

REQUEST FOR BOARD ACTION

Henderson County Board of Commissioners

Meeting Date: September 20, 2006

Subject: Water Line Extension – Fox Glen, Phase 2
Water Line Extension – Carriage Park, Section 15
Sewer Line Extension – Carriage Park, Section 17

Attachments: Project Summary
Engineer's Report
County Review Sheet

Summary of Request:

The City of Hendersonville has requested County comments on proposed water line extensions for Fox Glen, Phase 2, Carriage Park, Section 15 and sewer line extension for Carriage Park, Section 17.

A City of Hendersonville Project Summary sheet, with backup documents and County review sheet with staff comments are attached for Board review and action.

County Manager's Comments:

Recommend that the Board take action to support the referenced water and sewer line extension.

**City of Hendersonville - Project Summary
Water Line Extension
Fox Glen, Phase 2**

Date: June 6, 2006

This is a project to extend existing water lines to provide water service to a proposed residential development. This phase will serve up to forty (40) single-family residential units on 23.63 acres. This project has frontage on Howard Gap Road as well as Patty's Chapel Road and is located on the east side of Howard Gap Road; across from the Fletcher Elementary School.

This project is under the reviewing jurisdiction of: **Henderson County.**

This project requires approximately **2,145** linear feet of water line sized as following:

Description:	Approximate Length
2" PVC SDR 13.5	1040 lf
6" DIP CL 350	300 lf
6" PVC C900 DR18	825 lf

Fire Protection will be provided by two (2) hydrants.

The entire cost of the proposed water line extension is to be paid for by Glade Holdings, Inc of Hendersonville, NC.

Water pressure and flow in this area is as follows:

Static Pressure:	78 PSI
Residual:	45 PSI
Flow:	785 GPM

Based on the above information, the Water & Sewer department is capable of supporting the additional connections and recommends approval of the project contingent upon approval of the final plans and specifications from the Water & Sewer Department.

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

I move to accept this water line extension project and to authorize the City manager to execute the water line extension agreement on behalf of the City.

Water & Sewer Department:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____
Hendersonville City Council:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____

The undersigned represents this utility extension line request has been evaluated in light of the adopted land use plan for the municipality or Henderson County. In the absence of such a plan for the general area to be served, this extension has been evaluated in terms of its future impact on existing land uses.

Reviewing Jurisdiction: Henderson County

Signing Official: _____

Date of Review: _____

Approved Disapproved

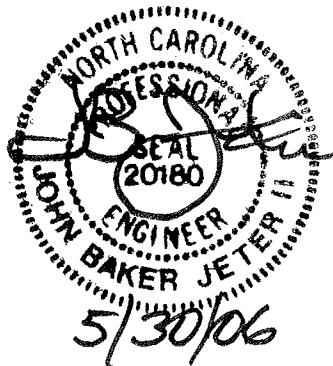
Narrative Comments Provided: Yes No

**FOX GLEN
(PHASE II)**

**FLETCHER
NORTH CAROLINA**

ENGINEER'S REPORT

**WATER DISTRIBUTION SYSTEM
IMPROVEMENTS**



Prepared by:
MOUNTAIN ENGINEERING COMPANY
121 Third Avenue West Suite 2
Hendersonville North Carolina 28792

Telephone No. (828) 697-2122

Facsimile No. (828) 697-8458

**FOX GLEN
(Phase 2)**

ENGINEER'S REPORT

WATER DISTRIBUTION SYSTEM IMPROVEMENTS

APPLICANT NAME and ADDRESS

CITY of HENDERSONVILLE
Post Office Box 1760
Hendersonville, North Carolina 28793

PROJECT DESCRIPTION AND NARRATIVE

Fox Glen is a proposed residential community. The project has frontage on **Howard Gap Road** (SR # 1006) as well as **Patty's Chapel Road** (SR # 1555) and is located on the east side of Howard Gap Road; across from the Fletcher Elementary School. The property is outside the city limits of both Fletcher and Hendersonville.

