

# SHAMBLEY MEADOWS SUBDIVISION PH. IV SITE CONSTRUCTION DRAWINGS

HADLEY MILL RD.  
TOWN OF PITTSBORO  
CHATHAM COUNTY, NC

June 14, 2011



Wrenn Engineering  
Civil Engineering  
Land Planning  
Site Design

WRENN ENGINEERING CO.  
1910 SEDWICK RD.  
SUITE 200-C  
DURHAM, NC 27713  
(919) 806-5082  
EN.WRENN@FRONTIER.COM



-0992

**FOR CONSTRUCTION**

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

COVER SHEET

## INDEX OF DRAWINGS

- |    |  |
|----|--|
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## OWNER INFORMATION

Name: H&A Properties, Inc.  
Address: 455 East Providence Rd.  
Pittsboro, N.C. 27312

## ENGINEER INFORMATION

Name: Wrenn Engineering  
Address: 1910 Sedwick Rd. 200 C  
Durham, N.C. 17713  
Phone Number: 919.806-5082  
Email: ken.wrenn@frontier.com

## PARCEL &amp; PROJECT DATA:

PIN: 9711-38-9544.000.  
AKPAR #: 87394.  
Zone: Not Zoned.  
Project: 11 lot subdivision.  
Average lot size: 2.09 ± ac.  
Total project parcel area (includes Hadley Mill R/W Rd. area): 25.01± ac.  
Total project parcel area (not including Hadley Mill R/W Rd. area): 23.703± ac.  
Total project impervious area onsite: 1.633 ac. (6.89 %).  
Total project impervious area offsite: 0.017 ac.  
Total impervious area allowed on all lots: 1.267 ac.  
Impervious area per lot allowed on lots 1-3: 4,000 s.f.  
Impervious area per lot allowed on lots 4-11: 5,400 s.f.  
Total impervious paved area onsite inside new public r/w: 0.361 ac.  
Total impervious paved area offsite (within Hadley Mill Rd. R/W): 0.017 ac.  
Total disturbed area: 1.92 ac. (83,809 s.f.)

[illegible]

Senior Engineer:

K. WRENN

Drawn By:

K. WRENN

ISSUE NO.	DATE	DESCRIPTION
1	4/16/10	FIRST PLAT SUBMITTAL
2	12/14/10	1ST CONST. SUBMITTAL
3	3/15/11	2ND CONST. SUBMITTAL
4	4/29/11	3RD CONST. SUBMITTAL
5	6/14/11	NCDOT REVISION

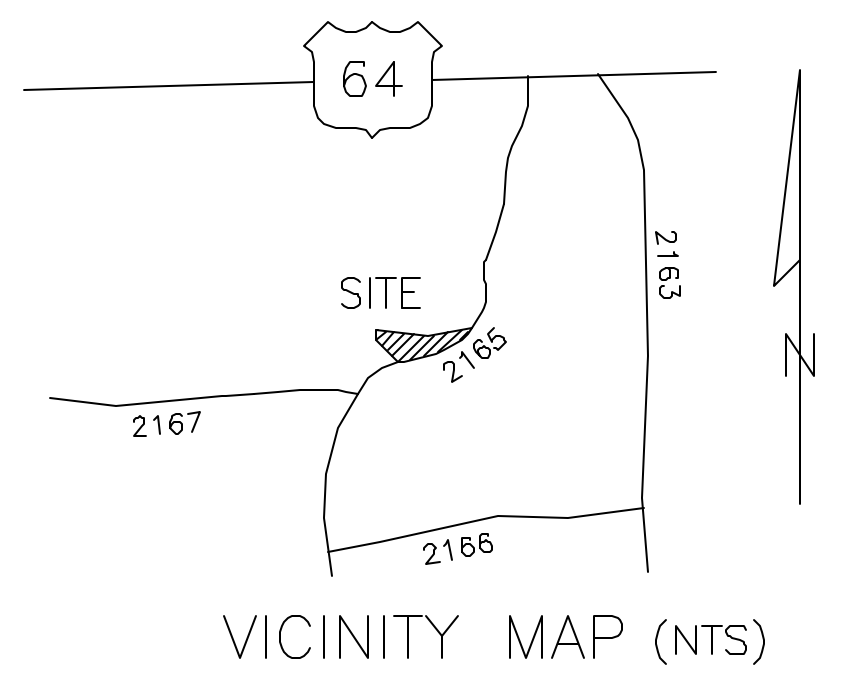

DATE DRAWN	DRAWING NAME
	C0-COVER

PROJECT #:	10100.00
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MEET #

CO





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F-0992

FOR CONSTRUCTION

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

EXISTING CONDITIONS

SHEET TITLE:

REVISION HISTORY

Senior Engineer:

K. WRENN

Drawn By:

K. WRENN

ISSUE

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1	4/16/10	FIRST PLAT SUBMITTAL
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DATE DRAWN

DRAWING NAME

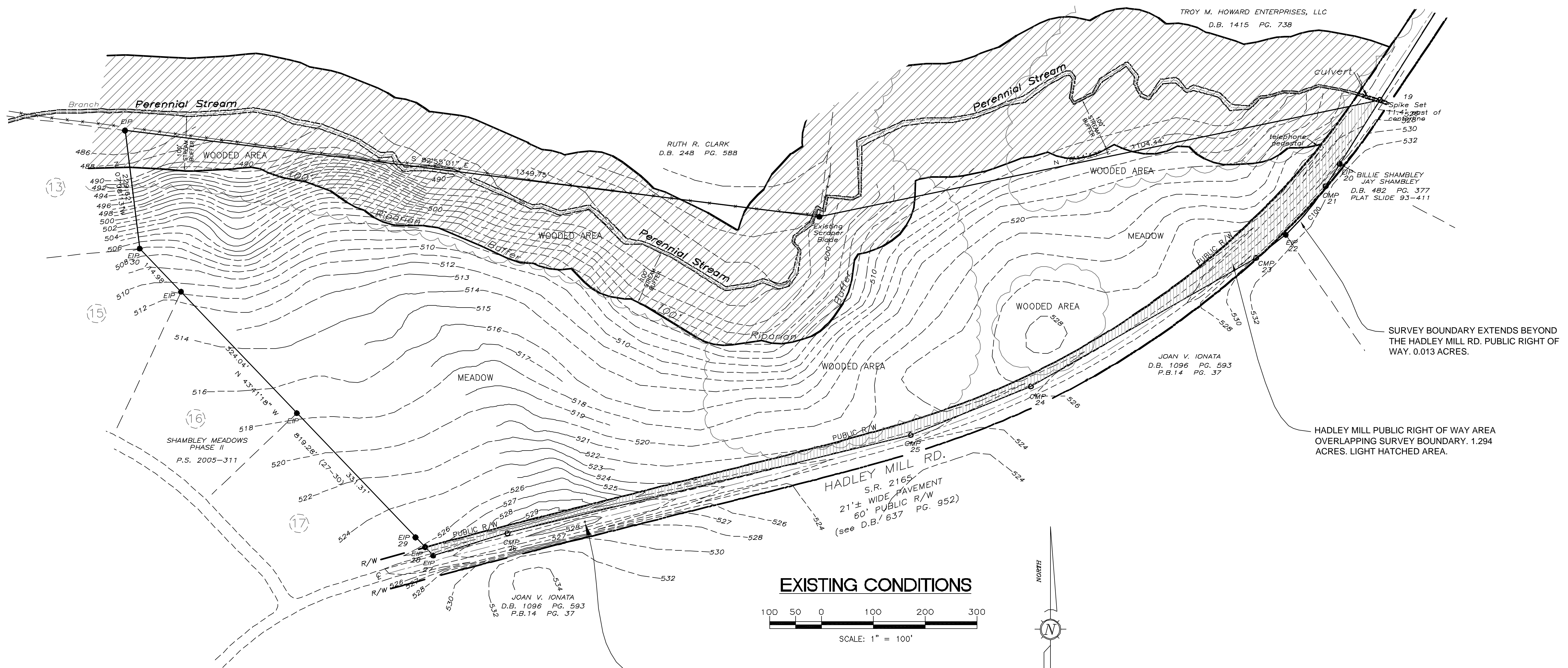
C1-EXISTING

PROJECT #:

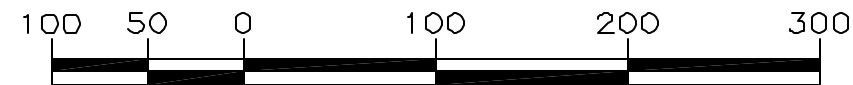
10100.00

SHEET #

C1



EXISTING CONDITIONS



TEMPORARY VERTICAL BENCHMARK:  
PK NAIL AT INTERSECTION OF PROPOSED ROAD AND HADLEY MILL RD.  
ELEV. 528.16' (ASSUMED ELEVATION).  
EXISTING CONDITIONS AND SURVEY INFORMATION OF PROPOSED  
ROAD AREA PROVIDED BY VAN R. FINCH, RLS DATED 2/3/10.  
CHATHAM COUNTY GIS INFORMATION USED FOR AREAS OUTSIDE  
OF PROPOSED ROAD AREA.

