PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

CONSTRUCTION DRAWINGS FOR SEDIMENT AND EROSION CONTROL

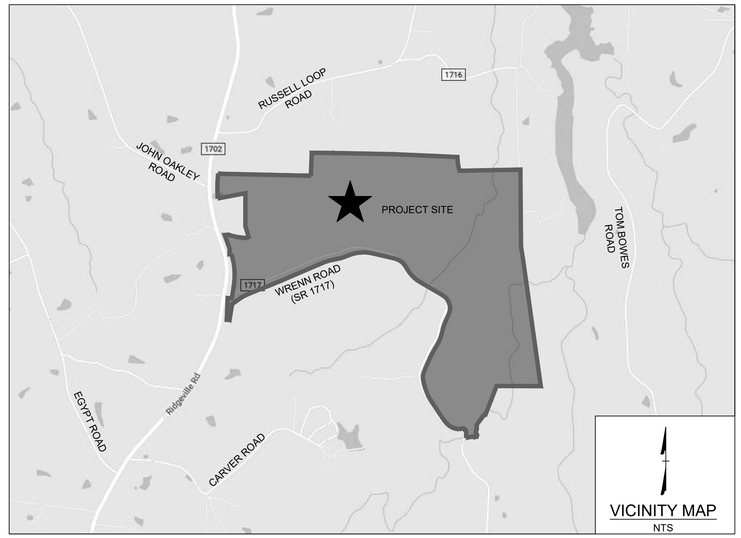
PROSPECT HILL, CASWELL COUNTY, NORTH CAROLINA
PARCEL ID: 0133 002, 0133 075, 0133 005, 0133 045, 0148 002

SITE DATA TABLE

PROJECT NAME:	PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
TOWNSHIP:	HIGHTOWERS
ZONING:	NONE
CURRENT USE:	VACANT/AGRICULTURE
PROPOSED USE:	QUARRY AND DISTRIBUTION CENTER
RIVER BASIN:	ROANOKE
SWC:	WS-II; HIGH QUALITY WATER
WATERSHED:	SUGAR TREE CREEK
TOTAL PROJECT AREA:	630.17 AC
TOTAL DISTURBED AREA:	426.06 AC

PROPERTY OWNER INFORMATION

NAME:	OWNER ADDRESS:	TID:	PROPERTY ADDRESS:	PROPERTY ACREAGE:	DEED / PAGE:
ETREE LLC	P.O. BOX 850 BURLINGTON, NC 27216	0133 002	2856 RIDGEVILLE ROAD PROSPECT HILL, NC 27314	46.13	584 / 1301
		0133 075	0 RIDGEVILLE ROAD PROSPECT HILL, NC 27314	30.00	604 / 816
		0133 005	0 WRENN ROAD PROSPECT HILL, NC 27314	488.71	604 / 816
		0133 045	1238 WRENN ROAD PROSPECT HILL, NC 27314	280.45	604 / 816
		0148 002	0 WRENN ROAD PROSPECT HILL, NC 27314	236.00	604 / 816



VICINITY MAP
NTS

Sheet List Table

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C3.60	SEDIMENT BASIN ENLARGEMENTS
C3.70	SEDIMENT BASIN ENLARGEMENTS
C3.80	SEDIMENT BASIN ENLARGEMENTS
C4.00	NCDEQ NCG01 SPECIFICATIONS
C4.10	NOTES AND DETAILS
C4.20	NOTES AND DETAILS
C4.30	NOTES AND DETAILS

DEVELOPER:
CAROLINA SUNROCK
SCOTT MARTINO
200 HORIZON DRIVE, SUITE 100
RALEIGH, NC 27615
PH: (919) 747-6336
SMARTINO@THESUNROCKGROUP.COM

CIVIL ENGINEER:
TIMMONS GROUP
RICK BAKER, P.E.
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RALEIGH, NC 27607
PH: (919) 866-4939
RICK.BAKER@TIMMONS.COM

PRELIMINARY - NOT RELEASED FOR CONSTRUCTION

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF PROSPECT HILL, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE

DATE: 2019-08-22
DRAWN BY: A. MAY
DESIGNED BY: S. MOORE
CHECKED BY: R. BAKER
SCALE: AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA
COVER SHEET

JOB NO. 44089
SHEET NO. C0.00

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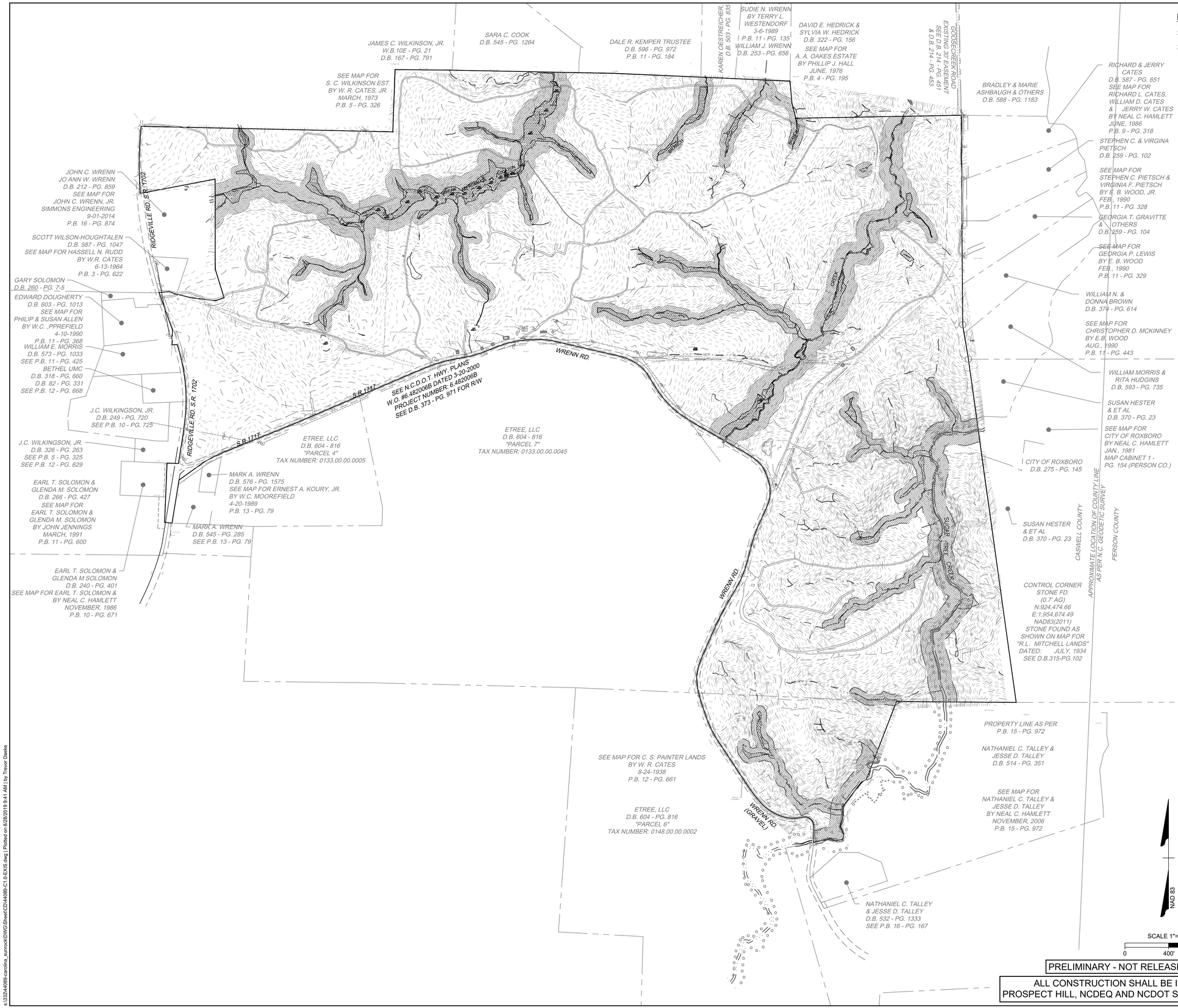
s:\32c\44089-carolina_sunrock\DWG\Sheet\CD\44089-C0.0-COVR.dwg | Plotted on 8/28/2019 9:41 AM | by Trevor Daeke



NOTES:

1. EXISTING CONDITIONS SHOW ARE BASED ON FIELD SURVEY DATA PROVIDED BY CAROLINA SUNROCK.
2. PROPERTY DOES NOT LIE IN A FEMA SPECIAL FLOOD HAZARD AREA PER FEMA FIRM MAP PANEL NO. 3710995200K AND 3710994200J DATES 09/28/2007.

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TIMMONS GROUP

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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EXISTING CONDITIONS PLAN

JOB NO. 44089

SHEET NO. C1.00

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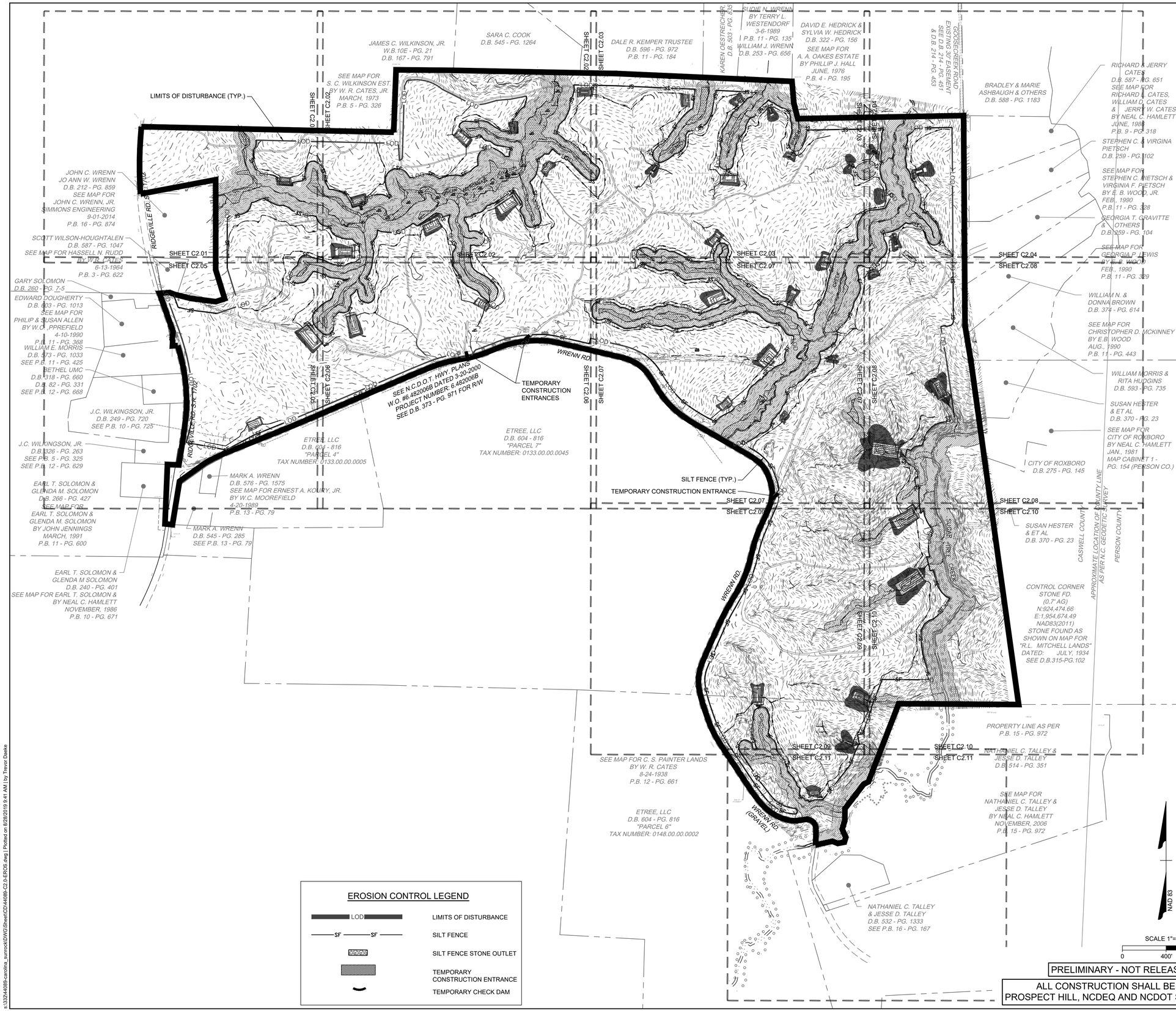

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EROSION CONTROL NOTES:

1. **TOTAL DISTURBED AREA = 426.06 ACRES**
2. MAINTENANCE: SUFFICIENT EROSION CONTROL PRACTICES MUST BE INSTALLED AND MAINTAINED TO RETAIN SEDIMENT WITHIN THE BOUNDARIES OF THE SITE. INSTALL ADDITIONAL MEASURES AS NEEDED TO PREVENT SEDIMENT RUNOFF.
3. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSPECTED WEEKLY AND AFTER EVERY RUNOFF PRODUCING RAINFALL EVENT. NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY.

CONSTRUCTION SEQUENCE:

1. OBTAIN NCDEQ PERMIT/ APPROVAL TO PROCEED.
2. SCHEDULE A PRE-CONSTRUCTION MEETING WITH NCDEQ DIVISION OF LAND QUALITY (336) 776-9800. FAILURE TO PERFORM THIS STEP BEFORE PERFORMING LAND DISTURBING ACTIVITIES MAY RESULT IN A NOTICE OF VIOLATION OR FINES.
3. LOCATE ALL EXISTING UTILITIES WITHIN THE PROJECT AREA (PUBLIC AND PRIVATE).
4. INSTALL TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCE, SILT FENCE STONE OUTLETS, SEDIMENT BASINS, CHECK DAMS AND TEMPORARY DIVERSION DITCHES AS SHOWN ON APPROVED PLANS. ADJUST SILT FENCE STONE OUTLET LOCATION PER FIELD CONDITIONS.
5. CALL NCDEQ DIVISION OF LAND QUALITY FOR INSPECTION (336) 776-9800.
6. UPON APPROVAL, COMMENCE PERMITTED LAND DISTURBING ACTIVITIES AS SHOWN ON APPROVED PLANS.
7. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISHED GRADE. STABILIZATION IS REQUIRED PER NCDEQ REQUIREMENTS AFTER COMPLETION OF ANY PHASE OF GRADING OR INACTIVITY ON ANY PROJECT.
8. MAINTAIN POSITIVE DRAINAGE AT ALL TIMES.
9. MAINTAIN EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION.
10. UPON COMPLETION OF CONSTRUCTION, SEED AND STABILIZE ALL REMAINING DISTURBED AREAS.
11. CALL NCDEQ FOR INSPECTION.
12. REMOVE SILT FENCING AND SEDIMENT BASINS ONLY AFTER A GOOD STAND OF GRASS HAS BECOME ESTABLISHED AND ONLY WITH SPECIFIC APPROVAL OF NCDEQ DIVISION OF LAND QUALITY. SEED RESULTING DISTURBED AREAS.

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TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA
EROSION CONTROL PLAN OVERVIEW

JOB NO. 44089
SHEET NO. C2.00

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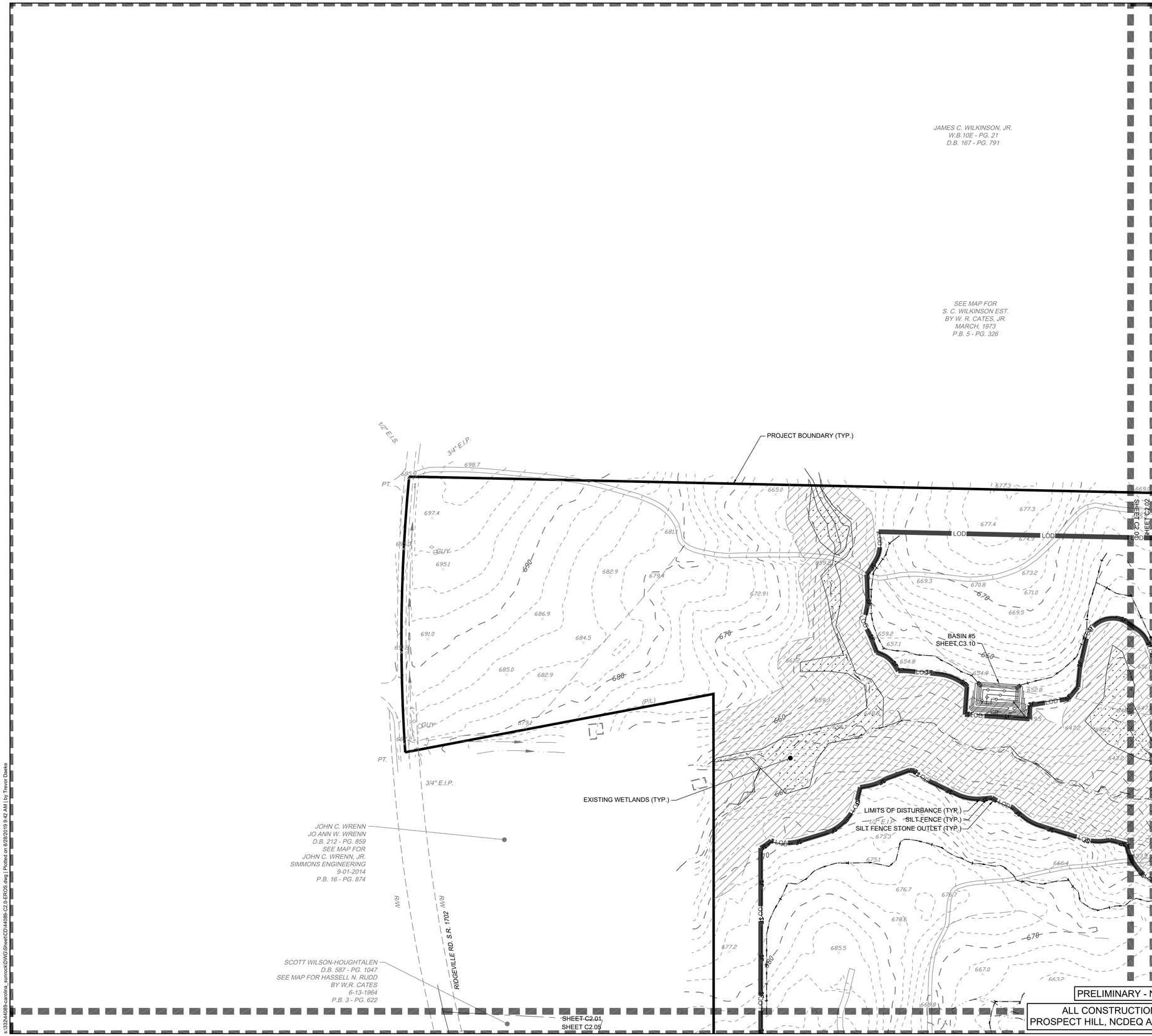
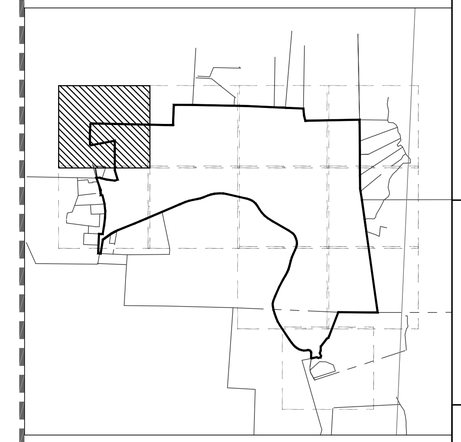


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



PROJECT KEY
N.T.S.

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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA
EROSION CONTROL PLAN ENLARGEMENT #1

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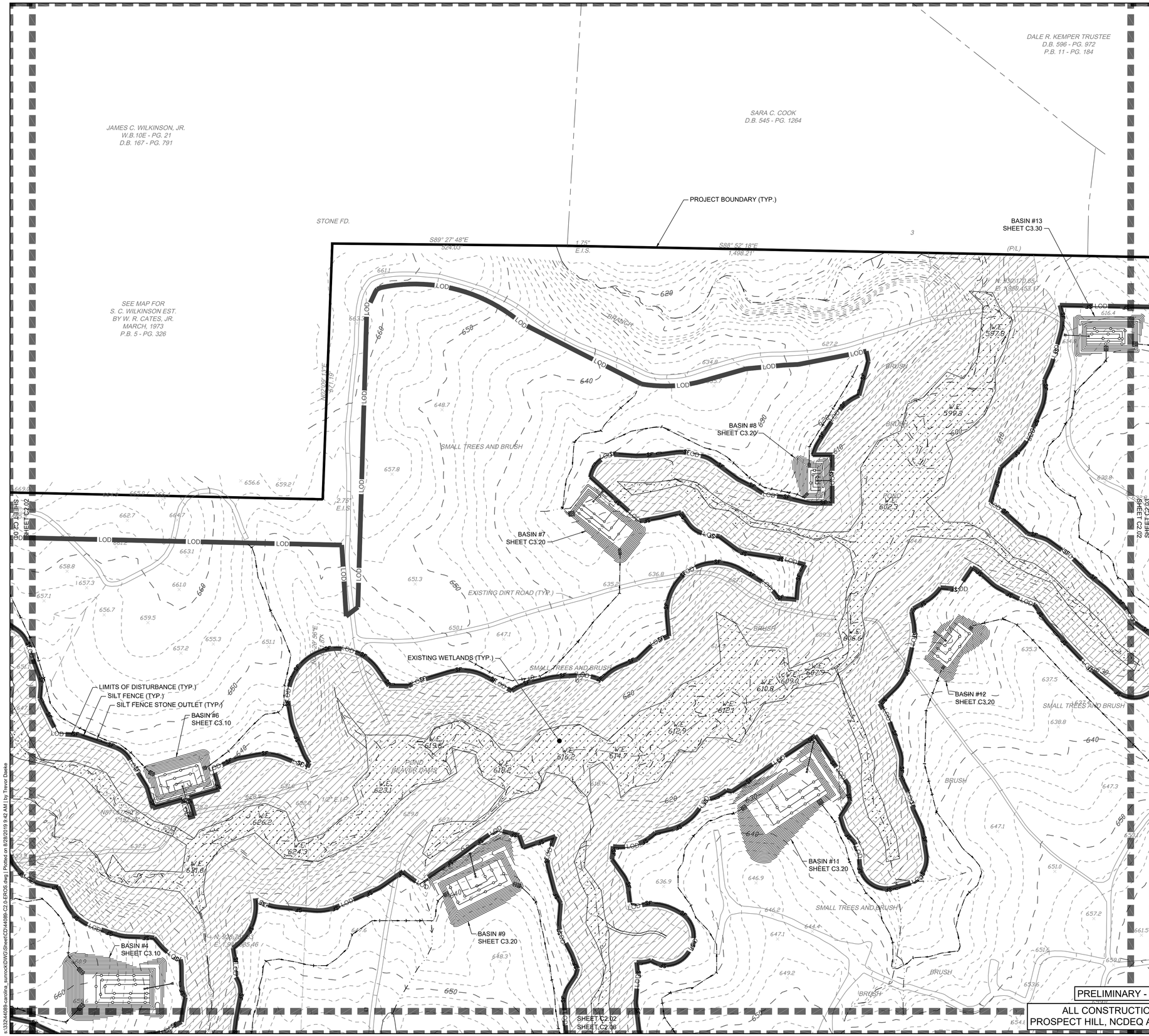
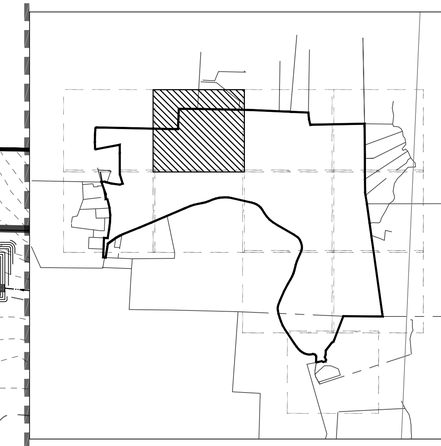


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #2

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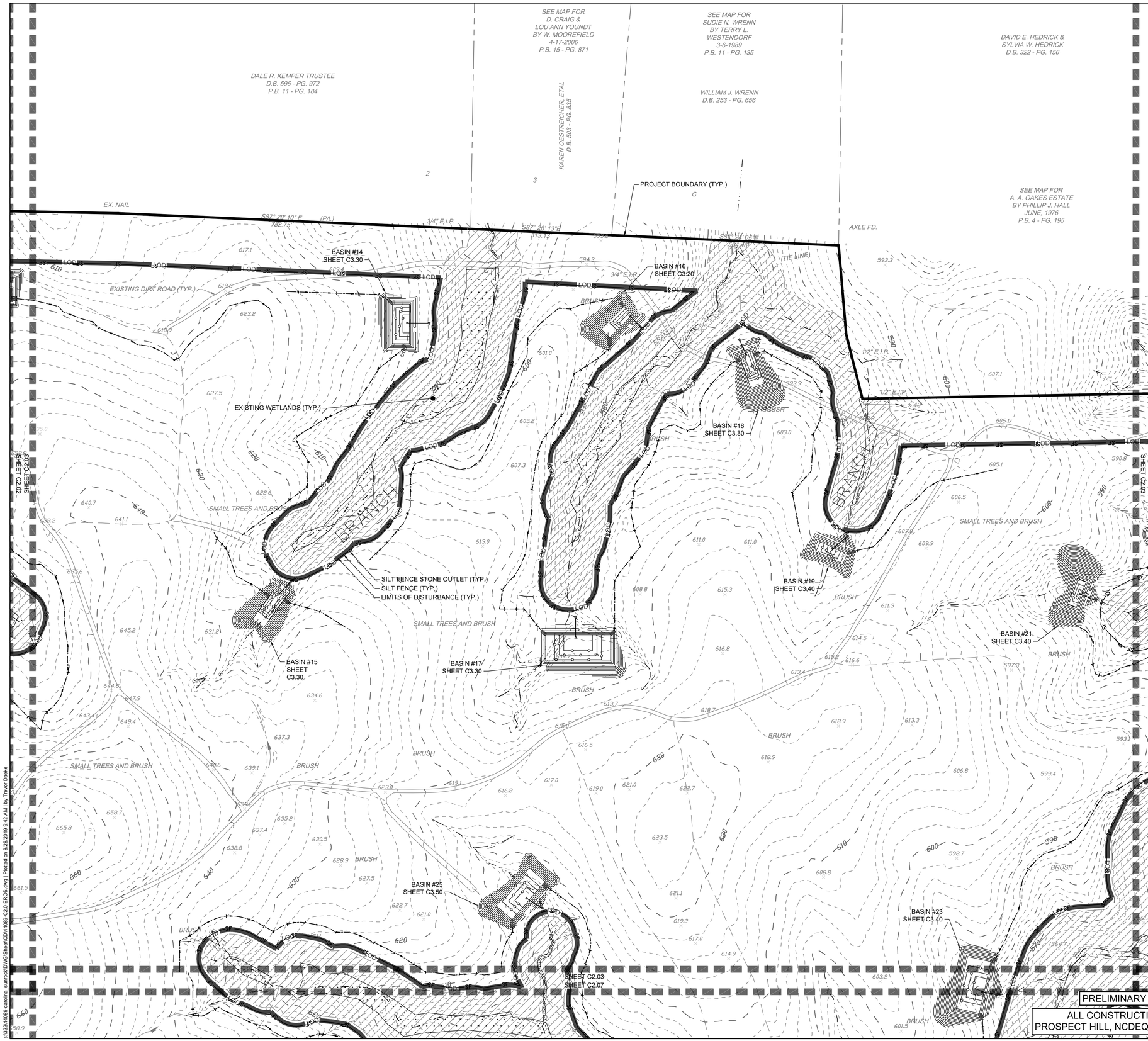
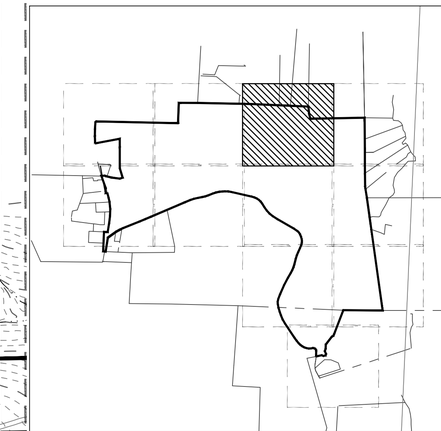