For this phase, the plan and permit provides for the development of homes on lots; up to forty (40) single-family residential units on **23.63** acres.

CURRENT PROJECT NARRATIVE

The proposed water distribution system includes water-main extensions (**6-inch** water-line: 1,665.0 lf and; **2-inch** water-line: 400.0 lf) and required appurtenances to serve only the Fox Glen – Phase 2 neighborhood; with up to forty (40) possible connections.

PROJECT SUMMARY

Air Release Valve (ARV.)	1 ea.
Fire hydrants	2 ea.
Water Lines	
6" D.I.P/CL.350	100 lf.
6" PVC/C900-DR18	1,565 lf.
2" PVC/SDR-13.5	400 lf.
Water Valves	
6" Gate Valve w/box	7 ea.
2" Gate Valve w/box	2 ea.
Water Services	40 ea.

IDENTIFICATION and DESCRIPTION of the SERVICE AREA

The service area for this project is only the Fox Glen – Phase 2 community.

FUTURE SERVICE AREAS

Future water-line extensions around the project will serve the surrounding area. This Water system extension is proposed to serve only the Fox Glen – Phase 2 neighborhood.

PRESENT and ANTICIPATED WATER DEMAND

There is no current water use. When this phase is completed, the anticipated water demand will be **16,000** GPD (40 units @ 400 GPD).

CHARACTER of the WATER SUPPLY SOURCE

The water supply for this project is from the City of Hendersonville Water Treatment Plant.

AGREEMENTS to PURCHASE WATER

Not applicable.

FACILITIES USEFUL LIFE

For this project, the expected useful life of the water lines is at least thirty (30) years.

MAXIMUM DAILY TREATED WATER SUPPLY and MAXIMUM DAILY DEMAND

The maximum daily treated water supply for the City of Hendersonville Water Treatment Plant is 12.0 MGD. The average demand is 7.2 MGD with a daily peak of 9.5 MGD.

CONSIDERATION of ALTERNATIVES to CONSTRUCTING A NEW WATER-SYSTEM

Not applicable.

POPULATION RECORDS and TRENDS

In 1998, the population of Hendersonville was 9538, and the growth rate from 1990 to 1998 was almost 31 percent.

PRESENT and FUTURE YIELD FROM the SOURCE of SUPPLY

Hendersonville's Water Treatment Plant draws water from the Mills River. Both present and future yield from this source is expected to be adequate for the City's needs.

PROPOSED WATER TREATMENT PROCESSES

Not applicable.

DESIGN BASIS

The design basis for this project is to provide adequate flow with a minimum pressure of at least forty (40) psi throughout the system.

PRIORITIZED LIST of INFRASTRUCTURE IMPROVEMENTS

Not applicable.

HENDERSON COUNTY REVIEW OF CITY WATER LINE EXTENSIONS

Project Name: Fox Glen, Phase 2
 Size of Water Line (Main & Distribution Pipe Size): 2" PVC SDR 13.5, 1040 lf; 8" DIP CL 350, 300 lf.; 6" PVC C900DR 18, 825 lf..
 County Staff Reviewing Extension: Rocky Hyder, Fire Marshal; Matt Card, Subdivision Admin.; Rodney Tucker, Project Mgr.

Has the project been reviewed under the **County Subdivision Ordinance**? Yes No N/A

Date reviewed: May 3, 2004
 Action: Approved with conditions.
 Conditions: Final plat conditions, approval of public utilities and other standard conditions.
 Comments:

Has the project been reviewed under the **County Manufactured Park Ordinance**? Yes No N/A

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

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

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

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

If yes, explain: Fox Glen was granted a Statutory Vested Right pursuant to Chapter 189 of the County Code.

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

Fox Glenn proposed water line extension is consistent with the CCP. The Plan recommends water access in the Urban Area.

