### 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:**

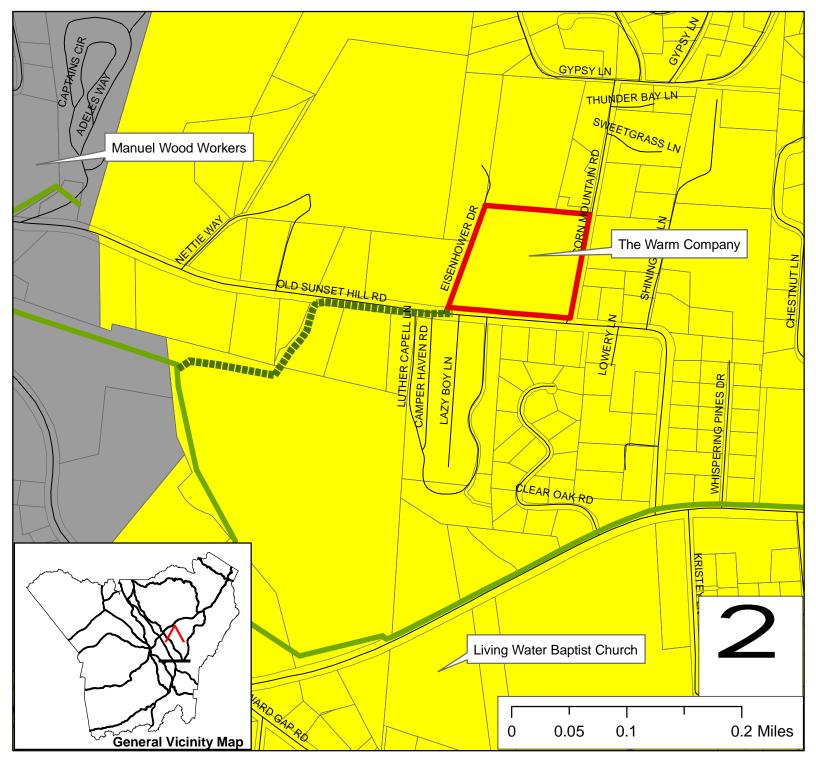
The City of Hendersonville has requested that the County comment on the proposed sewer line extension for the Warm Company. The proposed sewer line is 1,475 linear feet. The Board of Commissioners authorized this project through authorization of the 2008 Warm Company Economic Development Grant (CDBG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

Proposed Sewer Line
Streets
City of Hendersonville Sewer
Project Area
City of Hendersonville
Urban Services Area



# SANITARY SEWER EXTENSION for THE WARM COMPANY





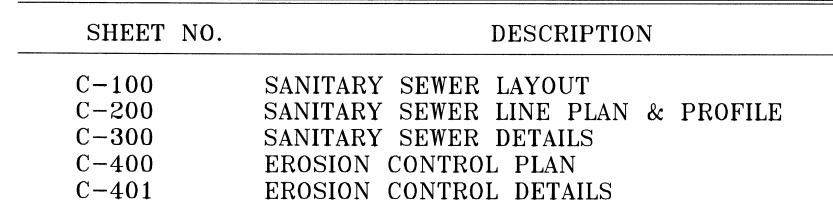
# LOCATION MAP

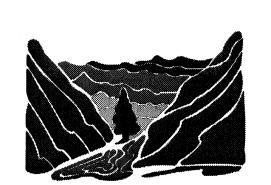
N.T.S.

OWNER/DEVELOPER:

HENDERSON COUNTY
CONTACT: ANTHONY STARR
PLANNING DIRECTOR
213 FIRST AVENUE EAST
HENDERSONVILLE, NC 28792
(828) 697-4819

# INDEX





# WILLIAM G LAPSLEY & ASSOCIATES P.A.

CONSULTING ENGINEERS & LAND PLANNERS
NC License No: C-0556

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

A SSOCIATES P.A. LAND PLANNERS CAROLINA

WILLIAM G. LAPSLEY & A CONSULTING ENGINEERS & 1 ASHEVILLE, NORTH

date:9/09

Revisions job: 09139 drawn: KHC

Know what's below.