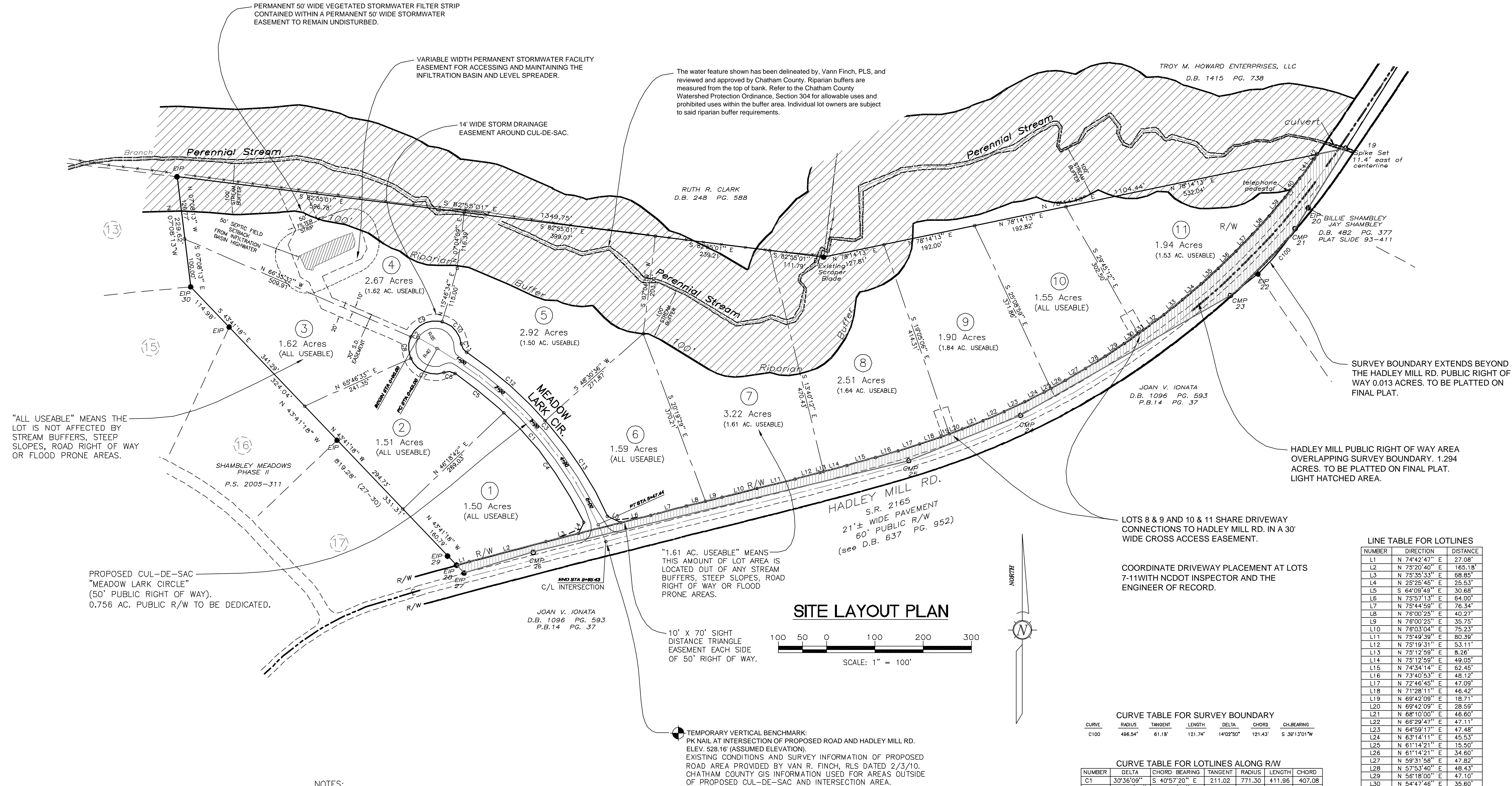
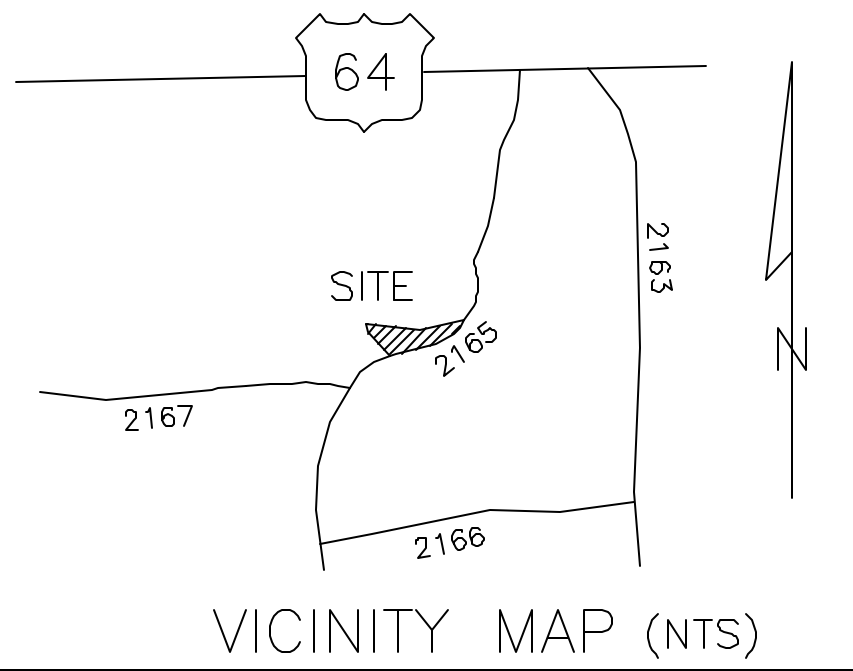
LINE TABLE FOR PUBLIC RIGHT OF WAY & BOUNDARY TIE

COURSE	BEARING	DISTANCE
19 - 20	S 32°11'48"W	145.16'
20 - 21	S 32°11'48"W	51.00'
22 - 23	S 52°16'49"W	73.55'
23 - 24	S 60°14'48"W	500.00'
24 - 25	S 67°59'48"W	250.00'
25 - 26	S 76°19'48"W	800.00'
26 - 27	S 73°18'22"W	149.88'
27 - 28	N 43°41'18"W	22.81'
28 - 29	N 43°41'18"W	26.14'

CURVE TABLE FOR PUBLIC RIGHT OF WAY

CURVE	RADIUS	TANGENT	LENGTH	DELTA	CHORD	CH.BEARING
C100	496.54'	61.18'	121.74'	14°02'50"	121.43'	S 39°13'01"W





LINE TABLE FOR LOTLINES

NUMBER	DIRECTION	DISTANCE
L1	N 74°42'47" E	27.08'
L2	N 75°20'40" E	165.18'
L3	N 73°35'33" E	58.85'
L4	N 25°25'45" E	25.53'
L5	S 64°09'49" E	30.68'
L6	N 75°57'13" E	64.00'
L7	N 75°44'59" E	76.34'
L8	N 76°00'25" E	40.27'
L9	N 76°00'25" E	35.75'
L10	N 78°03'04" E	75.23'
L11	N 75°49'39" E	80.39'
L12	N 75°19'31" E	53.11'
L13	N 75°12'59" E	8.26'
L14	N 75°12'59" E	49.05'
L15	N 74°34'14" E	62.45'
L16	N 73°40'33" E	48.12'
L17	N 72°46'45" E	47.09'
L18	N 71°28'11" E	46.42'
L19	N 69°42'09" E	18.71'
L20	N 69°42'09" E	28.59'
L21	N 68°10'00" E	46.60'
L22	N 68°29'47" E	47.11'
L23	N 64°59'17" E	47.48'
L24	N 63°14'11" E	45.53'
L25	N 61°14'21" E	15.50'
L26	N 61°14'21" E	34.60'
L27	N 59°31'58" E	47.82'
L28	N 57°53'40" E	48.43'
L29	N 56°18'00" E	47.10'
L30	N 54°17'46" E	35.60'
L31	N 54°47'46" E	13.07'
L32	N 53°04'10" E	53.24'
L33	N 51°24'33" E	49.85'
L34	N 49°38'06" E	50.42'
L35	N 47°50'00" E	47.98'
L36	N 45°55'45" E	49.88'
L37	N 44°21'31" E	49.93'
L38	N 42°25'05" E	50.91'
L39	N 40°03'34" E	50.89'
L40	N 38°20'51" E	49.59'
L41	N 36°11'44" E	49.22'
L42	N 34°24'02" E	12.22'

CURVE TABLE FOR SURVEY BOUNDARY

CURVE	RADIUS	TANGENT	LENGTH	DELTA	CHORD	CH-BEARING
C100	486.54'	61.18'	121.74'	14°02'50"	121.43'	S 39°13'01"W

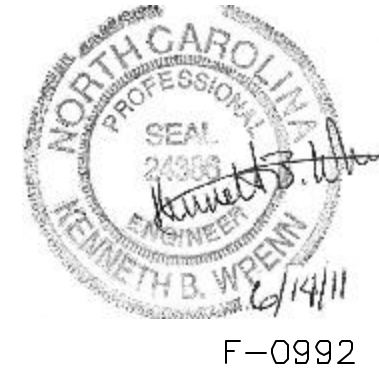
CURVE TABLE FOR LOTLINES ALONG R/W

NUMBER	DELTA	CHORD BEARING	TANGENT	RADIUS	LENGTH	CHORD
C1	30°36'09"	S 40°57'20" E	211.02	771.30	411.96	407.08
C2	282°33'57"	N 31°21'51" E	44.09	55.00	271.24	68.80
C3	31°35'41"	S 40°44'27" E	232.36	821.30	452.89	447.18
C4	20°58'44"	S 36°08'38" E	142.81	771.30	282.41	280.84
C5	09°37'25"	S 31°26'42" E	64.93	771.30	129.55	129.40
C6	33°39'43"	S 83°05'16" E	12.65	25.00	23.41	22.57
C7	85°41'40"	N 67°04'17" W	51.01	55.00	82.26	74.81
C8	47°37'55"	N 00°24'30" W	24.28	55.00	45.72	44.42
C9	102°39'33"	N 74°44'15" E	68.72	55.00	98.55	85.88
C10	48°34'48"	S 30°38'35" E	23.68	55.00	44.71	43.49
C11	49°11'06"	S 31°56'44" E	11.44	25.00	21.46	20.81
C12	15°02'53"	S 49°00'51" E	108.48	821.30	215.70	215.08
C13	16°32'48"	S 33°15'00" E	119.43	821.30	237.19	236.56



