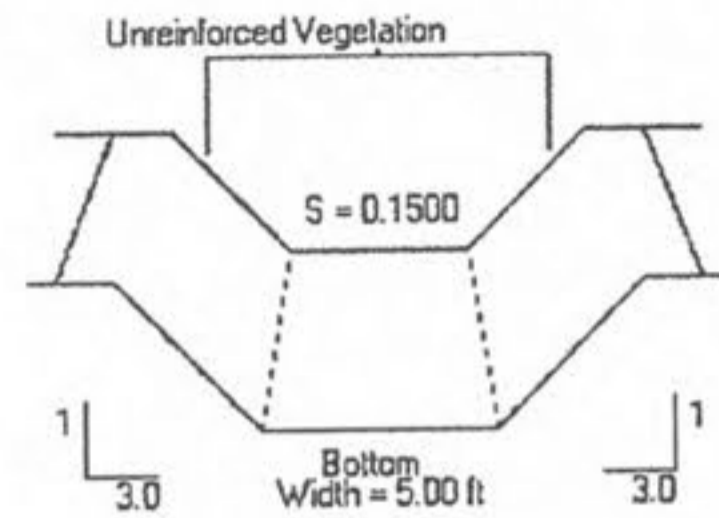


North American Green - Erosion Control Materials Design Software Ver.4.1 - Channel 4/4/2007 10:20 PM (COMPUTED BY: A-A)
 PROJECT NAME: preston woods phase II PROJECT NUMBER:
 FROM STATION/REACH: TO STATION/REACH: DRAINAGE AREA: DESIGN FREQUENCY:

HYDRAULIC RESULTS

| Discharge (cfs) | Peak Flow Period (hrs) | Velocity (fps) | Area (sq.ft.) | Hydraulic Radius(ft) | Normal Depth (ft) |
|-----------------|------------------------|----------------|---------------|----------------------|-------------------|
| 4.1 | 0.5 | 2.22 | 1.85 | 0.27 | 0.31 |



Not to Scale

LINER RESULTS

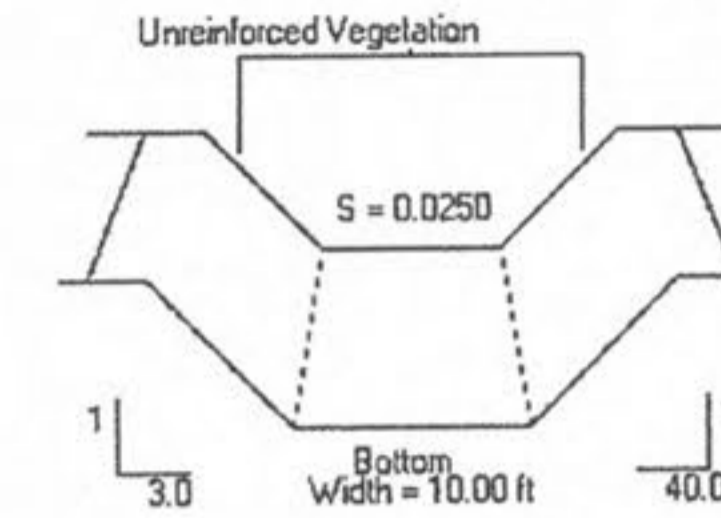
| Reach | Material Type | | Phase Class | Veg. Type Veg. Density | Soil Type | Manning's 'n' | Permissible Shear Stress (psf) | Calculated Shear Stress (psf) | Safety Factor | Remarks |
|----------|----------------|-------|-------------|------------------------|-----------|---------------|--------------------------------|-------------------------------|---------------|---------|
| | Staple Pattern | Class | | | | | | | | |
| Straight | Unreinforced | C | 75-95% | Clay | | 0.107 | 4.20 | 2.91 | 1.44 | STABLE |
| | | | | | | | | 0.015 | 4.52 | STABLE |

SECTION "A-A"