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 structure spacing of 31 feet or more. Yes No N/A

BOARD OF COMMISSIONERS APPROVAL

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

Date of Board Review: _____
 Comments: _____

**City of Hendersonville - Project Summary
Water Line Extension
Carriage Park, Section 15**

Date: July 17, 2006

This is a project to extend existing water lines to provide water service to an additional section of the existing Carriage Park development. This section is situated just north of Carriage Park Way. This extension will serve a total of sixty-six (66) ltos.

This project is under the reviewing jurisdiction of: **Henderson County.**

This project requires approximately **4,352** linear feet of water line sized as following:

Description:	Approximate Length
8" DIP CL350	1852'
6" DIP CL350	1752'
4" DIP CL350	748'

Fire Protection will be provided by the installation of five (5) fire hydrants.

The entire cost of the proposed water line extension is to be paid for by Carriage Park Associates, LLC of Hendersonville, NC.

Water pressure and flow in this area is as follows:

Static Pressure:	70 PSI
Residual:	55 PSI
Flow:	690 GPM

Based on the above information, the Water & Sewer department is capable of supporting the additional connections and recommends approval of the project contingent upon approval of the final plans and specifications from the Water & Sewer Department.

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

I move to accept this water line extension project and to authorize the City manager to execute the water line extension agreement on behalf of the City.

Water & Sewer Department:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____
Hendersonville City Council:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____

The undersigned represents this utility extension line request has been evaluated in light of the adopted land use plan for the municipality or Henderson County. In the absence of such a plan for the general area to be served, this extension has been evaluated in terms of its future impact on existing land uses.	
Reviewing Jurisdiction: Henderson County	
Signing Official: _____	
Date of Review: _____	
<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	
Narrative Comments Provided: <input type="checkbox"/> Yes <input type="checkbox"/> No	

ENGINEERING REPORT

FOR

CARRIAGE PARK - SECTION 15 WATER MAIN EXTENSION

OFF CARRIAGE PARK WAY

HENDERSONVILLE, NORTH CAROLINA

HENDERSONVILLE TOWNSHIP
HENDERSON COUNTY

(JOB NO.: 05-11-62-ENG)

PREPARED BY:

PATTERSON & PATTERSON

ENGINEERING - SURVEYING - PLANNING

P.O. BOX 1189

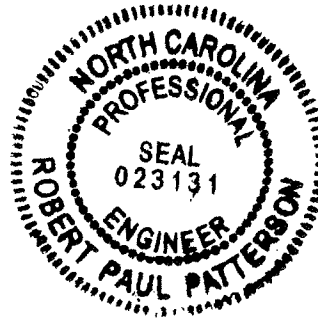
HENDERSONVILLE, NC 28793-1189

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 11TH DAY OF July, 2006.

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



Carriage Park Section 15 - Water Main Extension
Carriage Park Section 15
Project No.: 05-11-62-ENG (Patterson & Patterson)

PROJECT SUMMARY:

An extension of an existing 8" water main is required to provide water service to Section 15 and future Section 16 of Carriage Park. This Section 15 is situated just north of Carriage Park Way. This water extension will serve a total of sixty-six (66) 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 1852 linear feet of 8" CL-350 Ductile Iron water main, 1752 linear feet of 6" CL-350 Ductile Iron water main, 748 linear feet of 4" CL-350 Ductile Iron water main, five (5) fire hydrants and assemblies, and other appurtenances. For more information, see the attached 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 on the north side of Carriage Park Way. 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, N.C. 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 Section 15 will be served via gravity sewer and two (2) lift stations that will tie into a manhole within the Carriage Park Development. 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 looped 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 proposed hydrants along the existing proposed eight (8) inch and six (6) inch mains. Future expansion of this line is proposed to the north into the Proposed 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.

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

Project Name: Carriage Park, Section 15
 Size of Water Line (Main & Distribution Pipe Size): 8" DIP CL 350 – 1852 lf.; 6" DIP CL 350 – 1752 lf.; 4" DIP CL 350 – 748 lf..
 County Staff Reviewing Extension: Rocky Hyder, Fire Marshal; Matt Card, Subdivision Admin.; Rodney Tucker, Project Mgr.