Call before you dig.

sheet C-100



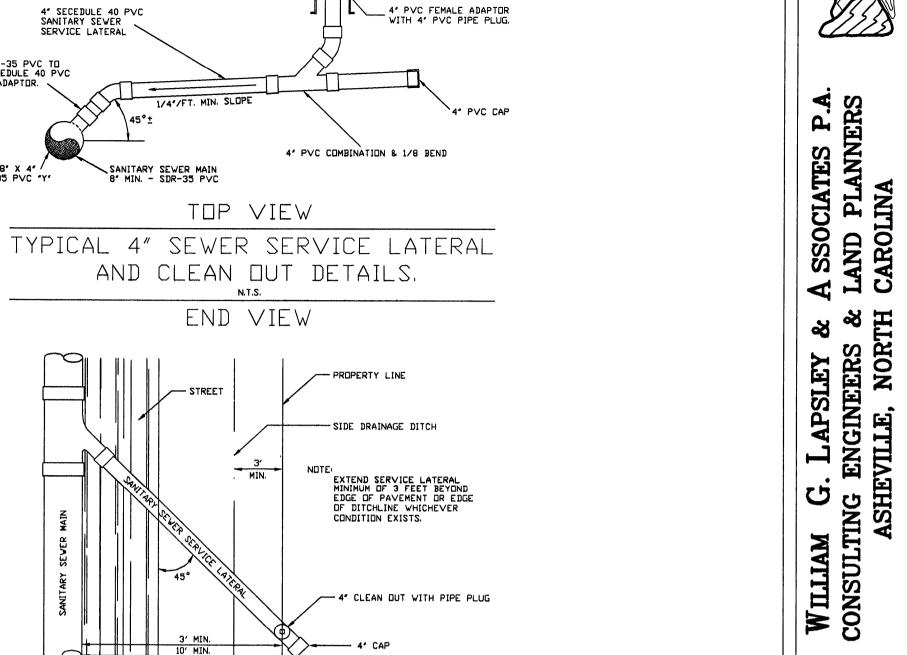
- 1.) THE SPECIFICATIONS AND REQUIREMENTS OF THE HENDERSONVILLE WATER AND SEWER DEPARTMENT SUPERSEDE ALL OTHERS IN THE INSTALLATION OF THE PROPOSED EXTENSION(S).
- 2.) CITY OF HENDERSONVILLE WATER AND SEWER DEPARTMENT MAINTENANCE OF SEWER SERVICES END AT THE FIRST CLEANOUT, MAINTENANCE OF SERVICES BEYOND THIS POINT IS PŔIVATE.
- 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 MORRRISON 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.

GRAPHIC SCALE ( IN FEET ) 1 inch = 50 ft.

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Consulting Engineers & Land Planners NC License No: C-0556 Two Town Square Blvd. Suite 320 Asheville, North Carolina 28803 (828) 687-7177 \* Fax (828) 687-7178 www.wgla.com

ERS\Will\projects\Warm\project file\dwg\09139-C-200.dwg, 10/29/2009 3:52:21 PM, 1:50.0008



4' S9-5B (FOR BINDER) 1" S9-5B ASPHALT SURFACE COURSE EXISTING THE WARM SANITARY SEW HENDERSO NORTH (

- UNDISTURBED EARTH

-EXISTING PROFILE PROFILE RIP RAP & FILTER FABRIC -PROPOSED DUCTILE IRON SANITARY SEWER LINE

TYPICAL PAVEMENT REPAIR

N.T.S.

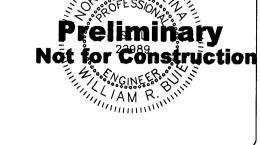
18" X 18" X 4" CONCRETE PAD POURED AROUND ALL CLEAN OUTS.

STREET ---

4' SDR-35 PVC TO 4' SCHEDULE 40 PVC MALE ADAPTOR.