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #3

JOB NO. 44089

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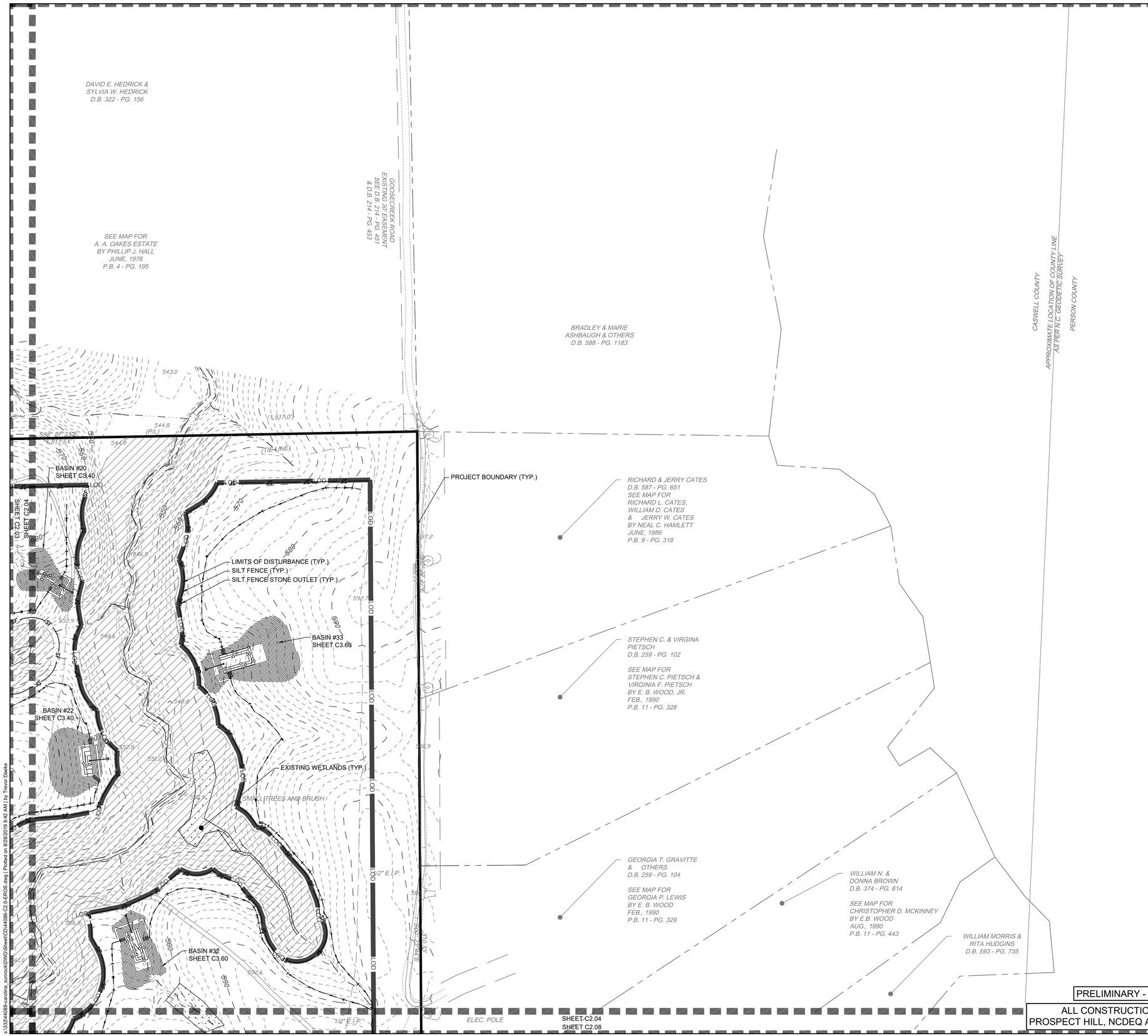
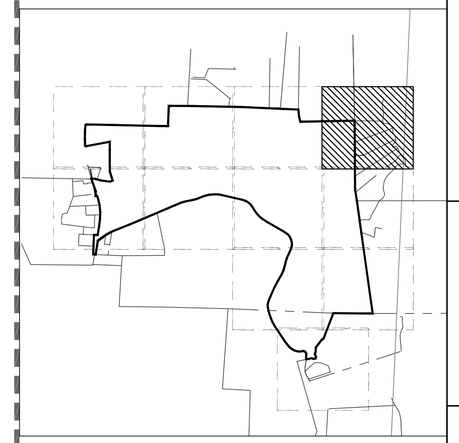


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #4

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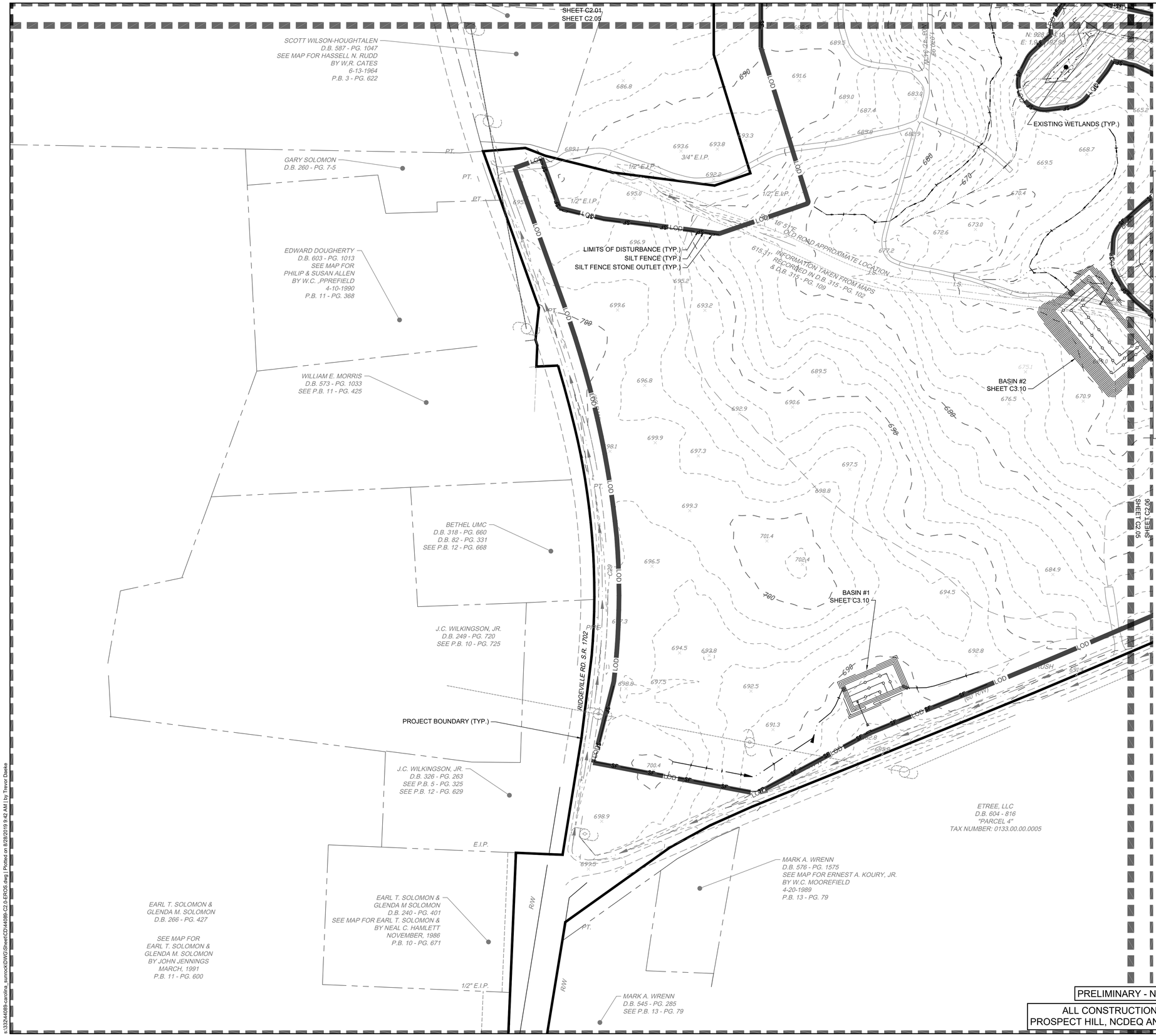
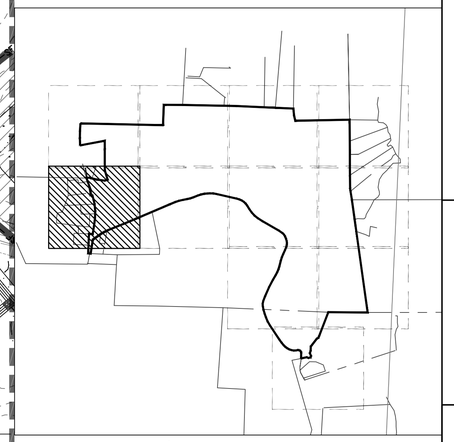


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #5

JOB NO. 44089

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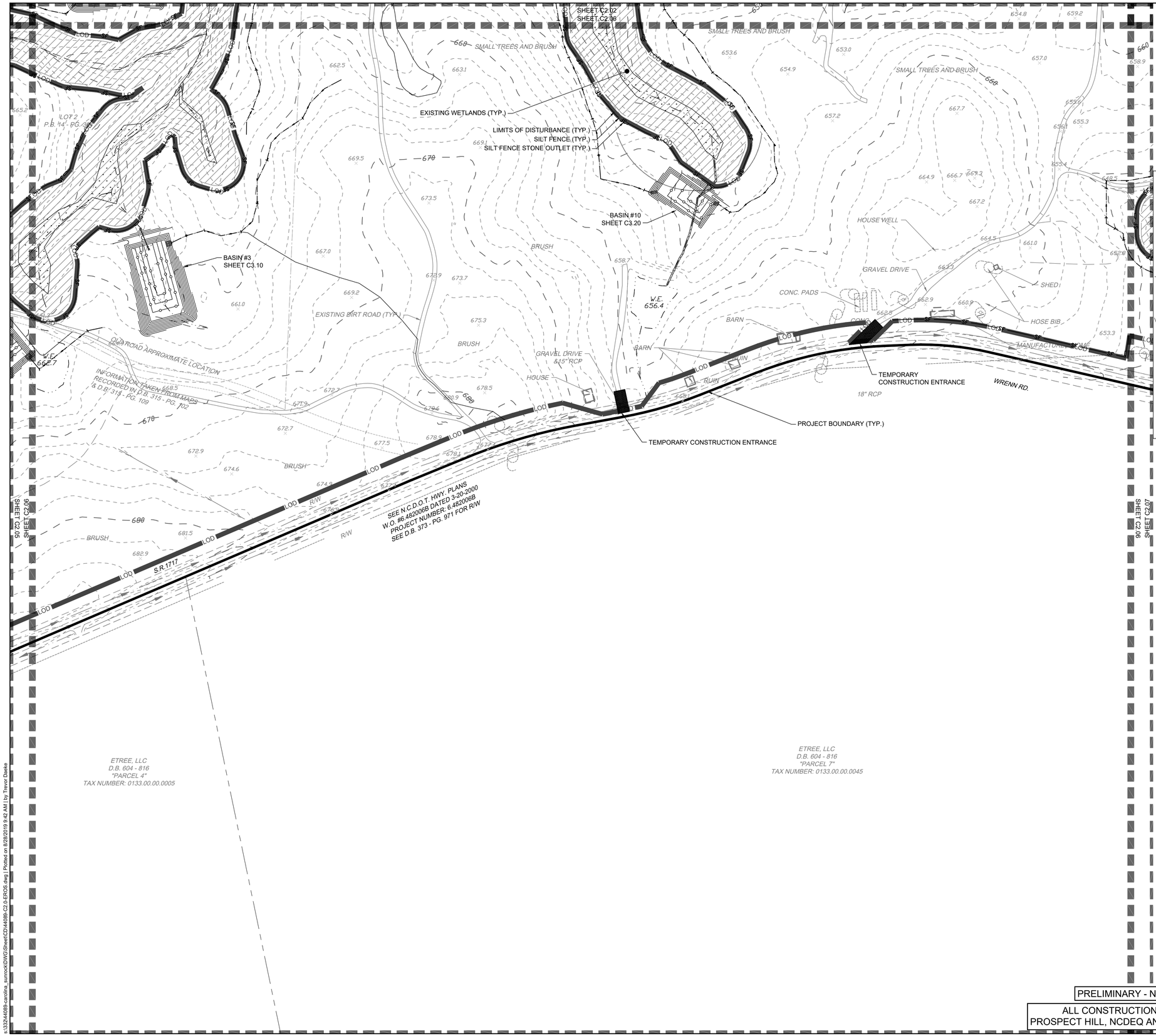
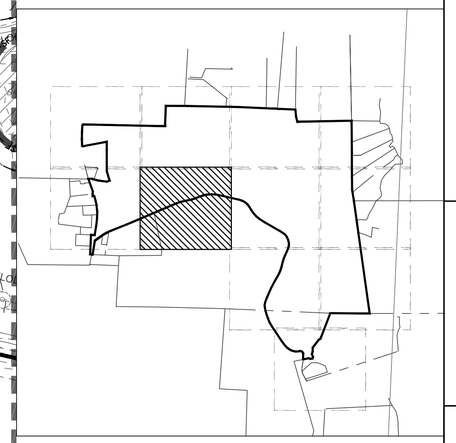


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



PROJECT KEY
N.T.S.

NAD 83

SCALE 1"=100'
0 100' 200'

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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #6

JOB NO. 44089

SHEET NO. C2.06

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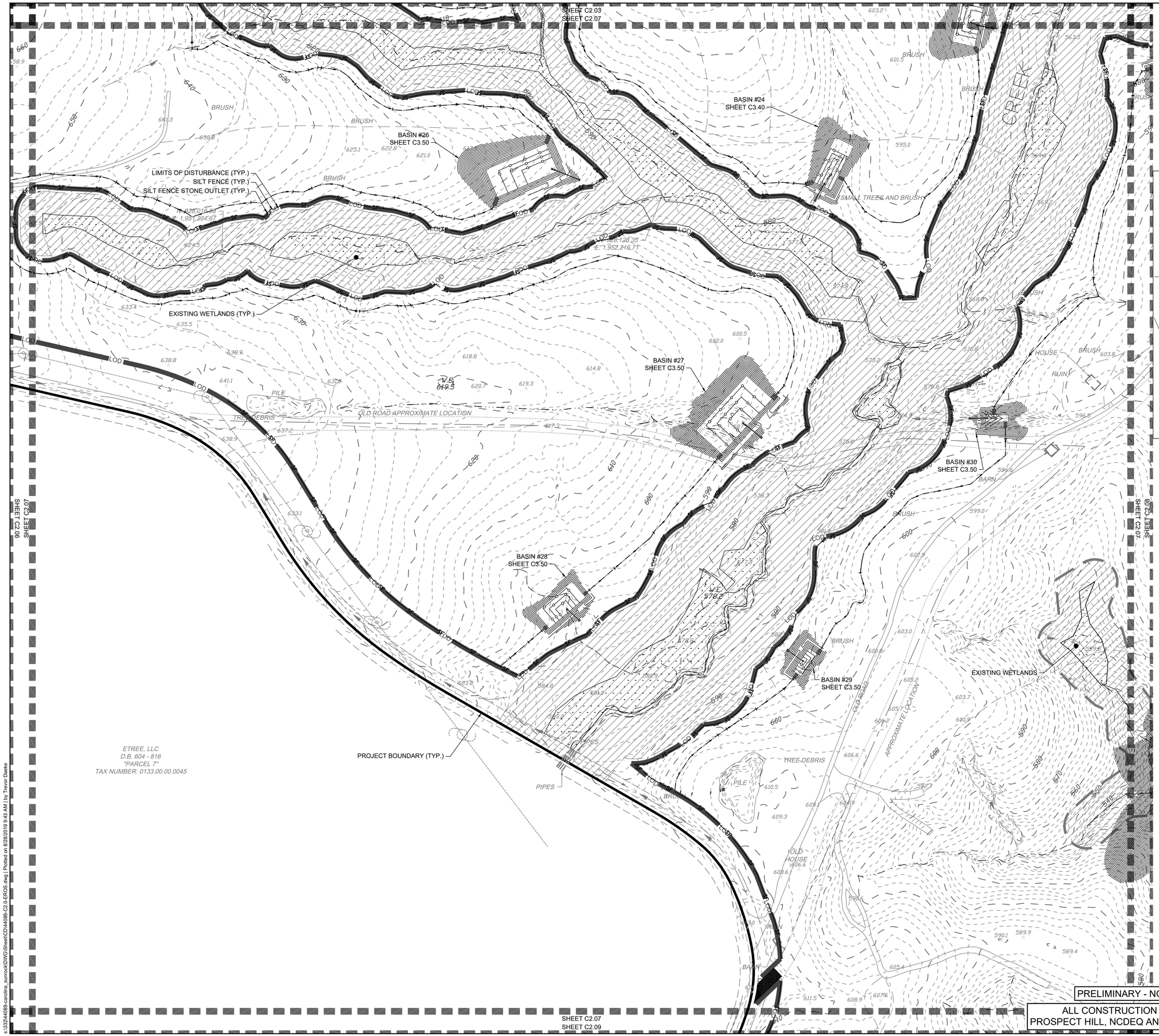
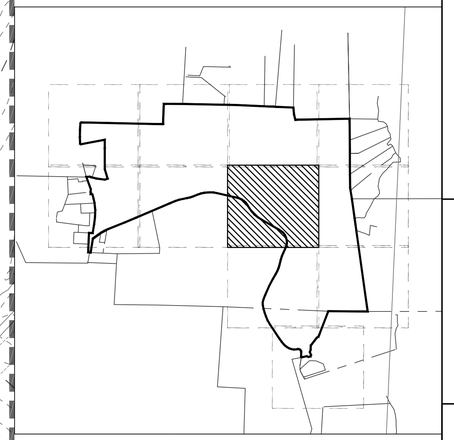


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



PROJECT KEY
N.T.S.

NAD 83

SCALE 1"=100'
0 100' 200'

PRELIMINARY - NOT RELEASED FOR CONSTRUCTION

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF PROSPECT HILL, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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REVISION DESCRIPTION	DATE

DATE	2019-08-22
DRAWN BY	T. DAEKE
DESIGNED BY	S. MOORE
CHECKED BY	R. BAKER
SCALE	AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #7

JOB NO. 44089

SHEET NO. C2.07

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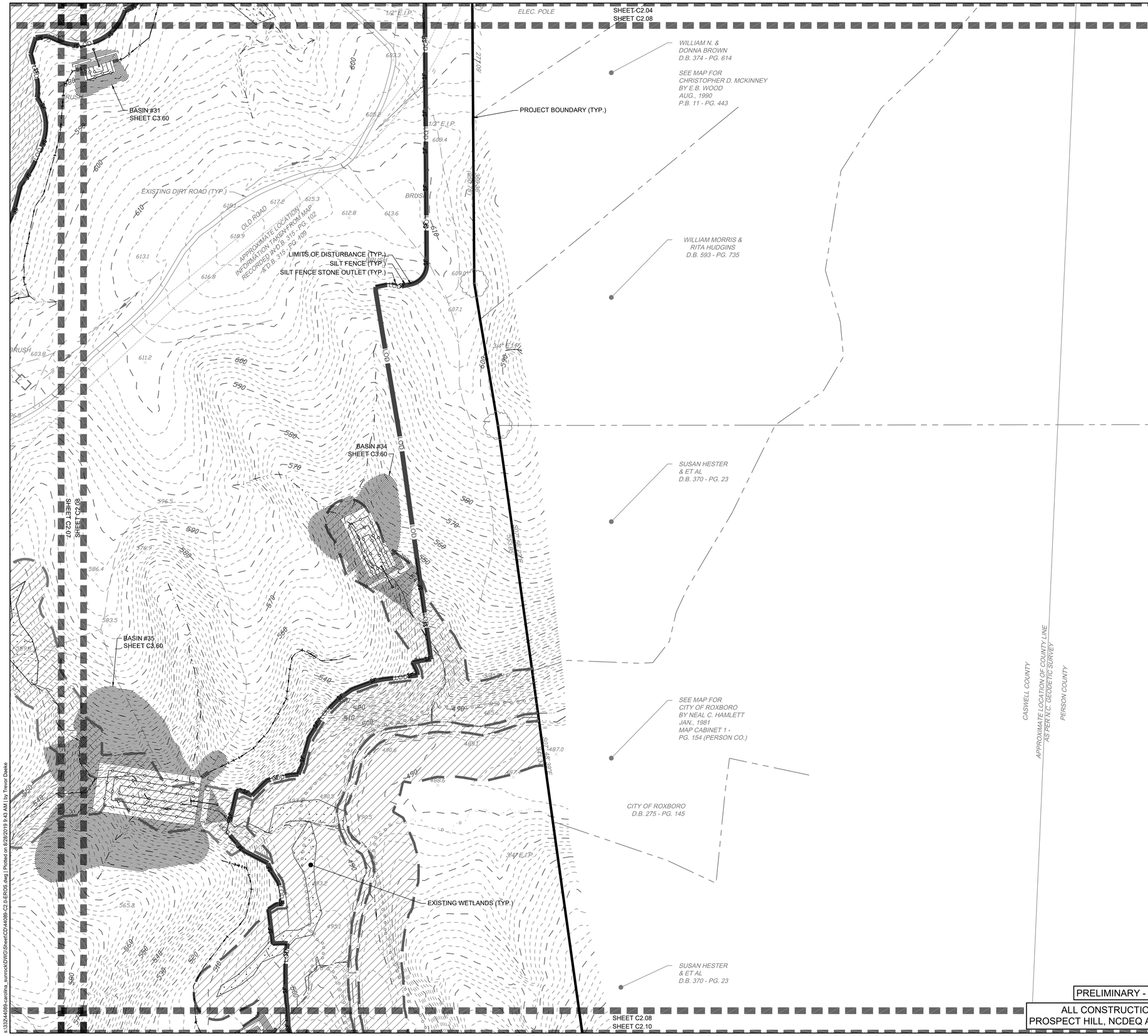
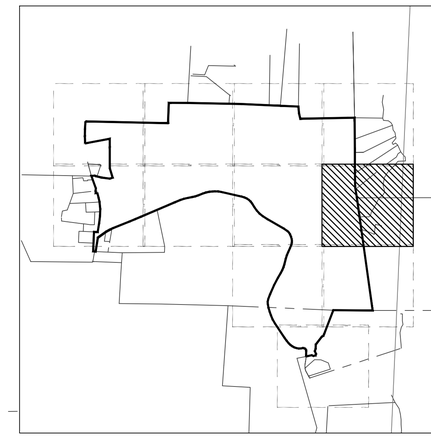


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



PROJECT KEY
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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #8

JOB NO. 44089

SHEET NO. C2.08

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SHEET C2.07
SHEET C2.09

ETREE, LLC
D.B. 604 - 816
"PARCEL 7"
TAX NUMBER: 0133.00.00.0045

EXISTING WETLANDS (TYP.)

WRENN RD.

EXISTING DIRT ROAD (TYP.)

BASIN #41
SHEET C3.80

BASIN #38
SHEET C3.70

BASIN #39
SHEET C3.70

SEE MAP FOR C. S. PAINTER LANDS
BY W. R. CATES
8-24-1938
P.B. 12 - PG. 661

PROJECT BOUNDARY (TYP.)

LIMITS OF DISTURBANCE (TYP.)
SILT FENCE (TYP.)
SILT FENCE STONE
OUTLET (TYP.)

ETREE, LLC
D.B. 604 - PG. 816
"PARCEL 6"
TAX NUMBER: 0148.00.00.0002

(PAVED)

SHEET C2.09
SHEET C2.11

SHEET C2.10

EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM

PROJECT KEY
N.T.S.

