

Attachment A

R 2721-A Explanation of Impact Changes by Permit Site

Table A. R 2721-A Detailed Wetland Impact Revisions

Site Number^	Fill Original*	Fill Revised	Temp Excavation Original*	Temp Excavation Revised*	Excavation Original*	Excavation Revised	Mechanized Clearing Original*	Mechanized Clearing Revised	Reason
5	0.05	0.01	-	-	-	0.01	0.02	0.09	(Station 48+91 to 49+79-LREV-RT) Slope stakes altered which decreased fill by 0.04 ac and increased excavation by 0.01 ac. Mechanized clearing increased by 0.07 ac and hand clearing increased by 0.03 ac to clear out space for utilities and Total Take was required
6	1.53	1.57	-	-	0.06	0.03	0.02	0.07	(Station 51+87 to 57+80 -LREV-) Slope stakes altered, and pipe extended which increased fill by 0.04 ac, decreased excavation by 0.03 ac, and mechanized clearing increased by 0.05 ac to provide room for construction. Hand clearing increased by 0.18 ac for utilities.
9	0.27	0.28	-	-	<0.01	-	-	-	(Station 67+37 to 70+18-LREV-LT) Slope stakes altered, converting 0.01 ac of excavation to fill.
11	0.08	0.08	-	-	0.03	0.03	-	-	(Station 72+71 to 73+27-LREV-LT) Ditch altered which converted <0.01 ac of fill to excavation
12	0.48	0.47	-	-	-	-	0.03	0.03	(Station 48+91 to 49+79-LREV-RT) Slope stakes altered which decreased fill by <0.01 ac and decreased Mechanized clearing by <0.01 ac.

Site Number^	Fill Original*	Fill Revised	Temp Excavation Original*	Temp Excavation Revised*	Excavation Original*	Excavation Revised	Mechanized Clearing Original*	Mechanized Clearing Revised	Reason
13	0.17	0.17	-	-	-	-	0.01	0.03	(Station 81+19 to 82+63-L-LT) Grade raised to allow for greenway under the bridge, which increased fill by <0.01 ac. Mechanized clearing increased by 0.02 ac to provide room for construction.
15	1.73	1.80	-	-	0.01	<0.01	0.09	0.16	(Station 85+31 to 90+05-L-) Grade raised to allow for greenway under the bridge, which increased fill by 0.07 ac, decreased excavation by <0.01 ac, and increased mechanized clearing by 0.07 ac to provide room for construction.
16	-	-	-	-	0.67	0.51	-	0.15	(Station 108+15 to 110+35-L-) ROW on RT side of side brought closer to site and slope stakes were altered which reduced excavation by 0.16 ac, and converting 0.15 ac of excavation to mechanized clearing
17	0.11	0.10	-	-	-	<0.01	0.01	0.02	(Station 115+52 to 116+14 -L-RT) Drainage design altered to decrease size of rip rap outlet pad, increasing mechanized clearing by 0.01 ac, increasing excavation by <0.01 ac and decreasing fill in wetlands by 0.01 ac.
18	0.83	0.88	-	0.01	0.06	-	0.06	0.15	(Station 125+08 to 127+71L-L) Slope stakes and drainage design altered which increased size of rip rap at inlet, decreasing excavation by 0.06. Fill increased by 0.05 ac and mechanized clearing increased by 0.09 ac to provide room for construction. Temporary excavation increased by 0.01 ac from erosion control measures.