4" SECEDULE 40 PVC SANITARY SEWER SERVICE LATERAL





Know what's below.
Call before you dig. Revisions date:9/16/09

STONE BEDDING TO SPRINGLINE OF PIPE

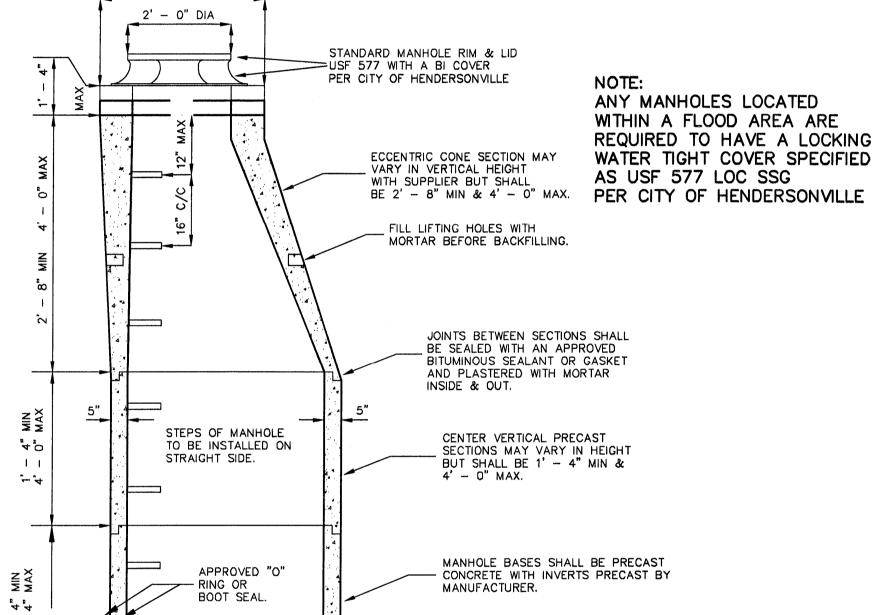
> sheet C-300

TOP OF COVER~ WORDS "SANITARY SEWER" CAST IN LID. MANHOLE COVER STANDARD MANHOLE RIM & LID USF 577 WITH A BI COVER PER CITY OF HENDERSONVILLE

# MANHOLE RING & COVER FOR SANITARY SEWERS

2' - 10" DIA

MANHOLE RING

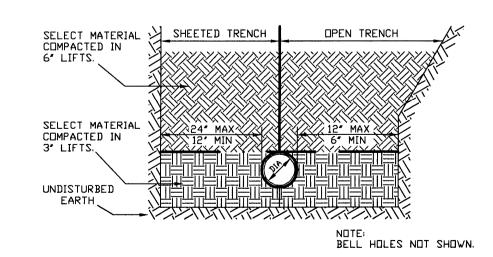


TYPICAL PRECAST CONCRETE MANHOLE DETAIL N.T.S.

BASE FOUNDATION TO BE CONSTRUCTED

LEVEL WITH A MINIMUM OF 6" OF

WASHED STONE.



OPEN TRENCH SELECT MATERIAL 3" LIFTS. UNDISTURBED NOTE: BELL HOLES NOT SHOWN.

MANHOLES SUBJECT TO VEHICULAR TRAFFIC SHALL BE TINDALL G48 OR EQUAL.

