

**CANDIFF CREEK**

**PROJECT: 118335**

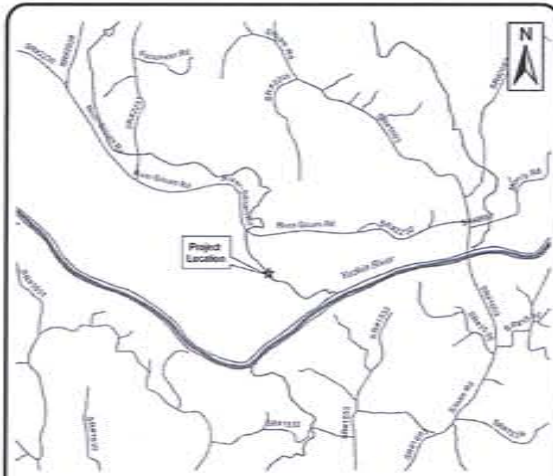
**NORTH CAROLINA  
ECOSYSTEM ENHANCEMENT PROGRAM**

**SURRY COUNTY**

**LOCATION: ON THE JOHNSON PROPERTY NEAR SILOAM, NC  
OFF RIVER-SILOAM ROAD**

**TYPE OF WORK: AS-BUILT PLANS FOR STREAM RESTORATION,  
ENHANCEMENT, AND PRESERVATION**

STATE	BAKER PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
NC	118335	1	31

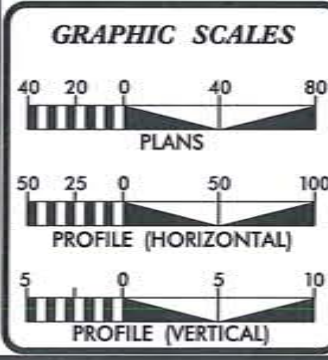


**VICINITY MAP**

**INDEX OF SHEETS**

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**DATUM DESCRIPTION:**  
NORTH CAROLINA GRID COORDINATES (NAD83) FOR PRIMARY GPS DERIVED CONTROL POINTS WERE ESTABLISHED FOR MICHAEL BAKER ENGINEERING INC. CARY, NC.  
SUPPLEMENT CONTROL POINTS (NAD83) UTILIZED FOR THIS SURVEY WERE ESTABLISHED BY MICHAEL BAKER ENGINEERING USING CONVENTIONAL METHODS.



**PROJECT LENGTH**

	CANDIFF	UT1	UT2
EXISTING REACH LENGTH =	4,783	885	1,117
DESIGN REACH LENGTH =	5,064	885	1,117
AS-BUILT REACH LENGTH =	5,078	885	1,117

**PREPARED FOR THE OFFICE OF:**

**JULIE CAHILL**  
PROJECT MANAGER

**SUBMITTED BY THE OFFICE OF:**

**TONY DAVIS**  
PROJECT MANAGER

**PREPARED IN THE OFFICE OF:**

**Baker**

APRIL 2012  
COMPLETION DATE

**Michael Baker Engineering Inc.**  
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**WILLIAM SCOTT HUNT III, PE**  
PROJECT ENGINEER

**JOSHUA WHITE, PG, PE**  
PROJECT MANAGER / GEOMORPHOLOGIST

**PROJECT ENGINEER**

**WILLIAM SCOTT HUNT III, PE**  
SIGNATURE

**STREAM CONVENTIONAL SYMBOLS  
SUPERCEDES SHEET 1B**

ROCK J-HOOK	SAFETY FENCE
ROCK VANE	TAPE FENCE
OUTLET PROTECTION	100 YEAR FLOOD PLAIN
ROCK CROSS VANE	CONSERVATION EASEMENT
DOUBLE DROP ROCK CROSS VANE	EXISTING MAJOR CONTOUR
SINGLE WING DEFLECTOR	EXISTING MINOR CONTOUR
DOUBLE WING DEFLECTOR	LIMITS OF DISTURBANCE
TEMPORARY SILT CHECK	PERMANENT STREAM CROSSING
ROOT WAD	TRANSPLANTED VEGETATION
LOG J-HOOK	DITCH PLUG
LOG VANE	CHANNEL FILL
LOG WEIR	BRUSH MATTRESS
LOG CROSS VANE	GEOLIFT
CONSTRUCTED RIFFLE	VEGETATION PLOT
BOULDER CLUSTER	CROSS-SECTION FROM EXISTING CONDITIONS
CREST GAUGE / PHOTO POINT	AS-BUILT CROSS-SECTION

\*\*NOTE: ALL ITEMS ABOVE MAY NOT BE USED ON THIS PROJECT

**GENERAL NOTES**

1. CONSTRUCTION BEGAN IN SEPT. 2011 AND WAS COMPLETED MARCH 2012.
2. PLANTING BEGAN IN MARCH 2012 AND WAS COMPLETED IN APRIL 2012.

PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>1-A</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering, Inc. 8000 Regency Parkway, Suite 600 Cary, NORTH CAROLINA 27518 Phone: 919.483.5400 Fax: 919.483.5400 License # F-1084</small>	

**STANDARD SPECIFICATIONS**

**EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL  
MARCH 2009**

- 6.06 TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- 6.62 SILT FENCE
- 6.63 TEMPORARY ROCK DAM
- 6.70 TEMPORARY STREAM CROSSING



**VEGETATION SELECTION**

The following table lists bare-root vegetation selection for the project site. Species were planted at a density of 702 stems per acre. Total planting area is approximately 18 acres. Exact placement of species was determined prior to site planting.

Common Name	Scientific Name	Percent Planted by Species	Total Number of Stems	Wetness Tolerance
<b>Trees (75%) Planted 9' X 9' Spacing - 445 Trees/ Acre</b>				
River Birch	<i>Betula nigra</i>	23.3%	1,800	FACW
Sycamore	<i>Platanus occidentalis</i>	22.1%	1,700	FACW-
Green Ash	<i>Fraxinus pennsylvanica</i>	15.6%	1,200	FACW
Swamp Chestnut Oak	<i>Quercus michauxii</i>	15.6%	1,200	FACW-
Tulip Poplar	<i>Liriodendron tulipifera</i>	7.8%	600	FAC
Willow Oak	<i>Quercus phellos</i>	7.8%	600	FACW-
Persimmon	<i>Diospyros virginiana</i>	7.8%	600	FAC
<b>Tree total</b>		<b>100%</b>	<b>7,700</b>	
<b>Shrubs (25%) Planted 16' X 16' Spacing - 243 Shrubs/ Acre</b>				
Spicebush	<i>Lindera benzoin</i>	9.5%	400	FACW
Arrowwood	<i>Viburnum dentatum</i>	17%	700	FAC
Paw Paw	<i>Asimina triloba</i>	9.5%	400	FAC
Ironwood	<i>Carpinus caroliniana</i>	12%	500	FAC
Redbud	<i>Cercis canadensis</i>	14%	600	FACU
Elderberry	<i>Sambucus canadensis</i>	19%	800	FACW-
Silky Dogwood	<i>Cornus amomum</i>	19%	800	FACW+
<b>Shrub Total</b>		<b>100%</b>	<b>4,200</b>	

**Total Plants 11,900**

Live staking were applied to all restored streambanks following the details in this plan set and according to the construction specifications.

Common Name	Scientific Name	Percentage of Total	Wetness Tolerance
Elderberry	<i>Sambucus canadensis</i>	30%	FACW-
Silky Dogwood	<i>Cornus amomum</i>	30%	FACW+
Silky Willow	<i>Salix sericea</i>	30%	OBL
Black Willow	<i>Salix nigra</i>	10%	OBL

The following table lists temporary seed mix for the project site. All disturbed areas were stabilized using mulch and temporary seed.

Common Name	Rate	Dates
ANNUAL RYE (COOL SEASON)	130 LBS/ACRE	SEPTEMBER TO MARCH
MILLET (WARM SEASON)	40 LBS/ACRE	APRIL TO AUGUST

Permanent seed mixtures for the project site were planted throughout the floodplain and riparian buffer areas. Permanent seed mixtures shall be applied with temporary seed, as defined in the construction specifications.

Common Name	Scientific Name	Percent of Mixture	Seeding Density (lbs/acre)	Wetness Tolerance
Redtop	<i>Agrostis alba</i>	10%	1.5	FACW
Virginia Wildrye	<i>Elymus virginicus</i>	15%	2.25	FAC
Switchgrass	<i>Panicum virgatum</i>	15%	2.25	FAC+
Eastern Gamagrass	<i>Tripsacum dactyloides</i>	5%	0.75	FAC+
Pennsylvania Smartweed	<i>Polygonum pennsylvanicum</i>	5%	0.75	FACW
Little Bluestem	<i>Schizachyrium scoparium</i>	5%	0.75	FACU
Soft Rush	<i>Juncus effusus</i>	5%	0.75	FACW+
Devil's Beggartick	<i>Bidens frondosa</i>	5%	0.75	FACW
Lanceleaf Tickseed	<i>Coreopsis lanceolata</i>	10%	1.5	UPL
Deertongue	<i>Dichanthelium clandestinum</i>	15%	2.25	FACW
Big Bluestem	<i>Andropogon gerardii</i>	5%	0.75	FAC
Indiangrass	<i>Sorghastrum nutans</i>	5%	0.75	FACU

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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS



\*S.U.E = SUBSURFACE UTILITY ENGINEER

ROADS & RELATED ITEMS

Edge of Pavement	----
Curb	-----
Prop. Slope Stakes Cut	-----C-----
Prop. Slope Stakes Fill	-----F-----
Prop. Woven Wire Fence	○-----○
Prop. Chain Link Fence	□-----□
Prop. Barbed Wire Fence	◇-----◇
Prop. Wheelchair Ramp	Ⓜ
Curb Cut for Future Wheelchair Ramp	Ⓜ
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	⊕
Pavement Removal	XXXXXX

RIGHT OF WAY

Baseline Control Point	◆
Existing Right of Way Marker	△
Exist. Right of Way Line w/Marker	-----△-----
Prop. Right of Way Line with Proposed	-----▲-----
R/W Marker (Iron Pin & Cap)	▲
Prop. Right of Way Line with Proposed (Concrete or Granite) R/W Marker	⊙
Exist. Control of Access Line	⊙
Prop. Control of Access Line	⊙
Exist. Easement Line	-----E-----
Prop. Temp. Construction Easement Line	-----E-----
Prop. Temp. Drainage Easement Line	-----TDE-----
Prop. Perm. Drainage Easement Line	-----PDE-----

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	-----RBB-----
Flow Arrow	→
Disappearing Stream	Y
Spring	Ⓜ
Swamp Marsh	Ⓜ
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	[CONC]
Bridge Wing Wall, Head Wall and End Wall	)CONC HW(

MINOR	
Head & End Wall	-----CONC HW-----
Pipe Culvert	=====
Footbridge	----->-----<-----
Drainage Boxes	□ CB
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	•
Exist. Power Pole	⊕
Prop. Power Pole	⊕
Exist. Telephone Pole	⊕
Prop. Telephone Pole	⊕
Exist. Joint Use Pole	⊕
Prop. Joint Use Pole	⊕
Telephone Pedestal	⊕
U/G Telephone Cable Hand Hold	⊕
Cable TV Pedestal	⊕
U/G TV Cable Hand Hold	⊕
U/G Power Cable Hand Hold	⊕
Hydrant	⊕
Satellite Dish	⊕
Exist. Water Valve	⊕
Sewer Clean Out	⊕
Power Manhole	⊕
Telephone Booth	⊕
Cellular Telephone Tower	⊕
Water Manhole	⊕
Light Pole	⊕
H-Frame Pole	⊕
Power Line Tower	⊕
Pole with Base	⊕
Gas Valve	⊕
Gas Meter	⊕
Telephone Manhole	⊕
Power Transformer	⊕
Sanitary Sewer Manhole	⊕
Storm Sewer Manhole	⊕
Tank; Water, Gas, Oil	⊕
Water Tank With Legs	⊕
Traffic Signal Junction Box	⊕
Fiber Optic Splice Box	⊕
Television or Radio Tower	⊕
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	-----TS-----

Recorded Water Line	-----
Designated Water Line (S.U.E.*)	-----
Sanitary Sewer	-----SS-----
Recorded Sanitary Sewer Force Main	-----FSS-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----FSS-----
Recorded Gas Line	-----G-----
Designated Gas Line (S.U.E.*)	-----G-----
Storm Sewer	-----S-----
Recorded Power Line	-----P-----
Designated Power Line (S.U.E.*)	-----P-----
Recorded Telephone Cable	-----T-----
Designated Telephone Cable (S.U.E.*)	-----T-----
Recorded U/G Telephone Conduit	-----TC-----
Designated U/G Telephone Conduit (S.U.E.*)	-----TC-----
Unknown Utility (S.U.E.*)	-----TUL-----
Recorded Television Cable	-----TV-----
Designated Television Cable (S.U.E.*)	-----TV-----
Recorded Fiber Optics Cable	-----FO-----
Designated Fiber Optics Cable (S.U.E.*)	-----FO-----
Exist. Water Meter	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to U/G Record	ATTUR
End of Information	E.O.I.

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	⊕
Exist. Iron Pin	⊕
Property Corner	⊕
Property Monument	⊕
Property Number	⊕
Parcel Number	⊕
Fence Line	-----X-----
Existing Wetland Boundaries	-----WW & ISBW-----
High Quality Wetland Boundary	-----HLB-----
Medium Quality Wetland Boundaries	-----MQ WLB-----
Low Quality Wetland Boundaries	-----LQ WLB-----
Proposed Wetland Boundaries	-----WLB-----
Existing Endangered Animal Boundaries	-----EAB-----
Existing Endangered Plant Boundaries	-----EPB-----

BUILDINGS & OTHER CULTURE

Buildings	⊕
Foundations	⊕
Area Outline	⊕
Gate	⊕
Gas Pump Vent or UG Tank Cap	⊕
Church	⊕
School	⊕
Park	⊕
Cemetery	⊕
Dam	⊕
Sign	⊕
Well	⊕
Small Mine	⊕
Swimming Pool	⊕

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	R/W
Guard Post	⊕ GP
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	⊕

VEGETATION

Single Tree	⊕
Single Shrub	⊕
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

RAILROADS

Standard Gauge	-----
RR Signal Milepost	⊕
Switch	⊕

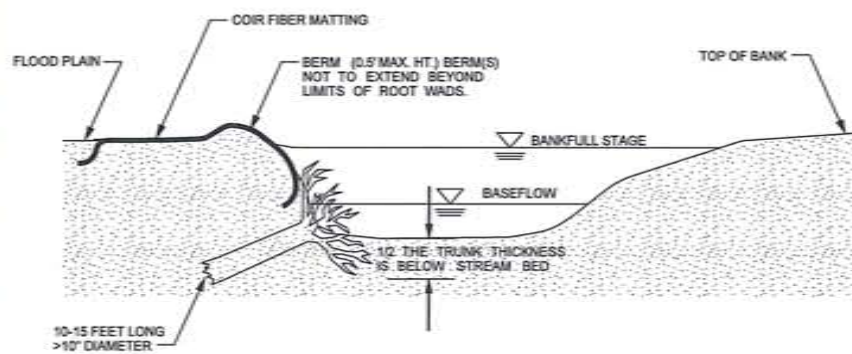
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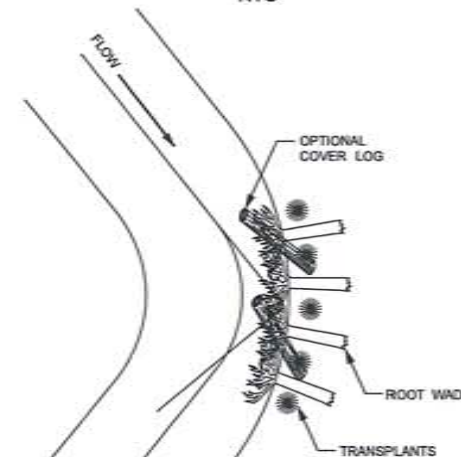
**ROOT WADS**

**ROOT WADS WITHOUT TRANSPLANTS**

CROSS SECTION VIEW  
NTS

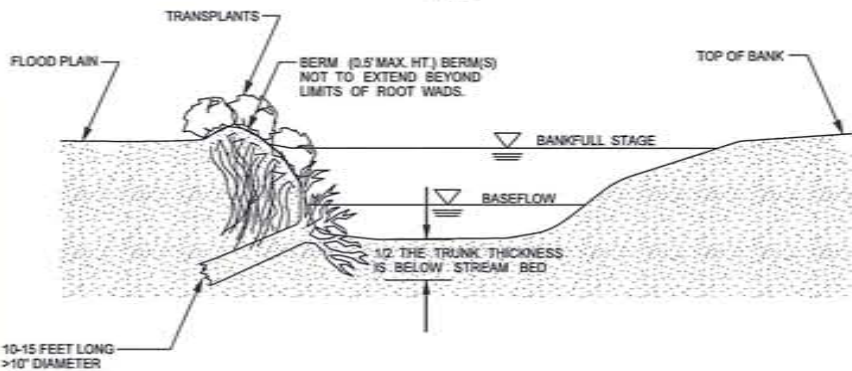


PLAN VIEW  
NTS



**ROOT WADS WITH TRANSPLANTS**

CROSS SECTION VIEW  
NTS



**NOTES:**

**TRENCHING METHOD:**  
IF THE ROOT WAD CANNOT BE DRIVEN INTO THE BANK OR THE BANK NEEDS TO BE RECONSTRUCTED, THE TRENCHING METHOD SHOULD BE USED. THIS METHOD REQUIRES THAT A TRENCH BE EXCAVATED FOR THE LOG PORTION OF THE ROOT WAD. IN THIS CASE, A FOOTER LOG SHOULD BE INSTALLED UNDERNEATH THE ROOT WAD IN A TRENCH EXCAVATED PARALLEL TO THE BANK AND WELL BELOW THE STREAMBED. ONE-THIRD OF THE ROOT WAD SHOULD REMAIN BELOW NORMAL BASE FLOW CONDITIONS.

**NOTES:**

**DRIVE POINT METHOD:**  
SHARPEN THE END OF THE LOG WITH A CHAINSAW BEFORE "DRIVING" IT INTO THE BANK. ORIENT ROOT WADS UPSTREAM SO THAT THE STREAM FLOW MEETS THE ROOT WAD AT A 90-DEGREE ANGLE, DEFLECTING THE WATER AWAY FROM THE BANK. A TRANSPLANT SHOULD BE PLACED ON THE DOWNSTREAM SIDE OF THE ROOT WAD IF A BACK EDDY IS FORMED BY THE ROOT WAD.

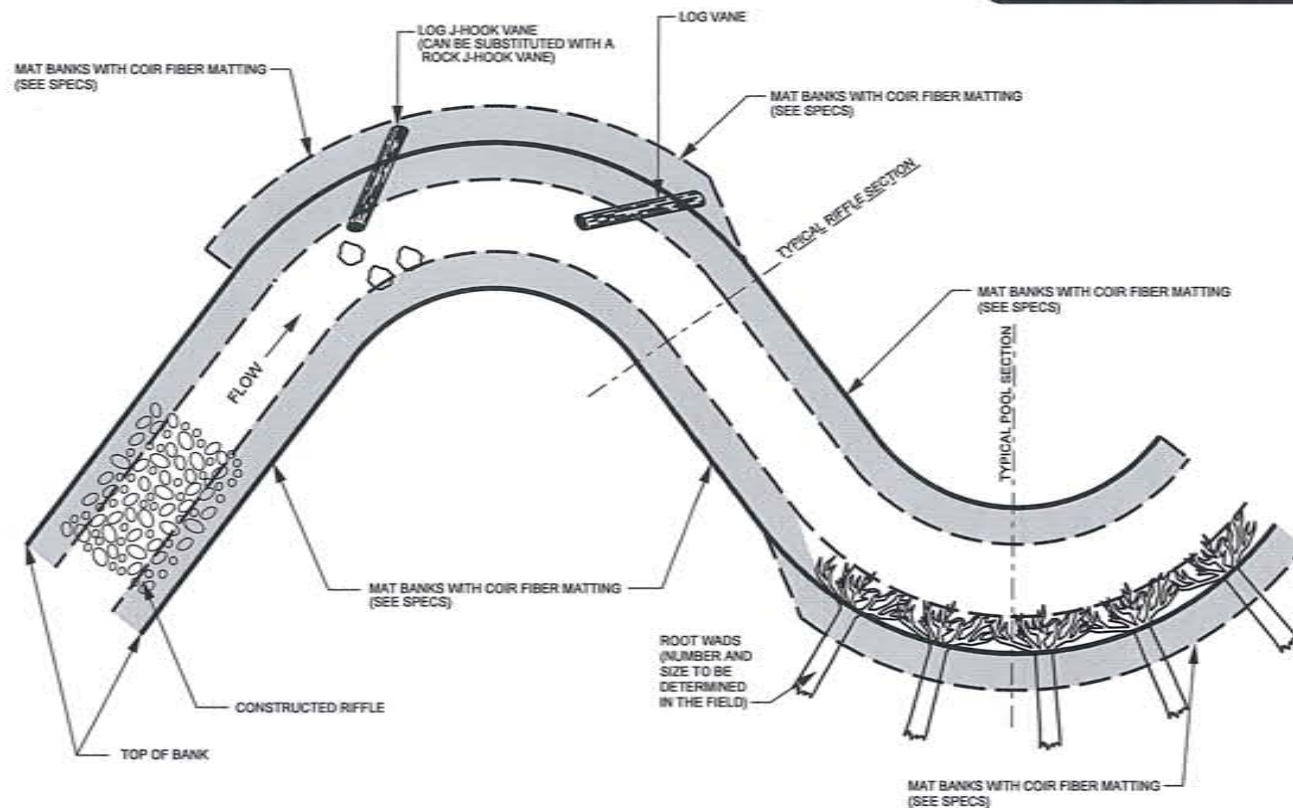
**TYPICAL STRUCTURE PLACEMENT**

**STRUCTURE NOTES:**

1. GENERALLY LOG AND ROCK J-HOOK VANES, ROOT WADS, LOG VANES AND COIR FIBER MATTING WILL BE INSTALLED IN THE LOCATION AND SEQUENCE AS SHOWN.
2. ADDITIONAL STRUCTURES OR CHANGES TO STRUCTURE LOCATIONS MAY BE MADE BY THE DESIGN ENGINEER DURING CONSTRUCTION.

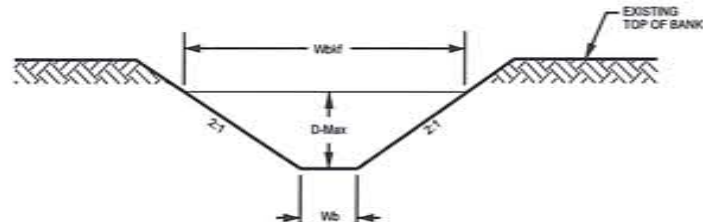
**NOTES:**

1. COIR FIBER MATTING TO BE INSTALLED ON ALL RESTORED STREAMBANKS.
2. IF ROOT WADS DO NOT COVER ENTIRE SLOPE ON OUTSIDE OF MEANDER BENDS, COIR FIBER MATTING IS NEEDED.

