

REQUEST FOR BOARD ACTION

Henderson County Board of Commissioners

Meeting Date: December 7, 2009

Subject: Sewer Line Extension– Warm Company

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

Summary of Request:

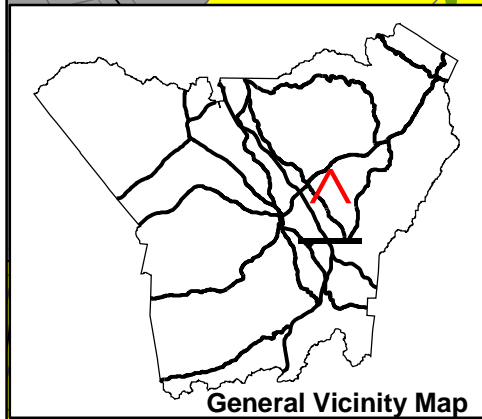
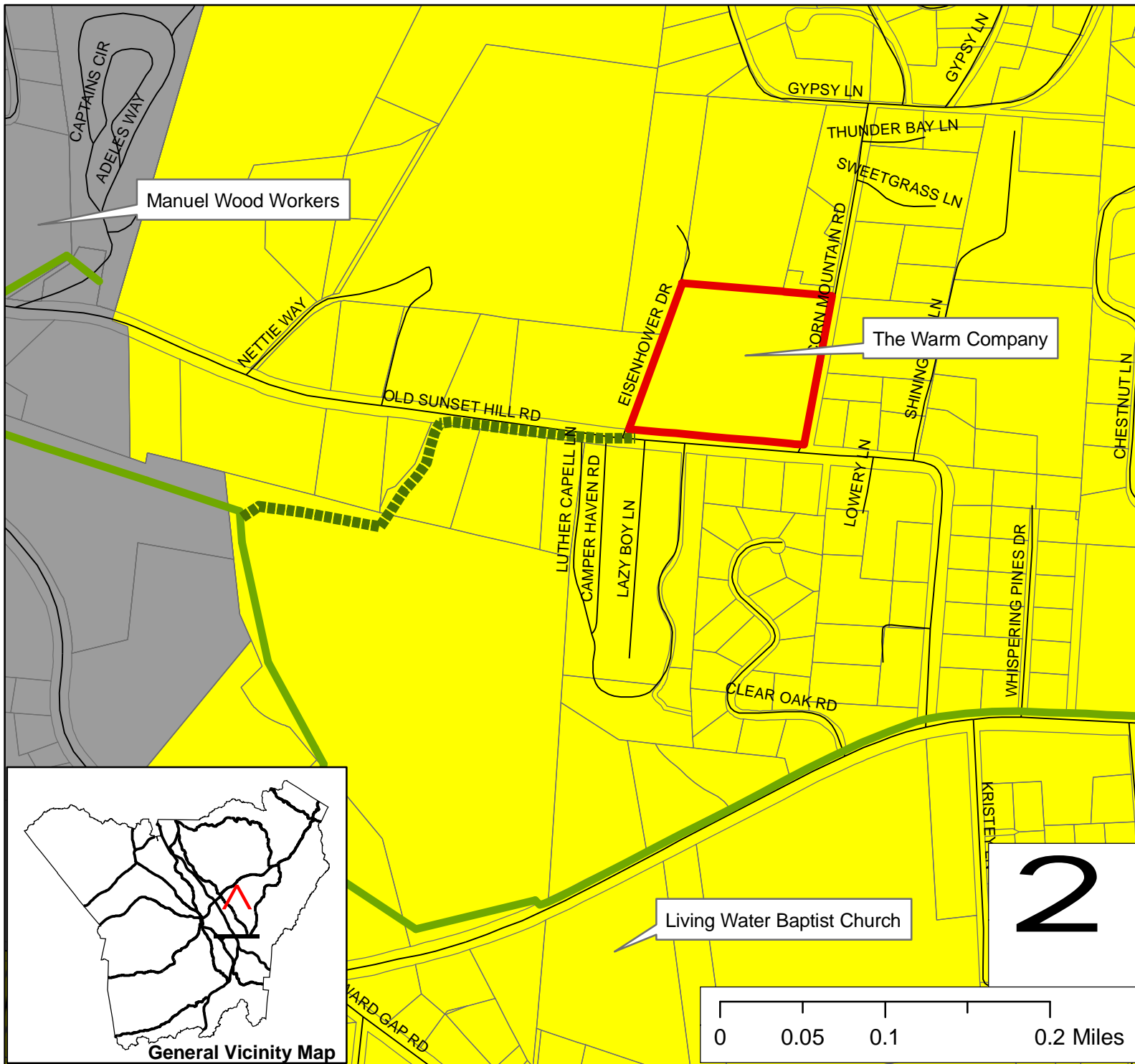
The City of Hendersonville has requested that the County comment on the proposed sewer line extension for the Warm Company. The proposed sewer line is 1,475 linear feet. The Board of Commissioners authorized this project through authorization of the 2008 Warm Company Economic Development Grant (CDBG 08-C-1848). 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.

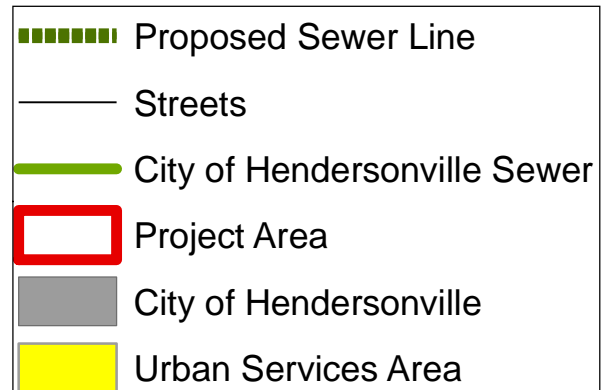
Suggested Motion:

I move that the Board approve the Warm Company sewer line extension and direct Staff to convey the County's comments to the City of Hendersonville.



Warm Company

OWNER/DEVELOPER: The Warm Company
ZONING: Industrial





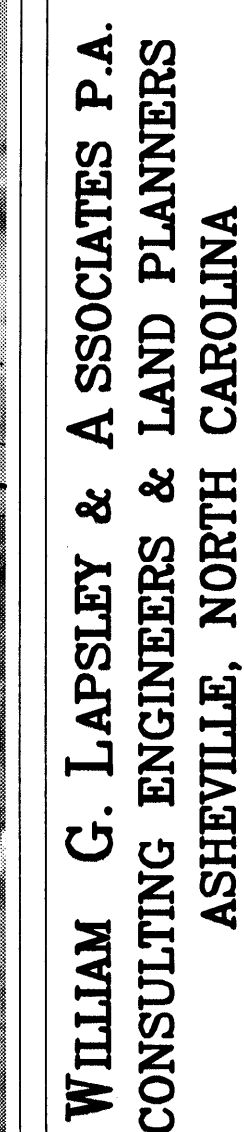
N.T.S.