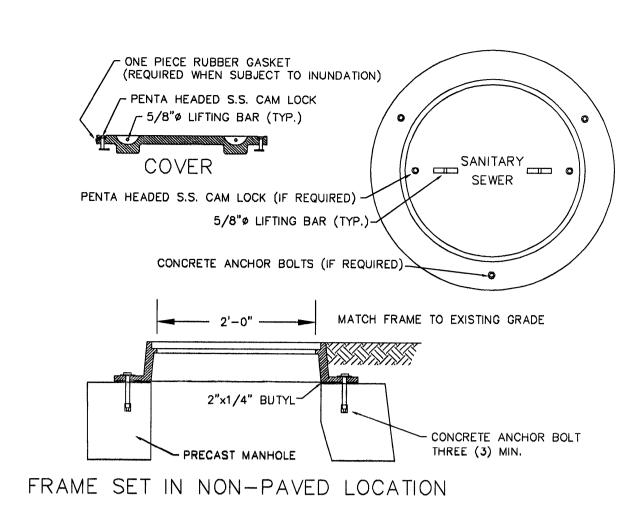
END VIEW

END VIEW

OVERCUT EXCAVATION

STANDARD EXCAVATION

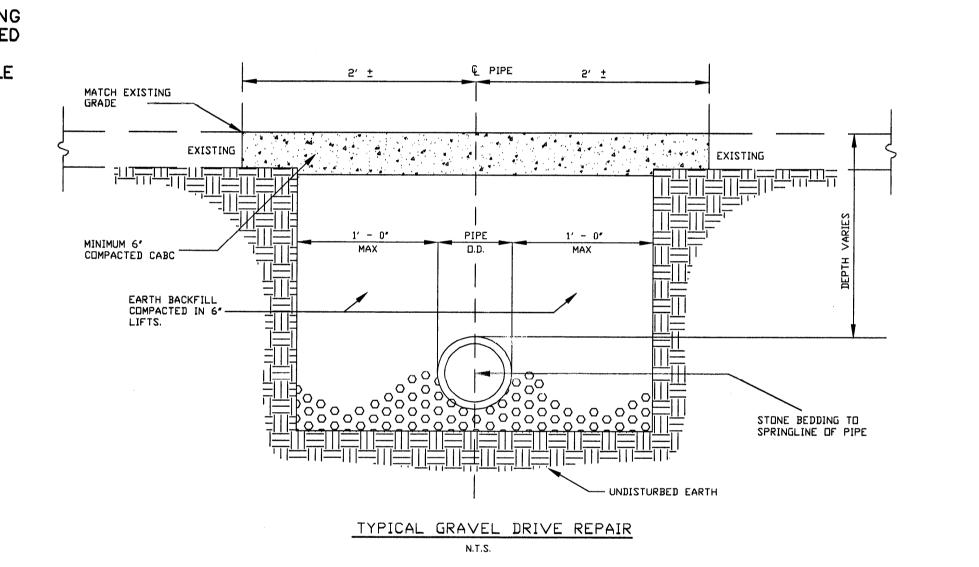
TYPICAL TRENCHING DETAIL FOR DIP

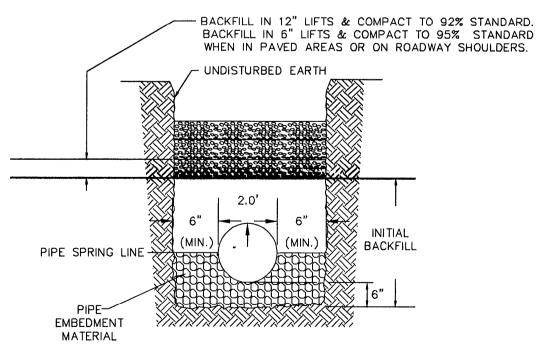


MACHINED SURFACES-1" MAX. --PAVEMENT -Jayers (MAX.) 12"(MAX.) 2"x1/4" BUTYL-4 -PRECAST CONCRETE GRADE RING - PRECAST MANHOLE FRAME SET IN PAVED LOCATION

NOTE: WATERTIGHT FRAME & COVER REQUIRED IN FLOODPLAIN OR WHEN SPECIFIED ON PLANS

# WATERTIGHT MANHOLE FRAME & COVER





- 3. NO BOULDERS OR STONES WILL BE USED IN INTIAL BACKFILL.
- 4. THIS DETAIL IS VALID FOR PVC SEWER PIPE INSTALLED AT DEPTHS OF UP TO 20 FEET.
- 5. PVC PIPE NOT ALLOWED WITH LESS THAN 3'-0" COVER.

TYPICAL TRENCHING DETAIL FOR PVC

RELATIONSHIP OF WATER & SEWER MAINS Contractor is required to comply with the North Carolina Administrative Code, Rules Governing Public Water Systems, Title 15a NCAC 18C.0906.

See Section No. 1200.10 in the City of

MATCH EXISTING PAVEMENT

MINIMUM 6'
COMPACTED CABC

EARTH BACKFILL COMPACTED IN 6'-LIFTS.

Hendersonville Technical Specifications.

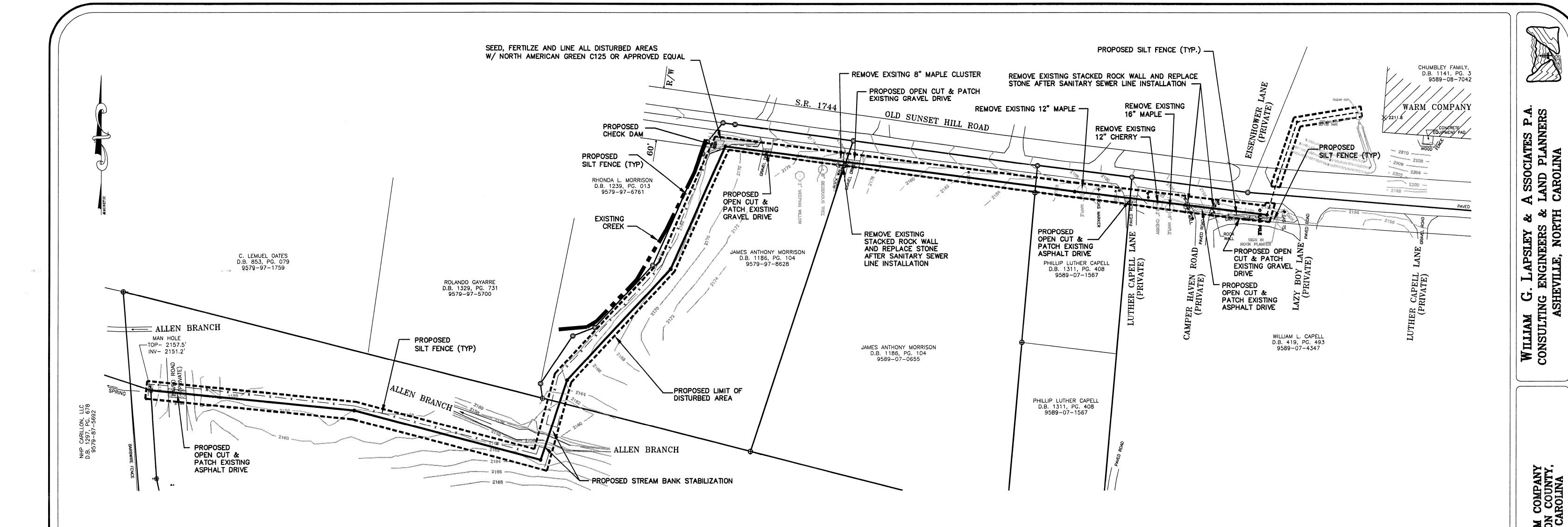
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N.T.S.