NAD 83

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NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA
EROSION CONTROL PLAN ENLARGEMENT #9

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SHEET NO. C2.09

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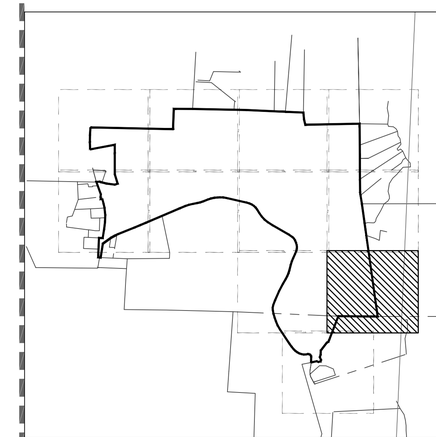
EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



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NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #10

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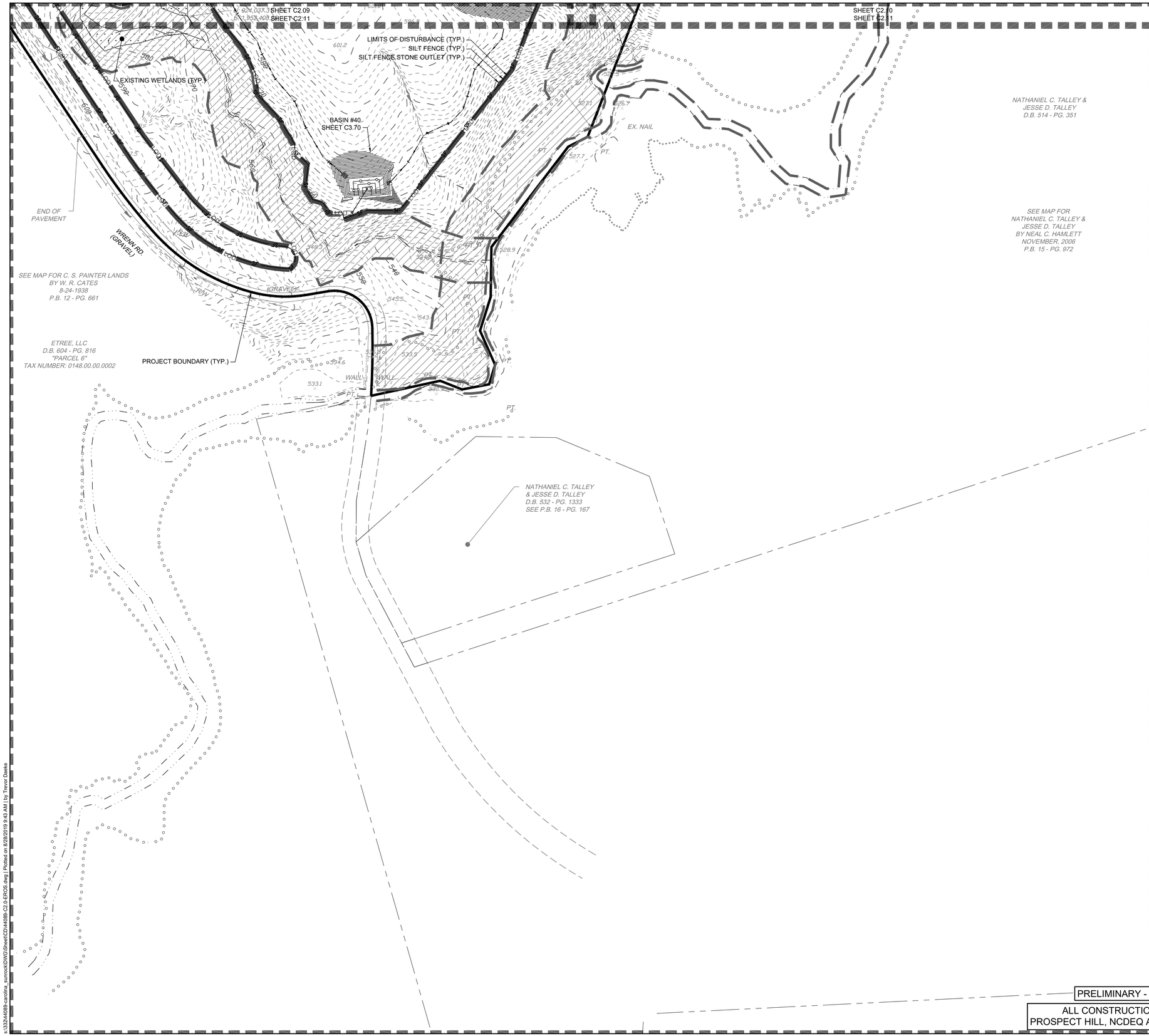
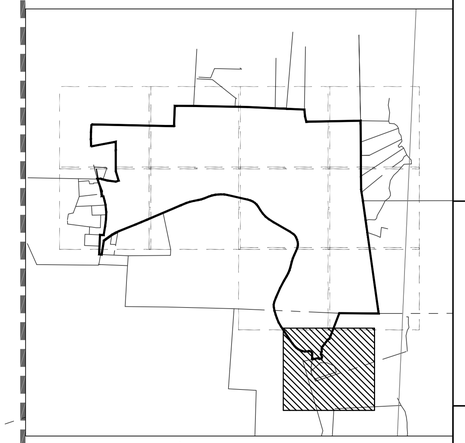


EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	SILT FENCE STONE OUTLET
	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY CHECK DAM



PROJECT KEY
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PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN ENLARGEMENT #11

JOB NO. 44089

SHEET NO. C2.11

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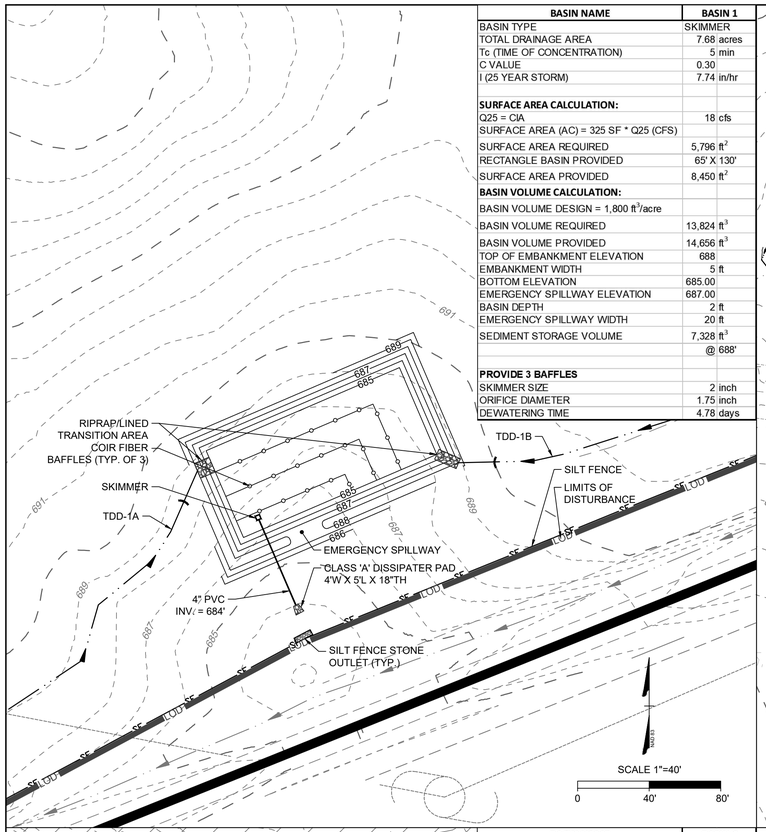
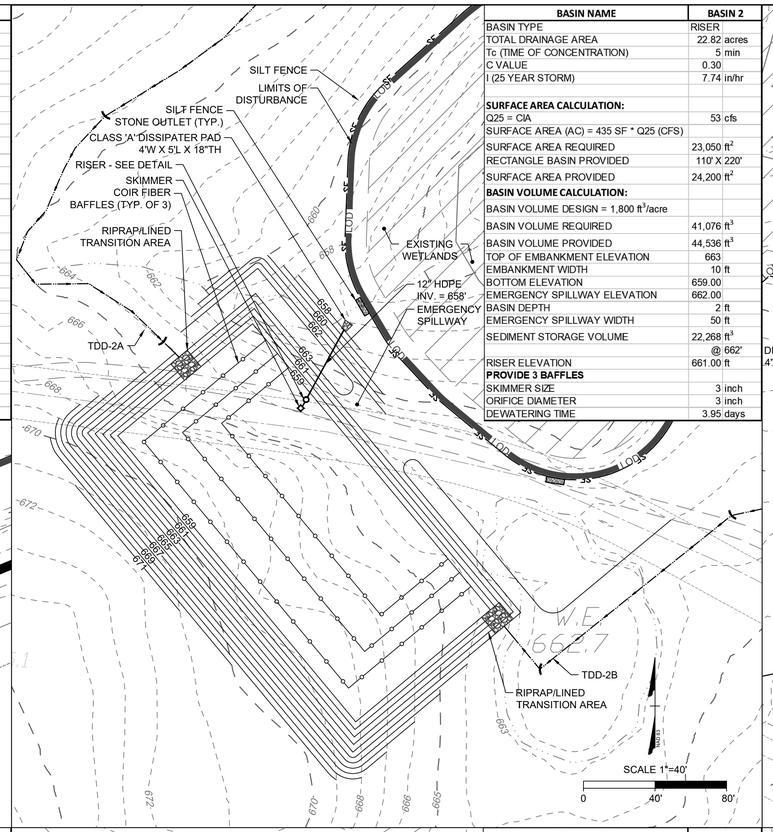
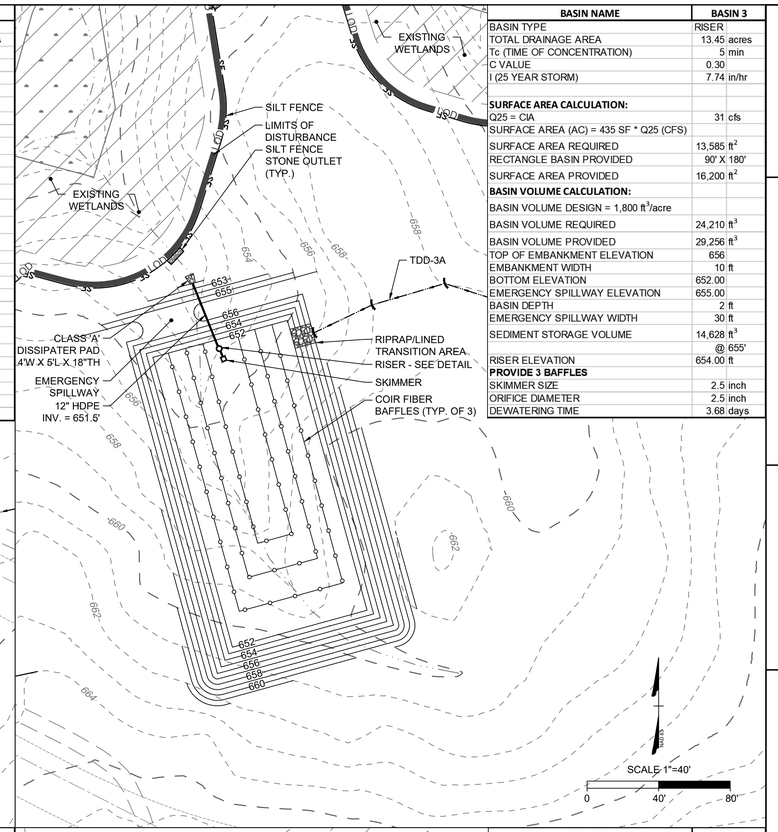


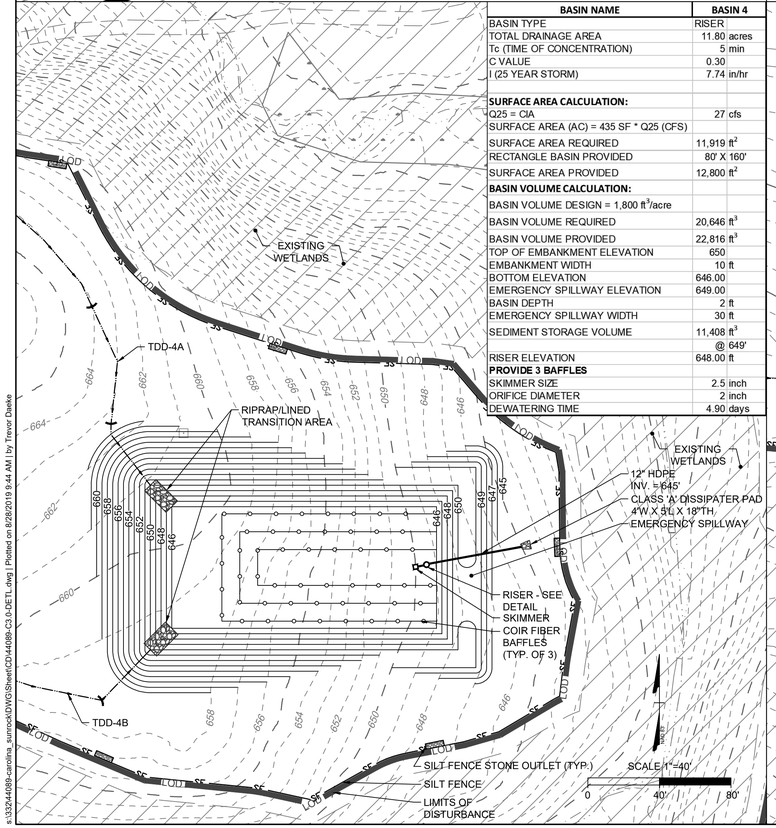
BASIN NAME	BASIN 1
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	7.68 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	18 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	5,796 ft^2
RECTANGLE BASIN PROVIDED	65' X 130'
SURFACE AREA PROVIDED	8,450 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	13,824 ft^3
BASIN VOLUME PROVIDED	14,656 ft^3
TOP OF EMBANKMENT ELEVATION	688
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	685.00
EMERGENCY SPILLWAY ELEVATION	687.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	20 ft
SEDIMENT STORAGE VOLUME	7,328 ft^3 @ 688'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.75 inch
DEWATERING TIME	4.78 days



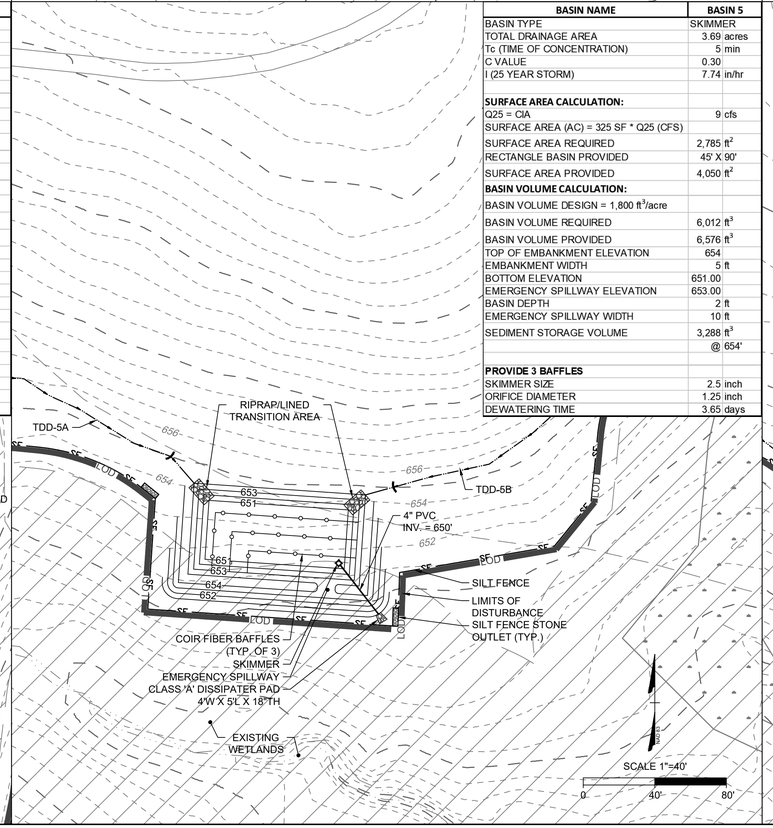
BASIN NAME	BASIN 2
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	22.82 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	53 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	23,050 ft^2
RECTANGLE BASIN PROVIDED	110' X 220'
SURFACE AREA PROVIDED	24,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	41,076 ft^3
BASIN VOLUME PROVIDED	44,536 ft^3
TOP OF EMBANKMENT ELEVATION	663
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	659.00
EMERGENCY SPILLWAY ELEVATION	662.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	50 ft
SEDIMENT STORAGE VOLUME	22,268 ft^3 @ 662'
RISER ELEVATION	661.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	3 inch
ORIFICE DIAMETER	3 inch
DEWATERING TIME	3.95 days



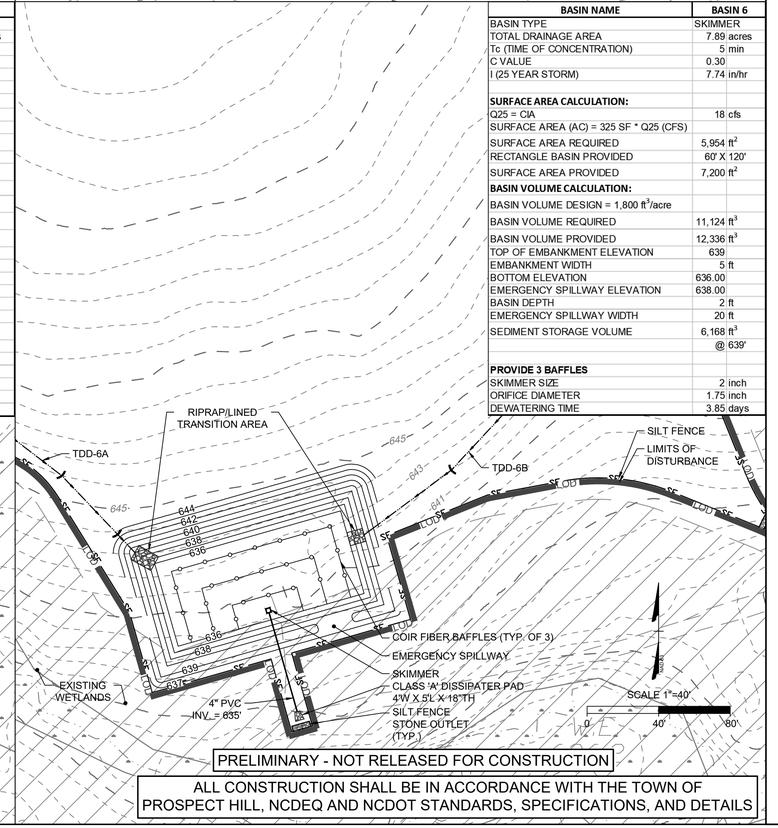
BASIN NAME	BASIN 3
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	13.45 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	31 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	13,585 ft^2
RECTANGLE BASIN PROVIDED	90' X 180'
SURFACE AREA PROVIDED	16,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	24,210 ft^3
BASIN VOLUME PROVIDED	29,256 ft^3
TOP OF EMBANKMENT ELEVATION	656
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	652.00
EMERGENCY SPILLWAY ELEVATION	655.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	30 ft
SEDIMENT STORAGE VOLUME	14,628 ft^3 @ 655'
RISER ELEVATION	654.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2.5 inch
DEWATERING TIME	3.68 days



BASIN NAME	BASIN 4
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	11.80 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	27 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	11,919 ft^2
RECTANGLE BASIN PROVIDED	80' X 160'
SURFACE AREA PROVIDED	12,800 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	20,646 ft^3
BASIN VOLUME PROVIDED	22,816 ft^3
TOP OF EMBANKMENT ELEVATION	650
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	646.00
EMERGENCY SPILLWAY ELEVATION	649.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	30 ft
SEDIMENT STORAGE VOLUME	11,408 ft^3 @ 649'
RISER ELEVATION	648.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	4.90 days



BASIN NAME	BASIN 5
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	3.69 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	9 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	2,785 ft^2
RECTANGLE BASIN PROVIDED	45' X 90'
SURFACE AREA PROVIDED	4,050 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	6,012 ft^3
BASIN VOLUME PROVIDED	6,576 ft^3
TOP OF EMBANKMENT ELEVATION	654
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	651.00
EMERGENCY SPILLWAY ELEVATION	653.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	10 ft
SEDIMENT STORAGE VOLUME	3,288 ft^3 @ 654'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	1.25 inch
DEWATERING TIME	3.65 days



BASIN NAME	BASIN 6
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	7.89 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	18 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	5,954 ft^2
RECTANGLE BASIN PROVIDED	60' X 120'
SURFACE AREA PROVIDED	7,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	11,124 ft^3
BASIN VOLUME PROVIDED	12,336 ft^3
TOP OF EMBANKMENT ELEVATION	639
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	636.00
EMERGENCY SPILLWAY ELEVATION	638.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	20 ft
SEDIMENT STORAGE VOLUME	6,168 ft^3 @ 639'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.75 inch
DEWATERING TIME	3.85 days

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TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

SEDIMENT BASIN ENLARGEMENTS

JOB NO.	44089
SHEET NO.	C3.10

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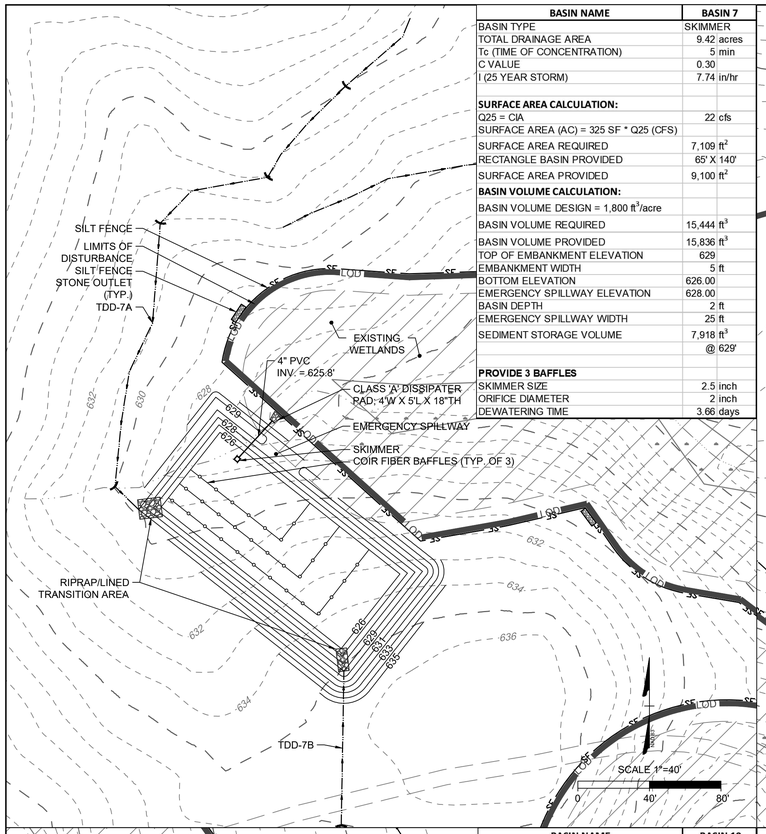
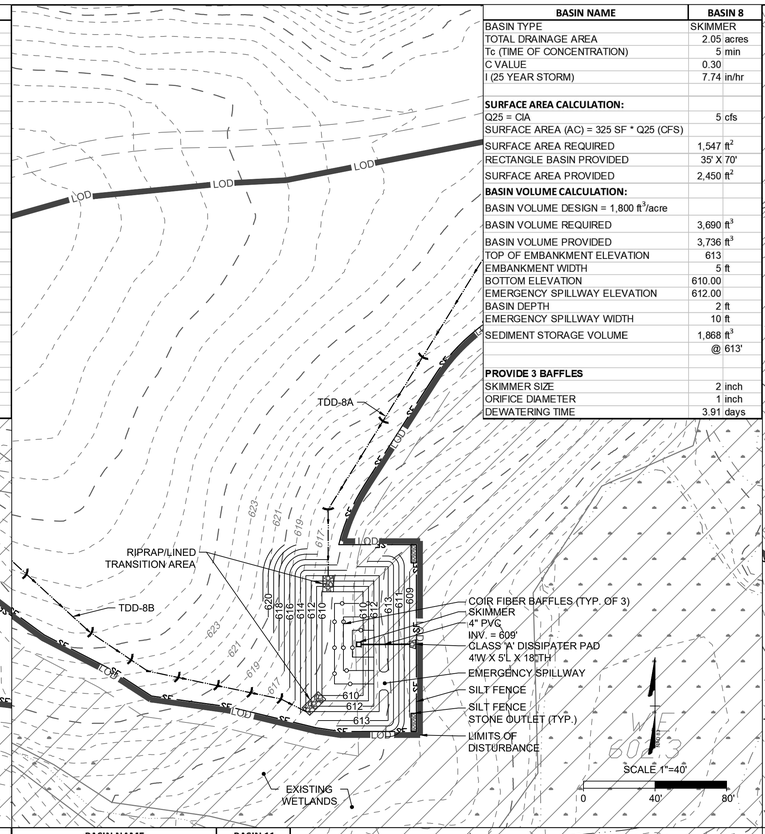
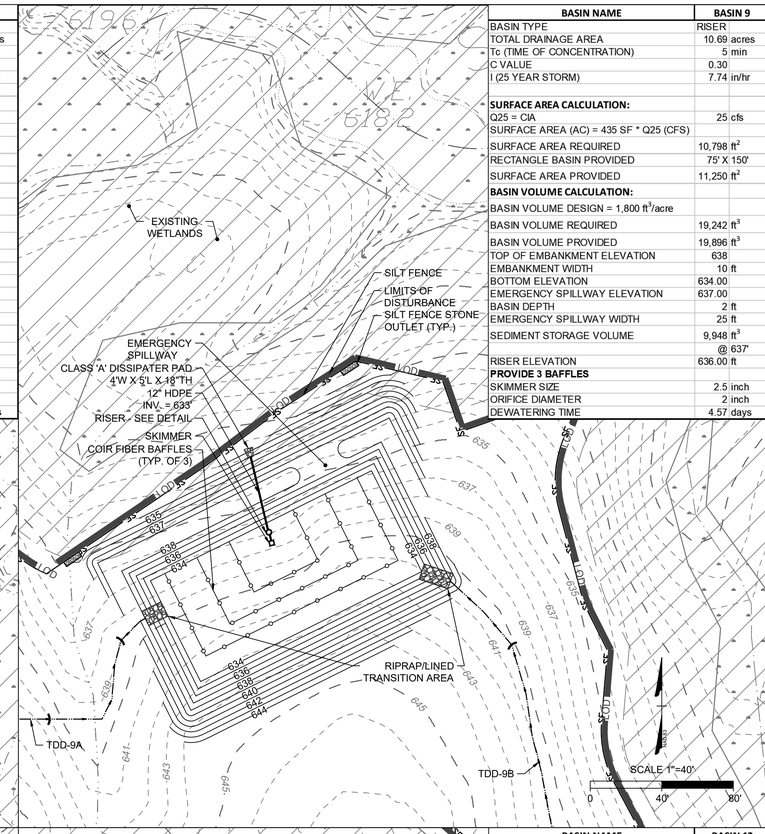