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FOR CONSTRUCTION

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

SHEET TITLE: SITE LAYOUT PLAN

REVISION HISTORY

Senior Engineer: K. WRENN

Drawn By: K. WRENN

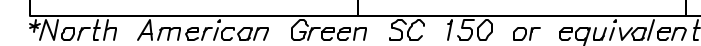
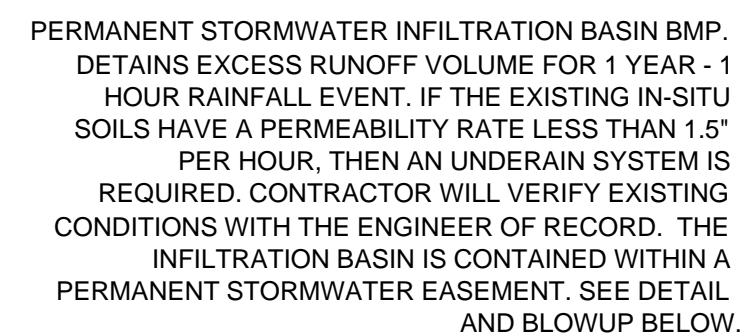
ISSUE NO.	DATE	DESCRIPTION
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2	12/14/10	1ST CONST. SUBMITTAL
3	3/15/11	2ND CONST. SUBMITTAL
4	4/29/11	3RD CONST. SUBMITTAL
5	6/14/11	NC DOT REVISION

DATE DRAWN: C2-SITEPLAN

PROJECT #: 10100.00

SHEET # C2





LOT #	DIA.	SLOPE
1	15	1% MIN
2	15	1% MIN
3	18	1% MIN
4-11	15	1% MIN

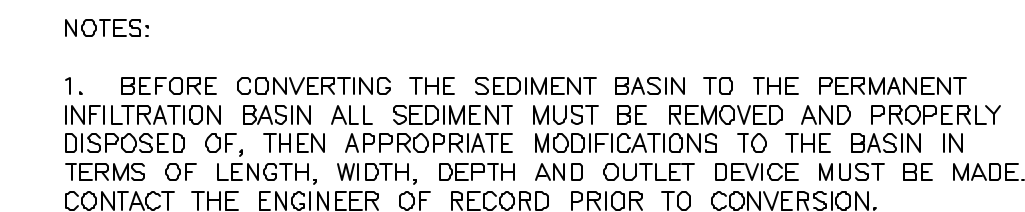
\*\*\*VERY IMPORTANT\*\*\*

LOTS 7-11 WILL CONNECT BY PRIVATE DRIVEWAY ACCESS TO HADLEY MILL ROAD - USE A MINIMUM DRIVEWAY PIPE SIZE OF FIFTEEN INCHES (15") CLASS III REINFORCED CONCRETE PIPE. COORDINATE DRIVEWAY PLACEMENT WITH NCDOT INSPECTOR AND THE ENGINEER OF RECORD

NOTES:

1. TOTAL PROJECT AREA- 25.01 ACRES.
- 2a. TOTAL IMPERVIOUS AREA OF ONSITE ROAD PAVEMENT- 0.361 AC.
- 2b. TOTAL IMPERVIOUS AREA OF OFFSITE ROAD PAVEMENT- 0.017 AC.
3. TOTAL IMPERVIOUS AREA OF INDIVIDUAL LOTS- 1.267 AC.
- 4a. TOTAL IMPERVIOUS ONSITE AREA- 1.628 AC. (6.51%)
- 4b. TOTAL IMPERVIOUS OFFSITE AREA- 0.017 AC.
5. THE IMPERVIOUS AREAS ASSOCIATED WITH ALL NEW ONSITE AND OFFSITE ROAD PAVEMENT AND LOTS 1, 2 & 3 TOTALING 0.654 AC. WILL BE DEDICATED TO A SERIES OF THREE PERMANENT GRASS CHANNELS, AN INFILTRATION BASIN, A LEVEL SPREADER AND A GRASS FILTER STRIP BEFORE ENTERING THE STREAM BUFFER.
6. THE IMPERVIOUS AREAS ASSOCIATED WITH LOTS 4-11 ARE HANDLED ON A LOT BY LOT BASIS AND MUST CONFORM TO APPENDIX "C" OF THE CHATHAM COUNTY STORMWATER ORDINANCE.
7. THE ASSUMED MAXIMUM IMPERVIOUS AREA FOR LOTS 1-3 IS 4,000 S.F. FOR LOT 4 THE ASSUMED MAXIMUM IMPERVIOUS AREA FOR LOTS 4-11 IS 5,400 S.F..
8. THE STORMWATER QUALITY CONTROL REQUIREMENTS MUST REDUCE THE 1-HR STORM RUNOFF PEAK FLOW RATE TO NO MORE THAN THE PRE DEVELOPMENT RATE.
9. THE STORMWATER QUALITY CONTROL REQUIREMENTS MUST REDUCE THE SUSPENDED SOLIDS BY 85% THAT ARE GENERATED IN THE DISTURBED AREAS.

10. ALL SITE SOILS ARE GEORGEVILLE SILT LOAM (Dsb). PUBLISHED INFILTRATION RATE RANGE (0.60-2.00 IN/HR) ASSUMED INFILTRATION RATE IS 1.50 IN/HR.
11. ONE FOOT CONTOUR INTERVALS PROVIDED IN THE AREA OF THE PROPOSED CUL-DE-SAC AND STORM WATER IMPROVEMENTS.
12. ALL STORMWATER CONVEYANCES AND FACILITIES MUST BE CONTAINED WITHIN A PERMANENT STORMWATER EASEMENT.
13. TYPICAL PERMANENT STORMWATER CONTROL MEASURES FOR LOTS 4-11 MUST CONFORM TO APPENDIX "C" OF THE CHATHAM COUNTY STORM WATER ORDINANCE. SELECT ONE OF THE FOLLOWING REQUIRED MEASURES:
  - i. All roof downspouts shall discharge onto the surface of the natural ground at-least 25 feet from the property boundary and in accordance with all applicable Building Codes ;
  - ii. Collect the first  $\frac{1}{2}$ " equivalent runoff volume from at-least 1/2 of the total roof area by connecting downspouts to operating rain barrels or cisterns;
  - iii. Driveways, walkways and patios shall drain into well-maintained landscaped beds using native vegetation and amended soils.

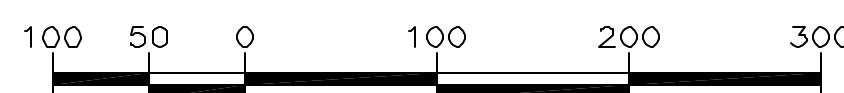
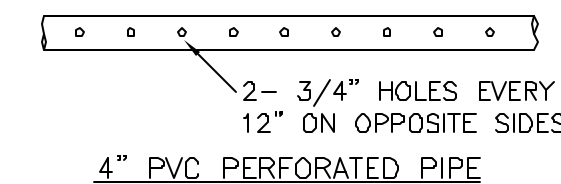


2. SHOULD IT BECOME NECESSARY TO INSTALL A SANDY LOAM SOIL, 4" PVC UNDERDRAIN AND WASHED STONE FILTER, THE SANDY LOAM SOIL AND THE STONE SHOULD BE UNIFORM. THE SANDY LOAM MUST HAVE 75%-85% SAND AND A BALANCE OF 15%-25% FINES AND ORGANICS.
3. THE ENGINEER OF RECORD WILL MAKE THE FINAL DETERMINATION ON WHETHER A SANDY LOAM/STONE AND UNDERDRAIN SYSTEM IS REQUIRED TO DRAIN THE STORMWATER FACILITY.
4. AT LEAST THREE IN HOLE CONDUCTIVITY TESTS SHALL BE PERFORMED. TWO TESTS WITHIN THE STORMWATER FACILITY AND ONE TEST A MINIMUM OF TEN FEET DOWNSTREAM FROM THE TOP OF THE WEIR.

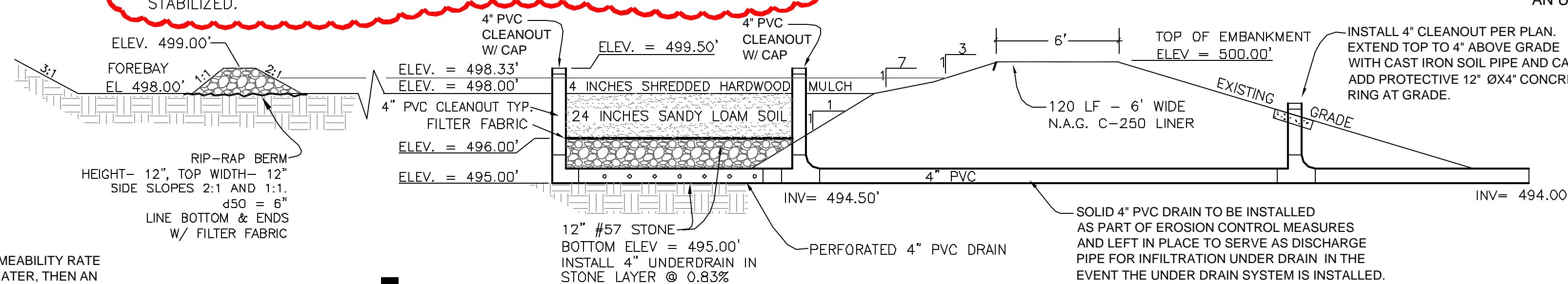
THE PVC PERFORATED PIPE  
WILL BE WRAPPED IN A PVIOUS  
GEOTEXTILE LINER. MIRAFL 140NL  
OR ENGINEER APPROVED EQUAL.

**\*\*\*VERY IMPORTANT\*\*\***  
IF IN-SITU SOIL HAS A PERMEABILITY RATE  
OF 1.5" PER HOUR OR GREATER, THEN AN  
UNDERDRAIN SYSTEM IS NOT REQUIRED.  
INSTALL CLEANOUT CLOSEST TO EMBANKMENT.

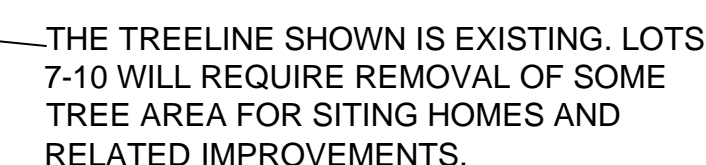
IF NO UNDERDRAIN SYSTEM IS REQUIRED,  
THEN BOTTOM OF POND IS AT ELEVATION 498.00.



