

# BRIDGE MANAGEMENT



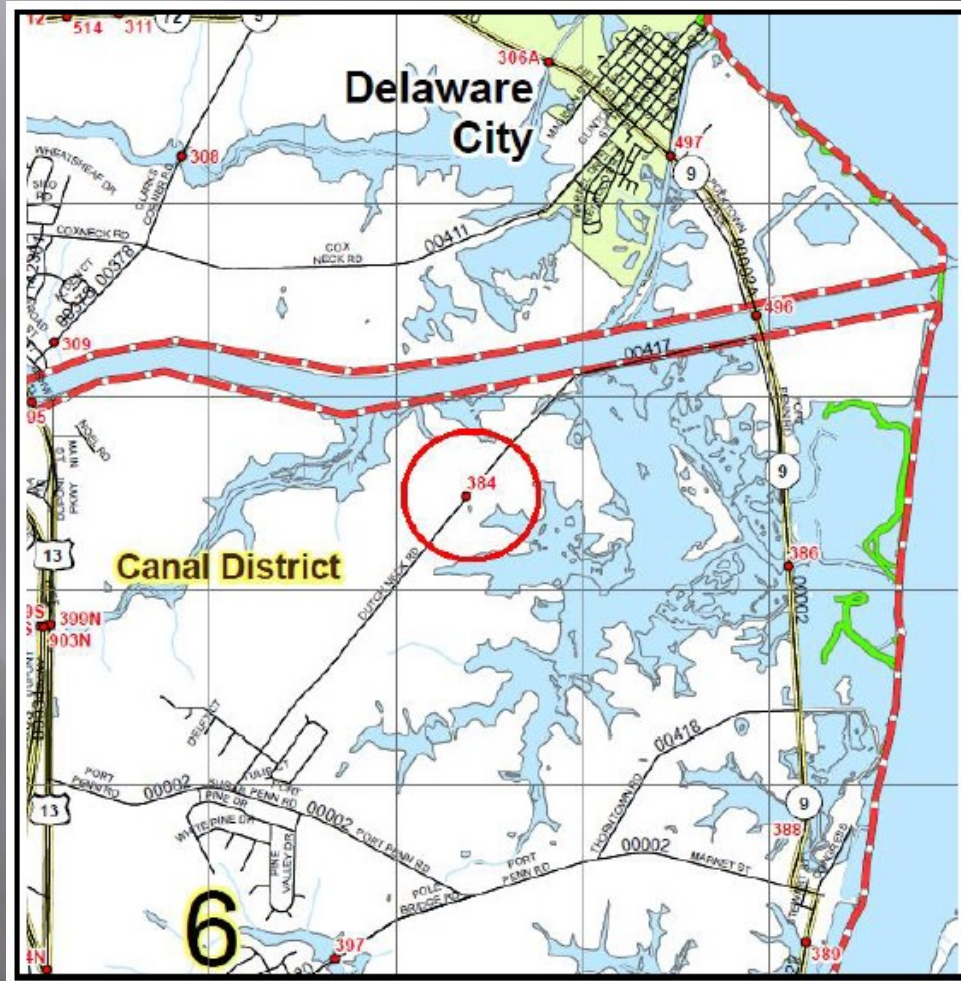
2020 Highlights

# Bridge Management 2020 Highlights

- ▣ **Bridge 1-384 In-House Concrete Slab Design & Construction**
- ▣ Bridge 1-076 Emergency Scour Repair
- ▣ 2020 Bridge Performance Measures