North American Green - Erosion Control Materials Design Software Ver.4.1 - Channel 4/4/2007 10:17 PM (COMPUTED BY: B-B)
 PROJECT NAME: preston woods phase II PROJECT NUMBER:
 FROM STATION/REACH: TO STATION/REACH: DRAINAGE AREA: DESIGN FREQUENCY:

HYDRAULIC RESULTS

| Discharge (cfs) | Peak Flow Period (hrs) | Velocity (fps) | Area (sq.ft.) | Hydraulic Radius(ft) | Normal Depth (ft) |
|-----------------|------------------------|----------------|---------------|----------------------|-------------------|
| 13.1 | 0.5 | 0.90 | 14.54 | 0.39 | 0.62 |



Not to Scale

LINER RESULTS

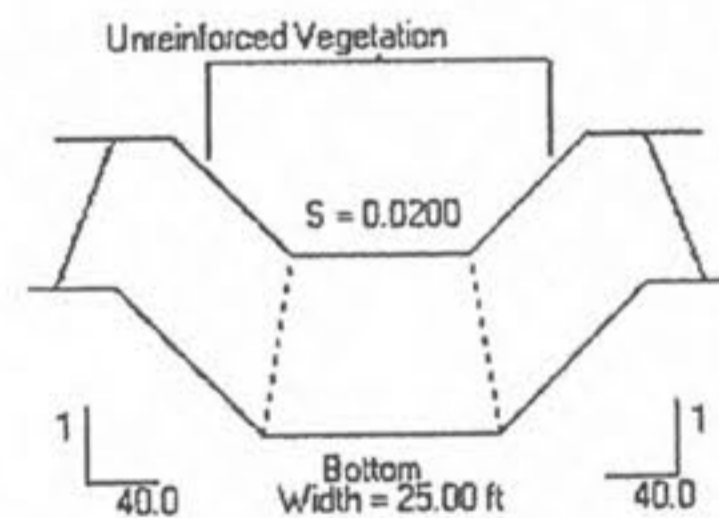
| Reach | Material Type | | Phase Class | Veg. Type Veg. Density | Soil Type | Manning's 'n' | Permissible Shear Stress (psf) | Calculated Shear Stress (psf) | Safety Factor | Remarks |
|----------|----------------|-------|-------------|------------------------|-----------|---------------|--------------------------------|-------------------------------|---------------|---------|
| | Staple Pattern | Class | | | | | | | | |
| Straight | Unreinforced | C | 75-95% | Clay | | 0.140 | 4.20 | 0.97 | 4.33 | STABLE |
| | | | | | | | | 0.003 | 23.32 | STABLE |

SECTION "B-B"

North American Green - Erosion Control Materials Design Software Ver.4.1 - Channel 4/4/2007 10:14 PM (COMPUTED BY: D-D)
 PROJECT NAME: preston woods phase II PROJECT NUMBER:
 FROM STATION/REACH: TO STATION/REACH: DRAINAGE AREA: DESIGN FREQUENCY:

HYDRAULIC RESULTS

| Discharge (cfs) | Peak Flow Period (hrs) | Velocity (fps) | Area (sq.ft.) | Hydraulic Radius(ft) | Normal Depth (ft) |
|-----------------|------------------------|----------------|---------------|----------------------|-------------------|
| 0.3 | 0.5 | 0.14 | 2.13 | 0.07 | 0.08 |