HENDERSON COUNTY, NORTH CAROLINA

Two Town Square Blvd.
Suite 320
Asheville, NC 28803
(828) 687-7177 Phone
(828) 687-7178 Fax
www.wgla.com

DESCRIPTION

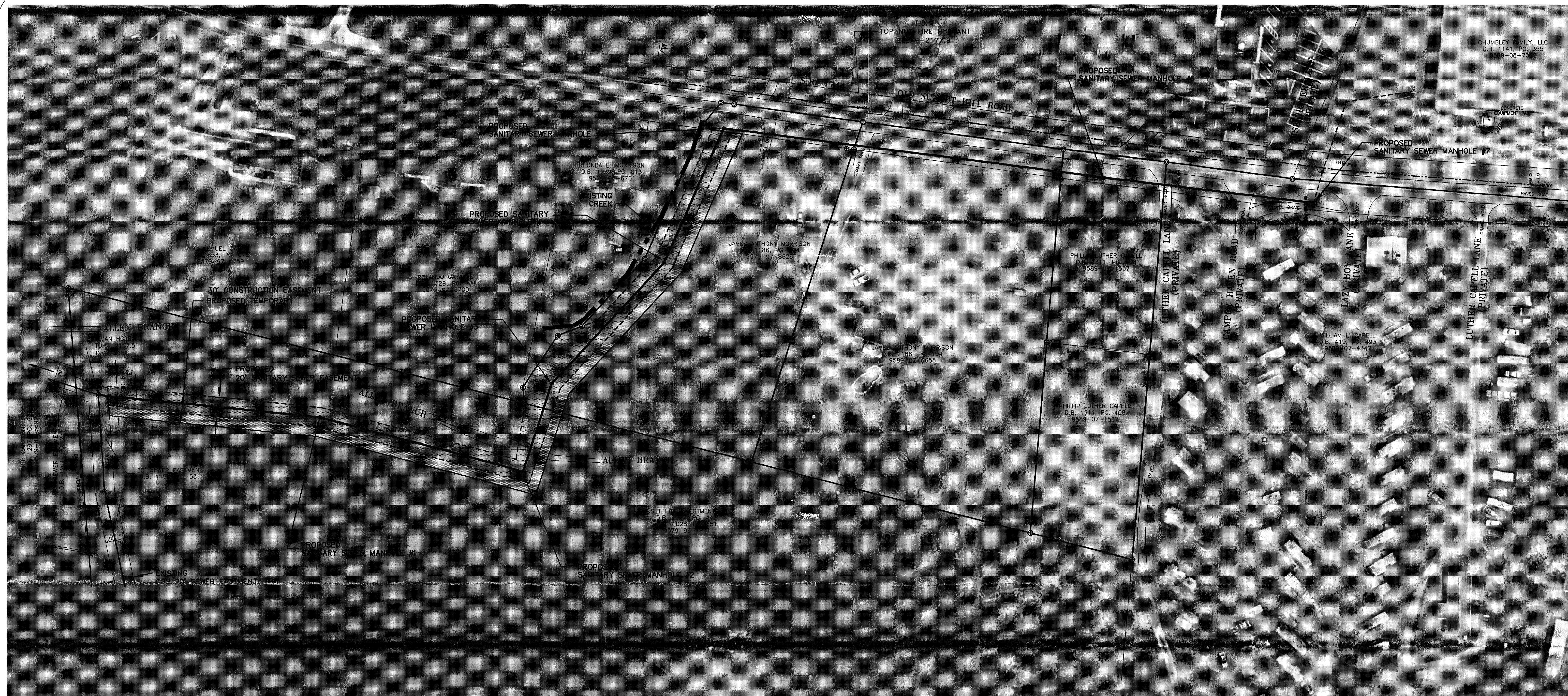
C-100	SANITARY SEWER LAYOUT
C-200	SANITARY SEWER LINE PLAN & PROFILE
C-300	SANITARY SEWER DETAILS
C-400	EROSION CONTROL PLAN
C-401	EROSION CONTROL DETAILS