TEMPORARY VERTICAL BENCHMARK:  
PK NAIL AT INTERSECTION OF PROPOSED ROAD AND HADLEY MILL RD.  
ELEV. 528.16' (ASSUMED ELEVATION).  
EXISTING CONDITIONS AND SURVEY INFORMATION OF PROPOSED  
ROAD AREA PROVIDED BY VAN R. FINCH, RLS DATED 2/3/10.  
CHATHAM COUNTY GIS INFORMATION USED FOR AREAS OUTSIDE  
OF PROPOSED ROAD AREA.



INFILTRATION BASIN & FOREBAY SECTION  
NO SCALE



10 LF - 4' WIDE SC150  
NORTH AMERICAN GREEN  
LINER OR EQUAL

67 LF - 4" PVC PIPE  
SLOPE = 0.75% MIN  
INSTALL CLEANOUT AT 45° BEND

120 LF WEIR  
ELEV.= 500.00'  
INSTALL 6"W  
N.A.G. C-350  
60 LF - 4" PVC - PERFORATED  
WRAP PERFORATED PIPE  
IN A SOCK

**\*\*\*VERY IMPORTANT\*\*\***  
**\*\*\*IF IN-SITU SOIL HAS A PERMEABILITY RATE**  
**OF 1.5" PER HOUR OR GREATER, THEN**  
**AN UNDERDRAIN SYSTEM IS NOT REQUIRED.**

37 LF RIP-RAP CHANNEL @ 20% -  
TOP WIDTH- 7.33', BOT WIDTH- 4'  
SIDE SLOPES- 2:1, DEPTH- 10"  
d50 STONE- 9", STONE DEPTH- 18"  
LINE RIP-RAP W/ FILTER FABRIC.

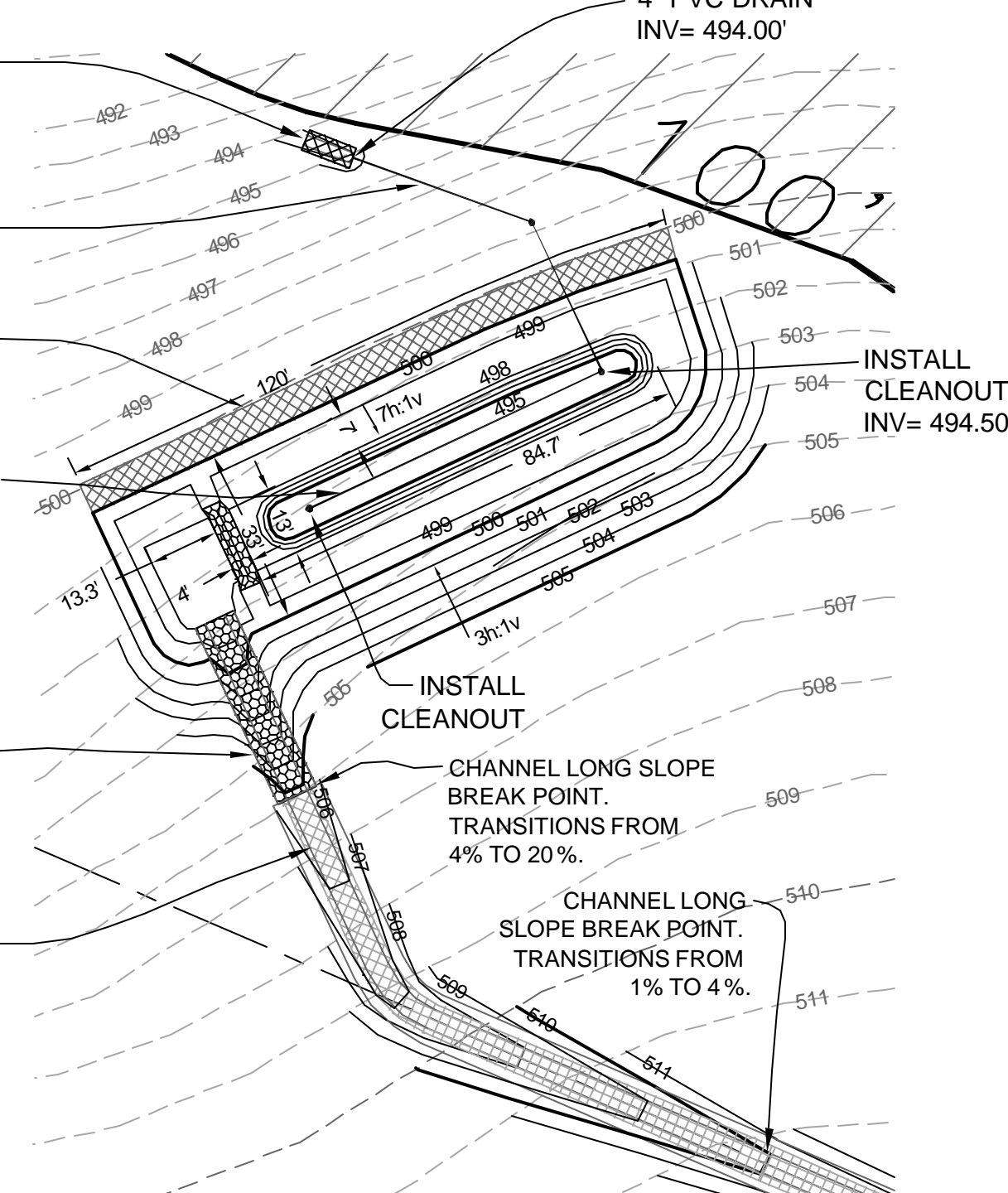
230 LF - SC150 TO 8" DEPTH MIN  
NORTH AMERICAN GREEN  
LINER OR EQUAL  
(SEE EROSION CONTROL PLAN)



The top of the embankment serves as a weir at elevation 500.00

DESIGN VOLUMES FOR INFILTRATION BASIN			
ELEV.	AREA (S.F.)	INCR. VOL. (C.F.)	ACCUM VOL. (C.F.)
498.0	1,298	0	0
499.0	2,945	2,122	2,122
500.0	3,852	3,399	5,521

4" PVC DRAIN



## INFILTRATION BASIN



**WRENN ENGINEERING CO.**  
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**FOR REVIEW ONLY  
NOT FOR CONSTRUCTION**

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

**SHEET TITLE:**  
**STORM DRAINAGE PLAN**

[illegible]

**Senior Engineer:**

K. WRENN

Drawn By:

ISSUE NO.	DATE	DESCRIPTION
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4	4/7/11	3RD CONST. SUBMITTAL

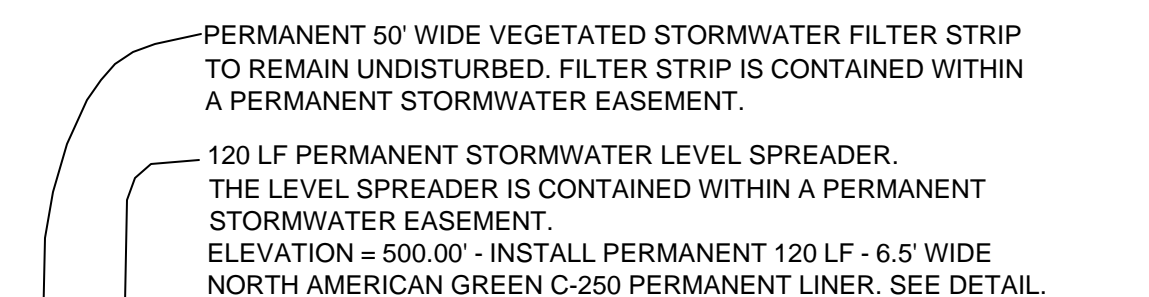
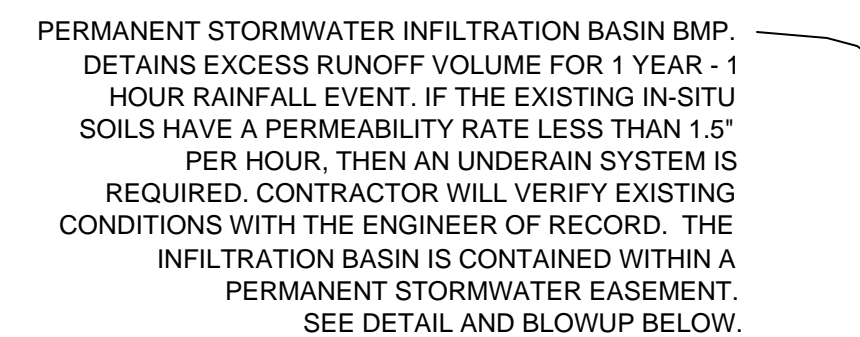
DATE DRAWN	DRAWING NAME
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PROJECT #:


**SHEET**

**C3**





ALL PIPE IS NCDOT APPROVED CLASS III REINFORCED CONCRETE PIPE UNLESS OTHERWISE SPECIFIED ON THE PLANS.

