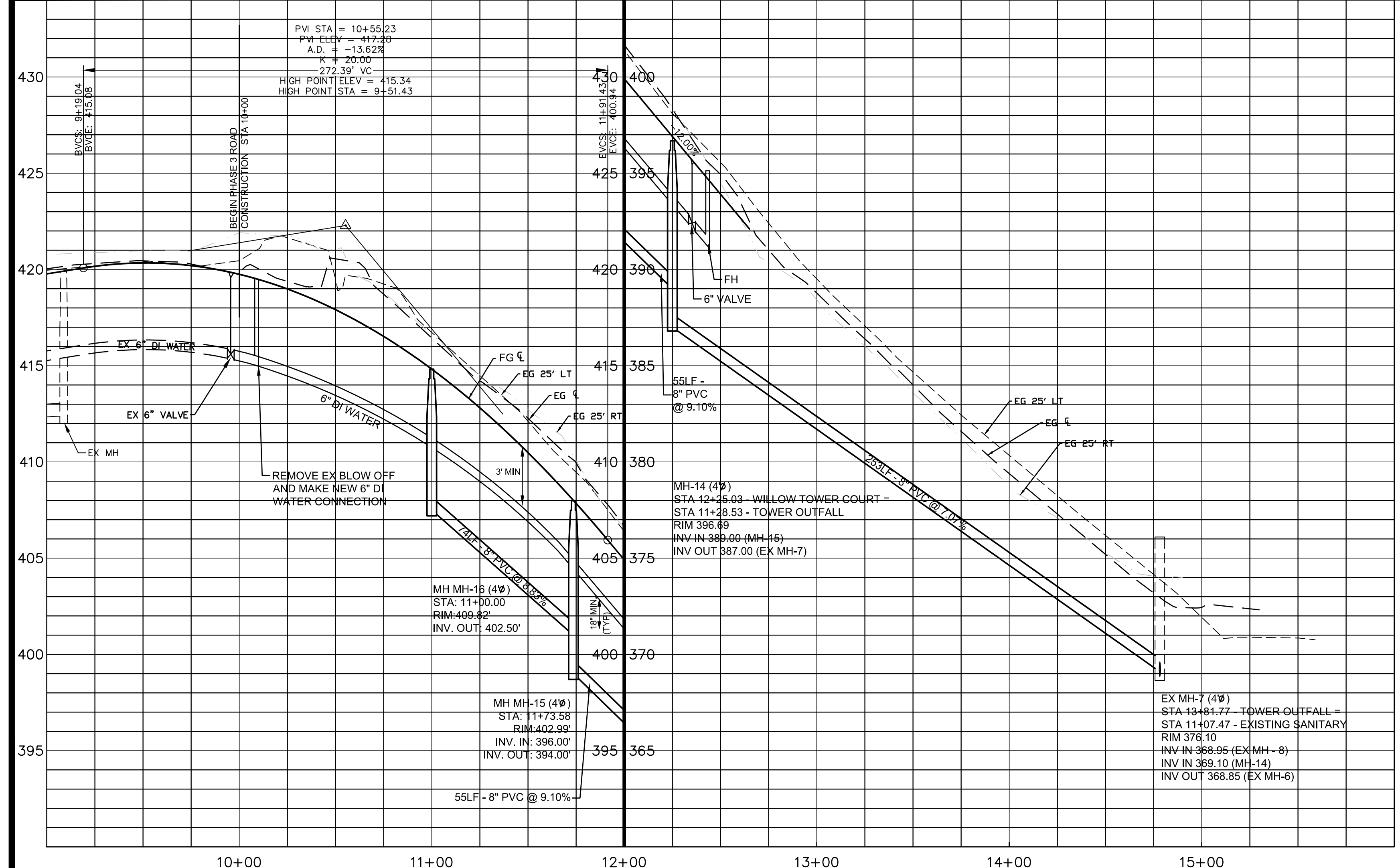
The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook, City of Raleigh Public Utilities Department Permit # 54852.

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

WILLOW TOWER COURT  
27' B-B / 50' RW



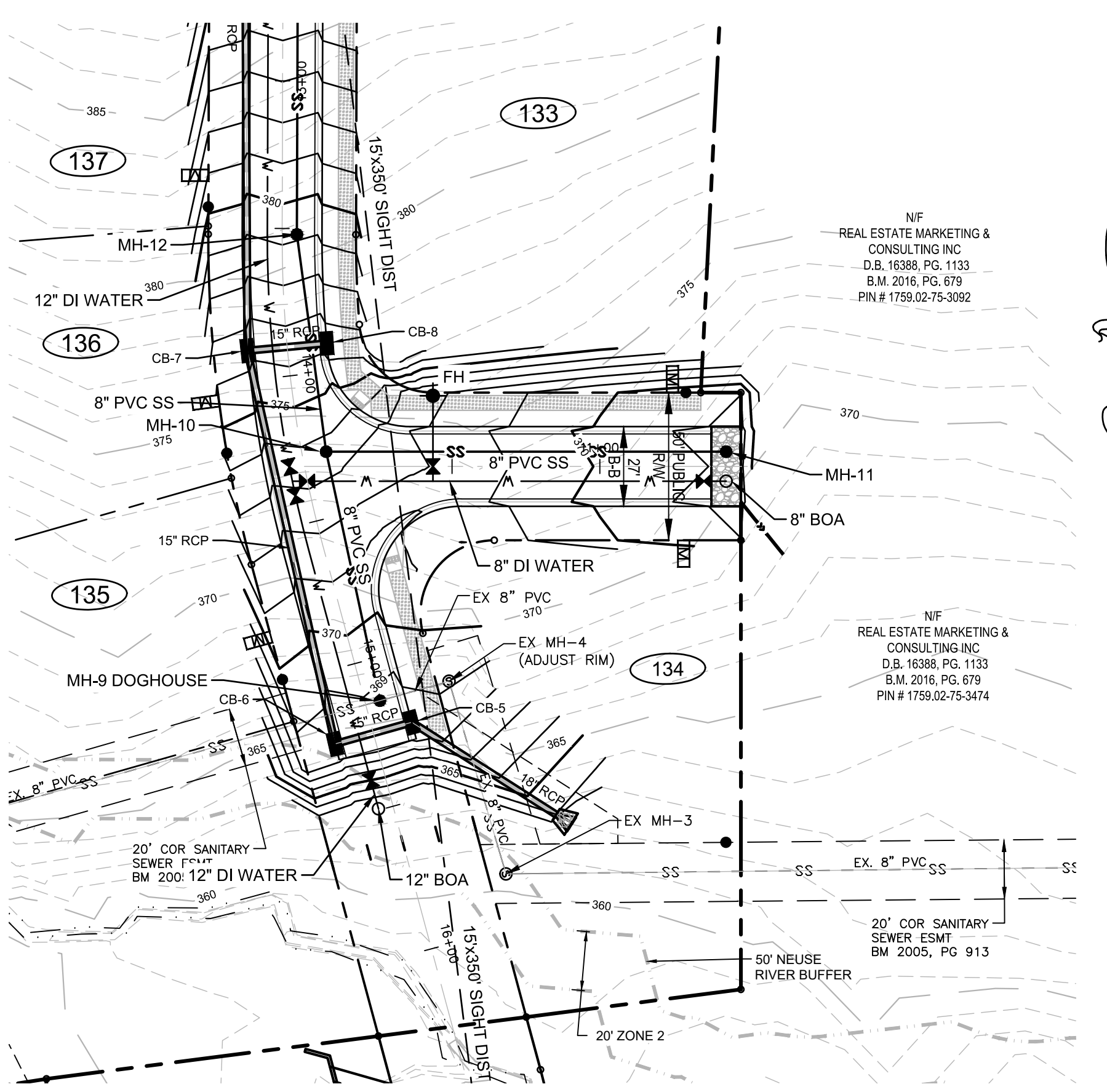
REVISION	DATE	BY	TT
PER TRC COMMENTS	05/27/21		
PER TRC COMMENTS	10/28/21		
PER TRC COMMENTS	10/29/21		

**JOHN A. EDWARDS & COMPANY**  
Consulting Engineers  
NC License F-0289  
333 Wade Ave., Raleigh, N.C. 27605  
Phone: (919) 828-4428  
Fax: (919) 828-4771  
E-mail: info@jaeco.com

**GRANITE CREST SUBDIVISION**  
PHASE III C  
ROLESVILLE WAKE COUNTY NORTH CAROLINA  
WILLOW TOWER COURT PLAN & PROFILE

DATE: 03-10-2021  
SCALE: 1" = 40'  
VER. 1" = 40'  
HORIZ. 1" = 40'  
DRAWN BY: JNM  
CHECKED BY: JAE, JR.  
FILE NO:

SHEET  
**CE-6**



NF  
REAL ESTATE MARKETING &  
CONSULTING INC  
D.B. 16388, PG. 1133  
B.M. 2016, PG. 679  
PIN # 1759.02-75-3092

NF  
REAL ESTATE MARKETING &  
CONSULTING INC  
D.B. 16388, PG. 1133  
B.M. 2016, PG. 679  
PIN # 1759.02-75-3474

20' COR SANITARY  
SEWER ESMT  
BM 2005, PG 913

- LEGEND**
- CL CENTER LINE
  - RT RIGHT
  - LT LEFT
  - EG EXISTING GRADE
  - FG FINISH GRADE
  - SM EX. SANITARY SEWER MANHOLE
  - SV EX. WATER VALVE
  - FH PROPOSED FIRE HYDRANT (FH)
  - WV PROPOSED WATER VALVE (WV)
  - WM PROPOSED WATER METER (WM)
  - MH PROPOSED MANHOLE (MH)
  - JB PROPOSED JUNCTION BOX (JB)
  - CO PROPOSED CLEANOUT (CO)
  - BA BLOWOFF ASSEMBLY (BOA)
  - WL PROPOSED WATER LINE
  - SS PROPOSED SANITARY SEWER
  - DI PROPOSED DROP INLET (DI)
  - CB PROPOSED CATCH BASIN (CB)
  - SM PROPOSED STORM MAIN
  - EX EX. STORM MAIN

**UTILITY NOTES:**

- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.

**UTILITY SEPARATION:**

- Water & Sewer Mains
  - Minimum lateral separation 10'
  - Separate ditches with 18" min. vertical distance
- Water & storm drainage lines 18" min.
- Sanitary sewer & storm drain LINES 18" min.
- Minimum cover over water mains shall be 3.0'

**PIPE MATERIAL:**

**WATER MAINS** - SHALL BE DUCTILE IRON WATER PIPE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**SEWER MAINS** - SHALL BE PVC OR DIP GRADY SANITARY SEWER PIPE, ASTM D-3034 SDR 35, TYPE PSM OR EQUAL AS SPECIFIED BY THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

ALL MATERIALS AND CONSTRUCTION STANDARDS TO BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.

**SITE PERMITTING APPROVAL**

*Water and Sewer Permits (if applicable)*

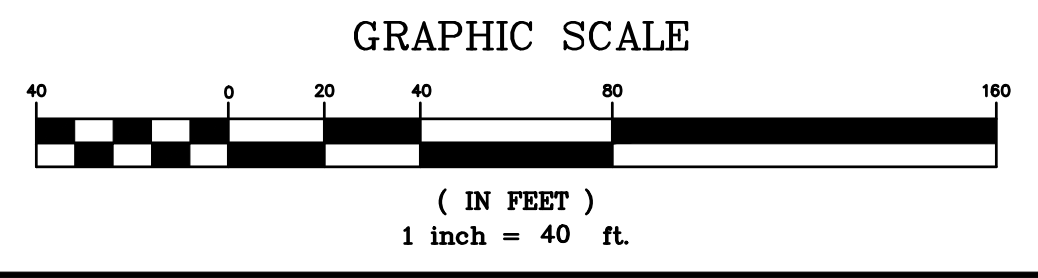
The City of Raleigh consents to the connection and extension of the City's Public Sewer System as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook, City of Raleigh Public Utilities Department Permit # 24882.

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 # 24882.

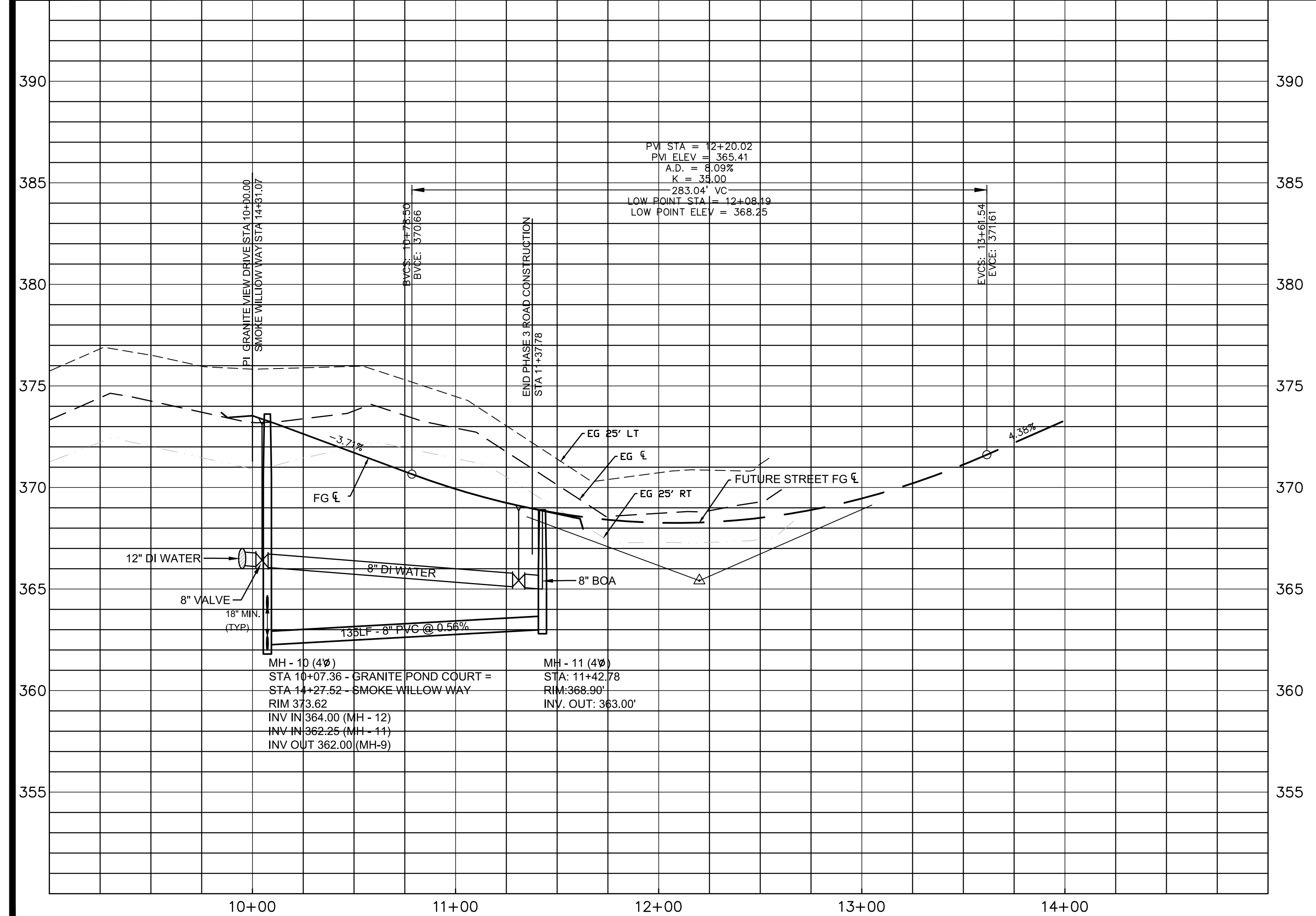
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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

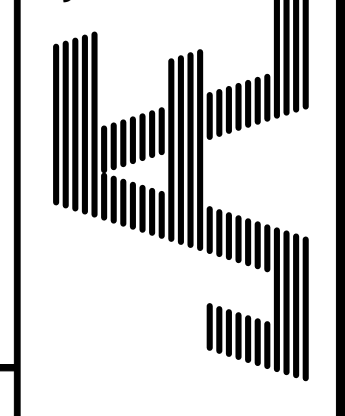


GRANITE VIEW DRIVE  
27' B-B / 50' RW



REVISION	DATE	BY	DESCRIPTION
PER TRC COMMENTS	05/27/21	TT	
PER TRC COMMENTS	09/16/21	TT	
PER TRC COMMENTS	10/28/21	TT	
PER TRC COMMENTS	10/29/21	TT	

**JOHN A. EDWARDS & COMPANY**  
Consulting Engineers  
NC License F-0289  
333 Wade Ave., Raleigh, N.C. 27605  
Phone: (919) 828-4428  
Fax: (919) 828-4771  
E-mail: info@jaeco.com



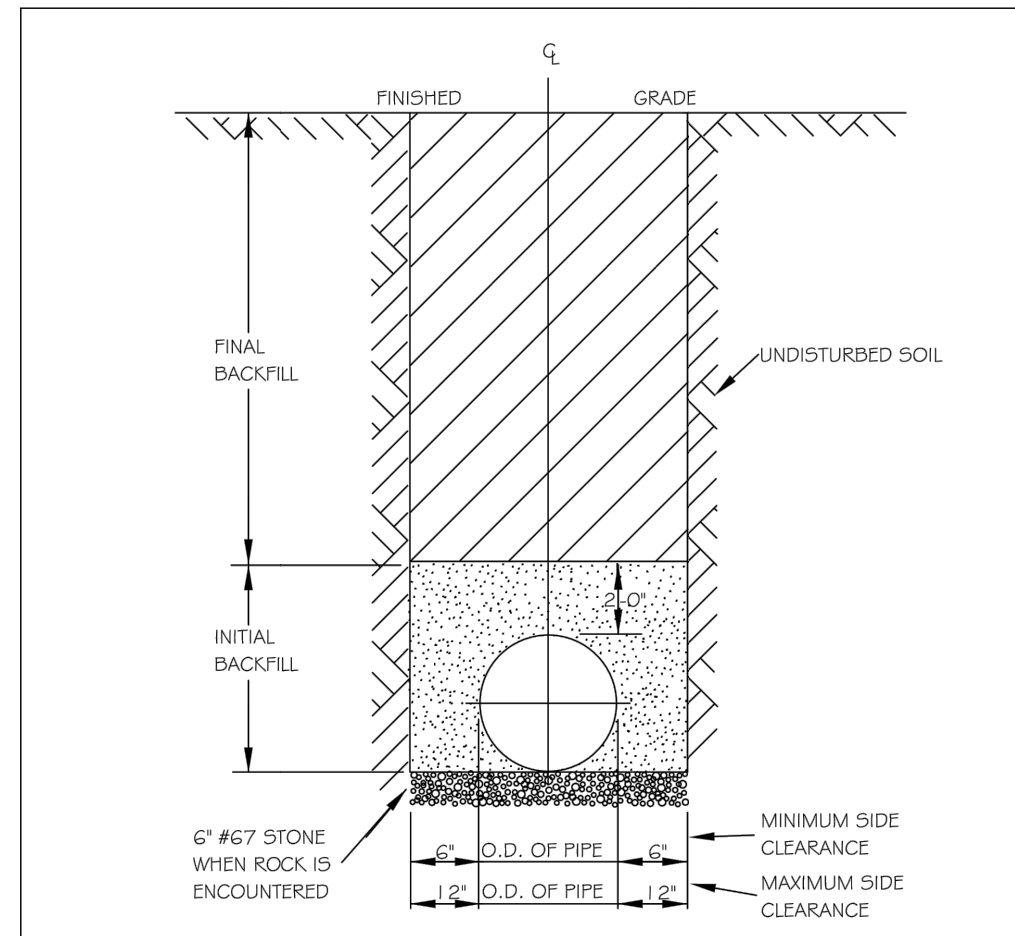
GRANITE CREST SUBDIVISION  
PHASE III C  
ROLESVILLE WAKE COUNTY NORTH CAROLINA  
GRANITE VIEW DRIVE PLAN & PROFILE

SCALE: VERT: 1" = 4' HORIZ: 1" = 40'	DATE: 03-10-2021	DRAWN BY: JFM	CHECKED BY: JAE, JR.
FILE NO:			