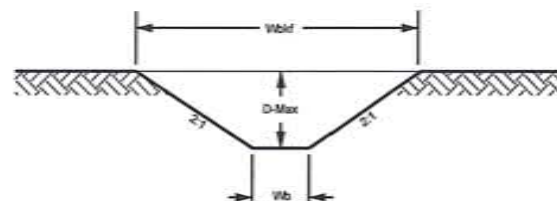


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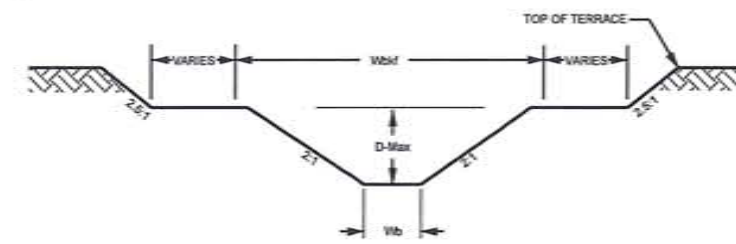
**TYPICAL RIFFLE, POOL, AND BANKFULL BENCH CROSS SECTIONS**



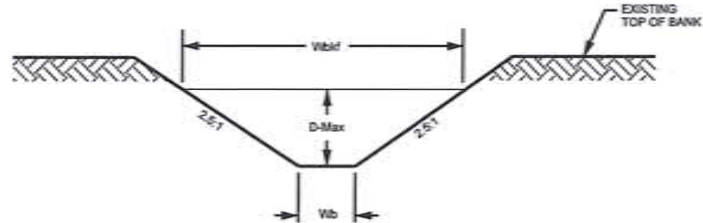
**RIFFLE - M2**



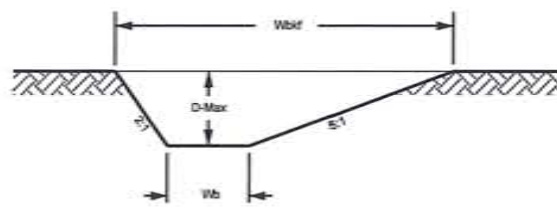
**RIFFLE - M3**



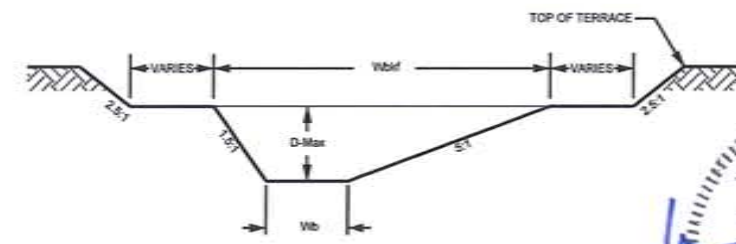
**RIFFLE WITH BANKFULL BENCH - M3**



**POOL - M2**



**POOL - M3**



**POOL WITH BANKFULL BENCH - M3**

**NOTES:**

1. DURING CONSTRUCTION CORNERS OF DESIGN CHANNEL WILL BE ROUNDED AND A THALWEG WILL BE SHAPED PER DIRECTION OF ENGINEER.
2. POOLS SHOWN ABOVE ARE LEFT POOLS ONLY.

CANDIFF M2		CANDIFF M3	
RIFFLE	POOL	RIFFLE	POOL
20.0	25.0	25.4	30.0
1.7	3.4	1.9	4.4
13.9	12.1	13.0	13.0
28.8	65.7	32.0	69.1
13.0	12.0	12.5	1.4

WIDTH OF BANKFULL (Wbf)  
MAXIMUM DEPTH (D-Max)  
WIDTH TO DEPTH RATIO (Wbf / D-Max)  
BANKFULL AREA (Abf)  
BOTTOM WIDTH (Wb)

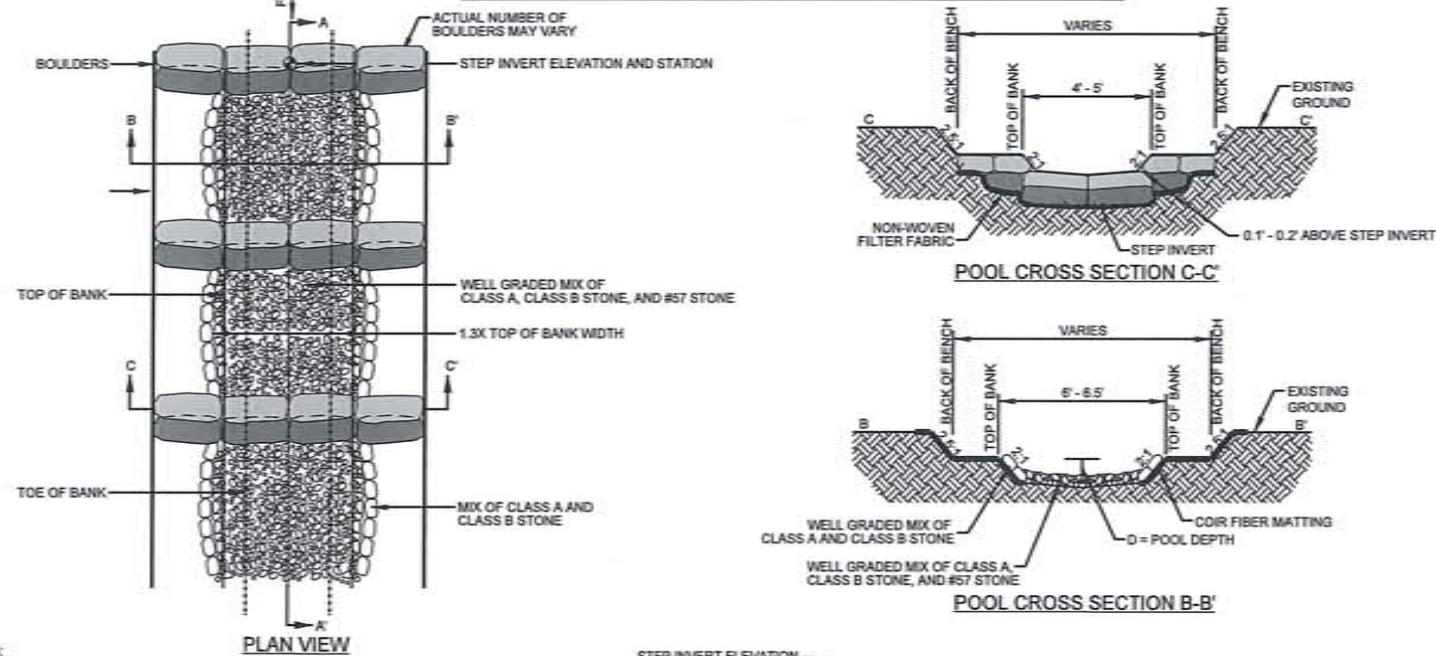
**NORTH CAROLINA PROFESSIONAL ENGINEER**  
SEAL  
22967  
06.06.2012  
**WILLIAM SCOTT HUNT**

\*\* M1, U1, AND U2 CONSTRUCTION ONLY INCLUDES INVASIVE SPECIES REMEDIATION AND FENCE INSTALLATION SO NO CROSS SECTION DATA IS PROVIDED

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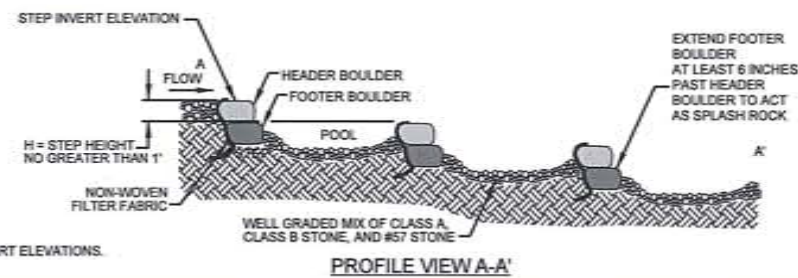
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### ROCK STEP-POOL CHANNEL / OUTLET PROTECTION

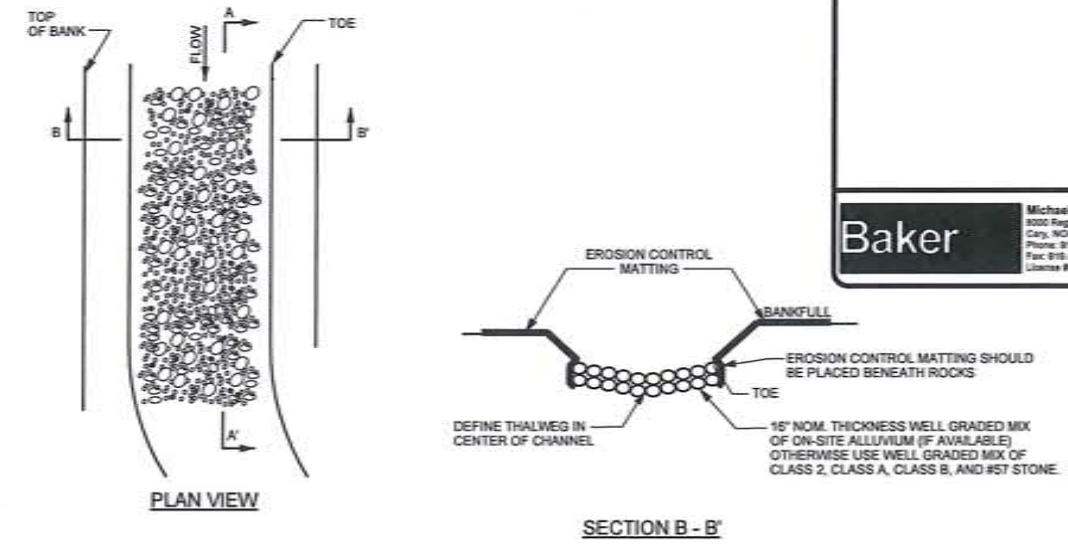


**NOTES:**

1. HEADER BOULDERS MUST BE 2' X 2' X 1' AND FOOTERS SHALL NOT EXCEED 3' X 2' X 1'.
2. FOOTERS SHALL BE INSTALLED SUCH THAT 1/4 TO 1/3 OF THE LENGTH IS DOWNSTREAM OF THE HEADER.
3. SOIL SHALL BE WELL COMPACTED AROUND BURIED PORTION OF FOOTERS WITH THE BUCKET OF EXCAVATOR.
4. INSTALL NON-WOVEN FILTER FABRIC UNDERNEATH FOOTER BOULDERS.
5. UNDERCUT POOL BED ELEVATION 8 INCHES TO ALLOW FOR LAYER OF STONE.
6. INSTALL EROSION CONTROL MATTING ALONG COMPLETED BANKS SUCH THAT THE EROSION CONTROL MATTING AT THE TOE OF THE BANK EXTENDS DOWN TO THE UNDERCUT ELEVATION.
7. INSTALL WELL GRADED MIX OF CLASS A AND CLASS B STONE ALONG SIDE SLOPES.
8. FINAL CHANNEL BED SHAPE SHOULD BE ROUNDED, COMPACTED, AND CONCAVE, WITH THE ELEVATION OF THE BED APPROXIMATELY 0.5 FT DEEPER IN THE CENTER THAN AT THE EDGES.
9. STEP HEIGHT (H) SHALL NOT EXCEED 1.0 FT.
10. MINIMUM POOL DEPTH (D) SHALL BE NO LESS THAN 1.3 FT.
11. AT LEAST 6" OF THE UPSTREAM FOOTER MUST BE BURIED BELOW THE DOWNSTREAM HEADER INVERT ELEVATIONS.
12. ALL STRUCTURES MUST BE FOOTERED.

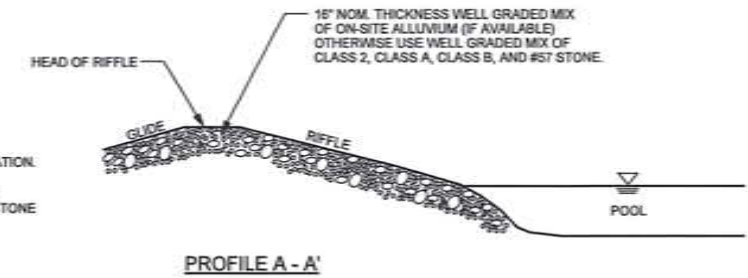


### CONSTRUCTED RIFFLE

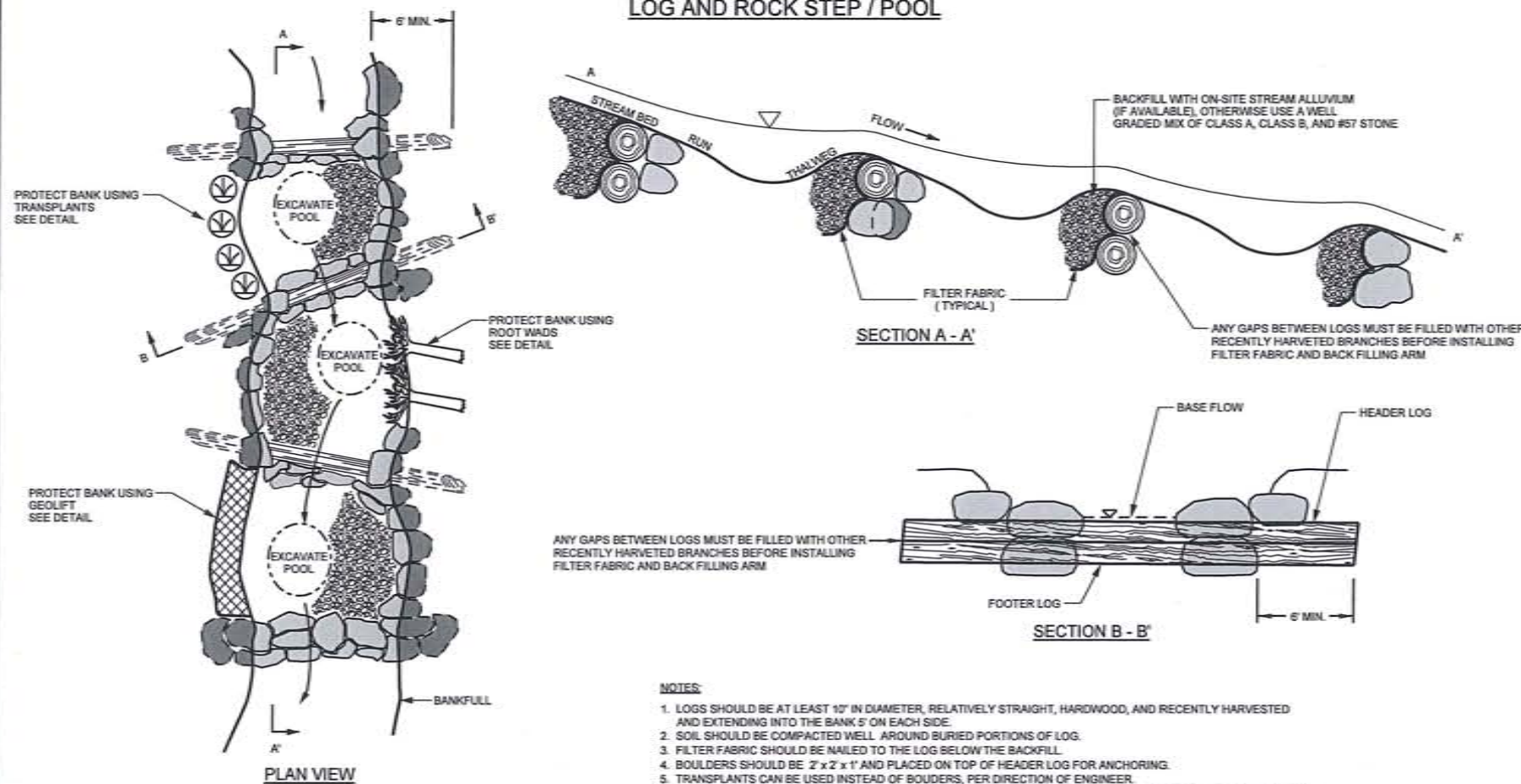


**NOTES:**

1. DIG A TRENCH BELOW THE BED FOR THE BED MATERIAL INSTALLATION.
2. FILL TRENCH WITH ON-SITE ALLUVIUM (IF AVAILABLE) OTHERWISE USE WELL GRADED MIX OF CLASS 2, CLASS A, CLASS B, AND #57 STONE TO THE BED ELEVATION OF THE CHANNEL.
3. DEFINE THALWEG IN CENTER OF CHANNEL.



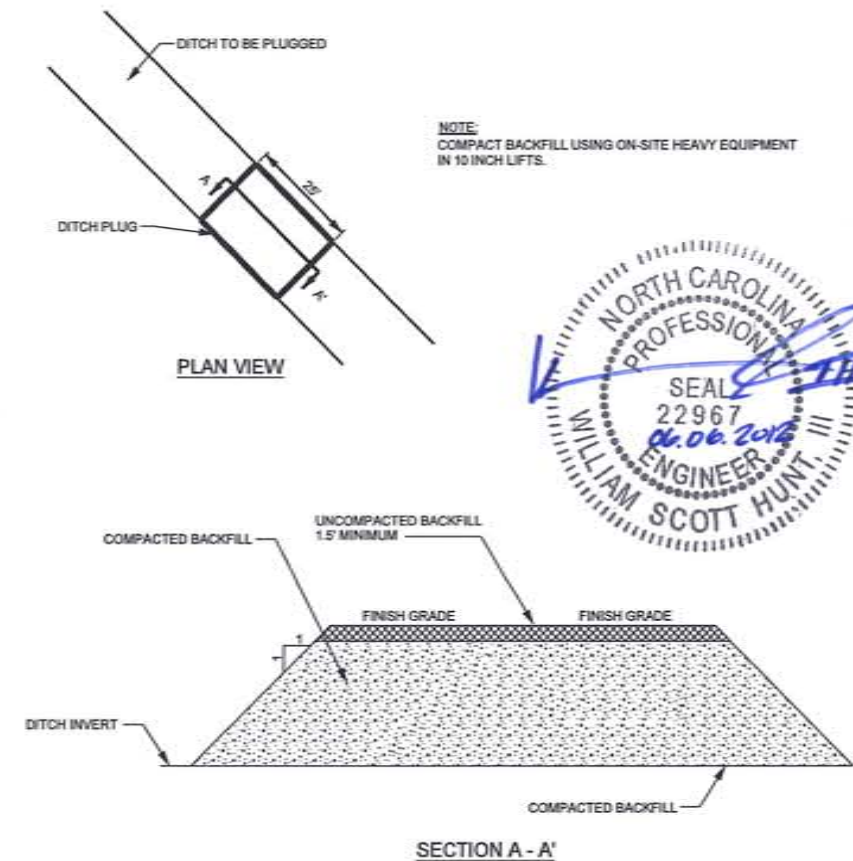
### LOG AND ROCK STEP / POOL



**NOTES:**

1. LOGS SHOULD BE AT LEAST 10" IN DIAMETER, RELATIVELY STRAIGHT, HARDWOOD, AND RECENTLY HARVESTED AND EXTENDING INTO THE BANK 5' ON EACH SIDE.
2. SOIL SHOULD BE COMPACTED WELL AROUND BURIED PORTIONS OF LOG.
3. FILTER FABRIC SHOULD BE NAILED TO THE LOG BELOW THE BACKFILL.
4. BOULDERS SHOULD BE 2' X 2' X 1' AND PLACED ON TOP OF HEADER LOG FOR ANCHORING.
5. TRANSPLANTS CAN BE USED INSTEAD OF BOULDERS, PER DIRECTION OF ENGINEER.
6. AT LEAST 6" OF THE UPSTREAM FOOTER MUST BE BURIED BELOW THE DOWNSTREAM HEADER INVERT ELEVATIONS.
7. ALL STRUCTURES MUST BE FOOTERED.

