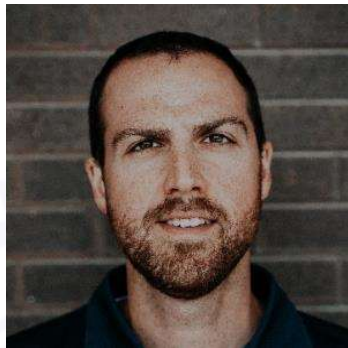


# INDOT/Industry Preseason Meeting



Nathan Awwad, PE  
Asphalt Engineer  
Division of Materials and Tests  
4/8/21

# Overview

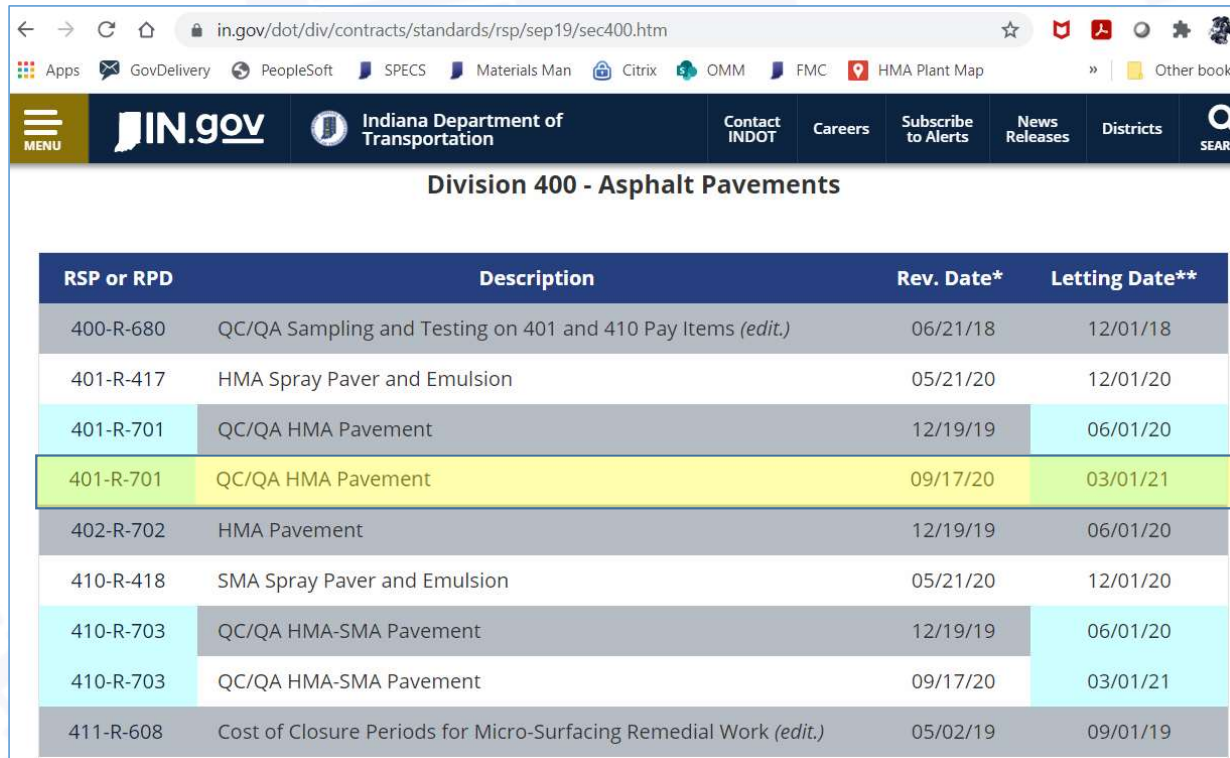
---

- Specification Updates
- HMA Programs
  - Modernizing workflow
- HMA Initiatives



# Specification Updates

- Recurring Special Provisions (RSP)



The screenshot shows a web browser window displaying the Indiana Department of Transportation website. The page title is "Division 400 - Asphalt Pavements". The table below lists various Recurring Special Provisions (RSP) or Recurring Particular Details (RPD) with their descriptions, revision dates, and letting dates.