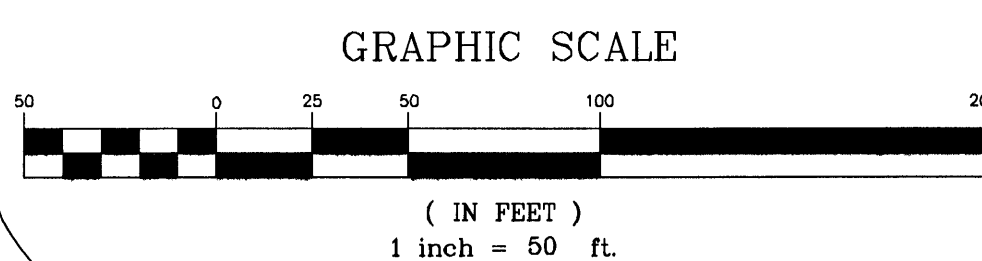
**THE WARM COMPANY
SANITARY SEWER EXTENSION
HENDERSON COUNTY,
NORTH CAROLINA**

SANITARY SEWER LAYOUT

sheet
C-100

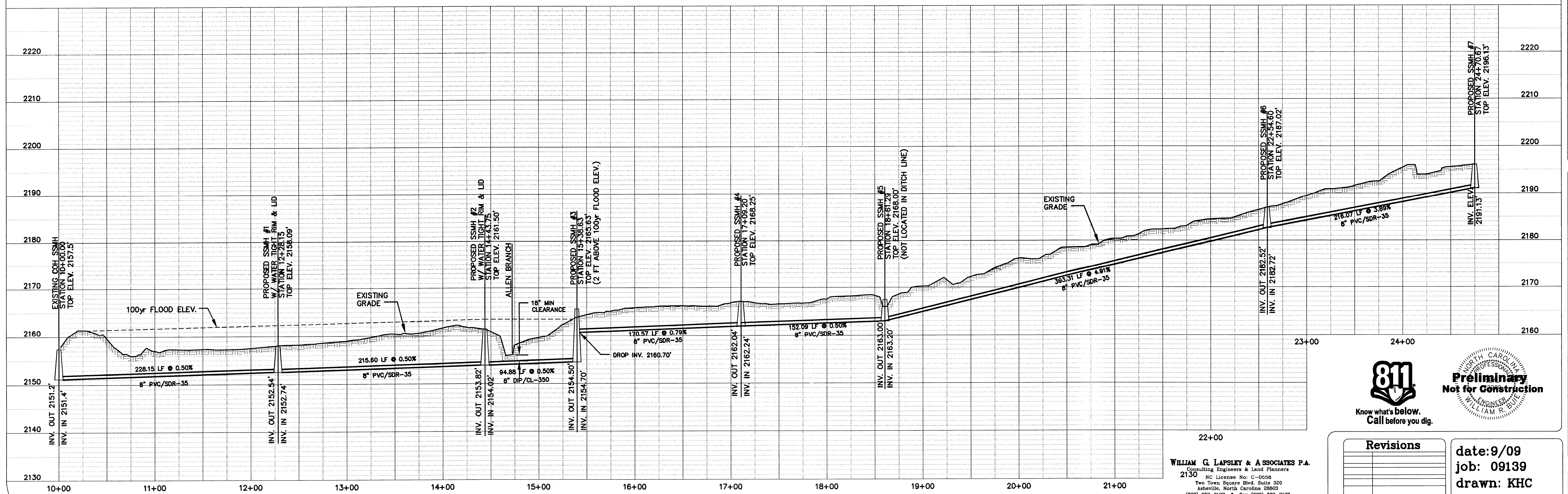
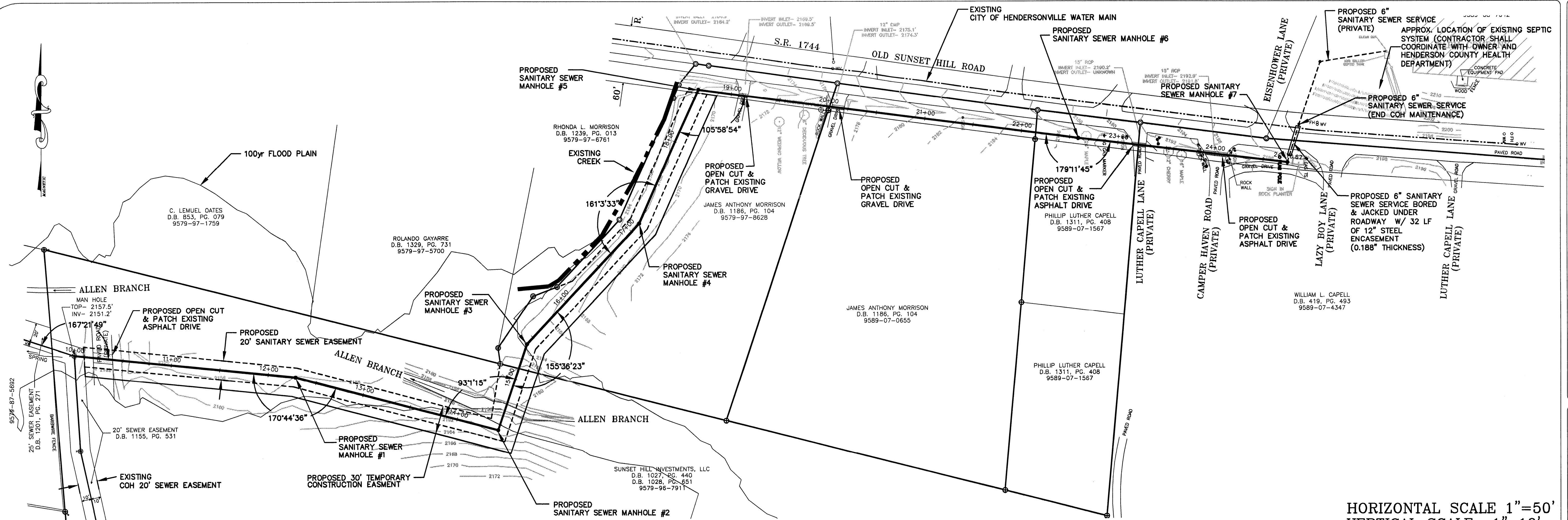


- 1.) THE SPECIFICATIONS AND REQUIREMENTS OF THE HENDERSONVILLE WATER AND SEWER DEPARTMENT SUPERSEDE ALL OTHERS IN THE INSTALLATION OF THE PROPOSED EXTENSION(S).
- 2.) CITY OF HENDERSONVILLE WATER AND SEWER DEPARTMENT MAINTENANCE OF SEWER SERVICES END AT THE FIRST CLEANOUT, MAINTENANCE OF SERVICES BEYOND THIS POINT IS PRIVATE.
- 3.) EXISTING COH MANHOLE SHALL BE CORED AND BOOTED FOR NEW PIPE CONNECTION(S).
- 4.) ALL SEWER SERVICES SHALL BE 4"Ø UNLESS OTHERWISE NOTED.
- 5.) CONTRACTOR SHALL USE DIP/CL-350 PIPING ON ALL SEWER LINES WHERE 3 FEET OF COVER IS NOT PROVIDED.
- 6.) ALL SANITARY SEWER WORK IS TO BE PERFORMED BY A LICENSED NORTH CAROLINA UTILITY CONTRACTOR.
- 7.) BENCHMARK FOR THIS PROJECT SHALL BE THE EXISTING SANITARY SEWER MANHOLE TOP @ 2157.5'
- 8.) ALL SANITARY SEWER LINES TURNED OVER TO COH SHALL BE GRAVITY LINES.
- 9.) ALL NEW SANITARY SEWER MANHOLES SHALL BE FLUSH WITH EXISTING GRADE, EXCEPT FOR MANHOLE #3.
- 10.) THE CONTRACTOR SHOULD BE AWARE OF THE EXISTING UTILITIES ON THE SITE INCLUDING BUT NOT LIMITED TO WATER MAINS, ELECTRICAL LINES, PHONE LINES, ETC. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE AGENCIES TO LOCATE THE UTILITIES PRIOR TO CONSTRUCTION.
- 11.) THE CONTRACTOR SHOULD BE AWARE OF THE EXISTING SEPTIC DRAINFIELD AREAS CURRENTLY SERVING THE HOME LOCATED ON THE JAMES MORRISON PROPERTY. THE CONTRACTOR SHOULD COORDINATE THE LOCATION OF THE DRAINFIELDS WITH THE OWNER PRIOR TO CONSTRUCTION.
- 12.) THE CONSTRUCTION SITE MUST BE PROPERLY SIGNED AND SECURED TO LIMIT ACCESS FOR NON-CONSTRUCTION PERSONNEL.
- 13.) DURING NON-WORKING HOURS, THE SITE SHOULD BE SECURED SO THAT NO OPEN TRENCHES OR OTHER HAZARDS ARE ACCESSIBLE.