### DITCH PLUG

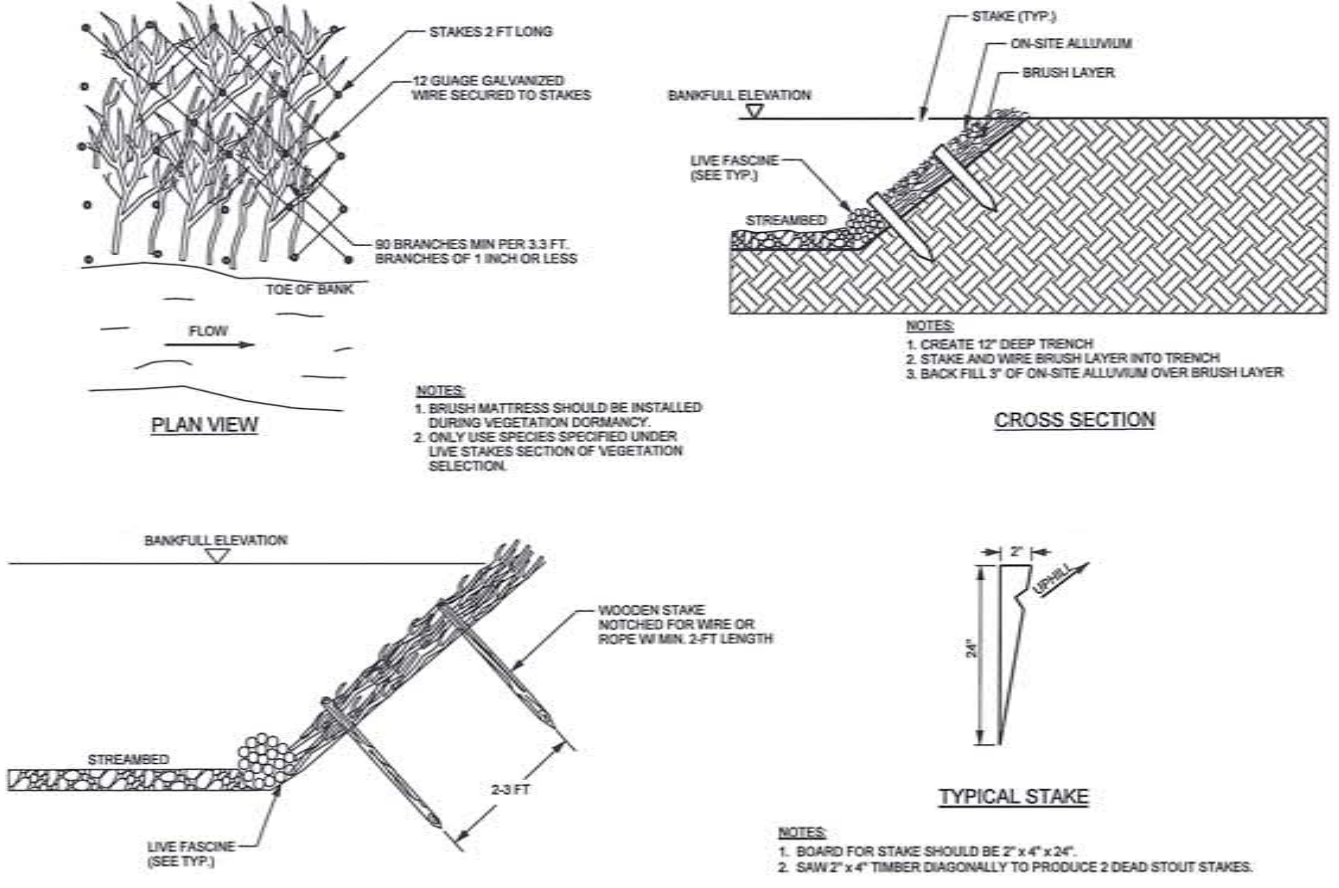


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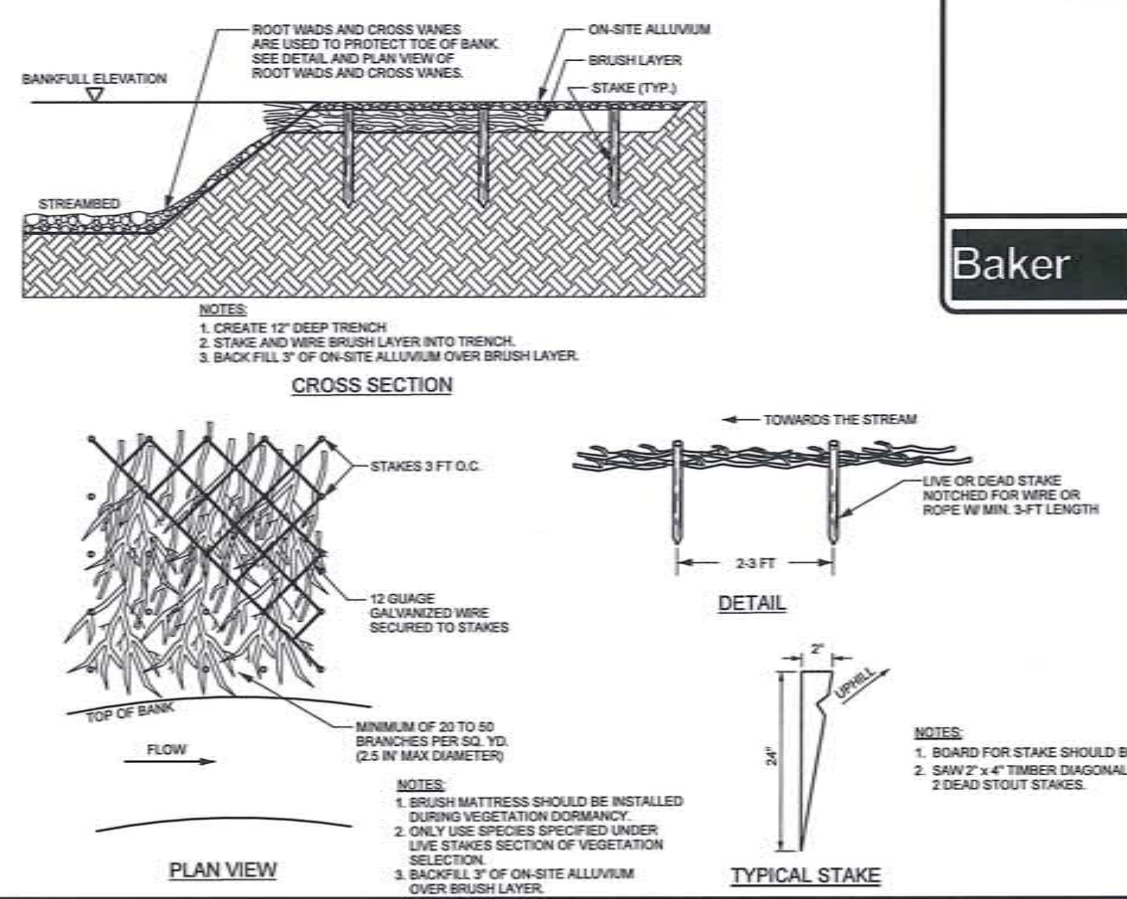
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PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>2-B</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>           Michael Baker Engineering Inc.            8000 Agency Parkway, Suite 600            Cary, NORTH CAROLINA 27518            Phone: 919.483.5488            Fax: 919.483.5480            License # F-1094         </small>	

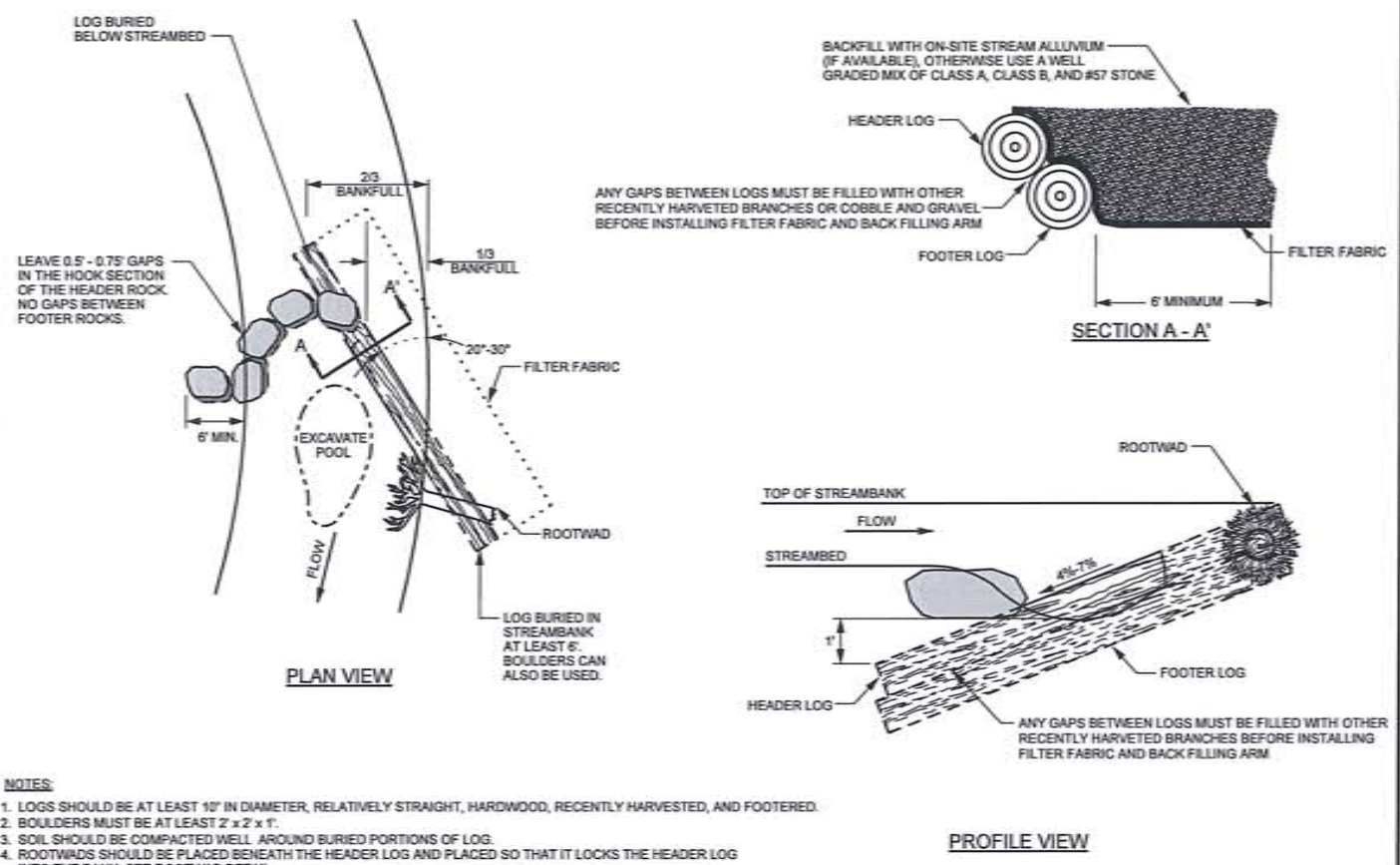
### BRUSH MATTRESS



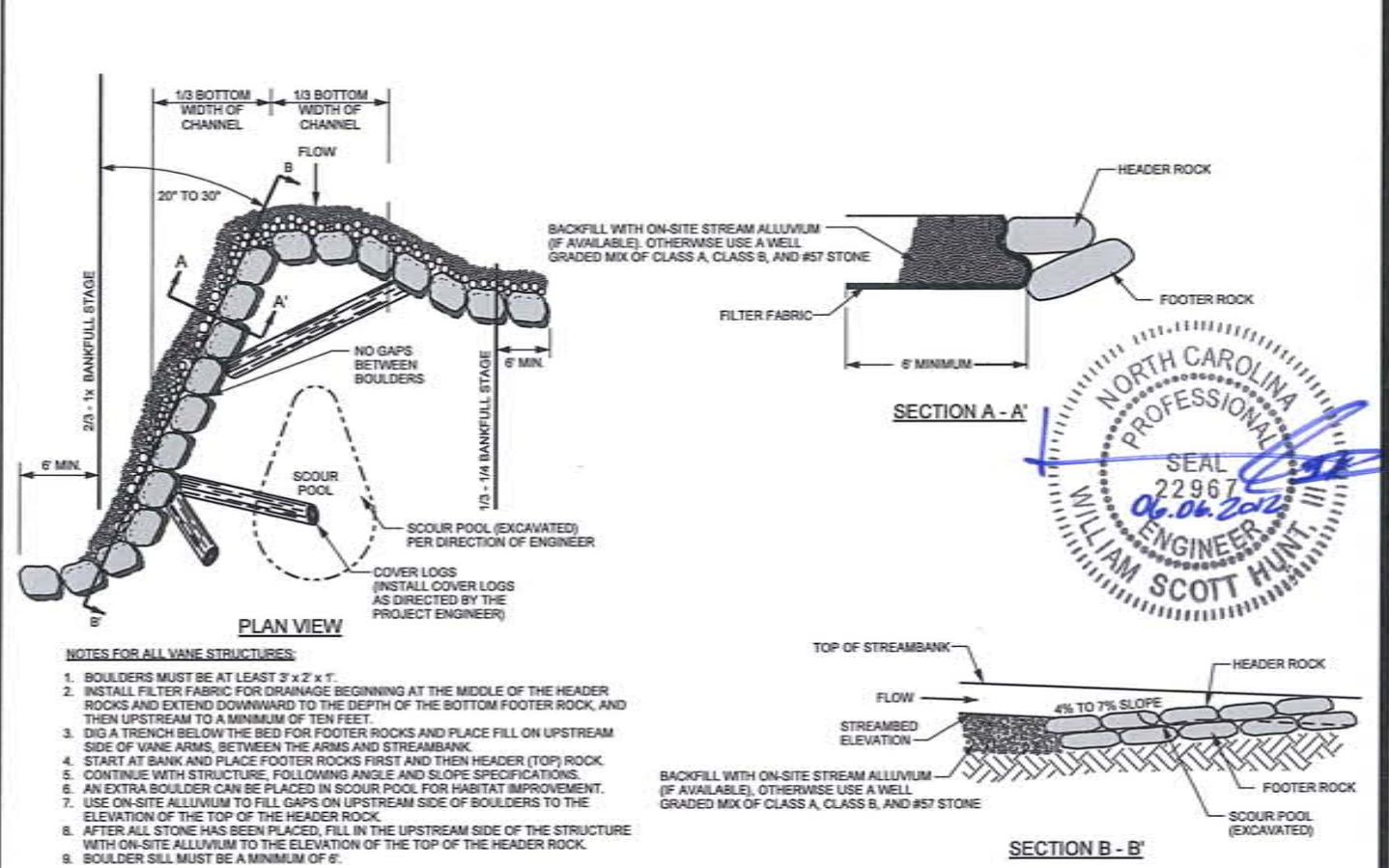
### BRUSH LAYER



### GRADE CONTROL LOG J-HOOK VANE



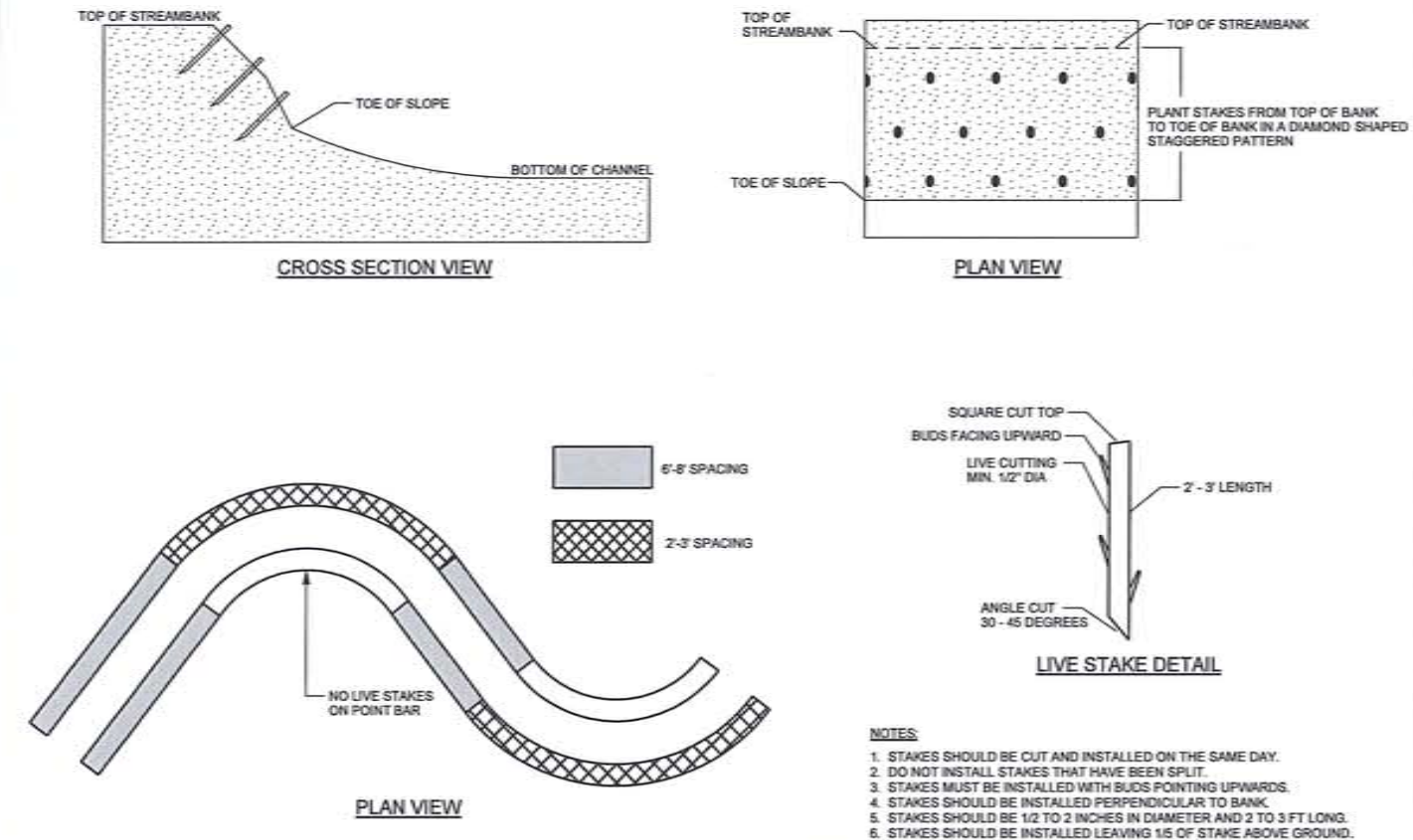
### GRADE CONTROL J-HOOK VANE FOR SAND/GRAVEL BED SYSTEMS



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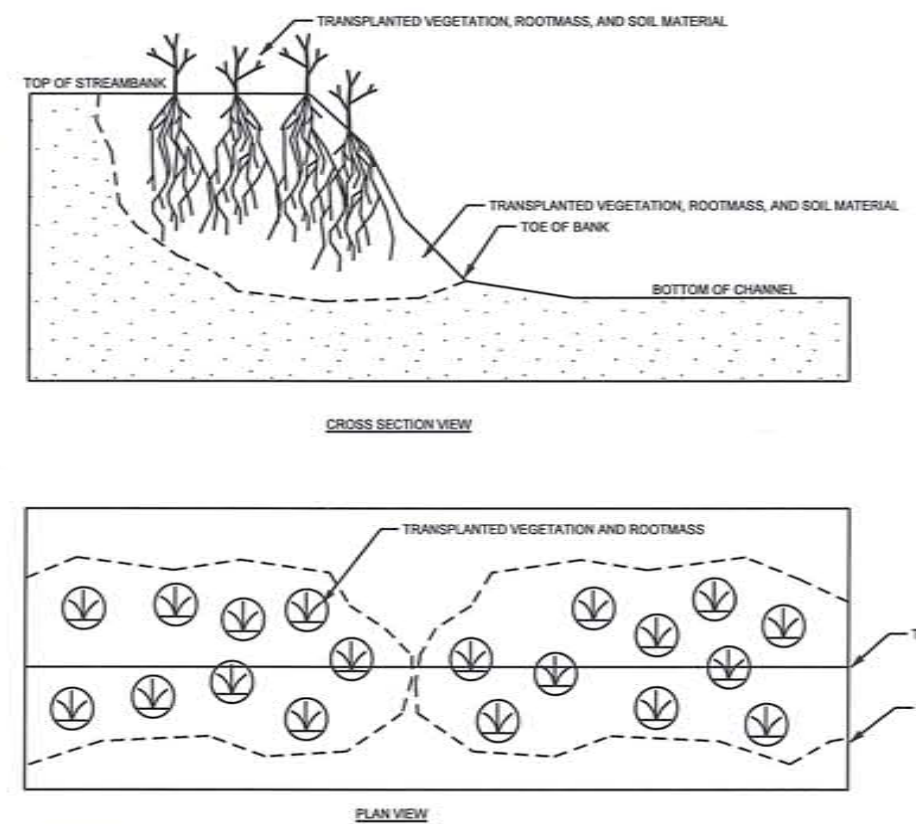
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**LIVE STAKING**



- NOTES:**
1. STAKES SHOULD BE CUT AND INSTALLED ON THE SAME DAY.
  2. DO NOT INSTALL STAKES THAT HAVE BEEN SPLIT.
  3. STAKES MUST BE INSTALLED WITH BUDS POINTING UPWARDS.
  4. STAKES SHOULD BE INSTALLED PERPENDICULAR TO BANK.
  5. STAKES SHOULD BE 1/2 TO 2 INCHES IN DIAMETER AND 2 TO 3 FT LONG.
  6. STAKES SHOULD BE INSTALLED LEAVING 1/5 OF STAKE ABOVE GROUND.

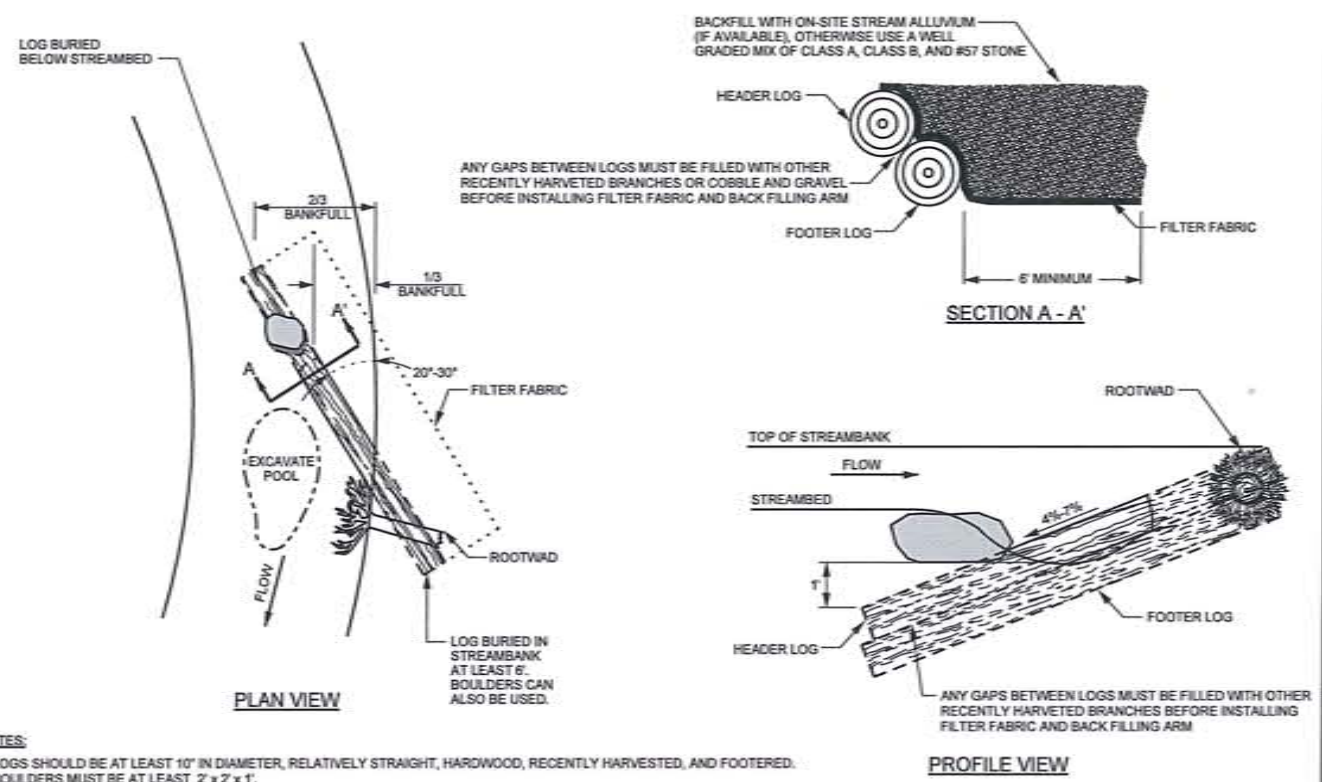
**TRANSPLANTED VEGETATION**



- NOTES:**
1. EXCAVATE A HOLE IN THE BANK TO BE STABILIZED THAT WILL ACCOMMODATE THE SIZE OF TRANSPLANT TO BE PLACED. BEGIN EXCAVATION AT THE TOE OF THE BANK.
  2. EXCAVATE TRANSPLANT USING A FRONT END LOADER. EXCAVATE THE ENTIRE ROOT MASS AND AS MUCH ADDITIONAL SOIL MATERIAL AS POSSIBLE. IF ENTIRE ROOT MASS CAN NOT BE EXCAVATED IN ONE BUCKET LOAD, THE TRANSPLANT IS TOO LARGE AND ANOTHER SHOULD BE SELECTED.
  3. PLACE TRANSPLANT IN THE BANK TO BE STABILIZED SO THAT VEGETATION IS ORIENTATED VERTICALLY.
  4. FILL IN ANY HOLES AROUND THE TRANSPLANT AND COMPACT.
  5. ANY LOOSE SOIL LEFT IN THE STREAM SHOULD BE REMOVED.
  6. PLACE MULTIPLE TRANSPLANTS CLOSE TOGETHER SUCH THAT THEY TOUCH.