Site Number^	Fill Original*	Fill Revised	Temp Excavation Original*	Temp Excavation Revised*	Excavation Original*	Excavation Revised	Mechanized Clearing Original*	Mechanized Clearing Revised	Reason
19	0.01	0.02	-	0.01	<0.01	0.01	0.04	0.12	(Station 140+59 to 142+46 -L-) Slope stakes and drainage design altered to decreasing rip rap pad at inlet which increased fill by 0.01 ac and excavation by <0.01 ac. Mechanized clearing increased by 0.08 ac to provide room for construction and temporary excavation increased by 0.01 ac for erosion control measures.
20	0.11	0.10	-	0.02	<0.01	-	0.04	0.08	(Station 146+70 to 147+85-L-) Slope stakes altered and drainage design altered to decrease rip rap pad at inlet which decreased fill by 0.01 ac, decreased excavation by 0.02 ac. Mechanized clearing increased by 0.04 ac to provide room for construction. Temp excavation increased by 0.02 ac from erosion control measures.
21	-	-	-	<0.01	<0.01	-	<0.01	0.01	(Station 146+88 to 147+06-L-LT) Final Design altered to no longer impact wetland, but <0.01 ac mechanical clearing and <0.01 ac temp excavation added for erosion control measures.
23	-	-	-	-	<0.01	-	<0.01	-	(Station 148+41 to 149+02-L-RT) Design altered to no longer impact wetland
24	1.96	1.25	-	-	0.02	0.05	0.07	0.08	(Station 149+09 to 155+85-L-) Slope stakes altered and drainage design altered to decrease rip rap pad at inlet, and fill properly within extents of wetland WAC, which decreased fill by 0.71 ac, increased excavation by 0.03 ac, and increased mechanized clearing by 0.01 ac.

Site Number^	Fill Original*	Fill Revised	Temp Excavation Original*	Temp Excavation Revised*	Excavation Original*	Excavation Revised	Mechanized Clearing Original*	Mechanized Clearing Revised	Reason
26	1.24	1.25	-	-	-	-	0.08	0.09	(Station 165+94 to 168+54 -L-) Slope stakes altered which increased fill by 0.01 ac and increased mechanized clearing by 0.01 ac.
27	-	-	-	-	-	-	0.02	0.09	(Station 168+51 to 169+40-L-) Mechanized clearing increased by 0.09 ac to provide room for construction.
28	<0.01	-	-	-	-	-	<0.01	<0.01	(Station 172+97 to 173+41-L-RT) Slope stakes altered which decreased wetland fill by <0.01 ac and decreased mechanized clearing by <0.01 ac.
30	1.42	1.32	-	-	-	-	0.04	0.12	(Station 174+63 to 181+12-L-) Slope stakes and drainage design altered which decreased fill by 0.1 ac and increased mechanized clearing by 0.08 ac.
32	0.04	0.03	-	-	-	-	-	0.01	(Station 199+29 to 199+93-L-LT) Slope stakes altered which converted 0.01 ac of fill to mechanized clearing
33	0.33	0.25	-	-	0.05	0.05	0.03	0.07	(Station 47+12 to 48+74 -Y5-LT) Slope stakes and drainage design altered which decreased fill by 0.08 ac, decreased excavation by <0.01 ac, and increased mechanized clearing by 0.04 ac.
34	0.12	0.11	-	-	0.01	0.01	0.52	0.07	(Station 23+30 to 24+76-Y5RPB-LT) Slope stakes and drainage design altered which decreased fill by 0.01 ac, increased excavation by <0.01 ac, and decreased mechanized clearing by 0.45 ac.
35	0.01	0.01	-	-	<0.01	<0.01	<0.01	0.01	(Station 50+01-Y5- to 15+32-Y5A-) Ditch altered which converted <0.01 ac excavation to mechanized clearing. Impacts overall did not change

Site Number^	Fill Original*	Fill Revised	Temp Excavation Original*	Temp Excavation Revised*	Excavation Original*	Excavation Revised	Mechanized Clearing Original*	Mechanized Clearing Revised	Reason
37	0.31	0.20	-	0.01	0.03	0.03	0.09	0.08	(Station 202+42 to 205+59-L-RT) Slope stakes altered and culvert width decreased, decreasing fill by 0.11 ac, increased excavation by <0.01 ac and decreased mechanized clearing by 0.01 ac. Temp excavation increased by .01 ac from erosion control measures.
38	0.32	0.31	-	-	0.02	0.01	0.03	0.05	(Station 209+59 to 211+77-L-) Slope stakes and drainage design altered which decreased fill by 0.01 ac, decreased excavation by 0.01 ac, and increased mechanized clearing by 0.02 ac.
39	0.20	0.19	-	-	<0.01	<0.01	0.03	0.09	(Station 225+15 to 226+55-L-) Slope stakes and drainage design altered which decreased fill by 0.01 ac. Mechanized clearing increased by 0.06 ac to provide room for construction.
40	0.26	0.24	-	-	<0.01	0.01	0.04	0.06	(Station 225+72 to 227+98-L-) Slope stakes and drainage design altered which decreased fill by 0.02 ac, increased excavation by <0.01 ac and increased mechanized clearing by 0.02 ac.
42	0.06	0.03	-	-	-	-	<0.01	0.13	(Station 12+90 to 15+00-Y3-LT) Slope stake altered and the fill changed to be at the extents of the fill slope. Clearing for utilities requires 0.13 ac more of mechanical clearing and 0.15 ac of hand clearing
43	0.19	0.18	-	-	-	-	0.07	0.06	(Station 11+86 to 15+02-Y3-RT) Slope stake altered which converted <0.01 ac of wetland fill to mechanized clearing. Overall impacts decreased by <0.01 ac.

