

REQUEST FOR BOARD ACTION

Henderson County Board of Commissioners

Meeting Date: April 6, 2009

Subject: Water Extension
Sewer Line Extension– Carriage Park Section 16

Attachments: Vicinity Map
Engineer’s Report
Project Summary
Project Map
County Review Sheet

Summary of Request:

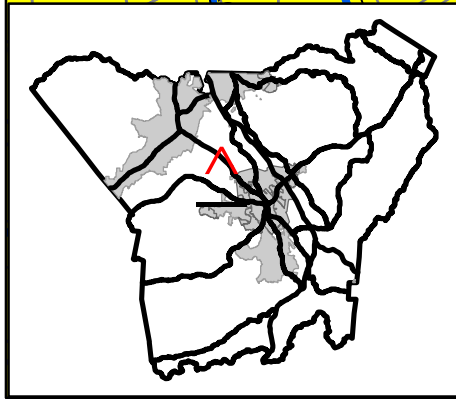
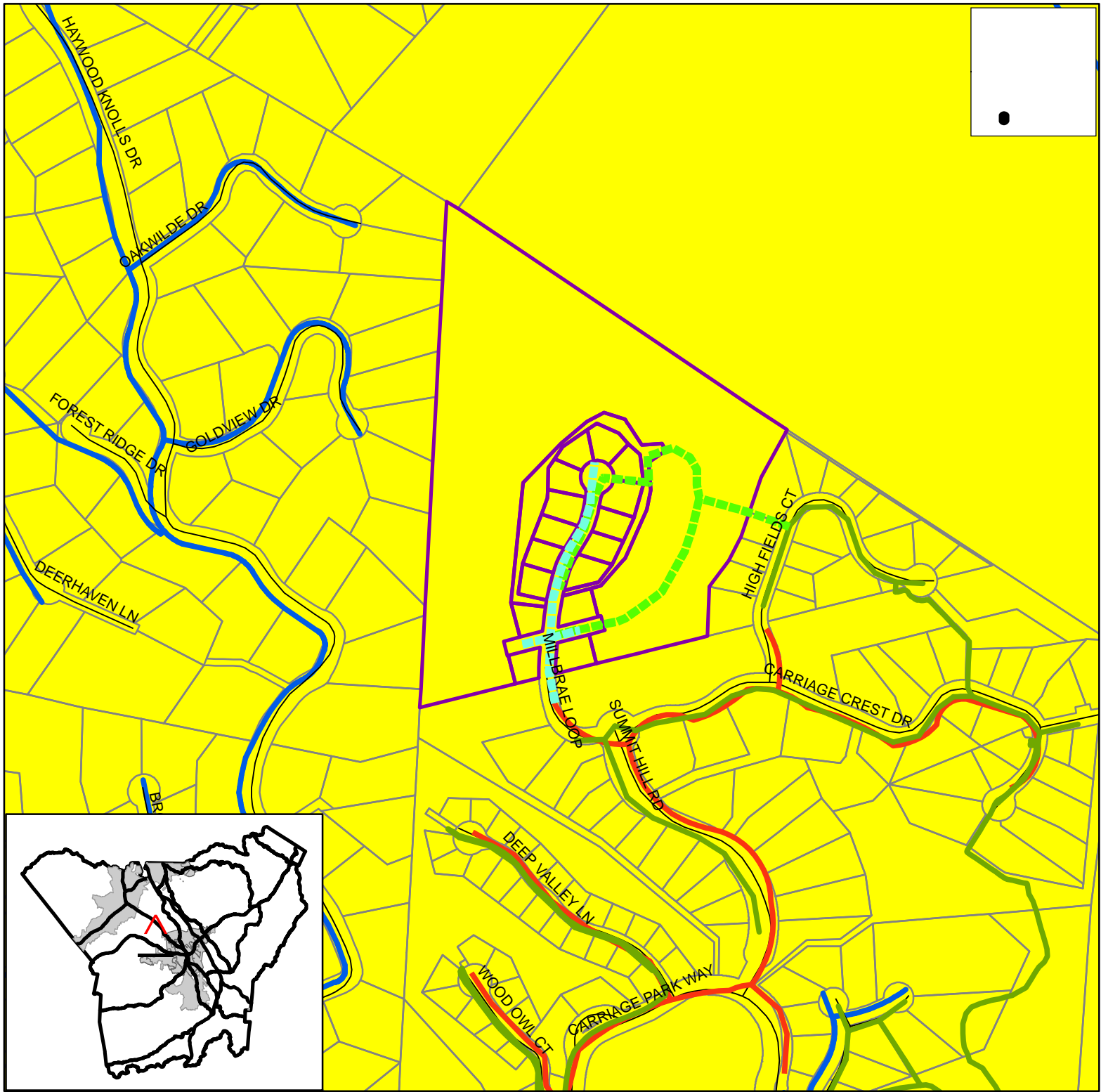
The City of Hendersonville has requested that the County comment on the proposed water and sewer line extension for Carriage Park Section 16. The proposed water line is 1,092 linear feet and the proposed sewer line is 1,710 feet. The projects’ location within the Urban Services area is consistent with the Henderson County 2020 Comprehensive Plan. A City of Hendersonville Project Summary Sheet, with backup documents and County Review Sheet with Staff comments, are attached for Board review and action.

