

# ARENDELL AVE SITE PLAN SET PROJECT #561602

**SITE INFORMATION:**

LOCATION: 706 N ARENDELL AVE, ZEBULON  
 COUNTY: WAKE  
 PARENT PIN: 2705274195  
 PMPG: 2006/02452

ZONING: DTP  
 ACREAGE: 1.38 ACRES  
 CURRENT LAND USE MAP CLASSIFICATION: TN  
 PROPOSED LAND USE MAP CLASSIFICATION: TN

LAND CLASS: RESIDENTIAL

**MINIMUM BUILDING SETBACKS:**  
 FRONT YARD: 25'  
 SIDE YARD: 0' OR 5'  
 REAR YARD: 4'  
 CORNER YARD: 5'

**RIGHT OF WAY & OTHER AREAS:**  
 RIGHT OF WAY DEDICATION: 0.00 AC  
 NATURAL WETLANDS: 0.00 AC  
 STREAM BUFFER: 0.00 AC

**LOT ACREAGE:**  
 TOTAL NUMBER PROPOSED LOTS: 12  
 MAXIMUM ALLOWED DENSITY: 10 DU/AC  
 PROPOSED DENSITY: 8.70 DU/AC  
 MINIMUM ALLOWED LOT SIZE: 3,000 SF  
 MINIMUM PROPOSED LOT SIZE: 3,090 SF  
 MAXIMUM PROPOSED LOT SIZE: 3,427 SF  
 AVERAGE PROPOSED LOT SIZE: 3,152 SF  
 MINIMUM ALLOWABLE LOT WIDTH: 30'  
 MINIMUM PROPOSED LOT WIDTH: 30'  
 MAXIMUM ALLOWED LOT COVERAGE: 85%  
 MAXIMUM PROPOSED LOT COVERAGE: 63%

**OPEN SPACE BREAKDOWN:**  
 PROPERTY BOUNDARY: 60,200 SF (1.38 AC)  
 REQUIRED URBAN SET-ASIDE: 6,020 SF (10% OF TOTAL SITE)  
 PROVIDED URBAN SET-ASIDE: 9,079 SF (0.21 AC)

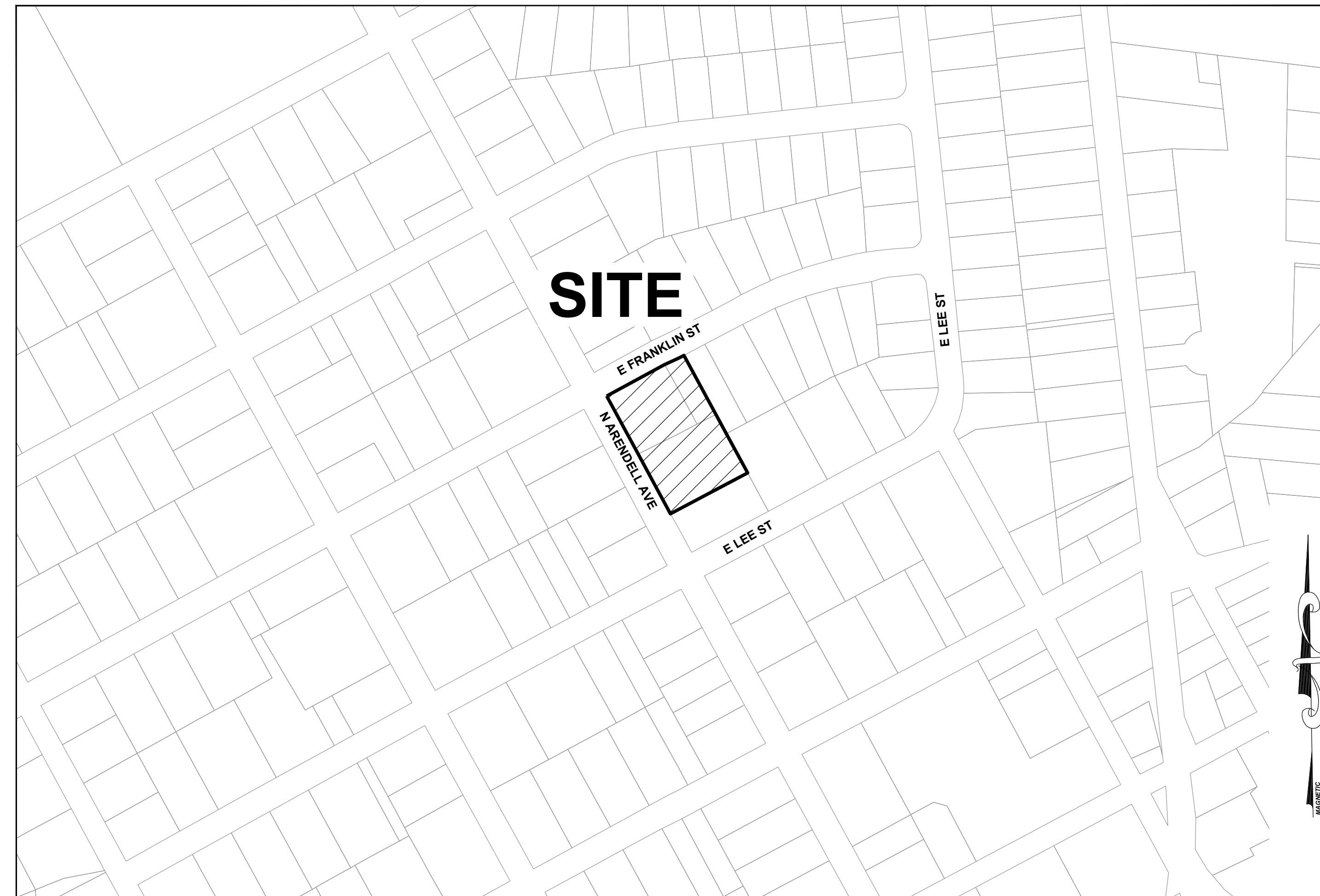
**IMPERVIOUS AREAS:**  
 ROADWAYS / PARKING: 7,085 SF (0.16 AC)  
 SIDEWALKS: 3,017 SF (0.07 AC)  
 LOTS (1,710 SF/LOT): 20,520 SF (0.47 AC)  
 TOTAL ON-SITE IMPERVIOUS AREA: 30,622 SF (0.7 AC)  
 TOTAL ON-SITE IMPERVIOUS PERCENT: 50.72%

**UTILITY DEMANDS:**  
 SEWAGE USAGE: 4,320 GPD  
 3 BED X 120 GPD/BED X 12 UNITS

**WATER USAGE:**  
 4,320 GPD  
 3 BED X 120 GPD/BED X 12 UNITS

**DISTURBED AREA:**  
 TOTAL DISTURBED AREA: 61,002 SF (1.4 AC)

**STREET TYPE SUMMARY:**  
 16' ROW SECTION: 390 LF



VICINITY MAP  
1" = 200'

**SHEET INDEX**

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C-5.0	GRADING PLAN
C-6.0	STORMWATER PLAN
C-7.0	EROSION CONTROL NOTE
C-7.1	EROSION CONTROL PLAN - STAGE 1
C-7.2	EROSION CONTROL PLAN - STAGE 2
C-8.0	LANDSCAPING PLAN
D-1.0	BUILDING ELEVATIONS
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D-2.10	LIGHTING DETAILS

**PUBLIC UTILITY IMPROVEMENTS:**

WATER MAIN: 0 SF  
 SEWER MAIN: 76 SF  
 WATER STUBS: 14  
 SEWER STUBS: 16

NOTE: STUB QUANTITY INCLUDES REMOVAL OF EXISTING STUBS.

**EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT**

**APPROVED**

EROSION CONTROL  S-  
 STORMWATER MGMT.  S-  
 FLOOD STUDY  S-  
 DATE \_\_\_\_\_

ENVIRONMENTAL CONSULTANT SIGNATURE \_\_\_\_\_

**PERMIT INFORMATION:**

(PERMITTING AUTHORITY, PERMIT IDENTIFIERS, & EFFECTIVE DATES)

TOWN OF ZEBULON PLANNING AND ZONING:  
 - EFFECTIVE DATE OF ZONING APPROVAL: XX-XX-2020  
 - EFFECTIVE DATE OF MASTER PLAN APPROVAL: XX-XX-2020

WAKE COUNTY ENVIRONMENTAL:  
 -LAND DISTURBANCE PERMIT: SEC-XXXXXX-XXXX  
 -STORMWATER PERMIT: SWF-XXXXXX-XXXX

NCDWR/CITY OF ZEBULON PUBLIC UTILITIES:  
 -WATER EXTENSION PERMIT: W-XXXX  
 -SEWER EXTENSION PERMIT: S-XXXX

NC DEPT. OF TRANSPORTATION:  
 -DRIVEWAY PERMIT: D51-XXX-XXXX (DATE: XX-XX-XXXX)  
 -2 PARTY ENCROACHMENT AGMT: E51-XXX-XXXX (DATE: XX-XX-XXXX)  
 -3 PARTY ENCROACHMENT AGMT: E51-XXX-XXXX (DATE: XX-XX-XXXX)

U.S. ARMY CORPS OF ENGINEERS:  
 -IMPACT PERMIT: NOT REQUIRED

NC DIVISION OF WATER QUALITY:  
 -BUFFER IMPACT AUTHORIZATION: NOT REQUIRED

**SURVEYOR:**

TAYLOR LAND CONSULTANTS  
 5448 APEX PEAKWAY  
 APEX, NC 27502  
 919-801-1104 (O)  
 919-337-7998 (M)  
 CONTACT: JEREMY TAYLOR, PL  
 jeremy@taylorlc.com

**CIVIL ENGINEERING:**

STRONG ROCK ENGINEERING GROUP, PLLC  
 PO BOX 55992  
 RALEIGH, NC 27624  
 COMPANY LICENSE #: P-2166  
 CONTACT:  
 984-200-1932 (P)  
 information@strongrockengineering.com

**SITE PERMITTING APPROVAL:**

WATER AND SEWER PERMITS (IF APPLICABLE)

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # S-3936

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # N/A

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT - PLANS AUTHORIZED FOR CONSTRUCTION

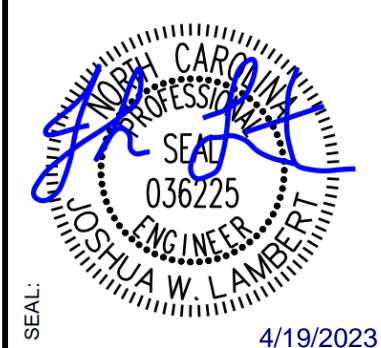
ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A TOWN OF ZEBULON REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH 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 PUBLIC UTILITIES DEPARTMENT DEVELOPMENT APPROVAL

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT WATER REVIEW OFFICER



NO.	REVISIONS	DATE	BY



**STRONGROCK ENGINEERING GROUP**

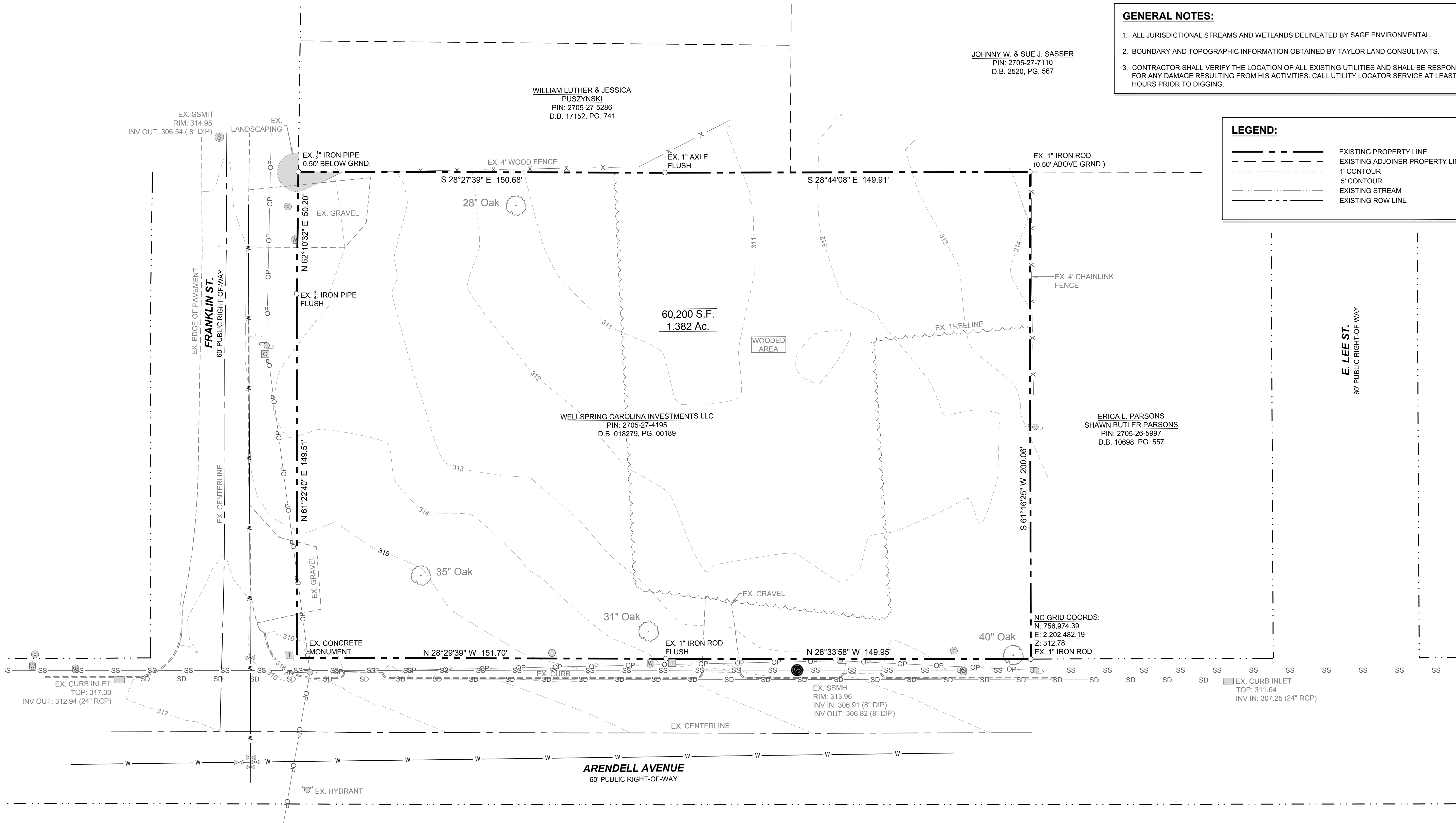
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166  
 6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT: NOT FOR CONSTRUCTION  
 SCALE: AS SHOWN  
 DESIGNED BY: JWL  
 DRAWN BY: SRG  
 CHECKED BY: JWL

TRUE- ZEBULON-ARENDELL  
 TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 CONSTRUCTION PLANS  
 COVER SHEET

DRAWING SHEET  
**C-0.0**

01 OF 24



**GENERAL NOTES:**

1. ALL JURISDICTIONAL STREAMS AND WETLANDS DELINEATED BY SAGE ENVIRONMENTAL.
2. BOUNDARY AND TOPOGRAPHIC INFORMATION OBTAINED BY TAYLOR LAND CONSULTANTS.
3. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS ACTIVITIES. CALL UTILITY LOCATOR SERVICE AT LEAST 48 HOURS PRIOR TO DIGGING.

**LEGEND:**

- EXISTING PROPERTY LINE
- - - EXISTING ADJOINER PROPERTY LINE
- 1' CONTOUR
- 5' CONTOUR
- EXISTING STREAM
- EXISTING ROW LINE

JOHNNY W. & SUE J. SASSER  
PIN: 2705-27-7110  
D.B. 2520, PG. 567

WILLIAM LUTHER & JESSICA  
PUSZYNSKI  
PIN: 2705-27-5286  
D.B. 17152, PG. 741

60,200 S.F.  
1.382 Ac.

WELLSPRING CAROLINA INVESTMENTS LLC  
PIN: 2705-27-4195  
D.B. 018279, PG. 00189

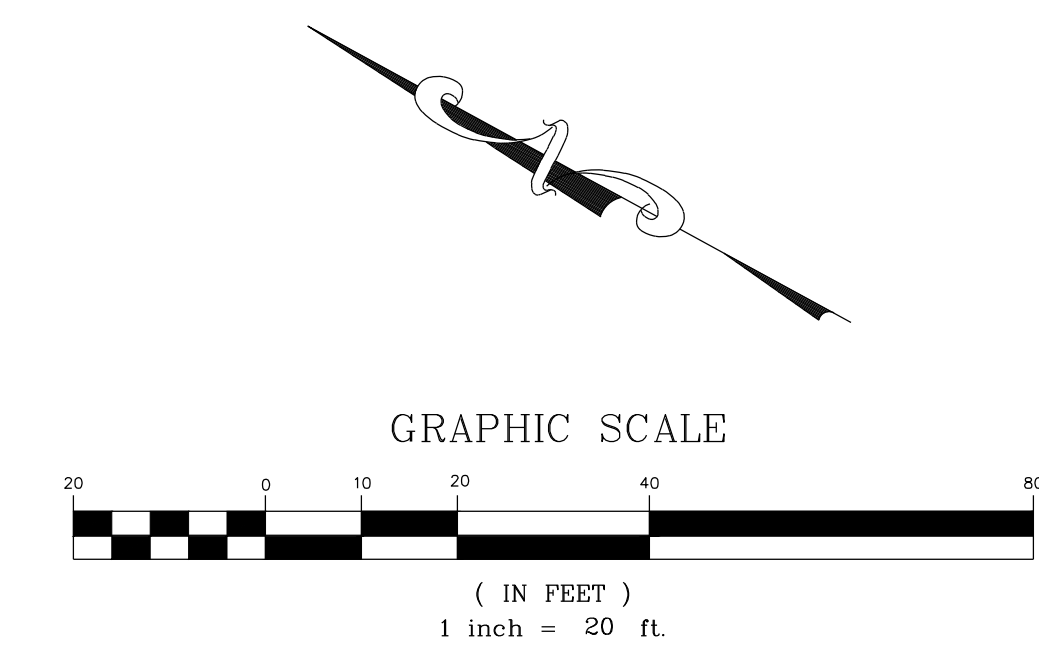
ERICA L. PARSONS  
SHAWN BUTLER PARSONS  
PIN: 2705-26-5997  
D.B. 10698, PG. 557

NC GRID COORDS:  
N: 756,974.39  
E: 2,202,482.19  
Z: 312.78  
EX. 1" IRON ROD

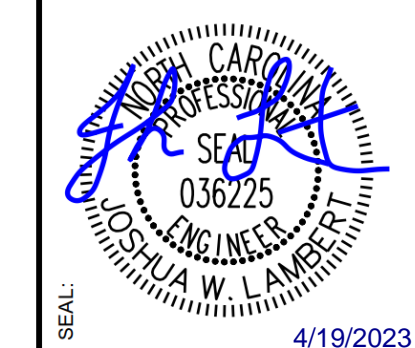
EX. SSMH  
RIM: 313.96  
INV IN: 306.91 (8" DIP)  
INV OUT: 306.82 (8" DIP)

EX. CURB INLET  
TOP: 311.64  
INV IN: 307.25 (24" RCP)

EX. CURB INLET  
TOP: 317.30  
INV OUT: 312.94 (24" RCP)



NO.	REVISIONS	DATE	BY



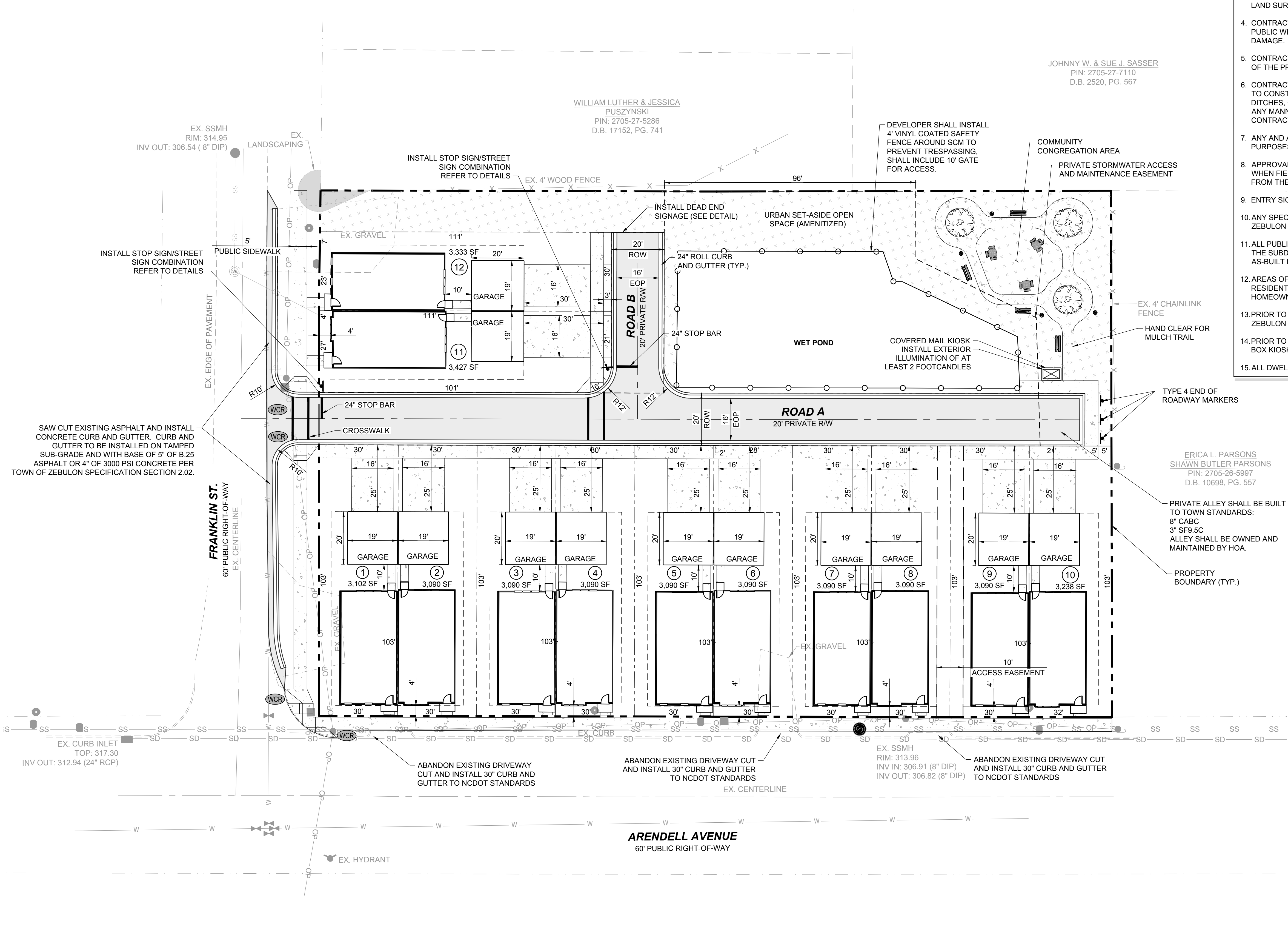
**STRONGROCK**  
ENGINEERING GROUP  
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166  
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY

TRUE- ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
EXISTING CONDITIONS PLAN

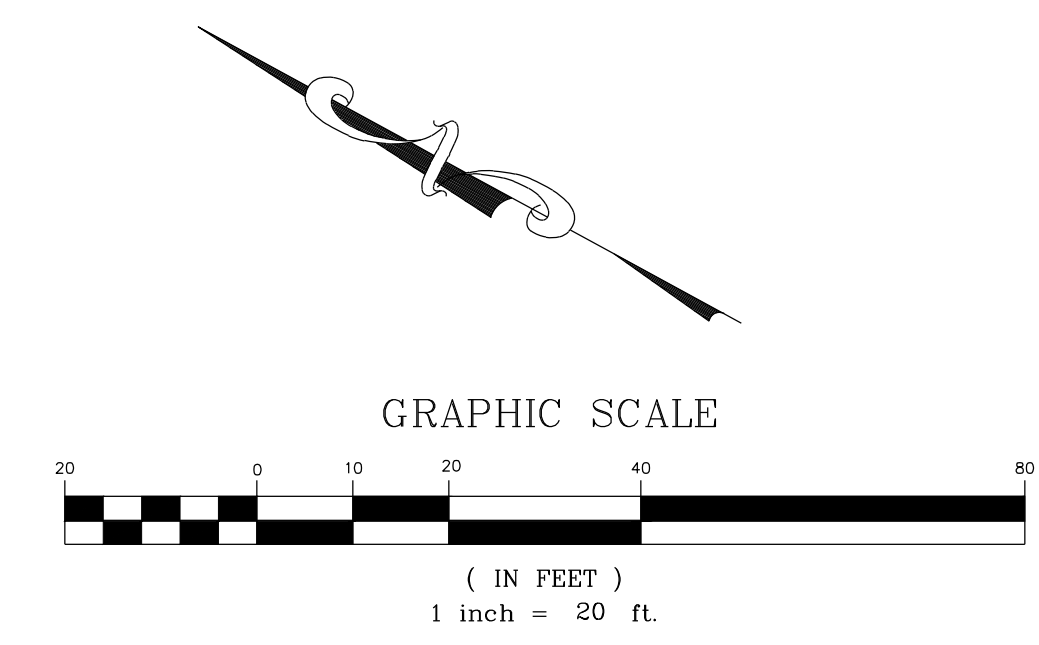
DRAWING SHEET  
**C-1.0**  
02 OF 24

- GENERAL NOTES:**
1. ALL CONSTRUCTION SHALL BE PER TOWN OF ZEBULON STANDARDS AND SPECIFICATIONS.
  2. CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, RIGHT-OF-WAYS AND UTILITIES, PUBLIC OR PRIVATE BEFORE WORKING IN THESE AREAS.
  3. PROTECT ALL PROPERTY MONUMENTS AND PINS. MONUMENTS AND PINS THAT WILL BE DISTURBED DURING CONSTRUCTION SHALL BE REFERENCED AND REPLACED BY A LICENSED LAND SURVEYOR AT THE COST OF THE CONTRACTOR.
  4. CONTRACTOR SHALL MAINTAIN THE SITE IN SUCH A MANNER THAT WORKMEN AND THE PUBLIC WILL BE PROTECTED FROM INJURY AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
  5. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
  6. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AID/OR MATERIAL DUE TO CONSTRUCTION OPERATIONS. ALL STREET SURFACES, UTILITY POLES, CULVERTS, DITCHES, CURB AND GUTTER OR OTHER STRUCTURES THAT ME DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATIONS.
  7. ANY AND ALL QUANTITIES SHOWN OR IMPLIED ON THE PLANS ARE FOR ESTIMATION PURPOSES ONLY.
  8. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFFSITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS.
  9. ENTRY SIGNS SHALL BE LOCATED IN A DEDICATED EASEMENT.
  10. ANY SPECIALITY STREET SIGNS INCLUDING POSTS SHALL BE SUBMITTED TO THE TOWN OF ZEBULON FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
  11. ALL PUBLIC AND PRIVATE EASEMENTS SHALL BE RECORDED AS PART OF THE FINAL PLAT OF THE SUBDIVISION. EASEMENTS BASED OF CENTER OF UTILITY OR PIPE SHALL BE PER AS-BUILT LOCATIONS.
  12. AREAS OF PARENT PARCEL THAT ARE NOT SUBDIVIDED TO CREATE SINGLE FAMILY RESIDENTIAL LOTS ARE TO REMAIN AS ONE PARCEL TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION OF THE NEIGHBORHOOD.
  13. PRIOR TO FINAL PLAT, DEVELOPER SHALL SUBMIT A LIGHTING PLAN TO THE TOWN OF ZEBULON SHOWING LIGHT FIXTURE DETAILS AND PHOTOMETRICS.
  14. PRIOR TO FINAL PLAT, DEVELOPER SHALL SUBMIT CUT SHEETS FOR PARK BENCHES, MAIL BOX KIOSK, AND PEDESTRIAN WAYFINDING.
  15. ALL DWELLINGS WILL BE IN COMPLIANCE WITH REQUIREMENTS OF ARTICLE 4 OF UDO.

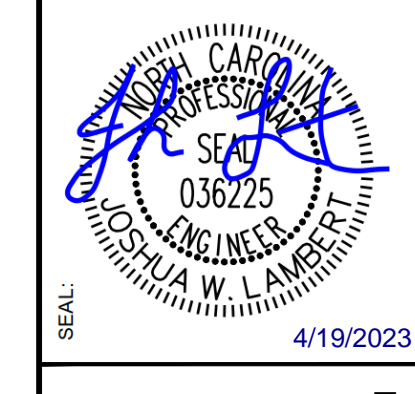


**LEGEND:**

	EXISTING PROPERTY LINE
	ROADWAY CENTER LINE
	PROPOSED PROPERTY LINE
	STANDARD CURB & GUTTER
	ASPHALT PAVEMENT
	OPEN SPACE
	STREET LIGHT
	SIGN
	STOP BAR
	WHEELCHAIR RAMP
	FENCE LINE



NO.	REVISIONS	DATE	BY



**STRONGROCK**  
 ENGINEERING GROUP  
 STRONG ROCK ENGINEERING GROUP, PLLC (COMPANY LICENSE # P-2166)  
 6801 FALLS OF NEUSE RD., SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

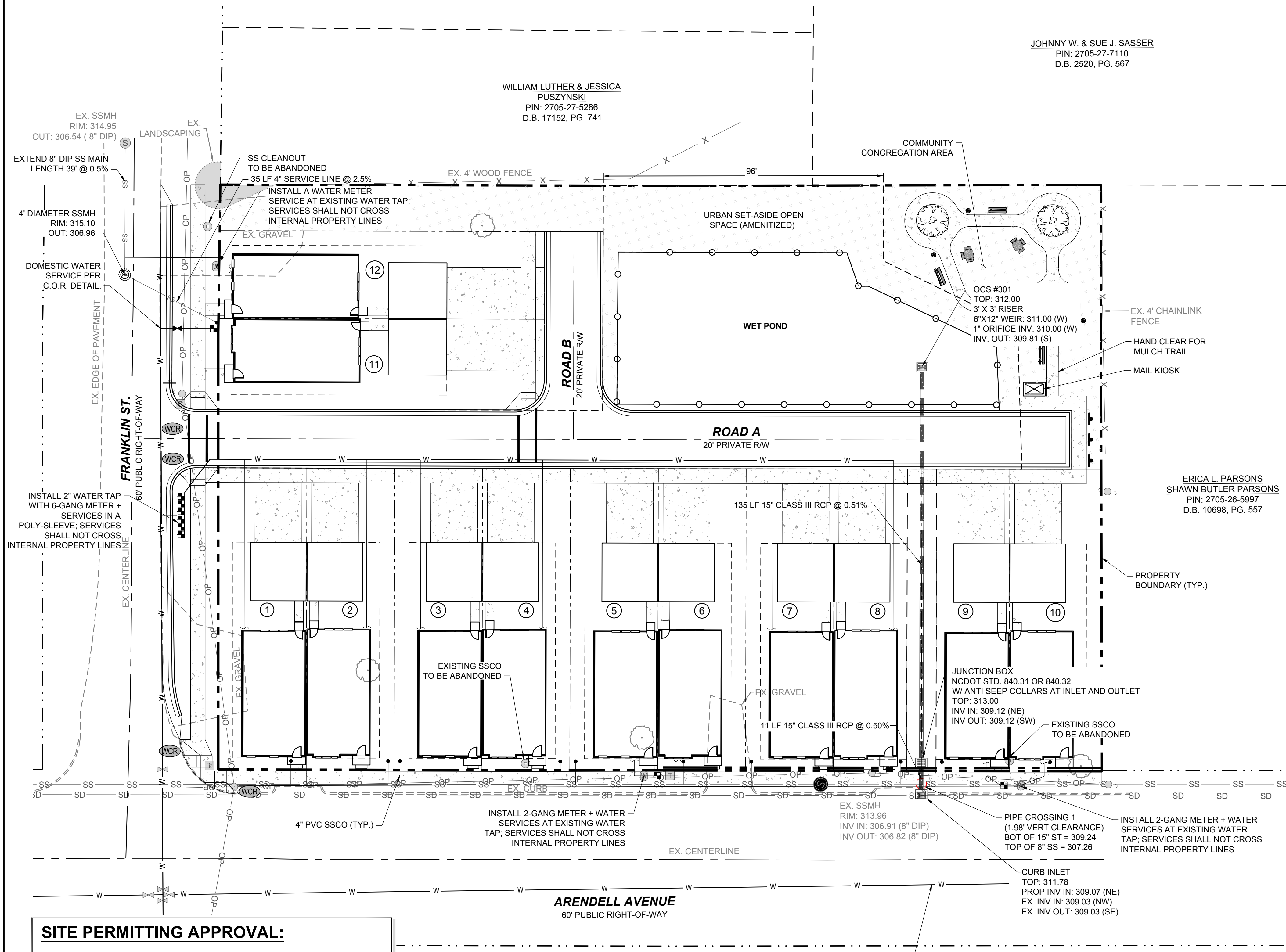
STRONG ROCK PROJECT	DESIGNED BY	JWL	SRG
NOT FOR CONSTRUCTION	DRAWN BY	JWL	JWL
SCALE AS SHOWN	CHECKED BY	JWL	JWL

TRUE- ZEBULON-ARENDELL  
 TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 CONSTRUCTION PLANS  
**SITE PLAN**  
 DRAWING SHEET  
**C-2.0**  
 03 OF 24

JOHNNY W. & SUE J. SASSER  
 PIN: 2705-27-7110  
 D.B. 2520, PG. 567

WILLIAM LUTHER & JESSICA  
 PUSZYNSKI  
 PIN: 2705-27-5286  
 D.B. 17152, PG. 741

ERICA L. PARSONS  
 SHAWN BUTLER PARSONS  
 PIN: 2705-26-5997  
 D.B. 10698, PG. 557



**UTILITY NOTES:**

- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF ZEBULON DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)
- UTILITY SEPARATION REQUIREMENTS (TAKEN FROM CORPUD HANDBOOK, 2014 EDITION, SEWER DESIGN, MATERIAL, & CONSTRUCTION STANDARDS, SECTION 1. a. 15.):
  - A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
  - WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
  - WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
  - 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
  - MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS. MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49).
  - ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF ZEBULON PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF ZEBULON 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 ZEBULON PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
- INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
- INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
- PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.
- A 3-PARTY ENCROACHMENT AGREEMENT BETWEEN THE NCDOT, THE CITY OF ZEBULON PUBLIC UTILITIES, AND THE DEVELOPER MAY BE NEEDED FOR WATER AND SEWER SERVICE TAPS WITHIN THE NODOT MAINTAINED RIGHT OF WAY. 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.
- PROPOSED PRIVATE UTILITIES (POWER, TELEPHONE, NATURAL GAS, CABLE TV) ARE NOT SHOWN ON THIS PLAN. THE DEVELOPER SHALL COORDINATE THE INSTALLATION OF THOSE UTILITIES WHEN INSTALLING PUBLIC UTILITIES.
- CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES PRIOR TO ANY LAND DISTURBANCE ACTIVITIES. IF ANY EXISTING UTILITIES ARE LOCATED THAT CAUSE A CONFLICT WITH PROPOSED UTILITIES, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CIVIL ENGINEER OF RECORD IN WRITING. IF SUCH A SCENARIO ARISES, THE PROPOSED UTILITY IN QUESTION SHALL NOT BE INSTALLED UNTIL AN ACCEPTABLE SOLUTION IS PREPARED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- CONTRACTOR SHALL ADJUST ALL CLEANOUTS, VALVE BOXES, MANHOLES, ETC. TO THE FINISHED GRADES ESTABLISHED BY THE PROJECT.
- ALL UNDERGROUND ELECTRICAL CONDUITS SHALL HAVE A MINIMUM COVER OF 36"; GAS AND COMMUNICATION LINES SHALL HAVE DEPTH AND SPACING AS SPECIFIED BY SERVICE COMPANY.
- MAXIMUM SPACING FOR SANITARY SEWER CLEANOUTS IS 75 FEET. ALL CLEANOUTS LOCATED IN DRIVE AISLES AND/OR PARKING AREAS SHALL TO BE TRAFFIC RATED.
- INVERT AT CLEANOUT IS INVERT ELEVATION AT THE CONNECTION OF THE HORIZONTAL BEND.
- A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS.
- CONTRACTOR SHALL PROVIDE PROPER NOTIFICATION TO AUTHORITIES HAVING JURISDICTION AS SPECIFIED IN AGENCY PERMIT CONDITIONS. AS A COURTESY, CIVIL ENGINEER OF RECORD REQUESTS NOTIFICATION.
- THRUST RESTRAINT SHALL BE IN ACCORDANCE WITH CITY OF ZEBULON STANDARD SPECIFICATIONS.
- WATER LINE TESTING AND STERILIZATION SHALL BE IN ACCORDANCE WITH CITY OF ZEBULON STANDARD SPECIFICATIONS.
- ALL NEW MANHOLES SHALL BE ECCENTRIC UNLESS OTHERWISE NOTED.
- ALL WATER AND SEWER SERVICE CONNECTIONS SHALL BE INSTALLED BY A LICENSED PLUMBER.

**SITE PERMITTING APPROVAL:**

WATER AND SEWER PERMITS (IF APPLICABLE)

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # S-3936

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # N/A

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT - PLANS AUTHORIZED FOR CONSTRUCTION

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CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT DEVELOPMENT APPROVAL

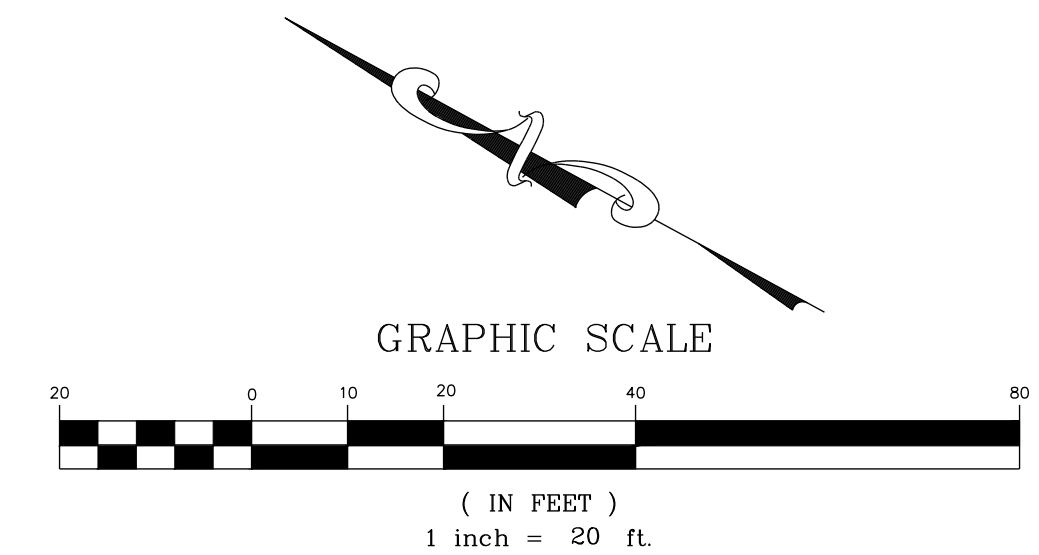
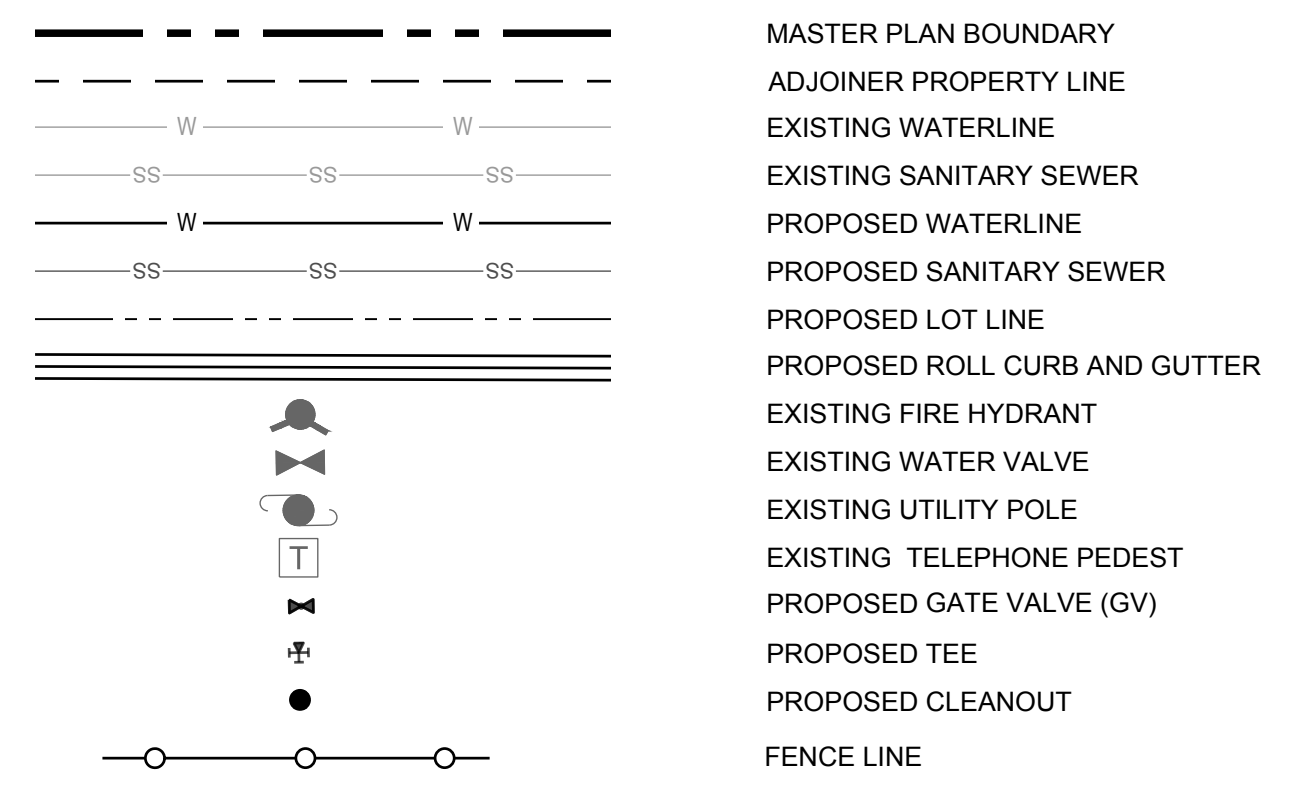
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT WATER REVIEW OFFICER

**NOTE:**

WHERE PROPOSED SS PASSES OVER WATER AND STORM, SS MUST BE DUCTILE IRON WITH CONCRETE COLLAR, REFER TO DETAIL S-49.

MAINTAIN 5' SEPARATION BETWEEN UTILITY SERVICE LINES AND TREE'S DRIPLINE.

**LEGEND:**



BY		DATE	
REVISIONS			
No.			