RSP or RPD	Description	Rev. Date*	Letting Date**
400-R-680	QC/QA Sampling and Testing on 401 and 410 Pay Items <i>(edit.)</i>	06/21/18	12/01/18
401-R-417	HMA Spray Paver and Emulsion	05/21/20	12/01/20
401-R-701	QC/QA HMA Pavement	12/19/19	06/01/20
401-R-701	QC/QA HMA Pavement	09/17/20	03/01/21
402-R-702	HMA Pavement	12/19/19	06/01/20
410-R-418	SMA Spray Paver and Emulsion	05/21/20	12/01/20
410-R-703	QC/QA HMA-SMA Pavement	12/19/19	06/01/20
410-R-703	QC/QA HMA-SMA Pavement	09/17/20	03/01/21
411-R-608	Cost of Closure Periods for Micro-Surfacing Remedial Work <i>(edit.)</i>	05/02/19	09/01/19

# 401-R-701

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- Since letting of 6/1/20
  - Allows for finer graded 9.5mm surface mixtures
  - 9.5mm OG air void target now 12.0 to 17.0%
  - Mat must cool to 175°F before next lift
  - Min mix temp of 245 °F if 402 mix.
  - Lift thickness allowed to be 2x to 5x
- New as of letting 3/1/21
  - Plate sample exceptions
  - Core exceptions
  - Patching mat temp exceptions



# 401-R-701

SECTION 401, AFTER LINE 293, DELETE AND INSERT AS FOLLOWS:

Samples shall not be obtained from *the following areas*:

- (a) *Mixture placed on an approach, taper, gore area, crossover that is not placed simultaneously with the mainline.*
- (b) *Mixture placed on a shoulder less than 8 ft in width that is not placed simultaneously with the mainline.*
- (c) *Within 25 ft of a transverse construction joint.*
- (d) *Areas placed with paving equipment in accordance with 409.03(c)2 or 409.03(c)3.*

If a random location falls within this area, the Engineer will randomly select another location within the subplot for sampling. If an entire subplot falls within this area, test results from the previous subplot will be used for acceptance. If the previous subplot is not available,

# 401-R-701

SECTION 401, AFTER LINE 526, DELETE AND INSERT AS FOLLOWS:

Cores shall not be obtained from *the following areas*:

- (a) *Mixture placed on an approach, taper, gore area, crossover that is not placed simultaneously with the mainline.*
- (b) *Mixture placed on a shoulder less than 8 ft in width that is not placed simultaneously with the mainline.*
- (c) *Within 25 ft of a transverse construction joint.*
- (d) *Within 25 ft of an acceptance sample taken in accordance with 401.09.*
- (e) *Areas placed with paving equipment in accordance with 409.03(c)2 or 409.03(c)3.*

If a random location falls within this area, the Engineer will randomly select another location within the subplot for coring. If an entire subplot falls within this area, test results

## 304-R-711

---

The excavated patch areas shall be filled with HMA for patching of the type specified in the pay item *and as shown on the plans*. ~~Partial depth patches shall use HMA intermediate mixture and full depth patches shall use HMA base mixture in accordance with 402.~~ *HMA used for patching shall be in accordance with 402.* A MAF in accordance with 402.05 will not apply. *The 175°F temperature requirement for the previously paved course in accordance with 402.13 will not apply.* Mixtures will be accepted in accordance with 402.09.

# How does this affect your contract?

---

- Spec says, “sampling in accordance with ITM 802.”
- ITM 802 updated 11/5/2020
  - ITM becomes effective immediately
  - No construction memo!?!

#### 4. Areas specifically exempted per 401.09:

- a. Mixture placed on an approach, taper, gore area, or crossover that is not placed simultaneously with the mainline.
- b. Mixture placed on a shoulder less than 8 feet wide that is not placed simultaneously with the mainline
- c. Within 25 feet of a transverse construction joint
- d. Areas placed with wideners, or specialty equipment approved by the Engineer.

If the random location falls within these areas another randomly selected location is determined. If the entire subplot falls within these areas, the previous subplot is used for acceptance. If the previous subplot is not available, the subsequent subplot will be used for acceptance.