Board Action Request:

Action by the Board of Commissioners is needed to either grant or deny this request. If the Board decides to approve the requested extension the following motion has been provided.

Suggested Motion:

I move that the Board approve the Carriage Park Section 16 water and sewer line extension and direct Staff to convey the County’s comments to the City of Hendersonville.



Carriage Park Section 16

OWNER/DEVELOPER: CARRIAGE PARK ASSOCIATES LLC
 ZONING: R2
 ROAD SYSTEM: Private

Legend

- - - Proposed Waterline
- - - Proposed Sewer Line
- Existing Sewer
- BOC Approved Water Extensions
- Existing Waterlines
- Streets
- Project Site



ENGINEERING REPORT

FOR

**CARRIAGE PARK
SECTION 16 - PHASE 1
WATER MAIN EXTENSION**

OFF MILLBRAE LOOP

HENDERSONVILLE, NORTH CAROLINA

HENDERSONVILLE TOWNSHIP
HENDERSON COUNTY

(JOB NO.: 06-12-74-ENG)

PREPARED BY:

PATTERSON & PATTERSON

ENGINEERING - SURVEYING - PLANNING

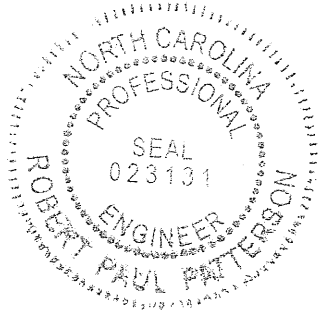
P.O. BOX 6114

HENDERSONVILLE, NC 28793-6114

TEL. & FAX: (828) 692-6629

I HEREBY CERTIFY THAT THE REPORT CONTAINED HEREIN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

SIGNED, SEALED AND DATED THIS 12TH DAY OF FEB., 2009.



BY: *Robert Paul Patterson*
ROBERT PAUL PATTERSON, P.E.
PATTERSON & PATTERSON
N.C.P.E. # 023131

Carriage Park Section 16 (Phase 1) - Water Main Extension
Carriage Park Section 16
Project No.: 06-12-74-ENG (Patterson & Patterson)

PROJECT SUMMARY:

An extension of an existing 8" water main (see Carriage Park Section 15 Extension) is required to provide water service to Phase 1 of Section 16, Carriage Park. This section is situated just north of the roundabout within Section 15 off of Millbrae Loop. This phase of the water extension will serve sixteen (16) lots. The proposed site is currently owned and being developed by:

Carriage Park Associates, L.L.C.
2827 Haywood Road
Hendersonville, NC 28791
Mr. Dale Hamlin, General Manager
(828) 697-7200

At the present time, Mr. Hamlin will be responsible for signing the Waterline Extension Agreement with the City of Hendersonville.