\*\*\*VERY IMPORTANT\*\*\*

LOTS 7-11 WILL CONNECT BY PRIVATE DRIVEWAY ACCESS TO HADLEY MILL ROAD - USE A MINIMUM DRIVEWAY PIPE SIZE OF FIFTEEN INCHES (18") CLASS III REINFORCED CONCRETE PIPE. COORDINATE DRIVEWAY PLACEMENT WITH NCDOT INSPECTOR AND THE ENGINEER OF RECORD

NOTES:

1. TOTAL PROJECT AREA- 25.01 ACRES.
- 2a. TOTAL IMPERVIOUS AREA OF ONSITE ROAD PAVEMENT- 0.361 AC.
- 2b. TOTAL IMPERVIOUS AREA OF OFFSITE ROAD PAVEMENT- 0.017 AC.
3. TOTAL IMPERVIOUS AREA OF INDIVIDUAL LOTS- 1.267 AC.
- 4a. TOTAL IMPERVIOUS ONSITE AREA- 1.628 AC. (6.51%)
- 4b. TOTAL IMPERVIOUS OFFSITE AREA- 0.017 AC.
5. THE IMPERVIOUS AREAS ASSOCIATED WITH ALL NEW ONSITE AND OFFSITE ROAD PAVEMENT AND LOTS 1, 2 & 3 TOTALING 0.654 AC. WILL BE OFFSET BY A SERIES OF THREE PERMANENT GRASS CHANNELS, AN INFILTRATION BASIN, A LEVEL SPREADER AND A GRASS FILTER STRIP BEFORE ENTERING THE STREAM BUFFER.
6. THE IMPERVIOUS AREAS ASSOCIATED WITH LOTS 4-11 ARE HANDLED ON A LOT BY LOT BASIS AND MUST CONFORM TO APPENDIX "C" OF THE CHATHAM COUNTY STORMWATER ORDINANCE.
7. THE ASSUMED MAXIMUM IMPERVIOUS AREA FOR LOTS 1-3 IS 4,000 S.F. PER LOT. THE ASSUMED MAXIMUM IMPERVIOUS AREA FOR LOTS 4-11 IS 5,400 S.F.
8. THE STORMWATER QUANTITY CONTROL REQUIREMENTS MUST REDUCE THE 1YR - 1HR STORM RUNOFF PEAK FLOW RATE TO NO MORE THAN THE PRE DEVELOPMENT RATE.
9. THE STORMWATER QUALITY CONTROL REQUIREMENTS MUST REDUCE THE SUSPENDED SOLIDS BY 85% THAT ARE GENERATED IN THE DISTURBED AREAS.

10. ALL SITE SOILS ARE GEORGEVILLE SILT LOAM (Gsb).
11. PUBLISHED INFILTRATION RATE RANGE (0.60-2.00 IN/HR) ASSUMED INFILTRATION RATE IS 1.50 IN/HR.
12. ONE FOOT CONTOUR INTERVALS PROVIDED IN THE AREA OF THE PROPOSED CUL-DE-SAC AND STORM WATER IMPROVEMENTS.
13. ALL STORMWATER CONVEYANCES AND FACILITIES MUST BE CONTAINED WITHIN A PERMANENT STORMWATER EASEMENT.
14. TYPICAL PERMANENT STORMWATER CONTROL MEASURES FOR LOTS 4-11 MUST CONFORM TO APPENDIX "C" OF THE CHATHAM COUNTY STORM WATER ORDINANCE. SELECT ONE OF THE FOLLOWING REQUIRED MEASURES:
  - i. All roof downspouts shall discharge onto the surface of the natural ground at least 25 feet from the property boundary and in accordance with all applicable Building Codes ;
  - ii. Collect the first ½" equivalent runoff volume from at-least 1/2 of the total roof area by connecting downspouts to operating rain barrels or cisterns;
  - iii. Driveways, walkways and patios shall drain into well-maintained landscaped beds using native vegetation and amended soils.
- 14a. TOTAL DISTURBED AREA- 1.90 ACRES.
- 14b. PHASE ONE DISTURBED AREA- 1.40 ACRES.
- 14c. PHASE TWO DISTURBED AREA- 0.50 ACRES.



1. BEFORE CONVERTING THE SEDIMENT BASIN TO THE PERMANENT INFILTRATION BASIN ALL SEDIMENT MUST BE REMOVED AND PROPERLY DISPOSED OF, THEN APPROPRIATE MODIFICATIONS TO THE BASIN IN TERMS OF LENGTH, WIDTH, DEPTH AND OUTLET DEVICE MUST BE MADE. CONTACT THE ENGINEER OF RECORD PRIOR TO CONVERSION.
2. SHOULD IT BECOME NECESSARY TO INSTALL A SANDY LOAM SOIL, 4" PVC UNDERDRAIN AND WASHED STONE FILTER, THE SANDY LOAM SOIL AND THE STONE SHOULD BE UNIFORM. THE SANDY LOAM MUST HAVE 75%-85% SAND AND A BALANCE OF 15%-25% FINES AND ORGANICS.
3. THE ENGINEER OF RECORD WILL MAKE THE FINAL DETERMINATION ON WHETHER A SANDY LOAM/STONE AND UNDERDRAIN SYSTEM IS REQUIRED TO DRAIN THE STORMWATER FACILITY.
4. AT LEAST THREE IN HOLE CONDUCTIVITY TESTS SHALL BE PERFORMED. TWO TESTS WITHIN THE STORMWATER FACILITY AND ONE TEST A MINIMUM OF TEN FEET DOWNSTREAM FROM THE TOP OF THE WEIR.

THE PVC PERFORATED PIPE  
WILL BE WRAPPED IN A PERVIOUS  
GEOTEXTILE LINER. MIRAFL 140NL  
OR ENGINEER APPROVED EQUAL.

2- 3/4" HOLES EVERY  
12" ON OPPOSITE SIDES

4" PVC PERFORATED PIPE

\*\*\*NOTE CONCERNING CONSTRUCTION OF PERMANENT INFILTRATION BASIN\*\*\*  
DO NOT CONVERT THE TEMPORARY SEDIMENT BASIN OVER TO THE PERMANENT  
INFILTRATION BASIN UNTIL ALL AREA CONTRIBUTING RUNOFF TO THE BASIN IS  
STABILIZED.

TEMPORARY VERTICAL BENCHMARK:  
PK NAIL AT INTERSECTION OF PROPOSED ROAD AND HADLEY MILL RD.  
ELEV. 528.16' (ASSUMED ELEVATION).  
EXISTING CONDITIONS AND SURVEY INFORMATION OF PROPOSED  
ROAD AREA PROVIDED BY VAN R. FINCH, RLS DATED 2/3/10.  
CHATHAM COUNTY GIS INFORMATION USED FOR AREAS OUTSIDE  
OF PROPOSED ROAD AREA.

**\*\*\*VERY IMPORTANT\*\*\***  
**\*\*\*IF IN-SITU SOIL HAS A PERMEABILITY RATE**  
**OF 1.5" PER HOUR OR GREATER, THEN**  
**AN UNDERDRAIN SYSTEM IS NOT REQUIRED**

37 LF RIP-RAP CHANNEL @ 20% -  
TOP WIDTH- 7.33', BOT WIDTH- 4'  
SIDE SLOPES- 2:1, DEPTH- 10"  
#50 STONE- 9", STONE DEPTH- 18"  
LINE RIP-RAP W/ FILTER FABRIC.  
HAND LAY RIP-RAP STONE.

230 LF - SC150 TO 8" DEPTH MIN.  
NORTH AMERICAN GREEN  
LINER OR EQUAL  
(SEE EROSION CONTROL PLAN)

VOLUME REQUIRED IN INFILTRATION BASIN =  
Q1 (1HR)post - Q1 (1HR)pre = **4,204 cubic feet.**

The top of the embankment serves as a weir at elevation 500.00

DESIGN VOLUMES FOR INFILTRATION BASIN

ELEV.	AREA (S.F.)	INCR. VOL. (C.F.)	ACCUM VOL (C.F.)
498.0	1,298	0	0
499.0	2,945	2,122	2,122
500.0	3,852	3,399	5,521

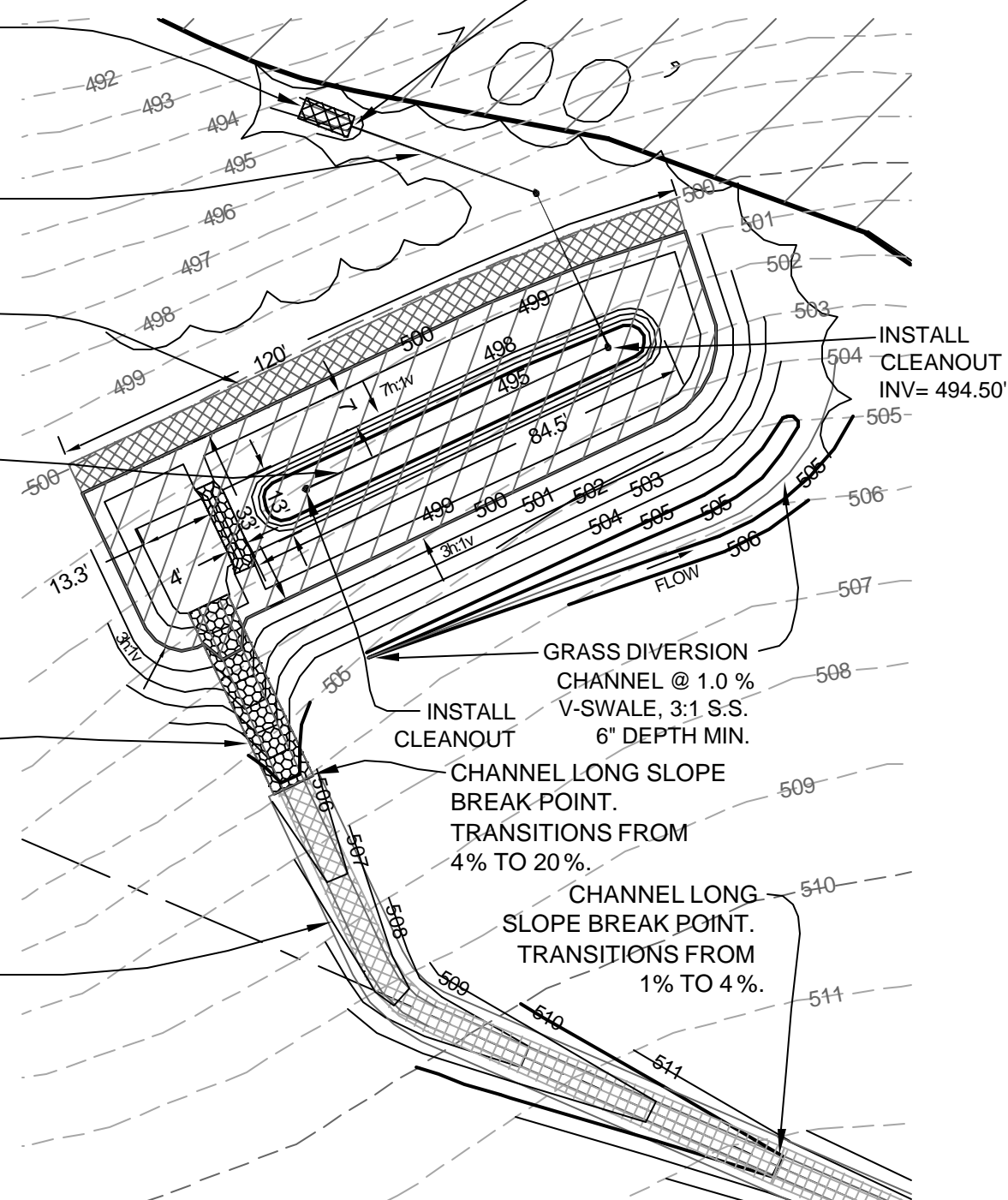
10 LF - 4' WIDE SC150  
NORTH AMERICAN GREEN  
LINER OR EQUAL