NOTES: 1. PVC PIPES REQUIRE #67 WASHED STONE PIPE EMBEDMENT MATERIALS. 2. WHEN TRENCH IS SUBJECT TO INUNDATION, EMBEDMENT MATERIALS MUST EXTEND TO TOP OF PIPE.

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job: 09139 drawn: TWT



NOTES:

GRAPHIC SCALE

( IN FEET )

1 inch = 50 ft.

1.) CONTRACTOR SHALL ENSURE NO SILT ENTERS INTO THE EXISTING STREAM. MEASURES BEYOND THOSE SHOWN ON THE PLANS SHOULD BE APPROVED BY THE OWNER. 2.) IT IS THE CONTRACTORS RESPONSIBLY TO MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT THE LIFE OF THE PROJECT.

3.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD STAKING NECESSARY FOR THE CONSTRUCTION OF THE PROJECT. THE ENGINEER WILL PROVIDE THE CONTRACTOR WITH AN ELECTRONIC COPY OF THE DESIGN FOR STAKING PURPOSES. HOWEVER ALL ELECTRONIC INFORMATION SHOULD BE COORDINATED WITH THE PLANS. 4.) CONTRACTOR SHALL REMOVE ALL EROSION CONTROL MEASURES AT COMPLETION OF PROJECT, AFTER SITE

HÁS STABILIZED AND RESTORE TO FINAL GRADE. 6.) SURVEY INFORMATION BASED ON SEVERAL SOURCES INCLUDING FIELD INFORMATION BY DAVID HILL.

> LEGEND --- x --- PROPOSED SILT FENCE PROPOSED MATTING PROPOSED CHECK DAM PROPOSED LIMITS OF DISTURBED AREA

**TOTAL DISTURB AREA** 0.7± ARCES

OWNER/DEVLOPER: HENDERSON COUNTY CONTACT: ANTHONY STARR PLANNING DIRECTOR (828) 697-4819 213 FIRST AVENUE EAST, HENDERSONVILLE, NC 28792 Know what's below. Call before you dig.

Preliminary Not for Construction

WILLIAM G. LAPSLEY & A SSOCIATES 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) 687-7178 www.wgla.com

Revisions

date:9/09 job: 09139 drawn: KHC

sheet C-400

CONTROL PROFILE

EROSION PLAN &

7. Excavate a trench approximately 4 inches wide and 8 inches deep along the proposed line of posts and upslope from the barrier (Figure 6.62a). 8. Place 12 inches of the fabric along the bottom and side of the trench. 9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.

10. Do not attach filter fabric to existing trees. SEDIMENT FENCE INSTALLATION USING THE SLICING METHOD Instead of excavating a trench, placing fabric and then backfilling trench. sediment fence may be installed using specially designed equipment that inserts the fabric into a cut sliced in the ground with a disc (Figure 6.62b).

Installation 1. The base of both end posts should be at least one foot higher than the Specifications middle of the fence. Check with a level if necessary. . Install posts 4 feet apart in critical areas and 6 feet apart on standard

> 3. Install posts 2 feet deep on the downstream side of the silt fence, and as close as possible to the fabric, enabling posts to support the fabric from upstream water pressure. 4. Install posts with the nipples facing away from the silt fabric. 5. Attach the fabric to each post with three ties, all spaced within the top 8

6. Wrap approximately 6 inches of fabric around the end posts and secure 7. No more than 24 inches of a 36 inch fabric is allowed above ground

8. The installation should be checked and corrected for any deviations before

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.

9. Compaction is vitally important for effective results. Compact the soil immediately next to the silt 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.

. 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

SYNTHETIC FIBER SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT TEMPERATURE RANGE ON 0 TO 120°F. . ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB.LINEAR FT STEEL WITH

O FACILITATE FASTENING THE FABRIC. 3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

6 DOT #5 or #57 A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS Figure \$.55a Rock pipe inlet protection plan view and cross-section view.