# Bridge Management 2020 Highlights

## Bridge 1-384 Concrete Slab





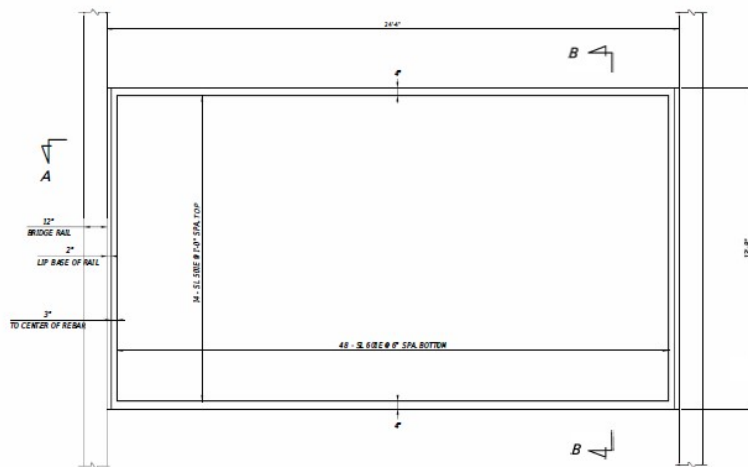
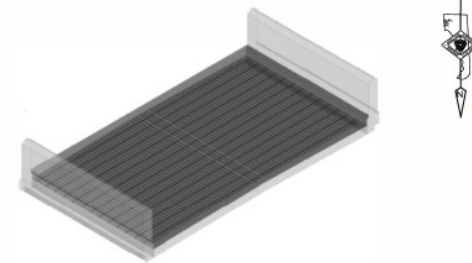
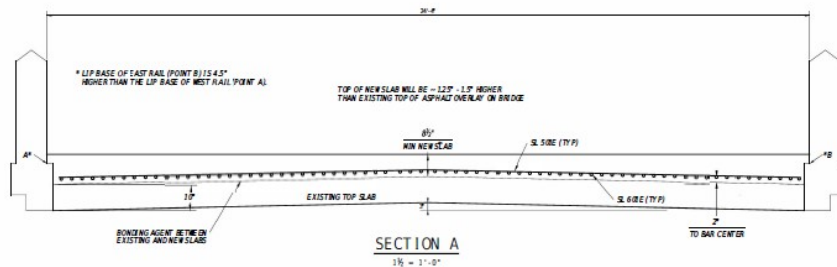
# Bridge Management 2020 Highlights

## Bridge 1-384 Concrete Slab



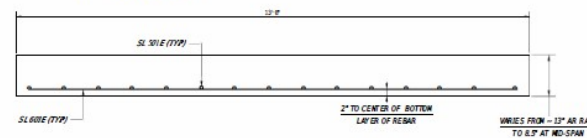
# Bridge Management 2020 Highlights

## Bridge 1-384 Concrete Slab



NOTES:

1. REMOVE EXISTING ASPHALT OVERLAY FROM EXISTING BRIDGE. REMOVE ADDITIONAL ASPHALT AT ENDS OF EXISTING SLAB TO ALLOW FOR CONSTRUCTION OF FORMWORK FOR NEW SLAB.
2. BLAST CLEAN (AIR HOSE) EXISTING TOP SLAB SURFACE.
3. PLACE BONDING AGENT ALONG TOP OF EXISTING CONCRETE SLAB.
4. PLACE BOTTOM LEVEL OF REBAR MAT (AR BARS SPACED AT 12") 6" W/ A 2" DISTANCE FROM THE TOP OF EXISTING CONCRETE SLAB TO CENTER OF BOTTOM LEVEL OF REBAR MAT.
5. PLACE TOP LEVEL OF REBAR MAT (AS BARS SPACED AT 12") DIRECTLY ON TOP OF BOTTOM LEVEL OF REBAR MAT.
6. CONCRETE FOR NEW SLAB SHALL BE CLASS A WITH FC= 28-000' COMPRESSIVE STRENGTH OF 4,951.
7. 300% REBAR TIE REQUIRED.



SECTION B  
3/4" = 3'-0"

REBAR SPECIFICATIONS					BONDING DIMENSIONS (FEET-INCHES)					
QTY	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F
34	5	23'-0"	SL 501E	STR		23'-6"				
48	6	12'-0"	SL 608E	STR	13'-0"					

- ALL REBAR SHALL CONFORM TO AASTHO M31 (ASTM A618), GRADE 60.
- ALL REINFORCING STEEL SHALL BE PROTECTED WITH FUSION BONDED EPOXY AND CONFORM TO AASTHO M284 (D3983).

