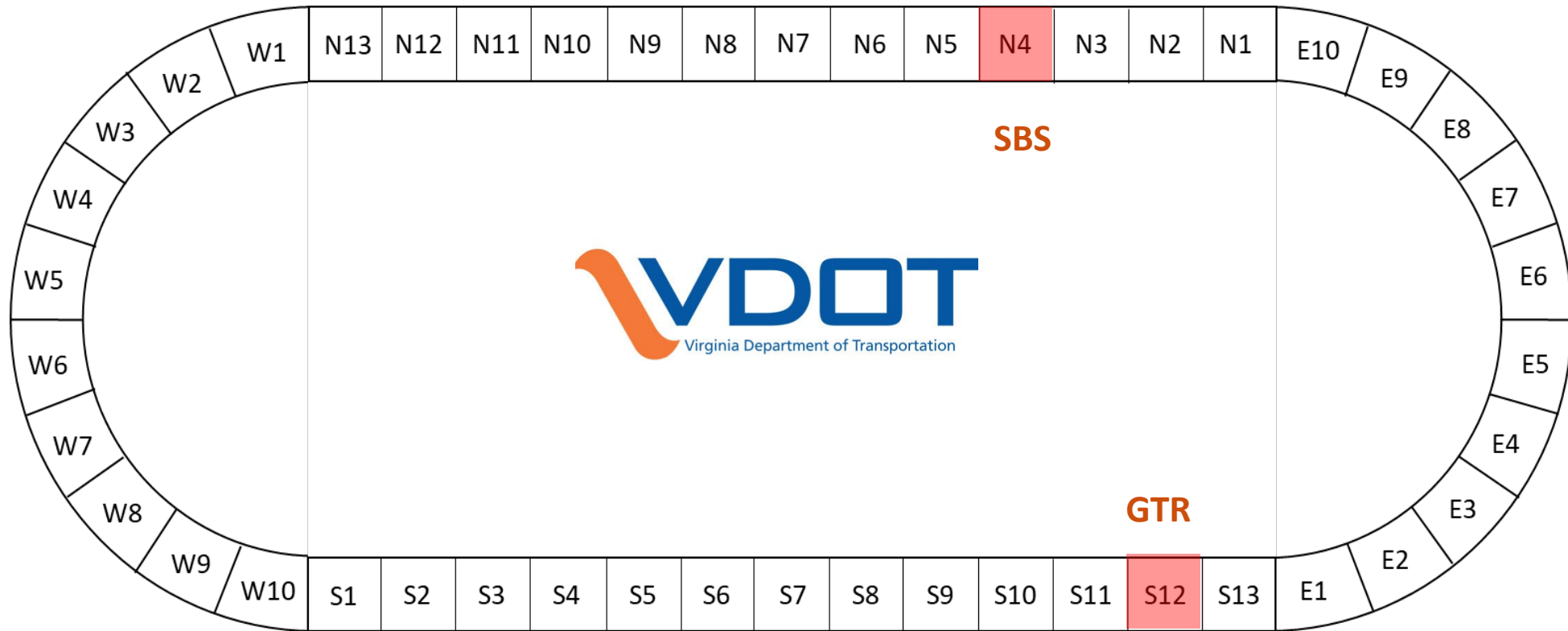




Evaluation of DGA Mixes with GTR and SBS Modified Binder

VDOT S12 AND N4 TEST SECTIONS



SECTION S12, N4-EXPERIMENT OBJECTIVE

- Evaluate the performance of DGA mixtures with dry GTR and SBS modified binder
 - Previous successful TT experience comparing DGA with wet GTR (terminally blended) and SBS modified binder
 - Pavement structure: 6-in agg. base + 4.5-in CCPR+ 2.8-in DGA
 - CCPR evaluation presented tomorrow by Ben Bowers (stay tuned...)

MIX DESIGN

- VDOT 12.5 NMAS
- VA aggregates: traprock 78s (39%), 10s (46%), and RAP (15%)
- N4-SBS mix (control): PG 76-22
- S12-GTR mix: PG 64-22+12% GTR -Elastiko ECR (by weight of virgin binder)
- AC content: SBS mix (5.3%), GTR mix (5.5%) (extra 0.2% to account for binder absorption)

MIX DESIGN BMD

- BMD Results:
 - IDEAL-CT CT_{Index} at $25^{\circ}C \geq 70$
 - SBS mix=90.6, GTR mix=94.9
 - HT-IDT-IDT at $54.4^{\circ}C \geq 100kPa$
 - SBS mix 165.8kPa, GTR mix=116.5kPa

