

Universe File Structure

The NCDOT Universe file is a database currently housed on the mainframe computer at SIPS. It contains records for each road segment in the NC State Maintained Road System. In the near future, the contents of this mainframe database will be migrated to a more modern database and joined to the road centerline file. The mechanism for joining the two data structures is the Linear Referencing System.

For a more detailed explanation of item codes, should you require one, contact [Jon Arnold](#) of the Road Inventory Information Section for a printed manual.

Current Universe File Record Structure

ITEM	NAME	LENGTH	CODE
1	Identification Number	6	
2	County Number	2	00-99
3a	Numbered System	1	
	• Interstate		1
	• US		2
	• NC		3
	• Secondary		4
	• Non-Sys Local City St		5
	• Non-Sys State Park		6
	• Non-Sys Federal		7
	• Projected Roads		9
3b	Route Number	4	
	<i>1st Digit</i>		
	• Normal Route		0
	• Alternate Route		1
	• North		3
	• South		4
	• East		5
	• West		6
	• Spur or Spec. Cond.		7
	• truck		8
	• Business		9
	<i>last 3 Digits</i>		
	• Blue Ridge Parkway		BRP
	• City Streets		CTY
	• Forest Development Road		FDR
	• Indian Reservations		IND
	• Military Reservations		MIL
	• National Park System		NPS
	• State Parks		SPK

	• Wildlife Resource Commision		WRC
4	List Control	1	
	• Normal Listing Sequence		1
	• Cards listed at end of Route		2
	• addtl. Group listed at end of Route		3
5	Mile Post	4	
	• code only at beg. card of the route or couplet		
6	Section Length	4	
7	Inventory Control	1	
	• Both directions of travel		1
	• Northbound only		2
	• Southbound only		3
	• Eastbound only		4
	• Westbound only		5
	• Common card		6
	• Gap card		7
8	Terminal Description	10	
9	State Highway System	1	
	• Rural State Primary System		1
	• Municipal State Primary over 5000		2
	• Municipal State Primary under 5000		3
	• Rural State Secondary System		4
	• Municipal State Secondary over 5000		5
	• Municipal State Secondary under 5000		6
	• Local City Streets		7
	• State Park Roads, etc		8
	• Natl. Park/Forest/Reservation Rds		9
	• Projected Roads		0
10	Federal Aid System - obsolete per ISTEA		
11	Functional Classification	1	
	• Rural Principal Arterial-Interstate		1
	• Rural Principal Arterial-Other		3
	• Rural Minor Arterial		4
	• Rural Major Collector		6
	• Rural Minor Collector		7
	• Rural Local		8
	• Urban Principal Arterial-Interstate		1
	• Urban Principal Arterial-Freeways & Expressways		2
	• Urban Principal Arterial-Other		5
	• Urban Minor Arterial		6

	• Urban Collector		7
	• Urban Local		8
12	Special Systems (Federal Domain)	1	
	• Unknown, State Park/Forest/RecArea Roads		blank
	• Appalachain Highway Access Road		0
	• Natl Forest Highway System Roads		1
	• Natl Forest Development Roads		2
	• Blue Ridge Parkway		3
	• National Park,Seashore Rec,Monuments,Historic Areas		4
	• Cherokee Indian Reservation Roads		5
	• Priority Primary Highways		6
	• Military Reservation Roads		7
	• National Wildlife Refuge Roads		8
	• Addition to Interstate System-23 USC 139 (a,b,c,d)		9,G,H,J
	• Appalachain Development Hwy - various classifications		K,B,C,D,E,F
13	Highway Division	2	01-14
14	CITY or TOWN	2	varies
15	Population Group - Municipalities	1	
	• Under 1,000 pop		1
	• 1,000-2,499		2
	• 2,500-4,999		3
	• 5,000-9,999		4
	• 10,000-24,999		5
	• 25,000-49,999		6
	• 50,000-99,999		7
	• 100,000 & over		8
16	Terrain	1	
	• Flat		1
	• Rolling		2
	• Mountainous		3
17	Sight Distance	2	
18	Weighted Design Speed	2	
	• no 3 degree curves		70
	• curves gt 3 degrees		$WDS=(Tn*Sn)/L$
19	Rural Urban Identification	2	
	• Rural(outside urban areas)		00
	• Small Urban Areas unique within their county		X1
	<i>Small Urban Areas requiring individual identification</i>		
	• Eden		XE
	• Hamlet		XT