4/19/2023

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166  
 6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY JWL	SRG	DRAWN BY JWL	CHECKED BY JWL
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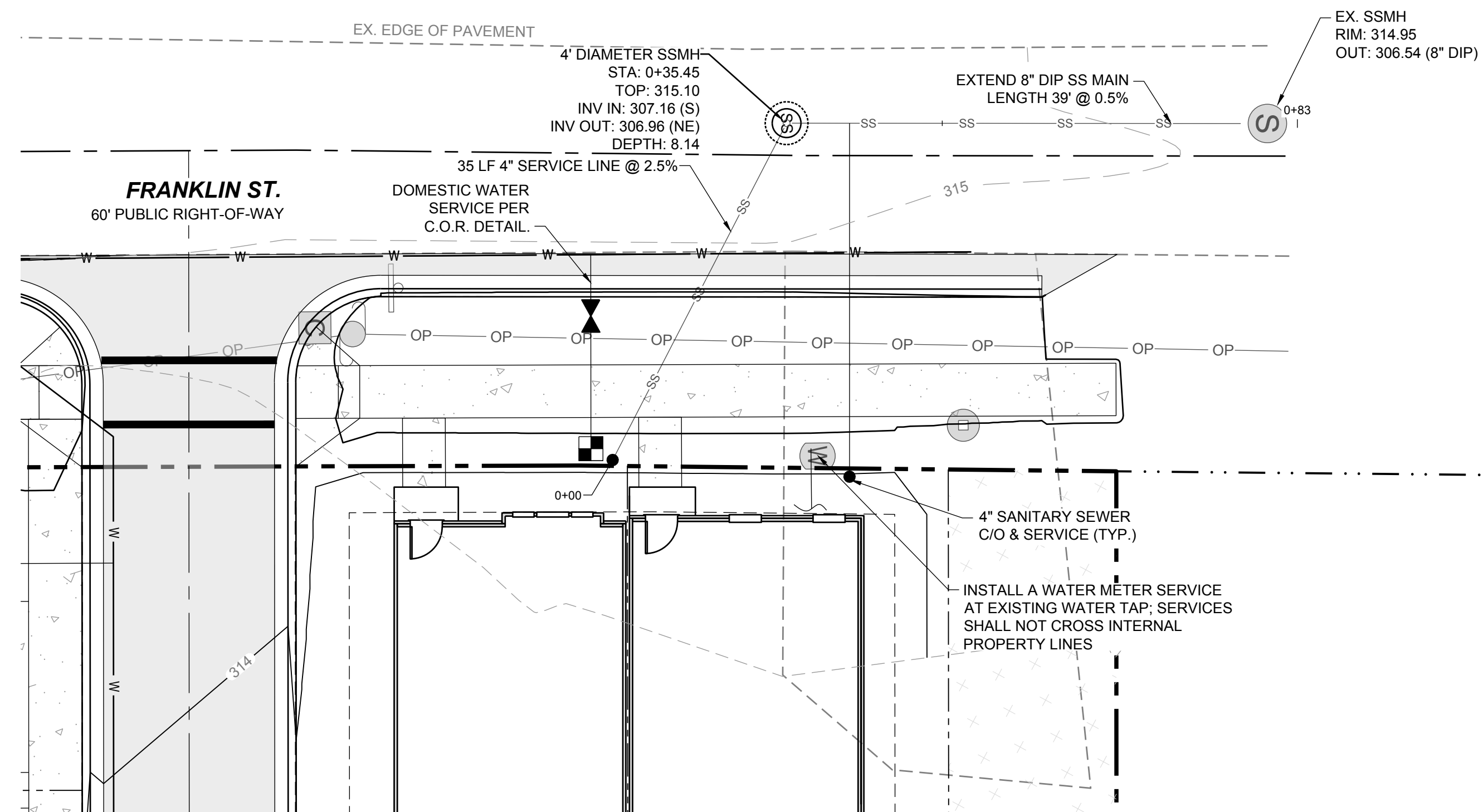
TRUE- ZEBULON-ARENDELL  
 TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION PLANS**

**UTILITY PLAN**

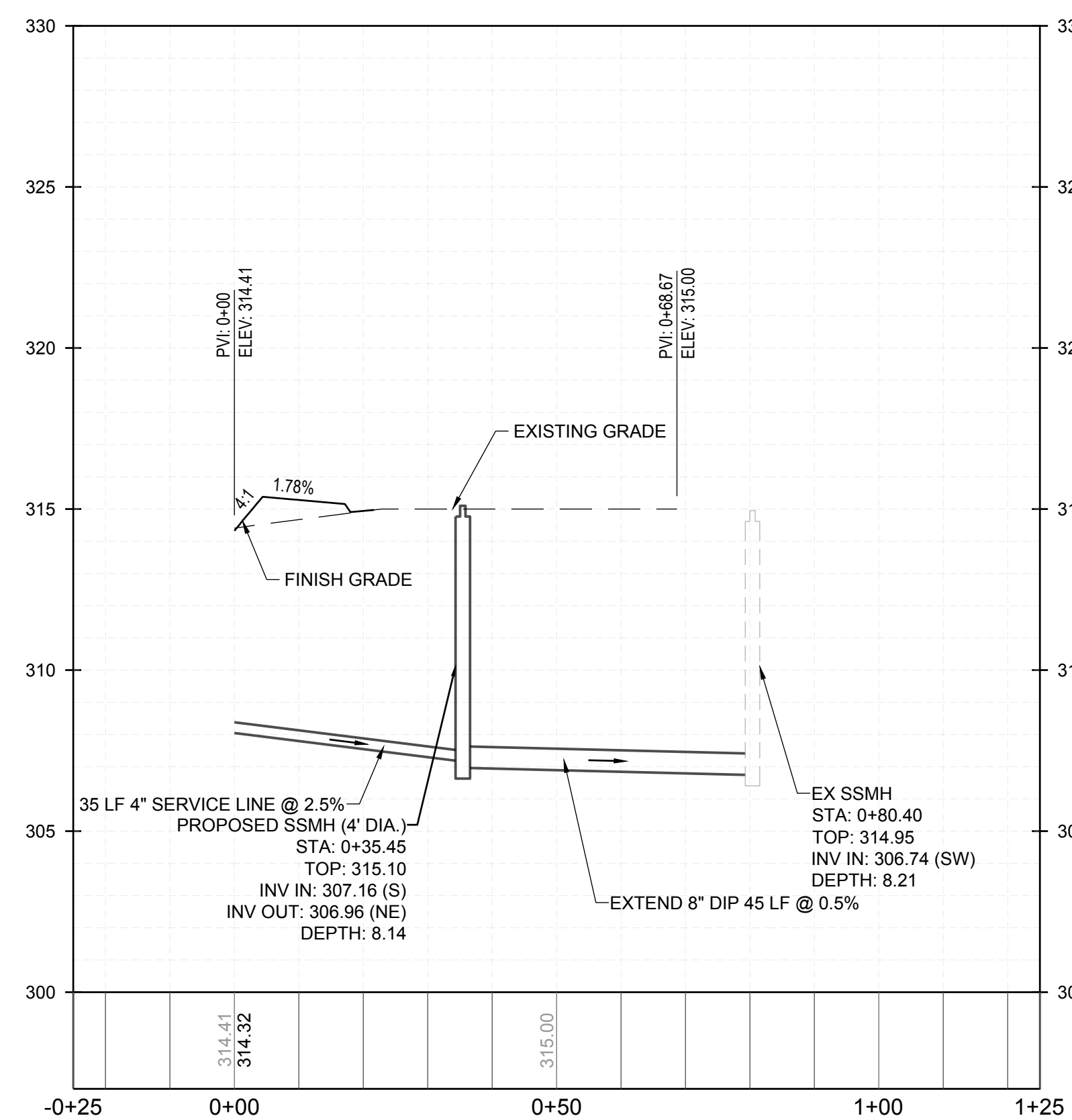
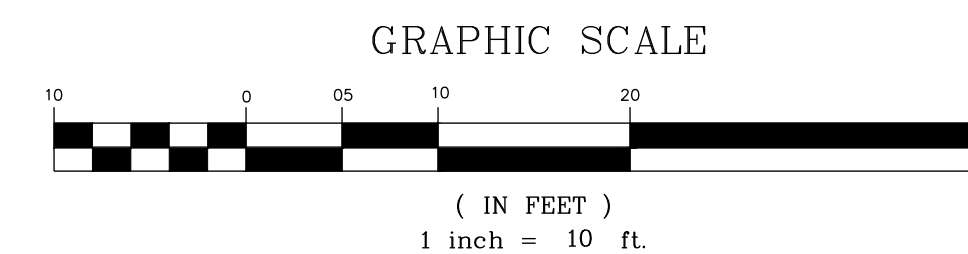
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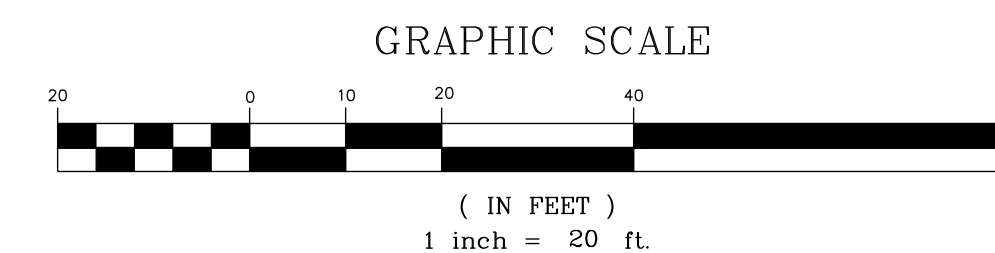
04 OF 24



**OFF - SITE SANITARY SEWER - PLAN**  
HORIZONTAL: 1" = 10'



**OFF - SITE SANITARY SEWER - PROFILE**  
VERTICAL: 1" = 5'  
HORIZONTAL: 1" = 20'



**SITE PERMITTING APPROVAL:**

WATER AND SEWER PERMITS (IF APPLICABLE)

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # S-3938

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # N/A

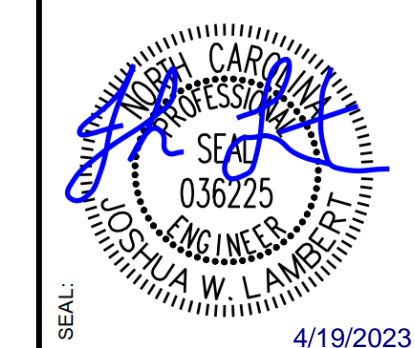
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT - PLANS AUTHORIZED FOR CONSTRUCTION

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A TOWN OF ZEBULON 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 PUBLIC UTILITIES DEPARTMENT DEVELOPMENT APPROVAL

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT WATER REVIEW OFFICER

NO.	REVISIONS	DATE	BY



**STRONGROCK**  
ENGINEERING GROUP  
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166  
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

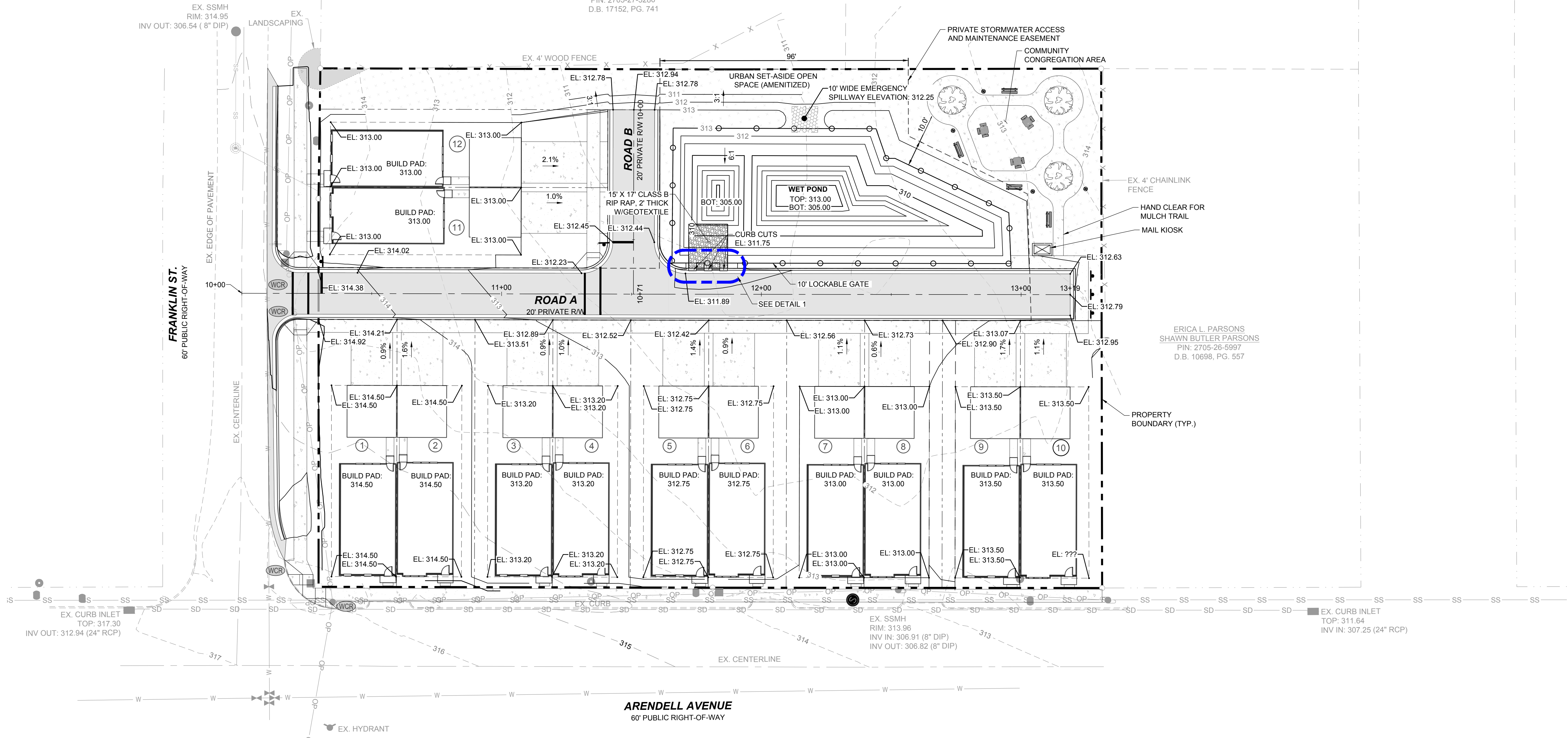
STRONG ROCK PROJECT	NOT FOR CONSTRUCTION SCALE	AS SHOWN SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
			JWL	SRG	JWL

TRUE- ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
**OFF-SITE SANITARY SEWER PLAN & PROFILE**

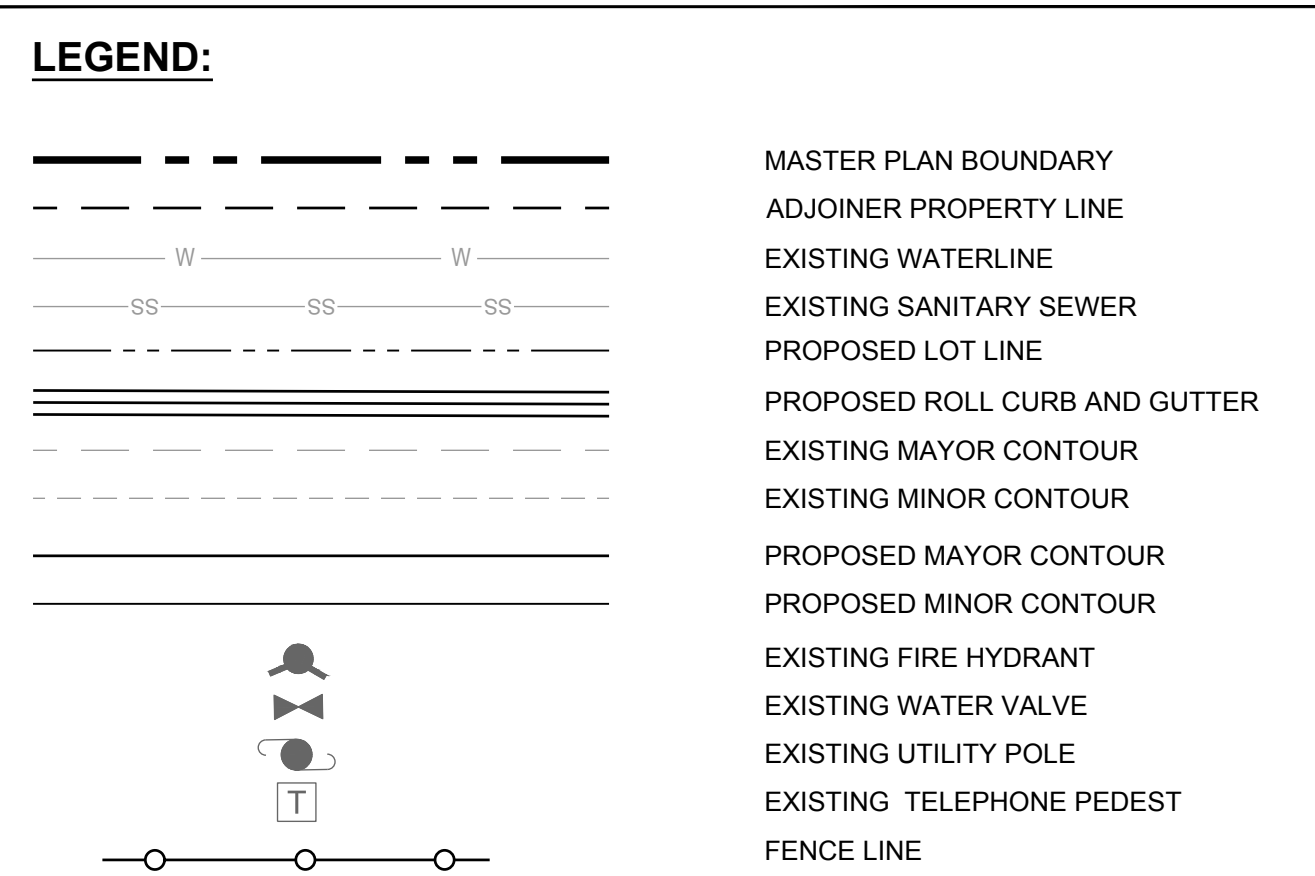
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JOHNNY W. & SUE J. SASSER  
PIN: 2705-27-7110  
D.B. 2520, PG. 567

WILLIAM LUTHER & JESSICA  
PUSZYNSKI  
PIN: 2705-27-5286  
D.B. 17152, PG. 741

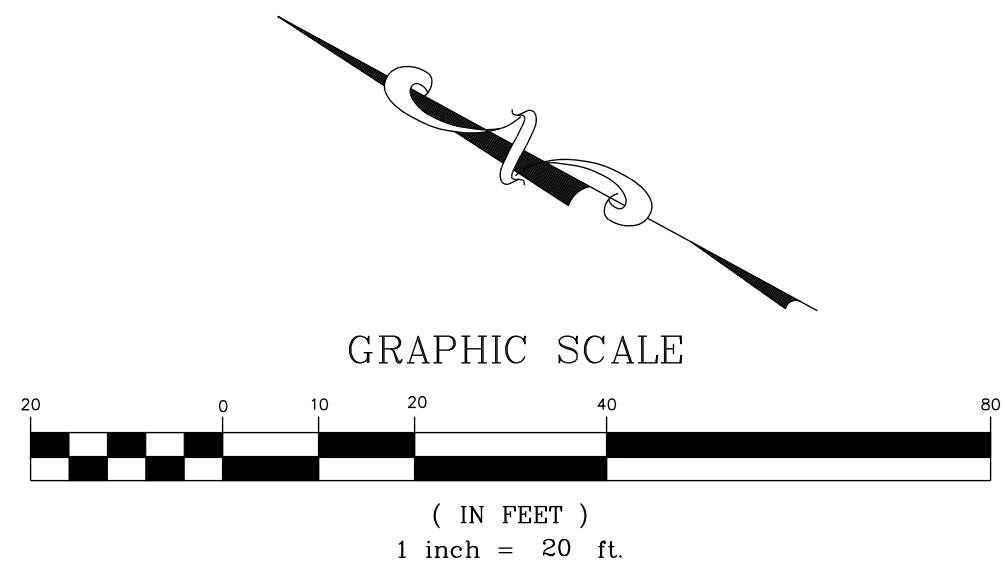
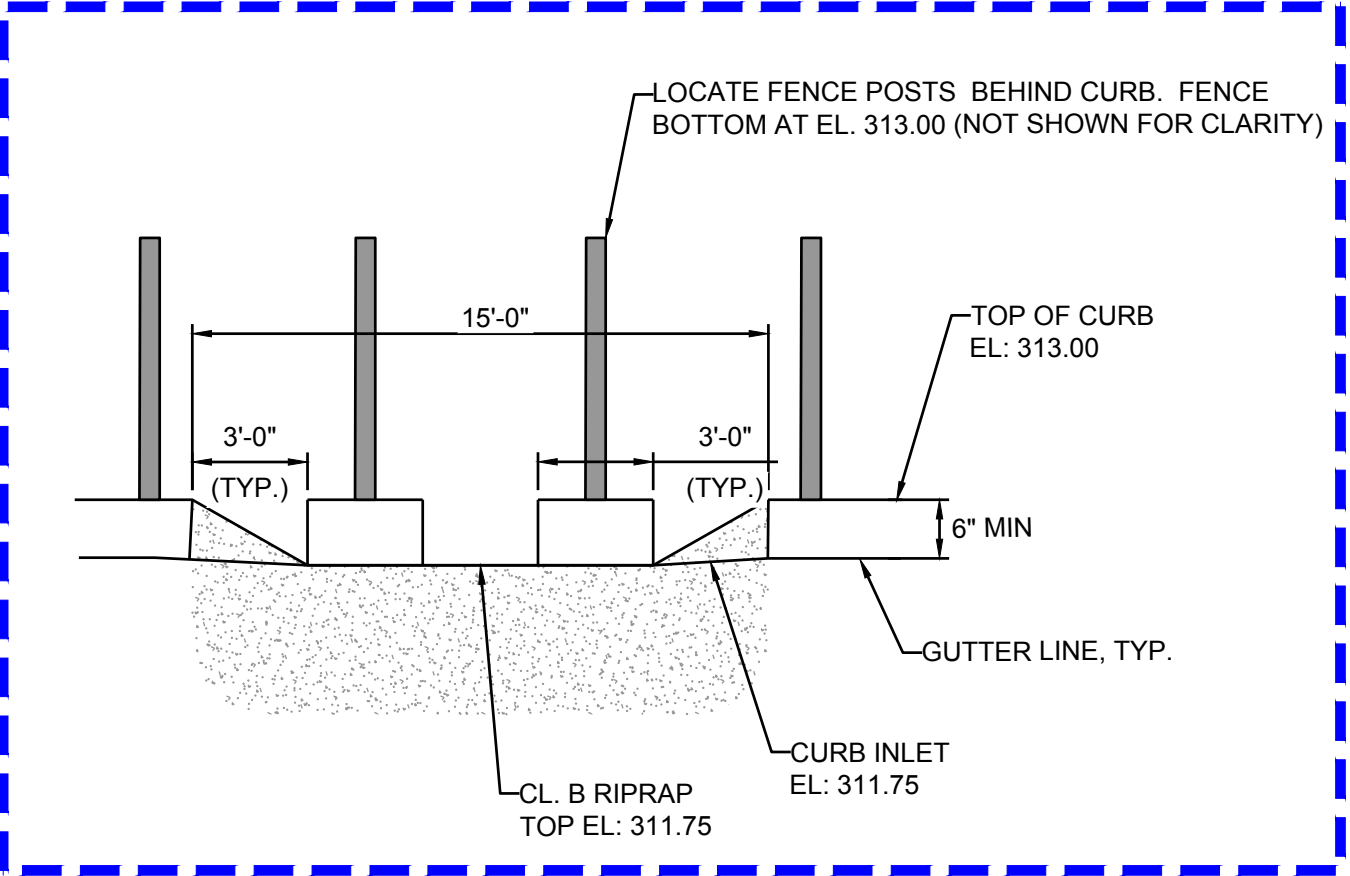


ERICA L. PARSONS  
SHAWN BUTLER PARSONS  
PIN: 2705-26-5997  
D.B. 10698, PG. 557

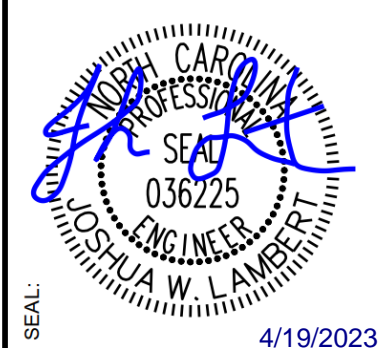


**GRADING NOTES:**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF ZEBULON, CITY OF ZEBULON, NCDOT, AND/OR WAKE COUNTY STANDARDS AS APPLICABLE.
- CONTRACTOR SHALL COORDINATE ALL GRADING OPERATIONS WITH THE OWNERS GEOTECHNICAL ENGINEER.



NO.	REVISIONS	DATE	BY



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ENGINEERING GROUP  
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STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY
			JWL	SRG	JWL

TRUE- ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
**GRADING PLAN**

DRAWING SHEET  
**C-5.0**  
06 OF 24

JOHNNY W. & SUE J. SASSER  
PIN: 2705-27-7110  
D.B. 2520, PG. 567

WILLIAM LUTHER & JESSICA  
PUSZYNSKI  
PIN: 2705-27-5286  
D.B. 17152, PG. 741

**LEGEND:**

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- STANDARD ROLL CURB & GUTTER
- PROPOSED STORM DRAIN LINE
- FENCE LINE

**DRAINAGE NOTES:**

- CONTRACTOR SHALL MAINTAIN POSITIVE SLOPE AND OUTFALL OF ANY FOUNDATION DRAIN SYSTEMS.
- ALL STORM DRAIN HOODS, MANHOLE COVERS AND GRATES ARE TO BE LABELED "NO DUMPING DRAINS TO STREAM".

**SITE PERMITTING APPROVAL:**

WATER AND SEWER PERMITS (IF APPLICABLE)

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # S-3936

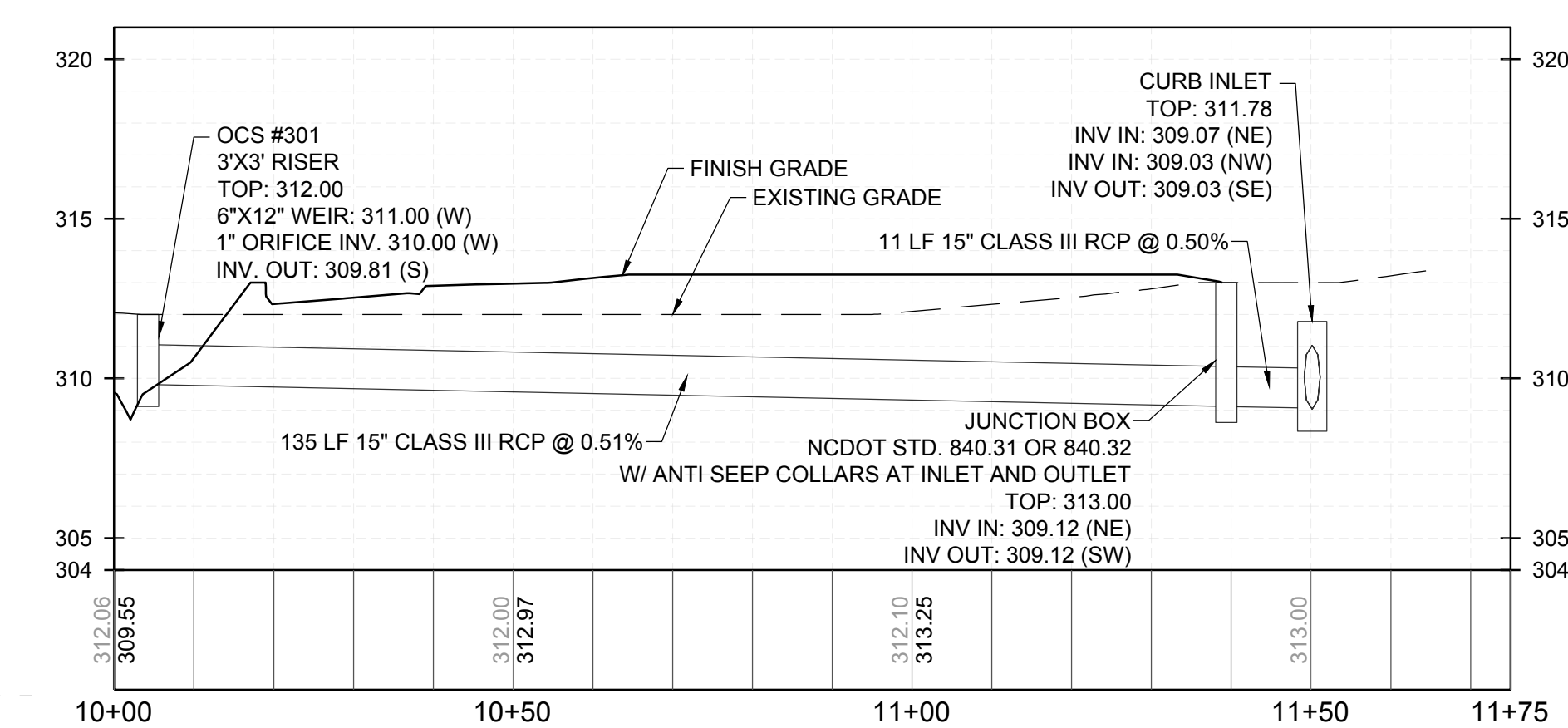
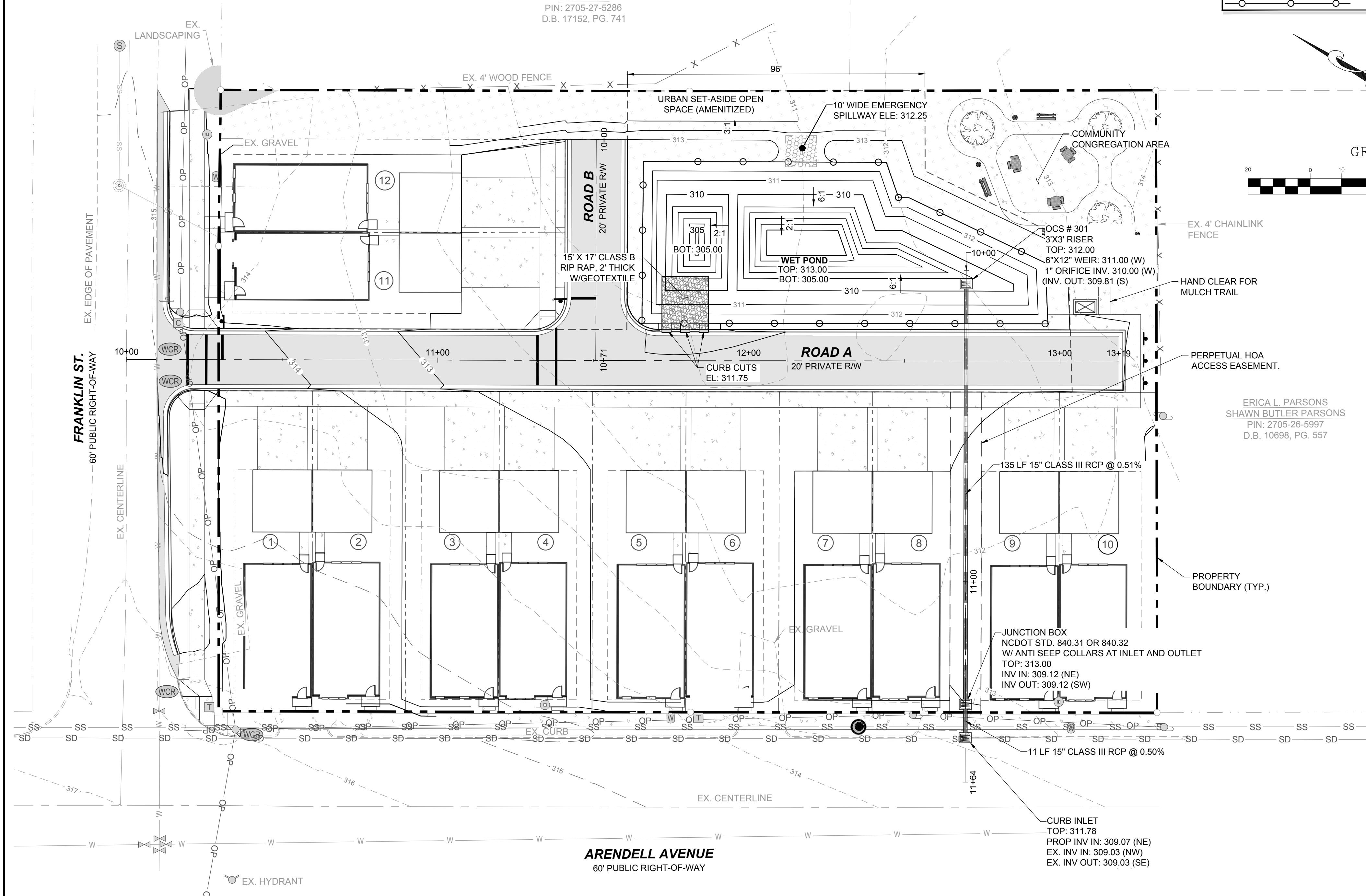
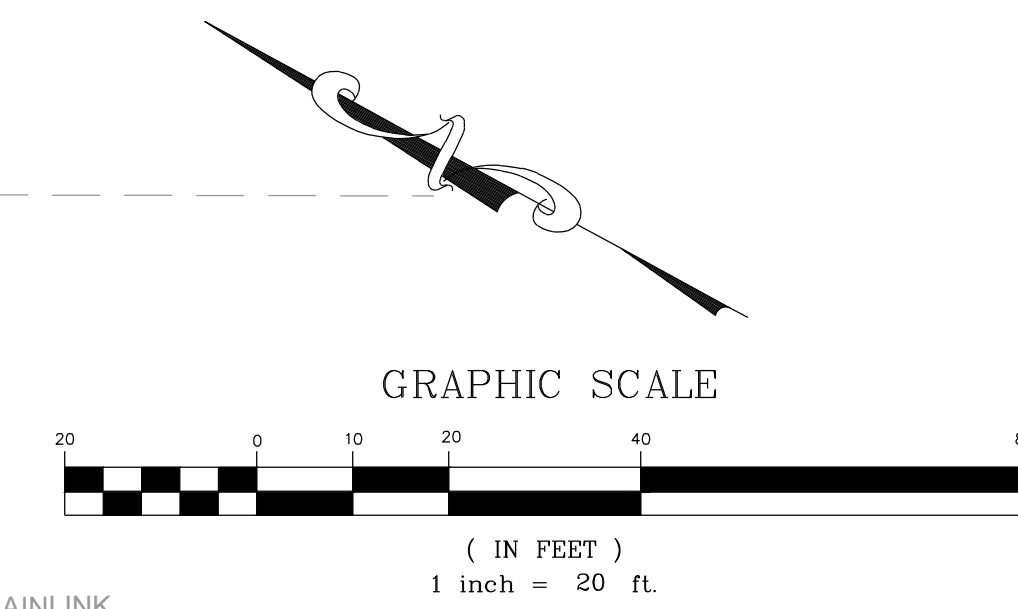
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT CONSENTS TO THE CONNECTION AND EXTENSION OF THE CITY'S PUBLIC WATER SYSTEM AS SHOWN ON THIS PLAN. THE MATERIAL AND CONSTRUCTION METHODS USED FOR THIS PROJECT SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY'S PUBLIC UTILITIES HANDBOOK. CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PUBLIC UTILITIES DEPARTMENT PERMIT # N/A

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT - PLANS AUTHORIZED FOR CONSTRUCTION

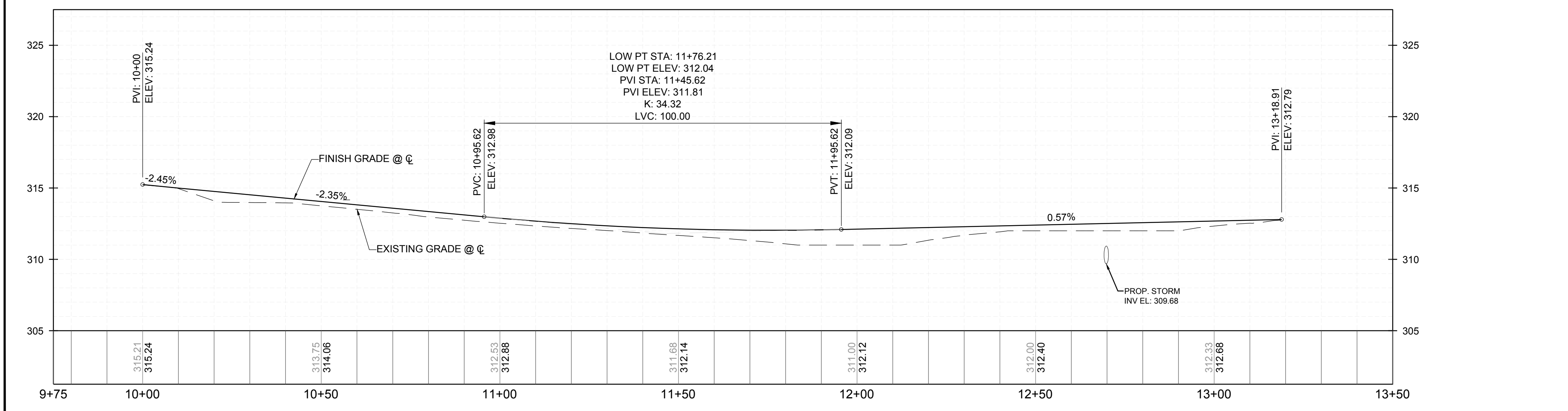
ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A TOWN OF ZEBUL REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH 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 PUBLIC UTILITIES DEPARTMENT DEVELOPMENT APPROVAL

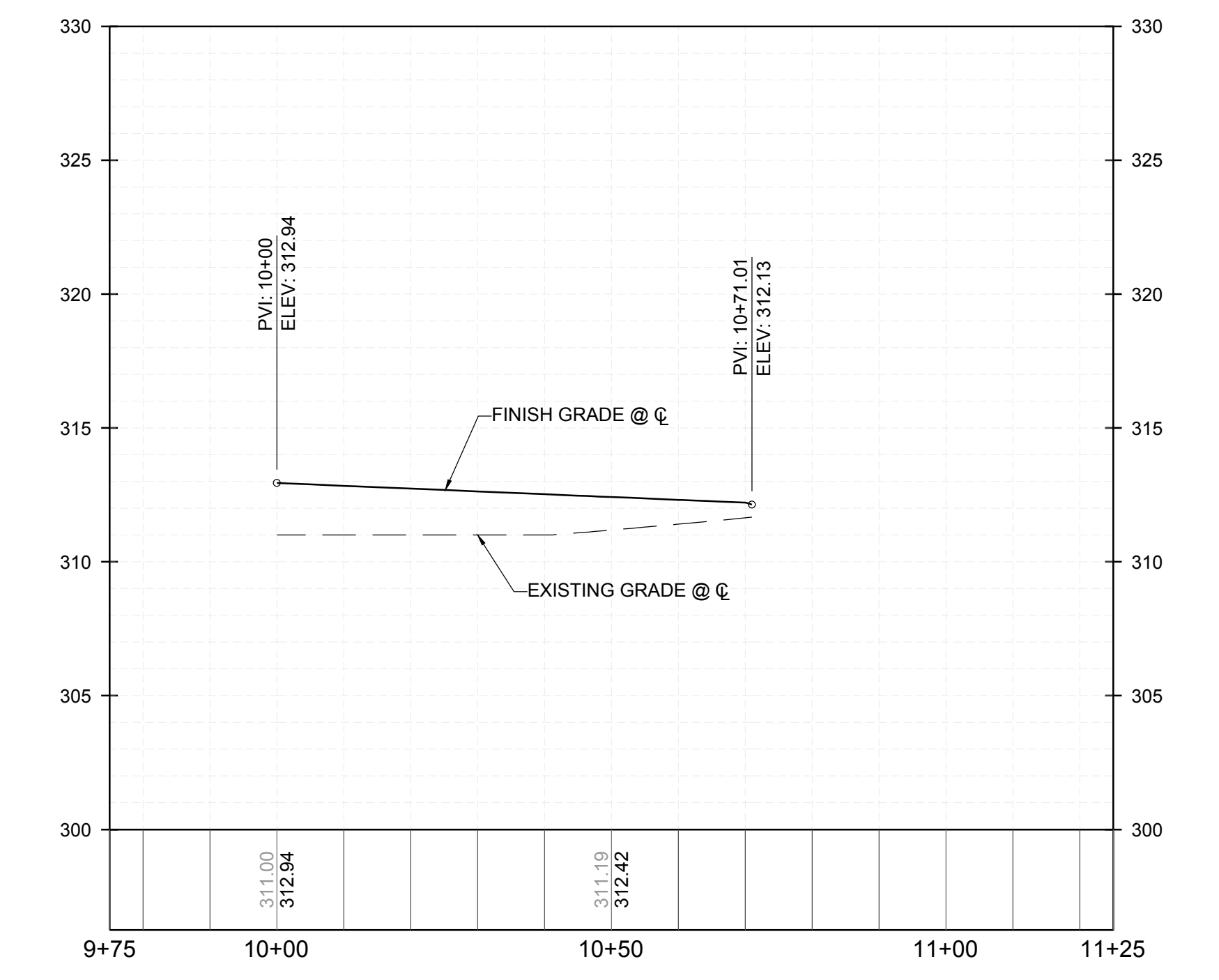
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT WATER REVIEW OFFICER



**PROPOSED STORM DRAINAGE - PROFILE**  
VERTICAL: 1" = 5'  
HORIZONTAL: 1" = 20'

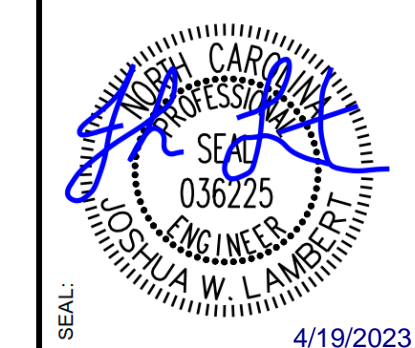


**PROPOSED ROAD A - PROFILE**  
VERTICAL: 1" = 5'  
HORIZONTAL: 1" = 20'



**PROPOSED ROAD B - PROFILE**  
VERTICAL: 1" = 5'  
HORIZONTAL: 1" = 20'

NO.	REVISIONS	DATE	BY



**STRONGROCK ENGINEERING GROUP**

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6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY

TRUE-ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
**STORMWATER PLAN**

DRAWING SHEET

OFFSITE SPOIL NOTE:

- 1. IF AN OFFSITE SOIL SPOIL OR BORROW SITE IS UTILIZED, THEN THE DISTURBED AREA FOR THE SPOIL/BORROW SITE MUST BE INCLUDED IN THE LAND-DISTURBANCE PLAN AND PERMIT UNLESS THE SPOIL/BORROW SITE ALREADY HAS A SEPARATE LAND-DISTURBANCE PERMIT.

STAGE 1 SPECIFIC SEQUENCE:

- 1. INSTALL CONSTRUCTION ENTRANCE, SILT FENCING, SILT FENCE OUTLETS, DIVERSION DITCHES, AND SKIMMER BASINS AS SHOWN ON APPROVED STAGE 1 EROSION CONTROL PLAN. CLEAR AND GRADE ONLY AREAS NECESSARY TO INSTALL THESE EROSION AND SEDIMENT CONTROL DEVICES. INSTALL SILT FENCE OUTLETS AT LOW POINTS IN THE SILT FENCING AS NEEDED TO PREVENT BLOWOUTS.
2. STABILIZE ALL DISTURBED AREAS DOWNSTREAM OF SEDIMENT BASINS AND OTHER CRITICAL EROSION CONTROL AREAS IMMEDIATELY UPON INSTALLATION. ONCE APPROVED, BEGIN CLEARING AND GRADING REMAINDER OF THE SITE. MAINTAIN EROSION CONTROL DEVICES AS NEEDED. INSTALL DIVERSION DITCHES AS SHOWN ON THE STAGE 1 EROSION CONTROL PLANS. MAINTAIN DIVERSION DITCHES AS SITE IS BROUGHT TO FINAL GRADE IN ORDER TO DIVERT AS MUCH RUNOFF INTO SEDIMENT BASINS AS POSSIBLE.
3. STABILIZE GRADED AREAS AS THEY ARE CLEARED. TEMPORARILY SEED AND MULCH DENUDED AREAS PER THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE SEC. 12.20.5(2). ONCE FINAL GRADE HAS BEEN ACHIEVED, PAVE OR PERMANENTLY SEED ALL AREAS AND SLOPES PER NCDENR'S EROSION SEDIMENT CONTROL PLANNING AND DESIGN MANUAL VERSION 6/06, SECTION 6.10 AND 6.11.
4. MAINTAIN EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAIN EVENT THROUGHOUT CONSTRUCTION.

STAGE 2 SPECIFIC SEQUENCE:

- 1. AFTER CONTRACTOR HAS COMPLETED ROUGH GRADING OPERATIONS:
A. CONTRACTOR SHALL STABILIZE HOUSE LOTS WITH TEMPORARY SEEDING; REFER TO SEEDING DETAILS.
B. CONTRACTOR SHALL PERMANENTLY STABILIZE ALL SLOPES AND/OR OTHER AREAS THAT ARE AT FINAL GRADE.
C. CONTRACTOR MAY CREATE ENTRANCE THROUGH SILT FENCE TO LOTS PERMITTED FOR GRADING AS REQUIRED.
D. CONTRACTOR SHALL CREATE STABILIZED ENTRANCE AT DEFINED LOCATIONS TO REDUCE SEDIMENT TRACKING AND LIMIT ACCESS LOCATIONS.
2. INSTALL UTILITIES, INCLUDING STORM NETWORK. CONTRACTOR SHALL ONLY EXCAVATE THE AMOUNT OF TRENCH TO ALLOW FOR ONE DAY OF PIPE INSTALLATION.
3. CONTRACTOR SHALL USE BERMS, DIVERSIONS, AND PIPE INLET PROTECTION TO PREVENT SEDIMENT RUNOFF FROM ENTERING THE STORM SYSTEM.
4. INSTALL INLET PROTECTION ON ALL COMPLETED STORM STRUCTURES
5. UPON APPROVAL OF PERMANENT STABILIZATION, REMOVE BALANCE OF EROSION CONTROL MEASURES, GRADE AND STABILIZE REMAINDER OF SITE.
6. WITH APPROVAL OF EROSION CONTROL INSPECTOR, REMOVE THE REMAINDER OF THE EROSION CONTROL DEVICES.

EROSION CONTROL NARRATIVE NOTE:

THE PURPOSE OF THIS PLAN IS TO ESTABLISH 12 LOTS RESIDENTIAL SUBDIVISION. LAND DISTURBANCE WILL BE KEPT TO THE MINIMUM AMOUNT NEEDED TO INSTALL THE INFRASTRUCTURE AND ASSOCIATED STORM WATER DEVICE SHOWN ON THE PLAN. ACCELERATED EROSION WILL BE CONTROLLED BY MINIMIZING THE AMOUNT OF EXISTING VEGETATIVE COVER TO BE REMOVED, AND PROVIDING TEMPORARY AND PERMANENT STABILIZATION MEASURE ON DISTURBED AREAS AS SOON AS POSSIBLE. IN GENERAL, STRIPPING OF VEGETATION, REGRADING OR OTHER DEVELOPMENT IS TO BE DONE IN SUCH A WAY THAT WILL MINIMIZE EROSION. THE PRIMARY CONTROL FOR CAPTURING SEDIMENT FROM THESE AREAS WILL BE SILT FENCE AND RISER/SKIMMER BASIN. A CONSTRUCTION ENTRANCE WILL BE PROVIDED FOR THE ACCESS. THE AMOUNT OF DISTURBED AREA AND THE DURATION OF EXPOSURE SHALL BE KEPT TO A PRACTICAL MINIMUM AND THE PERMANENT VEGETATION AND STORMWATER CONTROL SYSTEMS WILL BE INSTALLED AS SOON AS POSSIBLE TO PREVENT EROSION AND THEREFORE MINIMIZE THE AMOUNT OF SEDIMENT TO BE CONTROLLED.