ROCK DOUGHNUT INLET PROTECTION

Practice Standards and Specifications TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT Definition A graveled area or pad located at points where vehicles enter and leave a con-PUIPOSS 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. Conditions Where Wherever traffic will be leaving a construction site and moving directly onto a Practice Applies 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 50-ft minimum Location-Locate construction entrances and exists 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. coarse aggregate Figure 6.06a Gravel entrance/exit keeps sediment from leaving the construction site (modified from Va SWCC).

Figure 6.62a Installation detail of a sediment fence.

8' max. standard strength fabric with wire fence 6' max. extra strength fabric without wire fence

Practice Standards and Specifications

SILT FENCE DETAIL

# SEEDING SPECIFICATIONS

TEMPORARY COVER A. 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

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

MAY THROUGH AUGUST

SUNDANGRASS

RYEGRAIN

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

SEPT. THROUGH APRIL

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

120 LBS/AC.

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

A SLURRY MIXTURE OF WATER, FERTILIZER, SEED, AND CELLULOSE FIBER MULCH IS ACCEPTABLE ON THIS PROJECT.

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

A. DRY UNCHOPPED, UNWEATHERED SMALL GRAIN STRAW OR HAY FREE OF SEEDS OF COMPETING PLANTS — 1—2 TON/ACRE B. WOOD FIBER (EXCELSIOR) WOOD CELLULOSE FIBER - 500 LBS./ACRE WITHOUT STRAW

II. PERMANENT COVER

A: 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 2.3 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)

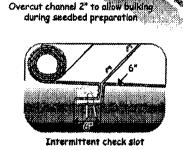
B. SEEDING DATES: KY.31 TALL FESCUE

AUG. 20 - SEPT. 15 (BELOW 2500' ELEVATION)

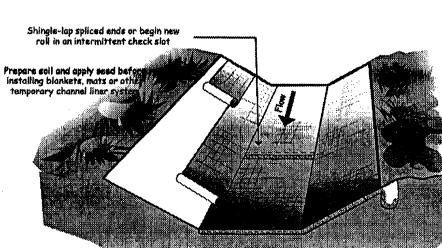
MARCH 5 - MAY 15 (ABOVE 2500' ELEVATION)

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

Figure 6.17d Temporary Channel Liners; Washington State Department of Ecology



with erasian control blankets or turf



1. Design velocities exceeding 2 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

CHANNEL MATTING DETAIL

1.) CONTRACTOR SHALL ENSURE NO SILT ENTERS INTO THE EXISTING STREAM. MEASURES

2.) ALL EXISTING INLETS SHALL HAVE ROCK INLET PROTECTION AS SHOWN ON THIS

4.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD STAKING NECESSARY FOR

5.) CONTRACTOR SHALL REMOVE ALL EROSION CONTROL MEASURES AT COMPLETION OF

6.) CONTRACTOR MUST KEEP ALL EXISTING STREETS CLEAR OF SEDIMENT. BROOMING OR

THE CONSTRUCTION OF THE PROJECT. THE ENGINEER WILL PROVIDE THE CONTRACTOR

WITH AN ELECTRONIC COPY OF THE DESIGN FOR STAKING PURPOSES. HOWEVER ALL

BEYOND THOSE SHOWN ON THE PLANS SHOULD BE APPROVED BY THE OWNER.

SHEET (IF SILT ENTERS INTO ANY EXISTING DRIVEWAY CULVERT, THEN IT IS THE

CONTRACTORS RESPONSIBLY TO CLEAN THE SILT OR DEBRIS OUT AT THEIR OWN

3.) IT IS THE CONTRACTORS RESPONSIBLY TO MAINTAIN ALL EROSION CONTROL

ELECTRONIC INFORMATION SHOULD BE COORDINATED WITH THE PLANS.

PROJECT, AFTER SITE HAS STABILIZED AND RESTORE TO FINAL GRADE.

SWEEPING OF THE STREETS WILL BE THE CONTRACTORS RESPONSIBILITY.

7.) THIS PROJECT IS NOT LOCATED WITHIN A 100 YEAR FLOOD HAZARD AREA.

MÉASURES THROUGHOUT THE LIFE OF THE PROJECT.

6.17.10

NOTES:

Rev. 6/06

# 12" of NCDOT #5 or #57

2' max. at Filter Clot Cross-Section View

Figure 6.83b Stone check dam stone should be placed over the channel banks to keep water from cutting around the 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. I significant erosion occurs between dams, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel (Practice 6.31, Riprap-line 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 Payed Channels North Carolina Department of Transportation

Standard Specifications for Roads and Structures CHECK DAM DETAIL

N.T.S.