SHEET  
**CE-7**

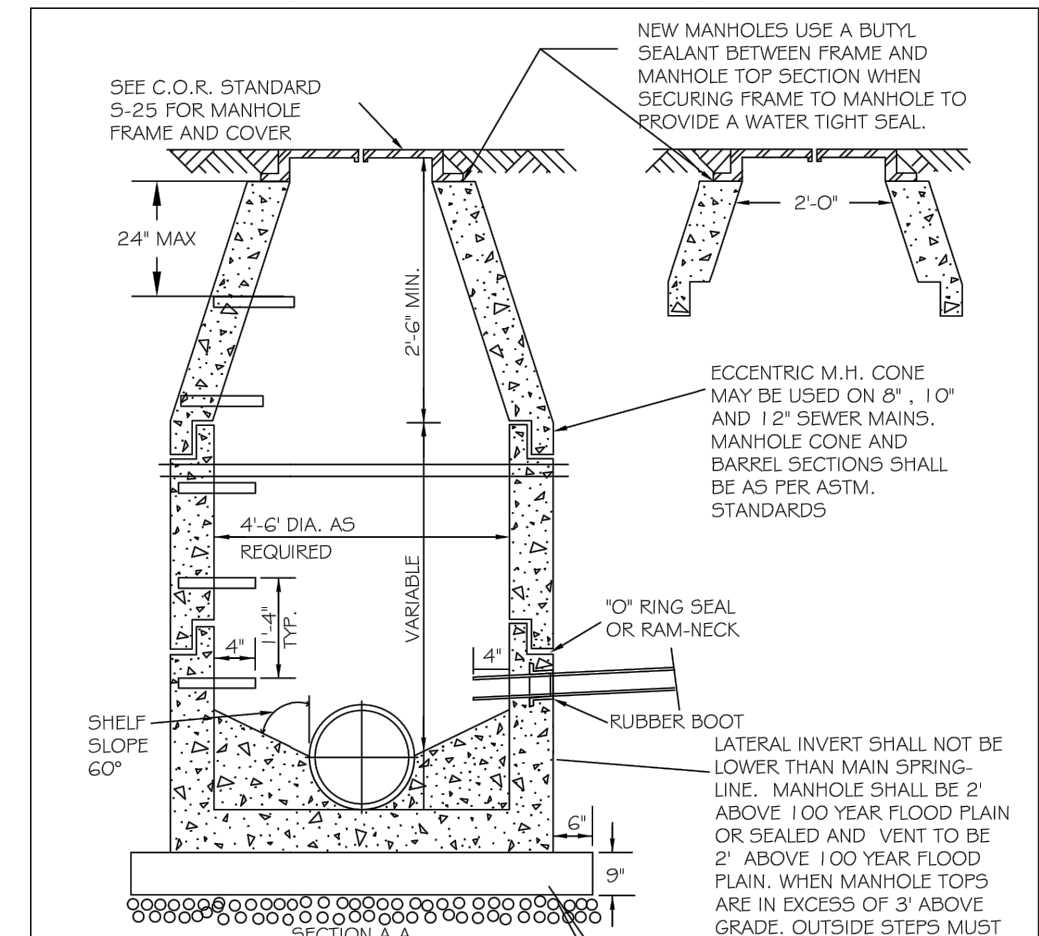






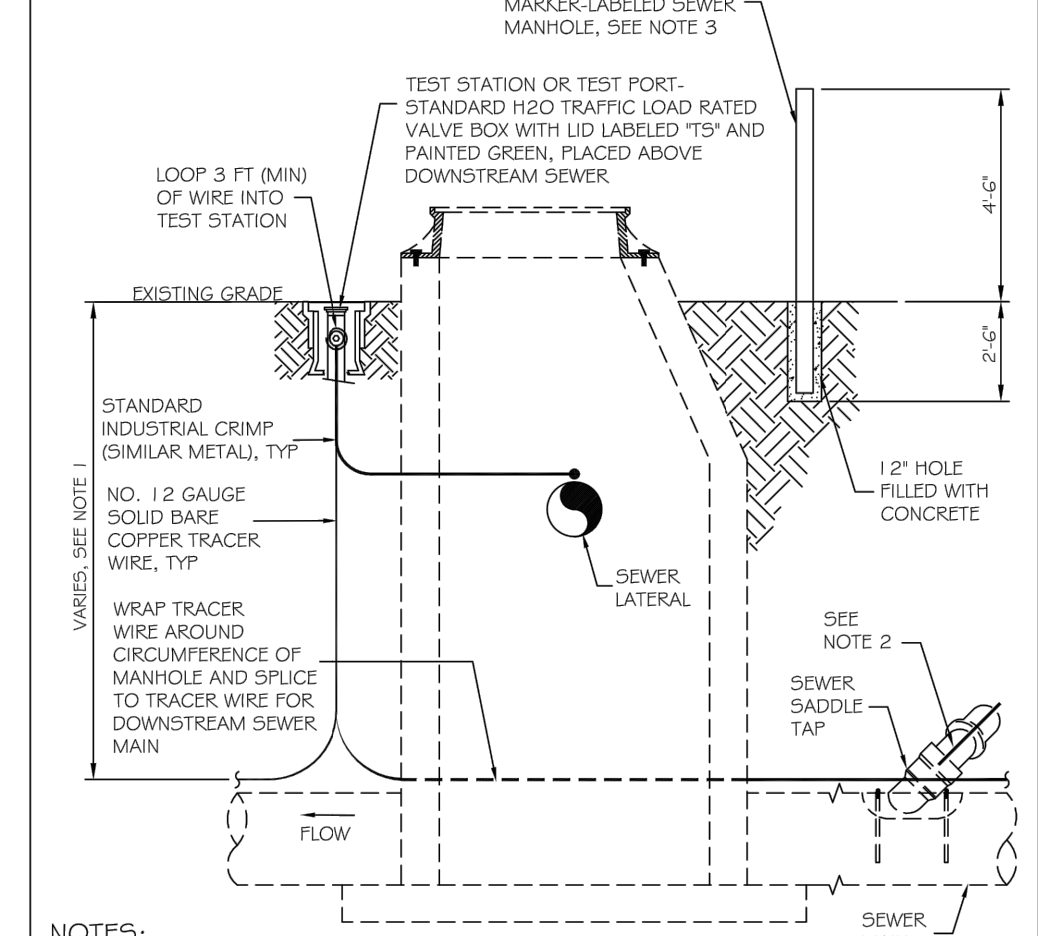
- NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
  2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
  3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
  4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.
  5. ACHIEVE 80% COMPACTION IN NON-TRAFFIC AREAS, AND 95% COMPACTION IN TRAFFIC AREAS.
  6. IF IN EASEMENT 4" TOPSOIL AND 12" CLEAN SELECT FILL MAY BE REQUIRED.
  7. NO BOULDERS 2" 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	D.W.G.	9-3-99			
	RRH	3-30-00			



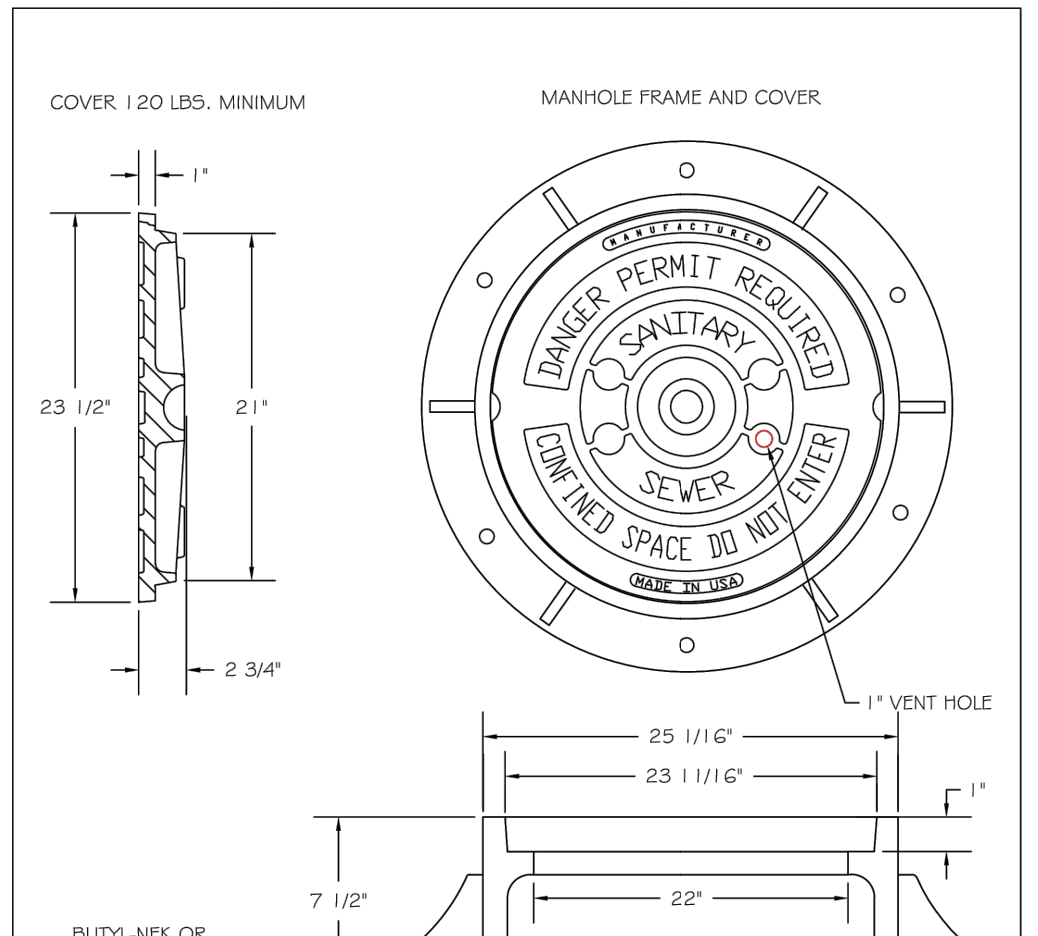
- NOTES:
1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS LESS THAN 8 FT, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS DEEPER THAN 8 FT, THE TRACING WIRE SHALL BE INSTALLED AT A DEPTH OF 7-8 FT. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OF CUTS IN THE TRACER WIRE SHALL BE PERMITTED.
  2. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO BE PLACED BETWEEN THE SADDLE AND MAIN.
  3. MANHOLE MARKERS SHALL BE PLACED ADJACENT TO MANHOLES AT THE DISCRETION OF OWNER OR OWNER'S REPRESENTATIVE.

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
STANDARD PRECAST SANITARY SEWER MANHOLE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-20	Y.C.A.	12-31-92	RRH	3-30-00	D.H.L.
					6-16-08



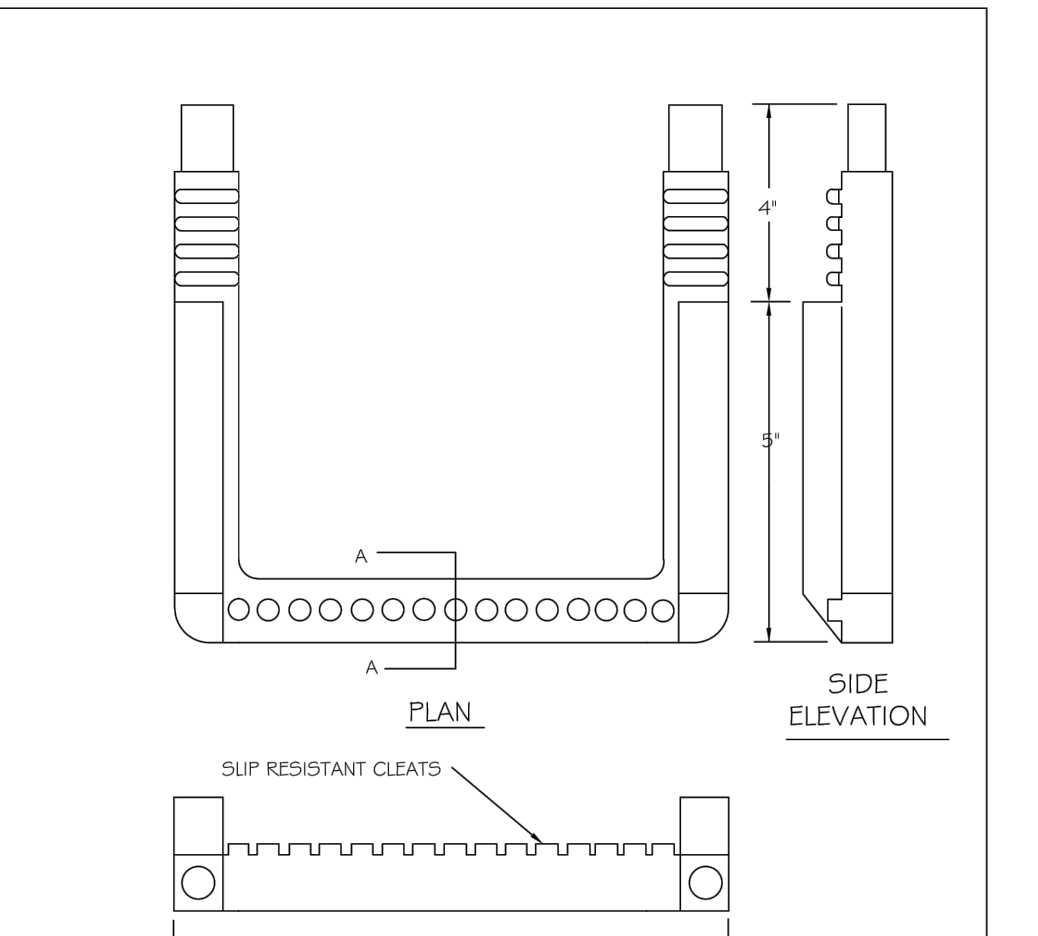
- NOTES:
1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS LESS THAN 8 FT, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS DEEPER THAN 8 FT, THE TRACING WIRE SHALL BE INSTALLED AT A DEPTH OF 7-8 FT. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OF CUTS IN THE TRACER WIRE SHALL BE PERMITTED.
  2. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO BE PLACED BETWEEN THE SADDLE AND MAIN.
  3. MANHOLE MARKERS SHALL BE PLACED ADJACENT TO MANHOLES AT THE DISCRETION OF OWNER OR OWNER'S REPRESENTATIVE.

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
GRAVITY SEWER MAIN TRACER WIRE AND MANHOLE MARKER					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-20A	RRH	09-14			
					2-21-05



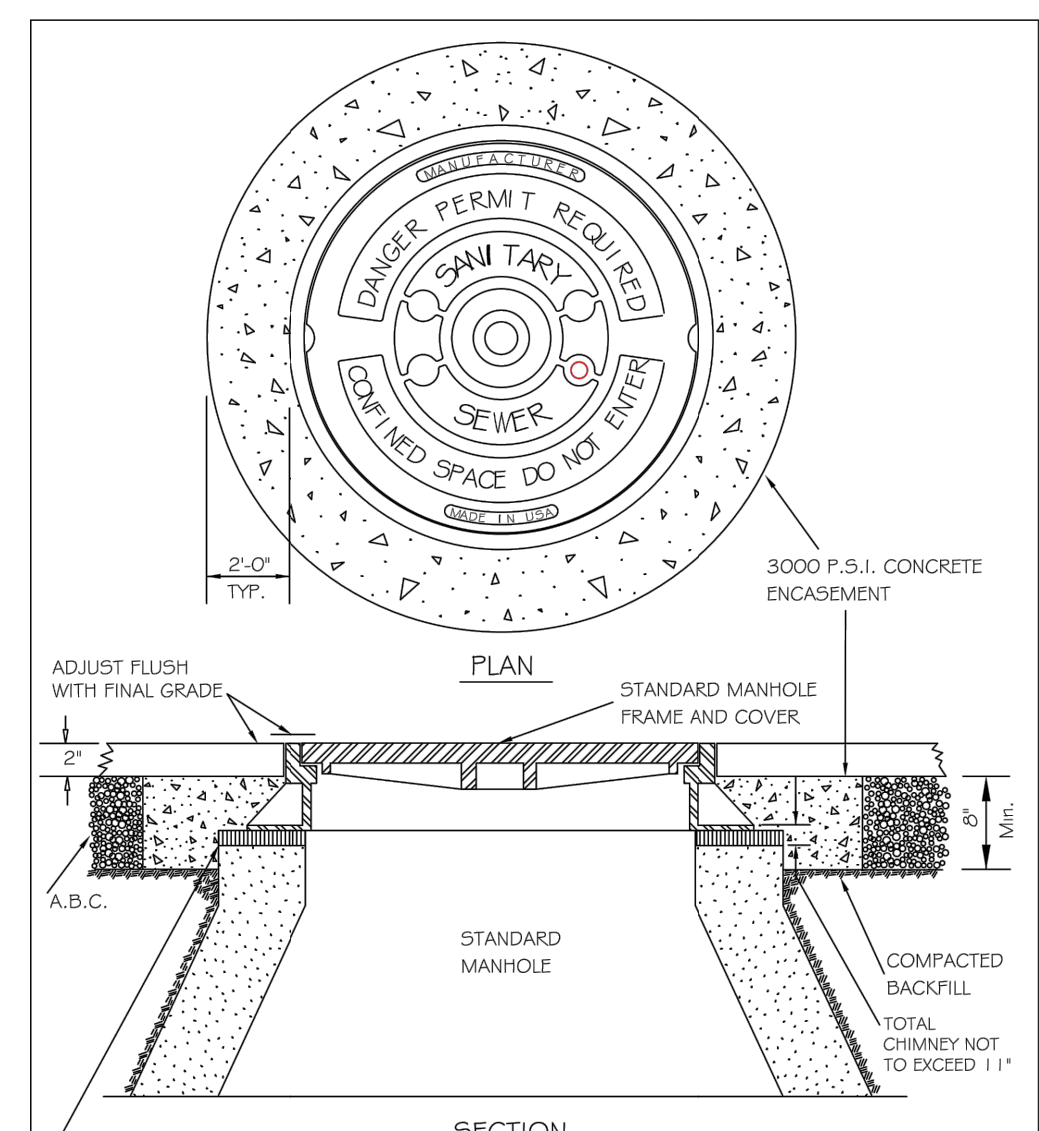
- NOTES:
- 1) ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
  - 2) FRAME SHALL BE A MINIMUM WEIGHT OF 120 LBS. WITHIN PUBLIC ROW AND 160 LBS. WITHIN EASEMENTS.
  - 3) COVER SHALL WEIGH A MIN. OF 120 LBS.
  - 4) ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.
  - 5) 5/8"x3" LAGSHEILD IN HOLE DRILLED INTO CONE OR RING WITH ANCHOR SUNK TO DESIGN DEPTH, AND 3/8"x3" NOT DIPPED GALVANIZED LAG BOLT AND WASHER.

