

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

## SYMBOLS AND ABBREVIATIONS

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

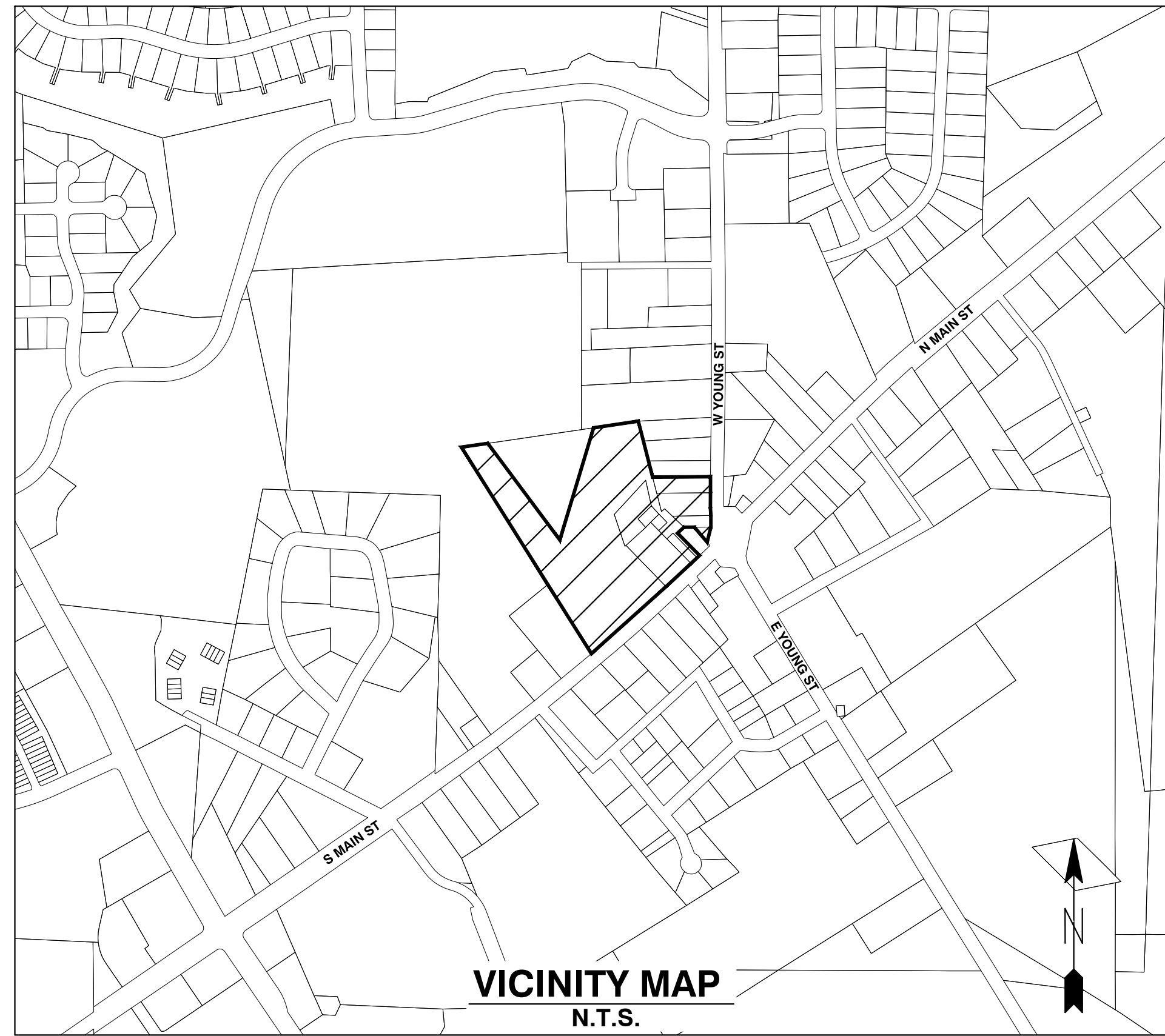
NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF ROLESVILLE AND NCDOT

# COBBLESTONE VILLAGE MIXED USE DEVELOPMENT

## TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

# CONSTRUCTION DRAWINGS

## TOWN OF ROLESVILLE PROJECT NO.



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

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

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

## SHEET INDEX

| COVER          |                                       |
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## CONSTRUCTION NOTES

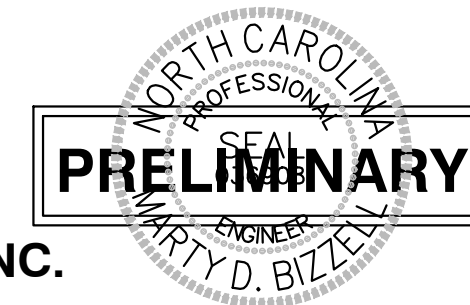
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE MUNICIPALITY STANDARDS, SPECIFICATIONS, AND DETAILS. WORK IN THIS PROJECT SHALL ALSO CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS, THE ROAD AND BRIDGE STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, THE FINAL GEOTECHNICAL REPORT, AND GENERAL DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR TRENCH SAFETY DURING ALL PHASES OF CONSTRUCTION.
- THE LOCATION AND SIZE OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA ONE-CALL UTILITIES LOCATION SERVICE (1-800-632-4949) FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE SITE.
- THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- TRAFFIC CONTROL ON PUBLIC STREETS SHALL BE IN CONFORMANCE WITH THE TRAFFIC CONTROL PLAN, THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND AS FURTHER DIRECTED BY CITY AND STATE INSPECTORS.
- ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE THE MEETING WITH THE CITY ENGINEERING DIVISION.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER AND APPLICABLE MUNICIPALITY) AS REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
- THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
- MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACKFILL AROUND DRAINAGE STRUCTURES, OR IN UTILITY TRENCHES FOR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D998. STONE BACKFILL SHALL BE COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST AS SET OUT IN ASTM STANDARD D1557. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY.
- PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND ROADWAY PROFILES/SUPERELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
- THE CONTRACTOR SHALL REVIEW, VERIFY AND COORDINATE ALL DIMENSIONS SHOWN ON PLANS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER PRIOR TO STARTING PROJECT.
- ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5 FEET. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.
- ALL HANDICAP RAMPING, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA REQUIREMENTS AND THE NORTH CAROLINA STATE BUILDING CODE, VOL. 1-C ACCESSIBILITY CODE.
- OWNER SHALL PROVIDE FENCING AND OTHER SAFETY MEASURES NECESSARY IN AND AROUND ANY PROPOSED STORMWATER MANAGEMENT MEASURES (PONDS, WETLANDS, ETC.) OBTAINING PROPER PERMITS SHALL BE THE RESPONSIBILITY OF THE OWNER.
- RETAINING WALLS EXCEEDING 30 INCHES IN HEIGHT SHALL INCLUDE FALL PROTECTION IN THE FORM OF A HANDRAIL OR FENCING ON THE HIGH SIDE OF THE RETAINING WALL.
- PROPER COMPACTION OF ALL FILL SOILS PLACED ON SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COMPACTION SHALL BE ADEQUATE TO SUPPORT THE PROPOSED USE OF AREAS IN WHICH FILL SOILS ARE PLACED. THE CONTRACTOR SHALL HIRE A GEOTECHNICAL ENGINEER TO TEST AND VERIFY THAT COMPACTION IS ADEQUATE FOR THE PROPOSED USE OF IN THE AREA OF FILL PLACEMENT.
- ALL ASPECTS OF THIS PROJECT SHALL BE IN FULL COMPLIANCE WITH CURRENT ADA STANDARDS. IF THE CONTRACTOR NOTES ANY ASPECTS OF THE PROJECT WHICH ARE NOT IN COMPLIANCE, THE ENGINEER SHALL BE NOTIFIED PRIOR TO ANY FURTHER WORK BEING PERFORMED. ANY WORK PERFORMED AFTER THE CONTRACTOR NOTES SUCH A NON COMPLIANCE IS SUBJECT TO REMOVAL AND REPAIR AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR OR OWNER SHALL EMPLOY A GEOTECHNICAL ENGINEER TO TEST ALL EMBANKMENTS AND FILL PLACEMENT FOR PROPER COMPACTION. PROPER COMPACTION SHALL BE PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS OR THESE PLANS, WHICHEVER IS MORE STRINGENT. EMBANKMENTS FOR PONDS SHALL BE PLACED IN 6 INCH LOOSE LAYERS AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF 4% OR TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D998. THE CONTRACTOR SHALL TAKE PHOTOGRAPHS OF THE OUTLET STRUCTURE AT ALL AT ALL PHASES OF INSTALLATION AND SHALL RETAIN WITH GEOTECHNICAL TESTING DATA. THE CONTRACTOR SHALL ALSO RETAIN ALL SHIPPING RECORDS AND SPECIFICATIONS FOR THE OUTLET STRUCTURE MATERIALS AND STRUCTURES. ALL OF THE ABOVE DATA MAY BE REQUIRED AS PART OF THE MUNICIPALITY AS-BUILT PROCESS AND SHALL BE MADE AVAILABLE TO THE ENGINEER UPON REQUEST. THE CONTRACTOR AND OWNER SHALL HAVE DOCUMENTATION OF THESE TESTS AVAILABLE UPON REQUEST.
- RETAINING WALLS SHOWN HEREIN SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER WITH EXPERIENCE DESIGNING RETAINING WALLS. AT LEAST 14 DAYS PRIOR TO BEGINNING CONSTRUCTION OF RETAINING WALLS, THE CONTRACTOR SHALL CONTACT THE OWNER'S GEOTECHNICAL ENGINEER TO SCHEDULE AND COORDINATE ALL APPROPRIATE INSPECTIONS, TESTING, AND VERIFICATION NECESSARY DURING RETAINING WALL CONSTRUCTION. THE GEOTECHNICAL ENGINEER SHALL PROVIDE CONTINUOUS INSPECTION, TESTING AND VERIFICATION FOR THE DURATION OF RETAINING WALL CONSTRUCTION. PROPER SCHEDULING, EXECUTION, AND RECORD KEEPING FOR ALL REQUIRED INSPECTIONS, TESTING, AND VERIFICATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH RECORDS SHALL BE RETAINED AND SHALL BE PROVIDED TO THE OWNER AND BASS, NIXON & KENNEDY, INC. ALL MONITORING, TESTING, AND VERIFICATION SHALL CONFORM TO THE MOST RECENT VERSION OF THE NC BUILDING CODE CHAPTER 18, SECTION 1806 OR THE WALL DESIGN ENGINEER'S SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.



## QUANTITY SUMMARY

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

**ENGINEER:**  
**BANK**  
**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**

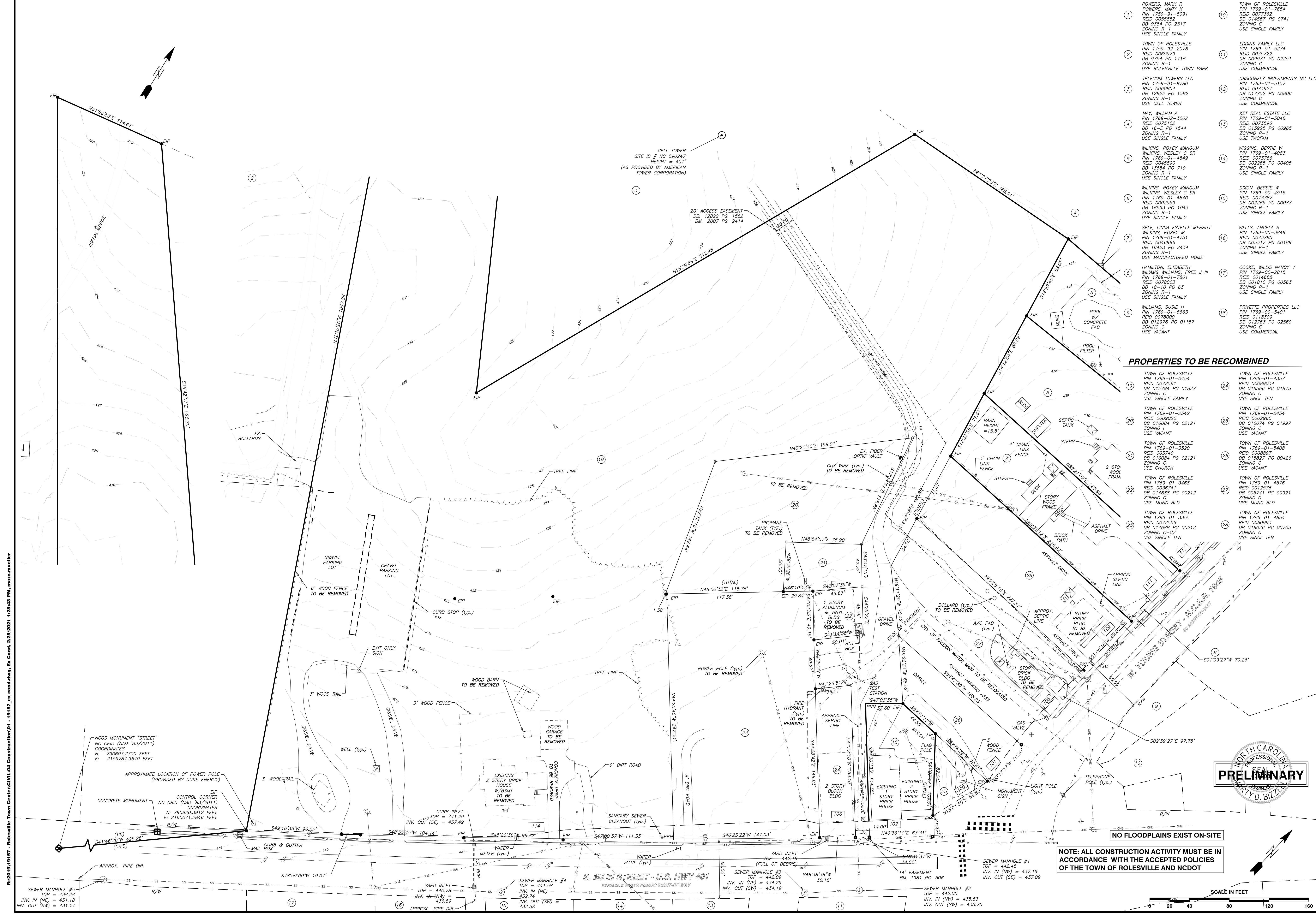


**6310 CHAPEL HILL ROAD, SUITE 250**  
**RALEIGH, NORTH CAROLINA 27607**  
**TELEPHONE: (919) 851-4422**  
**FAX: (919) 851-8968**

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

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

RL201919187 - Rolesville Town Center CIVIL04 Construction01 - 19187.dwg, Ex. Contd, 2/25/2021 1:28:43 PM, maric.mueller



- 1 POWERS, MARK R  
PIN 1759-01-8091  
REID 0055852  
DB 9384 PG 2517  
ZONING R-1  
USE SINGLE FAMILY
- 2 TOWN OF ROLESVILLE  
PIN 1759-02-2076  
REID 0069979  
DB 9754 PG 1416  
ZONING R-1  
USE ROLESVILLE TOWN PARK
- 3 TELECOM TOWERS LLC  
PIN 1759-01-8780  
REID 0080854  
DB 12822 PG 1582  
ZONING R-1  
USE CELL TOWER
- 4 MAY, WILLIAM A  
PIN 1769-02-3002  
REID 0075102  
DB 16-E PG 1544  
ZONING R-1  
USE SINGLE FAMILY
- 5 WILKINS, ROXEY MANGUM  
WILKINS, WESLEY C SR  
PIN 1769-01-4849  
REID 0045890  
DB 13684 PG 719  
ZONING R-1  
USE SINGLE FAMILY
- 6 WILKINS, ROXEY MANGUM  
WILKINS, WESLEY C SR  
PIN 1769-01-4840  
REID 0002959  
DB 16593 PG 1043  
ZONING R-1  
USE SINGLE FAMILY
- 7 SELF, LINDA ESTELLE MERRITT  
WILKINS, ROXEY M  
PIN 1769-01-4751  
REID 0046998  
DB 16423 PG 2434  
ZONING R-1  
USE MANUFACTURED HOME
- 8 HAMILTON, ELIZABETH  
WILKINS, WESLEY C SR  
PIN 1769-01-7801  
REID 0078003  
DB 18-10 PG 63  
ZONING R-1  
USE SINGLE FAMILY
- 9 WILLIAMS, SUSIE H  
PIN 1769-01-6663  
REID 0078000  
DB 012976 PG 01157  
ZONING C  
USE VACANT
- 10 TOWN OF ROLESVILLE  
PIN 1769-01-7654  
REID 0077362  
DB 014567 PG 0741  
ZONING C  
USE SINGLE FAMILY
- 11 EDDINS FAMILY LLC  
PIN 1769-01-5274  
REID 0035722  
DB 009971 PG 02251  
ZONING C-1  
USE COMMERCIAL
- 12 DRAGONFLY INVESTMENTS NC LLC  
PIN 1769-01-5157  
REID 0073627  
DB 017752 PG 00806  
ZONING C  
USE COMMERCIAL
- 13 KET REAL ESTATE LLC  
PIN 1769-01-5048  
REID 0075596  
DB 015925 PG 00965  
ZONING R-1  
USE TWOFAM
- 14 WIGGINS, BERTIE W  
PIN 1769-01-4083  
REID 0073786  
DB 002265 PG 00405  
ZONING R-1  
USE SINGLE FAMILY
- 15 WIGGINS, BERTIE W  
PIN 1769-00-4915  
REID 0073787  
DB 002265 PG 00087  
ZONING R-1  
USE SINGLE FAMILY
- 16 WELLS, ANGELA S  
PIN 1769-00-3849  
REID 0073785  
DB 005317 PG 00189  
ZONING R-1  
USE SINGLE FAMILY
- 17 COOKE, WILLIS NANCY V  
PIN 1769-00-5401  
REID 0014688  
DB 001810 PG 00563  
ZONING R-1  
USE SINGLE FAMILY
- 18 PRIVETTE PROPERTIES LLC  
PIN 1769-00-5401  
REID 0118309  
DB 012763 PG 02560  
ZONING C  
USE COMMERCIAL

- PROPERTIES TO BE RECOMBINED**
- 19 TOWN OF ROLESVILLE  
PIN 1769-01-0454  
REID 0008904  
DB 012794 PG 01827  
ZONING C  
USE SINGLE FAMILY
  - 20 TOWN OF ROLESVILLE  
PIN 1769-01-2542  
REID 0009020  
DB 016084 PG 02121  
ZONING C  
USE VACANT
  - 21 TOWN OF ROLESVILLE  
PIN 1769-01-3520  
REID 003740  
DB 016084 PG 02121  
ZONING C  
USE CHURCH
  - 22 TOWN OF ROLESVILLE  
PIN 1769-01-3468  
REID 0036741  
DB 014688 PG 00212  
ZONING C  
USE MUNG BLD
  - 23 TOWN OF ROLESVILLE  
PIN 1769-01-3355  
REID 0025559  
DB 014688 PG 00212  
ZONING C-CZ  
USE SINGLE TEN
  - 24 TOWN OF ROLESVILLE  
PIN 1769-01-4357  
REID 0008904  
DB 016566 PG 01875  
ZONING C  
USE SINGL TEN
  - 25 TOWN OF ROLESVILLE  
PIN 1769-01-5454  
REID 0009260  
DB 016074 PG 01997  
ZONING C  
USE VACANT
  - 26 TOWN OF ROLESVILLE  
PIN 1769-01-5408  
REID 0008897  
DB 015827 PG 00426  
ZONING C  
USE VACANT
  - 27 TOWN OF ROLESVILLE  
PIN 1769-01-4576  
REID 0012576  
DB 005741 PG 00921  
ZONING C  
USE MUNG BLD
  - 28 TOWN OF ROLESVILLE  
PIN 1769-01-4654  
REID 0008993  
DB 016026 PG 00705  
ZONING C-CZ  
USE SINGL TEN



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

SCALE IN FEET

**BASS, NIXON & KENNEDY, INC.**  
CONSULTING ENGINEERS  
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
TELEPHONE: (919) 881-4422 FAX: (919) 881-6868  
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |

PROGRESS DRAWN BY: MRM  
DATE: 03-19-17  
JOB NO.: 19187

**COBBLESTONE VILLAGE MIXED USE DEVELOPMENT DEMOLITION PLAN**

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

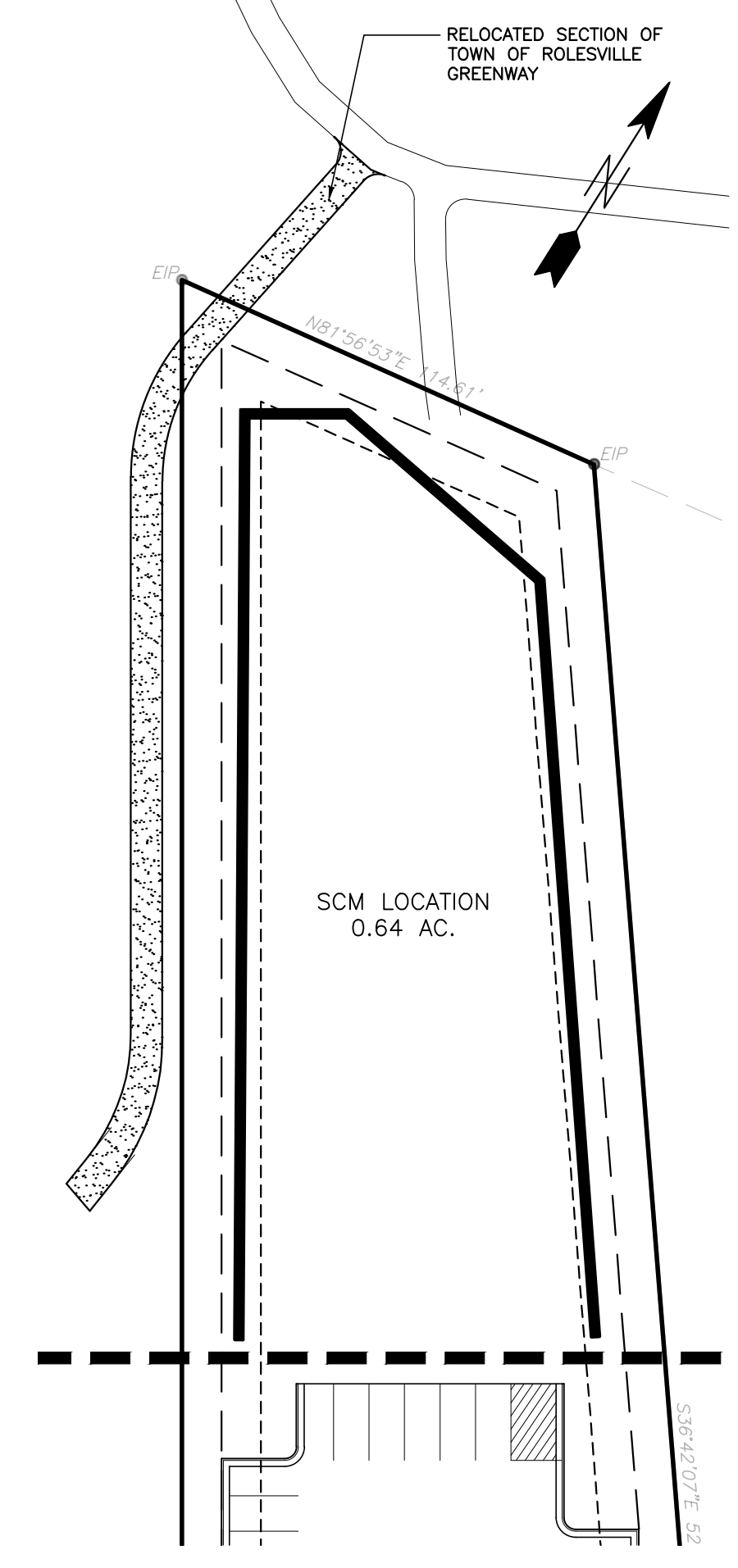
SCALE: 1" = 40'

CHK BY: MDB

SHEET C0.1

TOWN OF ROLESVILLE PROJECT NO.

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



**Cobblestone Village Parking Study**  
 February 5, 2021

**Total Square Footage and Unit Tabulation**

| Building     | Standard | Product | Office | Office SF | Retail/Flex SF | Residential Units |
|--------------|----------|---------|--------|-----------|----------------|-------------------|
| Building 1   |          |         |        |           |                | 16,481            |
| Building 2   |          |         |        |           |                | 11,495            |
| Building 3   |          |         |        | 18,200    |                | 18                |
| Building 4   |          |         |        |           | 18,188         | 18                |
| Building 5   |          |         |        |           | 18,188         | 18                |
| Building 6   |          |         |        |           | 18,188         | 18                |
| Building 7   |          |         |        |           | 18,188         | 18                |
| Building 8   |          |         |        |           | 18,188         | 18                |
| <b>Total</b> |          |         |        | 18,200    | 68,830         | 183               |

**NON-OPTIMIZED Single-Use Parking Requirements**

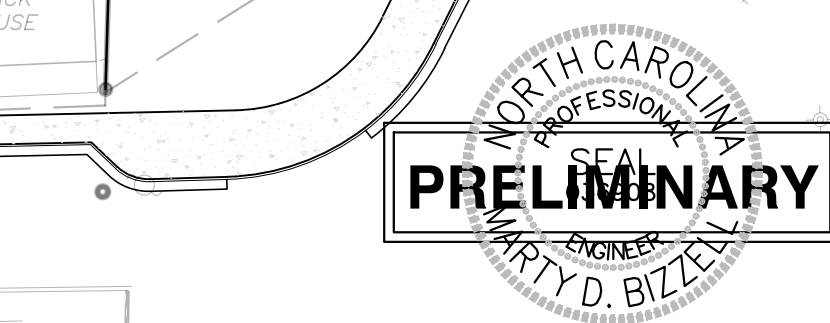
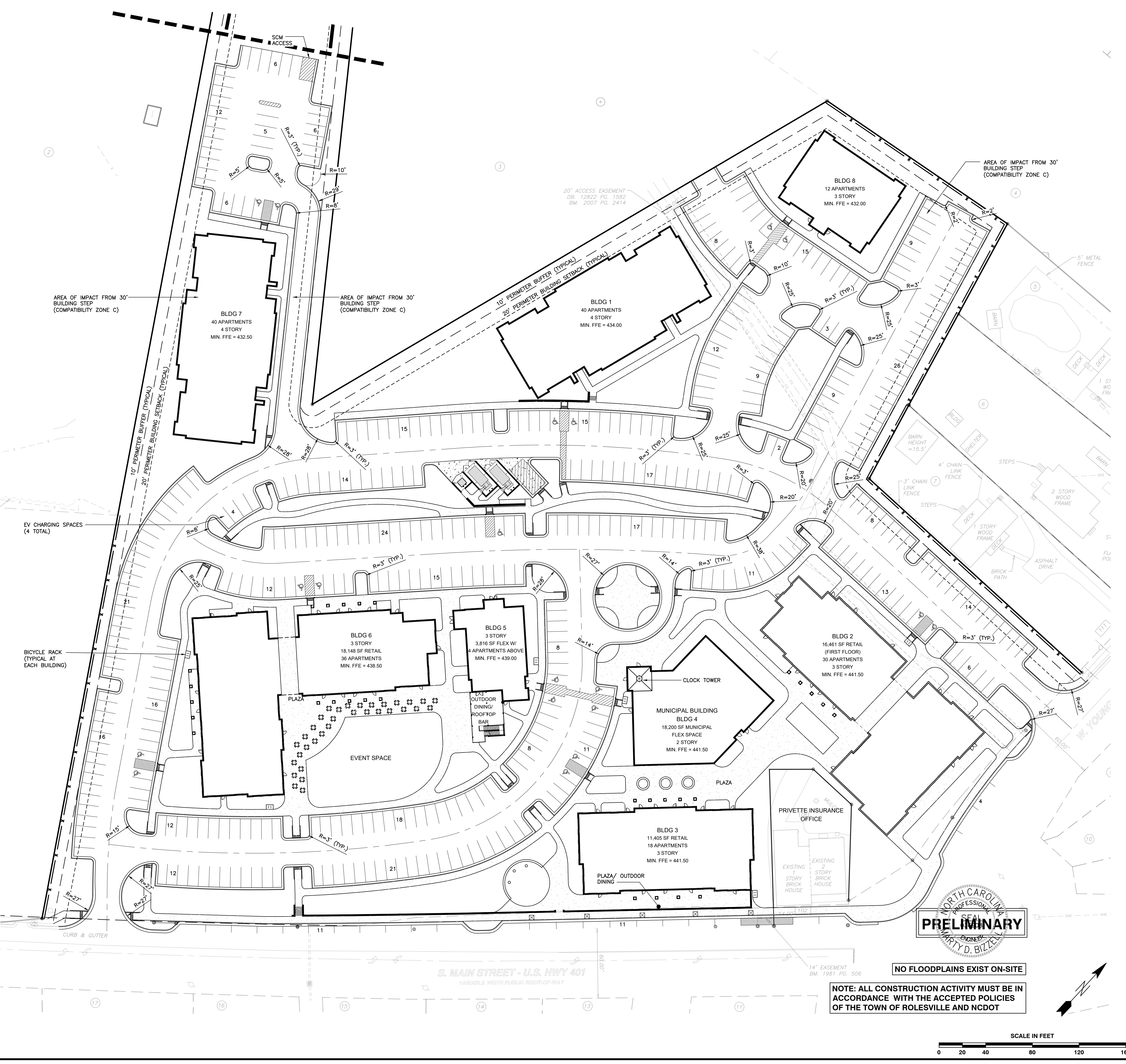
| Parking Coefficient | 0.00 | 0.01 | 0.02 | 31,000 SF | 31,000 SF | 21 per 100 | Total      |
|---------------------|------|------|------|-----------|-----------|------------|------------|
| Parking Coefficient | 0.00 | 0.01 | 0.02 | 31,000 SF | 31,000 SF | 21 per 100 | 360        |
| Parking Coefficient | 0.00 | 0.01 | 0.02 | 18,200    | 18,200    | 21 per 100 | 483        |
| <b>Total</b>        |      |      |      |           |           |            | <b>843</b> |

**OPTIMIZED Peak Hour Percentage Factors**

| TIME                          | % of peak demand <sup>1</sup> | pm only | % of peak demand <sup>2</sup> | % of peak demand <sup>3</sup> | % of peak demand <sup>4</sup> | Sum  | Notes      |
|-------------------------------|-------------------------------|---------|-------------------------------|-------------------------------|-------------------------------|------|------------|
| 8:00 AM                       | 0%                            | 0       | 0%                            | 0                             | 100%                          | 100% | 322        |
| 7:50 AM                       | 8%                            | 0       | 20%                           | 1%                            | 8%                            | 129% | 313        |
| 8:00 AM                       | 18%                           | 0       | 40%                           | 3%                            | 27%                           | 79%  | 284        |
| 8:10 AM                       | 42%                           | 0       | 93%                           | 52                            | 42%                           | 83   | 73%        |
| 8:20 AM                       | 69%                           | 0       | 100%                          | 59                            | 69%                           | 139  | 68%        |
| 8:30 AM                       | 80%                           | 0       | 100%                          | 59                            | 80%                           | 139  | 68%        |
| 8:40 AM                       | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 8:50 AM                       | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 9:00 AM                       | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 9:10 AM                       | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 9:20 AM                       | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 9:30 AM                       | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 9:40 AM                       | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 9:50 AM                       | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 10:00 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 10:10 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 10:20 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 10:30 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 10:40 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 10:50 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 11:00 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 11:10 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 11:20 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 11:30 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 11:40 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 11:50 AM                      | 85%                           | 0       | 100%                          | 59                            | 85%                           | 139  | 68%        |
| 12:00 AM                      | 0%                            | 0       | 0%                            | 0                             | 0%                            | 0    | 360        |
| <b>Peak Demand Required</b>   |                               |         |                               |                               |                               |      | <b>483</b> |
| Parking Provided:             |                               |         |                               |                               |                               |      | 481        |
| On-Site:                      |                               |         |                               |                               |                               |      | 28         |
| <b>Total Parking Provided</b> |                               |         |                               |                               |                               |      | <b>483</b> |

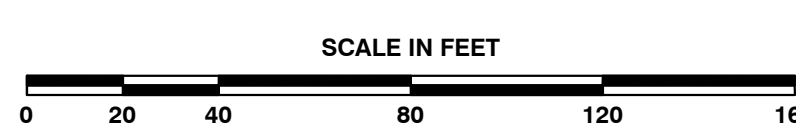
**OVERALL SITE DATA**

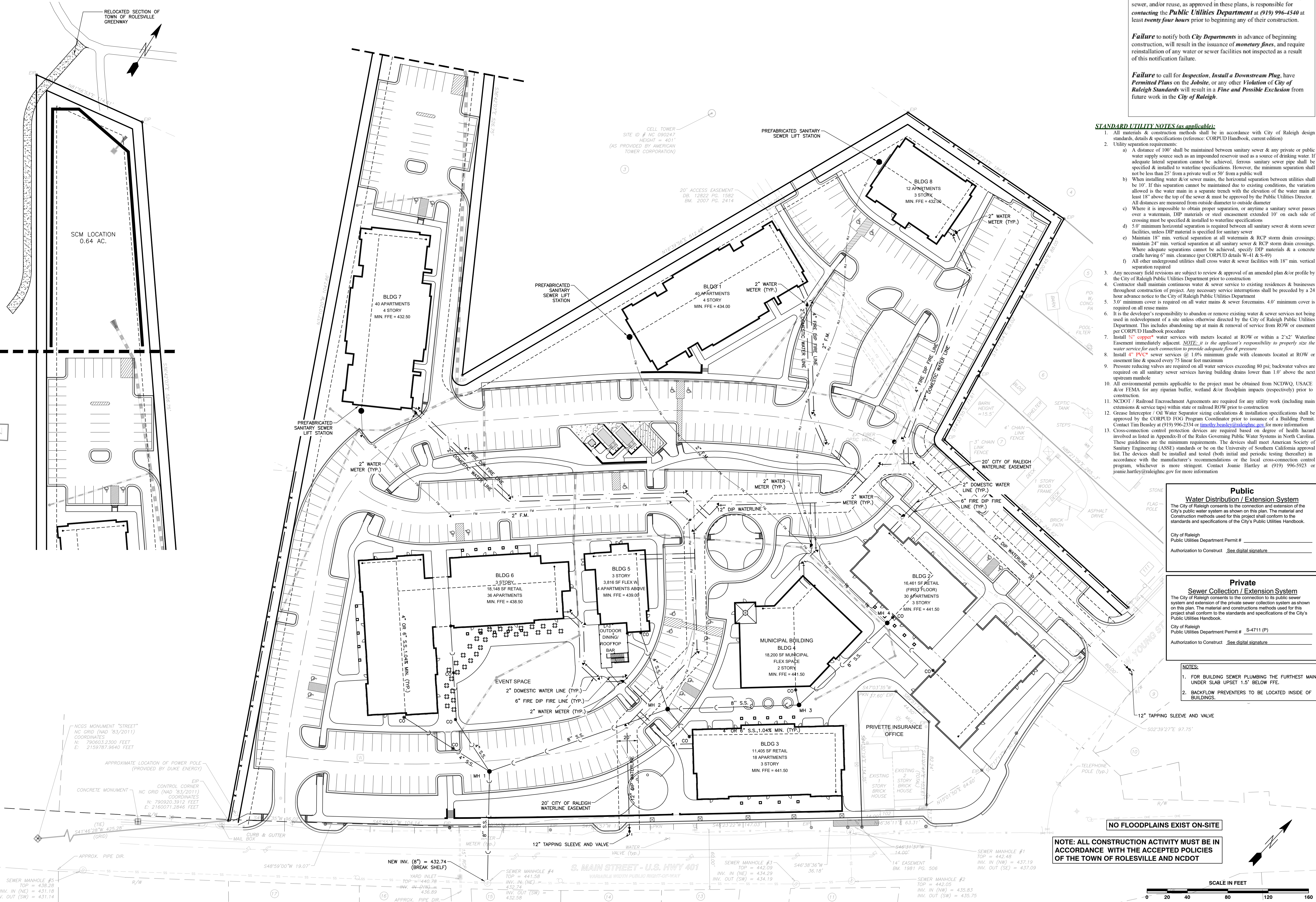
|  |  |
|--|--|
| SITE AREA  | 10.96 AC (477,418 SF±)   |
| P.I.N.   | 1769-01-0454, 1769-01-4357, 1769-01-3355<br>1769-01-3468, 1769-01-2542, 1769-01-3520<br>1769-01-4654, 1769-01-5454, 1769-01-5408, 1769-01-4576 |
| ZONING DISTRICT:   | TOWN CENTER (TC)<br>RESIDENTIAL, MIXED USE   |
| OPEN SPACE AREA:   | 3.48 AC  |
| IMPERVIOUS AREA:   | 7.48 AC  |
| IMPERVIOUS AREA (%):   | 68%  |
| APARTMENT MIX  | 112 UNITS<br>4 UNITS<br>64 UNITS<br>180 UNITS  |
| RESIDENTIAL DENSITY:   | 16.4 UNITS/ACRE  |
| RETAIL/COMMERCIAL:   | 49,830 SQUARE FEET   |
| MUNICIPAL FLEX SPACE:  | 18,200 SQUARE FEET   |
| TOTAL:   | 68,030 SQUARE FEET   |
| EVENT SPACE:   | 0.44 ACRES/ 18,976 SQUARE FEET   |
| PARKING REQUIREMENTS PER TC DISTRICT DEVELOPMENT STANDARDS                           | 180 x 2 = 360 SPACES REQUIRED  |
| MIXED USE RESIDENTIAL:   | 2.0 SPACES PER UNIT  |
| MIXED USE NON-RESIDENTIAL:   | 3 SPACES PER 1000 GSF  |
| TOTAL PARKING REQUIRED/PROVIDED:   | 68,030/1000 x 3 = 205 SPACES REQUIRED<br>565 SPACES REQUIRED/ 483 PROVIDED   |
| 5% OF ON STREET PARKING MAY BE COUNTED AS REQUIRED PARKING (28 ALLOWED/ 26 PROVIDED) |  |
| 15% PARKING REDUCTION ALLOWED FOR SHARED PARKING:                                    | 565 x .85 = 481 REQUIRED   |



**NO FLOODPLAINS EXIST ON-SITE**

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





**ATTENTION CONTRACTORS**  
 The Construction Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the Public Utilities Department at (919) 996-4540 at least twenty four hours prior to beginning any of their construction.  
**Failure** to notify both City Departments in advance of beginning construction, will result in the issuance of monetary fines, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.  
**Failure** to call for Inspection, Install a Downstream Plug, have Permitted Plans on the Jobsite, or any other Violation of City of Raleigh Standards will result in a Fine and Possible Exclusion from future work in the City of Raleigh.

- STANDARD UTILITY NOTES (as applicable):**
- All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference: CORPUD Handbook, current edition)
  - Utility separation requirements:
    - A distance of 100' shall be maintained between sanitary sewer & any private or public water supply source such as an impounded reservoir used as a source of drinking water. If adequate lateral separation cannot be achieved, ferrous sanitary sewer pipe shall be specified & installed to watertight specifications. However, the minimum separation shall not be less than 25' from a private well or 50' from a public well
    - When installing water &/or sewer mains, the horizontal separation between utilities shall be 10'. If this separation cannot be maintained due to existing conditions, the variation allowed is the water main in a separate trench with the elevation of the water main at least 18" above the top of the sewer & must be approved by the Public Utilities Director. All distances are measured from outside diameter to outside diameter
    - Where it is impossible to obtain proper separation, or anytime a sanitary sewer passes over a watermain, DIP materials or steel encasement extended 10' on each side of crossing must be specified & installed to watertight specifications
    - 5.0' minimum horizontal separation is required between all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer
    - Maintain 18" min. vertical separation at all sanitary sewer & RCP storm drain crossings; maintain 24" min. vertical separation at all sanitary sewer & RCP storm drain crossings. Where adequate separations cannot be achieved, specify DIP materials & a concrete cradle having 6" min. clearance (per CORPUD details W-41 & S-49)
    - All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required
  - Any necessary field revisions are subject to review & approval of an amended plan &/or profile by the City of Raleigh Public Utilities Department prior to construction
  - Contractor shall maintain continuous water & sewer service to existing residences & businesses throughout construction of project. Any necessary service interruptions shall be preceded by a 24 hour advance notice to the City of Raleigh Public Utilities Department
  - 3.0' minimum cover is required on all water mains & sewer force mains. 4.0' minimum cover is required on all reuse mains
  - It is the developer's responsibility to abandon or remove existing water & sewer services not being used in redevelopment of a site unless otherwise directed by the City of Raleigh Public Utilities Department. This includes abandoning tap at main & removal of service from ROW or easement per CORPUD Handbook procedure
  - Install 3/4" copper water services with meters located at ROW or within a 2'x2' Watertight Easement immediately adjacent. *NOTE: It is the applicant's responsibility to properly size the water service for each connection to provide adequate flow & pressure*
  - Install 4" PVC sewer services @ 1.0% minimum grade with cleanouts located at ROW or easement line & spaced every 75 linear feet maximum
  - Pressure reducing valves are required on all water services exceeding 80 psi; backwater valves are required on all sanitary sewer services having building drains lower than 1.0' above the next upstream manhole
  - All environmental permits applicable to the project must be obtained from NCDWQ, USACE &/or FEMA for any riparian buffer, wetland &/or floodplain impacts (respectively) prior to construction.
  - NCDOT / Railroad Encroachment Agreements are required for any utility work (including main extensions & service taps) within state or railroad ROW prior to construction
  - Grease Interceptor / Oil Water Separator sizing calculations & installation specifications shall be approved by the COWID IOK Program Coordinator prior to issuance of a Building Permit. Contact Tim Beasley at (919) 996-2334 or [timothy.beasley@raleighnc.gov](mailto:timothy.beasley@raleighnc.gov) for more information
  - Cross-connection control protection devices are required based on degree of health hazard involved as listed in Appendix-B of the Rules Governing Public Water Systems in North Carolina. These guidelines are the minimum requirements. The devices shall meet American Society of Sanitary Engineering (ASSE) standards or be on the University of Southern California approval list. The devices shall be installed and tested (both initial and periodic testing thereafter) in accordance with the manufacturer's recommendations or the local cross-connection control program, whichever is more stringent. Contact Joanie Hartley at (919) 996-5923 or [joanie.hartley@raleighnc.gov](mailto:joanie.hartley@raleighnc.gov) for more information

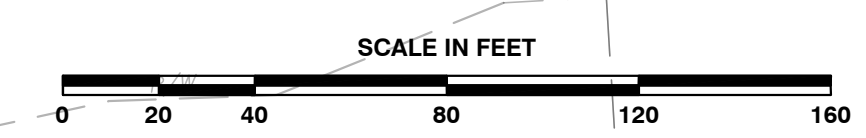
**Public Water Distribution / Extension System**  
 The City of Raleigh consents to the connection and extension of the City's public water system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.  
 City of Raleigh  
 Public Utilities Department Permit # \_\_\_\_\_  
 Authorization to Construct *See digital signature*

**Private Sewer Collection / Extension System**  
 The City of Raleigh consents to the connection to its public sewer system and extension of the private sewer collection system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.  
 City of Raleigh  
 Public Utilities Department Permit # S-4711 (P)  
 Authorization to Construct *See digital signature*

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

**NO FLOODPLAINS EXIST ON-SITE**

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



BNK

BASS, NIXON & KENNEDY, INC.

CONSULTING ENGINEERS

6310 CHAPEL HILL ROAD, SUITE 950, RALEIGH, NC 27607

TELEPHONE: (919) 981-4122 FAX: (919) 981-8686

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

| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |

03-19187

PROGRESS

MRN

DRAWN BY

JOB NO.