The project will consist of 250 linear feet of 8" CL-350 Ductile Iron water main, 539 linear feet of 6" CL-350 Ductile Iron water main, 303 linear feet of 4" CL-350 Ductile Iron water main, one (1) fire hydrant and assembly, and other appurtenances. For more information, see the accompanying preliminary plans. (The above quantities are approximate.)

This project should be completed within one hundred twenty (120) working days after final grading has been completed, assuming favorable weather conditions. At the present time, I will be monitoring construction for this project.

WATER SUPPLY:

The proposed water main extension will tie into an existing 8" water main located just north of the roundabout in Section 15 to the north of the end of pavement of Millbrae Loop. The proposed water mains will be owned and maintained by the City of Hendersonville Water & Sewer Department. The proposed water mains will be pressurized by a 200,000 gallon tank located within the Carriage Park Development. The City of Hendersonville's water system is supplied by an intake pipe on Mills River at U.S. Highway 280/N.C. 191 and two (2) intake pipes in the Pisgah National Forest. For further details and information on the City of Hendersonville's water system, please contact:

CITY OF HENDERSONVILLE
Attn.: Mr. Lee Smith, Utilities Director
Water & Sewer Department
P.O. Box 1760
Hendersonville, NC 28793
Telephone No. (828) 697-3061
Fax No. (828) 697-1707

Once the project is complete, the City of Hendersonville will take over and maintain the proposed water main extension.

All calculations for the proposed water main extension were based on information provided by the City of Hendersonville Water & Sewer Department. The detailed information on residual pressure,

flow, and static pressure on this water main and further information on the existing water system within this development may be obtained from Mr. Dennis Frady, at (828) 697-3073.

SANITARY SEWER:

At the current time, public sanitary sewer exists in close proximity to the proposed site. The proposed Phase 1 of Section 16 will be served via gravity sewer that will tie into a manhole within Section 15 of the Carriage Park Development. An upgrade (or increase in size) of the impellers of the pumps within the smaller lift station for Section 15 will be required prior to final approval of the proposed water and sewer extensions. Other than the minor upgrade above, the existing sewer system has sufficient capacity to collect all of the proposed sewer discharge from this proposed Section.

CONCLUSION:

The proposed water main extension will be installed by a licensed Utility Contractor and inspected by both the Engineer and a City of Hendersonville representative. The water main extension will be financed by Carriage Park Associates, L.L.C., and not the City of Hendersonville.

The proposed water main extension will be connecting into an existing eight (8) inch water main, that is pressurized by an existing 200,00 gallon storage tank. There is sufficient flow and pressure to provide adequate fire protection and residential service (See attached calculation sheets), according to pressure information provided by the City of Hendersonville Water and Sewer Department. Fire protection will be provided via a proposed hydrant along the proposed six (6) inch main. Future expansion of this line is proposed to the north into the Proposed Phase 2 - Section 16 of Carriage Park, but no further expansion is anticipated.

The proposed extension should have a negligible impact on the overall water system capacity depletion. A water availability letter will be provided by the City of Hendersonville for the proposed project. Therefore, it is my professional opinion that the proposed water main extension can serve the site with both water service and fire protection.