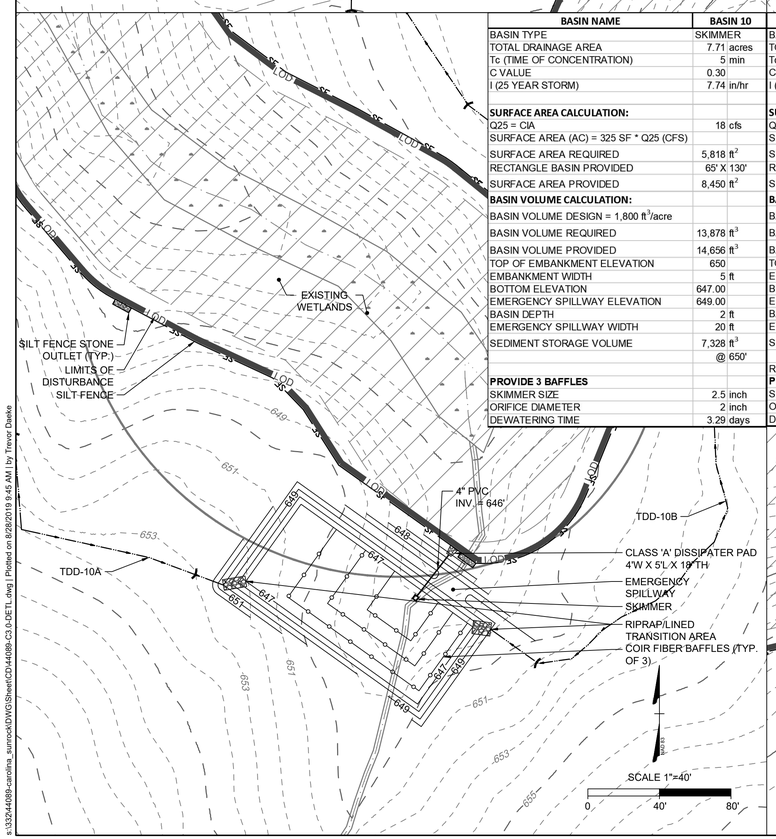
BASIN NAME	BASIN 7
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	9.42 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	22 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	7,109 ft^2
RECTANGLE BASIN PROVIDED	65' X 140'
SURFACE AREA PROVIDED	9,100 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	15,444 ft^3
BASIN VOLUME PROVIDED	15,836 ft^3
TOP OF EMBANKMENT ELEVATION	629
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	626.00
EMERGENCY SPILLWAY ELEVATION	628.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	25 ft
SEDIMENT STORAGE VOLUME	7,918 ft^3 @ 629'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	3.66 days



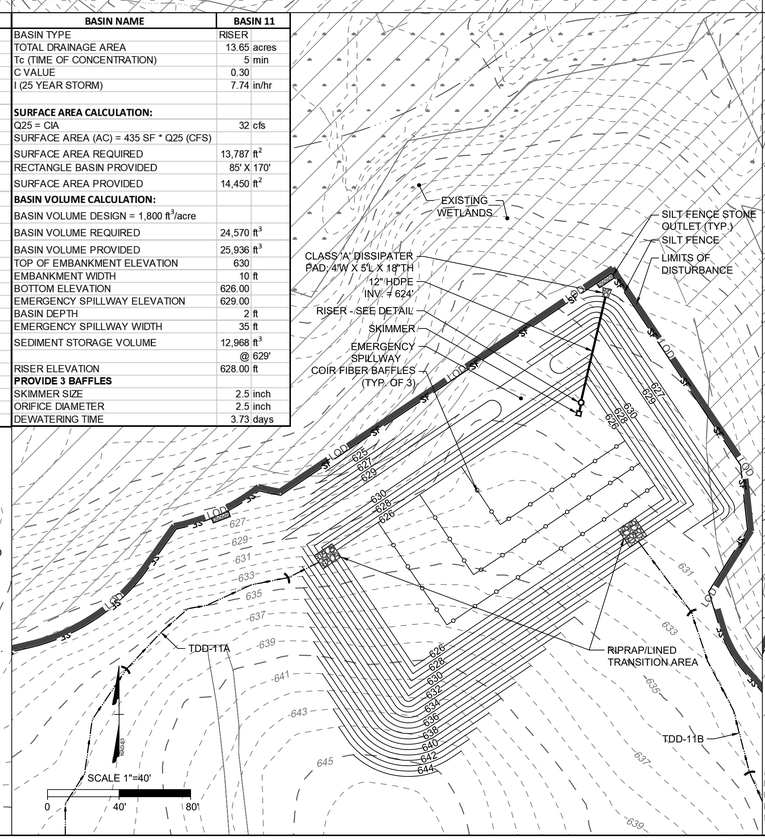
BASIN NAME	BASIN 8
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	2.05 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	5 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	1,547 ft^2
RECTANGLE BASIN PROVIDED	35' X 70'
SURFACE AREA PROVIDED	2,450 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	3,690 ft^3
BASIN VOLUME PROVIDED	3,736 ft^3
TOP OF EMBANKMENT ELEVATION	613
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	610.00
EMERGENCY SPILLWAY ELEVATION	612.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	10 ft
SEDIMENT STORAGE VOLUME	1,868 ft^3 @ 613'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1 inch
DEWATERING TIME	3.91 days



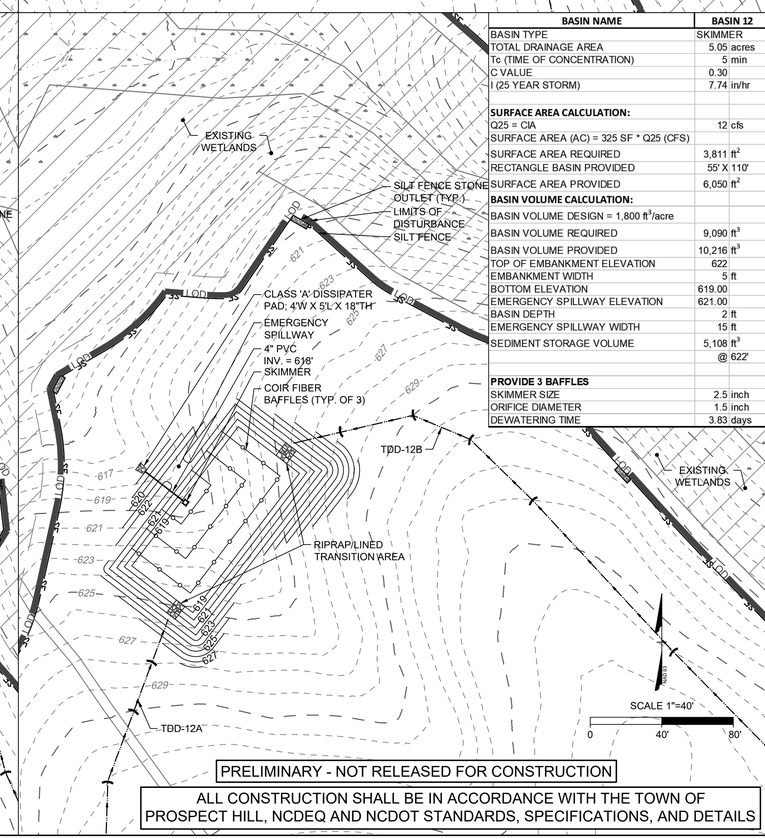
BASIN NAME	BASIN 9
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	10.69 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	25 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	10,798 ft^2
RECTANGLE BASIN PROVIDED	75' X 150'
SURFACE AREA PROVIDED	11,250 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	19,242 ft^3
BASIN VOLUME PROVIDED	19,896 ft^3
TOP OF EMBANKMENT ELEVATION	638
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	634.00
EMERGENCY SPILLWAY ELEVATION	637.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	25 ft
SEDIMENT STORAGE VOLUME	9,948 ft^3 @ 637'
RISER ELEVATION	636.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	4.57 days



BASIN NAME	BASIN 10
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	7.71 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	18 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	5,818 ft^2
RECTANGLE BASIN PROVIDED	65' X 130'
SURFACE AREA PROVIDED	8,450 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	13,878 ft^3
BASIN VOLUME PROVIDED	14,656 ft^3
TOP OF EMBANKMENT ELEVATION	650
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	647.00
EMERGENCY SPILLWAY ELEVATION	649.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	20 ft
SEDIMENT STORAGE VOLUME	7,328 ft^3 @ 650'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	3.29 days



BASIN NAME	BASIN 11
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	13.65 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	32 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	13,787 ft^2
RECTANGLE BASIN PROVIDED	85' X 170'
SURFACE AREA PROVIDED	14,450 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	24,570 ft^3
BASIN VOLUME PROVIDED	25,936 ft^3
TOP OF EMBANKMENT ELEVATION	630
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	626.00
EMERGENCY SPILLWAY ELEVATION	629.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	35 ft
SEDIMENT STORAGE VOLUME	12,968 ft^3 @ 629'
RISER ELEVATION	628.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2.5 inch
DEWATERING TIME	3.73 days



BASIN NAME	BASIN 12
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	5.05 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	12 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	3,811 ft^2
RECTANGLE BASIN PROVIDED	55' X 110'
SURFACE AREA PROVIDED	6,050 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	9,090 ft^3
BASIN VOLUME PROVIDED	10,216 ft^3
TOP OF EMBANKMENT ELEVATION	622
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	619.00
EMERGENCY SPILLWAY ELEVATION	621.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	15 ft
SEDIMENT STORAGE VOLUME	5,108 ft^3 @ 622'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	1.5 inch
DEWATERING TIME	3.83 days

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NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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REVISION DESCRIPTION	DATE

DATE	2019-08-22
DRAWN BY	T. DAEKE
DESIGNED BY	S. MOORE
CHECKED BY	R. BAKER
SCALE	AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

SEDIMENT BASIN ENLARGEMENTS

JOB NO. 44089

SHEET NO. C3.20

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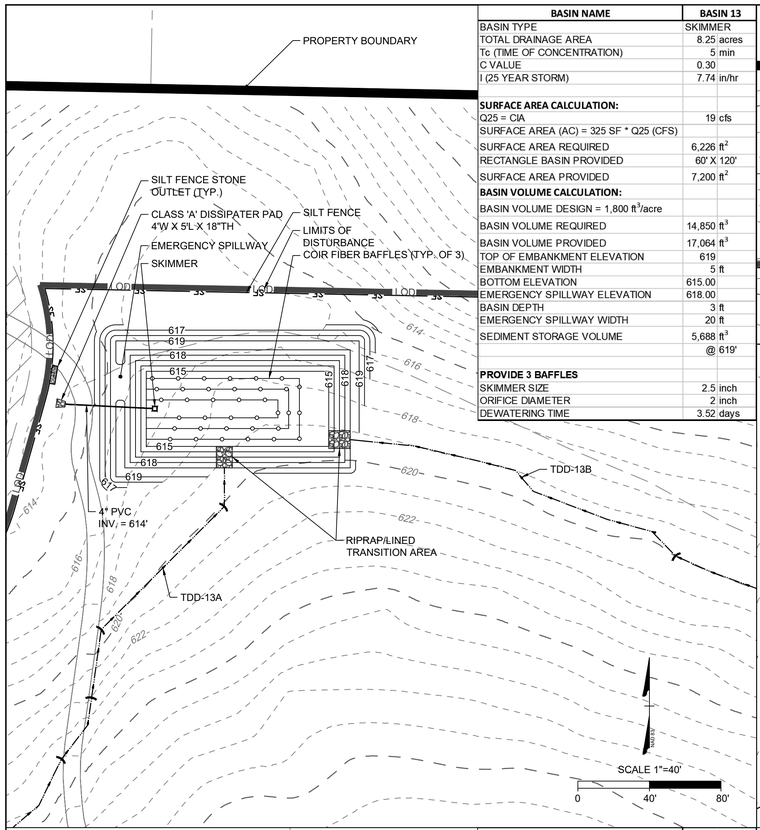
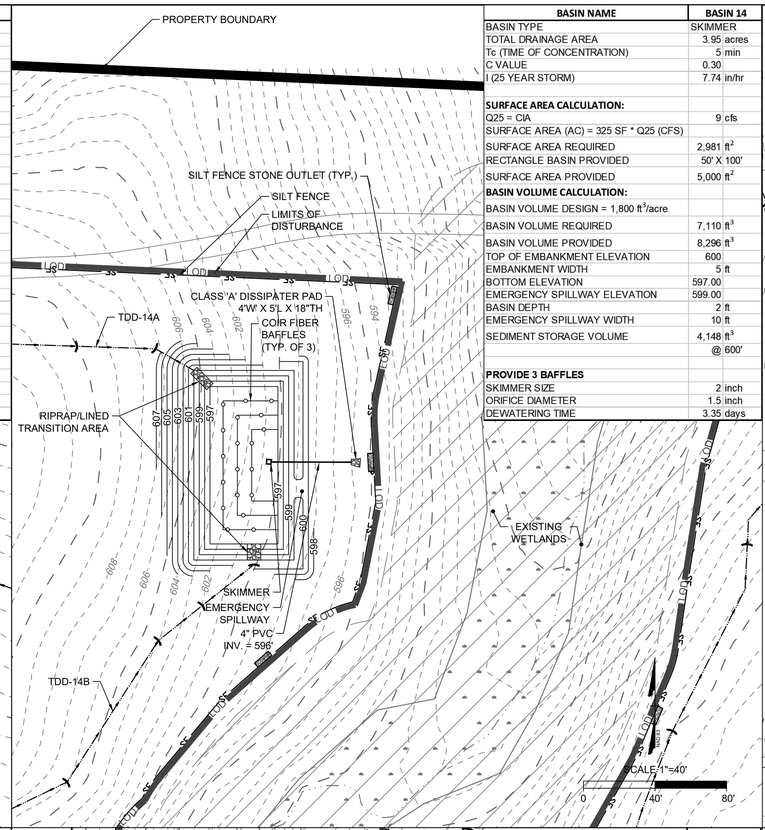
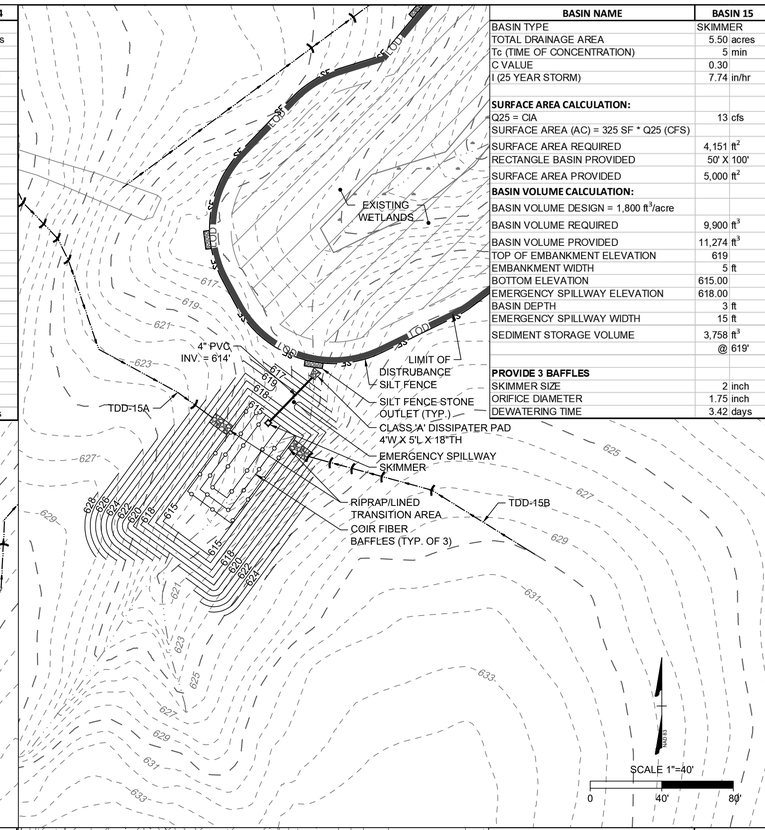


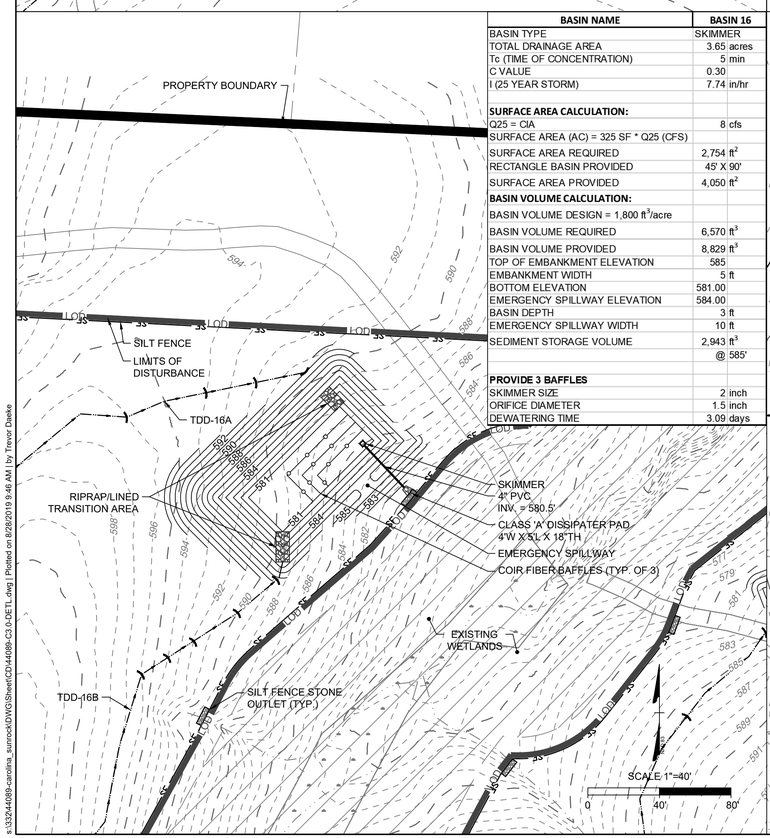
BASIN NAME	BASIN 13
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	8.25 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	19 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	6,226 ft^2
RECTANGLE BASIN PROVIDED	60' X 120'
SURFACE AREA PROVIDED	7,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	14,850 ft^3
BASIN VOLUME PROVIDED	17,064 ft^3
TOP OF EMBANKMENT ELEVATION	619
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	615.00
EMERGENCY SPILLWAY ELEVATION	618.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	20 ft
SEDIMENT STORAGE VOLUME	5,688 ft^3 @ 619'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	3.52 days



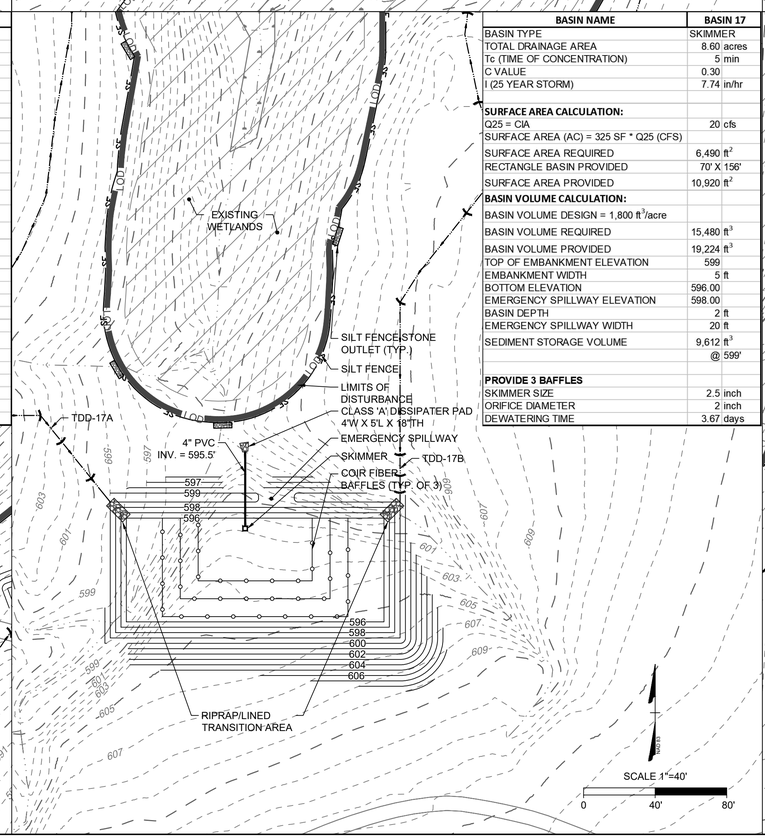
BASIN NAME	BASIN 14
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	3.95 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	9 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	2,981 ft^2
RECTANGLE BASIN PROVIDED	50' X 100'
SURFACE AREA PROVIDED	5,000 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	7,110 ft^3
BASIN VOLUME PROVIDED	8,296 ft^3
TOP OF EMBANKMENT ELEVATION	600
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	597.00
EMERGENCY SPILLWAY ELEVATION	599.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	10 ft
SEDIMENT STORAGE VOLUME	4,148 ft^3 @ 600'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.5 inch
DEWATERING TIME	3.35 days



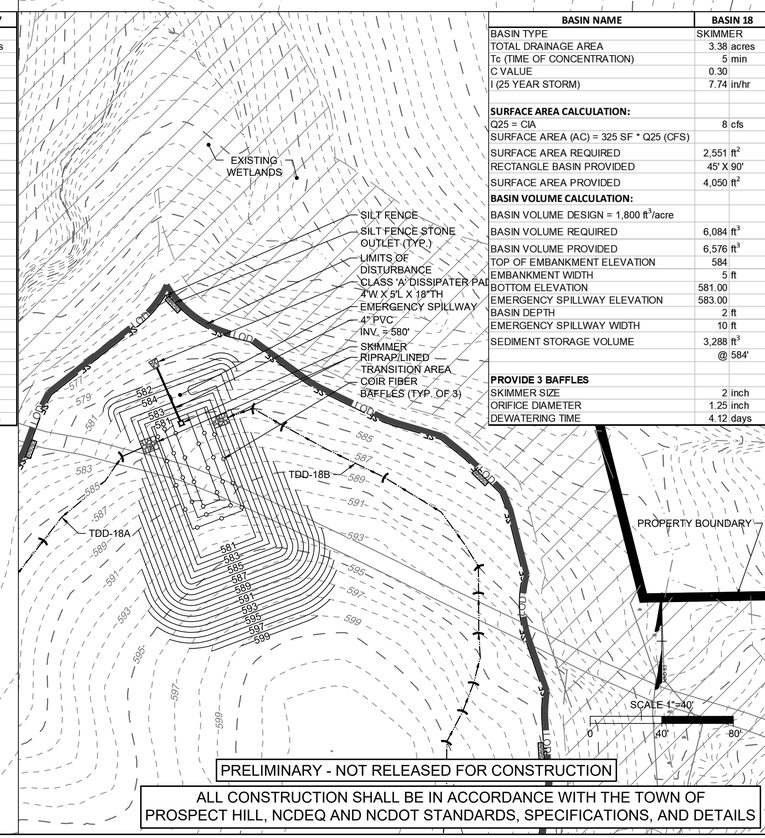
BASIN NAME	BASIN 15
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	5.50 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	13 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	4,151 ft^2
RECTANGLE BASIN PROVIDED	50' X 100'
SURFACE AREA PROVIDED	5,000 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	9,900 ft^3
BASIN VOLUME PROVIDED	11,274 ft^3
TOP OF EMBANKMENT ELEVATION	619
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	615.00
EMERGENCY SPILLWAY ELEVATION	618.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	15 ft
SEDIMENT STORAGE VOLUME	3,758 ft^3 @ 619'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.75 inch
DEWATERING TIME	3.42 days



BASIN NAME	BASIN 16
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	3.65 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	8 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	2,754 ft^2
RECTANGLE BASIN PROVIDED	45' X 90'
SURFACE AREA PROVIDED	4,050 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	6,570 ft^3
BASIN VOLUME PROVIDED	8,829 ft^3
TOP OF EMBANKMENT ELEVATION	585
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	581.00
EMERGENCY SPILLWAY ELEVATION	584.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	10 ft
SEDIMENT STORAGE VOLUME	2,943 ft^3 @ 585'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.5 inch
DEWATERING TIME	3.09 days



BASIN NAME	BASIN 17
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	8.60 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	20 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	6,490 ft^2
RECTANGLE BASIN PROVIDED	70' X 156'
SURFACE AREA PROVIDED	10,920 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	15,480 ft^3
BASIN VOLUME PROVIDED	19,224 ft^3
TOP OF EMBANKMENT ELEVATION	599
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	596.00
EMERGENCY SPILLWAY ELEVATION	598.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	20 ft
SEDIMENT STORAGE VOLUME	9,612 ft^3 @ 599'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	3.67 days



BASIN NAME	BASIN 18
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	3.38 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	8 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	2,551 ft^2
RECTANGLE BASIN PROVIDED	45' X 90'
SURFACE AREA PROVIDED	4,050 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	6,084 ft^3
BASIN VOLUME PROVIDED	6,576 ft^3
TOP OF EMBANKMENT ELEVATION	584
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	581.00
EMERGENCY SPILLWAY ELEVATION	583.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	10 ft
SEDIMENT STORAGE VOLUME	3,288 ft^3 @ 584'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.25 inch
DEWATERING TIME	4.12 days

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08/28/19

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REVISION DESCRIPTION	DATE

DATE	2019-08-22
DRAWN BY	T. DAEKE
DESIGNED BY	S. MOORE
CHECKED BY	R. BAKER
SCALE	AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