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE COVER					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-25	3-1-07	3-1-07	A.B.B.	2-9-05	
	RRH	3-30-00	D.H.L.		6-18-08



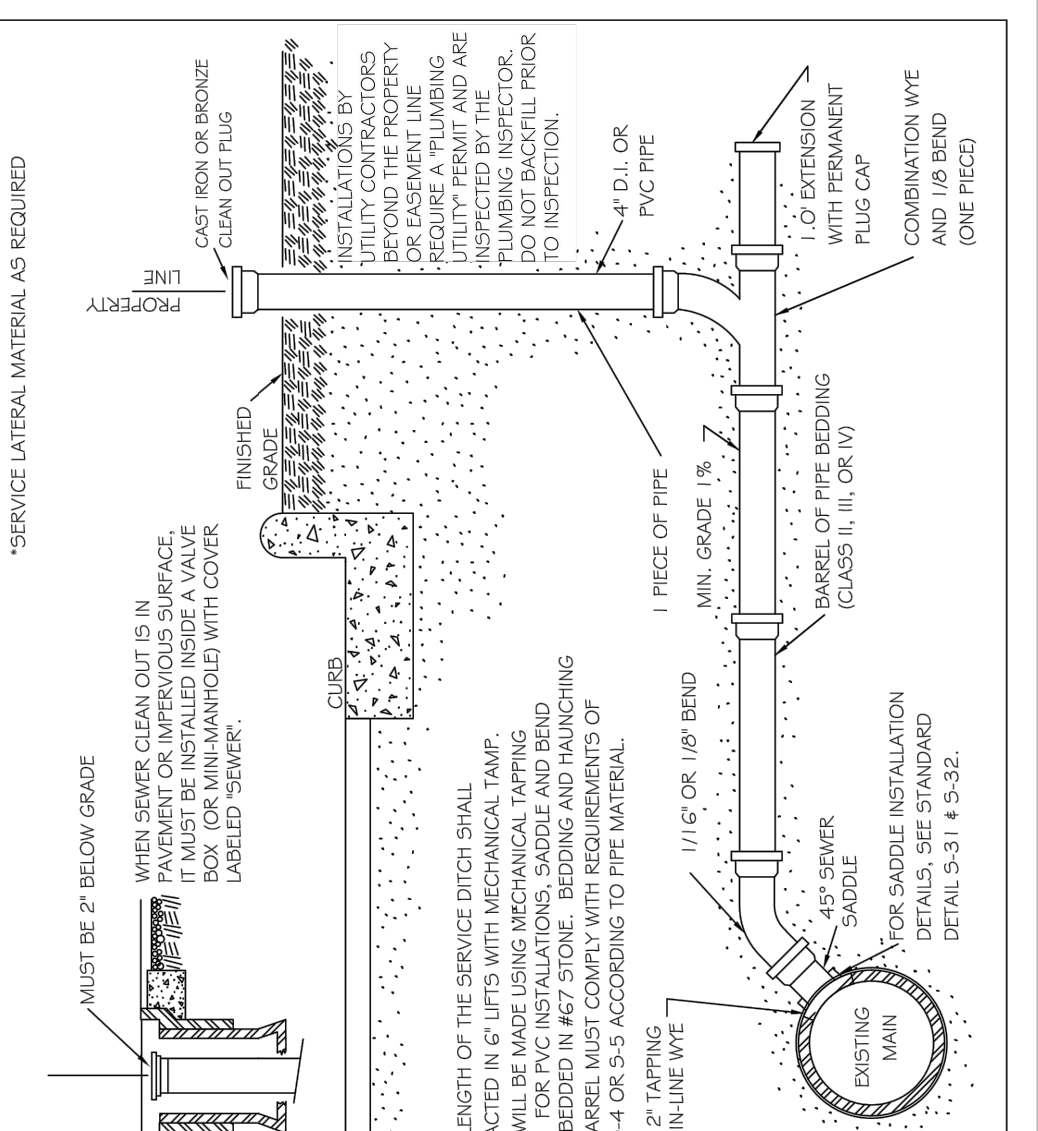
- NOTES:
1. ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
  2. FRAME SHALL BE A MINIMUM WEIGHT OF 120 LBS. WITHIN PUBLIC ROW AND 160 LBS. WITHIN EASEMENTS.
  - 3) COVER SHALL WEIGH A MIN. OF 120 LBS.
  - 4) ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.
  - 5) 5/8"x3" LAGSHEILD IN HOLE DRILLED INTO CONE OR RING WITH ANCHOR SUNK TO DESIGN DEPTH, AND 3/8"x3" NOT DIPPED GALVANIZED LAG BOLT AND WASHER.

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



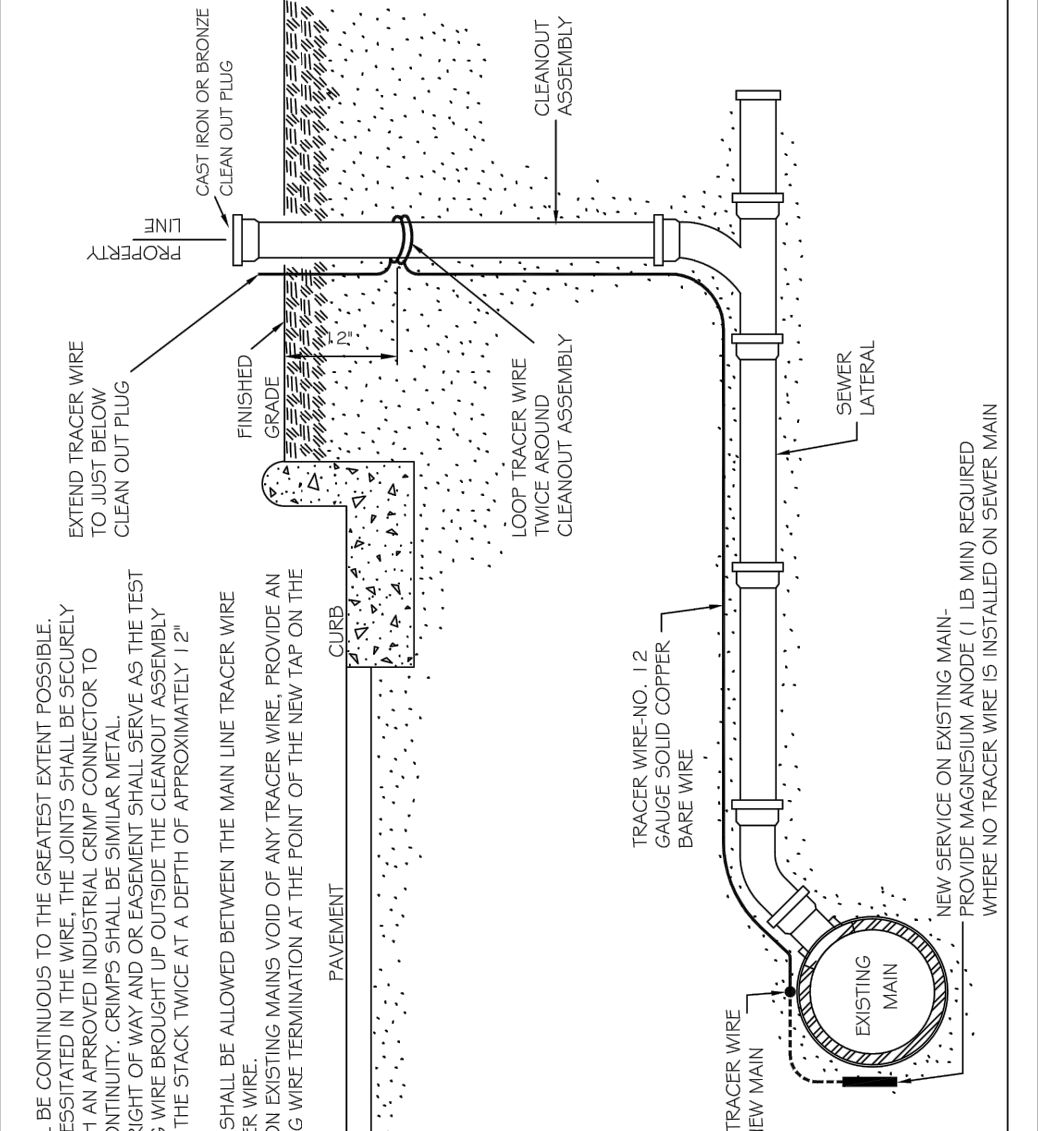
- NOTES:
1. THE FULL LENGTH OF THE SERVICE DITCH SHALL BE COMPACTED IN 6" LIFTS WITH MECHANICAL TAMP. FOR PVC INSTALLATIONS, SADDLE AND BRAD MUST BE BEDDED IN #67 STONE. BEDDING AND HAUNCHING MUST BE BEDDED IN #67 STONE. BEDDING AND HAUNCHING DETAILS S-4 OR S-5 ACCORDING TO PIPE MATERIAL.
  2. 8" OR 10" OR 12" TAPPING SADDLE OR IN-LINE WIRE SHALL BE 2" BELOW GRADE.
  3. WHEN SEWER CLEAN OUT IS IN PAVEMENT OR IMPERVIOUS SURFACE, BOX FOR MAIN MANHOLE WITH COVER AND LABELLED 'SEWER'.
  4. PRECAST CONCRETE SPACER (DONUT RINGS) IN TRAFFIC AREAS ONLY. DONUT RINGS NOT ALLOWED IN EASEMENTS.

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE FRAME AND COVER DETAIL WITHIN PAVED SURFACES					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-29	Y.C.A.	12-31-99	RRH	3-30-00	D.H.L.
					11-29-07



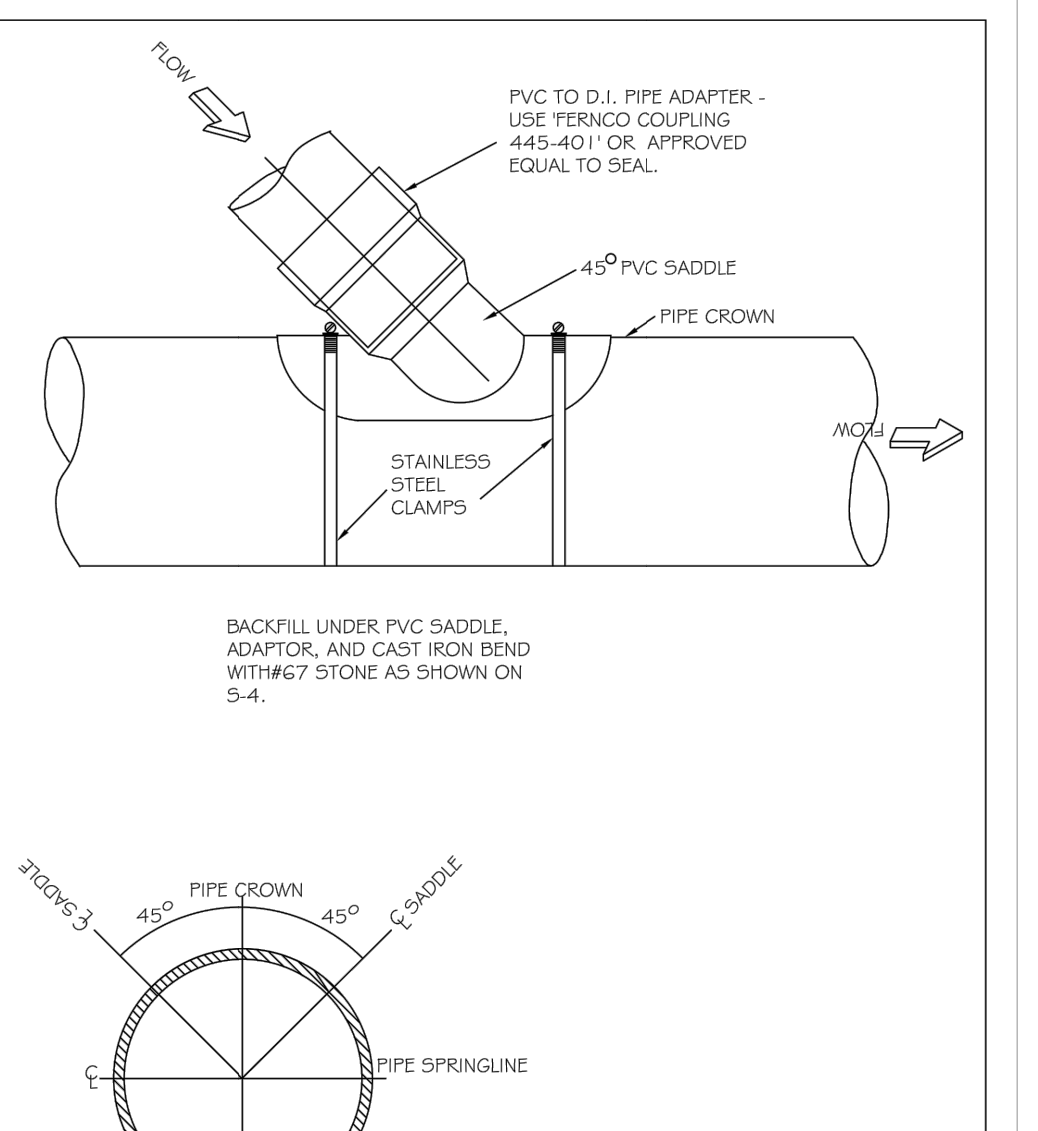
- NOTES:
1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS LESS THAN 8 FT, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS DEEPER THAN 8 FT, THE TRACING WIRE SHALL BE INSTALLED AT A DEPTH OF 7-8 FT. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OF CUTS IN THE TRACER WIRE SHALL BE PERMITTED.
  2. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO BE PLACED BETWEEN THE SADDLE AND MAIN.
  3. MANHOLE MARKERS SHALL BE PLACED ADJACENT TO MANHOLES AT THE DISCRETION OF OWNER OR OWNER'S REPRESENTATIVE.

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
TYPICAL SANITARY SEWER LATERAL CONNECTION					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-30	Y.C.A.	6-93	RRH	3-30-00	D.H.L.
					6-18-08



- NOTES:
1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS LESS THAN 8 FT, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS DEEPER THAN 8 FT, THE TRACING WIRE SHALL BE INSTALLED AT A DEPTH OF 7-8 FT. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OF CUTS IN THE TRACER WIRE SHALL BE PERMITTED.
  2. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO BE PLACED BETWEEN THE SADDLE AND MAIN.
  3. MANHOLE MARKERS SHALL BE PLACED ADJACENT TO MANHOLES AT THE DISCRETION OF OWNER OR OWNER'S REPRESENTATIVE.

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
TYPICAL SANITARY SEWER LATERAL TRACER WIRE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-30A	WKS	9-14			



- NOTES:
1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS LESS THAN 8 FT, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS. FOR GRAVITY MAIN AND/OR LATERAL INSTALLATIONS DEEPER THAN 8 FT, THE TRACING WIRE SHALL BE INSTALLED AT A DEPTH OF 7-8 FT. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OF CUTS IN THE TRACER WIRE SHALL BE PERMITTED.
  2. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO BE PLACED BETWEEN THE SADDLE AND MAIN.
  3. MANHOLE MARKERS SHALL BE PLACED ADJACENT TO MANHOLES AT THE DISCRETION OF OWNER OR OWNER'S REPRESENTATIVE.

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
LATERAL SADDLE INSTALLATION DETAIL FOR PVC PIPE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-31	RRH	3-1-07			
					3-30-00

**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 # **1-4822**

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 # **30-3806**.