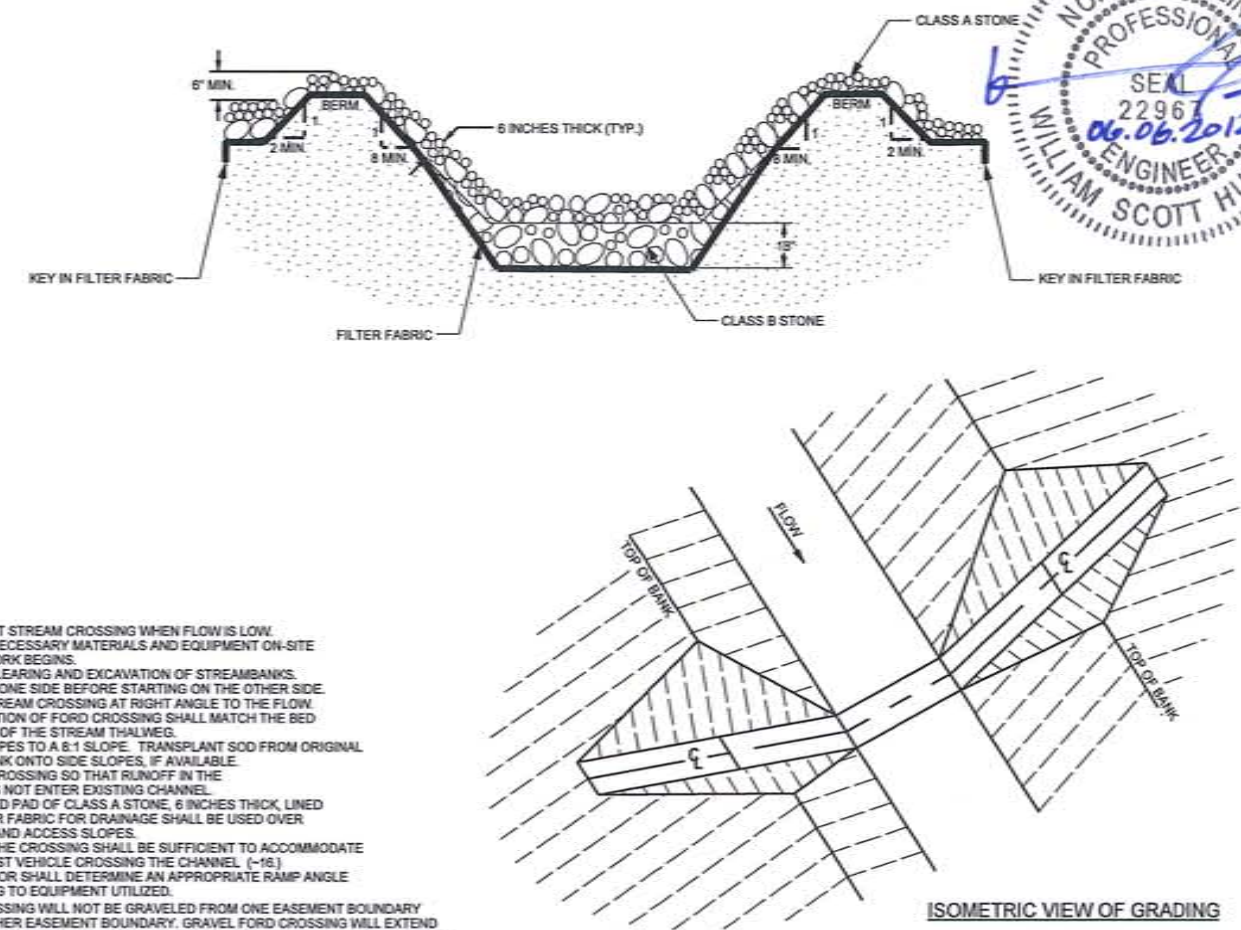
PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>2-C</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering Inc. 8000 Regency Parkway, Suite 800 Cary, NORTH CAROLINA 27518 Phone: 919.483.5400 Fax: 919.483.5400 Utama # F-1084</small>	

**LOG VANE**



- NOTES:**
1. LOGS SHOULD BE AT LEAST 10" IN DIAMETER, RELATIVELY STRAIGHT, HARDWOOD, RECENTLY HARVESTED, AND FOOTERED.
  2. BOULDERS MUST BE AT LEAST 2' x 2' x 1'.
  3. SOIL SHOULD BE COMPACTED WELL AROUND BURIED PORTIONS OF LOG.
  4. ROOTWADS SHOULD BE PLACED BENEATH THE HEADER LOG AND PLACED SO THAT IT LOCKS THE HEADER LOG INTO THE BANK. SEE ROOTWAD DETAIL.
  5. BOULDER SHOULD BE PLACED ON TOP OF HEADER LOG FOR ANCHORING.
  6. FILTER FABRIC SHOULD BE NAILED TO THE LOG BELOW THE BACKFILL.
  7. TRANSPLANTS CAN BE USED INSTEAD OF ROOTWADS, PER DIRECTION OF ENGINEER.
  8. BOULDER SILL MUST BE A MINIMUM OF 6".

**PERMANENT FORD STREAM CROSSING**

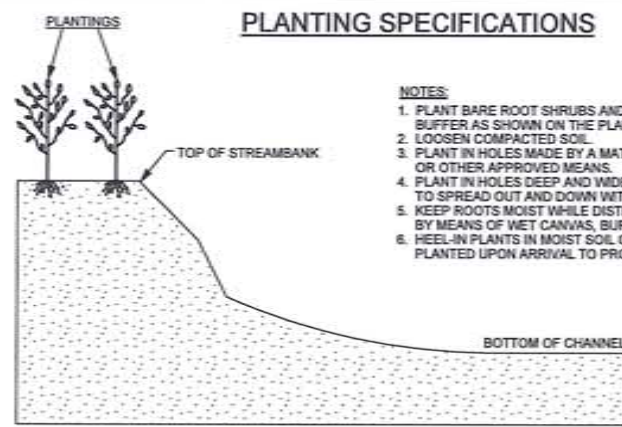


- NOTES:**
1. CONSTRUCT STREAM CROSSING WHEN FLOW IS LOW.
  2. HAVE ALL NECESSARY MATERIALS AND EQUIPMENT ON-SITE BEFORE WORK BEGINS.
  3. MINIMIZE CLEARING AND EXCAVATION OF STREAMBANKS. COMPLETE ONE SIDE BEFORE STARTING ON THE OTHER SIDE.
  4. INSTALL STREAM CROSSING AT RIGHT ANGLE TO THE FLOW.
  5. BED ELEVATION OF FORD CROSSING SHALL MATCH THE BED ELEVATION OF THE STREAM THALWEG.
  6. GRADE SLOPES TO A 8:1 SLOPE. TRANSPLANT SOD FROM ORIGINAL STREAMBANK ONTO SIDE SLOPES, IF AVAILABLE.
  7. MAINTAIN CROSSING SO THAT RUNOFF IN THE ROAD DOES NOT ENTER EXISTING CHANNEL.
  8. A STABILIZED PAD OF CLASS A STONE, 6 INCHES THICK, LINED WITH FILTER FABRIC FOR DRAINAGE SHALL BE USED OVER THE BERM AND ACCESS SLOPES.
  9. WIDTH OF THE CROSSING SHALL BE SUFFICIENT TO ACCOMMODATE THE LARGEST VEHICLE CROSSING THE CHANNEL (-16).
  10. CONTRACTOR SHALL DETERMINE AN APPROPRIATE RAMP ANGLE ACCORDING TO EQUIPMENT UTILIZED.
  11. FORD CROSSING WILL NOT BE GRAVELED FROM ONE EASEMENT BOUNDARY TO THE OTHER EASEMENT BOUNDARY. GRAVEL FORD CROSSING WILL EXTEND 10' PAST THE POINT WHERE THE CROSSING MEETS BANKFULL ON BOTH SIDES.

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06.06.2012  
ENGINEER  
WILLIAM SCOTT HUNT

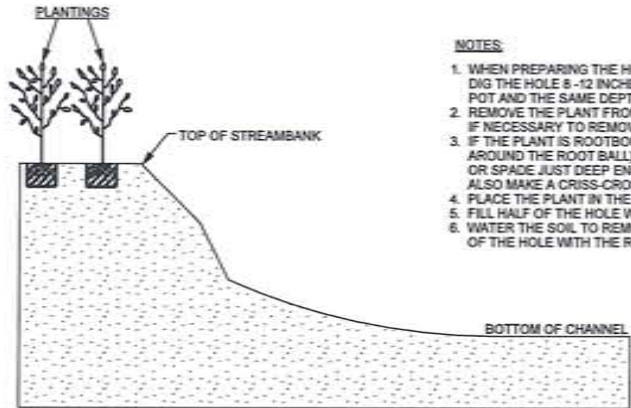
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### PLANTING SPECIFICATIONS



CROSS SECTION VIEW OF BARE ROOT PLANTING

- NOTES:**
1. PLANT BARE ROOT SHRUBS AND TREES TO THE WIDTH OF THE BUFFER, AS SHOWN ON THE PLANS.
  2. LOOSEN COMPACTED SOIL.
  3. PLANT IN HOLES MADE BY A MATTOCK, DIBBLE, PLANTING BAR, OR OTHER APPROVED MEANS.
  4. PLANT IN HOLES DEEP AND WIDE ENOUGH TO ALLOW THE ROOTS TO SPREAD OUT AND DOWN WITHOUT J-ROOTING.
  5. KEEP ROOTS MOIST WHILE DISTRIBUTING OR WAITING TO PLANT BY MEANS OF VET CANVAS, BURLAP, OR STRAW.
  6. HEEL-IN PLANTS IN MOIST SOIL OR SAWDUST IF NOT PROMPTLY PLANTED UPON ARRIVAL TO PROJECT SITE.

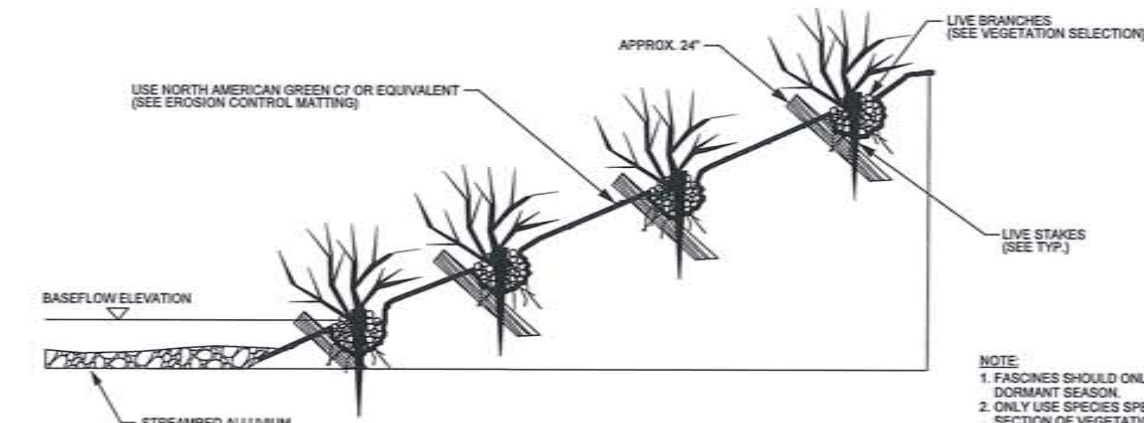


CROSS SECTION VIEW OF CONTAINER PLANTING

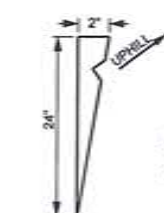
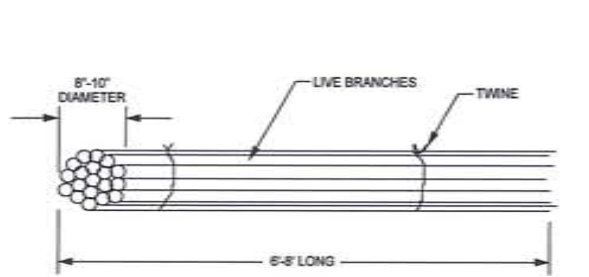
- NOTES:**
1. WHEN PREPARING THE HOLE FOR A POTTED PLANT OR SHRUB DIG THE HOLE 8-12 INCHES LARGER THAN THE DIAMETER OF THE POT AND THE SAME DEPTH AS THE POT.
  2. REMOVE THE PLANT FROM THE POT. LAY THE PLANT ON ITS SIDE IF NECESSARY TO REMOVE THE POT.
  3. IF THE PLANT IS ROOTBOUND (ROOTS GROWING IN A SPIRAL AROUND THE ROOT BALL), MAKE VERTICAL CUTS WITH A KNIFE OR SPADE JUST DEEP ENOUGH TO CUT THE NET OF ROOTS. ALSO MAKE A CRISS-CROSS CUT ACROSS THE BOTTOM OF THE BALL.
  4. PLACE THE PLANT IN THE HOLE.
  5. FILL HALF OF THE HOLE WITH SOIL (SAME SOIL REMOVED FOR BACKFILL).
  6. WATER THE SOIL TO REMOVE AIR POCKETS AND FILL THE REST OF THE HOLE WITH THE REMAINING SOIL.

### LIVE FASCINE

RECOMMENDED SPACING FOR LIVE FASCINES IS 5' TO 7'



- NOTE:**
1. FASCINES SHOULD ONLY BE INSTALLED DURING DORMANT SEASON.
  2. ONLY USE SPECIES SPECIFIED UNDER LIVE STAKE SECTION OF VEGETATION SELECTION.
  3. FASCINES SHOULD BE 8"-12" DIAMETER, 6'-8' IN LENGTH, AND BOUND WITH BIODEGRADABLE TWINE



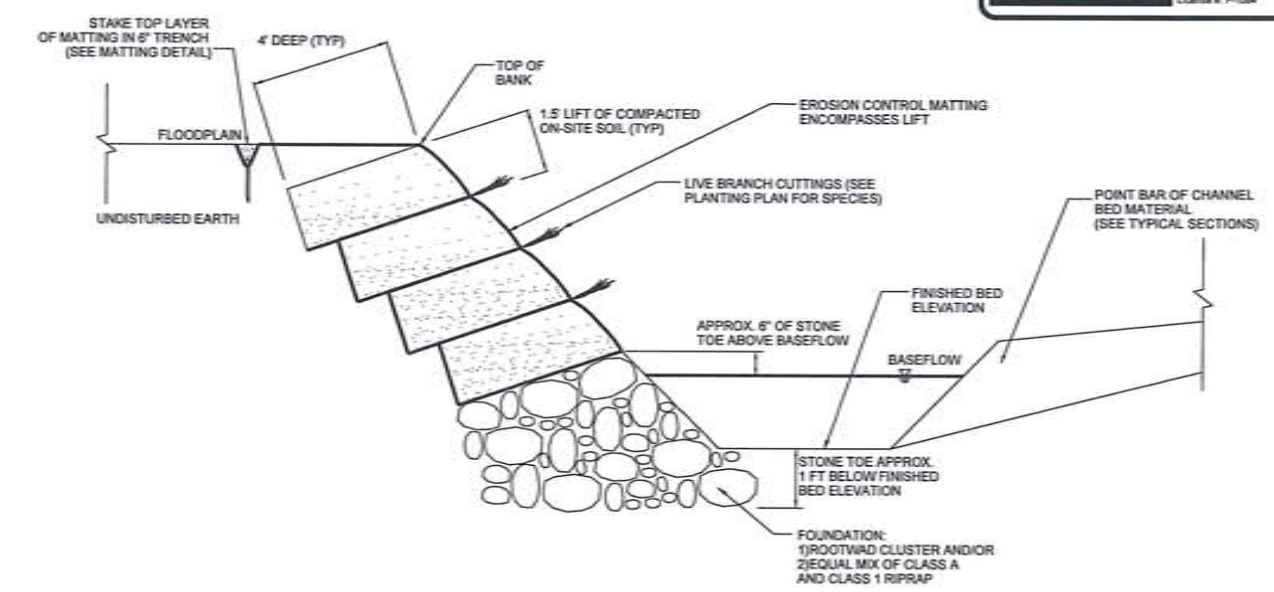
TYPICAL STAKE

- NOTES:**
1. BOARD FOR STAKE SHOULD BE 2" X 4" X 24".
  2. SAW 2" X 4" TIMBER DIAGONALLY TO PRODUCE 2 DEAD STOUT STAKES.

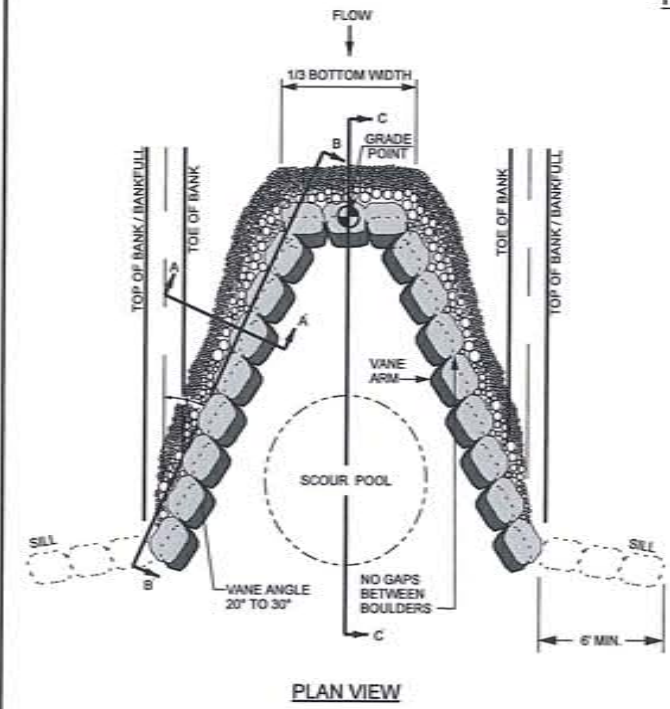
### GEOLIFT



PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>2-D</b>
PROJECT ENGINEER	
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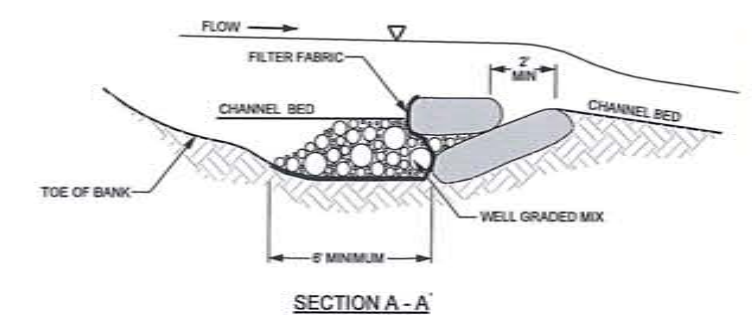
### ROCK CROSS VANE



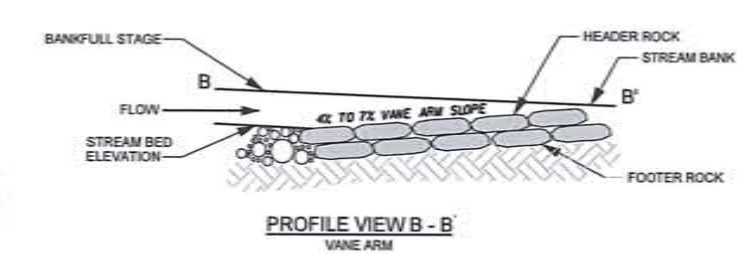
PLAN VIEW

#### NOTES FOR ALL VANE STRUCTURES:

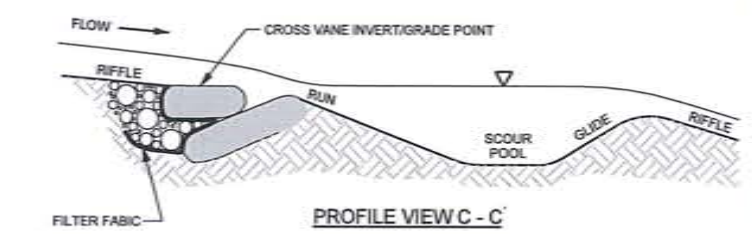
1. BOULDERS MUST BE AT LEAST 3' x 2' x 1'.
2. INSTALL FILTER FABRIC FOR DRAINAGE BEGINNING AT THE MIDDLE OF THE HEADER ROCKS AND EXTEND DOWNWARD TO THE DEPTH OF THE BOTTOM FOOTER ROCK, AND THEN UPSTREAM TO A MINIMUM OF SIX FEET.
3. DIG A TRENCH BELOW THE BED FOR FOOTER ROCKS AND PLACE FILL ON UPSTREAM SIDE OF VANE ARM, BETWEEN THE ARM AND STREAMBANK.
4. CONSTRUCT FOLLOWING ANGLE AND SLOPE SPECIFICATIONS. USE CLASS 1 STONE TO FILL GAPS ON UPSTREAM SIDE OF BOULDERS, AND CLASS A STONE TO FILL GAPS ON UPSTREAM SIDE OF CLASS 1 STONE.
5. AFTER ALL STONE HAS BEEN PLACED, FILL IN THE UPSTREAM SIDE OF THE STRUCTURE WITH ON-SITE ALLUVIUM TO THE ELEVATION OF ONE HALF THE HEADER ROCK.
7. BOULDER SILL MUST BE A MINIMUM OF 6'.



SECTION A-A



PROFILE VIEW B - B' VANE ARM

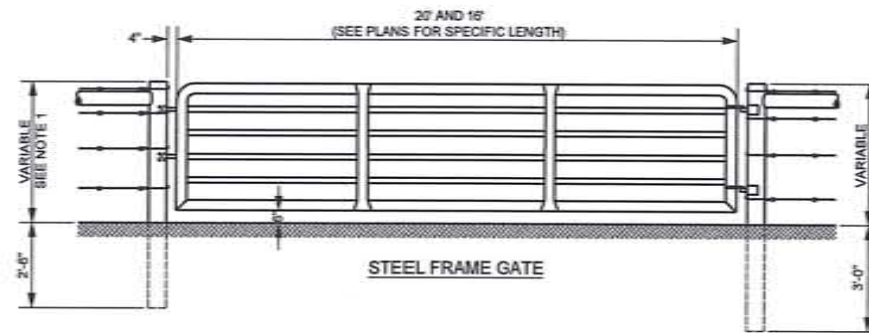


PROFILE VIEW C - C'



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## STEEL GATES



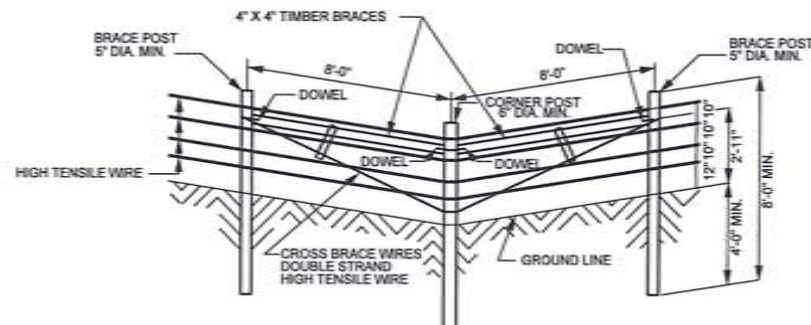
**NOTES:**

1. POST HEIGHT DIMENSION SHALL BE THE SAME AS REQUIRED FOR THE ADJACENT FENCE.
2. CONSTRUCT AN END OR STRESS PANEL AS REQUIRED IN THE SPECIFICATION, ON EACH SIDE OF GATE.
3. HINGES AND LOCKS SHALL BE INSTALLED AS SPECIFIED BY GATE MANUFACTURER.