BASIN REMOVAL SEQUENCE:

- 1. SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
2. CONTACT 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, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING:
A. REASON FOR CONVERSION
B. BASIN #
C. DEWATERING METHOD
D. ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01. (KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION)
3. AFTER RECEIVING POSITIVE CONFIRMATION FROM 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. FINE GRADE AREA IN PREPARATION FOR SEEDING.
4. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
5. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
6. WHEN SITE IS FULLY STABILIZED, CALL 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.

EROSION CONTROL NOTES:

- 1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST WAKE COUNTY STANDARDS, SPECIFICATIONS AND DETAILS.
2. GRADING AND EROSION CONTROL METHODS SHALL ADHERE TO THE WAKE COUNTY SOIL AND EROSION CONTROL STANDARDS AND SPECIFICATIONS.
3. GRADING AND EROSION CONTROL METHODS SHALL ADHERE TO THE NORTH CAROLINA DEPARTMENT OF NATURAL RESOURCES DIVISION OF WATER QUALITY (DWQ) STANDARDS AND SPECIFICATIONS. WHERE DIFFERENT FROM WAKE COUNTY STANDARDS, THE MORE STRINGENT METHOD SHALL BE APPLIED.
4. FAILURE TO FOLLOW THE APPROVED PLAN SEQUENCE AND DETAILS COULD SUBJECT THE FINANCIALLY RESPONSIBLE PARTY TO FINES AND PENALTIES ISSUED BY EITHER THE WAKE COUNTY EROSION CONTROL DEPARTMENT OR THE DWQ.
5. CONTRACTOR SHALL SEED AND STABILIZE ALL STEEP SLOPES (GREATER THAN 2H:1V) WITHIN 7 DAYS, 10 DAYS FOR MODERATE SLOPES ( 3H:1V OR GREATER) AND WITHIN 14 CALENDAR DAYS EVERYWHERE ELSE (STATE LAW 2009-486).
6. FOR ANY LAND-DISTURBING ACTIVITY WHERE GRADING ACTIVITIES HAVE BEEN COMPLETED, TEMPORARY OR PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION SHALL BE PROVIDED AS SOON AS PRACTICAL, BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER COMPLETING THE WORK. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND ESPECIALLY WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE ON THE PLAN.
7. NO DEBRIS SHALL BE TRACKED ONTO PUBLIC RIGHT OF WAY. IF THE SITUATION OCCURS WHERE MUD, ROCK AND DEBRIS IS TRACKED ONTO PAVEMENT, THE CONTRACTOR SHALL CLEAN THE PAVEMENT AND INSTALL ADDITIONAL MEASURES TO PREVENT THE FUTURE OCCURRENCE.
8. THE EROSION CONTROL INSPECTOR MAY REQUIRE ADDITIONAL FIELD MEASURES AS NECESSARY TO PROVIDE ADEQUATE PROTECTION FROM RECEIVING WATER COURSES.
9. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. THE CONTRACTOR SHALL CALL FOR AN INSPECTION BY NCDEQ ONCE INITIAL MEASURES ARE IN PLACE. (SEE CONSTRUCTION SEQUENCES)
10. CONTRACTOR SHALL INSPECT ALL SEDIMENT /EROSION CONTROL DEVICES AFTER EACH STORM EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE.
11. A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
12. CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GRADING CONTRACTOR UNLESS OTHERWISE NOTED.
13. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE CITY/COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
14. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF THE CITY/COUNTY ENGINEERING DEPARTMENT AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.
15. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE STRIPPING OF TOPSOIL OR LOWERING OF EXISTING GRADE AROUND A TREE, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA AND SHALL BE POSTED ON THE PROTECTION FENCE. A PROTECTION FENCE CONSTRUCTED OF MATERIAL RESISTANT TO DEGRADATION BY SUN, WIND, AND MOISTURE FOR THE DURATION OF THE CONSTRUCTION, SHALL BE INSTALLED AT THE SAME TIME AS THE EROSION CONTROL MEASURES AND SHALL BE IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE.
16. A CONSTRUCTION SEQUENCE HAS BEEN PROVIDED. INSTALLATION OF ALL PROPOSED SEDIMENTATION & EROSION CONTROL MEASURES IN THE SEQUENCE(S) PROVIDED AND MAINTENANCE OF THOSE DEVICES IS REQUIRED. THE CONTRACTOR MAY BE ALLOWED, WITH PRIOR APPROVAL FROM THE OWNER, TO COORDINATE CHANGES TO THE PLAN WITH THE ON-SITE SEDIMENTATION & EROSION CONTROL INSPECTOR AND THE ENGINEER.
17. PROVIDE INLET PROTECTION AROUND ALL SITE STORM INLETS. PROTECT OPEN PIPES UNDER CONSTRUCTION WITH EITHER PLYWOOD OR WITH MESH AND GRAVEL WEIRS. RUNOFF SHALL NOT BE ALLOWED IN ANY OPEN TRENCH.
18. CONTRACTOR WILL FIELD LOCATE SILT FENCE OUTLETS AT LOW POINTS IN SILT FENCE AS REQUIRED TO PROVIDE RELIEF FROM CONCENTRATED FLOWS AND PONDING.
19. TEMPORARY DIVERSIONS SHALL BE MAINTAINED DAILY BY CONTRACTOR SO THAT THEY ARE FUNCTIONAL AT THE END OF EACH WORKDAY AND WHEN STOPPING WORK FOR RAIN.
20. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
21. DISTURBANCE OUTSIDE OF THE SITE PROPERTY LIMITS OR PUBLIC RIGHT-OF-WAY SHALL ONLY BE AS ALLOWED BY SIGNED GRADING AGREEMENTS AND/OR EASEMENTS BETWEEN THE DEVELOPER AND THE OFFSITE PROPERTY OWNER.
22. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SAFE OPEN ACCESS TO ALL PROPERTIES ALONG ADJACENT PROPERTIES DURING CONSTRUCTION PERIOD FOR IMPROVEMENTS.
23. SLOPES GREATER THAN 3:1 AND/OR GREATER THAN 10' IN VERTICAL DIFFERENCE SHALL BE INSTALLED WITH ROLLED EROSION CONTROL PRODUCT IMMEDIATELY UPON INSTALLATION.

CONSTRUCTION SEQUENCE:

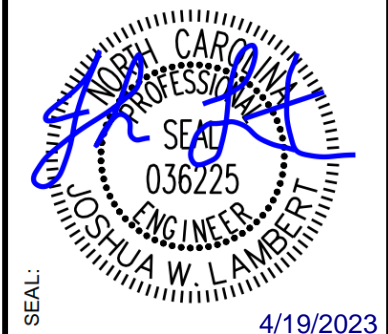
- 1. SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT. OBTAIN A LANDDISTURBING PERMIT.
2. INSTALL GRAVEL CONSTRUCTION PAD, SILT FENCE, SEDIMENT BASIN OR OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES.
3. CALL ENVIRONMENTAL CONSULTANT FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT TO OBTAIN A CERTIFICATE OF COMPLIANCE.
4. BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE.
5. INSTALL STORM SEWER, IF SHOWN, AND PROTECT INLETS WITH BLOCK AND GRAVEL INLET CONTROLS, OR OTHER APPROVED MEASURES AS SHOWN ON THE PLAN. BEGIN CONSTRUCTION, BUILDING, ETC.
6. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
7. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL ENVIRONMENTAL CONSULTANT FOR AN INSPECTION.
8. IF SITE IS APPROVED, REMOVE, SILT FENCE, SEDIMENT BASIN, ETC., AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SHOULD NOW BE INSTALLED.
9. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT. OBTAIN A CERTIFICATE OF COMPLETION.
KARYN PAGEAU AT 919-796-8769 AS ENVIRONMENTAL CONSULTANT.
10. WAKE COUNTY MUST GRANT PERMISSION TO CONVERT THE SEDIMENT BASIN OVER TO STORMWATER USE PRIOR TO COMPLETING ANY RELATED WORK

GENERAL SEQUENCE:

- ENFORCEMENT NOTE 1: FAILURE TO FOLLOW THIS CONSTRUCTION SEQUENCE MAY RESULT IN LOCAL ENFORCEMENT ACTIONS, INCLUDING BUT NOT LIMITED TO CIVIL PENALTIES TO \$5000 PER VIOLATION PER DAY, INJUNCTIVE RELIEF, CRIMINAL PENALTIES, AND PERMIT REVOCATION. ADDITIONALLY, OFF-SITE SEDIMENTATION MAY RESULT IN RESTORATION REQUIREMENTS.
ENFORCEMENT NOTE 2: IF THE WAKE COUNTY S&E STAFF DETERMINES THAT EXCESSIVE SEDIMENT IS LEAVING THE SITE, A REVISED SEDIMENTATION AND EROSION CONTROL PLAN MAY BE REQUIRED, WITH ASSOCIATED REQUIREMENTS FOR ADDITIONAL S&E MEASURES.
CONSTRUCTION SEQUENCE
1. SCHEDULE AND HOLD A PRE-CONSTRUCTION CONFERENCE PRIOR TO BEGINNING ANY LAND-DISTURBING ACTIVITIES. THIS CONFERENCE SHOULD BE ATTENDED BY A REPRESENTATIVE OF THE FINANCIALLY RESPONSIBLE PARTY AND/OR THE GENERAL CONTRACTOR, GRADING SUB-CONTRACTOR, EROSION CONTROL SUB-CONTRACTOR AND THE WAKE COUNTY S&E OFFICE.
2. OBTAIN LAND DISTURBING PERMIT AND PLACARD, AND POST THE PLACARD ON SITE.
3. OBTAIN AN APPROVED (STAMPED) S&E CONTROL PLAN AND KEEP IT ON SITE, EITHER IN THE INSPECTION BOX, CONSTRUCTION OFFICE OR WITH THE CONTRACTOR.
4. INSTALL CONSTRUCTION EGRESS/EXITS, SILT FENCING, SEDIMENT TRAPS/BASINS, DIVERSION DITCHES, TEMPORARY PIPES, CLEAR WATER DIVERSIONS, CHECK DAMS, AND OTHER INITIAL EROSION CONTROL MEASURES AS SPECIFIED IN THE PLAN (PHASE 1). REMOVE ONLY TREES AND GROUND COVER NECESSARY TO INSTALL THESE DEVICES.
5. IF A STOCKPILE IS NECESSARY DUE TO EXCAVATION OF THE SEDIMENT TRAP/BASIN, PLACE A DOUBLE ROW OF SILT FENCE 10 FEET APART. TREES AND GROUND COVER MAY BE REMOVED ONLY AS NECESSARY FOR THIS STOCKPILE. IF MATERIAL IS GOING TO BE HAULED OFF-SITE, A SEPARATE EROSION CONTROL PERMIT MUST BE OBTAINED FOR THE DESTINATION OF THE MATERIAL.
6. PROVIDE TEMPORARY GROUND COVER FOR DIVERSION DITCHES AND SEDIMENT TRAPS/BASINS WITHIN 3 DAYS OF COMPLETION.
7. NOTIFY THE WAKE COUNTY S&E SITE INSPECTOR AFTER MEASURES HAVE BEEN INSTALLED AND PROJECT HAS STARTED.
8. BEGIN CLEARING, GRUBBING AND GRADING OF SITE IN ACCORDANCE WITH THE APPROVED S&E CONTROL PLAN.
9. FOR ANY LAND-DISTURBING ACTIVITY WHERE GRADING ACTIVITIES HAVE BEEN COMPLETED, TEMPORARY OR PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION SHALL BE PROVIDED AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER COMPLETING THE WORK. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND ESPECIALLY WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE ON THE PLAN.
10. REMOVE ALL EROSION CONTROL MEASURES AFTER THE WAKE COUNTY S&E OFFICE APPROVAL OF PERMANENT STABILIZATION.

LIMITS OF DISTURBANCE = 61,002 SF (1.4 AC)

Table with columns for NO, REVISIONS, and DATE.



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Table with columns for project status: STRONG ROCK PROJECT, NOT FOR CONSTRUCTION, SCALE AS SHOWN, DESIGNED BY JWL, SRG, DRAWN BY, CHECKED BY JWL.

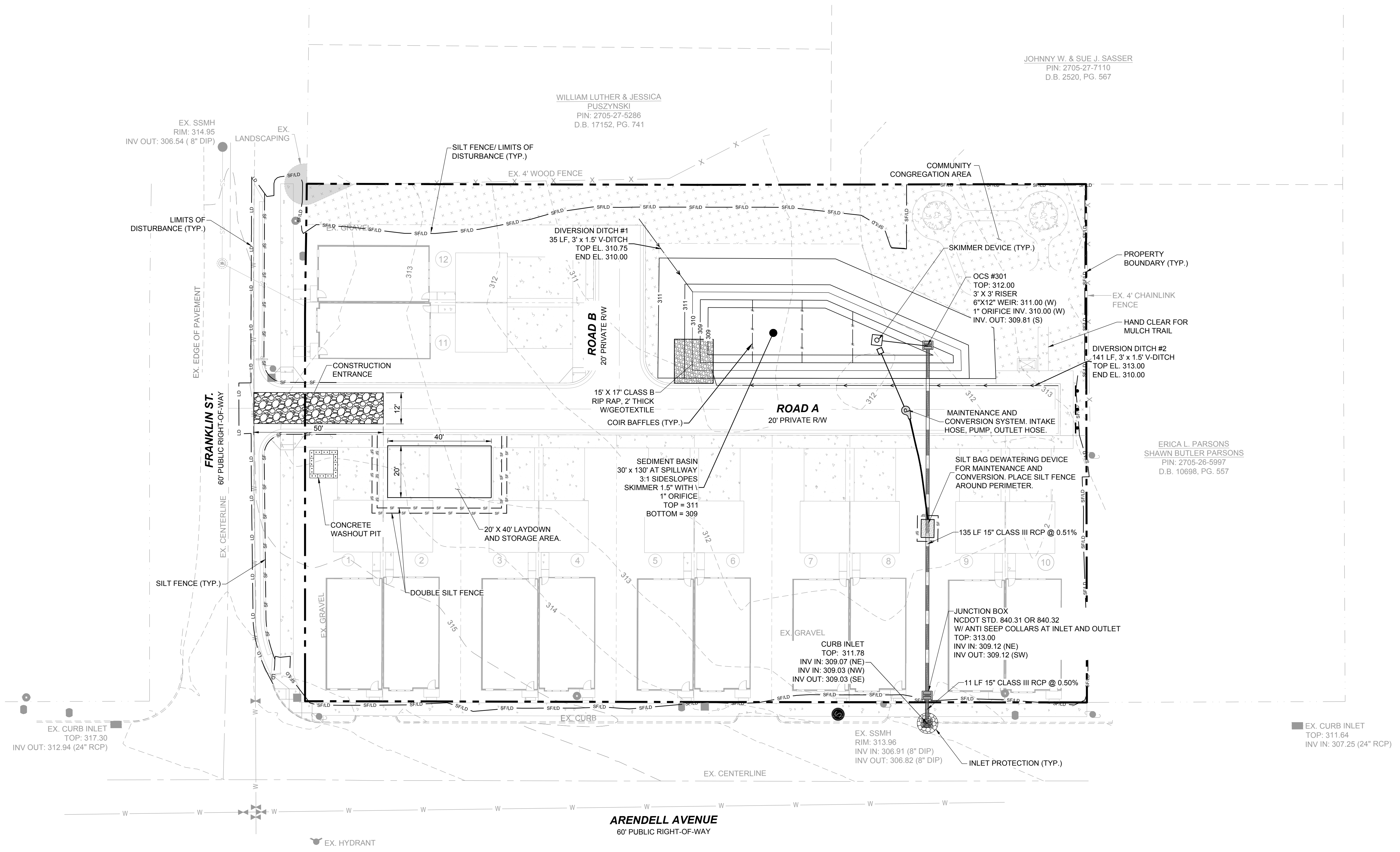
Town of Zebulon-Arendell Construction Plans and Erosion Control Note title block.

DRAWING SHEET

C-7.0

08 OF 24





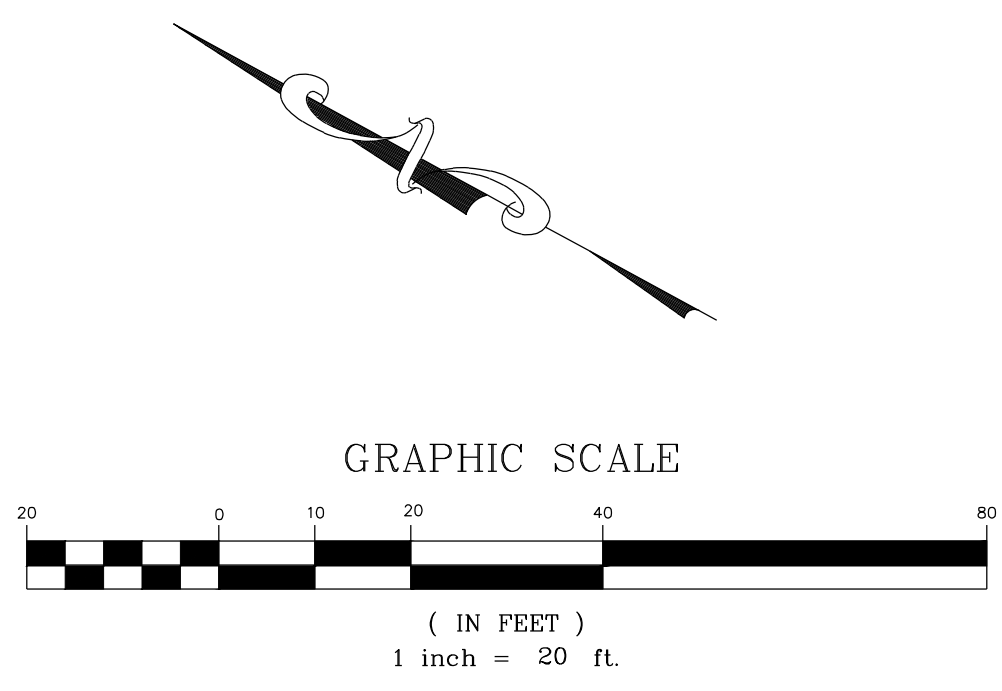
JOHNNY W. & SUE J. SASSER  
PIN: 2705-27-7110  
D.B. 2520, PG. 567

WILLIAM LUTHER & JESSICA  
PUSZYNSKI  
PIN: 2705-27-5286  
D.B. 17152, PG. 741

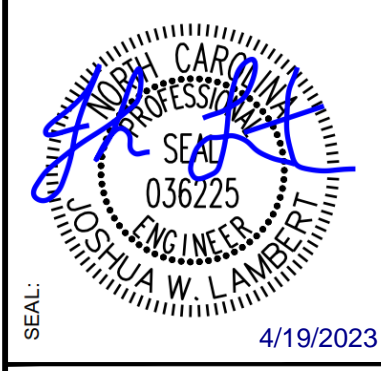
ERICA L. PARSONS  
SHAWN BUTLER PARSONS  
PIN: 2705-26-5997  
D.B. 10698, PG. 557

**LEGEND:**

---	EXISTING PROPERTY LINE
-SFLD- SFLD-	SILT FENCE / LIMITS OF DISTURBANCE
-LD- LD-	LIMITS OF DISTURBANCE
-SF- SF-	SILT FENCE
(Pattern)	CONSTRUCTION ENTRANCE
(Dashed)	PROPOSED STORM DRAIN LINE
(Circle)	INLET PROTECTION



NO.	REVISIONS	DATE	BY



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DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

TRUE- ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
**EROSION CONTROL PLAN - STAGE 1**

DRAWING SHEET  
**C-7.1**

JOHNNY W. & SUE J. SASSER  
PIN: 2705-27-7110  
D.B. 2520, PG. 567

WILLIAM LUTHER & JESSICA  
PUSZYNSKI  
PIN: 2705-27-5286  
D.B. 17152, PG. 741

ERICA L. PARSONS  
SHAWN BUTLER PARSONS  
PIN: 2705-26-5997  
D.B. 10698, PG. 557

EX. SSMH  
RIM: 314.95  
INV OUT: 306.54 ( 8" DIP)

LIMITS OF  
DISTURBANCE (TYP.)

EX. EDGE OF PAVEMENT

FRANKLIN ST.  
60' PUBLIC RIGHT-OF-WAY

SILT FENCE (TYP.)

EX. CURB

EX. CURB INLET  
TOP: 317.30  
INV OUT: 312.94 (24" RCP)

EX. HYDRANT

SILT FENCE / LIMITS OF  
DISTURBANCE (TYP.)

EX. 4' WOOD FENCE

ROAD B  
20' PRIVATE R/W

15' X 17' CLASS B  
RIP RAP, 2" THICK  
W/GEOTEXTILE

ROAD A  
20' PRIVATE R/W

COMMUNITY  
CONGREGATION AREA

WET POND  
TOP: 313.000  
BOT: 305.000

OCS #301  
TOP: 312.00  
3' X 3' RISER  
6" X 12" WEIR: 311.00 (W)  
1" ORIFICE INV. 310.00 (W)  
INV. OUT: 309.81 (S)

PROPERTY  
BOUNDARY (TYP.)

EX. 4' CHAINLINK  
FENCE

HAND CLEAR FOR  
MULCH TRAIL

MAIL KIOSK

135 LF 15" CLASS III RCP @ 0.51%

JUNCTION BOX  
NCDOT STD. 840.31 OR 840.32  
W/ ANTI SEEP COLLARS AT INLET AND OUTLET  
TOP: 313.00  
INV IN: 309.12 (NE)  
INV OUT: 309.12 (SW)

11 LF 15" CLASS III RCP @ 0.50%

CURB INLET  
TOP: 311.78  
INV IN: 309.07 (NE)  
INV IN: 309.03 (NW)  
INV OUT: 309.03 (SE)

EX. SSMH  
RIM: 313.96  
INV IN: 306.91 (8" DIP)  
INV OUT: 306.82 (8" DIP)

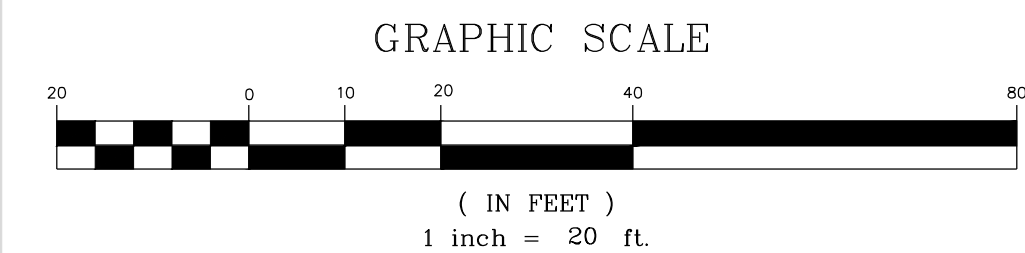
INLET PROTECTION (TYP.)

EX. CURB INLET  
TOP: 311.64  
INV IN: 307.25 (24" RCP)

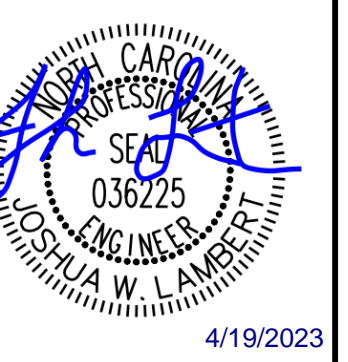
ARENDELL AVENUE  
60' PUBLIC RIGHT-OF-WAY

**LEGEND:**

	EXISTING PROPERTY LINE
	SILT FENCE / LIMITS OF DISTURBANCE (TYP.)
	LIMITS OF DISTURBANCE
	SILT FENCE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	CONSTRUCTION ENTRANCE
	PROPOSED STORM DRAIN LINE
	INLET PROTECTION
	FENCE LINE



NO.	REVISIONS	DATE	BY



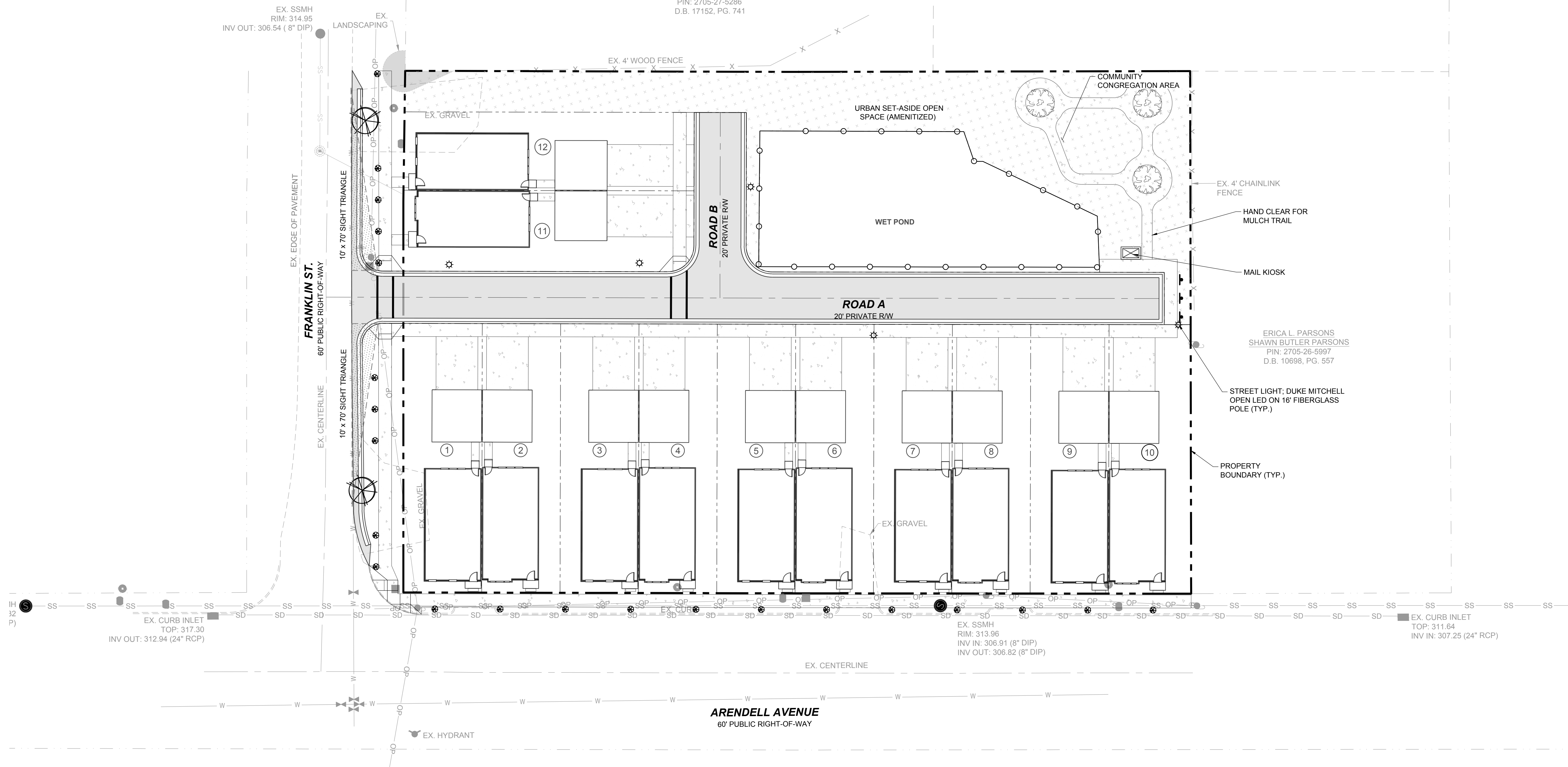
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			JWL	SRG	JWL

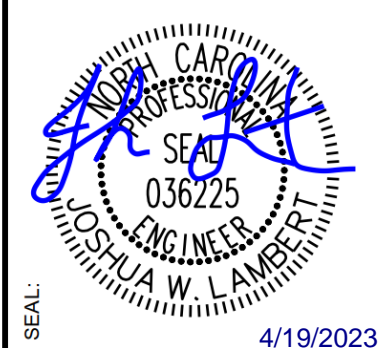
TRUE- ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
**EROSION CONTROL PLAN - STAGE 2**

DRAWING SHEET  
**C-7.2**

WILLIAM LUTHER & JESSICA  
 PUSZYNSKI  
 PIN: 2705-27-5286  
 D.B. 17152, PG. 741



No.	REVISIONS	DATE	BY



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 6801 FALLS OF NEUSE RD., SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY JWL	SRG	DRAWN BY JWL	CHECKED BY JWL
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TRUE- ZEBULON-ARENDELL  
 TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 CONSTRUCTION PLANS  
**LANDSCAPING PLAN**

**LEGEND:**

	RED BUD
	CHINESE PISTACIA

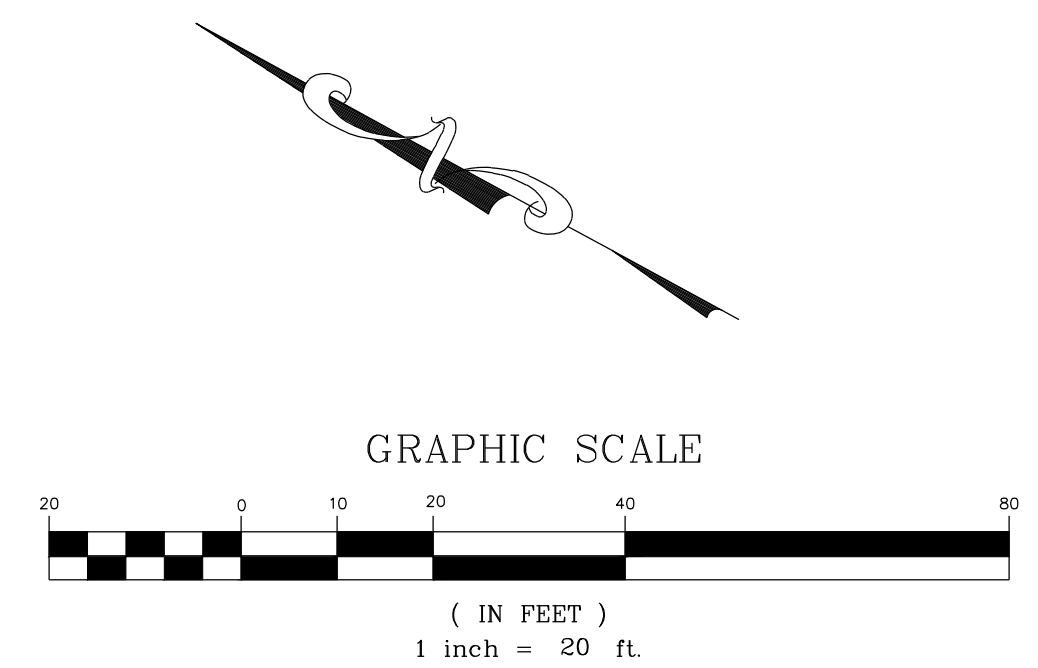
**PLANTING SCHEDULE:**

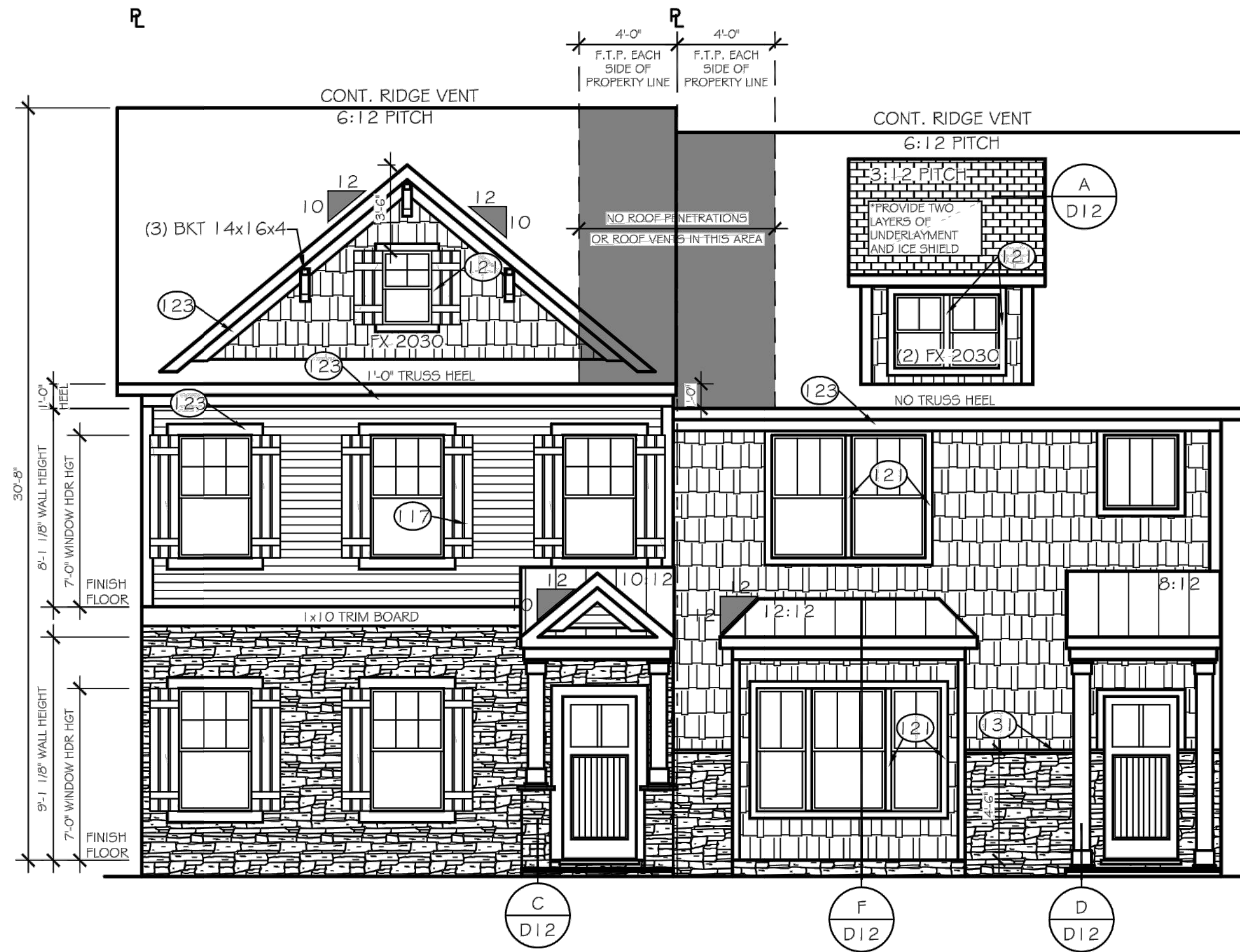
KEY	QTY	BOTANICAL NAME	COMMON NAME	CONTAINER	SIZE	HEIGHT
PERIMETER BUFFERS						
CP	2	CHINESE PISTACIA	BOTANICAL	B&B	1" CAL	6'
CJ	22	RED BUD	CERCIS CANADENSIS	GAL.	1" CAL	6'

- GENERAL PLANTING NOTES:**
- STREET TREES SHALL BE INSTALLED SUCH THAT ONE TREE IS REQUIRED ALONG THE RESIDENTIAL STREET AS SHOWN, SPACED EVERY 40 FEET.
  - DO NOT PLACE STREET TREES WITHIN A PUBLIC STORM OR UTILITY EASEMENT.
  - ALL CANOPY TREES SHALL BE MIN. 8' TALL AND 2" CALIPER AT TIME OF PLANTING.
  - ALL UNDERSTORY TREES SHALL BE MIN. 6' TALL AND 1" CALIPER AT TIME OF PLANTING.
  - LANDSCAPING IN AREAS OUTSIDE OF RIGHT OF WAY ARE TO BE PROVIDED BY THE DEVELOPER. ANY LANDSCAPING INSTALLED WITHIN THESE AREAS ARE TO BE MAINTAINED BY THE DEVELOPER UNTIL HOME OWNERS ASSOCIATION (HOA) IS ESTABLISHED. HOA WILL BE RESPONSIBLE FOR CONTINUED MAINTENANCE OF LANDSCAPING AND ANY IMPROVEMENTS OUTSIDE THE RIGHT OF WAY.
  - ADDITIONAL LANDSCAPING ON SITE MAYBE PROVIDED BY DEVELOPER.

**LEGEND:**

	EXISTING PROPERTY LINE
	ROADWAY CENTER LINE
	PROPOSED PROPERTY LINE
	STANDARD CURB & GUTTER
	ASPHALT PAVEMENT
	OPEN SPACE
	STREET LIGHT
	FENCE LINE



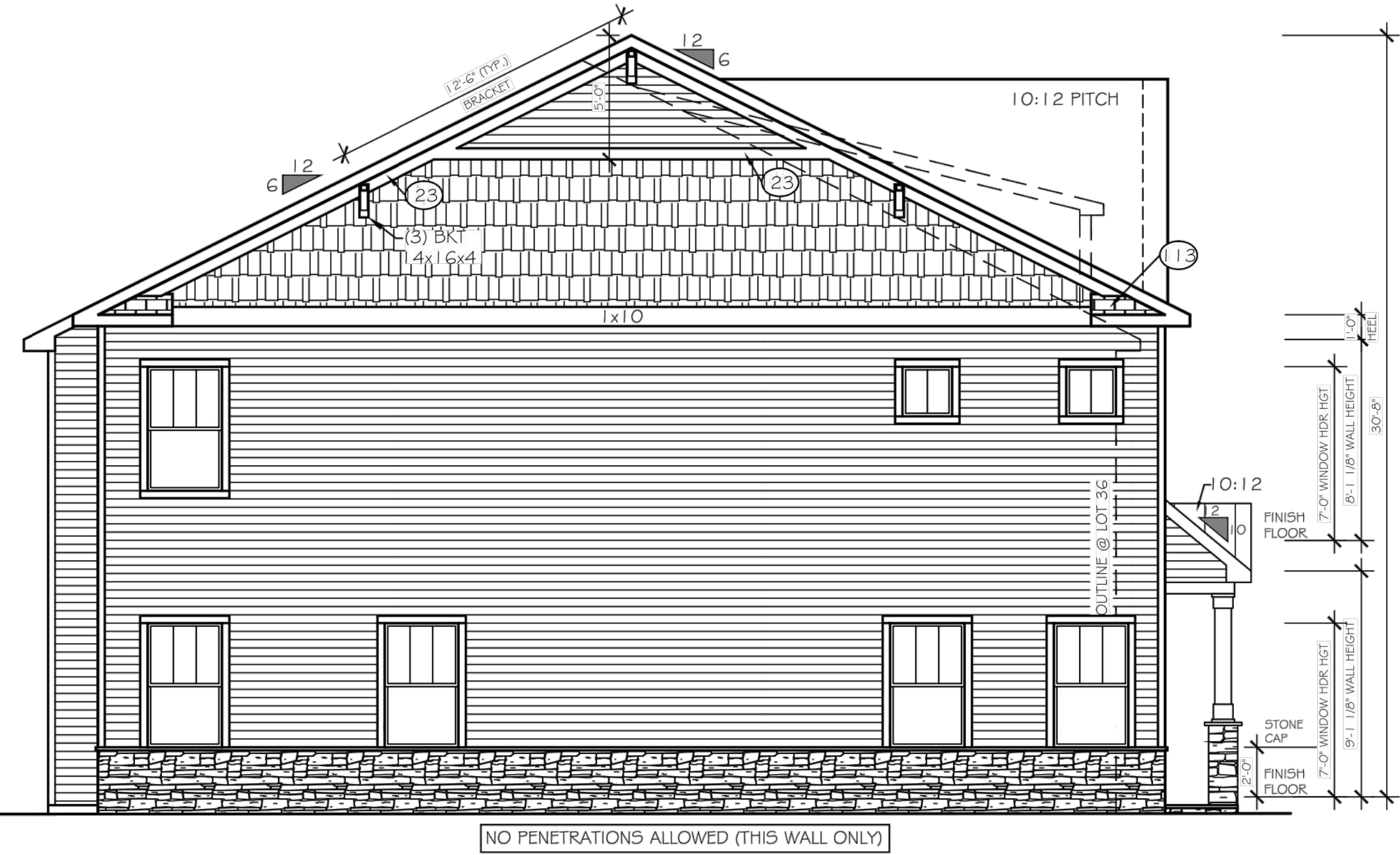


FRONT ELEVATION - A3F  
SCALE: 1/4" = 1'-0"

LOT - 1

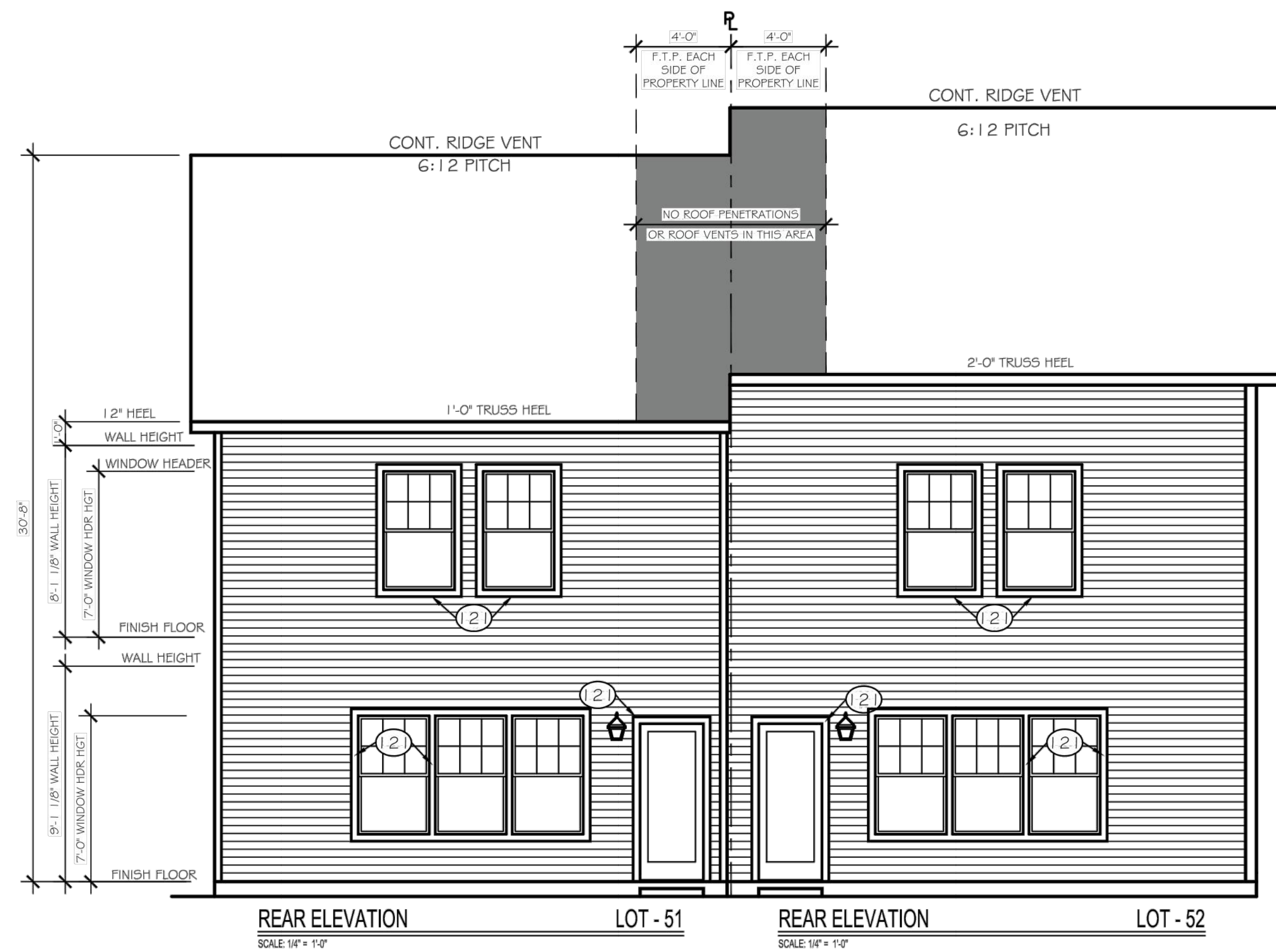
FRONT ELEVATION - C3B  
SCALE: 1/4" = 1'-0"

LOT - 2



LEFT ELEVATION  
SCALE: 1/4" = 1'-0"

