



Administrative Approval Action

Case File / Name: SUB-0030-2022
DSLCL - Stonehenge Place

City of Raleigh
Development Services Department
One Exchange Plaza
Raleigh, NC 27602
(919) 996-2492
currentplanning@raleighnc.gov
www.raleighnc.gov

- LOCATION:** This 1.08 acre site zoned R-4 is located on the northwest corner of the intersection of Ray Road and Henry Drive at 7703 Ray Road. This site is outside the city limits.
- REQUEST:** This is a conventional subdivision of this 1.08 acre vacant tract to create three lots for detached houses.
- DESIGN ADJUSTMENT(S)/ALTERNATES, ETC:**
- FINDINGS:** City Administration finds that this request, with the below conditions of approval being met, conforms to the Unified Development Ordinance. This approval is based on a preliminary plan dated April 26, 2024 by RWK,PA.

CONDITIONS OF APPROVAL and NEXT STEPS:

This document must be applied to the second sheet of all future submittals except for final plats. This is a preliminary plan and as such no permits have been issued with this approval. To obtain permits and/or completion of the project, the following steps are required:

SITE PERMITTING REVIEW - For land disturbance of 12,000 square feet or greater, public or private infrastructure, shared stormwater devices, etc. Site Permitting Review may be submitted upon receipt of this signed approval document.

The following items are required prior to approval of Site Permitting Review plans:

General

1. Final design details of the private alley shall be approved. The extent of the pavement of the alley for which the cross access easement is required is to be further evaluated.

Engineering

2. Required NCDOT encroachment and/or driveway permits must be approved and copies provided to the City of Raleigh Transportation Department – Mobility Strategy and Infrastructure Division prior to Site Permit review approval.
3. A Traffic Control and Pedestrian (TCPED) Plan must be approved and a right-of-way occupancy permit must be obtained from Right-of-way Services for any construction activities within the right-of-way.

Public Utilities

4. A deed shall be recorded prior to concurrent approval for all necessary offsite City of Raleigh Sanitary Sewer Easements to accommodate future sewer line construction.

Stormwater

5. A surety equal to of the cost of clearing, grubbing and reseeding a site, shall be paid to the City (UDO 9.4.4).



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6. If required, a nitrogen offset payment must be made to a qualifying mitigation bank (UDO 9.2.2.B).
7. A stormwater control plan with a stormwater operations and maintenance manual and budget shall be approved (UDO 9.2).

LEGAL DOCUMENTS - Email to legaldocumentreview@raleighnc.gov. Legal documents must be approved, executed, and recorded prior to or in conjunction with the recorded plat on which the associated easements are shown. Copies of recorded documents must be returned to the City within one business day of recording to avoid withholding of further permit issuance.

<input checked="" type="checkbox"/>	Cross Access Agreements Required
<input checked="" type="checkbox"/>	Utility Placement Deed of Easement Required
<input checked="" type="checkbox"/>	Stormwater Maintenance Covenant Required

<input checked="" type="checkbox"/>	Slope Easement Deed of Easement Required
<input checked="" type="checkbox"/>	Right of Way Deed of Easement Required

RECORDED MAP(S) - Submit plat to record new property lines, easements, tree conservation areas, etc.). Plats may be submitted for review when the Site Permitting Review plans, if required, have been deemed ready for mylar signature.

The following items must be approved prior to recording the plat:

Engineering

1. A cross access agreement among the lots in the proposed subdivision shall be approved by the Development Services Department for recording in the Wake County Registry, and a copy of the recorded cross access easement shall be returned to the Development Services Department within one day of plat recordation. If a recorded copy of the document is not provided within this time, further recordings and building permit issuance will be withheld.
2. A 5' utility placement easement deed of easement, in addition to a plat showing the location of the easement, shall be submitted to the Planning and Development Services Department for review, and if acceptable, approved for recordation. Approved plats must be recorded at the Wake County Register of Deeds Office on or before the 14th day following approval by the City. The 14-day expiration date shall be clearly indicated on the plat. By the end of the next business day following recordation of the plat, all required legal instruments (including deeds of easement) shall be recorded, and recorded copies of the plat and all legal instruments required by the City in association with development approval shall be provided to the City. (Reference: UDO 8.1.7.A; 10.2.5.F.4.d)
3. A sight distance easement shall be approved by the Transportation Department for recording in the Wake County Registry and shown on a plat approved for recordation.
4. A public infrastructure surety shall be provided to City of Raleigh Transportation – Development Engineering Division (UDO 8.1.3) in the amount of 100% of the improvement cost for the NCDOT portion and 125% of the improvement cost for the City of Raleigh infrastructure.



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5. A public street right-of-way deed of easement, in addition to a plat showing the location of the easement, shall be submitted to the Planning and Development Services Department for review, and if acceptable, approved for recordation. Approved plats must be recorded at the Wake County Register of Deeds Office on or before the 14th day following approval by the City. The 14-day expiration date shall be clearly indicated on the plat. By the end of the next business day following recordation of the plat, all required legal instruments (including deeds of easement) shall be recorded, and recorded copies of the plat and all legal instruments required by the City in association with development approval shall be provided to the City. (Reference: UDO 8.1.7.A; 10.2.5.F.4.d)
6. A slope easement deed of easement, in addition to a plat showing the location of the easement, shall be submitted to the Planning and Development Services Department for review, and if acceptable, approved for recordation. Approved plats must be recorded at the Wake County Register of Deeds Office on or before the 14th day following approval by the City. The 14-day expiration date shall be clearly indicated on the plat. By the end of the next business day following recordation of the plat, all required legal instruments (including deeds of easement) shall be recorded, and recorded copies of the plat and all legal instruments required by the City in association with development approval shall be provided to the City. (Reference: UDO 8.1.7.A; 10.2.5.F.4.d)

Public Utilities

7. Infrastructure Construction Plans (concurrent submittal) must be approved by the City of Raleigh Public Utilities Department for all public water, public sewer and/or private sewer extensions.
8. A Petition for Annexation into the City limits shall be submitted in accordance with City Council policy for extension of utility service to properties currently outside of the City limits. This voluntary annexation in no way obligates the City to extend utility services to the property.

Stormwater

9. The maximum allocated impervious area for all applicable lots in the subdivision should be identified on all maps for recording.
10. The City form document entitled Declaration of Maintenance Covenant and Grant of Protection Easement for Stormwater Control Facilities shall be approved by the City and recorded with the county register of deeds office (UDO 9.2.2.G).
11. All stormwater control measures and means of transporting stormwater runoff to and from any nitrogen and stormwater runoff control measures shall be shown on all plats for recording as private drainage easements (UDO 9.2).
12. A surety equal to 125% of the cost of the construction of a stormwater device shall be paid to the Engineering Services Department (UDO 9.2.2.D.1.d).