date:9/09
job: 09139
drawn: KHC

WILLIAM G. LAPSLEY & ASSOCIATES P.A.
Consulting Engineers & Land Planners
NC License No: C-0556
Two Town Square Blvd. Suite 320
Asheville, North Carolina 28803
(828) 687-7177 • Fax (828) 687-7176
www.wgla.com



Preliminary
Not for Construction

Revisions

date:9/09
job: 09139
drawn: KHC

Sheet
C-200

WILLIAM G. LAPSLEY & ASSOCIATES P.A.
CONSULTING ENGINEERS & LAND PLANNERS
ASHEVILLE, NORTH CAROLINA

**THE WARM COMPANY
SANTARY SEWER EXTENSION
HENDERSON COUNTY,
NORTH CAROLINA**

**SANITARY SEWER LINE
PLAN & PROFILE**

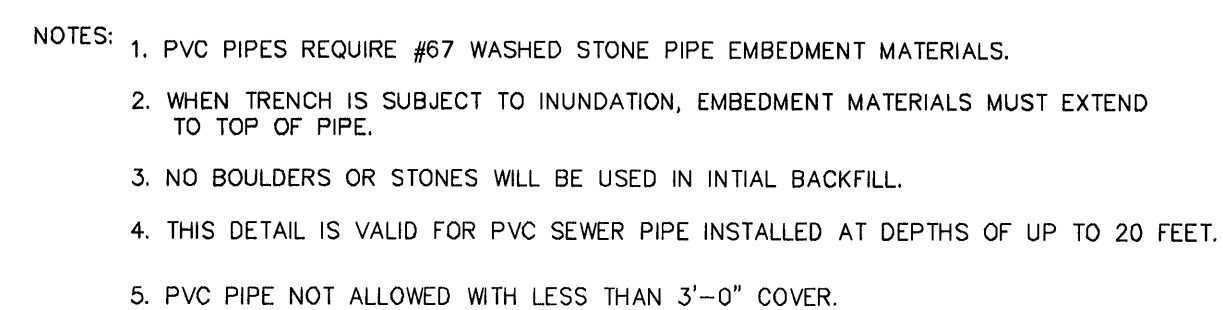
WILLIAM G. LAPSLEY & ASSOCIATES P.A.
Consulting Engineers & Land Planners
2130 NC License No: C-0556
Two Town Square Blvd. Suite 320
Asheville, North Carolina 28903
(828) 687-7177 • Fax (828) 687-7178
www.wgla.com



TYPICAL TRENCHING DETAIL FOR DIP



WATERTIGHT MANHOLE FRAME & COVER



TYPICAL TRENCHING DETAIL FOR PVC



STREAM CROSSING DETAIL

Know what's **below**.
Call before you dig.

Preliminary
Not for Construction

Revisions

date:9/16/09
job: 09139
drawn: TWT

SANITARY SEWER DETAIL SHEET

sheet
C-300

WILLIAM G. LAPSLEY & ASSOCIATES P.A.
CONSULTING ENGINEERS & LAND PLANNERS
ASHEVILLE, NORTH CAROLINA

6.06

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

Definition

A gravelled area or pad located at points where vehicles enter and leave a construction site.

Purpose

To provide a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.

Conditions Where Practice Applies

Wherever traffic will be leaving a construction site and moving directly onto a public road or other paved off-site area. Construction plans should limit traffic to properly constructed entrances.

Design Criteria

Aggregate Size—Use 2-3 inch washed stone.

Dimensions of gravel pad—
Thickness: 6 inches minimum
Width: 12-ft minimum or full width at all points of the vehicular entrance and exit area, whichever is greater
Length: 50-ft minimum

Location—Locate construction entrances and exits to limit sediment from leaving the site and to provide for maximum utility by all construction vehicles (Figure 6.06a). Avoid steep grades and entrances at curves in public roads.

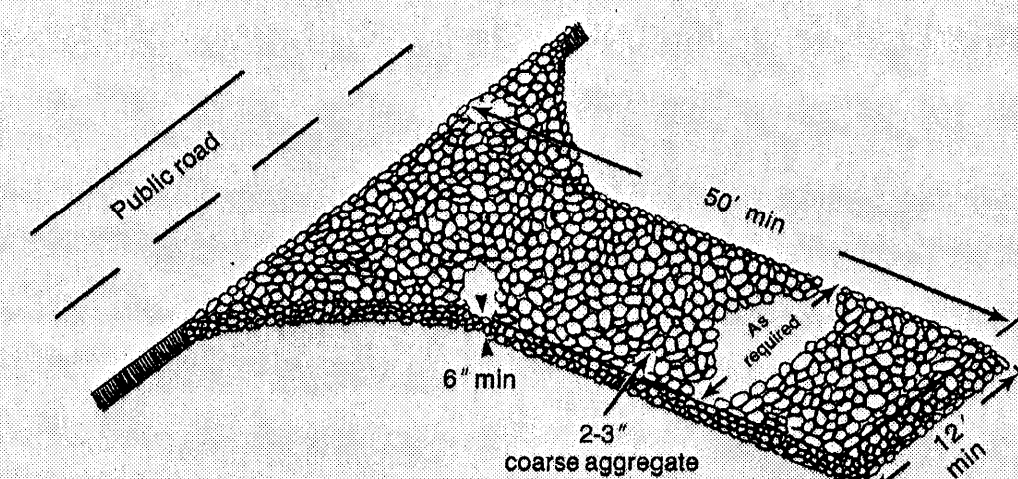


Figure 6.06a Gravel entrance/exit keeps sediment from leaving the construction site (modified from Va SWCC).