67 LF - 4" PVC PIPE  
SLOPE = 0.75% MIN  
INSTALL CLEANOUT AT 45° BEND

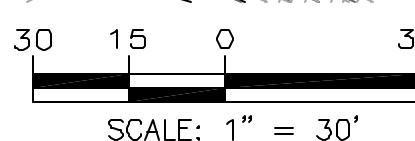
ELEV.= 500.00'  
INSTALL 6"W  
N.A.G. C-350  
60 LF - 4" PVC - PERFORATED  
WRAP PERFORATED PIPE  
IN A SOCK

\*\*\*VERY IMPORTANT\*\*\*

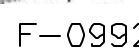
\*\*\*IF IN-SITU SOIL HAS A PERMEABILITY RATE  
OF 1.5" PER HOUR OR GREATER, THEN  
AN UNDERDRAIN SYSTEM IS NOT REQUIRED



## INFILTRATION BASIN



WRENN ENGINEERING CO.  
1910 SEDWICK RD.  
SUITE 200-C  
DURHAM, NC 27713  
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**FOR CONSTRUCTION**

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

SHEET TITLE:  
STORM DRAINAGE PLAN

[illegible]

Senior Engineer:

K. WRENN

Drawn By:

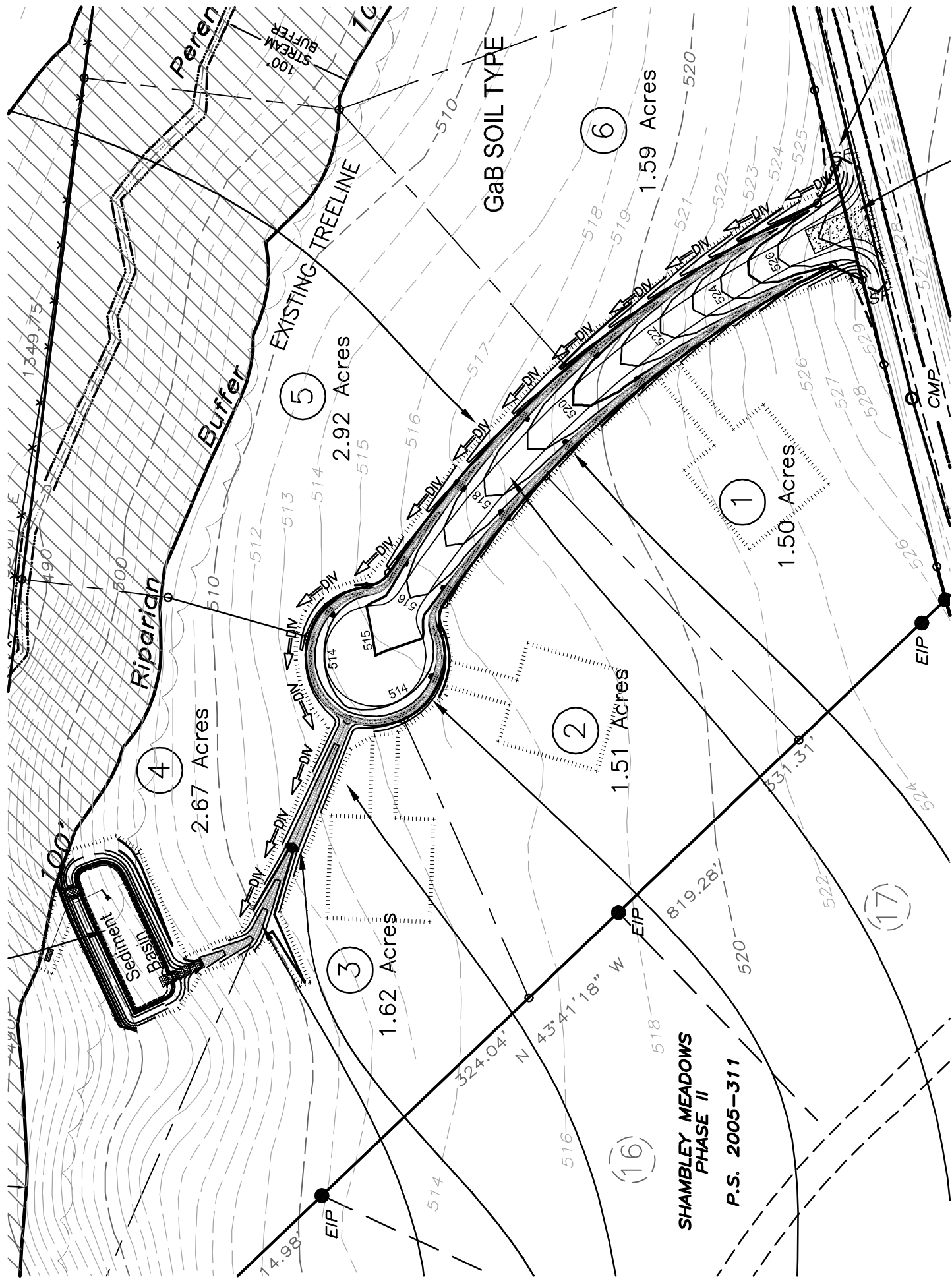
ISSUE NO.	DATE	DESCRIPTION
1	4/16/10	FIRST PLAT SUBMITTAL
2	12/14/10	1ST CONST. SUBMITTAL
3	3/15/11	2ND CONST. SUBMITTAL
4	4/29/11	3RD CONST. SUBMITTAL
5	6/14/11	NCDOT REVISION