Urban Forestry



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13. A public infrastructure surety for 3 street trees shall be provided to City of Raleigh Transportation – Development Engineering Division (UDO 8.1.3) in the amount of 100% of the improvement cost for the NCDOT portion of infrastructure.

BUILDING PERMITS - For buildings and structures shown on the approved plans. Commercial building permit plans must include the signed, approved Site Permitting Review plans attached, if applicable. Permit sets may be reviewed prior to the recordation of required plats, but cannot be approved.

The following items must be approved prior to the issuance of building permits:

Public Utilities

1. A plat must be recorded at the Wake County Register of Deeds office for all utility easement dedications.

Stormwater

2. All stormwater control measures and means of transporting stormwater runoff to and from any nitrogen and stormwater runoff control measures shall be shown on all plats for recording as private drainage easements (UDO 9.2).
3. Impervious restrictions for each lot must be recorded on a plat prior to building permit issuance.
4. If total land disturbance will be over 12,000 sq. ft. for multiple houses, a separate site plan submittal & approval will be required. Site plans require an erosion control plan. (UDO 9.4.6.)

Urban Forestry

5. A tree impact permit must be obtained for the approved streetscape tree installation in the right-of-way. This development proposes 3 street trees along Henry Drive.

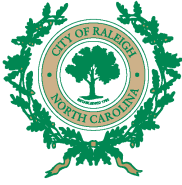
The following are required prior to issuance of building occupancy permit:

General

1. Final inspection of right-of-way street trees by Urban Forestry Staff.
2. Required public right-of-way infrastructure improvements shall be, at a minimum, sufficiently completed to provide the necessary, safe emergency and vehicular access.

Stormwater

3. As-built impervious survey is accepted by the Engineering Services Department (UDO 9.2).
4. As-built drawings and associated forms for all Stormwater devices are accepted by the Engineering Services Department (UDO 9.2.2.D.3).



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EXPIRATION DATES: If significant construction has not taken place on a project after preliminary subdivision approval, that approval may "sunset" and be declared void, requiring re-approval before permits may be issued. To avoid allowing this preliminary approval to "sunset", the following must take place by the following dates:

3-Year Sunset Date: August 6, 2027
Record at least $\frac{1}{2}$ of the land area approved.

5-Year Sunset Date: August 6, 2029
Record entire subdivision.

I hereby certify this administrative decision.

Signed: _____  _____ Date: 08/06/2024
Development Services Dir/Designee
Staff Coordinator: Michael Walters

Preliminary Subdivision Application
Planning and Development

Planning and Development Customer Service Center - One Sipherway Plaza, Suite 403 | Raleigh, NC 27611 | (919) 996-2100



INSTRUCTIONS: This form is used when submitting a Preliminary Subdivision (UDO Section 10.2.5). Please check the appropriate review type and include the plan checklist document. Please email all documents and your preliminary subdivision permit to: SubDivisions@raleighnc.gov.

DEVELOPMENT TYPE (UDO Section 2.1.2)	
<input type="checkbox"/> Conventional Subdivision	<input type="checkbox"/> Compact Development
<input type="checkbox"/> Conservation Development	<input type="checkbox"/> Cottage Court

NOTE: Subdivisions may require City Council approval if in a Metro Park Overlay or Historic Overlay District

GENERAL INFORMATION

Scoping/Concept plan case number(s):

Development name (subject to approval): Stonehenge Place

Property Address(es): **7703 Ray Road**

Recorded Deed PIN# 0797174594

What is your project type? Single Family Apartment Townhouse Non-residential Other: Attached houses

CURRENT PROPERTY OWNER/DEVELOPER INFORMATION
NOTE: Please attach purchase agreement when submitting this form

Company: STONEHENGE PLACE LLC | Owner/Developer Name and Title: Robert Jones
Address: 1207 FRONT STREET, SUITE 200, Raleigh NC 27605
Phone #: (919) 802-3633 | Email: rob@stonehengeplace.com

APPLICANT INFORMATION

Company: RWK, PA Engineering and Survey | Contact Name and Title: Chuck Rietzky, Engineer
Address: 101 W Main St, Suite 202, Garner NC 27526
Phone #: (919) 779-4654 | Email: cpratzky@rwkpa.com

Continue to page 2 >>

STONEHENGE PLACE

7703 RAY ROAD

RALEIGH, NC

SANITARY SEWER CASE#: SPR-0230-2019 REVISED
SUB-0030-2022



VICINITY MAP
SCALE: 1" = 500'

ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL CITY OF RALEIGH AND NC DOT STANDARDS AND SPECIFICATIONS.

EXCEPTION TO THE BLOCK PERIMETER STANDARD PER SECTION 8.3.2.A.1.B.1

SHEETS:

- C-1 COVER
- C-2 EXISTING CONDITIONS
- C-3 SUBDIVISION PLAN
- C-3.1 RIGHT-OF-WAY PLAN
- C-4 GRADING & STORMWATER
- C-5 LANDSCAPE PLAN
- D-1 STORMWATER & EROSION CONTROL DETAILS
- D-2 UTILITY DETAILS

Public Improvement Quantities	
Phase Number(s)	PHASE 1
Number of Lots	3
Lot Number(s) by Phase	1-3
Liveable Buildings	0
Open Space?	No
Number of Open Space Lots	0
Public Water (LF)	0
Public Sewer (LF)	0
Public Street (LF) - FULL	0
Public Street (LF) - PARTIAL	486
Public Sidewalk (LF) - FULL	0
Public Sidewalk (LF) - PARTIAL	486
Street Signs (LF)	486
Water Service Stub	3
Sewer Service Stub	3

OWNER/DEVELOPER:

STONEHENGE PLACE, LLC
C/O ROBERT JONES
1207 FRONT STREET
RALEIGH NC 27604
PHONE: 919-802-3833
EMAIL: rob@dj1918.com

ENGINEER:

RWK, PA
101 W. MAIN STREET, SUITE 202
GARNER, NC 27529
PHONE: (919) 779-4854
cpratzky@nc.rr.com

SITE DATA:

SITE ADDRESS:
7703 RAY ROAD
RALEIGH NC 27615

PIN: 0797174594
DEED: BK 17478 PG 1134
ZONING: R-4

EXISTING LAND USE: VACANT
PROPOSED BLDG USE: RESIDENTIAL

GROSS ACREAGE: 1.084 AC
NET ACREAGE: 0.977 AC
TOTAL NUMBER OF LOTS: 3
DENSITY = 3 UNITS / 0.977 AC = 3 UNITS/AC

PREVIOUS IMPERVIOUS AREA: 7,403 SF 15.6%

SOLID WASTE COLLECTION FROM THIS DEVELOPMENT WILL INVOLVE USING ROLL CONTAINERS THAT SHALL BE ROLLED DOWN TO THE PRIVATE ALLEY ACCESS THEN UP TO THE CURBSIDE OF HENRY DRIVE.