LOT - 1

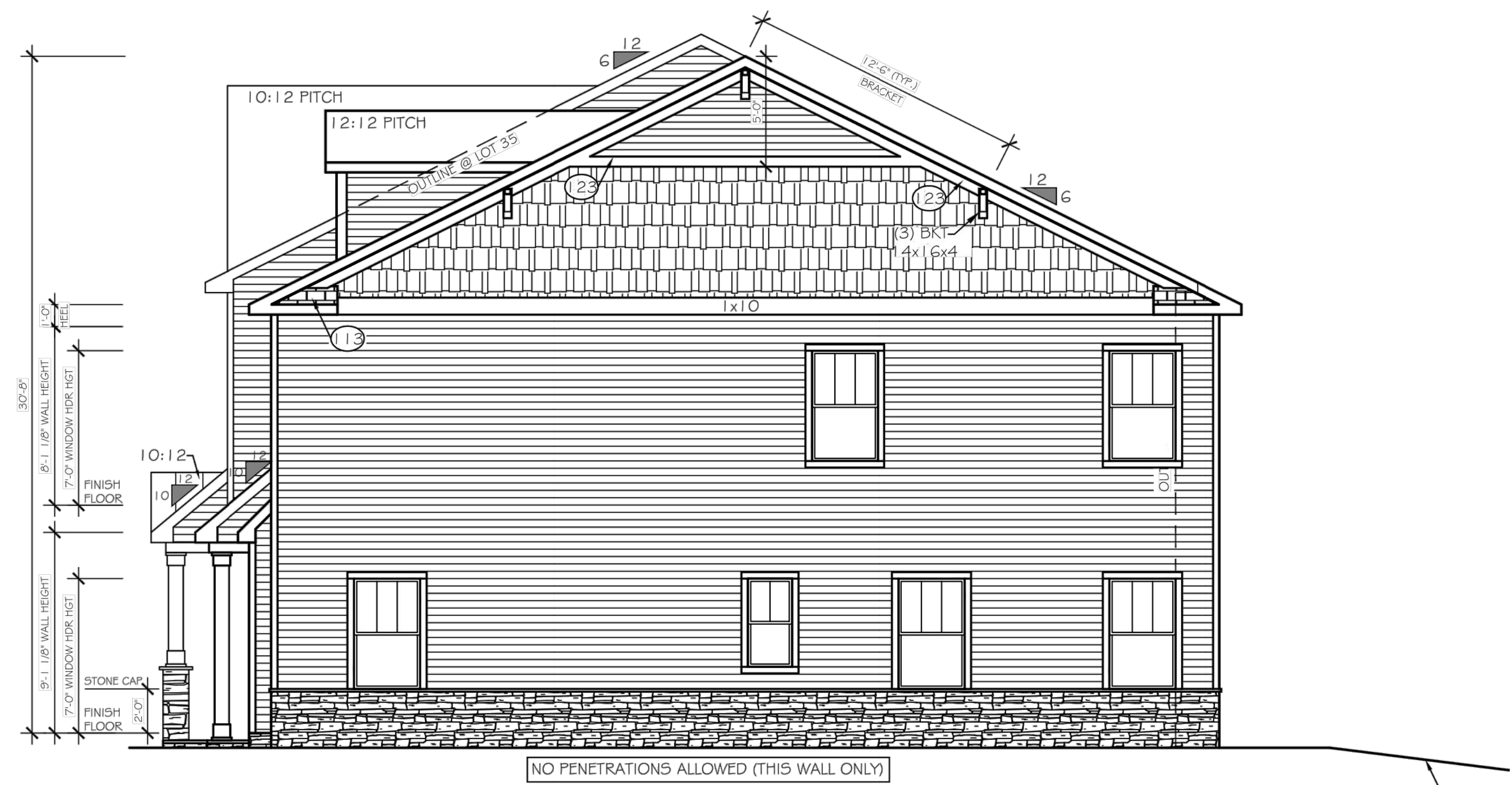


REAR ELEVATION  
SCALE: 1/4" = 1'-0"

LOT - 51

REAR ELEVATION  
SCALE: 1/4" = 1'-0"

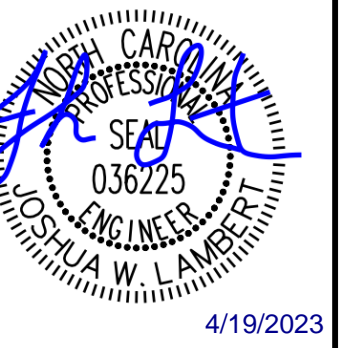
LOT - 52



RIGHT ELEVATION  
SCALE: 1/4" = 1'-0"

LOT - 2

NO.	REVISIONS	DATE	BY

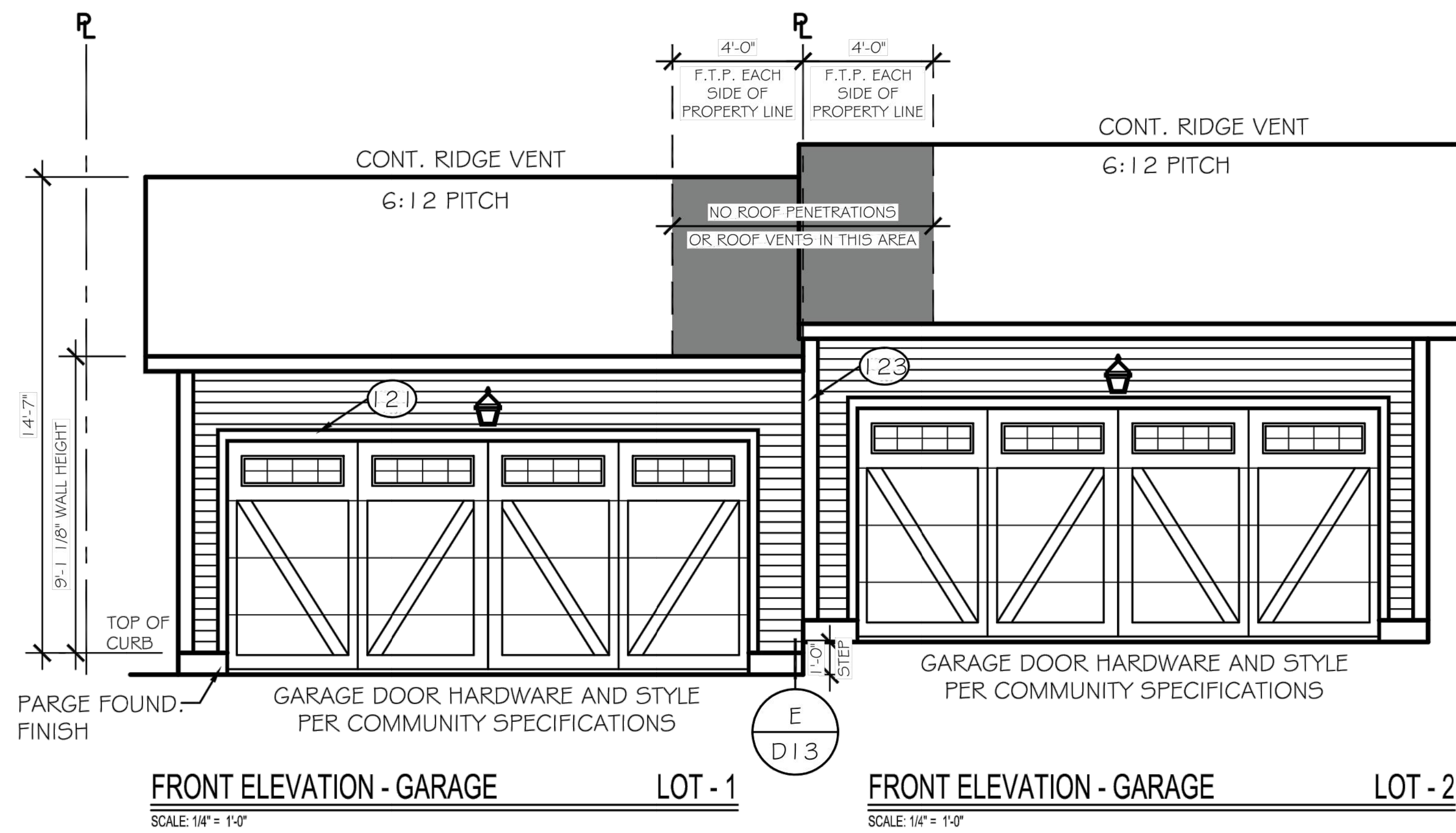


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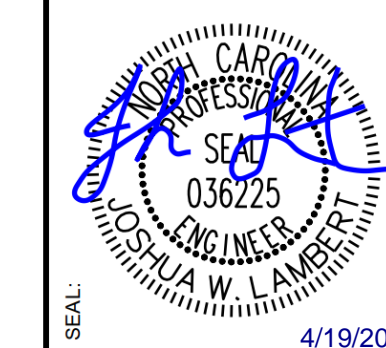
STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY

TRUE-ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
BUILDING ELEVATIONS

DRAWING SHEET  
**D-1.0**



No.	REVISIONS	DATE	BY



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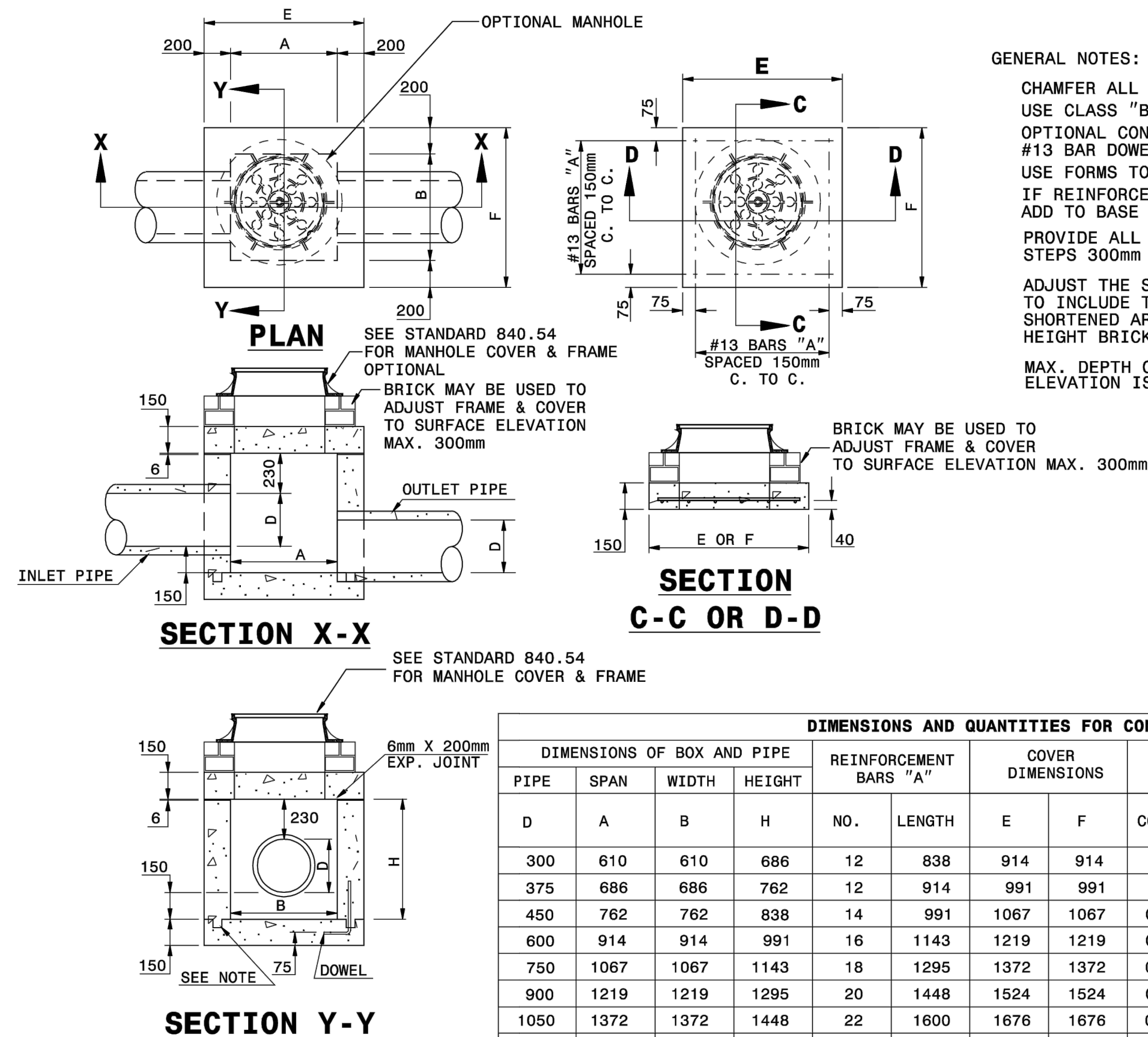
STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY JWL	DRAWN BY SRG	CHECKED BY JWL
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TRUE- ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
**BUILDING ELEVATIONS**

DRAWING SHEET  
**D-1.1**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

METRIC STANDARD DRAWING FOR CONCRETE JUNCTION BOX (WITH OPTIONAL MANHOLE) 300mm THRU 1650mm PIPE SHEET 1 OF 1 840.31



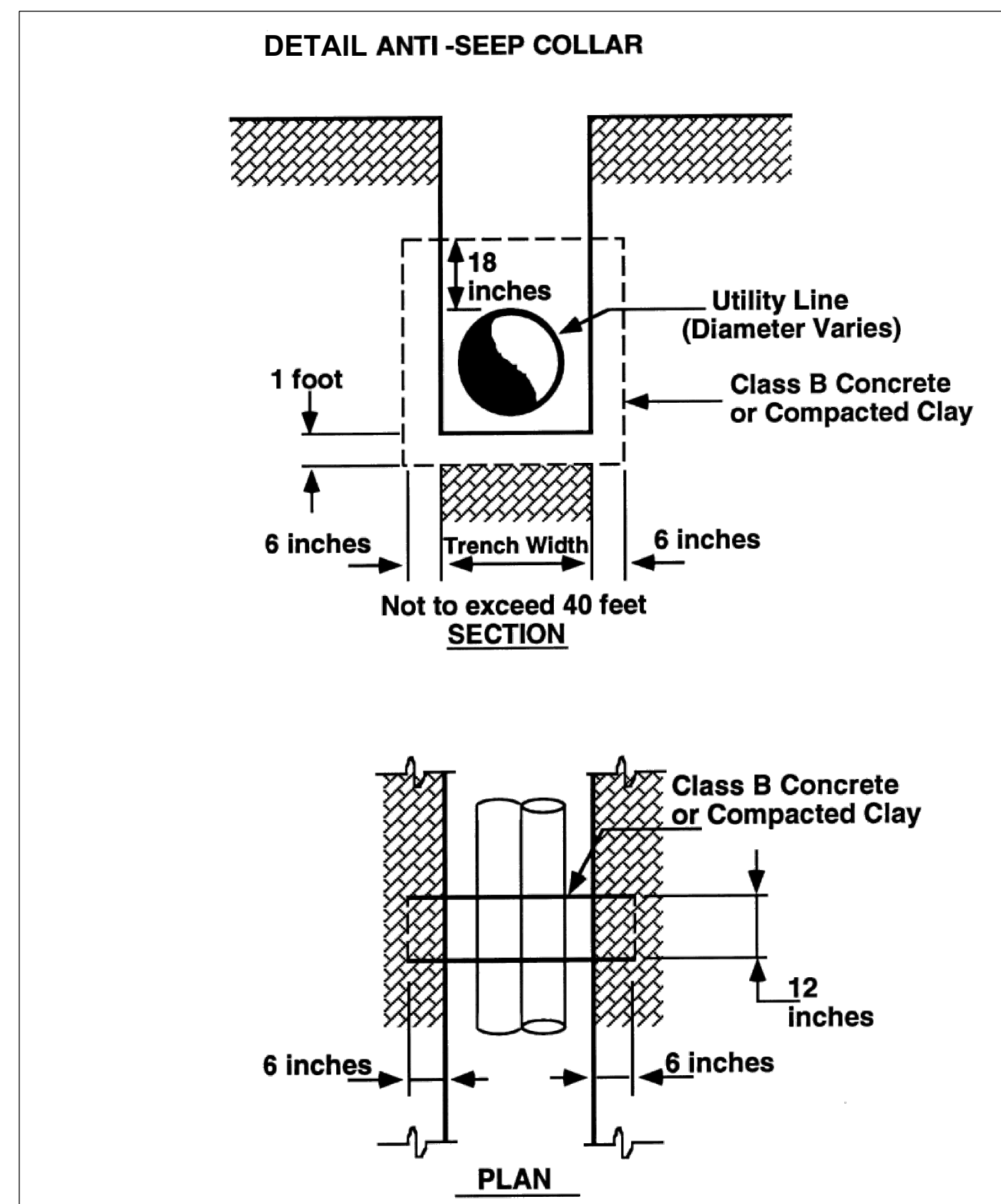
GENERAL NOTES: CHAMFER ALL EXPOSED CORNERS 25mm. USE CLASS "B" CONCRETE THROUGHOUT. OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 50mm KEYWAY, OR #13 BAR DOWELS AT 300mm CENTERS AS DIRECTED BY THE ENGINEER. USE FORMS TO CONSTRUCT THE BASE SLAB. IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STD. DWG. 840.66. PROVIDE ALL JUNCTION BOXES OVER 1.0m IN DEPTH WITH STEPS 300mm ON CENTERS IN ACCORDANCE WITH STD. DWG. 840.66. ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB. ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.) MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 3.6 METERS.

Table with 7 columns: DIMENSIONS OF BOX AND PIPE, REINFORCEMENT BARS 'A', COVER DIMENSIONS, CUBIC METERS IN BOX, TOTAL QUANTITIES BOX AND COVER, DEDUCTIONS FOR ONE PIPE m.3. Rows include dimensions for pipes from 300mm to 1650mm.

Note: This drawing is dimensioned in millimeters unless otherwise depicted within the drawing.

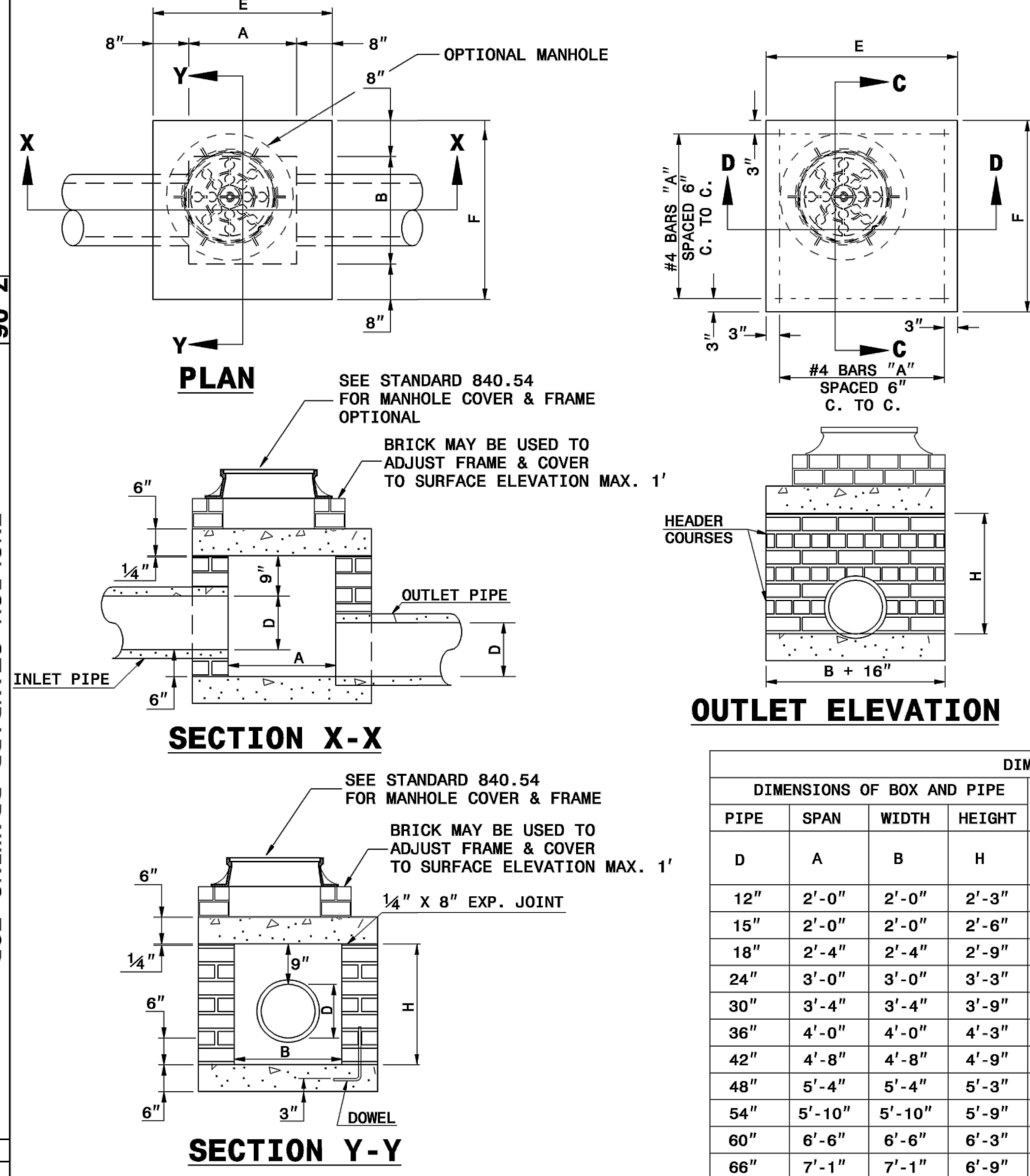
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

METRIC STANDARD DRAWING FOR CONCRETE JUNCTION BOX (WITH OPTIONAL MANHOLE) 300mm THRU 1650mm PIPE SHEET 1 OF 1 840.31



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR BRICK JUNCTION BOX (WITH OPTIONAL MANHOLE) 12" THRU 66" PIPE SHEET 1 OF 1 840.32



GENERAL NOTES: CHAMFER ALL EXPOSED CORNERS 1". USE CLASS "B" CONCRETE THROUGHOUT. USE #4 BAR DOWELS AT 12" CENTERS. MORTAR JOINTS 1/2" ± 1/8" THICK. CONCAVE TOO ALL EXPOSED JOINTS. USE FORMS TO CONSTRUCT THE BOTTOM SLAB. JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICK. FOR 8'-0" IN HEIGHT OR LESS, USE 8" WALL. OVER 8'-0" IN HEIGHT, USE 12" WALL TO 6'-0" FROM TOP OF WALL, AND 8" WALL FOR THE REMAINING 6'-0". ADJUST DIMENSIONS AND QUANTITIES ACCORDINGLY. IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00. PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66. ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB. ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.) MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

Table with 7 columns: DIMENSIONS OF BOX AND PIPE, REINFORCEMENT BARS, TOP SLAB DIMENSIONS, CUBIC YARDS, DEDUCTIONS FOR ONE PIPE CU.YDS. Rows include dimensions for pipes from 12" to 66" and material quantities.

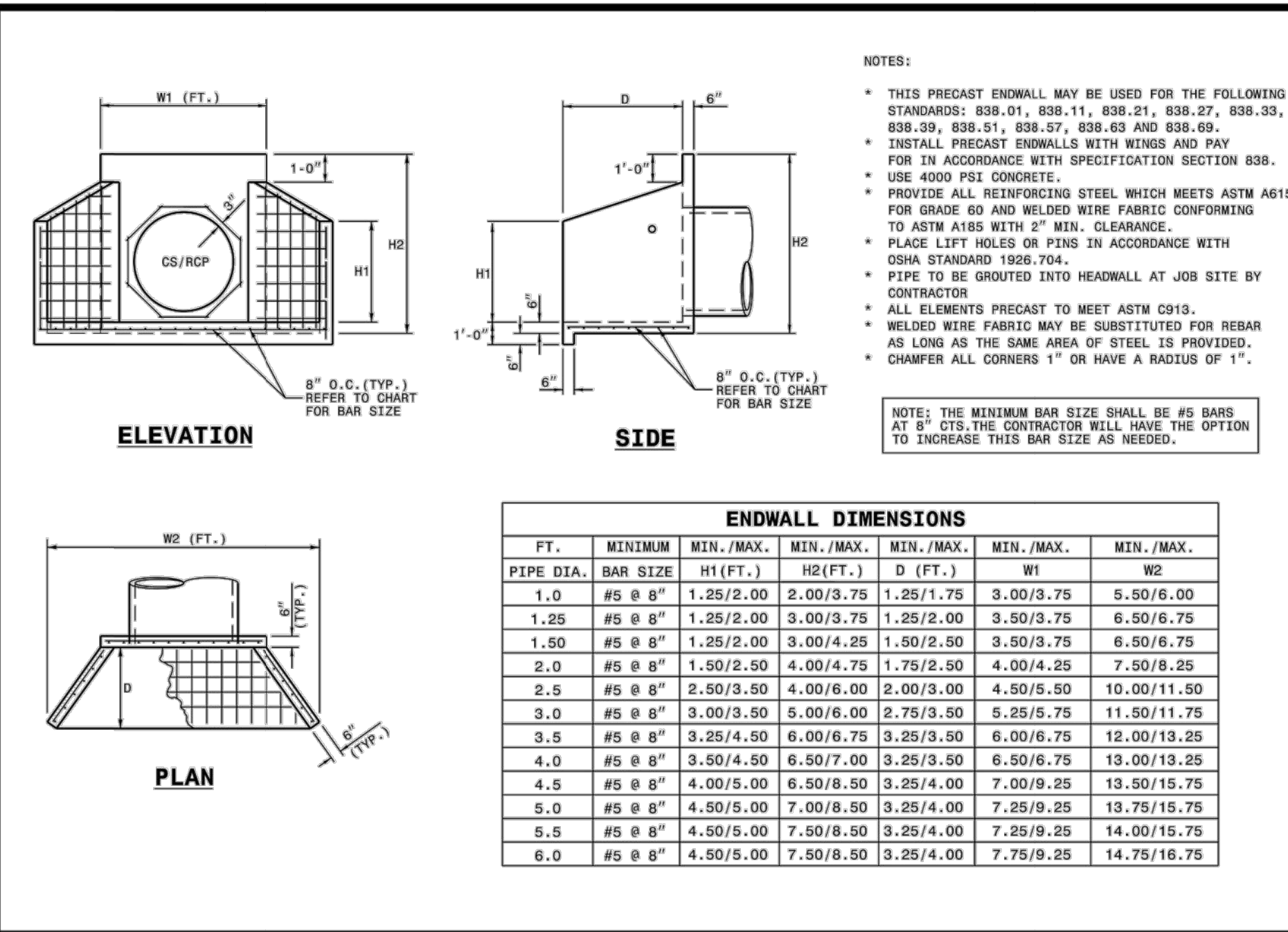
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR BRICK JUNCTION BOX (WITH OPTIONAL MANHOLE) 12" THRU 66" PIPE SHEET 1 OF 1 840.32

REVISIONS table with columns for No., Description, Date, and By.

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TRUE-ZEBULON-ARENDELL TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA CONSTRUCTION PLANS STORM DRAINAGE DETAILS DRAWING SHEET D-2.0 14 OF 24



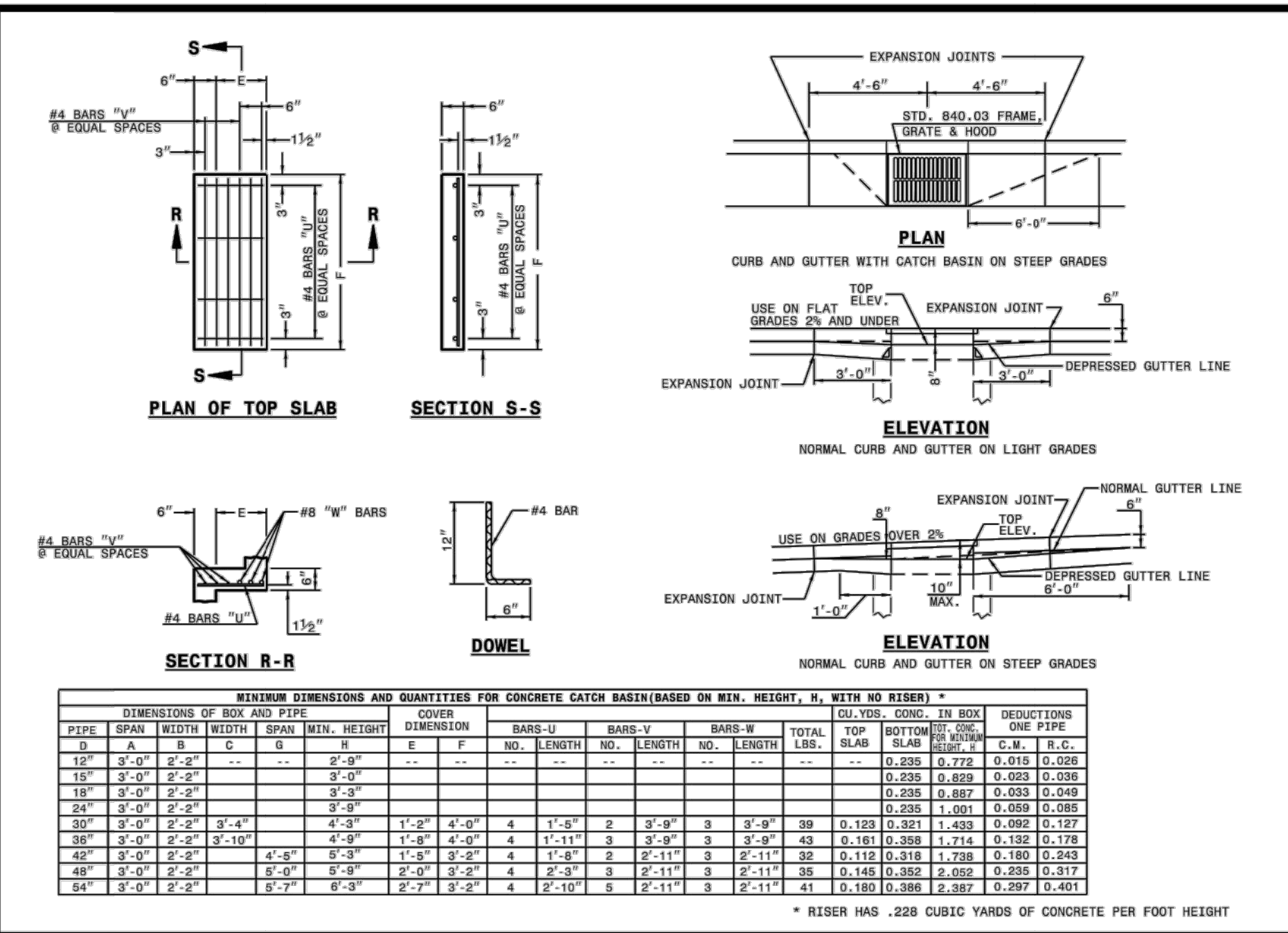
PIPE DIA.	BAR SIZE	H1 (FT.)	H2 (FT.)	W1 (FT.)	W2 (FT.)
1.0	#5 @ 8"	1.25/2.00	2.00/3.75	1.25/1.75	3.00/3.75
1.25	#5 @ 8"	1.25/2.00	3.00/3.75	1.25/2.00	3.50/3.75
1.50	#5 @ 8"	1.25/2.00	3.00/4.25	1.50/2.50	3.50/3.75
2.0	#5 @ 8"	1.50/2.50	4.00/4.75	1.75/2.50	4.00/4.25
2.5	#5 @ 8"	2.50/3.50	4.00/6.00	2.00/3.00	4.50/5.50
3.0	#5 @ 8"	3.00/3.50	5.00/6.00	2.75/3.50	5.25/5.75
3.5	#5 @ 8"	3.25/4.50	6.00/6.75	3.25/3.50	6.00/6.75
4.0	#5 @ 8"	3.50/4.50	6.50/7.00	3.25/3.50	6.50/6.75
4.5	#5 @ 8"	4.00/5.00	6.50/8.50	3.25/4.00	7.00/8.25
5.0	#5 @ 8"	4.50/5.00	7.00/8.50	3.25/4.00	7.25/8.25
5.5	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.25/8.25
6.0	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.75/8.25

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

ROADWAY STANDARD DRAWING FOR PRECAST CONCRETE ENDWALL FOR SINGLE 12" THRU 72" PIPE - 90° SKEW

SHEET 1 OF 1

838.80



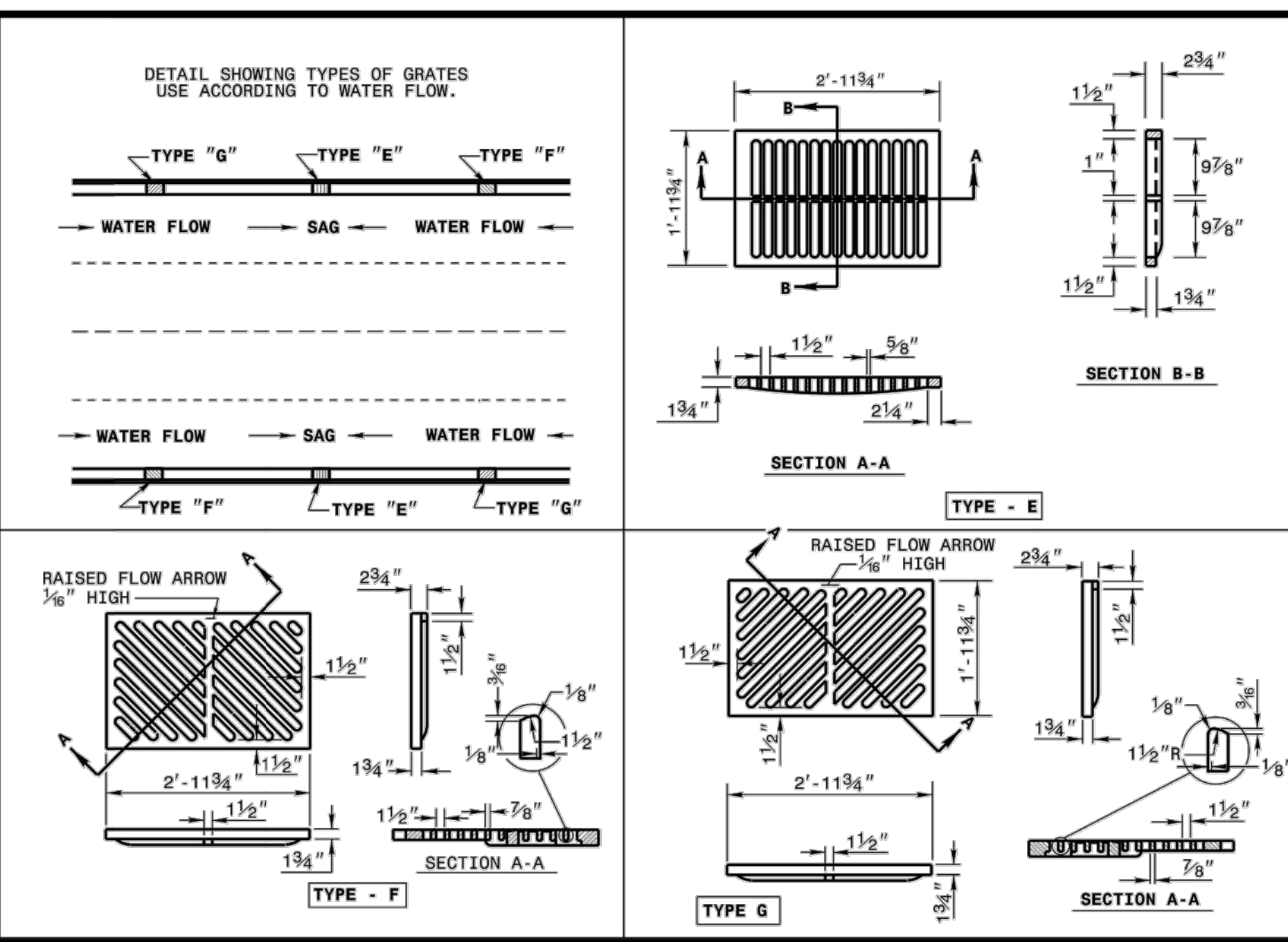
PIPE	SPAN	WIDTH	DEPTH	COVER	CURB	GUTTER	NO. BARS	NO. RISERS	NO. JOINTS	NO. FEET	NO. YARDS
15"	3'-0"	2'-0"	2'-0"	2'-0"	6"	2'-0"	4	0	0	10.0	3.0
18"	3'-0"	2'-0"	2'-0"	2'-0"	6"	2'-0"	4	0	0	10.0	3.0
24"	3'-0"	2'-0"	2'-0"	2'-0"	6"	2'-0"	4	0	0	10.0	3.0
30"	3'-0"	2'-0"	2'-0"	2'-0"	6"	2'-0"	4	0	0	10.0	3.0
36"	3'-0"	2'-0"	2'-0"	2'-0"	6"	2'-0"	4	0	0	10.0	3.0
42"	3'-0"	2'-0"	2'-0"	2'-0"	6"	2'-0"	4	0	0	10.0	3.0
48"	3'-0"	2'-0"	2'-0"	2'-0"	6"	2'-0"	4	0	0	10.0	3.0
60"	3'-0"	2'-0"	2'-0"	2'-0"	6"	2'-0"	4	0	0	10.0	3.0

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

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

SHEET 2 OF 3

840.02

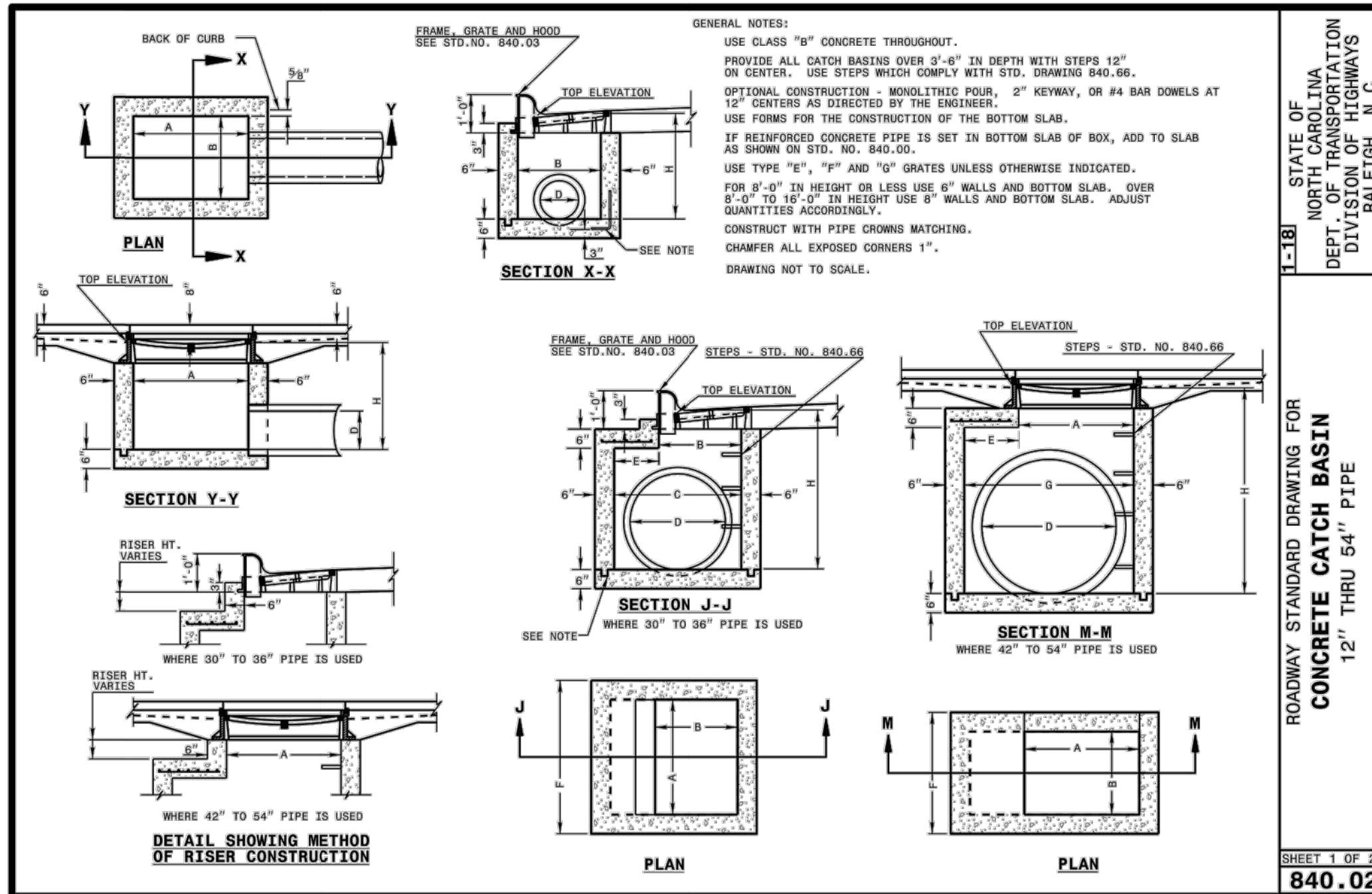


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

SHEET 2 OF 2

840.03

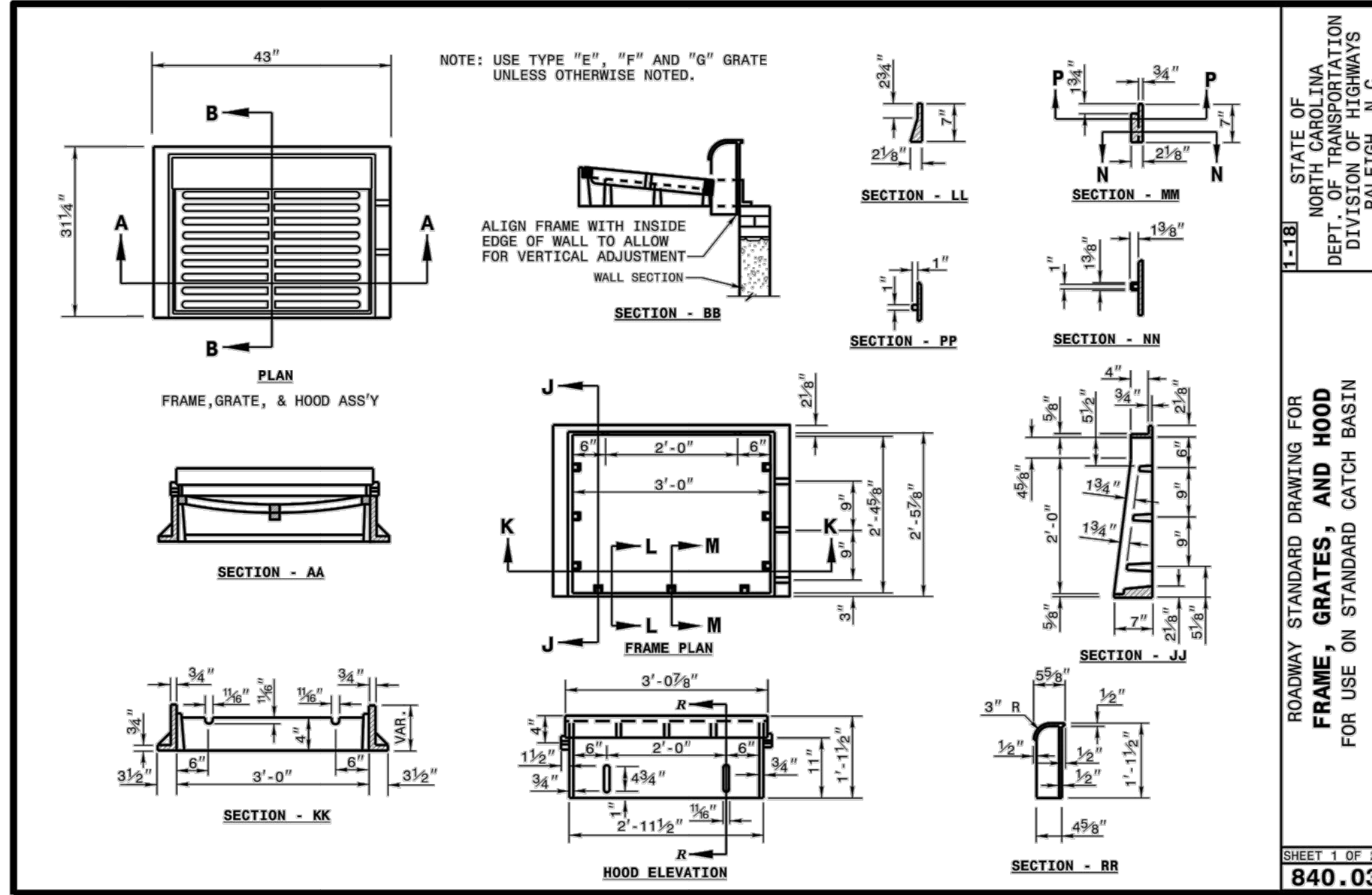


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

SHEET 1 OF 2

840.02



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

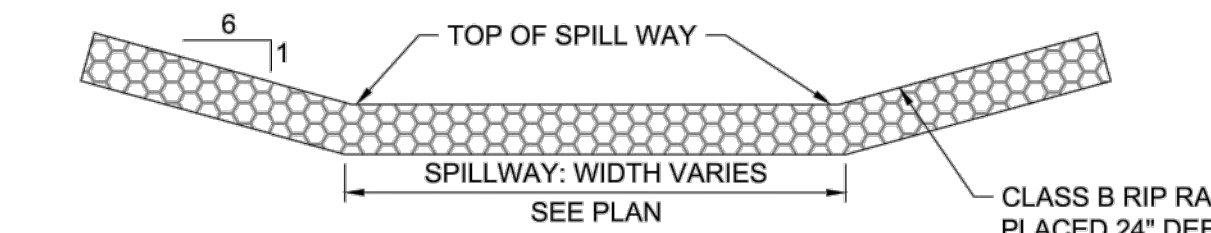
ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

SHEET 1 OF 2

840.03

PERMANENT DETENTION BASIN NOTES:

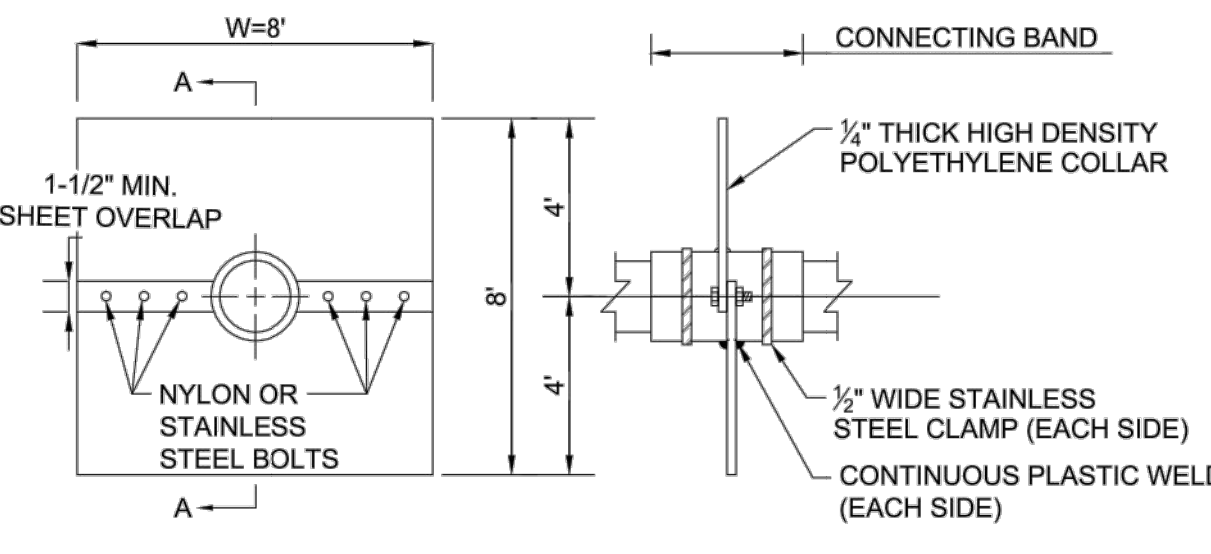
- ALL FILL SOILS FOR BERM SECTION SHALL BE CLEAN, IMPERMEABLE MATERIAL AND COMPACTED TO AT LEAST 98% STANDARD PROCTOR MAXIMUM DRY DENSITY, AT OPTIMUM MOISTURE CONTENT. NO BLASTED MATERIALS SHALL BE USED IN THE EMBANKMENT CONSTRUCTION. SOILS SHALL NOT EXHIBIT SIGNIFICANT SHRINK/SWELL OR DISPERSIVE CHARACTERISTICS. ON-SITE GEOTECHNICAL ENGINEER SHALL APPROVE THE SOILS FOR PLACEMENT WITHIN THE BERM SECTION. THE GEOTECHNICAL ENGINEER SHALL ALSO SPECIFY THE METHODS TO BE USED FOR PLACEMENT OF FILL. IF ADDITIONAL USES PLANNED UPON THE BERM SECTION (BUILDINGS, ETC.), THE GEOTECHNICAL ENGINEER SHALL SPECIFY SOILS SUITABLE FOR THAT ADDITIONAL USE. OF FILL.
- IN ALL FILL AREAS OF THE BERM, A SOILS COMPACTION TEST SHALL BE CONDUCTED EACH 2500 SQUARE FEET PER VERTICAL FOOT
- A KEY TRENCH IS TO BE PROVIDED IN ALL FILL AREAS. TRENCH TO EXTEND A MINIMUM OF FIVE FEET BELOW EXISTING GRADE. SOILS AND COMPACTION FOR KEY TRENCH SHALL MEET ALL REQUIREMENTS OF #1 ABOVE.
- NO TREES OF ANY TYPE MAY BE LOCATED ON THE BERM SECTION.
- FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM 8' LIFT. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF EMBANKMENT. BEFORE PLACEMENT OF FILL FOR THE BERM SECTION, ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND THE SURFACE PROPERLY PREPARED FOR FILL PLACEMENT.
- ANY FILL REQUIRING HAND COMPACTION, INCLUDING FILL AROUND PIPES, SHALL BE CONDUCTED IN 4" LIFTS.
- CONTRACTOR IS RESPONSIBLE TO CLEAN OUT SEDIMENT BASIN PRIOR TO CONVERTING TO PERMANENT STORMWATER BMP.



