

SCDOT BRIDGE INSPECTION FORM

10 of 44

(008) BRIDGE ID: 0720002100200
(005) ROUTE: BEAUFORT US 21
(006) CROSSING: HARBOR RIVER

(009) LOCATION: 12.5 MI SE BEAUFORT
(026) FUNCTIONAL CLASS: 03

EXK

GENERAL BRIDGE DATA

	EXISTING	REVISED	TYPE STRUCTURE	EXISTING SUP-SUB	REVISED SUP-SUB
(027) YEAR BUILT	1939		(043) MAIN ORIGINAL (A)	3 17 1	
(106) YEAR RECON	0		MAIN RECONST (B)		
(031) DESIGN LOAD	2		(044) APPR ORIGINAL (A)	4 02 1	
(032) APPR RDWAY	38		APPR RECONST (B)		
(033) BRIDGE MEDIAN	0		(107) DECK STRUCT	1	
(034) SKEW	0		(108) WEAR SURF	1 8 8	
(035) FLARED	0		(045) # MAIN SPANS	1	
(36A) RAILINGS	0		(046) # APPR SPANS	67	
(36B) TRANSITIONS	0		(048) MAX SPAN LGTH	172	
(36C) APPR GUARD	1		(308) APPR SPAN LGTH	40	
(36D) APPR GUARD END	0		(049) STRUCT LENGTH	2851	
(041) TRAFFIC STATUS	---	P	(037) HISTORY	4	

GEOMETRIC DATA

	EXISTING	REVISED		EXISTING	REVISED
(038) NAVIGATION CONT	1		(042) TYPE SERV; (A)-(B)	1 5	
(039) NAV VERT CLEAR	15		(028) LANES; ON(A) UND(B)	2 0	
(040) NAV HORZ CLEAR	60		(47A) HORZ CLEAR RIGHT	20	
(111) NAV PIER PROT	2		(47B) HORZ CLEAR LEFT	0	
(10A) GREAT MIN OVER	FT IN	FT IN	(47UA) HORZ CLEAR RIGHT	0	
UNDERCLEARANCES	15 0		(47UB) HORZ CLEAR LEFT	0	
(10B) GREAT MIN RIGHT	99 99		(50B) SIDEWALK RIGHT	0	
(10C) GREAT MIN LEFT	99 99		(50A) SIDEWALK LEFT	0	
(54A) VERT CLEAR REF	N		(051) CURB TO CURB	20	
(54B) VERT CLEAR RIGHT	0 0		(052) DECK OUT-OUT	21	
(54C) VERT CLEAR LEFT	0 0		(053) VERT CLEARANCE	FT IN	FT IN
(55A) LAT CLEAR REF	N		ABOVE DECK	15 0	
(55B) LAT CLEAR RIGHT	99.9				
(55C) LAT CLEAR LEFT	0				

CONDITION RATINGS

	EXISTING	REVISED		EXISTING	REVISED
(063) OPERATING RATING METHOD	1	4	(58) DECK	5	
(064) OPERATING RATING	1	26	(59) SUPER STR	5	
(065) INVENTORY RATING METHOD	1	4	(60) SUB STR	5	
(066) INVENTORY RATING	1	26	(061) CHANNEL	7	
(319) LAST PAINT DATE	2000		(062) CULV RET	N	

CRITICAL INSPECTION DATA

	EXISTING	REVISED
(090) INSP DATE	10/2010	11/2012 MAY 2011
(091) INSP FREQ	24	
(113) SCOUR CRITICAL	8	
	INTERVAL MTH YR	INTERVAL MTH YR
(93A) FRACTURE	Y24 10/2010	Y 24 11 2012
(93B) UNDERWATER	Y60 11/2010	Y 24 5 2014
(93C) SPECIAL	N	

APPRAISAL RATINGS

	EXISTING	REVISED
(067) STRUCTURE	5	GEN
(068) DECK GEOM	2	GEN
(069) UNDERCLEAR	N	GEN
(070) BRIDGE POST	1	GEN
(071) WATER ADEQ	8	
(072) APPR RDWAY	8	
(411) LOAD RATING ID	0	

13/925

10/02/2012

Bridge Element Group Textual Data

Bridge ID: 07-2-00021-0-02-00

28 May-2014

Abutments and/or Headwalls:

HEAVY RUST WITH MINOR SECTION LOSS ON SEVERAL GUSSET PLATE CONNECTIONS. HEAVY RUST WITH 100% SECTION LOSS ON TOP CHORD AT VERTICAL POSTS 2 AND 6 RIGHT SIDE. HEAVY RUST WITH MINOR METAL LOSS ON FLOORBEAMS AND STRINGERS ON TRUSS WITH MODERATE SECTION LOSS ON STRINGERS 1 AND 4 AT TURN TABLE

Bents and/or Piers:

[5] FAIR-4 RC PILES WITH R.C. CAPS, SOME BENT HAVE 7 PILES, AND BENTS 23 AND 25 HAVE 12 R.C. PILES
SEE ATTACHED SHEETS FOR PILE AND CAP DEFICIENCIES

Bearings:

[4] POOR-STEEL EXPANSION SEVERE RUST AND PACK RUST THRU-OUT W/SECTION LOSS

Girders/Floor Beams/Stringers and/or Beams:

[5] FAIR-4 24" STEEL "I" BEAMS -- BENT 27 ALL BEAMS 100% SECTION LOSS ON FLANGES EXTENDING 2 1/2" TOWARDS WEB, ALL BEAMS ENDS AND FLANGES HAVE SEVERE SECTION LOSS THRU-OUT

Truss Members:

[6] SAT- 172' STEEL SWING SPAN IN GOOD MECHANICAL CONDITION; COLLISION DAMAGE ABOVE SOUTH AND NORTH BOUND LANES; 1"X7" HOLE IN UPSTREAM LEFT BOTTOM CHORD ON NORTH BOUND END BOTTOM CORD; 1"X2" HOLE IN BOTTOM CHORD ON DOWNSTREAM SIDE.
(CONTINUED IN ABUTMENTS)

Expansion Joints:

[5]FAIR-HOT POURED ASPHALT JOINT FILLER; MOST JOINTS ARE CRACKED AND LEAKING THRU-OUT STRUCTURE AND SOME JOINTS ARE COMPLETELY OPEN

Decks and/or Slabs:

[5]FAIR-R.C. DECK;MODERATE TRANSVERSE AND MAP CRACKING THRU-OUT TOP;SPAN 4 HAS 1'x1'x1" SPALL W/NO EXPOSED REBAR; MODERATE SPALLING W/ REBAR EXPOSED THROUGHOUT UNDERSIDE OF THE DECK ON ALL SPANS

SEE ATTACHED NOTES

Curbs:

[7]GOOD-8" R.C. CURB

Bridge Railing/Parapets and/or Median Barriers:

[7]GOOD-R.C. BRIDGE RAILING-MINOR CRACKING THRU-OUT;SPAN 36 HAS MINOR COLLISION DAMAGE ON LEFT SIDE

Paint System(s):

[4]POOR-PAINT ON ALL STEEL;ALL STEEL BEAMS HAVE RUST FORMING THROUGHOUT
[4]POOR-STEEL THROUGH TRUSS; MOD. TO HEAVY RUSTING IN SPOTS

Waterway and Scour:

[8]VERY GOOD
NONE

Fender System:

[8]VERY GOOD-T.T. PILING AND STRAKES;(NEWLY BUILT IN 2008)

Roadway Alignment:

[7]GOOD
[7]GOOD

Traffic Signs:

ALL NECESSARY SIGNS ARE IN PLACE AND IN GOOD CONDITION

Encroachments:

WALKWAY AND WATER PIPE ON LEFT;METAL PIPE ON RIGHT

Miscellaneous Notes:

1C)CLEAN/PAINT ALL STEEL MEMBERS,EXPOSED REBAR, AND RUSTED
AREAS ON TRUSS SECTION

2C)REPAIR ALL CRACKED AND OPEN EXPANSION JOINTS

3C)REPAIR DAMAGED TOP RIGHT CHORD ABOVE VERTICAL 2 AND 6

072002100200
Inspection Notes
11/08/2012

1. Underside of the deck has Moderate spalling with rebar exposed in the following spans (All exposed rebar has 100% section loss): Spans 1-15, 17, 19-22, 25, 28-33, 36-38, 42-47, 55, 57, and 61
2. All cracks except fine cracks have rust staining
3. All exposed rebar has 100% Section loss
4. Some anchor bolts are missing on some bearings
5. Bt.2 cap has large spall w/ exposed rebar(15') w/100% sec. loss, pile 4 wide vert. Crack, 6' horizontal crack in Bt.2 cap
6. Bt.3 cap has large spall w/ exposed rebar(8') and 6' horizontal crack, piles 3, 4 have wide vert. crack
7. Bt.4 cap has large spall w/ 6' of exposed rebar with 100% section loss in the rebar(see picture). Bt.4 Piles 2, 4 have vert. cracking
8. Bt. 5 piles 1,3, & 4 has wide vert. crack from water line up 7' and horizontal crack in cap.
9. Bt.6 pile 4 has wide vert. crack from water line up 7'
10. Span 6 has 2' by 2' spall w/ rebar exposed on under side of deck between beams 3 and 4
11. Bt.7 pile 4 has vertical crack
12. Bt.9 pile 1 has large spall at top of pile, pile4 has vert. cracks from water line up 12', cap has fine vert. and moderate hori. cracking,

13. Span 9 beams 3, 4 above Bt.9 and 10 has pack rust w/ 100% loss of section on bottom flange above cap (2' total length)
14. Bt. 10 cap has moderate horizontal cracking, pile 3 has moderate vert. cracking
15. Bt.11 cap has large 3' by 2' spall with exposed rebar w/ up to 30% sec. loss, pile 4 has vert. cracking
16. Bt. 12 cap has moderate hori. cracking that extends whole width of cap
17. Bt.13 piles 4, 7 has wide vert. crack from water line up 15' and vert. Cracking in cap
18. Bt. 15 pile 4 has wide vert. crack from water line up 10', cap has fine vertical cracking.
19. Bt.16 pile 4 has vert. crack
20. Bt. 19 Pile 4 has moderate vert. cracking & 1'x1' spall w/no exposed rebar
21. Span 19 beam 2 above Bt. 20 has a 2" dia. Area w/ 100% section loss in bottom flange.
22. Bt. 21 pile 3 has wide vert. crack from water line up 20'
23. Bt. 22 pile 8 has moderate vert. cracking
24. Bt. 23 cap has fine moderate map cracking thru-out
25. Bt. 24 cap has fine moderate map cracking thru-out
26. Span 24 beams 3 and 4 above Bt. 25 has a 3" x 6" area w/ 100% section loss.
27. Bt. 25 cap has moderate map cracking throughout
28. Span 25 Stringers 1 and 7 has 10" x 4" w/100% section loss.
29. Span 25 beams 3 and 4 above Bt. 26 has 2" x 4" area w/ 100% section loss
30. Bt.26 pile 4 has wide vert. crack from water line up 15'

31. Verticals above Bt. 26 has 3"x3" w/100% section loss.
32. Span 26 beams 3 and 4 above Bt.27 has 3"x5" area w/100% section loss
33. Span 28 above Bt.29 beams 3 and 4 have 5"x3" area w/100% section loss on bottom flange.

34. Bt.30 pile 7 has wide vert. crack from water line up 15', cap has moderate hori.

Cracking

35. Bt. 32 cap has 5' hori. Crack above pile 3 w/rust staining
36. Bt.34 pile 4 has vert. crack
37. Bt. 36 pile 7 has vertical crack
38. Bt. 37 piles 6 and 7 has wide vert. cracks from water line up 20'
39. Bt.39 cap has wide hori. crack in middle 20' over pile 2 & 3, pile 4 has moderate vert. Cracking w/exposed rebar
40. Bt. 40 pile 4 has vertical crack
41. Span 40 beams 2 & 3 have 100% loss on bottom flange at Bt. 41
42. Bt. 41 cap has horizontal crack w/exposed rebar.
43. Bt.43 pile 4 has vert. Crack, cap has horizontal crack above piles 2 and 3
44. Bt. 44 cap has wide hori. Crack extending entire length 4" from bot. of cap
45. Bt. 46 cap has wide hori. Crack 8' over pile 2 and 3
46. Span 46 beams 2 and 4 has 75% loss at bot. flange for 1' at Bt. 45
47. Bt.48 pile 7 has wide vert. crack from mud line up 12'
48. Bt. 49 pile 5 has wide vert. crack from mud line up 15', cap has 5' horizontal crack above piles 3 and 4 (see picture)
49. Bt. 50 cap has 3' horizontal crack in cap, Bt. 50 pile 2 has vertical crack