DEVELOPMENT TYPE & SITE DATA TABLE
(Applicable to all developments)

ZONING & INFORMATION

Gross site acreage: 1.084 AC

Zoning districts (if more than one, provide acreage of each): R-4

Overlay district: NA | Inside City limits? Yes No

Conditions Use District (CUD): Case # 2- N/A | Board of Adjustment (BOA): Case # A- N/A

STORMWATER INFORMATION

Existing Impervious Surface: Acres: 0.000 | Square Feet: 0.000 | Proposed Impervious Surface: Acres: | Square Feet: |

Nature River Buffer: Yes No | Wetlands: Yes No

Is this a flood hazard area? Yes No
If yes, please provide the following:

Alluvial soils: _____
Flood study: _____
FEMA Map Panel #: 222610705L

NUMBER OF LOTS AND DENSITY

Total # of townhouse lots: Detached: Attached: _____

Total # of single-family lots: 3

Proposed density for each zoning district (UDO 1.3.2.F): **3 units/acre**

Total # of open space and/or common area lots: NA

Total # of requested lots: 3

SIGNATURE BLOCK

The undersigned declares that the property owner(s) is aware of this application and that the proposed project described in this application will be maintained in all respects in accordance with the plans and specifications submitted herewith, and in accordance with the provisions and regulations of the City of Raleigh Unified Development Ordinance.

I, Charles Rietzky, will serve as the agent regarding this application, and will receive and respond to administrative comments, resubmit plans and applicable documentation, and will represent the property owner(s) in any public meeting regarding this application.

I have read, acknowledge, and affirm that this project is conforming to all application requirements applicable with the proposed development; use it as a knowledge that this application is subject to the filing calendar and submittal policy, which states applications will be reviewed after 150 days of inactivity.

Signature: [Signature] Date: 03-21-22
Printed Name: Robert Jones

Signature: _____ Date: _____
Printed Name: Charles Rietzky

NO.	REVISION	DATE
1	REVISED PER COR. COMMENTS	01-09-23
2	REVISED PER COR. COMMENTS	03-06-23
3	REVISED PER COR. COMMENTS	02-07-24

STONEHENGE PLACE
7703 RAY ROAD
CITY OF RALEIGH
WAKE COUNTY, NC

RWK, PA
ENGINEERING & SURVEYING
101 W. MAIN ST., SUITE 202
GARNER, NC 27526
PHONE: (919) 779-4854
FAX: (919) 779-4256

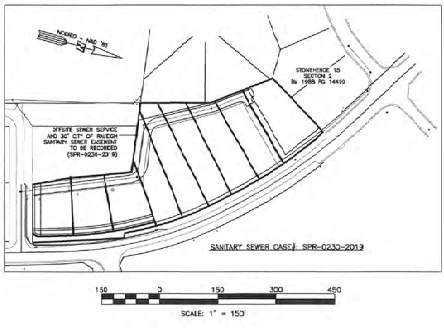
REVIEW SET
NOT RELEASED FOR CONSTRUCTION

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DATE: 03-21-22
DRAWN: TC
SHEET: COVER
C-1

LEGEND

- AR CONSPICUOUS
- BC2 BLOCK FLOW PREVENTER
- BE CURB WALL
- CG2 CURB WALL
- CG3 CURB WALL
- CG4 CURB WALL
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- NOTE:**
- 1) SEE LANDSCAPE PLAN ON SHEET CS FOR STREET TREES AND LANDSCAPE PLAN.
 - 2) EXTENDED R/W ROAD SHOULD BE CORRECTLY USED BY FIRE APPARATUS.
 - 3) PRIVATE ALLEY, DOWNWATER CONTROL, MEASURE AND WALL ROSS TO BE MAINTAINED BY HOA.
 - 4) HOUSES FACE RAY ROAD AND HAVE GARAGES IN REAR.
- REFERENCE DIMENSION SHOWING 15' FROM ROAD SURFACE FOR FIRE APPARATUS.



OWNER:
STONEHENGE PLANS, LLC
C/O ROBERT JONES
1507 FRODO STREET
RALEIGH NC 27604
PHONE: 919-889-2812
EMAIL: rjones@stonehengeplans.com

