

estimate 130' bridge

1@20' 1@60'
15' longer on N
5' shorter on S

Print Record

Form PDR Action PDR P/P 407

GENERAL INFO

Date 3/11/2011 Div WBS TIP #
12 B.220261 Proj #
Let Date

County CLEVELAND Bridge # 261

Road # SR 1005 Road Name: N LAFAYETTE ST

Stream TRIB_FIRST BROAD R 30

Req Type Name Assigned To Checked By
Prior Survey Survey Date Recommendation
Study by Scour Section

DRAINAGE INFO

Flood Zone YES Panel # 2548 Study Type LIMITED Study Date 2/20/2008

IS THERE A HEC RAS TYPE MODEL ☐

BM info
Quad SHELBY
Drainage Area 3.42 Sq. Mi. DA Source QUAD
Q25 1130 cfs Q 50 1380 cfs Q 100 1610 cfs
METHOD USGS REGRESSION EQUATION BASIN TYPE REGION 1

FEMA Q100 = 1910

EXISTING INFO

Location 0.3 MI N JCT SR 1839
GPS CO-ORD(Dec) 35 20 35.8 81 32 29.3
OAL 120 B-C 19 Depth 2
ADT 1400 Skew 60 Stream Slope
STRUCTURE TYPE TIMBER DECK / I BEAMS
Spans 1@23'-7 4@24'-0

UP STREAM INFO

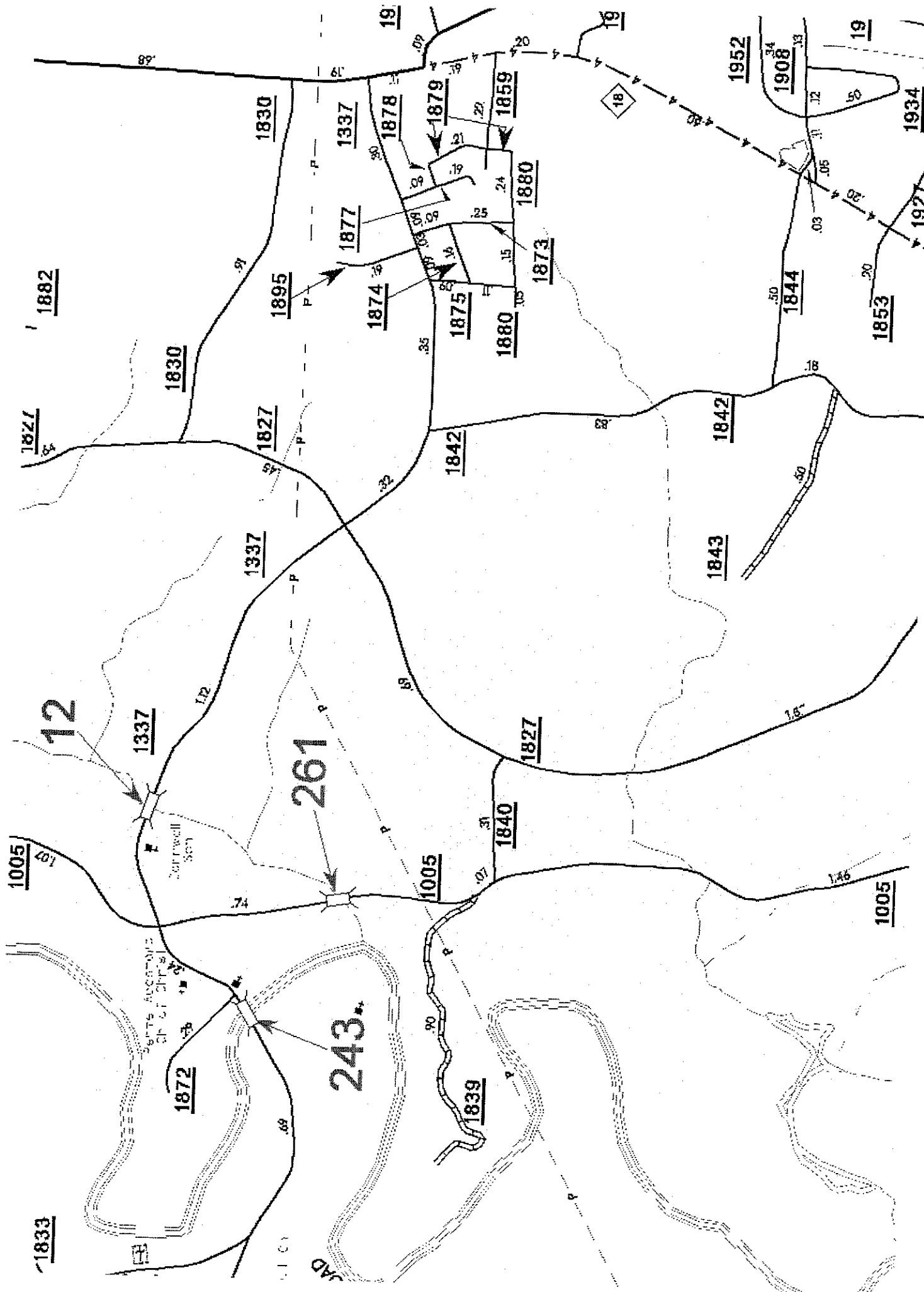
US Structure US Road # US Str. OAL
US Location
US B-C US Prior survey