EMERGENCY SPILLWAY DITCH  
NOT TO SCALE

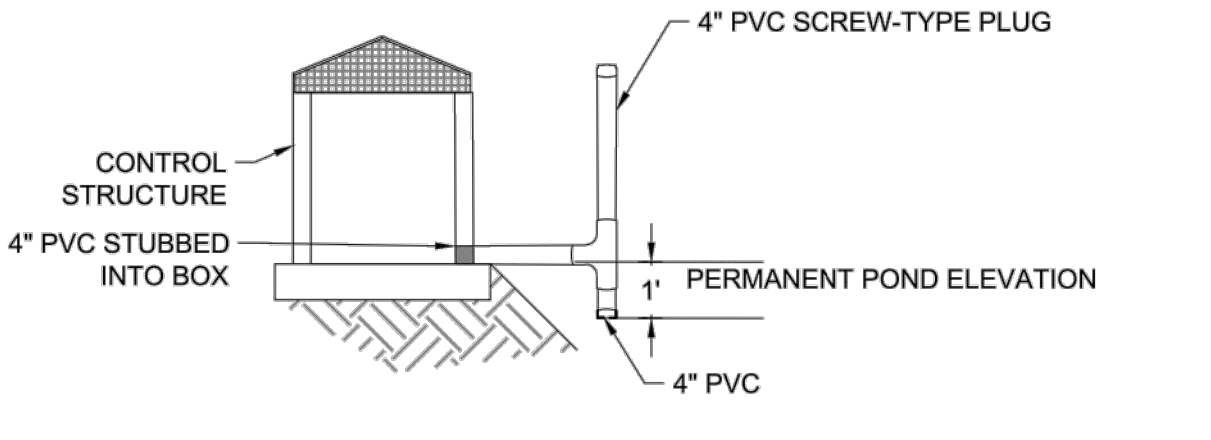
INCLUDE SUBLAYER OF FILTER FABRIC OR FS-2 FILTER STONE WITH A BEDDING THICKNESS OF 6".

CLASS B RIP RAP PLACED 24" DEEP



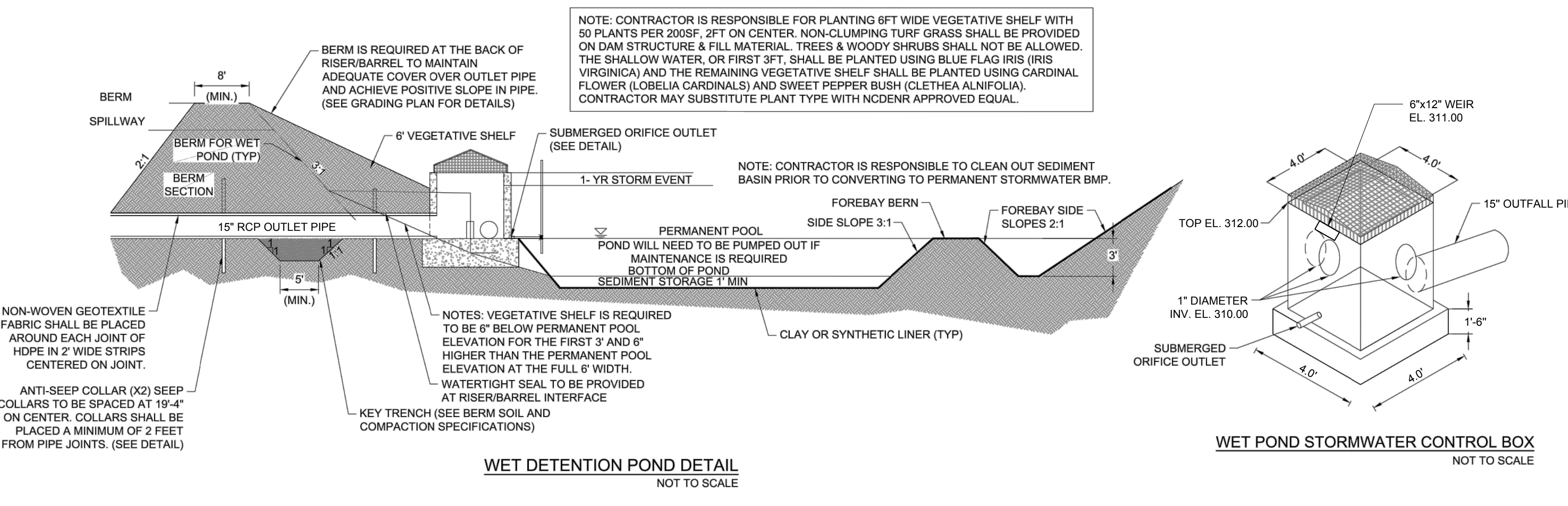
- NOTES:
- THE PIPE, CONNECTING BAND, AND SEAM COATING CAN BE EITHER SILICON CAULKING (RECOMMENDED), TAR OR MASTIC.
  - APPLY SILICON CAULK, TAR, OR MASTIC TO THE CONNECTING BAND AND LAY THE PIPE ON IT. APPLY SILICON CAULK, TAR, OR MASTIC TO THE OTHER HALF OF THE CONNECTING BAND AND SET IT IN PLACE, LINING UP THE BOLT HOLES.
  - INSTALL THE STAINLESS STEEL CLAMPS ON THE SPLIT HALVES OF THE CONNECTING BANDS AND TIGHTEN THE BOLTS AND CLAMPS.
  - APPLY SILICON CAULK, TAR, OR MASTIC ON THE SEAMS AS NEEDED TO INSURE A GOOD SEAL SO THAT THE COMPLETED INSTALLATION IS WATERTIGHT.

WET POND ANTI-SEEP COLLAR DETAIL



- NOTES:
- THE RISER SHOULD BE PLACED IN OR AT THE FACE OF THE EMBANKMENT.

WET POND SUBMERGED ORIFICE OUTLET DETAIL  
NOT TO SCALE



NOTE: CONTRACTOR IS RESPONSIBLE FOR PLANTING 6FT WIDE VEGETATIVE SHELF WITH 50 PLANTS PER 200SQ. 2FT ON CENTER. NON-CLUMPING TURF GRASS SHALL BE PROVIDED ON DAM STRUCTURE & FILL MATERIAL. TREES & WOODY SHRUBS SHALL NOT BE ALLOWED. THE SHALLOW WATER, OR FIRST 3FT, SHALL BE PLANTED USING BLUE FLAG IRIS (IRIS VIRGINICA) AND THE REMAINING VEGETATIVE SHELF SHALL BE PLANTED USING CARDINAL FLOWER (LOBELIA CARDINALIS) AND SWEET PEPPER BUSH (CLETHEA ALNIFOLIA). CONTRACTOR MAY SUBSTITUTE PLANT TYPE WITH NCDENR APPROVED EQUAL.

NOTE: CONTRACTOR IS RESPONSIBLE TO CLEAN OUT SEDIMENT BASIN PRIOR TO CONVERTING TO PERMANENT STORMWATER BMP.

NOTE: VEGETATIVE SHELF IS REQUIRED TO BE 6" BELOW PERMANENT POOL ELEVATION FOR THE FIRST 3' AND 6" HIGHER THAN THE PERMANENT POOL ELEVATION AT THE FULL 6' WIDTH. WATERTIGHT SEAL TO BE PROVIDED AT RISER/BARREL INTERFACE

NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED AROUND EACH JOINT OF HDPE IN 2' WIDE STRIPS CENTERED ON JOINT.

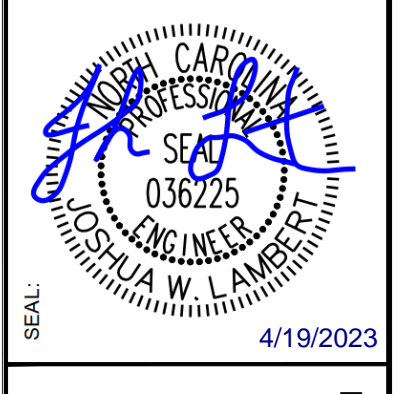
ANTI-SEEP COLLAR (X2) SEEP COLLARS TO BE SPACED AT 19'-4" ON CENTER. COLLARS SHALL BE PLACED A MINIMUM OF 2 FEET FROM PIPE JOINTS. (SEE DETAIL)

KEY TRENCH (SEE BERM SOIL AND COMPACTION SPECIFICATIONS)

WET DETENTION POND DETAIL  
NOT TO SCALE

PRELIMINARY CONSTRUCTION DRAWINGS; THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNTIL APPROVED BY ALL AUTHORITIES HAVING JURISDICTION AND RELEASED BY THE ENGINEER OF RECORD.

		DATE
		REVISIONS
		No.



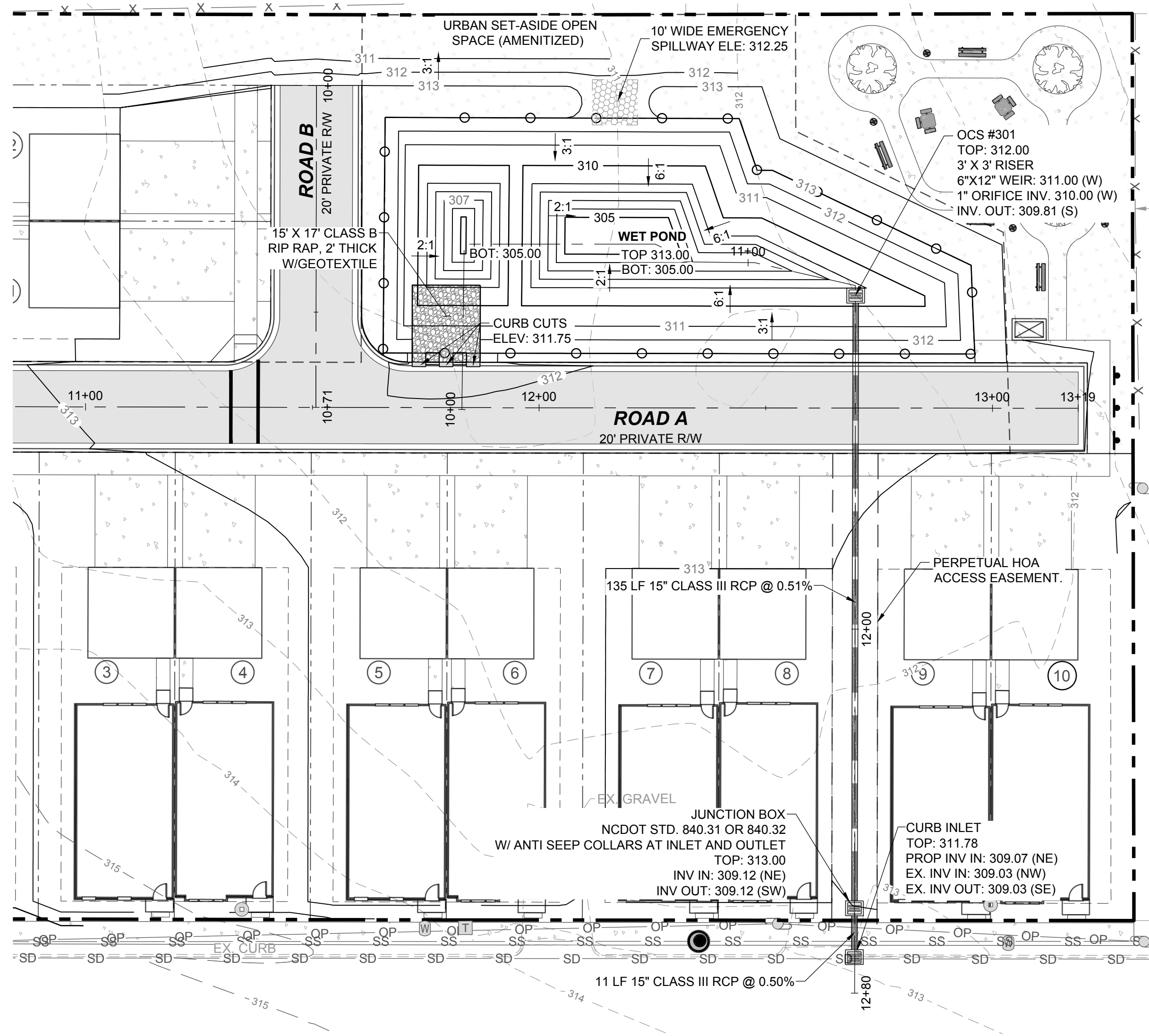
**STRONGROCK**  
ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166  
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

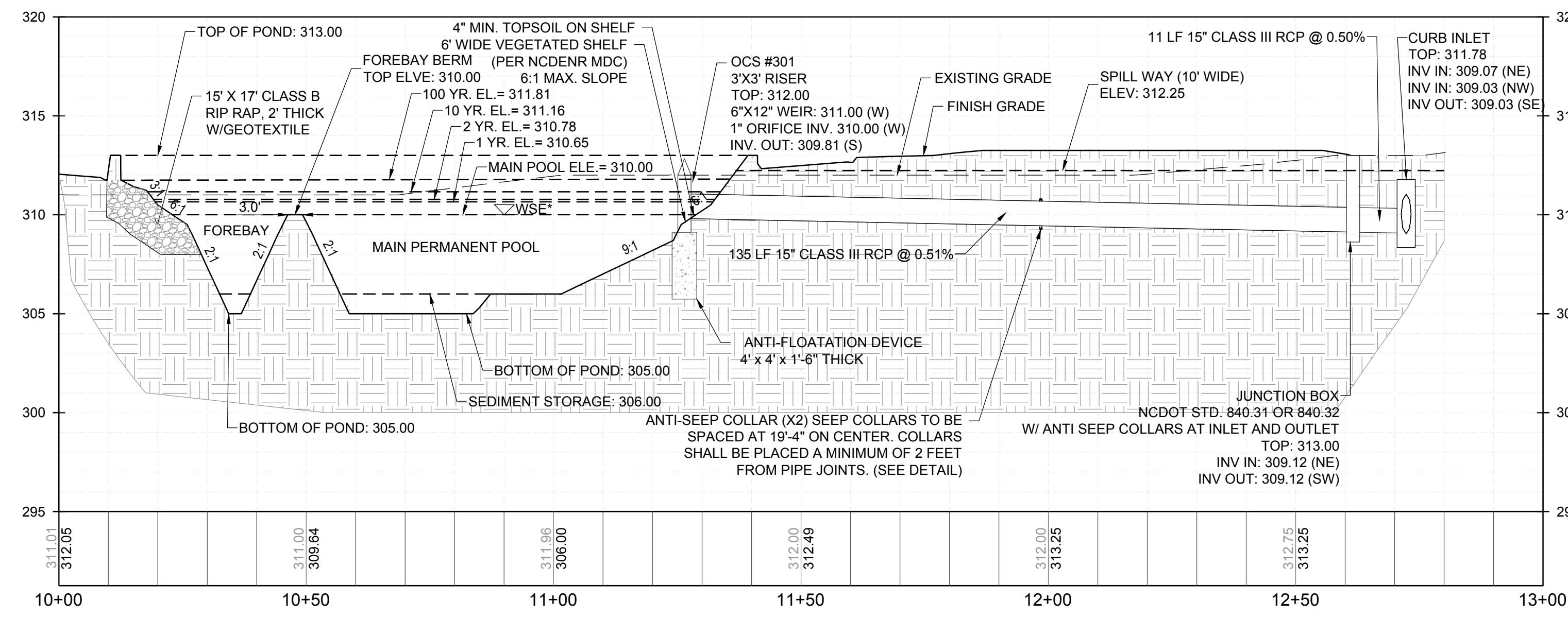
STRONG ROCK PROJECT	NOT FOR CONSTRUCTION SCALE	AS SHOWN	JWL	SRG	JWL
			DESIGNED BY	DRAWN BY	CHECKED BY

TRUE-ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
STORM DRAINAGE DETAILS

DRAWING SHEET  
D-2.1



**WET POND - PLAN**  
HORIZONTAL: 1" = 20'



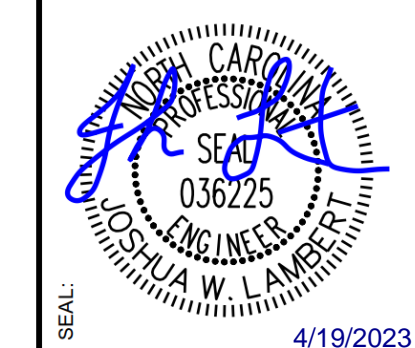
**WET POND - PROFILE**  
VERTICAL: 1" = 5'

GRAPHIC SCALE  
( IN FEET )  
1 inch = 20 ft.

**LEGEND:**

- EXISTING PROPERTY LINE
- - - ROADWAY CENTER LINE
- - - PROPOSED PROPERTY LINE
- ==== STANDARD ROLL CURB & GUTTER
- - - PROPOSED STORM DRAIN LINE

No.	REVISIONS	DATE	BY

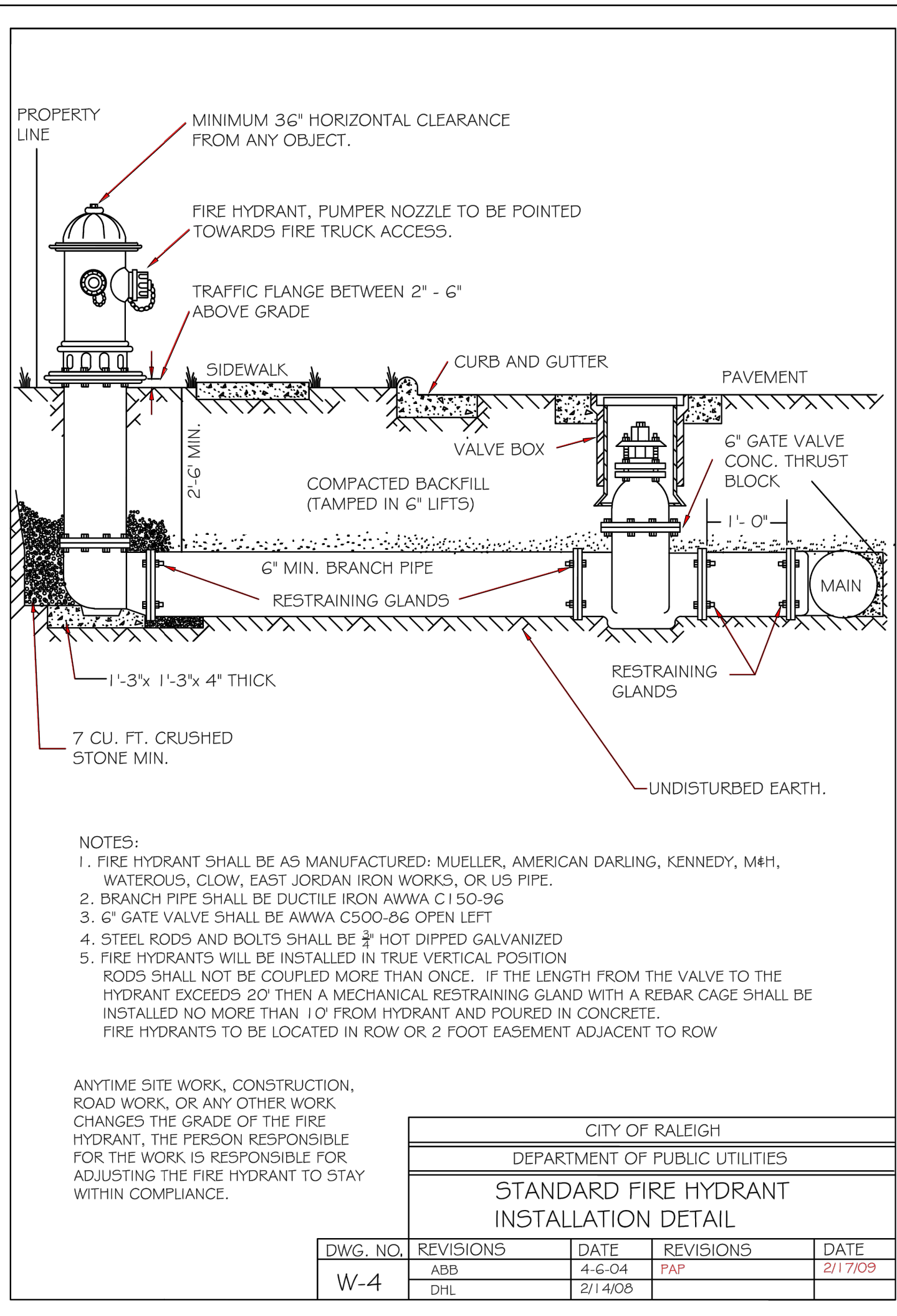


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STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY
			JWL	SRG	JWL

TRUE- ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
**STORM DRAINAGE DETAILS**

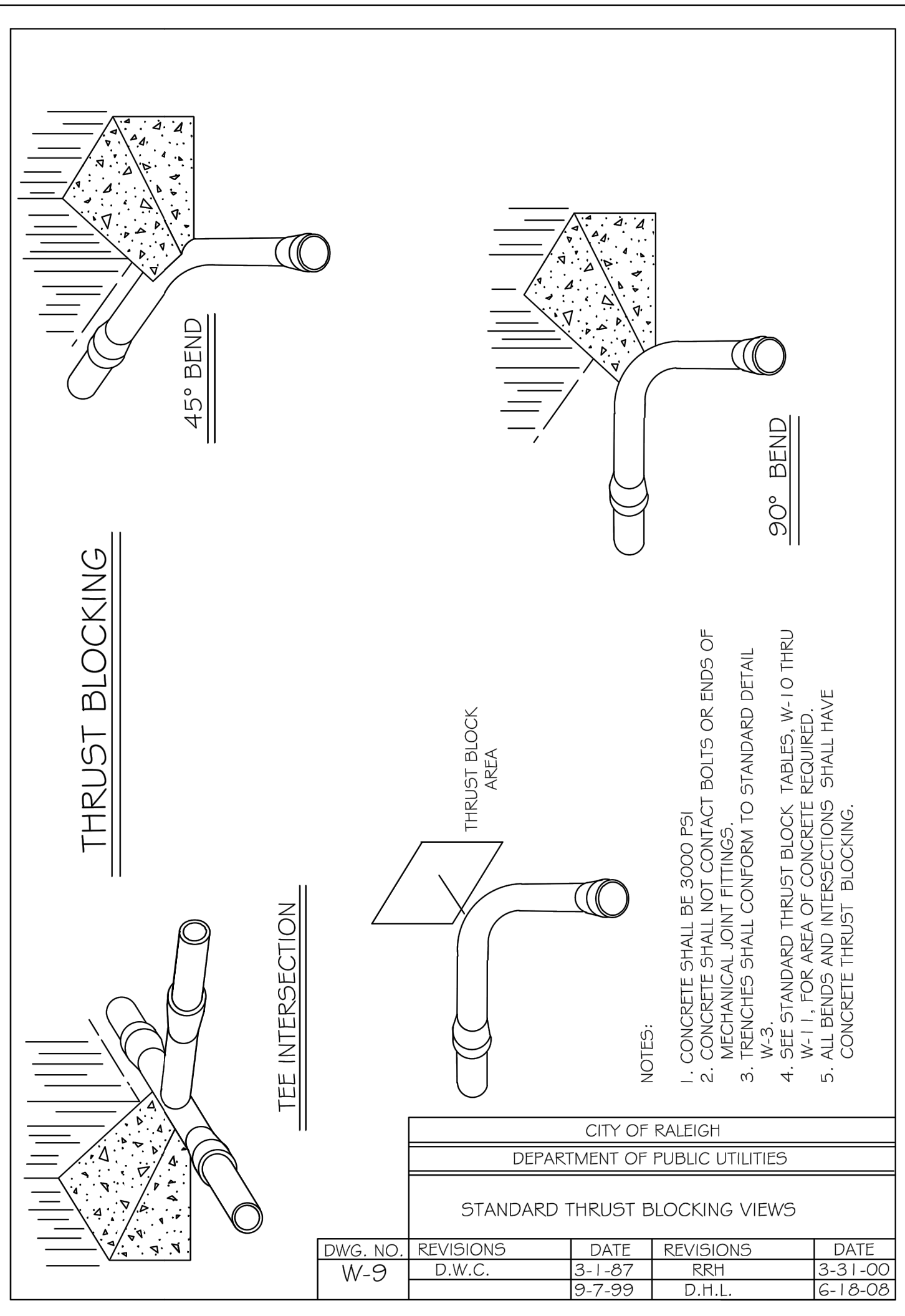




- NOTES:
- FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, MMH, WATEROUS, CLOW, EAST JORDAN IRON WORKS, OR US PIPE.
  - BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150-96
  - GATE VALVE SHALL BE AWWA C500-96 OPEN LEFT
  - STEEL RODS AND BOLTS SHALL BE 3\"/>

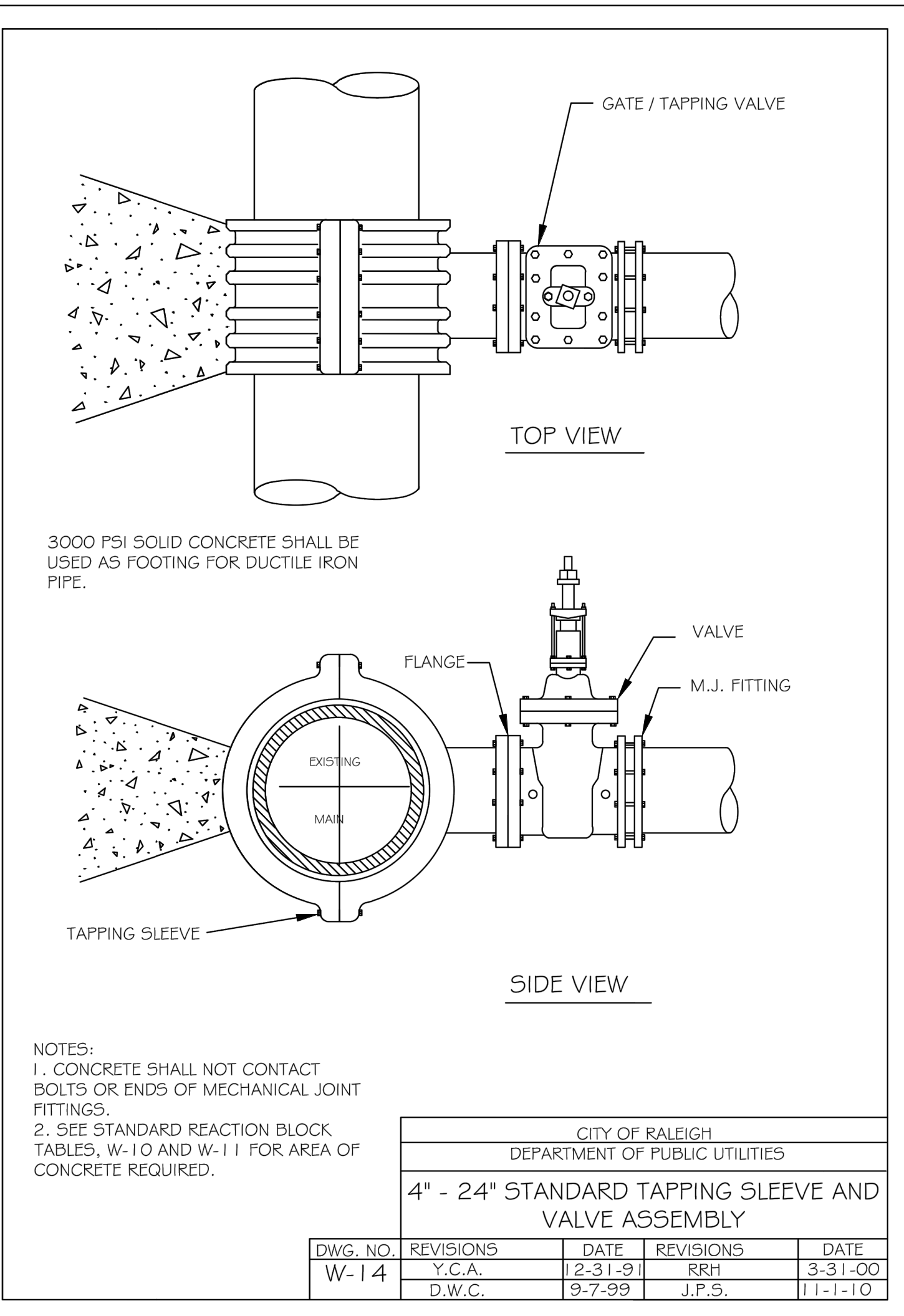
ANYTIME SITE WORK, CONSTRUCTION, ROAD WORK, OR ANY OTHER WORK CHANGES THE GRADE OF THE FIRE HYDRANT, THE PERSON RESPONSIBLE FOR ADJUSTING THE FIRE HYDRANT TO STAY WITHIN COMPLIANCE.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD FIRE HYDRANT INSTALLATION DETAIL				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-4	ABB	4-6-04	PAF	2/17/09
	DHL	2/14/06		



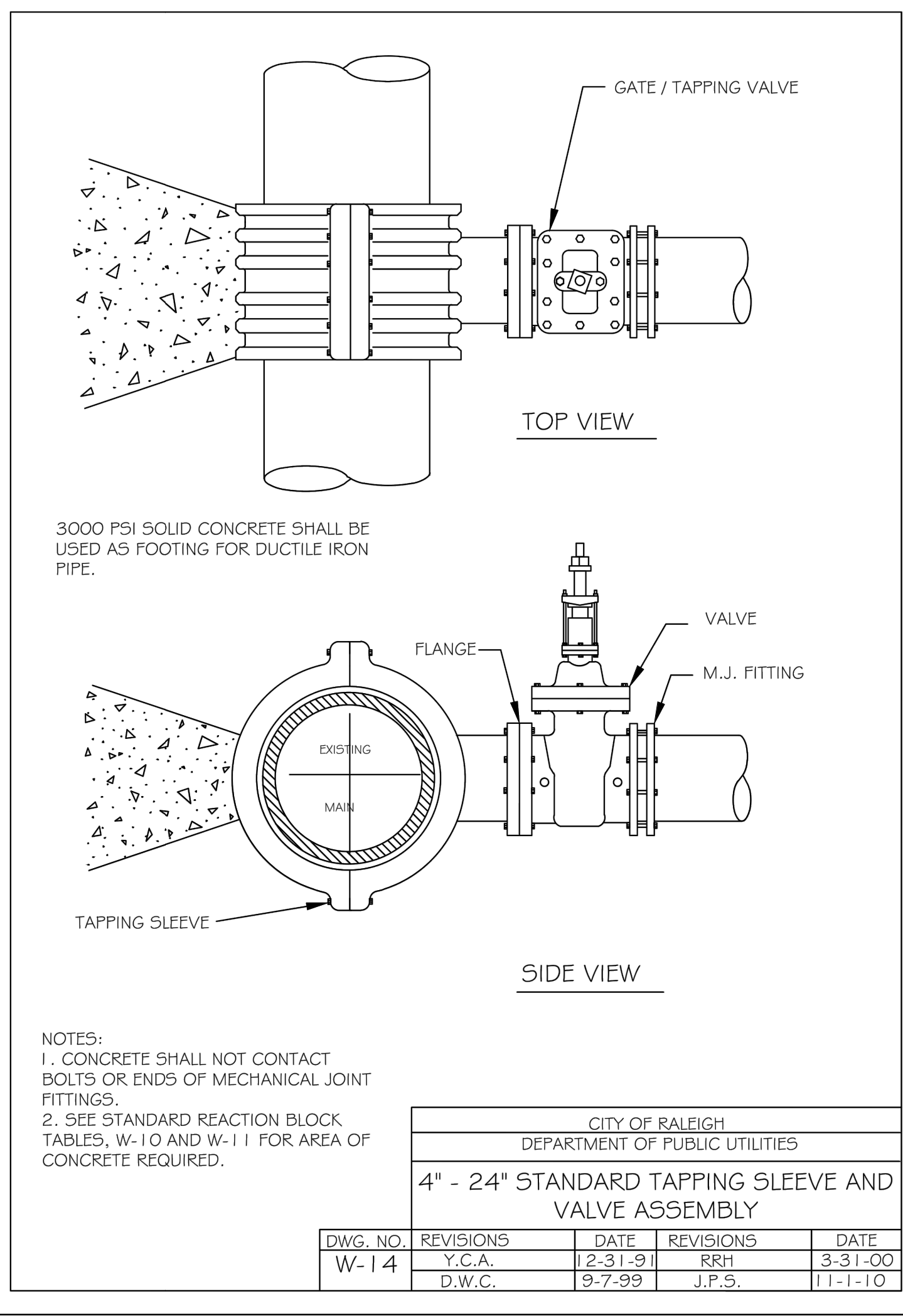
- NOTES:
- CONCRETE SHALL BE 3000 PSI
  - CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
  - TRENCHES SHALL CONFORM TO STANDARD DETAIL
  - SEE STANDARD THRUST BLOCK TABLES, W-10 THRU W-11 FOR AREA OF CONCRETE REQUIRED.
  - ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD THRUST BLOCKING VIEWS				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-9	D.W.C.	3-1-87	RRH	3-31-00
		9-7-99	D.H.L.	6-18-08



- NOTES:
- CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
  - SEE STANDARD REACTION BLOCK TABLES, W-10 AND W-11 FOR AREA OF CONCRETE REQUIRED.

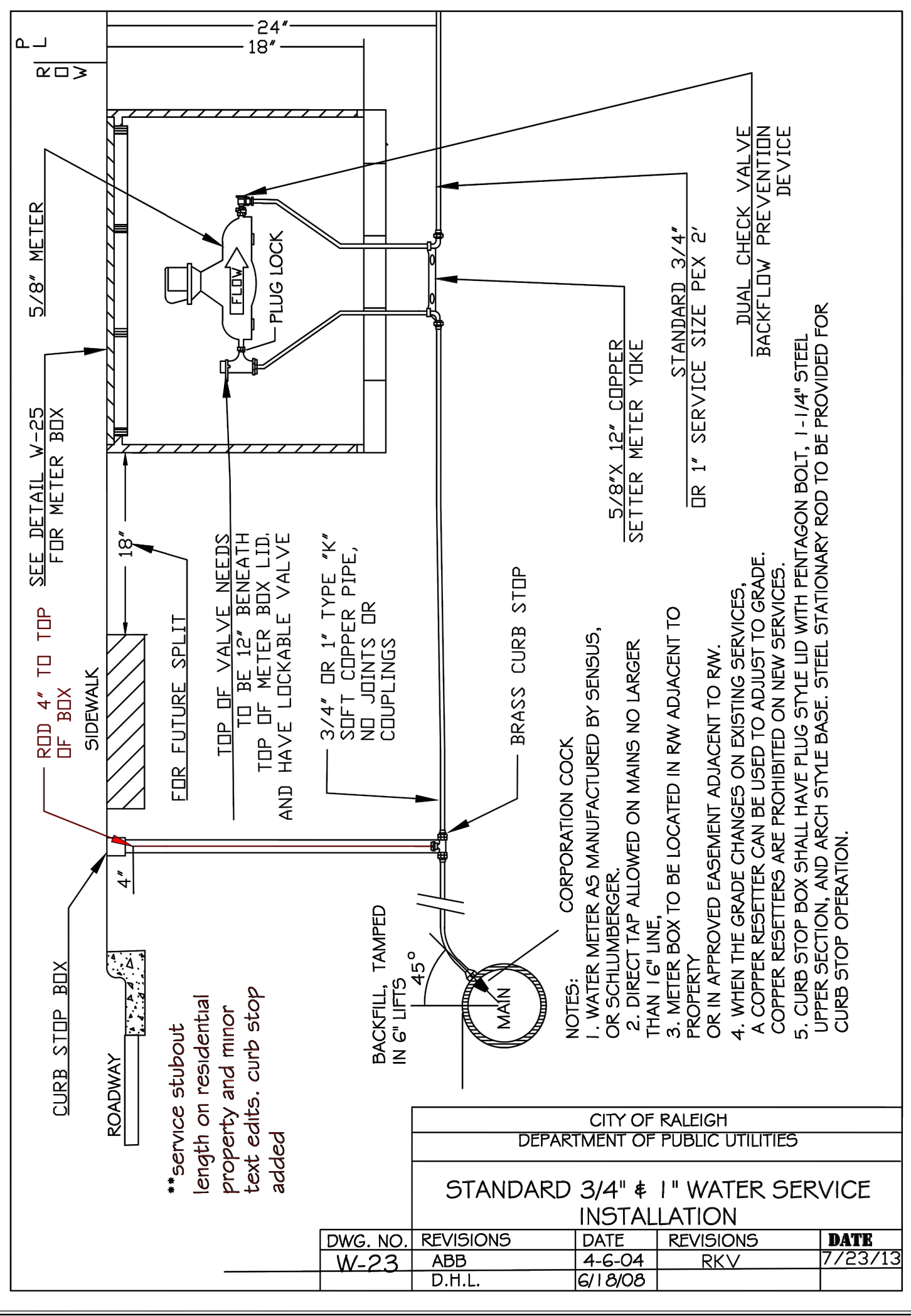
CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
4" - 24" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-14	Y.C.A.	12-31-91	RRH	3-31-00
	D.W.C.	9-7-99	J.P.S.	11-1-10



3000 PSI SOLID CONCRETE SHALL BE USED AS FOOTING FOR DUCTILE IRON PIPE.

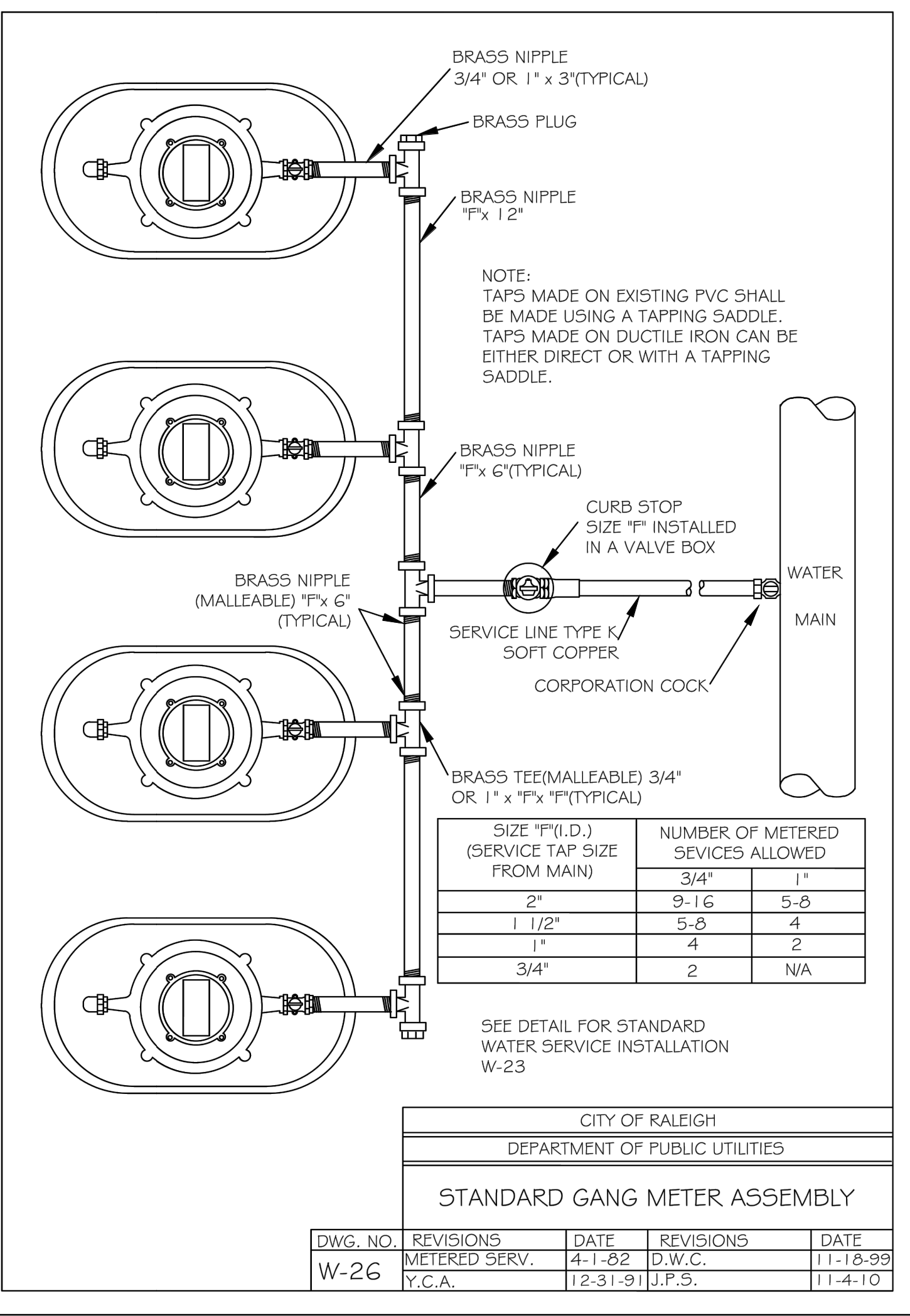
- NOTES:
- CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
  - SEE STANDARD REACTION BLOCK TABLES, W-10 AND W-11 FOR AREA OF CONCRETE REQUIRED.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
4" - 24" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-14	Y.C.A.	12-31-91	RRH	3-31-00
	D.W.C.	9-7-99	J.P.S.	11-1-10



- NOTES:
- WATER METER AS MANUFACTURED BY SENSUS, OR SENSUS/EVERETT.
  - SOFT COPPER ALLOWED ON MAINS NO LARGER THAN 12\"/>

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD 3/4" # 1" WATER SERVICE INSTALLATION				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-23	ABB	4-6-04	RKV	7/23/13
	D.H.L.	6/18/08		



- NOTE:
- TAPS MADE ON EXISTING PVC SHALL BE MADE USING A TAPPING SADDLE.
  - TAPS MADE ON DUCTILE IRON CAN BE EITHER DIRECT OR WITH A TAPPING SADDLE.