ADDITIONAL INFORMATION

(As per 15A NCAC 18C .0307)

1. The proposed extension will tie into an existing 8" water main that is owned by the City of Hendersonville Water & Sewer Department.
2. The proposed water main extension is located in the central portion of Henderson County, and will serve a new residential section within the Carriage Park Development. The surrounding properties are already served with public water from the City of Hendersonville or by private wells.
3. The applicant is:
Carriage Park Associates, L.L.C.
2827 Haywood Road
Hendersonville, NC 28791
Mr. Dale Hamlin, General Manager
(828) 697-7200
4. The proposed service area is an approximate 5.20 acre tract of land that is currently undeveloped.
5. The future service area for the proposed extension can now change with the availability of city water, with additional development of the land adjacent to this phase being anticipated/proposed.
6. N/A
7. N/A
8. This phase of the project to serve a total of sixteen (16) residential lots. The anticipated future peak water usage for this section is approximately 6,400 G.P.D.
9. Water is to be supplied to this extension by the City of Hendersonville Water & Sewer Department.
10. N/A
11. N/A
12. The proposed water main extension is to be constructed of CL-350 Ductile Iron with an estimated design service life of fifty years.
13. The maximum daily treated water supply for the City of Hendersonville is 12 M.G.D. The current maximum daily demand is approximately 7 M.G.D.
14. N/A

PROJECT SUMMARY
SEWER UTILITY EXTENSION
Carriage Park Section 16 Phase 1

February 13, 2009

To: Honorable Mayor and Members of City Council

From: Water & Sewer Department Staff

RE: STAFF RECOMMENDATION FOR ACCEPTANCE OF
SEWER UTILITY EXTENSION AGREEMENT (SUEA)

This is a project to extend lines to provide sewer service to an additional section/phase of the existing residential development. This project is located adjacent to Millbrae Loop with the existing development.. This project is under the reviewing jurisdiction of Henderson County and is located within the USA – Urban Services Area. The entire cost of the proposed sewer line extension is to be paid for by Carriage Park, LLC.

This project requires approximately 1710 linear feet of sewer line sized as following:

Approximate Length:	Description:
513 lf	8" SDR 35 PVC
1197 lf	8" DIP CL 350

Pump station required: Yes No.

The amount of wastewater generated by this project will be approximately 10,800 gallons per day.

The Reviewing Jurisdiction, listed below, has completed their review of this utility extension request in regard to their adopted land use plan or in terms of its future impact on existing land uses for that local government.

Reviewing Jurisdiction: **Henderson County**

Approved Disapproved

Narrative Comments Provided: Yes No

Signing of Official: _____
Printed Name: _____

Date: _____

Based on the above information, the Water & Sewer Department has the capacity to support this additional infrastructure and associated connections and hereby recommends approval of said project contingent upon final approval of construction plans and specifications by the Water & Sewer Department.

A motion is needed to approve and accept this project. Suggested wording for motion is as follows:

"I move to accept this Sewer Utility Extension Project and to authorize the City Manager to execute the associated Sewer Utility Extension Agreement on behalf of the City."

Water and Sewer Department:	<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: 02-02-09
Henderson Co. Commissioners:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____
Hendersonville City Council:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____

**PROJECT SUMMARY
WATER UTILITY EXTENSION
Carriage Park Section 16 Phase 1**

February 13, 2009

To: Honorable Mayor and Members of City of Council

From: Water & Sewer Department Staff

RE: STAFF RECOMMENDATION FOR ACCEPTANCE OF
WATER UTILITY EXTENSION AGREEMENT (WUEA)

This is a project to extend lines to provide water service to an **additional section/phase of the existing residential development**. This project is located **adjacent to Millbrae Loop within the existing development**. This project is under the reviewing jurisdiction of **Henderson County** and is located within the **USA – Urban Services Area**. This project **will not** involve an IBT (Interbasin Transfer) from the French Broad River Basin. The entire cost of the proposed water line extension is to be paid for by **Carriage Park, LLC of Hendersonville, NC**.

This project requires approximately **1,092** linear feet of water line sized as following:

Approximate Length:	Description:
303 lf	4" DIP CL350
539'	6" DIP CL350
250 lf	8" DIP CL350

Fire Protection will be provided by the installation of **one (1)** fire hydrant.