DOWN STREAM INFO

DS Structure DS Road # DS Str. OAL
DS Location
DS B-C DS Prior survey SCS Watershed

ENVIRONMENTAL INFO

Trout Stream NO Anadromous Fish NO Primary Nursery Area NO
High Quality Waters NO NUTRIENT SENSITIVE WATERS NO
NEAR WATER SUPPLY INTAKE NO CAMA COUNTY NO
STREAM CLASSIFICATION
DENR RIVER BASIN BROAD





NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

TO PRIORITY MAINTENANCES (S BEAM, 1 CAP, 1
SCOUR)
TEMPORARY REPAIRS (BEAMS)

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY CLEVELAND

BRIDGE NUMBER 220261

INSPECTION CYCLE 2 YRS

ROUTE SR1005

ACROSS CREEK

M.P. 0

LOCATION 0.3 MI. N. JCT. SR1839

SUPERSTRUCTURE TIMBER DECK ON I-BEAMS

SUBSTRUCTURE END & INT. BENTS: TIMBER CAPS & PILES, BT#3: PILES CONC. ENCASED

SPANS 1@23'7", 4@24'0" SIMPLE

LONGITUDE 81° 32' 29.3"

LATITUDE 35° 20' 35.8"

PRESENT CONDITION POOR

INVENTORY RATING 4.5

INSPECTION DATE 11/18/2010

OPERATING RATING 4.2

PRESENT POSTING SV 18 TTST 24

PROPOSED POSTING weight limit 8 tons

COMPUTER UPDATE 12/03/2010

ANALYSIS DATE 12/03/2010

POSTING LETTER DATE 12/03/2010

SUFFICIENCY RATING

OTHER SIGNS PRESENT DELINEATORS (4)



SOUTH APPROACH

SIGN NOTICE
ISSUED FOR

NUMBERED
REQUIRED

No	WEIGHT LIMIT	
No	DELINEATORS	
No	NARROW BRIDGE	
No	ONE LANE BRIDGE	
No	LOW CLEARANCE	

BRIDGE MANAGEMENT UNIT
DATA ON EXISTING STRUCTURE

Run Date: 12/06/2010

COUNTY : CLEVELAND		DIV : 12	DIST : 1	STRUCTURE NUMBER : 220261		LENGTH : 120 FEET	
ROUTE CARRIED : SR1005			FEATURE INTERSECTED : CREEK				
LOCATED : 0.3 MI. N. JCT. SR1839			BRIDGE NAME :			CITY :	
FUNC. CLASS : 08	SYST.ON : NFA	SYST.UNDER : NFA	ADT & YR : 1400 2009		RAIL TYPE : LT 227 RT 227		
BUILT : 1952	BY : BMU	PROJ :	FED.AID PROJ :		DESIGN LOAD : Other or Unknown		
REHAB : 1989	BY : BMU	PROJ : 5.8051	ALIGNMENT : TAN	SKEW : 60	LANES : ON 2 UNDER		
NAVIGATION : VC 0.0 FT HC 0.0 FT		HT. CRN. TO BED : 19 FT		WATER DEPTH : 2 FT			
SUPERSTRUCTURE : TIMBER DECK ON I-BEAMS							
SUBSTRUCTURE : END & INT.BENTS;TIMBER CAPS & PILES,BT#3;PILES CONC. ENCASED							
SPANS : 1@23'7", 4@24'0" SIMPLE							
BEAMS OR GIRDERS : 10 LINES OF W14X30 I-BEAMS @ VARIOUS CENTERS							
FLOOR : 4X8"TIM,3.75"WS		ENCROACHMENT :		DECK (OUT TO OUT) : 23.5 FT			
CLEAR ROADWAY : 22.6 FT		BETWEEN RAILS : 23.2 FT		SIDEWALK OR CURB : LT 0.3 FT RT 0.3 FT			
VERT.CLOVER : 99 FT 99 IN		VERT.CL.UNDER : 00 FT 00 IN		HOR.CL.UNDER : 0.0 FT			
INV.RTG. : HS-	OPE.RTG. : HS-	CONTR.MEMBER :		POSTED : SV 8 TTST 8		DATE 12/03/2010	
SYSTEM : Secondary S.R. Route				GREEN LINE ROUTE : N			
2ND OPENING :		3RD OPENING :		4TH OPENING :		5TH OPENING :	
REMARKS :							