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

City of Raleigh Development Approval  
Raleigh Water Review Officer

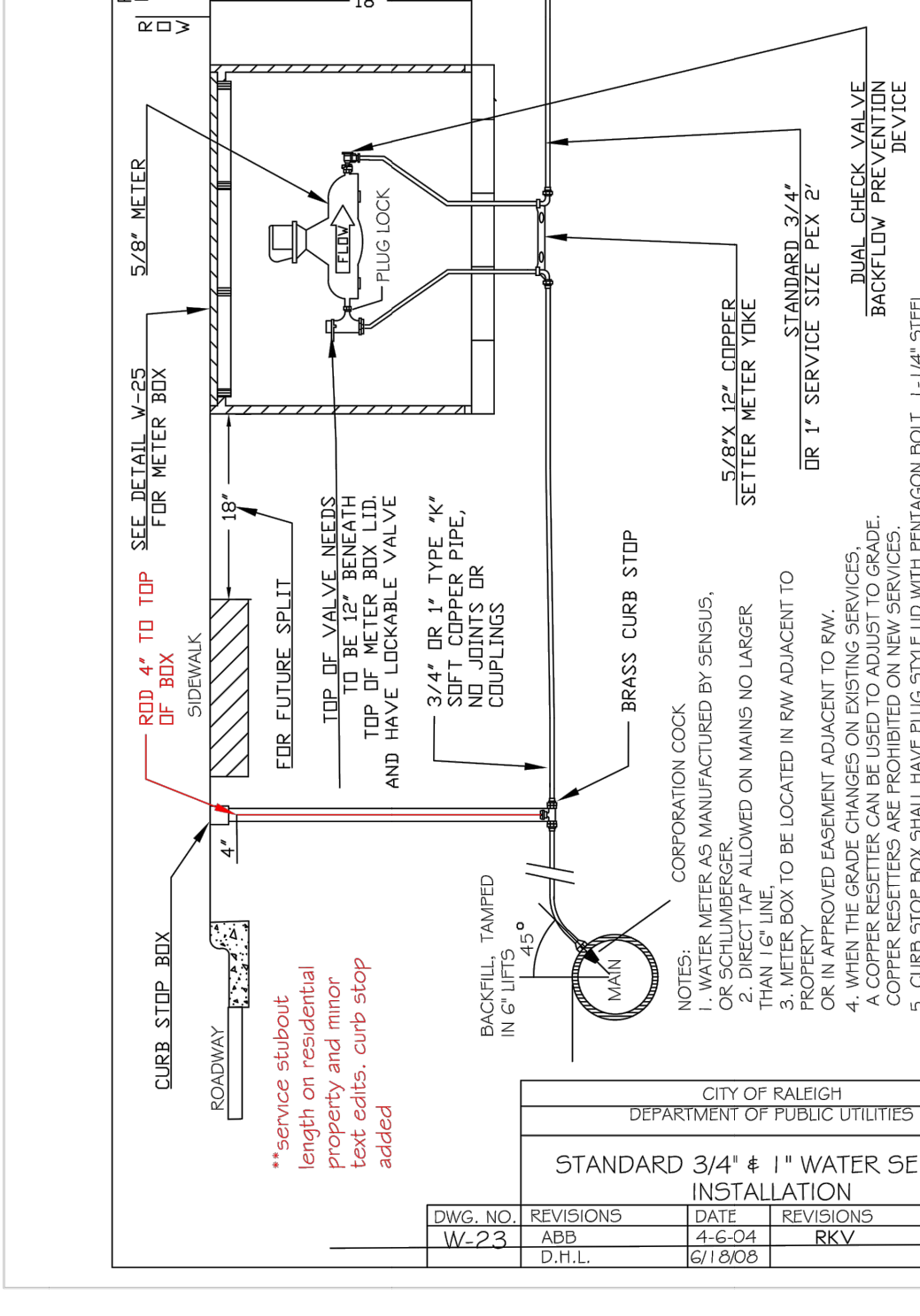
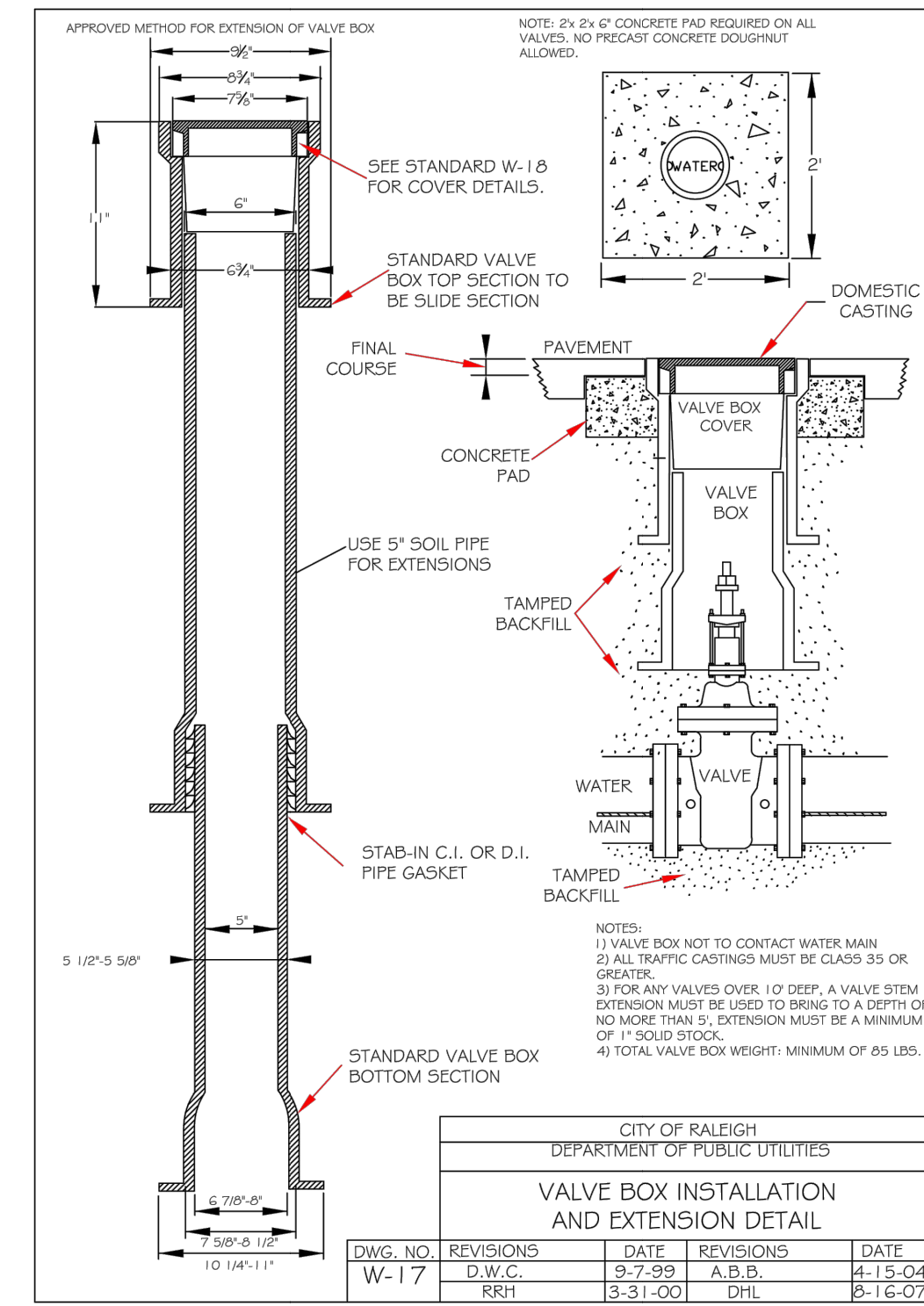
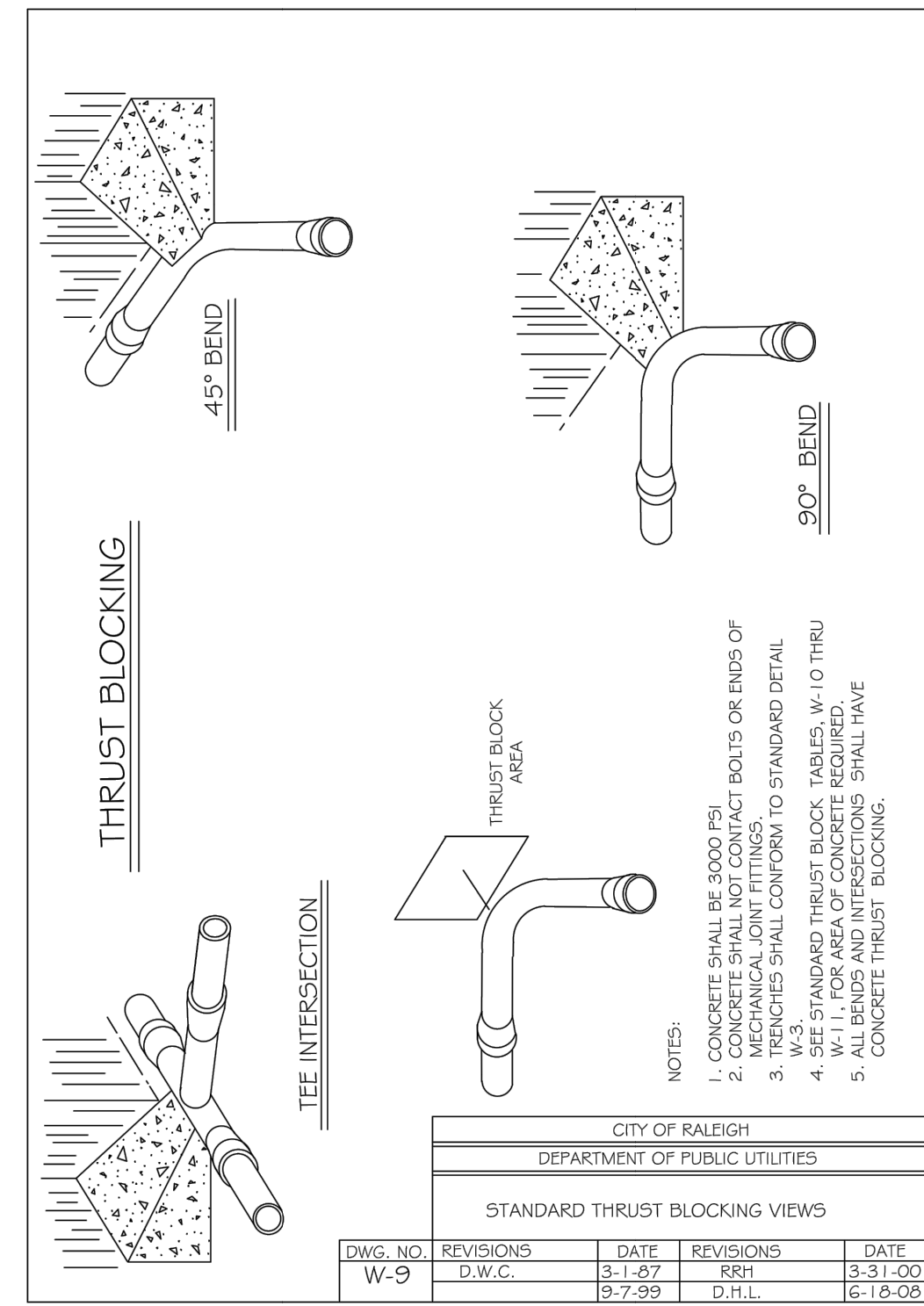
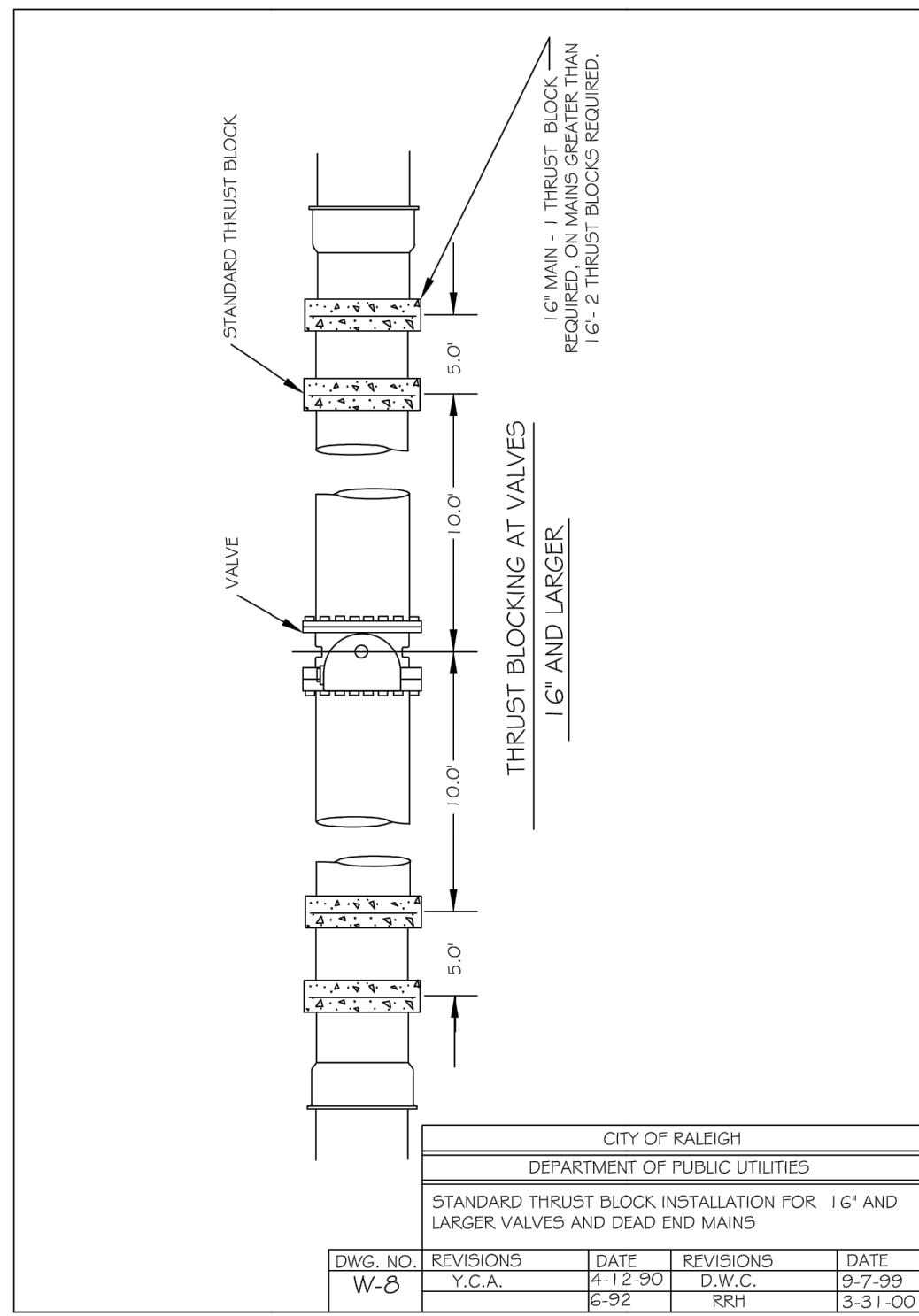
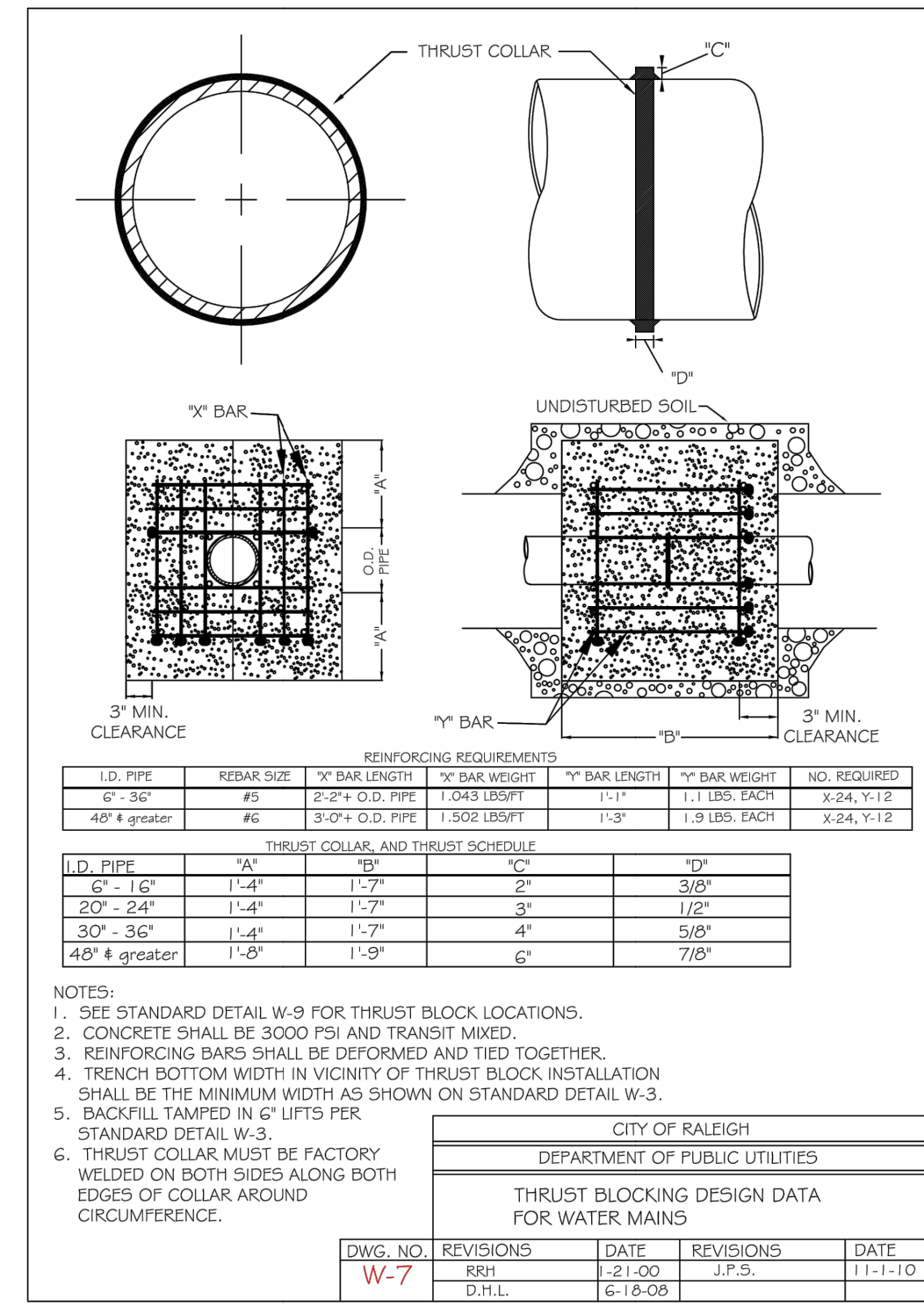
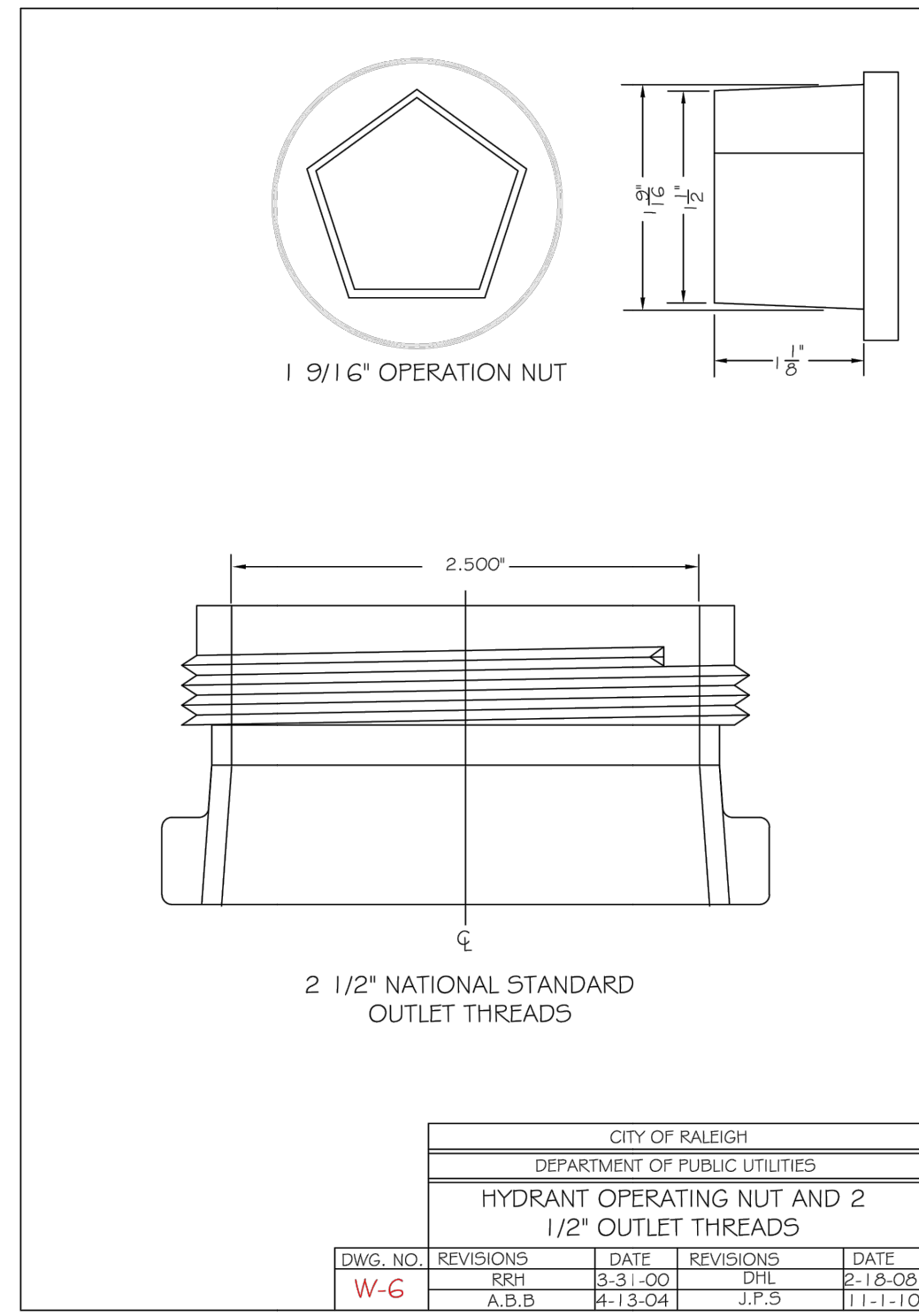
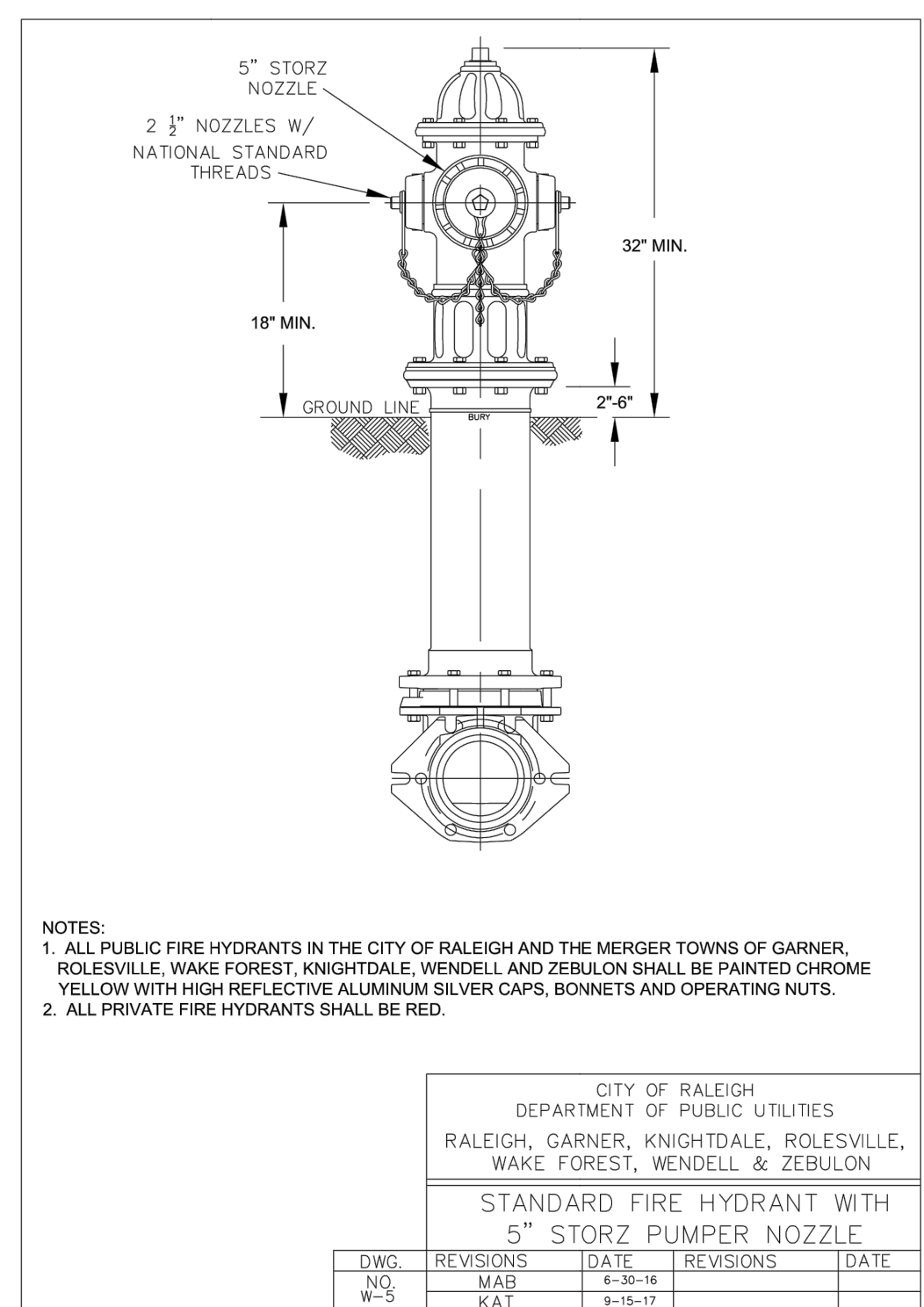
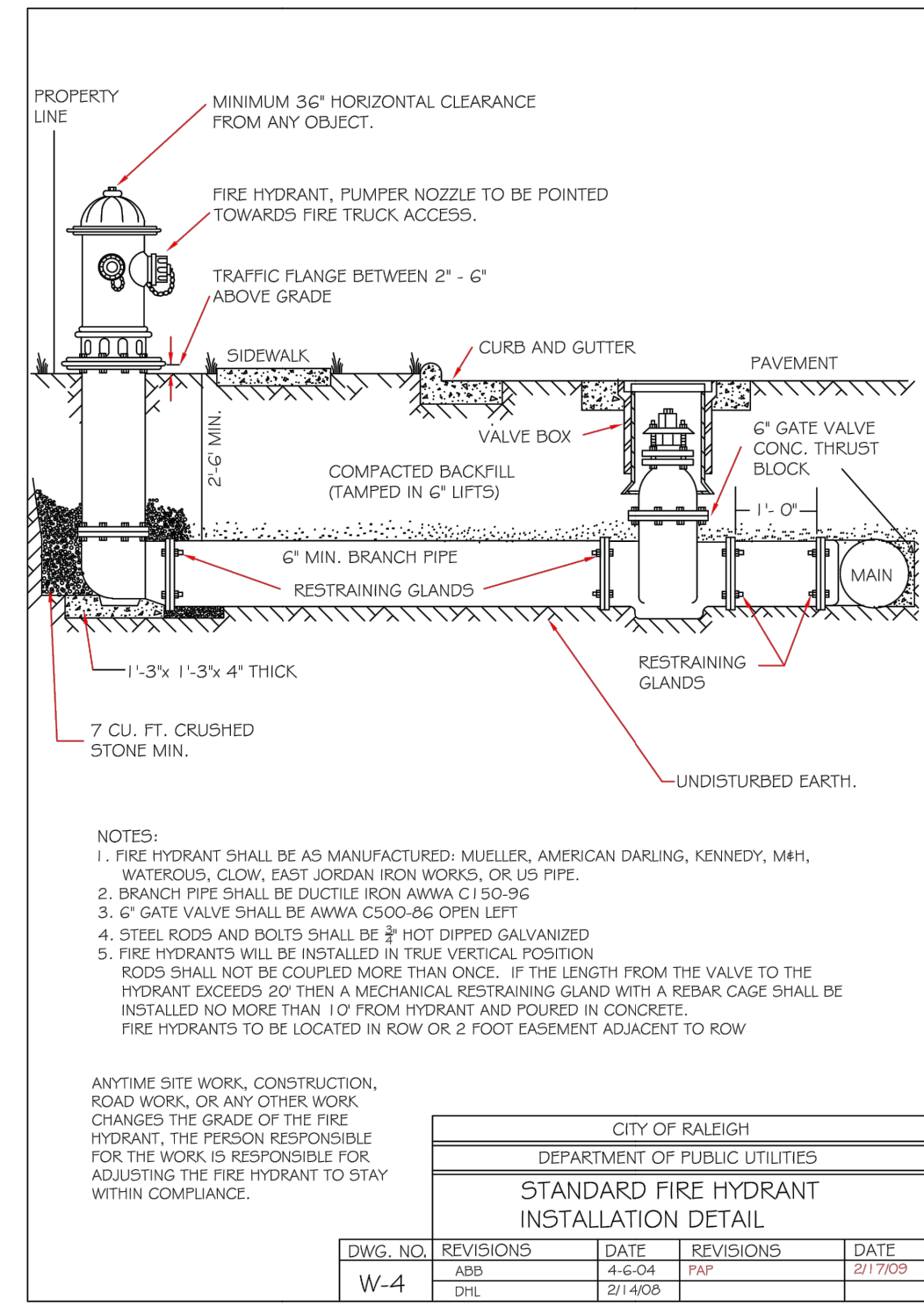
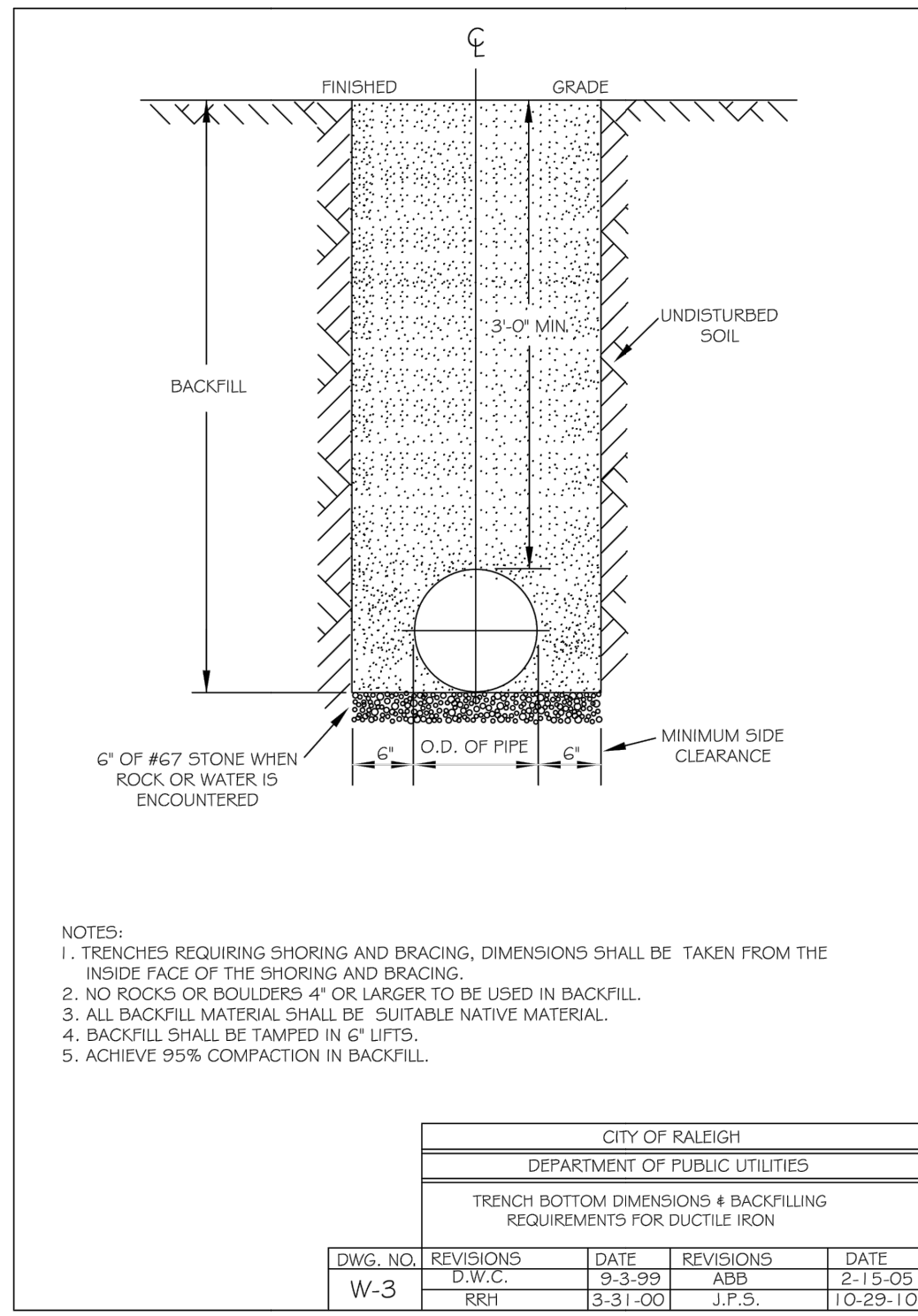
BY	DATE	REVISION
TT	05/27/21	PER TRC COMMENTS
TT	10/28/21	PER TRC COMMENTS
TT	10/29/21	PER TRC COMMENTS