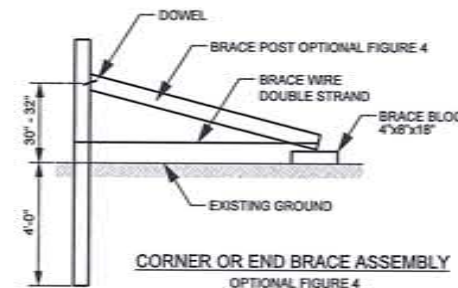


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License # F-1084

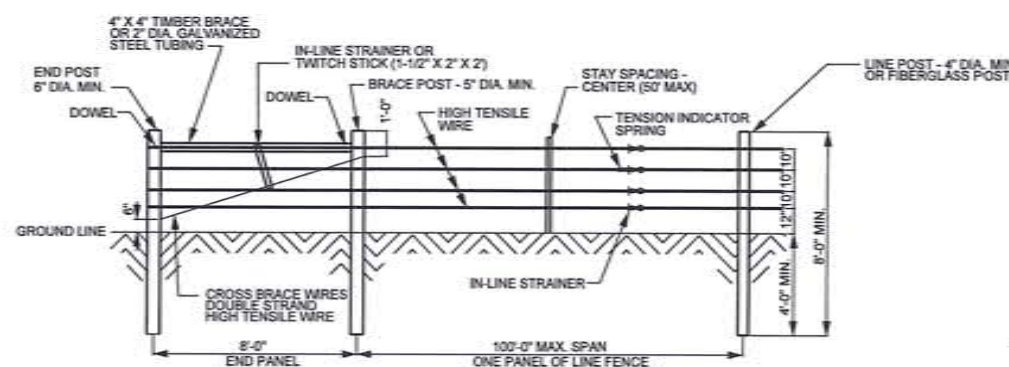
## 4 STRAND - HIGH TENSILE FENCING



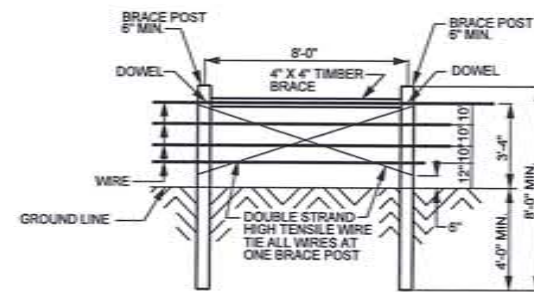
**CORNER AND VERTICAL CHANGE BRACING**  
INSTALL AT ALL POINTS WHERE FENCE ALIGNMENT CHANGES 15 DEGREES OR MORE



**CORNER OR END BRACE ASSEMBLY**  
OPTIONAL FIGURE 4



**END ASSEMBLY AND LINE FENCE SECTION**



**PULL POST ASSEMBLY**  
PLACE IN FENCE LINE SO THAT MAXIMUM DISTANCE BETWEEN BRACED POSTS DOES NOT EXCEED 1320 FEET

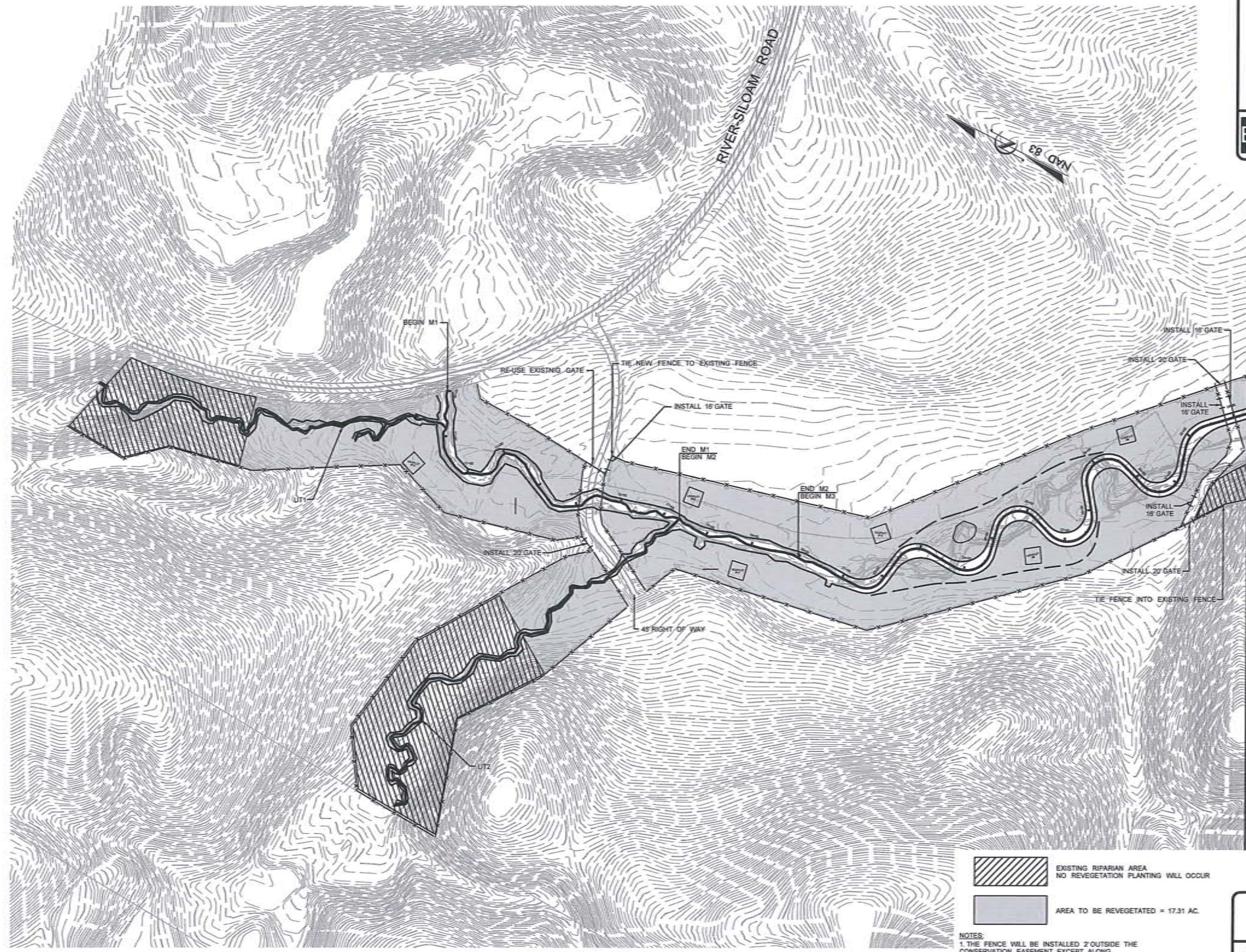
**NOTES:**



1. NOTCH POSTS 3/4" FOR 4" X 4" TIMBER BRACES.
2. DOWELS TO BE 1/2" DIA. X 5' PLAIN STEEL RODS. DRIVE DOWELS IN 7/16" DIA. HOLES, 2-1/2" INTO EACH POST AND TIMBER BRACE.
3. STAPLE CROSS-BRACE WIRES TO BRACE AND CORNER POSTS AT QUARTER POINTS OF THE POSTS.
4. HIGH TENSILE WIRE WILL BE NEW AND SMOOTH AND WILL MEET THE FOLLOWING  
1) TENSILE STRENGTH - 110,000 PSI 2) GALVANIZING - TYPE III 3) GAGE - 12-1/2.
5. ALL CORNER POSTS, BRACE POSTS, BRACES, AND STAY SPACERS, SHALL BE PRESSURE TREATED. PRESSURE TREATMENT SHALL CONFORM TO FEDERAL SPECIFICATION TT-W-571. (1-1/4" LONG FOR HARD WOODS).
6. AT CORNER POSTS, STAPLE EACH WIRE AT QUARTER POINTS OF POSTS. AT BRACE POSTS, DOUBLE STAPLE EACH WIRE. AT LINE POSTS, SECURE EACH WIRE WITH STANDARD CLAMPS.
7. FIBERGLASS MAY BE USED FOR LINE POSTS. THESE WILL CONSIST OF MARBLE, FIBERGLASS, AND POLYMER RESINS WHICH HAVE BEEN TREATED BY THERMOSETTING (HEAT TREATMENT). POSTS MUST BE DRIVEN IN THE SOIL AT LEAST 18 INCHES.
8. 2" DIAMETER PIPE DIAGONAL BRACE MAY BE USED IN PLACE OF HORIZONTAL TIMBER BRACE AND DIAGONAL WIRES.
9. SEE NORTHEAST REGIONAL AGRICULTURAL ENGINEERING SERVICE PUBLICATION NO. 11, HIGH-TENSILE WIRE FENCING, FOR SPECIFIC DETAILS ON BEST METHODS OF HIGH-TENSILE FENCE INSTALLATION.
10. MINIMUM NET RETENTION OF CHROMATED COPPER ARSENATE (CCA) FOR WOOD FENCE POSTS SHALL BE 0.40 POUNDS PER CUBIC FOOT.
11. A SINGLE 12 FOOT LONG, 6 INCH MINIMUM DIAMETER POST MAY BE SUBSTITUTED FOR END PANEL, CORNER AND VERTICAL CHANGE BRACING, AND PULL POST ASSEMBLY. THE 12 FOOT LONG POSTS SHALL EXTEND A MINIMUM OF 7.5 FEET INTO THE GROUND AND BE BACKFILLED WITH GRAVEL.

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PROJECT ENGINEER	
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 EXISTING RIPARIAN AREA  
 NO REVEGETATION PLANTING WILL OCCUR  
 AREA TO BE REVEGETATED = 17.31 AC.

**NOTES:**  
 1. THE FENCE WILL BE INSTALLED 2' OUTSIDE THE CONSERVATION EASEMENT EXCEPT ALONG RIGHT OF WAYS AND PROPERTY BOUNDARIES WHICH WILL BE FENCED AT THEIR BOUNDARIES.  
 2. CONTRACTOR WILL CONTROL ANY INVASIVE SPECIES WITHIN EASEMENT.



**REVEGETATION FENCING**



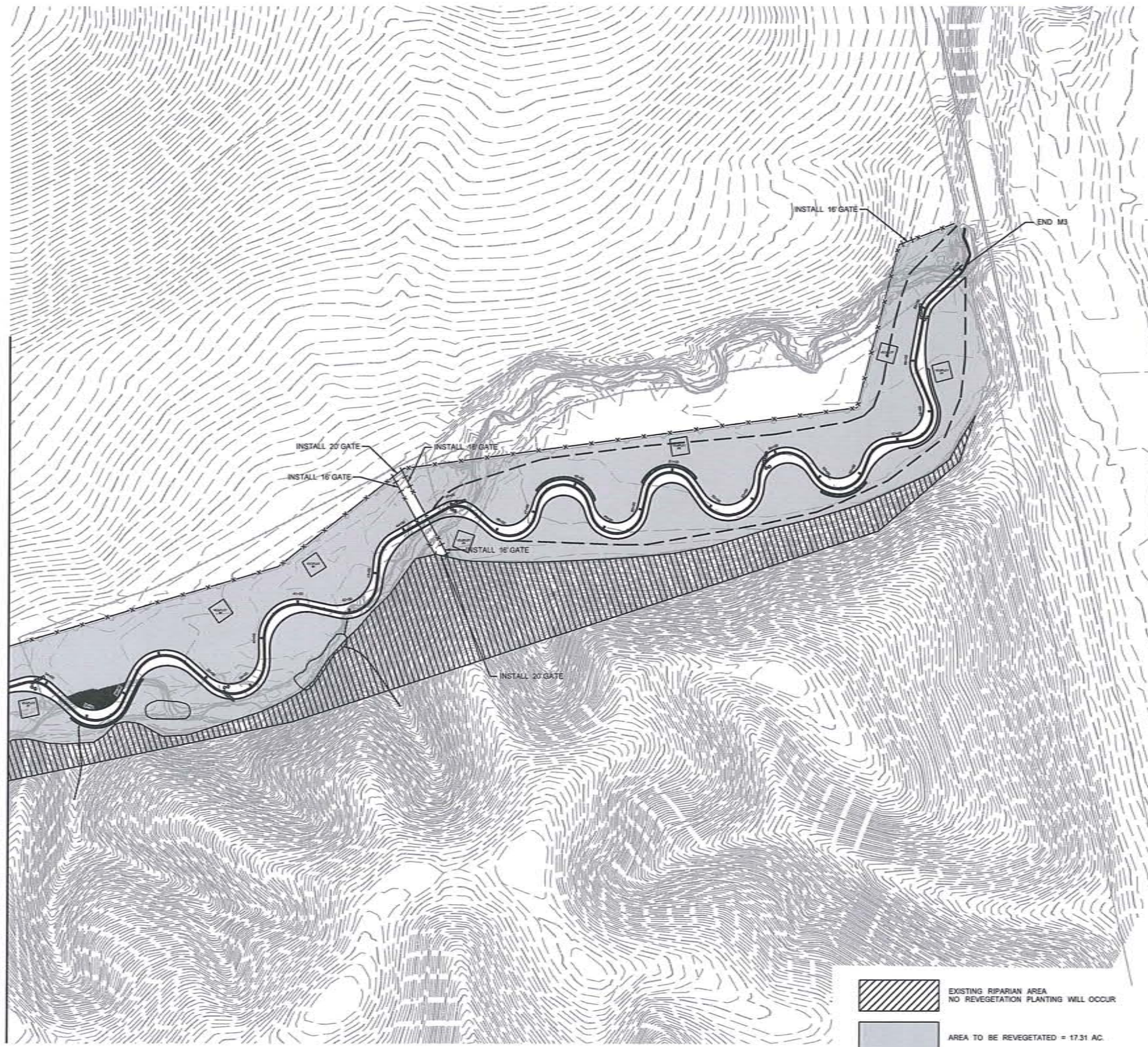
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MATCHLINE SHEET 12



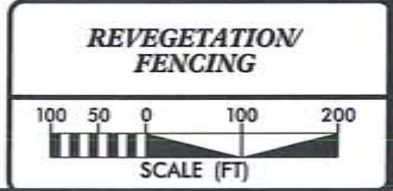
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PROJECT ENGINEER	
<b>Baker</b>	
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- NOTES:
1. THE FENCE WILL BE INSTALLED 2' OUTSIDE THE CONSERVATION EASEMENT EXCEPT ALONG RIGHT OF WAYS AND PROPERTY BOUNDARIES WHICH WILL BE FENCED AT THEIR BOUNDARIES.
  2. CONTRACTOR WILL CONTROL ANY INVASIVE SPECIES WITHIN EASEMENT.

 EXISTING RIPARIAN AREA  
NO REVEGETATION PLANTING WILL OCCUR

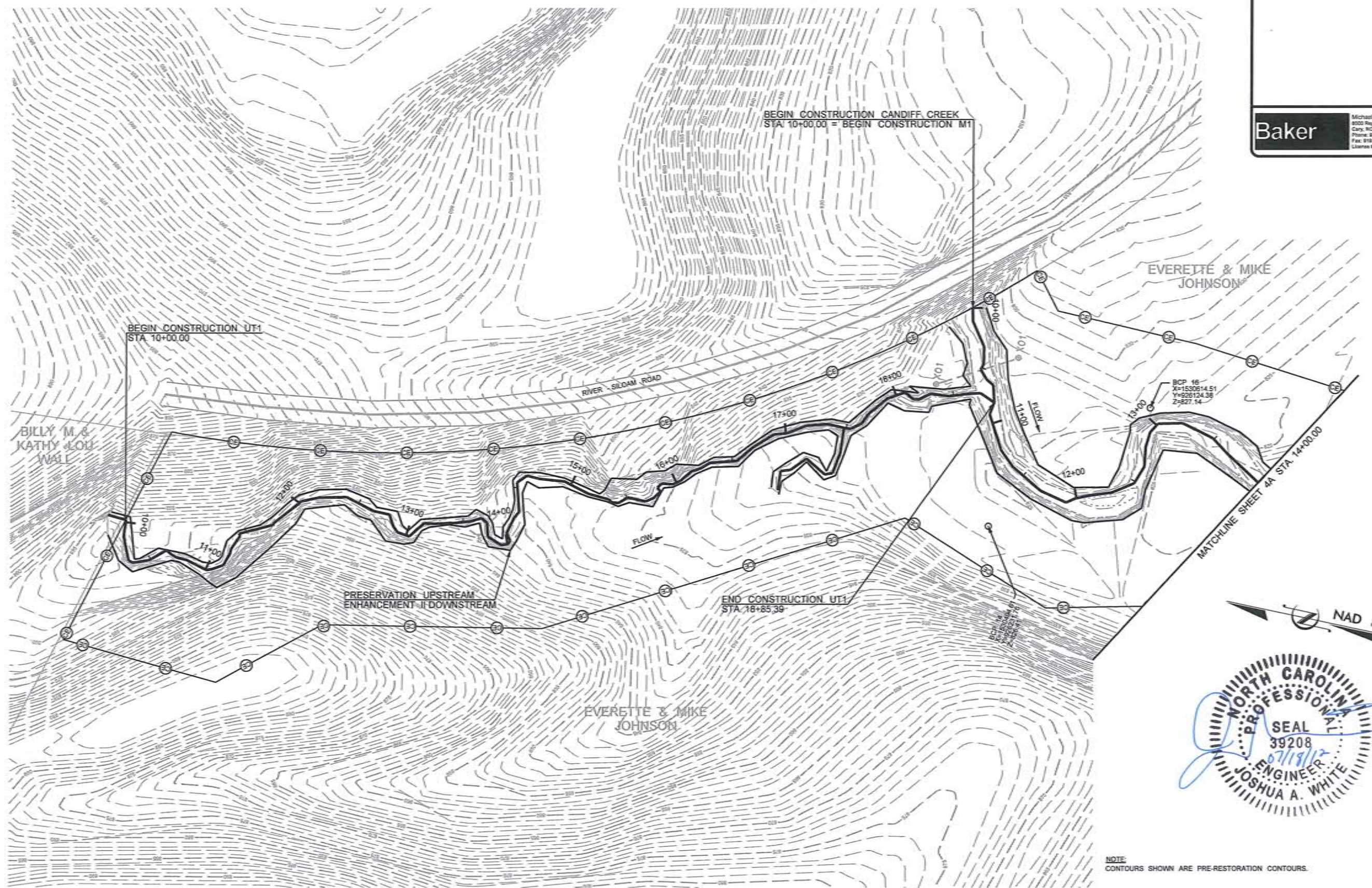
 AREA TO BE REVEGETATED = 17.31 AC.



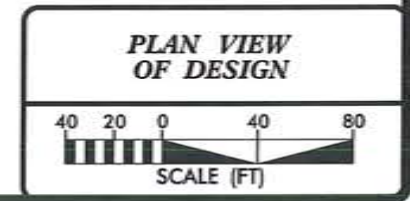
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PROJECT ENGINEER	
	
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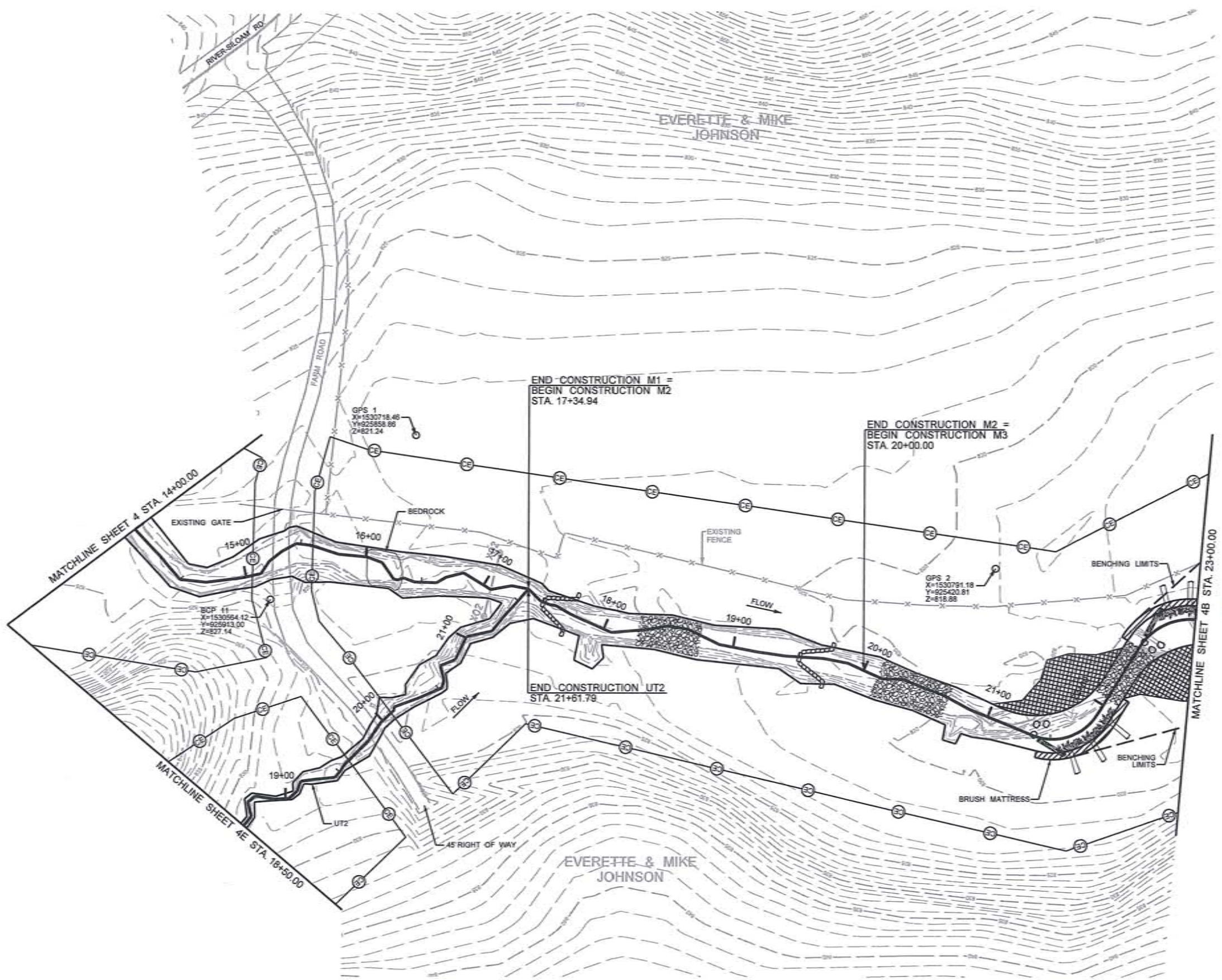
NOTE  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.