CONSTRUCTION ACTIVITIES N4, S12

08-23/24-2024



MIX DESIGN AND QC RESULTS

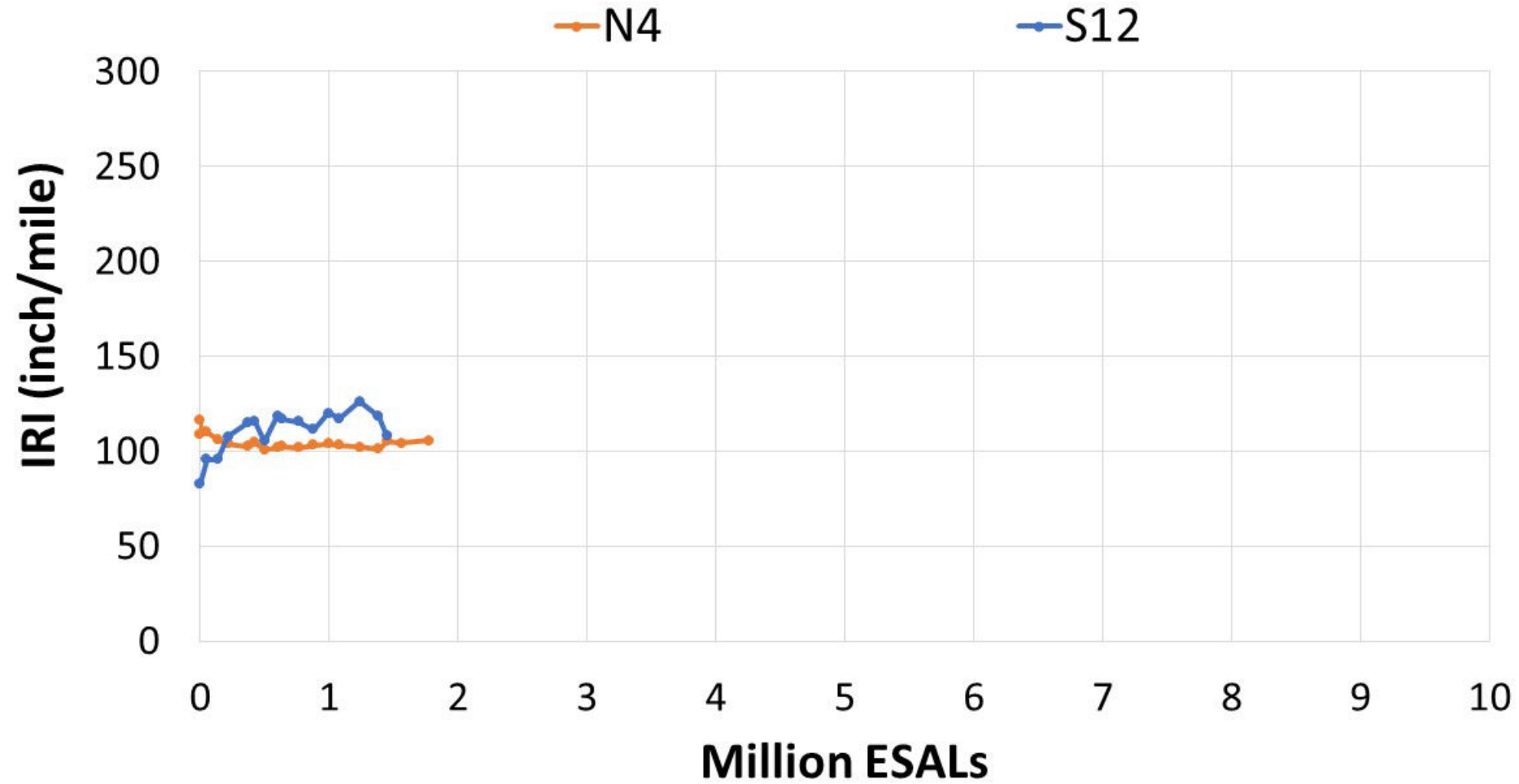
Sieve Size	SBS Mix-Design	SBS Mix-QC	GTR Mix-Design	GTR Mix-QC
19 mm (3/4")	100	100	100	100
12.5 mm (1/2")	98	98	98	97
9.5 mm (3/8")	89	86	89	84
4.75 mm (#4)	59	60	59	59
0.15 mm (#100)	10	7	10	8
0.075 mm (#200)	5	4.8	5	5.4
AC (%)	5.3	5.3	5.5	5.5
Va (%)	4.4	4.7	4.4	2.8
As-built-thickness	2.8	2.7	2.8	2.7
In-Place Density (%)	94	93.9	94	93.9

- Production mix (RH):
 - IDEAL-CT-CT_{Index} ≥ 70
 - SBS mix-70.6
 - GTR mix-124.8
 - HT-IDT (Report only)
 - SBS mix-232.5kPa
 - GTR mix-191.7kPa

FIELD PERFORMANCE AT 1.8MESALS

- No cracking
- Rutting: Less than 0.2 in (N4), less than 0.1in (N12)

FIELD PERFORMANCE AT 1.8MESALS



THANK YOU!

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