Not to Scale

LINER RESULTS

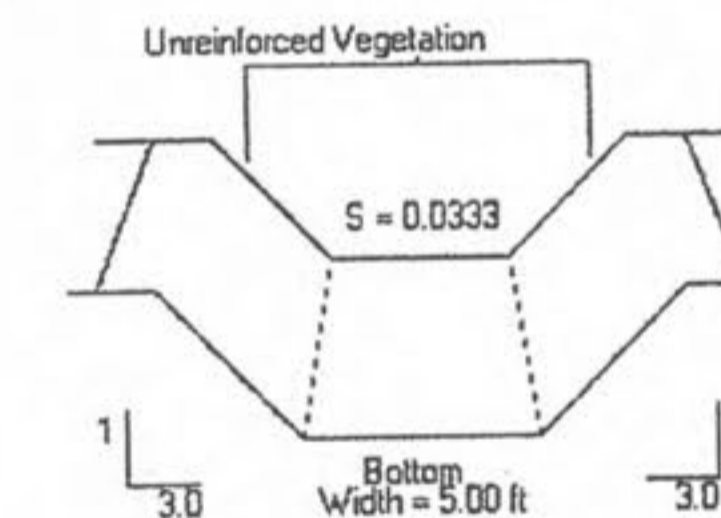
| Reach | Material Type | | Phase Class | Veg. Type Veg. Density | Soil Type | Manning's 'n' | Permissible Shear Stress (psf) | Calculated Shear Stress (psf) | Safety Factor | Remarks |
|----------|----------------|-------|-------------|------------------------|-----------|---------------|--------------------------------|-------------------------------|---------------|---------|
| | Staple Pattern | Class | | | | | | | | |
| Straight | Unreinforced | C | 75-95% | Clay | | 0.250 | 4.20 | 0.09 | 44.27 | STABLE |
| | | | | | | | | 0.000 | 759.14 | STABLE |

SECTION "D-D"

North American Green - Erosion Control Materials Design Software Ver.4.1 - Channel 3/5/2007 01:15 PM (COMPUTED BY: F-F)
 PROJECT NAME: Preston Woods Phase II PROJECT NUMBER:
 FROM STATION/REACH: TO STATION/REACH: DRAINAGE AREA: DESIGN FREQUENCY:

HYDRAULIC RESULTS

| Discharge (cfs) | Peak Flow Period (hrs) | Velocity (fps) | Area (sq.ft.) | Hydraulic Radius(ft) | Normal Depth (ft) |
|-----------------|------------------------|----------------|---------------|----------------------|-------------------|
| 0.9 | 0.5 | 0.60 | 1.49 | 0.23 | 0.26 |



Not to Scale

LINER RESULTS

| Reach | Material Type | | Phase Class | Veg. Type Veg. Density | Soil Type | Manning's 'n' | Permissible Shear Stress (psf) | Calculated Shear Stress (psf) | Safety Factor | Remarks |
|----------|----------------|-------|-------------|------------------------|-----------|---------------|--------------------------------|-------------------------------|---------------|---------|
| | Staple Pattern | Class | | | | | | | | |
| Straight | Unreinforced | D | 75-95% | Clay | | 0.166 | 3.33 | 0.54 | 6.20 | STABLE |
| | | | | | | | | 0.001 | 59.32 | STABLE |

SECTION "F-F"

REVISIONS

| DATE | BY | DESCRIPTION |
|---------|----|-------------------------------|
| 1/17/07 | A | DESIGN COMMENTS/CITY COMMENTS |
| 1/17/07 | A | CITY COMMENTS |

DEVELOPER/OWNER:
 THE JONES COMPANY HOMES, L.L.C.
 16640 CHESTERFIELD GROVE, SUITE 200
 CHESTERFIELD, MO 63005
 PHONE: (636) 537-7192

PROFESSIONAL ENGINEER
 MIKE E. VONDERHEIDE
 NUMBER E-12077
 1/29/07

III
PRESTON WOODS - PHASE III
 MASS GRADING PLANS
 + PARTIAL STORM SEWER
 ST. CHARLES, MO. 63366

SWALE CROSS SECTIONS

planning • engineering • surveying • landscape architecture
Cole and ASSOCIATES
 INCORPORATED
 10777 sunset office dr.
 saint louis, missouri 63127
 p: 314 984 9887 f: 314 984 0587

DESIGNED BY: JKW
 DRAWN BY: JKW
 CHECKED BY: JFH
 DATE: 8/13/07
 Job Number: 07-0178
 Sheet Number: G6.4

USER: jkwhom TUE 08:47:51am
 DRAWING: S:\a085\p082007\07-0178\007-0178.dwg MASS GRADING PLANS PHASE III\0_GPLAN_06.0 DETAILS.dwg