SEDIMENT BASIN ENLARGEMENTS

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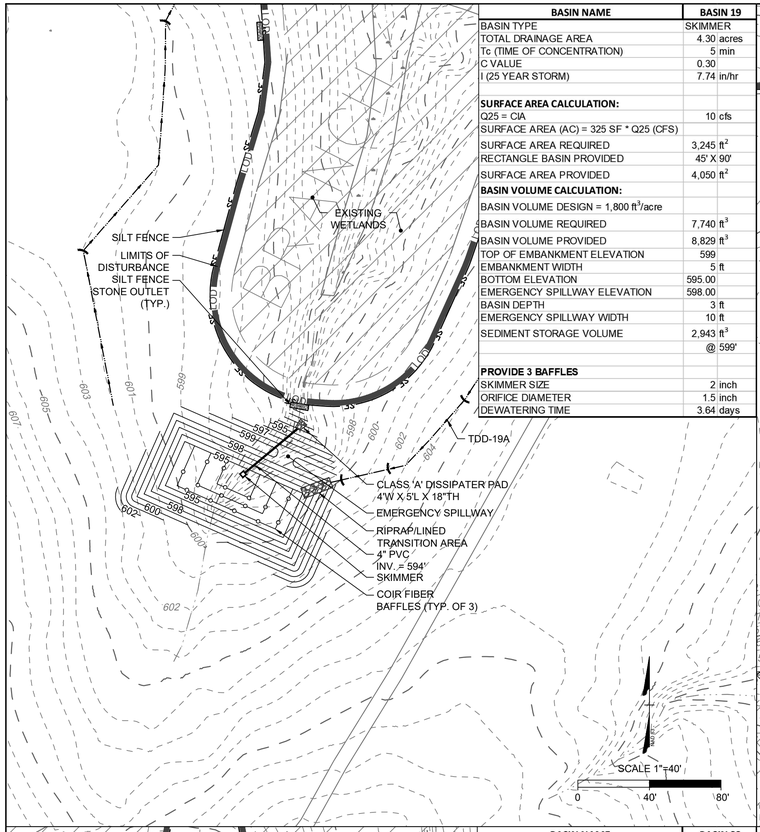
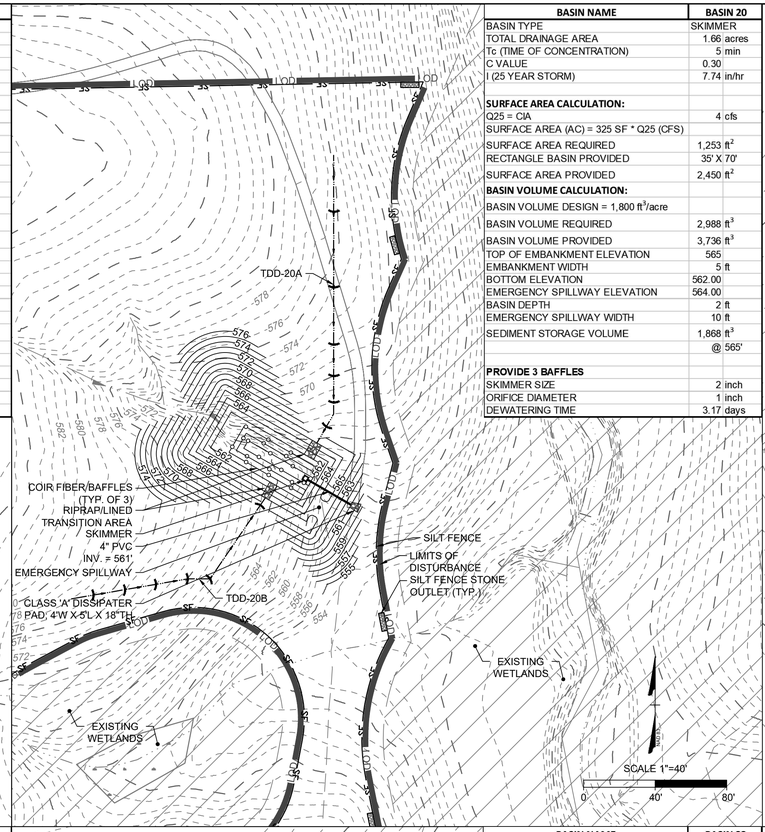
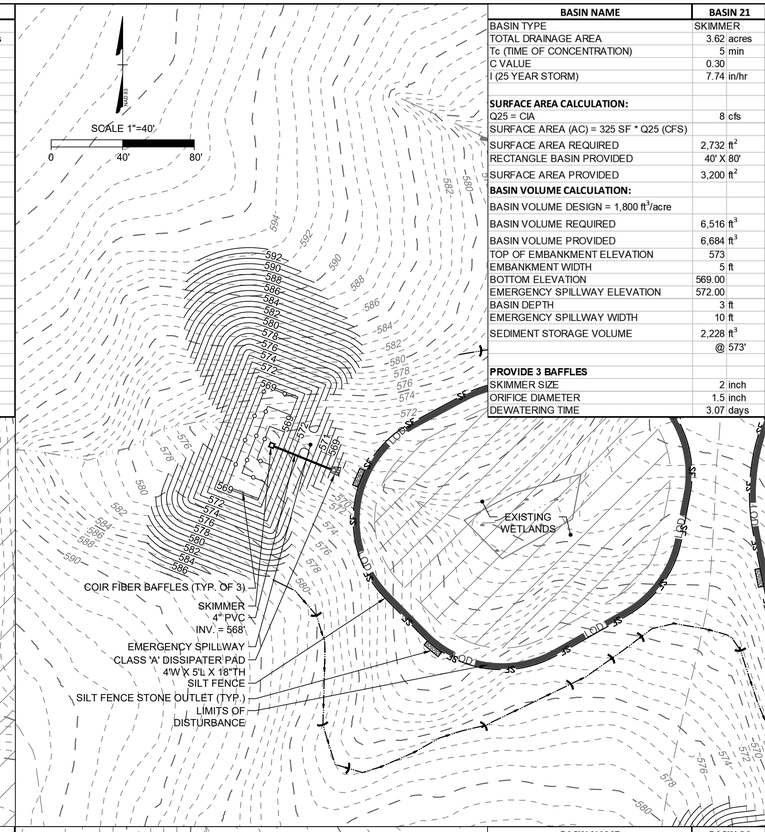


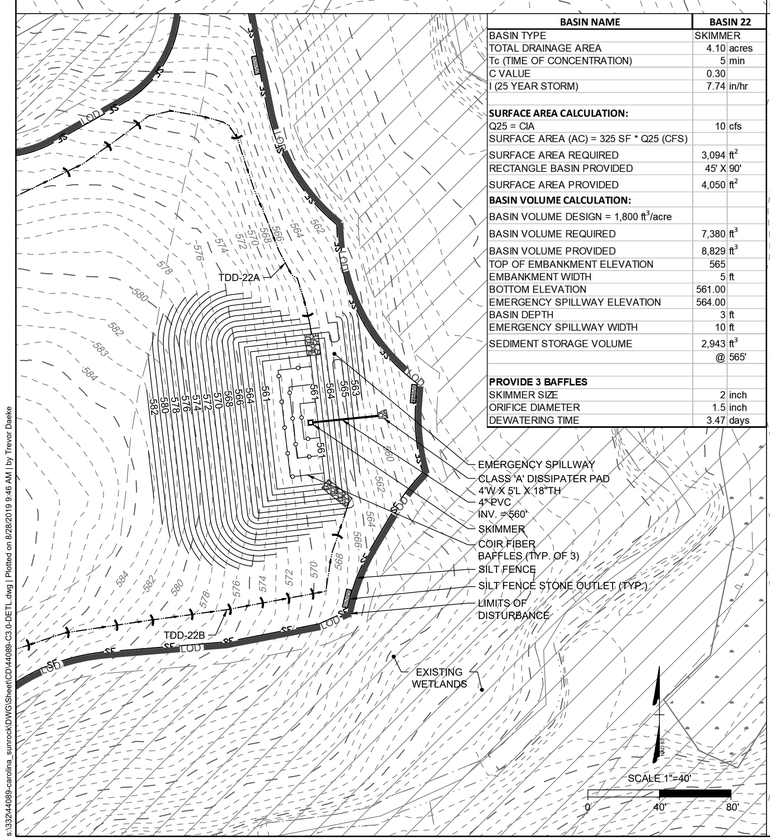
BASIN NAME	BASIN 19	
BASIN TYPE	SKIMMER	
TOTAL DRAINAGE AREA	4.30	acres
Tc (TIME OF CONCENTRATION)	5	min
C VALUE	0.30	
I (25 YEAR STORM)	7.74	in/hr
SURFACE AREA CALCULATION:		
Q25 = CIA	10	cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)		
SURFACE AREA REQUIRED	3,245	ft^2
RECTANGLE BASIN PROVIDED	45' X 90'	
SURFACE AREA PROVIDED	4,050	ft^2
BASIN VOLUME CALCULATION:		
BASIN VOLUME DESIGN = 1,800 ft^3/acre		
BASIN VOLUME REQUIRED	7,740	ft^3
BASIN VOLUME PROVIDED	8,829	ft^3
TOP OF EMBANKMENT ELEVATION	599	
EMBANKMENT WIDTH	5	ft
BOTTOM ELEVATION	595.00	
EMERGENCY SPILLWAY ELEVATION	598.00	
BASIN DEPTH	3	ft
EMERGENCY SPILLWAY WIDTH	10	ft
SEDIMENT STORAGE VOLUME	2,943	ft^3
	@ 599'	
PROVIDE 3 BAFFLES		
SKIMMER SIZE	2	inch
ORIFICE DIAMETER	1.5	inch
DEWATERING TIME	3.64	days



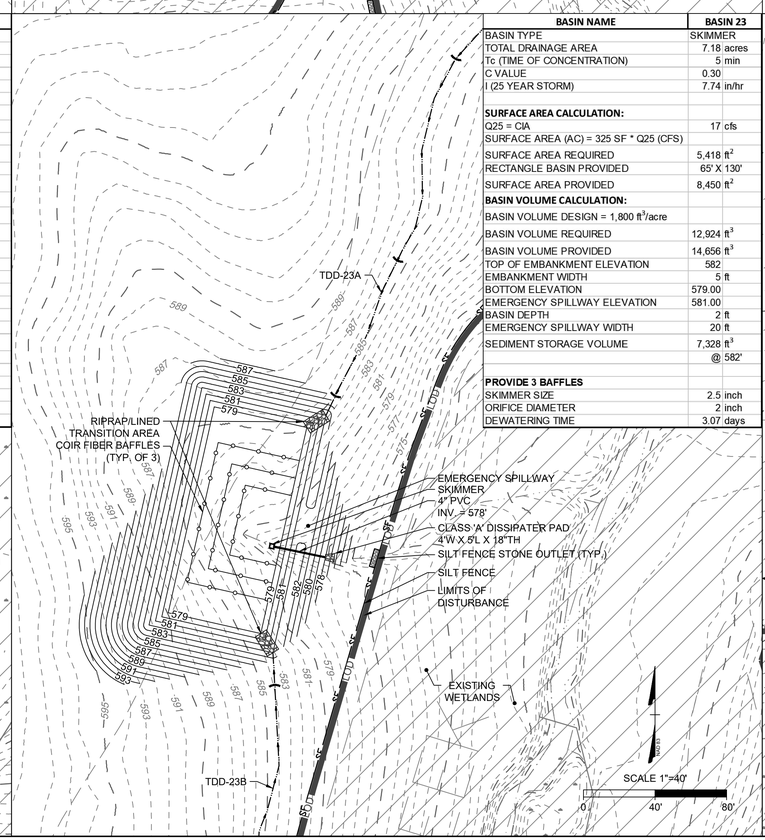
BASIN NAME	BASIN 20	
BASIN TYPE	SKIMMER	
TOTAL DRAINAGE AREA	1.66	acres
Tc (TIME OF CONCENTRATION)	5	min
C VALUE	0.30	
I (25 YEAR STORM)	7.74	in/hr
SURFACE AREA CALCULATION:		
Q25 = CIA	4	cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)		
SURFACE AREA REQUIRED	1,253	ft^2
RECTANGLE BASIN PROVIDED	35' X 70'	
SURFACE AREA PROVIDED	2,450	ft^2
BASIN VOLUME CALCULATION:		
BASIN VOLUME DESIGN = 1,800 ft^3/acre		
BASIN VOLUME REQUIRED	2,988	ft^3
BASIN VOLUME PROVIDED	3,736	ft^3
TOP OF EMBANKMENT ELEVATION	565	
EMBANKMENT WIDTH	5	ft
BOTTOM ELEVATION	562.00	
EMERGENCY SPILLWAY ELEVATION	564.00	
BASIN DEPTH	2	ft
EMERGENCY SPILLWAY WIDTH	10	ft
SEDIMENT STORAGE VOLUME	1,868	ft^3
	@ 565'	
PROVIDE 3 BAFFLES		
SKIMMER SIZE	2	inch
ORIFICE DIAMETER	1	inch
DEWATERING TIME	3.17	days



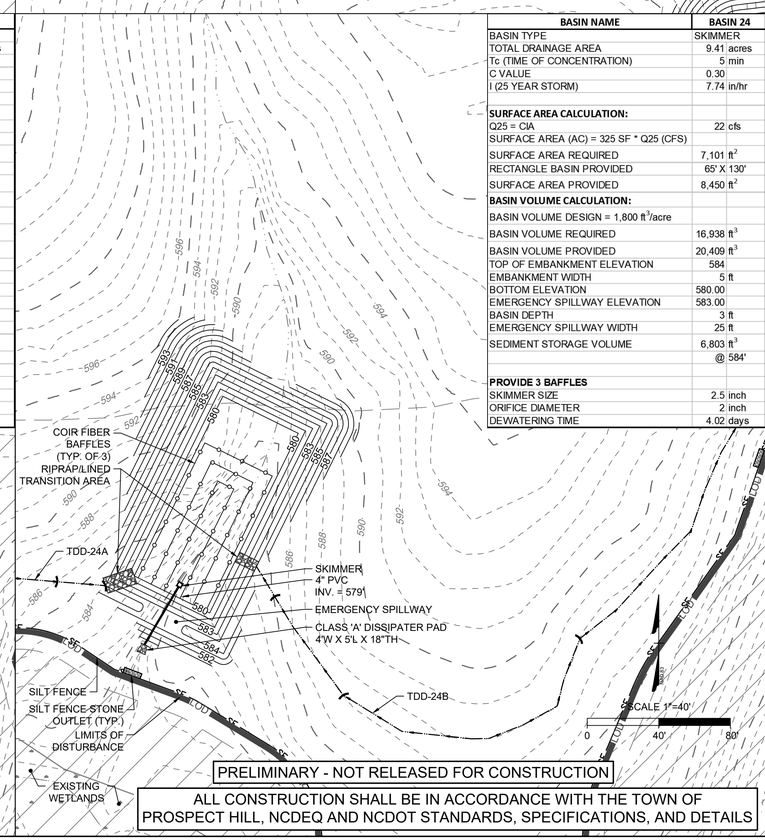
BASIN NAME	BASIN 21	
BASIN TYPE	SKIMMER	
TOTAL DRAINAGE AREA	3.62	acres
Tc (TIME OF CONCENTRATION)	5	min
C VALUE	0.30	
I (25 YEAR STORM)	7.74	in/hr
SURFACE AREA CALCULATION:		
Q25 = CIA	8	cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)		
SURFACE AREA REQUIRED	2,732	ft^2
RECTANGLE BASIN PROVIDED	40' X 80'	
SURFACE AREA PROVIDED	3,200	ft^2
BASIN VOLUME CALCULATION:		
BASIN VOLUME DESIGN = 1,800 ft^3/acre		
BASIN VOLUME REQUIRED	6,516	ft^3
BASIN VOLUME PROVIDED	6,684	ft^3
TOP OF EMBANKMENT ELEVATION	573	
EMBANKMENT WIDTH	5	ft
BOTTOM ELEVATION	569.00	
EMERGENCY SPILLWAY ELEVATION	572.00	
BASIN DEPTH	3	ft
EMERGENCY SPILLWAY WIDTH	10	ft
SEDIMENT STORAGE VOLUME	2,228	ft^3
	@ 573'	
PROVIDE 3 BAFFLES		
SKIMMER SIZE	2	inch
ORIFICE DIAMETER	1.5	inch
DEWATERING TIME	3.07	days



BASIN NAME	BASIN 22	
BASIN TYPE	SKIMMER	
TOTAL DRAINAGE AREA	4.10	acres
Tc (TIME OF CONCENTRATION)	5	min
C VALUE	0.30	
I (25 YEAR STORM)	7.74	in/hr
SURFACE AREA CALCULATION:		
Q25 = CIA	10	cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)		
SURFACE AREA REQUIRED	3,094	ft^2
RECTANGLE BASIN PROVIDED	45' X 90'	
SURFACE AREA PROVIDED	4,050	ft^2
BASIN VOLUME CALCULATION:		
BASIN VOLUME DESIGN = 1,800 ft^3/acre		
BASIN VOLUME REQUIRED	7,380	ft^3
BASIN VOLUME PROVIDED	8,829	ft^3
TOP OF EMBANKMENT ELEVATION	565	
EMBANKMENT WIDTH	5	ft
BOTTOM ELEVATION	561.00	
EMERGENCY SPILLWAY ELEVATION	564.00	
BASIN DEPTH	3	ft
EMERGENCY SPILLWAY WIDTH	10	ft
SEDIMENT STORAGE VOLUME	2,943	ft^3
	@ 565'	
PROVIDE 3 BAFFLES		
SKIMMER SIZE	2	inch
ORIFICE DIAMETER	1.5	inch
DEWATERING TIME	3.47	days



BASIN NAME	BASIN 23	
BASIN TYPE	SKIMMER	
TOTAL DRAINAGE AREA	7.18	acres
Tc (TIME OF CONCENTRATION)	5	min
C VALUE	0.30	
I (25 YEAR STORM)	7.74	in/hr
SURFACE AREA CALCULATION:		
Q25 = CIA	17	cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)		
SURFACE AREA REQUIRED	5,418	ft^2
RECTANGLE BASIN PROVIDED	65' X 130'	
SURFACE AREA PROVIDED	8,450	ft^2
BASIN VOLUME CALCULATION:		
BASIN VOLUME DESIGN = 1,800 ft^3/acre		
BASIN VOLUME REQUIRED	12,924	ft^3
BASIN VOLUME PROVIDED	14,656	ft^3
TOP OF EMBANKMENT ELEVATION	582	
EMBANKMENT WIDTH	5	ft
BOTTOM ELEVATION	579.00	
EMERGENCY SPILLWAY ELEVATION	581.00	
BASIN DEPTH	2	ft
EMERGENCY SPILLWAY WIDTH	20	ft
SEDIMENT STORAGE VOLUME	7,328	ft^3
	@ 582'	
PROVIDE 3 BAFFLES		
SKIMMER SIZE	2.5	inch
ORIFICE DIAMETER	2	inch
DEWATERING TIME	3.07	days



BASIN NAME	BASIN 24	
BASIN TYPE	SKIMMER	
TOTAL DRAINAGE AREA	9.41	acres
Tc (TIME OF CONCENTRATION)	5	min
C VALUE	0.30	
I (25 YEAR STORM)	7.74	in/hr
SURFACE AREA CALCULATION:		
Q25 = CIA	22	cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)		
SURFACE AREA REQUIRED	7,101	ft^2
RECTANGLE BASIN PROVIDED	65' X 130'	
SURFACE AREA PROVIDED	8,450	ft^2
BASIN VOLUME CALCULATION:		
BASIN VOLUME DESIGN = 1,800 ft^3/acre		
BASIN VOLUME REQUIRED	16,938	ft^3
BASIN VOLUME PROVIDED	20,409	ft^3
TOP OF EMBANKMENT ELEVATION	584	
EMBANKMENT WIDTH	5	ft
BOTTOM ELEVATION	580.00	
EMERGENCY SPILLWAY ELEVATION	583.00	
BASIN DEPTH	3	ft
EMERGENCY SPILLWAY WIDTH	25	ft
SEDIMENT STORAGE VOLUME	6,803	ft^3
	@ 584'	
PROVIDE 3 BAFFLES		
SKIMMER SIZE	2.5	inch
ORIFICE DIAMETER	2	inch
DEWATERING TIME	4.02	days

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NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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REVISION DESCRIPTION	DATE

DATE	2019-08-22
DRAWN BY	T. DAEKE
DESIGNED BY	S. MOORE
CHECKED BY	R. BAKER
SCALE	AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

SEDIMENT BASIN ENLARGEMENTS

JOB NO. 44089

SHEET NO. C3.40

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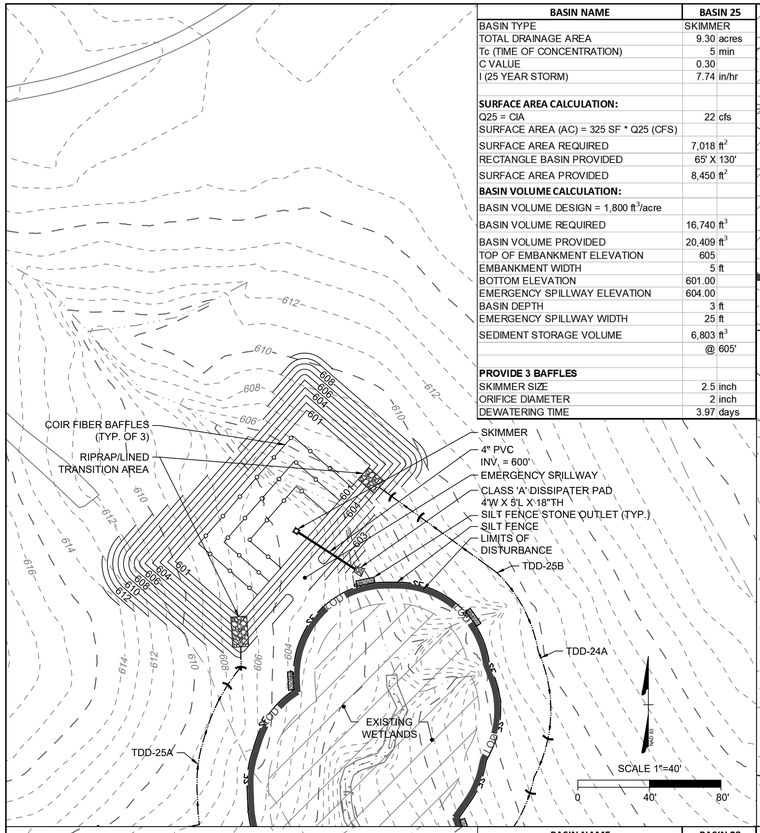
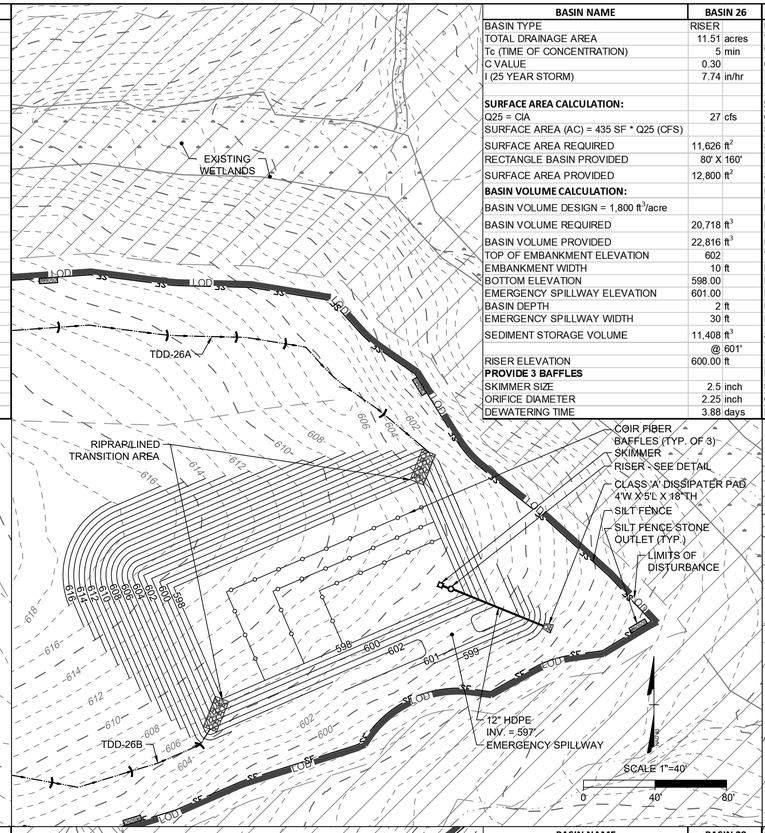
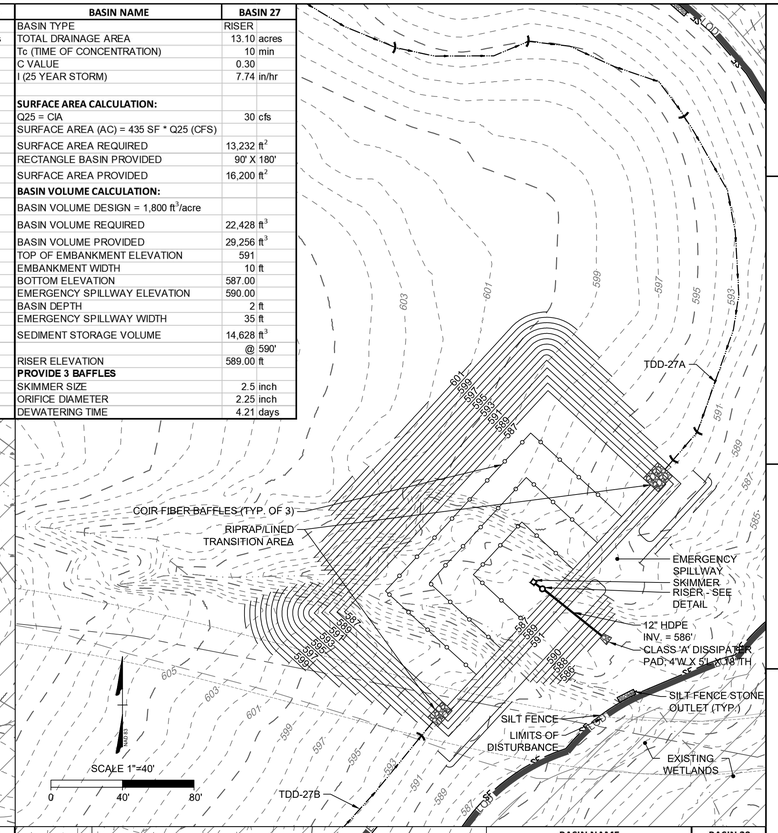
BASIN NAME	BASIN 25
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	9.30 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	22 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	7,018 ft^2
RECTANGLE BASIN PROVIDED	65' X 130'
SURFACE AREA PROVIDED	8,450 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	16,740 ft^3
BASIN VOLUME PROVIDED	20,409 ft^3
TOP OF EMBANKMENT ELEVATION	605
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	601.00
EMERGENCY SPILLWAY ELEVATION	604.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	25 ft
SEDIMENT STORAGE VOLUME	6,803 ft^3
	@ 605'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	3.97 days