NO.	DATE	REVISIONS

SCALE AS NOTED

BR 384  
ON DUTCH NECK RD

CONTRACT	BRIDGE NO.	1-384
NO.	DESIGNED BY	MR
COUNTY	CHECKED BY	SW
NOW CAST		

SLAB  
REINFORCEMENT  
DETAIL

SECTION
05
SHEET NO.
1

# Bridge Management

## 2020 Highlights

### Bridge 1-384 Concrete Slab

- Road closed and existing asphalt overlay removal started on Monday, October 19<sup>th</sup>
- Formwork was rebar layout was constructed on the 20<sup>th</sup> & 21<sup>st</sup>
- Concrete poured on the 22<sup>nd</sup>
- Desired 4.5ksi strength of concrete slab was confirmed by 21-day compression test
- Bridge rails repaired/painted and asphalt approach road wedges placed November 16-18<sup>th</sup>
- Bridge reopened by Thursday, November 19<sup>th</sup>
- Cost to place new concrete slab ~\$16k versus \$90-\$100k to complete by SMC Contractor



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## Bridge 1-384 Concrete Slab





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## Bridge 1-384 Concrete Slab





# Bridge Management 2020 Highlights

**Bridge 1-384 Concrete Slab**





# Bridge Management 2020 Highlights

- ▣ Bridge 1-384 Concrete Slab Design & Construction
- ▣ **Bridge 1-076 Emergency Scour Repair**
- ▣ 2020 Bridge Performance Measures





# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair



East Elevation View



North Approach – Looking South

# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair



General View – Looking through bridge structure



# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair



Upstream View



# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair

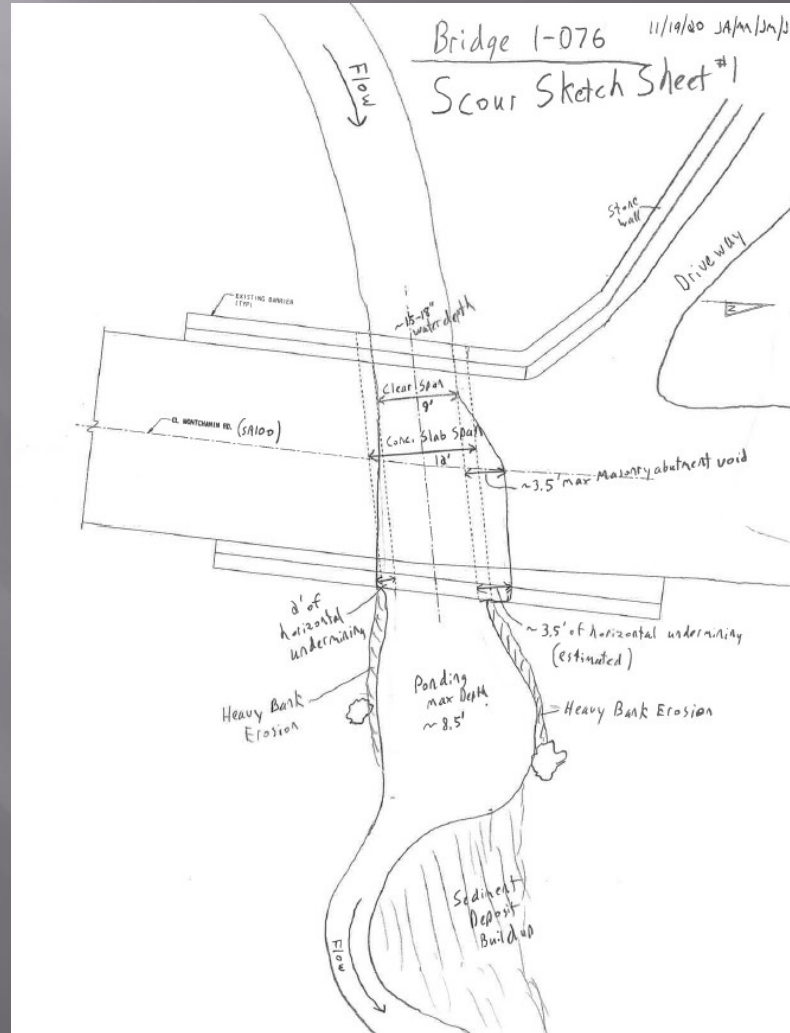


Downstream View



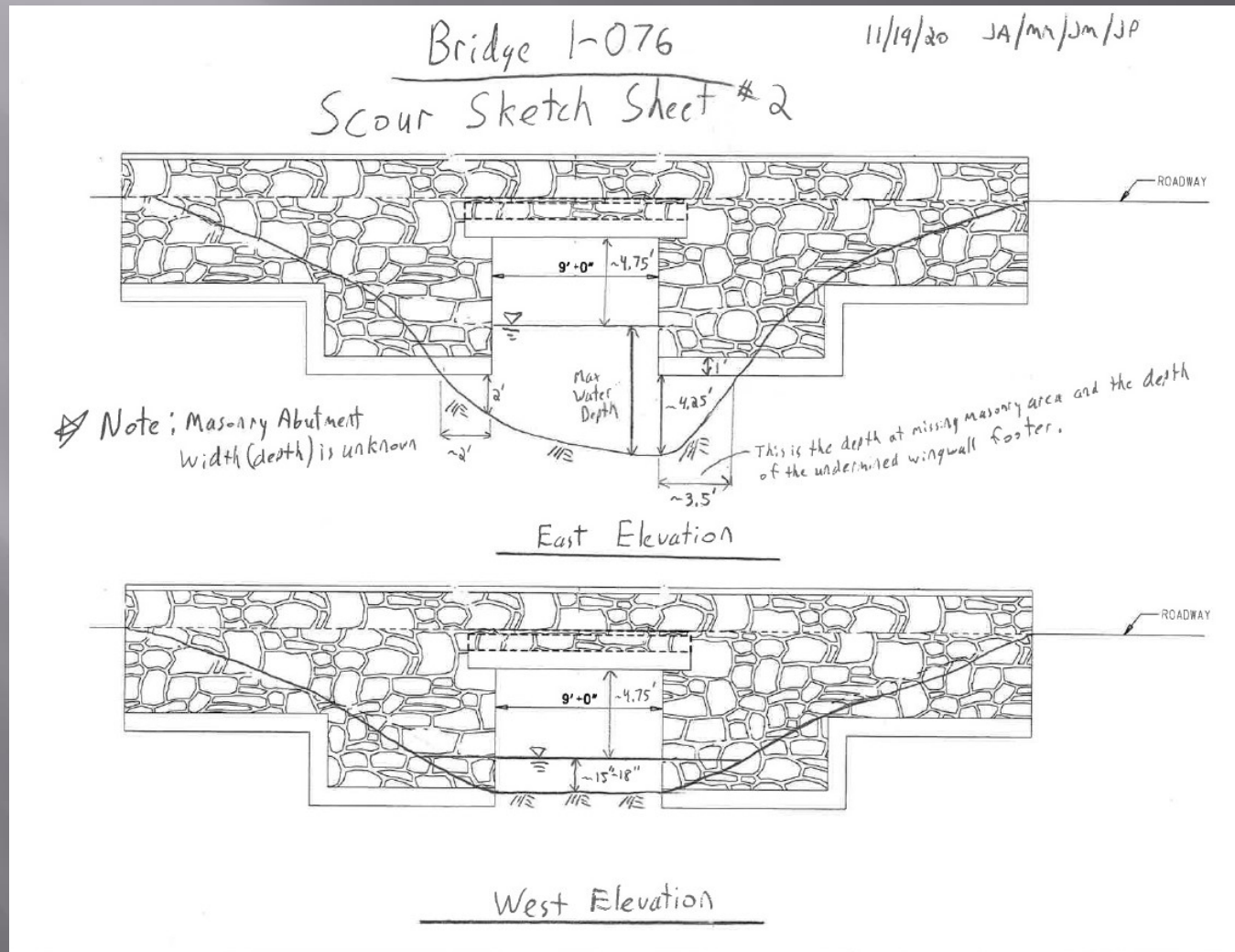
# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair



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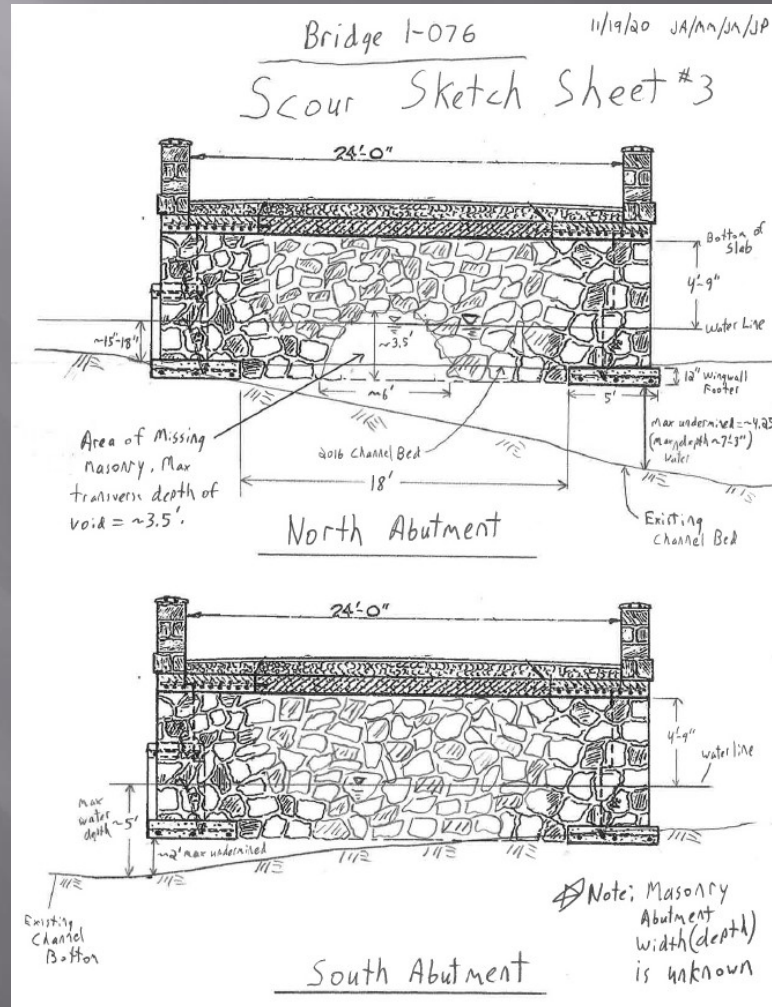
## Bridge 1-076 Emergency Scour Repair





# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair



# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair





# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair



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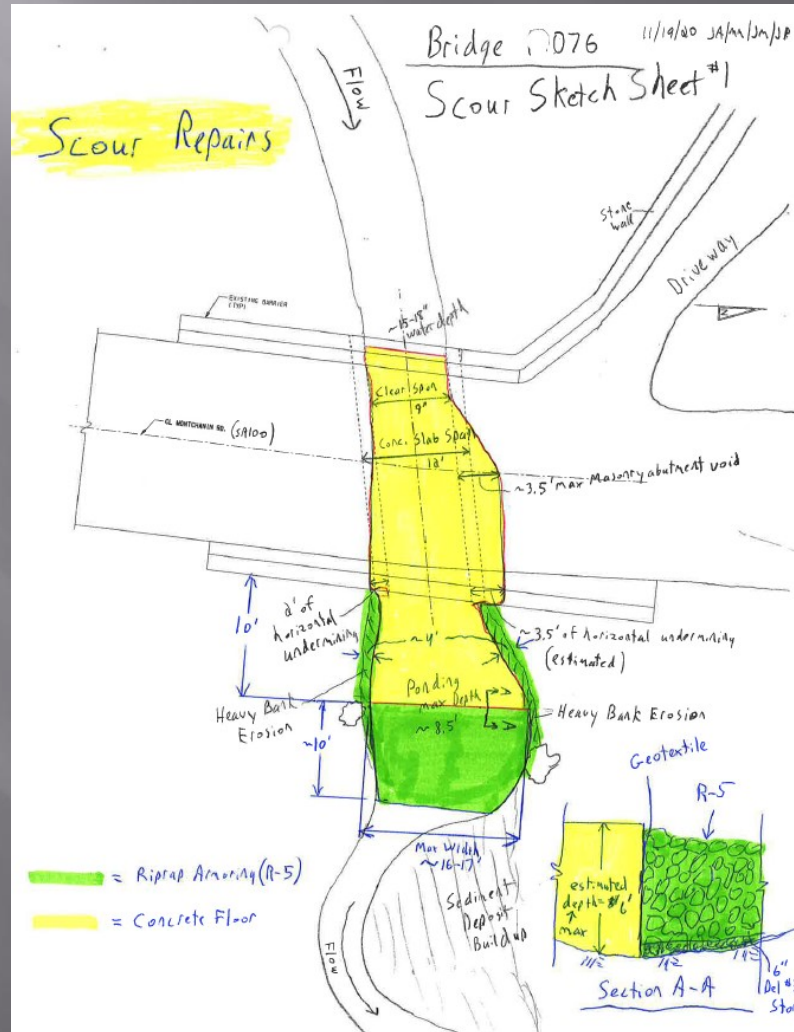
## Bridge 1-076 Emergency Scour Repair





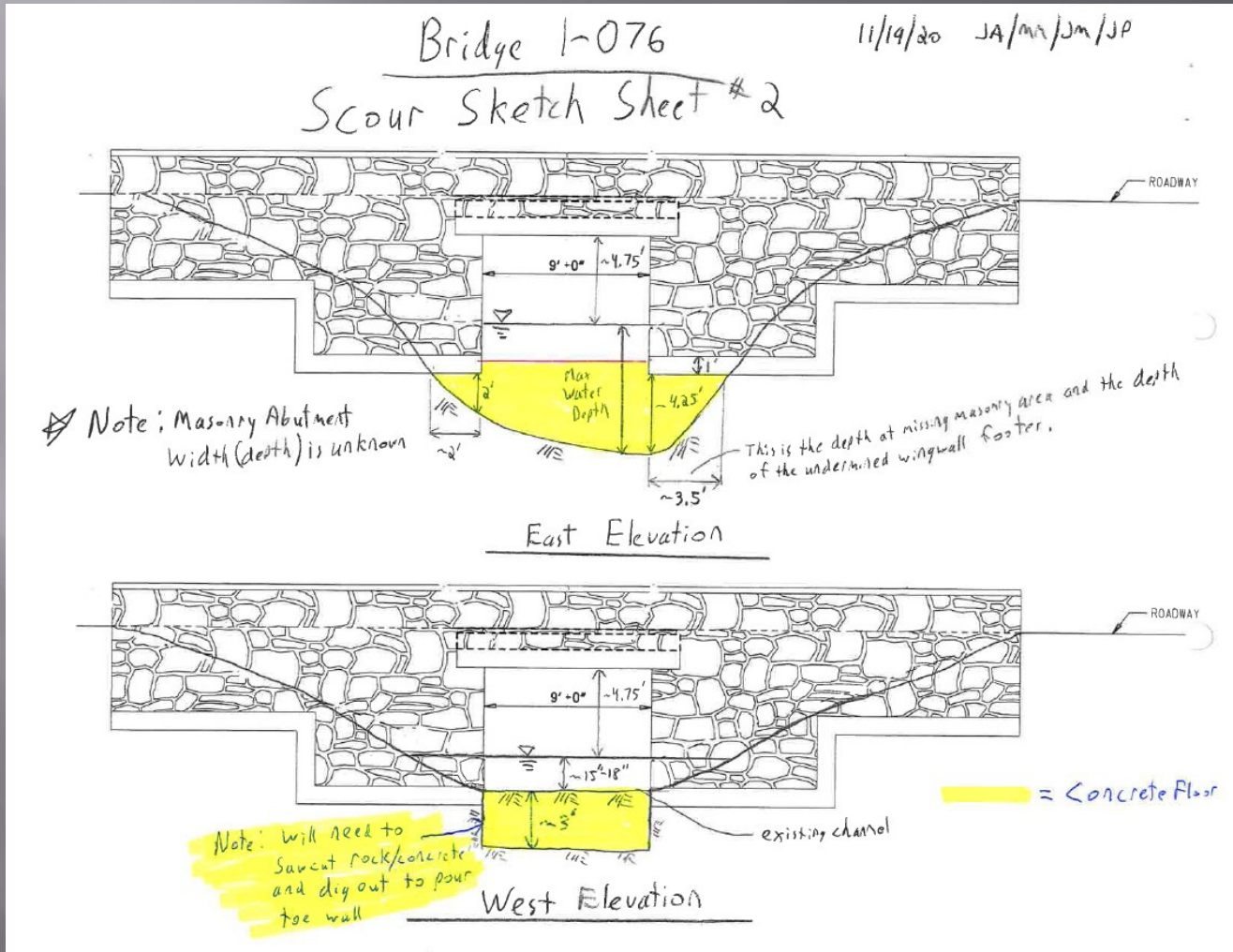
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## Bridge 1-076 Emergency Scour Repair