DATE: 03-10-2021  
DRAWN BY: FJM  
CHECKED BY: JAE, JR.  
SCALE: NTS  
FILE NO:

SHEET: CE-9

JOHN A. EDWARDS & COMPANY  
Consulting Engineers  
333 Wade Ave., Raleigh, NC 27605  
Phone (919) 828-4428  
Fax (919) 828-4711  
E-mail info@jaeco.com

GRANITE RIDGE TOWNHOMES  
PHASE III C  
ROLESVILLE  
WAKE COUNTY  
NORTH CAROLINA  
SEWER DETAILS



**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 # 14253.

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 # 10-366.

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 \_\_\_\_\_

**GRANITE RIDGE TOWNHOMES**  
 PHASE III C  
 WAKE COUNTY  
 NORTH CAROLINA

**WATER DETAILS**

DATE: 03-10-2021  
 DRAWN BY: FNM  
 CHECKED BY: JAE, JR.

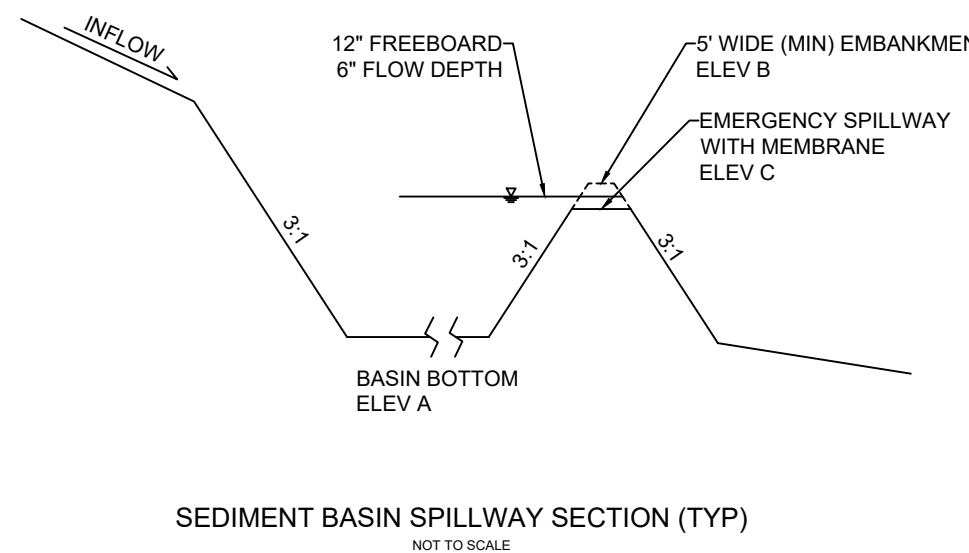
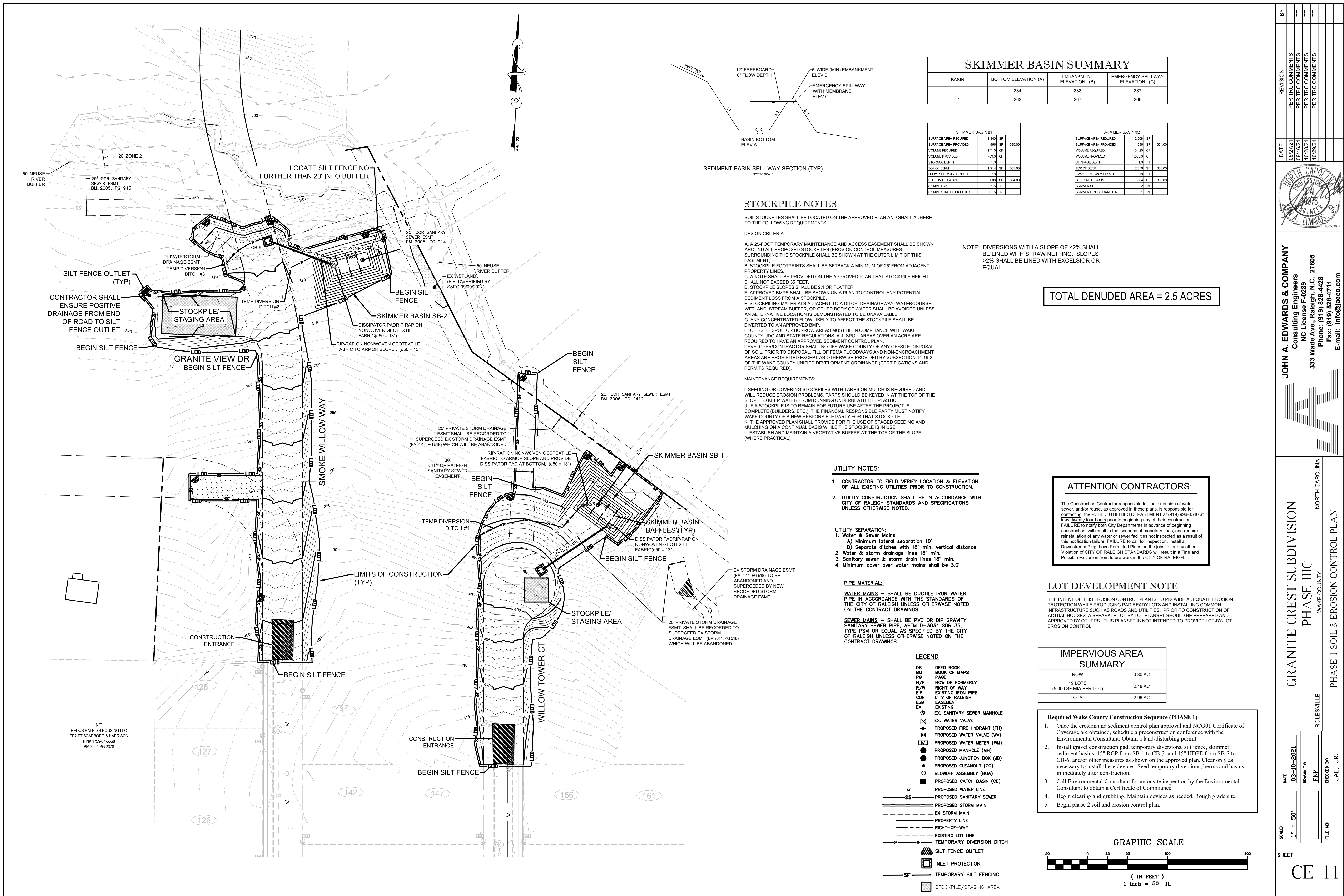
SCALE: NTS  
 FILE NO:

SHEET: CE-10

REVISIONS:  
 PER TRC COMMENTS  
 PER TRC COMMENTS  
 PER TRC COMMENTS

DATE:  
 09/16/21  
 10/28/21  
 10/29/21

JOHN A. EDWARDS & COMPANY  
 Consulting Engineers  
 Wade Ave., Raleigh, NC 27605  
 Phone (919) 828-4428  
 FAX (919) 828-4711  
 E-mail info@jaeco.com



### SKIMMER BASIN SUMMARY

BASIN	BOTTOM ELEVATION (A)	EMBANKMENT ELEVATION (B)	EMERGENCY SPILLWAY ELEVATION (C)
1	384	388	387
2	363	367	366

SKIMMER BASIN #1		SKIMMER BASIN #2	
SURFACE AREA REQUIRED	1,340 SF	SURFACE AREA REQUIRED	2,200 SF
SURFACE AREA PROVIDED	966 SF 385.00	SURFACE AREA PROVIDED	1,296 SF 364.00
VOLUME REQUIRED	1,710 CF	VOLUME REQUIRED	3,420 CF
VOLUME PROVIDED	7830 CF	VOLUME PROVIDED	1,880 CF
STORAGE DEPTH	1.0 FT	STORAGE DEPTH	1.0 FT
TOP OF BERM	1,914 SF 387.00	TOP OF BERM	2,376 SF 366.00
EMERGENCY SPILLWAY LENGTH	10 FT	EMERGENCY SPILLWAY LENGTH	10 FT
BOTTOM OF BASIN	800 SF 384.00	BOTTOM OF BASIN	864 SF 363.00
SKIMMER SIZE	18 IN	SKIMMER SIZE	2 IN
SKIMMER ORIFICE DIAMETER	0.75 IN	SKIMMER ORIFICE DIAMETER	1 IN

### STOCKPILE NOTES

SOIL STOCKPILES SHALL BE LOCATED ON THE APPROVED PLAN AND SHALL ADHERE TO THE FOLLOWING REQUIREMENTS.

DESIGN CRITERIA:

- A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT).
- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
- A NOTE SHALL BE PROVIDED ON THE APPROVED PLAN THAT STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
- STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
- APPROVED BMPs SHALL BE SHOWN ON A PLAN TO CONTROL ANY POTENTIAL SEDIMENT LOSS FROM A STOCKPILE.
- STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.
- ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.
- OFF-SITE SPOIL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY LUD AND STATE REGULATIONS. ALL SPOIL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY WAKE COUNTY OF ANY OFFSITE DISPOSAL OF SOIL. PRIOR TO DISPOSAL, FILL OF FEMA FLOODWAYS AND NON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).

MAINTENANCE REQUIREMENTS:

- SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
- THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

NOTE: DIVERSIONS WITH A SLOPE OF <2% SHALL BE LINED WITH STRAW NETTING. SLOPES >2% SHALL BE LINED WITH EXCELSIOR OR EQUAL.

TOTAL DENUDED AREA = 2.5 ACRES

### UTILITY NOTES:

- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
  - UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
- UTILITY SEPARATION:
- Water & Sewer Mains
    - Minimum lateral separation 10'
    - Separate ditches with 18" min. vertical distance
  - Water & storm drainage lines 18" min.
  - Sanitary sewer & storm drain lines 18" min.
  - Minimum cover over water mains shall be 3.0'

### PIPE MATERIAL:

**WATER MAINS** - SHALL BE DUCTILE IRON WATER PIPE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**SEWER MAINS** - SHALL BE PVC OR DIP GRAVITY SANITARY SEWER PIPE, ASTM D-3034 SDR 35, TYPE PSM OR EQUAL AS SPECIFIED BY THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

### LEGEND

- DB DEED BOOK
- BM BOOK OF MAPS
- PG PAGE
- N/F NOW OR FORMERLY
- R/W RIGHT OF WAY
- EP EXISTING IRON PIPE
- COR CITY OF RALEIGH EASEMENT
- EX EXISTING
- ⊗ EX. SANITARY SEWER MANHOLE
- ⊕ EX. WATER VALVE
- ⊕ PROPOSED FIRE HYDRANT (FH)
- ⊕ PROPOSED WATER VALVE (WV)
- ⊕ PROPOSED WATER METER (WM)
- ⊕ PROPOSED MANHOLE (MH)
- PROPOSED JUNCTION BOX (JB)
- PROPOSED CLEANOUT (CO)
- BLOWOFF ASSEMBLY (BOA)
- PROPOSED CATCH BASIN (CB)
- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER
- PROPOSED STORM MAIN
- EX STORM MAIN
- PROPERTY LINE
- RIGHT-OF-WAY
- EXISTING LOT LINE
- TEMPORARY DIVERSION DITCH
- ⊕ SILT FENCE OUTLET
- ⊕ INLET PROTECTION
- TEMPORARY SILT FENCING
- STOCKPILE/STAGING AREA

### ATTENTION CONTRACTORS:

The Construction Contractor responsible for the extension of water, sewer, and/or gas, as approved in these plans, is responsible for contacting the PUBLIC UTILITIES DEPARTMENT at (919) 966-4540 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.

### LOT DEVELOPMENT NOTE

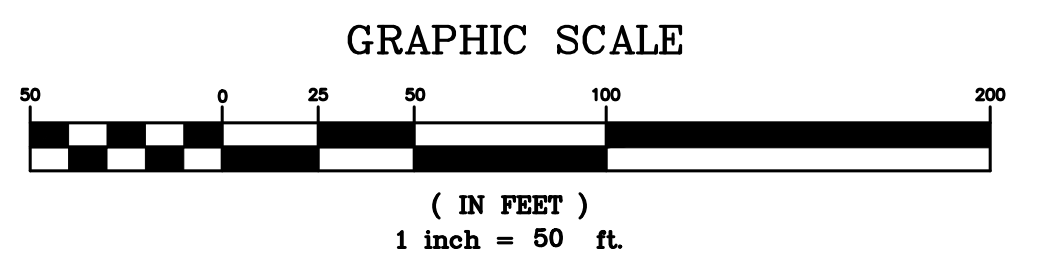
THE INTENT OF THIS EROSION CONTROL PLAN IS TO PROVIDE ADEQUATE EROSION PROTECTION WHILE PRODUCING PAD READY LOTS AND INSTALLING COMMON INFRASTRUCTURE SUCH AS ROADS AND UTILITIES. PRIOR TO CONSTRUCTION OF ACTUAL HOUSES, A SEPARATE LOT BY LOT PLANSET SHOULD BE PREPARED AND APPROVED BY OTHERS. THIS PLANSET IS NOT INTENDED TO PROVIDE LOT-BY-LOT EROSION CONTROL.

### IMPERVIOUS AREA SUMMARY

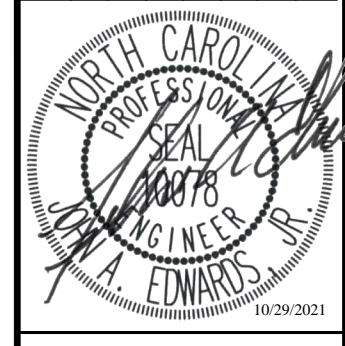
ROW	0.80 AC
19 LOTS (5,000 SF MIA PER LOT)	2.18 AC
TOTAL	2.98 AC

### Required Wake County Construction Sequence (PHASE 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, 15" RCP from SB-1 to CB-3, and 15" HDPE from SB-2 to CB-6, and/or 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.
- Begin phase 2 soil and erosion control plan.