50. Bt. 51 pile 4 has wide vert. crack from mud line up 10'
51. Bt. 52 pile 4 has wide vert. crack from mud line up 5'
52. Bt. 53 cap has wide hori. Crack extending entire length, Bt. 53 pile 4 has vertical crack from waterline up 5'
53. Bt. 54 pile 4 has wide vert. crack from mud line up 8', cap has wide hori. crack extending the entire length.
54. Bt. 55 cap has large spall across entire face 1-2' high w/ rebar exposed w/ up to 90% loss on one exposed rebar, pile 4 has moderate vertical cracking. (see picture)
55. Bt. 56 cap has wide hori. Crack extending entire length and fine horizontal cracking, pile 4 has vert. crack
56. Bt. 57 cap has wide hori. Crack extending entire length, piles 1,2,3,6, and 7 has moderate vert. cracking, piles 3 and 6 crack extends from top of pile almost to waterline
57. Bt. 58 piles 1,3,4, and 7 has vert. crack from mud line up 8'
58. Bt. 59 cap has moderate horizontal cracking extending over piles 2 and 3
59. Span 59 beams 2 & 3 bot. flange has up to 100% loss of edges at mid span, cap has moderate hori. cracking, piles 1,2, and 4 has moderate vertical cracking
60. Bt. 60 cap has fine to moderate hori. cracking across entire section, piles 1,2, and 4 have vert. cracking
61. Bt. 61 cap fine horizontal crack between piles 3 and 4, piles 1 and 4 have vertical cracking
62. Bt. 62 cap moderate horizontal cracking extending entire length of cap, pile 1 has vertical crack extending from top of cap to waterline

63. Bt.63 cap has horizontal cracking extending entire length of cap, pile 4 has

vertical cracking in cap from mudline up 5'


64. Bt.64 cap has 8' spall w/exposed rebar in cap between piles 1 and 2 w/ app. 50%

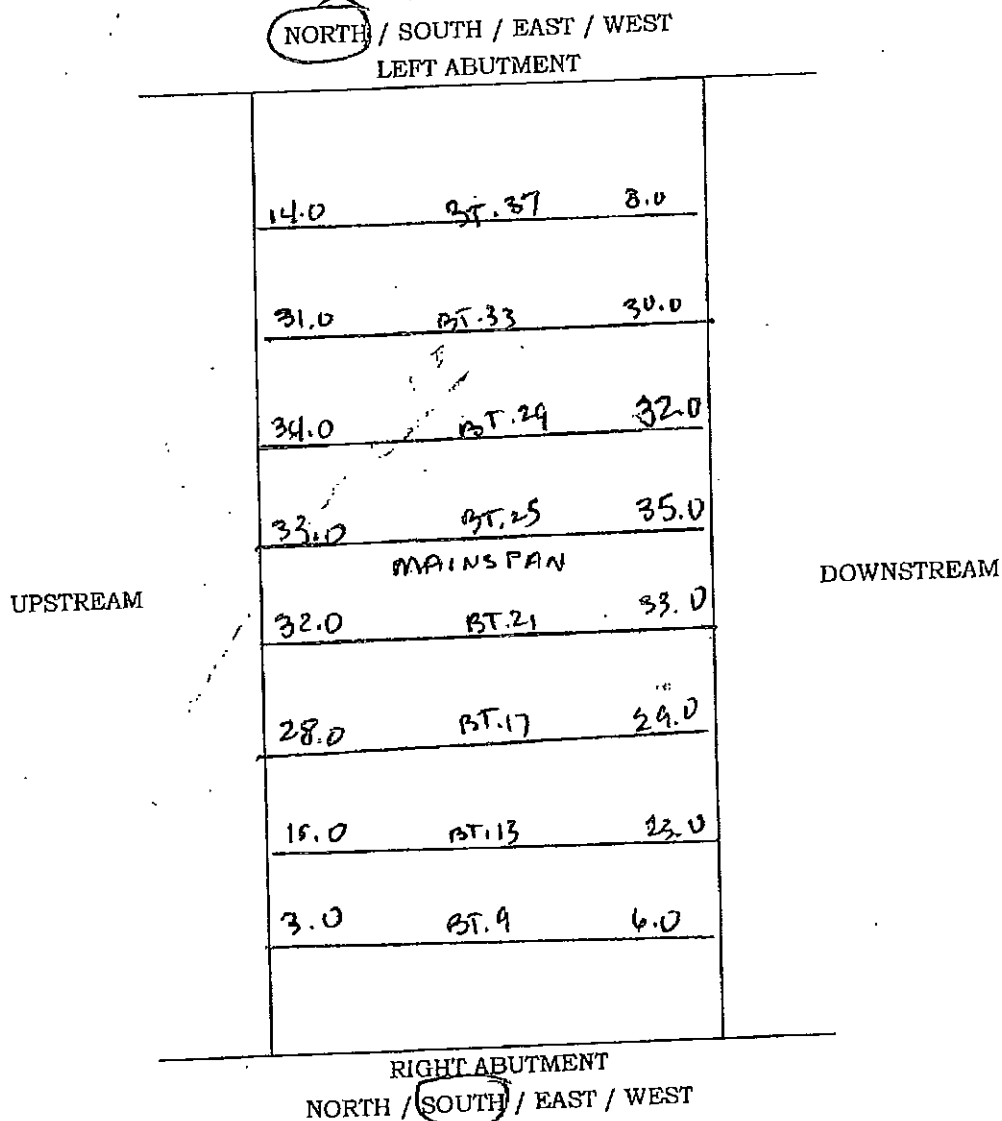
section loss to rebar, pile 4 has vertical cracking in pile 5' from mudline up