The Reviewing Jurisdiction, listed below, has completed their review of this utility extension request in regard to their adopted land use plan or in terms of its future impact on existing land uses for that local government.

Reviewing Jurisdiction: **Henderson County**

Approved Disapproved

Narrative Comments Provided: Yes No

Signing of Official: _____

Date: _____

Printed Name: _____

Based on the above information, the Water & Sewer Department has the capacity to support this additional infrastructure and associated connections and hereby recommends approval of said project contingent upon final approval of construction plans and specifications by the Water & Sewer Department.

A motion is needed to approve and accept this project. Suggested wording for motion is as follows:

"I move to accept this Water Utility Extension Project and to authorize the City Manager to execute the associated Water Utility Extension Agreement on behalf of the City."

Water and Sewer Department:	<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: 2-2-09
Henderson Co. Commissioners:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____
Hendersonville City Council:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____



PRESSURE CALCULATIONS

Project Name:
Carriage Park - Section 16 - Phase 1

Project No.:
06-12-74-ENG

Pressure Head = 2725
 Elevation = 2725
 Qinit = 500 gpm
 Home Use: 51.7 pgm
 Units/Houses: 16 units
 C = 100

Pt	# Houses	Q (gpm)	Length1 (ft)	Equiv. Length (ft)	Length2 (ft)	Pipe Diameter (in)	Friction Head (ft)	Comp. Fric. Head (ft)	Elev. Head (ft)	Res. Pres. (ft)	Pressure (psi)
A	16	551.69	0	20	20	8	2.79	2.99	2435.0	287.0	124.4
B	14	545.23	250	20	270	8	2.60	5.58	2434.0	285.4	123.7
C	14	545.23	7.69	20	27.69	6	1.08	6.67	2434.2	284.1	123.1
G	10	32.30	240	20	260	6	0.05	6.72	2440.5	277.8	120.4
H	1	3.23	303	20	323	4	0.01	6.73	2427.0	291.3	126.2

PRESSURE CALCULATIONS

Project Name:
Carriage Park - Section 16 - Phase 1

Project No.:
06-12-74-ENG

Pressure Head = 2725
 Elevation = 2725
 Qinit = 500 gpm
 Home Use: 51.7 pgm
 Units/Houses: 16 units
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Pt #	Houses	Q (gpm)	Length1 (ft)	Equiv. Length (ft)	Length2 (ft)	Pipe Diameter (in)	Friction Head (ft)	Comp. Fric. Head (ft)	Elev. Head (ft)	Res. Pres. (ft)	Pressure (psi)
A	16	551.69	0	20	20	8	0.20	0.20	2435.0	289.8	125.6
B	14	545.23	250	40	290	8	2.79	2.99	2434.0	288.0	124.8
F	0	500.00	156.07	0	156.07	6	5.19	8.18	2419.9	296.9	128.7

PRESSURE CALCULATIONS

Project Name:
Carriage Park - Section 16 - Phase 1

Pressure Head = 2725
Elevation = 2725
Qinit = 500 gpm
Home Use: 51.7 pgm
Units/Houses: 16 units
C = 100