Practice Standards and Specifications

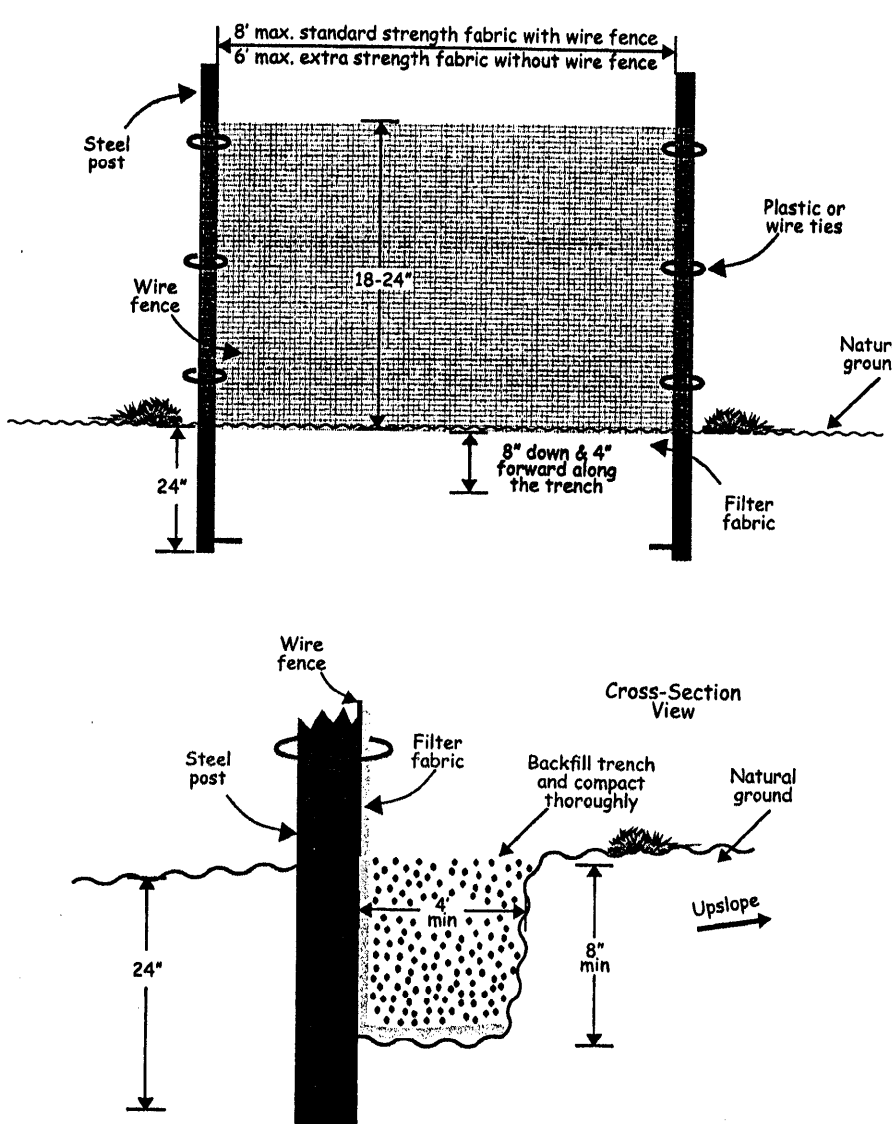


Figure 6.62a Installation detail of a sediment fence.

SILT FENCE DETAIL
N.T.S.

Practice Standards and Specifications

- Ensure that posts for sediment fences are 1.33 lb/linear ft steel with a minimum length of 5 feet. Make sure that steel posts have projections to facilitate fastening the fabric.
- For reinforcement of standard strength filter fabric, use wire fence with a minimum 14 gauge and a maximum mesh spacing of 6 inches.

Table 6.62b Specifications For Sediment Fence Fabric

Temporary Silty Fence Material Property Requirements				
Grab Strength	Test Material	Units	Supported ¹ Silty Fence	Un-Supported ¹ Silty Fence
Machine Direction	ASTM D 4832	N (lbs)	400	500
			(90)	(90)
X-Machine Direction			400	450
			(90)	(90)
Permeability ²	ASTM D 4491	sec-1	0.05	0.05
Apparent Opening Size ³	ASTM D 4751	mm	0.60	0.60
		(US Sieve #)	(30)	(30)
Ultraviolet Stability	ASTM D 4355	% Retained Strength	70% after 800h of exposure	70% after 500h of exposure
			Typical	

¹ Silty Fence support shall consist of 14 gauge steel wire with a mean spacing of 150 mm (6 inches), or prefabricated polymer mesh of equivalent strength.

² These default values are based on empirical evidence with a variety of sediment. For environmentally sensitive areas, a review of the previous experience and/or site or regionally specific geotextile tests in accordance with Test Method D 5141 should be performed by the agency to confirm suitability of these requirements.

³ As measured in accordance with Test Method D 4832.

CONSTRUCTION

- Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
- Ensure that the height of the sediment fence does not exceed 24 inches above the ground surface. (Higher fences may impound volumes of water sufficient to cause failure of the structure.)
- Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
- Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip tie is should have minimum 50 pound tensile strength.
- When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Support posts should be driven securely into the ground a minimum of 24 inches.
- Extra strength filter fabric with 6 feet post spacing does not require wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have minimum 50 pound tensile strength.

Installation Specifications

- The base of both end posts should be at least one foot higher than the middle of the fence. Check with a level if necessary.
- Install posts 4 feet apart in critical areas and 6 feet apart on standard applications.
- Install posts 2 feet deep on the downstream side of the silty fence, and as close as possible to the fabric, enabling posts to support the fabric from upstream water pressure.
- Install posts with the nipples facing away from the silty fabric.
- Attach the fabric to each post with three ties, all spaced within the top 8 inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1 inch vertically apart. Also, each tie should be positioned to hang on a post nipple when tightened to prevent sagging.
- Wrap approximately 6 inches of fabric around the end posts and secure with 3 ties.
- No more than 24 inches of a 36 inch fabric is allowed above ground level.
- The installation should be checked and corrected for any deviations before compaction.
- Compaction is vitally important for effective results. Compact the soil immediately next to the silty fence fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first, and then each side twice for a total of 4 trips.

SEDIMENT FENCE MATERIALS:

- USE A SYNTHETIC FIBER OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461, WHICH IS SHOWN IN PART IN TABLE 6.62b.

SYNTHETIC FIBER SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE ON 0 TO 120°F.

- ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB./LINEAR FT STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.

- FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

6

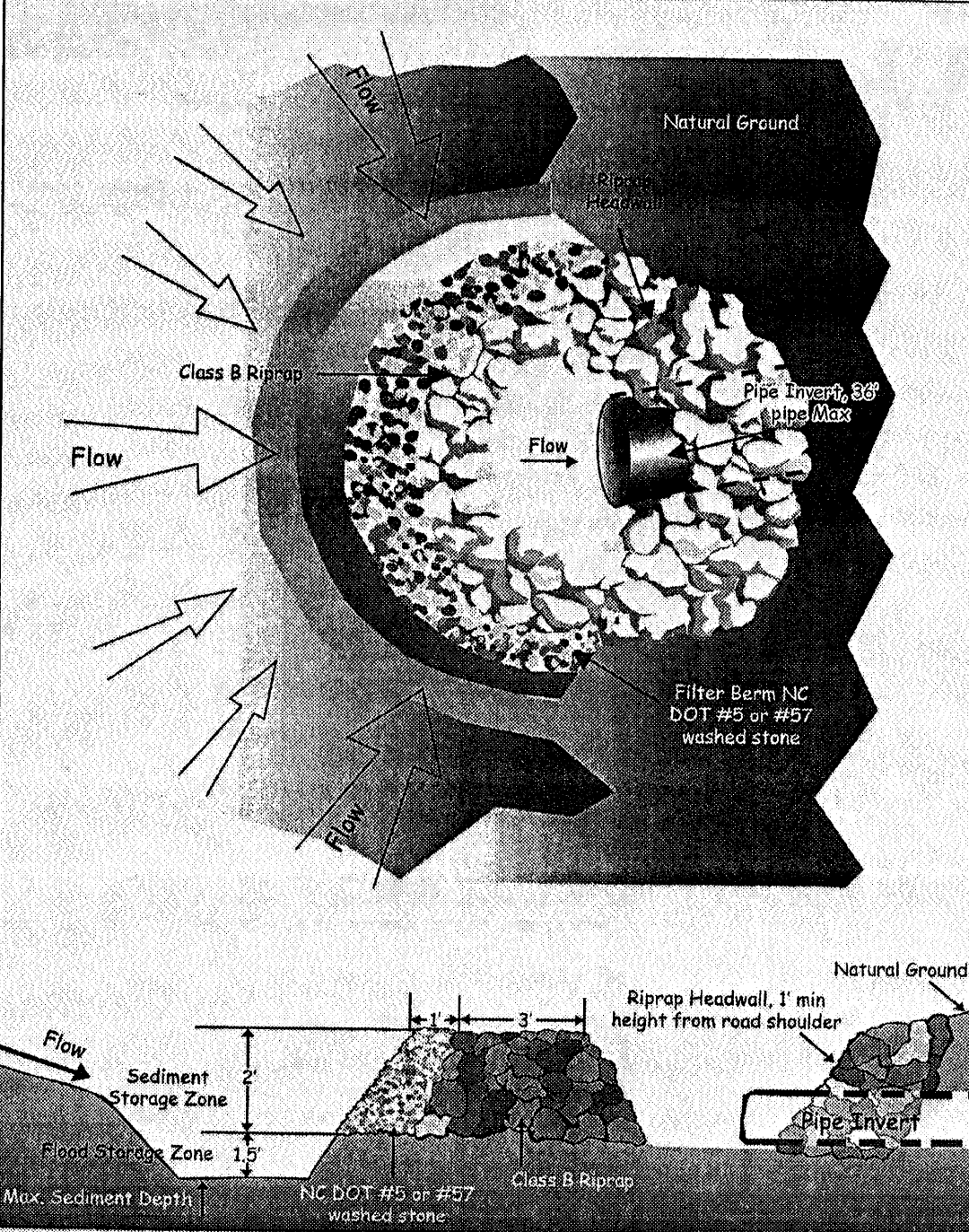


Figure 6.95a Rock pipe inlet protection plan view and cross-section view.

ROCK DOUGHNUT INLET PROTECTION
N.T.S.

SEEDING SPECIFICATIONS

I. TEMPORARY COVER

- LIME & FERTILIZER—CONTRACTOR SHALL FURNISH AND APPLY LIME AND FERTILIZER TO THE SOIL AS REQUIRED TO PROVIDE SATISFACTORY CONDITIONS FOR SEED GERMINATION. AN APPLICATION RATE OF 2000 LBS PER ACRE OF GROUND AGRICULTURAL LIME AND 750 LBS/ACRE OF FERTILIZER (10-10-10).

THESE MATERIALS SHALL BE SPREAD UNIFORMLY OVER THE AREA TO BE PLANTED. THE SOIL SHALL BE TILLED TO A DEPTH OF 3 - 4 INCHES WITH EQUIPMENT APPROVED BY THE ENGINEER.

B. TEMPORARY COVER

SEEDING—CONTRACTOR SHALL SELECT A QUICK GROWING GRASS WITH HIGH SEEDING VIGOR THAT IS SUITED TO THE AREA, THE TIME OF PLANTING, AND THAT WILL NOT INTERFERE WITH PLANTS TO BE SOWN LATER FOR PERMANENT COVER.

MAY THROUGH AUGUST

SUNDANGRASS 50 LB/AC.
OR GERMAN MILLET 40 LB/AC.

SEPT. THROUGH APRIL

RYEGRAIN 120 LBS/AC.

ALL SEEDS SHALL HAVE BEEN TESTED NOT MORE THAN 6 MONTHS PRIOR TO THE DATE OF SEEDING.

CONTRACTORS SHALL APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRAULICALLY.

C. MULCHING

IN ORDER TO REDUCE DAMAGE FROM WATER RUN-OFF AND IMPROVE MOISTURE CONDITIONS FOR SEEDINGS, A MULCH MATERIAL SHALL BE FURNISHED WHEN TEMPORARY SEEDING IS TO BE DONE. ACCEPTABLE MATERIALS ARE

- DRY UNCHOPPED, UNWEATHERED SMALL GRAIN STRAW OR HAY FREE OF SEEDS OF COMPETING PLANTS - 1-2 TON/ACRE
- WOOD FIBER (EXCEL) - 500 LBS/ACRE WITHOUT STRAW
- WOOD CELLULOSE FIBER - 500 LBS/ACRE WITHOUT STRAW
- JUTE MATTING -

II. PERMANENT COVER

- CONTRACTOR SHALL FURNISH AND APPLY 90 LBS./1000 S.F. OF GROUND AGRICULTURAL LIME (2 TONS PER ACRE), 25 LBS./1000 S.F. OF FERTILIZER (10-10-10) (1000 LBS. PER ACRE), AND 2.5 LBS./1000 S.F. KENTUCKY 31 TALL FESCUE (100 LBS. PER ACRE) IN THE MANNER DESCRIBED ABOVE IN PARTS 1, 2 & 3. APPLY NURSE CROP AS FOLLOWS:

MAY 1 - AUG. 15 - 10 LBS./AC. GERMAN MILLET OR 15 LBS./AC. SUNDANGRASS
AUG 15 - MAY 1 - 40 LBS./AC. RYE (GRAIN)