Site Number^	Fill Original*	Fill Revised	Temp Excavation Original*	Temp Excavation Revised*	Excavation Original*	Excavation Revised	Mechanized Clearing Original*	Mechanized Clearing Revised	Reason
46	0.07	0.07	-	-	-	-	0.03	0.07	(Station 16+20 to 18+23-Y5-LT) Mechanical Clearing increased by 0.04 ac to provide room for construction.
47	0.06	0.06	-	-	-	-	0.03	0.03	(Station 17+25 to 18+39-Y5-RT) Slope stake altered which decreased mechanized clearing by <0.01 ac.
Det Site 1	0.38	-	-	-	-	-	0.07	-	(Station 12+52 to 15+29-Y3DET-LT) Detour moved impacts no longer required
Det Site 2	0.09	-	-	-	-	-	0.02	-	(Station 16+06 to 16+81-Y3DET-LT) Detour moved impacts no longer required
Det Site 3	0.01	0.06	-	-	-	-	0.02	0.03	(Station 24+50 to 25+66-Y5DET-LT) Slope stakes and drainage design altered which increased fill by 0.05 ac and increased mechanized clearing by 0.01 ac. Division requested wetland impacts to be extended to easement to provide sufficient room for construction.

^ Sites not listed had no changes to impacts.

*Based on the October 2019, 401/404 permit application

Table B: R 2721-A Detailed Surface Waters Impact Revisions

Site Number^	Permanent Stream Original*	Permanent Stream Revised	Temporary Stream Original*	Temporary Stream Revised	Reason
8	2366	2009	52	551	(Station 66+34 to 79+65-LREV-) Slope stakes pulled in and portions of the ditch removed to utilize the natural stream, decreasing permanent stream impacts by 357 ft and increasing temporary stream impacts by 472 ft. Additional impacts from erosion control measures added 27 ft of temporary stream impacts
10	262	259	10	10	(Station 70+17 to 71+41-LREV-) Drainage design altered decreasing the size of the rip rap inlet pad, decreasing permanent stream impacts by 3 ft.
14	57	57	14	10	(Station 83+13 to 83+46-LREV-) Temporary stream impacts increased by 4 ft. to provide room for construction.
14A	231	237	15	29	(Station 84+63 to 85+49-LREV-LT) Temporary stream impacts extended out to the ROW, increasing by 14 ft. Slope stakes altered, increasing permanent stream impacts by 6 ft.
15	33	0	0	0	(Station 85+31 to 90+05-L-) Stream is no longer being impacted.
18	354	352	21	82	(Station 125+08 to 127+71L-LT) Slope stakes and drainage design altered which increased size of rip rap at inlet, decreasing permanent stream impacts by 2 ft. Temporary stream impacts increased by 61 ft for erosion control measures.
19	455	452	11	93	(Station 140+59 to 142+46 -L-) Slope stakes and drainage design altered to decrease rip rap pad at both outlet and inlet which decreased permanent stream by 3 ft. Temporary stream impacts increased by 82 ft for erosion control measures.
20	364	341	21	65	(Station 146+70 to 147+85-L-) Slope stakes and drainage design altered to decrease rip rap pad at inlet and outlet which decreased the permanent stream impacts by 23 ft. Additional temporary stream impacts increased by 44 ft. for erosion control measures.
22	104	70	10	15	(Station 148+36 to 149+02-L-RT) Slope stakes were reduced and the drainage design altered reducing permanent stream impacts by 34 ft. Temporary stream impacts increased by 5 ft. to provide room for construction.