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PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering Inc. 800 Regency Parkway, Suite 800 Cary, NORTH CAROLINA 27518 Phone: 919.483.5456 Fax: 919.483.5450 License # F-1084</small>	



- DITCH PLUG
- FILL EXISTING DITCH

NOTES:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

**PLAN VIEW OF DESIGN**

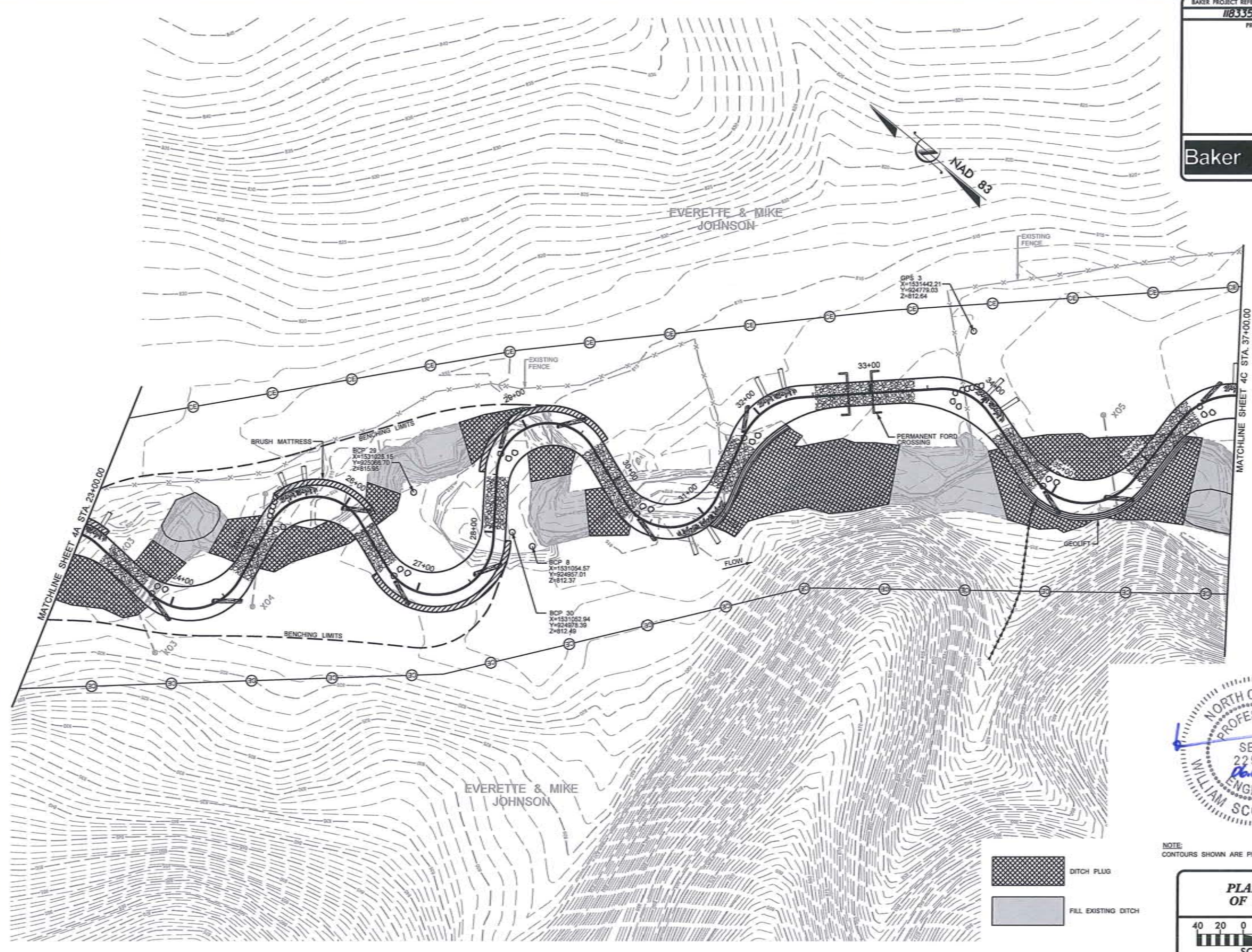
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	DITCH PLUG
	FILL EXISTING DITCH

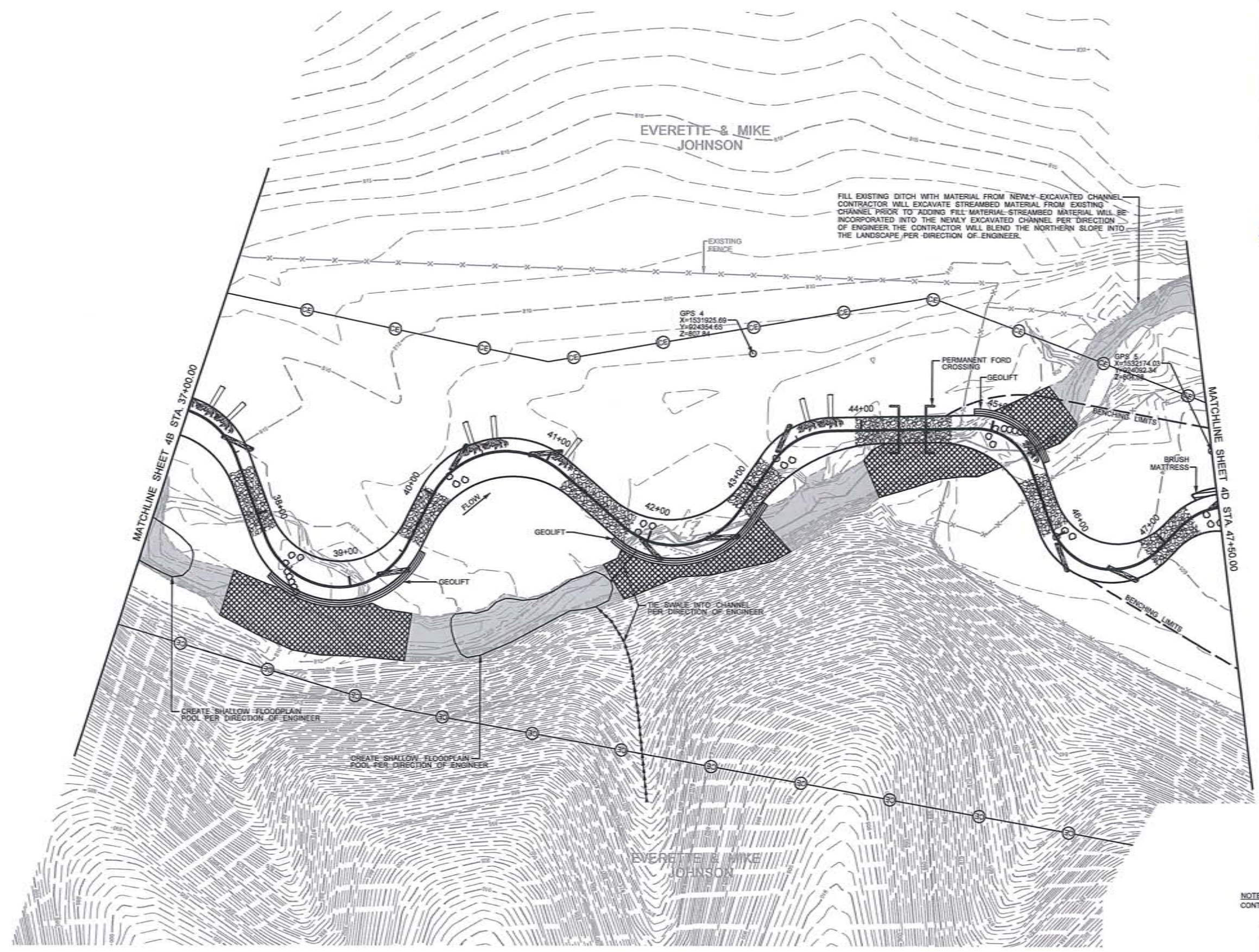
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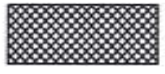
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BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>4C</b>
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	DITCH PLUG
	FILL EXISTING DITCH

NOTE:  
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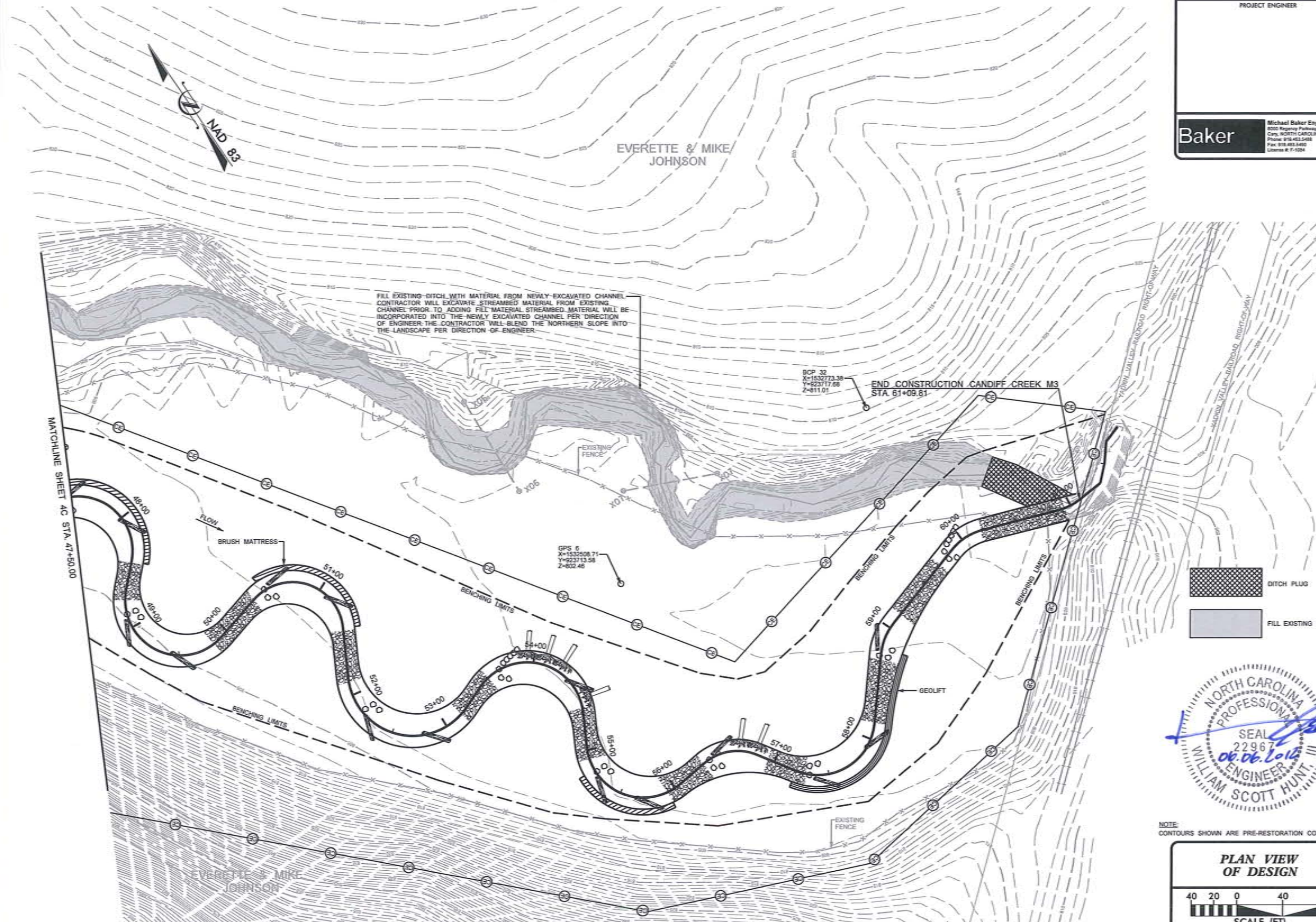
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PROJECT ENGINEER	
<b>Baker</b>	
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DITCH PLUG  
 FILL EXISTING DITCH



NOTE:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

**PLAN VIEW OF DESIGN**

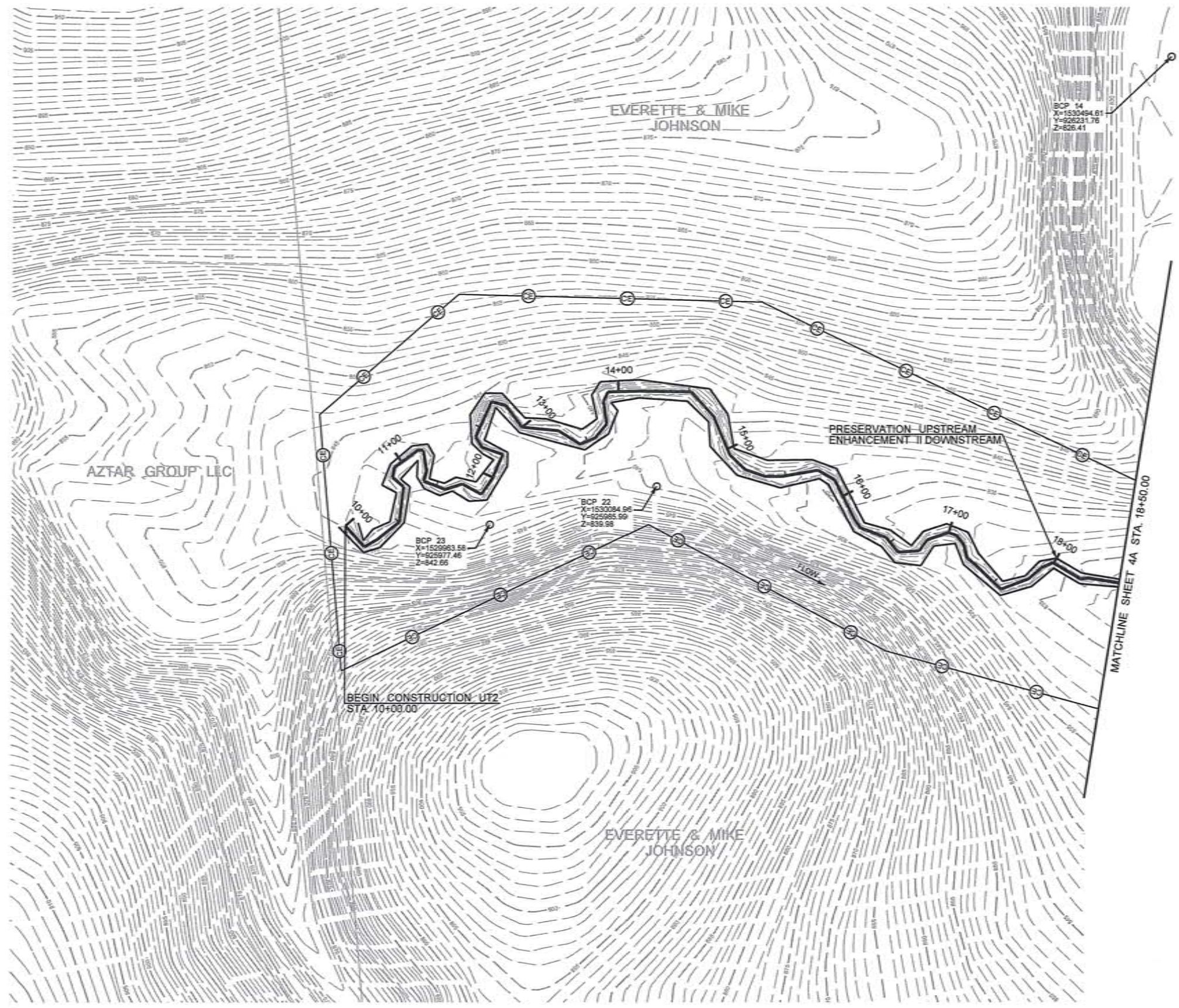
SCALE (FT)



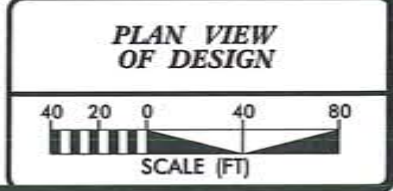
2/26/03

Z:\118335\_Condiff\Design\as-built\plans\118335\_Condiff\_92767\_Designline\_2012\_AB\_04a.dgn

BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>4E</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering, Inc.        8000 Regency Parkway, Suite 500        Cary, NORTH CAROLINA 27518        Phone: 919.483.5488        Fax: 919.483.5490        License #: F-1284</small>	



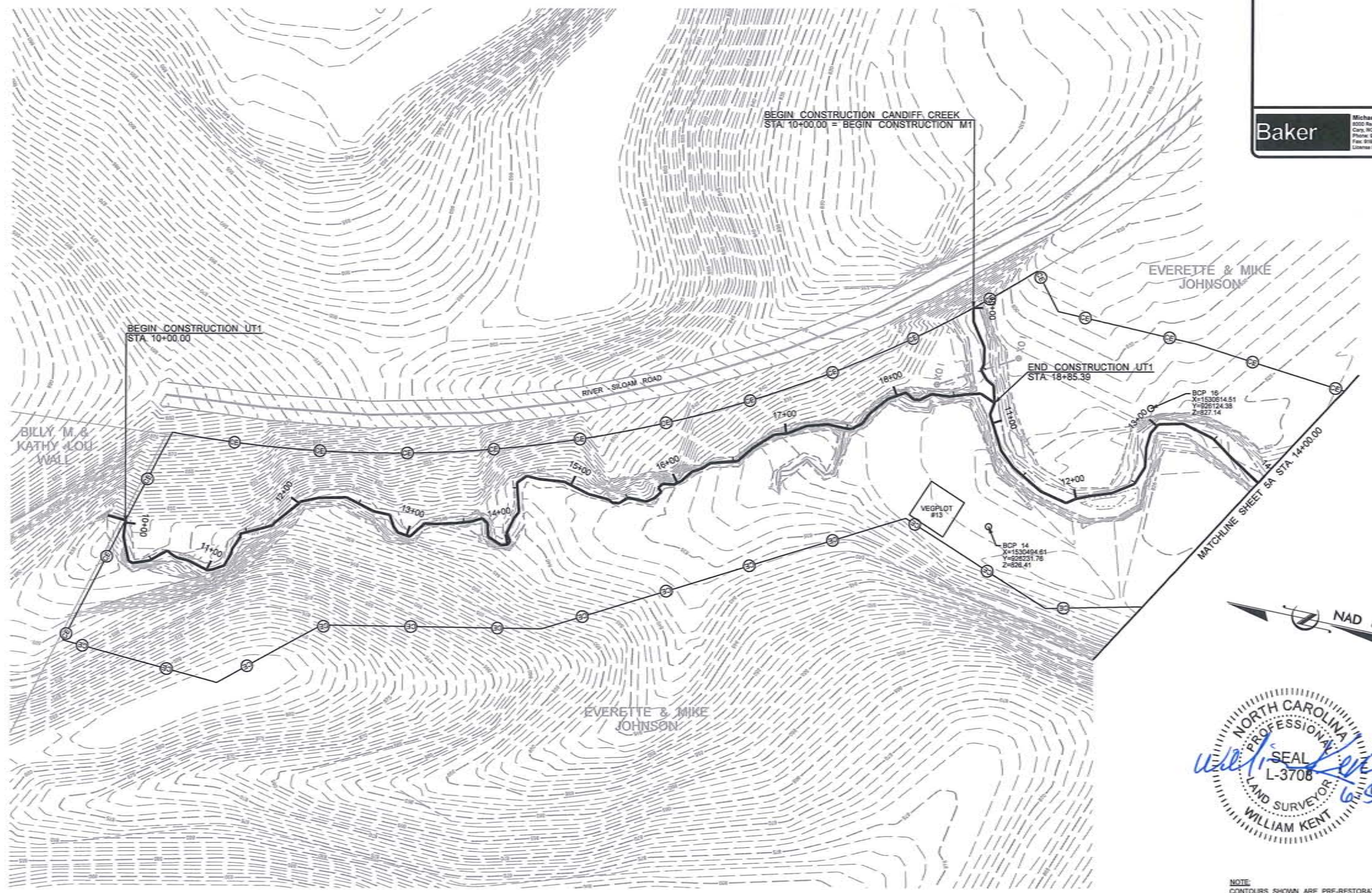
NOTE:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.



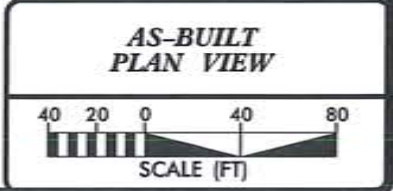
2/26/03

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BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>5</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering Inc. 8000 Regency Parkway, Suite 800 Cary, NORTH CAROLINA 27518 Phone: 919.483.5488 Fax: 919.483.5490 License # F-1084</small>	



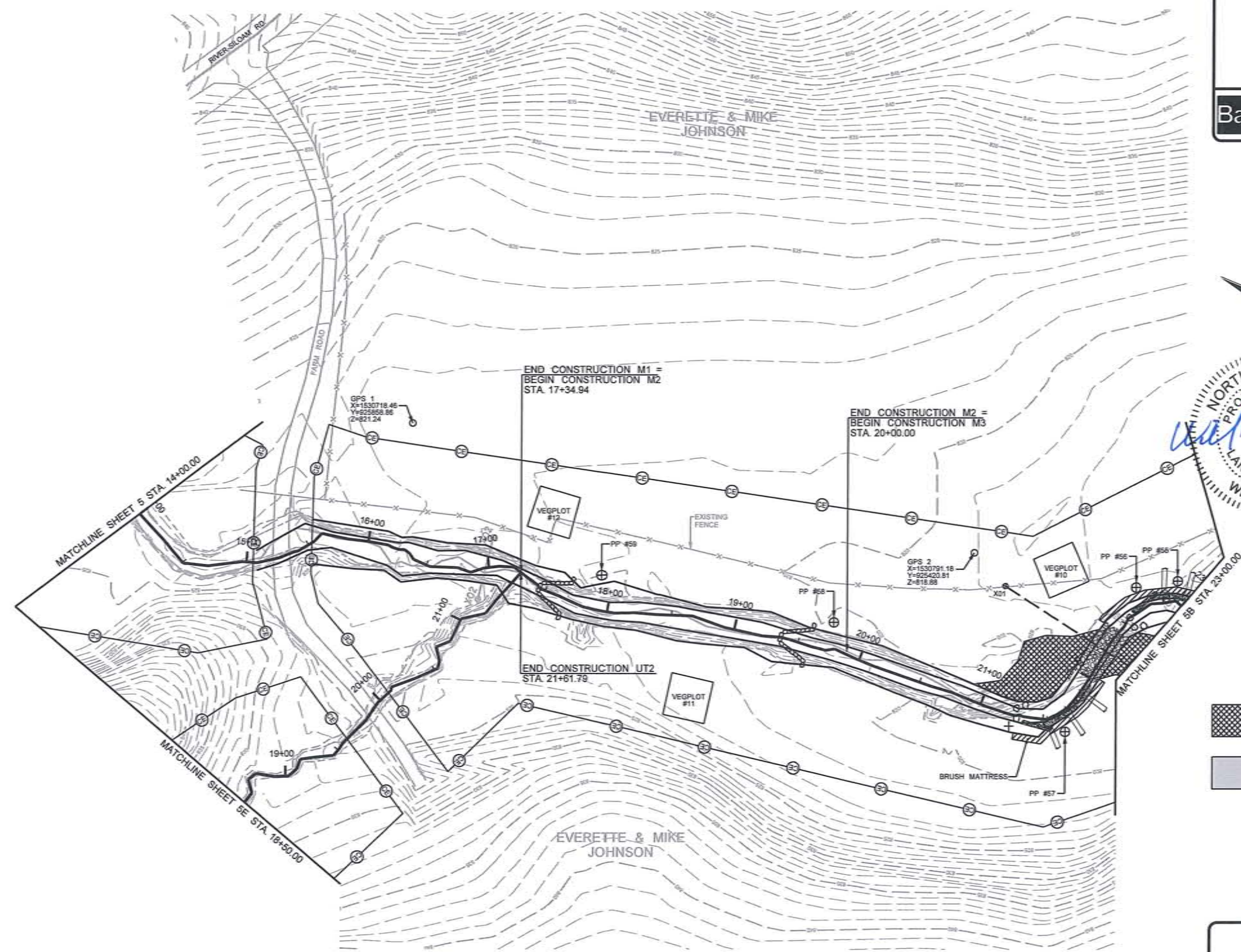
NOTE:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.