# ITM Updates

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- Indiana Test Methods

- <https://www.in.gov/indot/div/mt/itm/itm.htm>
- ITM 571. Extraction. **03/1/21**
  - Added auto extractor as a valid method
- ITM 583. Certified HMA producer. **03/1/21**
  - Corrected JMF binder adjustment tolerance for SMA
- ITM 587. Reducing HMA samples to testing size. **03/1/21**
  - Added more guidance on mixing and quartering samples
- ITM 802. Random Sampling. **11/05/20**
  - Added the plate and core sample exceptions



# INDOT Directives

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- Directives are for public view on the INDOT webpage
  - <https://www.in.gov/indot/div/mt/directives/directives.htm>
- Internal procedures developed by INDOT to direct testing activities



# INDOT Directives

<b>300</b>	<b><i>Asphalt Materials</i></b>	
301	Certified Hot Mix Asphalt Producer Program Procedures	2/17/19
302	Asphalt Materials	4/15/19
303	Plate Sample Preparation and SUPERPAVE Gyratory Compactor (SGC) Specimen Fabrication	2/4/19
304	QC/QA Hot Mix Asphalt Procedures	4/15/19
305	Hot Mix Asphalt Mix Design Laboratory Requirements	1/23/20
306	Specific Gravity of Fine Aggregates from Extracted Samples	2/14/19

# Modernizing Workflow

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Cloud-based Tools



# Modernizing Workflow

## DMF ENTRY

- HMA Producers and District Testing

## Lab Testing

- INDOT HMA testing Labs

## Field Assistant and SM

- District Construction

## HMA Pay Wizard

- Producers and INDOT



# Modernizing Workflow

2019 implemented DMF entry



# Modernizing Workflow



**MDS Overview** **Contracts**

HMA Producer:  Certified Plant #:  Plant Location:  Approved Design Lab:

Aggregate Size	Source	Sou... #	Q- Nu...	Led...	Design Lab GSB	Design Lab ABS %	INDOT List GSB	INDOT List ABS %	DMF %
11 st.	US Agg Portland	2361	962...	3-6	2.603	1.98	2.603	1.98	45.0
12 st.	US Agg Portland	2361	962...	3-6	2.541	3.20	2.541	3.20	17.5
Crushed Gravel Sand	US Agg Richmond	2331	982...	na	2.603	2.33	2.603	2.33	7.0
24 St. Sand	Barrett	2334	9821...	na	2.730	1.37	2.730	1.37	11.0
4.75 Rap	Plant	na	na	na	2.640	1.00	2.640	1.00	18.0
Baghouse	Plant	na	na	na	2.800	1.00	2.800	1.00	1.5

PG Binder	Source	Source #
64-22	AMI	7105
70-22	AMI	7105
76-22	AMI	7105

Additive	Sou...	Sou...

Binder % RAS	0.0
Binder Repl. %	19.3
Virgin Binder %	5.7

	Fine RAP	Coarse RAP	RAS
% in mixture	18.0	0.0	0.0
Binder % extracted	7.5	0.0	0.0

PG Grade, Design TSR:

Mixture Designation:

Maximum Particle Size:

Mixture Course:  Base Inter  Surf

Ignition Oven Test Temp.:

Binder Actual %:

Binder calculated effective %:

Gyrations Nini/Ndex/Nmax:

Design No.:



# Modernizing Workflow

2019 implemented DMF entry

2019 implemented Lab Testing



Extraction Data		Fines Recovery	
*Weight of Sample (A)	Gram	*Cup & Fines $C_f$	Gram
*Dried Aggregate (B)	Gram	*Cup $c$	Gram
Cup Fines (C)	Gram	Cup Fines [ $C_f - c$ ] (C)	Gram
Filter Fines (D)	Gram	Filter Fines	
Total Aggregate & Fines (E)	Gram	*Dried Filter & Fines $D_f$	Gram
% Bituminous (F)	%	*Filter $f$	Gram
*Testing Technician Id	lbgootee	Filter Fines [ $D_f - f$ ] (D)	Gram
*Test Completion Date	03/29/2019		