DATE

UTILITY PLAN

NO. DATE

SCALE: 1" = 40'

CHK BY: MBB

COBBLESTONE VILLAGE

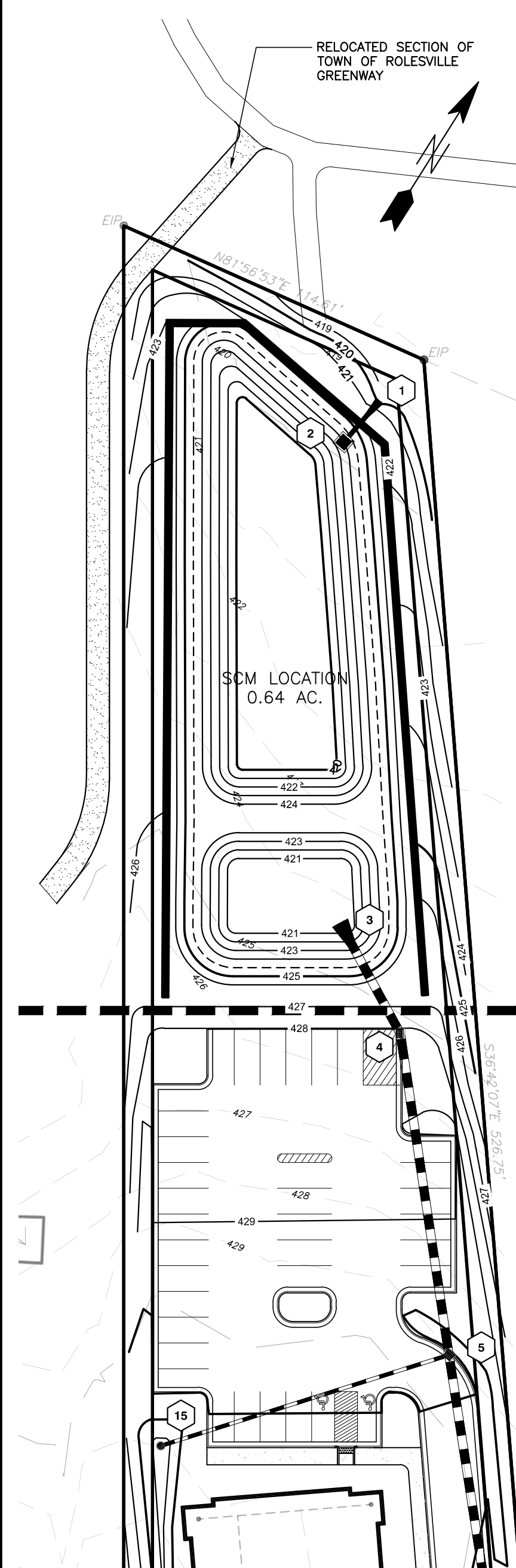
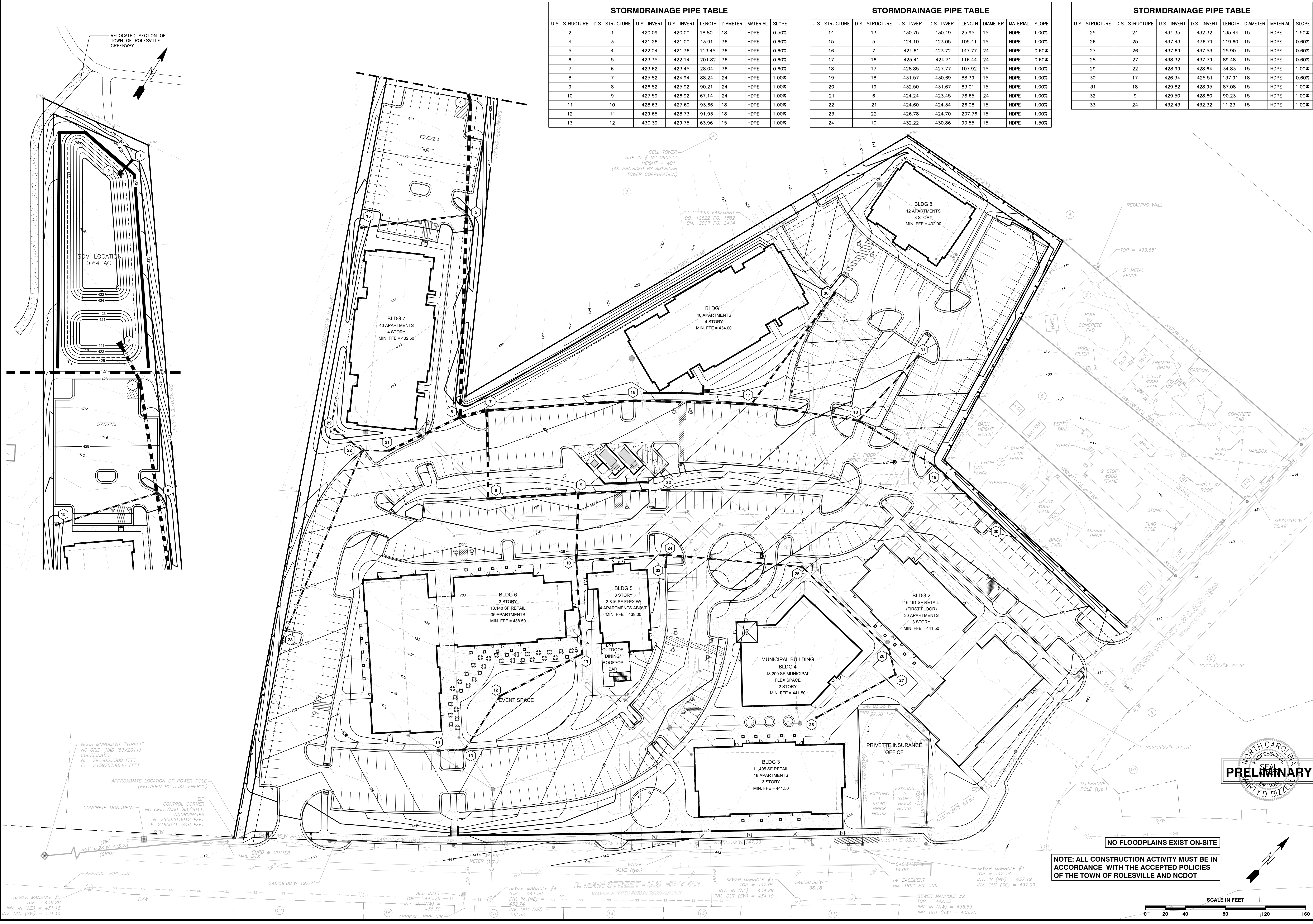
MIXED USE DEVELOPMENT

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

SHEET C2.1

TOWN OF ROLESVILLE PROJECT NO.



| STORMDRAINAGE PIPE TABLE |                |             |             |        |          |          |       |
|--------------------------|----------------|-------------|-------------|--------|----------|----------|-------|
| U.S. STRUCTURE           | D.S. STRUCTURE | U.S. INVERT | D.S. INVERT | LENGTH | DIAMETER | MATERIAL | SLOPE |
| 2                        | 1              | 420.09      | 420.00      | 18.80  | 18       | HDPE     | 0.50% |
| 4                        | 3              | 421.26      | 421.00      | 43.91  | 36       | HDPE     | 0.60% |
| 5                        | 4              | 422.04      | 421.36      | 113.45 | 36       | HDPE     | 0.60% |
| 6                        | 5              | 423.35      | 422.14      | 201.82 | 36       | HDPE     | 0.60% |
| 7                        | 6              | 423.62      | 423.45      | 28.04  | 36       | HDPE     | 0.60% |
| 8                        | 7              | 425.82      | 424.94      | 88.24  | 24       | HDPE     | 1.00% |
| 9                        | 8              | 426.82      | 425.92      | 90.21  | 24       | HDPE     | 1.00% |
| 10                       | 9              | 427.59      | 426.92      | 67.14  | 24       | HDPE     | 1.00% |
| 11                       | 10             | 428.63      | 427.69      | 93.66  | 18       | HDPE     | 1.00% |
| 12                       | 11             | 429.65      | 428.73      | 91.93  | 18       | HDPE     | 1.00% |
| 13                       | 12             | 430.39      | 429.75      | 63.96  | 15       | HDPE     | 1.00% |

| STORMDRAINAGE PIPE TABLE |                |             |             |        |          |          |       |
|--------------------------|----------------|-------------|-------------|--------|----------|----------|-------|
| U.S. STRUCTURE           | D.S. STRUCTURE | U.S. INVERT | D.S. INVERT | LENGTH | DIAMETER | MATERIAL | SLOPE |
| 14                       | 13             | 430.75      | 430.49      | 25.95  | 15       | HDPE     | 1.00% |
| 15                       | 5              | 424.10      | 423.05      | 105.41 | 15       | HDPE     | 1.00% |
| 16                       | 7              | 424.61      | 423.72      | 147.77 | 24       | HDPE     | 0.60% |
| 17                       | 16             | 425.41      | 424.71      | 116.44 | 24       | HDPE     | 0.60% |
| 18                       | 17             | 428.85      | 427.77      | 107.92 | 15       | HDPE     | 1.00% |
| 19                       | 18             | 431.57      | 430.69      | 88.39  | 15       | HDPE     | 1.00% |
| 20                       | 19             | 432.50      | 431.67      | 83.01  | 15       | HDPE     | 1.00% |
| 21                       | 6              | 424.24      | 424.45      | 78.65  | 24       | HDPE     | 1.00% |
| 22                       | 21             | 424.60      | 424.34      | 26.08  | 15       | HDPE     | 1.00% |
| 23                       | 22             | 426.78      | 424.70      | 207.76 | 15       | HDPE     | 1.00% |
| 24                       | 10             | 432.22      | 430.86      | 90.55  | 15       | HDPE     | 1.50% |

| STORMDRAINAGE PIPE TABLE |                |             |             |        |          |          |       |
|--------------------------|----------------|-------------|-------------|--------|----------|----------|-------|
| U.S. STRUCTURE           | D.S. STRUCTURE | U.S. INVERT | D.S. INVERT | LENGTH | DIAMETER | MATERIAL | SLOPE |
| 25                       | 24             | 434.35      | 432.32      | 135.44 | 15       | HDPE     | 1.50% |
| 26                       | 25             | 437.43      | 436.71      | 119.60 | 15       | HDPE     | 0.60% |
| 27                       | 26             | 437.69      | 437.53      | 25.90  | 15       | HDPE     | 0.60% |
| 28                       | 27             | 438.32      | 437.79      | 89.48  | 15       | HDPE     | 0.60% |
| 29                       | 22             | 428.99      | 428.64      | 34.83  | 15       | HDPE     | 1.00% |
| 30                       | 17             | 426.34      | 425.51      | 137.91 | 18       | HDPE     | 0.60% |
| 31                       | 18             | 429.82      | 428.95      | 87.08  | 15       | HDPE     | 1.00% |
| 32                       | 9              | 429.50      | 428.60      | 90.23  | 15       | HDPE     | 1.00% |
| 33                       | 24             | 432.43      | 432.32      | 11.23  | 15       | HDPE     | 1.00% |

**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**  
 6310 CHAPEL HILL ROAD, SUITE 950, RALEIGH, NC 27607  
 TELEPHONE: (919) 851-4422 FAX: (919) 851-6986  
 CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |

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

PROGRESS MRN 03-19157  
 DATE DRAWN BY  
**GRADING PLAN**  
 SCALE: 1" = 40'  
 CHK BY: MDB

RJ201919157 - Rolesville Town Center CIVIL04 Construction04 - 19157\_Grading.dwg, Grading Plan, 2/28/2021 3:37:56 PM, marc.mueller

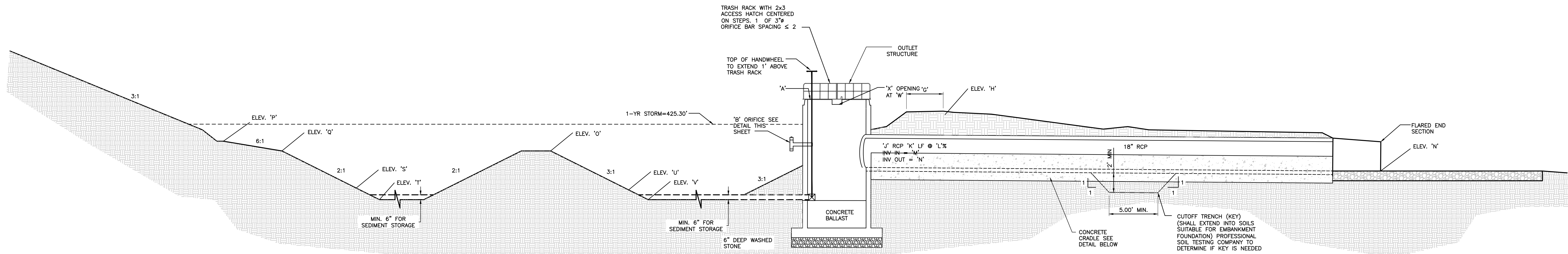


**NO FLOODPLAINS EXIST ON-SITE**

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

SCALE IN FEET  
 0 20 40 80 120 160

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



### CROSS-SECTION OF WET POND A-A

NTS

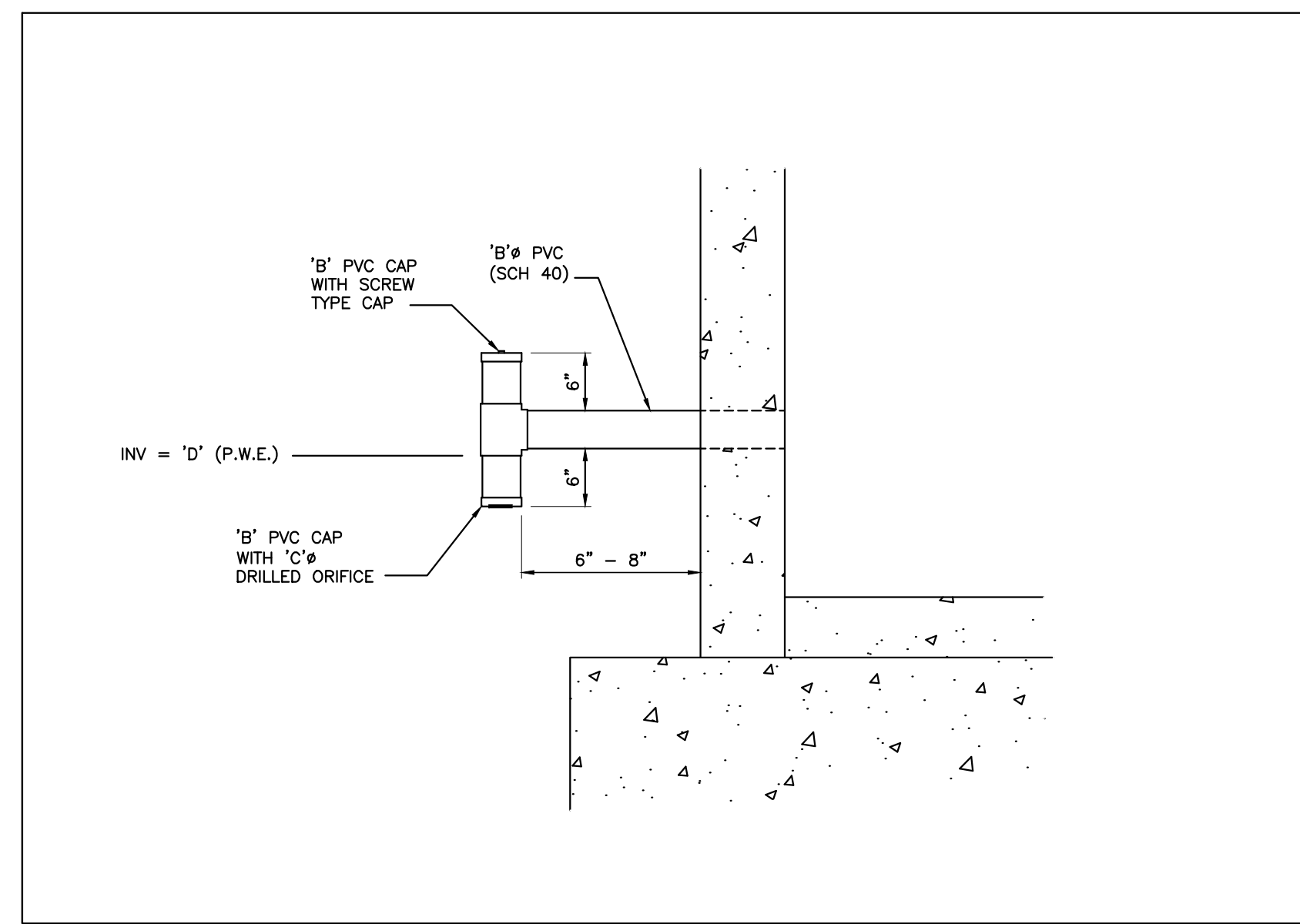
#### BOUANCY CALCULATIONS FOR RISER/BARREL

##### COBBLESTONE VILLAGE

##### WET POND - SCM

|                                     |         |
|-------------------------------------|---------|
| Square Riser Inside Length (ft):    | 4.0     |
| Riser Wall Thickness (in):          | 6       |
| Pond Bottom Elevation (ft):         | 420.00  |
| Riser Crest Elevation (ft):         | 426.50  |
| Density of Riser Mat (lb/cf):       | 150.00  |
| Pipe Inside Diameter (in):          | 24      |
| Pipe Wall Thickness (in):           | 3       |
| Length of Pipe Exposed (ft):        | 1.00    |
| Density H2O (lb/cf):                | 62.40   |
| Volume H2O Displaced by Riser (cf): | 131.63  |
| Weight H2O Displaced by Riser (lb): | 8213.40 |
| Volume H2O Displaced by Pipe (cf):  | 4.91    |
| Weight H2O Displaced by Pipe (lb):  | 306.31  |
| Total Uplift Force (lb):            | 8519.71 |
| Weight of Riser (lb):               | 4,144   |
| Weight of Pipe (lb):                | 285.07  |
| Pipe/Riser Downward Force (lb):     | 4408.82 |

|                                  |        |
|----------------------------------|--------|
| Ballast Concrete:                |        |
| Minimum Factor of Safety:        | 1.2    |
| Required ballast thickness (in): | 37.02  |
| Provided Ballast Thickness (in): | 40     |
| Total Downward Force (lb):       | 10,692 |
| Provided Factor of Safety:       | 1.25   |



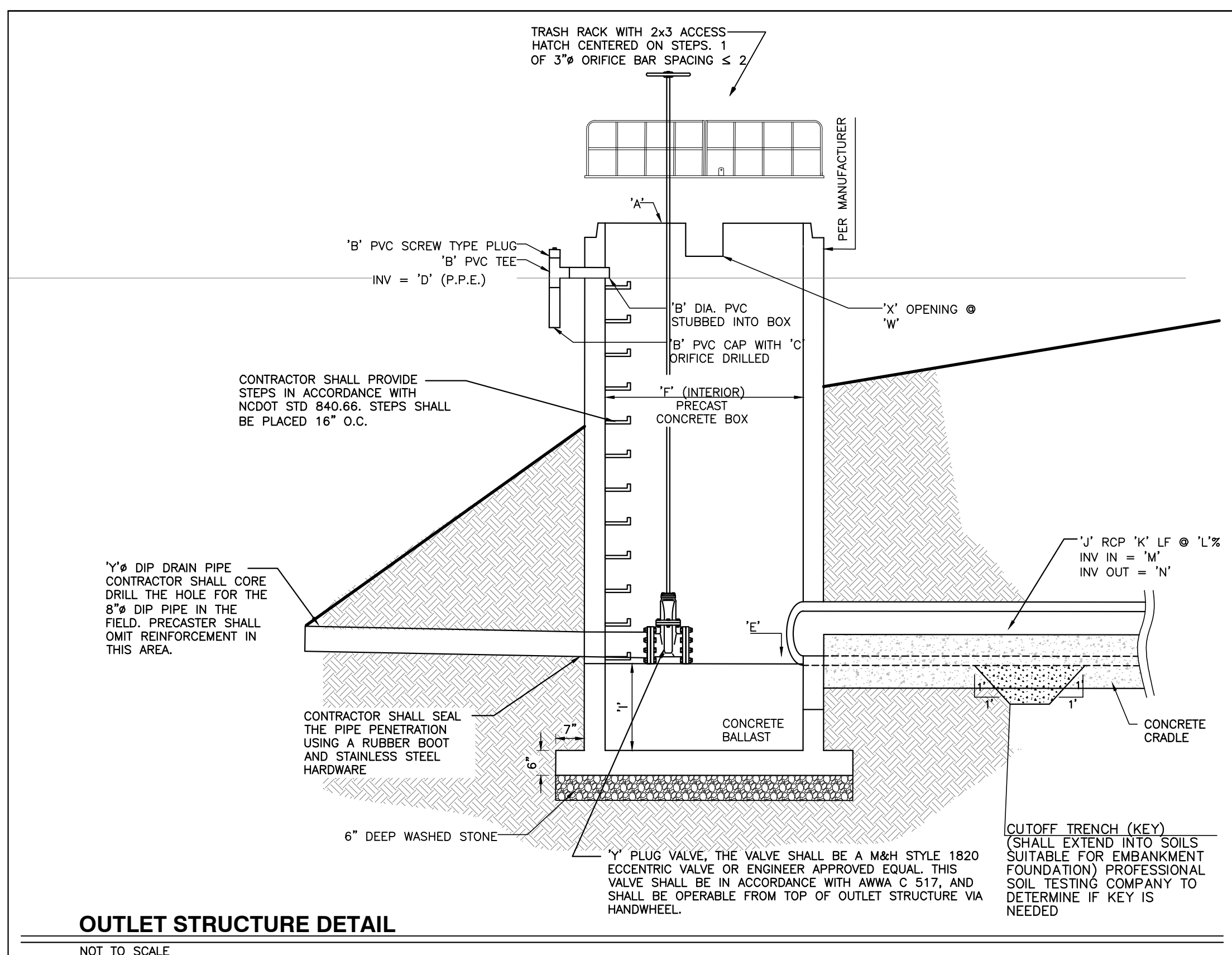
#### INVERTED INTAKE DETAIL (RISER)

NTS

#### POND LEGEND - SCM

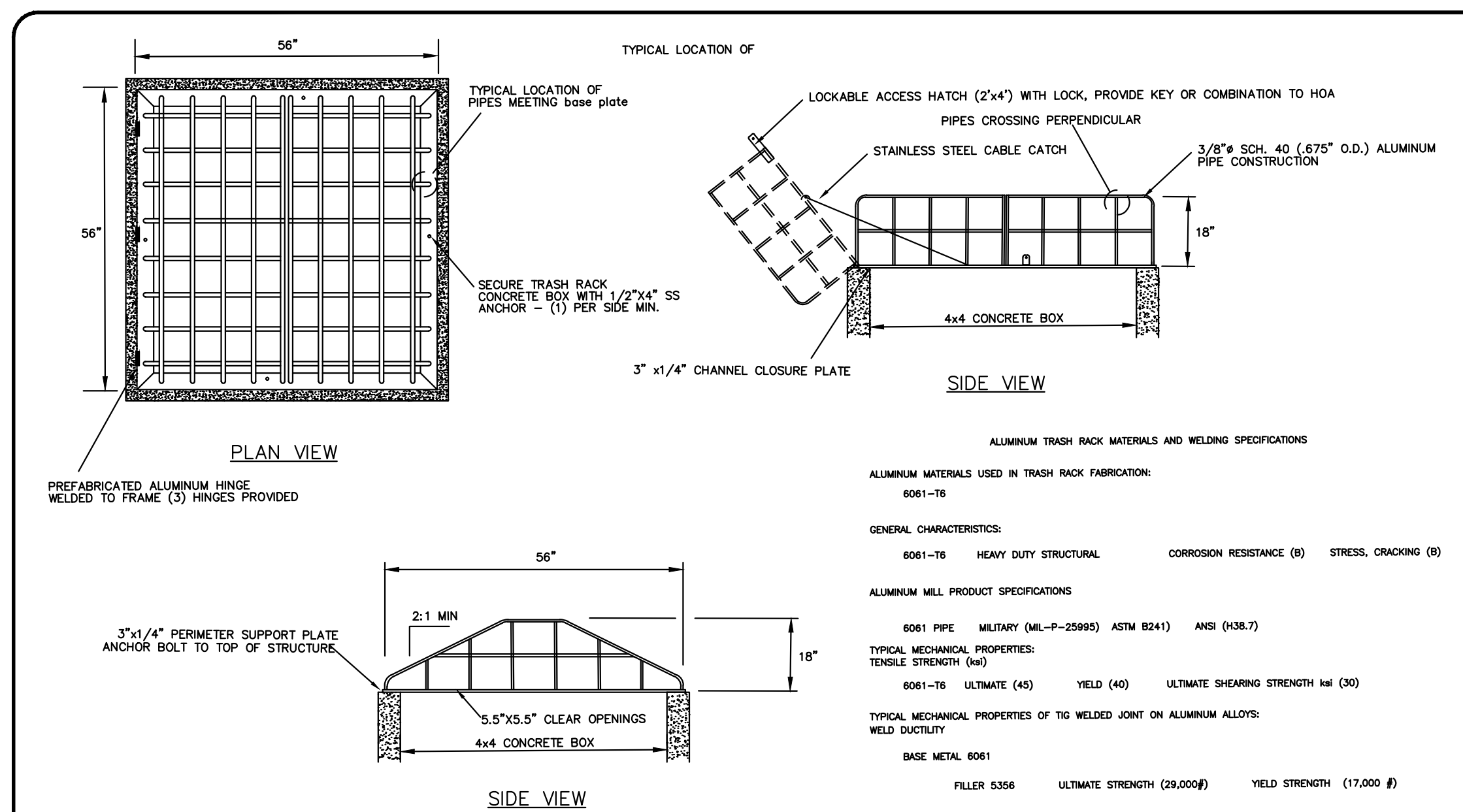
| Description                                  | Design    | As-Built |
|--|-----------|----------|
| A Top of Riser                               | 426.50 ft |          |
| B Diameter of PVC Drawdown Pipe              | 4 in      |          |
| C Drawdown Orifice Opening                   | 2.5 in    |          |
| D Drawdown Pipe Elevation / Permanent Pool   | 424.50 ft |          |
| E Inside Bottom Riser Elevation              | 420.00 ft |          |
| F Outlet Structure Size                      | 4ft x 4ft |          |
| G Top of Berm Width                          | 10 ft     |          |
| H Top of Dam                                 | 428.00 ft |          |
| I Ballast Thickness                          | 40 in     |          |
| J Size of Outlet Pipe                        | 24 in     |          |
| K Length of Outlet Pipe                      | 18 ft     |          |
| L Slope of Outlet Pipe                       | 2.78 %    |          |
| M Invert in Outlet Pipe                      | 420.00 ft |          |
| N Invert Out Outlet Pipe                     | 419.80 ft |          |
| O Top Elevation Forebay Berm                 | 424.00 ft |          |
| P Elevation Top of Littoral Shelf            | 425.00 ft |          |
| Q Elevation Bottom of Littoral Shelf         | 424.00 ft |          |
| R Slope of Littoral Shelf                    | 6:1       |          |
| S Sediment Cleanout Elevation Forbay         | 422.00 ft |          |
| T Bottom Elevation Forebay                   | 421.00 ft |          |
| U Sediment Cleanout Elevation Permanent Pool | 421.00 ft |          |
| V Bottom Elevation Permanent Pool            | 420.00 ft |          |
| W Elevation Secondary Weir                   | 426.20 ft |          |
| X Width Secondary Weir                       | 12 in     |          |

**Special Instructions**  
 Place Drawdown pipe opposite of outlet pipe and ensure a minimum of 12" clearance between drawdown pipe opening and ground elevation to allow for proper drainage. Place secondary weir above drawdown pipe on same side of outlet structure.



#### OUTLET STRUCTURE DETAIL

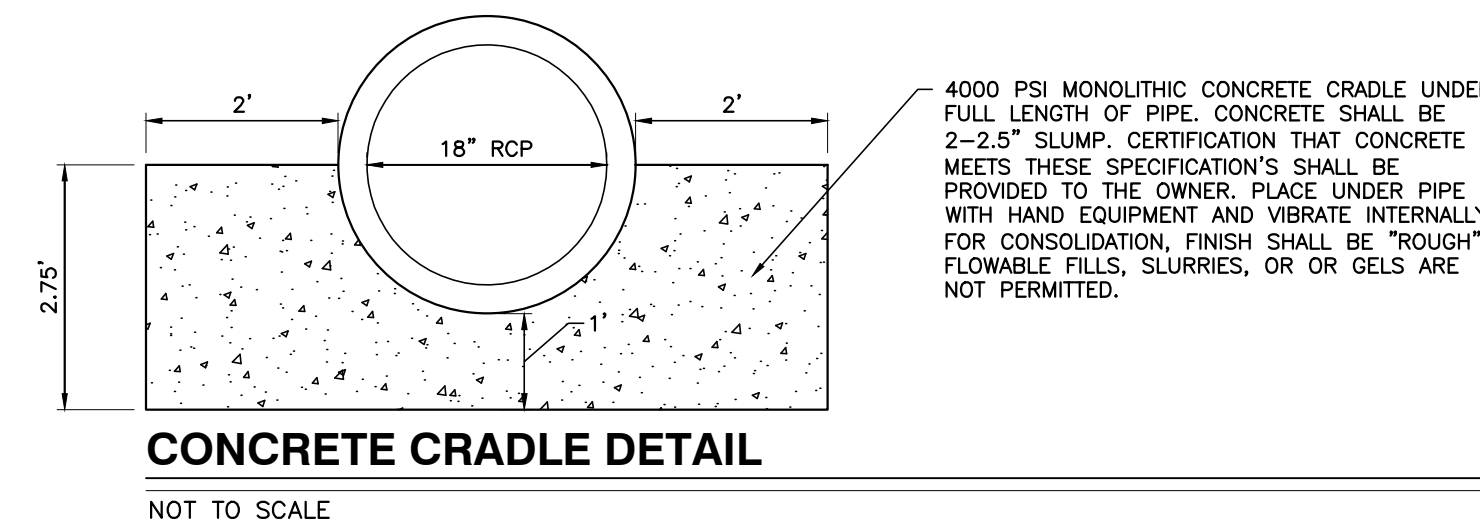
NOT TO SCALE



#### TRASH RACK SUBMITTAL - Aluminum Trashrack for 4x4 Box

#### TRASH RACK DETAIL

NTS



#### CONCRETE CRADLE DETAIL

NOT TO SCALE



NO FLOODPLAINS EXIST ON-SITE

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

| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
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### CONSTRUCTION SEQUENCE - STAGE 1

- ONCE THE EROSION AND SEDIMENT CONTROL PLAN APPROVAL AND NCGO1 CERTIFICATE OF COVERAGE ARE OBTAINED, SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT, OBTAIN A LAND-DISTURBANCE PERMIT.
- INSTALL GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, SILT FENCE, SKIMMER BASINS AND OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
- CALL ENVIRONMENTAL CONSULTANT FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT TO OBTAIN A CERTIFICATE OF COMPLIANCE.
- BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE.
- STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDEED AREAS PER GROUND STABILIZATION TIME FRAMES.
- STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, ALLEY PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDEED AREAS PER GROUND STABILIZATION TIME FRAMES.
- CALL ENVIRONMENTAL CONSULTANT FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT PRIOR TO THE REMOVAL OF SKIMMER SEDIMENT BASIN #1.
- CONTINUE TO SOIL EROSION PLAN STAGE 2 ONCE SKIMMER BASIN #1 HAS BEEN REMOVED.

NOTE: WAKE COUNTY MUST GRANT PERMISSION TO CONVERT THE SEDIMENT BASIN OVER TO THE STORMWATER USE PRIOR TO COMPLETING ANY RELATED WORK.  
TOTAL DISTURBED AREA = 11.0 AC

### REQUIRED WAKE COUNTY BASIN REMOVAL AND/OR CONVERSION SEQUENCE

- SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED OR CONVERTED TO A PERMANENT STORMWATER POND, INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
- UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SEDIMENT BASIN SURFACE FOR DRAW DOWN OF WATER IN BASIN FOR MAINTENANCE OR CLOSE OUT UNLESS INFEASIBLE. SEE REQUIREMENTS OF NCGO1 PERMIT PART I, SECTION C, ITEM (4) ENTITLED "DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT" AND REFER TO WAKE COUNTY "FILTER BAG FOR DEWATERING ACTIVITIES" CONSTRUCTION DETAIL.
- REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES, IF CULVERT PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
- PERFORM SEEDBED PREPARATION, SEED, MULCH AND ASPHALT TACK ANY RESULTING BARE AREAS IMMEDIATELY.
- INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
- WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVISE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION. NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.

### SEDIMENT BASIN SUMMARY CHART

| Sediment Basin Number      | 1                      | 2                       |
|----------------------------|------------------------|-------------------------|
| Drainage Area (Acres)      | 1.74                   | 6.99                    |
| Q10 (cfs)                  | (0.5)(7.22)(1.74)=6.28 | (0.5)(7.22)(6.99)=25.23 |
| Weir Size (ft)             | 10 x 1.5               | 10 x 1.5                |
| Surface Area Required (SF) | (435)(6.28)=2,732      | (435)(25.23)=10,975     |
| Volume Required (CF)       | (1800)(1.74)=3,132     | (1800)(6.99)=12,582     |
| Dimensions (ft)            | see plans              | see plans               |
| Surface Area Provided (SF) | 2,800                  | 11,000                  |
| Volume Provided (CF)       | 5,646                  | 27,500                  |
| Skimmer Size               | 4"                     | 4"                      |
| Orifice Radius             | 0.4"                   | 0.75"                   |
| Orifice Diameter           | 0.75"                  | 1.5"                    |
| Drawdown Time (Days)       | 4.18                   | 4.2                     |
| Number of Baffles          | 3                      | 3                       |

| Structure | d <sub>50</sub> (ft) | Velocity (fps) | Length (ft) | Width (ft) | Depth (ft) | Type      | d <sub>50</sub> |
|-----------|----------------------|----------------|-------------|------------|------------|-----------|-----------------|
| FES 1     | 2.00                 | 12.0           | 12          | 6          | 22         | Class 'B' | 6"-13"          |
| FES 3     | 3.00                 | 7.3            | 18          | 9          | 22         | Class 'B' | 6"-13"          |
| DITCH 1*  | 1.25                 | 5.3            | 5           | 4          | 9          | Class 'A' | 3"-6"           |
| DITCH 2*  | 1.25                 | 5.3            | 5           | 4          | 9          | Class 'A' | 3"-6"           |
| PIPE 3*   | 1.25                 | 5.3            | 5           | 4          | 9          | Class 'A' | 3"-6"           |

\*Per NYDOT Dissipator Schedule Fig. 1  
\*\*TEMPORARY DIVERSION DITCH OUTLET  
\*\*\*TEMPORARY SKIMMER BASIN OUTLET

### DITCH/CHANNEL CALCULATIONS

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

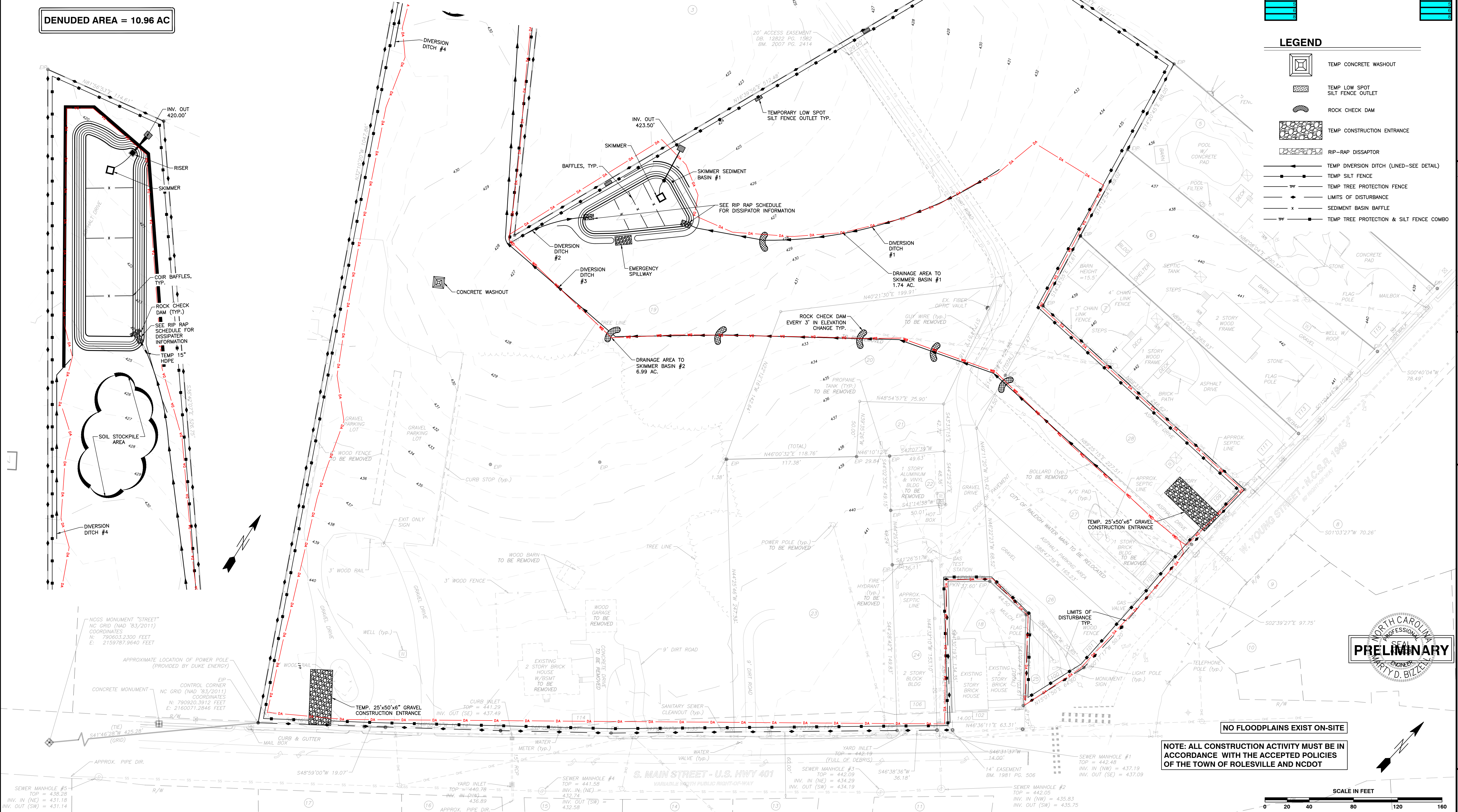
\*NAG = NORTH AMERICAN GREEN OR EQUIVALENT

| Skimmer Basin #1                                 |  | Skimmer Basin #2                                 |  |
|--|--|--|--|
| Okay   |  | Okay   |  |
| 1.02 Drainage Area (Acres)                       | 6.14 Drainage Area (Acres)                       | 1.02 Drainage Area (Acres)                       | 6.14 Drainage Area (Acres)                       |
| 3.68 Peak Flow from 10-year Storm (cfs)          | 22.17 Peak Flow from 10-year Storm (cfs)         | 3.68 Peak Flow from 10-year Storm (cfs)          | 22.17 Peak Flow from 10-year Storm (cfs)         |
| 1838 Required Volume (ft <sup>3</sup> )          | 11052 Required Volume (ft <sup>3</sup> )         | 1838 Required Volume (ft <sup>3</sup> )          | 11052 Required Volume (ft <sup>3</sup> )         |
| 1601 Required Surface Area (ft <sup>2</sup> )    | 9644 Required Surface Area (ft <sup>2</sup> )    | 1601 Required Surface Area (ft <sup>2</sup> )    | 9644 Required Surface Area (ft <sup>2</sup> )    |
| 283 Suggested Width (ft)                         | 684 Suggested Width (ft)                         | 283 Suggested Width (ft)                         | 684 Suggested Width (ft)                         |
| 56.8 Suggested Length (ft)                       | 138.9 Suggested Length (ft)                      | 56.8 Suggested Length (ft)                       | 138.9 Suggested Length (ft)                      |
| 38 Trial Top Width at Spillway Invert (ft)       | 52 Trial Top Width at Spillway Invert (ft)       | 38 Trial Top Width at Spillway Invert (ft)       | 52 Trial Top Width at Spillway Invert (ft)       |
| 46 Trial Top Length at Spillway Invert (ft)      | 186 Trial Top Length at Spillway Invert (ft)     | 46 Trial Top Length at Spillway Invert (ft)      | 186 Trial Top Length at Spillway Invert (ft)     |
| 2 Trial Side Slope Ratio Z:1                     | 2 Trial Side Slope Ratio Z:1                     | 2 Trial Side Slope Ratio Z:1                     | 2 Trial Side Slope Ratio Z:1                     |
| 2.8 Trial Depth (ft) (2 to 3.5 feet above grade) | 2.8 Trial Depth (ft) (2 to 3.5 feet above grade) | 2.8 Trial Depth (ft) (2 to 3.5 feet above grade) | 2.8 Trial Depth (ft) (2 to 3.5 feet above grade) |
| 42 Bottom Width (ft)                             | 40 Bottom Width (ft)                             | 42 Bottom Width (ft)                             | 40 Bottom Width (ft)                             |
| 38 Bottom Length (ft)                            | 174 Bottom Length (ft)                           | 38 Bottom Length (ft)                            | 174 Bottom Length (ft)                           |
| 900 Bottom Area (ft <sup>2</sup> )               | 6900 Bottom Area (ft <sup>2</sup> )              | 900 Bottom Area (ft <sup>2</sup> )               | 6900 Bottom Area (ft <sup>2</sup> )              |
| 3096 Actual Volume (ft <sup>3</sup> )            | 24876 Actual Volume (ft <sup>3</sup> )           | 3096 Actual Volume (ft <sup>3</sup> )            | 24876 Actual Volume (ft <sup>3</sup> )           |
| 1610 Actual Surface Area (ft <sup>2</sup> )      | 9672 Actual Surface Area (ft <sup>2</sup> )      | 1610 Actual Surface Area (ft <sup>2</sup> )      | 9672 Actual Surface Area (ft <sup>2</sup> )      |
| 10 Trial Weir Length (ft)                        | 20 Trial Weir Length (ft)                        | 10 Trial Weir Length (ft)                        | 20 Trial Weir Length (ft)                        |
| 0.18 Suggested Trial Depth of Flow (ft)          | 0.76 Suggested Trial Depth of Flow (ft)          | 0.18 Suggested Trial Depth of Flow (ft)          | 0.76 Suggested Trial Depth of Flow (ft)          |
| 10.8 Spillway Capacity (cfs)                     | 39.0 Spillway Capacity (cfs)                     | 10.8 Spillway Capacity (cfs)                     | 39.0 Spillway Capacity (cfs)                     |
| Skimmer Size (inches)                            | 4 Skimmer Size (inches)                          | Skimmer Size (inches)                            | 4 Skimmer Size (inches)                          |
| 0.167 Head on Skimmer (feet)                     | 0.333 Head on Skimmer (feet)                     | 0.167 Head on Skimmer (feet)                     | 0.333 Head on Skimmer (feet)                     |
| 0.78 Orifice Size (1/4 inch increments)          | 1.5 Orifice Size (1/4 inch increments)           | 0.78 Orifice Size (1/4 inch increments)          | 1.5 Orifice Size (1/4 inch increments)           |
| 3.48 Dewatering Time (days)                      | 3.68 Dewatering Time (days)                      | 3.48 Dewatering Time (days)                      | 3.68 Dewatering Time (days)                      |
| Required 3 to 5 days for Wake County             |  | Required 3 to 5 days for Wake County             |  |

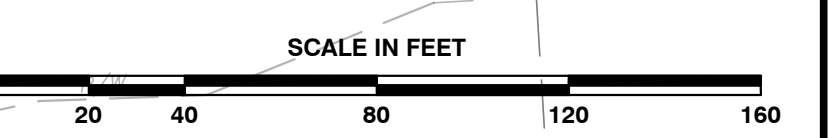
### LEGEND

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

DENUDEED AREA = 10.96 AC



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



**BASS, NIXON & KENNEDY, INC.**  
CONSULTING ENGINEERS  
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
TELEPHONE: (919)881-4422 FAX: (919)881-8686  
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

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

NO FLOODPLAINS EXIST ON-SITE

NO RELEASED FOR CONSTRUCTION OR BID SOLICITATION

PROGRESS DATE: 03-19-17  
JOB NO.: 19157  
DRAWN BY: MRM  
CHECKED BY: MDB  
SCALE: 1" = 40'

EROSION CONTROL PLAN - STAGE 1

NO. DATE DESCRIPTION REVISIONS

SHEET C3.3

TOWN OF ROLESVILLE PROJECT NO.

### CONSTRUCTION SEQUENCE - STAGE 2

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

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

TOTAL DISTURBED AREA = 10.96 AC

ENVIRONMENTAL CONSULTANT: ALAN ALCOCK (919-868-2560)

### REQUIRED WAKE COUNTY BASIN REMOVAL AND/OR CONVERSION SEQUENCE

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

### Skimmer Basin #2

| Item  | Value  | Status |
|-------|--|--------|
| 6.99  | Drainage Area (Acres)                        | Okay   |
| 25.23 | Peak Flow from 10-year Storm (cfs)           | Okay   |
| 12862 | Required Volume (ft <sup>3</sup> )           | Okay   |
| 10075 | Required Surface Area (ft <sup>2</sup> )     | Okay   |
| 74.1  | Suggested Width (ft)                         | Okay   |
| 148.2 | Suggested Length (ft)                        | Okay   |
| 58    | Trial Top Width at Spillway Invert (ft)      | Okay   |
| 190   | Trial Top Length at Spillway Invert (ft)     | Okay   |
| 3     | Trial Side Slope Ratio (2:1)                 | Okay   |
| 3     | Trial Depth (ft) (2 to 3.5 feet above grade) | Okay   |
| 46    | Bottom Width (ft)                            | Okay   |
| 178   | Bottom Length (ft)                           | Okay   |
| 8188  | Bottom Area (ft <sup>2</sup> )               | Okay   |
| 28740 | Actual Volume (ft <sup>3</sup> )             | Okay   |
| 11020 | Actual Surface Area (ft <sup>2</sup> )       | Okay   |
| 20    | Trial Weir Length (ft)                       | Okay   |
| 0.75  | Suggested Trial Depth of Flow (ft)           | Okay   |
| 39.9  | Spillway Capacity (cfs)                      | Okay   |
| 4     | Skimmer Size (inches)                        | Okay   |
| 0.333 | Head on Skimmer (feet)                       | Okay   |
| 156   | Orifice Size (1/4 inch increments)           | Okay   |
| 4.20  | Dewatering Time (days)                       | Okay   |
|       | Required 3 to 5 days for Wake County         | Okay   |

### SEDIMENT BASIN SUMMARY CHART

| Sediment Basin Number      | 1                      | 2                       |
|----------------------------|------------------------|-------------------------|
| Drainage Area (acres)      | 1.74                   | 6.99                    |
| Q10(cfs)                   | (0.5)(7.22)(1.74)=6.28 | (0.5)(7.22)(6.99)=25.23 |
| Weir Size (ft)             | 10 x 1.5               | 10 x 1.5                |
| Surface Area Required (SF) | (435)(6.28)=2,732      | (435)(25.23)=10,975     |
| Volume Required (CF)       | (1800)(1.74)=3,132     | (1800)(6.99)=12,582     |
| Dimensions (ft)            | see plans              | see plans               |
| Surface Area Provided (SF) | 2,800                  | 11,000                  |
| Volume Provided (CF)       | 5,646                  | 27,800                  |
| Skimmer Size               | 4"                     | 6"                      |
| Orifice Radius             | 0.4"                   | 0.75"                   |
| Orifice Diameter           | 0.75"                  | 1.5"                    |
| Number of Baffles          | 3                      | 3                       |

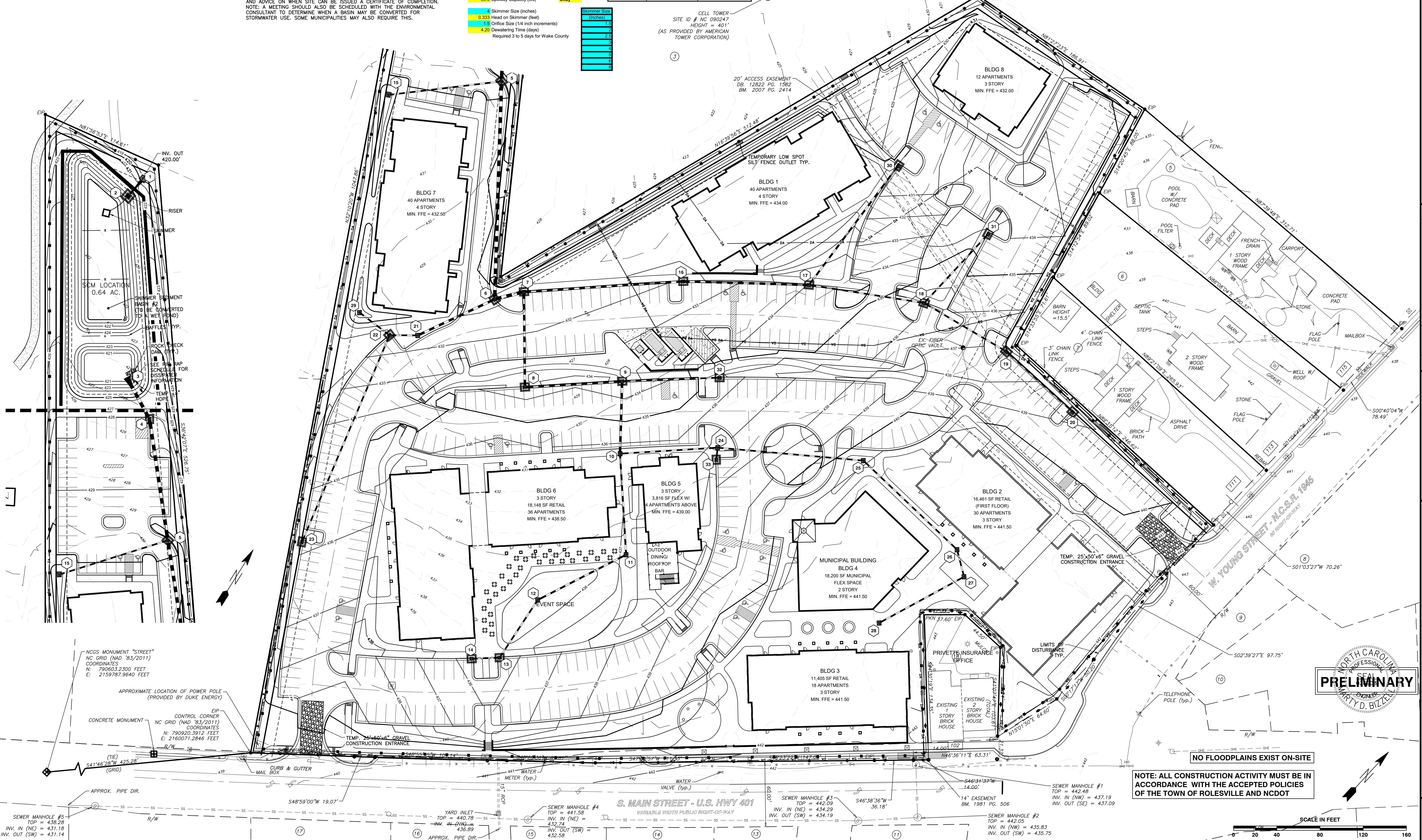
### DITCH/CHANNEL CALCULATIONS

| DIVERSION DITCH ID | LENGTH (LF) | DA (Ac) | Q10 (CFS) | SLOPE (%) | V10 (FPS) | LINER * (PSF) | PERMISSIBLE SHEAR STRESS (PSF) | CALCULATED SHEAR STRESS (PSF) |
|--------------------|-------------|---------|-----------|-----------|-----------|---------------|--------------------------------|-------------------------------|
| DV-1               | 296         | 1.02    | 2.34      | 2.00      | 2.01      | SC150         | 2.00                           | 0.78                          |
| DV-2               | 495         | 1.00    | 2.30      | 2.60      | 2.29      | SC150         | 2.00                           | 0.94                          |
| DV-3               | 442         | 0.52    | 1.19      | 1.80      | 0.92      | SC150         | 1.80                           | 0.29                          |
| DV-4               | 167         | 0.06    | 0.13      | 2.90      | 0.96      | SC150         | 1.80                           | 0.38                          |

\* NAG = NORTH AMERICAN GREEN OR EQUIVALENT

### LEGEND

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



**BASS, NIXON & KENNEDY, INC.**  
CONSULTING ENGINEERS  
6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
TELEPHONE: (919)861-4122 FAX: (919)861-6868  
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

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

PROGRESS MRN 03-19157  
DATE DRAWN BY  
JOB NO. DATE DRAWN BY

EROSION CONTROL PLAN - STAGE 2

SCALE: 1" = 40'

CHK BY: MDB

NO. DATE DESCRIPTION REVISIONS

SHEET C3.4

TOWN OF ROLESVILLE PROJECT NO.

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

R:\2019\19157 - Rolesville Town Center\CIVIL\04\_Construction\06 - 19157\_Erosion Control\Phase 2\_2.26.2021\_3.30.43 PM.marc.mueller





Table with columns: NO., DATE, DESCRIPTION, REVISIONS, BY

Table with columns: JOB NO., DRAWN BY, CHECK BY, SCALE, NTS.

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

SHEET C3.6

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

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).

Table: Temporary and Permanent Groundcover\* with columns: SITE AREA DESCRIPTION, STABILIZATION, TIMEFRAME EXCEPTIONS

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

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

Table comparing Temporary Stabilization and Permanent Stabilization techniques.

- POLYACRYLAMIDES (PAMS) AND FLOCCULANTS 1. Select flocculants that are appropriate for the soils being exposed during construction...