Site Number^	Permanent Stream Original*	Permanent Stream Revised	Temporary Stream Original*	Temporary Stream Revised	Reason
27	433	431	36	37	(Station 168+51 to 169+40-L-) Roadway width decreased which decreased permanent stream impacts by 2'. Temporary stream impacts extended 1' to provide room for construction.
30	251	257	10	4	(Station 174+63 to 181+12-L-) Slope stakes and drainage design altered to increase rip rap outlet pad, which increased permanent stream impacts by 6 ft, and decreased temporary stream impacts by 6'
31	872	871	0	0	(Station 193+15 to 197+24-L-) Slope stakes were reduced, decreasing permanent stream impacts by 1 ft.
33	278	251	9	9	(Station 47+12 to 48+74 -Y5-LT) No change in stream impacts from a design change. Length of permanent stream impacts corrected.
35	1833	1657	77	180	(Station 50+01-Y5- to 202+45-L-LT) Portion of ditch removed, decreasing permanent stream impacts by 176 ft. Temporary stream impacts were extended to provide room for construction, and additional temporary stream impacts added at confluence with Stream SAC, increasing them by 103 ft.
36	1069	1048	10	31	(Station 50+01-Y5- to 15+32-Y5A-) Drainage design altered and culvert length decreased, reducing permanent stream impacts by 21 ft. Temporary stream impacts increased by 21 ft. to provide room for construction.
38	376	265	10	10	(Station 209+59 to 211+77-L-) Slope stakes and drainage design altered to decrease rip rap outlet pad, which decreased permanent stream impacts by 111 ft.
39	321	376	9	11	(Station 225+15 to 226+55-L-LT) Design altered which increased permanent stream impacts by 55 ft and increased temporary stream impacts by 2 ft.
40	0	0	10	0	(Station 225+72 to 227+98-L-) Impacts redrawn based on most recent NCDOT provided Final Survey, which no longer requires stream impacts at this location.
44	181	181	30	60	(Station 15+00 to 15+88-Y3-) Temporary stream impacts increased by 30 ft to provide room for construction.

Site Number^	Permanent Stream Original*	Permanent Stream Revised	Temporary Stream Original*	Temporary Stream Revised	Reason
45	313	311	41	34	(Station 15+60 to 16+27-Y5-) Culvert length decreased which decreased permanent stream impacts by 2 ft. Temporary stream impacts reduced to ROW, decreasing by 7 ft.

^ Sites not listed had no changes to impacts.

*Based on the August 2018 application

Table C: R 2721-A Detailed Buffer Impact Revisions

Site Number^	Allowable Zone 1 Original*	Allowable Zone 1 Revised	Allowable Zone 2 Original*	Allowable Zone 2 Revised	Mitigable Zone 1 Original*	Mitigable Zone 1 Revised	Mitigable Zone 2 Original*	Mitigable Zone 2 Revised	Reason
1	-	-	-	-	-	11887	1100	6469	(Station 52+27 to 52+90-LREV-RT) Additional impacts needed for utilities.
2	-	-	-	-	29408	30036	18956	20253	(Station 52+98 to 58+31 -LREV-LT) Buffer impacts squared off and PDE updated to allow room to build ditch.
3	-	-	-	-	24273	24234	16141	16102	(Station 59+05 to 60+25-LREV-) ROW moved slightly closer to site, causing a small decrease in buffer impacts
4	-	-	-	-	132681	144369	69262	76539	(Station 65+01 to 84+43-LREV-) Increase in buffer impacts due to the inclusion of buffer impacts between ditches that previously were not counted. Additional impacts from erosion control measures.
5	-	-	-	-	10459	13310	8389	8641	(Station 69+55 to 71+59 -LREV-) Increase in buffer impacts to provide for room for construction and erosion control measures.
6	26603	27484	14543	17336	617	1035	3309	1518	(Station 81+45 to 87+64-LREV-) Increase in buffer impacts due to the increase in grade around the bridge. Buffer zone 1 impacts extended to ROW on northern side of bridge to provide room for construction.