Sample ID	Check-in Date	Check-in
R179122400001	29/2019	Check-in
R183403540111	29/2019	Check-in
R183403541011	29/2019	Check-in
R193123400005	29/2019	Check-in

Showing 1 to 4 of 4 Test Methods:

pe	A	B	$C_f$	$c$	$D_f$	$f$	D	E	F	Tester	Test Date	Remove
No Tests found												





# Modernizing Workflow

- 2019 implemented DMF entry
- 2019 implemented Lab Testing
- 2020 implemented Field Assistant



**Contractor Information**

(\*) Denotes required fields

\*Contractor:

\*Crew No.:

Show 10 entries

Contractor	Crew	Personnel Type	Qty	Action
26-1745760 : K & S MARKERS INC	1	prsn : Laborer	3	
35-1139301 : E & B PAVING INC	1	prsn : Carpenter	2	
35-1630972 : ABC CUTTING CONTRACTORS	1	prsn : Laborer	2	
35-1630972 : ABC CUTTING CONTRACTORS	2	supr : Foreman	1	
35-1630972 : ABC CUTTING CONTRACTORS	2	prsn : Laborer	1	
35-1917625 : MILESTONE CONTRACTORS LP **PRIME**	1	supr : Foreman	1	
35-1917625 : MILESTONE CONTRACTORS LP **PRIME**	1	prsn : Laborer	4	
35-1917625 : MILESTONE CONTRACTORS LP **PRIME**	1	prsn : Equipment Operator	3	
35-1917625 : MILESTONE CONTRACTORS LP **PRIME**	1	prsn : Q/C Q/A H.M.A. Tech	1	
35-1917625 : MILESTONE CONTRACTORS LP **PRIME**	1	supr : Superintendent	1	

Showing 1 to 10 of 11 entries

\*Select a Remark Type:

ABC Cutting on site cutting through sidewalks and curbing. One crew marking, one cutting. Started around 8am.

Milestone on site for paving, resurface. John is QC/QA for Milestone, Ph# 812-555-0132 Paving commenced at 9am, starting at Sta 123+25 Lt 32'. Bill is Paving Foreman on site. Looking to do around 800 tons today, two bridges if hitting daily planned qty. Down from 10:30 to 11:30 due to plant issues.

K&S Markers running ahead of Milestone, removing RPMs from tomorrows planned mill work.

Show 10 entries

Remark Type	Text	Action
BCOP : DWR Work Operations	ABC Cutting on site cutting through sidewalks and curbing. One crew marking, one cutting. Started ar...	<input type="button" value=""/>
HITE : PE/S High Temp	92	<input type="button" value=""/>
LOTE : PE/S Low Temp	72	<input type="button" value=""/>
WEAT : PE/S Weather	Clear	<input type="button" value=""/>

Showing 1 to 4 of 4 entries

Project

Pay Items

# Modernizing Workflow

- 2019 implemented DMF entry
- 2019 implemented Lab Testing
- 2020 implemented Field Assistant
- 2020 implemented HMA Pay Wizard



Contract: RS-39465    CLN: 0023    DMF: 193302003    Lot: 1    Acceptance: PWL													
STATE - MIX PROPERTIES	QA/Appeal Unified	Sample Date	Related Sample Id	Rep. Qty (Tons)	Mix % Binder	Mix Gmm	Pill 1 Gmb	Pill 2 Gmb	Pill Avg. Gmb	Core A Gmb	Core B Gmb	QA Adjustment	
	Sublot 1	08/22/2019	A194515524100	600.00	6.49	2.399	2.341	2.333	2.337	2.264	2.280	+5,350.00	
	Sublot 2	04/08/2019	R194515524101	600.00	6.60	2.426	2.355	2.350	2.353	2.299	2.311	3000.00	
	Sublot 3	04/09/2019	R194515524102	600.00	6.49	2.428	2.337	2.330	2.334	2.260	2.305	5500.00	
	Sublot 4	04/09/2019	R194515524103	600.00	6.54	2.428	2.336	2.332	2.334	2.235	2.230	1.012	
	Sublot 5	04/09/2019	R194515524104	600.00	6.58	2.427	2.348	2.349	2.349	2.267	2.212	0.93	
Total Lot Quantity 3000 Tons												Value	
												\$5,355.73	
												Appeal Adjustment	
												\$74.00	
												0.93	
STATE - MIX PROPERTIES	INDOT T30 Detail												
STATE - MIX PROPERTIES	Mix Properties for Acceptance												
STATE - MIX PROPERTIES	Acceptance Results and Pay Factors, Final												
STATE - ACCEPTANCE PWL		Average	Sigma	N	Qu USL	Qu	PWLu	Qi LSL	Qi	PWLi	Total PWL	Pay Factor	LCPF
	% Air Voids	3.31	0.65	5	5.40	3.22	100	2.6	1.09	86	86	0.98	1.02
	% Vbe	12.21	0.55	5	13.50	2.35	100	11	2.2	100	100	1.05	
	% Density	93.52	1.53	10	-	-	-	91	1.65	96	96	1.03	