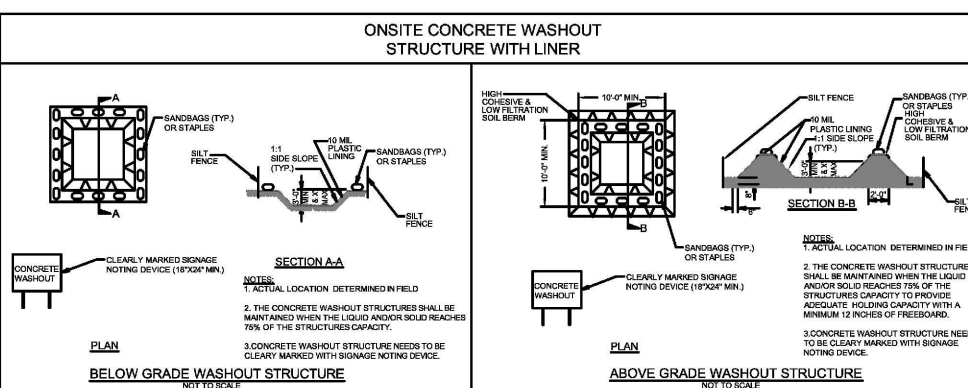
- EQUIPMENT AND VEHICLE MAINTENANCE 1. Maintain vehicles and equipment to prevent discharge of fluids. 2. Provide drip pans under any stored equipment.

- LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE 1. Never bury or burn waste. Place litter and debris in approved waste containers.

- PAINT AND OTHER LIQUID WASTE 1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.

- PORTABLE TOILETS 1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available.

- EARTHEN STOCKPILE MANAGEMENT 1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.



- CONCRETE WASHOUTS 1. Do not discharge concrete or cement slurry from the site. 2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.

- HERBICIDES, PESTICIDES AND RODENTICIDES 1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.

- HAZARDOUS AND TOXIC WASTE 1. Create designated hazardous waste collection areas on-site.

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

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.

Table with columns: Inspect, Frequency (during normal business hours), Inspection records must include [40 CFR 122.41]

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



PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING 1. E&SC Plan Documentation The approved E&SC plan as well as any approved deviation shall be kept on the site.

Table with columns: Item to Document, Documentation Requirements

- 2. Additional Documentation In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours...

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

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

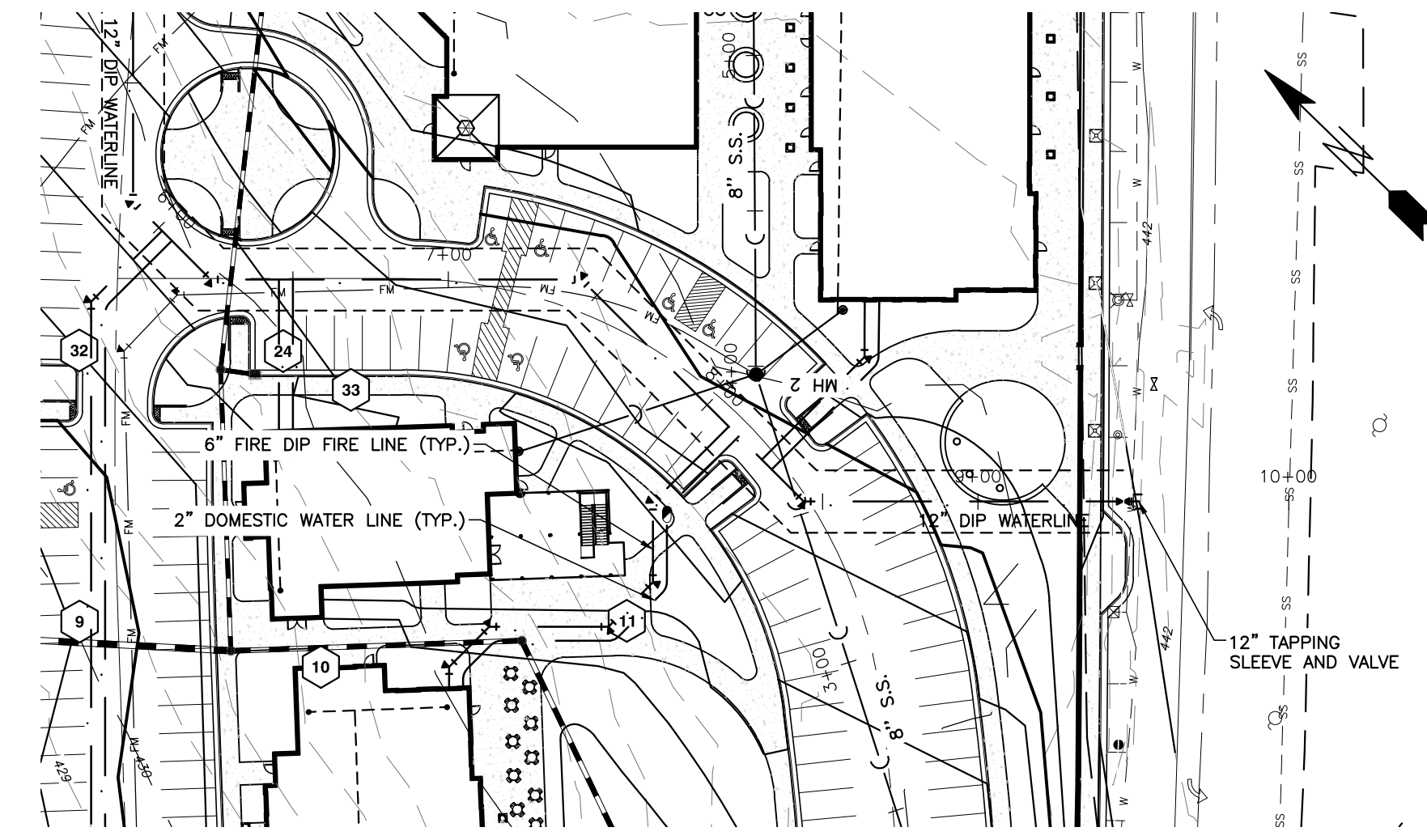
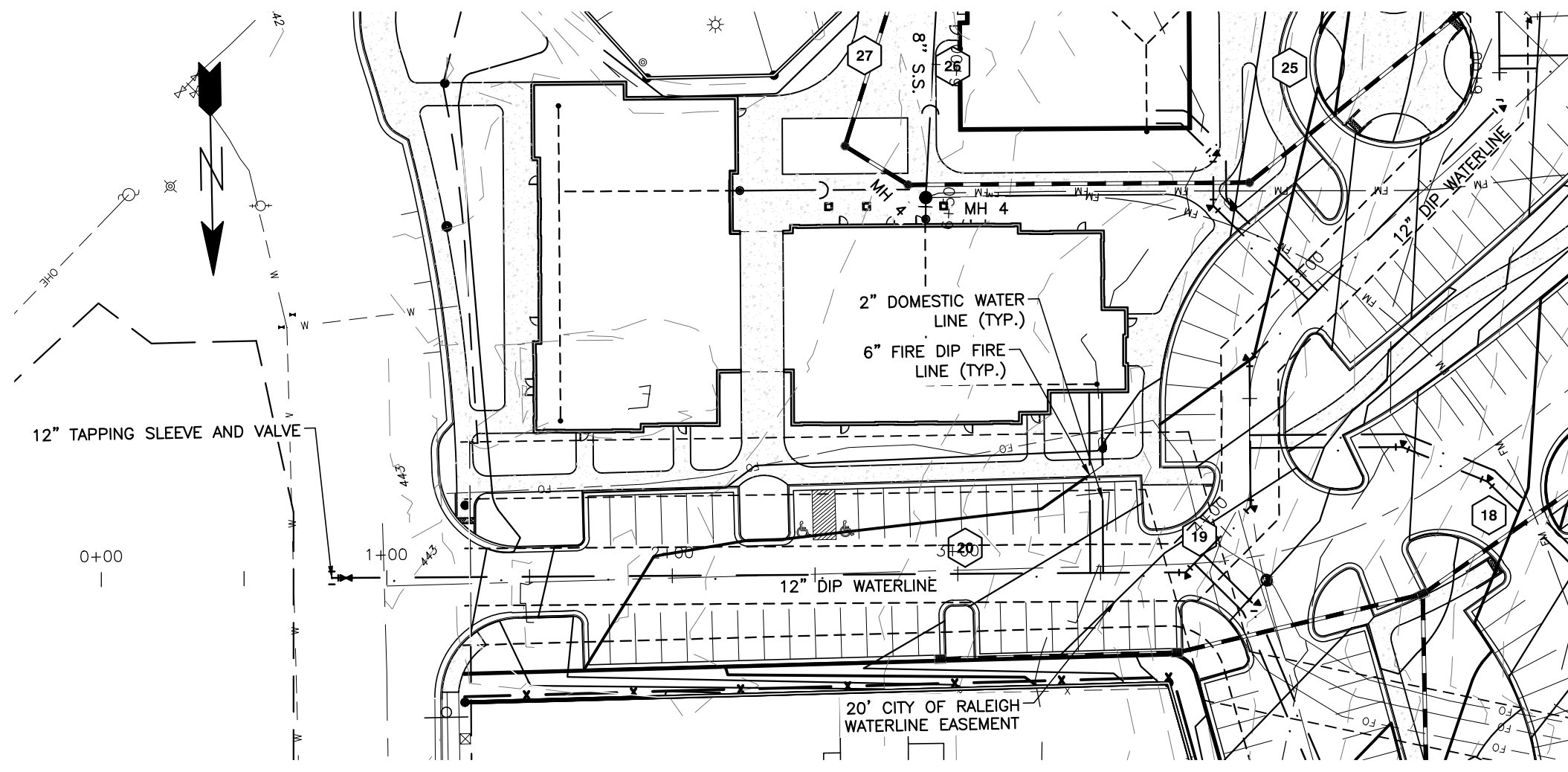
- (a) Visible sediment deposition in a stream or wetland. (b) Oil spills if: They are 25 gallons or more, They are less than 25 gallons but cannot be cleaned up within 24 hours, They cause sheen on surface waters (regardless of volume), or They are within 100 feet of surface waters (regardless of volume).

2. Reporting Timeframes and Other Requirements After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below.

Table with columns: Occurrence, Reporting Timeframes (After Discovery) and Other Requirements

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





**Public**  
**Water Distribution / Extension System**  
 The City of Raleigh consents to the connection and extension of the City's public water system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.  
 City of Raleigh  
 Public Utilities Department Permit # \_\_\_\_\_  
 Authorization to Construct See digital signature



**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**  
 6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
 TELEPHONE: (919)881-1422 FAX: (919)881-8686  
 CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

| NO. | DATE | DESCRIPTION | BY |
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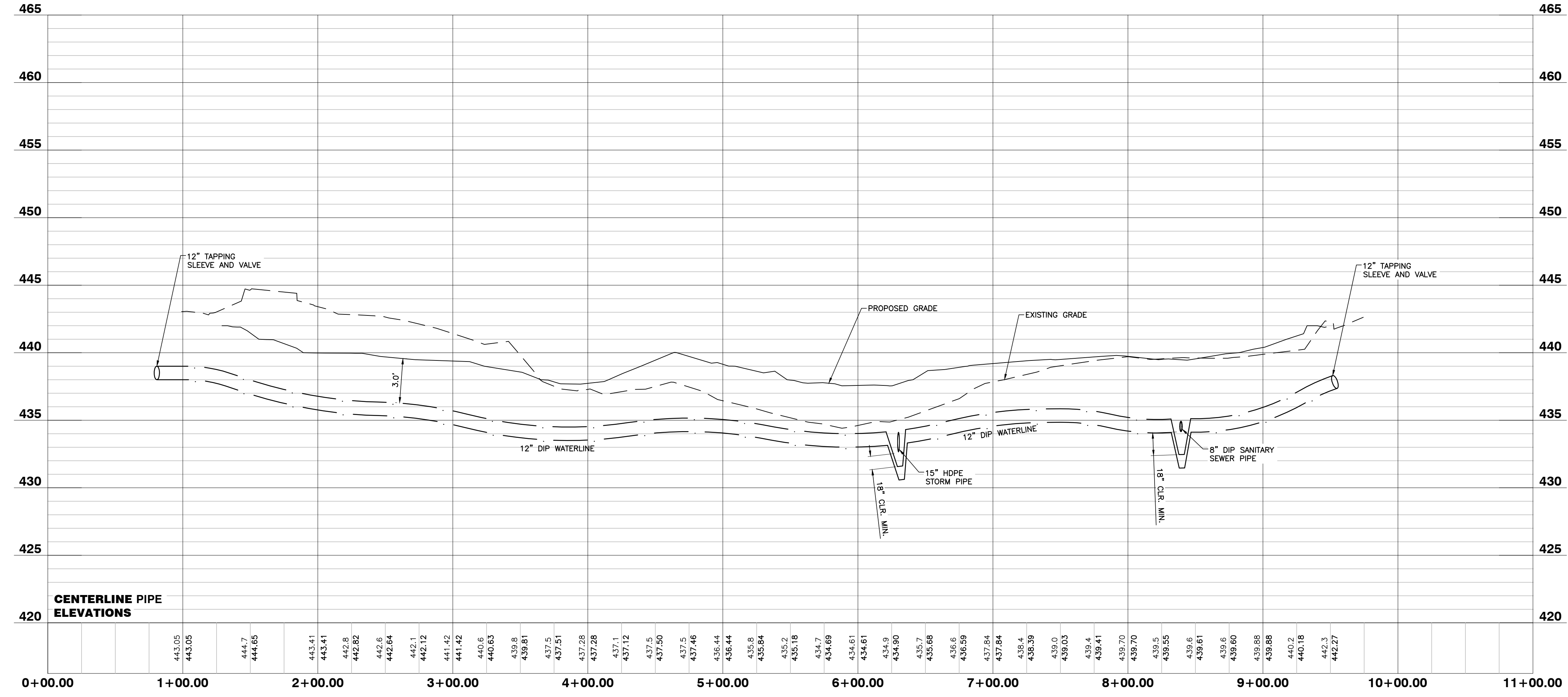
**PUBLIC WATERLINE PROFILE**

SCALE: 1" = 50' H; 1" = 5' V CHK BY: MDB

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

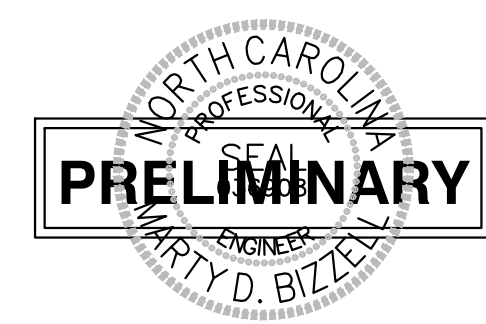
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**PUBLIC WATERLINE PROFILE**



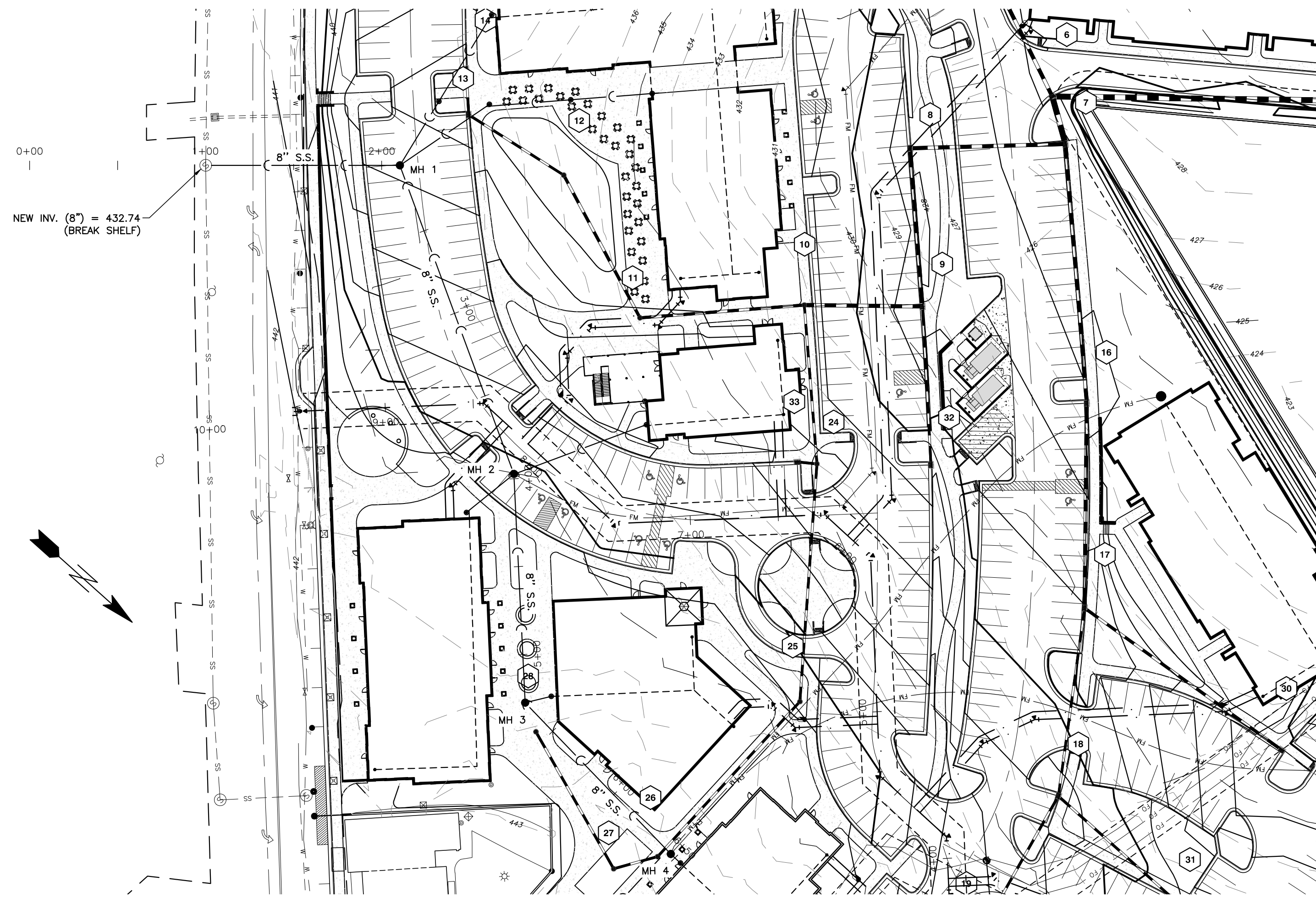
NO FLOODPLAINS EXIST ON-SITE

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



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NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



**Private Sewer Collection / Extension System**  
 The City of Raleigh consents to the connection to its public sewer system and extension of the private sewer collection system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.  
 City of Raleigh  
 Public Utilities Department Permit # S-4711 (P)  
 Authorization to Construct See digital signature



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

| NO. | DATE | DESCRIPTION | BY |
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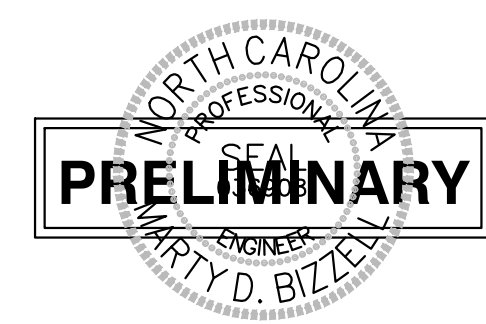
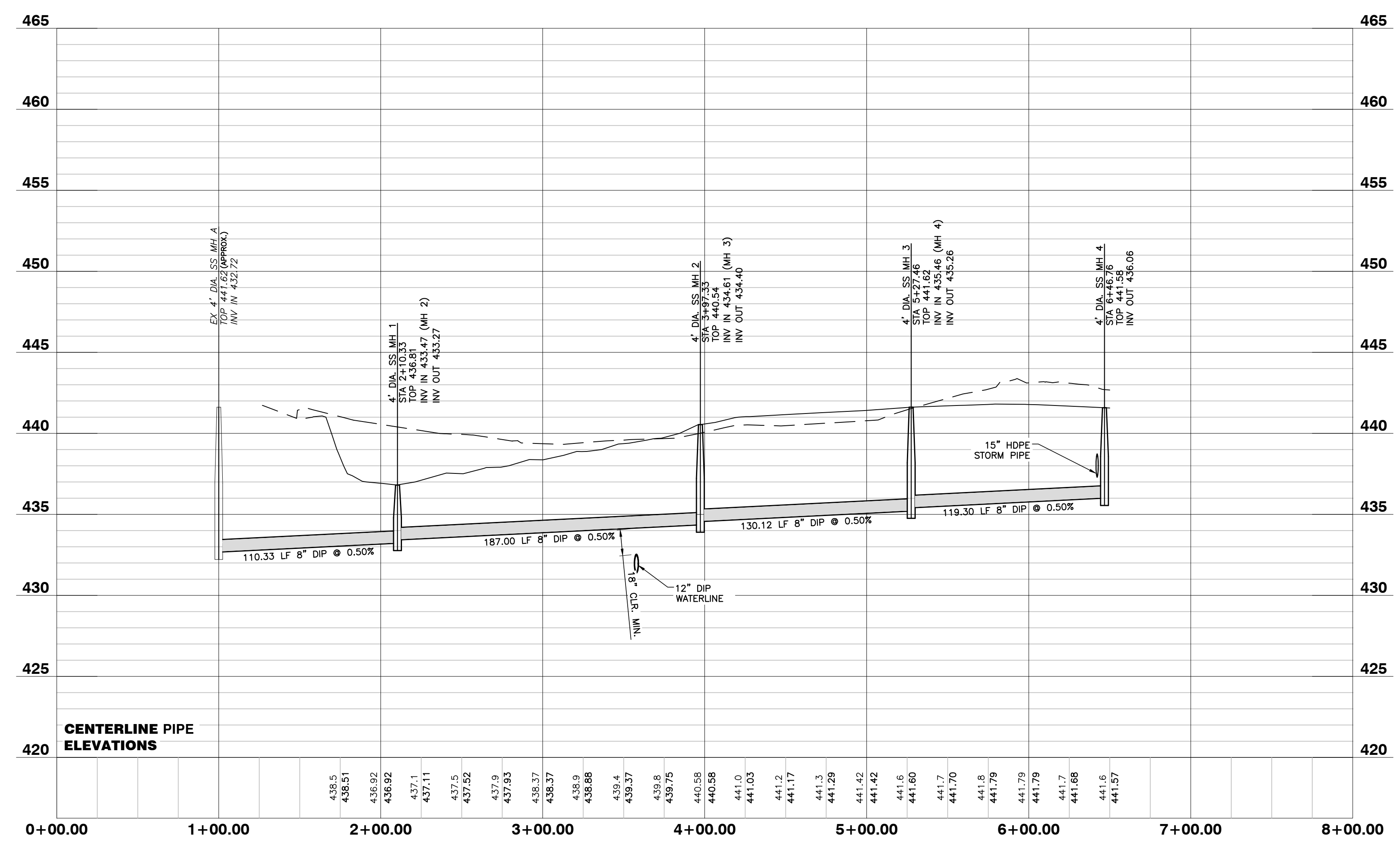
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| 03-19157 |     |      |          |

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

SHEET  
**C4.2**

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

**SANITARY SEWER PROFILE**



NO FLOODPLAINS EXIST ON-SITE  
 NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF ROLESVILLE AND NCDOT

**GENERAL NOTES**

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

**LANDSCAPE CALCULATIONS**

PERIMETER BUFFERS (10' TYPICAL):  
 WEST (1) - 352 LF = 3 TREES / 100 LF = 11 TREES REQUIRED/PROVIDED  
 = 40 SHRUBS / 100 LF = 141 SHRUBS REQUIRED/PROVIDED  
 = 352 LF MIN. 6' TALL FENCE REQUIRED

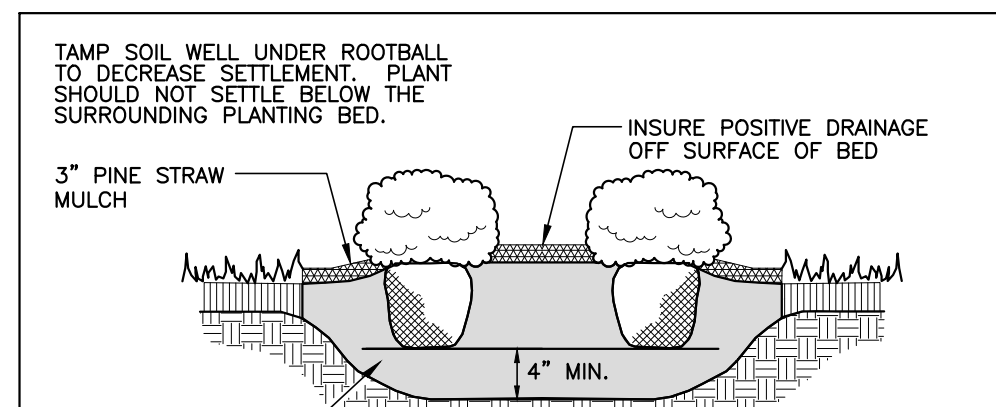
NORTH (2) - 187 LF = 3 TREES / 100 LF = 6 TREES REQUIRED/PROVIDED  
 = 40 SHRUBS / 100 LF = 75 SHRUBS REQUIRED/PROVIDED  
 = 187 LF MIN. 6' TALL FENCE REQUIRED

NORTHEAST (3) - 249 LF = 3 TREES / 100 LF = 7 TREES REQUIRED/PROVIDED  
 = 40 SHRUBS / 100 LF = 100 SHRUBS REQUIRED/PROVIDED  
 = 249 LF MIN. 6' TALL FENCE REQUIRED

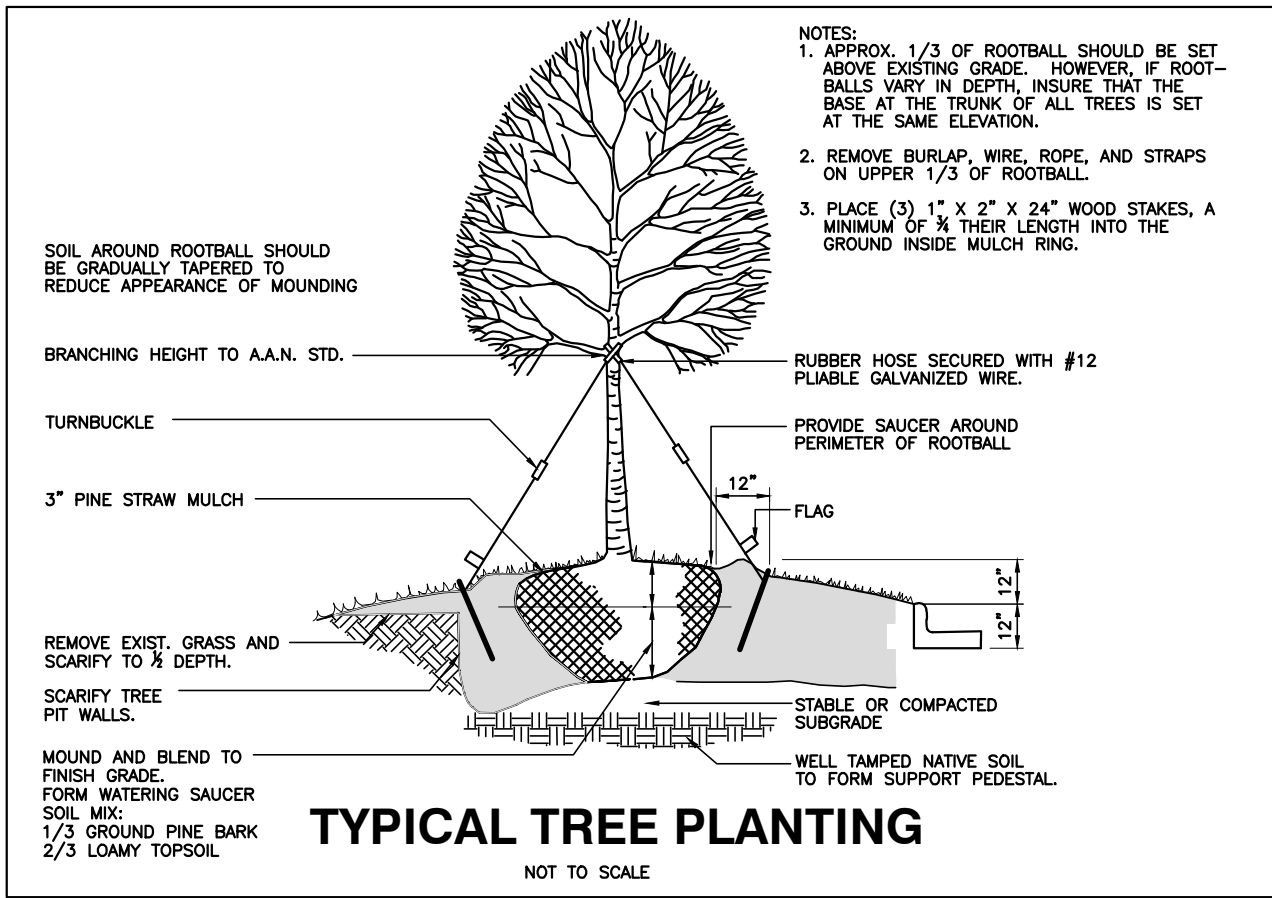
EAST (4) - 247 LF = 3 TREES / 100 LF = 8 TREES REQUIRED/PROVIDED  
 = 40 SHRUBS / 100 LF = 100 SHRUBS REQUIRED/PROVIDED  
 = 247 LF MIN. 6' TALL FENCE REQUIRED

STREET YARDS:  
 MAIN ST - 595 LF = 1 TREE / 50 LF = 12 TREES REQUIRED/PROVIDED  
 WEST YOUNG ST - 242 LF = 1 TREE / 50 LF = 5 TREES REQUIRED/PROVIDED

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



**CONTINUOUS SHRUB PLANTING**  
NOT TO SCALE

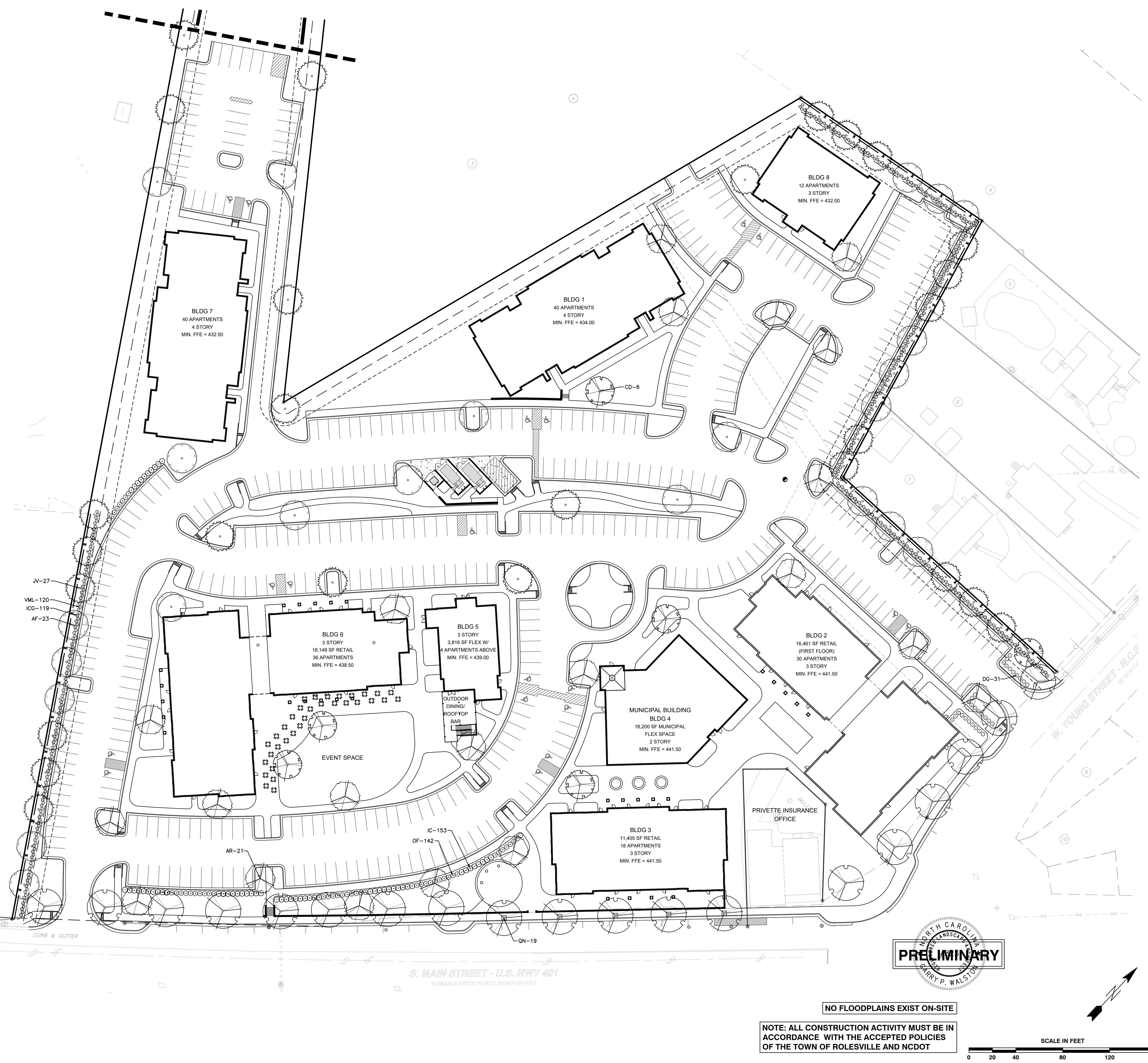


**PLANT LIST**

| KEY                 | SCIENTIFIC NAME             | COMMON NAME                | QUAN. | CAL  | HT  | ROOT  |
|---------------------|-----------------------------|----------------------------|-------|------|-----|-------|
| <b>CANOPY TREES</b> |                             |                            |       |      |     |       |
| CD                  | Cedrus deodara              | Deodar Cedar               | 6     | 2.5" | 8'  | B&B   |
| JV                  | Juniperus virginiana        | Eastern Red Cedar          | 27    | 2.5" | 8'  | B&B   |
| AF                  | Acer freemanii              | Freeman Maple              | 23    | 2.5" | 8'  | B&B   |
| QN                  | Quercus nuttallii           | Nuttall Oak                | 19    | 2.5" | 8'  | B&B   |
| AR                  | Acer rubrum 'Brandywine'    | Brandywine Red Maple       | 21    | 2.5" | 8'  | B&B   |
| <b>SHRUBS</b>       |                             |                            |       |      |     |       |
| ICC                 | Ilex crenata 'Chesapeake'   | Chesapeake Holly           | 153   | N/A  | 24" | CONT. |
| OF                  | Osmunda fragrans            | Fragrant Tea Olive         | 142   | N/A  | 24" | CONT. |
| ICG                 | Ilex crenata 'Green Lustre' | Green Lustre Japanese Holl | 120   | N/A  | 24" | CONT. |
| VML                 | Viburnum x 'Moonlit Lace'   | Moonlit Lace Viburnum      | 186   | N/A  | 24" | CONT. |
| DG                  | Distylium 'Green Wave'      | Green Wave Distylium       | 31    | N/A  | 24" | CONT. |

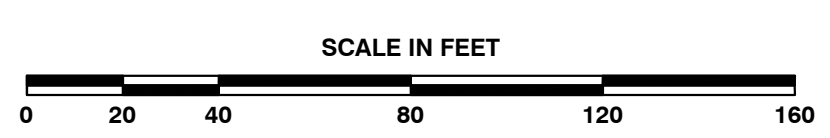
PLANTING NOTES:  
 LOCATE PLANTS AND PLANTING BEDS BY USING SCALED DIMENSIONS FROM STREET, PROPERTY LINES, BACK OF CURB, BUILDINGS, WALLS, ETC. ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM STANDARDS SET BY THE U.S.D.A. FOR NURSERY STOCK SPONSORED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC., WASHINGTON,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