DATE DRAWN	DRAWING NAME
	C3-STORM
PROJECT #:	10100.00

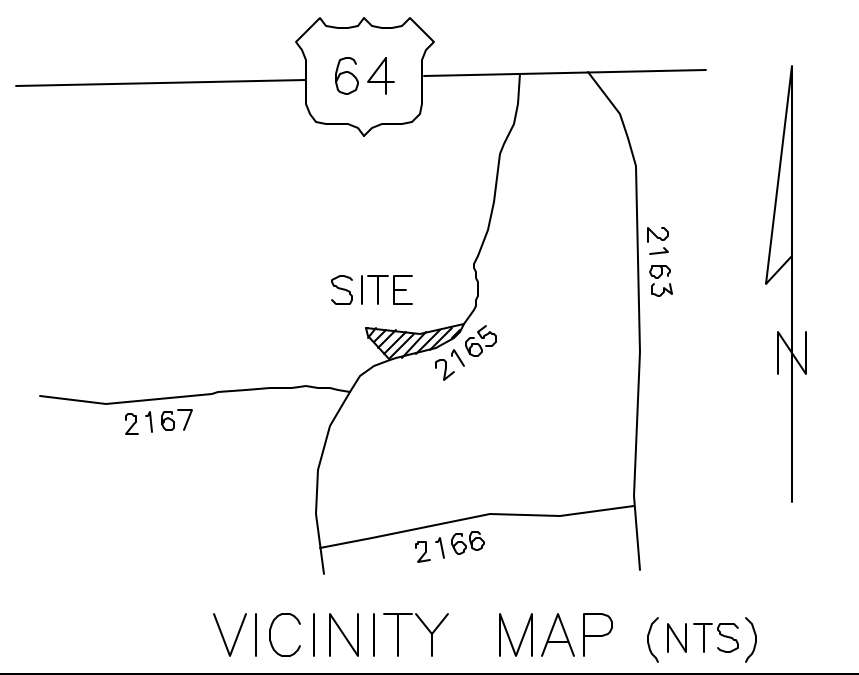
SHEET #

C3

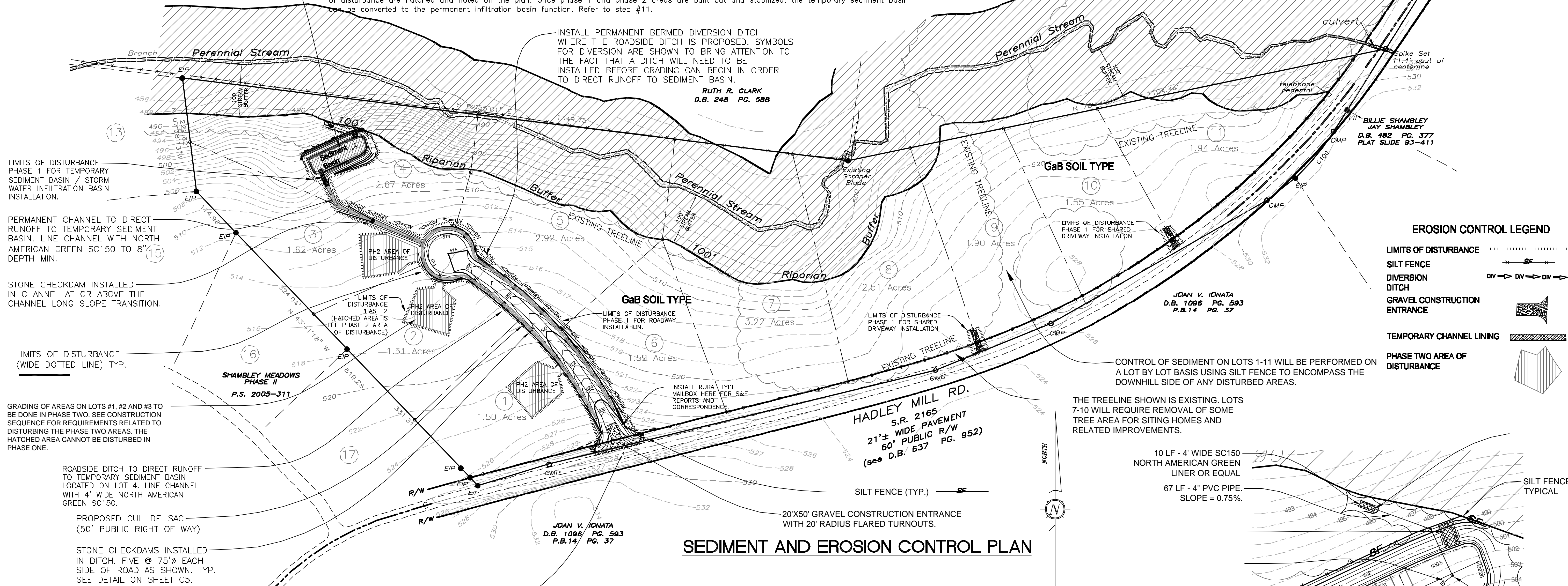








TEMPORARY SKIMMER SEDIMENT BASIN  
TOTAL DRAINAGE AREA- 4.433 AC.  
TOTAL DISTURBED AREA- 1.39 AC  
Q25YR = 10.2 CFS  
MIN. REQUIRED SURFACE AREA = 0.01\*10.2= 0.102 AC. = 4,443 S.F.  
MIN. REQUIRED VOLUME = 1.31 \* 3600 = 4,716 C.F.  
SEE BLOWUP AND DETAIL THIS SHEET FOR ACTUAL SIZE,  
DIMENSIONS, ETC.  
FUTURE INFILTRATION BASIN AT THIS SAME LOCATION.



TEMPORARY VERTICAL BENCHMARK:  
PK NAIL AT INTERSECTION OF PROPOSED ROAD AND HADLEY MILL RD.  
ELEV. 528.16' (ASSUMED ELEVATION).  
EXISTING CONDITIONS AND SURVEY INFORMATION OF  
PROPOSED ROAD AREA PROVIDED BY VAN R. FINCH, RLS  
DATED 2/3/10.  
CHATHAM COUNTY GIS INFORMATION USED FOR AREAS  
OUTSIDE OF PROPOSED ROAD AREA.

#### NOTES:

1. TOTAL PROJECT AREA- 25.01 ACRES.
- 2a. TOTAL DISTURBED AREA- 1.92 ACRES.  
2b. PHASE ONE DISTURBED AREA- 1.40 ACRES.  
2c. PHASE TWO DISTURBED AREA- 0.52 ACRES.
3. ALL SEDIMENT AND EROSION CONTROL MEASURES TO  
CONFORM TO THE LATEST NCDENR SEDIMENT AND EROSION  
CONTROL DESIGN MANUAL OR THE CHATHAM COUNTY  
EROSION CONTROL MANUAL - WHICHEVER IS GREATER.
4. THE HOMEBUILDERS WILL BE RESPONSIBLE FOR INSTALLING  
EROSION CONTROL DEVICES ON LOTS 4-11 AS THEY ARE  
DEVELOPED AND AS REQUIRED TO PREVENT SEDIMENT FROM  
LEAVING EACH LOT.

#### SEEDBED PREPARATION

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE  
SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE  
REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND  
MIX WITH SOIL.
5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM  
SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING  
EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS  
WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD OVER  
80% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND  
SEEDING RATES.
9. CONSULT S&EC ENVIRONMENTAL ENGINEER ON MAINTENANCE TREATMENT AND  
FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

MIXTURE  
Agricultural Limestone 2 tons/acre (2 tons/acre for clay soil)  
10-10-10 Fertilizer 1000 lbs/acre  
Super Phosphate 500 lbs/acre- 20% analysis  
Mulch 2 tons/acre- small grain straw  
Anchor Asphalt Emulsion at 300 gals/acre

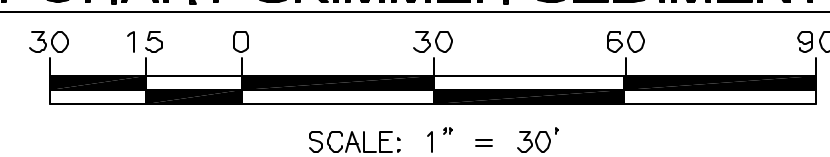
#### Seeding Schedule for Slopes 3:1 or Less

DATE	TYPE	PLANTING RATE
Aug 15 - Nov 1	Tall Fescue	300 lbs/acre
Nov 1 - Mar 1	Tall Fescue & Abruzzi Rye	300 lbs/acre
Mar 1 - Apr 15	Tall Fescue	300 lbs/acre
Apr 15 - Jun 30	Hulled Common Burmuda Grass	25 lbs/acre
Jun 30 - Aug 15	Tall Fescue AND EITHER Browntop Millet OR Sorghum-Sudan Hybrids***	125 lbs/acr 35 lbs/acre 30 lbs/acre
Seeding Schedule for Shoulders, Side Ditches and Slopes 3:1 to 2:1		
DATE	TYPE	PLANTING RATE
Mar 1 - Jun 1	Secioea Lespedeza (scarified) and use the following combinations: Add Tall Fescue	50 lbs/acre 120 lbs/acre
Mar 1 - Apr 15 OR Mar 1 - Jun 30 OR Mar 1 - Jun 30	Add Weeping Love grass Add Hulled Common Bermudagrass	10 lbs/acre 25 lbs/acre
Jun 1 - Sept 1	Tall Fescue AND EITHER Browntop Millet OR Sorghum-Sudan Hybrids***	125 lbs/acre 35 lbs/acre 30 lbs/acre
Sept 1 - Mar 1	Secioea Lespedeza (unhulled & unscarified) AND Tall Fescue	70 lbs/acre 120 lbs/acre
Nov 1 - Mar 1	AND Abruzzi Rye	25 lbs/acre

37 LF - RIPRAP  
LINED CHANNEL  
SEE SHEET C3 FOR  
PERMANENT GEOMETRY.

230 LF - 6" WIDE SC150  
NORTH AMERICAN GREEN  
LINER OR EQUAL  
SEE SHEET C3 FOR  
PERMANENT GEOMETRY.

#### TEMPORARY SKIMMER SEDIMENT TRAP



Wrenn Engineering  
Civil Engineering  
Land Planning  
Site Design

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F-0992

#### FOR CONSTRUCTION

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

SHEET TITLE:  
SEDIMENT AND EROSION CONTROL PLAN

REVISION HISTORY

NO.	DATE	DESCRIPTION
1	4/16/10	FIRST PLAT SUBMITTAL
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5	6/14/11	NC DOT REVISION

Senior Engineer:

K. WRENN

Drawn By:

K. WRENN

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5	6/14/11	NC DOT REVISION

DATE DRAWN	DRAWING NAME
12/14/10	C4-ECP
PROJECT #:	10100.00

SHEET #

C4





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Land Planning  
Site Design

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F-0992  
**FOR CONSTRUCTION**

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

SHEET TITLE:  
SEDIMENT AND EROSION CONTROL PLAN DETAILS

REVISION HISTORY

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5	6/14/11	NC DOT REVISION

Senior Engineer:  
K. WRENN

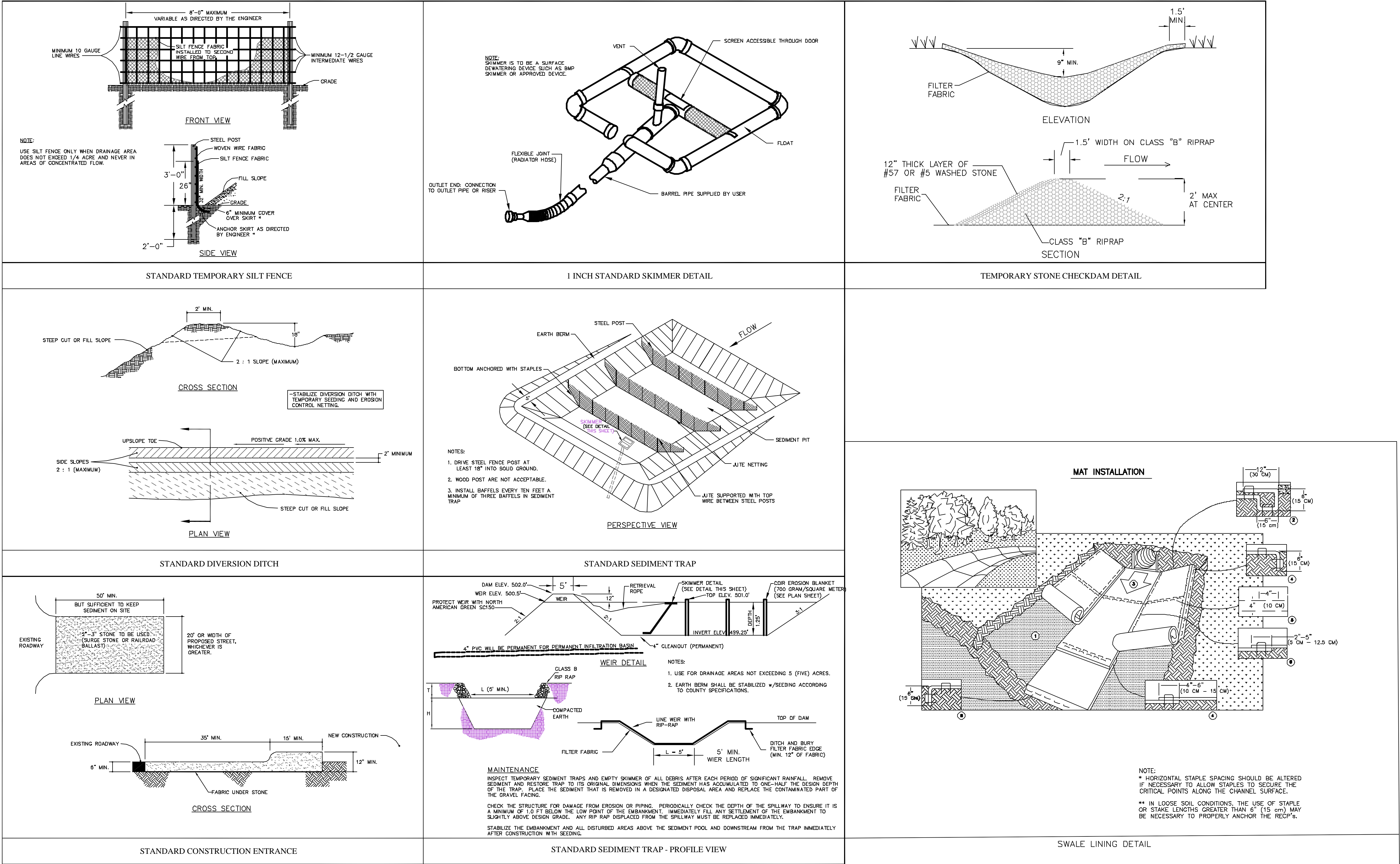
Drawn By:  
K. WRENN

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5	6/14/11	NC DOT REVISION

DATE DRAWN	DRAWING NAME
	C5-ECP-DETAILS

PROJECT #: 10100.00

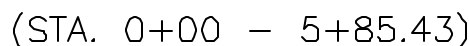
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SCALE 1" = 6'