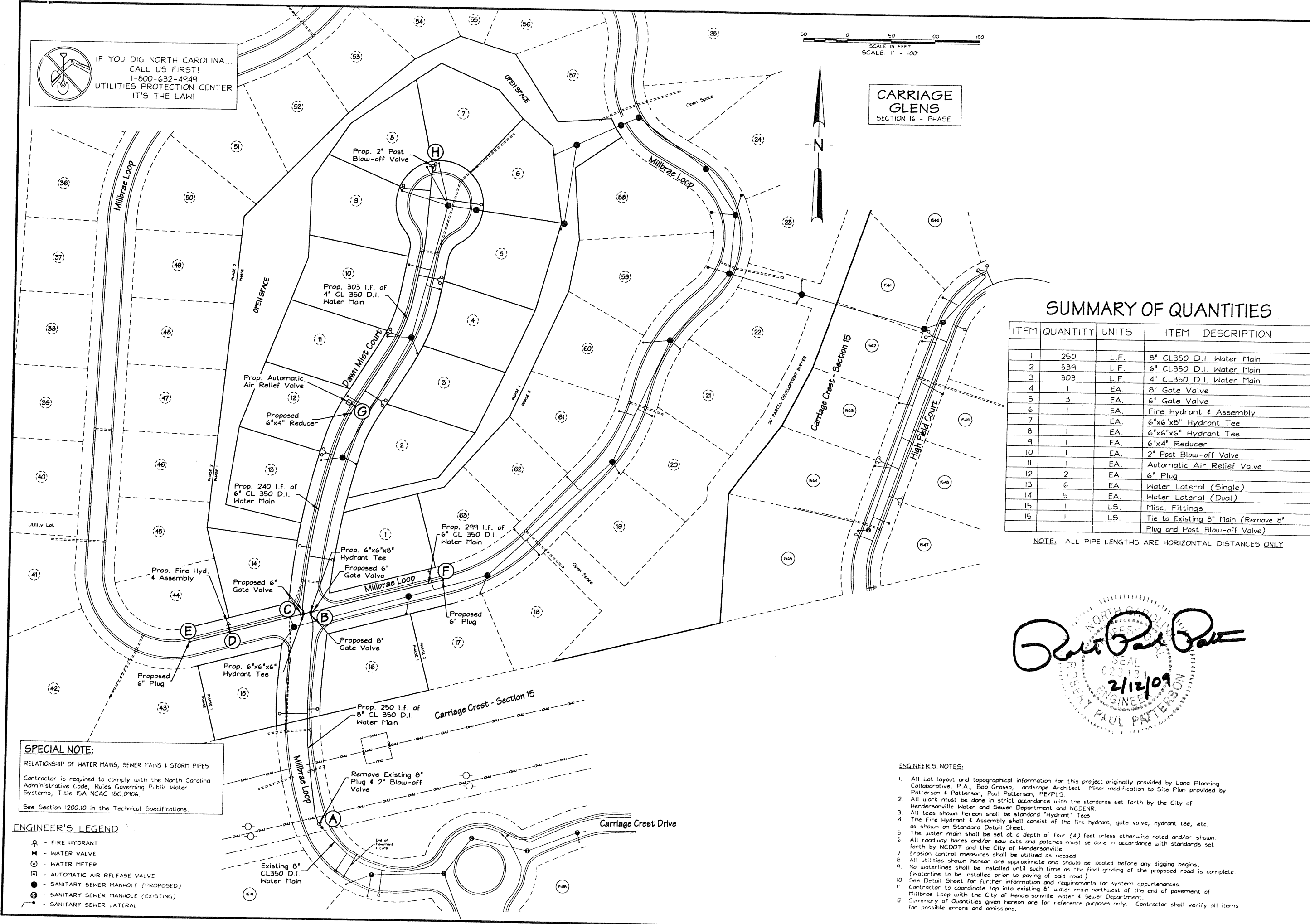
Project No.:
06-12-74-ENG

Pt	# Houses	Q (gpm)	Length1 (ft)	Equiv. Length (ft)	Length2 (ft)	Pipe Diameter (in)	Friction Head (ft)	Comp. Fric. Head (ft)	Elev. Head (ft)	Res. Pres. (ft)	Pressure (psi)
A	16	551.69	0	20	20	8	0.20	0.20	2435.0	289.8	125.6
B	14	545.23	250	40	290	8	2.79	2.99	2434.0	288.0	124.8
C	14	545.23	7.69	20	27.69	6	1.08	1.28	2434.2	289.5	125.5
D	0	500.00	87.1	20	107.1	6	3.56	4.84	2430.0	290.2	125.7
E	0	500.00	47.37	20	67.37	6	2.24	7.08	2425.0	292.9	126.9

IF YOU DIG NORTH CAROLINA...
CALL US FIRST!
1-800-632-4949
UTILITIES PROTECTION CENTER
IT'S THE LAW!