# Modernizing Workflow

## DMF Entry

- Can submit HMA and OG
- SMA is still excel DMF coversheet (for now)

## HMA Pay Wizard

- Can only process HMA
- OG and SMA are still excel pay workbooks (for now)

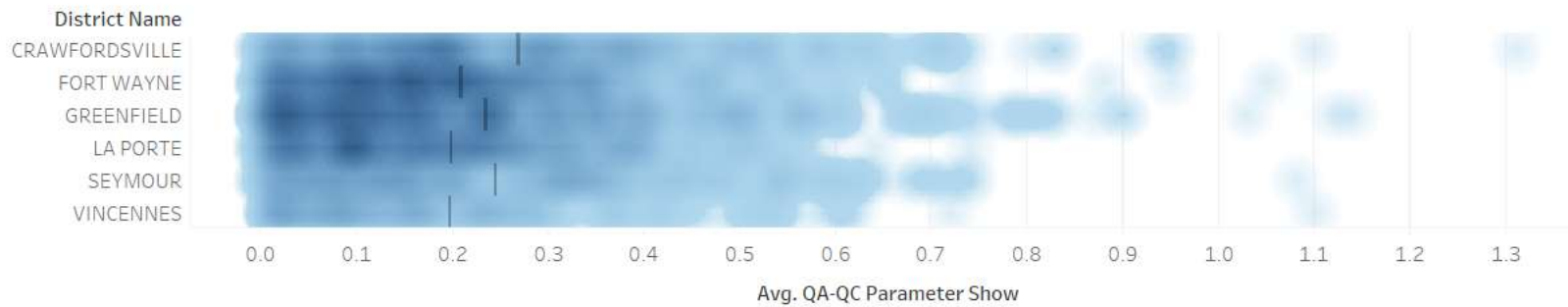


# Modernizing Workflow

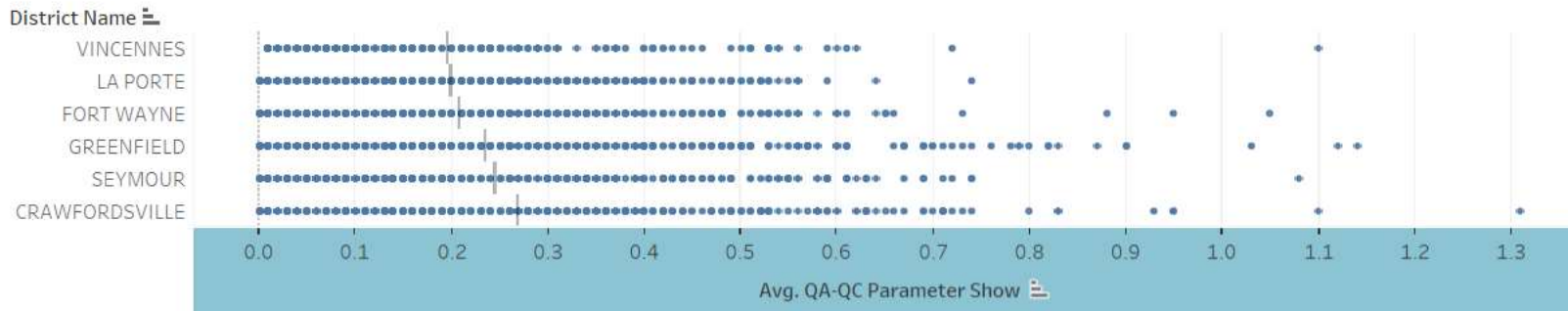
The real benefits? DATA!