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Land Planning  
Site Design

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F-0992

FOR CONSTRUCTION

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

SHEET TITLE:  
MEADOW LARK CIRCLE CUL-DE-SAC ROAD  
CROSS SECTIONS STATIONS 0+00 - 3+50

REVISION HISTORY

Senior Engineer:  
K. WRENN  
Drawn By:  
K. WRENN

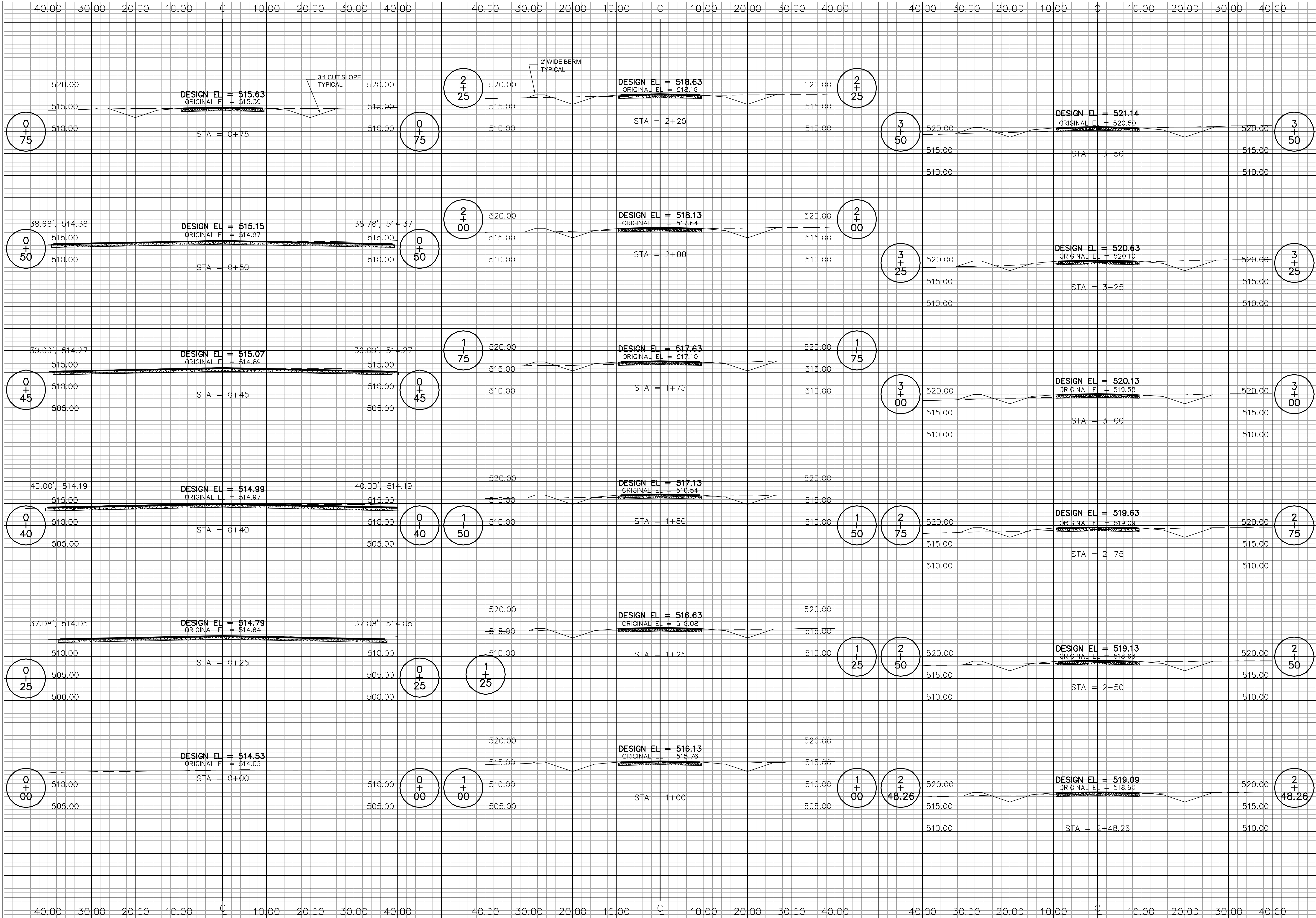
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5	6/14/11	NC DOT REVISION

DATE DRAWN  
12-14-10

DRAWING NAME  
C7-XSEC1

PROJECT #:  
10100.00

SHEET #  
C7



**X SECTIONS- MEADOW LARK CIRCLE CUL-DE-SAC**  
STATIONS 0+00 - 3+50





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F-0992

**FOR CONSTRUCTION**

SHAMBLEY MEADOWS SUBDIVISION PHASE IV

SHEET TITLE:  
MEADOW LARK CIRCLE CUL-DE-SAC ROAD  
CROSS SECTIONS STATIONS 3+75 - 5+85.43

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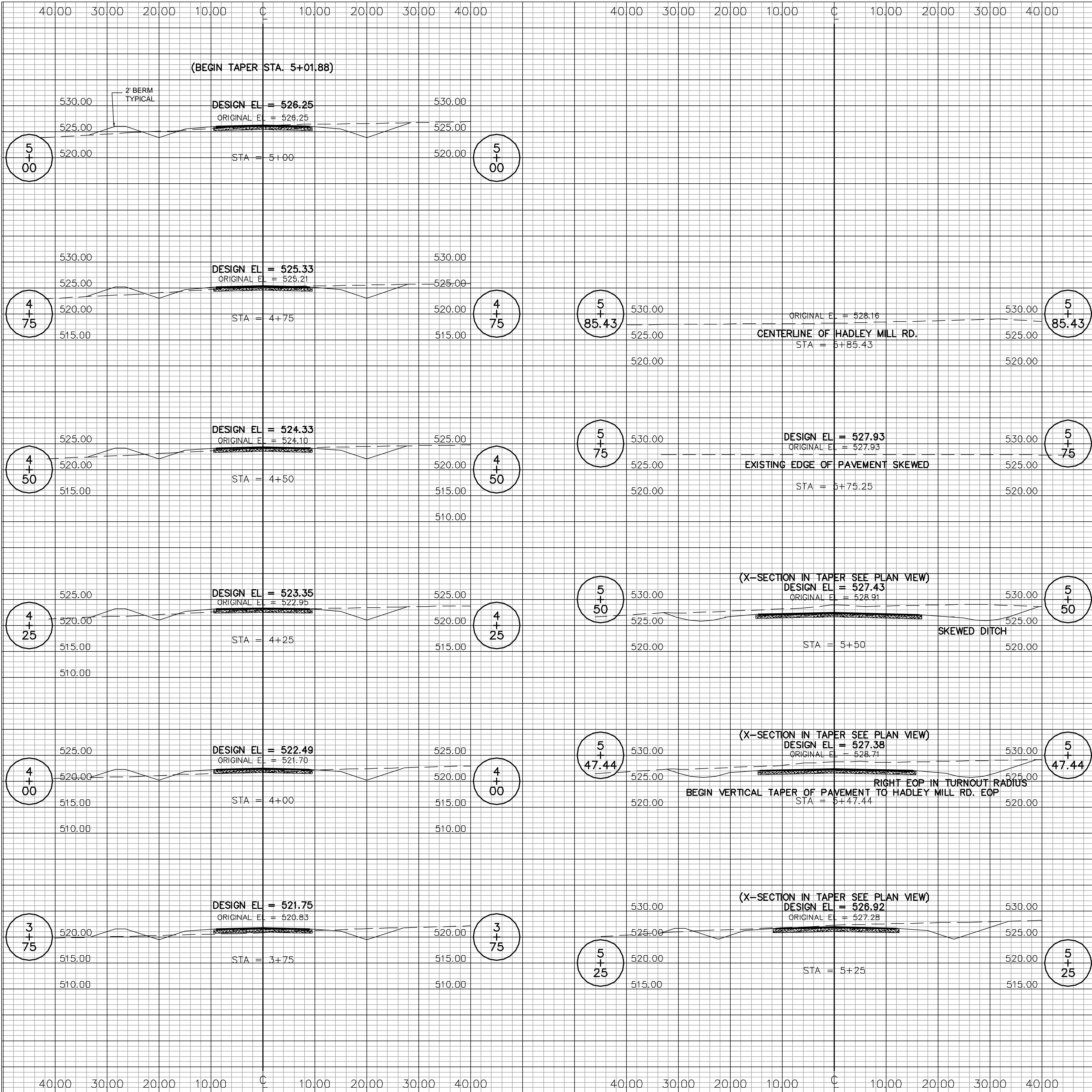
Senior Engineer:  
K. WRENN

Drawn By:  
K. WRENN

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5	6/14/11	NCDOT REVISION

DATE DRAWN	DRAWING NAME
12-14-10	C8-XSEC2
PROJECT #:	10100.00

SHEET # C8



**X SECTIONS- MEADOW LARK CIRCLE CUL-DE-SAC**  
STATIONS 3+50 - 5+85.43