Stream Bed Soundings

(See next sheet for profile sketch)

Bridge No: 220261

County: CLEVELAND

Date: 11/18/2010

By: DCR

Record sounding from top of rail. Other location if needed:

Distance from Highwater Mark to top of rail:

Location of Highwater Mark:

DOWNSTREAM			UPSTREAM		
Distance (Station) (ft)	Sounding (ft)	Description	Distance (Station) (ft)	Sounding (ft)	Description
0	2.7	FF ABUT 1			
0.7	4.7	ABUT 1			
1.3	5.9	SF ABUT 1	1.3	6.1	SF ABUT 1
24.3	9	BENT 1	24.3	10.6	BENT 1
40.3	11	SLOPE			
48.3	16.6	BENT 2	48.3	11.2	BENT 2
62.3	17.4	SEDIMENT			
70.3	19.4	WSWE			
72.3	20.3	BENT 3	72.3	18.7	BENT 3
73.3	20.6	N.FACE BT 3FTG			
83.3	21.4	DP			
86.3	21	BED			
90.3	19.4	WSWE			
96.3	17.1	BENT 4	96.3	17.6	BENT 4
106.3	11.5	SEDIMENT			
109.3	8	SLOPE			
119.3	5.9	SF ABUT 2	119.3	5.6	SF ABUT 2
119.9	4.7	ABUT 2			
120.6	2.7	FF ABUT 2			