65. Bt. 65 cap has fine horizontal cracking in cap, Pile 4 has vertical crack extending

3' up from mudline

66. Bt. 68 cap has fine horizontal cracking

 THE OFFICE OF BRIDGE MAINTENANCE		DISTRICT SIX BRIDGE INSPECTION TEAM	
BRIDGE INSPECTION STREAM / GROUND PROFILE		BRIDGE NUMBER: <u>072 0002 100200</u>	
COMMENTS: To TOP of Water(Upstream)=		ROAD NUMBER: <u>US-21</u>	
Taken Midstream @ Bent=		CROSSING: <u>HARBOR RIVER</u>	
_____		TOP OF WATER TO TOP OF PARAPET, CURB, DECK	
<u>WATER PROFILE TAKEN</u>		HORIZONTAL BLOCKAGE (%) _____ TO _____	
<u>W/ BOAT</u>		VERTICAL BLOCKAGE (%) _____	




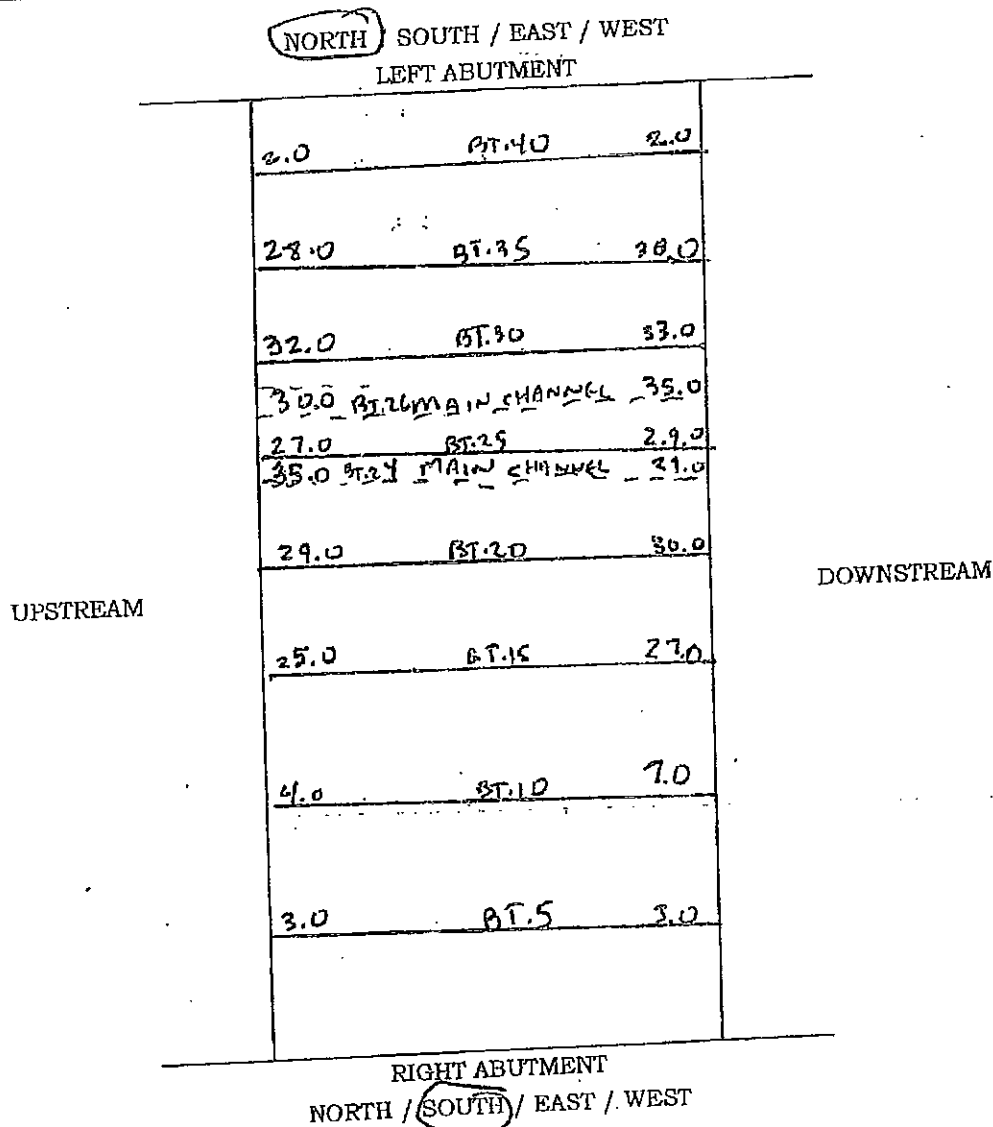
RD, LF
 MEASUREMENT BY

8 NOV-2012
 DATE MEASURED

9:30
 TIME

MEASUREMENTS ARE FROM TOP OF
 PARAPET CURB TO GROUND LINE
 DECK

 THE OFFICE OF BRIDGE MAINTENANCE		DISTRICT SIX BRIDGE INSPECTION TEAM	
BRIDGE INSPECTION STREAM / GROUND PROFILE		BRIDGE NUMBER: <u>0720002100200</u>	
COMMENTS: To TOP of Water(Upstream)=		ROAD NUMBER: <u>US-21</u>	
Taken Midstream @ Bent=		CROSSING: <u>HABOE RIVER</u>	