SITE ADDRESS:
7703 RAY ROAD
RALEIGH NC 27615

PERMITS:
PLAN: 070178654
SEEDS: 14 0701786 1104
EROWAS: 1-4

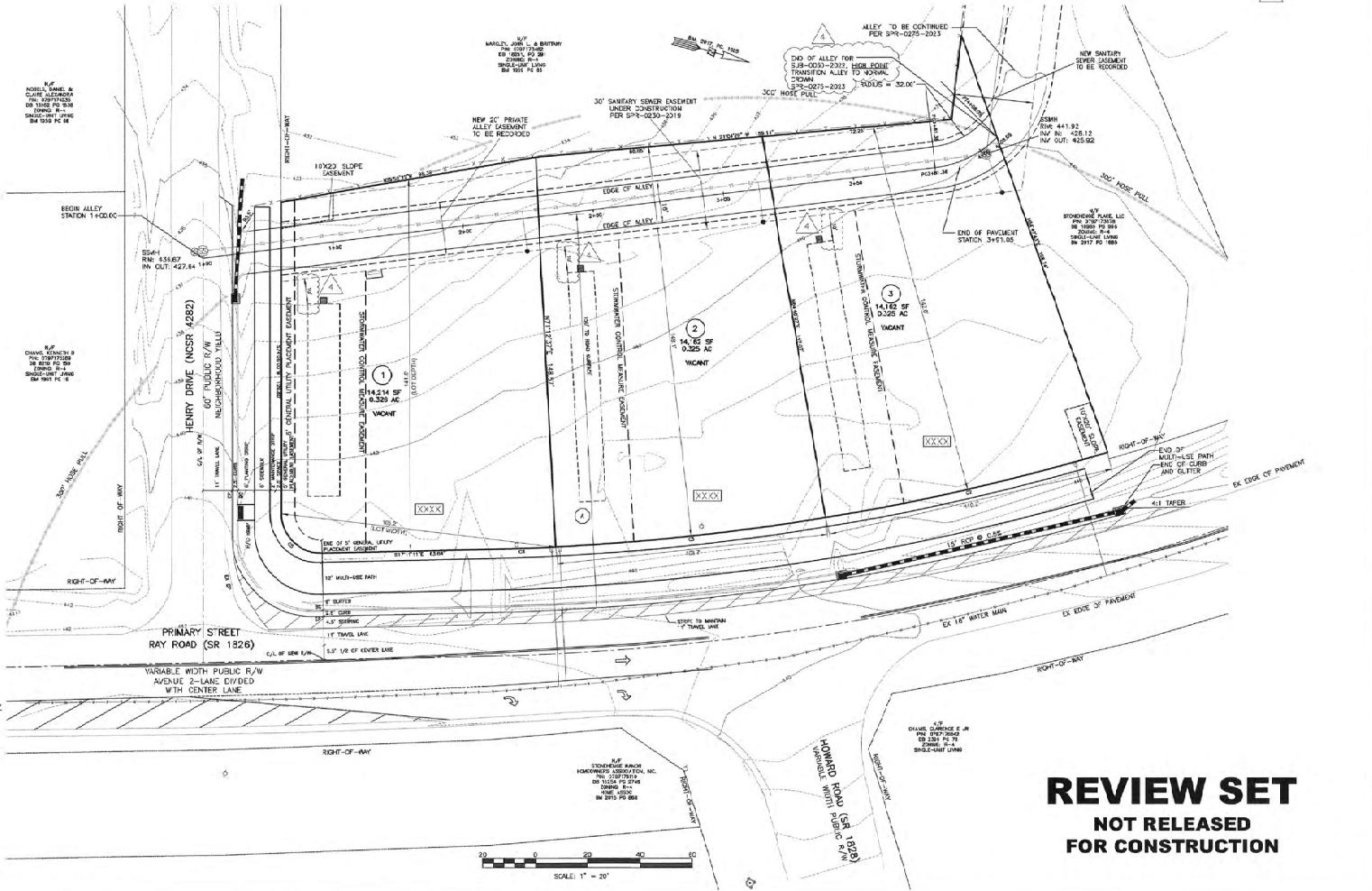
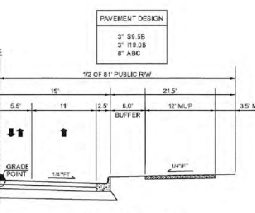
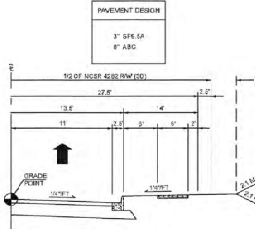
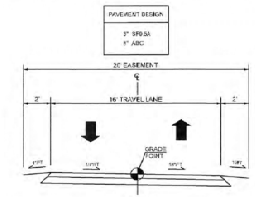
EXISTING LAND USE: VACANT
PROPOSED LAND USE: RESIDENTIAL
TOTAL NUMBER OF LOTS: 1

LOT	SCM IMPERVIOUS SURFACE CAPACITY (S.F.)	ALLEY AREAS DRAINING TO SCMS (S.F.)	REMAINING ALLOWABLE IMPERVIOUS SURFACES (S.F.)
1	4,500	1,383	3,117
2	4,500	1,381	3,119
3	4,500	1,359	3,141

NEW AREAS:
LOT 1: 14,811 SF 0.336 AC
LOT 2: 14,811 SF 0.336 AC
LOT 3: 14,811 SF 0.336 AC

NO.	REVISION	DATE
1	REVISED PER COR COMMENTS	01-09-23
2	REVISED PER COR COMMENTS	03-08-23
3	IMPERVIOUS LIMIT	02-07-24
4	IMPERVIOUS LIMIT, SCM DIMENSION	4-24-24

CLASSIFICATION	DESCRIPTION	DATE	BY	CHKD BY
1	PRELIMINARY	10/20/20	JK	JK
2	REVISED	11/14/20	JK	JK
3	REVISED	11/23/20	JK	JK
4	REVISED	12/01/20	JK	JK
5	REVISED	12/01/20	JK	JK
6	REVISED	12/01/20	JK	JK
7	REVISED	12/01/20	JK	JK
8	REVISED	12/01/20	JK	JK
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12	REVISED	12/01/20	JK	JK
13	REVISED	12/01/20	JK	JK
14	REVISED	12/01/20	JK	JK
15	REVISED	12/01/20	JK	JK