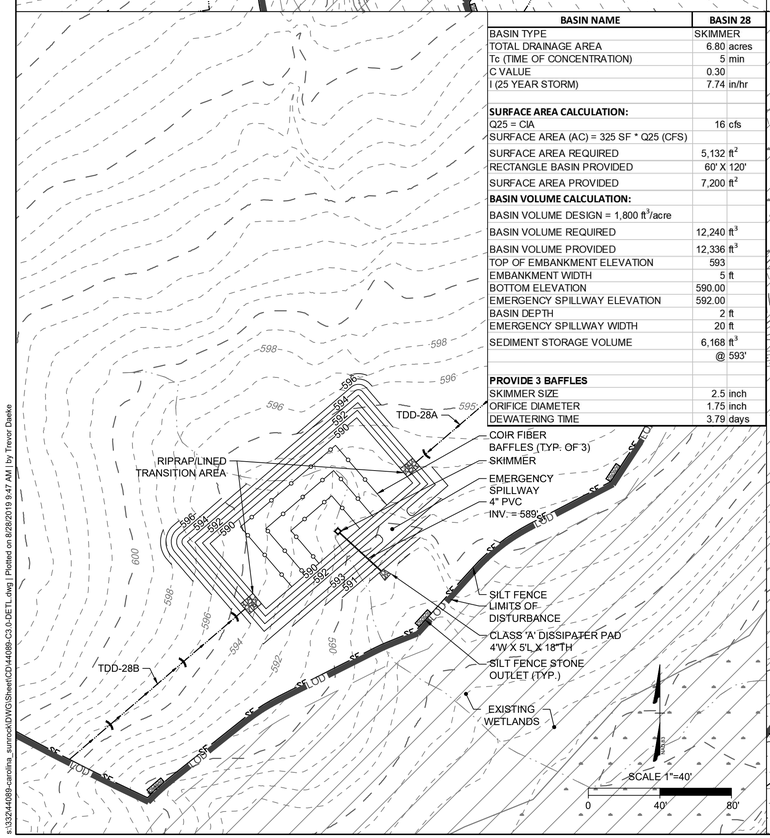
BASIN NAME	BASIN 26
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	11.51 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	27 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	11,626 ft^2
RECTANGLE BASIN PROVIDED	80' X 160'
SURFACE AREA PROVIDED	12,800 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	20,718 ft^3
BASIN VOLUME PROVIDED	22,816 ft^3
TOP OF EMBANKMENT ELEVATION	602
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	598.00
EMERGENCY SPILLWAY ELEVATION	601.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	30 ft
SEDIMENT STORAGE VOLUME	11,408 ft^3
	@ 601'
RISER ELEVATION	600.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2.25 inch
DEWATERING TIME	3.88 days



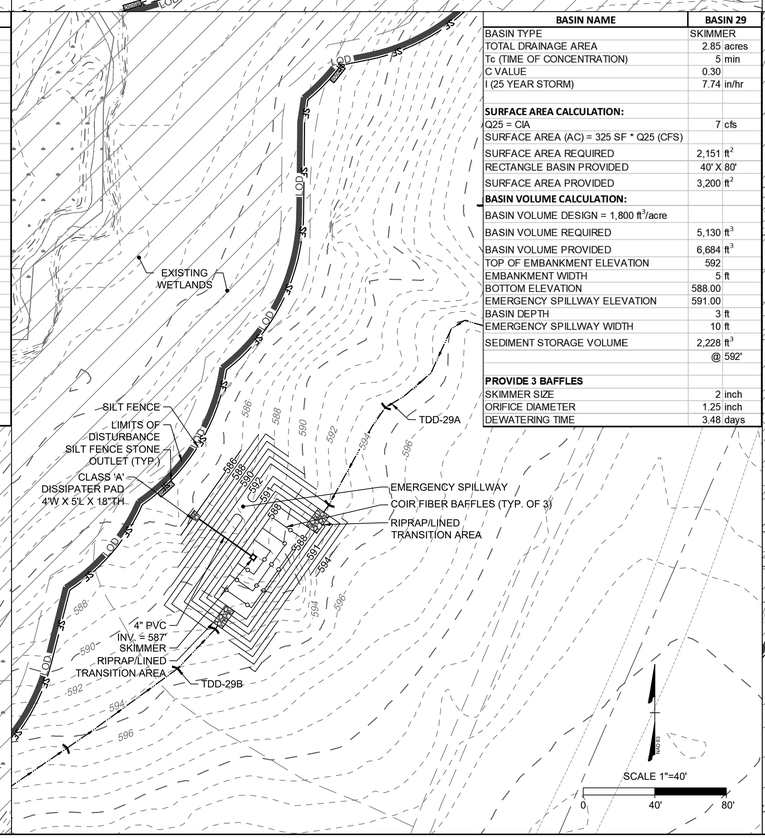
BASIN NAME	BASIN 27
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	13.10 acres
Tc (TIME OF CONCENTRATION)	10 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	30 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	13,232 ft^2
RECTANGLE BASIN PROVIDED	90' X 180'
SURFACE AREA PROVIDED	16,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	22,428 ft^3
BASIN VOLUME PROVIDED	29,256 ft^3
TOP OF EMBANKMENT ELEVATION	591
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	587.00
EMERGENCY SPILLWAY ELEVATION	590.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	35 ft
SEDIMENT STORAGE VOLUME	14,628 ft^3
	@ 590'
RISER ELEVATION	589.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2.25 inch
DEWATERING TIME	4.21 days



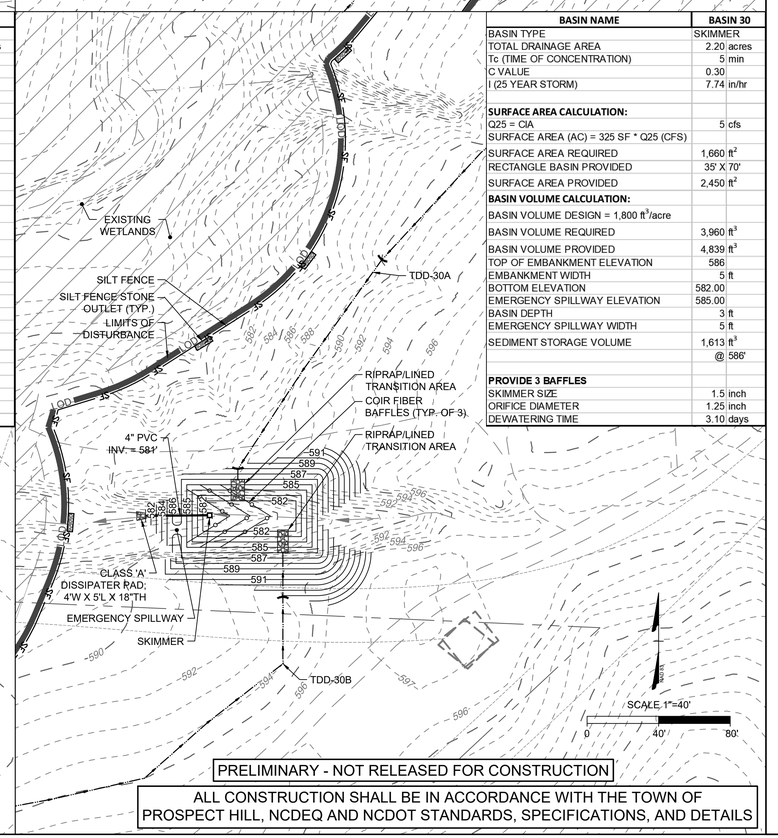
BASIN NAME	BASIN 28
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	6.80 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	16 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	5,132 ft^2
RECTANGLE BASIN PROVIDED	60' X 120'
SURFACE AREA PROVIDED	7,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	12,240 ft^3
BASIN VOLUME PROVIDED	12,336 ft^3
TOP OF EMBANKMENT ELEVATION	593
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	590.00
EMERGENCY SPILLWAY ELEVATION	592.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	20 ft
SEDIMENT STORAGE VOLUME	6,168 ft^3
	@ 593'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	1.75 inch
DEWATERING TIME	3.79 days



BASIN NAME	BASIN 29
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	2.85 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	7 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	2,151 ft^2
RECTANGLE BASIN PROVIDED	40' X 80'
SURFACE AREA PROVIDED	3,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	5,130 ft^3
BASIN VOLUME PROVIDED	6,684 ft^3
TOP OF EMBANKMENT ELEVATION	592
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	588.00
EMERGENCY SPILLWAY ELEVATION	591.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	10 ft
SEDIMENT STORAGE VOLUME	2,228 ft^3
	@ 592'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.25 inch
DEWATERING TIME	3.48 days



BASIN NAME	BASIN 30
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	2.20 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	5 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	1,660 ft^2
RECTANGLE BASIN PROVIDED	35' X 70'
SURFACE AREA PROVIDED	2,450 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	3,960 ft^3
BASIN VOLUME PROVIDED	4,839 ft^3
TOP OF EMBANKMENT ELEVATION	586
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	582.00
EMERGENCY SPILLWAY ELEVATION	585.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	5 ft
SEDIMENT STORAGE VOLUME	1,613 ft^3
	@ 586'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	1.5 inch
ORIFICE DIAMETER	1.25 inch
DEWATERING TIME	3.10 days



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08/28/19

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REVISION DESCRIPTION	DATE

DATE	2019-08-22
DRAWN BY	T. DAEKE
DESIGNED BY	S. MOORE
CHECKED BY	R. BAKER
SCALE	AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

SEDIMENT BASIN ENLARGEMENTS

JOB NO. 44089

SHEET NO. C3.50

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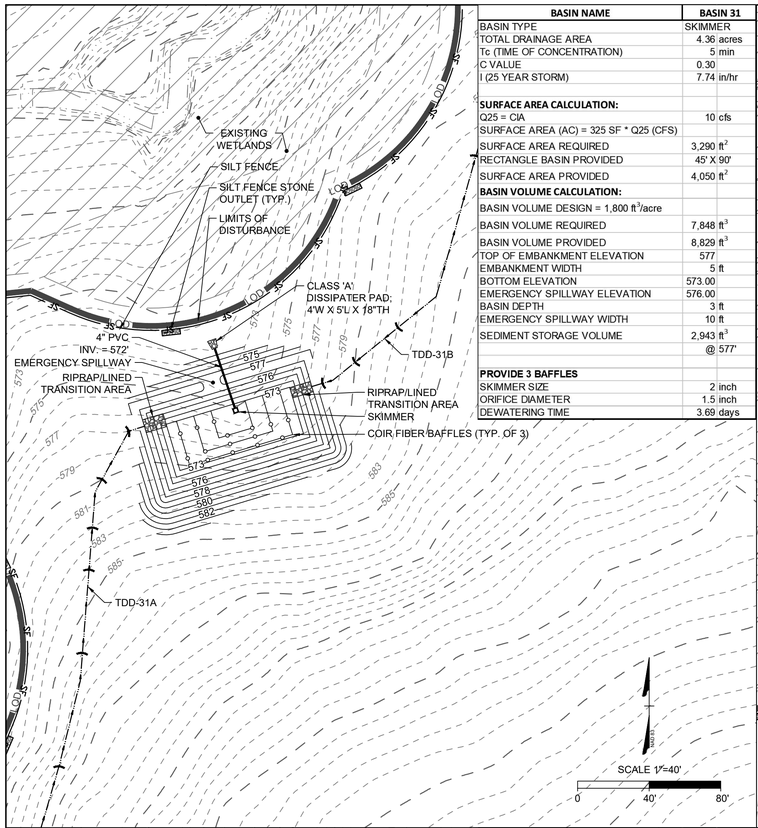
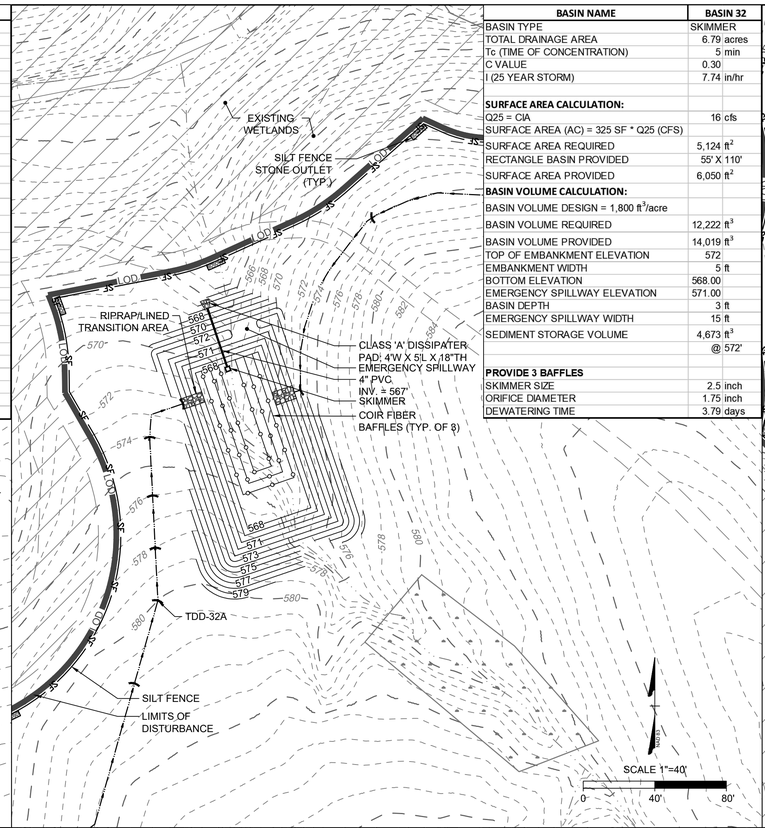
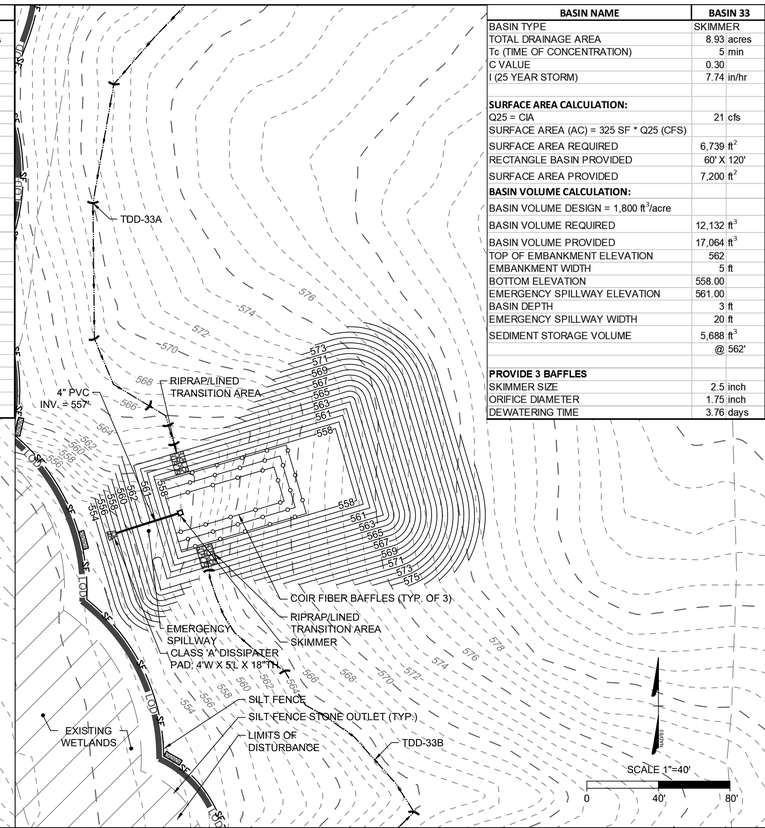


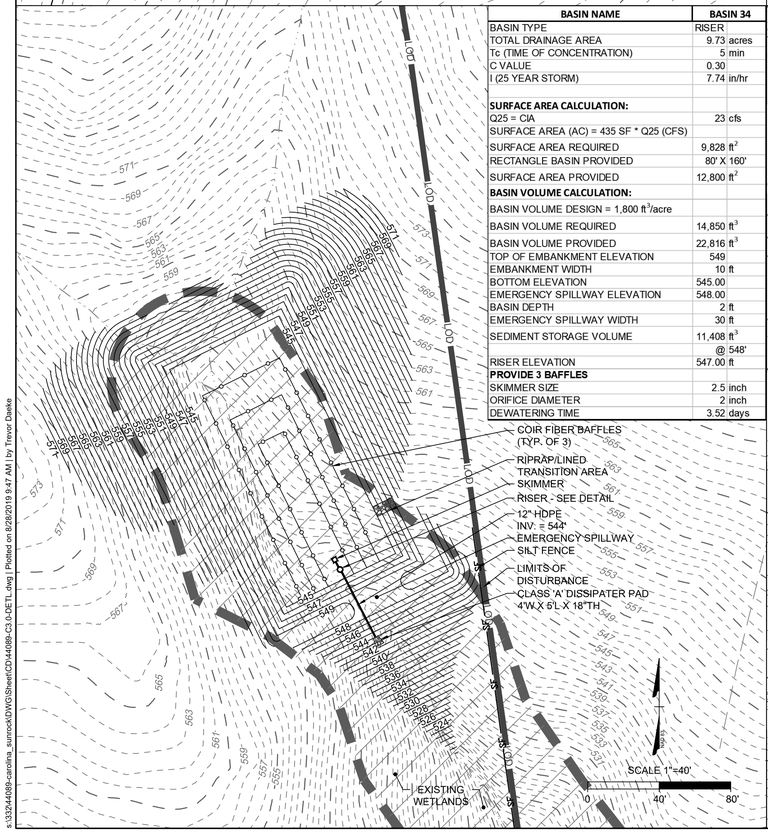
BASIN NAME	BASIN 31
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	4.36 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	10 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	3,290 ft^2
RECTANGLE BASIN PROVIDED	45' X 90'
SURFACE AREA PROVIDED	4,050 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	7,848 ft^3
BASIN VOLUME PROVIDED	8,829 ft^3
TOP OF EMBANKMENT ELEVATION	577
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	573.00
EMERGENCY SPILLWAY ELEVATION	576.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	10 ft
SEDIMENT STORAGE VOLUME	2,943 ft^3 @ 577'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.5 inch
DEWATERING TIME	3.69 days



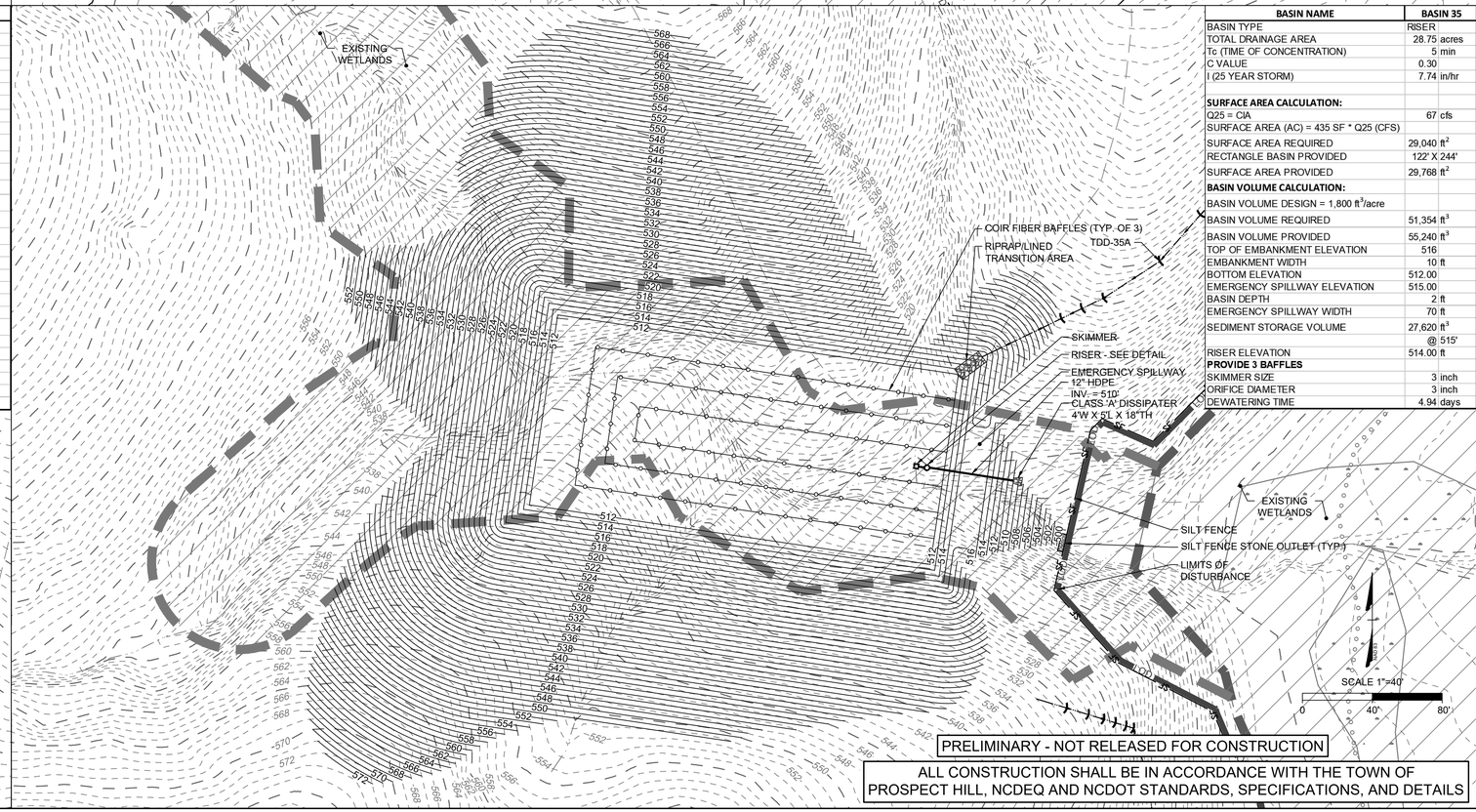
BASIN NAME	BASIN 32
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	6.79 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	16 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	5,124 ft^2
RECTANGLE BASIN PROVIDED	55' X 110'
SURFACE AREA PROVIDED	6,050 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	12,222 ft^3
BASIN VOLUME PROVIDED	14,019 ft^3
TOP OF EMBANKMENT ELEVATION	572
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	568.00
EMERGENCY SPILLWAY ELEVATION	571.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	15 ft
SEDIMENT STORAGE VOLUME	4,673 ft^3 @ 572'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	1.75 inch
DEWATERING TIME	3.79 days



BASIN NAME	BASIN 33
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	8.93 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	21 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	6,739 ft^2
RECTANGLE BASIN PROVIDED	60' X 120'
SURFACE AREA PROVIDED	7,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	12,132 ft^3
BASIN VOLUME PROVIDED	17,064 ft^3
TOP OF EMBANKMENT ELEVATION	562
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	558.00
EMERGENCY SPILLWAY ELEVATION	561.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	20 ft
SEDIMENT STORAGE VOLUME	5,688 ft^3 @ 562'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	1.75 inch
DEWATERING TIME	3.76 days



BASIN NAME	BASIN 34
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	9.73 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	23 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	9,828 ft^2
RECTANGLE BASIN PROVIDED	80' X 160'
SURFACE AREA PROVIDED	12,800 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	14,850 ft^3
BASIN VOLUME PROVIDED	22,816 ft^3
TOP OF EMBANKMENT ELEVATION	549
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	545.00
EMERGENCY SPILLWAY ELEVATION	548.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	30 ft
SEDIMENT STORAGE VOLUME	11,408 ft^3 @ 548'
RISER ELEVATION	547.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	3.52 days



BASIN NAME	BASIN 35
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	28.75 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	67 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	29,040 ft^2
RECTANGLE BASIN PROVIDED	122' X 244'
SURFACE AREA PROVIDED	29,768 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	51,354 ft^3
BASIN VOLUME PROVIDED	55,240 ft^3
TOP OF EMBANKMENT ELEVATION	516
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	512.00
EMERGENCY SPILLWAY ELEVATION	515.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	70 ft
SEDIMENT STORAGE VOLUME	27,620 ft^3 @ 515'
RISER ELEVATION	514.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	3 inch
ORIFICE DIAMETER	3 inch
DEWATERING TIME	4.94 days

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REVISION DESCRIPTION	DATE

DATE	2019-08-22
DRAWN BY	T. DAEKE
DESIGNED BY	S. MOORE
CHECKED BY	R. BAKER
SCALE	AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