# Bridge Management 2020 Highlights

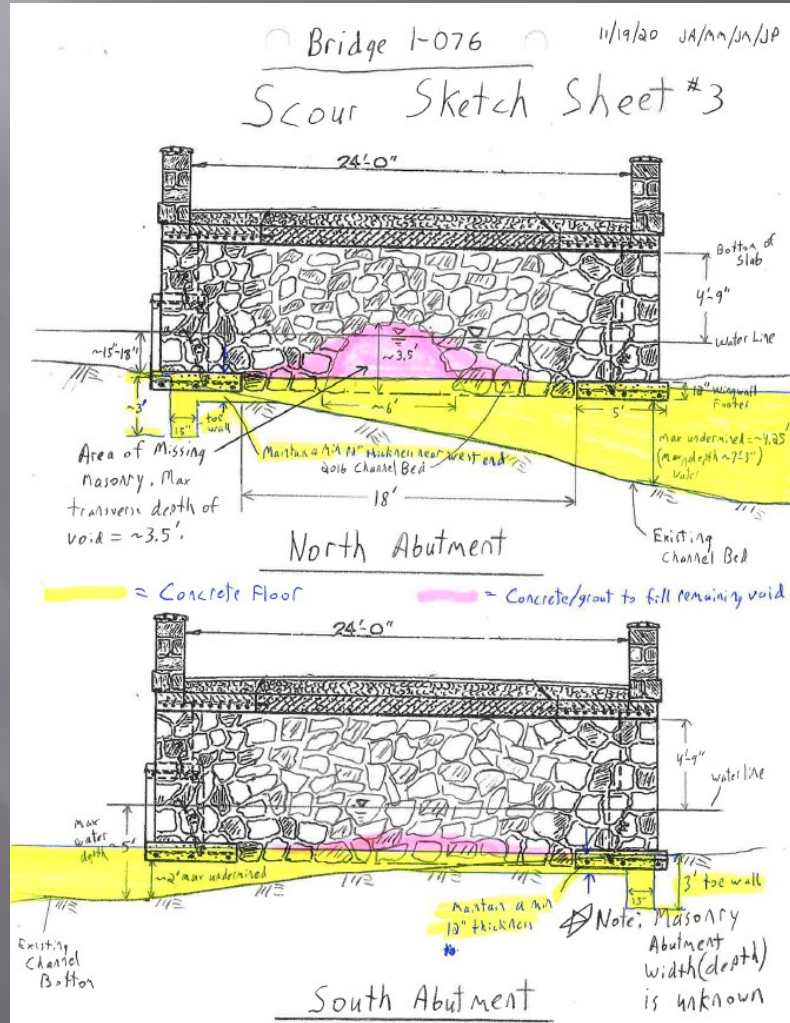
## Bridge 1-076 Emergency Scour Repair





# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair



# Bridge Management 2020 Highlights

## Bridge 1-076 Emergency Scour Repair





# Bridge Management

## 2020 Highlights

### Bridge 1-076 Emergency Scour Repair

#### Timeline:

- Wednesday, November 18<sup>th</sup>: Routine Bridge Inspection Occurred
- Thursday, November 19<sup>th</sup>: Scour conditions verified & road closed
- Friday, November 20<sup>th</sup>: Repair design confirmed & sent to contractor
- Monday, November 23<sup>rd</sup>: Contractor mobilized & started dewatering
- Tuesday, November 24<sup>th</sup>: Dewatering complete & field measurements taken to confirm concrete and riprap quantities
- Wednesday, November 25<sup>th</sup>: Concrete poured
- Thursday, November 26<sup>th</sup>: Thanksgiving (no work)
- Friday, November 27<sup>th</sup>: Formwork pulled, riprap placed, and road reopened

# Bridge Management 2020 Highlights

- ▣ Bridge 1-384 Concrete Slab Design & Construction
- ▣ Bridge 1-076 Emergency Scour Repair
- ▣ **2020 Bridge Performance Measures**



# Bridge Management 2020 Highlights

## 2020 Bridge Performance Measures

Condition Rating	All DeIDOT Bridges		DeIDOT NBI Bridges		DeIDOT State Bridges	
	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges
Poor ( $\leq 4$ )	29	<b>1.6%</b>	13	<b>1.5%</b>	16	<b>1.7%</b>
Fair = 5	261	14.7%	144	17.1%	117	12.5%
Good ( $\geq 6$ )	1488	<b>83.7%</b>	687	<b>81.4%</b>	801	<b>85.8%</b>
Total =	1,778	100.0%	844	100.0%	934	100.0%

Bridge Performance Measures	
	# of Bridges
Poor/SD ( $\leq 4$ )	$\leq 5\%$
Good ( $\geq 6$ )	$\geq 75\%$

# Bridge Management

## 2020 Highlights

### 2020 Bridge Performance Measures

Bridge Condition Rating	2011		2012		2013		2014		2015		2016		2017		2018		2019		2020	
	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges	# of Bridges	% of Bridges
Poor (0-4)	116	7.4%	92	5.8%	87	5.5%	111	6.8%	107	6.4%	87	5.1%	70	4.1%	58	3.3%	42	2.4%	29	1.6%
Fair (5)	310	19.8%	331	21.0%	307	19.3%	304	18.7%	329	19.7%	390	22.7%	380	22.1%	314	17.8%	271	15.3%	261	14.7%
Good (6-9)	1,140	72.8%	1,152	73.1%	1,198	75.3%	1,211	74.5%	1,238	74.0%	1,239	72.2%	1,267	73.8%	1,392	78.9%	1,463	82.4%	1,488	83.7%
Totals	1,566	100%	1,575	100%	1,592	100%	1,626	100%	1,674	100%	1,716	100%	1,717	100%	1,764	100%	1,776	100%	1,778	100%

■ = Did not meet performance measure

■ = Met performance measure



# Bridge Management 2020 Highlights

**Questions or Comments?**

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