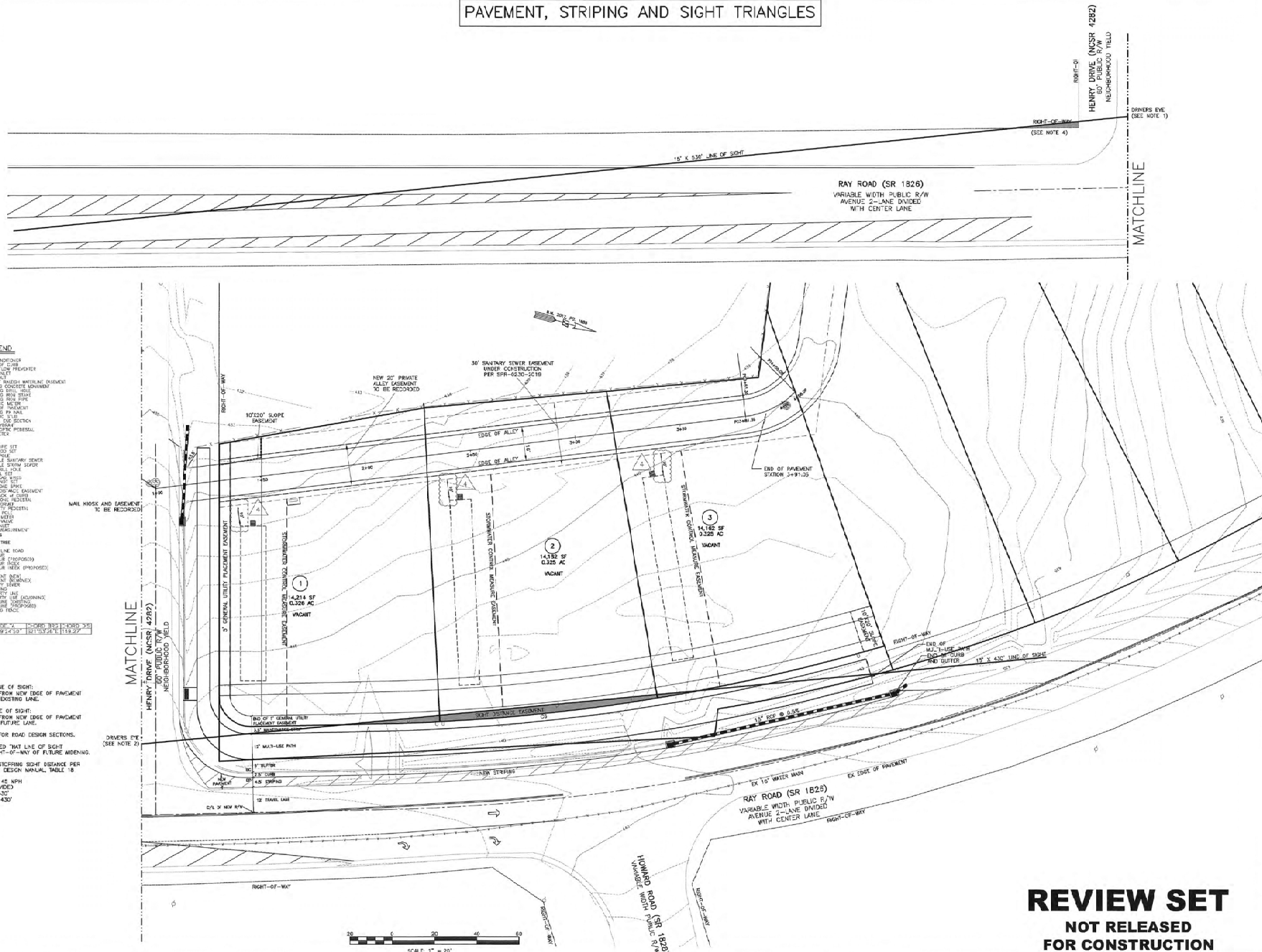
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STONEHENGE PLACE
7703 RAY ROAD
CITY OF RALEIGH
WAKE COUNTY, NC

RWK PA
ENGINEERING - SURVEYING
107 CARRIAGE HOUSE DRIVE
RALEIGH, NC 27604
PHONE: (919) 779-4884
FAX: (919) 779-4956

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DATE: 03-21-22
DRAWN: TC
SHEET:
SUBDIVISION PLAN
C-3

PAVEMENT, STRIPING AND SIGHT TRIANGLES



- LEGEND**
- 00 AIR CONDITIONER
 - 01 AC UNIT
 - 02 BIRD HOUSE
 - 03 BIRD FEEDER
 - 04 BIRD HOUSE
 - 05 BIRD FEEDER
 - 06 BIRD HOUSE
 - 07 BIRD FEEDER
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 - 100 BIRD HOUSE

- NOTES:**
- 1) RIGHT TURN LINE OF SIGHT: SET BACK 15' FROM ROW EDGE OF PAVEMENT TO CENTER OF EXISTING LANE.
 - 2) LEFT TURN LINE OF SIGHT: SET BACK 15' FROM ROW EDGE OF PAVEMENT TO CENTER OF FUTURE LANE.
 - 3) SEE SHEET 3 FOR ROAD DESIGN SECTIONS.
 - 4) IF IT IS ANTICIPATED THAT LINE OF SIGHT WILL BE IN RIGHT-OF-WAY OF FUTURE WIDENING.
 - 5) INTERSECTION STRIPING SIGHT DISTANCE PER RALEIGH STREET DESIGN MANUAL TABLE 18
SPEED LIMIT 45 MPH
3 LANE UNDIVIDED
LEFT TURN 430'
RIGHT TURN 430'

NO.	REVISION	DATE
1	REVISED PER COR. COMMENTS	01-08-23
2	REVISED PER COR. COMMENTS	03-08-23
4	SCM DIMENSION	04-24-24

STONEHENGE PLACE
7703 RAY ROAD
CITY OF RALEIGH
WAKE COUNTY, NC



RWK, PA
ENGINEERING - SURVEYING
101 W. MAIN ST., SUITE 202
GARDNER, NC 27526
PHONE: (919) 779-4564
FAX: (919) 779-4056

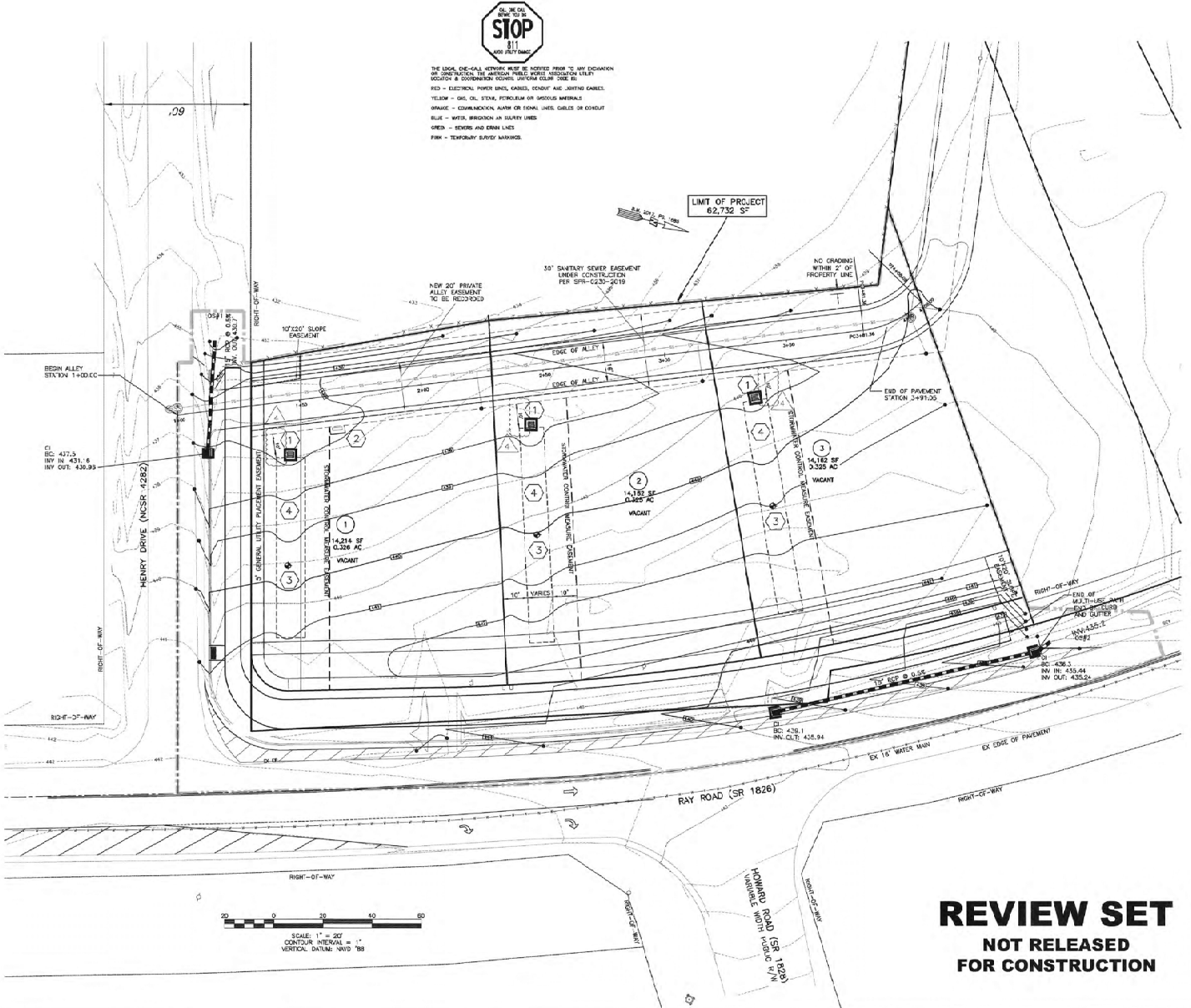
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DATE: 03-21-22
DRAWN: TC
SHEET:
RIGHT OF WAY
PLAN
C-3.1