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



NO FLOODPLAINS EXIST ON-SITE

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



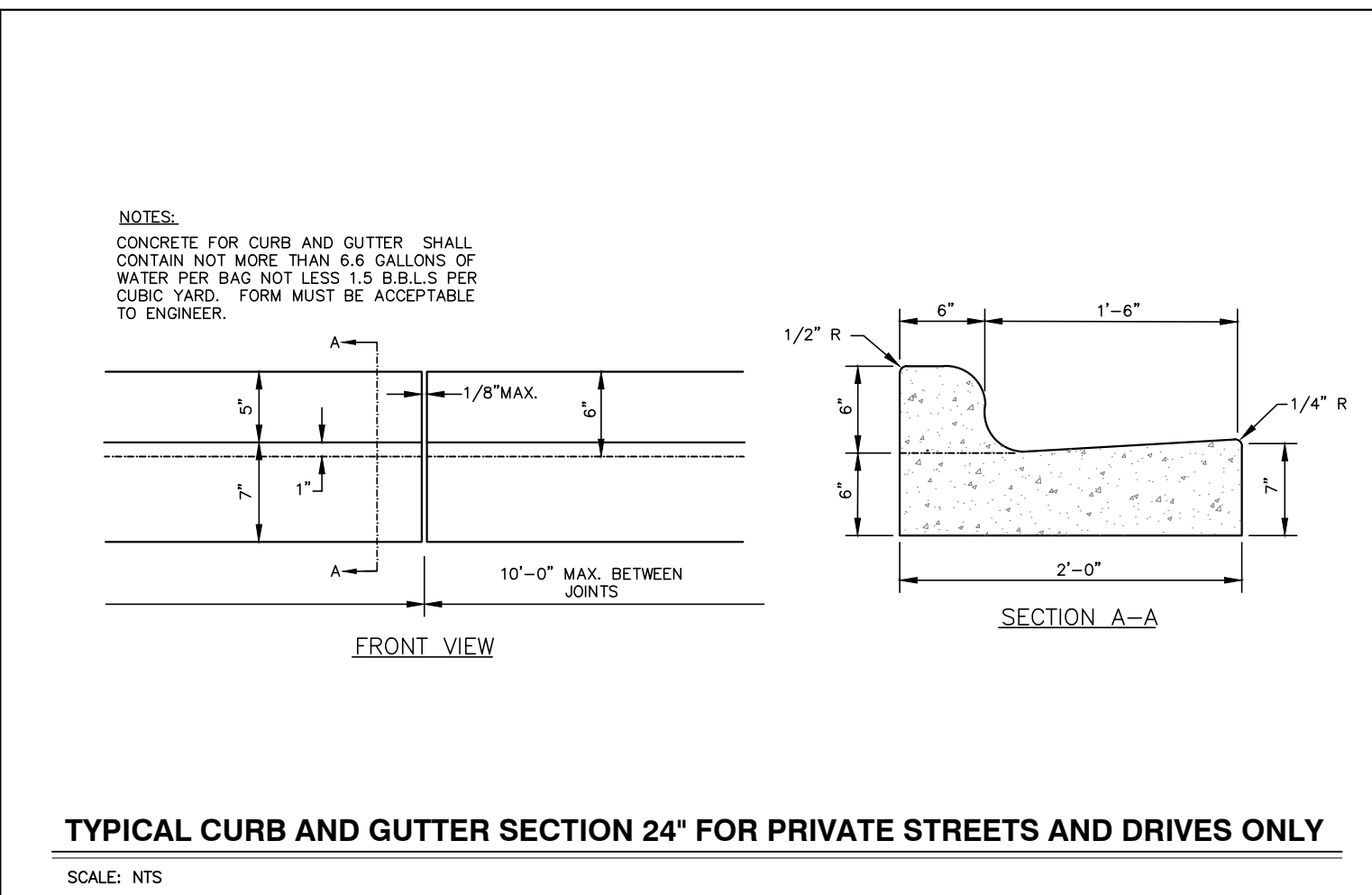
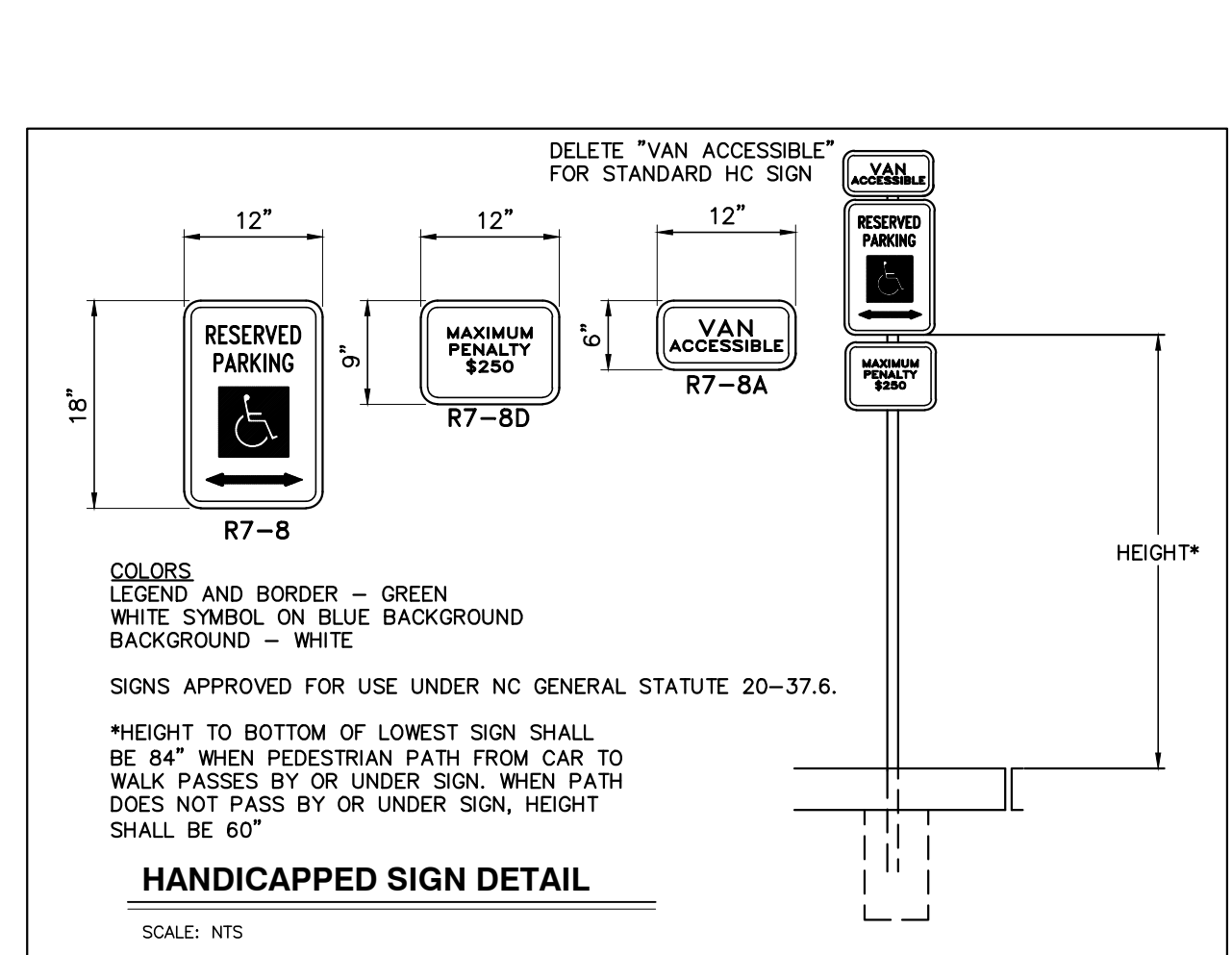
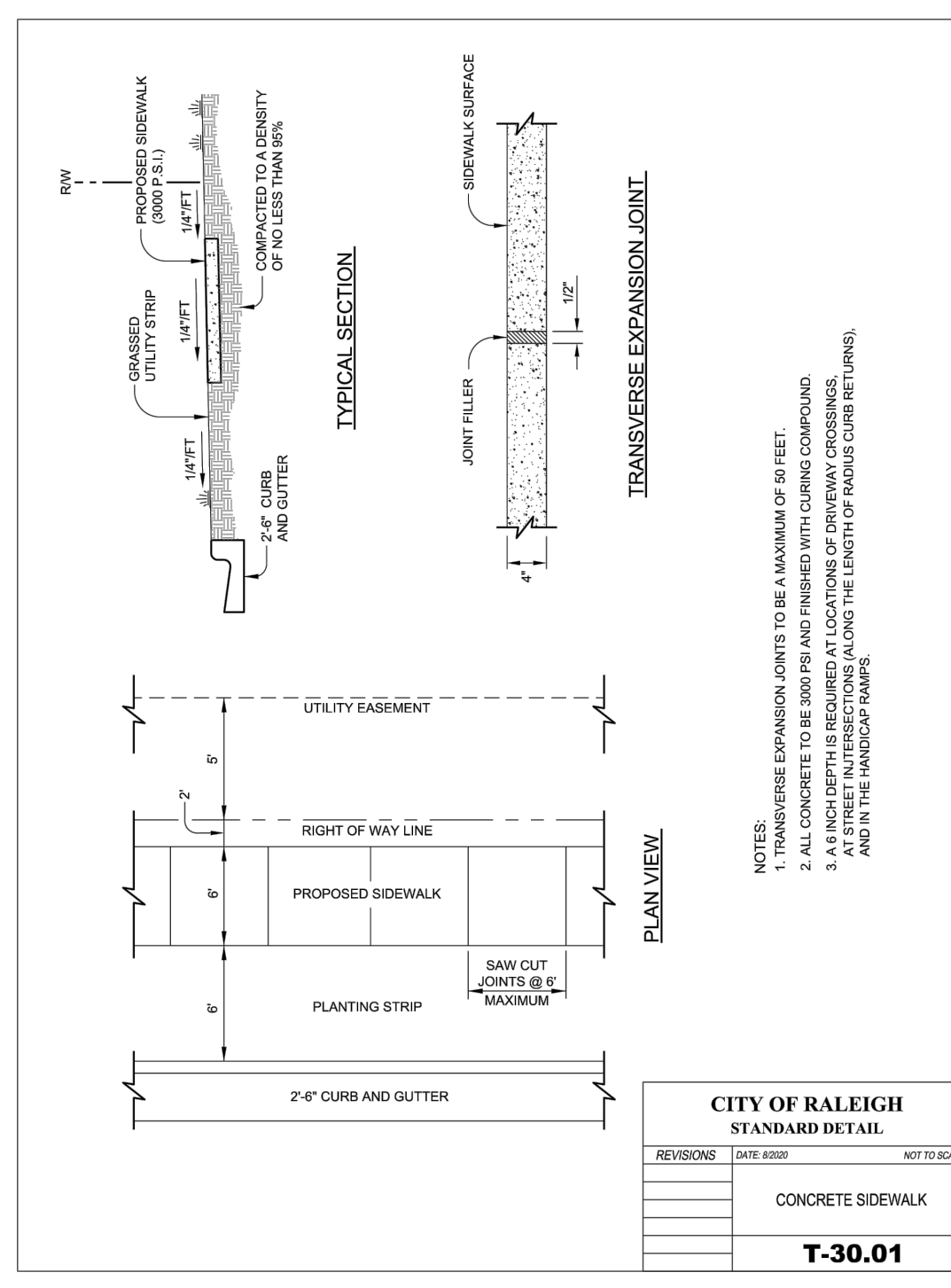
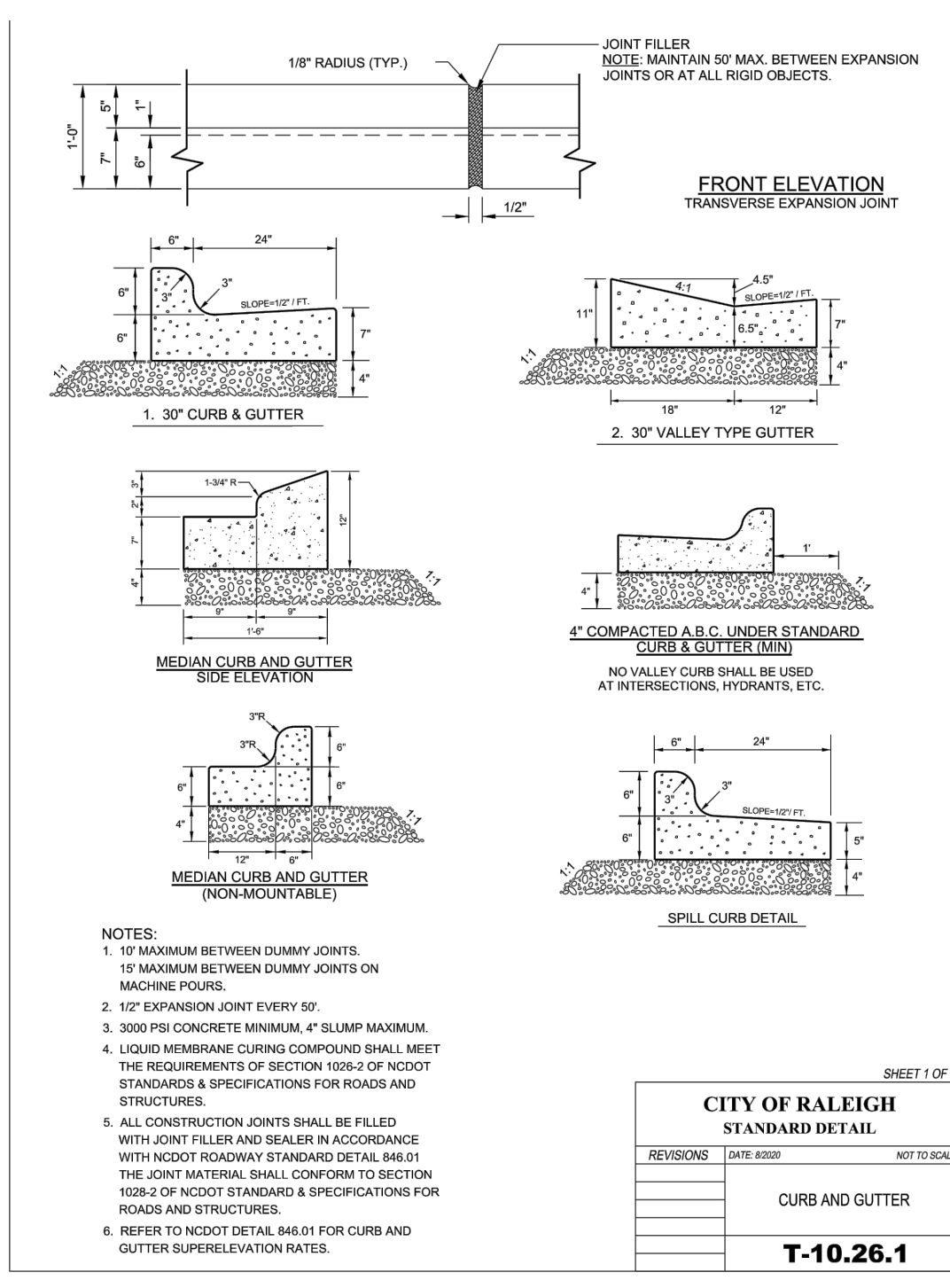
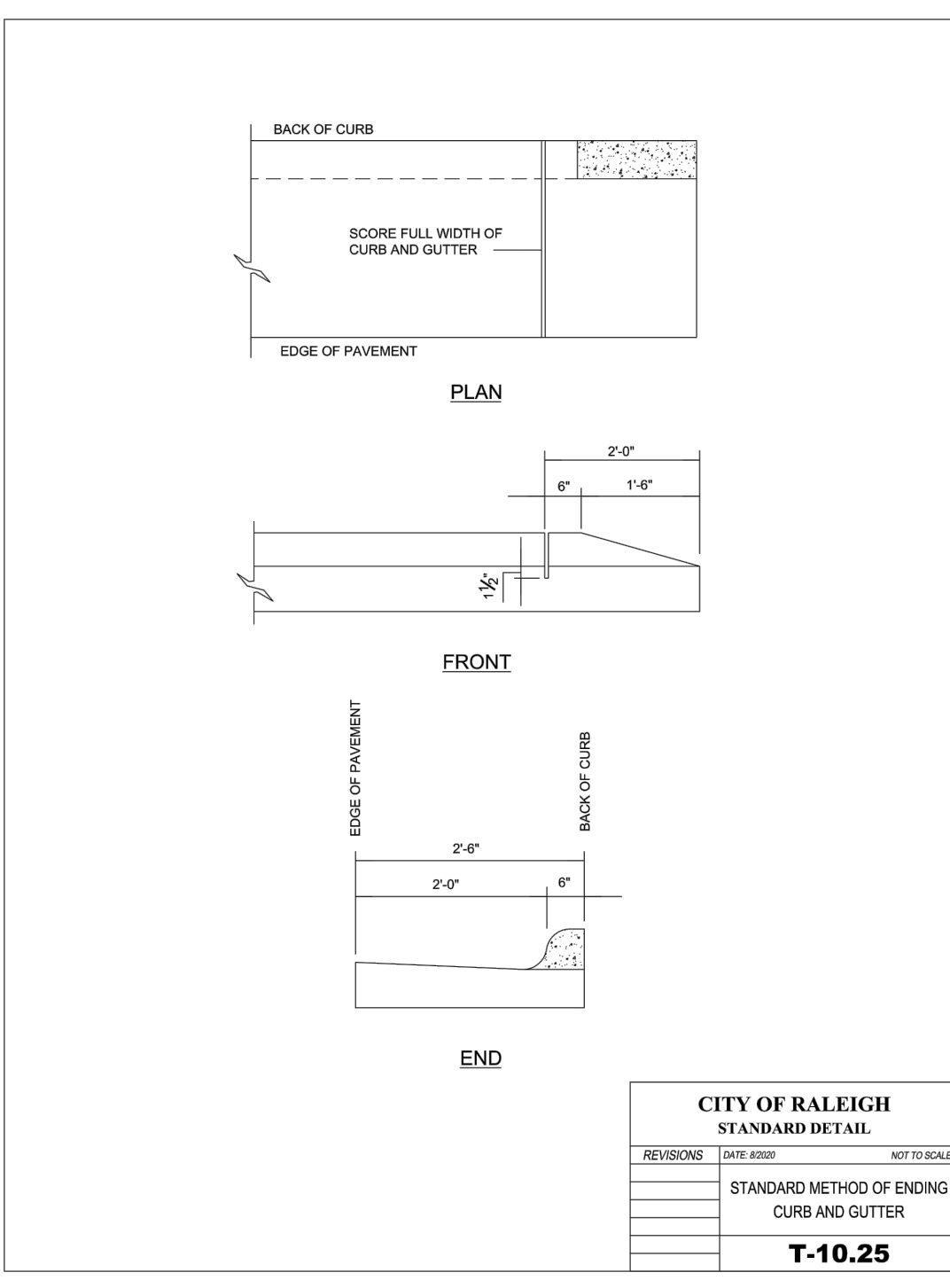
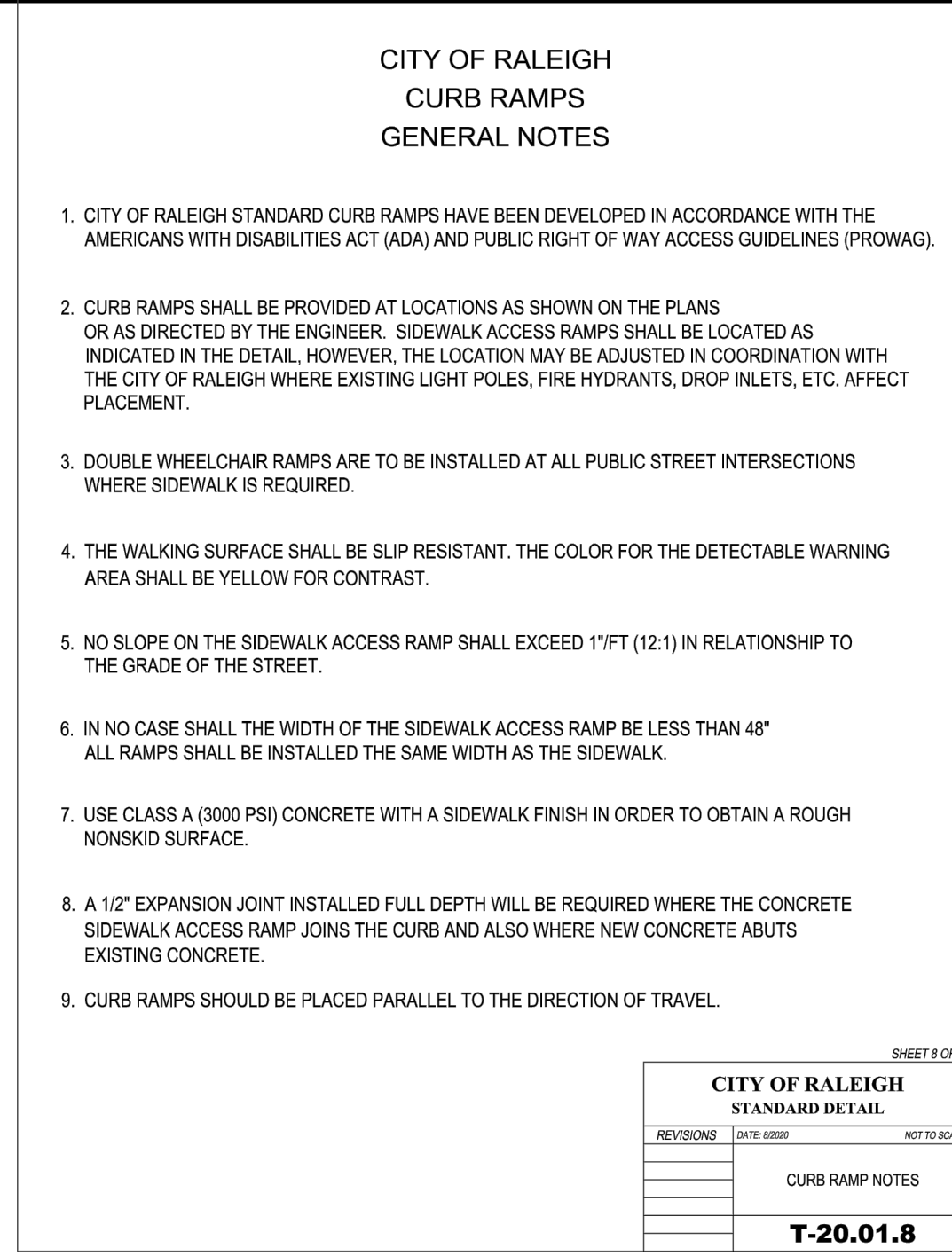
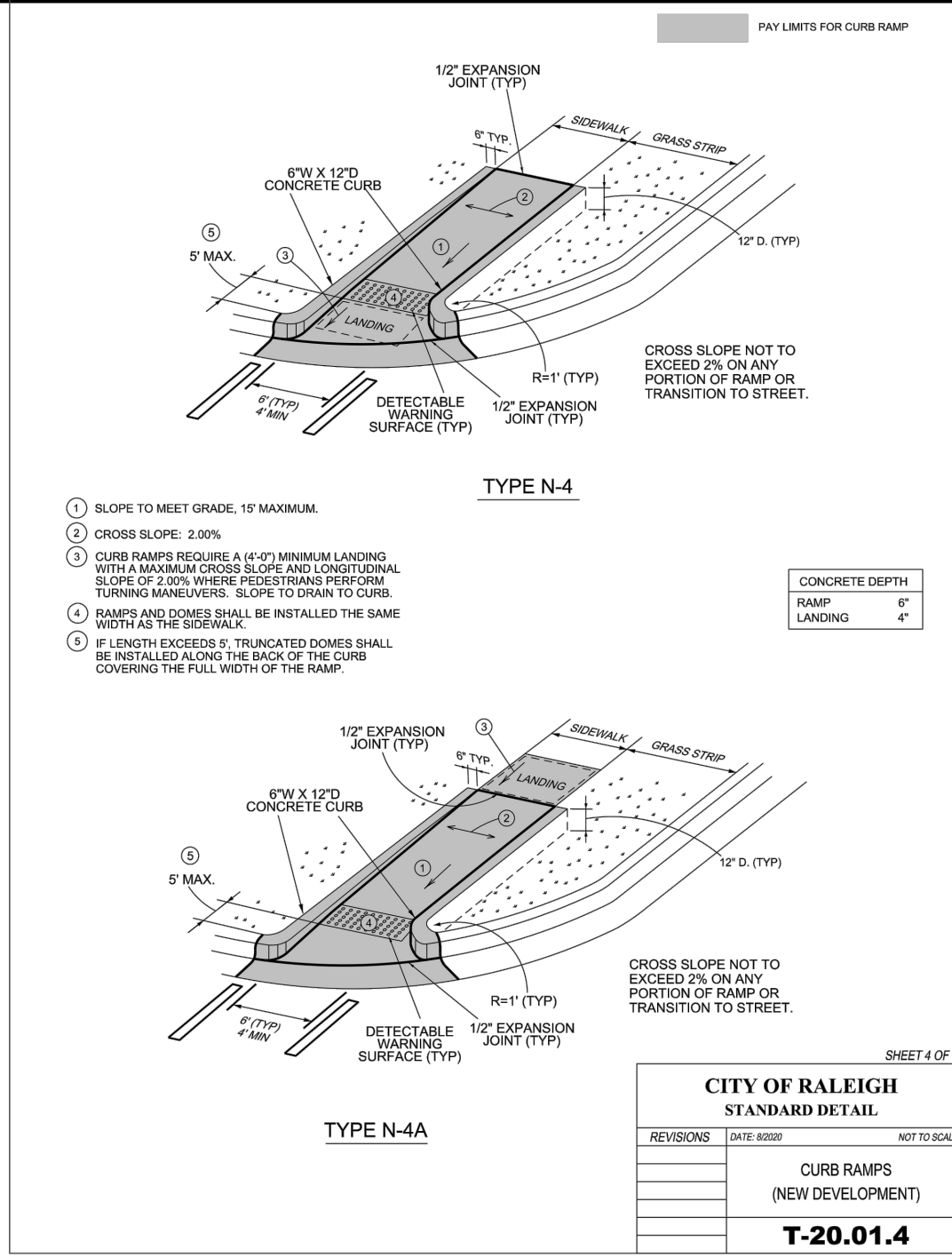
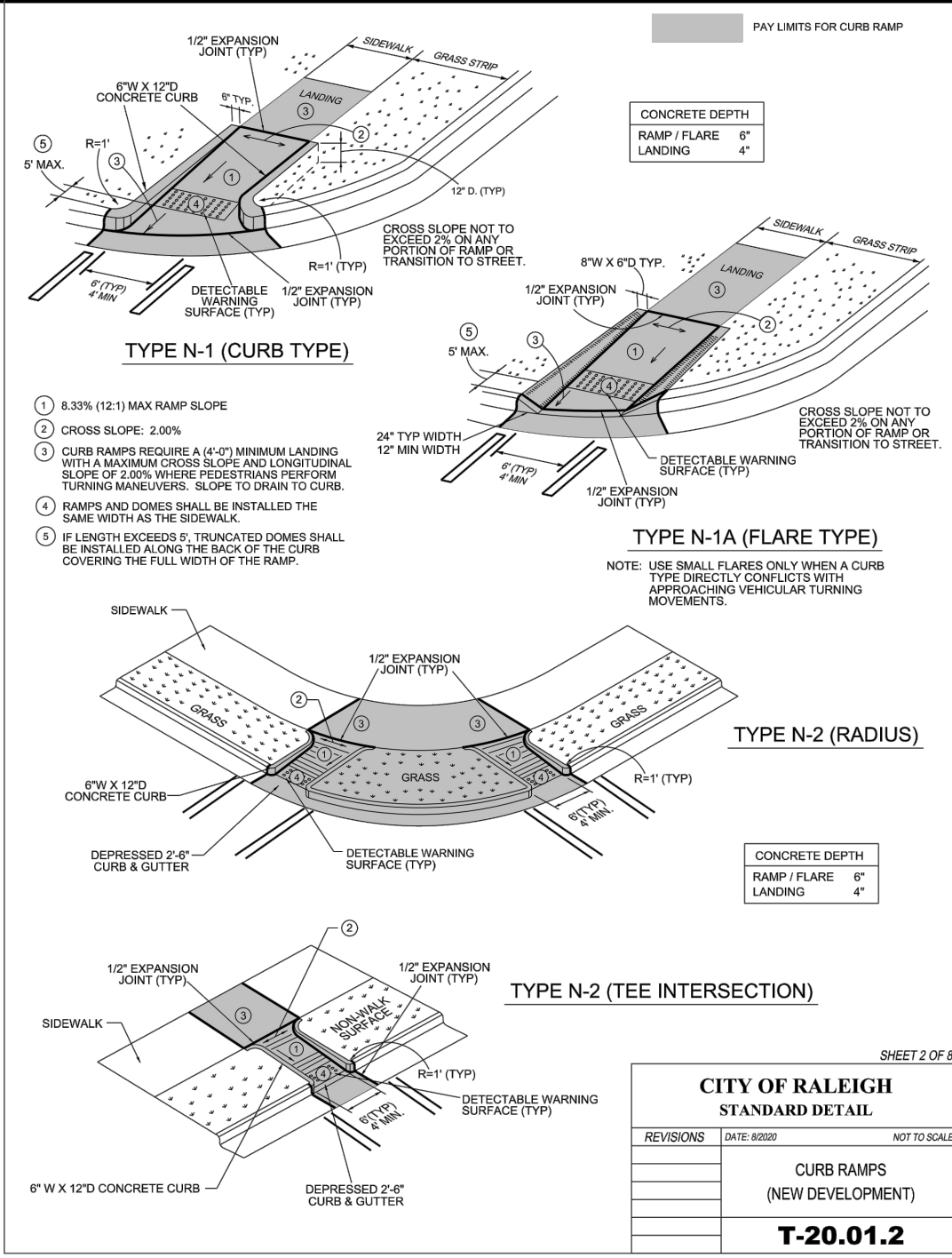
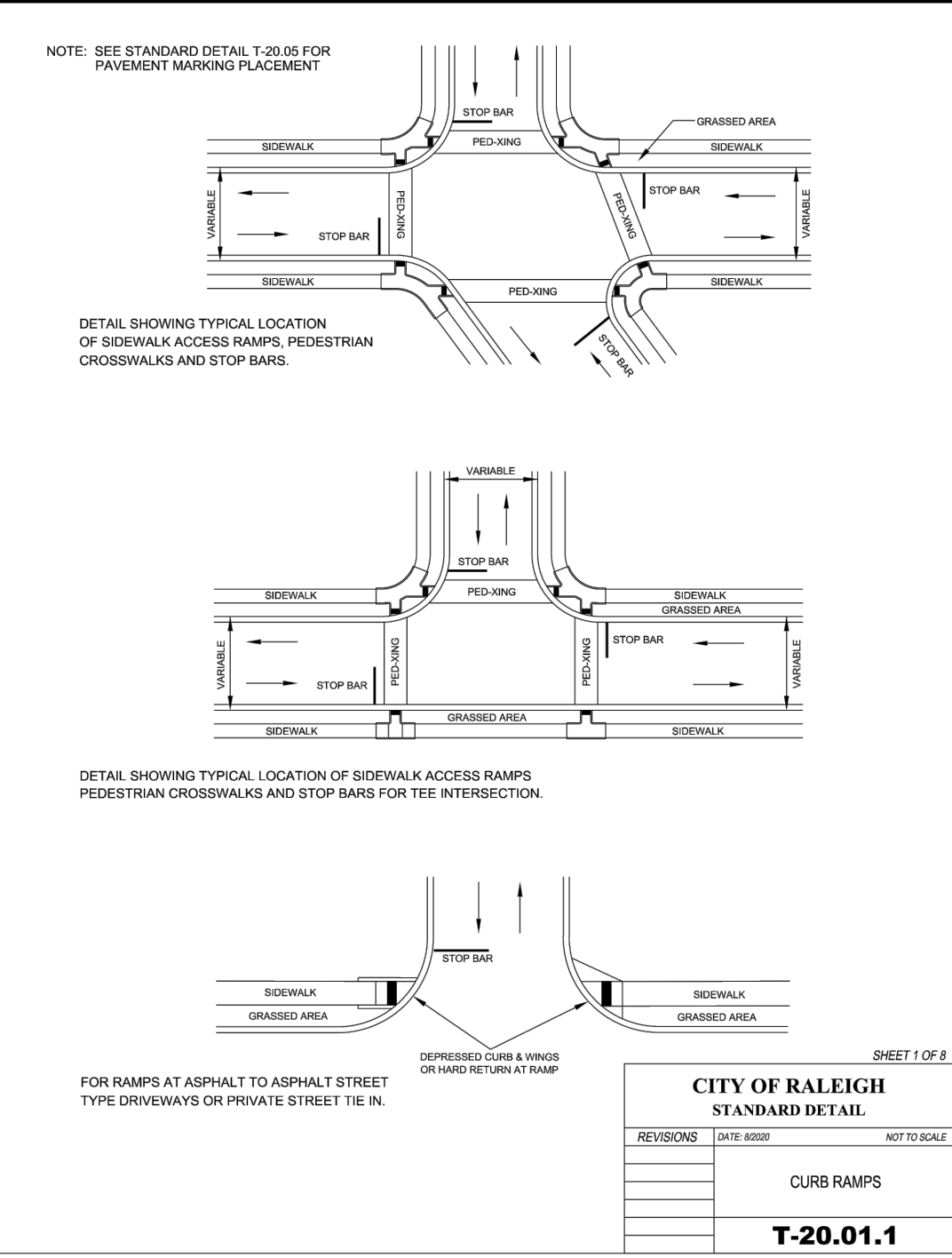
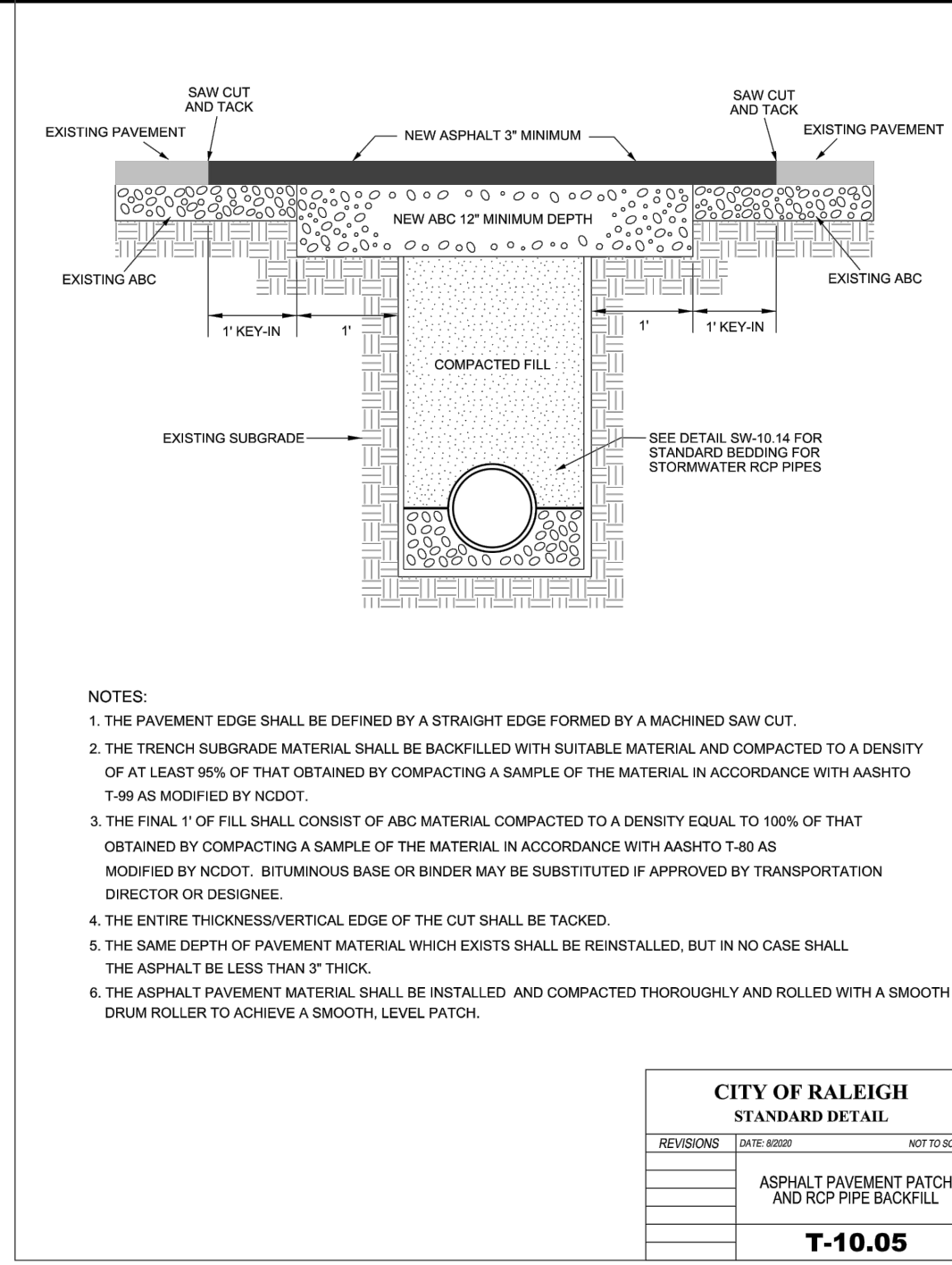
**BASS, NIXON & KENNEDY, INC.**  
 CONSULTING ENGINEERS  
 6310 CHARLIE HILL ROAD, SUITE 250, RALEIGH, NC 27607  
 TELEPHONE: (919) 881-1122 FAX: (919) 881-8686  
 CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

| NO. | DATE | DESCRIPTION | BY |
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03-19157 - PROGRESS LAK  
 JOB NO. DATE DRAWN BY  
**LANDSCAPE PLAN**  
 SCALE: 1" = 40'  
 CHK BY: GPW

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

SHEET **L1.1**  
 NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION



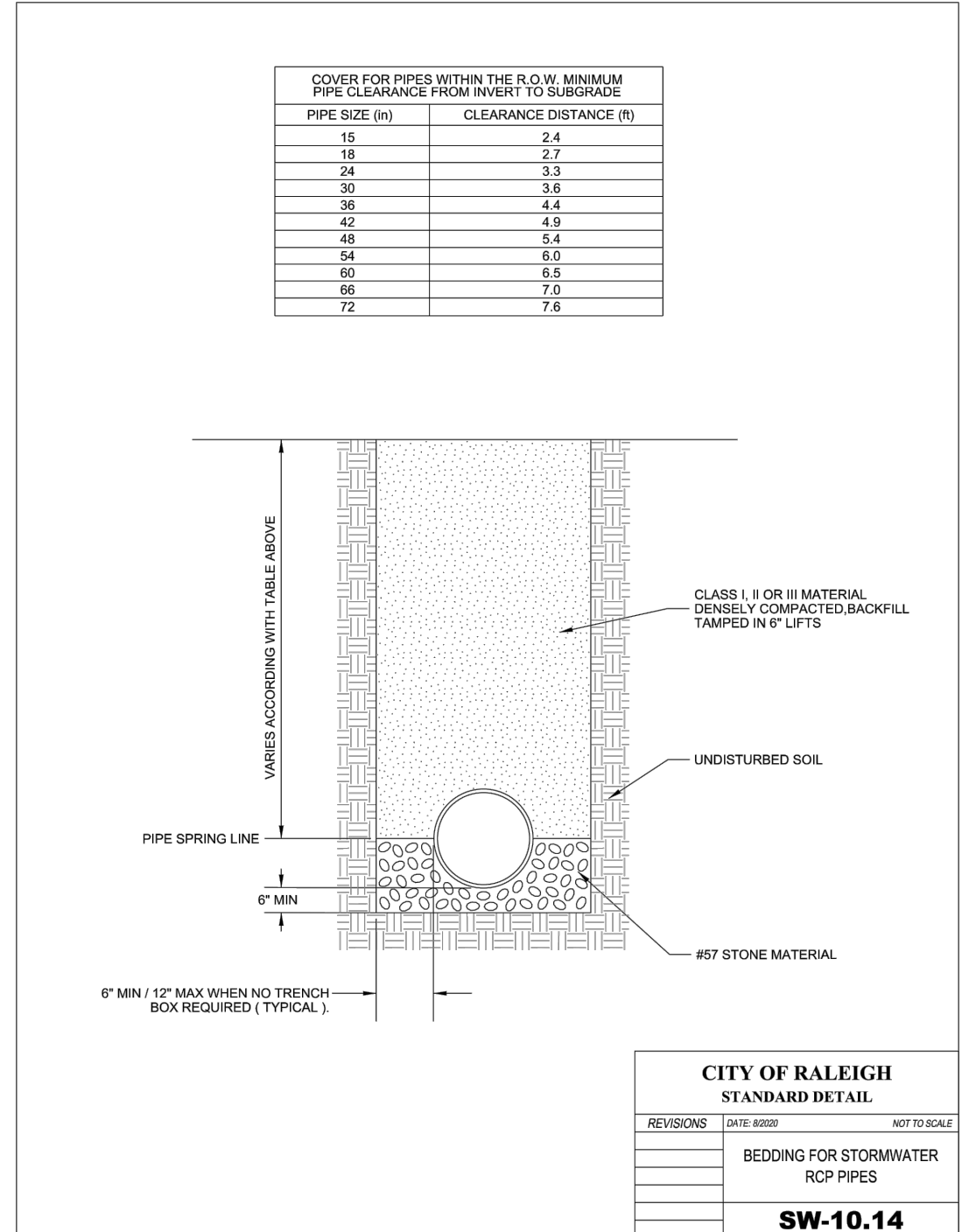
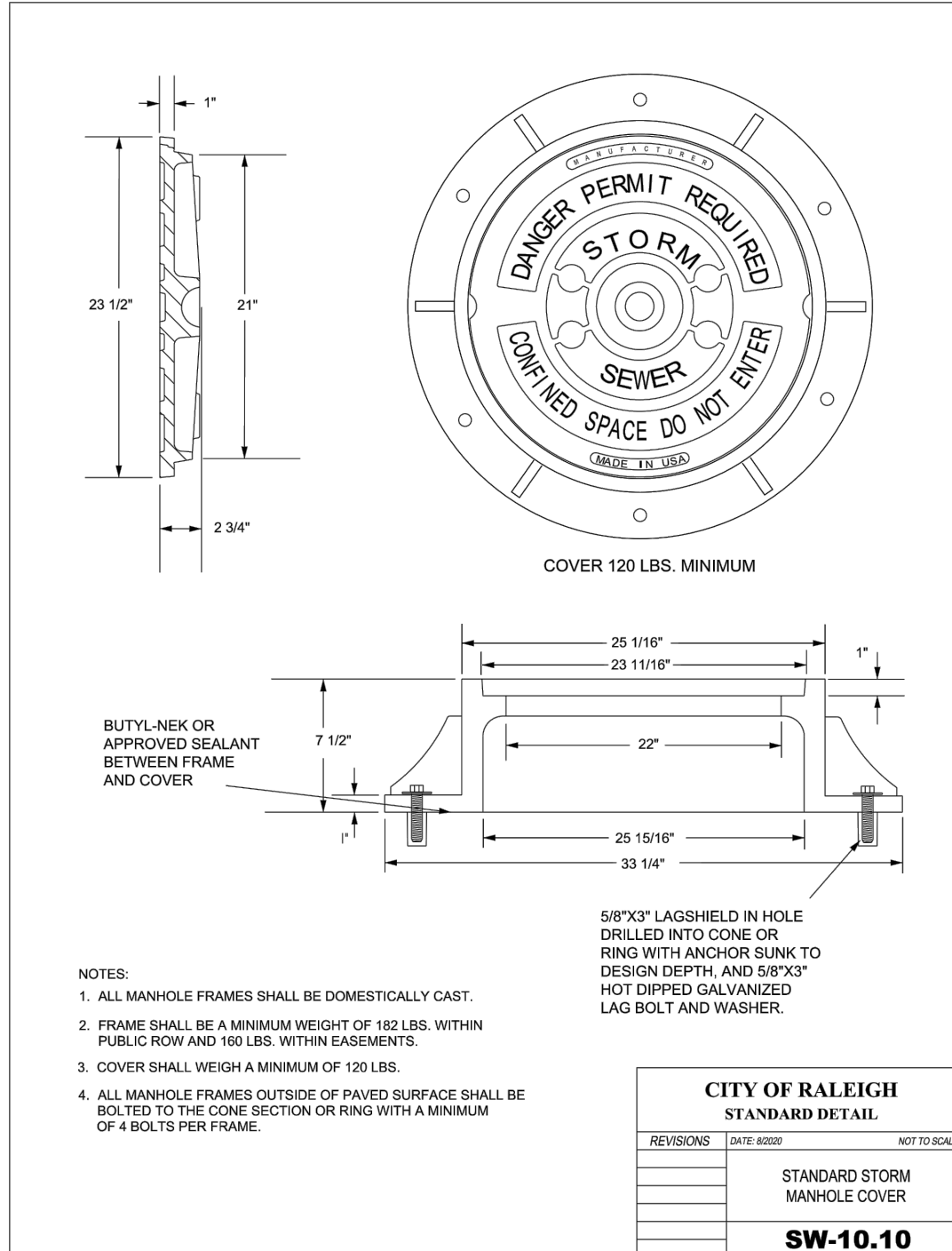
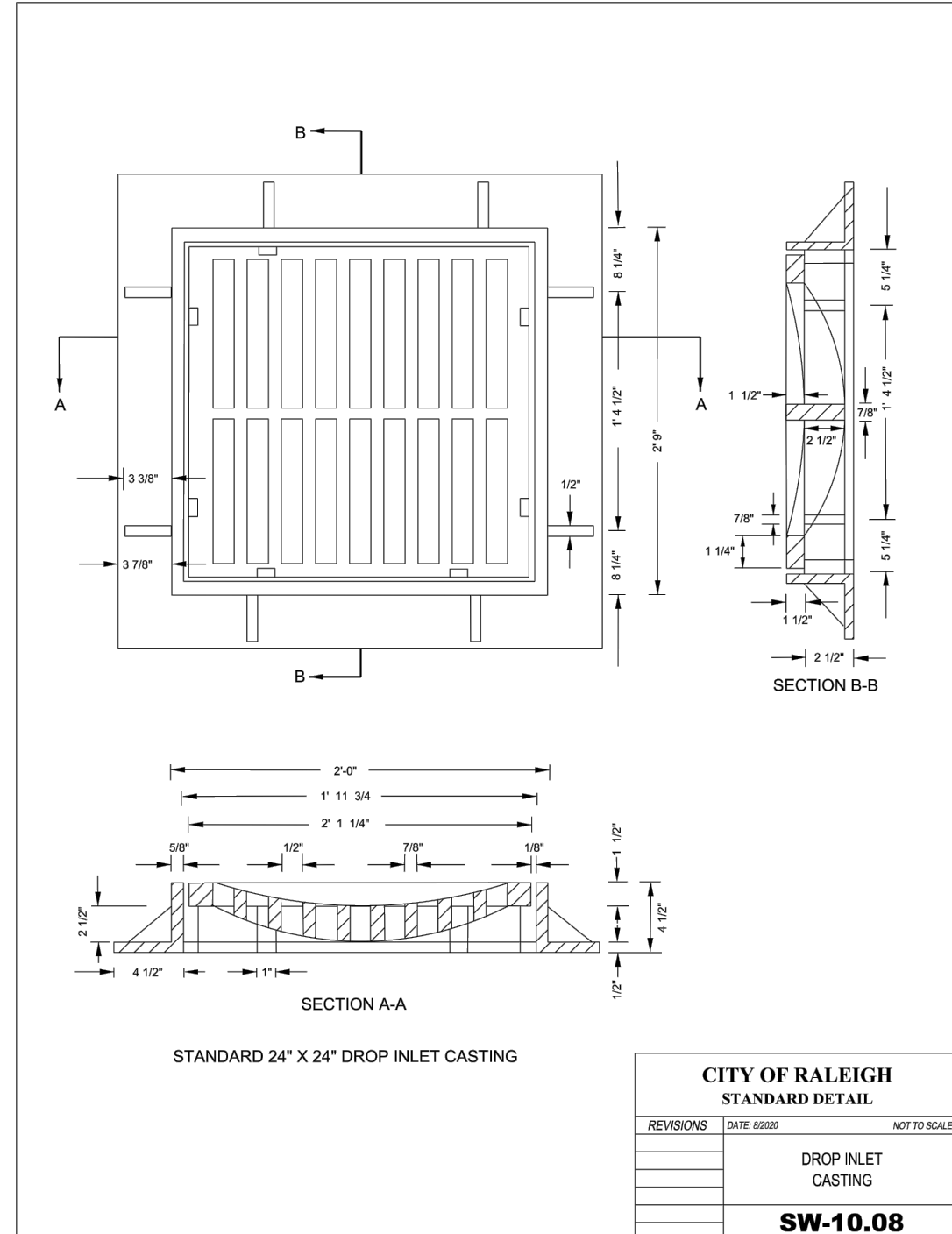
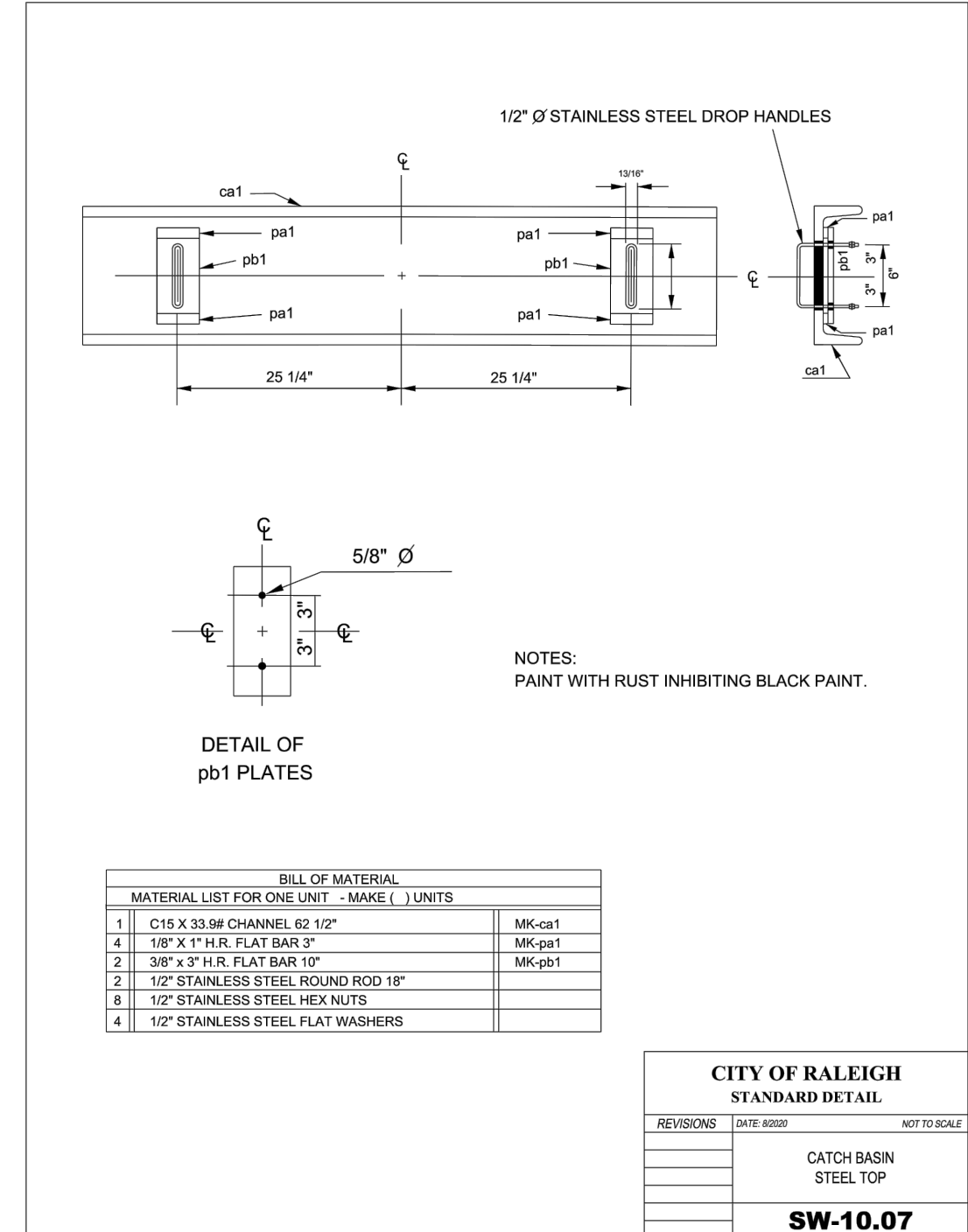
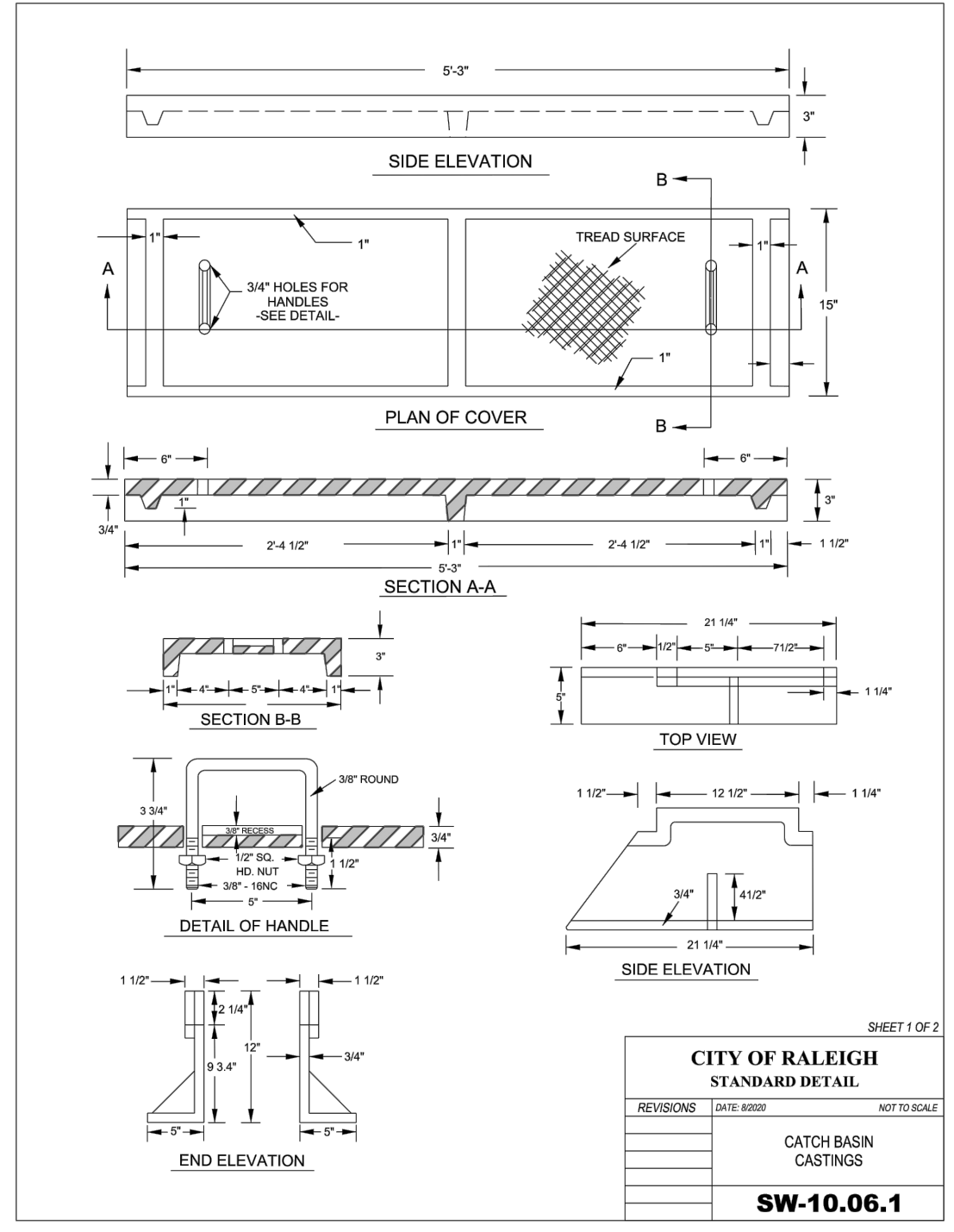
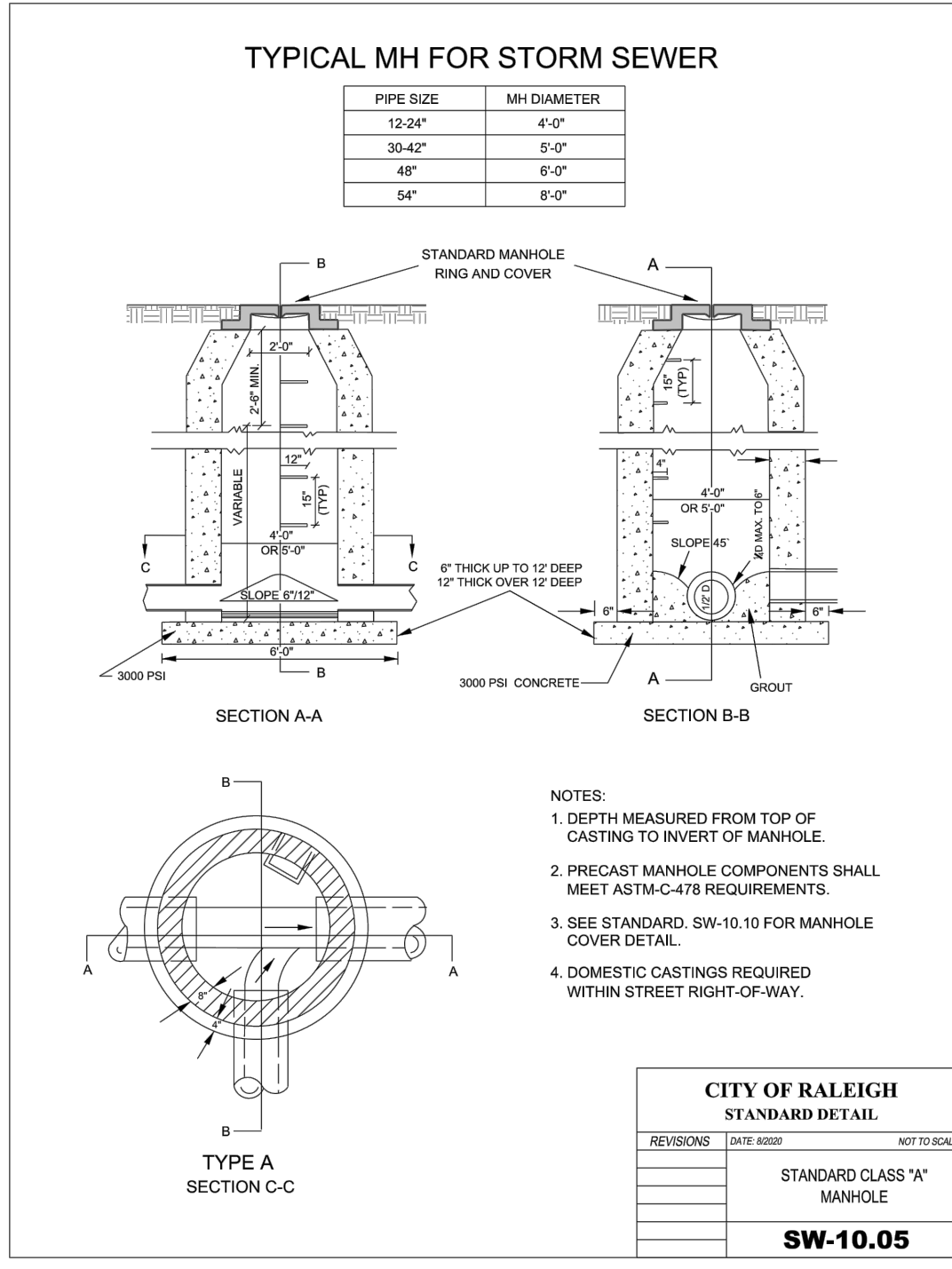
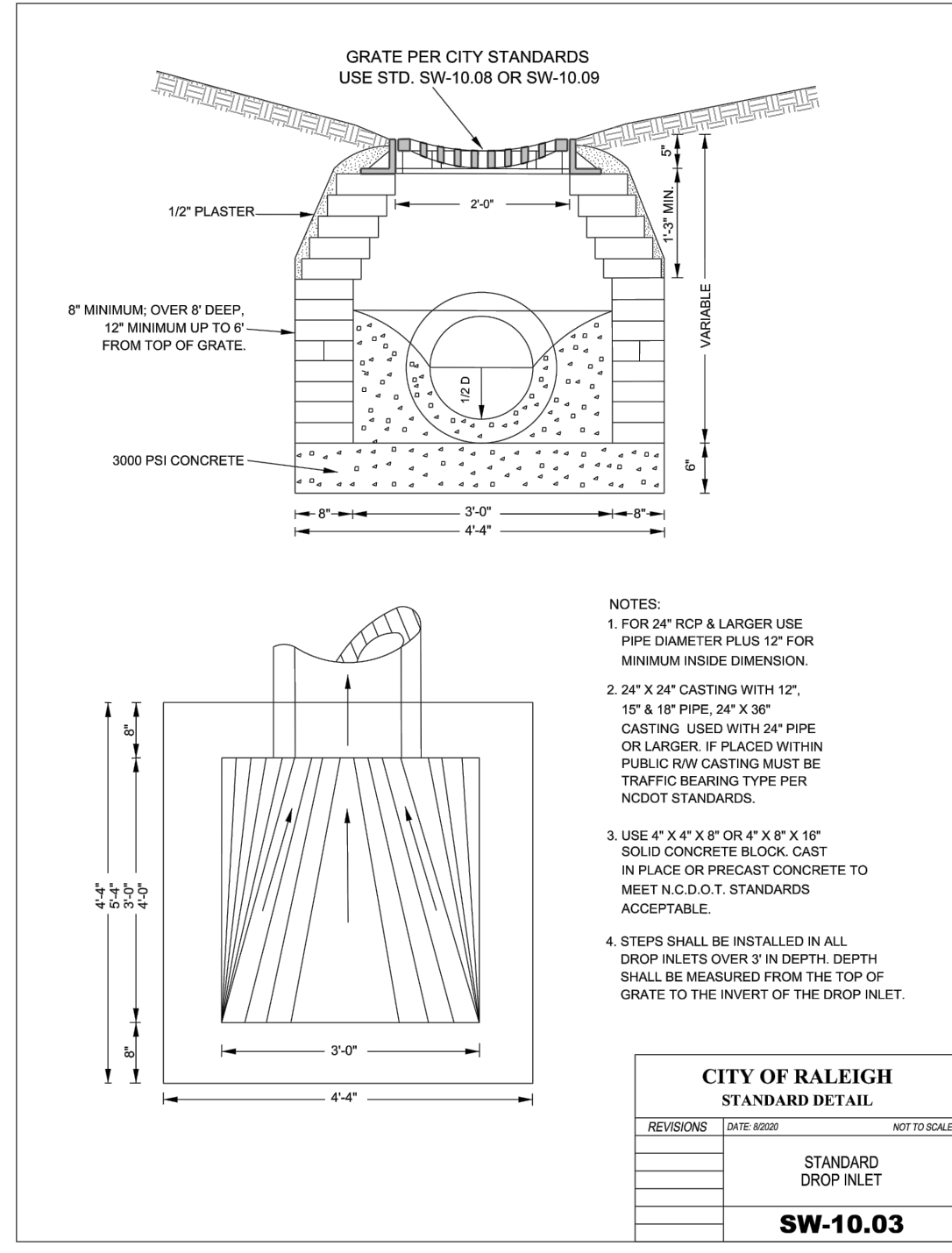
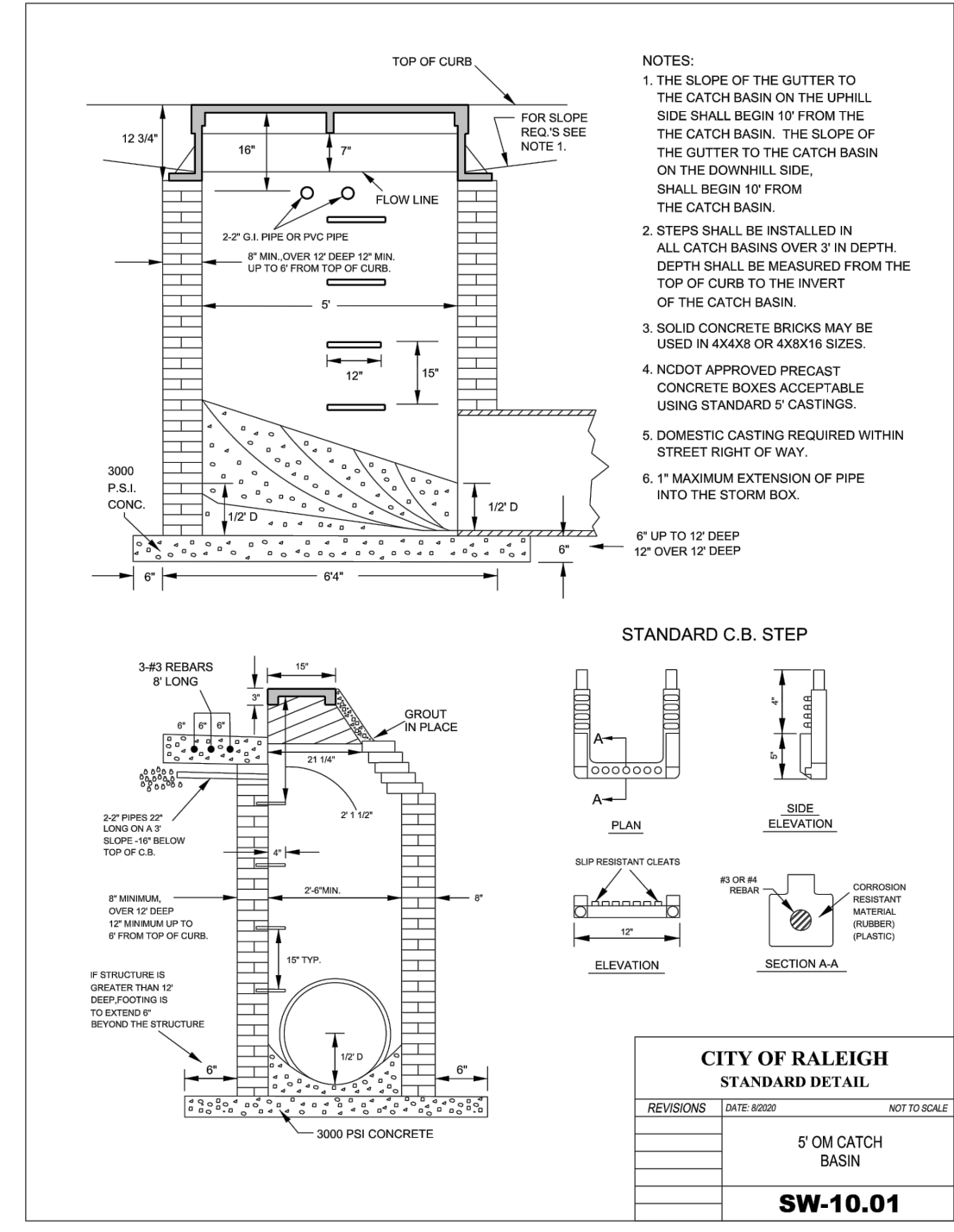
**BASS, NIXON & KENNEDY, INC.**  
 CONSULTING ENGINEERS  
 6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
 TELEPHONE: (919)881-1232 FAX: (919)881-8686  
 CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

| NO. | DATE | DESCRIPTION | BY |
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**COBBLESTONE VILLAGE MIXED USE DEVELOPMENT**  
 TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA



**SHEET C5.1**



**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**  
 6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
 TELEPHONE: (919) 881-1222 FAX: (919) 881-8686  
 CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

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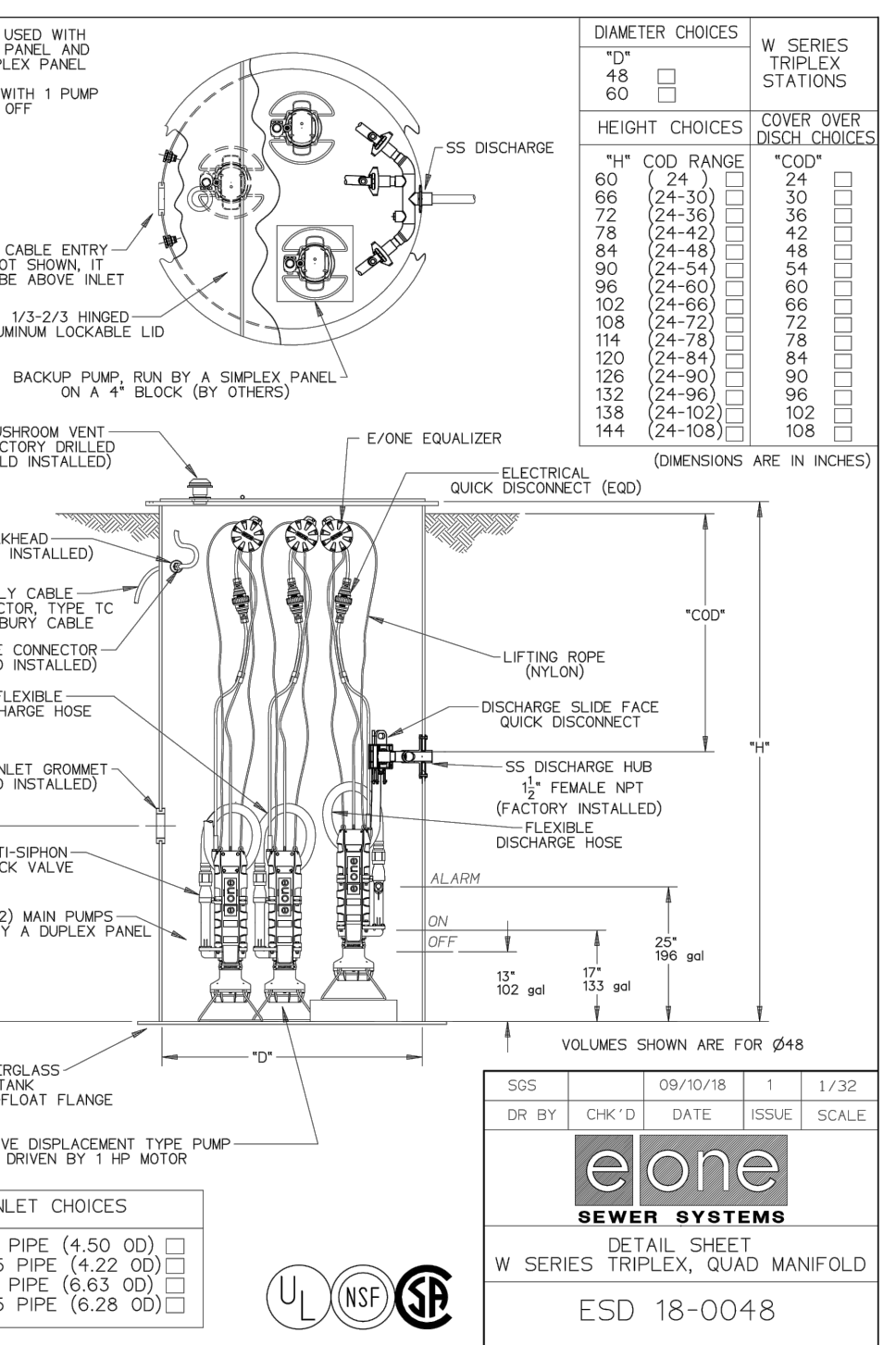
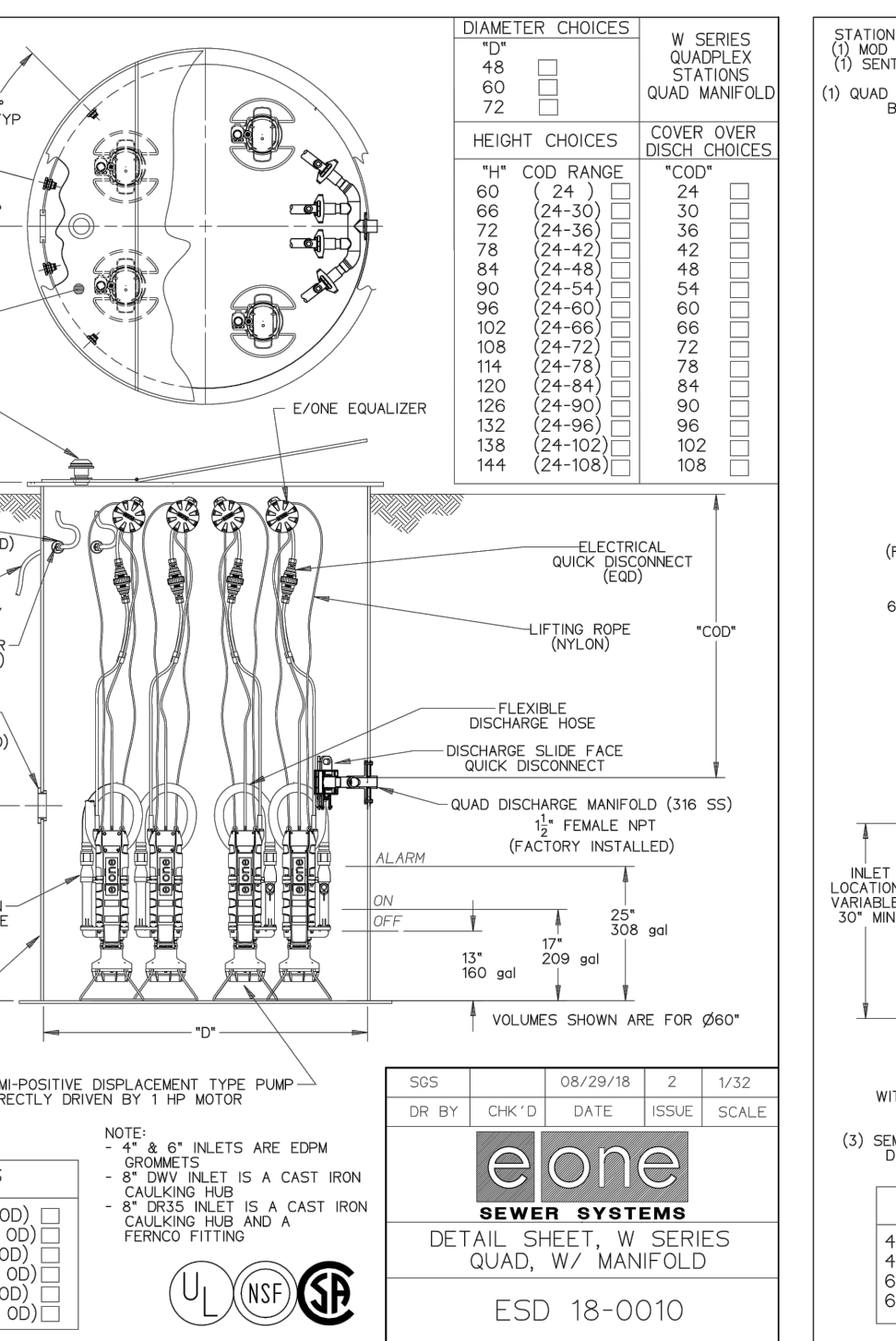
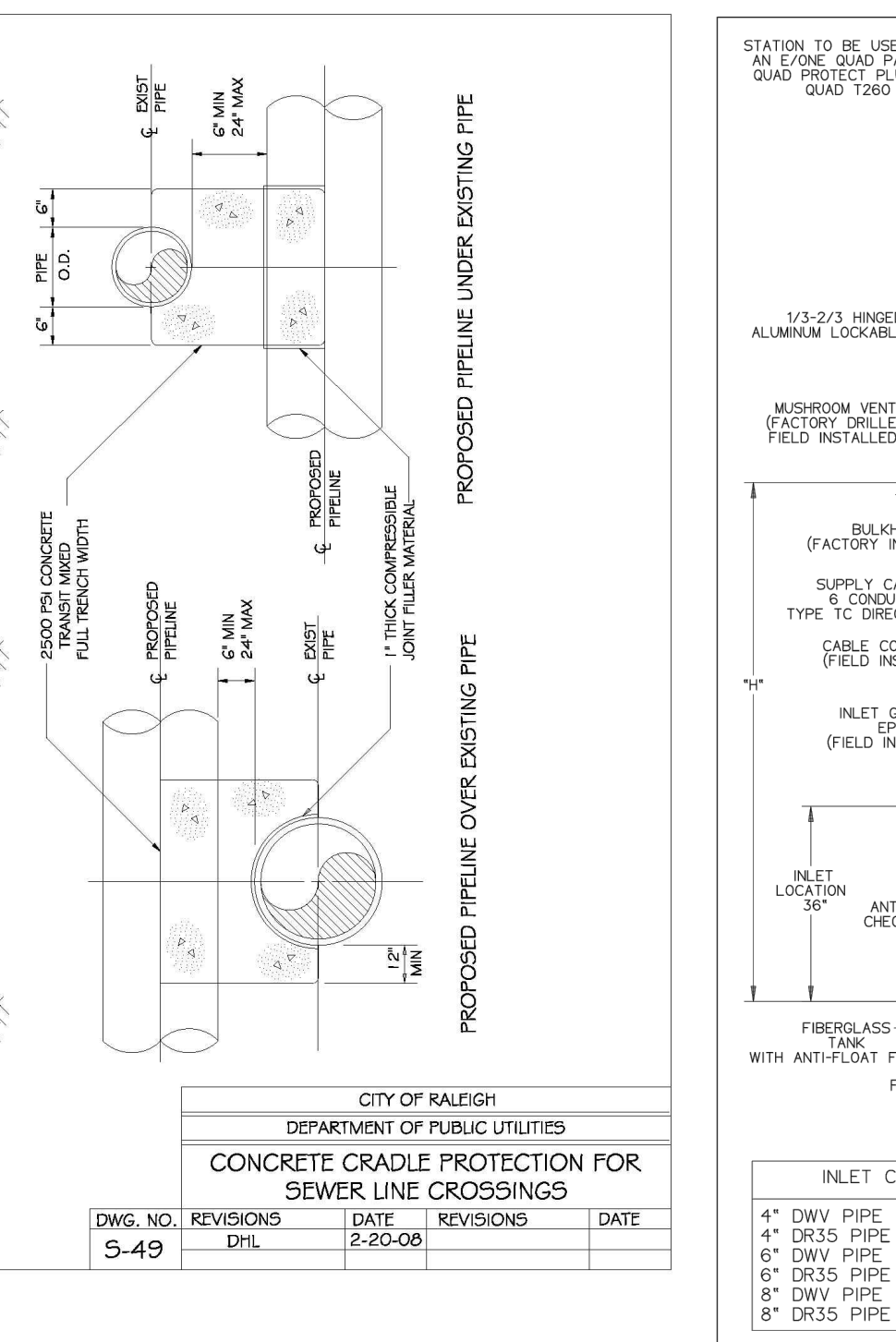
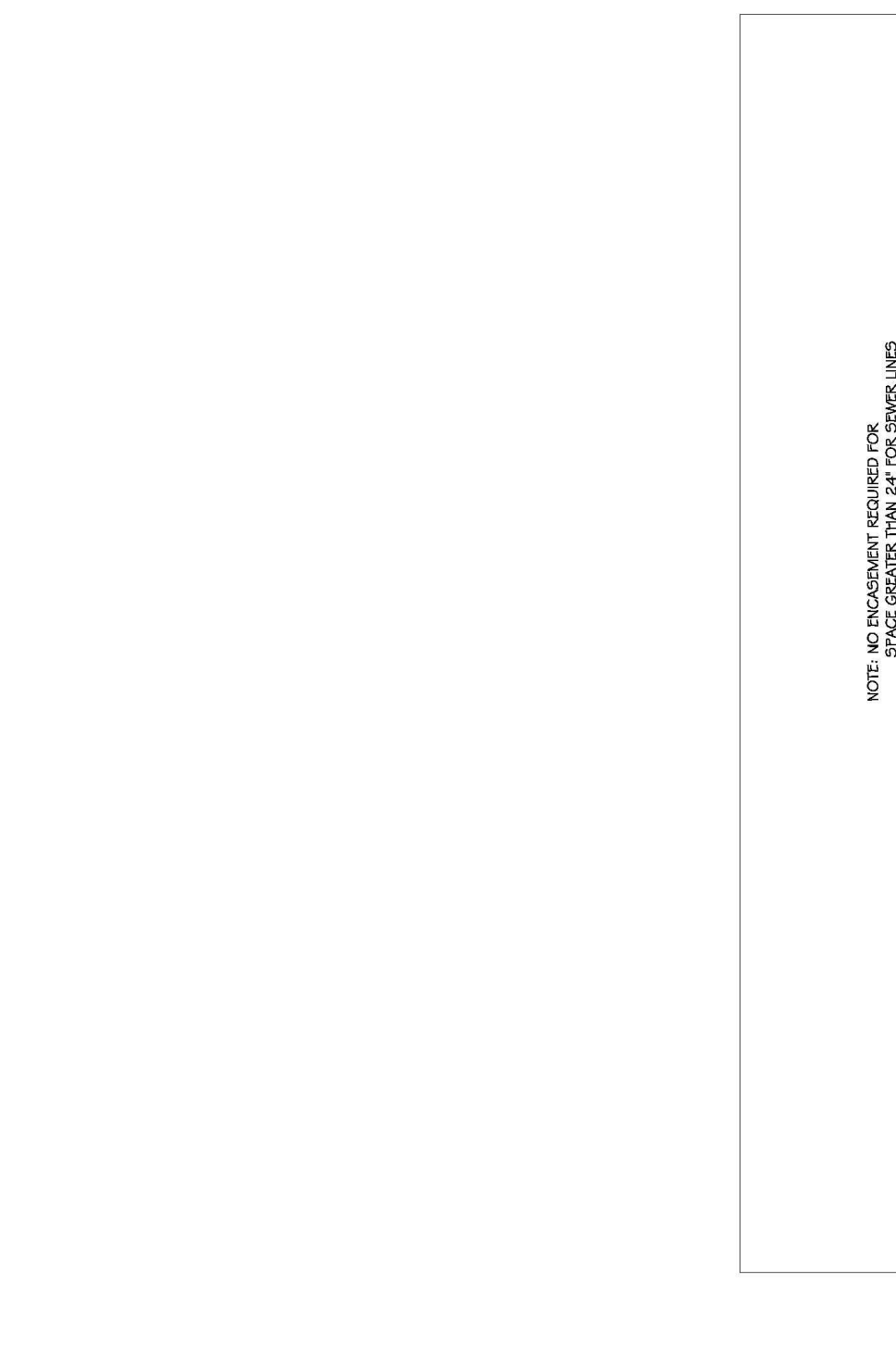
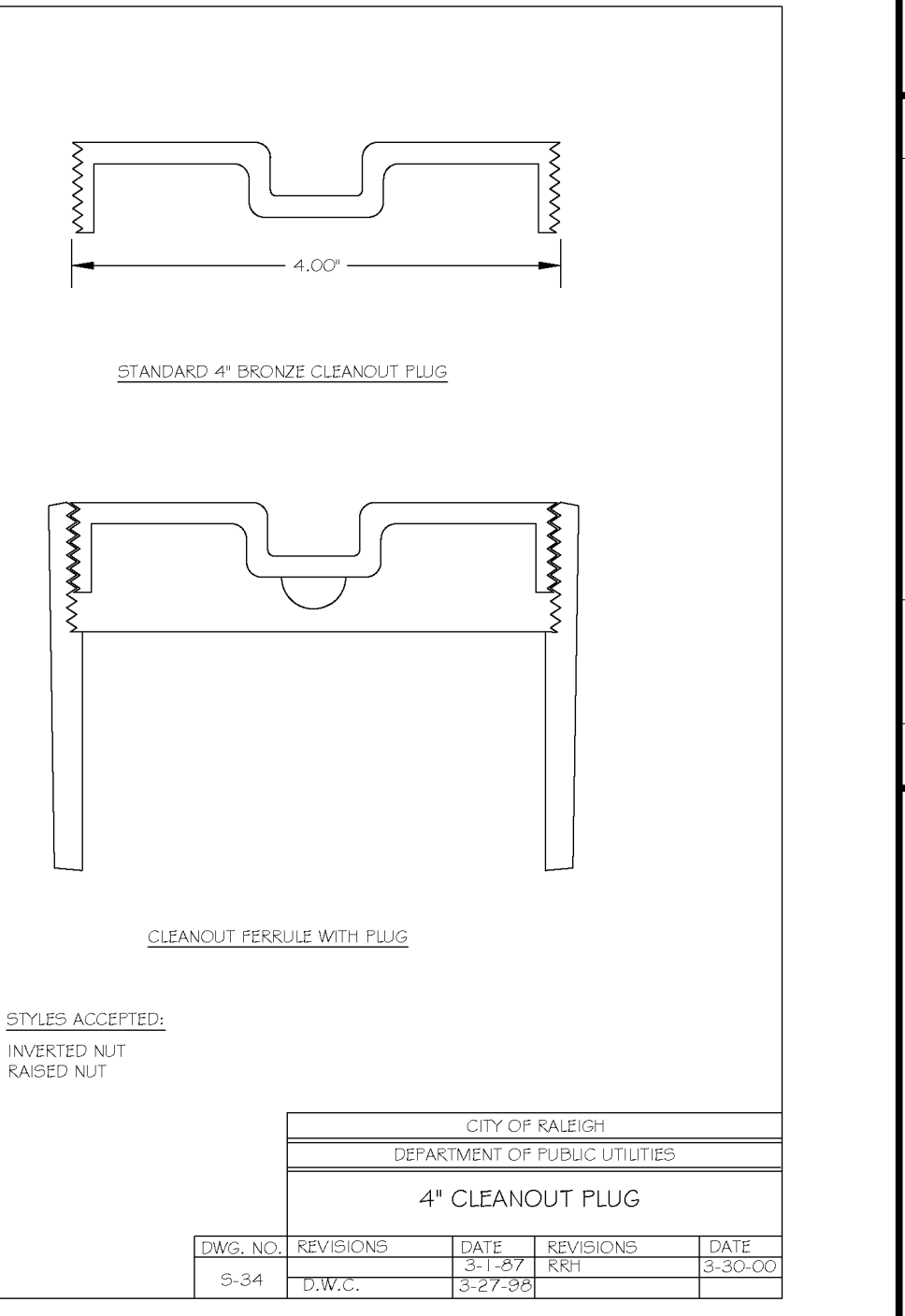
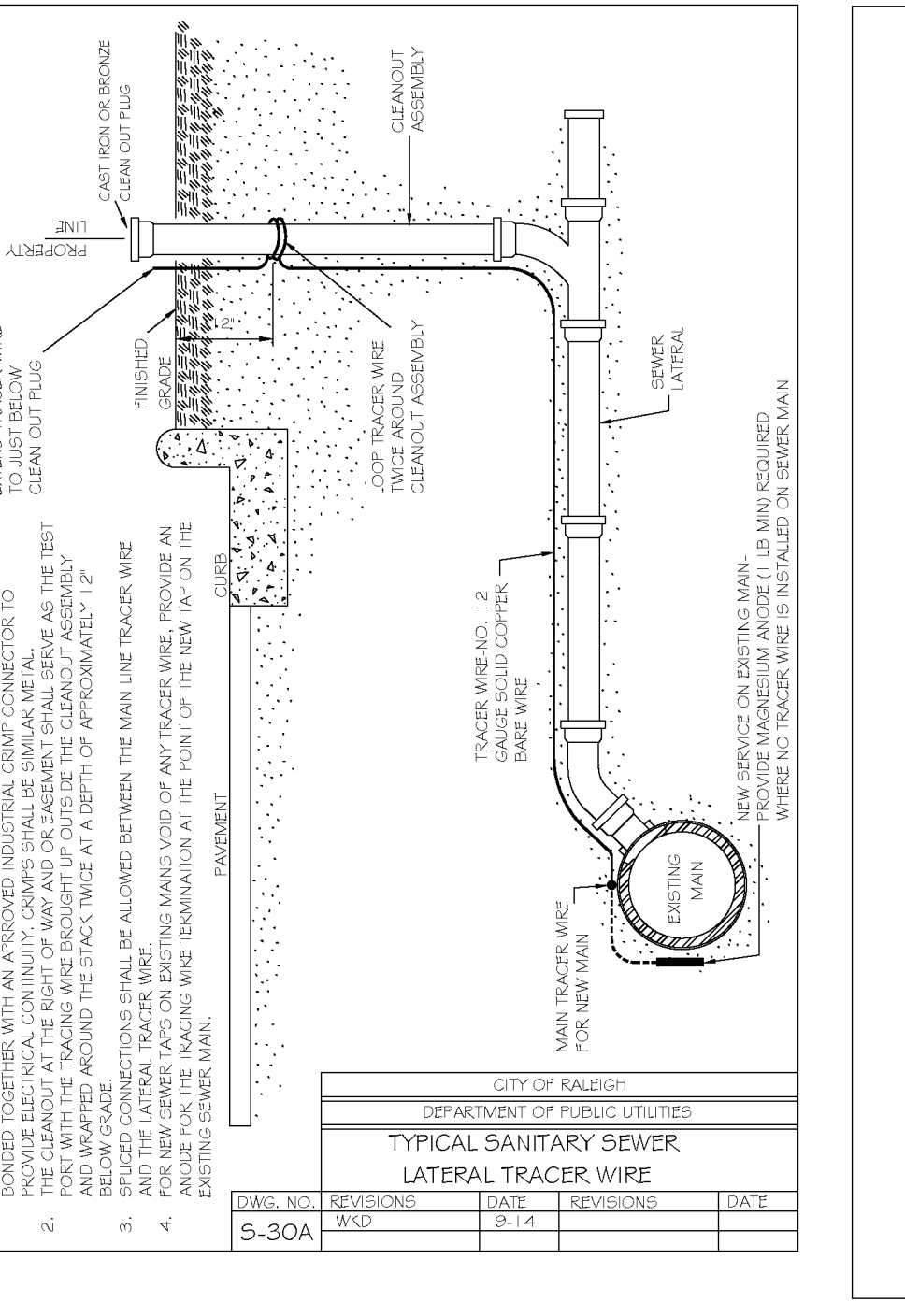
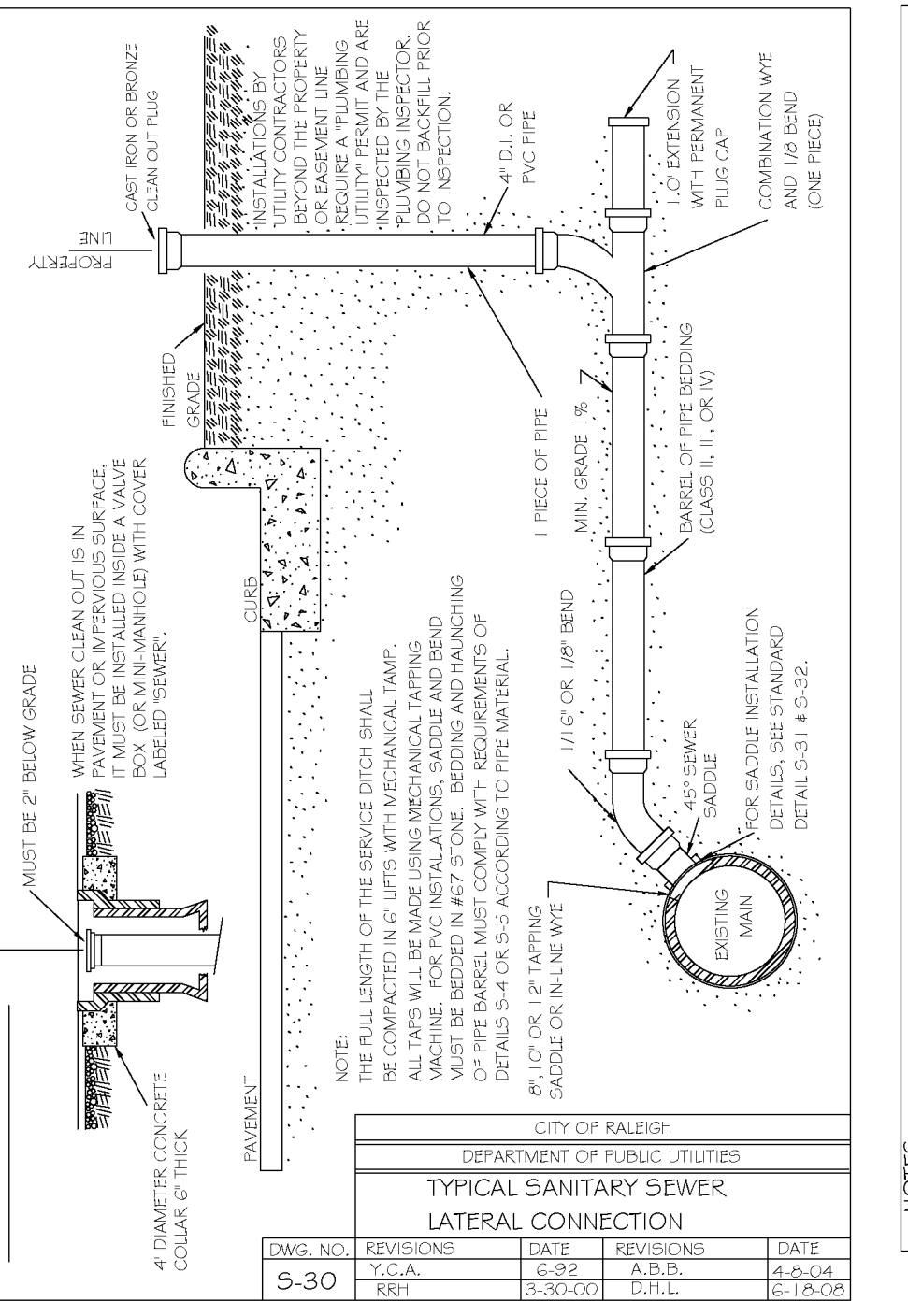
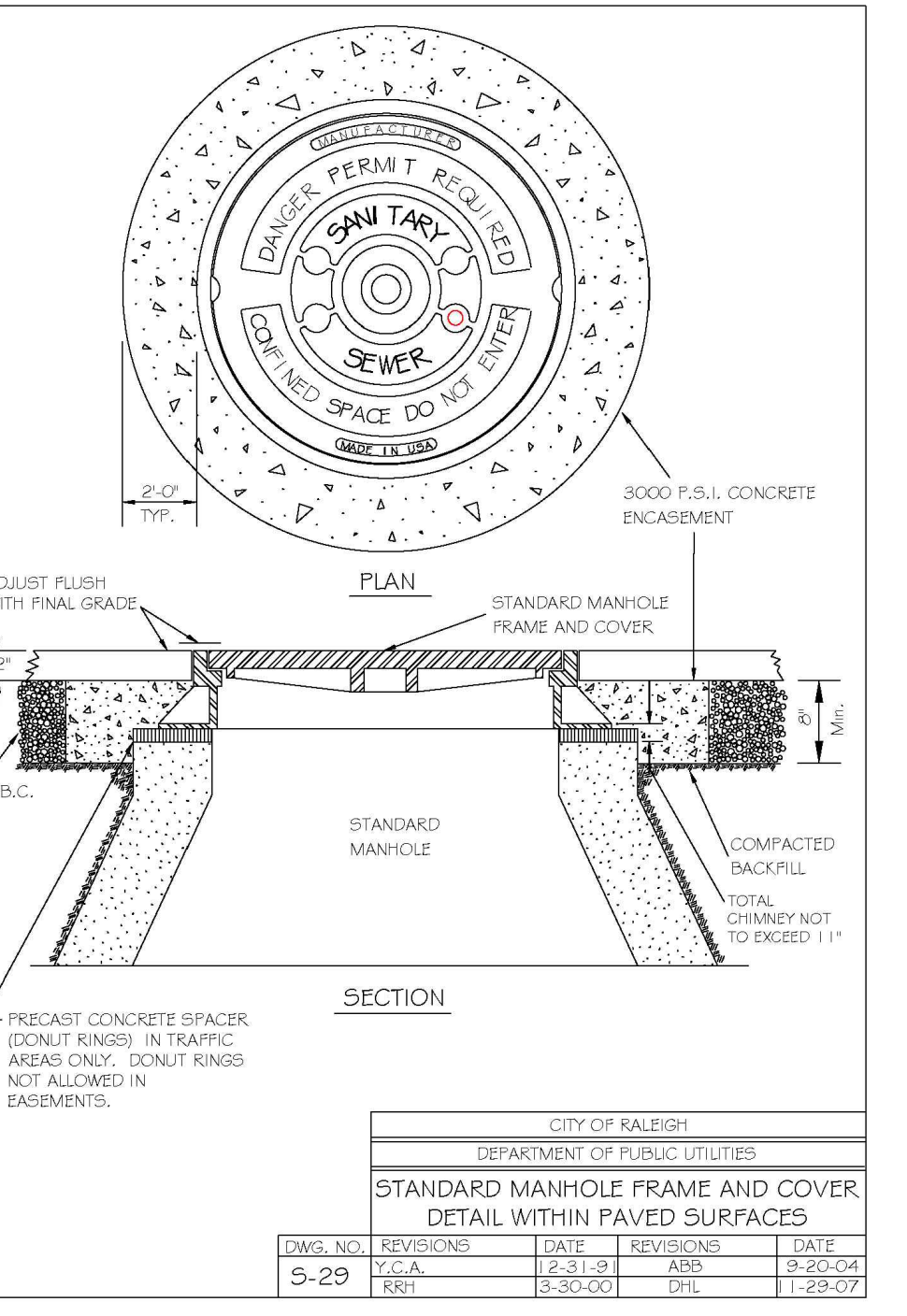
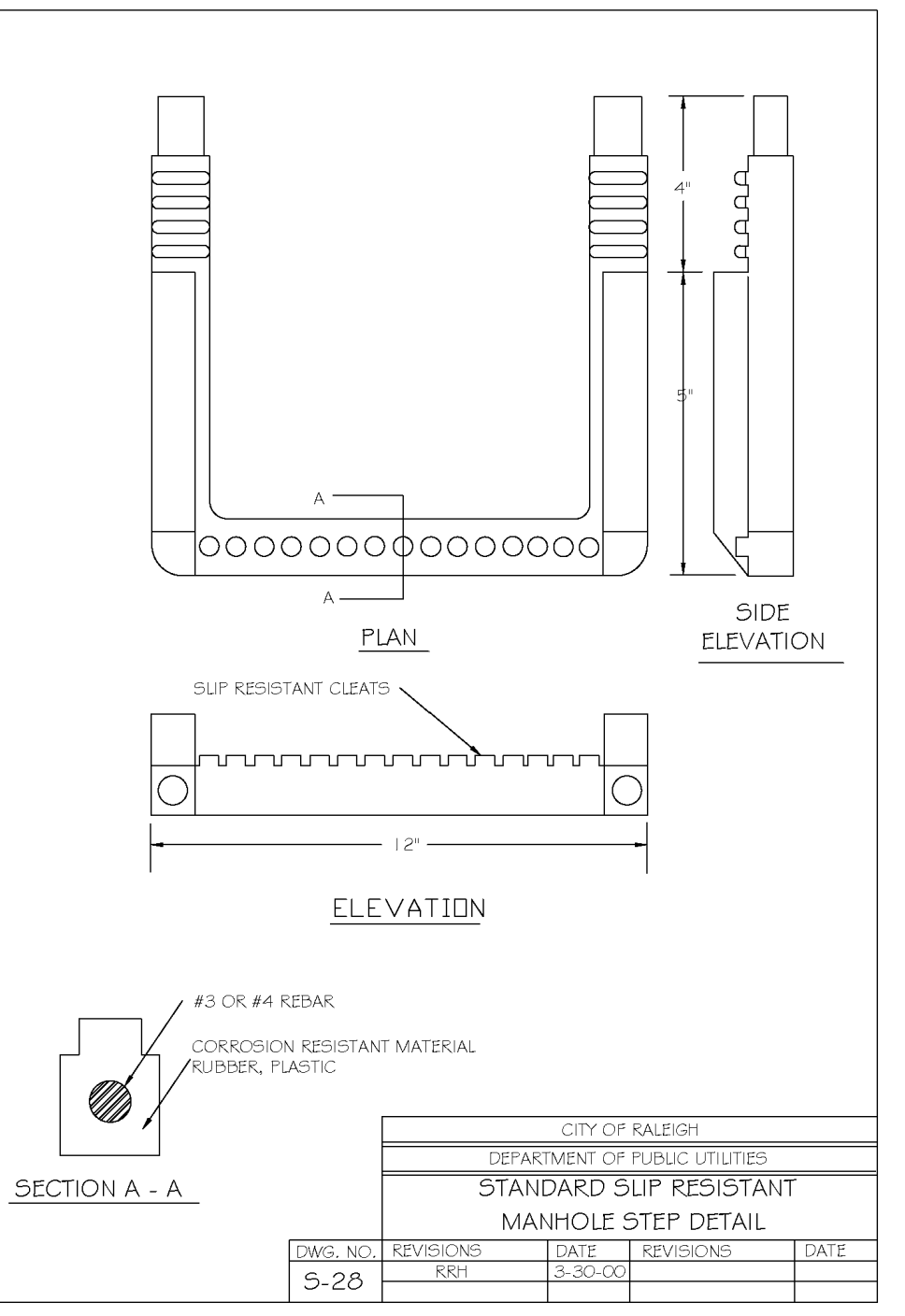
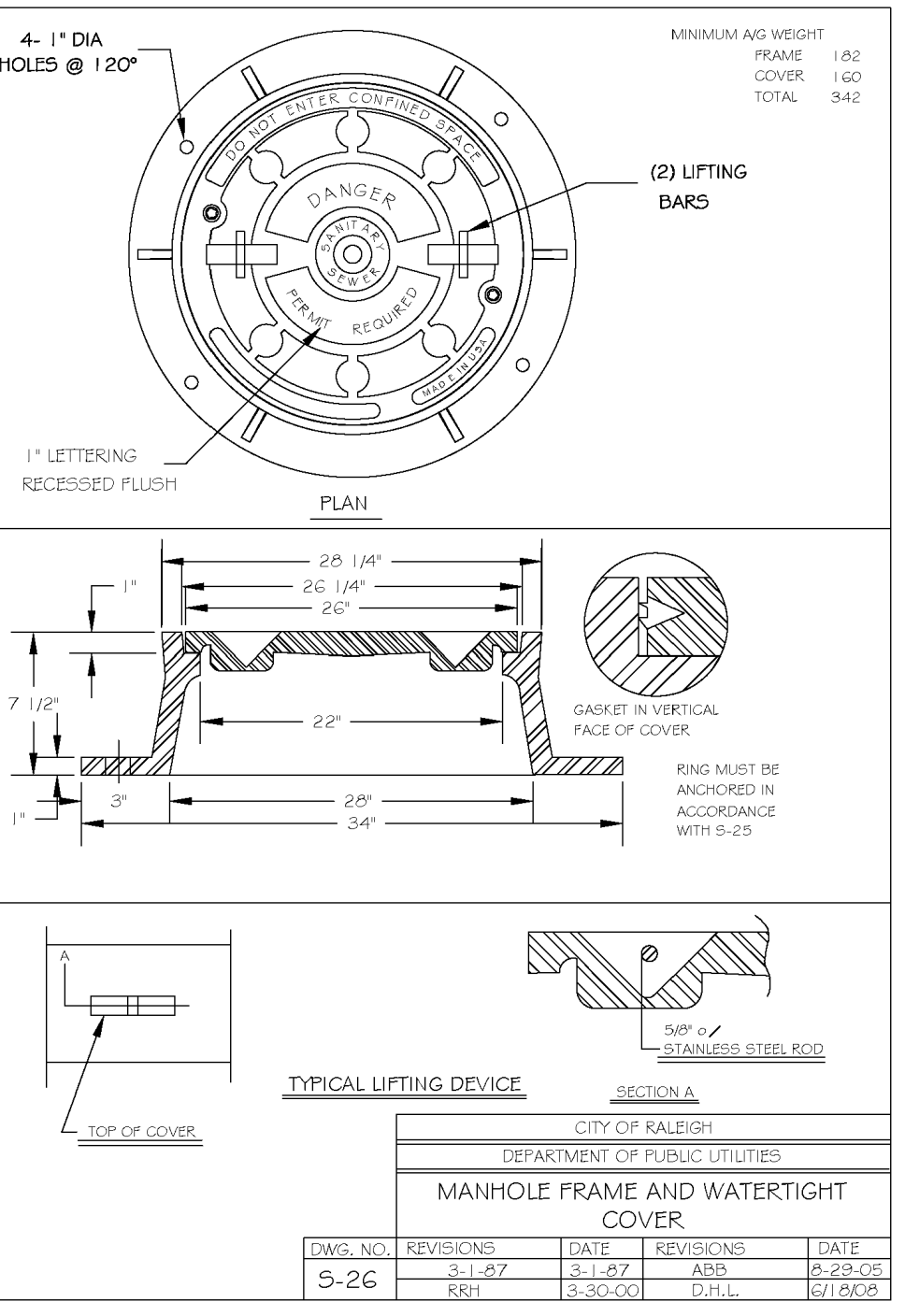
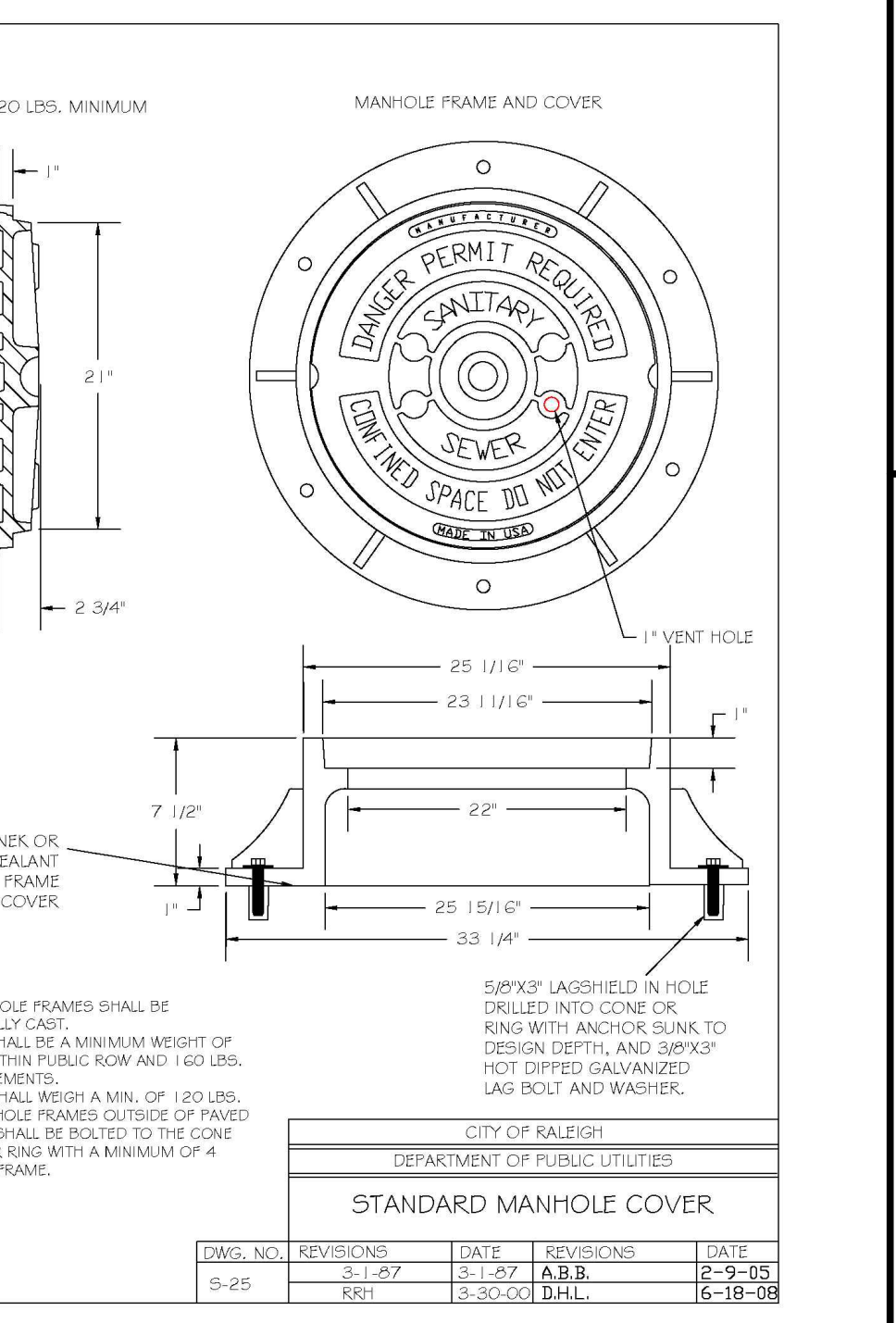
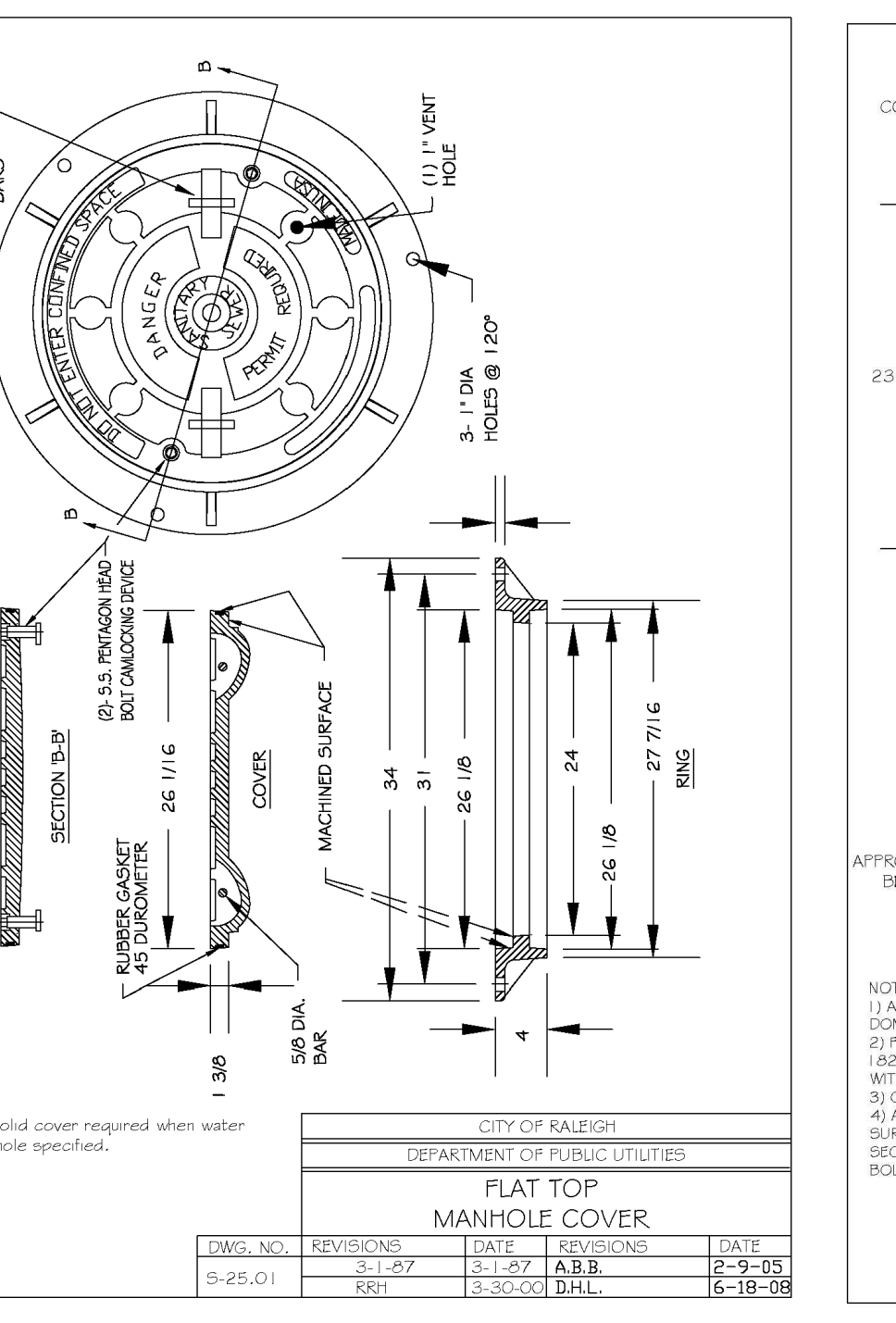
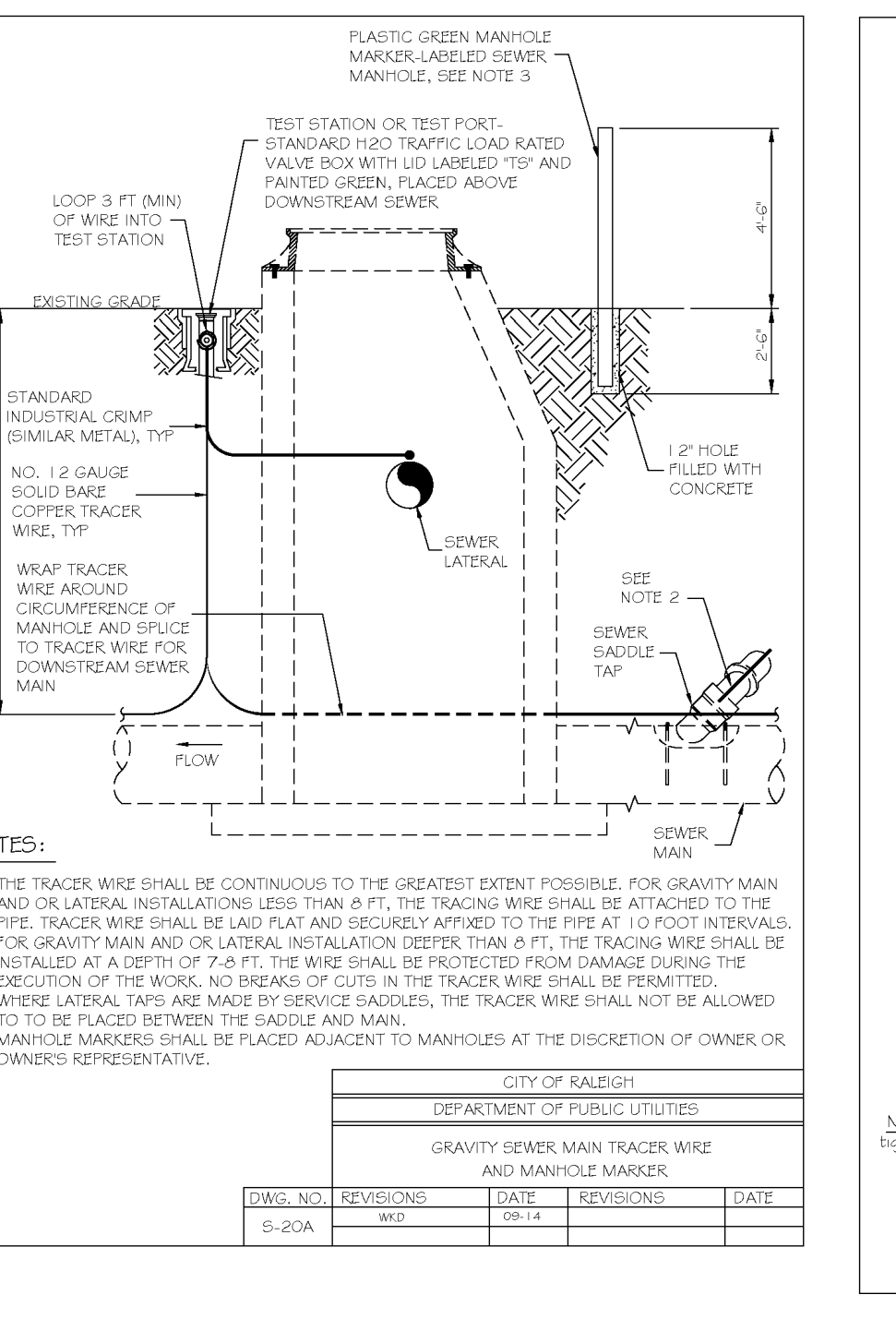
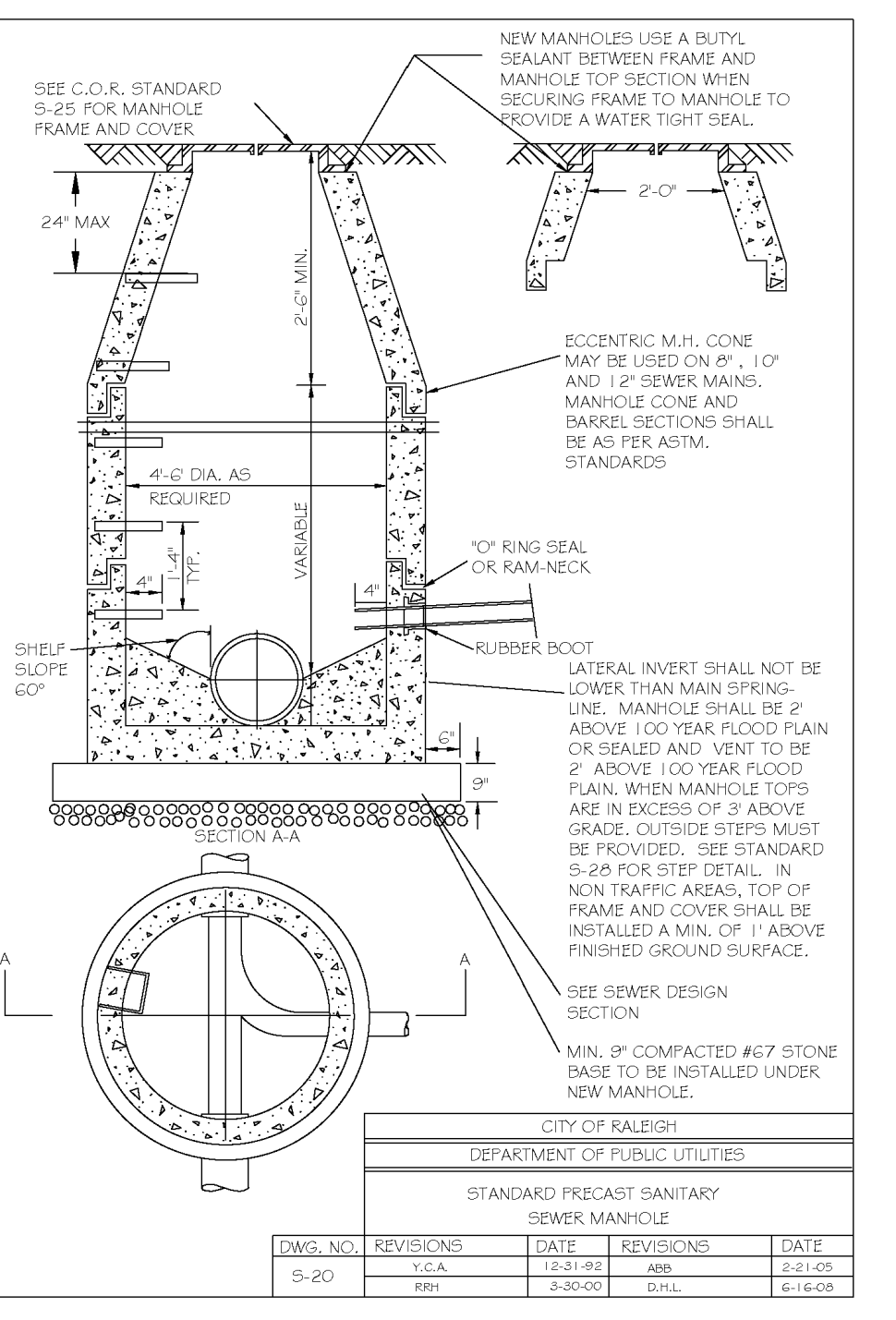
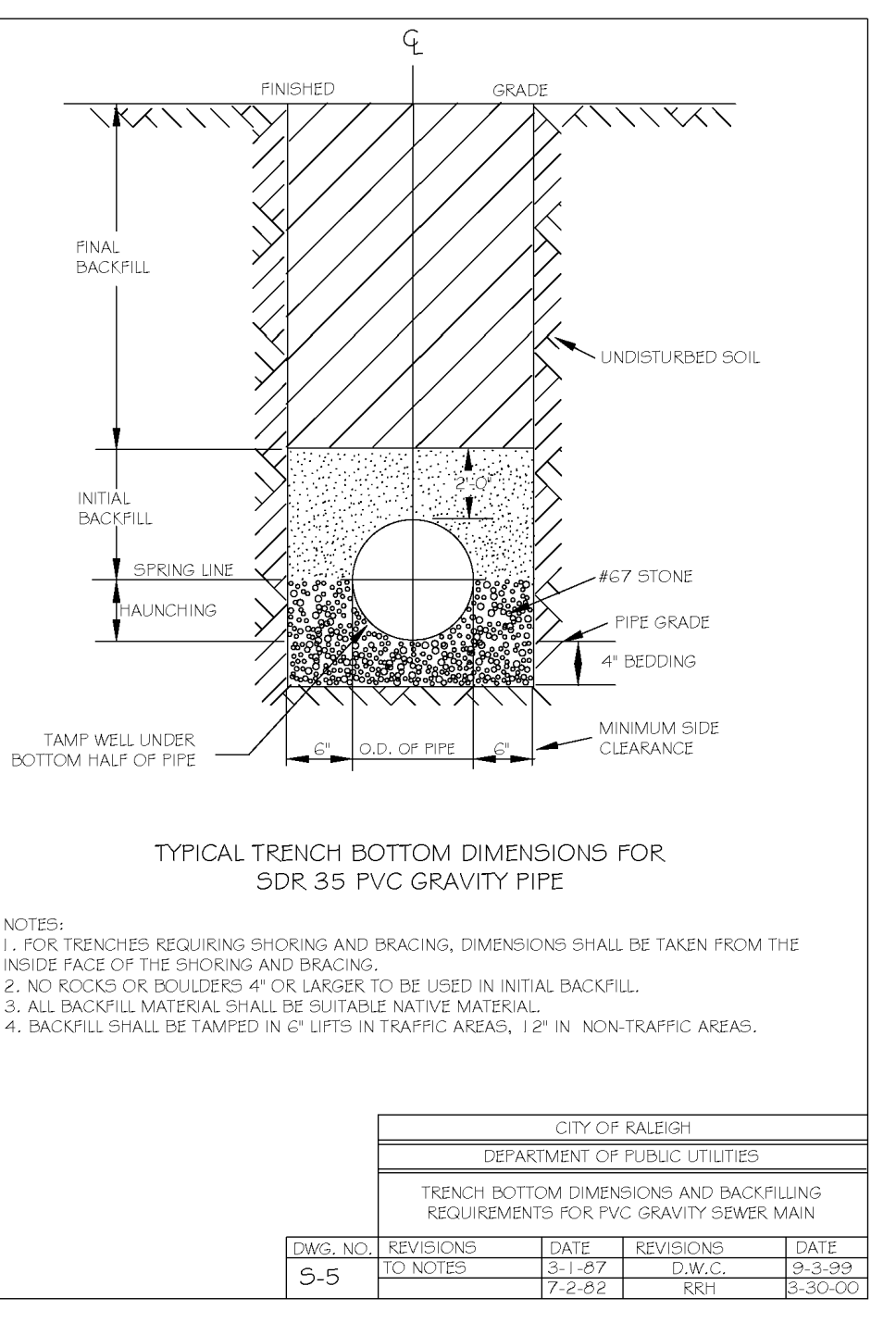
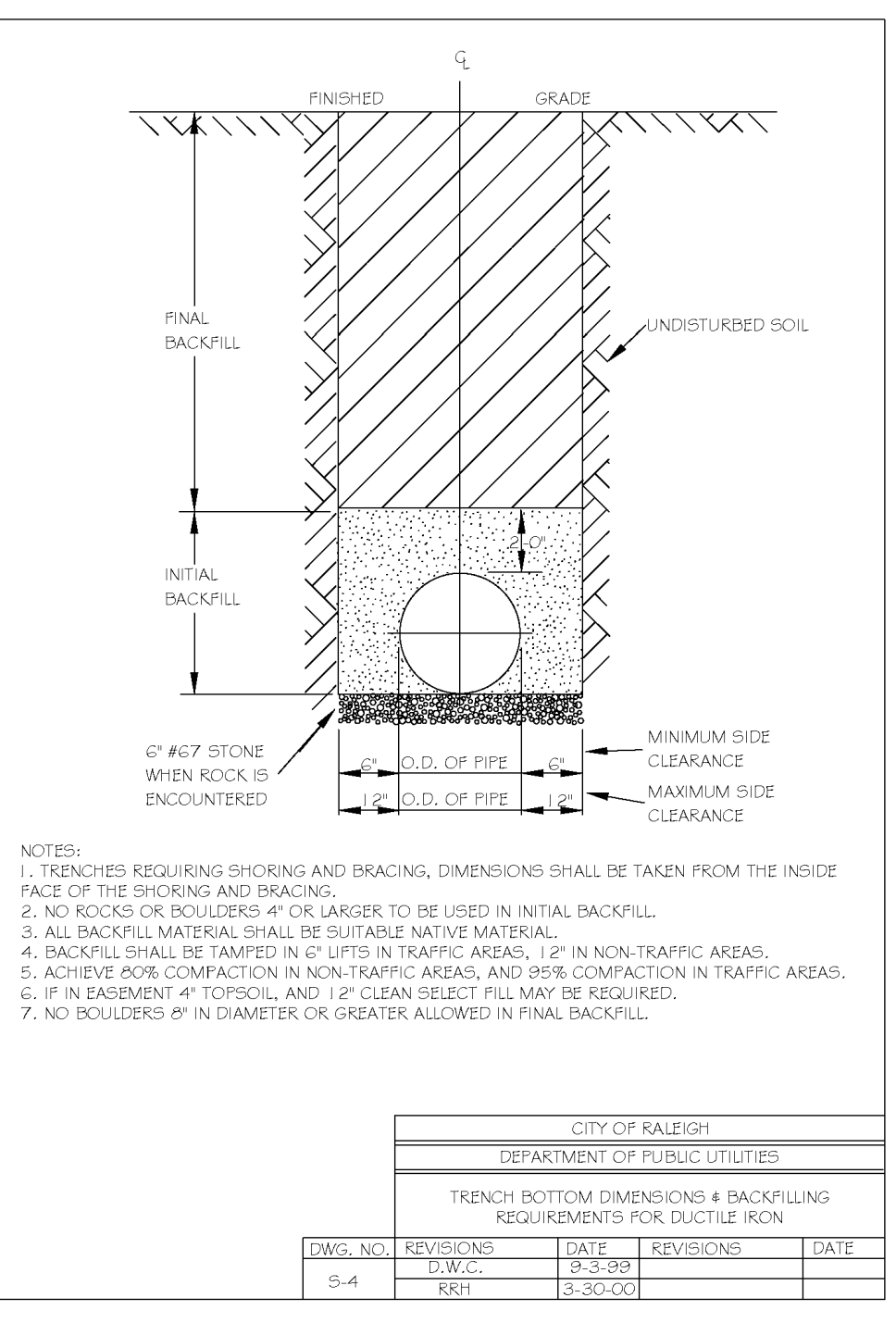
**COBBLESTONE VILLAGE MIXED USE DEVELOPMENT**  
 TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