Site Number^	Allowable Zone 1 Original*	Allowable Zone 1 Revised	Allowable Zone 2 Original*	Allowable Zone 2 Revised	Mitigable Zone 1 Original*	Mitigable Zone 1 Revised	Mitigable Zone 2 Original*	Mitigable Zone 2 Revised	Reason
7	2809	3126	748	1011	9867	9984	4783	6085	(Station 84+38 to 85+96 -LREV-LT) Portion of allowable buffer zone converted to mitigable buffer zone from change in the bridge length. Slope stakes increased causing an increase in impacts.
9	-	-	-	-	18345	25718	12510	16949	(Station 124+47 to 126+48 -L-) Additional buffer zone added for Stream SS that was previously not accounted for. Additional impacts from erosion control measures.
10	-	-	-	-	28484	30892	18802	21347	(Station 140+32 to 142+97-L-) Drainage design and slope stakes altered. Additional impacts from erosion control measures.
11	-	-	-	-	32299	21649	46835	15710	(Station 146+80 to 148+37-L-) Slope stakes and drainage design altered which decreased the extent of buffer impacts. Additional impacts from erosion control measures.
12	-	-	-	-	8561	7006	6046	6475	(Station 147+44 to 149+51-L-RT) Slope stakes and drainage design altered which decreased the extent of buffer impacts
13	-	-	-	-	27842	26264	18095	17852	(Station 168+13 to 169+95-L-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of bank.
15	-	-	-	-	48780	46768	31001	31001	(Station 192+63 to 197+32-L-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks.

Site Number^	Allowable Zone 1 Original*	Allowable Zone 1 Revised	Allowable Zone 2 Original*	Allowable Zone 2 Revised	Mitigable Zone 1 Original*	Mitigable Zone 1 Revised	Mitigable Zone 2 Original*	Mitigable Zone 2 Revised	Reason
16					15703	16145	9430	10114	(Station 46+92 to 49+14 -Y5- LT) Increased impacts to provide room for construction.
16A	-	-	-	-	-	3590	-	4011	(Station 24+27 to 24+54 -Y5RPB-) Increase in Buffer Zone impacts due to Buffers not being accounted for in original plans
17	-	-	-	-	119892	113685	67192	67833	(Station 15+80-Y5A- to 48+68-Y5-(SAB)) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Buffers extended to the ROW at -Y5RPA-21+00 RT.
18	-	-	-	-	63401	62659	35703	35870	(Station 201+74 to 206+80-L-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Additional impacts from erosion control measures.
19	-	-	-	-	16825	17332	12033	12563	(Station 209+01 to 211.28 -L-) Drainage plans altered to increase rip rap pad at outlet, increasing buffer impacts.
20	-	-	-	-	22669	22902	14026	13676	(Station 224+83 to 226+97-L-) Slight increase in Buffer Zone 1 due to calculating buffers based on the top of banks.
21	-	-	-	-	2521	1087	784	1181	(Station 225+70 to 226+35-L-LT) Slight increase in Buffer Zone 2 due to calculating buffers based on the top of banks. Extent of impact are was reduced for Buffer Zone 1 due to altered slope stakes and drainage design.

Site Number [^]	Allowable Zone 1 Original*	Allowable Zone 1 Revised	Allowable Zone 2 Original*	Allowable Zone 2 Revised	Mitigable Zone 1 Original*	Mitigable Zone 1 Revised	Mitigable Zone 2 Original*	Mitigable Zone 2 Revised	Reason
22	-	-	-	-	18564	13000	10568	9300	(Station 14+60 to 16+35 -Y3-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Detour impacts no longer apply decreasing Buffer Zone 1 and 2 impacts.
23	-	-	-	-	19377	17568	8151	9279	(Station 15+10 to 16+77-Y5-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Buffers extended to easement to provide room for construction.
24	-	-	-	-	9758	8416	5594	5987	(Station 66+72 to 69+30 -Y5-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Division requested buffer impacts be extended to ROW to provide room for construction.
25	-	-	-	-	5086	4877	2081	2282	(Station 69+01 to 69+70-Y5-LT) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Buffers extended to PDE to provide room for construction.
26	-	-	-	-	1112	-	889	-	(Station 16+25 to 16+89-Y5A-RT) Removed as drainage was rerouted to avoid impacts at that location

[^] Sites not listed had no changes to impacts.