Has the project been reviewed under the **County Subdivision Ordinance**? Yes No N/A

Date reviewed: December 20, 2005
 Action: Final Plat conditions, approval of public utilities and other standard conditions
 Conditions: _____
 Comments: _____

Has the project been reviewed under the **County Manufactured Park Ordinance**? Yes No N/A

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

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

Date reviewed: December 20, 2005
 Action: Project was reviewed for conformance with SP-93-3 (as amended)
 Conditions: _____
 Comments: _____

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

If yes, explain: The Carriage Park water line extension project is in WS IV Water Supply/Watershed Area. The project would conform to the regulations.

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

Carriage Park's proposed water line extension is consistent with the CCP. The Plan recommends water access in the Urban Area which encompasses Carriage Park.

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**? Yes No N/A

BOARD OF COMMISSIONERS APPROVAL

- | | | |
|--------------------------|-------------------------------------|-----------------------------|
| <input type="checkbox"/> | Approved | Date of Board Review: _____ |
| <input type="checkbox"/> | Not Approved | Comments: _____ |
| <input type="checkbox"/> | Conditional Approval (See Comments) | |

City of Hendersonville - Project Summary
Sewer Line Extension
Carriage Park Section 17

Date: June 7, 2006

This is a project to extend existing sewer lines to provide sewer service to an additional section of Carriage Park. This section is situated just northwest of Carriage Park Way. This extension will serve a total of thirty-six (36) lots.

This project is under the reviewing jurisdiction of: **Henderson County**

This project requires approximately **3,207** linear feet of sewer line sized as following:

Description:	Approximate Length
8" PVC SDR 35	631 lf
8" DIP CL350	578 lf
2" PVC SDR 13.5	1998 lf (Forcemain)

Pump station required: yes (2) No

The amount of wastewater generated by this project will be approximately **12,960** gallons per day.

The entire cost of the proposed sewer line extension is to be paid for by Carriage Park Associates, LLC.

Based on the above information, the Water & Sewer department is capable of supporting the additional connections and recommends approval of the project contingent upon approval of the final plans and specifications from the Water & Sewer Department.

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

I move to accept this sewer line extension project and to authorize the City manager to execute the sewer line extension agreement on behalf of the City.

Water & Sewer Department:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____
Hendersonville City Council:	<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved	Date: _____

The undersigned represents this utility extension line request has been evaluated in light of the adopted land use plan for the municipality or Henderson County. In the absence of such a plan for the general area to be served, this extension has been evaluated in terms of its future impact on existing land uses.

Reviewing Jurisdiction: Henderson County

Signing Official: _____

Date of Review: _____

Approved Disapproved

Narrative Comments Provided: Yes No

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

Project Name: Carriage Park, Section 17
 Size of Sewer Line: 2" PVC SDR 13.5 – 1998 lf.; 8" PVC SDR 35 – 631 lf.; 8" DIP CL 350 – 578 lf.
 County Staff Reviewing Extension: Gary Tweed, County Engineer; Matt Card, Subdivision Administrator; Rodney Tucker, Project Engineer

Has the project been reviewed under the **County Subdivision Ordinance**? Yes No N/A

Date reviewed: July 19, 2005
 Action: Approved with Conditions
 Conditions: Final plat requirements, approval of public utilities, road name approval, soil erosion plan approval and other standards conditions.
 Comments: _____

Has the project been reviewed under the **County Manufactured Park Ordinance**? Yes No N/A

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

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

Special Use Permit #SP-93-13

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

If yes, explain: The Carriage Park sewer line extension project is in WS IV Water Supply/Watershed Area. The project would conform to the regulations.

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

Carriage Park's proposed sewer line extension is consistent with the CCP. The Plan recommends sewer access in the Urban Area which encompasses Carriage Park.

Comment from Gary Tweed, County Engineer: Since this project connects to the City of Hendersonville, I have no comments.

BOARD OF COMMISSIONERS APPROVAL

- Approved
 - Not Approved
 - Conditional Approval (See Comments)
- Date of Board Review: _____
 Comments: _____