SEDIMENT BASIN ENLARGEMENTS

JOB NO. 44089

SHEET NO. C3.60

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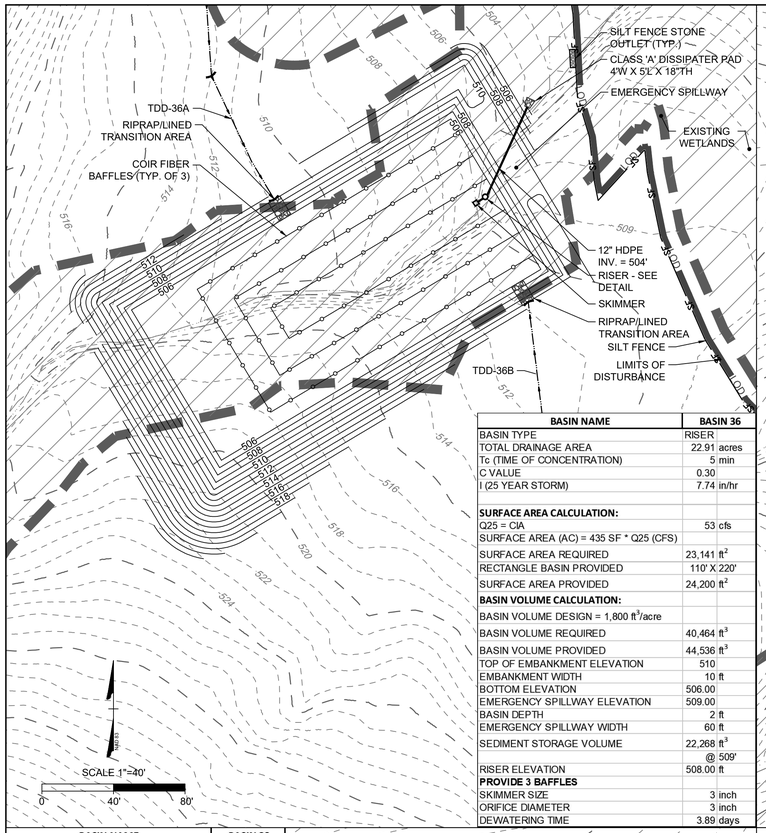
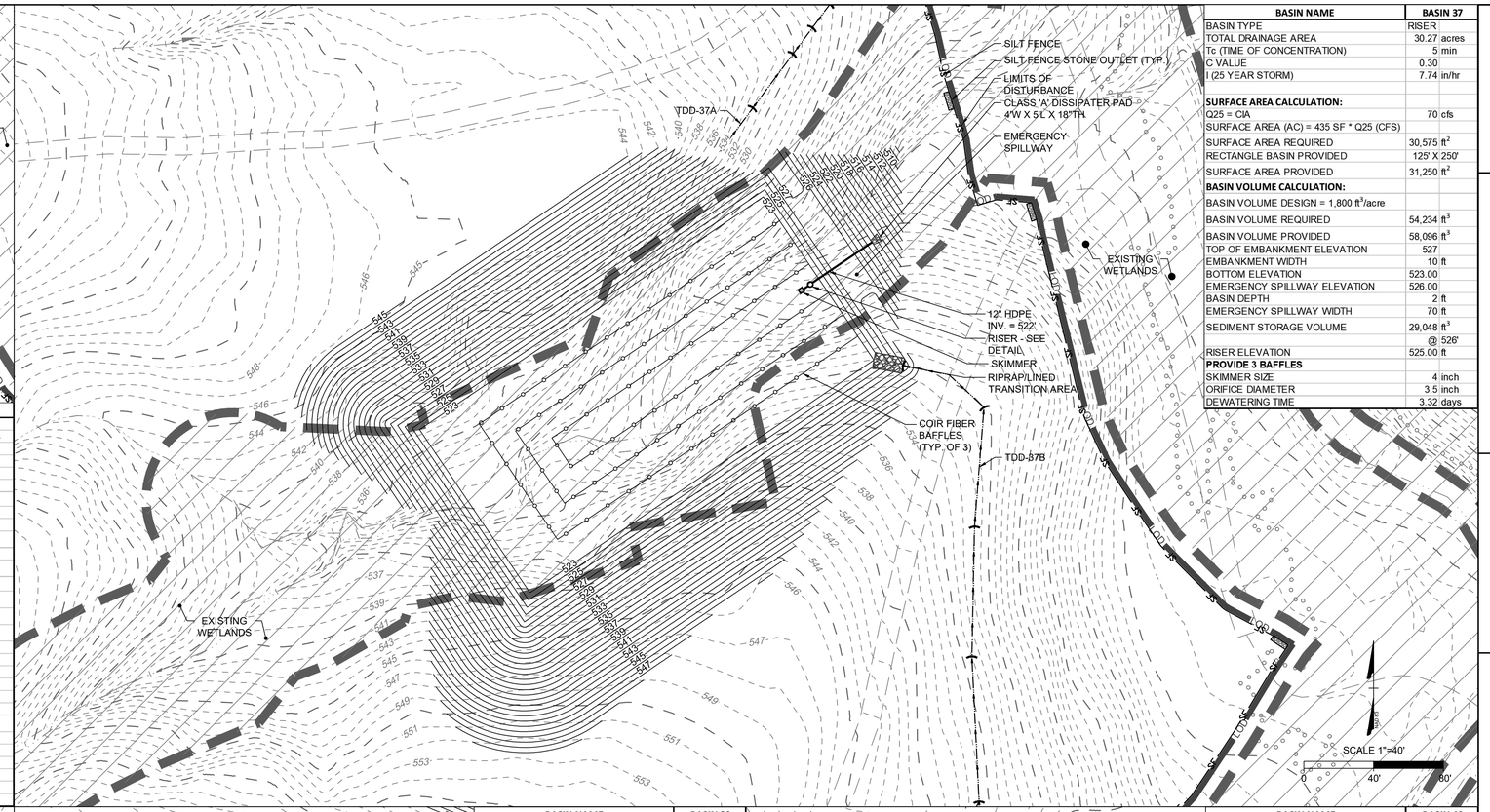
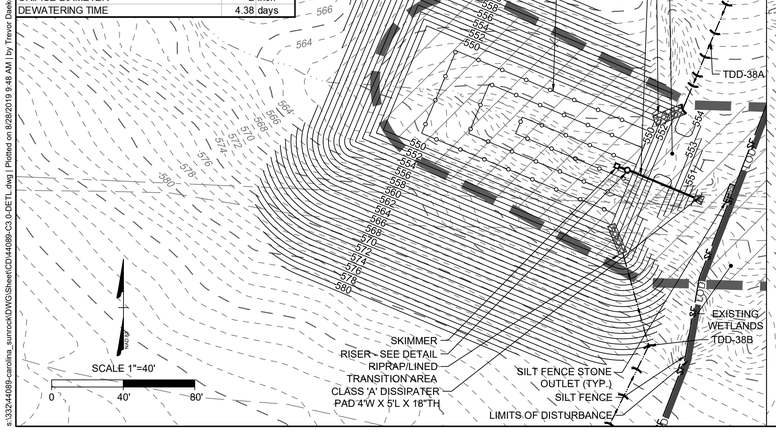


BASIN NAME	BASIN 36
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	22.91 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	53 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	23,141 ft^2
RECTANGLE BASIN PROVIDED	110' X 220'
SURFACE AREA PROVIDED	24,200 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	40,464 ft^3
BASIN VOLUME PROVIDED	44,536 ft^3
TOP OF EMBANKMENT ELEVATION	510
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	506.00
EMERGENCY SPILLWAY ELEVATION	509.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	60 ft
SEDIMENT STORAGE VOLUME	22,268 ft^3 @ 509'
RISER ELEVATION	508.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	3 inch
ORIFICE DIAMETER	3 inch
DEWATERING TIME	3.89 days

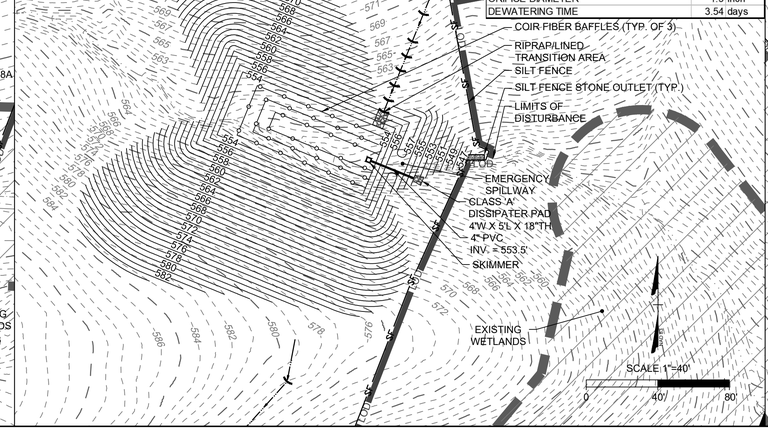


BASIN NAME	BASIN 37
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	30.27 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	70 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	30,575 ft^2
RECTANGLE BASIN PROVIDED	125' X 250'
SURFACE AREA PROVIDED	31,250 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	54,234 ft^3
BASIN VOLUME PROVIDED	58,096 ft^3
TOP OF EMBANKMENT ELEVATION	527
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	523.00
EMERGENCY SPILLWAY ELEVATION	526.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	70 ft
SEDIMENT STORAGE VOLUME	29,048 ft^3 @ 526'
RISER ELEVATION	525.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	4 inch
ORIFICE DIAMETER	3.5 inch
DEWATERING TIME	3.32 days

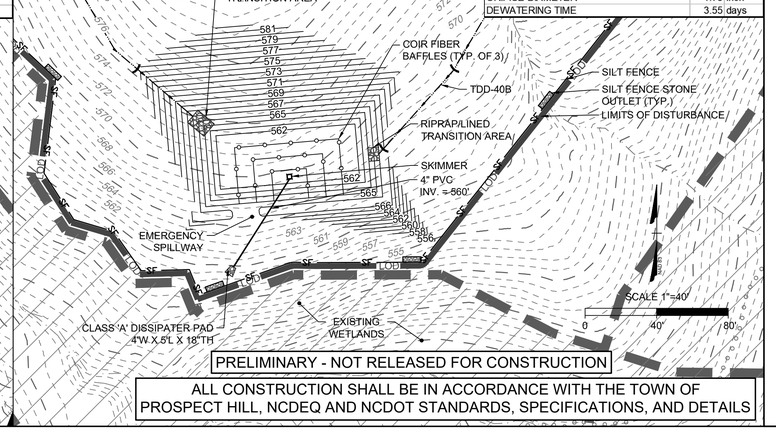
BASIN NAME	BASIN 38
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	10.26 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	24 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	10,363 ft^2
RECTANGLE BASIN PROVIDED	75' X 150'
SURFACE AREA PROVIDED	11,250 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	18,468 ft^3
BASIN VOLUME PROVIDED	19,896 ft^3
TOP OF EMBANKMENT ELEVATION	554
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	550.00
EMERGENCY SPILLWAY ELEVATION	553.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	25 ft
SEDIMENT STORAGE VOLUME	9,948 ft^3 @ 553'
RISER ELEVATION	552.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2 inch
DEWATERING TIME	4.38 days



BASIN NAME	BASIN 39
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	4.18 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	10 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	3,154 ft^2
RECTANGLE BASIN PROVIDED	50' X 100'
SURFACE AREA PROVIDED	5,000 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	7,524 ft^3
BASIN VOLUME PROVIDED	8,296 ft^3
TOP OF EMBANKMENT ELEVATION	557
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	554.00
EMERGENCY SPILLWAY ELEVATION	556.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	10 ft
SEDIMENT STORAGE VOLUME	4,148 ft^3 @ 557'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.5 inch
DEWATERING TIME	3.54 days



BASIN NAME	BASIN 40
BASIN TYPE	SKIMMER
TOTAL DRAINAGE AREA	5.70 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	13 cfs
SURFACE AREA (AC) = 325 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	4,302 ft^2
RECTANGLE BASIN PROVIDED	48' X 96'
SURFACE AREA PROVIDED	4,608 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	10,260 ft^3
BASIN VOLUME PROVIDED	10,260 ft^3
TOP OF EMBANKMENT ELEVATION	566
EMBANKMENT WIDTH	5 ft
BOTTOM ELEVATION	562.00
EMERGENCY SPILLWAY ELEVATION	565.00
BASIN DEPTH	3 ft
EMERGENCY SPILLWAY WIDTH	15 ft
SEDIMENT STORAGE VOLUME	3,420 ft^3 @ 566'
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2 inch
ORIFICE DIAMETER	1.75 inch
DEWATERING TIME	3.55 days



PRELIMINARY - NOT RELEASED FOR CONSTRUCTION

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF PROSPECT HILL, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE

DATE	2019-08-22
DRAWN BY	A. MAY
DESIGNED BY	S. MOORE
CHECKED BY	R. BAKER
SCALE	AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER

PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

SEDIMENT BASIN ENLARGEMENTS

JOB NO.	44089
SHEET NO.	C3.70

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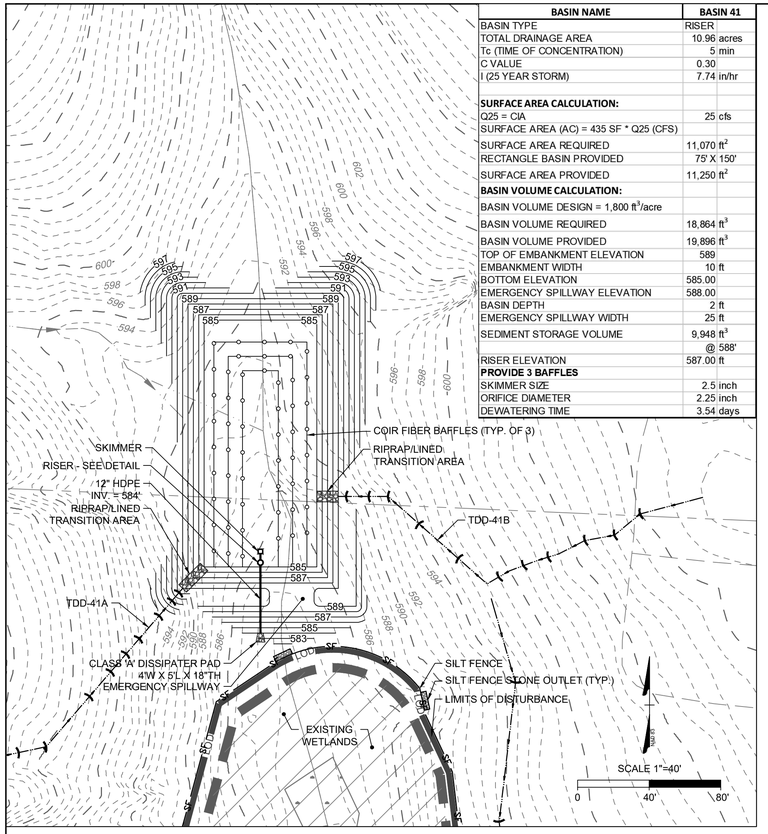
BASIN NAME	BASIN 41
BASIN TYPE	RISER
TOTAL DRAINAGE AREA	10.96 acres
Tc (TIME OF CONCENTRATION)	5 min
C VALUE	0.30
I (25 YEAR STORM)	7.74 in/hr
SURFACE AREA CALCULATION:	
Q25 = CIA	25 cfs
SURFACE AREA (AC) = 435 SF * Q25 (CFS)	
SURFACE AREA REQUIRED	11,070 ft^2
RECTANGLE BASIN PROVIDED	75' X 150'
SURFACE AREA PROVIDED	11,250 ft^2
BASIN VOLUME CALCULATION:	
BASIN VOLUME DESIGN = 1,800 ft^3/acre	
BASIN VOLUME REQUIRED	18,864 ft^3
BASIN VOLUME PROVIDED	19,896 ft^3
TOP OF EMBANKMENT ELEVATION	589
EMBANKMENT WIDTH	10 ft
BOTTOM ELEVATION	585.00
EMERGENCY SPILLWAY ELEVATION	588.00
BASIN DEPTH	2 ft
EMERGENCY SPILLWAY WIDTH	25 ft
SEDIMENT STORAGE VOLUME	9,948 ft^3 @ 588'
RISER ELEVATION	587.00 ft
PROVIDE 3 BAFFLES	
SKIMMER SIZE	2.5 inch
ORIFICE DIAMETER	2.25 inch
DEWATERING TIME	3.54 days



PRELIMINARY - NOT RELEASED FOR CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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REVISION DESCRIPTION	DATE

DATE: 2019-08-22
DRAWN BY: A. MAY
DESIGNED BY: S. MOORE
CHECKED BY: R. BAKER
SCALE: AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA

SEDIMENT BASIN ENLARGEMENTS

JOB NO. 44089
SHEET NO. C3.80

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GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

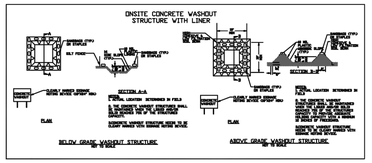
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA *Environmental Quality*



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes [After Discovery] and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA *Environmental Quality*

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

PRELIMINARY - NOT RELEASED FOR CONSTRUCTION

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF PROSPECT HILL, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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REVISION DESCRIPTION	DATE

DATE: 2019-08-22
DRAWN BY: T. DAEKE
DESIGNED BY: S. MOORE
CHECKED BY: R. BAKER
SCALE: AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA
NCDEQ NCG01 SPECIFICATIONS

JOB NO. 44089
SHEET NO. C4.00

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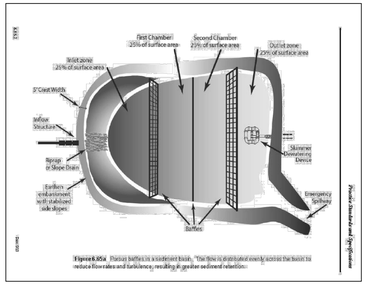

Figure 6.65a Porous baffles in a sediment basin. The flow is distributed evenly across the basin to reduce flow rates and turbulence, resulting in greater sediment retention.

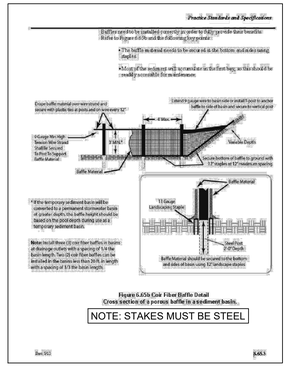

Figure 6.65b Coir Fiber Baffle Detail
Cross section of a porous baffle in a sediment basin.

NOTE: STAKES MUST BE STEEL

MATERIALS
(POROUS BAFFLES)

1. Use matting made of 100% coconut fiber (coir) twine woven into high strength matrix with the properties shown in table 6.6.5a.
2. Staples should be made of 0.125 inch diameter new steel wire formed into a "U" shape not less than 12 inches in length with a throat of 1 inch in width. The staples anchor the porous baffles into the sides and bottom of the basin.
3. Ensure that steel post form porous baffles area of a sufficient height to support baffles at desired height. Post should be approximately 1-3/8" wide measured parallel to the fence, and have a minimum weight of 1.25 lb/linear ft. The posts must be equipped with an anchor plate having a minimum area of 14.0 square inches and be of the self-fastener angle steel type to have a means of retaining wire and coir fiber mat in the desired position without displacement.
4. Use 9-gauge high tension wire for support wire.

Coir Fiber Material Property Requirements	
Thickness	0.30 in. minimum
Tensile Strength (Wet)	900 x 680 lb/ft minimum
Elongation (Wet)	69% x 34% maximum
Flow Velocity	10-12 ft/sec
Weight	20 oz/SY (680 g/m^2) minimum
Minimum Width	6.5 feet
Open Area	50% maximum

Table 6.65a Specifications for Porous Baffle Material

CONSTRUCTION SPECIFICATIONS
(POROUS BAFFLES)

1. Grade the basin so that the bottom is level front to back and side to side.
2. Install the coir fiber baffles immediately upon excavation of the basins.
3. Install posts across the width of the sediment trap (Practice 6.62, Sediment Fence).
4. Steel posts should be driven to a depth of 24 inches and spaced a maximum of 4 feet apart. The top of the fabric should be a minimum of 2 inches lower than the top of the earthen embankment.
5. Install at least three rows of baffles between the inlet and outlet discharge point. Basins less than 20 feet in length may use 2 baffles.
6. Attach a 9 gauge high tension wire stand to the steel post at a height of 6 inches above the spillway elevation with plastic ties or wire fasteners to prevent sagging. If the temporary sediment basin will be converted to a permanent stormwater basin of a greater depth, the baffle height should be based on the pool depth during use as a temporary sediment basin.
7. Extend 9 gauge minimum high tension wire strand to side of basin or install steel T-post to anchor baffle to side of basin and secure to vertical end posts as shown in Figure 6.65b.
8. Drape the coir fiber mat over the wire stand mounted at a height of 6 inches above the spillway elevation. Secure the coir fiber mat to the wire strand with plastic ties or wire fasteners. Anchor the matting to the sides and floor of the basin with 12 inch wire staples, approximately 1 ft apart, along the bottom and side slopes of the basin.
9. Do not splice the fabric, but use a continuous piece across the basin.
10. Adjustments may be required in the stapling requirements to fit individual site conditions.

MAINTENANCE SPECIFICATIONS
(POROUS BAFFLES)

1. Inspect baffles at least once a week and after each rainfall. Make any required repairs immediately.
2. Be sure to maintain access to the baffles. Should the fabric of a baffle collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits when it reaches half full to provide adequate storage volume for the next rain and to reduce pressure on the baffles. Take care to avoid damaging the baffles during cleanout, and replace if damaged during cleanout operations. Sediment depth should never exceed half the designed storage depth.
4. After the contributing drainage area has been properly stabilized, remove all baffle materials and unstable sediment deposits, bring the area to grade, and stabilize it.

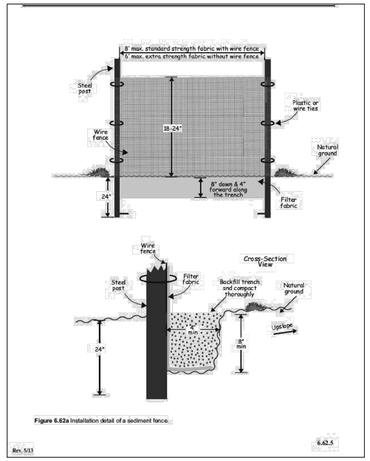

Figure 6.62a Installation detail of a sediment fence.

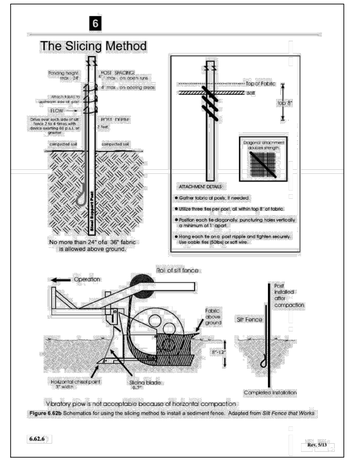

Figure 6.62b Schematics for using the slicing method to install a sediment fence. Adapted from *Silt Fence that Works*

MATERIALS
(SEDIMENT FENCE)

1. Use a synthetic filter fabric 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.
2. Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120° f.
3. Ensure that post for sediment fences are 1.25 lb/linear ft minimum steel with a minimum length of 5 feet. Make sure that steel posts have projections to facilitate fastening the fabric.
4. 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 Silt Fence Material Property Requirements					
	Test Material	Units	Supported[1] Silt Fence	Un-Supported[1] Silt Fence	Type of Value
Grab Strength	ASTM D 4632	N (lbs)			
Machine Direction			400	550	MARV
			(90)	(90)	
X-Machine Direction			400	450	MARV
			(90)	(90)	
Permittivity[2]	ASTM D 4491	sec-1	0.05	0.05	MARV
Apparent Opening Size[2]	ASTM D 4751	mm	0.60	0.60	Max. ARV[3]
		(US Sieve #)	(30)	(30)	
Ultraviolet Stability	ASTM D 4355	% Retained Strength	70% after 500h of exposure	70% after 500h of exposure	Typical

[1] Silt Fence support shall consist of 14 gage steel wire with a mesh 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 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 4632.

CONSTRUCTION SPECIFICATIONS
(SEDIMENT FENCE)

1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
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 sufficient to cause failure of the structure.)
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 strength.
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 24 inches.
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.
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 USINGTHE 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 Specifications

1. 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.
2. Install posts 4 feet apart in critical areas and 6 feet apart on standard applications.
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 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.
6. Wrap approximately 6 inches of fabric around the end posts and secure with 3 ties.
7. No more than 24 inches of a 36 inch fabric is allowed above ground level.
8. The installation should be checked and corrected for any deviations before compaction.
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.

MAINTENANCE SPECIFICATIONS
(SEDIMENT FENCE)

1. Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

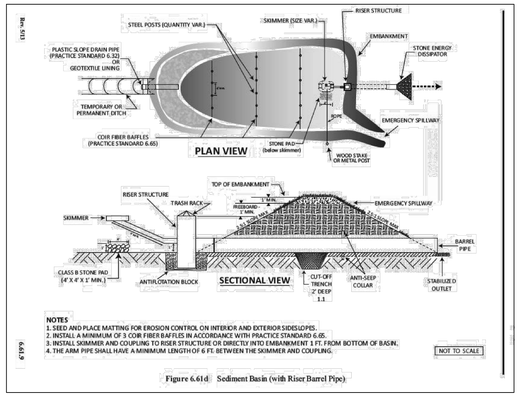

Figure 6.61d Sediment Basin (with Riser Barrel Pipe)

CONSTRUCTION SPECIFICATIONS
(SEDIMENT BASIN WITH RISER BARREL PIPE)

1. Site preparations- Clear, grub, and strip topsoil from areas under the embankment to remove trees, vegetation, roots, and other objectionable material. Delay clearing the pool area until the dam is complete and then remove brush, trees, and other objectionable materials to facilitate sediment cleanout. Stockpile all topsoil or soil containing organic matter for use on the outer shell of the embankment to facilitate vegetative establishment. Place temporary sediment control measures below the basin as needed.
2. Cut-off trench- Excavate a cut-off trench along the center line of the earth fill embankment. Cut the trench to stable soil material, but in no case make it less than 2 feet deep. The cut-off trench must extend into both abutments to at least the elevation of the riser crest. Make the minimum bottom width wide enough to permit operation of excavation and compaction equipment, but in no case less than 2 feet. Make side slopes of the trench no steeper than 1:1. Compaction requirements are the same as those for the embankment. Keep the trench dry during backfilling and compaction operations.
3. Embankment- Take fill material from the approved areas shown on the plans. It should be clean mineral soil, free of roots, woody vegetation, rocks, and other objectionable material. Scarify areas on which fill is to be placed before placing fill. The fill material must contain sufficient moisture so it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Place fill material in 6 to 8 inch continuous layers over the entire length of the fill area and compact it. Compaction may be obtained by routing the construction hauling equipment over the fill so that the entire surface of each layer is traversed by at least one wheel or tread track of heavy equipment, or a compactor may be used. Construct the embankment to an elevation 10 percent higher than the design height to allow for settling.
4. Conduit spillways- Securely attach the riser to the barrel or barrel stub to make a watertight structural connection. Secure all connections between barrel sections by approved watertight assemblies. Place the barrel and riser on a firm, smooth foundation of impervious soil. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe or anti-seep collars. Place the fill material around the pipe spillway in 4-inch layers, and compact it under and around the pipe to at least the same density as the adjacent embankment. **Care must be taken not to raise the pipe from firm contact with its foundation when compacting under the pipe haunches.** Place a minimum depth of 2 feet of compacted backfill over the pipe spillway before crossing it with construction equipment. Anchor the riser in place by concrete or other satisfactory means to prevent flotation. In no case should the pipe conduit be installed by cutting a trench through the dam after the embankment is complete.
5. Emergency spillway- Install the emergency spillway in undisturbed soil. The achievement of planned elevations, grade, design width, and entrance and exit channel slopes are critical to the successful operation of the emergency spillway.
6. Inlets- Discharge water into the basin in a manner to prevent erosion. Use diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency (*References: Runoff Control Measures and Outlet Protection*).
7. Erosion control- Construct the structure so that the disturbed area is minimized. Divert surface water away from bare areas. Complete the embankment before the area is cleared. Stabilize the emergency spillway embankment and all other disturbed areas above the crest of the principal spillway immediately after construction (*References: Surface Stabilization*).
8. Install porous baffles as specified in Practice 6.65, Porous Baffles.
9. Safety- Sediment basins may attract children and can be dangerous. Avoid steep side slopes, and fence and mark basins with warning signs if trespassing is likely. **Follow all state and local requirements**

MAINTENANCE SPECIFICATIONS
(SEDIMENT BASIN WITH RISER BARREL PIPE)

1. Inspect temporary sediment basins at least weekly and after each significant (1/2 inch or greater) rainfall event and repair immediately. Remove sediment and restore the basin to its original dimensions when it accumulates to one-half the design depth. Place removed sediment in an area with sediment controls.
2. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Make all necessary repairs immediately. Remove all trash and other debris from the riser and pool area.