2/26/03

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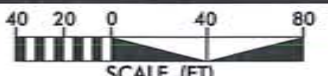
BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>5A</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering Inc. 8000 Regency Parkway, Suite 600 Cary, NORTH CAROLINA 27518 Phone: 919.403.5498 Fax: 919.403.5492 License # F-1024</small>	



NOTES:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

	PLUGGED DITCH
	FILLED EXISTING DITCH

**AS-BUILT  
PLAN VIEW**

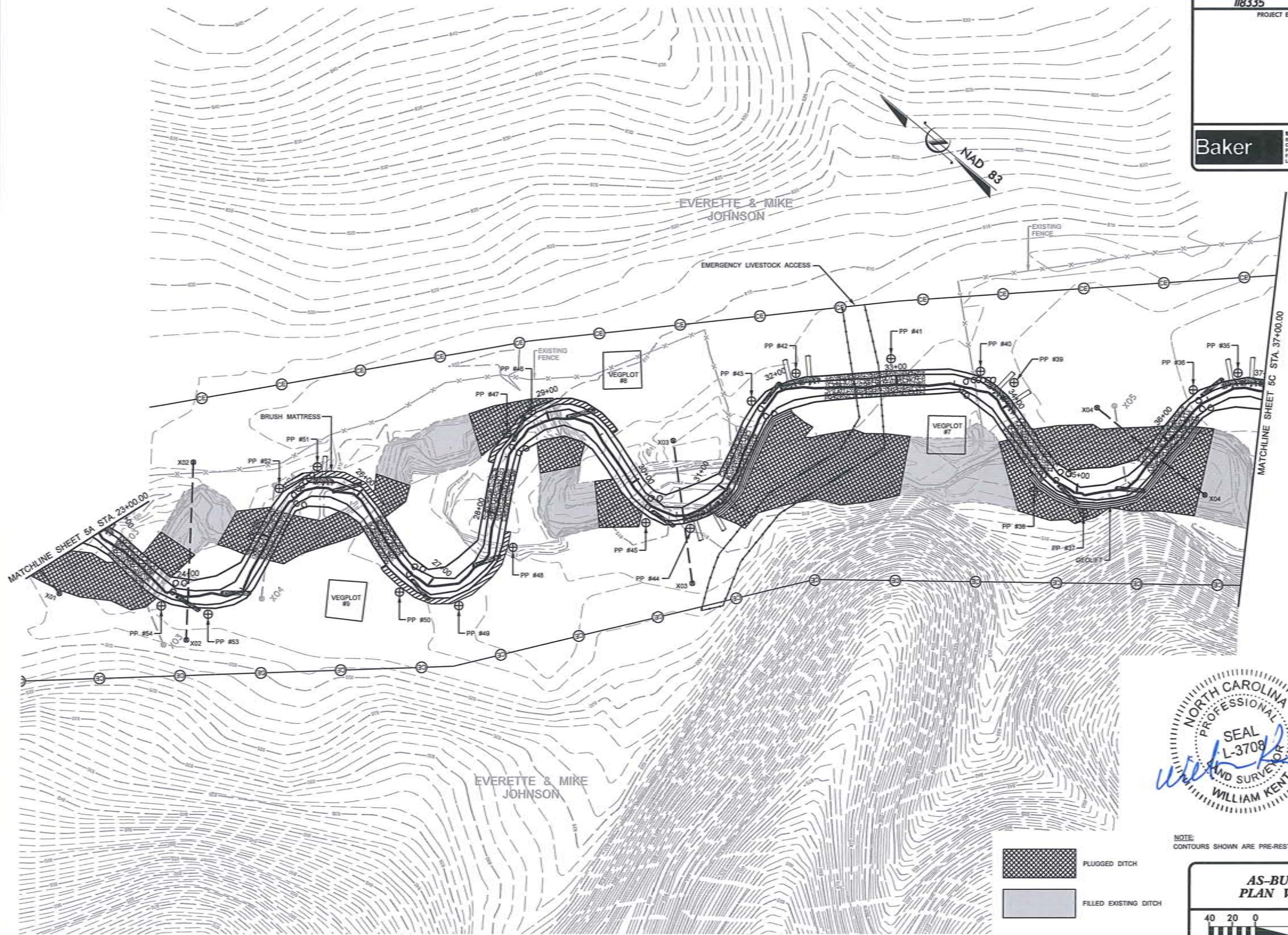


SCALE (FT)

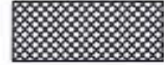

2/26/03

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BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>58</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering Inc. 8000 Regency Parkway, Suite 600 Cary, NORTH CAROLINA 27518 Phone: 919.403.5400 Fax: 919.403.5400 License # F-10284</small>	



NOTE:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

	PLUGGED DITCH
	FILLED EXISTING DITCH

**AS-BUILT  
PLAN VIEW**

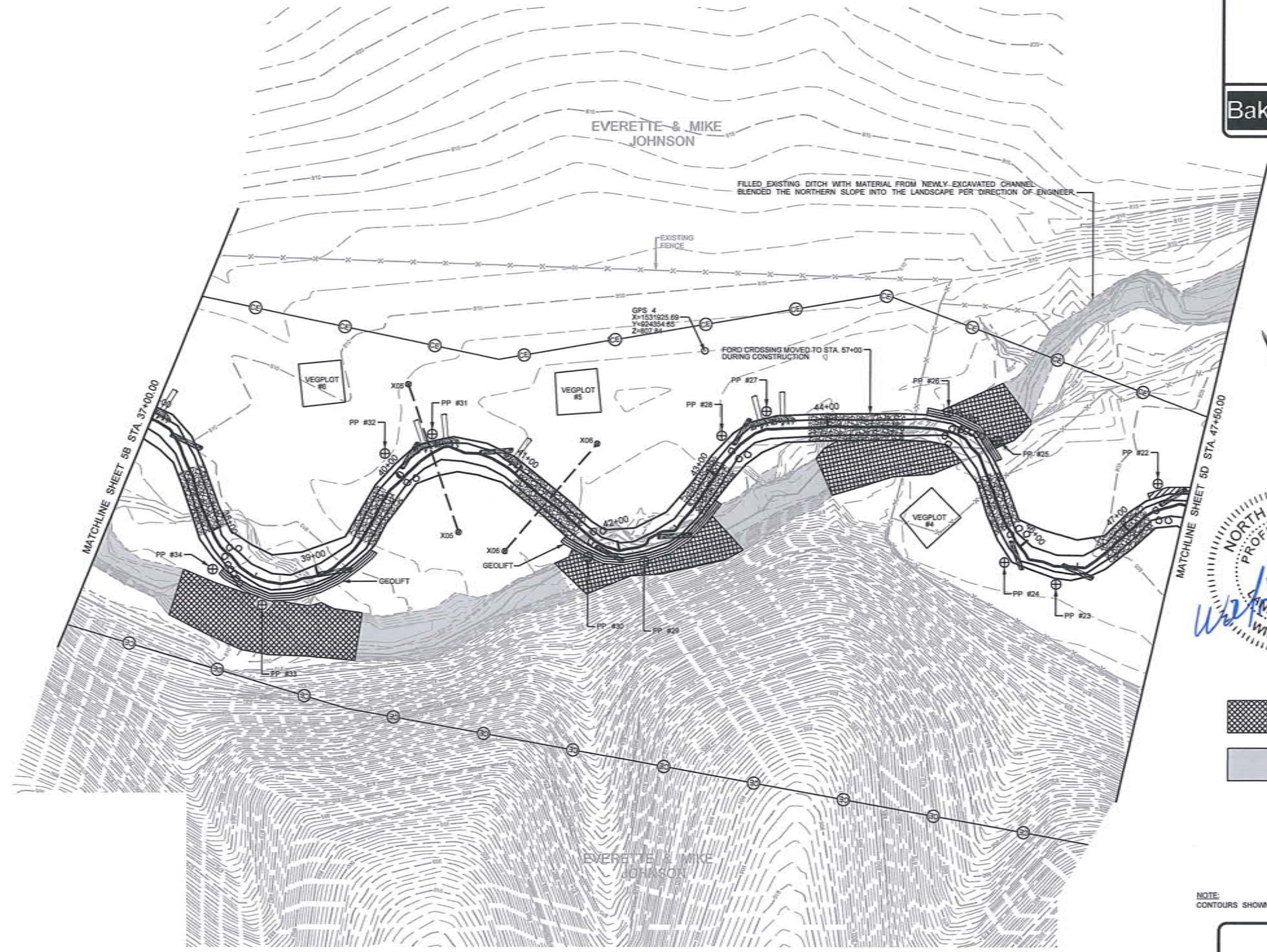


SCALE (FT)

2/26/03

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BAKER PROJECT REFERENCE NO. <b>18335</b>	SHEET NO. <b>5C</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering Inc. 8000 Regency Parkway, Suite 600 Cary, NORTH CAROLINA 27518 Phone: 919.453.5499 Fax: 919.453.5497 License # F-1084</small>	



FILLED EXISTING DITCH WITH MATERIAL FROM NEWLY EXCAVATED CHANNEL. BLENDED THE NORTHERN SLOPE INTO THE LANDSCAPE PER DIRECTION OF ENGINEER.

EXISTING FENCE

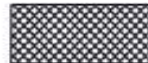

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Y=624354.65  
Z=607.84

FORD CROSSING MOVED TO STA. 57+00 DURING CONSTRUCTION

MATCHLINE SHEET 5B STA. 37+00.00


MATCHLINE SHEET 5D STA. 47+50.00



-  PLUGGED DITCH
-  FILLED EXISTING DITCH

NOTE: CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

**AS-BUILT  
PLAN VIEW**



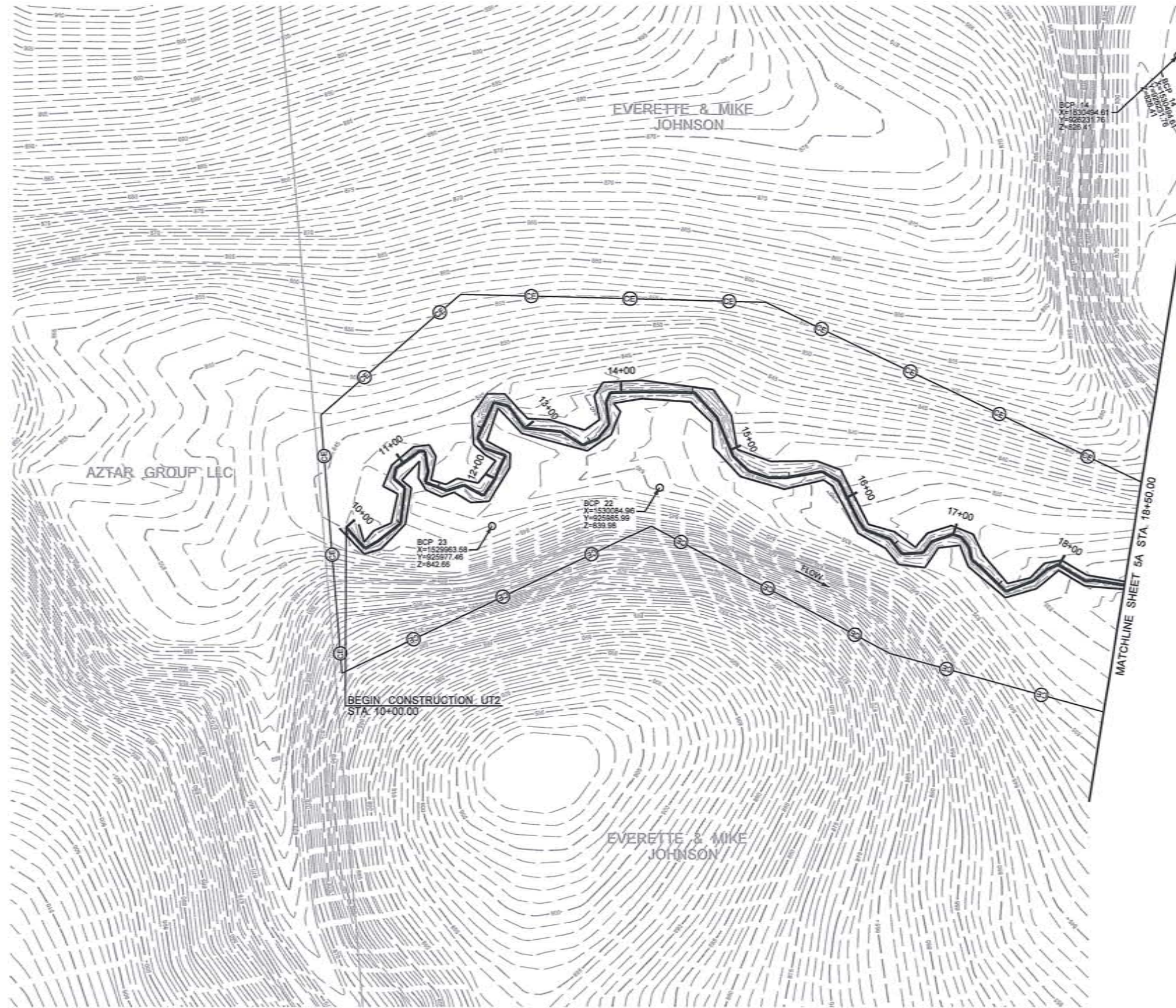
SCALE (FT)



2/26/03

S:\118335\_Condiff\Design\as-built\plans\118335\_Condiff\_92767\_Baseline\_2012\_AB\_05a.dgn

BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>5E</b>
PROJECT ENGINEER	
<b>Baker</b>	
Michael Baker Engineering Inc. 8000 Regency Parkway, Suite 600 Cary, NORTH CAROLINA 27518 Phone: 919.453.5488 Fax: 919.453.5489 License #: F-10284	



NOTE: CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

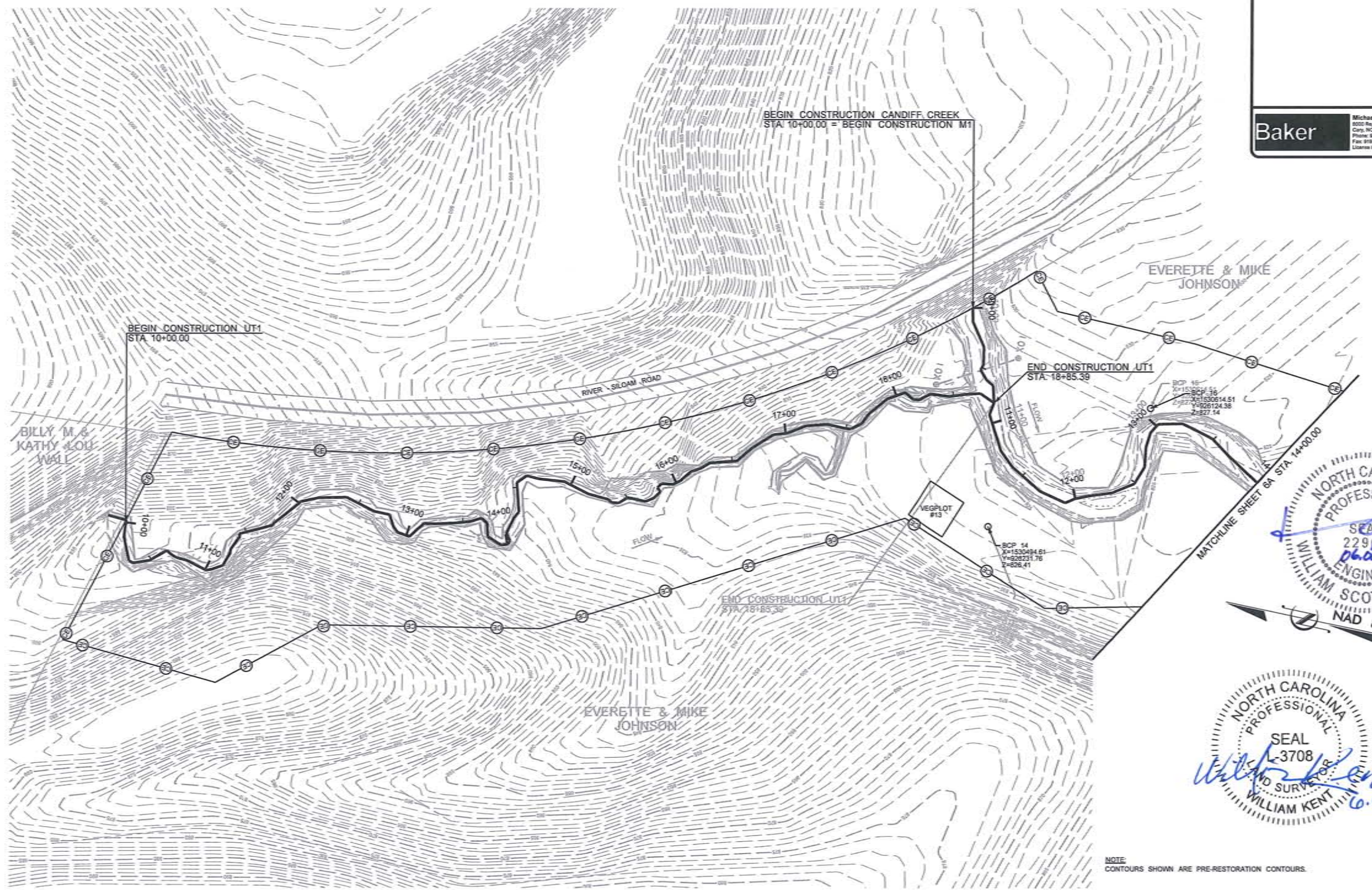
**AS-BUILT  
PLAN VIEW**

SCALE (FT)

2/26/03

K:\118336\_Candiff\Design\as-built\plans\118335\_Candiff\_92767\_BaseLine\_2012\_AB\_06.dgn

BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>6</b>
PROJECT ENGINEER	
<b>Baker</b>	
Michael Baker Engineering Inc. 8000 Regency Parkway, Suite 500 Cary, NORTH CAROLINA 27518 Phone: 919.483.5400 Fax: 919.483.5400 License # F-1284	



NORTH CAROLINA  
PROFESSIONAL  
SEAL  
22967  
06.06.2012  
ENGINEER  
WILLIAM SCOTT HUNT  
NAD 83

NORTH CAROLINA  
PROFESSIONAL  
SEAL  
3708  
WILLIAM KENT  
0.5.12

NOTE:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

**AS-BUILT OVER DESIGN  
PLAN VIEW**

SCALE (FT)

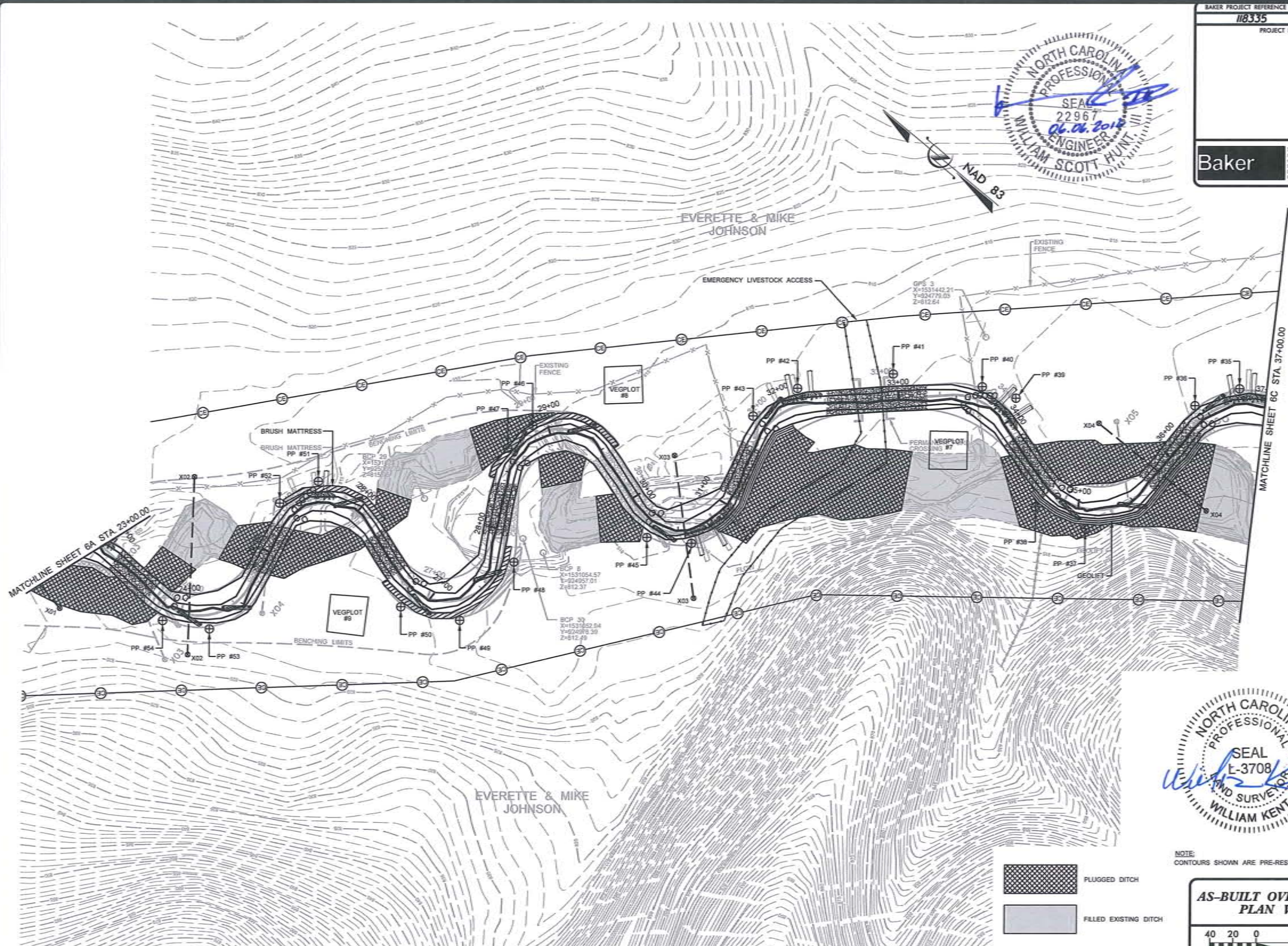




2/26/03

S:\118335\_Cemdi\F\Design\as-built\plans\118335\_Cemdi\F\_92767\_Designline.2012\_AD\_06b.dgn

BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>6B</b>
PROJECT ENGINEER	
<small>Michael Baker Engineering Inc. 8001 Regency Parkway, Suite 800 Cary, NORTH CAROLINA 27518 Phone: 919.483.5400 Fax: 919.483.5400 License # F-1084</small>	



NOTE:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

	PLUGGED DITCH
	FILLED EXISTING DITCH

**AS-BUILT OVER DESIGN  
PLAN VIEW**

SCALE (FT)

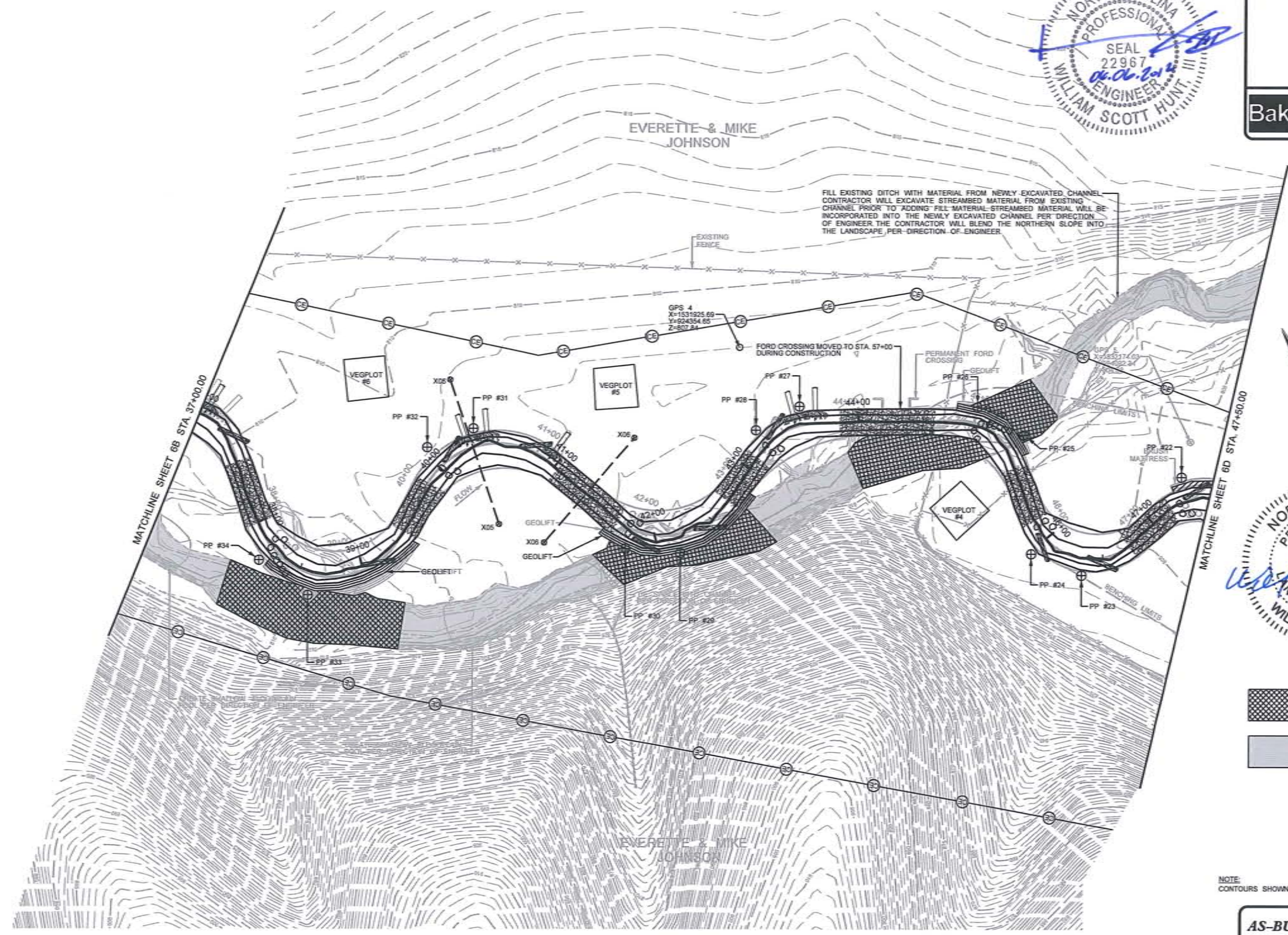
2/26/03

8/1/2012 C:\Users\Design\workspace\118335\Candl\F-92757\_Baseline\_2012\_AB\_050.dgn



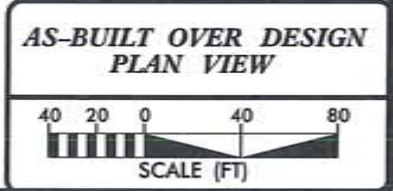
**Baker**

Michael Baker Engineering Inc.  
8000 Regency Parkway, Suite 800  
Cary, NORTH CAROLINA 27518  
Phone: 919.453.5499  
Fax: 919.453.5492  
License #: F-1084



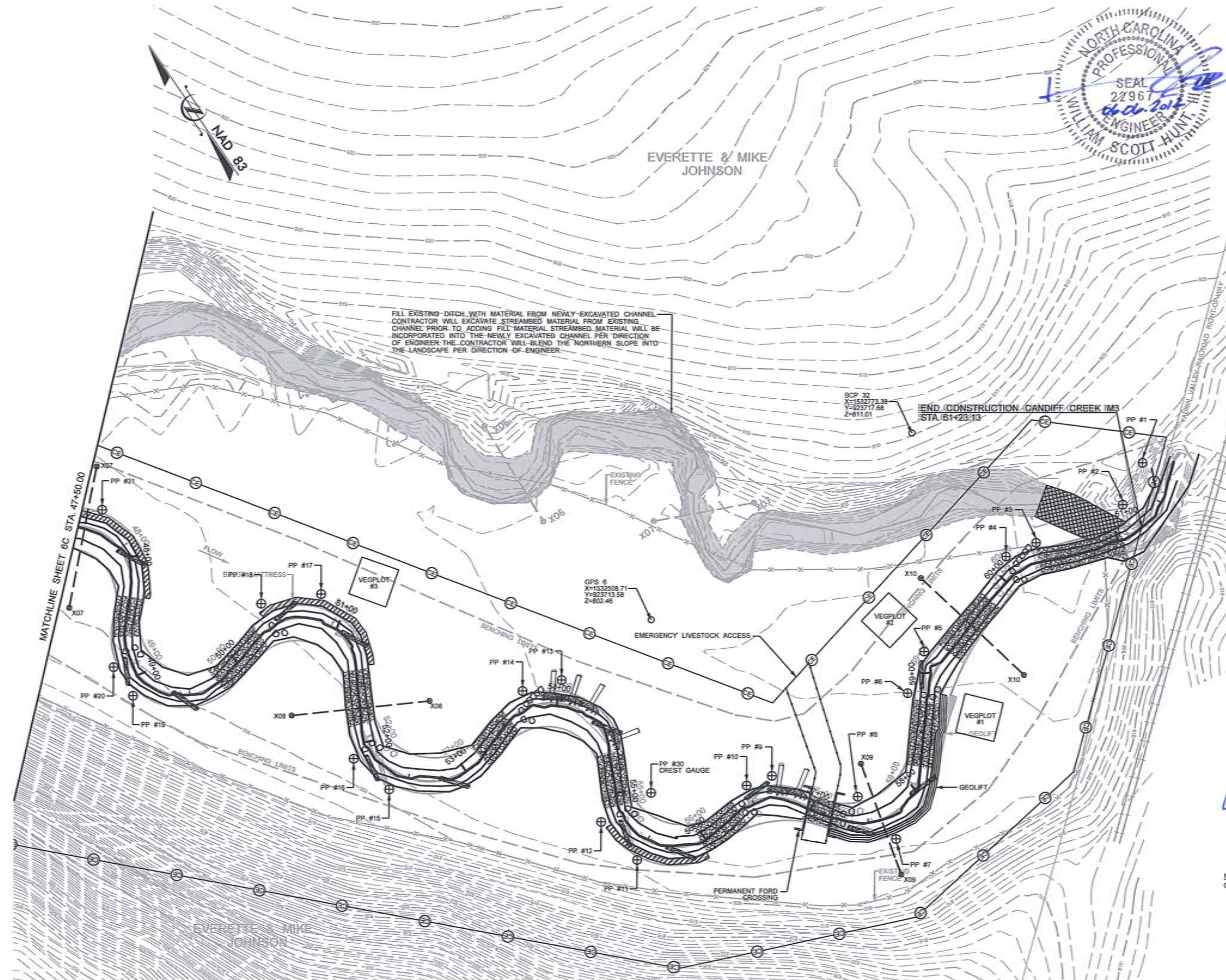
- PLUGGED DITCH
- FILLED EXISTING DITCH

NOTE:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

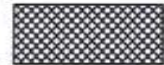



2/26/03  
 8/5/2012 C:\Design\as-built\plena\118335 - Candiff - 92767\_Baseline\_2012\_AB.dwg

BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>60</b>
PROJECT ENGINEER	
	
	
<small>Michael Baker Engineering Inc.        8000 Regency Parkway, Suite 600        Cary, NORTH CAROLINA 27518        Phone: 919.453.5400        Fax: 919.453.5400        License # F-1084</small>	




FILL EXISTING DITCH WITH MATERIAL FROM NEWLY EXCAVATED CHANNEL. CONTRACTOR WILL EXCAVATE STREAMBED MATERIAL FROM EXISTING CHANNEL PRIOR TO ADDING FILL MATERIAL. STREAMBED MATERIAL WILL BE INCORPORATED INTO THE NEWLY EXCAVATED CHANNEL PER DIRECTION OF ENGINEER. THE CONTRACTOR WILL BLENDE THE NORTHERN SLOPE INTO THE LANDSCAPE PER DIRECTION OF ENGINEER.

-  PLUGGED DITCH
-  FILLED EXISTING DITCH

  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 L-3708  
 WILLIAM KENT

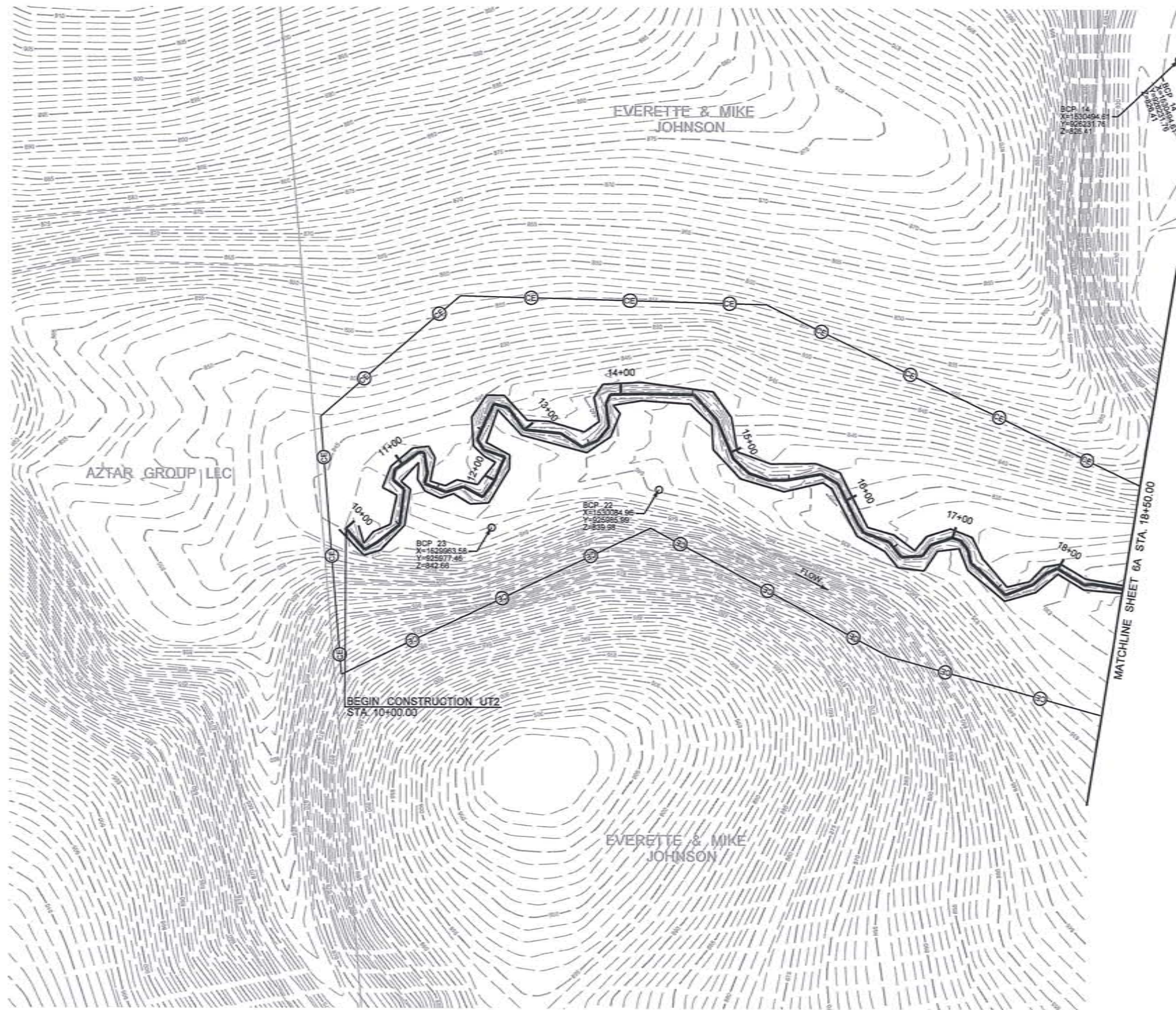
NOTE:  
 CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

**AS-BUILT OVER DESIGN  
 PLAN VIEW**



SCALE (FT)

2.25.103  
 6/3/2015  
 C:\Users\mike\Documents\118335\_Candiff\_02767\_BaseLine\_2012\_AB\_06e.dgn



BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>6E</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering Inc.                  8200 Regency Parkway, Suite 500                  Cary, NORTH CAROLINA 27518                  Phone: 919.493.5498                  Fax: 919.493.5499                  License #: F-1054</small>	

NAD 83

NORTH CAROLINA  
PROFESSIONAL  
SEAL  
L-3708  
WILLIAM KENT

*William Kent*  
6.5.12

NORTH CAROLINA  
PROFESSIONAL  
SEAL  
22967  
WILLIAM SCOTT HUNT

*William Scott Hunt*  
06.03.12

NOTE:  
CONTOURS SHOWN ARE PRE-RESTORATION CONTOURS.

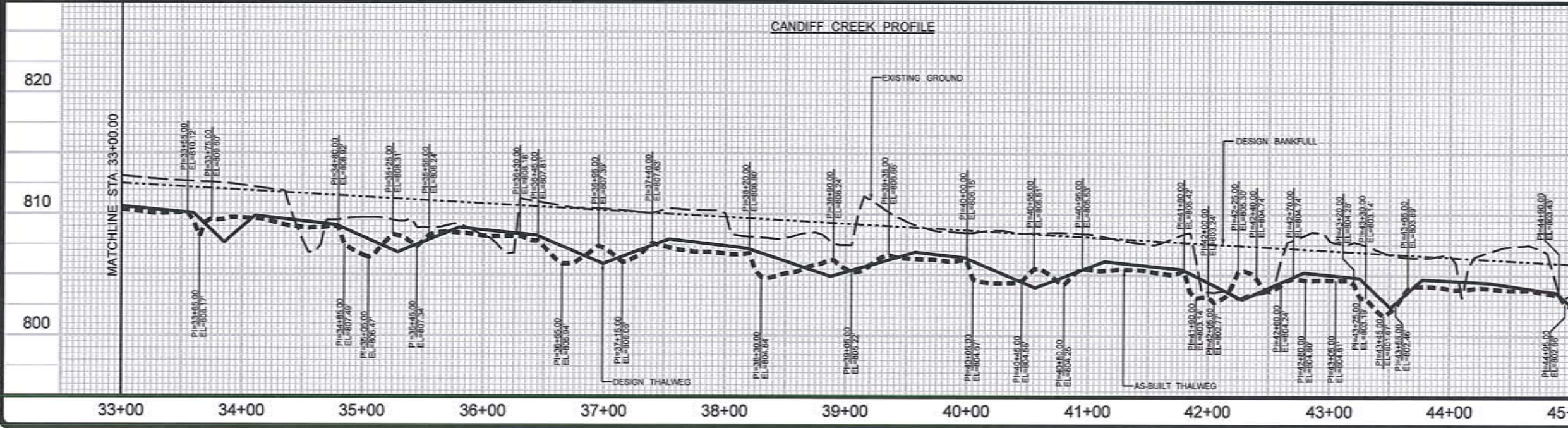
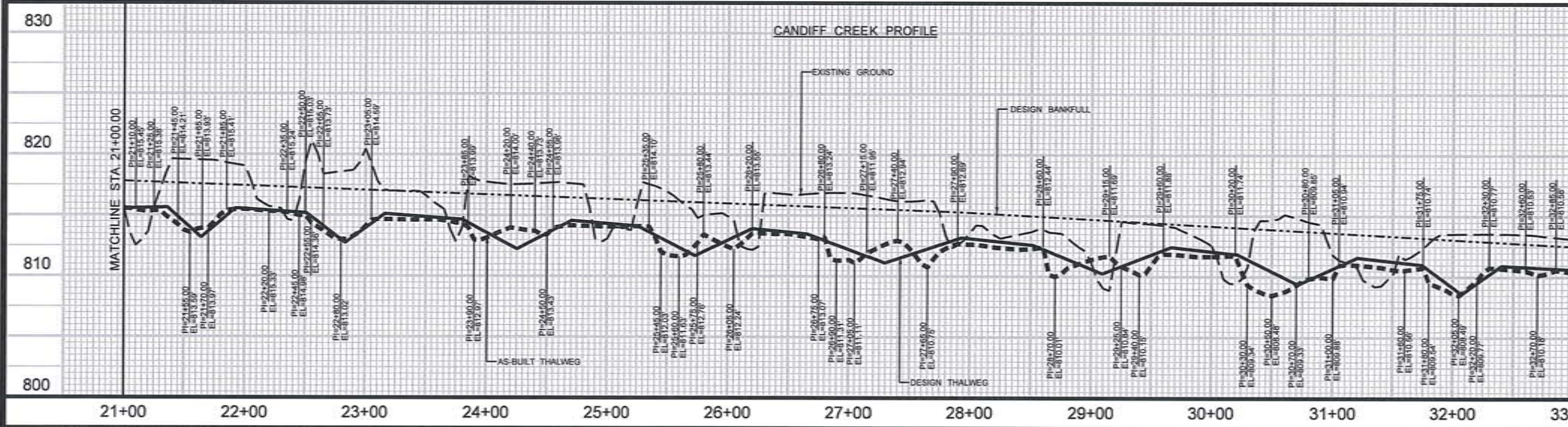
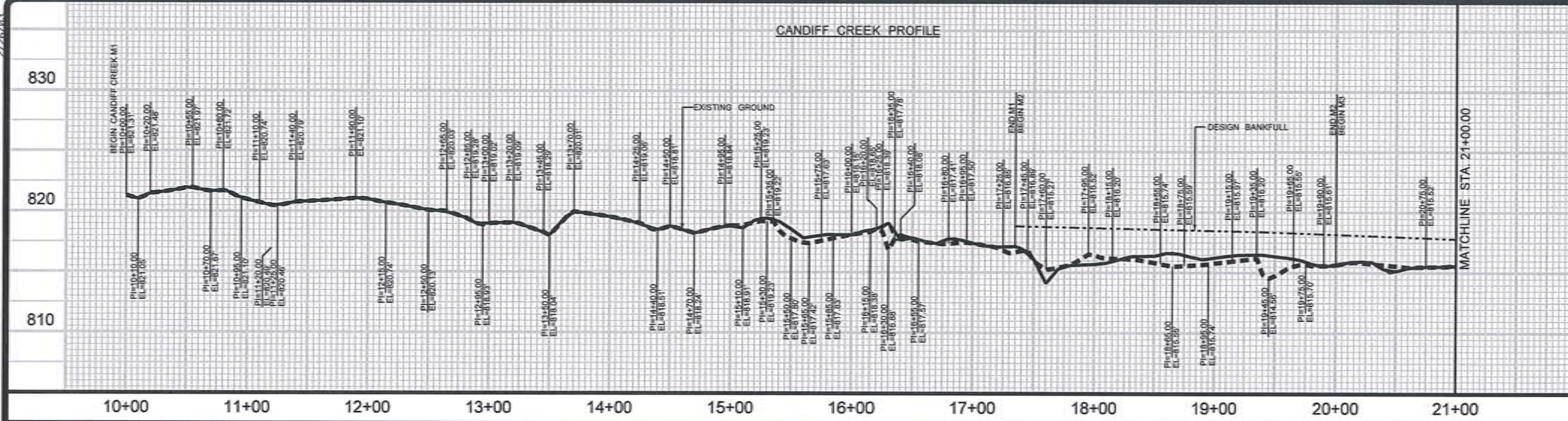
**AS-BUILT OVER DESIGN  
PLAN VIEW**

SCALE (FT)

2/25/03

8/1/2003 8:11:35 AM Candiff\as-built\plans\Candiff\_92767\_Baseline\_2012-AB\_07.dgn

BAKER PROJECT REFERENCE NO.	SHEET NO.
118335	7
PROJECT ENGINEER	
<b>Baker</b>	
Michael Baker Engineering Inc. 8500 Regency Parkway, Suite 800 Cary, NORTH CAROLINA 27518 Phone: 919.453.5488 Fax: 919.453.5485 License # P-1094	



**Professional Engineer Seal**

**WILLIAM KENT**  
 SEAL  
 L-3708  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER AND SURVEYOR

**Professional Engineer Seal**

**WILLIAM SCOTT HUNT**  
 SEAL  
 22967  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER

*Handwritten signatures and initials are present over the seals.*

2/26/03

Z:\18335\Candiff\as-built\plans\18335\_Candiff\_92767\_Baseline.2012\_AB\_00.dgn

BAKER PROJECT REFERENCE NO. <b>118335</b>	SHEET NO. <b>8</b>
PROJECT ENGINEER	
<b>Baker</b>	
<small>Michael Baker Engineering, Inc. 8000 Regency Parkway, Suite 600 Cary, NORTH CAROLINA 27518 Phone: 919.453.5488 Fax: 919.453.5480 License # F-1094</small>	