Left side

$$5.9 - 2.7 = 3.2$$

$$(3.2)(1.5) = 4.8$$

5' longer

Right side

$$19.4 - 2.7 = 16.7$$

$$(16.7)(1.5) + (10) = 35$$

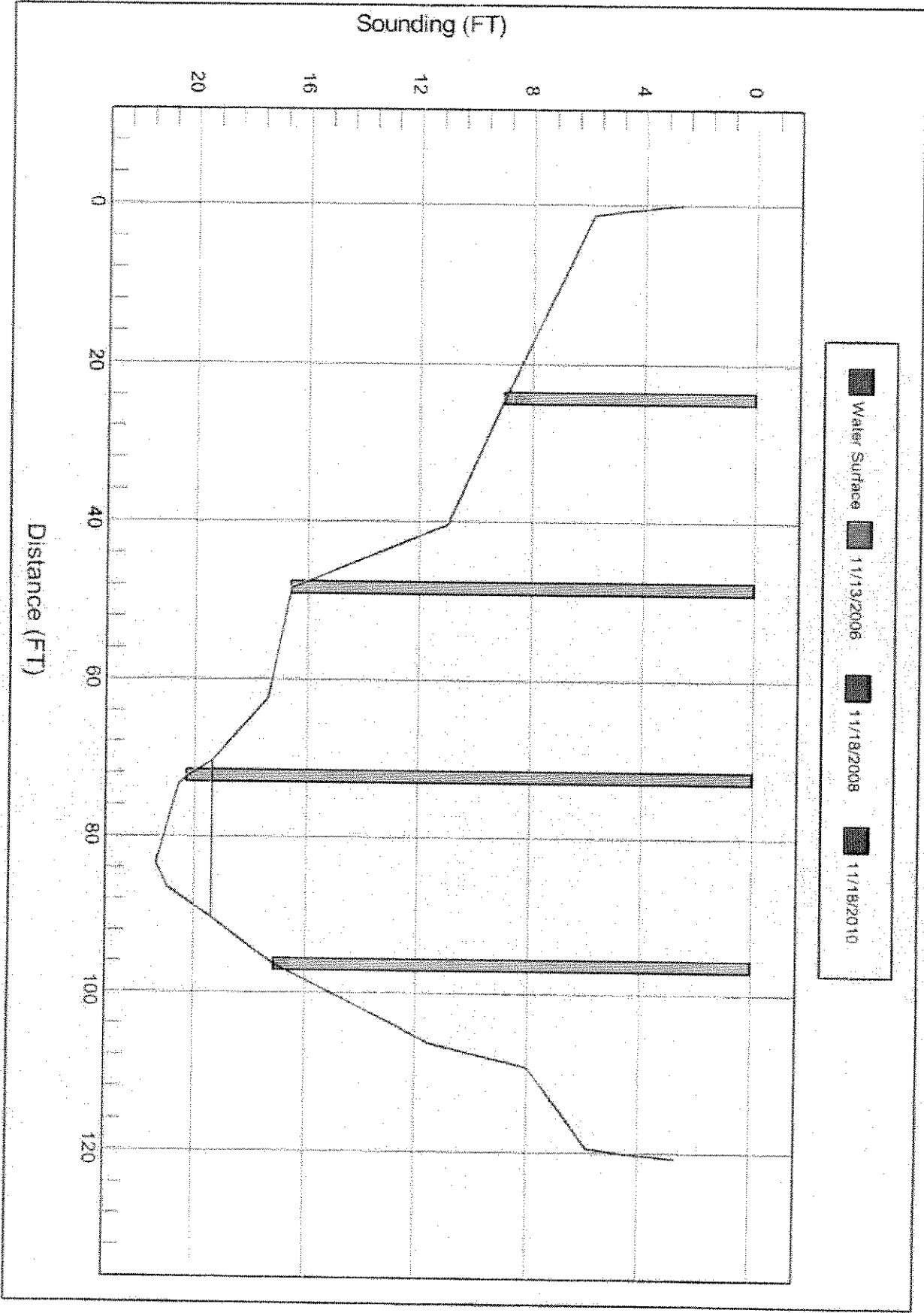
$$90 + 35 = 125$$

make 5' longer

$$5 + 120 + 5 = 130'$$

Top of Rail = 0 FT (Sounding)

STREAMBED PROFILE (Downstream)





Section 4.0 – Area Studied

Table 4—Flooding Sources Studied by Detailed Methods: Limited Detailed

Source	Riverine Sources		Affected Communities
	From	To	
Camp Creek	The confluence with Broad River	Approximately 0.4 mile upstream of Abes Mountain Road (SR 1202)	Cleveland County (Unincorporated Areas)
Church Branch	The confluence with Sandy Run	Approximately 0.7 mile upstream of confluence with Sandy Run	Cleveland County (Unincorporated Areas)
Cove Creek (into Wards Creek)	The confluence with Wards Creek	Approximately 400 feet upstream of Bracket Hill Road (SR 1578)	Cleveland County (Unincorporated Areas)
Cox Creek	The confluence with Ward Creek	Approximately 0.9 mile upstream of confluence with Ward Creek	Cleveland County (Unincorporated Areas)
Crooked Run Creek	The confluence with First Broad River	Approximately 1.4 miles upstream of Grady McNeilly Road (SR 1519)	Cleveland County (Unincorporated Areas), Town of Casar
Crowders Creek	Approximately 0.9 mile upstream of the confluence of McGill Creek	Approximately 1.0 mile upstream of the confluence of McGill Creek	City of Kings Mountain
Dark Hollow Branch	The confluence with Hinton Creek	Approximately 0.4 mile upstream of confluence with Hinton Creek	Cleveland County (Unincorporated Areas)
Dixon Branch	The North Carolina/South Carolina state boundary	Approximately 1,000 feet upstream of Dixon School Road (SR 2283)	Cleveland County (Unincorporated Areas)
Duncans Creek	The confluence with First Broad River	The Rutherford/Cleveland county boundary	Cleveland County (Unincorporated Areas)
First Broad River	The confluence with Broad River	The Rutherford/Cleveland county boundary	Cleveland County (Unincorporated Areas), City of Shelby, Town of Lawndale
First Broad River Tributary 5	The confluence with First Broad River	Approximately 50 feet upstream of SR 1142	Cleveland County (Unincorporated Areas)
First Broad River Tributary 20	The confluence with First Broad River	Approximately 0.5 mile upstream of confluence with First Broad River	Cleveland County (Unincorporated Areas)
First Broad River Tributary 30	The confluence with First Broad River	Approximately 1,500 feet upstream of N. Lafayette Street (SR 1005)	Cleveland County (Unincorporated Areas)
Flint Hill Creek	The confluence with Hinton Creek	Approximately 50 feet upstream of Hollis Road (SR 1376)	Cleveland County (Unincorporated Areas)
Gilliam Creek	The confluence with Muddy Fork	Approximately 100 feet downstream of the confluence of Gilliam Creek Tributary 2	Cleveland County (Unincorporated Areas)