	• Kings Mtn		XM
	• New Bern		XN
	• Pinehurst		XP
	• Roanoke Rapids		XZ
	• Statesville		XS
	• Waynesville		XW
	<i>Urbanized Areas</i>		
	• Asheville		AS
	• Burlington		BU
	• Charlotte		CH
	• Durham		DU
	• Fayetteville		FA
	• Gastonia		GA
	• Goldsboro		GO
	• Greensboro		GR
	• Greenville		GV
	• Hickory		HK
	• High Point		HP
	• Jacksonville		JA
	• Kannapolis		KA
	• Raleigh		RA
	• Rocky Mount		RM
	• Wilmington		WL
	• Winston-Salem		WS
20	Rural Urban Designation by Population	1	
	<i>Rural</i>		
	• Outside Urban Areas		0
	• Inc. Place outside Urb. Area under 2500 pop.		1
	• same as above 2400-499 pop.		2
	<i>Urban</i>		
	• Inc.Place + UEB 5000 - 24999 pop.		3
	• same as above 25000-49999 pop.		4
	<i>Urbanized Areas</i>		
	• Central city + Inc & Uninc areas 50000-99999 pop.		5
	• same as above 100000-199999 pop.		6
	• same as above 200000-499999 pop.		7
21	Record Continuation Code	1	
	• Indicates Universe Section Only		O
	• Standard HPMS Sample Record		B

	• Indicates accompanying record for "B" record		2
	• Non-Attainment Area "Donut" Sample		D
22	Right of Way	2	
23	Access Control	1	
	• No Access Control		1
	• Partial Access Control		2
	• Full Access Control		3
24	Speed Limit	2	
25	Year of Improvement	2	
26	Type of Improvement	2	
	• Relocation		NL
	• New Construction		NR
	• New Construction-HPMS sample		NE
	• Reconstruction to Freeway		RF
	• Reconstruction w/ more lanes		RL
	• Reconstruction to wider lanes		RW
	• Pavement Reconstruction		RP
	• Isolated Reconstruction		RI
	• Major Widening		MA
	• Minor Widening		MI
	• Concrete Resurfacing w/ Shoulder Improvements		CS
	• Bituminous Resurfacing w/ Shoulder Improvements		BS
	• Concrete Resurfacing		RC
	• Bituminous Resurfacing		RB
	• Initial Paving		IP
	• Surface Type Change		00-41
	• Restoration & Rehabilitation		RE
	• Bridge Replacement		BR
	• Major Bridge Rehabilitation		BH
	• Minor Bridge Rehabilitation		BM
	• Safety/traffic Operations		ST
	• Environmentally Related		OT
27	Number of lanes	1	
28	Surface Width	3	
29	Surface Type	2	
	• Primitive (non-state system)		00
	• Unimproved		10
	• Graded & Drained		20
	• Soil Surfaced		30
	• Gravel or Stone		41

	• Bituminous Surf. treatment on Topsoil		51
	• Bit. Surf. treatment on Gravel or Stone		52
	• Bit.s Surf. treatment over ext. types 63,65,66		54
	• Mixed Bit. - non rigid base		60
	• Mixed Bit. - rigid base		61
	• Bit. Penetration - rigid base		62
	• Bit. Penetration - non rigid base		64
	• Bit. Concrete(I1,I2,HDS)		63
	• Sand Asphalt on PC Concrete		67
	• Sand Asphalt on Bit. Concrete		66
	• Sand Asphalt on types other than 66 & 67		65
	• Portland Cement Concrete		70-76
	• Brick		80
	• Block		90
	• Unclassified hard Surface (non-sys rds)		99
30	Shoulder Width Left	2	
31	Shoulder Type Left	2	varies
32	Shoulder Width Right	2	
33	Shoulder Type Right	2	varies
34	Median Width		
	• One Way traffic		1W
	• Two Way traffic		2W
35	Median Type	2	
	• Undivided Roadway		1
	• Continuous Turn Lane		2
	• Paved Mountable		3
	• Curb		4
	• Grass		5
	• Positive Barrier		6
	• Parkland, Business, etc.		7
	• Couplet		8
36	Year of Addition	2	
	• Original Road (present in 1930)		30
	• Unknown		XX
	• Known Year		varies
37	Percent of trucks	1	
	• 0 - 4.99 %		1
	• 5.00 - 9.99 %		2
	• 10.00% and over		3
38	Design Hour Volume	2	K factor

39	Designated truck Route (Dtr)	1	
	• Not a Parkway, trucks allowed, not on Dtr		1
	• Parkway, trucks prohibited		2
	• Not a Parkway, trucks prohibited		3
	• Not a Parkway, trucks prohibited during certain times		4
	• Federally approved Dtr		
40	Average Daily traffic	6	
41	Portable traffic Counter	3 + 5	
42	Year of traffic Count	2	
43a	Sample Link Number	5	
43b	Sample Link Number Subdivision	1	
44	Interstate Milepost	2	
45	Percent trucks Off-Peak	2	
46	traffic Growth Factor	3	
47	Senic Byway (future item)	1	
48	Peak Parking Left	1	varies
49	Peak Parking Right	1	varies
50	Turn lane Width	2	
51	Area Type	1	varies
52	Pavement Condition	2	
53	Pavement Roughness	3	
54	Urban Location	1	varies