<u>WATER PROFILE TAKEN W/ BOAT</u>		TOP OF WATER TO TOP OF PARAPET, CURB, DECK	
		HORIZONTAL BLOCKAGE (%) <u> </u> TO <u> </u>	
		VERTICAL BLOCKAGE (%) <u> </u>	



NO, ES, CF, SL
 MEASUREMENT BY

28 OCT-2010
 DATE MEASURED

8:30
 TIME

MEASUREMENTS ARE FROM TOP OF PARAPET CURB TO GROUND LINE
 DECK

SCDOT PONTIS BMS ELEMENT DATA FORM

STRUCTURE NO.: 0720002100200
 FACILITY CARRIED: US 21
 CROSSING: HARBOR RIVER
 INSPECTION DATE: ~~28 Oct-2010~~

8 Nov-2012

DECK: 5 SUPERSTRUCTURE: 5 SUBSTRUCTURE: 5

CULVERT: N

ELEMENT ENVIRONMENT		TOTAL QUANT	PERCENT DISTRIBUTION BY STATE				
			1	2	3	4	5
12	1	59871	0	100	0	0	0
107	1	10716	0	0	0	100	0
113	1	1548	0	90	10	0	0
121	1	344	0	100	0	0	0
126	1	1168	0	100	0	0	0
152	1	189	0	83	17	0	0
205	1	343	0	70	30	0	0
234	1	1449	0	90	10	0	0
301	1	1365	0	100	0	0	0
304	1	42	0	100	0	0	0
311	1	92	0	100	0	0	0
312	1	1	0	100	0	0	0
333	1	5702	0	0	100	0	0
357	1	1	0	0	100	0	0
358	1	1	0	100	0	0	0
359	1	1	0	0	0	0	100
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