REVIEW SET
NOT RELEASED
FOR CONSTRUCTION

LEGEND

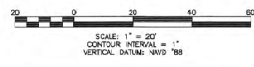
- AP - CONVEYOR
- BP - BACK OF CURB
- CP - CURB
- DP - DRIVE
- EP - EDGE OF PAVEMENT
- FP - FINISH GRADE
- GP - GRASS
- HP - HATCH
- IP - INTERIOR FINISH
- JP - JOINT
- KP - KICK OUT
- LP - LUMBER
- MP - MASONRY
- NP - NAIL
- OP - OILING
- PP - PAVEMENT
- QP - QUARRY
- RP - ROOF
- SP - STRUCTURE
- TP - TYPICAL
- UP - UNDER
- VP - VENT
- WP - WATER
- XP - EXISTING
- YP - YIELD
- ZP - ZONE

- 1 - YARD INLET WITH CONNECTION TO PIPE IN TRENCH DRAIN
- 2 - MAN HOLE WHERE EASEMENT TO BE RECORDED
- 3 - SOIL BORE TESTING SITE
- 4 - INFILTRATION TRENCH



THE LOCAL ONE-CALL NETWORK MUST BE NOTIFIED PRIOR TO ANY EXCAVATION AND OBTAIN THE APPROPRIATE YELLOW LINE AND STOP SIGN. THE YELLOW LINE IS A SERVICE MARKER FOR THE ONE-CALL NETWORK. THE STOP SIGN IS A SERVICE MARKER FOR THE ONE-CALL NETWORK. THE YELLOW LINE IS A SERVICE MARKER FOR THE ONE-CALL NETWORK. THE STOP SIGN IS A SERVICE MARKER FOR THE ONE-CALL NETWORK.

LIMIT OF PROJECT
62,732 SF



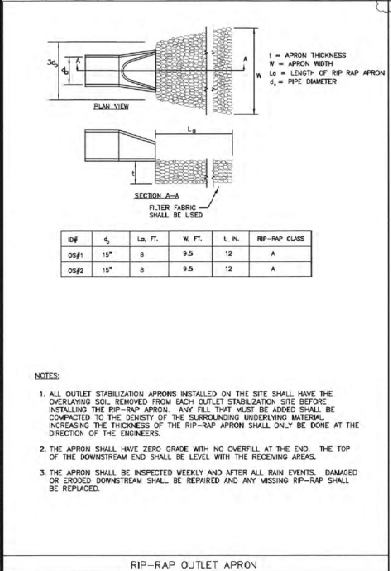
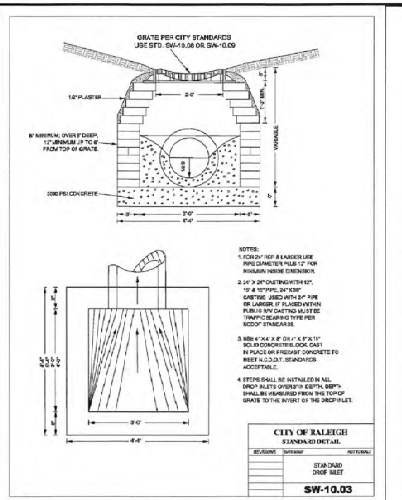
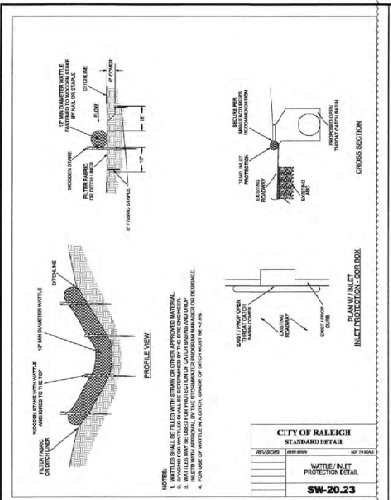
REVIEW SET
NOT RELEASED
FOR CONSTRUCTION

NO.	REVISION	DATE
1	REVISED PER COR COMMENTS	01-08-23
2	REVISED PER COR COMMENTS	08-08-23
3	REVISED PER COR COMMENTS	02-07-24
4	SCM DIMENSION	04-21-24

STONEHENGE PLACE
7703 RAY ROAD
CITY OF RALEIGH
WAKE COUNTY, NC

RWK, PA
ENGINEERING - SURVEYING
101 W. MAIN ST., SUITE 200
GREENSBORO, NC 27409
PHONE: (336) 733-4444
FAX: (336) 733-4458

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DATE: 03-21-22
DRAWN: TC
SHEET:
GRADING & STORMWATER
C-4