SIZE "F"(I.D.) (SERVICE TAP SIZE FROM MAIN)	NUMBER OF METERED SERVICES ALLOWED	
2"	9-16	5-8
1 1/2"	5-8	4
1"	4	2
3/4"	2	N/A

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD GANG METER ASSEMBLY				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-26	METERED SERV.	4-1-82	D.W.C.	11-18-99
	Y.C.A.	12-31-91	J.P.S.	11-1-10

**SITE PERMITTING APPROVAL:**

**WATER AND SEWER PERMITS (IF APPLICABLE)**

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # S-3936

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**CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT - PLANS AUTHORIZED FOR CONSTRUCTION**

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A TOWN OF ZEBULON 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 PUBLIC UTILITIES DEPARTMENT DEVELOPMENT APPROVAL

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT WATER REVIEW OFFICER

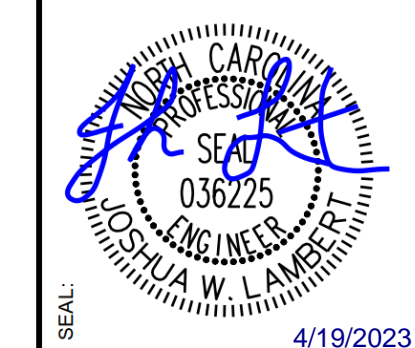
**CITY OF ZEBULON - PLANS AUTHORIZED FOR CONSTRUCTION:**

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CITY OF ZEBULON DEVELOPMENT APPROVAL

ZEBULON WATER REVIEW OFFICER

REVISIONS	
No.	DATE



**STRONGROCK**

ENGINEERING GROUP

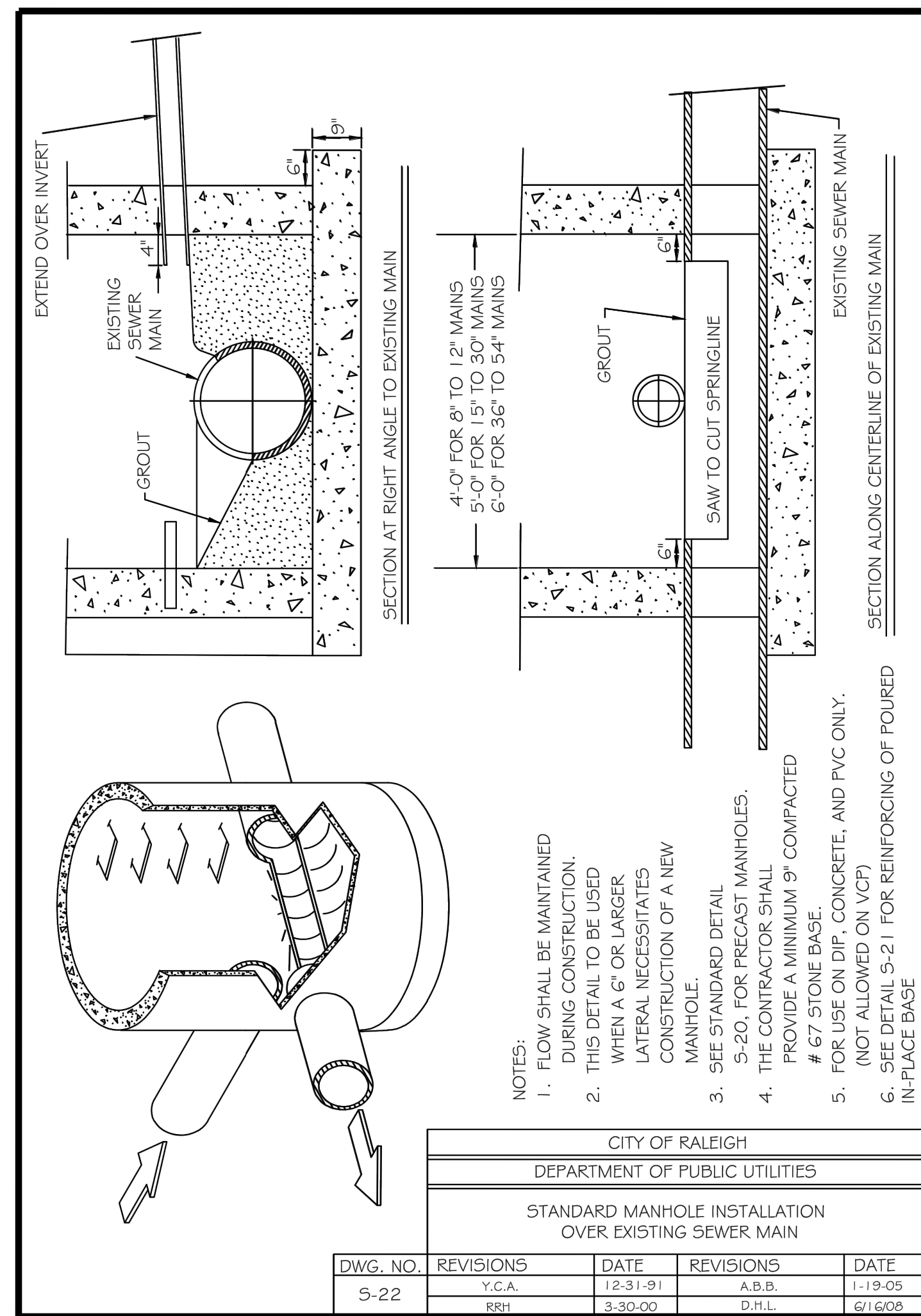
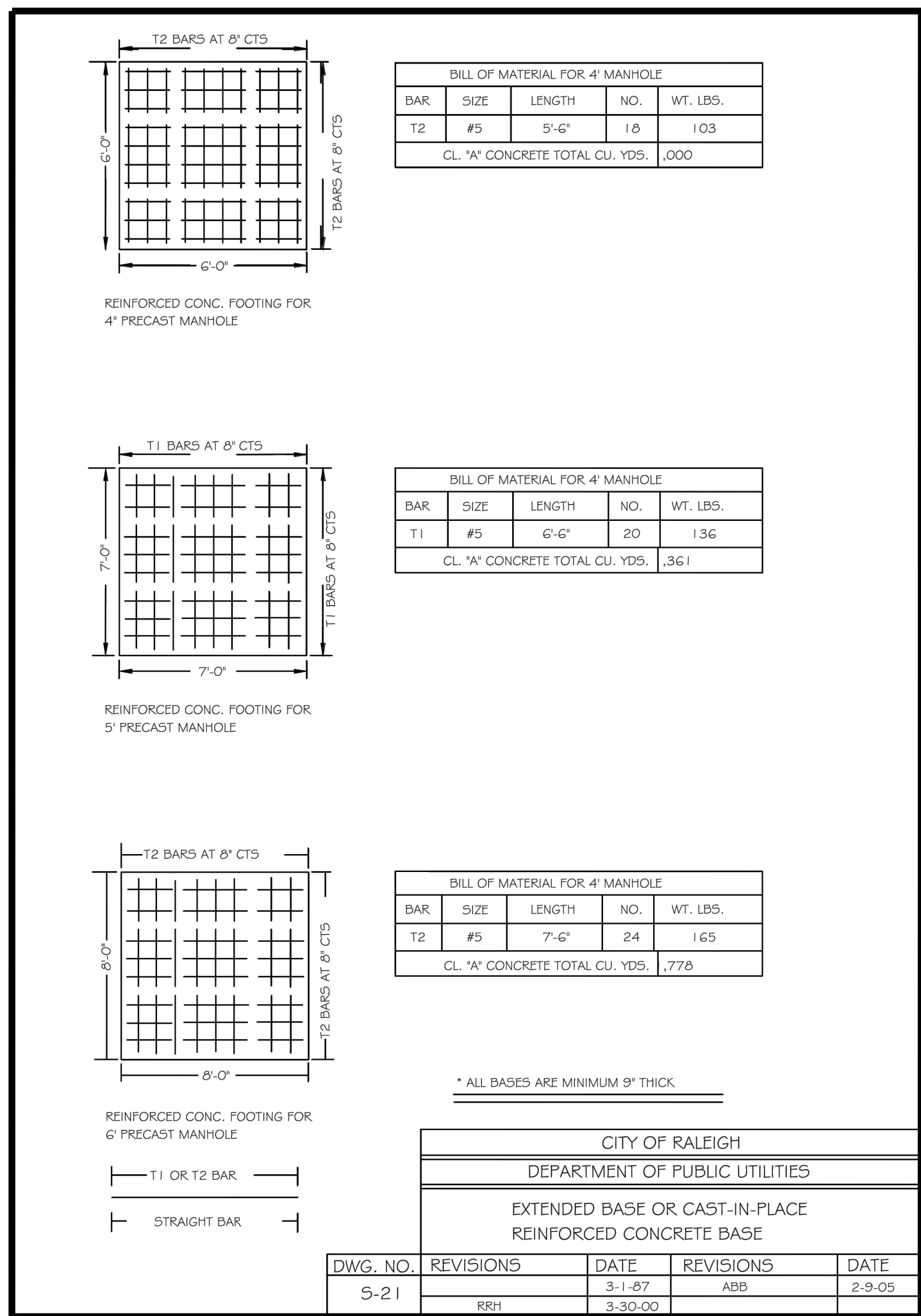
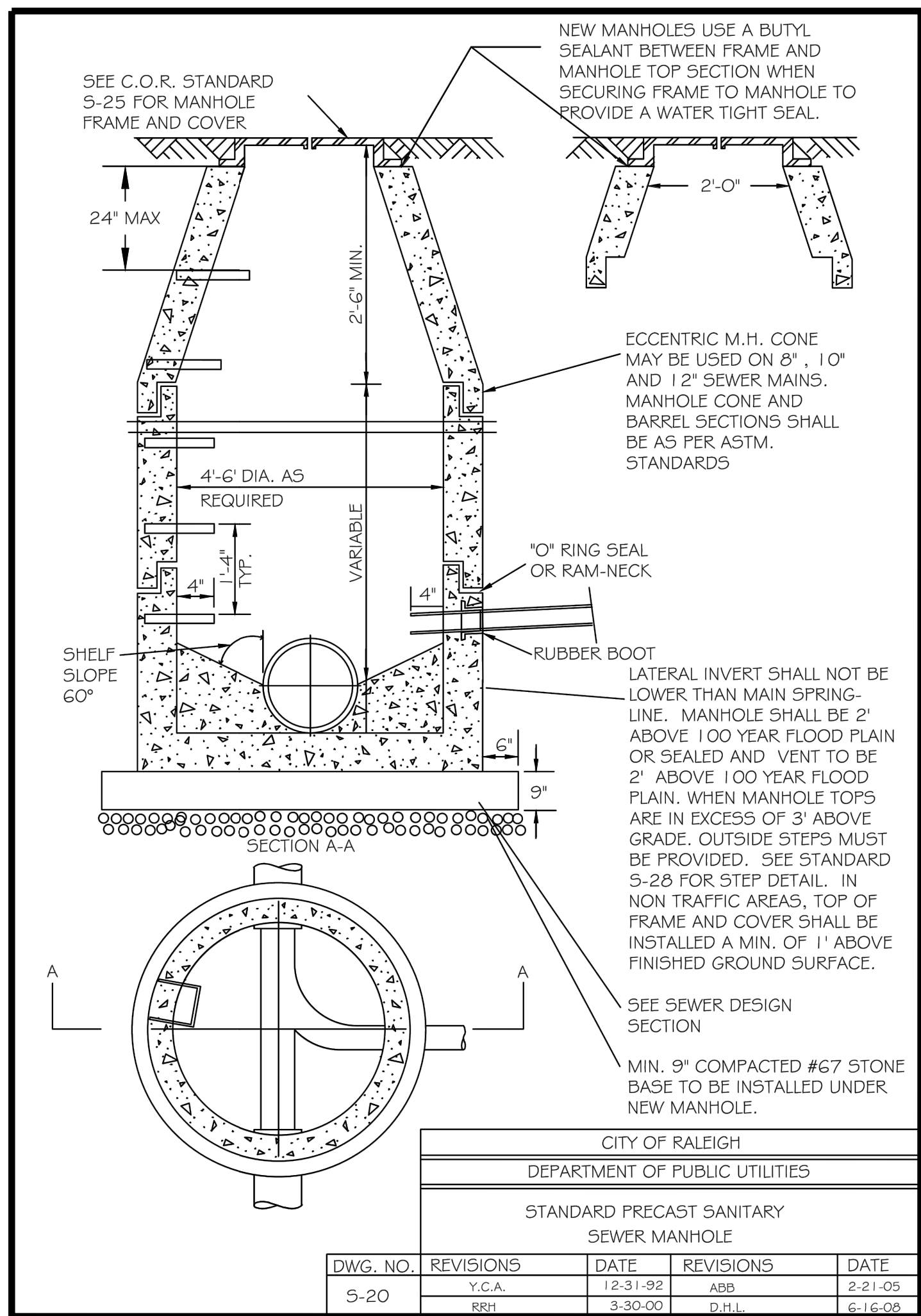
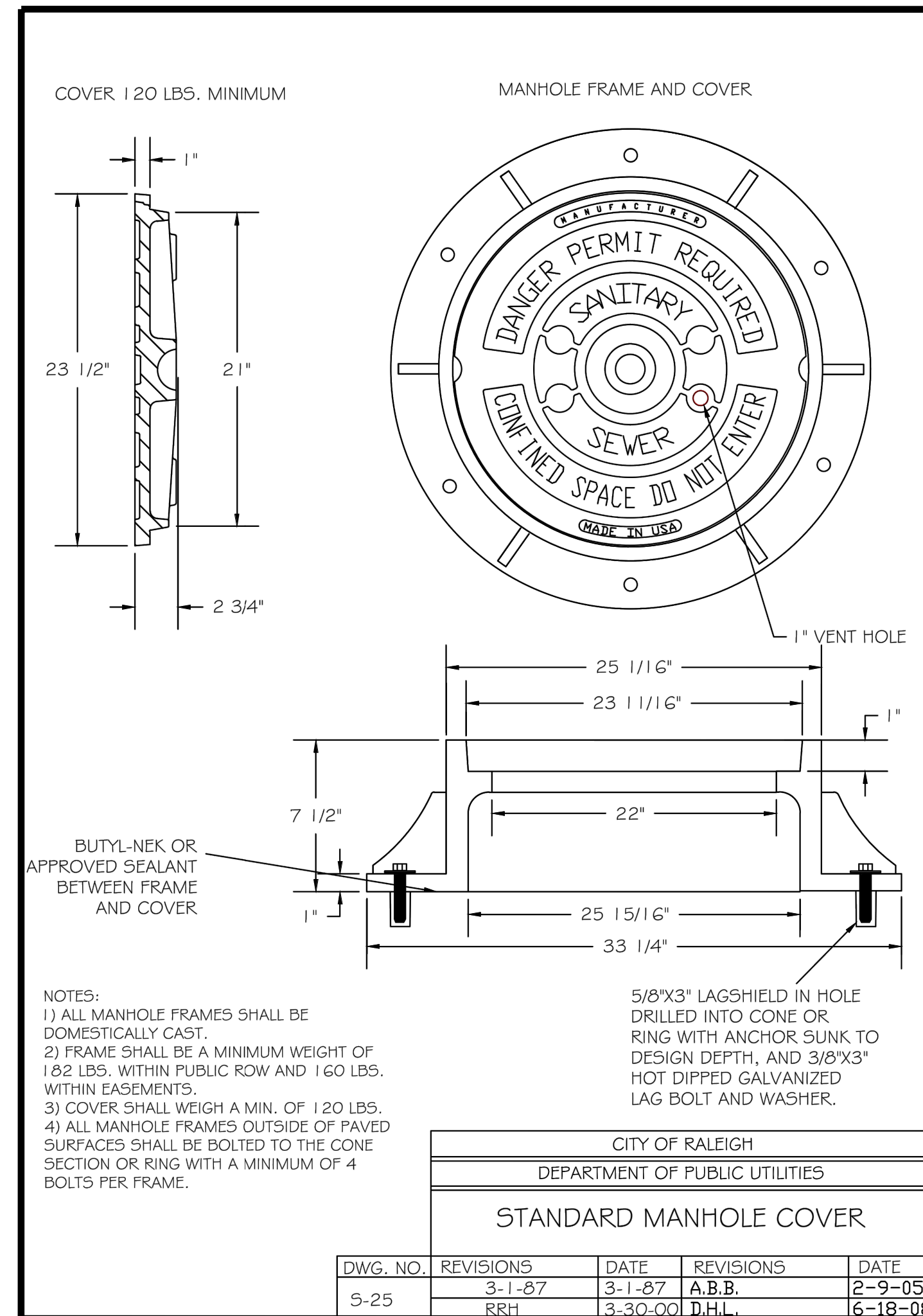
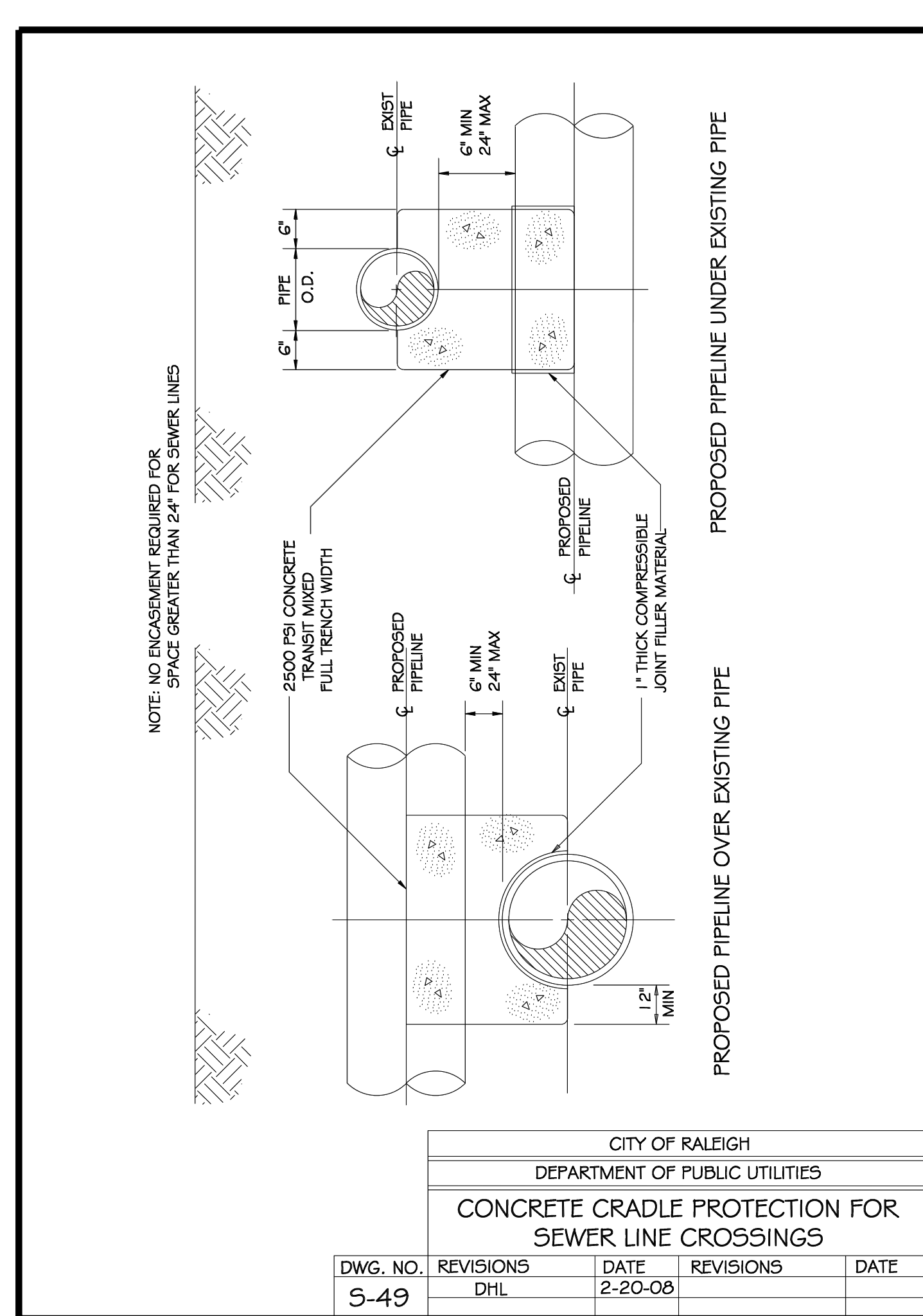
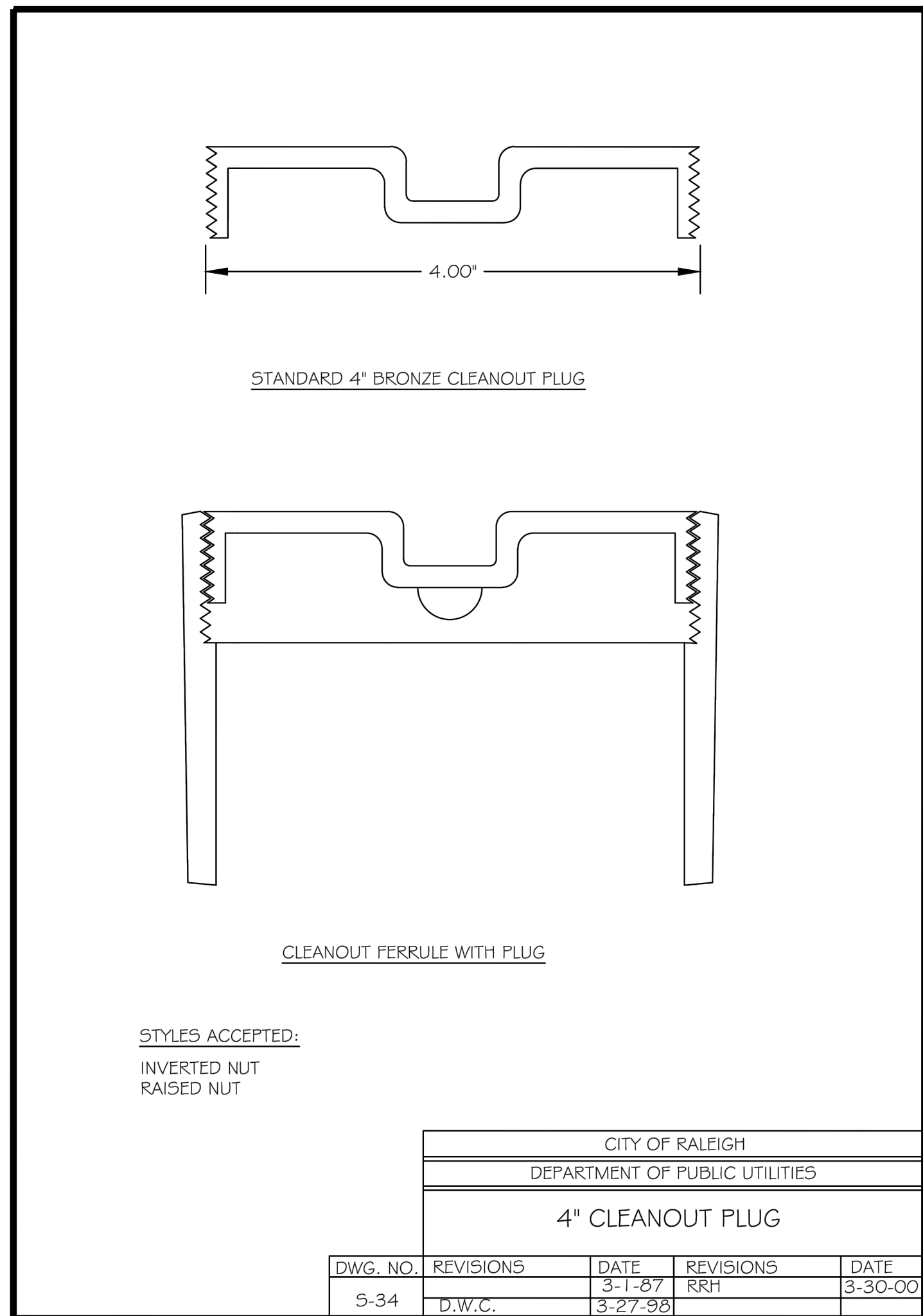
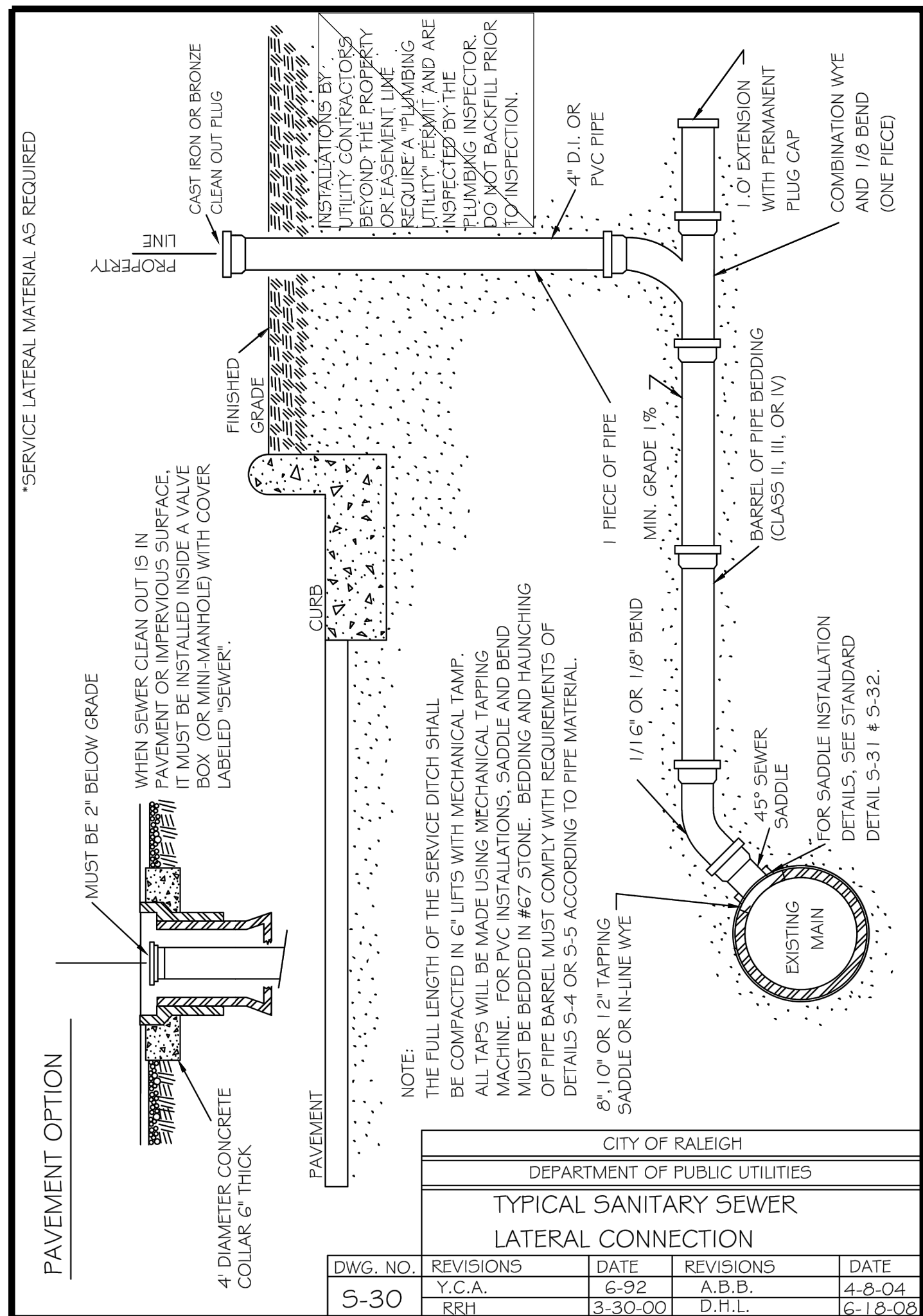
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801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT			
NOT FOR CONSTRUCTION	SCALE	DESIGNED BY	DRAWN BY
AS SHOWN	JWL	SRG	JWL
CHECKED BY			

TRUE- ZEBULON-ARENDELL  
TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION PLANS**

**WATER DETAILS**

DRAWING SHEET	
D-2.3	



**SITE PERMITTING APPROVAL:**

WATER AND SEWER PERMITS (IF APPLICABLE)

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 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 PUBLIC UTILITIES DEPARTMENT PERMIT # S-3936

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CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT - PLANS AUTHORIZED FOR CONSTRUCTION

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CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT DEVELOPMENT APPROVAL

CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT WATER REVIEW OFFICER

**CITY OF ZEBULON - PLANS AUTHORIZED FOR CONSTRUCTION:**

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CITY OF ZEBULON DEVELOPMENT APPROVAL

ZEBULON WATER REVIEW OFFICER

**STRONGROCK ENGINEERING GROUP**

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166  
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

TRUE-ZEBULON-ARENDELL TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS  
SEWER DETAILS

DRAWING SHEET  
**D-2.4**

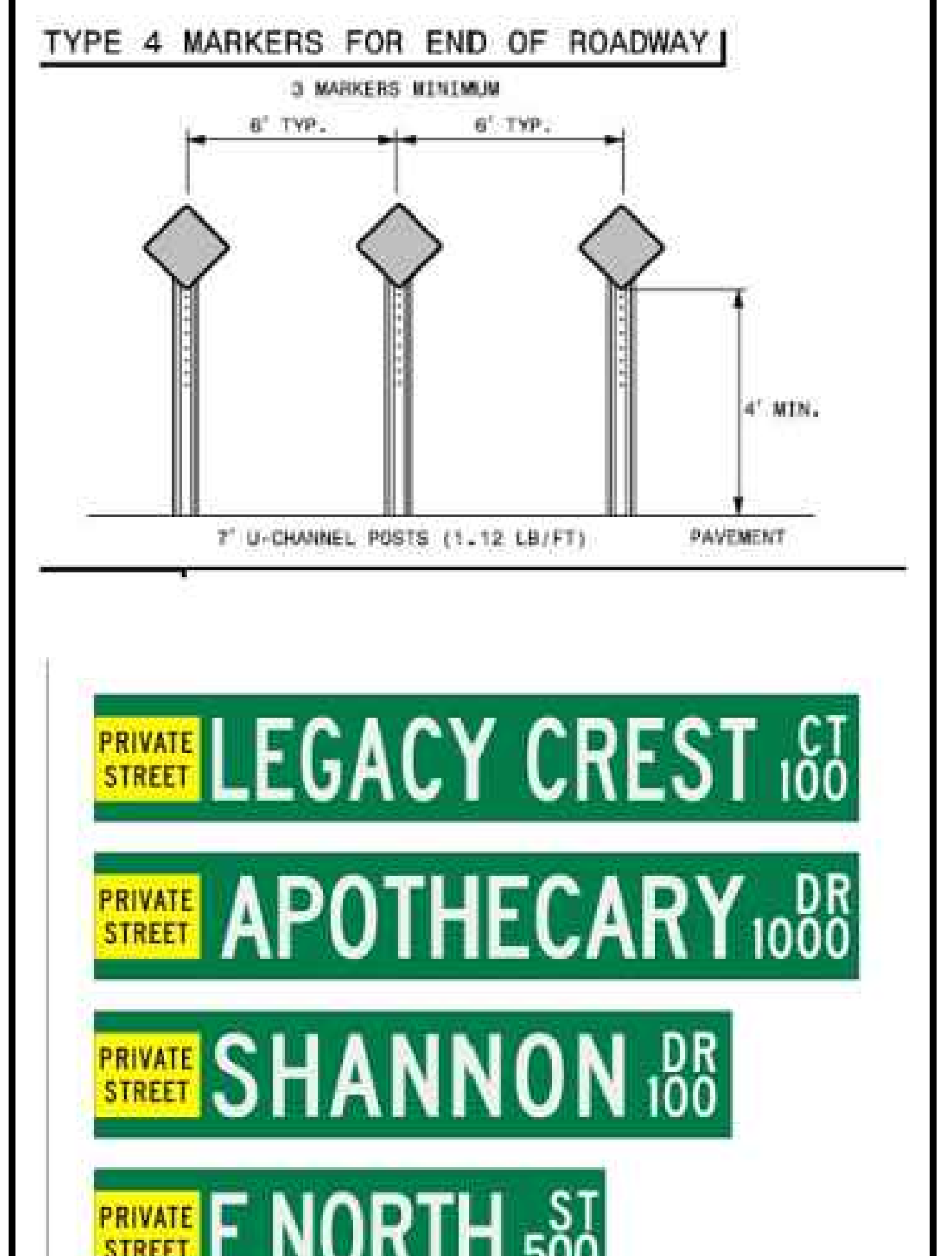
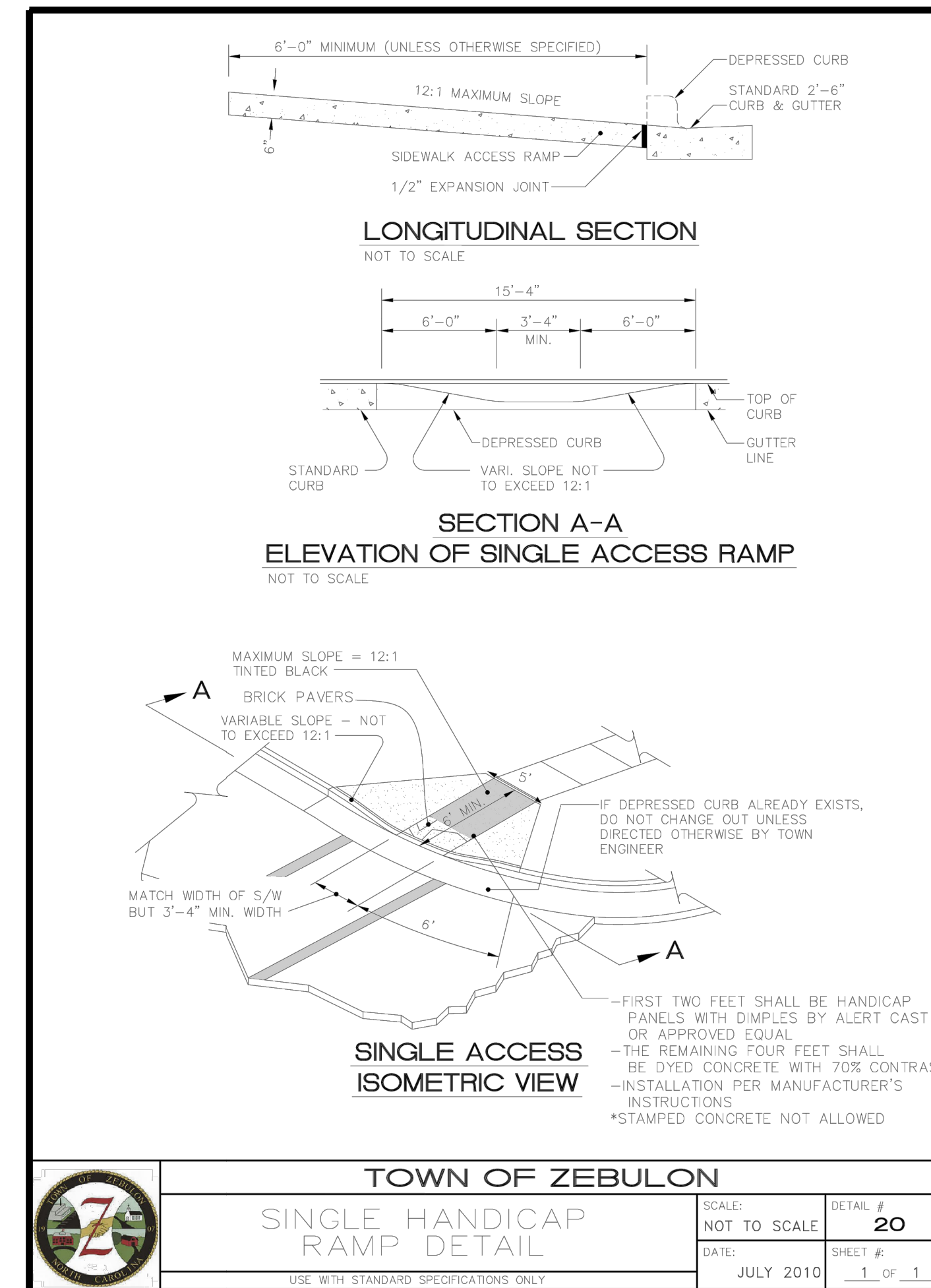
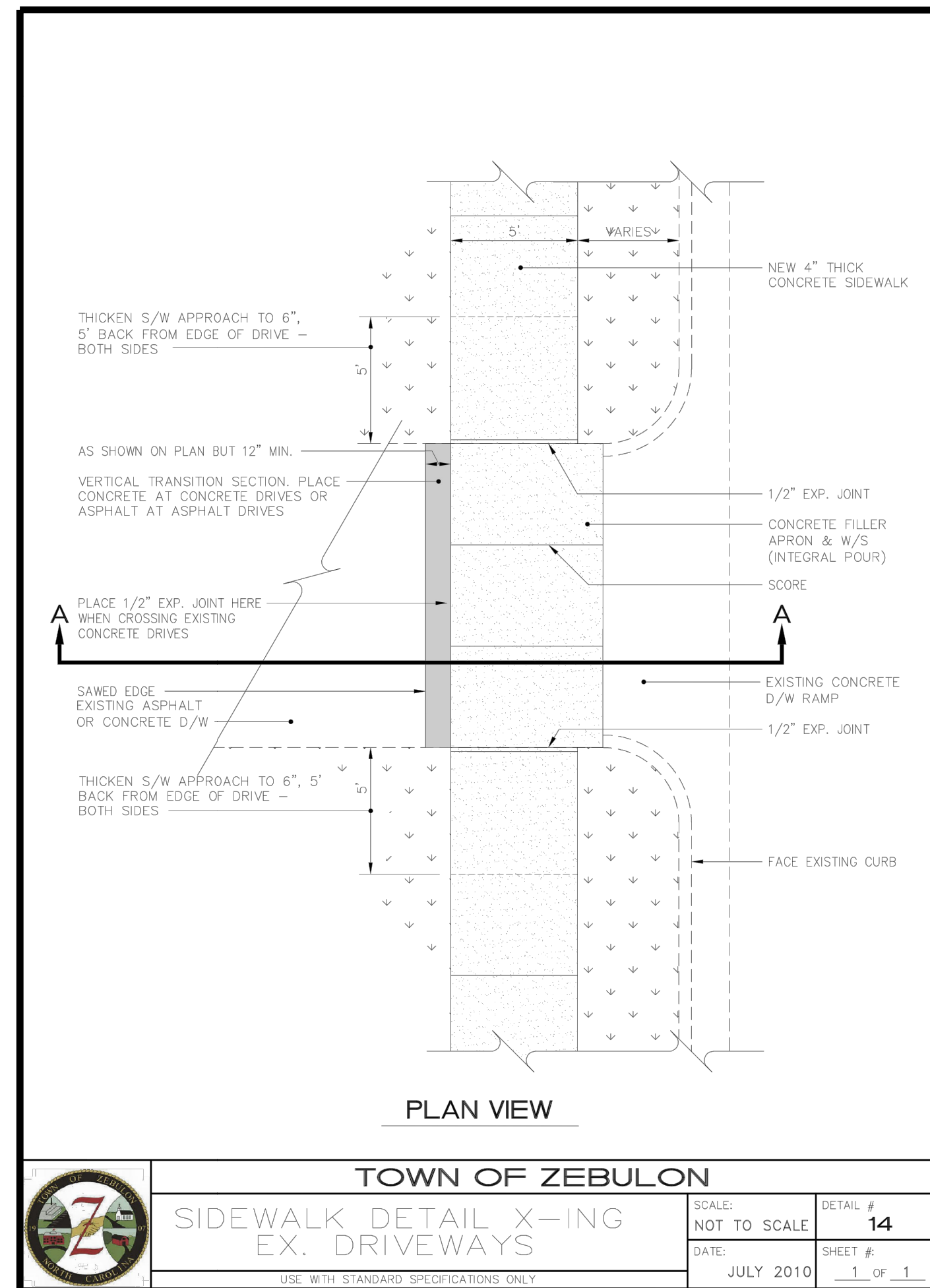
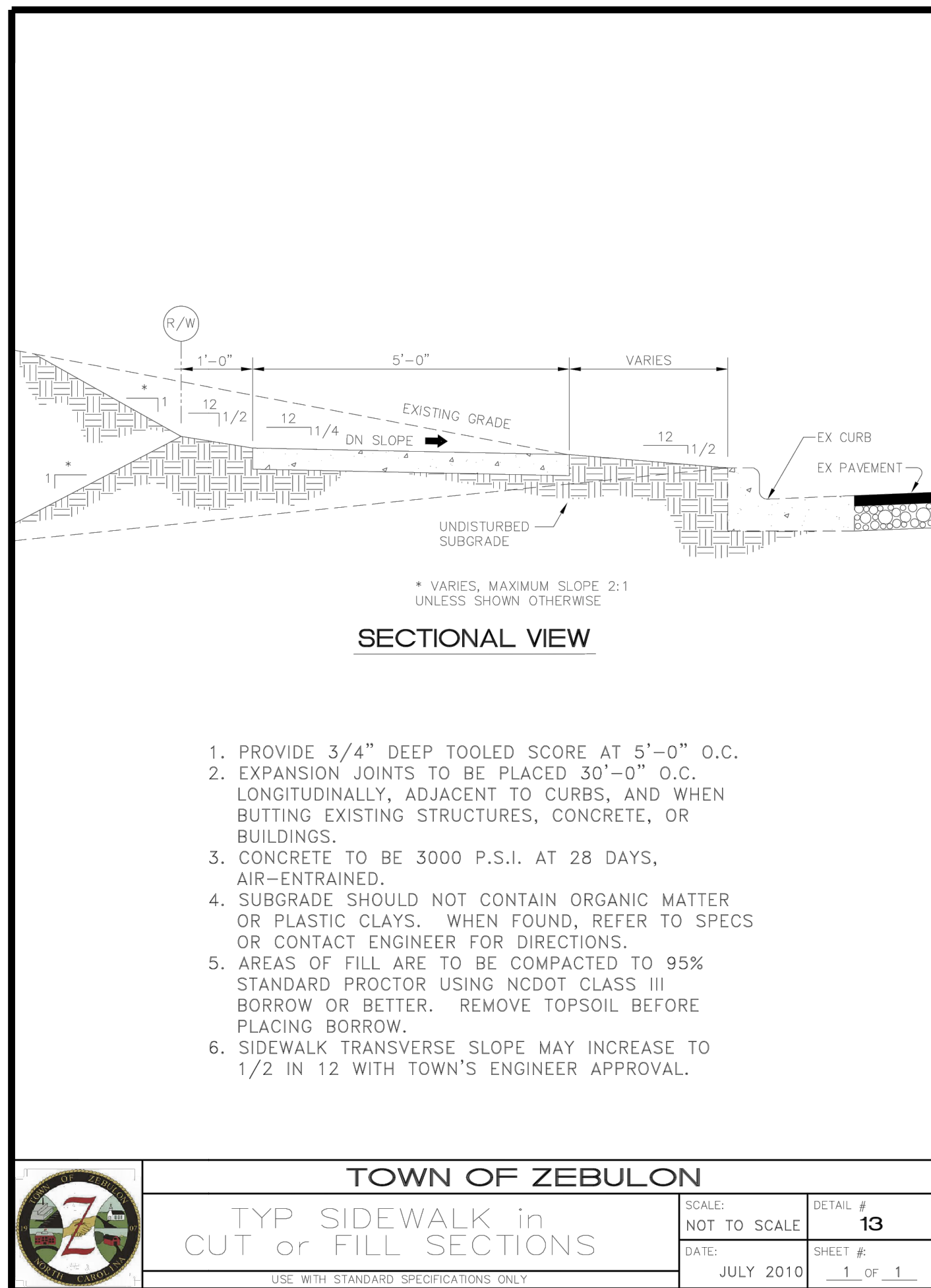
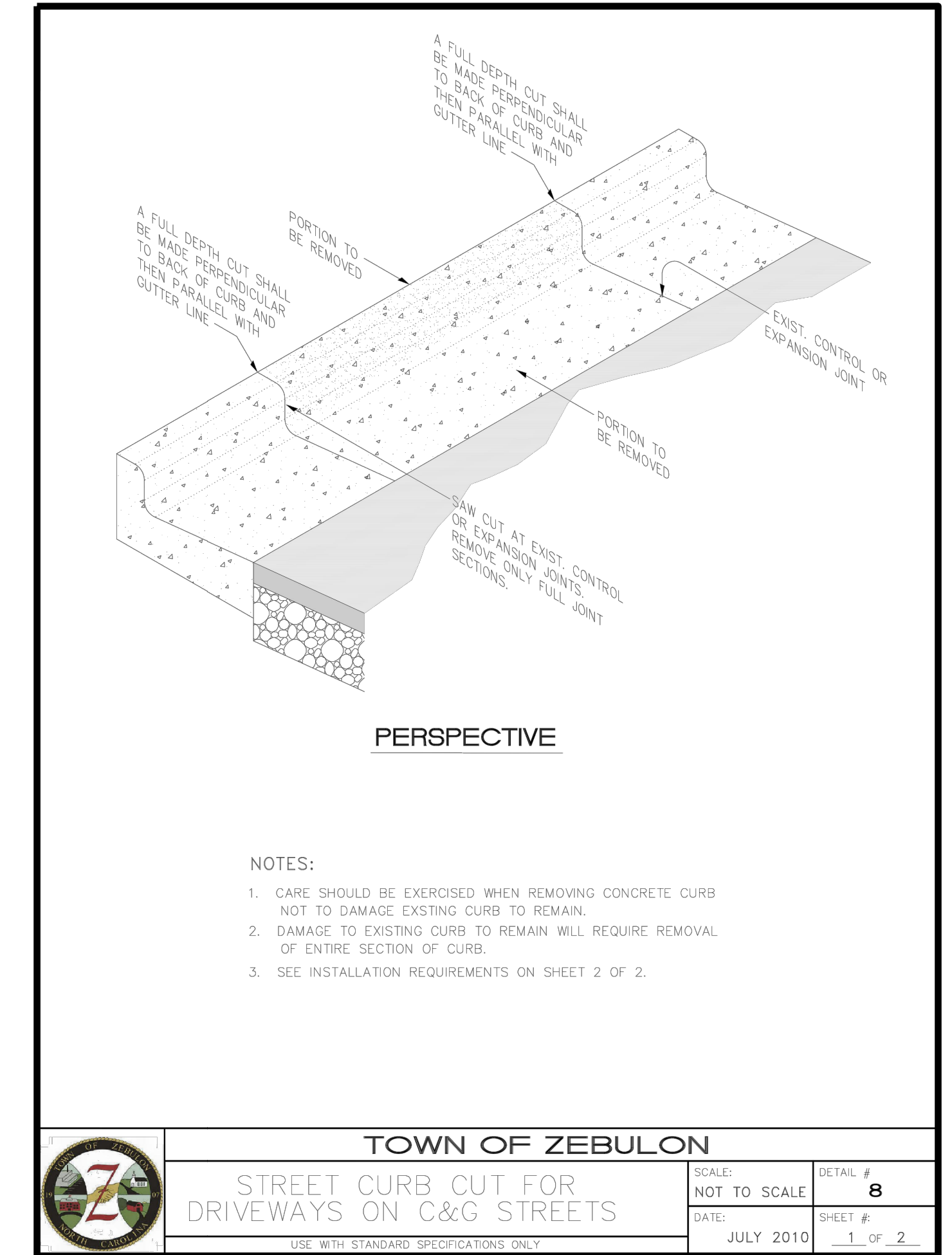
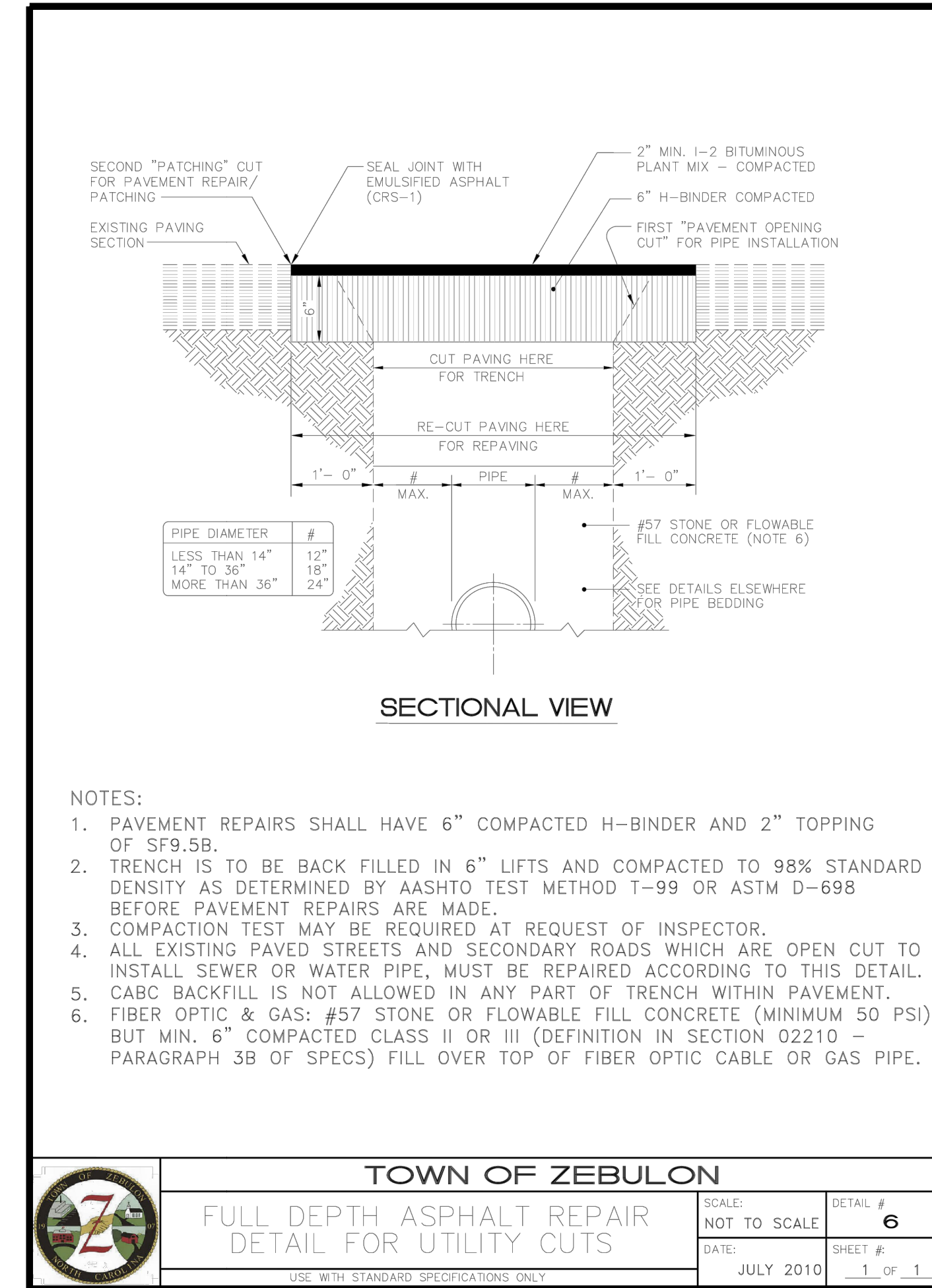
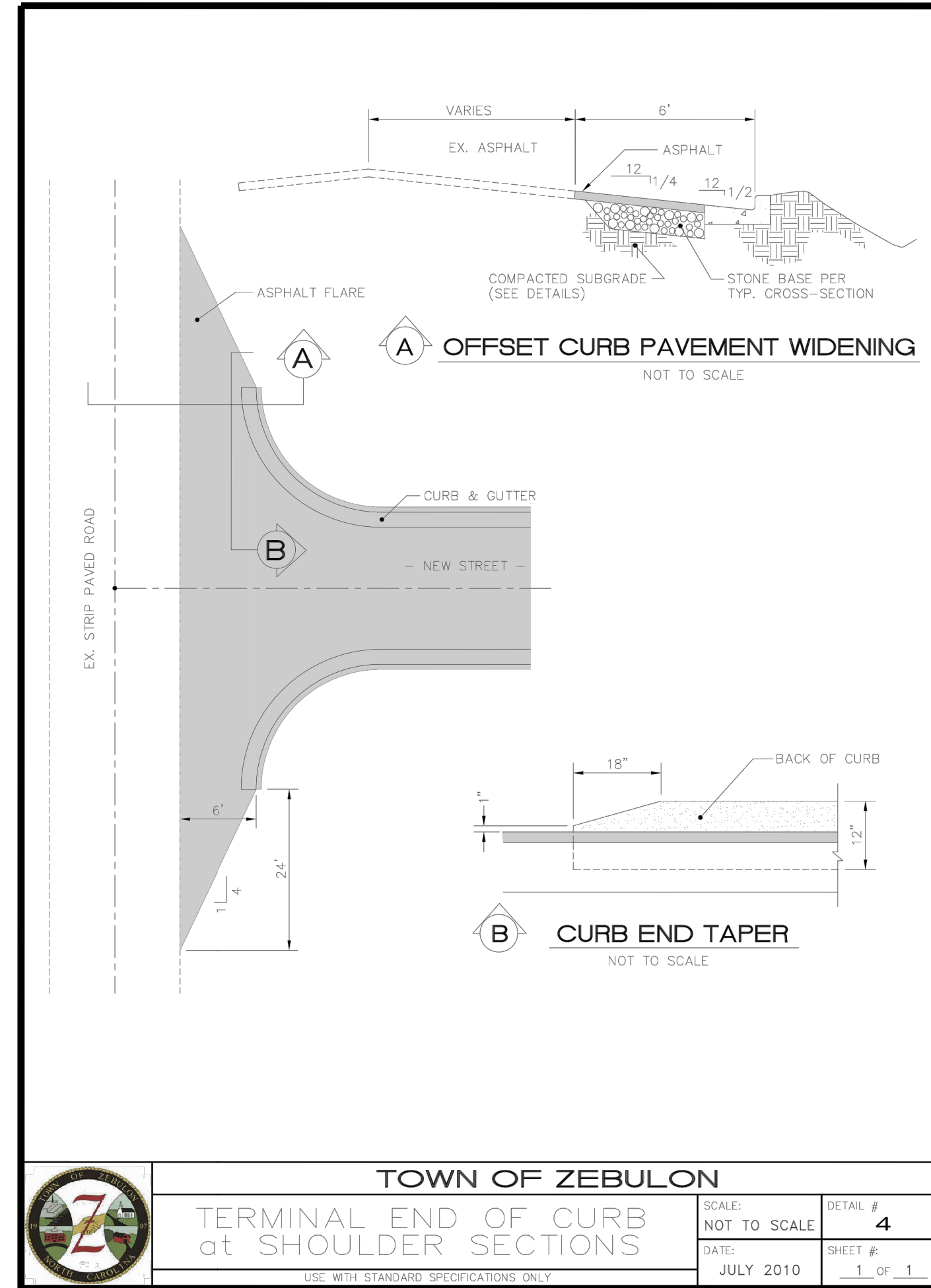
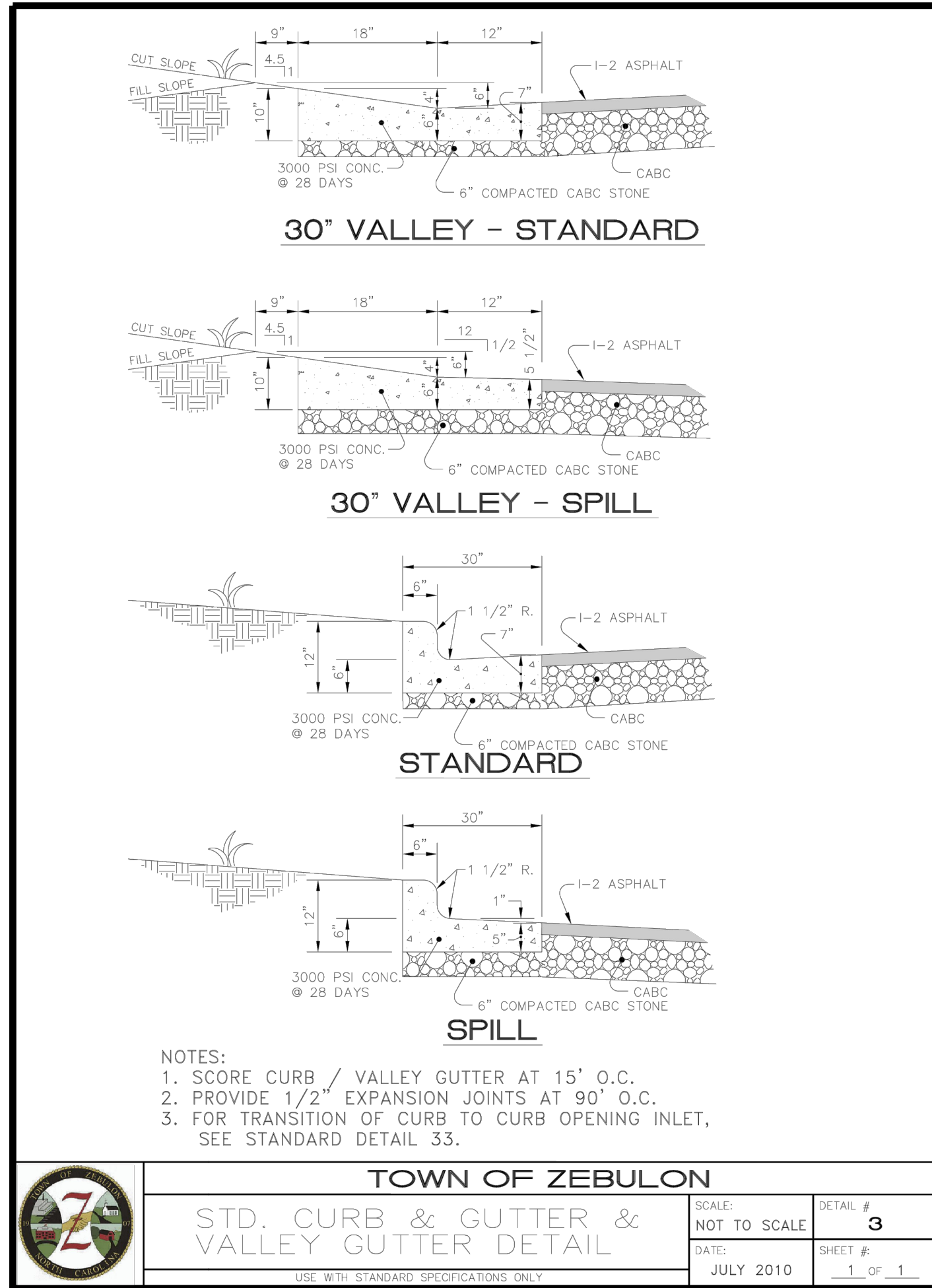
18 OF 24