REVISION	DATE	BY	DESCRIPTION
1	02/27/21	JAE	PER TRC COMMENTS
2	09/16/21	JAE	PER TRC COMMENTS
3	10/28/21	JAE	PER TRC COMMENTS
4	10/29/21	JAE	PER TRC COMMENTS



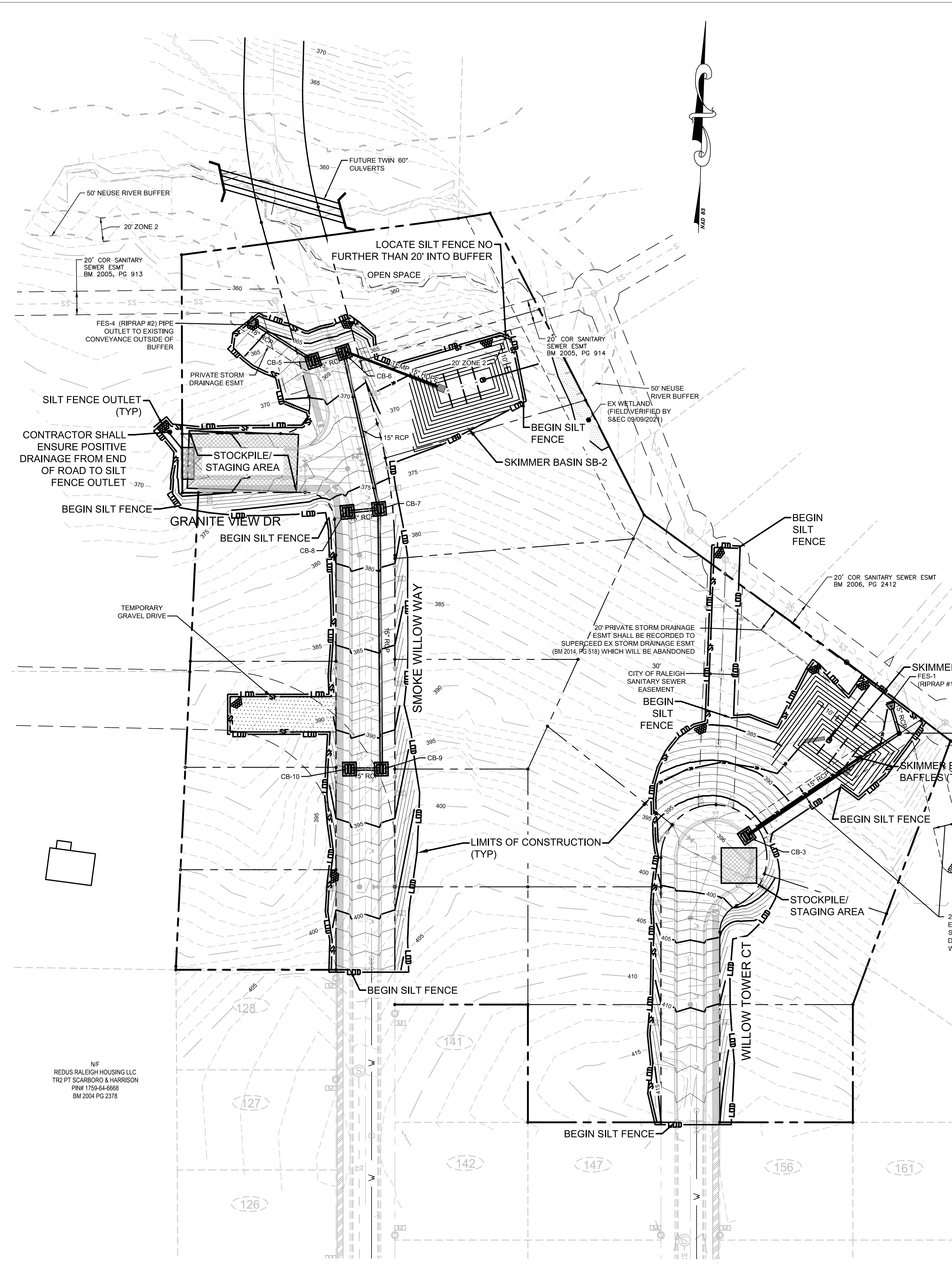
**JOHN A. EDWARDS & COMPANY**  
 Consulting Engineers  
 NC License F-02689  
 333 Wade Ave., Raleigh, N.C. 27605  
 Phone: (919) 828-4428  
 Fax: (919) 828-4711  
 E-mail: info@jaeco.com

GRANITE CREST SUBDIVISION  
 PHASE IIIIC  
 WAKE COUNTY  
 NORTH CAROLINA  
 PHASE 1 SOIL & EROSION CONTROL PLAN

DATE	03-10-2021
DRAWN BY	JAE
FILE NO	
CHECKED BY	JAE, JR.

SHEET  
 CE-11

NF  
 REDUS RALEIGH HOUSING LLC  
 TR2 PT SCARBORO & HARRISON  
 PIN# 1759-04-6588  
 BM 2004 PG 2378



**STOCKPILE NOTES**

SOIL STOCKPILES SHALL BE LOCATED ON THE APPROVED PLAN AND SHALL ADHERE TO THE FOLLOWING REQUIREMENTS:

- DESIGN CRITERIA:
- A. A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT)
  - B. STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
  - C. A NOTE SHALL BE PROVIDED ON THE APPROVED PLAN THAT STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
  - D. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
  - E. APPROVED BMPs SHALL BE SHOWN ON A PLAN TO CONTROL ANY POTENTIAL SEDIMENT LOSS FROM A STOCKPILE.
  - F. STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.
  - G. ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.
  - H. OFF-SITE SPOIL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY UDO AND STATE REGULATIONS. ALL SPOIL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN.
  - I. DEVELOPER/CONTRACTOR SHALL NOTIFY WAKE COUNTY OF ANY OFFSITE DISPOSAL OF SOIL, PRIOR TO DISPOSAL. FILL OF FEMA FLOODWAYS AND NON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).

- MAINTENANCE REQUIREMENTS:
- I. SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
  - J. IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
  - K. THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
  - L. ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

NOTE: DIVERSIONS WITH A SLOPE OF <2% SHALL BE LINED WITH STRAW NETTING. SLOPES >2% SHALL BE LINED WITH EXCELSIOR OR EQUAL.

**TOTAL DENUDED AREA = 2.5 ACRES**

IMPERVIOUS AREA SUMMARY	
ROW	0.80 AC
19 LOTS (5,000 SF MIA PER LOT)	2.18 AC
<b>TOTAL</b>	<b>2.98 AC</b>

**LOT DEVELOPMENT NOTE**

THE INTENT OF THIS EROSION CONTROL PLAN IS TO PROVIDE ADEQUATE EROSION PROTECTION WHILE PRODUCING PAD READY LOTS AND INSTALLING COMMON INFRASTRUCTURE SUCH AS ROADS AND UTILITIES. PRIOR TO CONSTRUCTION OF ACTUAL HOUSES, A SEPARATE LOT BY LOT PLANSET SHOULD BE PREPARED AND APPROVED BY OTHERS. THIS PLANSET IS NOT INTENDED TO PROVIDE LOT-BY-LOT EROSION CONTROL.

**UTILITY NOTES:**

- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.

**UTILITY SEPARATION:**

- Water & Sewer Mains
  - A) Minimum lateral separation 10'
  - B) Separate ditches with 18" min. vertical distance
- Water & storm drainage lines 18" min.
- Sanitary sewer & storm drain lines 18" min.
- Minimum cover over water mains shall be 3.0'

**PIPE MATERIAL:**

**WATER MAINS** - SHALL BE DUCTILE IRON WATER PIPE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**SEWER MAINS** - SHALL BE PVC OR DIP GRAVITY SANITARY SEWER PIPE, ASTM D-3034 SDR 35, TYPE PSM OR EQUAL AS SPECIFIED BY THE CITY OF RALEIGH UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS.

**LEGEND**

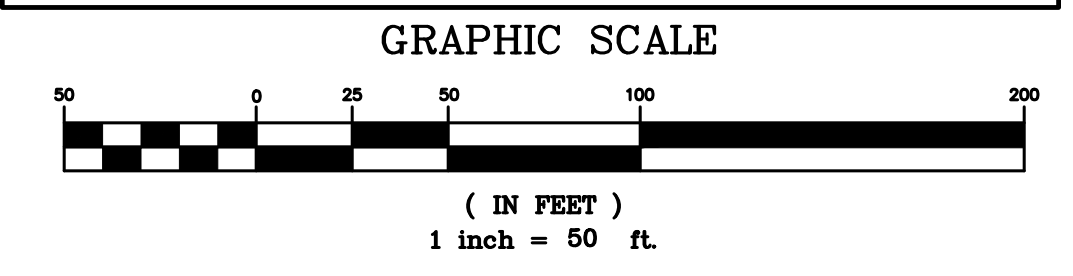
- DB DEED BOOK
- BM BOOK OF MAPS
- PG PAGE
- N/F NOW OR FORMERLY
- R/W RIGHT OF WAY
- EIP EXISTING IRON PIPE
- COR CITY OF RALEIGH EASEMENT
- ESMT EXISTING
- EX EXISTING
- EX SANITARY SEWER MANHOLE
- EX WATER VALVE
- PROPOSED FIRE HYDRANT (FH)
- PROPOSED WATER VALVE (WV)
- PROPOSED WATER METER (WM)
- PROPOSED MANHOLE (MH)
- PROPOSED JUNCTION BOX (JB)
- PROPOSED CLEANOUT (CO)
- BLOWOFF ASSEMBLY (BOA)
- PROPOSED CATCH BASIN (CB)
- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER
- PROPOSED STORM MAIN
- EX STORM MAIN
- PROPERTY LINE
- RIGHT-OF-WAY
- EXISTING LOT LINE
- TEMPORARY DIVERSION DITCH
- SILT FENCE OUTLET
- INLET PROTECTION
- TEMPORARY SILT FENCING
- STOCKPILE/STAGING AREA

**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.

**Required Wake County Construction Sequence (PHASE 2)**

- Maintain all erosion control measures installed for phase 1, and/or other measures as shown on the approved plan. Seed temporary diversions, berms and basins immediately after construction.
- Install remaining utility systems and stormwater collection system and protect inlets with block and gravel inlet controls, sediment traps or other approved measures as shown on the plan. Begin construction, building, etc.
- Block invert out of CB-6 to CB-5 until basin is ready for removal.
- 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.
- 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.
- Contact NCDEQ - Raleigh Regional Office (919) 791-4200 to determine the Division of Energy, Mineral and Land Resources contact person to receive dewatering notifications. At least 10 days prior to beginning dewatering activity, send Email to NCDEQ-DEMLR contact person and copy Environmental consultant that met you onsite. The email should include:
  - E&SC Jurisdiction: Wake County
  - Wake County Project: Name, Number
  - Location (city/town)
  - Environmental Consultant Name
 and address the following:
  - a) Reason for conversion
  - b) Basin #
  - c) Dewatering method, and
  - d) all other necessary info from Part II, Section G, Item 4 of the NCG01. (keep email for your NPDES monitoring documentation)
- After receiving positive confirmation from NCDEQ-DEMLR that you may remove the basin OR on > Day 11, whichever is sooner, Remove Basin(s) and associated temporary diversion ditches. If pipes need to be extended, perform this operation at this time. Remove blocking from CB-6 to CB-5. 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.