SCM (INFILTRATION TRENCH)	TRENCH WIDTH (FT.)	TRENCH LENGTH (FT.)	PIPE LENGTH (FT.)	GRATE ELEVATION	INVERT ELEVATION	SUMP ELEVATION	TRENCH BOTTOM	SEASONAL HIGH WATER TABLE	2-YEAR STORM ELEVATION	10-YEAR STORM ELEVATION	2-YEAR STORM VOLUME (CF)	10-YEAR STORM VOLUME (CF)
Lot 1	12	75	72.5	436.5	434.0	433.5	433.5	423.5	434.21	434.41	248	317
Lot 2	10	87.5	87	437.5	435.0	434.5	434.5	423.5	435.13	435.38	240	306
Lot 3	10	87.5	87	438.5	436.0	435.5	435.5	423.5	436.13	436.30	219	280

NOTES:

- ALL OUTLET STABILIZATION APRONS INSTALLED ON THE SITE SHALL HAVE THE OVERLAPPING SOIL REMOVED FROM EACH OUTLET STABILIZATION SITE BEFORE INSTALLING THE RIP-RAP APRON. ANY FILL THAT MUST BE ADDED SHALL BE COMPACTED TO THE DENSITY OF THE SURROUNDING UNDERLYING MATERIAL. INCREASING THE THICKNESS OF THE RIP-RAP APRON SHALL ONLY BE DONE AT THE DIRECTION OF THE ENGINEER.
- THE APRON SHALL HAVE ZERO GRADE WITH NO CURB/FILL AT THE END. THE TOP OF THE DOWNSTREAM END SHALL BE LEVEL WITH THE RECEIVING AREAS.
- THE APRON SHALL BE INSPECTED WEEKLY AND AFTER ALL RAIN EVENTS. DAMAGED OR EXPOSED DOWNSTREAM SHALL BE REPAIRED AND ANY MISSING RIP-RAP SHALL BE REPLACED.

CALCULATIONS FOR DETERMINING PIPE LENGTH

AREA DRAINING RUNOFF TO BE DETAINED = 4,500 S.F. OF IMPERVIOUS COVER

NOTES: 1. THE 4,500 S.F. IMPERVIOUS COVER FOR EACH LOT INCLUDES RUNOFF FROM THE ALLEY.
2. ALL SENS SHALL HAVE THE SAME MINIMUM LINEAR FEET OF PERFORATED PIPE.

VOLUME REQUIRED TO BE DETAINED

$$V = (A)(S)(12)$$

$$V = \text{VOLUME (CUBIC FEET) (C.F.)}$$

$$A = \text{ADDITIONAL IMPERVIOUS SURFACE(S) TO BE MANAGED}$$

$$S = \text{DESIGN STORM, 100% PERCENTILE STORM PER CITY OF RALEIGH}$$

$$= 1.4 \text{ INCHES}$$

REQUIRED VOLUME

$$V = (4,500 \text{ S.F.}) \times (1.4 \text{ IN.}/12 \text{ IN/FT})$$

$$= 525 \text{ C.F.}$$

LENGTH OF PIPE (IN TRENCH)

$$L = \frac{V}{A} \left(\frac{100}{100 - P} \right)$$

$$L = \text{LENGTH OF PIPE REQUIRED, FT.}$$

$$V = \text{VOLUME REQUIRED, C.F.}$$

$$A = \text{CROSS-SECTIONAL AREA OF TRENCH MINUS 46.5 S.F.}$$

$$V = 2 \text{ VOLUME OF Voids in #57 STONE, 408}$$

$$A = \text{CROSS-SECTIONAL AREA OF PIPE, C.F.}$$

REQUIRED PIPE LENGTH (SCM 1)

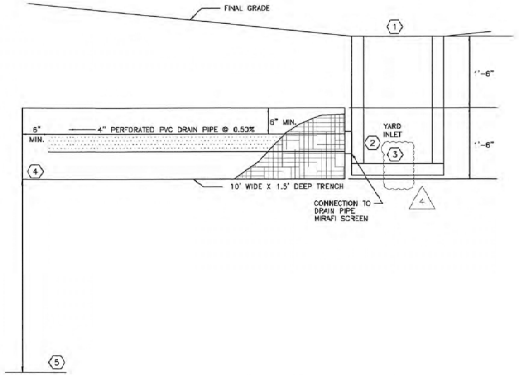
$$L = (626 \text{ C.F.}) / [(1.91 \text{ S.F.}/(\text{C} \cdot 40)) + (0.09 \text{ S.F.})]$$

$$= 72.4 \text{ FT.}$$

REQUIRED PIPE LENGTH (SCM 2 and 3)

$$L = (626 \text{ C.F.}) / [(1.91 \text{ S.F.}/(\text{C} \cdot 40)) + (0.09 \text{ S.F.})]$$

$$= 95.7 \text{ FT.}$$



NOTES:

- ALL INFILTRATION TRENCHES SHALL BE FILLED WITH #57 STONE.
- ALL INFILTRATION TRENCHES SHALL BE 1.5 FEET DEEP AND SHALL EXTEND A MINIMUM OF 6 BODIES BEYOND THE END OF THE PERFORATED PIPE.
- THE BOTTOMS OF ALL INFILTRATION TRENCHES SHALL BE OVER-EXCAVATED BY A MINIMUM OF 1.0 FEET. ALL EXCAVATED SOIL FROM OVER-EXCAVATION SHALL BE REPLACED AND COMPACTED TO 98%. ENSURING THE BOTTOMS OF INFILTRATION BASINS MAY BE SOME IN LIEU OF OVER-EXCAVATION.
- DRAIN INLETS SHALL HAVE A 6-INCH SLUMP FOR PRE-TREATMENT OF COLLECTED STORMWATER.