REVISIONS

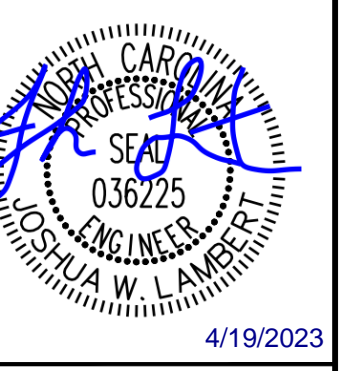
NO.	DATE
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DATE

BY



NO.	REVISIONS	DATE	BY



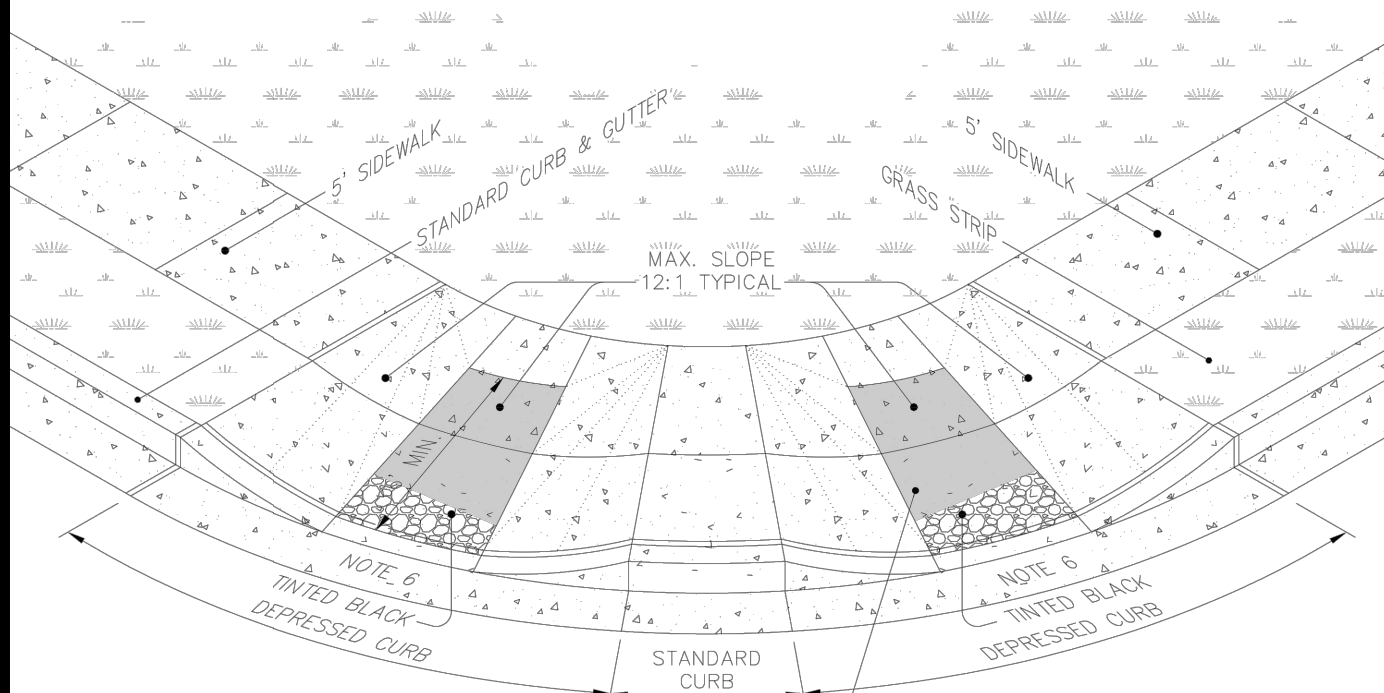
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STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY JWL	DRAWN BY SRG	CHECKED BY JWL
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TRUE-ZEBULON-ARENDELL  
 TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 CONSTRUCTION PLANS  
**SITE DETAILS**  
 DRAWING SHEET  
**D-2.5**  
 19 OF 24

NOTES:

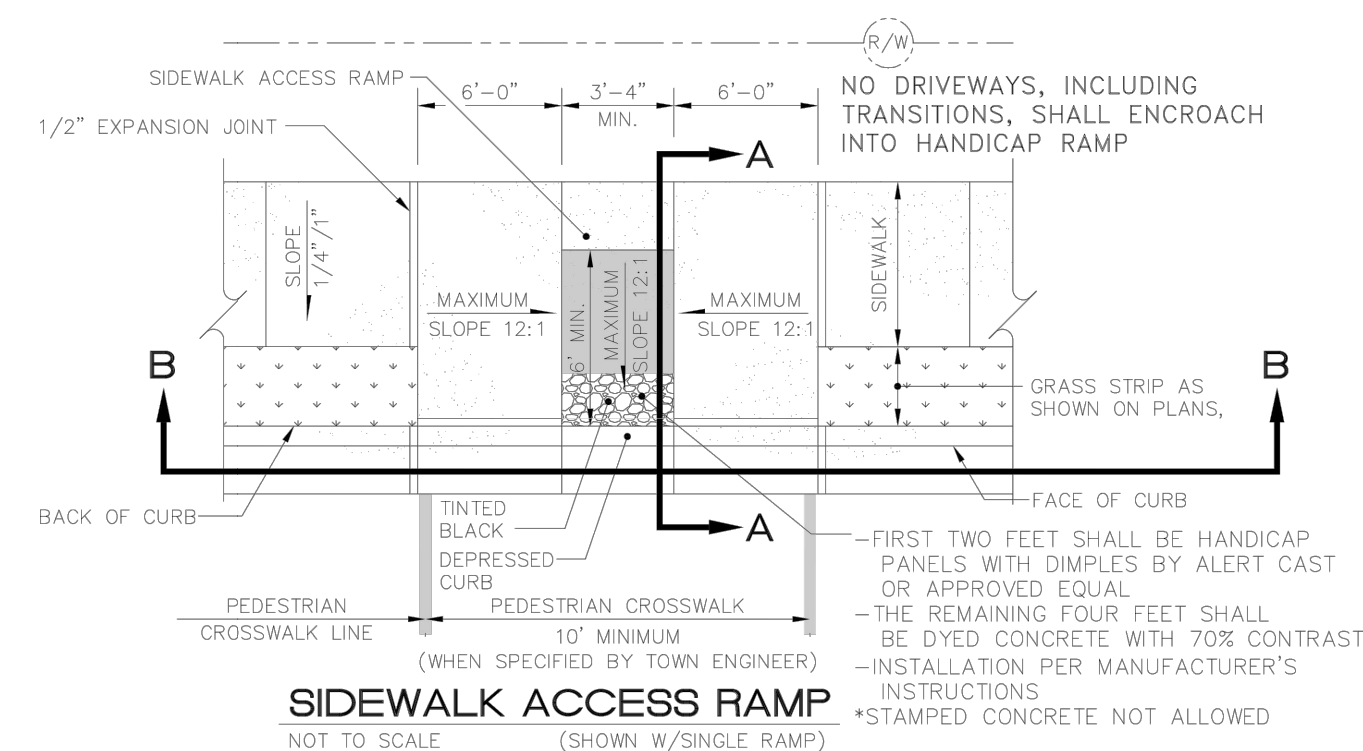
- WHEELCHAIR RAMPS SHALL BE PROVIDED AT LOCATIONS AS SHOWN ON THESE PLANS OR AS DIRECTED BY THE ENGINEER. WHEELCHAIR RAMPS SHALL BE LOCATED AS INDICATED IN THESE DETAILS; HOWEVER, THE LOCATION MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT. AT THESE LOCATIONS, NOT LESS THAN 2 FEET OF FULL HEIGHT CURB SHALL BE PLACED BETWEEN ADJACENT RAMPS.
- NO SLOPE ON THE WHEELCHAIR RAMP SHALL EXCEED 1" / 12" (12:1) IN RELATIONSHIP TO THE GRADE OF THE STREET.
- IN NO CASE SHALL THE WIDTH OF THE WHEELCHAIR RAMP BE LESS THAN 40" (3'-4") HOWEVER, WIDTH MAY EXCEED 40".
- USE AIR ENTRAINED 3000 PSI CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
- A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE CONCRETE WHEELCHAIR RAMP JOINS THE CURB AND AS SHOWN ON STANDARD DRAWINGS.
- CURB DEPRESSION MUST GO IN WHETHER OR NOT SIDEWALK IS PLACED.



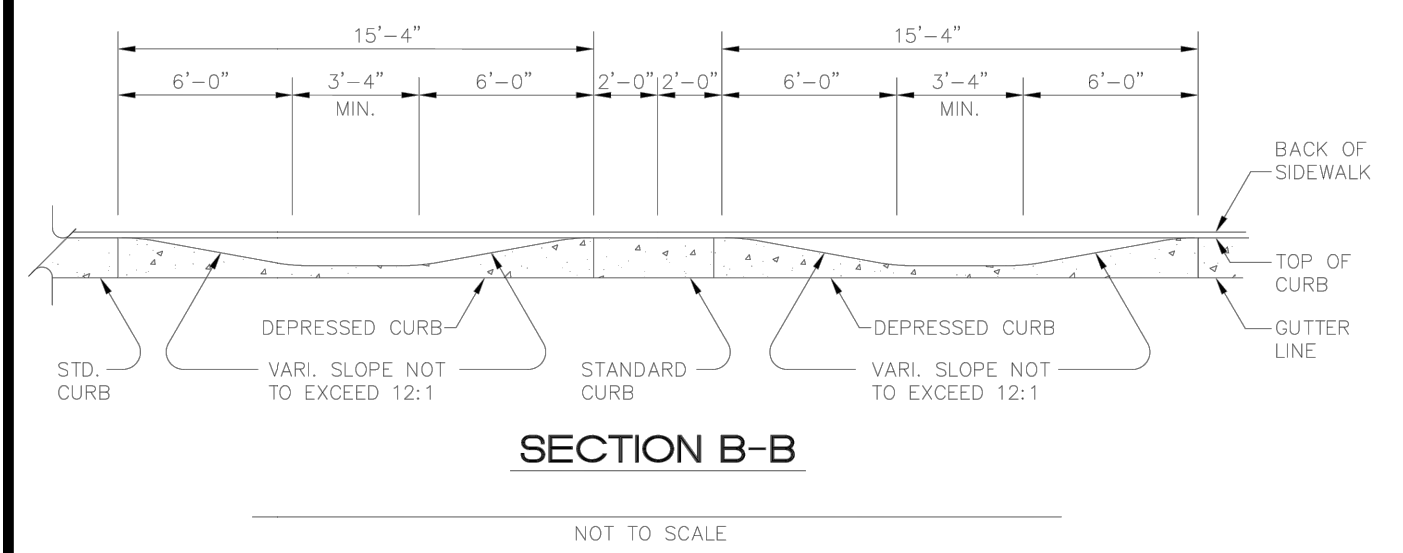
STANDARD ADA WHEELCHAIR SIDEWALK ACCESS AT CURB RETURNS

PERSPECTIVE

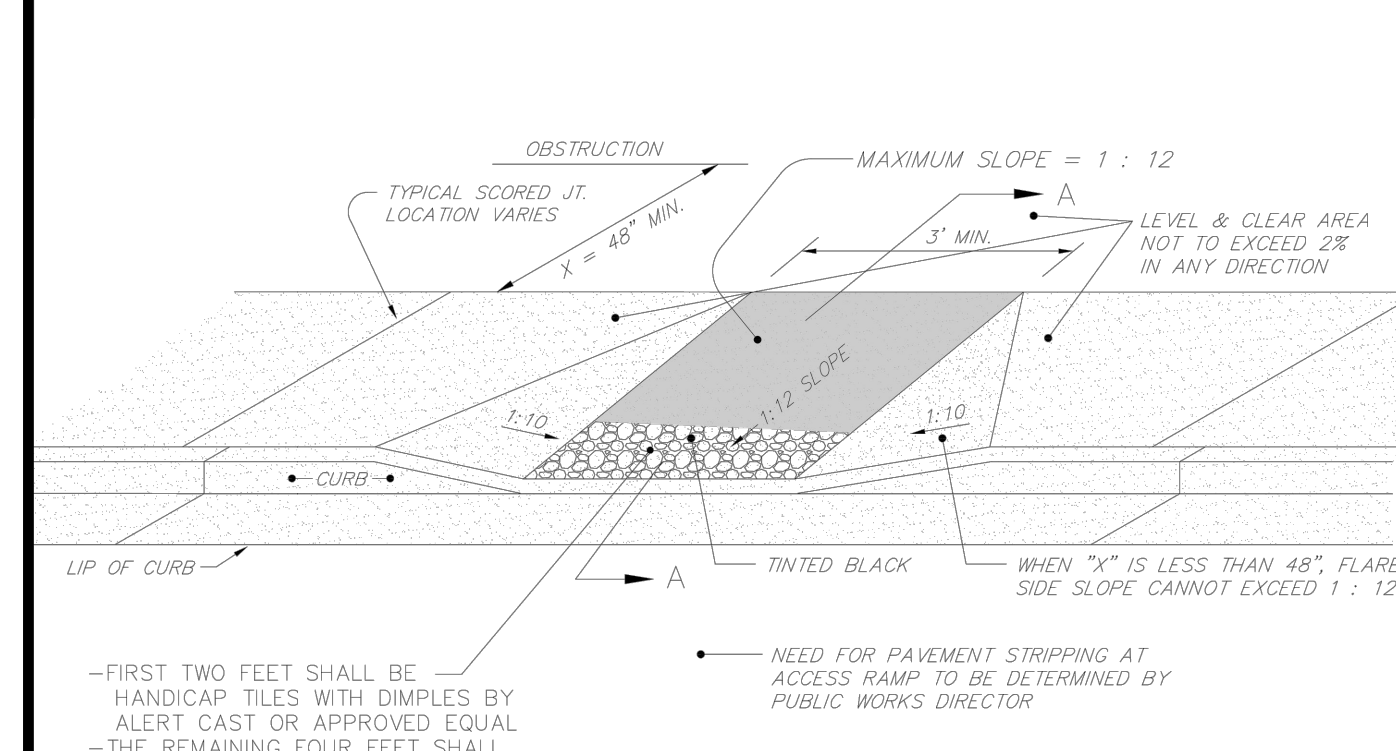
TOWN OF ZEBULON  
**DOUBLE HANDICAP RAMP DETAIL**  
SCALE: NOT TO SCALE  
DATE: JULY 2010  
SHEET # 1 OF 2  
DETAIL # 21



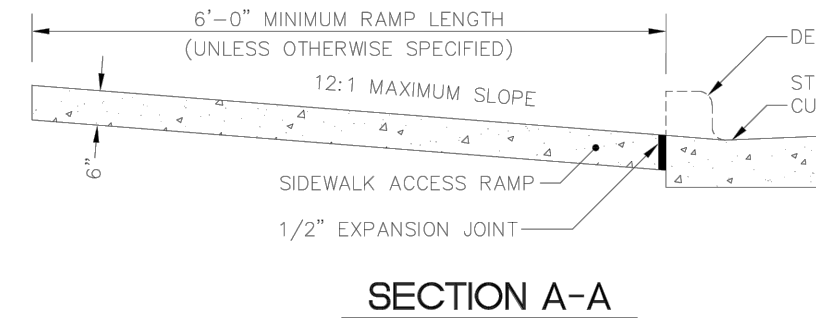
SIDEWALK ACCESS RAMP  
SECTION A-A PUBLIC STREET TIE-IN  
SECTION B-B



TOWN OF ZEBULON  
**DOUBLE HANDICAP RAMP DETAIL**  
SCALE: NOT TO SCALE  
DATE: JULY 2010  
SHEET # 2 OF 2  
DETAIL # 21



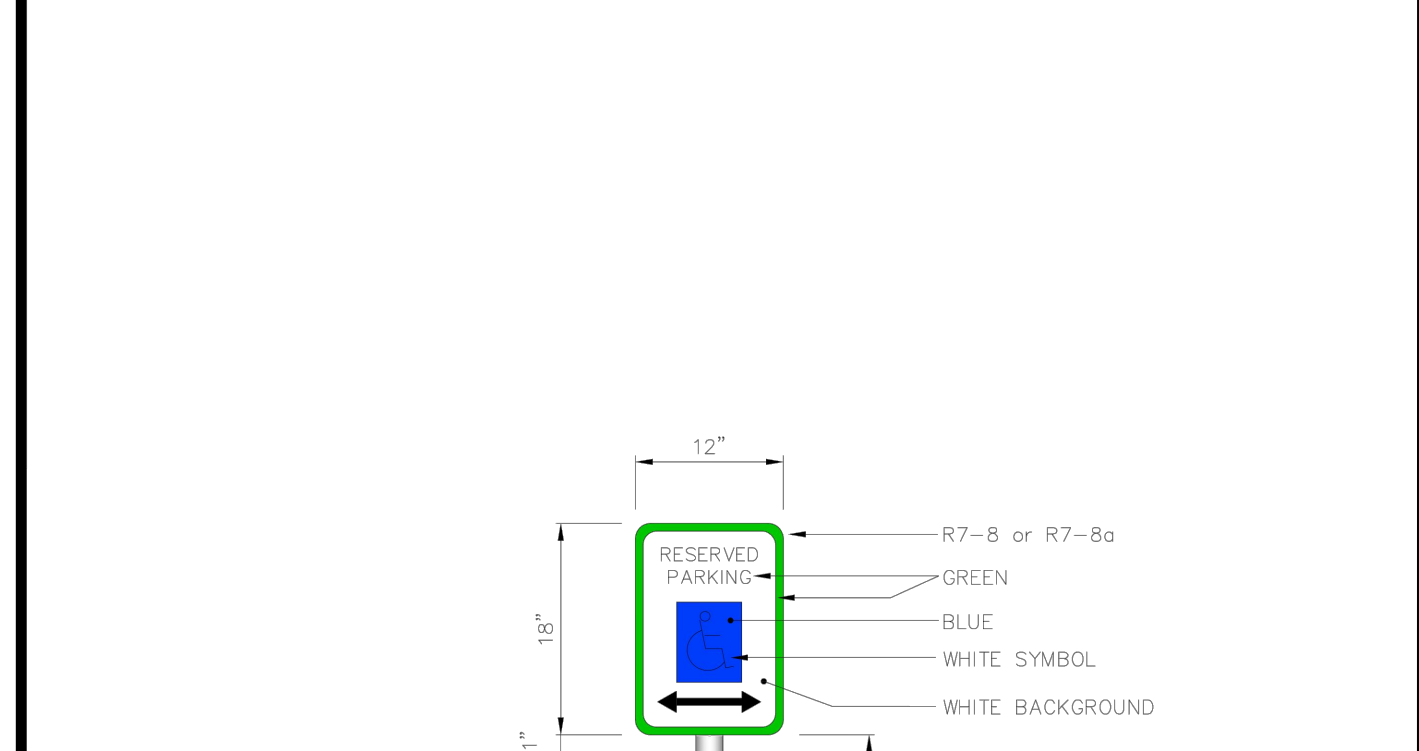
PERSPECTIVE



SECTION A-A  
IN-WALK HANDICAP RAMP

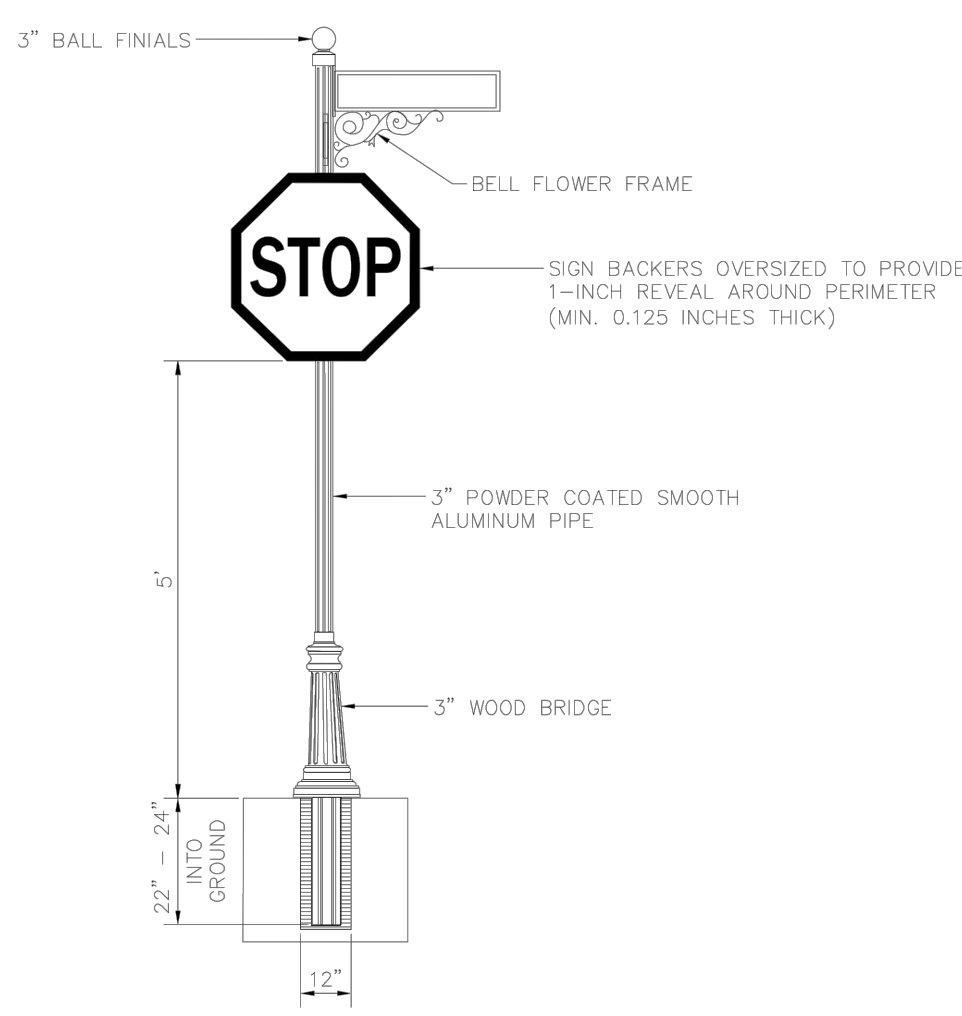
\* THIS DETAIL APPLICABLE FOR PARALLEL PARKING IN MUNICIPAL APPLICATIONS ONLY

TOWN OF ZEBULON  
**HANDICAP PARKING STALL DETAIL**  
SCALE: NOT TO SCALE  
DATE: JULY 2010  
SHEET # 1 OF 1  
DETAIL # 22



ELEVATIONAL VIEW

TOWN OF ZEBULON  
**R7-8 HANDICAP SIGN DETAIL**  
SCALE: NOT TO SCALE  
DATE: JULY 2010  
SHEET # 1 OF 1  
DETAIL # 23

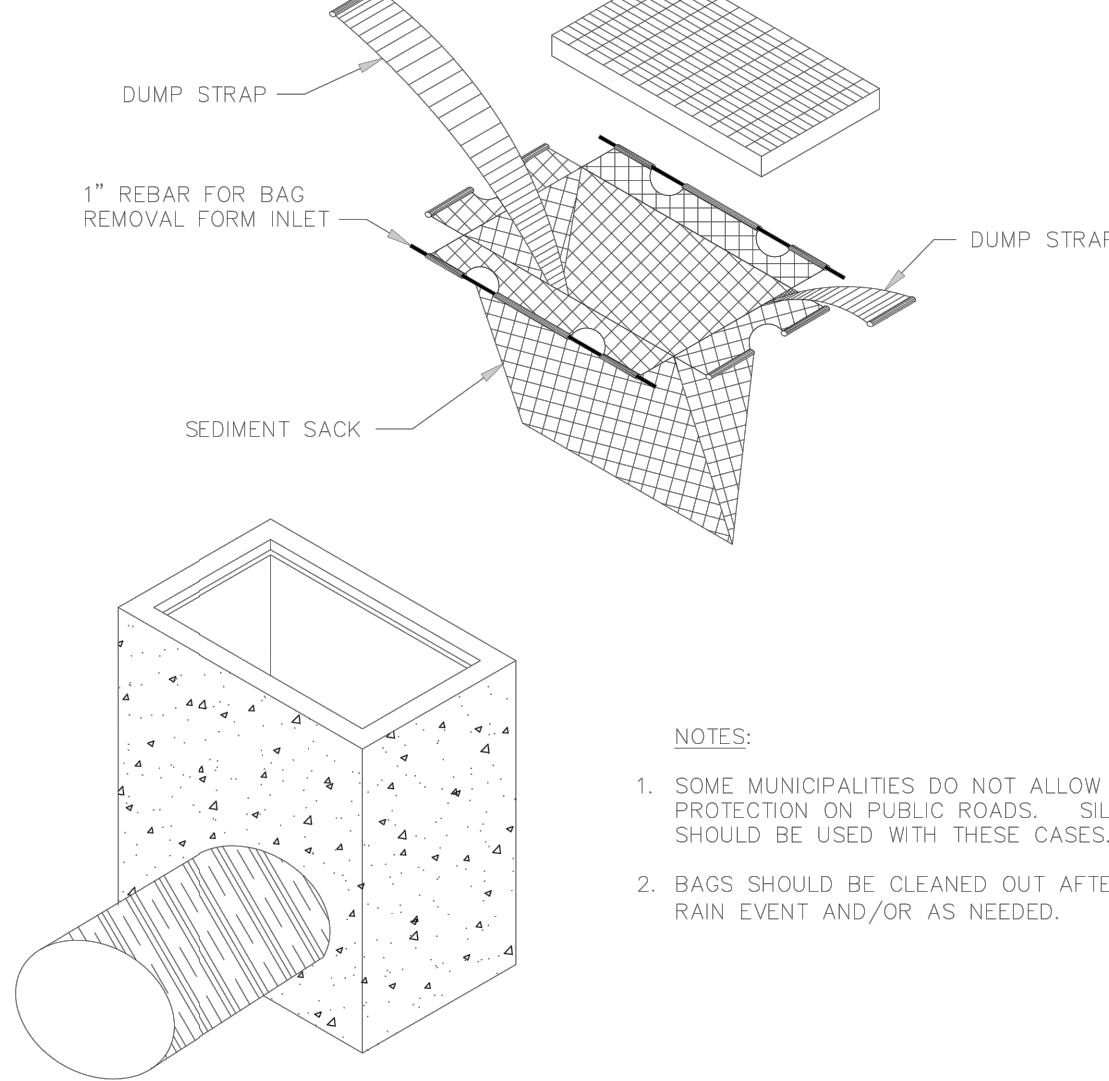


ELEVATIONAL VIEW

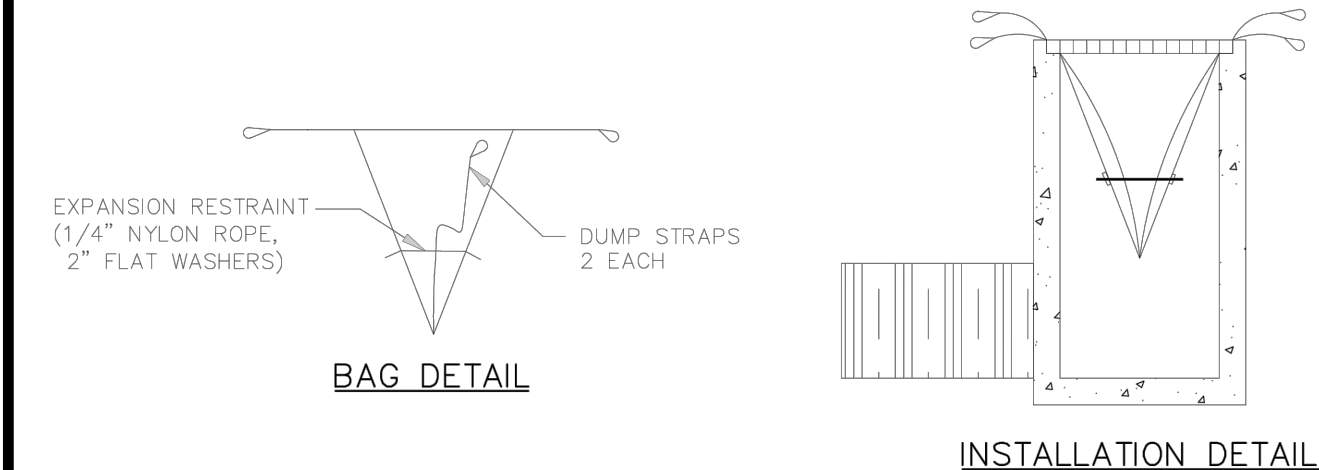
NOTES:

- SIGNS WILL BE CONSTRUCTED FROM QUALITY ALUMINUM AND POWDER COATED WITH GLOSS BLACK POLYESTER TWO COAT PROCESS.
- ALL FASTENERS WILL BE STAINLESS STEEL.
- STOP SIGNS WILL HAVE A 1/4" BLACK ALUMINUM BACKER.
- ALL STREET BLADES WILL BE FRAMED IN WITH ALUMINUM CASING.
- ALL REFLECTIVE SIGNS SHALL BE MADE OF HIGH INTENSITY GRADE REFLECTIVE SHEETING.
- DEVELOPER SHALL BE RESPONSIBLE FOR FURNISHING AND ERECTING ALL STREET NAME AND REGULATORY SIGNS.

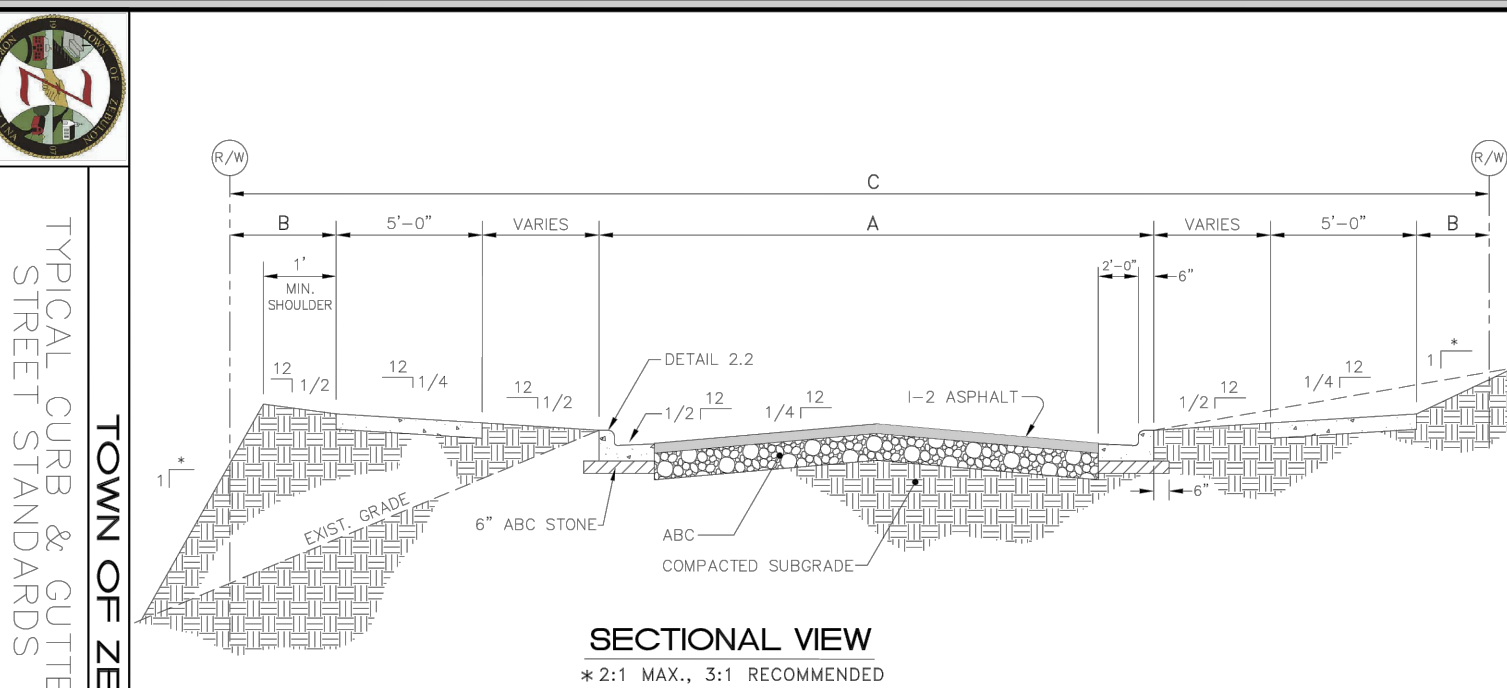
TOWN OF ZEBULON  
**PREMIUM SIGN INSTALLATION DETAIL**  
SCALE: NOT TO SCALE  
DATE: JULY 2010  
SHEET # 1 OF 1  
DETAIL # 31



- NOTES:
- SOME MUNICIPALITIES DO NOT ALLOW GUTTER PROTECTION ON PUBLIC ROADS. SILT BAGS SHOULD BE USED IN THESE CASES.
  - BAGS SHOULD BE CLEANED OUT AFTER EVERY RAIN EVENT AND/OR AS NEEDED.