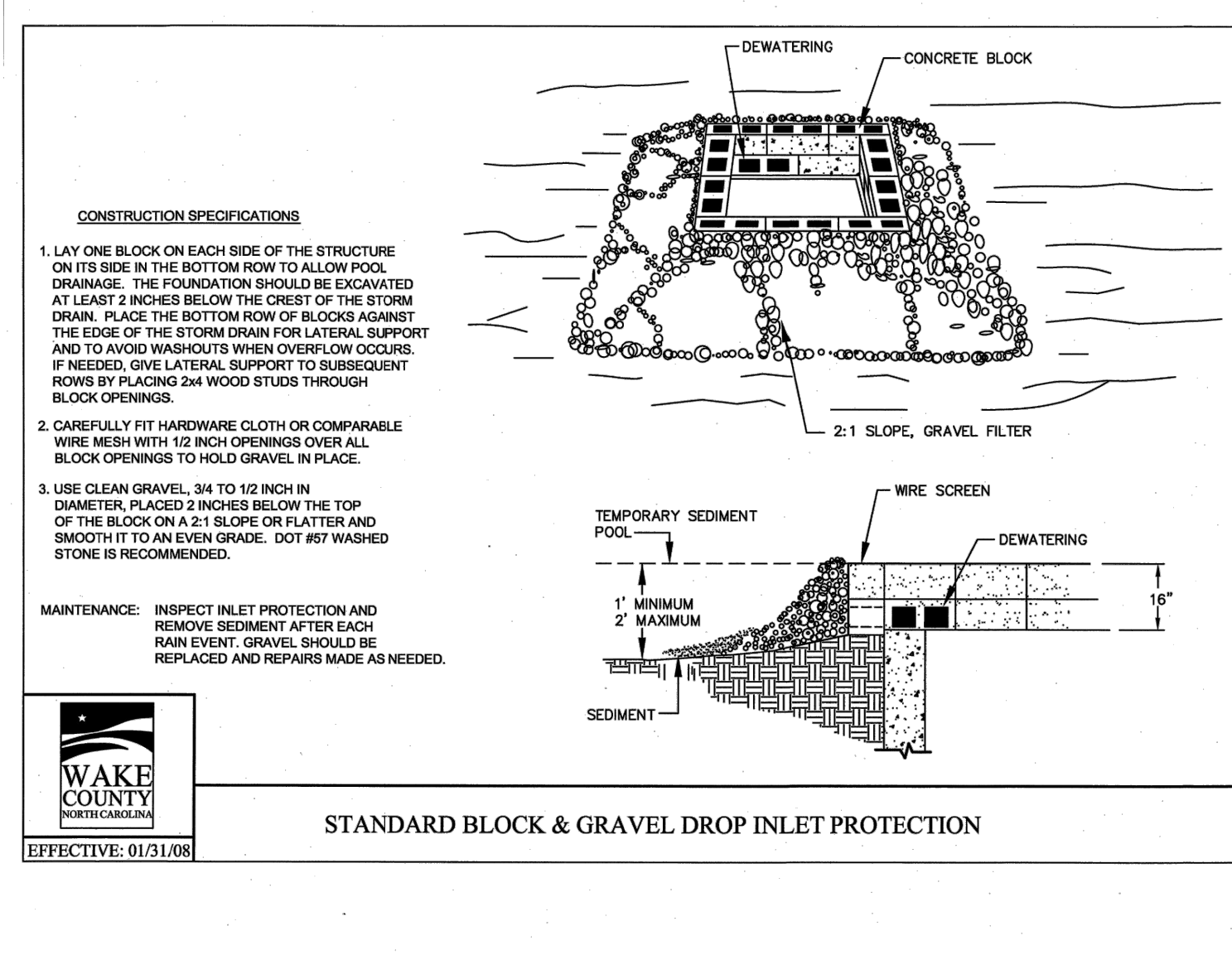
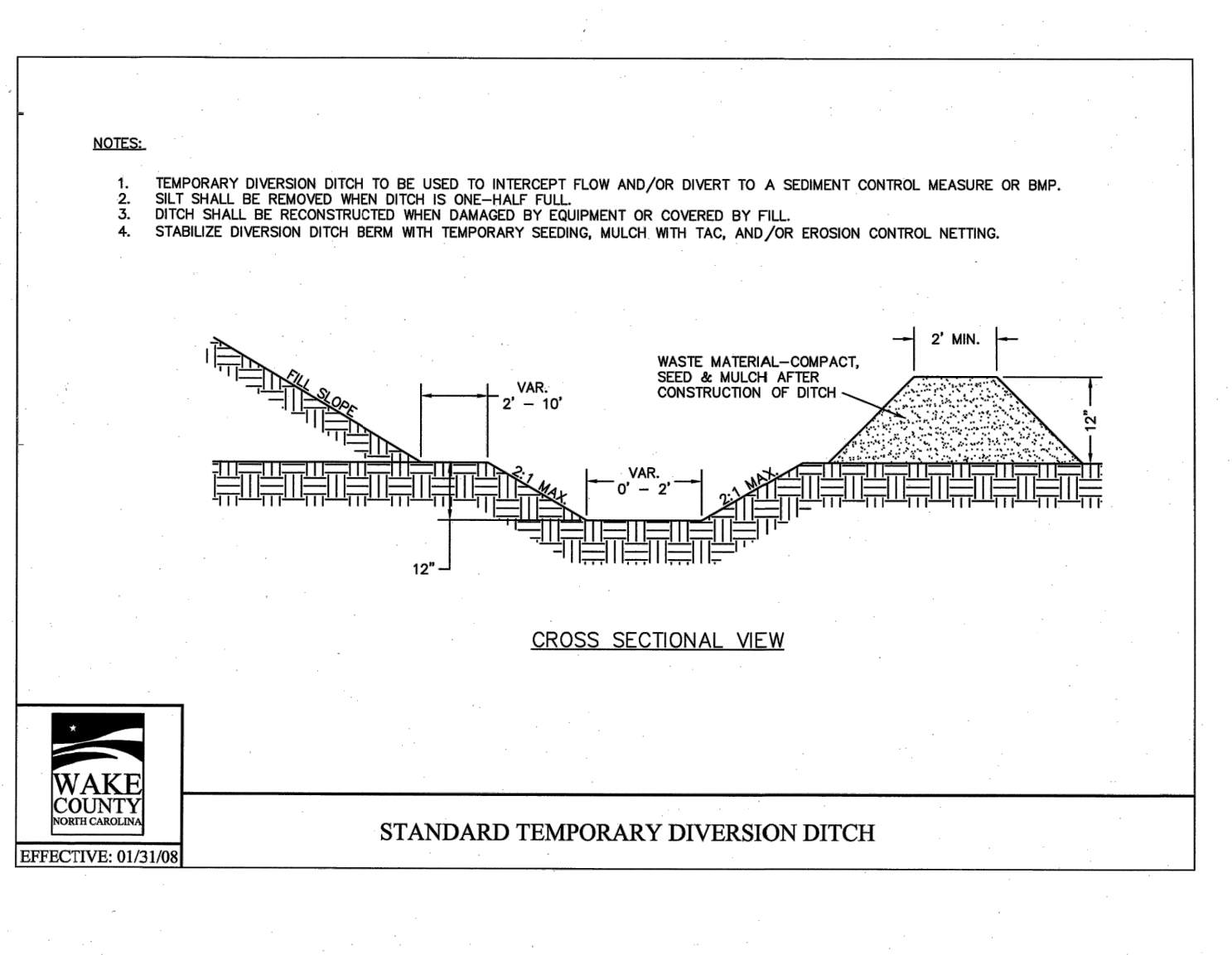
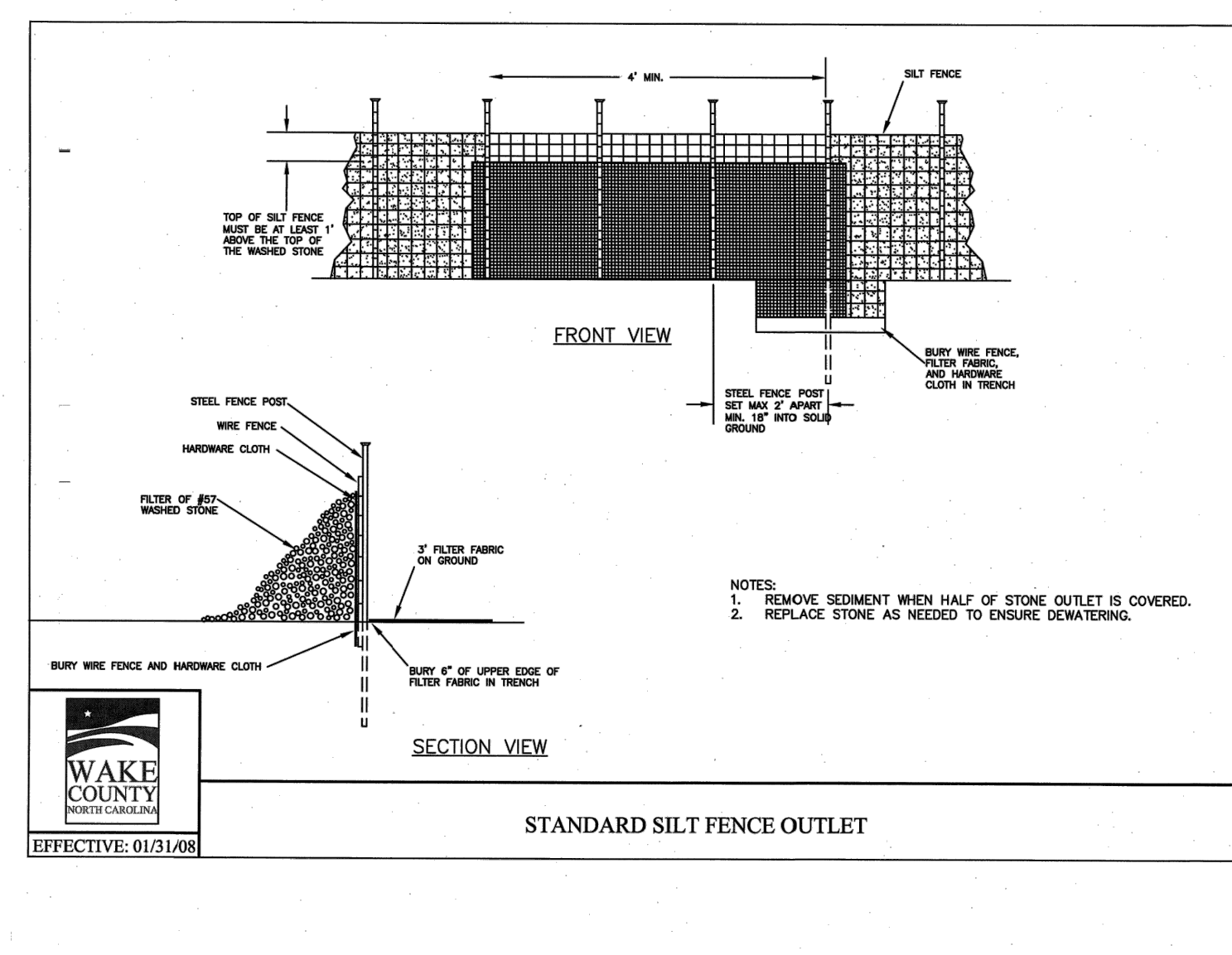
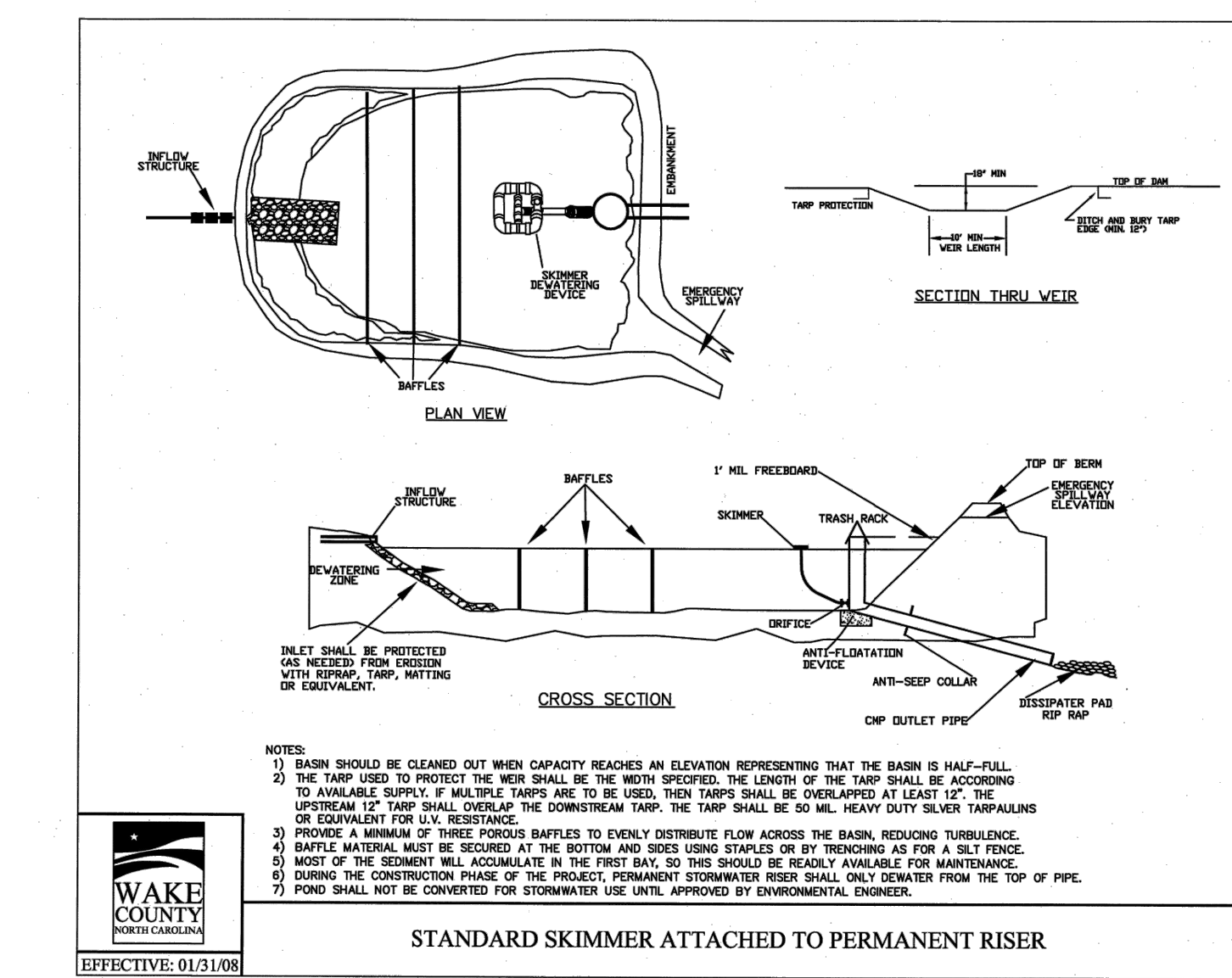
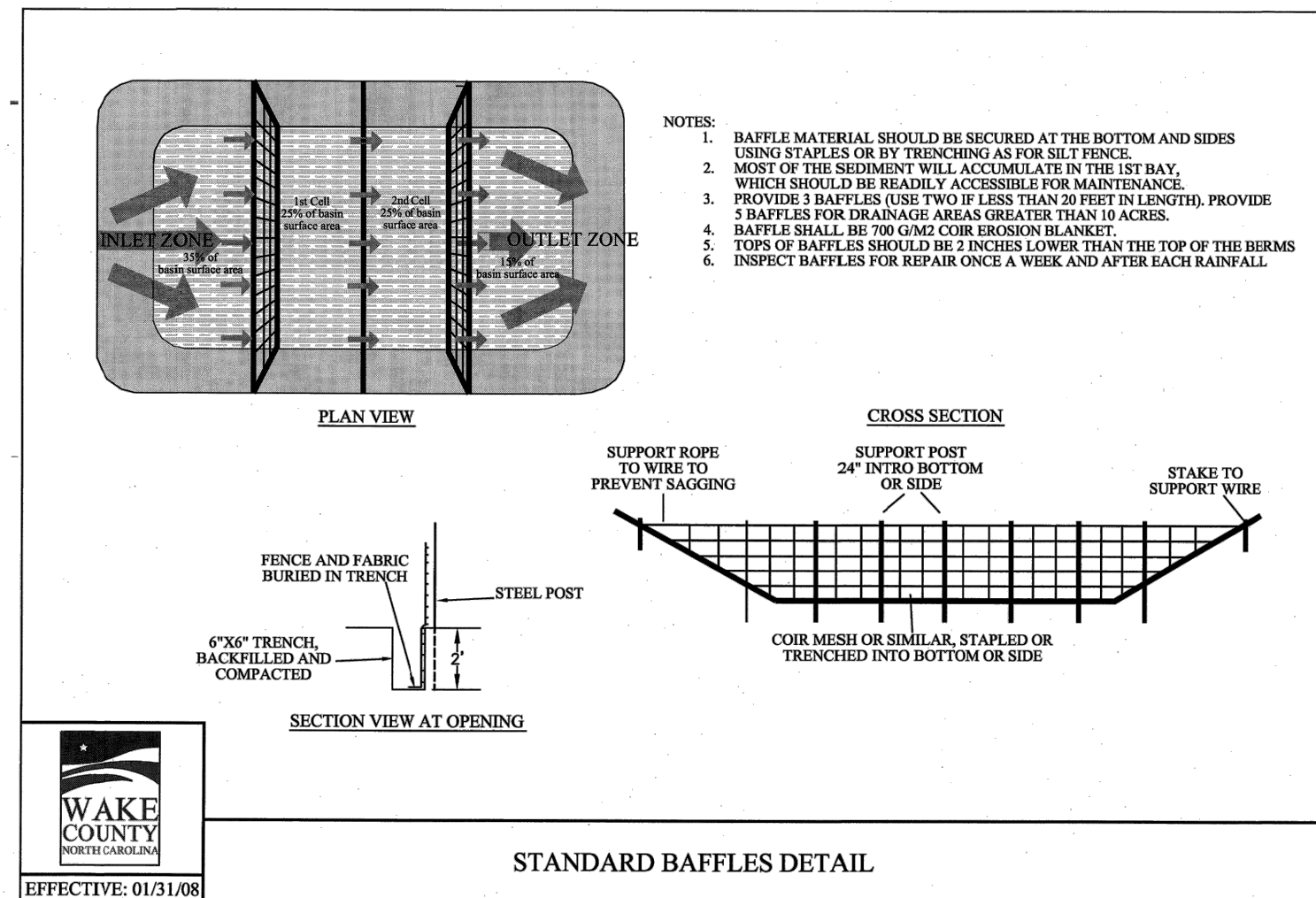
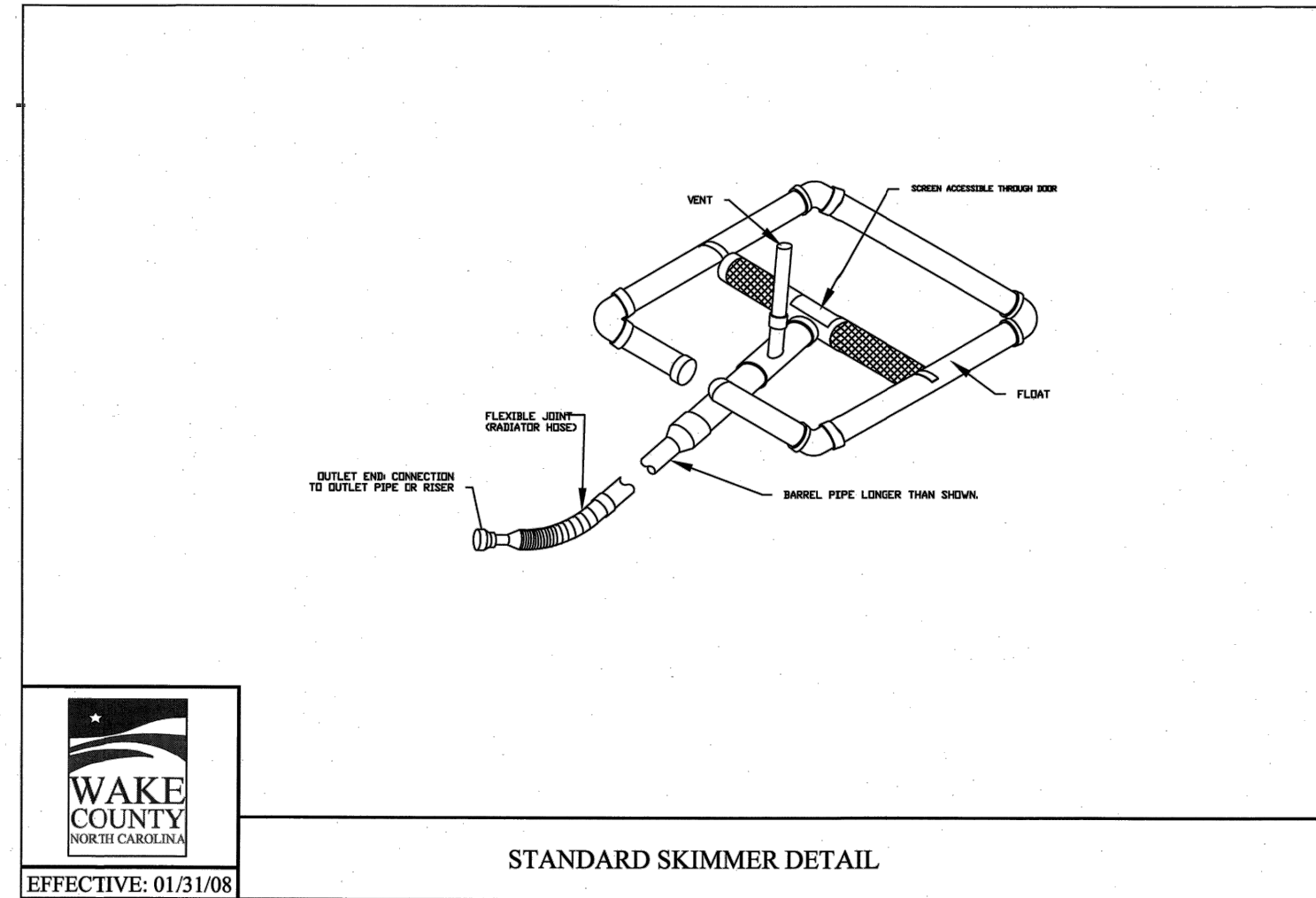
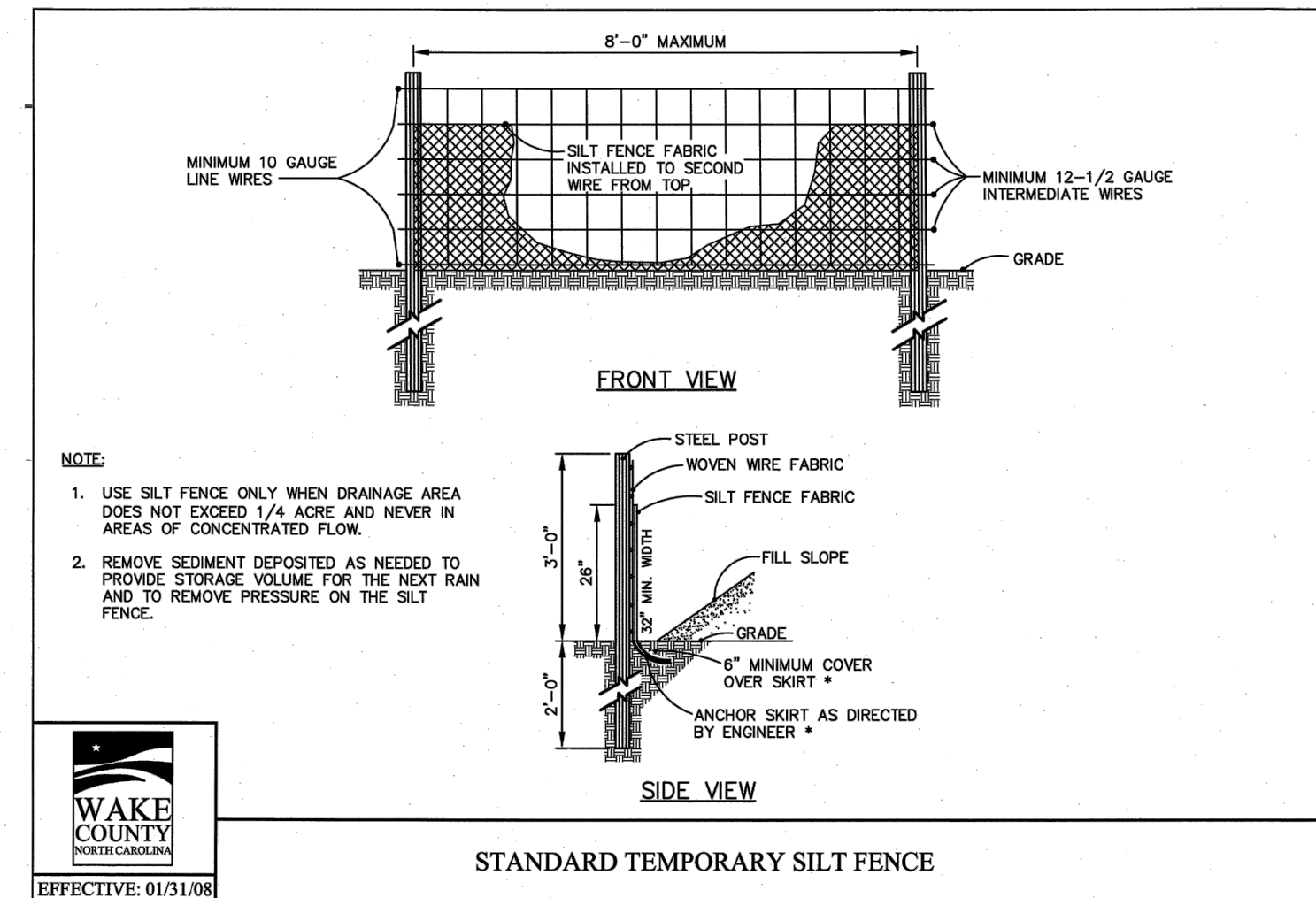
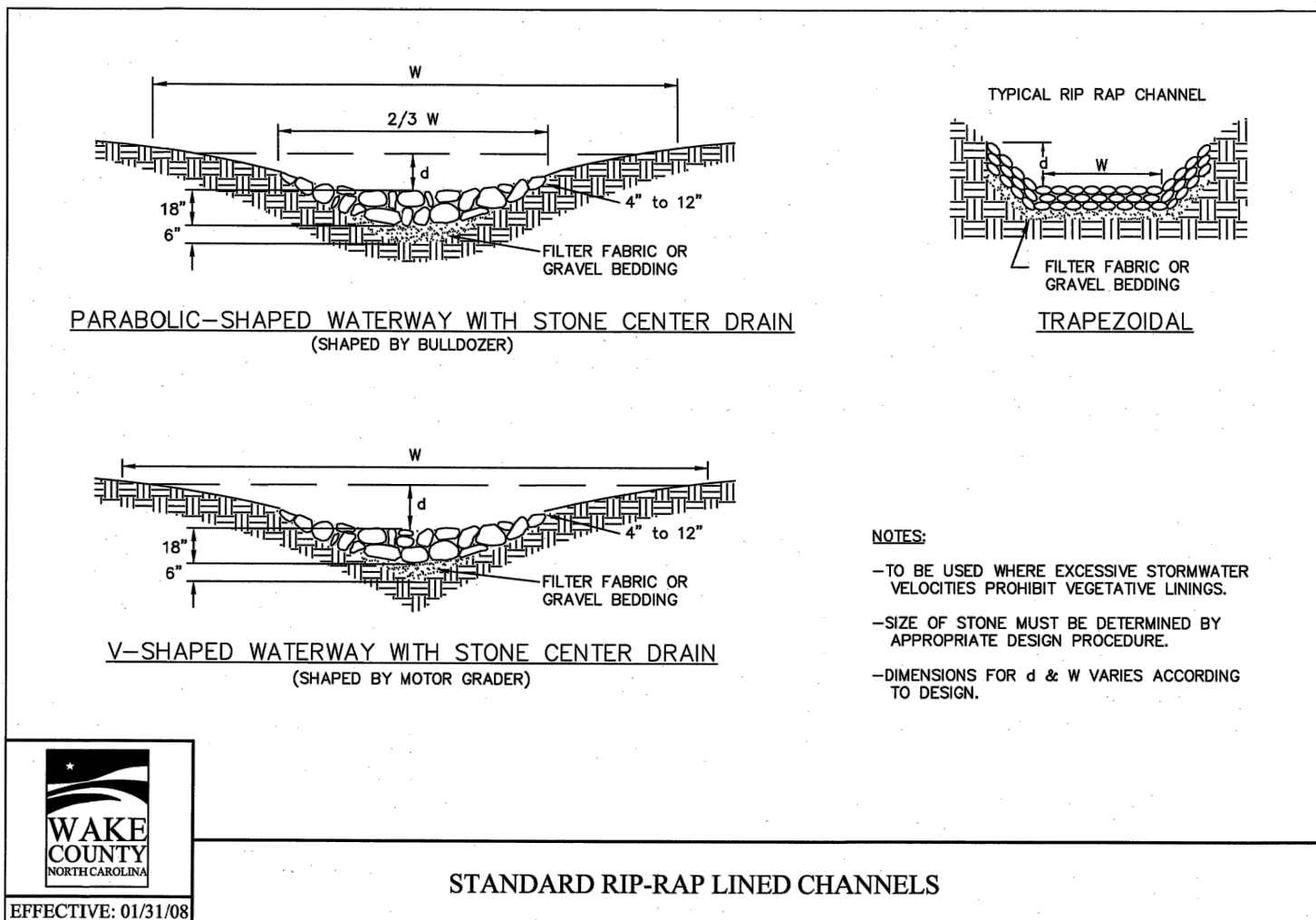