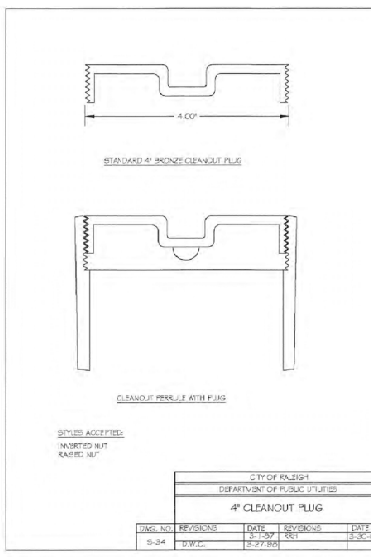
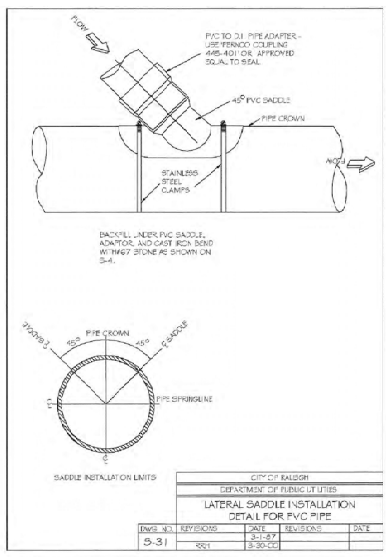
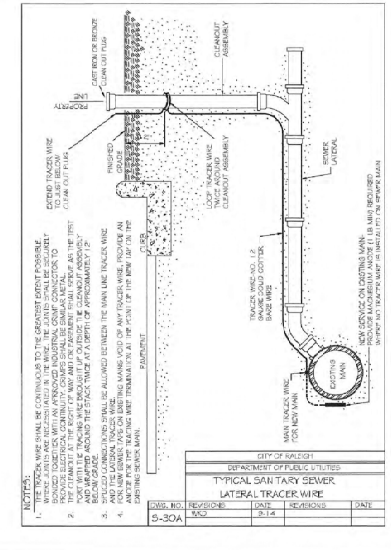
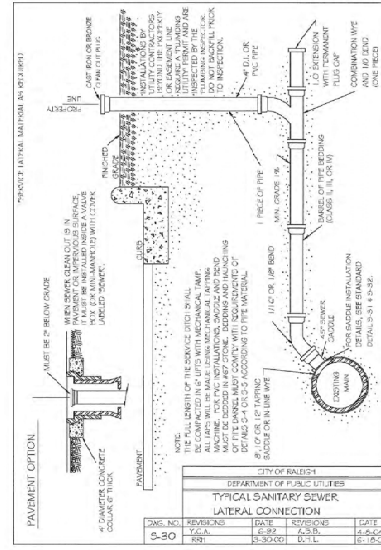
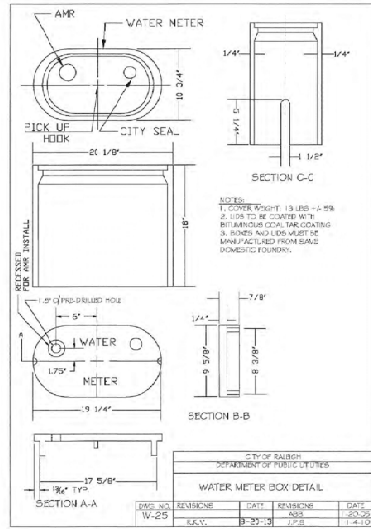
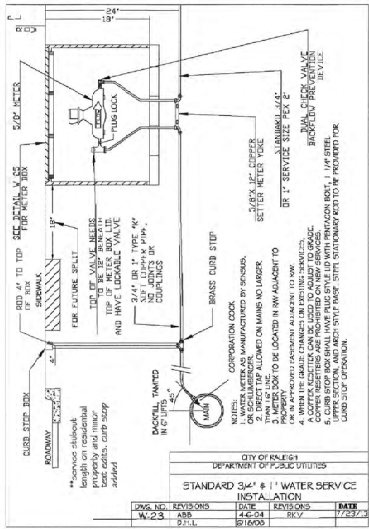
DETAIL OF INFILTRATION DEVICE
(N-13)

NO.	REVISION	DATE
1	REVISED PER COR. COMMENTS	03-08-23
3	REVISED DETAILS	02-07-24
4	REVISED DETAILS	04-21-24

STONEHENGE PLACE
7703 RAY ROAD
CITY OF RALEIGH
WAKE COUNTY, NC

RWK PA
ENGINEERING & SURVEYING
101 W. MAIN ST., SUITE 202
CARRIER, NC 27520
PHONE: (919) 778-0000
FAX: (919) 778-0095

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DATE: 08-21-22
DRAWN: SVM
SHEET:
STORMWATER & EROSION CONTROL
DETAILS
D-1



- STANDARD UTILITY NOTES (as applicable):**
- All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference: CORP-D Handbook, current editions)
 - Utility separation requirements:
 - A distance of 1' OC shall be maintained between sanitary sewer & any private or public water supply source such as an unexcavated reservoir used as a source of drinking water. If absolute utility separation cannot be achieved, various sanitary sewer pipe shall be specified & installed to achieve separation. However, the minimum separation shall not be less than 20' from a private well or 30' 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 in the water main is 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 dimensions are measured from outside diameter to outside diameter.
 - Where it is impossible to obtain proper separation, or combine a sanitary sewer cross-over w/ watermain DIP materials or steel encasement, extended 10' on each side of crossing must be specified & installed to exterior specifications.
 - 5.0' minimum horizontal separation is required between all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer.
 - Minimum 18" min. vertical separation at all watermain & RCP storm drain crossings, minimum 8" min. vertical separation at all sanitary sewer & RCP storm drain crossings. Where separate encasements cannot be achieved, specify DIP materials & a concrete cradle having 6" min. clearance (see CORP-D details W-41 & S-49).
 - All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required.
 - Any necessary field releases are subject to review & approval or an amended plan &/or profile by the City of Raleigh Public Utilities Department prior to construction.
 - Developer shall provide 24 hour advance written notice to owner for any work requiring utility or existing City of Raleigh Utility Department crossing procedures.
 - 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.
 - 1.8' minimum cover is required on all water mains & sewer laterals. 4.0' minimum cover is required on all steel 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. The process of abandoning, tapping or removal of service from ROW or easement per CORP-D Handbook procedure.
 - Install 1" copper water services with meters located at ROW or within 0.5' of Meterline Equipment immediately adjacent. NOTICE: It is the applicator'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' except last minimum.
 - Pressure reducing valves are required on all water services exceeding 80 psi; backwater valves are required on all sanitary sewer services having building level lower than 1.5' above the next upstream manhole.
 - All environmental permits applicable to the project must be obtained from NCEM, USACE &/or FEMA for any projects in the wetland &/or Riparian Zones. (Applicable) prior to construction.
 - NOCCF / other Environmental Agreements are required for any utility work (including main extensions & service lines) within wetlands or riparian ROW prior to construction.
 - Cross-connection / 24 Hour Separator being fabricated & installation specifications shall be approved by the CORP-D P33 Program Coordinator prior to issuance of a Building Permit. Contact: Stephen Cooverly at (919) 996-2384 or stephen.cooverly@raleigh.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. A Certificate of Compliance shall also be obtained for each device prior to issuance of a Building Permit. Contact: Josiah Hendry at (919) 996-0523 or josiah.hendry@raleigh.gov for more information.