PRELIMINARY - NOT RELEASED FOR CONSTRUCTION

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF PROSPECT HILL, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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REVISION DESCRIPTION	DATE

DATE: 2019-08-22
DRAWN BY: T. DAEKE
DESIGNED BY: S. MOORE
CHECKED BY: R. BAKER
SCALE: AS SHOWN

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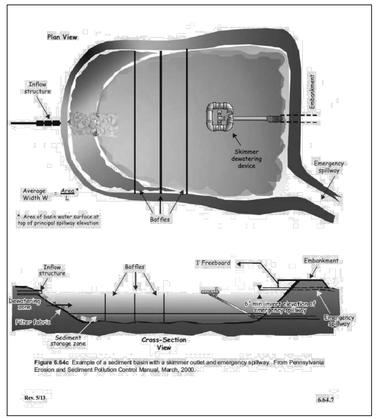

Figure 6.64c Example of a sediment basin with a skimmer outlet and emergency spillway. (From Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

Rev. 5/13 6.64.7

TYPE OF SKIMMER
FAIRCLOTH SKIMMER

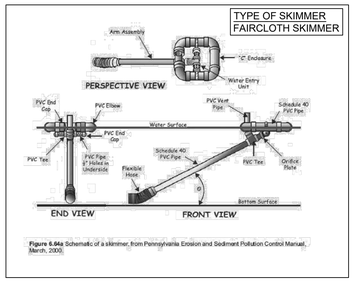

Figure 6.64a Schematic of a skimmer, from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

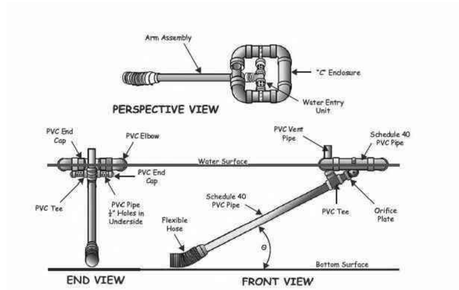

Figure 6.64a Schematic of a skimmer, from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

CONSTRUCTION SPECIFICATIONS
(SKIMMER SEDIMENT BASIN)

1. Clear, grub and strip the area under the embankment of all vegetation and root mat. Remove all surface soil containing high amounts of organic matter and stockpile or dispose of it properly. Haul all objectionable material to the designated disposal area. place temporary sediment control measures below basin as needed.
2. Ensure that fill material for the embankment is free of roots, woody vegetation, organic matter, and other objectionable material. place the fill in lifts not to exceed 9 inches, and machine compact it. Over fill the embankment 6 inches to allow for settlement.
3. Shape the basin to the specified dimensions. Prevent the skimming device from settling into the mud by excavating a shallow pit under the skimmer or providing a low support under the skimmer of stone or timber.
4. Place the barrel (typically 4-inch schedule 40 pvc pipe) on a firm, smooth foundation of impervious soil. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe. Place the fill material around the pipe spillway in 4-inch layers and compact it sunder and around the pipe to at least the same density as the adjacent embankment. Care must be taken not to raise the pipe from the firm contact with its foundation when compacting under the pipe haunches.
5. Assemble the skimmer following the manufacturers instructions, or as designed.
6. Lay the assembled skimmer on the bottom of the basin with the flexible joint at the inlet of the barrel pipe. Attach the flexible joint to the barrel pipe and position the skimmer over the excavated pit or support. Be sure to attach a rope to the skimmer and anchor it to the side of the basin. this will be used to pull the skimmer to the side for maintenance.
7. Earthen spillways - install the spillway in undisturbed soil to the greatest extent possible. The achievement of planned elevations, grade, design width, and entrance and exit channel slopes are critical to the successful operation of the spillway. The spillway should be lined with laminated plastic or impermeable geotextile fabric. the fabric must be wide and long enough to cover the bottom and sides and extend onto the top of the dam for anchoring in a trench. The edges may be secured with 8-inch staples or pines. The fabric must be long enough to extend down the slope and exit onto stable ground. The width of the fabric must be one piece, not joined or spliced; otherwise water can get under the fabric. If the length of the fabric is insufficient for the entire length of the spillway, multiple sections, spanning the complete width, may be used. The upper section(s) should overlap the lower section(s) so that water cannot flow under the fabric. Secure the upper edge and sides of the fabric in a trench with staples or pines. (Adapted from "A Manual for Designing, Installing and Maintaining Skimmer Sediment Basins." February, 1999.J. Faircloth & Son.).
8. Inlets - discharge water into the basin in a manner to prevent erosion. Use temporary slope drains or diversions with outlet protection to divert sediment laden water to the upper end of the pool area to improve basin trap efficiency (References: Runoff Control Measures and Outlet Protection).
9. Erosion control - construct the structure so that the disturbed area is minimized. Divert surface water away from bare spots. Compete the embankment before the area is cleared. Stabilize the emergency spillway embankment and all other disturbed areas above the crest of the principal spillway immediately after construction (References: Surface Stabilization).
10. Install porous baffles as specified in practice 6.65, porous baffles.
11. After all the sediment-produing areas have been permanently stabilized, remove the structure and all the unstable sediment. smooth the area to blend with the adjoining areas and stabilized properly. (References: Surface Stabilization).

MAINTENANCE SPECIFICATIONS
(SKIMMER SEDIMENT BASIN)

1. Inspect skimmer sediment basins at least weekly and after each significant (one-half inch or greater) rainfall event and repair immediately. Remove sediment and restore the basin to its original dimensions when sediment accumulates to one-half the height of the first baffle. Pull the skimmer to one side so that the sediment underneath it can be excavated. Excavate the sediment from the entire basin, not just around the skimmer or the first cell. Make sure vegetation growing in the bottom of the basin does not hold down the skimmer.
2. Repair the baffles if they are damaged. Re-anchor the baffles if water is flowing underneath or around them.
3. If the skimmer is clogged with trash and there is water in the basin, usually jerking on the rope will make the skimmer bob up and down and dislodge the debris and restore flow. If this does not work, pull the skimmer over to the side of the basin and remove the debris. Also check the orifice inside the skimmer to see if it is clogged; if so remove the debris.
4. If the skimmer arm or barrel pipe is clogged, the orifice can be removed and the obstruction cleared with a plumber's snake or by flushing with water. Be sure and replace the orifice before repositioning the skimmer.
5. Check the fabric lined spillway for damage and make any required repairs with fabric that spaces the full width of the spillway. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Make all necessary repairs immediately. Remove all trash and other debris from the skimmer and pool areas.
6. Freezing weather can result in ice forming in the basin. Some special precautions should be taken in the winter to prevent the skimmer from plugging with ice.

INSTALLATION SPECIFICATIONS
(SKIMMER)

1. Prevent the skimming device from settling into the mud by excavating a shallow pit under the skimmer or providing a low support under the skimmer of stone or timber.
2. Assemble the skimmer following the manufacturers instructions, or as designed.
3. Lay the assembled skimmer on the bottom of the basin with the flexible joint at the inlet of the barrel pipe. Attach the flexible joint to the barrel pipe and position the skimmer over the excavated pit or support. Be sure to attach a rope to the skimmer and anchor it to the side of the basin. This will be used to pull the skimmer to the side for maintenance.

MAINTENANCE SPECIFICATIONS
(SKIMMER)

1. Inspect skimmer sediment basins at least weekly and after each significant (one-half inch or greater) rainfall event and repair immediately. Remove sediment and restore the basin to its original dimensions when sediment accumulates to one-half the height of the first baffle. Pull the skimmer to one side so that the sediment underneath it can be excavated. Excavate the sediment from the entire basin, not just around the skimmer or the first cell. Make sure vegetation growing in the bottom of the basin does not hold down the skimmer.
2. If the skimmer is clogged with trash and there is water in the basin, usually jerking on the rope will make the skimmer bob up and down and dislodge the debris and restore flow. If this does not work, pull the skimmer over to the side of the basin and remove the debris. Also check the orifice inside the skimmer to see if it is clogged; if so remove the debris.
3. If the skimmer arm is clogged, the orifice can be removed and the obstruction cleared with a plumber's snake or by flushing with water. Be sure and replace the orifice before repositioning the skimmer.
4. Freezing weather can result in ice forming in the basin. Some special precautions should be taken in the winter to prevent the skimmer from plugging with ice.

INSTALLATION SPECIFICATIONS
(SEDIMENT BASIN BAFFLES)

1. Grade the basin so that the bottom is level front to back and side to side.
2. Install posts or saw horses across the width of the sediment trap (Practice 6.62, *Sediment Fence*).
3. Steel posts should be driven to a depth of 24 inches, spaced a maximum of 4 feet apart, and installed up the sides of the basin as well. The top of the fabric should be 6 inches higher than the invert of the spillway. Tops of baffles should be 2 inches lower than the top of the berms.
4. Install at least three rows of baffles between the inlet and outlet discharge point. Basins less than 20 feet in length may use 2 baffles.
5. When using posts, add a support wire or rope across the top of the measure to prevent sagging.
6. Wrap porous material, like jute backed by coir material, over a sawhorse or the top wire. Hammer rebar into the sawhorse legs for anchoring. The fabric should have five to ten percent openings in the weave. Attach fabric to a rope and a support structure with zip ties, wire, or staples.
7. The bottom and sides of the fabric should be anchored in a trench or pinned with 8-inch erosion control matting staples.
8. Do not splice the fabric, but use a continuous piece across the basin.

MAINTENANCE SPECIFICATIONS
(SEDIMENT BASIN BAFFLES)

1. Inspect baffles at least once a week and after each rainfall. Make any required repairs immediately.
2. Be sure to maintain access to the baffles. Should the fabric of a baffle collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits when it reaches half full to provide adequate storage volume for the next rain and to reduce pressure on the baffles. Take care to avoid damaging the baffles during cleanout. Sediment depth should never exceed half the designed storage depth.
4. After the contributing drainage area has been properly stabilized, remove all baffle materials and unstable sediment deposits, bring the area to grade, and stabilize it.

SEEDING SCHEDULE
(REVISED: 1-1-86)

Shoulders, Side Ditches, Slopes (Max 3:1)

DATE	TYPE	PLANTING RATE
Aug 15 - Nov 1	Tall Fescue	300 lbs/acre
Nov 1 - Mar 1	Tall Fescue & Abruzzi Rye	300 lbs/acre 25 lbs/acre
Mar 1 - Apr 15	Tall Fescue	300 lbs/acre
Apr 15 - Jun 30	Hulled Common Bermudagrass	25 lbs/acre
Jul 1 - Aug 15	Tall Fescue and ***Browntop Millet ***or Sorghum-Sudan Hybrids	120 lbs/acre 35 lbs/acre 30 lbs/acre

Slopes (3:1 to 2:1)

Mar 1 - Jun 1	Sericea Lespedeza (scarified) &	50 lbs/acre
(Mar 1 - Apr 15)	Add Tall Fescue	120 lbs/acre
(Mar 1 - Jun 30)	Or Add Weeping Lovegrass	10 lbs/acre
(Mar 1 - Jun 30)	Or Add Hulled Common Bermudagrass	25 lbs/acre
Jun 1 - Sep 1	***Tall Fescue and ***Browntop Millet ***or Sorghum-Sudan Hybrids	120 lbs/acre 35 lbs/acre 30 lbs/acre
Sep 1 - Mar 1	Sericea Lespedeza (unhulled-unscarified) and Tall Fescue	70 lbs/acre 120 lbs/acre
(Nov 1 - Mar 1)	Add Abruzzi Rye	25 lbs/acre

Consult Conservation Engineer or Soil Conservation Service for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those which do well under local conditions; other seeding rate combinations are possible.

***Temporary - Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12" in height before mowing, otherwise fescue may be shaded out.

SEEDING SCHEDULE

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 LOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4.) APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
5.) CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6INCHES DEEP.
6.) SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7.) MULCH IMMEDIATELY AFTER SEEDING ANDANCHOR MULCH.
8.) INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE.IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9.) CONSULT CONVERSATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY: AGRICULTURAL LIMESTONE - 2 TONS/ ACRES (3 TONS/ ACRE IN CLAY SOILS)
FERTILIZER - 1,000 lbs. / ACRE -10-10-10
SUPERPHOSPHATE- 500 lbs> / ACRE -20% ANALYSIS
MULCH -2 TONS / ACRE - SMALL GRAIN STRAW
ANOTHER - ASPHALT EMULSION @ 300 GALS./ ACRE

SEEDBED PREPARATION

CONSTRUCTION SEQUENCE

1. Obtain a land-disturbing permit. Notify the Environmental Engineer at 910-796-7312.
2. Install gravel construction pad, temporary diversions, silt fencing, sediment basins or other measures as shown on the approved plan. Clear only as necessary to install these devices. Seed temporary diversions, berms and basins immediately after construction.
3. Begin clearing and grubbing, rough grade site and maintain devices as needed.
4. Install water & sewer mains as shown on the plan.
5. Begin constructing parking lots, buildings, etc.
6. Stabilize site as areas are brought up to finish grade with vegetation, etc.

7. When construction is completed and all areas are stabilized completely, call for an inspection by the Environmental Engineer at 910-796-7312.
8. If site is approved, remove temporary diversions, silt fencing, sediment basins, etc. and seed out or stabilize any resulting bare areas.
9. When vegetation has become established, call for final site inspection by a Environmental Inspector at 910-796-7312 to obtain a Certificate of Compliance.

PRELIMINARY - NOT RELEASED FOR CONSTRUCTION

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF PROSPECT HILL, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

THIS DRAWING PREPARED AT THE
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YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE

DATE	2019-08-22
DRAWN BY	T. DAEKE
DESIGNED BY	S. MOORE
CHECKED BY	R. BAKER
SCALE	AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA
NOTES AND DETAILS

JOB NO. 44089
SHEET NO. C4.20

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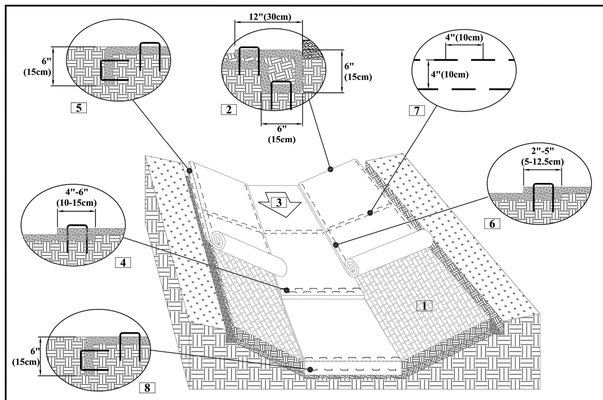


CRITICAL POINTS
A. Overlaps and Seams
B. Projected Water Line
C. Channel Bottom/Side Slope Vertices

Drawing Not To Scale

NOTES:
*Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

**In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.

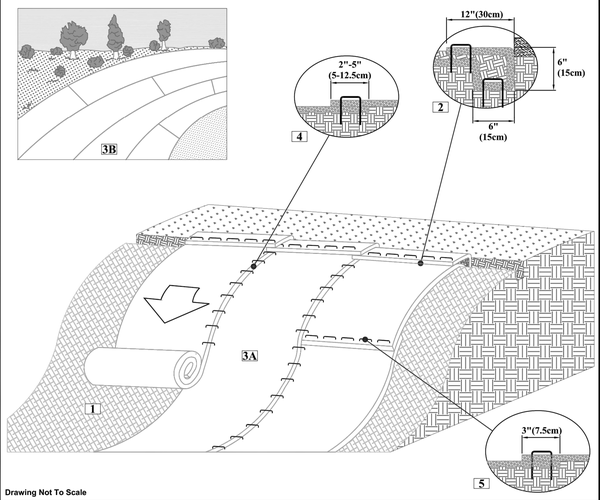
NORTH AMERICAN GREEN
5401 St. Wendel - Cynthiana Rd. Poseyville, IN 47633
PH: 800-722-2040 www.nagreen.com

Disclaimer:
The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

Drawn on: 5-4-17

CHANNEL INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12"(30cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes approximately 12"(30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" apart across the width of the RECPs.
3. Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. Place consecutive RECPs end-over-end (Shingle style) with a 4"-6" overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
5. Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes approximately 12"(30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent RECPs must be overlapped approximately 2"-5" (5-12.5cm) (Depending on RECPs type) and stapled.
7. In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9 -12m) intervals. Use a double row of staples staggered 4"(10cm) apart and 4"(10cm) on center over entire width of the channel.
8. The terminal end of the RECPs must be anchored with a row of staples/stakes approximately 12" (30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.



Drawing Not To Scale

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5401 St. Wendel - Cynthiana Rd. Poseyville, IN 47633
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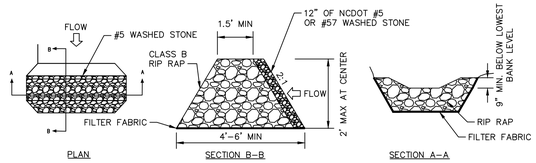
Drawn on: 5-4-17

SLOPE INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12"(30cm) apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. The edges of parallel RECPs must be stapled with approximately 2" - 5" (5-12.5cm) overlap depending on the RECPs type.
5. Consecutive RECPs spliced down the slope must be end over end (Shingle style) with an approximate 3"(7.5cm) overlap. Staple through overlapped area, approximately 12"(30cm) apart across entire RECPs width.

*NOTE:
In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.



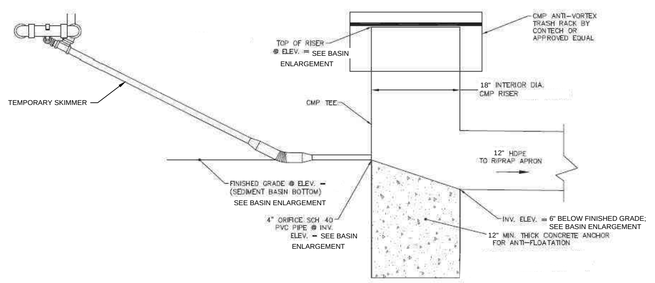
CONSTRUCTION SPECIFICATIONS:

1. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
2. KEEP THE CENTER STONE SECTION AT LEAST 1 FOOT BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
3. EXTEND STONE AT LEAST 1.5 FEET BEYOND BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.
4. SET SPACING BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME AS THE TOE ELEVATION OF THE UPPER DAM.
5. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.
6. MAKE SURE THAT THE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.
7. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

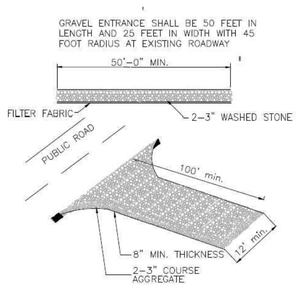
MAINTENANCE NOTES:

1. 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.
2. 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 LINER IN THAT PORTION OF THE CHANNEL.
3. 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.

ROCK CHECK DAM
N.T.S



CMP RISER DETAIL
N.T.S.



DESIGN CRITERIA
AGGREGATE SIZE – USE 2–3 INCH WASHED STONE
DIMENSION OF GRAVEL PAD
THICKNESS – 8 INCHES MINIMUM
WIDTH – 12 FT. MINIMUM OR FULL WIDTH AT ACCESS POINTS OF THE VEHICULAR ENTRANCE AND EXIT AREA, WHICHEVER IS GREATER
LENGTH – 100 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. AVOID STEEP GRADES AND ENTRANCES AT CURVES IN PUBLIC ROADS.

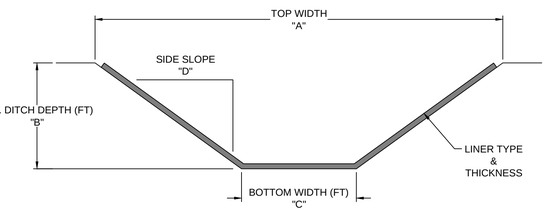
CONTRACTOR SHALL INSTALL ADDITIONAL GRAVEL CONSTRUCTION ENTRANCES NOT INDICATED ON THE PLANS REQUIRED FOR STAGING AND/OR BORROW AREAS AND MAINTAIN AT NO ADDITIONAL EXPENSE TO THE OWNER.

CONTRACTOR SHALL SUPPLEMENT AND MAINTAIN GRAVEL CONSTRUCTION ENTRANCES AT HIS EXPENSE UNTIL FINAL ACCEPTANCE.

MAINTENANCE:

MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2–INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

TEMPORARY CONSTRUCTION ENTRANCE
N.T.S.



DITCH NAME	TOP WIDTH "A"	MIN. DITCH DEPTH (FT) "B"	BOTTOM WIDTH (FT) "C"	SIDE SLOPE "D"	LINER TYPE & THICKNESS
TDD 1A	9 FT	1.5 FT	0	3:1	North American Green, S150
TDD 1B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 2A	12.25 FT	1.75 FT	1.75	3:1	North American Green, S75
TDD 2B	13 FT	2 FT	1	3:1	North American Green, S75
TDD 3A	10.75 FT	1.5 FT	1.75	3:1	North American Green, S75
TDD 4A	9 FT	1.5 FT	0	3:1	North American Green, S75
TDD 4B	9.75 FT	1.5 FT	0.75	3:1	North American Green, S75
TDD 5A	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 5B	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 6A	9 FT	1.5 FT	0	3:1	North American Green, C125
TDD 6B	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 7A	10.75 FT	1.75 FT	0.25	3:1	North American Green, S75
TDD 7B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 8A	6 FT	1 FT	0	3:1	North American Green, S75
TDD 8B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 9A	9.25 FT	1.5 FT	0.25	3:1	North American Green, S75
TDD 9B	9.25 FT	1.5 FT	0.25	3:1	North American Green, S75
TDD 10A	6 FT	1 FT	0	3:1	North American Green, S75
TDD 10B	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 11A	9 FT	1.5 FT	0	3:1	North American Green, S75
TDD 11B	11 FT	1.75 FT	0.5	3:1	North American Green, S75
TDD 12A	6 FT	1 FT	0	3:1	North American Green, S75
TDD 12B	7.5 FT	1.25 FT	0	3:1	North American Green, S150
TDD 12B	7.5 FT	1.25 FT	0	3:1	North American Green, S150
TDD 13A	9 FT	1.5 FT	0	3:1	Class B (8"@18"THK)
TDD 13B	9.75 FT	1.5 FT	0.75	3:1	North American Green, S75
TDD 14A	4.5 FT	0.75 FT	0	3:1	North American Green, S75
TDD 14B	7.5 FT	1.25 FT	0	3:1	North American Green, S150
TDD 15A	6 FT	1 FT	0	3:1	North American Green, C125
TDD 15B	4.8 FT	0.8 FT	0	3:1	North American Green, S150
TDD 16A	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 16B	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 17A	6 FT	1 FT	0	3:1	Class B (8"@18"THK)
TDD 17B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 18A	7.5 FT	1.25 FT	0	3:1	North American Green, SC150
TDD 18B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 19A	6 FT	1 FT	0	3:1	North American Green, S75
TDD 20A	6 FT	1 FT	0	3:1	North American Green, S150
TDD 20B	4.5 FT	0.75 FT	0	3:1	North American Green, S75
TDD 22A	7.5 FT	1.25 FT	0	3:1	North American Green, S150
TDD 22B	6 FT	1 FT	0	3:1	Class B (8"@18"THK)
TDD 23A	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 23B	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 24A	9 FT	1.5 FT	0	3:1	North American Green, SC150
TDD 24B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 25A	9 FT	1.5 FT	0	3:1	North American Green, C350
TDD 25B	9 FT	1.5 FT	0	3:1	Class B (8"@18"THK)
TDD 26A	7.75 FT	1.25 FT	0.25	3:1	North American Green, S150
TDD 26B	7.75 FT	1.25 FT	0.25	3:1	North American Green, SC150
TDD 27A	10.75 FT	1.75 FT	0.25	3:1	North American Green, C350
TDD 27B	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 28A	6 FT	1 FT	0	3:1	North American Green, S75
TDD 28B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 29A	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 29B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 30A	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 30B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 31A	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 31B	6 FT	1 FT	0	3:1	North American Green, S75
TDD 32A	6 FT	1 FT	0	3:1	North American Green, S75
TDD 33A	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 33B	9 FT	1.5 FT	0	3:1	North American Green, SC150
TDD 35A	7.5 FT	1.25 FT	0	3:1	Class B (8"@18"THK)
TDD 36A	7.5 FT	1.25 FT	0	3:1	North American Green, SC150
TDD 36B	7.5 FT	1.25 FT	0	3:1	Class B (8"@18"THK)
TDD 37A	9 FT	1.5 FT	0	3:1	Class B (8"@18"THK)
TDD 38A	6 FT	1 FT	0	3:1	Class B (8"@18"THK)
TDD 38B	4.5 FT	0.75 FT	0	3:1	Class B (8"@18"THK)
TDD 39A	6 FT	1 FT	0	3:1	North American Green, S75
TDD 40A	9 FT	1.5 FT	0	3:1	North American Green, C125
TDD 40B	7.5 FT	1.25 FT	0	3:1	North American Green, S75
TDD 41A	6 FT	1 FT	0	3:1	Class B (8"@18"THK)
TDD 41B	6 FT	1 FT	0	3:1	Class B (8"@18"THK)

MAINTENANCE FOR CHANNEL LINING/DITCH SECTION
DURING THE ESTABLISHMENT PERIOD, CHECK BLANKET-LINED CHANNELS AFTER EVERY RAINFALL. AFTER GRASS IS ESTABLISHED, PERIODICALLY CHECK THE CHANNEL; CHECK IT AFTER EVERY HEAVY RAINFALL EVENT. IMMEDIATELY MAKE REPAIRS. IT IS PARTICULARLY IMPORTANT TO CHECK THE CHANNEL OUTLET AND ALL ROAD/TRAIL CROSSINGS FOR BANK STABILITY AND EVIDENCE OF PIPING OR SCOUR HOLES. REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIGNED CARRYING CAPACITY. KEEP THE GRASS IN A HEALTHY, VIGOROUS CONDITION AT ALL TIMES, SINCE IT IS THE PRIMARY EROSION PROTECTION FOR THE CHANNEL.

CHANNEL LINING / DITCH SECTION SCHEDULE
N.T.S

PRELIMINARY - NOT RELEASED FOR CONSTRUCTION

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF PROSPECT HILL, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 022530 ENGINEER RICHARD W. BAKER, III
08/28/19

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REVISION DESCRIPTION	DATE

DATE: 2019-08-22
DRAWN BY: T. DAEKE
DESIGNED BY: S. MOORE
CHECKED BY: R. BAKER
SCALE: AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

PROSPECT HILL QUARRY AND DISTRIBUTION CENTER
PROSPECT HILL - CASWELL COUNTY - NORTH CAROLINA
NOTES AND DETAILS

JOB NO. 44089
SHEET NO. C4.30

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