REVISION	DATE	BY
PER TRC COMMENTS	02/27/21	TT
PER TRC COMMENTS	09/16/21	TT
PER TRC COMMENTS	10/28/21	TT
PER TRC COMMENTS	10/29/21	TT

**JOHN A. EDWARDS & COMPANY**  
 Consulting Engineers  
 NC License F-02689  
 333 Wade Ave., Raleigh, N.C. 27605  
 Phone: (919) 828-4428  
 Fax: (919) 828-4711  
 E-mail: info@jaeco.com

**GRANITE CREST SUBDIVISION**  
**PHASE IIIC**  
 NORTH CAROLINA  
 WAKE COUNTY  
**ROLESVILLE**  
**PHASE 2 SOIL & EROSION CONTROL PLAN**

DATE:	03-10-2021
DRAWN BY:	FJM
CHECKED BY:	JAE, JR.
SCALE:	1" = 50'
FILE NO:	



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

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

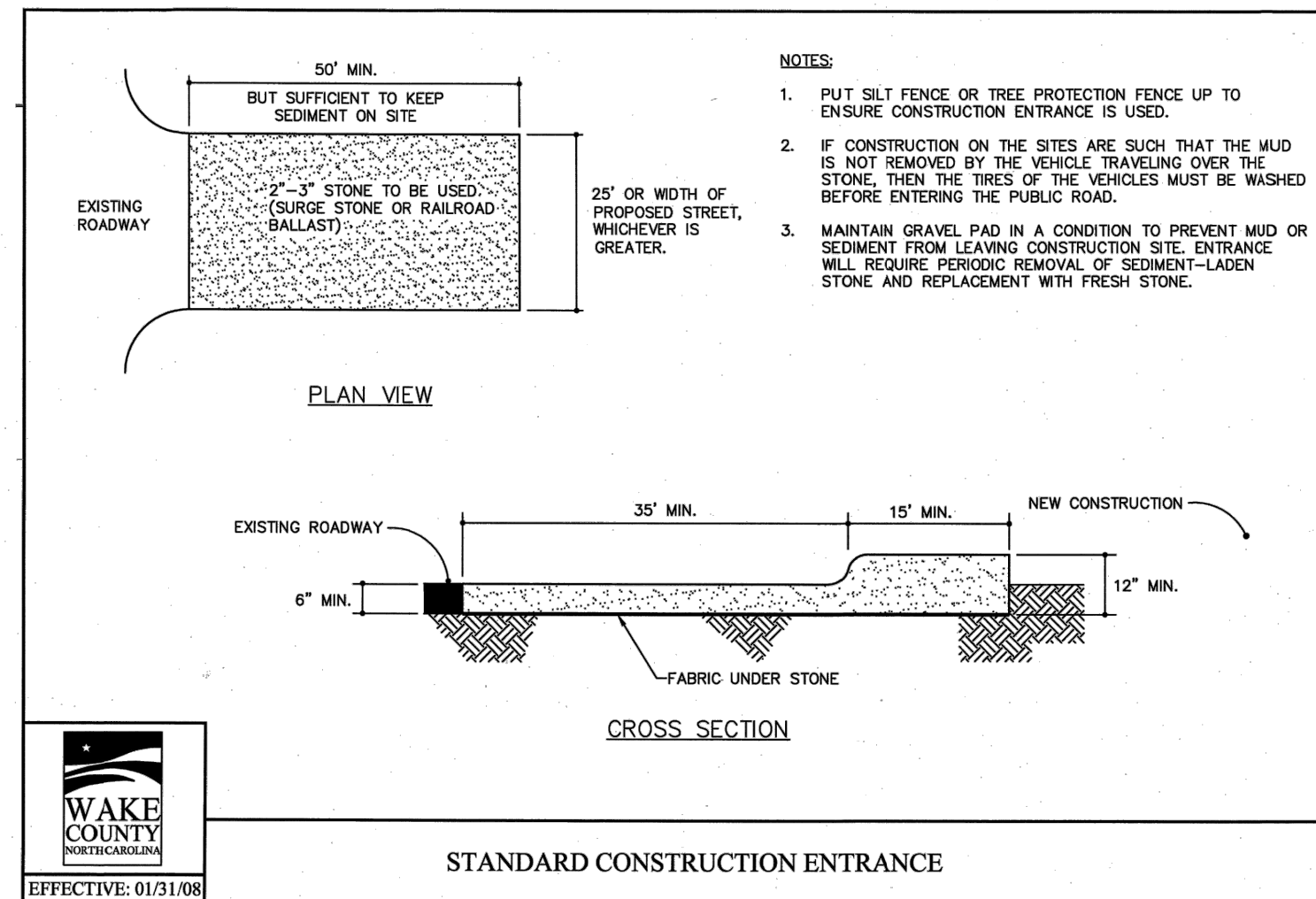
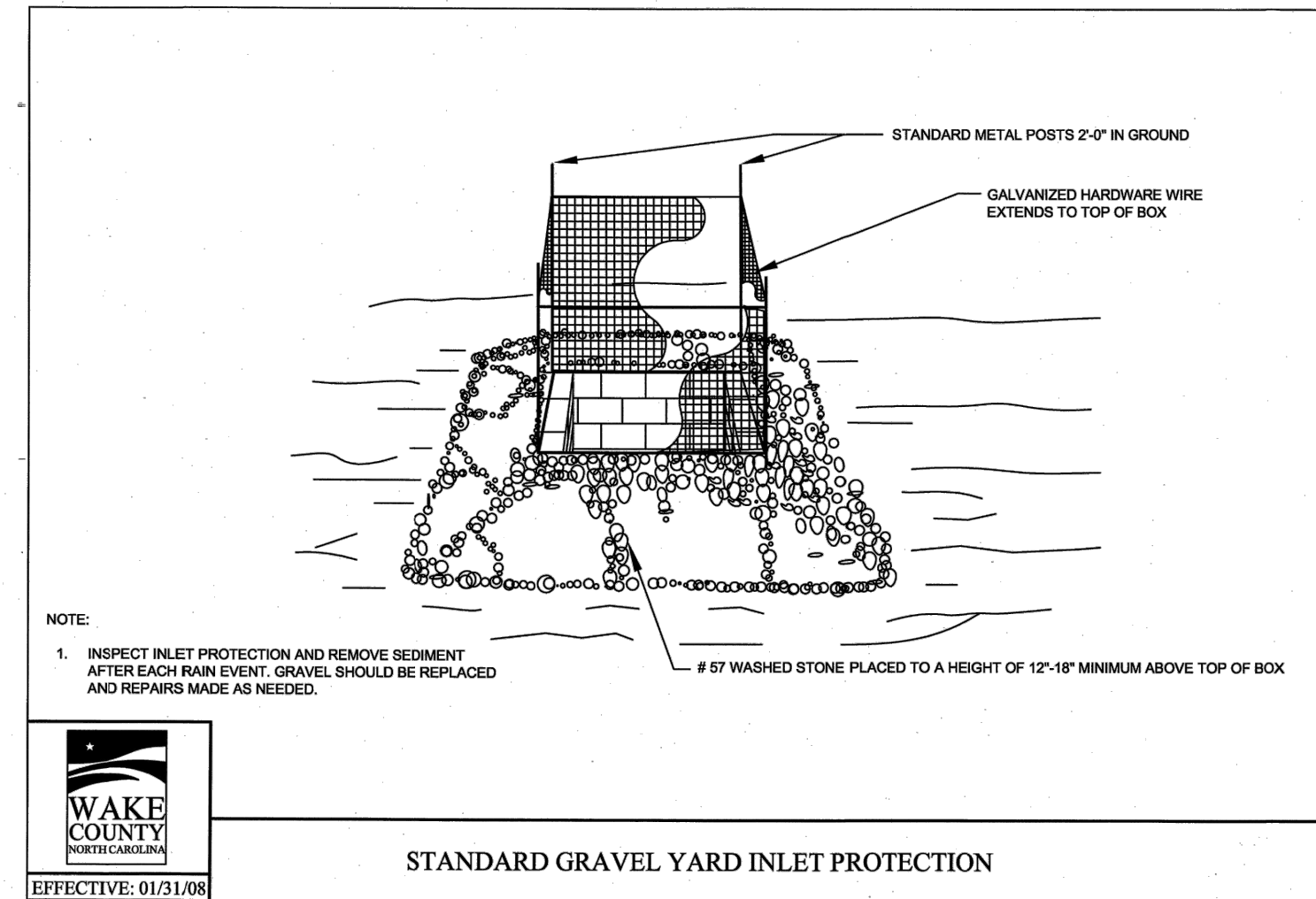
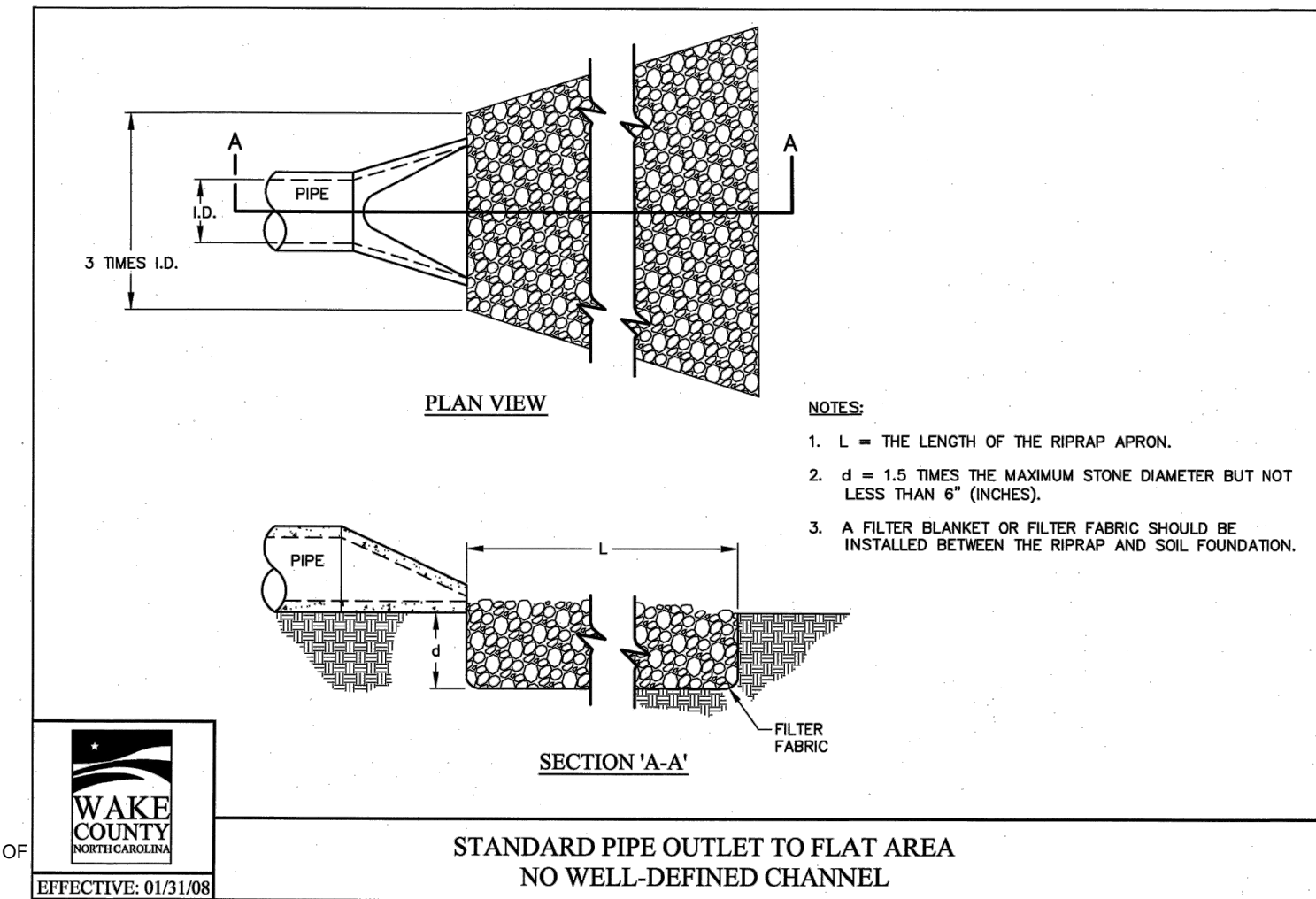
**SEEDING SCHEDULE FOR SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1)**

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

CONSULT S&E ENVIRONMENTAL ENGINEERS FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE THAT DO WELL UNDER LOCATION CONDITIONS. OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.  
\*\*TEMPORARY: RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12" IN HEIGHT BEFORE MOWING; OTHERWISE, FESCUE MAY BE SHADED OUT.

**NEW STABILIZATION TIMEFRAMES (EFFECTIVE AUG 3, 2011)**

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



- SEEDBED PREPARATION:**
- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
  - RIP THE ENTIRE AREA TO SIX INCHES DEEP.
  - REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS, LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
  - APPLY AGRICULTURAL LIME, FERTILIZER AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL. (SEE MIXTURE BELOW).
  - CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED FOR TO SIX INCHES DEEP.
  - SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
  - MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
  - INSPECT ALL SEEDBED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE MORE THAN 80% DAMAGED, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
  - CONSULT S&E ENVIRONMENTAL ENGINEERS ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

**SEEDING MIXTURE**

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

**JOHN A. EDWARDS & COMPANY**  
Consulting Engineers  
333 Wade Ave., Raleigh, NC 27605  
Phone (919) 828-4428  
FAX (919) 828-4711  
E-mail info@jaeco.com

**GRANITE RIDGE TOWNHOMES**  
PHASE III C  
WAKE COUNTY  
ROLESVILLE  
SOIL EROSION CONTROL DETAILS

**REVISION**

DATE	REVISION
05/27/21	PER TRC COMMENTS
09/16/21	PER TRC COMMENTS
10/28/21	PER TRC COMMENTS
10/29/21	PER TRC COMMENTS

**DATE:** 03-10-2021  
**SCALE:** NTS  
**DRAWN BY:** FJM  
**CHECKED BY:** JAE, JR.  
**FILE NO.:**  
**SHEET:** CE-13

**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

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

**SECTION E: GROUND STABILIZATION**

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

**Note:** After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

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

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

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

**EQUIPMENT AND VEHICLE MAINTENANCE**

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

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

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

**PAINT AND OTHER LIQUID WASTE**

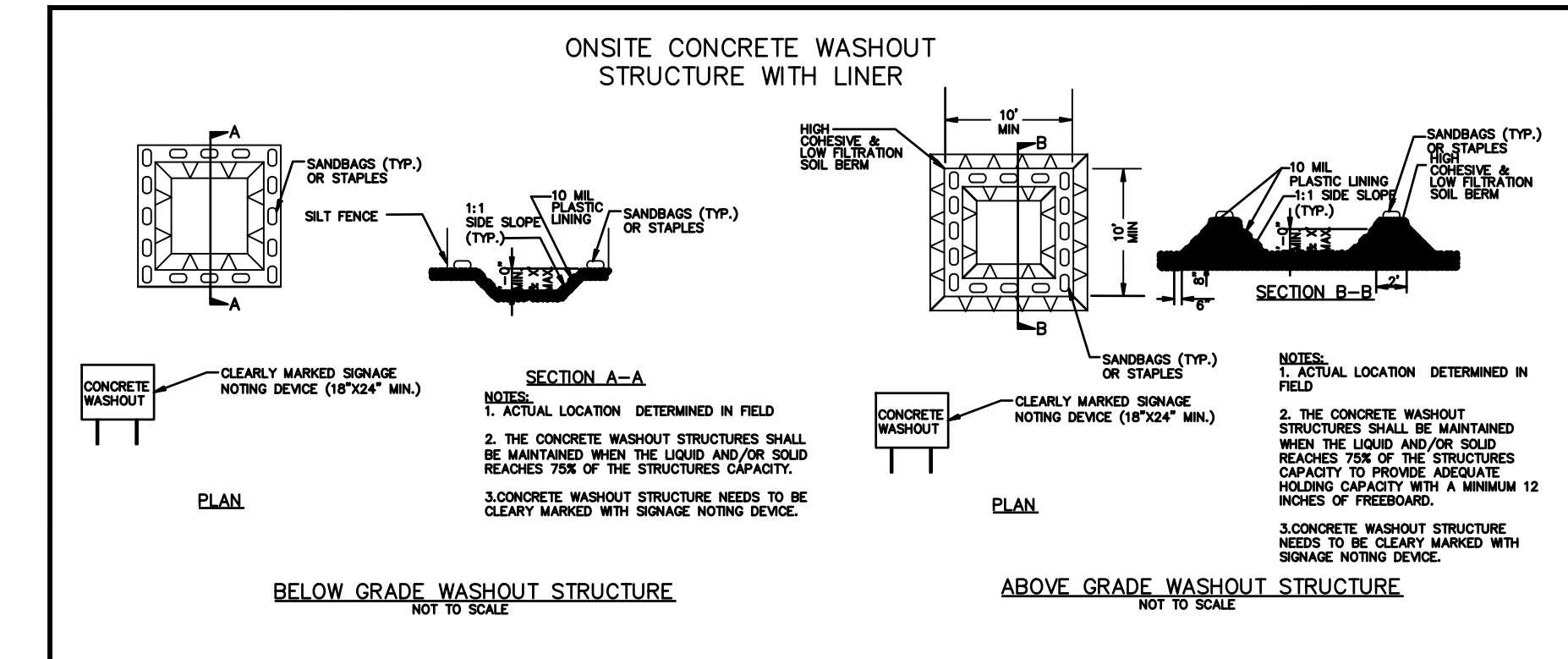
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled,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

**PORTABLE TOILETS**

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

**EARTHEN STOCKPILE MANAGEMENT**

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



**CONCRETE WASHOUTS**

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

**HERBICIDES, PESTICIDES AND RODENTICIDES**

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

**HAZARDOUS AND TOXIC WASTE**

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

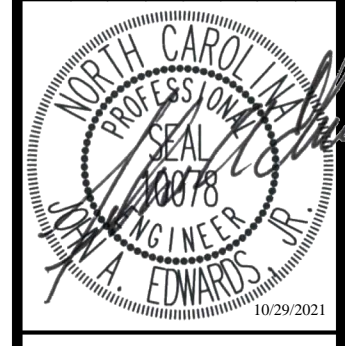
REVISION	DATE	BY
PER TRC COMMENTS	05/27/21	TT
PER TRC COMMENTS	09/16/21	TT
PER TRC COMMENTS	10/28/21	TT
PER TRC COMMENTS	10/29/21	TT

**JOHN A. EDWARDS & COMPANY**  
 Consulting Engineers  
 333 Wade Ave., Raleigh, NC 27605  
 Phone (919) 828-4428  
 Fax (919) 828-4711  
 E-mail info@jaeco.com

**GRANITE RIDGE TOWNHOMES**  
 PHASE III C  
 WAKE COUNTY  
 NORTH CAROLINA  
 NCG01 NOTES & DETAILS

DATE	03-10-2021
DRAWN BY	ENM
CHECKED BY	JAE, JR.
SCALE	NTS
FILE NO.	

REVISION	
PER TRC COMMENTS	
PER TRC COMMENTS	
PER TRC COMMENTS	
PER TRC COMMENTS	
PER TRC COMMENTS	
DATE	
05/27/21	
09/16/21	
10/28/21	
10/29/21	



**JOHN A. EDWARDS & COMPANY**  
 Consulting Engineers  
 333 Wade Ave., Raleigh, NC 27605  
 Phone (919) 828-4428  
 FAX (919) 828-4711  
 E-mail info@jaeco.com

**GRANITE RIDGE TOWNHOMES**  
 PHASE III C  
 WAKE COUNTY  
 ROLESVILLE  
 NORTH CAROLINA

NCG01 NOTES & DETAILS

DATE	03-10-2021
DRAWN BY	FIN
CHECKED BY	JAE, JR.
SCALE	NTS
FILE NO.	

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

**SECTION A: SELF-INSPECTION**

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

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

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

**PART II, SECTION G, ITEM (4)  
 DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT**

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- (a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
- (b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
- (c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
- (d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
- (e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- (f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

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

**SECTION B: RECORDKEEPING**

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

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

**2. Additional Documentation to be Kept on Site**

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- (a) This General Permit as well as the Certificate of Coverage, after it is received.
- (b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

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

**SECTION C: REPORTING**

**1. Occurrences that Must be Reported**

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

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

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