**PROGRESS** MRM  
**DATE** DRAWN BY  
**JOB NO.**

**DETAILS**

SCALE: N.T.S. CHK BY: MDB





**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**  
 6810 CHARLETTOWN ROAD, SUITE 250, RALEIGH, NC 27607  
 TELEPHONE: (919) 851-2122 FAX: (919) 851-8686  
 CERTIFICATION NUMBERS: NCBELS (C-0119); NCBOLA (C-0267)

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

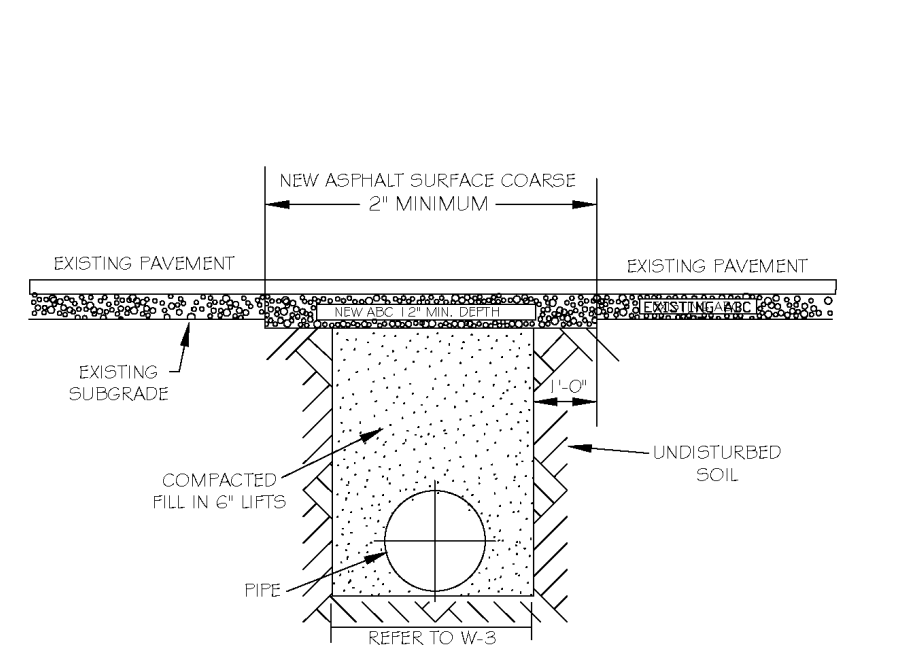
NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

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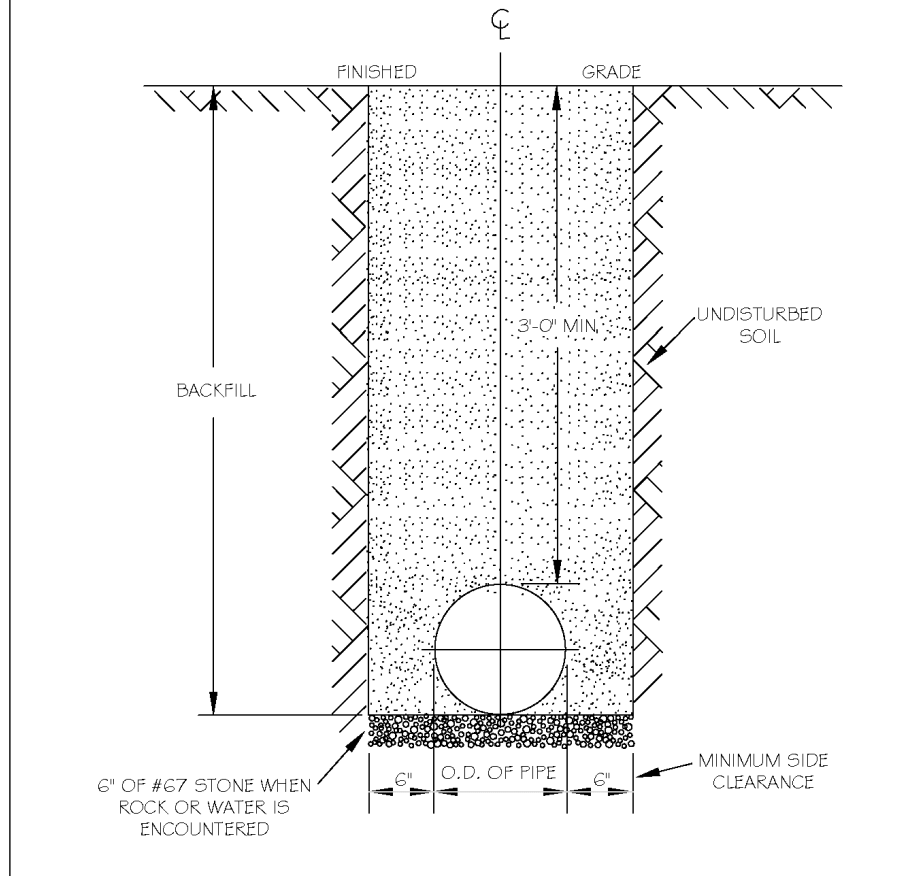
PRELIMINARY





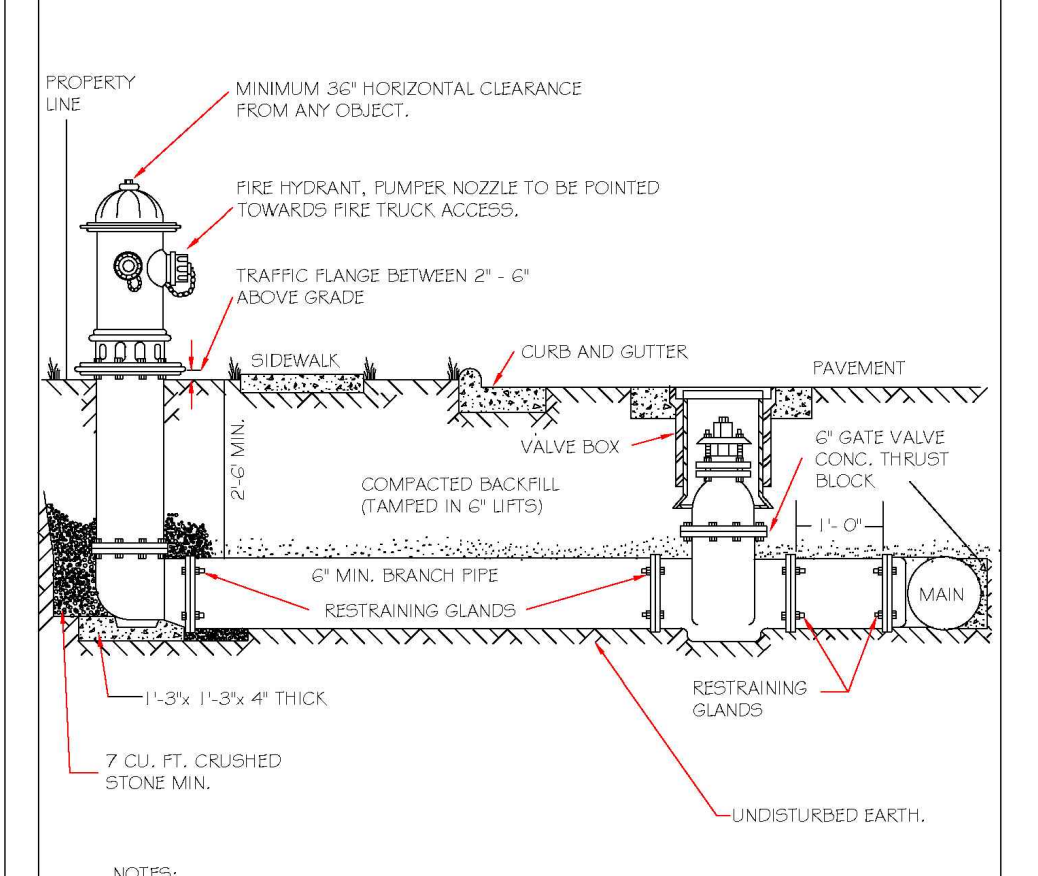
NOTES:  
 1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAW CUT MACHINE.  
 2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NC DOT.  
 3. THE FINAL 1" OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NC DOT.  
 4. THE ENTIRE THICKNESS VERTICAL EDGE OF CUT SHALL BE TACKED.  
 5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 2" THICK.  
 6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.  
 7. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING, W-3, FOR ADDITIONAL DETAILS.  
 8. NO HAND PATCHING ALLOWED.  
 9. PAVEMENT CUTS WITHIN NC DOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

| CITY OF RALEIGH                        |           | CITY OF RALEIGH                |           |
|--|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES         |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD ASPHALT PAVEMENT PATCH DETAIL |           |                                |           |
| DWG. NO.                               | REVISIONS | DATE                           | REVISIONS |
| W-2                                    | RRH       | 3-31-00                        | A.S.B.    |
| D.W.C.                                 | D.L.L.    | 11-1-04                        | J.P.S.    |
|  |           |                                | 10-29-10  |



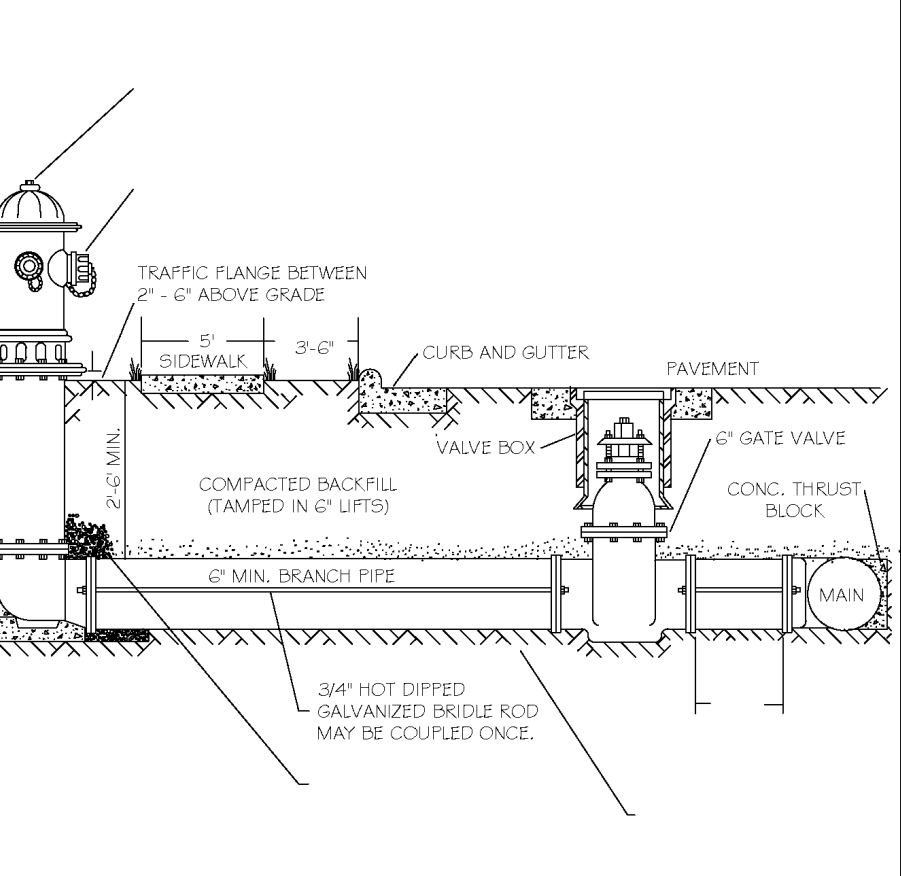
NOTES:  
 1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.  
 2. NO ROCKS OR BouldERS 4" OR LARGER TO BE USED IN BACKFILL.  
 3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.  
 4. BACKFILL SHALL BE TAMPED IN 6" LIFTS.  
 5. ACHIEVE 95% COMPACTION IN BACKFILL.

| CITY OF RALEIGH                           |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES            |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD FIRE HYDRANT INSTALLATION DETAIL |           |                                |           |
| DWG. NO.                                  | REVISIONS | DATE                           | REVISIONS |
| W-3                                       | RRH       | 3-31-00                        | A.S.B.    |
| D.W.C.                                    | D.L.L.    | 3-31-00                        | J.P.S.    |
|   |           |                                | 10-29-10  |



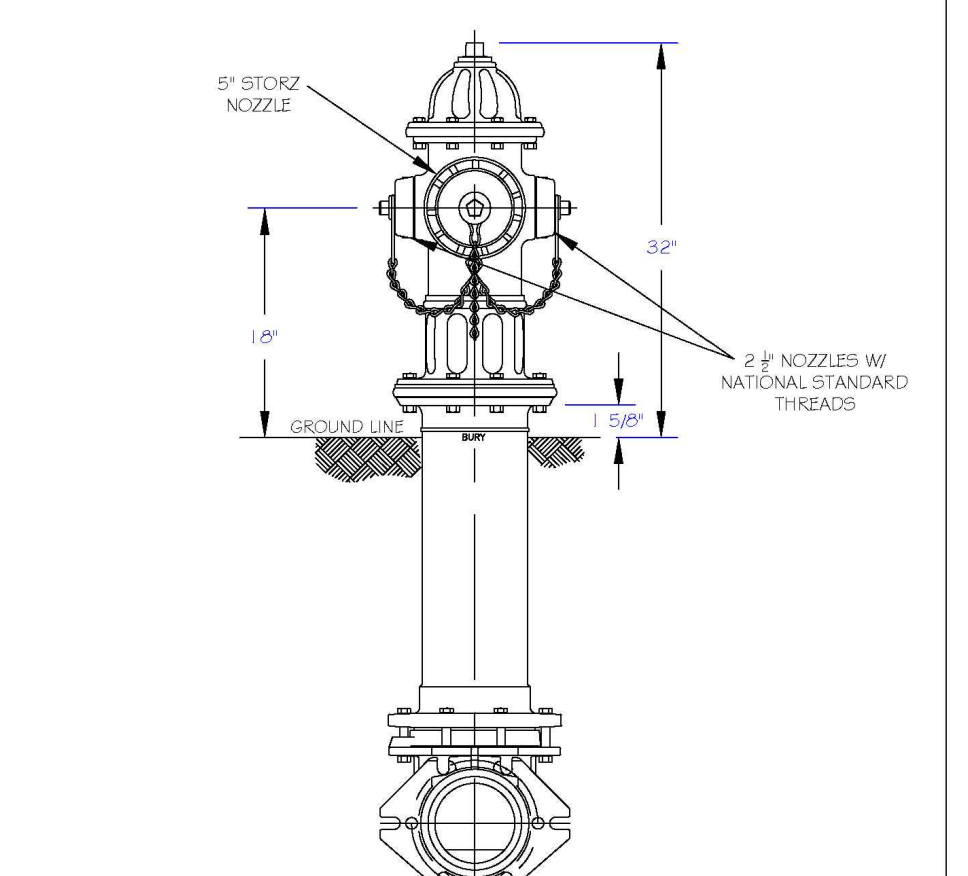
NOTES:  
 1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, M.H.I., WATERBURY, GLOW, EAST JORDAN IRON WORKS, OR US PIPE.  
 2. BRANCH PIPE SHALL BE DUCTILE IRON ANMA C150-20.  
 3. 4" GATE VALVE SHALL BE ANMA C200-20 OPEN LEFT.  
 4. STEEL RODS AND BOLTS SHALL BE #4 HOT DIPPED GALVANIZED.  
 5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION.  
 6. ROADS SHALL NOT BE COUPLED MORE THAN ONCE. IF THE LENGTH FROM THE VALVE TO THE HYDRANT EXCEEDS 20' THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CASE SHALL BE INSTALLED NO MORE THAN 10' FROM HYDRANT AND POURED IN CONCRETE.  
 7. FIRE HYDRANTS TO BE LOCATED IN ROW OR 2 FOOT EASEMENT ADJACENT TO ROW.

| CITY OF RALEIGH                           |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES            |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD FIRE HYDRANT INSTALLATION DETAIL |           |                                |           |
| DWG. NO.                                  | REVISIONS | DATE                           | REVISIONS |
| W-4                                       | ABB       | 4-6-04                         | FW        |
| D.W.C.                                    | D.L.L.    | 3-31-00                        | J.P.S.    |
|   |           |                                | 10-29-10  |



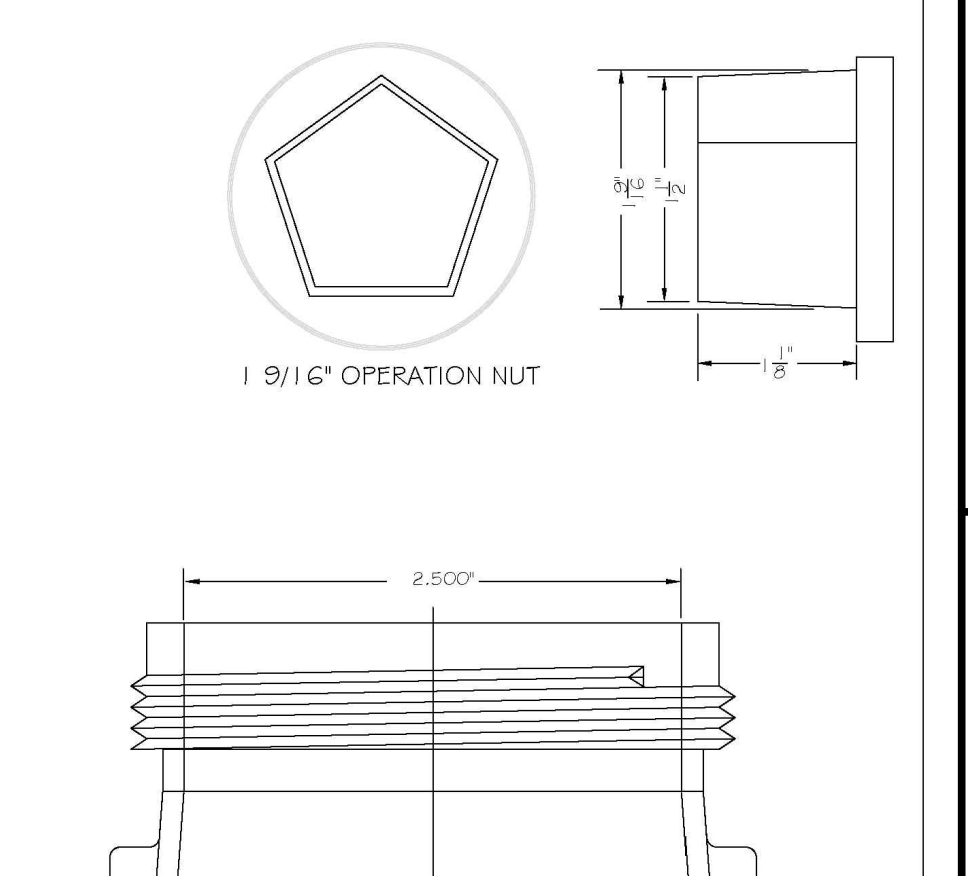
NOTES:  
 1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, M.H.I., WATERBURY, GLOW, EAST JORDAN IRON WORKS, OR US PIPE.  
 2. BRANCH PIPE SHALL BE DUCTILE IRON ANMA C150-20.  
 3. 4" GATE VALVE SHALL BE ANMA C200-20 OPEN LEFT.  
 4. STEEL RODS AND BOLTS SHALL BE #4 HOT DIPPED GALVANIZED.  
 5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION.  
 6. ROADS SHALL NOT BE COUPLED MORE THAN ONCE. IF THE LENGTH FROM THE VALVE TO THE HYDRANT EXCEEDS 20' THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CASE SHALL BE INSTALLED NO MORE THAN 10' FROM HYDRANT AND POURED IN CONCRETE.  
 7. FIRE HYDRANTS TO BE LOCATED IN ROW OR 2 FOOT EASEMENT ADJACENT TO ROW.

| CITY OF RALEIGH                           |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES            |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD FIRE HYDRANT INSTALLATION DETAIL |           |                                |           |
| DWG. NO.                                  | REVISIONS | DATE                           | REVISIONS |
| W-4a                                      | ABB       | 4-6-04                         | FW        |
| D.W.C.                                    | D.L.L.    | 3-31-00                        | J.P.S.    |
|   |           |                                | 10-29-10  |



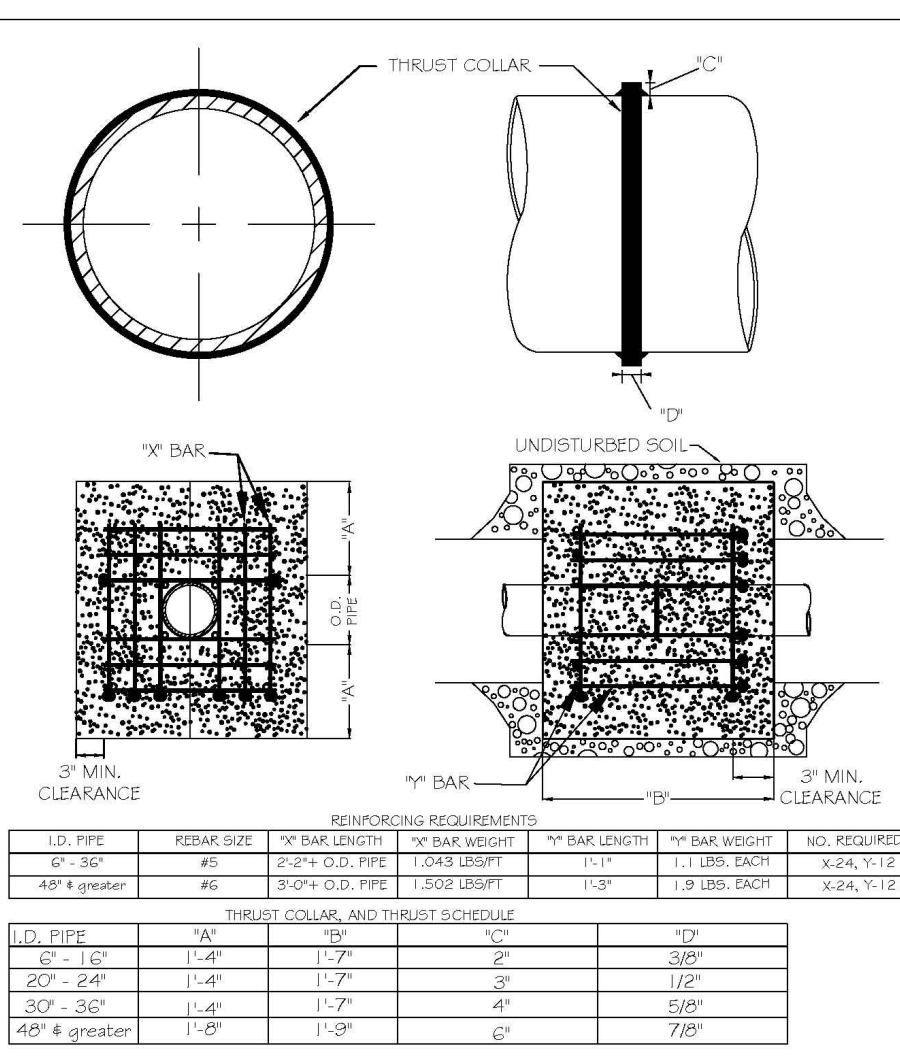
NOTES:  
 1. RALEIGH PUBLIC HYDRANTS SHALL BE PAINTED SOLID RED.  
 2. KNIGHTDALE, 4 ROLESVILLE PUBLIC HYDRANTS SHALL BE PAINTED RED W/ SILVER OPERATING NUTS.  
 3. ZEBULON PUBLIC HYDRANTS SHALL BE PAINTED RED W/ SILVER BONNETS AND OPERATING NUTS.  
 4. WAKE FOREST AND GARNER, AND WENDELL PUBLIC AND PRIVATE HYDRANTS TO BE PAINTED SAFETY YELLOW W/ SILVER CAPS AND OPERATING NUTS.  
 5. OPERATING NUTS ON HYDRANTS CONNECTED TO POTABLE MAINS LARGER THAN 1/2" SHALL BE PAINTED BLACK.

| CITY OF RALEIGH                                   |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES                    |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD FIRE HYDRANT WITH 5" STORZ PUMPER NOZZLE |           |                                |           |
| DWG. NO.  | REVISIONS | DATE                           | REVISIONS |
| W-5   | RRH       | 3-1-07                         | ARR       |
| D.W.C.  | D.L.L.    | 3-31-00                        | D.H.L.    |
|   |           |                                | 11-11-10  |

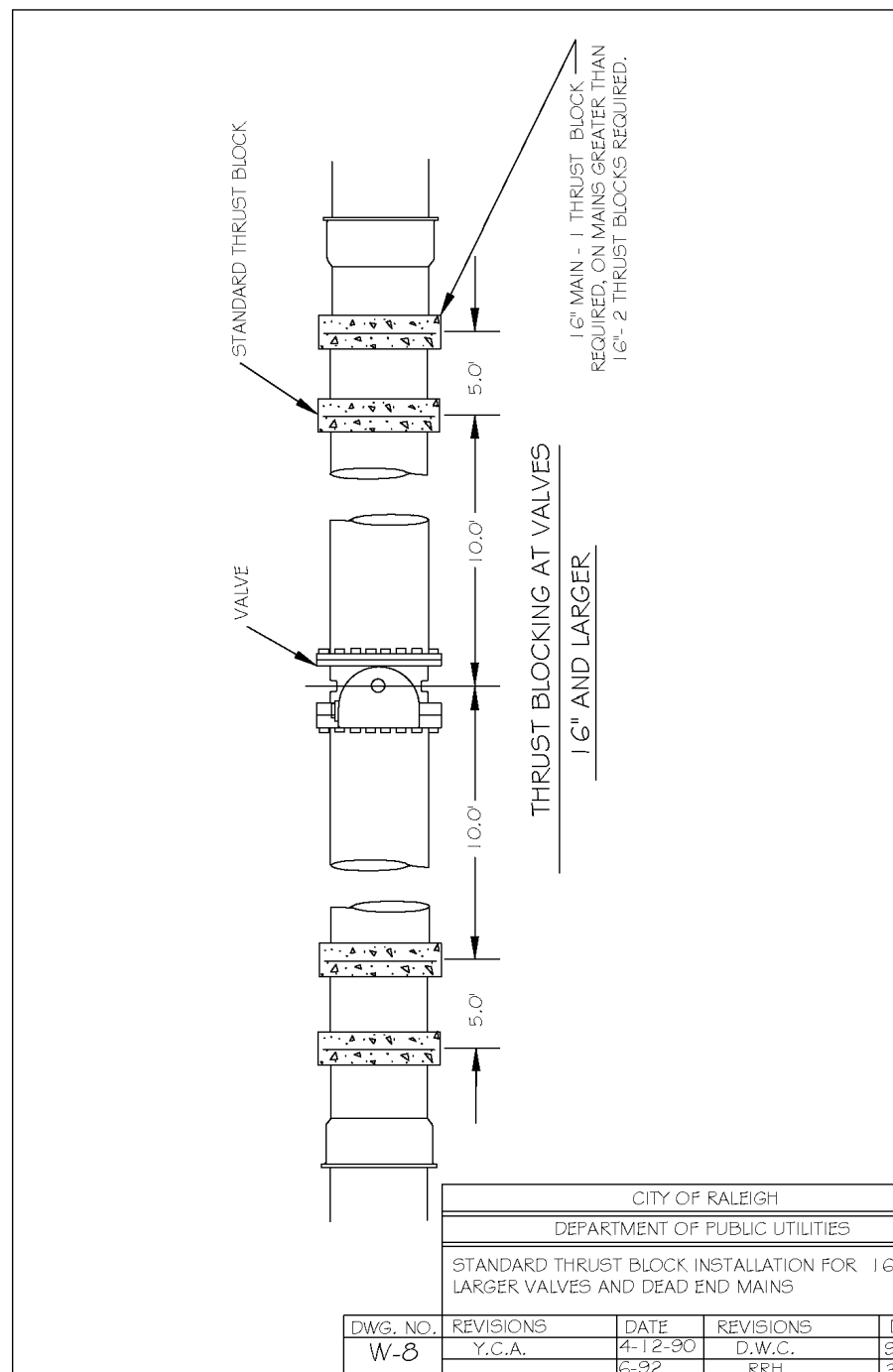


NOTES:  
 1. STEEL RODS AND BOLTS SHALL BE #4 HOT DIPPED GALVANIZED.  
 2. RESTRAINING MECHANICAL JOINT SHALL BE USED AT ALL FITTINGS.  
 3. RESTRAINING MECHANICAL JOINT SHALL BE USED AT ALL FITTINGS.  
 4. RESTRAINING MECHANICAL JOINT SHALL BE USED AT ALL FITTINGS.  
 5. RESTRAINING MECHANICAL JOINT SHALL BE USED AT ALL FITTINGS.  
 6. RESTRAINING MECHANICAL JOINT SHALL BE USED AT ALL FITTINGS.