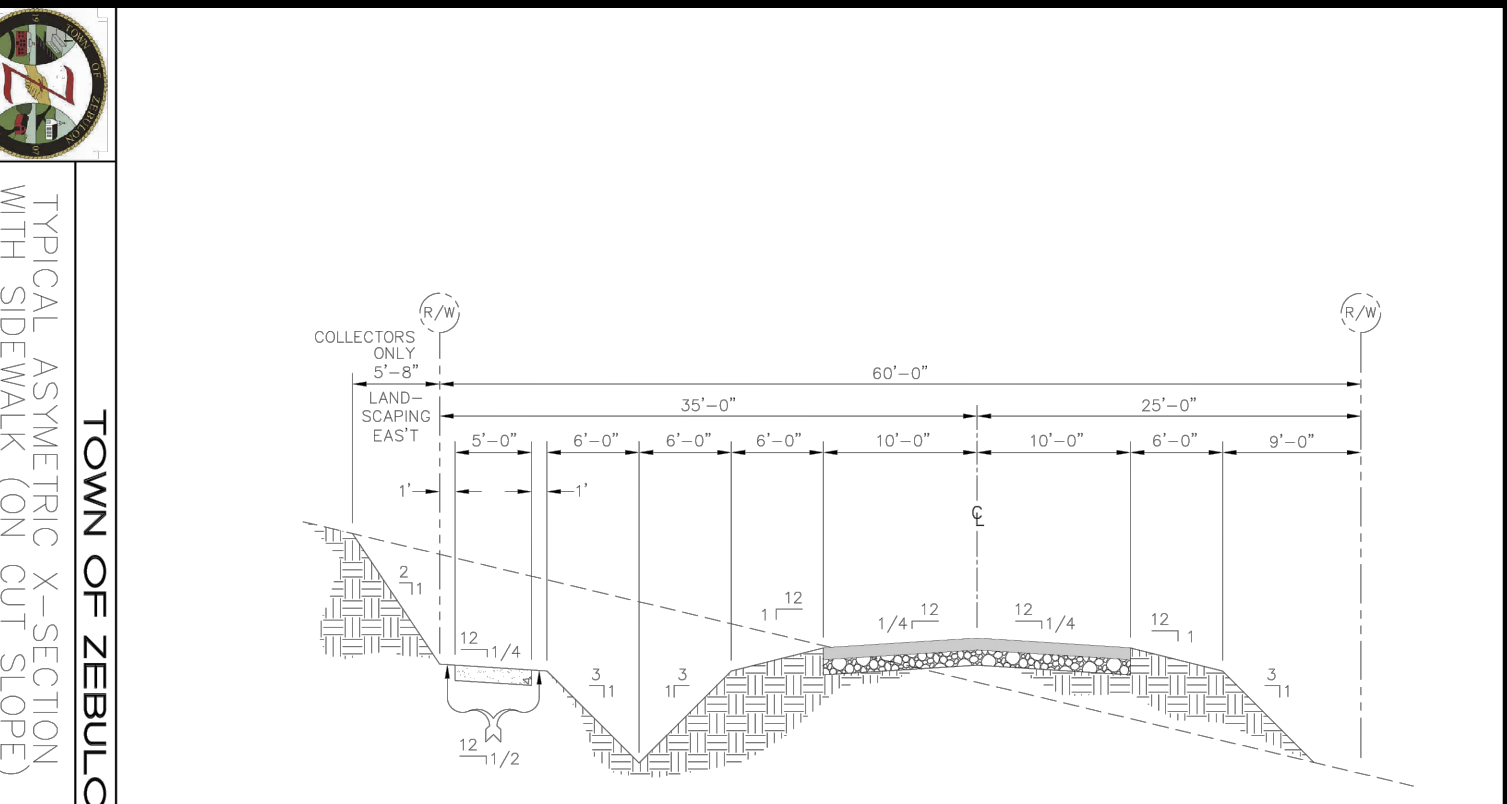
TOWN OF ZEBULON  
**CATCH BASIN - SEDIMENT CONTROL DEVICES**  
SCALE: NOT TO SCALE  
DATE: JULY 2010  
SHEET # 1 OF 1  
DETAIL # 50



SECTIONAL VIEW

\* 2:1 MAX., 3:1 RECOMMENDED

CLASSIFICATION	GEOMETRIC PROPERTIES		
	BACK TO BACK (B)	BACK TO BACK (C)	PAVEMENT SECTION (C) (D)
COLLECTOR	26"	26"	26"
LOCAL STREET	26"	26"	26"
RESIDENTIAL COLLECTOR	35"	35"	35"
THOROUGHFARE	VARIES	VARIES	VARIES



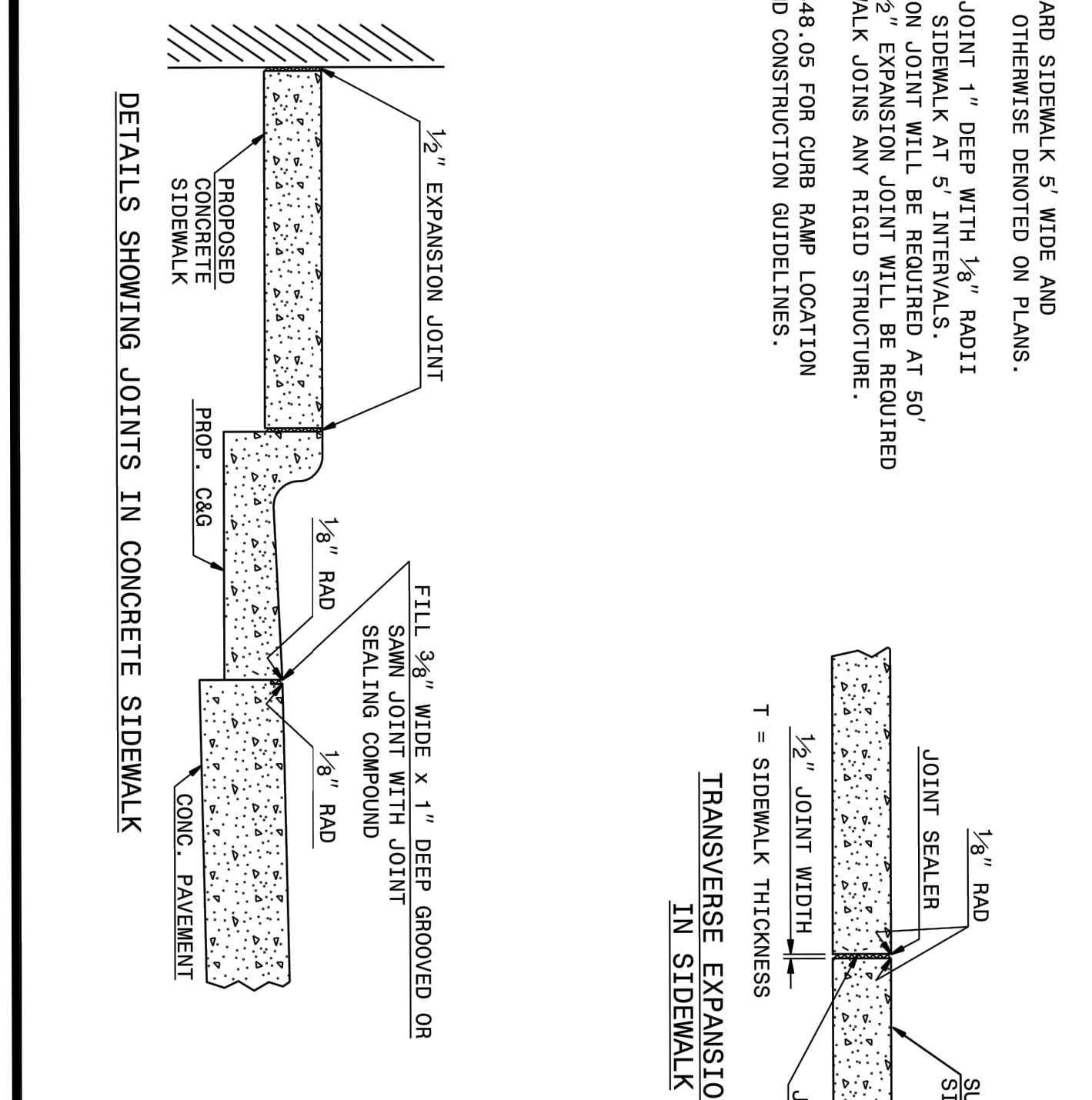
SECTIONAL VIEW

APPLIES TO STREET WHERE SIDE WALK IS REQUIRED

TOWN OF ZEBULON  
**TYPICAL ASYMMETRIC CURB SECTION WITH SIDEWALK (ON CUT SLOPE)**  
SCALE: NOT TO SCALE  
DATE: JULY 2010  
SHEET # 1 OF 2  
DETAIL # 2

NOTES:

- CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.
- PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADIUS IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
- SEE STD. DWG. 848.05 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



TOWN OF ZEBULON  
**DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK**  
SCALE: NOT TO SCALE  
DATE: JULY 2010  
SHEET # 1 OF 1  
DETAIL # 18

NO.	REVISIONS	DATE	BY



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TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION PLANS**  
**SITE DETAILS**

**NOTES:**

- BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
- MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
- PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 5 BAFFLES FOR DRAINAGE AREAS GREATER THAN 10 ACRES.
- BAFFLE SHALL BE 700 G/M<sup>2</sup> COIR EROSION BLANKET.
- TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS.
- INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH RAINFALL.

**MAINTENANCE:**

- INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL, TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES.
- TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.
- AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

**EFFECTIVE: 01/31/08**

**CONSTRUCTION SPECIFICATIONS**

- LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2x4 WOOD STUDS THROUGH BLOCK OPENINGS.
- CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2 INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
- USE CLEAN GRAVEL, 3/4 TO 1/2 INCH IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #57 WASHED STONE IS RECOMMENDED.

**MAINTENANCE:**

- INSPECT THE BARRIER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/4 INCH OR GREATER) RAINFALL AND MAKE REPAIRS AS NEEDED.
- REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.
- WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL, AND EITHER SALVAGE OR DISPOSE OF IT PROPERLY.
- BRING THE DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT IT.
- APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

**EFFECTIVE: 01/31/08**

**NOTES:**

- PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
- IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
- MAINTAIN GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING CONSTRUCTION SITE. ENTRANCE WILL REQUIRE PERIODIC REMOVAL OF SEDIMENT-LOADED STONE AND REPLACEMENT WITH FRESH STONE.

**MAINTENANCE:**

- MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE.
- AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY.
- IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ON TO PUBLIC ROADWAYS.

**EFFECTIVE: 01/31/08**

**NOTES:**

- PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING STREET, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
- USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH 1/2 INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
- INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.
- WHEN INSTALLING CURB INLET PROTECTION DEVICES, NEVER BLOCK THE CURB INLET.

**NOTE:** GRAVEL BAG SHOULD NOT BE HIGHER THAN TOP OF CURB

**EFFECTIVE: 01/31/08**

**NOTES:**

- TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
- SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
- DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
- STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAG, AND/OR EROSION CONTROL NETTING.

**MAINTENANCE:**

- INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE.
- WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

**EFFECTIVE: 01/31/08**

SLOPE	SLOPE LENGTH (FT)	MAXIMUM AREA (FT <sup>2</sup> )
<2%	100	10,000
2 TO 5%	75	7,500
5 TO 10%	50	5,000
10 TO 20%	25	2,500
>20%	15	1,500

**NOTE:**

- USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
- REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE.

**MAINTENANCE:**

- INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH 1 INCH OR GREATER RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUTS.
- REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

**EFFECTIVE: 01/31/08**

**NOTE:**

- INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH RAIN EVENT. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.

**MAINTENANCE:**

- INSPECT INLET AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/4 INCH OR GREATER) RAINFALL EVENT.
- CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS.
- TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL.
- REPLACE STONE AS NEEDED.

**EFFECTIVE: 01/31/08**

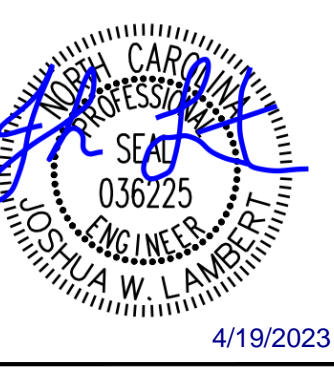
**NOTES:**

- PROVIDE STABILIZED OUTLET TO STREAM BANK. WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE FILTER BAG FOR DEWATERING ABOVE NATURAL GROUND.

**EFFECTIVE: 01/31/08**

**EFFECTIVE: 01/31/08**

NO.	REVISIONS	DATE



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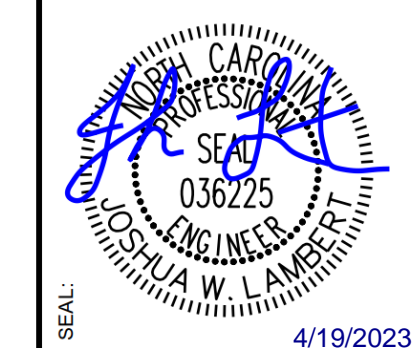
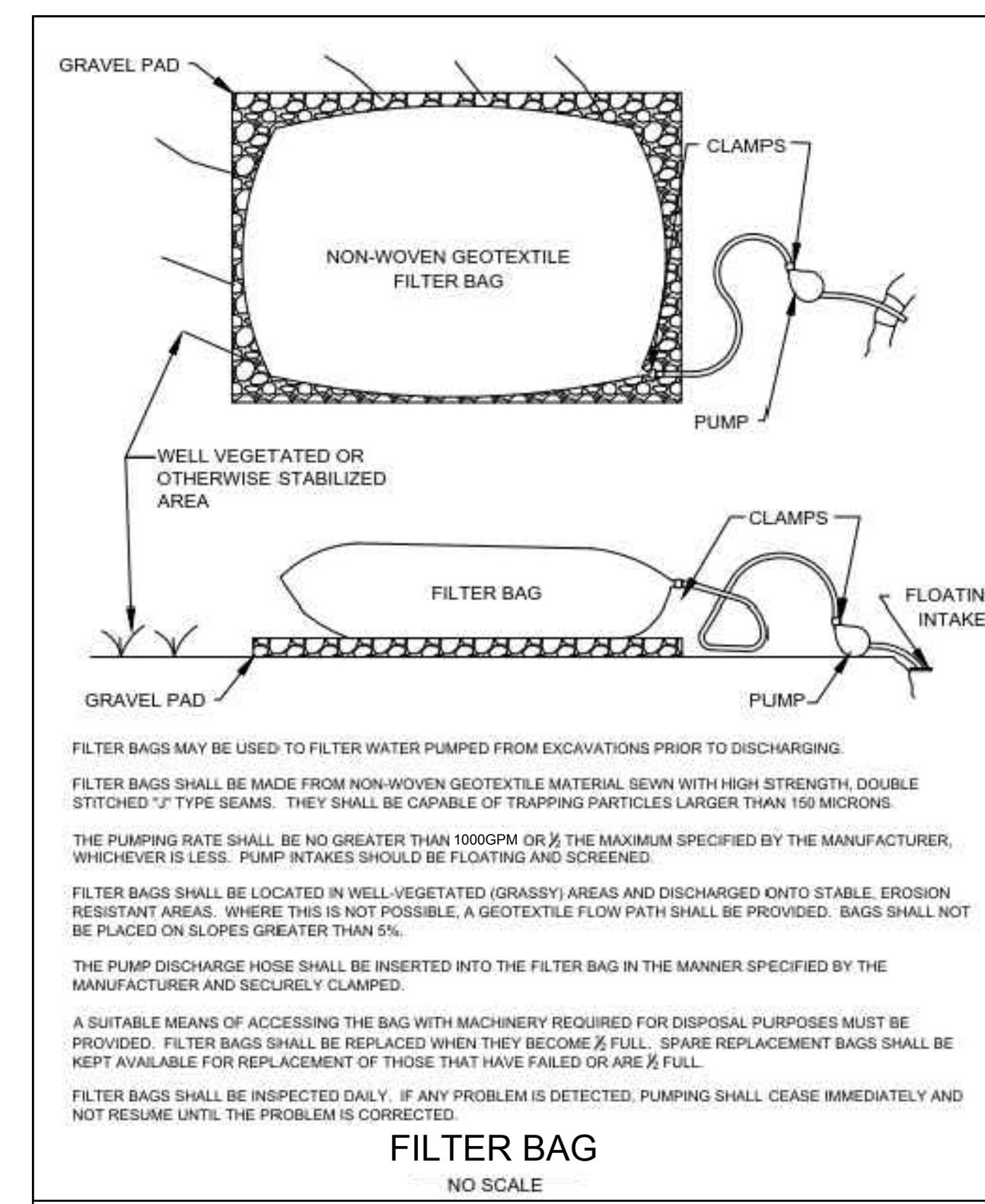
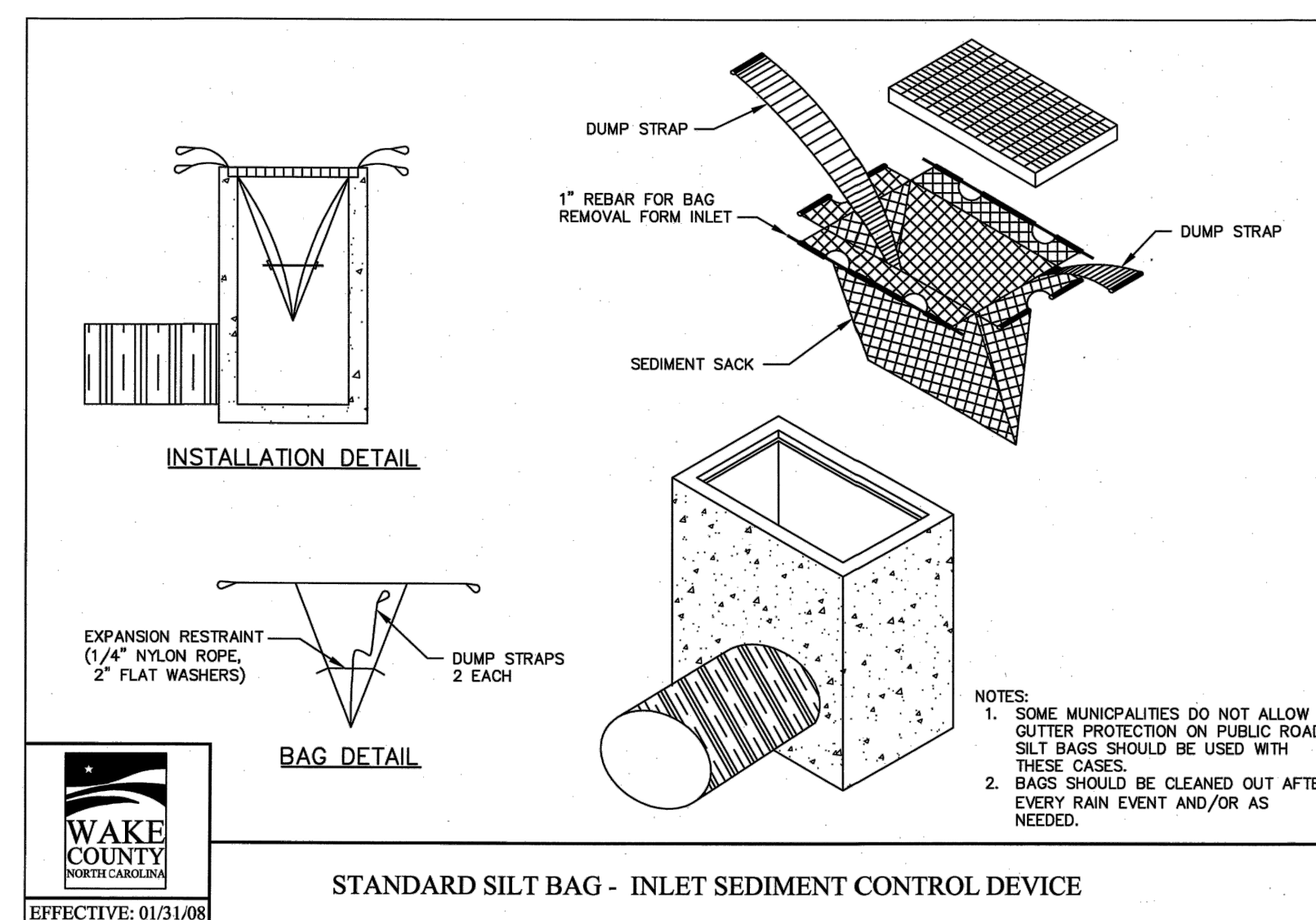
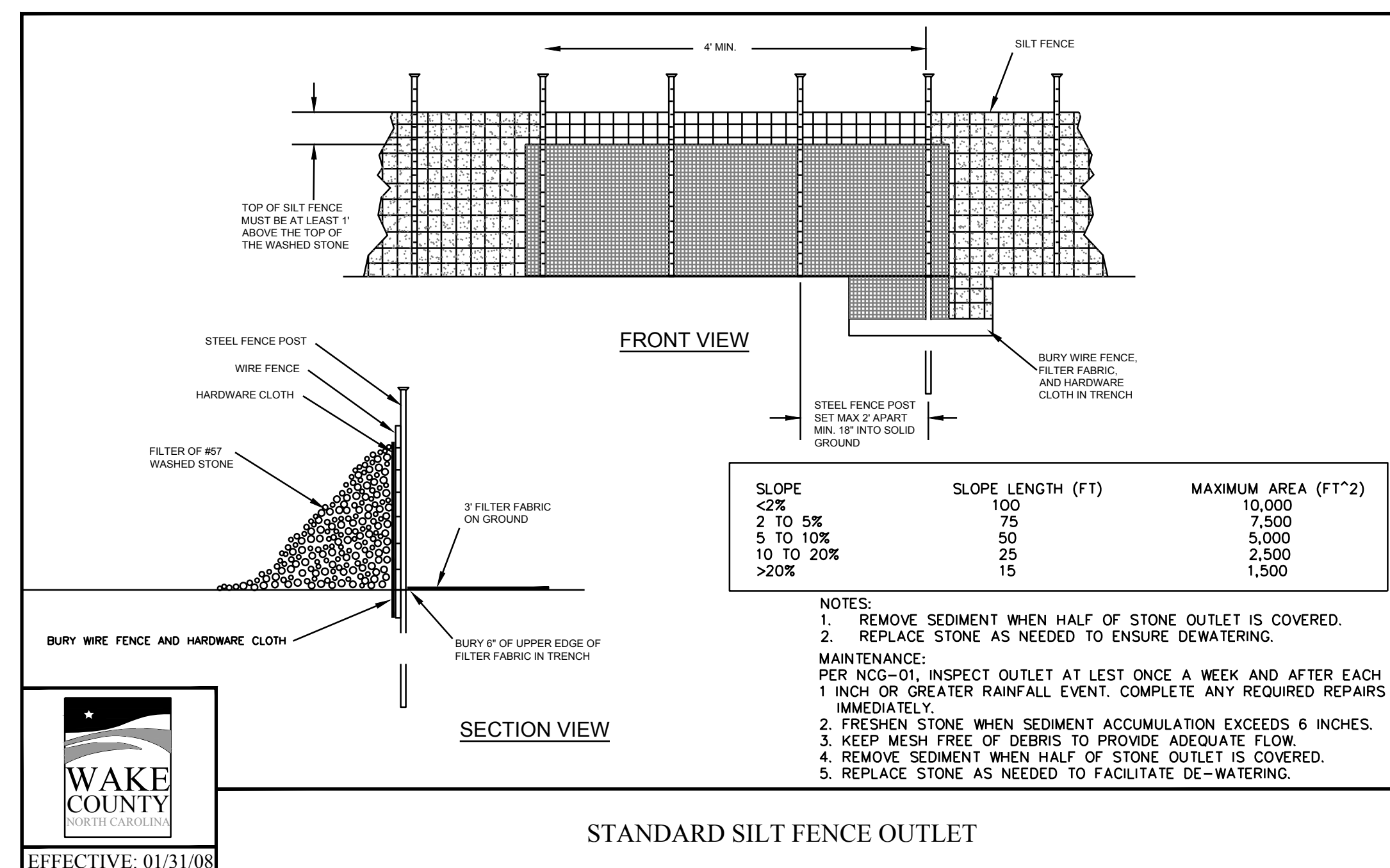
PROJECT	NOT FOR CONSTRUCTION	SCALE	AS SHOWN	JWL	SRG	JWL
STRONG ROCK PROJECT						

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TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
CONSTRUCTION PLANS

**EROSION CONTROL DETAILS**

DRAWING SHEET  
**D-2.7**

21 OF 24



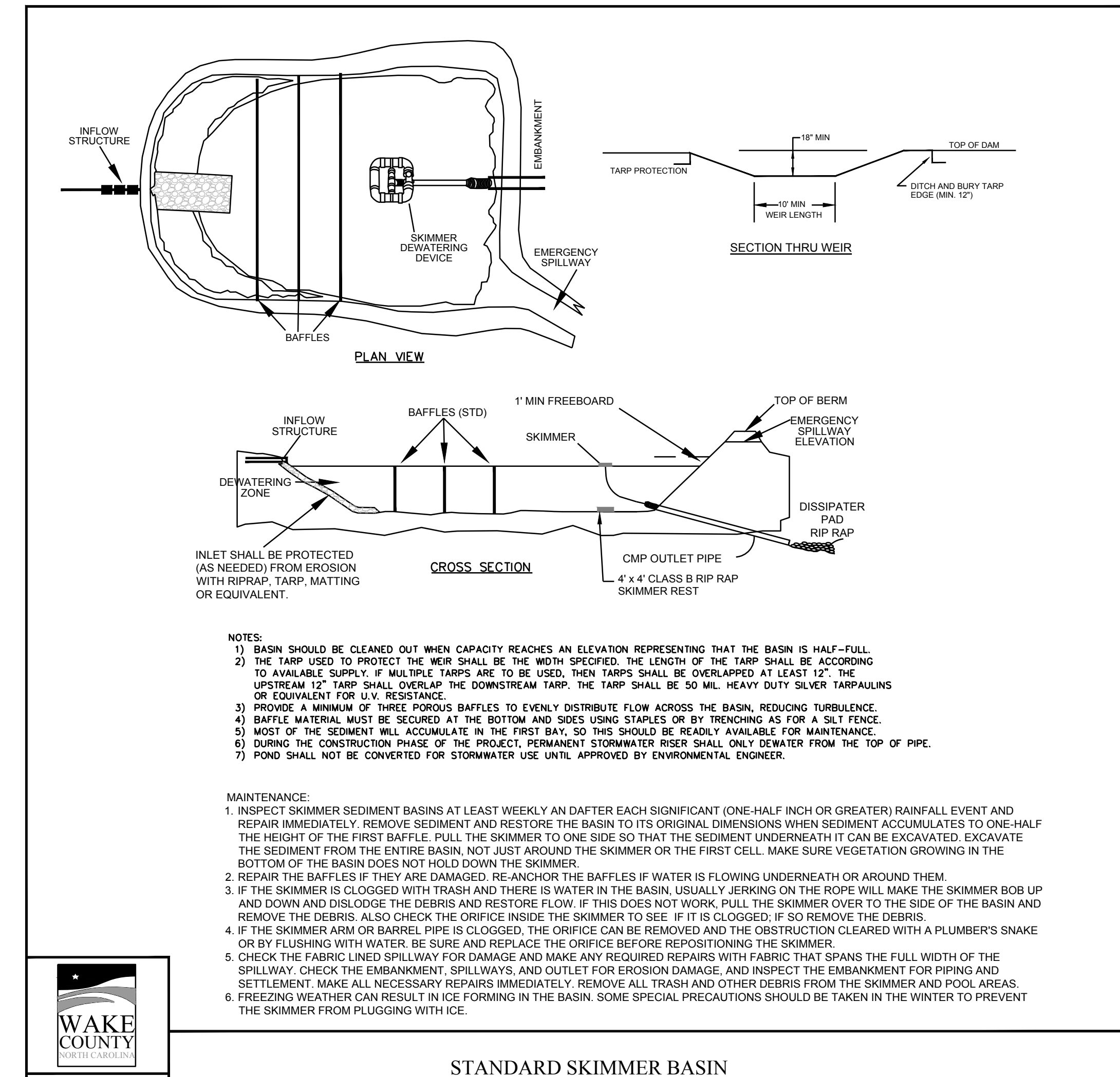
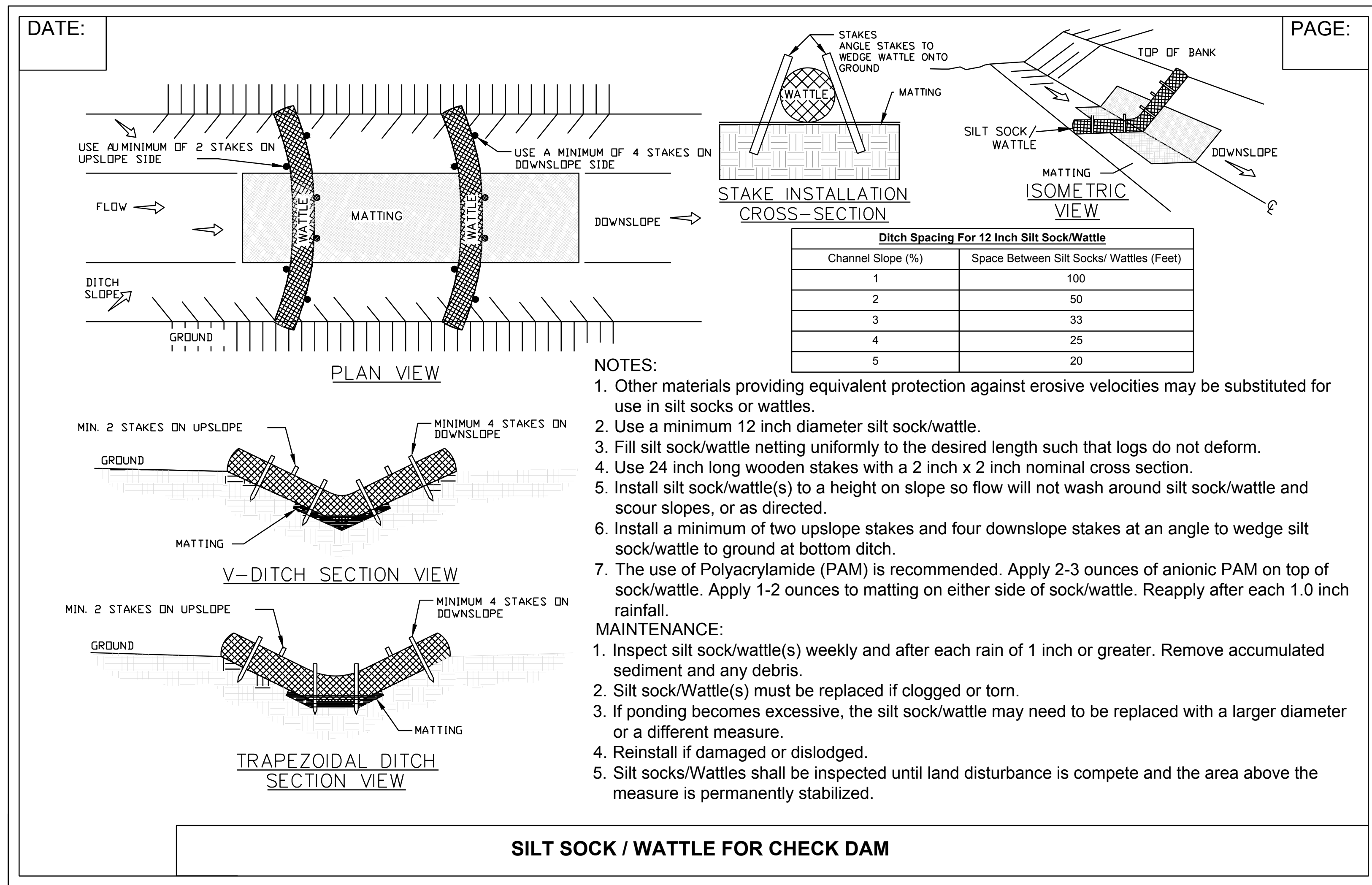
4/19/2023

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 TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 CONSTRUCTION PLANS  
 EROSION CONTROL DETAILS

DRAWING SHEET  
 D-2.8



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 permittees 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.

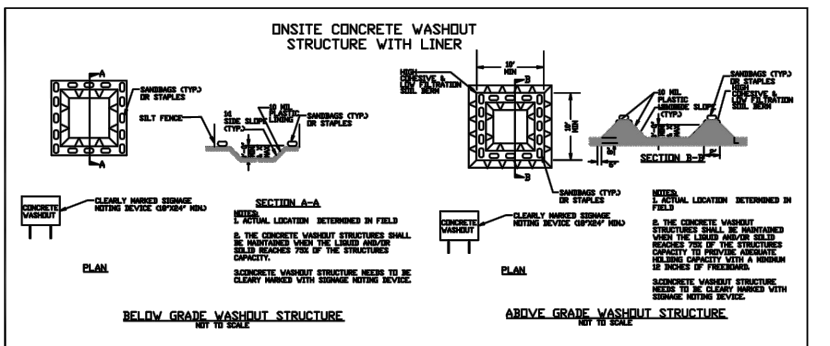
Required Ground Stabilization Timeframes table. Columns: Site Area Description, Stabilize within this many calendar days after ceasing land disturbance, Timeframe variations. Rows include: (a) Perimeter dikes, swales, ditches, and perimeter slopes; (b) High Quality Water (HQW) Zones; (c) Slopes steeper than 3:1; (d) Slopes 3:1 to 4:1; (e) Areas with slopes flatter than 4:1.

NOTE: After the permanent cessation of construction activities, any area 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.

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.

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 that alternatives are reasonably available.



CONCRETE WASHOUTS. Do not discharge concrete or cement slurry from the site. Dispose of, or recycle set, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.

SEEDING SPECIFICATIONS: SEEDBED PREPARATION: 1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE. 2. RIP THE ENTIRE AREA TO SIX INCHES DEEP.

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 400 GALS/ACRE

SEEDING SCHEDULE table. Columns: DATE, TYPE, PLANTING RATE. Rows include: AUG 15-NOV 1 (TALL FESCUE, 300 LBS/ACRE), NOV 1-MAR 1 (TALL FESCUE & ABRUZZI RYE, 300 LBS/ACRE), MAR 1-APR 15 (TALL FESCUE, 300 LBS/ACRE), APR 15-JUN 30 (HULLED COMMON BERMUDAGRASS, 25 LBS/ACRE), JUL 1-AUG 15 (TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS\*\*\*, 125 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)), FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1):

SEEDING SCHEDULE table. Columns: DATE, TYPE, PLANTING RATE. Rows include: MAR 1-JUN 1 (SERICEA LESPEDEZA (SCARIFIED) AND USE THE FOLLOWING COMBINATIONS: 50 LBS/ACRE (SERICEA LESPEDEZA); 120 LBS/ACRE ADD TALL FESCUE), MAR 1-JUN 30 (OR ADD WEEPING LOVE GRASS 10 LBS/ACRE), MAR 1-JUN 30 (OR ADD HULLED COMMON BERMUDAGRASS 25 LBS/ACRE), JUL 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 WAKE COUNTY SOIL & WATER CONSERVATION DISTRICT OR NC STATE COOPERATIVE EXTENSION FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUED AREAS. THE ABOVE VEGETATION RATES ARE THOSE THAT DO WELL UNDER LOCAL 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.

WAKE COUNTY Environmental Services logo and contact information: Tel: 919 856 7400 Fax: 919 743 4772. Sedimentation & Erosion Control, 336 Fayetteville St., P.O. Box 550, Raleigh, NC 27602.

Effective September 1, 2008. 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. 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).

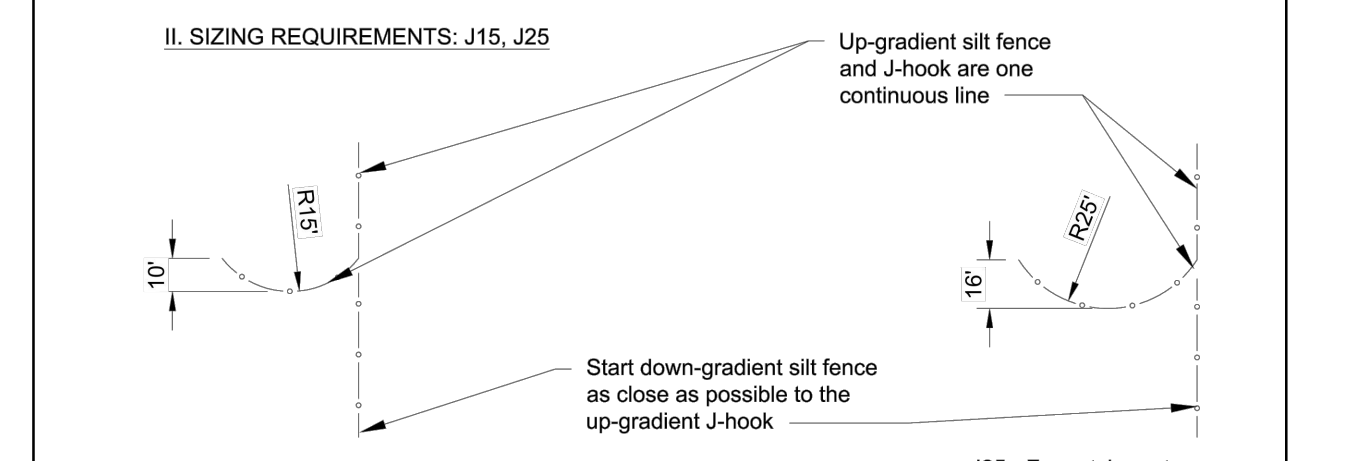
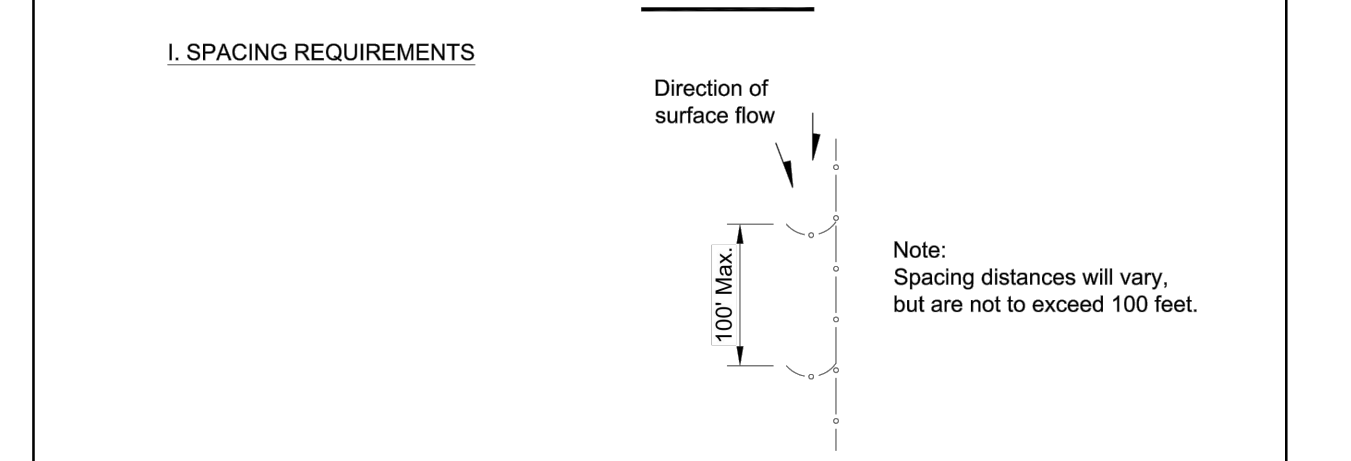
- Maintenance Requirements to be Noted on the Plan
i. Seeding or covering stockpiles with tarps or mulch is required and will reduce erosion problems. Tarps should be keyed in at the top of the slope to keep water from running underneath the plastic.
j. If a stockpile is to remain for future use after 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.
1. Establish and maintain a vegetative buffer at the toe of the slope (where practical).

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.

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING. SECTION B: RECORDKEEPING. The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&S plan shall be kept on site and available for inspection at all times during normal business hours.

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).

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING. SECTION C: REPORTING. Occurrences that Must be Reported. Permits shall report the following occurrences:




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:

J-HOOK MAINTENANCE: 1. INSPECT J-HOOK INSTALLATION AT REGULAR INTERVALS PER NPDES MONITORING REQUIREMENTS. 2. REPLACE TORN SILT FENCE FABRIC WITH NEW FENCE MATERIAL. 3. BENT OR BROKEN WIRES AND T-POLES SHALL BE REPLACED IMMEDIATELY. 4. SEDIMENT ACCUMULATION HIGHER THAN 1/3 OF INSTALLED HEIGHT OF FABRIC SHALL BE PROMPTLY REMOVED.

STRONGROCK logo and contact information: 6801 FALLS OF NEUSE RD, SUITE 108 RALEIGH, NC 27615 | INFO@STRONGROCKGROUP.COM. Includes a table for project details: PROJECT, NOT FOR CONSTRUCTION, SCALE, AS SHOWN, DESIGNED BY, JWL, DRAWN BY, SRG, CHECKED BY, JWL.


Vertical sidebar containing: REVISIONS table, DRAWING SHEET D-2.9, and page number 23 OF 24.



### Outdoor Lighting

## Mitchell LED Series

Mitchell LED  
 Mitchell Top Hat LED  
 Mitchell LED with ribs, bands and medallions  
 Mitchell Open LED  
 Mitchell Top Hat LED with ribs, bands and medallions




The energy-efficient fixtures in the Mitchell LED Series enhance the character and prestige of streetscapes and parking lots, as well as pedestrian areas and greenways. These fixtures provide safety and security in commercial settings and complement any neighborhood with their classic, elegant design.

LED <i>(Light Emitting Diode)</i>	50 watts, 75 watts (Mitchell Open)
Mounting heights	12', 13', 16'
Color	Black
Poles	Fiberglass Smooth round concrete Style V Style VI Style VII

For additional information, visit us at [duke-energy.com/OutdoorLighting](http://duke-energy.com/OutdoorLighting) or call us toll free at 866.769.6417.

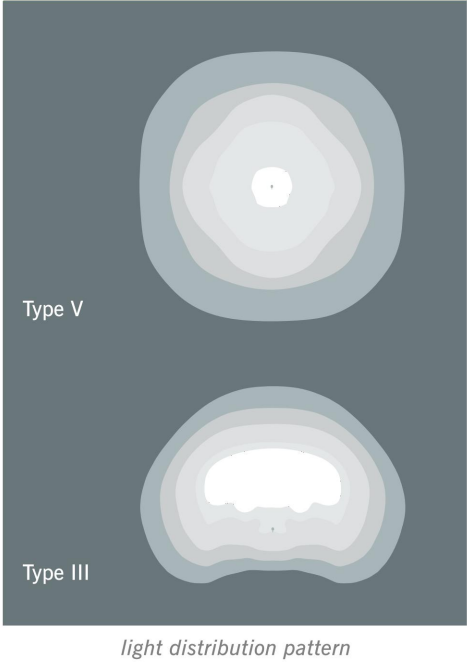
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### Outdoor Lighting

## Mitchell LED Series

Light source: LED (white)  
 Lumens: 4,332 – 5,678 (fixture dependent)  
 Color temperature: 4,000K



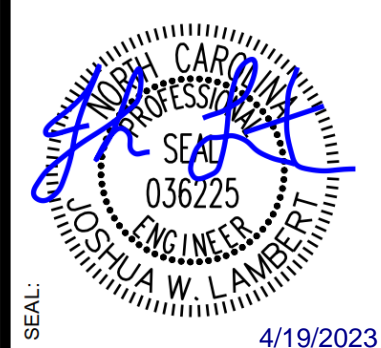
	Wattage	Light Pattern	IESNA Backlight – Uplight – Glare (BUG) Rating
Mitchell LED	50	IESNA Type V	B3-U4-G3
Mitchell Top Hat LED	50	IESNA Type V	B3-U3-G3
Mitchell Open LED	75	IESNA Type III	B1-U0-G1
Mitchell LED with Ribs, Bands and Medallions	50	IESNA Type V	B3-U4-G3
Mitchell Top Hat LED with Ribs, Bands and Medallions	50	IESNA Type V	B3-G3-U3

Poles available:

Name	Mounting height	Color
Smooth concrete	12', 16'	Black
Fiberglass	16'	Black
Style V	12', 16'	Black
Style VI	12'	Black
Style VII	13'	Black

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No.	REVISIONS	DATE	BY



**STRONGROCK**  
 ENGINEERING GROUP  
 STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166  
 6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE AS SHOWN	DESIGNED BY JWL	DRAWN BY SRG	CHECKED BY JWL
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TRUE- ZEBULON-ARENDELL  
 TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 CONSTRUCTION PLANS  
**LIGHTING DETAILS**