## EROSION CONTROL CONSTRUCTION SEQUENCE

1. OBTAIN PLAN APPROVAL AND APPLICABLE PERMITS 2. HOLD PRE CONSTRUCTION CONFERENCE.

3. INSTALL TEMPORARY DIVERSIONS & SILT FENCING, 4. CLEAR AND GRUB SITE. 5. INSTALL SEWER LINE & MANHOLES.

6. ANY DISTURBED AREAS THAT WILL BE LEFT MORE THAN 15 WORKING DAYS OR 21 CALENDAR DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING, IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, DISTURBED AREAS WILL BE MULCHED WITH STRAW OR EQUIVALENT MATERIAL ACCORDING TO SPECIFICATIONS.

. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSPECTED WEEKLY & ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.

CONSTRUCTION NOTES:

Practice Standards and Specifications

70% after

500h of exposure

MARV

MARV

MARV

Max. ARV3

2. 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

3. For reinforcement of standard swength filter fabric, use wire fence with a

minimum 14 gauge and a maximum mesh spacing of 6 inches.

70% after

500h of exposure

1. Construct the sediment barrier of standard strength or extra strength

2. Ensure that the height of the sediment fence does not exceed 24 inches

above the ground surface. (Higher fences may impound volumes of water

3. 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.

4. 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 ties should have minimum 50 pound tensile

5. 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

6. 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.

Practice Standards and Specification

facilitate fastening the fabric.

Temporary Silt Fence Material Property Requirements

(US Sieve #)

1 Silt Fence support shall consist of 14 gage steel wire with a mesh spacing of 150 mm (6 inches), or prefabricated poylmer mesh of

<sup>2</sup> These default values are based on empirical evidence with a variety of sediment. For environmentally sensitive areas, a review of

sufficient to cause failure of the structure)

previous experience and/or site or regionally specific geotextile tests in accordance with Test Method D 5141 should be performed

CONSTRUCTION

synthetic filter fabrics.

Table 6.62b Specifications For Sediment Fence Fabric

ASTM D 4632 N (lbs)

ASTM D 4491

ASTM D 4751

ASTM D 4355

by the agency to confirm suitability of these requirements

3 As measured in accordance with Test Method D 4632

Grab Strength

Permittivity<sup>2</sup>

Machine Direction

X-Machine Direction

1. 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.

3. 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:

A. Place the material in successive horizontal layers not exceeding 8" for the full width of the cross section.

B. Fill shall be placed only when it is within 3 % of its optimum moisture content as determined by a Standard Proctor ASTM D 698.

C. 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.

D. Sloped ground surfaces steeper than one vertical to four horizontal, on which fill is to be placed, shall be stepped or benched such that fill material will bond to the existing surfaces.

E. 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 the entire fill 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. than 2 horizontal to 1 vertical.

6.83.3

A. Structural Fill Under Buildings and Within 10' of Building Perimeter: 100% of Standard Proctor the entire depth of fill.

B. Under Walks, Drives, Pads, and Paved Areas: 95% of Standard Proctor except 100% of Standard Proctor in the upper 2'.

C. Under Lawns and Planting Areas Beyond 10' from Building: 95% of Standard

D. Backfill in Trenches: Comply with compaction requirements for the area

A. Clearing and grubbing wastes shall be removed from the site and properly disposed of by the contractor at their expense, unless otherwise specified.

B. Solid wastes to be removed such as sidewalks, curbs, pavement, etc. may be placed in specified disposal areas if permitted by the appropriate agencies and approved by the Owner. This material shall be spread and mixed with dirt eliminating all voids. This material shall have a minimum cover of 2. The Contractor shall maintain specified compaction requirements in these areas. When disposal sites are not provided, the Contractor shall remove this waste from the site and properly dispose of it at their expense.

C. Abandoned utilities such as culverts, water pipe, hydrants, casting, pipe appurtenances, utility poles, etc. shall be the property of the specified utility agency or company having jurisdiction. Before the Contractor can remove, destroy, salvage, re—use, sell or store for their own use any abandoned utility, they must present to the owner written permission from the utility involved.

D. Unless otherwise noted on the plans, burning will not be allowed on this project. Should burning be allowed by the owner, it is the Contractor's responsibility to obtain all necessary permits (at their expense) and follow all applicable rules and regulations.

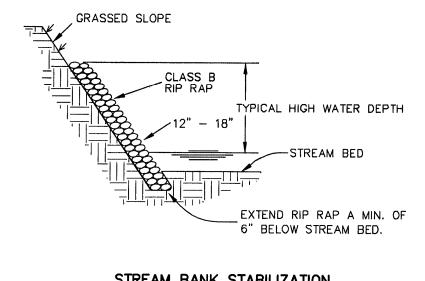
6. Unless otherwise specified, all base, paving, curbing and other concrete work shall conform to the local municipality or NCDOT specifications for construction. All water and sewer construction shall conform to the local utility requirements and/or the NCDENR minimum standards.