SCALE IN FEET
SCALE: 1" = 100'

CARRIAGE
GLENS
SECTION 16 - PHASE 1



SUMMARY OF QUANTITIES

ITEM	QUANTITY	UNITS	ITEM DESCRIPTION
1	250	L.F.	8" CL350 D.I. Water Main
2	539	L.F.	6" CL350 D.I. Water Main
3	303	L.F.	4" CL350 D.I. Water Main
4	1	EA.	8" Gate Valve
5	3	EA.	6" Gate Valve
6	1	EA.	Fire Hydrant & Assembly
7	1	EA.	6"x6"x8" Hydrant Tee
8	1	EA.	6"x6"x6" Hydrant Tee
9	1	EA.	6"x4" Reducer
10	1	EA.	2" Post Blow-off Valve
11	1	EA.	Automatic Air Relief Valve
12	2	EA.	6" Plug
13	6	EA.	Water Lateral (Single)
14	5	EA.	Water Lateral (Dual)
15	1	LS.	Misc. Fittings
15	1	LS.	Tie to Existing 8" Main (Remove 8" Plug and Post Blow-off Valve)

NOTE: ALL PIPE LENGTHS ARE HORIZONTAL DISTANCES ONLY.

SPECIAL NOTE:
RELATIONSHIP OF WATER MAINS, SEWER MAINS & STORM PIPES
Contractor is required to comply with the North Carolina Administrative Code, Rules Governing Public Water Systems, Title 15A NCAC 18C.0406.
See Section 1200.10 in the Technical Specifications.

- ENGINEER'S LEGEND**
- ⊙ - FIRE HYDRANT
 - ⊕ - WATER VALVE
 - ⊖ - WATER METER
 - ⊡ - AUTOMATIC AIR RELEASE VALVE
 - ⊙ - SANITARY SEWER MANHOLE (PROPOSED)
 - ⊙ - SANITARY SEWER MANHOLE (EXISTING)
 - - SANITARY SEWER LATERAL

Paul Patterson
Professional Engineer
2/12/09

- ENGINEER'S NOTES:**
- All Lot layout and topographical information for this project originally provided by Land Planning Collaborative, P.A., Bob Grasso, Landscape Architect. Minor modification to Site Plan provided by Patterson & Patterson, Paul Patterson, PE/PLS.
 - All work must be done in strict accordance with the standards set forth by the City of Hendersonville Water and Sewer Department and NCDNR.
 - All tees shown hereon shall be standard "Hydrant" Tees.
 - The Fire Hydrant & Assembly shall consist of the fire hydrant, gate valve, hydrant tee, etc. as shown on Standard Detail Sheet.
 - The water main shall be set at a depth of four (4) feet unless otherwise noted and/or shown.
 - All roadway bores and/or saw cuts and patches must be done in accordance with standards set forth by NCDOT and the City of Hendersonville.
 - Erosion control measures shall be utilized as needed.
 - All utilities shown hereon are approximate and should be located before any digging begins.
 - No waterlines shall be installed until such time as the final grading of the proposed road is complete. (Waterline to be installed prior to paving of said road.)
 - See Detail Sheet for further information and requirements for system appurtenances.
 - Contractor to coordinate tap into existing 8" water main northwest of the end of pavement of Millbrae Loop with the City of Hendersonville Water & Sewer Department.
 - Summary of Quantities given hereon are for reference purposes only. Contractor shall verify all items for possible errors and omissions.