Section 5.0 – Engineering Methods

Table 6—Summary of Discharges

Flooding Source	Location	Drainage Area (square miles)	Discharges (cfs)			
			10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
First Broad River Tributary 19	At confluence with First Broad River	2.5	1,450	2,180	2,380	2,900
	Approximately 0.7 mile upstream of confluence with First Broad River	2.2	1,360	2,040	2,220	2,700
	Approximately 1.4 miles upstream of confluence with First Broad River	1.9	1,290	1,940	2,110	2,560
	Approximately 600 feet downstream of confluence of First Broad River Tributary of Tributary 19	1.4	1,080	1,640	1,780	2,170
	Approximately 200 feet upstream of confluence of First Broad River Tributary of Tributary 19	0.5	470	780	870	1,110
First Broad River Tributary of Tributary 19	At confluence with First Broad River Tributary 19	0.8	850	1,290	1,400	1,690
	Approximately 400 feet upstream of West Dixon Boulevard US. 74	0.5	680	1,040	1,130	1,370
First Broad River Tributary 20	At confluence with First Broad River	0.5	*	*	780	*
First Broad River Tributary 23	At confluence with First Broad River	1.1	620	1,050	1,180	1,530
	Approximately 1,800 feet upstream of confluence with First Broad River	0.7	510	860	960	1,230
	Approximately 700 feet upstream of Kingsbury Street	0.3	300	530	590	790
First Broad River Tributary 30	At confluence with First Broad River	3.6	*	*	1,910	*
Flint Hill Creek	At confluence with Hinton Creek	1.7	*	*	1,190	*
Gilliam Creek	At confluence with Muddy Fork	7.5	*	*	2,632	*
	Approximately 50 feet upstream of confluence of Gilliam Creek Tributary 1	5.2	*	*	2,080	*

Section 5.0 – Engineering Methods

Table 10—Limited Detailed Flood Hazard Data

Cross Section¹	Stream Station²	Flood Discharge (cfs)	1% Annual Chance Water- Surface Elevation (feet NAVD 88)	Non- Encroachment Width³ (feet)
FIRST BROAD RIVER TRIBUTARY 5				
015	1,471	960	645.7 ⁴	19 / 19
019	1,936	960	645.7 ⁴	20 / 17
024	2,393	960	645.7 ⁴	20 / 20
025	2,498	960	645.7 ⁴	15 / 14
026	2,629	960	646.9	15 / 15
028	2,808	960	651.5	17 / 43
029	2,901	960	653.2	30 / 30
030	3,009	960	660.8	21 / 30
FIRST BROAD RIVER TRIBUTARY 20				
003	316	780	693.4 ⁴	14 / 9
008	826	780	693.4 ⁴	8 / 18
011	1,070	780	693.4 ⁴	6 / 6
011	1,103	780	693.4 ⁴	6 / 6
014	1,353	780	693.4 ⁴	11 / 14
015	1,493	780	693.4 ⁴	13 / 11
019	1,855	780	693.4 ⁴	10 / 7
022	2,239	780	694.9	13 / 11
026	2,613	780	697.1	12 / 14
FIRST BROAD RIVER TRIBUTARY 30				
002	217	1,910	733.2 ⁴	24 / 24
006	603	1,910	733.2 ⁴	77 / 80
007	714	1,910	733.2 ⁴	70 / 60
012	1,235	1,910	733.2 ⁴	56 / 25
017	1,668	1,910	733.2 ⁴	25 / 25
022	2,157	1,910	733.2 ⁴	19 / 70
025	2,511	1,910	733.2 ⁴	19 / 70
FLINT HILL CREEK				
005	500	1,190	873.5 ⁴	262 / 18
008	750	1,190	873.5 ⁴	76 / 20
010	1,000	1,190	873.5 ⁴	19 / 14
013	1,250	1,190	875.0	27 / 26
015	1,500	1,190	875.9	24 / 24
018	1,750	1,190	877.2	16 / 20
020	2,000	1,190	879.5	29 / 20
023	2,250	1,190	880.0	11 / 16
025	2,500	1,190	883.8	97 / 29
028	2,750	1,190	884.7	18 / 19
030	3,000	1,190	887.1	26 / 15
033	3,250	1,190	889.1	16 / 158
035	3,500	1,190	889.8	61 / 60
038	3,750	1,190	891.1	22 / 148
040	4,000	1,190	892.4	17 / 149
043	4,250	1,190	895.0	41 / 128
045	4,500	1,190	896.6	15 / 84
048	4,750	1,190	898.8	67 / 26
051	5,131	1,190	901.4	15 / 18
053	5,250	1,190	910.3	90 / 103

First Broad River Trib 30 Limited Detail Study Plan: Floodway Run_12-28-06 9/19/2007
 North_Lafayette_St_TOR Structure ID: Lafayette st SR1005 Approx



Legend	
WS 100-FW	
WS 100-year	
Ground	
Ineff	
Bank Sta	
Encroachment	