Avg Abs Delta Binder by District



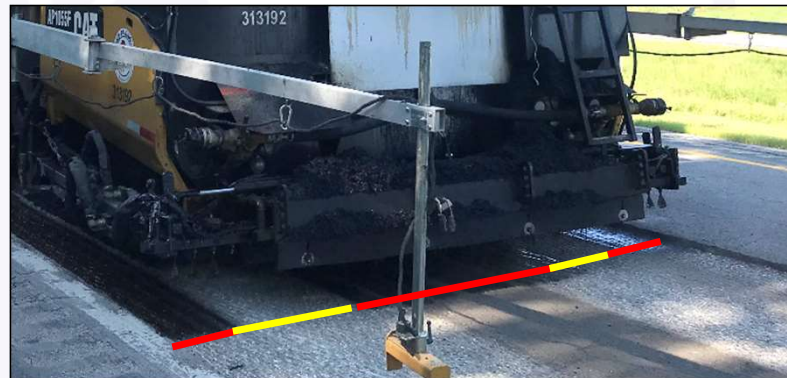
Avg Delta Binder by District



# HMA Initiatives

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- Strategic Steering Committee (SSC)
  - Spray Pavers with HMA



# HMA Initiatives

---

- Strategic Steering Committee (SSC)
  - Spray Pavers with HMA
  - VRAM



# HMA Initiatives

---

- Strategic Steering Committee (SSC)
  - Spray Pavers with HMA
  - VRAM
    - Committed to implement in 2026 specifications for Cat 4



# HMA Initiatives

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- Strategic Steering Committee (SSC)
  - Spray Pavers with HMA
  - VRAM
  - Joint Seal





# HMA Initiatives

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- Strategic Steering Committee (SSC)
  - Spray Pavers with HMA
  - VRAM
  - Joint Seal
  - IRI
    - Goal to fully implement in CY 2023
    - 16 pilot projects in 2021
    - CM 21-02. Allow for the use of the high speed profiler on projects utilizing profilograph simulation mode or straightedge simulation mode



# https://tinyurl.com/hmapplants

**Certified HMA Producers**  
A map of all the INDOT certified HMA producers  
489 views  
All changes saved in Drive

Add layer Share Preview

- 3324-Brooks Construction C...
- 3326- Dave O' Mara Contract...
- 3330- Rieth-Riley Constructio...
- 3332- Milestone Contractors...
- 3333- Milestone Contractors...
- 3334- Niblock Excavating Inc
- 3336- Walsh & Kelly, Inc.
- 3339- E & B Paving Inc
- 3340- E & B Paving Inc
- 3341- E & B Paving, Inc.
- 3342-API Construction Corp
- 3343- Wayne Asphalt and Co...
- 3344- Dave O' Mara Contract...
- 3345- Milestone Contractors...**
- 3347- Milestone Contractors...
- 3348- E & B Paving, Inc.
- 3349- E & B Paving Inc
- 3350-Wabash Valley Asphalt...
- 3351- Walsh & Kelly, Inc.
- 3353- Rieth-Riley Constructio...

**3345- Milestone Contractors LP**

1 of 7 >

Indianapolis, IN

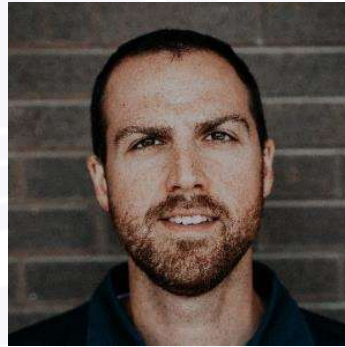
**Details from Google Maps** Remove  
4206 S Harding St, Indianapolis, IN 46217  
[View in Google Maps](#)

39.70559, -86.18689

Google My Maps

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# Thank You



Nathan Awwad

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317-522-9661