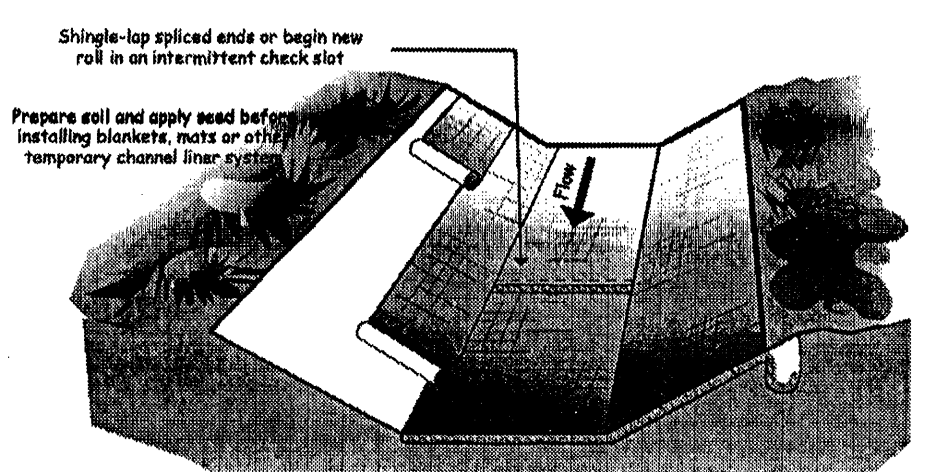
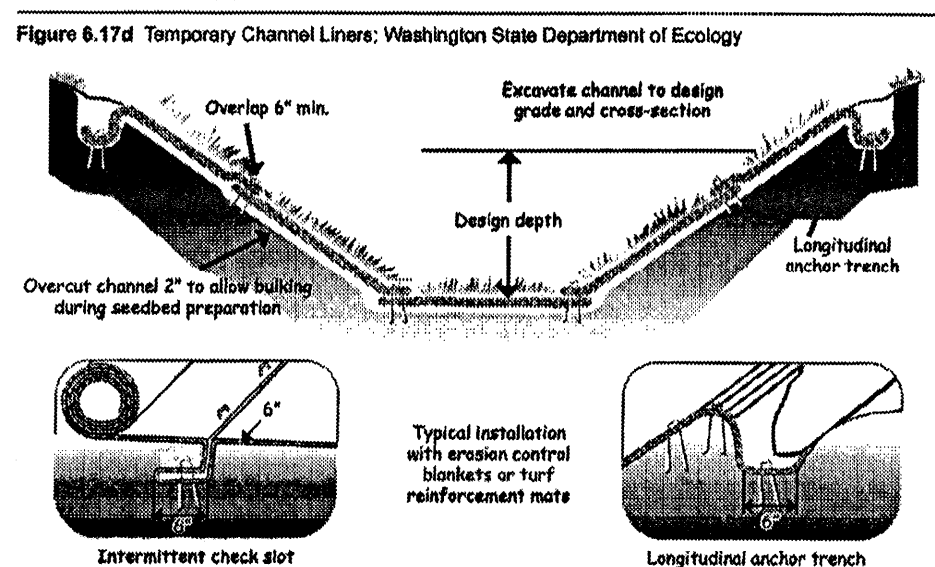
B. SEEDING DATES: KY.31 TALL FESCUE

AUG. 20 - SEPT. 15 (BELOW 2500' ELEVATION)
MARCH 1 - MAY 1 (ABOVE 2500' ELEVATION)
JULY 15 - AUG. 30 (ABOVE 2500' ELEVATION)
MARCH 5 - MAY 15 (ABOVE 2500' ELEVATION)

C. MULCHING

APPLY 4,000 LB PER ACRE OF GRAIN STRAW SUITABLY TAKEN DOWN.
ADD NETTING TO STEEP SLOPES AND STAPLE PER MANUFACTURERS RECOMMENDATIONS.

6



NOTES:
1. Design velocities exceeding 6 ft/sec require temporary blankets, mats or similar liners to protect seed and soil until vegetation becomes established.
2. Grass-lined channels with design velocities exceeding 6 ft/sec should include turf reinforcement mats.

CHANNEL MATTING DETAIL
N.T.S.

6.17.10

Rev. 0/0

Practice Standards and Specifications

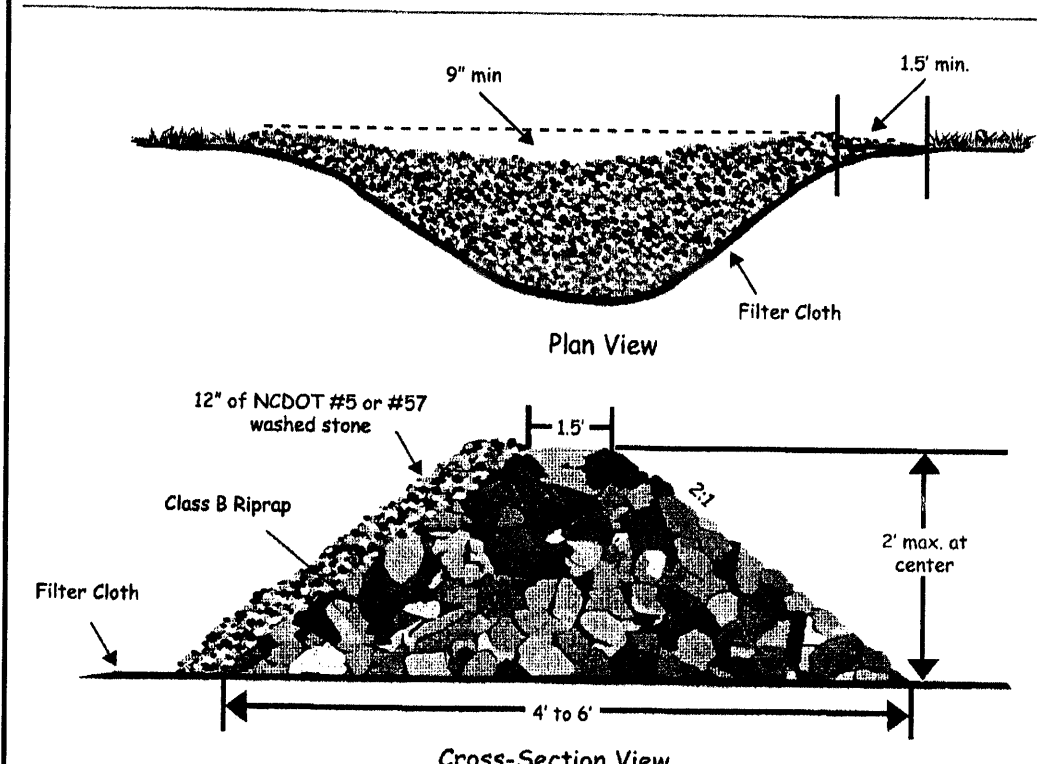


Figure 6.83b Stone check dam detail should be placed over the channel banks to keep water from cutting around the dam.

Maintenance
Inspect check dams and channels at least weekly and after each significant (1/2 inch or greater) rainfall event and repair immediately. Clean out sediment, straw, limbs, or other debris that could clog the channel when needed.

Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct all damage immediately. If significant erosion occurs between dams, additional measures can be taken such as: installing a protective riprap line in that portion of the channel (Practice 6.31, Riprap-lined and Paved Channels).