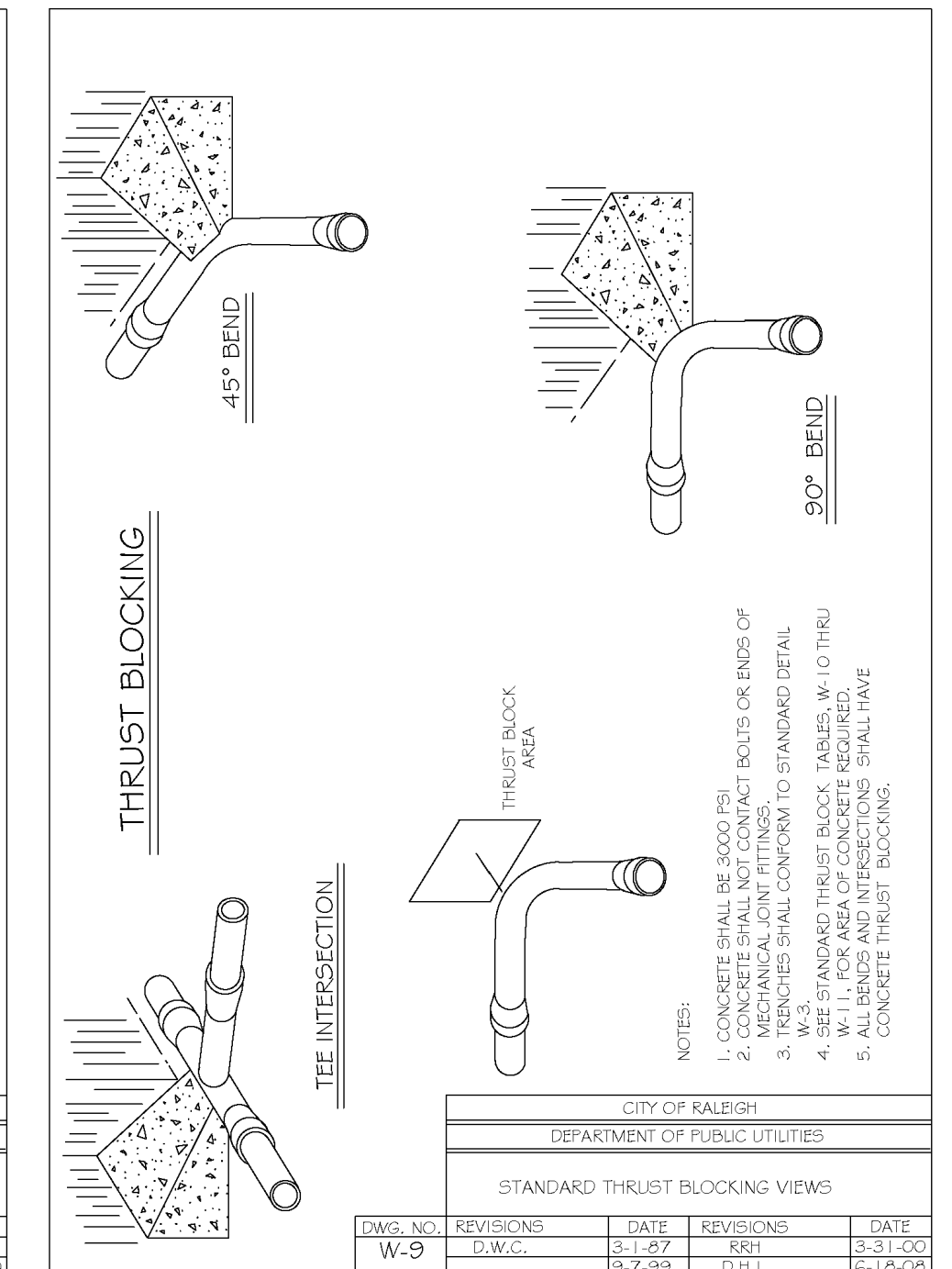
| CITY OF RALEIGH                     |           | CITY OF RALEIGH                |           |
|-------------------------------------|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES      |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| HYDRANT OPERATING NUT AND 2 1/2\"/> |           |                                |           |
| DWG. NO.                            | REVISIONS | DATE                           | REVISIONS |
| W-6                                 | RRH       | 3-31-00                        | D.H.L.    |
| D.W.C.                              | A.S.B.    | 4-13-04                        | J.P.S.    |
|                                     |           |                                | 11-11-10  |



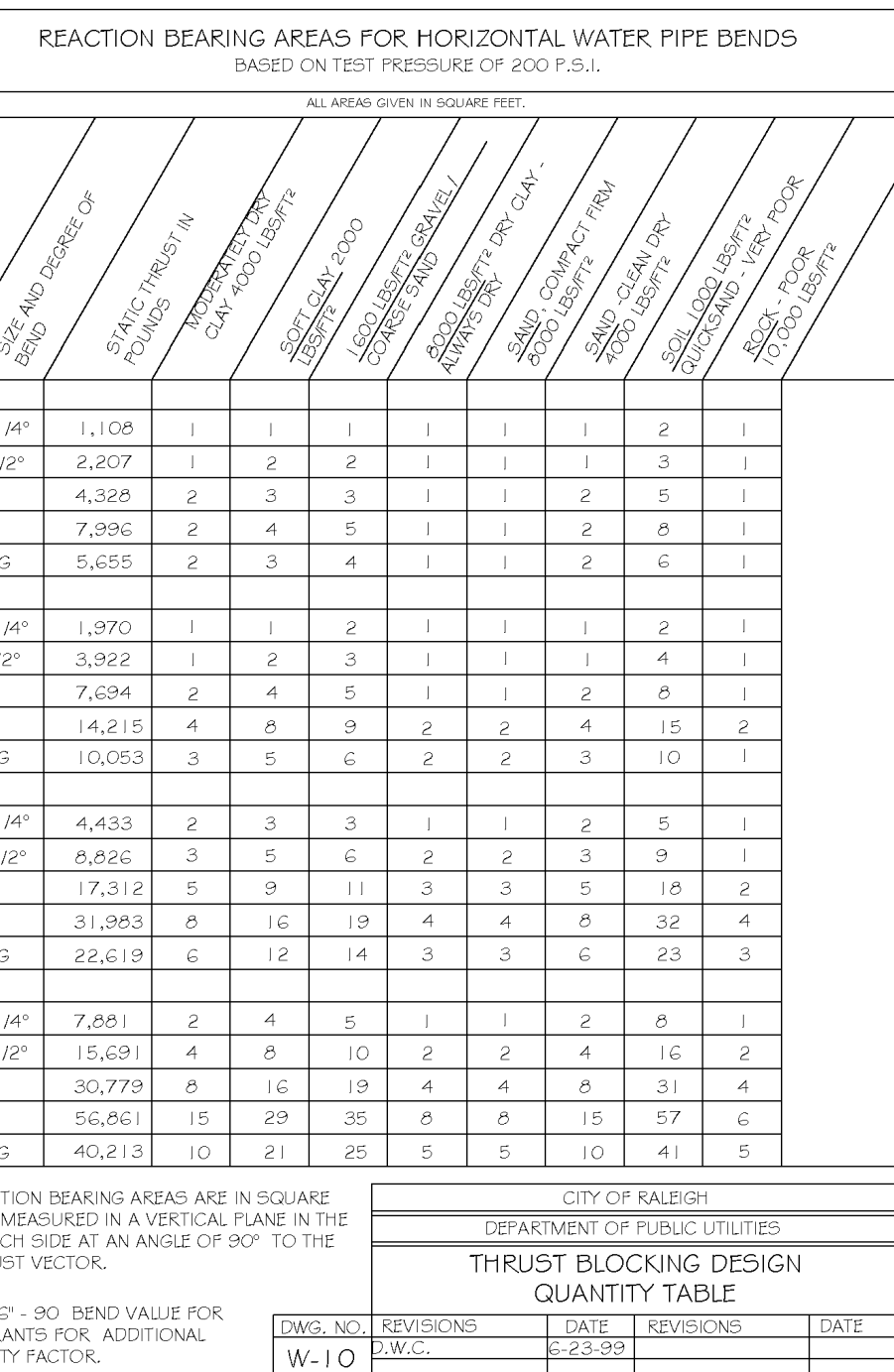
| CITY OF RALEIGH  |           | CITY OF RALEIGH                |           |
|--|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES                         |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD THRUST BLOCKING DESIGN DETAIL FOR WATER MAINS |           |                                |           |
| DWG. NO.   | REVISIONS | DATE                           | REVISIONS |
| W-7  | RRH       | 3-1-00                         | J.P.S.    |
| D.W.C.   | D.L.L.    | 12-18-08                       |           |
|  |           |                                | 11-11-10  |



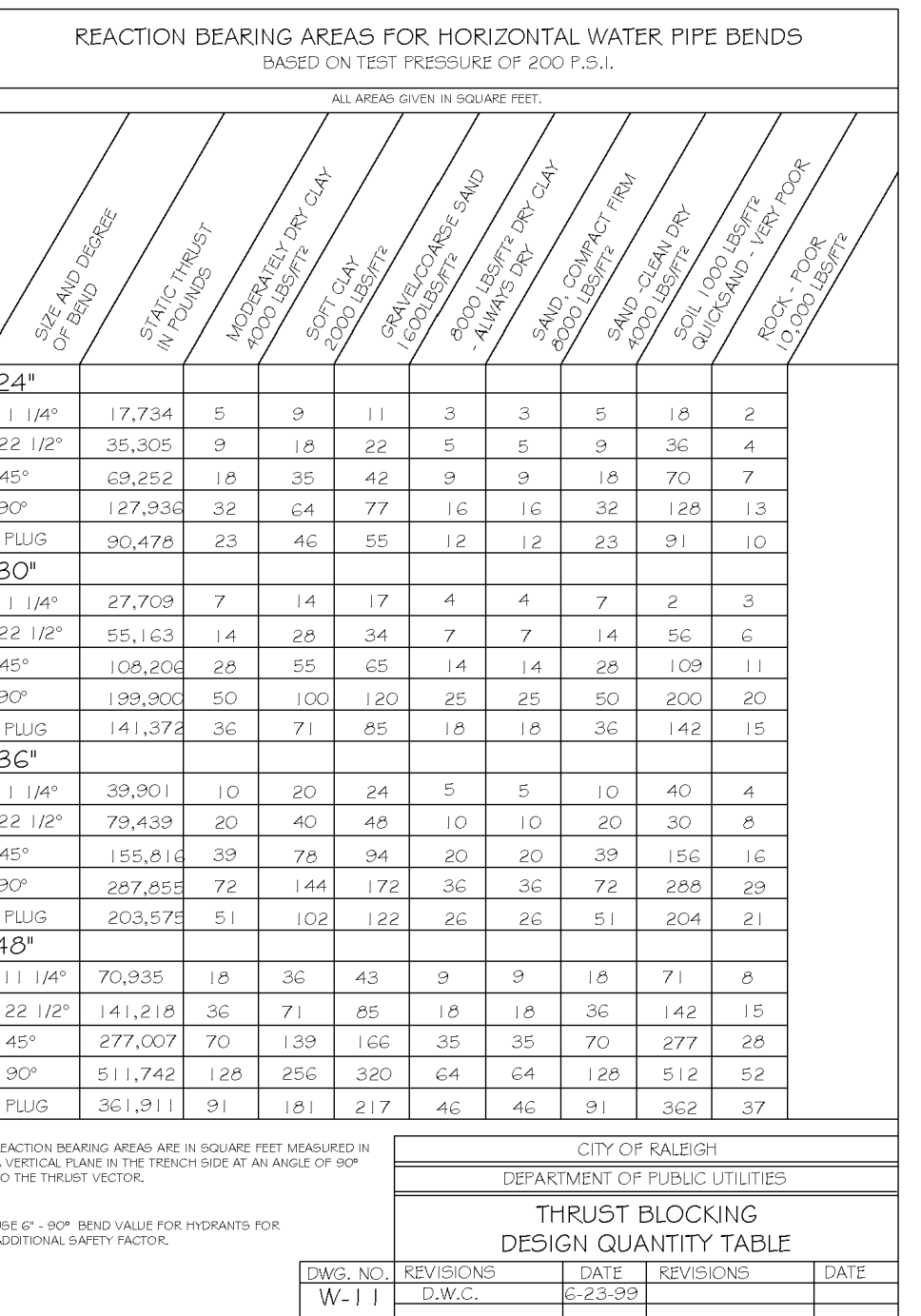
| CITY OF RALEIGH                               |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES                |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD THRUST BLOCK INSTALLATION FOR 16\"/> |           |                                |           |
| DWG. NO.                                      | REVISIONS | DATE                           | REVISIONS |
| W-8   | Y.C.A.    | 4-29-09                        | RRH       |
| D.W.C.  | D.L.L.    | 3-7-09                         | D.H.L.    |
|   |           |                                | 6-18-08   |



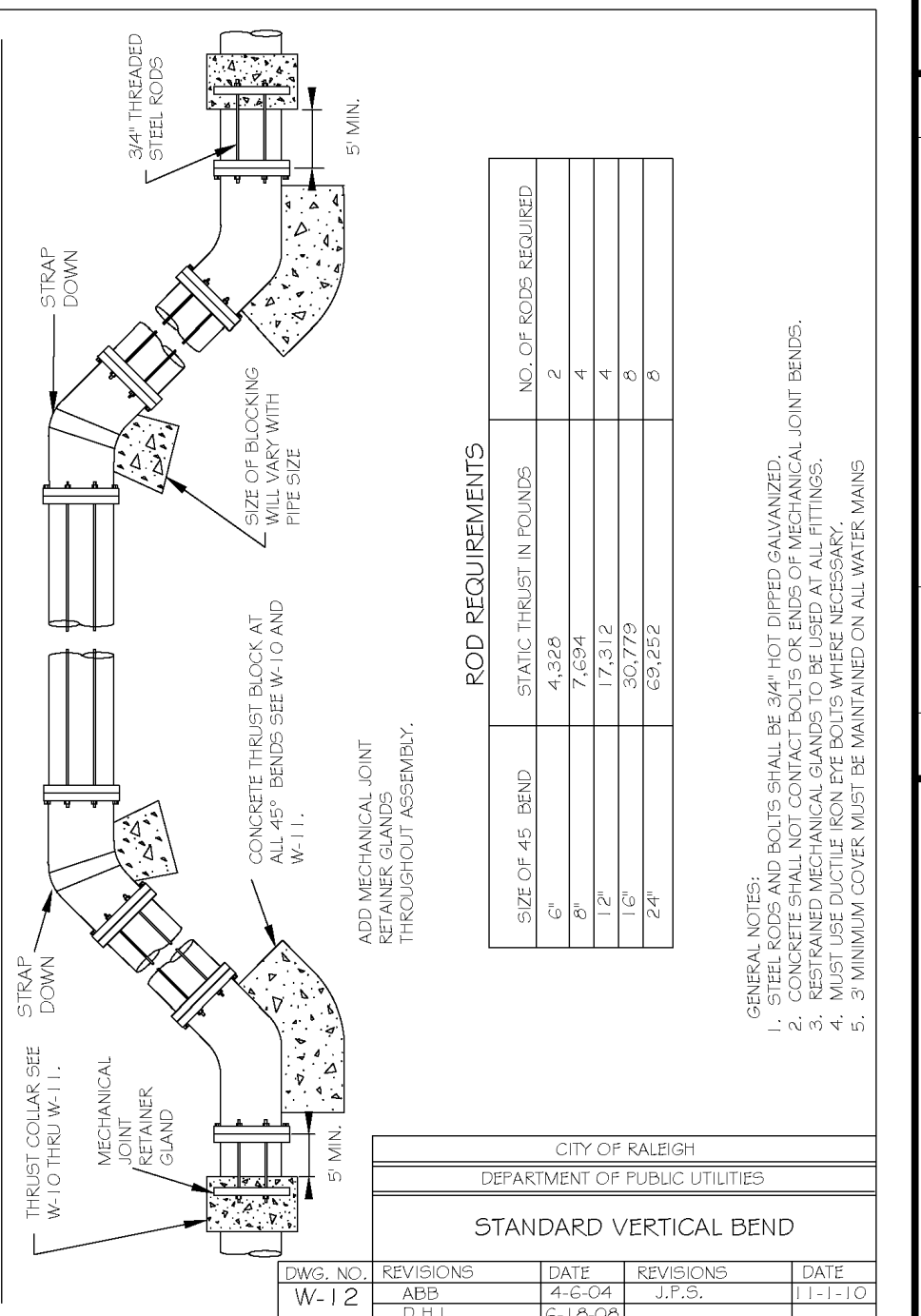
| CITY OF RALEIGH                |           | CITY OF RALEIGH                |           |
|--------------------------------|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD THRUST BLOCKING VIEWS |           |                                |           |
| DWG. NO.                       | REVISIONS | DATE                           | REVISIONS |
| W-9                            | D.W.C.    | 11-07-09                       | RRH       |
| D.W.C.                         | D.L.L.    | 3-7-09                         | D.H.L.    |
|                                |           |                                | 6-18-08   |



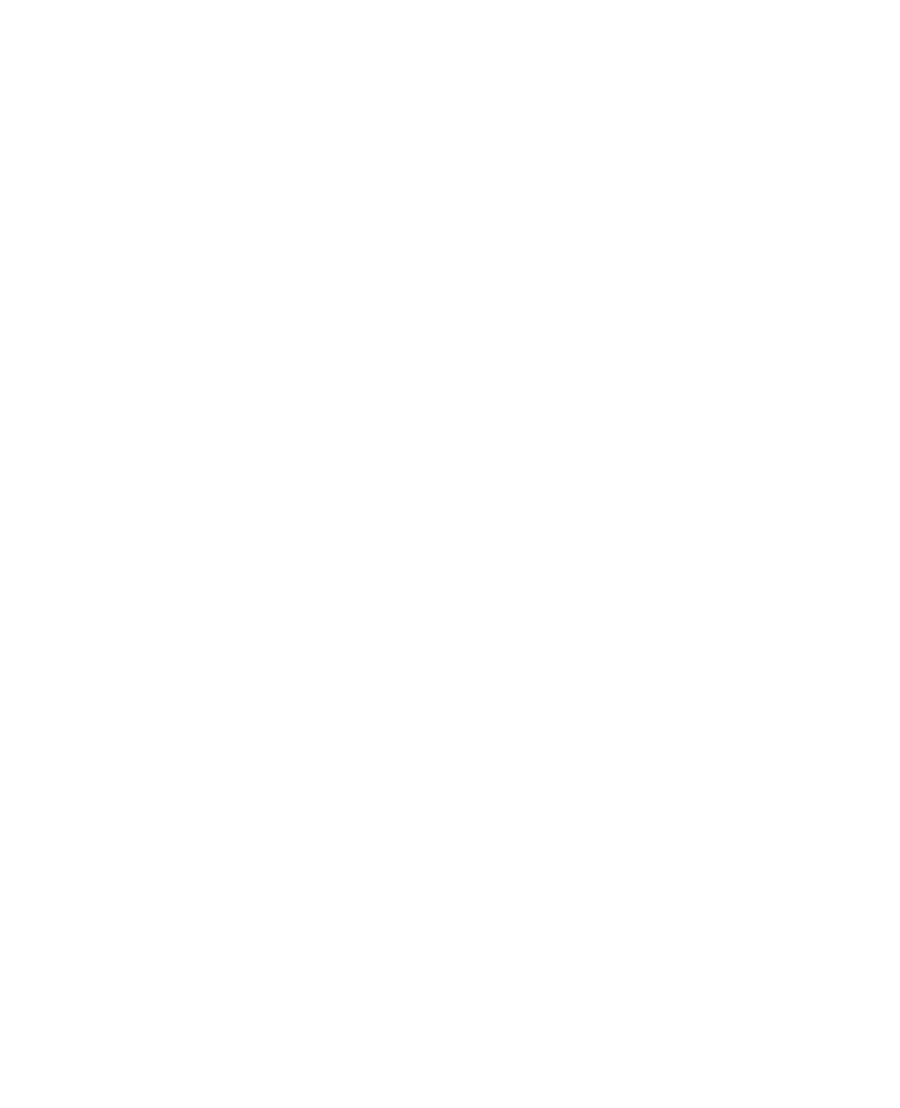
| CITY OF RALEIGH                       |           | CITY OF RALEIGH                |           |
|---------------------------------------|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES        |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| THRUST BLOCKING DESIGN QUANTITY TABLE |           |                                |           |
| DWG. NO.                              | REVISIONS | DATE                           | REVISIONS |
| W-10                                  | D.W.C.    | 3-23-09                        |           |
| D.W.C.                                | D.L.L.    | 3-23-09                        |           |
|                                       |           |                                | 6-18-08   |



| CITY OF RALEIGH                       |           | CITY OF RALEIGH                |           |
|---------------------------------------|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES        |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| THRUST BLOCKING DESIGN QUANTITY TABLE |           |                                |           |
| DWG. NO.                              | REVISIONS | DATE                           | REVISIONS |
| W-11                                  | D.W.C.    | 3-23-09                        |           |
| D.W.C.                                | D.L.L.    | 3-23-09                        |           |
|                                       |           |                                | 6-18-08   |



| CITY OF RALEIGH                |           | CITY OF RALEIGH                |           |
|--------------------------------|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD VERTICAL BEND         |           |                                |           |
| DWG. NO.                       | REVISIONS | DATE                           | REVISIONS |
| W-12                           | RRH       | 4-6-04                         | J.P.S.    |
| D.H.L.                         | D.H.L.    | 6-18-08                        | J.P.S.    |
|                                |           |                                | 11-11-10  |



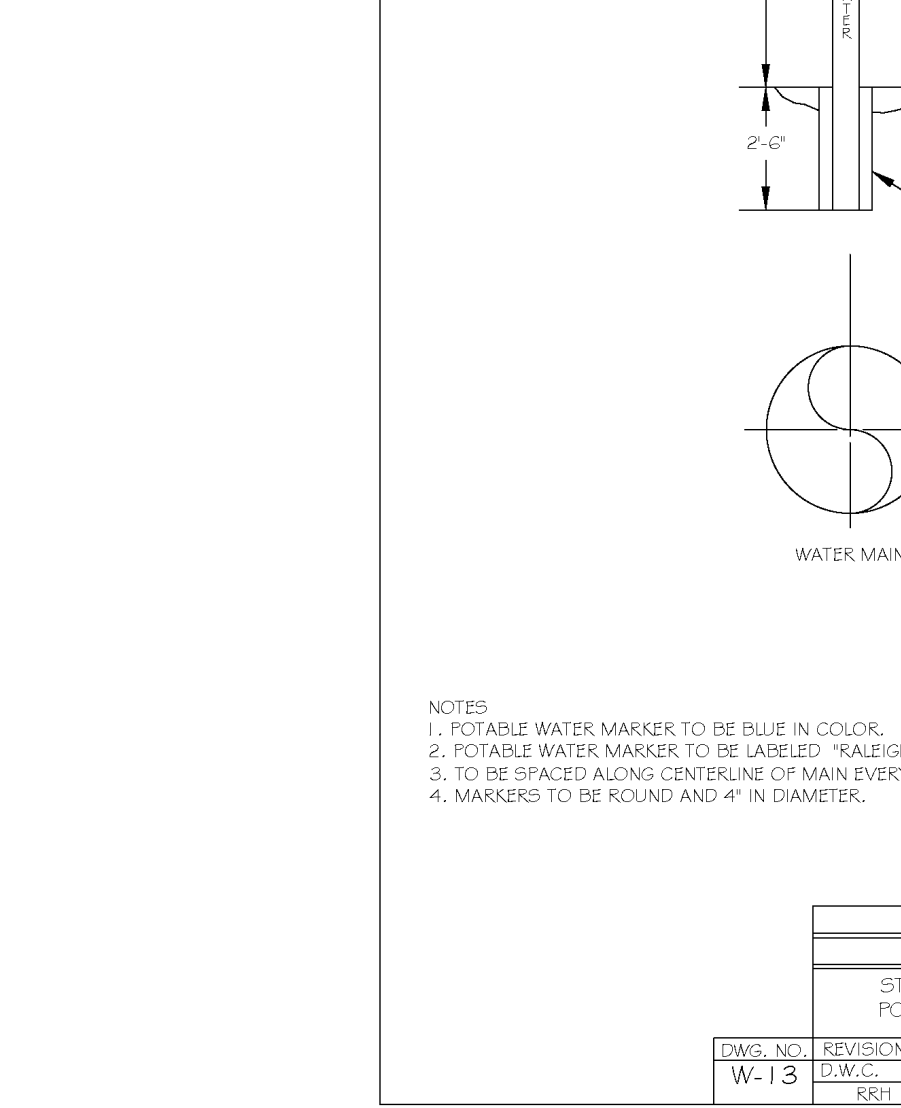
| CITY OF RALEIGH   |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES                                      |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD MAN & VALVE MARKERS FOR POTABLE & REUSE WATER IN EASEMENTS |           |                                |           |
| DWG. NO.  | REVISIONS | DATE                           | REVISIONS |
| W-13  | RRH       | 3-31-00                        | J.P.S.    |
| D.W.C.  | D.L.L.    | 3-31-00                        | J.P.S.    |
|   |           |                                | 11-11-10  |



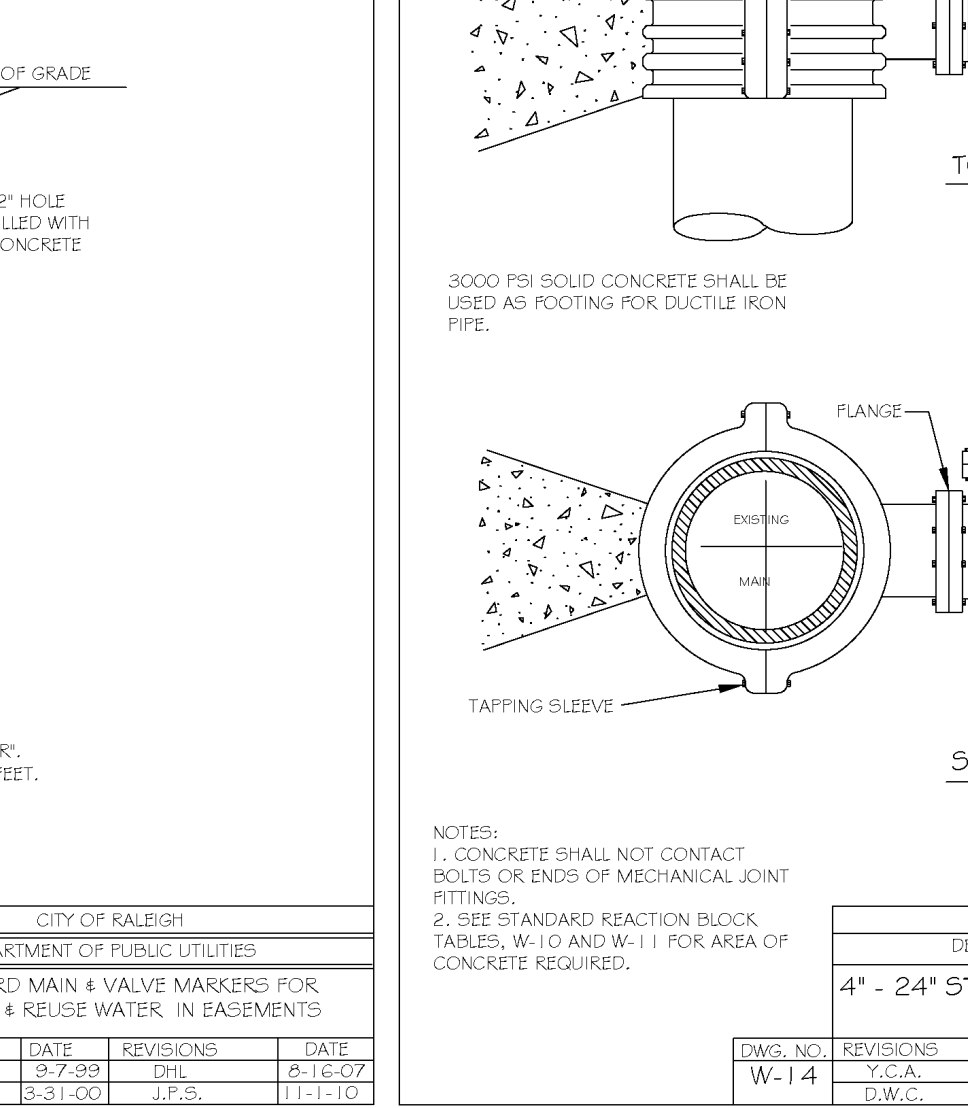
| CITY OF RALEIGH   |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES                                      |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD MAN & VALVE MARKERS FOR POTABLE & REUSE WATER IN EASEMENTS |           |                                |           |
| DWG. NO.  | REVISIONS | DATE                           | REVISIONS |
| W-13  | RRH       | 3-31-00                        | J.P.S.    |
| D.W.C.  | D.L.L.    | 3-31-00                        | J.P.S.    |
|   |           |                                | 11-11-10  |



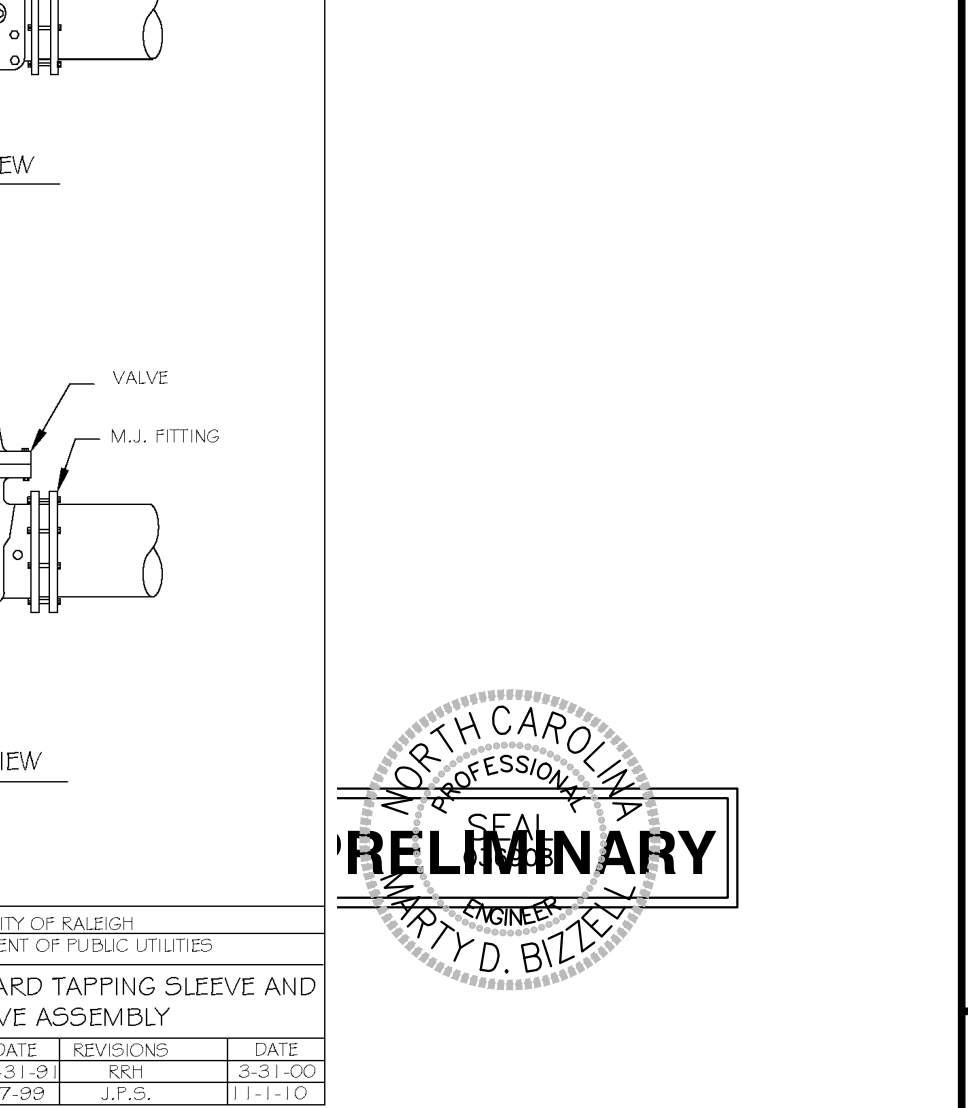
| CITY OF RALEIGH   |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES                                      |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD MAN & VALVE MARKERS FOR POTABLE & REUSE WATER IN EASEMENTS |           |                                |           |
| DWG. NO.  | REVISIONS | DATE                           | REVISIONS |
| W-13  | RRH       | 3-31-00                        | J.P.S.    |
| D.W.C.  | D.L.L.    | 3-31-00                        | J.P.S.    |
|   |           |                                | 11-11-10  |



| CITY OF RALEIGH   |           | CITY OF RALEIGH                |           |
|---|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES                                      |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| STANDARD MAN & VALVE MARKERS FOR POTABLE & REUSE WATER IN EASEMENTS |           |                                |           |
| DWG. NO.  | REVISIONS | DATE                           | REVISIONS |
| W-13  | RRH       | 3-31-00                        | J.P.S.    |
| D.W.C.  | D.L.L.    | 3-31-00                        | J.P.S.    |
|   |           |                                | 11-11-10  |



| CITY OF RALEIGH                |           | CITY OF RALEIGH                |           |
|--------------------------------|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| 4\"/>                          |           |                                |           |
| DWG. NO.                       | REVISIONS | DATE                           | REVISIONS |
| W-14                           | Y.C.A.    | 2-31-09                        | RRH       |
| D.W.C.                         | D.L.L.    | 3-7-09                         | J.P.S.    |
|                                |           |                                | 11-11-10  |



| CITY OF RALEIGH                |           | CITY OF RALEIGH                |           |
|--------------------------------|-----------|--------------------------------|-----------|
| DEPARTMENT OF PUBLIC UTILITIES |           | DEPARTMENT OF PUBLIC UTILITIES |           |
| 4\"/>                          |           |                                |           |
| DWG. NO.                       | REVISIONS | DATE                           | REVISIONS |
| W-14                           | Y.C.A.    | 2-31-09                        | RRH       |
| D.W.C.                         | D.L.L.    | 3-7-09                         | J.P.S.    |
|                                |           |                                | 11-11-10  |

R:\2019\19187 - Rolesville Town Center CIVIL\04 Construction\07 - 19187\_Details.dwg, CS-4, 2/25/2021 2:40:18 PM, mnc-mcneel

**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**  
 6310 CHAPEL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
 TELEPHONE: (919) 881-1122 FAX: (919) 881-8686  
 CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |

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

**REVISIONS**

PROGRESS DATE DRAWN BY

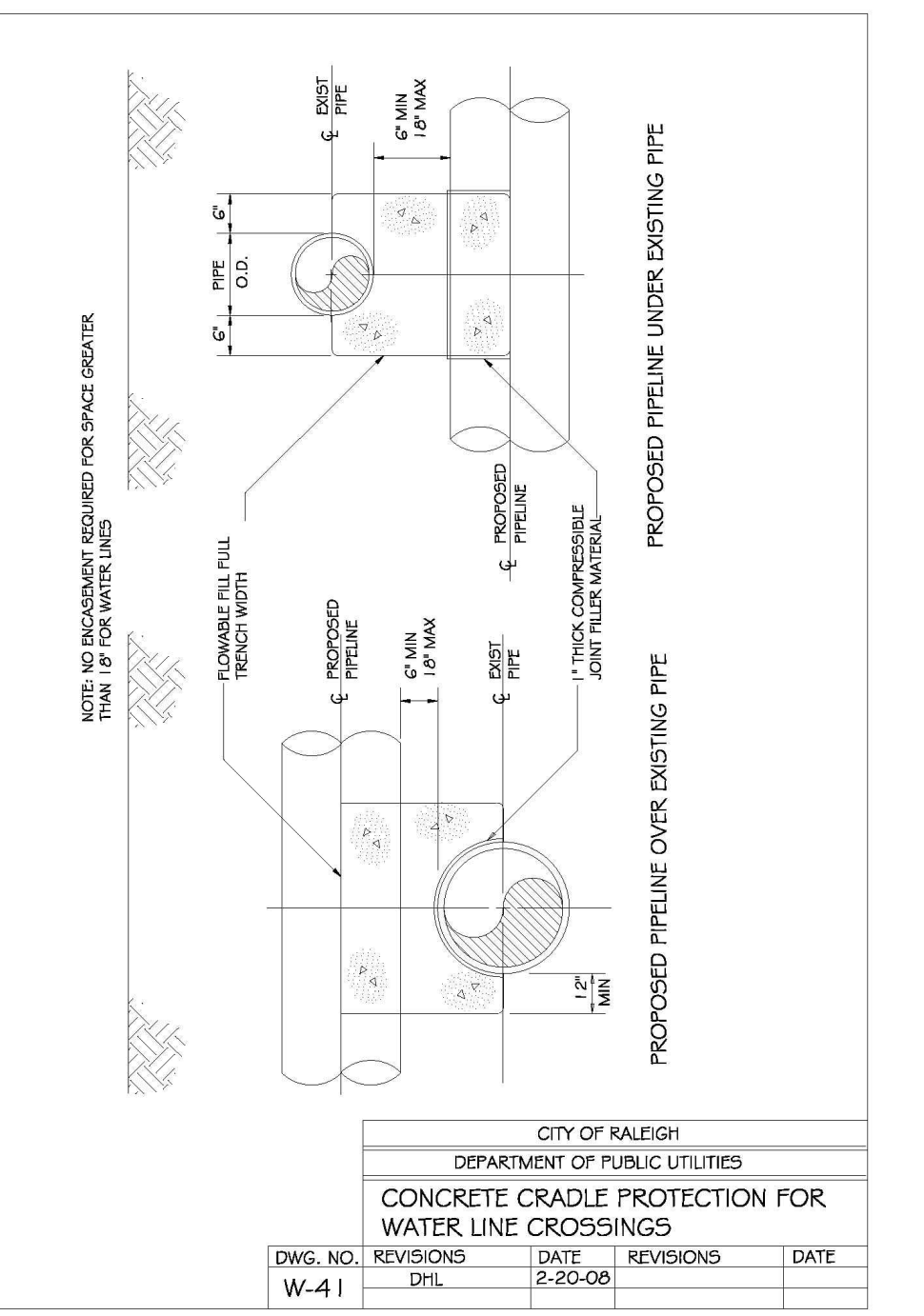
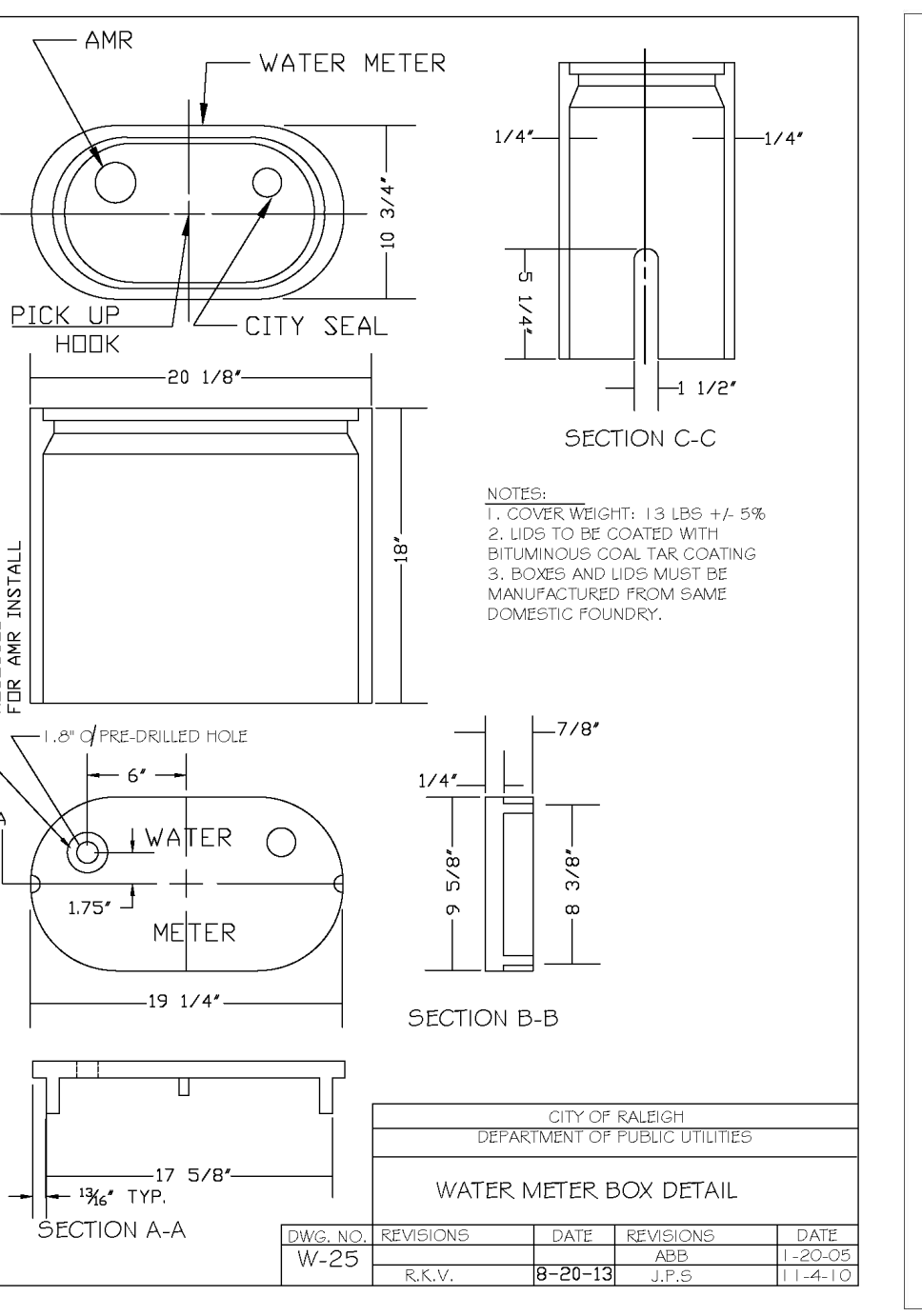
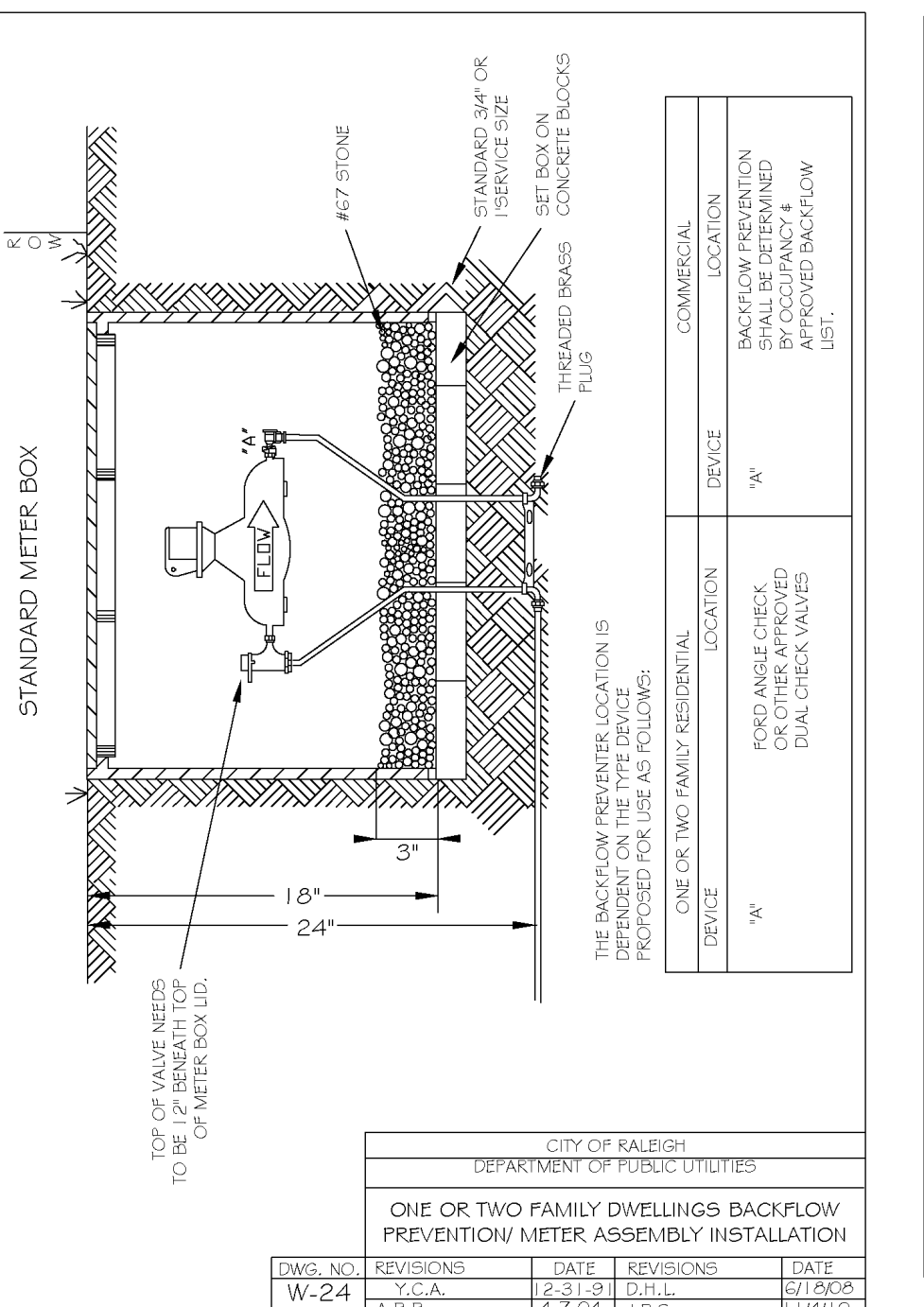
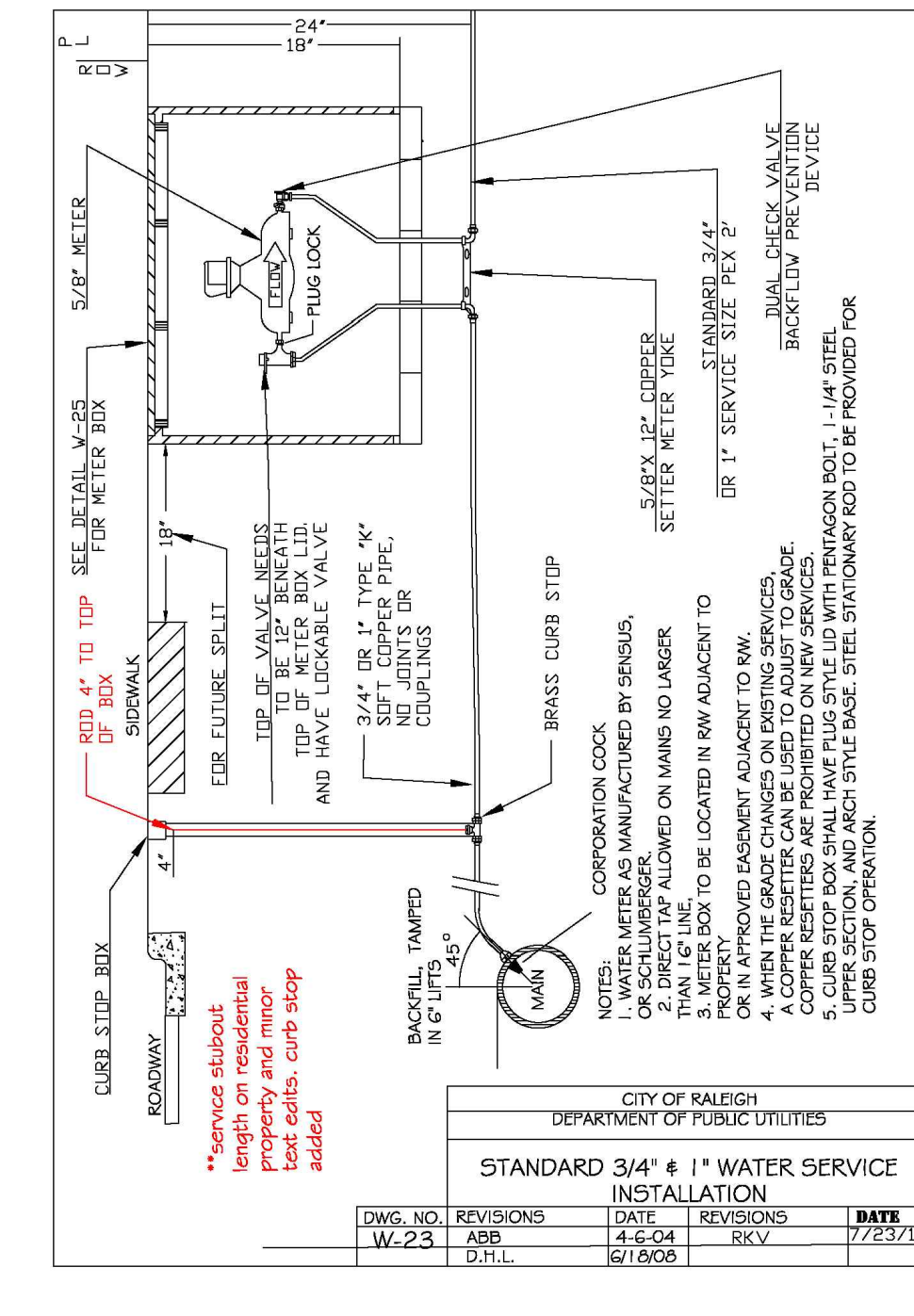
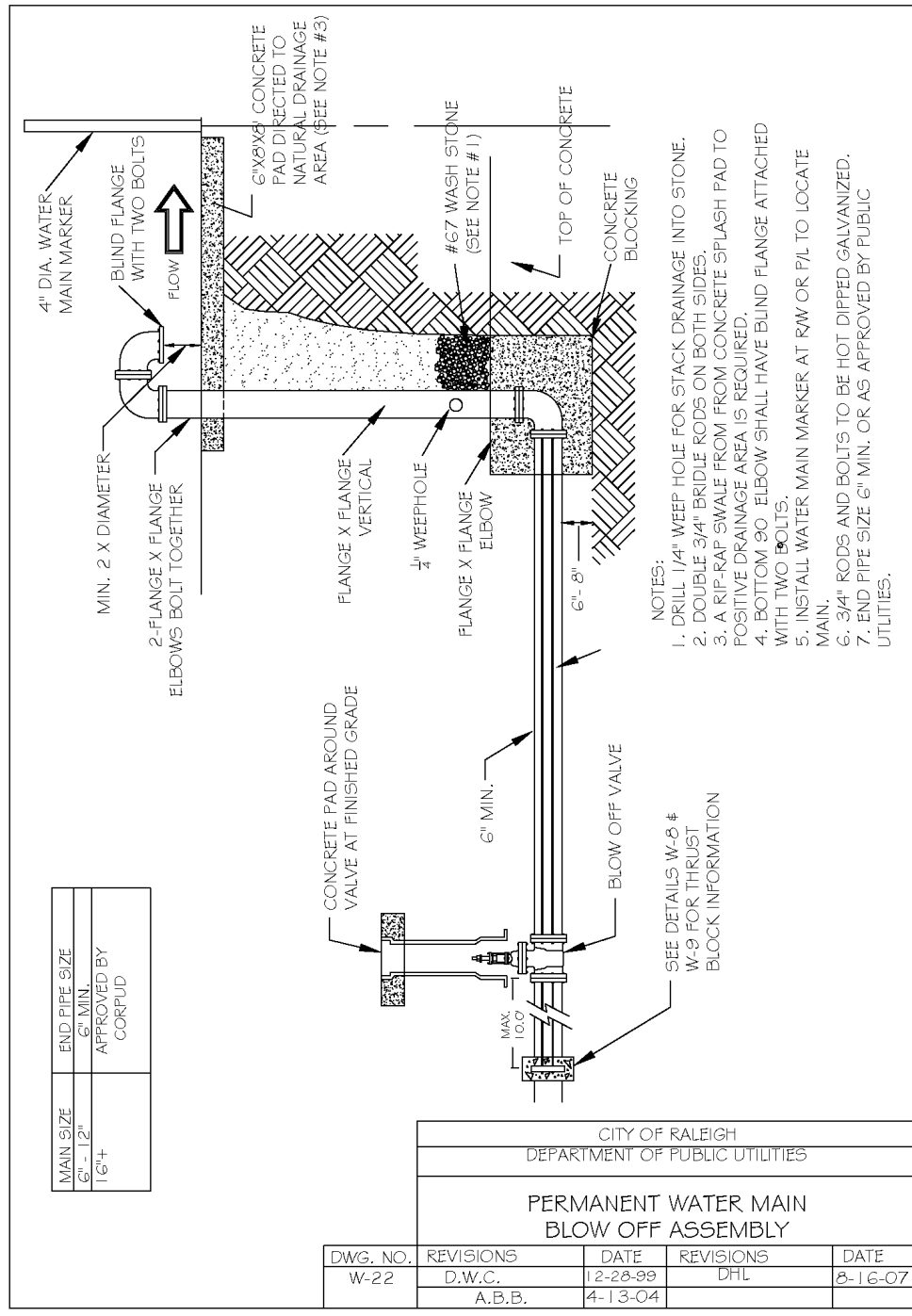
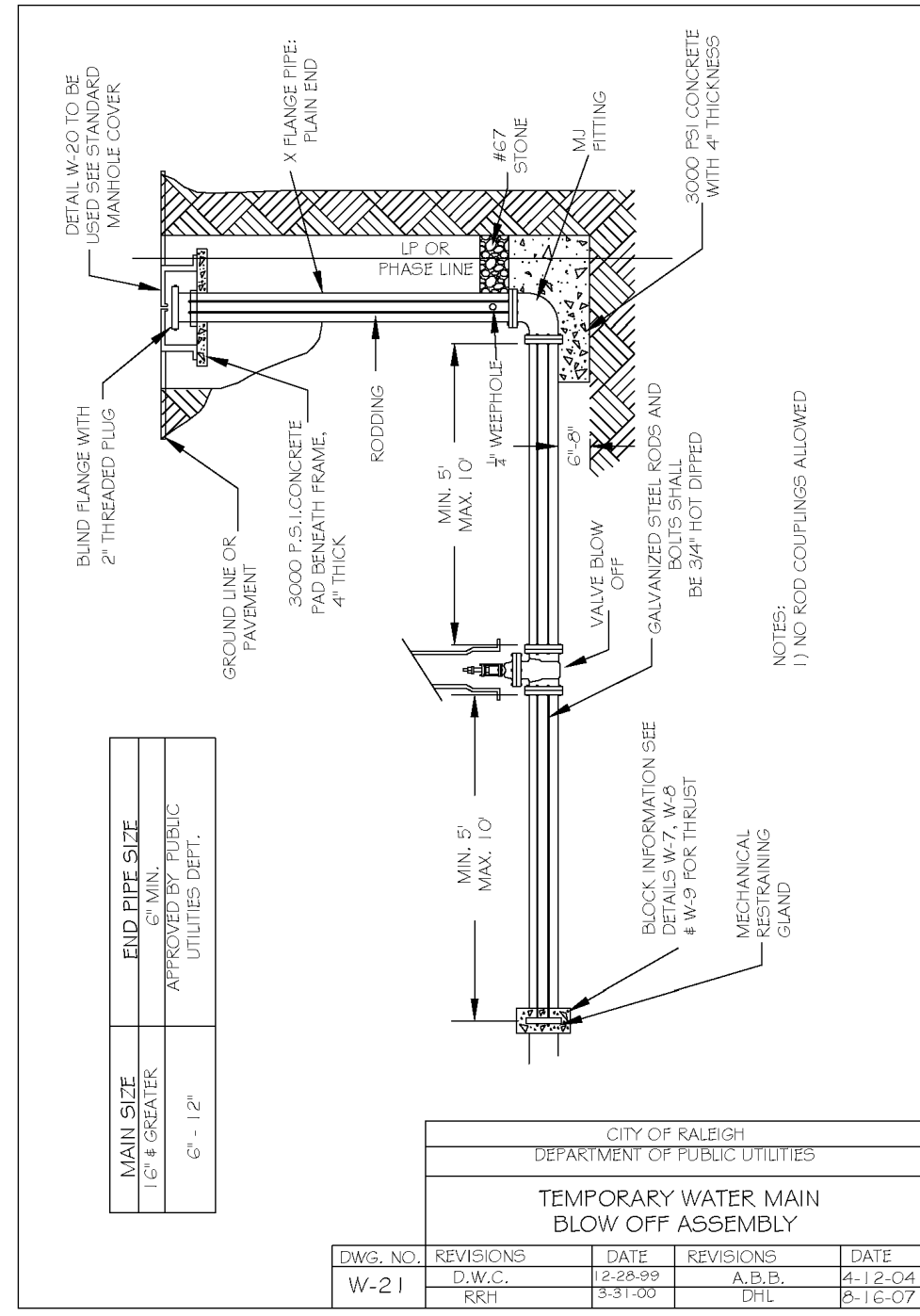
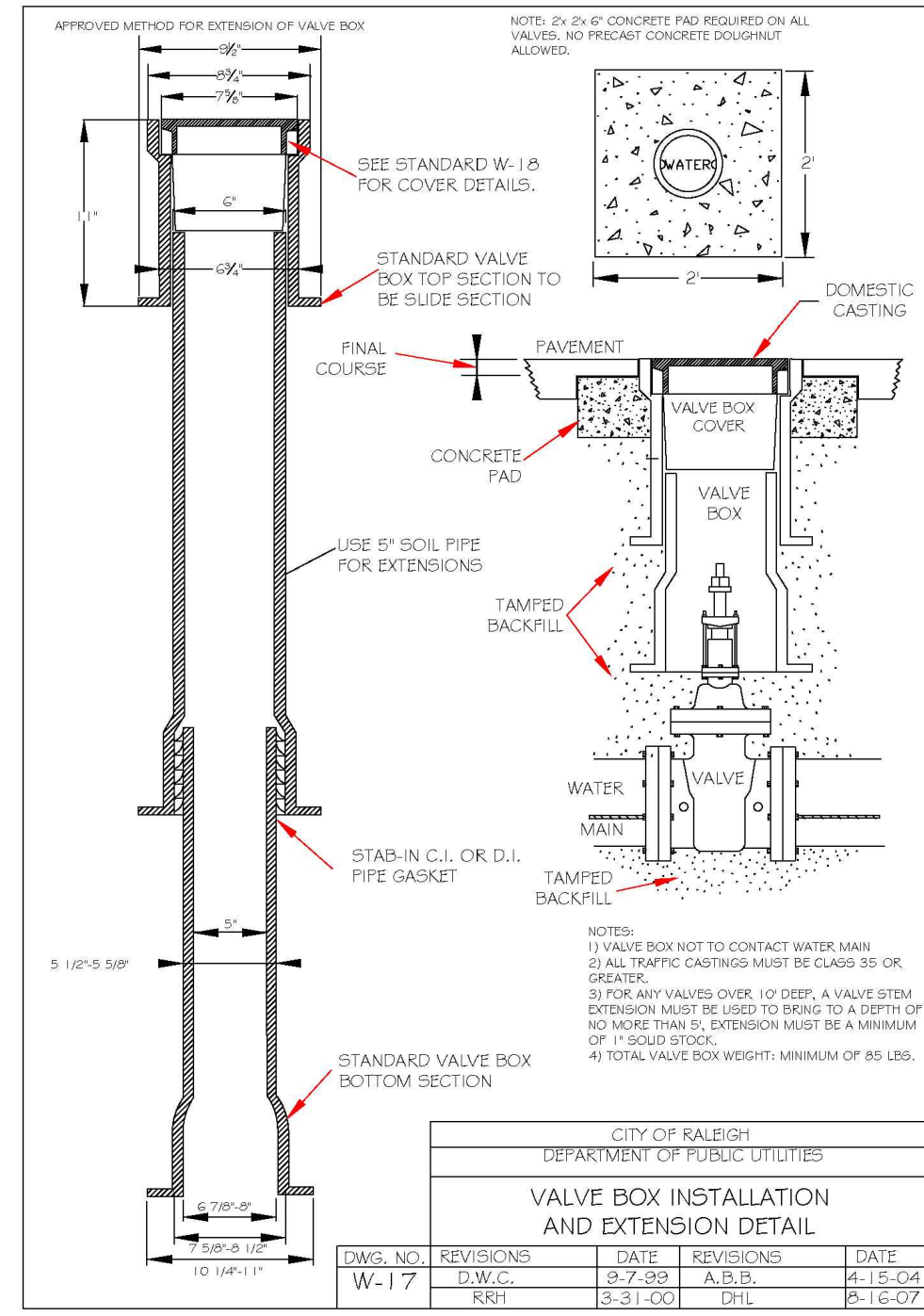
SCALE: N.T.S.