*Based on the August 2018 application

Table D: R 2721-A Wetlands in Riparian Buffer Impact Revisions

Site Number	Zone 1 Original	Zone 1 Revised	Zone 2 Original	Zone 2 Revised	Reason
1	-	8993	1100	1960	(Station 52+27 to 52+90-LREV-RT) Additional impacts needed for utilities.
2	21740	22034	8886	8886	(Station 52+98 to 58+31 -LREV-LT) Buffer impacts squared off and PDE updated to allow room to build ditch.
4	4296	4296	8310	8371	(Station 65+01 to 84+43-LREV-) Increase in buffer impacts due to the inclusion of buffer impacts between ditches that previously were not counted. Additional impacts from erosion control measures.
6	305	306	3309	5848	(Station 81+45 to 87+64-LREV-) Increase in buffer impacts due to the increase in grade around the bridge. Buffer zone 1 impacts extended to ROW on northern side of bridge to provide room for construction.
7	1578	1612	2822	3697	(Station 84+38 to 85+96 -LREV-LT) Portion of allowable buffer zone converted to mitigable buffer zone from change in the bridge length. Slope stakes increased causing an increase in impacts.
9	15816	17881	5499	7814	(Station 124+47 to 126+48 -L-) Additional buffer zone added for Stream SS that was previously not accounted for. Additional impacts from erosion control measures.
10	2466	3933	1755	2242	(Station 140+32 to 142+97-L-) Drainage design and slope stakes altered. Additional impacts from erosion control measures.
11	4788	5120	1931	2781	(Station 146+80 to 148+37-L-) Slope stakes and drainage design altered which decreased the extent of buffer impacts. Additional impacts from erosion control measures.
12	1455	1147	1459	1788	(Station 147+44 to 149+51-L-RT) Slope stakes and drainage design altered which decreased the extent of buffer impacts

Site Number	Zone 1 Original	Zone 1 Revised	Zone 2 Original	Zone 2 Revised	Reason
13	1926	3483	3348	3388	(Station 168+13 to 169+95-L-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of bank.
15	6735	6717	1270	1278	(Station 192+63 to 197+32-L-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks.
16	11955	12045	3997	3997	(Station 46+92 to 49+14 -Y5- LT) Increased impacts to provide room for construction.
16A	-	3513	-	3181	(Station 24+27 to 24+54 -Y5RPB-) Increase in Buffer Zone impacts due to Buffers not being accounted for in original plans
17	3387	3406	2052	2052	(Station 15+80-Y5A- to 48+68-Y5-(SAB)) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Buffers extended to the ROW at -Y5RPA-21+00 RT.
18	3972	3969	6105	6105	(Station 201+74 to 206+80-L-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Additional impacts from erosion control measures.
19	8324	8507	736	741	(Station 209+01 to 211.28 -L-) Drainage plans altered to increase rip rap pad at outlet, increasing buffer impacts.
20	10895	10729	109	109	(Station 224+83 to 226+97-L-) Slight increase in Buffer Zone 1 due to calculating buffers based on the top of banks.
21	1748	576	367	367	(Station 225+70 to 226+35-L-LT) Slight increase in Buffer Zone 2 due to calculating buffers based on the top of banks. Extent of impact are was reduced for Buffer Zone 1 due to altered slope stakes and drainage design.
22	210	97	2581	1025	(Station 14+60 to 16+35 -Y3-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Detour impacts no longer apply decreasing Buffer Zone 1 and 2 impacts.
23	476	472	594	594	(Station 15+10 to 16+77-Y5-) Slight decrease in Buffer Zone 1 due to calculating buffers based on the top of banks. Buffers extended to easement to provide room for construction.