In the event excessive ground water or springs are encountered within the limits of construction, the Contractor shall install necessary underdrains and stone as directed by the Engineer. All work shall be paid based upon the unit prices unless otherwise specified.

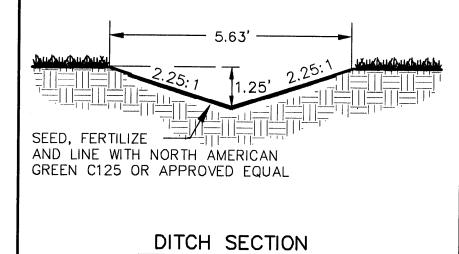
The Contractor is responsible for the coordination of adjustment of all utility surface accesses (including manhole covers, valve boxes, etc.) whether he performs the work or the utility company performs the work.

9. The Contractor shall control all "dust" by periodic watering and shall provide access at all times for property owners within the project and for emergency vehicles. All open ditches and hazardous areas shall be clearly marked in accordance with OSHA regulations.

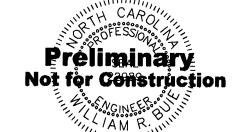
10. All areas of exposed soil shall be seeded, fertilized and mulched according to the specifications. The finished surface shall be to grade and smooth, free of all rocks larger than 3", equipment tracks, dirt clods, bumps, ridges, and gouges prior to seeding. The surface shall be loosened to a depth of 1"+/— to accept seed. The Contractor shall not proceed with seeding operations without first obtaining the Engineer's approval of the graded surface. All seeding shall be performed by a mechanical hydro—seeder". The Engineer prior to seeding must approve hand seeding on any area.



STREAM BANK STABILIZATION N.T.S.



Know what's below. Call before you dig.



WILLIAM G. LAPSLEY & A SSOCIATES 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) 687-7178 www.wgla.com

Revisions date:9/09 job: 09139 drawn: KHC

sheet C - 401

C. MULCHING

# PROJECT SUMMARY SEWER UTILITY EXTENSION

**Project Name** 

November 3, 2009					
To: Honorable Mayor and Membe	b: Honorable Mayor and Members of City Council				
From: Water & Sewer Department S	om: Water & Sewer Department Staff				
RE: STAFF RECOMMENDATION SEWER UTILITY EXTENSIO					
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:					
	otion: CL 350 SDR 35				
Pump station required: ⊠ Yes ☐ No	D.				
The amount of wastewater generated	d by this project will be approximately <b>400</b> 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: <b>Henderson County</b> Approved Disapproved (See attached form provided to the City by the Reviewing Jurisdiction)  Narrative Comments Provided: Yes No					
Signing of Official: Printed Name:	Date:				
1 Timed Name.					
additional infrastructure and associat contingent upon final approval of con Department.	Water & Sewer Department has the capacity to support this ed connections and hereby recommends approval of said project struction plans and specifications by the Water & Sewer				
"I move to accept this Sewer Utility	ccept this project. Suggested wording for motion is as follows:  Y Extension Project and to authorize the City Manager to  ity Extension Agreement on behalf of the City."				
Water and Sewer Department: Henderson Co. Commissioners: Hendersonville City Council:	□ Approved □ Disapproved □ Date: 10-28-09     □ Approved □ Disapproved □ Date: □     □ Approved □ Disapproved □ Date: □				

### HENDERSON COUNTY REVIEW OF CITY SEWER LINE EXTENSIONS

	The Warm				
Project Name:	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 re	eviewed under the County Subdivision Regulations of the Land Development Code (LDC)?	☐ Yes	⊠ No	□ N/A	
Date reviewed:					
Action:					
Conditions:					
Comments:					
Has the project been re	eviewed under the County Manufactured Park Regulations of the LDC?	☐ Yes	⊠ No	□ N/A	
Date reviewed:					
Action:					
Conditions:					
Comments:					
Has the project been re	eviewed under the County Zoning Regulations (i.e. Special Use Permit) of the LDC?	☐ Yes	⊠ No	□ N/A	
Date reviewed:		105	110	11/11	
Action:	<del></del>				
Conditions:					
Comments:					
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 <b>Henderson County 2020 Comprehensive Plan (CCP)</b> ?		⊠ Yes	□ No	□ N/A	
	BOARD OF COMMISSIONERS APPROVAL				
	Approved Date of Board				
	Not Approved Comments:				
	Conditional Approval (See Comments)				