DRAWING NAME: CPH18P DATE: 1/5/09
JOB NO.: 06-12-74-ENG SCALE: NOTED

PATTERSON & PATTERSON
ENGINEERING - SURVEYING - PLANNING
PAUL PATTERSON WILLIAM PATTERSON
Professional Engineer/Land Surveyor Professional Land Surveyor
P.O. BOX 414 HENDERSONVILLE, NC 28703-0414
TEL: & FAX: (828) 692-6629

CARRIAGE PARK - SECTION 16
HENDERSONVILLE TOWNSHIP - CITY OF HENDERSONVILLE - HENDERSON CO., N.C.

PRESSURE CALCULATIONS

REVISIONS

SHEET
1

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**HENDERSON COUNTY
REVIEW OF CITY SEWER LINE EXTENSIONS**

Project Name: Carriage Park Section 16
Size of Sewer Line: 571 linear feet PVC SDR 35; 1197 linear feet DIP CL 350
County Staff Reviewing Extension: Parker Sloan, Planner; Autumn Radcliff, Senior Planner

Has the project been reviewed under the **County Subdivision Regulations of the Land Development Code?** Yes No N/A

Date reviewed: _____
Action: _____
Conditions: _____
Comments: _____

Has the project been reviewed under the **County Manufactured Park Regulations of the Land Development Code?** Yes No N/A

Date reviewed: _____
Action: _____
Conditions: _____
Comments: _____

Has the project been reviewed under the **County Zoning Regulations (i.e. Special-Use or Conditional-Use Permit) of the Land Development Code?** Yes No N/A

Date reviewed: _____
Action: _____
Conditions: _____
Comments: _____

Is the project subject to **any other County Land Use Regulations?** Yes No N/A

If yes, explain: Carriage Park Adheres to Special Use Permit SP-93-13 as amended and issued under former Chapter 200, Zoning Ordinance.

Does the project conform with the **2020 Henderson County Comprehensive Plan (CCP)?** Yes No N/A

BOARD OF COMMISSIONERS APPROVAL

- Approved
- Not Approved
- Conditional Approval (See Comments)

Date of Board Review: _____
Comments: _____

HENDERSON COUNTY REVIEW OF CITY WATER LINE EXTENSIONS

Project Name: Carriage Park Section 16
 Size of Water Line (Main & Distribution Pipe Size): 303 LF of 4" DIP CL350; 539 LF of 6" DIP CL350; 250 LF of 8" DIP CL350
 County Staff Reviewing Extension: Rocky Hyder, Fire Marshal; Parker Sloan, Planner; Autumn Radcliff, Senior Planner

Has the project been reviewed under the **County Subdivision Regulations of the Land Development Code?** Yes No N/A

Date reviewed: _____
 Action: _____
 Conditions: _____
 Comments: _____

Has the project been reviewed under the **County Manufactured Park Regulations of the Land Development Code?** Yes No N/A

Date reviewed: _____
 Action: _____
 Conditions: _____
 Comments: _____

Has the project been reviewed under the **County Zoning Regulations (i.e. Special-Use or Conditional-Use Permit) of the Land Development Code?** Yes No N/A

Date reviewed: _____
 Action: _____
 Conditions: _____
 Comments: _____

Is the project subject to **any other County Land Use Regulations?** Yes No N/A

If yes, explain: Carriage Park Adheres to Special Use Permit SP-93-13 as amended and issued under former Chapter 200, Zoning Ordinance.

Does the project conform with the **2020 Henderson County Comprehensive Plan (CCP)?** Yes No N/A

Does the project have **adequate hydrant location and spacing?** Yes No N/A

Description of **hydrant type and thread:** Mueller Centurion – National Standard Thread

Does the estimated flow rate (gpm) meet **fire protection standards?** Meets standard for minimum structure spacing of 100 feet. Yes No N/A

BOARD OF COMMISSIONERS APPROVAL

- Approved
- Not Approved
- Conditional Approval (See Comments)

Date of Board Review: _____
 Comments: _____