Remove sediment accumulated behind the dams as needed to prevent damage to channel vegetation, allow the channel to drain through the stone check dam, and prevent large flows from carrying sediment over the dam. Add stones to dams as needed to maintain design height and cross section.

References

Runoff Conveyance Measures
6.30. Grass-lined Channels
6.31. Riprap-lined and Paved Channels
North Carolina Department of Transportation
Standard Specifications for Roads and Structures

CHECK DAM DETAIL
N.T.S.

Rev. 6/06

6.83.3

CONSTRUCTION NOTES:

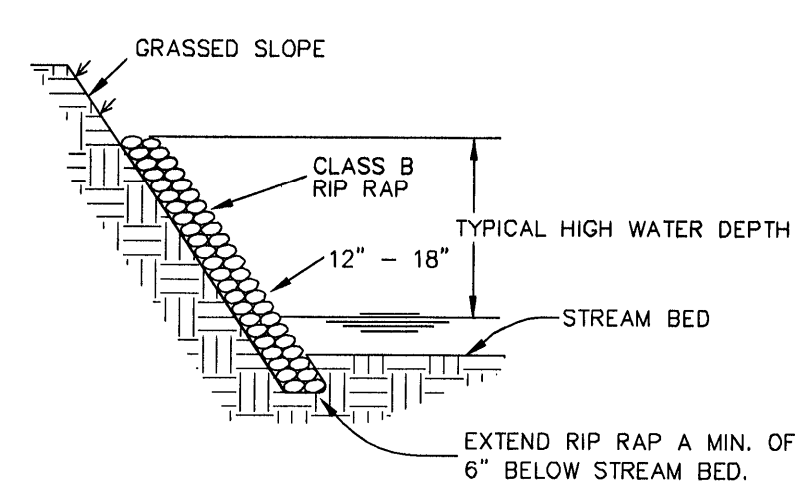
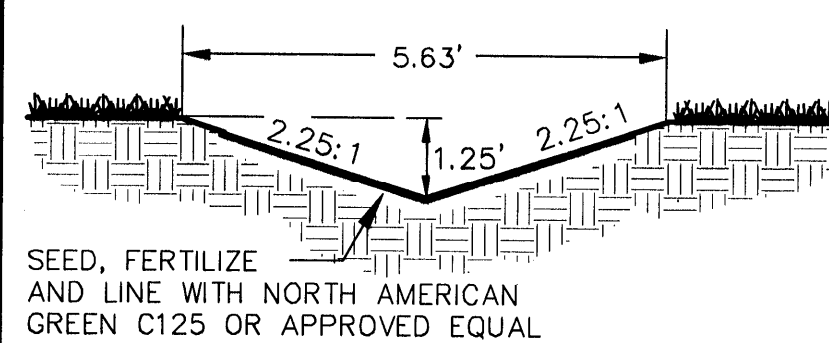
- All work and construction activities on the project site shall comply with all applicable OSHA regulations and requirements. It is the Contractor's responsibility to maintain a safe work site.
- The Engineer and Owner reserve the right to modify project work items (including grading) as deemed necessary for the successful completion of the project. The Contractor may suggest adjustments to grading or other work items to be approved by the Engineer or Owner.
- The Contractor shall comply with the Geotechnical Report for the placement of fill and compaction requirements. If no report is available, the following minimum standards shall apply:

Placement of fill:

- Place the material in successive horizontal layers not exceeding 8" for the full width of the cross section.
- Fill shall be placed only when it is within 3 % of its optimum moisture content as determined by a Standard Proctor ASTM D 698.
- Each layer of fill shall be spread evenly and shall be compacted to its specified density as determined by Standard Proctor ASTM D 698 before new layers are placed and compacted.
- Sloped ground surfaces steeper than one vertical to four horizontal, on which fill is to be placed, shall be sloped or benched such that fill material will bond to the existing surfaces.
- Embankment slopes shall be constructed by filling one (1) foot beyond the proposed finished slope surface for each lift. Compaction equipment shall work to the edge of each lift. After final slope is placed and compacted, the outside foot of the slope shall be trimmed to the design slope with a dozer. Unless indicated on the drawings, no fill slopes shall be steeper than 2 horizontal to 1 vertical.

Compaction:

- Structural Fill Under Buildings and Within 10' of Building Perimeter: 100% of Standard Proctor the entire depth of fill.
- Under Walks, Drives, Pads, and Paved Areas: 95% of Standard Proctor except 100% of Standard Proctor in the upper 2'.
- Under Lawns and Planting Areas Beyond 10' from Building: 95% of Standard Proctor
- Backfill in Trenches: Comply with compaction requirements for the area

STREAM BANK STABILIZATION
N.T.S.DITCH SECTION
N.T.S.

Know what's below.
Call before you dig.



Preliminary
Not for Construction

Revisions

No.	Description

date: 9/09
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ASHEVILLE, NORTH CAROLINA

THE WARM COMPANY
HENDERSON COUNTY,
NORTH CAROLINA

EROSION CONTROL
DETAIL SHEET

sheet
C-401

PROJECT SUMMARY
SEWER UTILITY EXTENSION
Project Name

November 3, 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 **existing commercial development**. This project is located near **Old Sunset Hill Road (SR 1744)**. This project is under the reviewing jurisdiction of **Henderson County** and is located within the **USA – Urban Services Area**. The proposed project is being administered by Henderson County and Land of Sky Regional Council as a grant from the NC Division of Community Assistance.

This project requires approximately **1,475** linear feet of sewer line sized as following:

Approximate Length:	Description:
96 lf	8" DIP CL 350
1,379 lf	8" PVC SDR 35

Pump station required: ☒ Yes ☐ No.

The amount of wastewater generated by this project will be approximately **400** 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 (See attached form provided to the City by the Reviewing Jurisdiction)

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: 10-28-09
Henderson Co. Commissioners:	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	Date: _____
Hendersonville City Council:	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	Date: _____

HENDERSON COUNTY REVIEW OF CITY SEWER LINE EXTENSIONS

Project Name: The Warm Company
Size of Sewer Line: 1,379 linear feet 8" PVC SDR 13; 96 linear feet 8" 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 (LDC)?** ☐ Yes ☒ No ☐ N/A

Date reviewed: _____

Action: _____

Conditions: _____

Comments:

Has the project been reviewed under the **County Manufactured Park Regulations of the LDC?** ☐ Yes ☒ No ☐ N/A

Date reviewed: _____

Action: _____

Conditions: _____

Comments:

Has the project been reviewed under the **County Zoning Regulations (i.e. Special Use Permit) of the LDC?** ☐ 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:

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

BOARD OF COMMISSIONERS APPROVAL

☐

Approved

Date of Board

☐

Not Approved

Comments:

☐

Conditional Approval (See Comments)