CHK BY: MDB

03-19187 JOB NO.

SHEET C5.4

**RELEASING ENGINEER**  
 WALTER D. BIZELL  
 NORTH CAROLINA PROFESSIONAL SEAL



**BASS, NIXON & KENNEDY, INC.**  
CONSULTING ENGINEERS  
6310 CHASEL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
TELEPHONE: (919)881-4222 FAX: (919)881-6986  
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |

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

SCALE: N.T.S.      CHK BY: MDB

PROGRESS DATE      MRM DRAWN BY

03-19157      DATE

**DETAILS**





**TRANSPARENCY CALCULATIONS**  
 GROUND LEVEL (RETAIL USE):  
 TOTAL FACADE AREA (WxH): 983 SF  
 REQ'D AREA OF TRANSPARENCY: 983 SF x 0.4 = 394 SF  
 AREA OF TRANSPARENCY: 390 SF 40%

Section 7.4 - Town Center Overlay District  
 7.4.18 Windows, doors, display windows and/or arcades shall make up at least 40 percent of the street facade on the first story as measured from two feet above grade to ten feet above grade.  
 Blank walls are not permitted adjacent to streets.

**BLDG 2 - EAST ELEVATION** 1  
 1/8" = 1'-0"



**TRANSPARENCY CALCULATIONS**  
 GROUND LEVEL (RETAIL USE):  
 TOTAL FACADE AREA (WxH): 836 SF  
 REQ'D AREA OF TRANSPARENCY: 836 SF x 0.4 = 334 SF  
 AREA OF TRANSPARENCY: 363 SF 43%

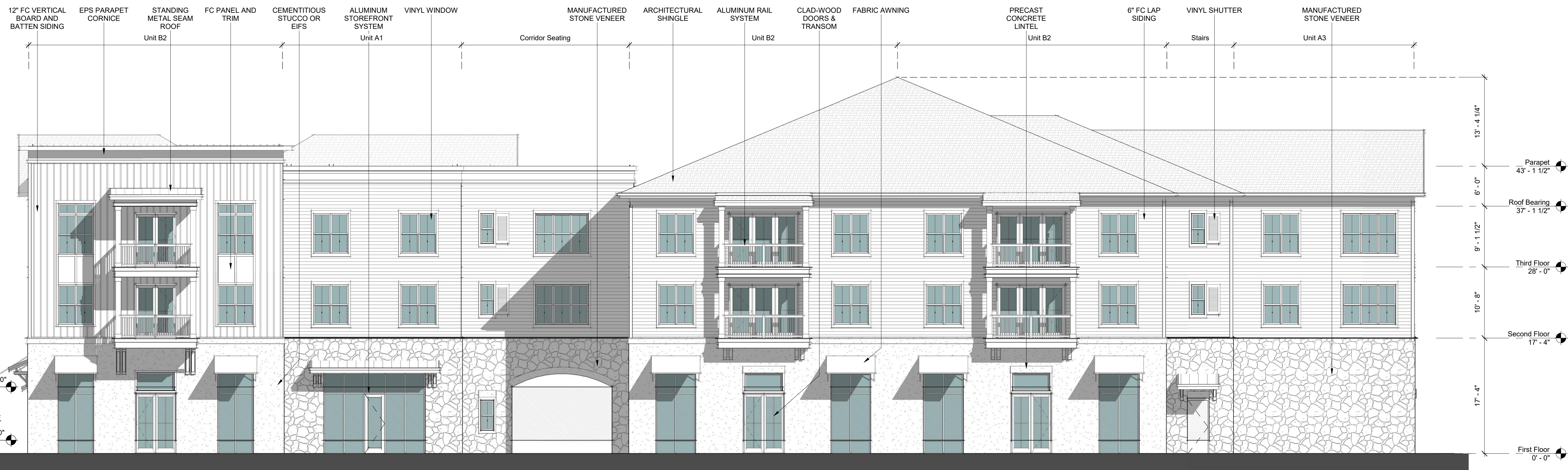
**BLDG 2 - WEST ELEVATION** 2  
 1/8" = 1'-0"



**COBBLESTONE VILLAGE**  
 ROLESVILLE, NORTH CAROLINA

**EXTERIOR ELEVATIONS - BLDG 2 A2.21**

1/8" = 1'-0" 019032 | 10.16.2020  
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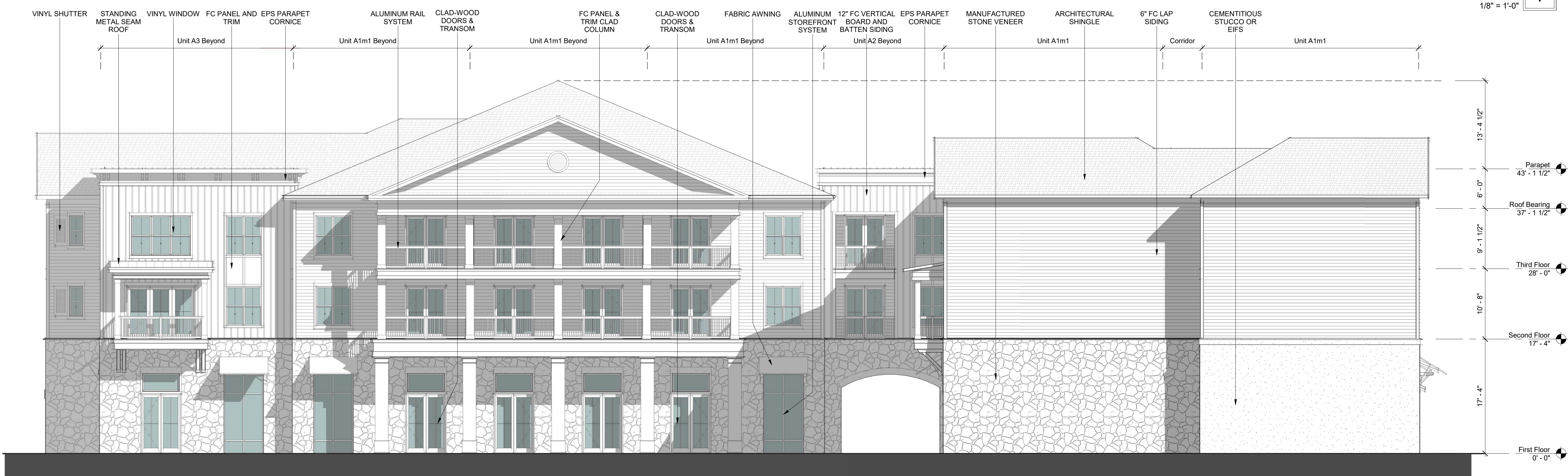


**TRANSPARENCY CALCULATIONS**  
 GROUND LEVEL (RETAIL USE): 1,667 SF  
 TOTAL FACADE AREA (Net): 1,667 SF x 0.4 = 667 SF  
 REQ'D AREA OF TRANSPARENCY: 667 SF x 41% = 275 SF  
 AREA OF TRANSPARENCY: 275 SF x 100% = 275 SF

Section 7.4 - Town Center Overlay District

7.4.18 Windows, doors, display windows and/or arcades shall make up at least 40 percent of the street facade on the first story as measured from two feet above grade to ten feet above grade. Blank walls are not permitted adjacent to streets.

**BLDG 2 - NORTH ELEVATION** 1  
 1/8" = 1'-0"

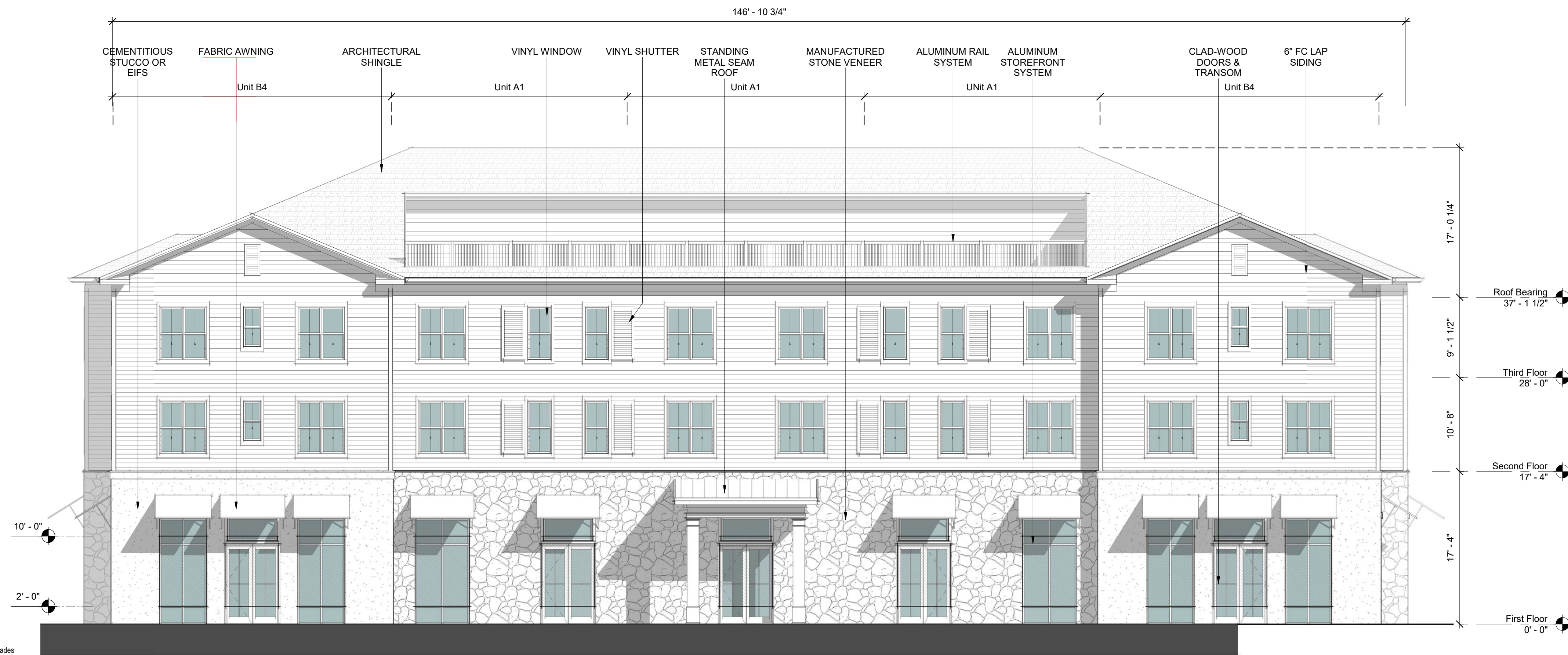


**BLDG 2 - SOUTH ELEVATION** 2  
 1/8" = 1'-0"



**COBBLESTONE VILLAGE**  
 ROLESVILLE, NORTH CAROLINA

**EXTERIOR ELEVATIONS - BLDG 2 A2.22**  
 1/8" = 1'-0" 019032 | 10.16.2020  
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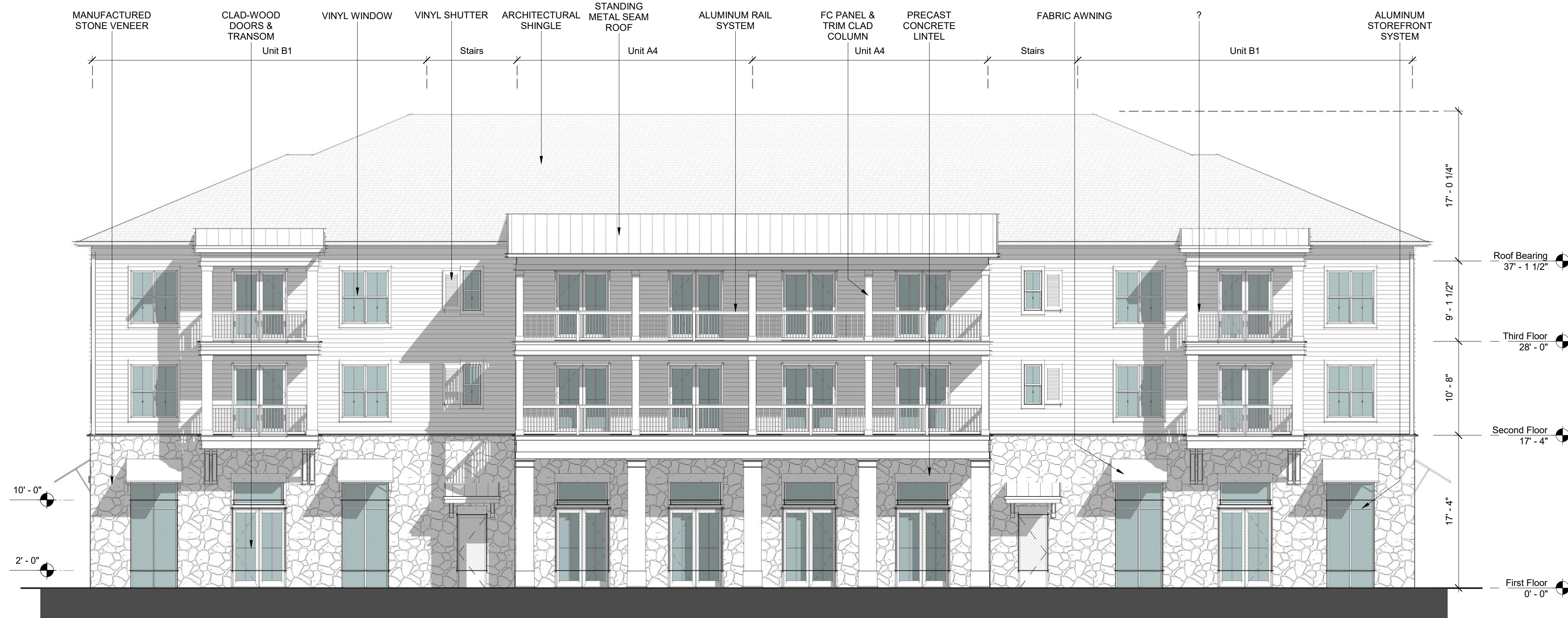
**TRANSPARENCY CALCULATIONS**

GROUND LEVEL (RETAIL USE):  
 TOTAL FACADE AREA (W/H): 1,155 SF  
 REQ'D AREA OF TRANSPARENCY: 1,155 SF x 0.4 = 462 SF  
 AREA OF TRANSPARENCY: 495 SF 43%

**Section 7.4 - Town Center Overlay District**

7.4.18 Windows, doors, display windows and/or arcades shall make up at least 40 percent of the street facade on the first story as measured from two feet above grade to ten feet above grade. Blank walls are not permitted adjacent to streets.

**BLDG 3 - NORTH ELEVATION** 1  
 1/8" = 1'-0"



**TRANSPARENCY CALCULATIONS**

GROUND LEVEL (RETAIL USE):  
 TOTAL FACADE AREA (W/H): 1,204 SF  
 REQ'D AREA OF TRANSPARENCY: 1,204 SF x 0.4 = 482 SF  
 AREA OF TRANSPARENCY: 843 SF 40%

**BLDG 3 - SOUTH ELEVATION** 2  
 1/8" = 1'-0"



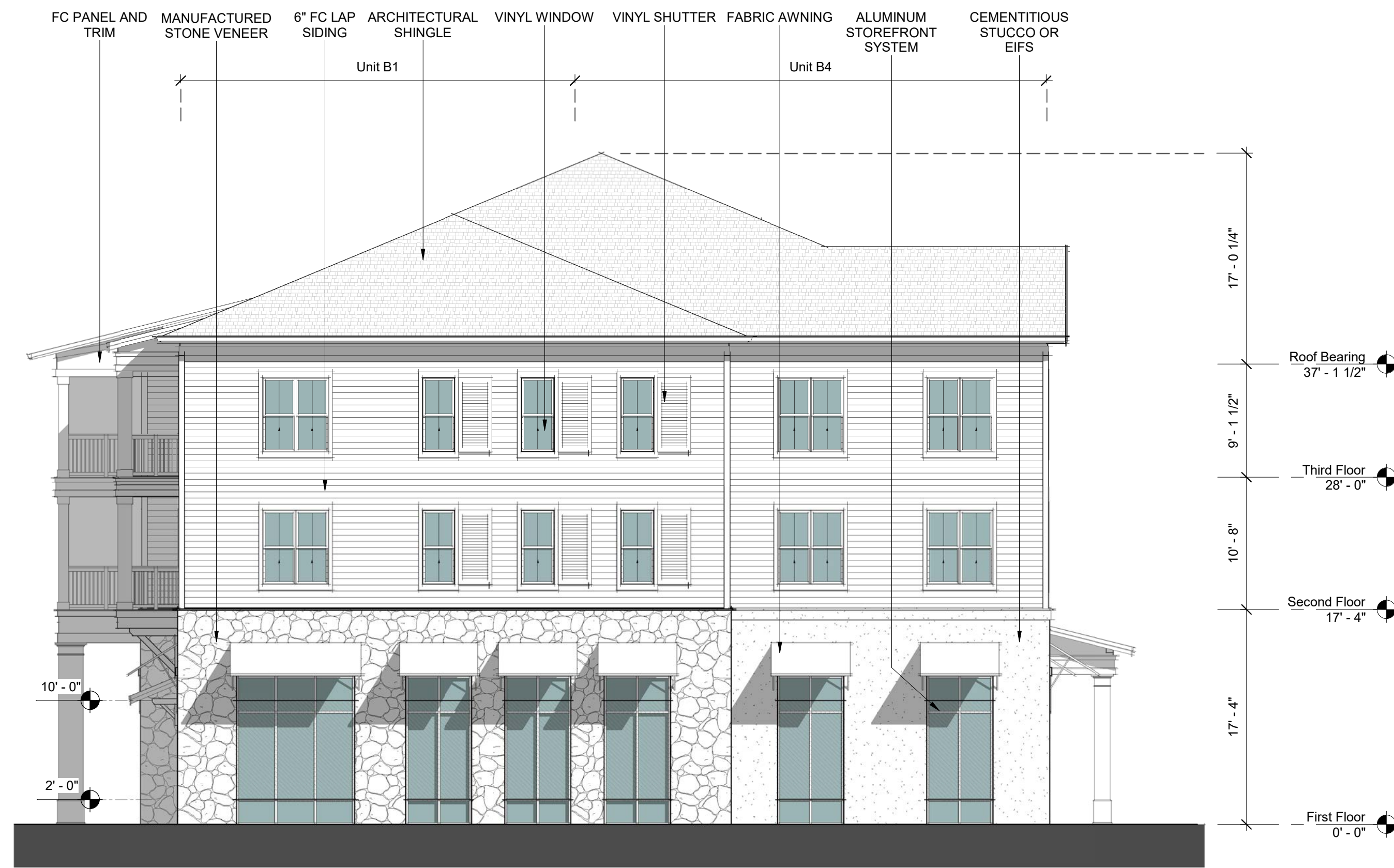
**COBBLESTONE VILLAGE**  
 ROLESVILLE, NORTH CAROLINA

**EXTERIOR ELEVATIONS - BLDG 3 A2.31**

1/8" = 1'-0"

019032 | 10.16.2020

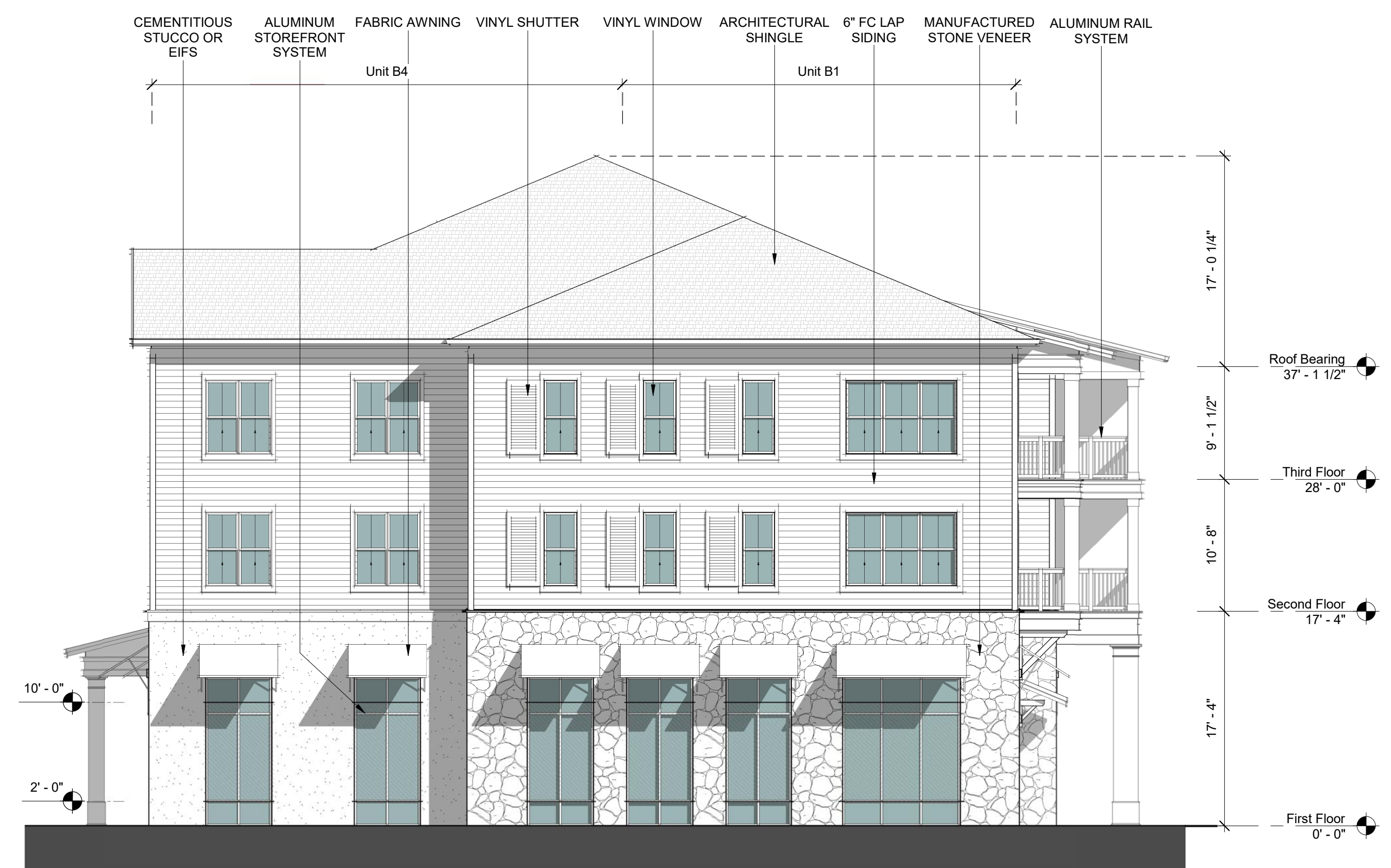
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**TRANSPARENCY CALCULATIONS**  
 GROUND LEVEL (RETAIL USE): 563 SF  
 TOTAL FACADE AREA (W/H): 563 SF x 0.4 = 225 SF  
 REQ'D AREA OF TRANSPARENCY: 289 SF 51%  
 AREA OF TRANSPARENCY: 289 SF 51%

Section 7.4 - Town Center Overlay District  
 7.4.18 Windows, doors, display windows and/or arcades shall make up at least 40 percent of the street facade on the first story as measured from two feet above grade to ten feet above grade.  
 Blank walls are not permitted adjacent to streets.

**BLDG 3 - EAST ELEVATION** 1  
 1/8" = 1'-0"



**TRANSPARENCY CALCULATIONS**  
 GROUND LEVEL (RETAIL USE): 563 SF  
 TOTAL FACADE AREA (W/H): 563 SF x 0.4 = 225 SF  
 REQ'D AREA OF TRANSPARENCY: 289 SF 51%  
 AREA OF TRANSPARENCY: 289 SF 51%

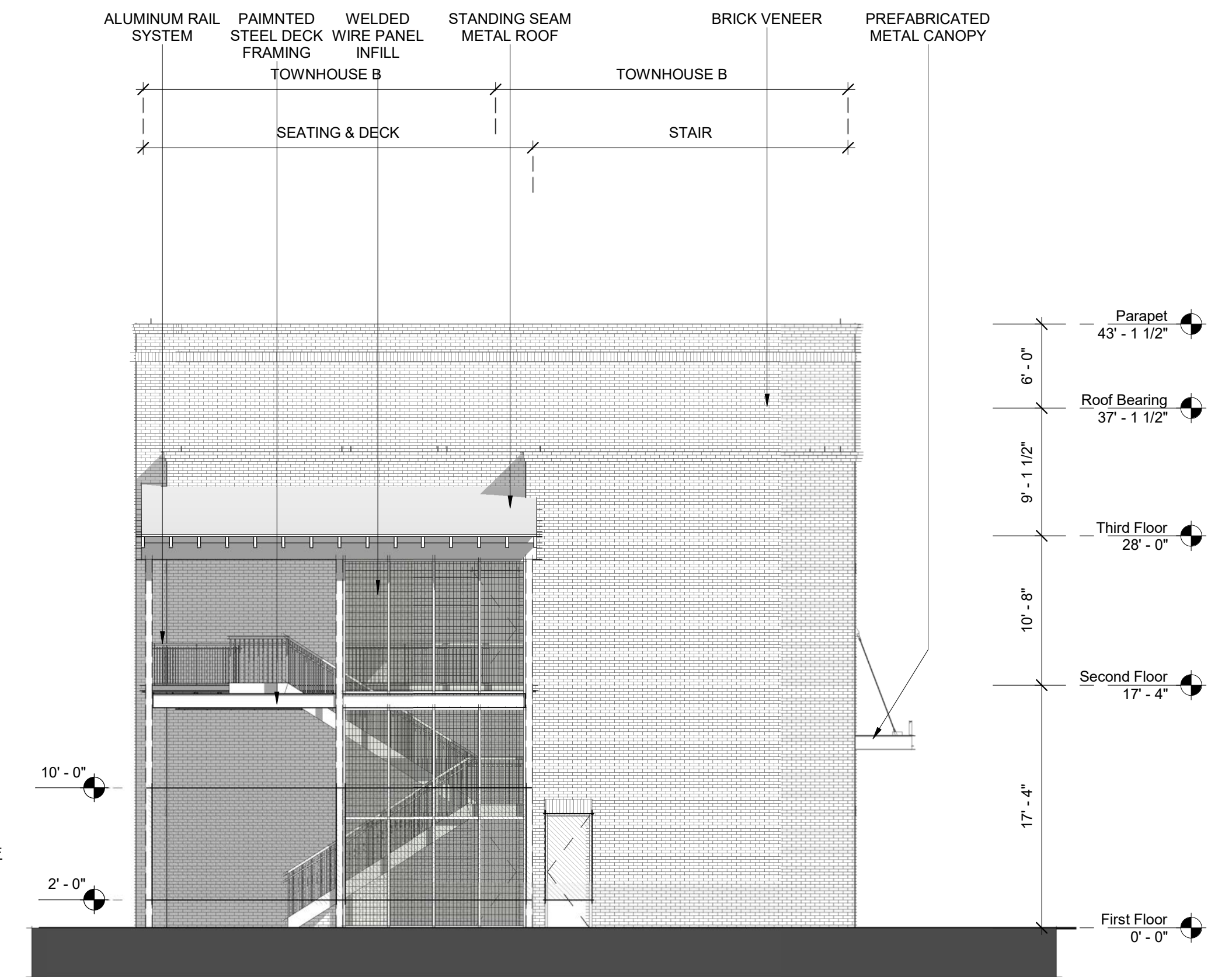
**BLDG 3 - WEST ELEVATION** 2  
 1/8" = 1'-0"



**COBBLESTONE VILLAGE**  
 ROLESVILLE, NORTH CAROLINA



**BLDG 5 - WEST ELEVATION** 4  
1/8" = 1'-0"



**BLDG 5 - SOUTH ELEVATION** 2  
1/8" = 1'-0"



**BLDG 5 - EAST ELEVATION** 3  
1/8" = 1'-0"



**BLDG 5 - NORTH ELEVATION** 1  
1/8" = 1'-0"

**TRANSPARENCY CALCULATIONS**  
GROUND LEVEL (RETAIL USE): 411 SF  
TOTAL FACADE AREA (W/H): 411 SF x 0.4 = 164 SF  
REQD AREA OF TRANSPARENCY: 229 SF 56%

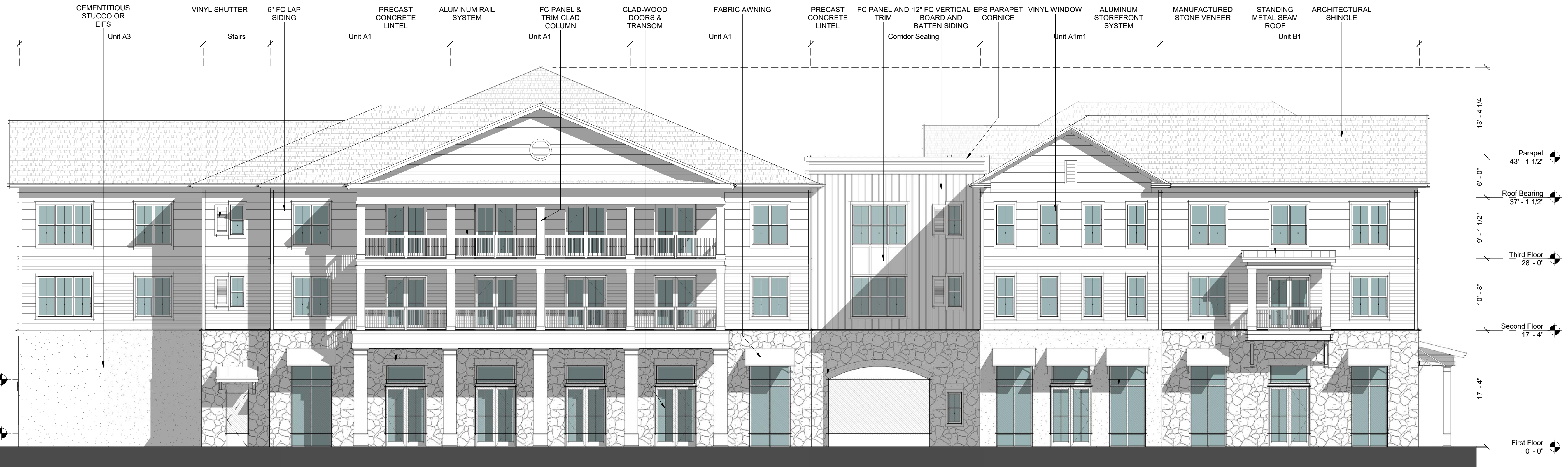
**TRANSPARENCY CALCULATIONS**  
GROUND LEVEL (RETAIL USE): 411 SF  
TOTAL FACADE AREA (W/H): 411 SF x 0.4 = 164 SF  
REQD AREA OF TRANSPARENCY: 203 SF 49%

Section 7.4 - Town Center Overlay District  
7.4.18 Windows, doors, display windows and/or arcades shall make up at least 40 percent of the street facade on the first story as measured from two feet above grade to ten feet above grade.  
Blank walls are not permitted adjacent to streets.



**COBBLESTONE VILLAGE**  
ROLESVILLE, NORTH CAROLINA

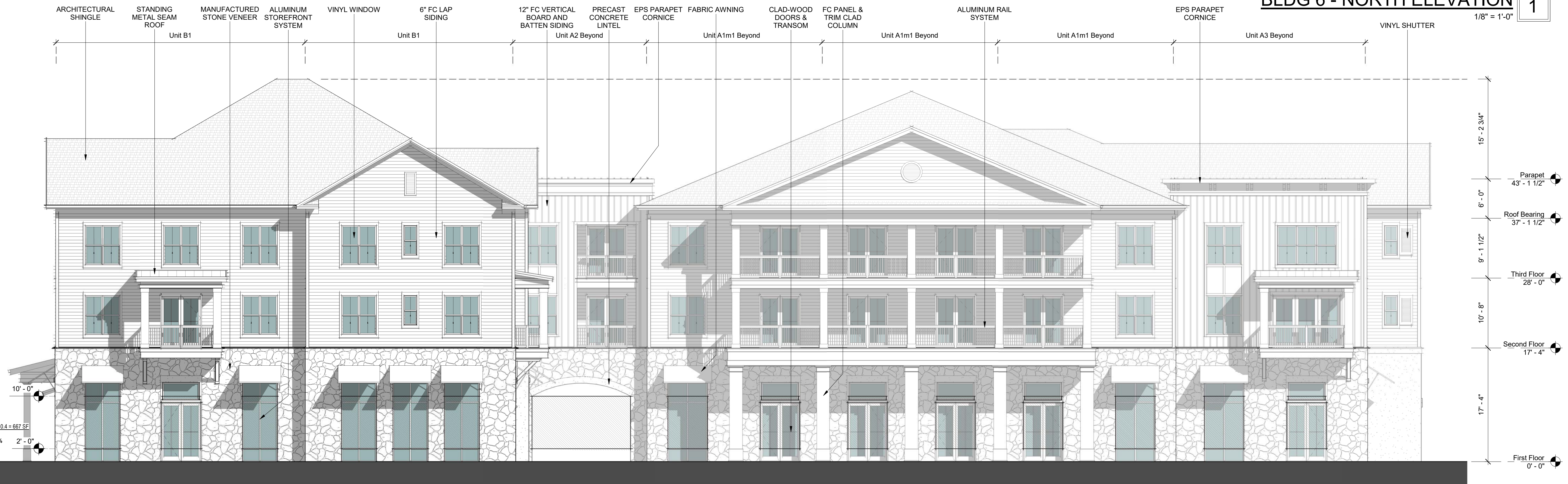
**EXTERIOR ELEVATIONS - BLDG 5 A2.51**  
1/8" = 1'-0" 019032 | 10.16.2020  
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**TRANSPARENCY CALCULATIONS**  
 GROUND LEVEL (RETAIL USE):  
 TOTAL FACADE AREA (WxH): 1,667 SF  
 REQD AREA OF TRANSPARENCY: 1,667 SF x 0.4 = 667 SF  
 AREA OF TRANSPARENCY: 668 SF 41%  
 2' - 0"

Section 7.4 - Town Center Overlay District  
 7.4.18 Windows, doors, display windows and/or arcades shall make up at least 40 percent of the street facade on the first story as measured from two feet above grade to ten feet above grade.  
 Blank walls are not permitted adjacent to streets.

**BLDG 6 - NORTH ELEVATION** 1  
 1/8" = 1'-0"



**TRANSPARENCY CALCULATIONS**  
 GROUND LEVEL (RETAIL USE):  
 TOTAL FACADE AREA (WxH): 1,667 SF  
 REQD AREA OF TRANSPARENCY: 1,667 SF x 0.4 = 667 SF  
 AREA OF TRANSPARENCY: 749 SF 45%  
 2' - 0"

**BLDG 6 - SOUTH ELEVATION** 2  
 1/8" = 1'-0"



**COBBLESTONE VILLAGE**  
 ROLESVILLE, NORTH CAROLINA

**EXTERIOR ELEVATIONS - BLDG 6 A2.61**

1/8" = 1'-0" 019032 | 10.16.2020  
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**TRANSPARENCY CALCULATIONS**

GROUND LEVEL (RETAIL USE):  
 TOTAL FACADE AREA (WtH): 1,229 SF  
 REQ'D AREA OF TRANSPARENCY: 1,229 SF x 0.4 = 492 SF  
 AREA OF TRANSPARENCY: 490 SF 40%

Section 7.4 - Town Center Overlay District

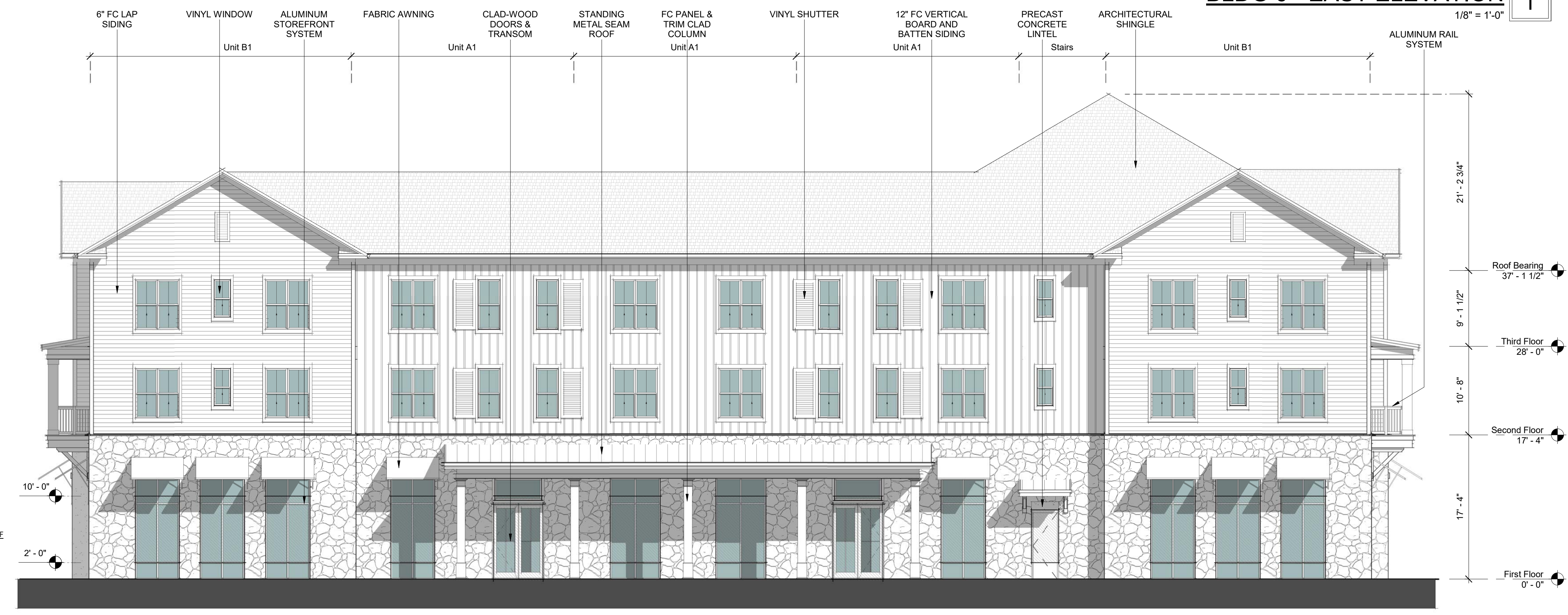
7.4.18 Windows, doors, display windows and/or arcades shall make up at least 40 percent of the street facade on the first story as measured from two feet above grade to ten feet above grade.  
 Blank walls are not permitted adjacent to streets.



**BLDG 6 - EAST ELEVATION** 1  
 1/8" = 1'-0"

**TRANSPARENCY CALCULATIONS**

GROUND LEVEL (RETAIL USE):  
 TOTAL FACADE AREA (WtH): 1,236 SF  
 REQ'D AREA OF TRANSPARENCY: 1,236 SF x 0.4 = 494 SF  
 AREA OF TRANSPARENCY: 573 SF 46%



**BLDG 6 - WEST ELEVATION** 2  
 1/8" = 1'-0"



**COBBLESTONE VILLAGE**  
 ROLESVILLE, NORTH CAROLINA

**EXTERIOR ELEVATIONS - BLDG 6 A2.62**  
 1/8" = 1'-0" 019032 | 10.16.2020  
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**BLDG 1 & 7 - REAR ELEVATION** 2  
1/8" = 1'-0"



**BLDG 1 & 7 - FRONT ELEVATION** 1  
1/8" = 1'-0"



**COBBLESTONE VILLAGE**  
ROLESVILLE, NORTH CAROLINA

**EXTERIOR ELEVATIONS - BLDGS 1 & 7 A2.71**  
1/8" = 1'-0" 019032 | 10.16.2020  
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**BLDG 1 & 7 - LEFT SIDE ELEVATION** 2  
 1/8" = 1'-0"



**BLDG 1 & 7 - RIGHT SIDE ELEVATION** 1  
 1/8" = 1'-0"



**BLDG 8 - RIGHT SIDE ELEVATION** 4  
1/8" = 1'-0"



**BLDG 8 - REAR ELEVATION** 2  
1/8" = 1'-0"



**BLDG 8 - LEFT SIDE ELEVATION** 3  
1/8" = 1'-0"



**BLDG 8 - FRONT ELEVATION** 1  
1/8" = 1'-0"



**COBBLESTONE VILLAGE**  
ROLESVILLE, NORTH CAROLINA

**EXTERIOR ELEVATIONS - BLDG 8 A2.81**

1/8" = 1'-0"

019032 | 10.16.2020

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