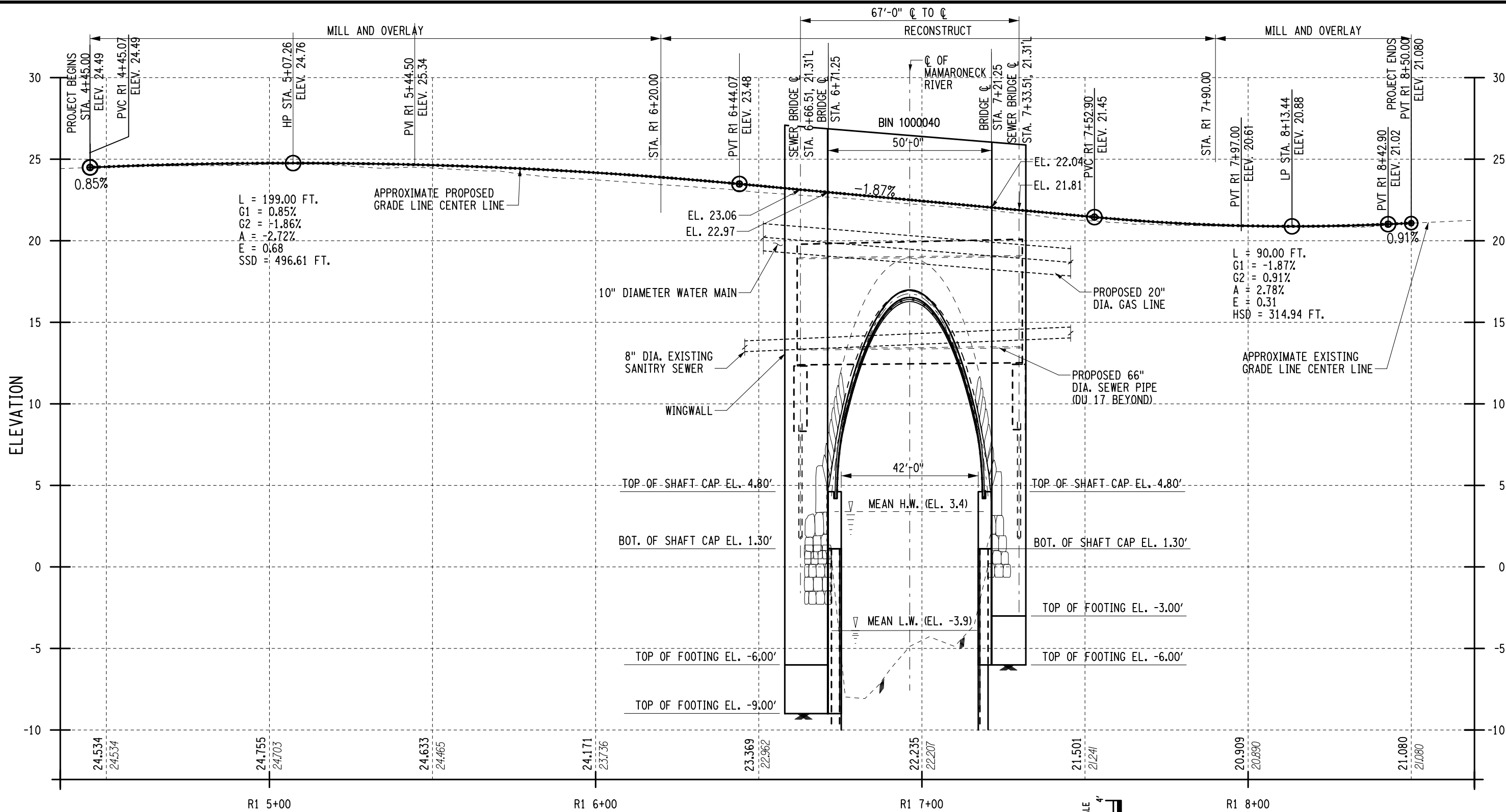


US Route 1 Over Mamaroneck River Joint Permit Application  
ILLUSTRATION NAME = 847314\_cpl-001 Pro Bridge.dgn  
DATE/TIME = 09-JUL-2021 17:06  
USER = rrozeik

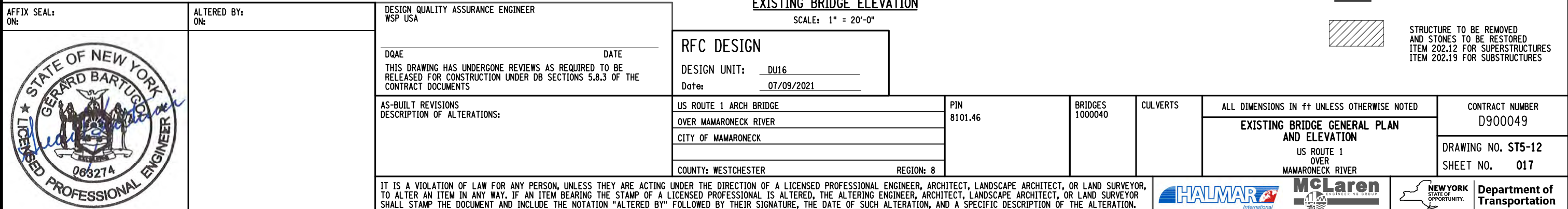
JOB MANAGER K. SHAO  
DESIGN J. MORALES  
CHECK P. LANTIGUA  
DRAFTING J. ISSA & R. ROZEIK  
CHECK L. ARMENDINGER  
PROJECT MANAGER G. BARTUCCI

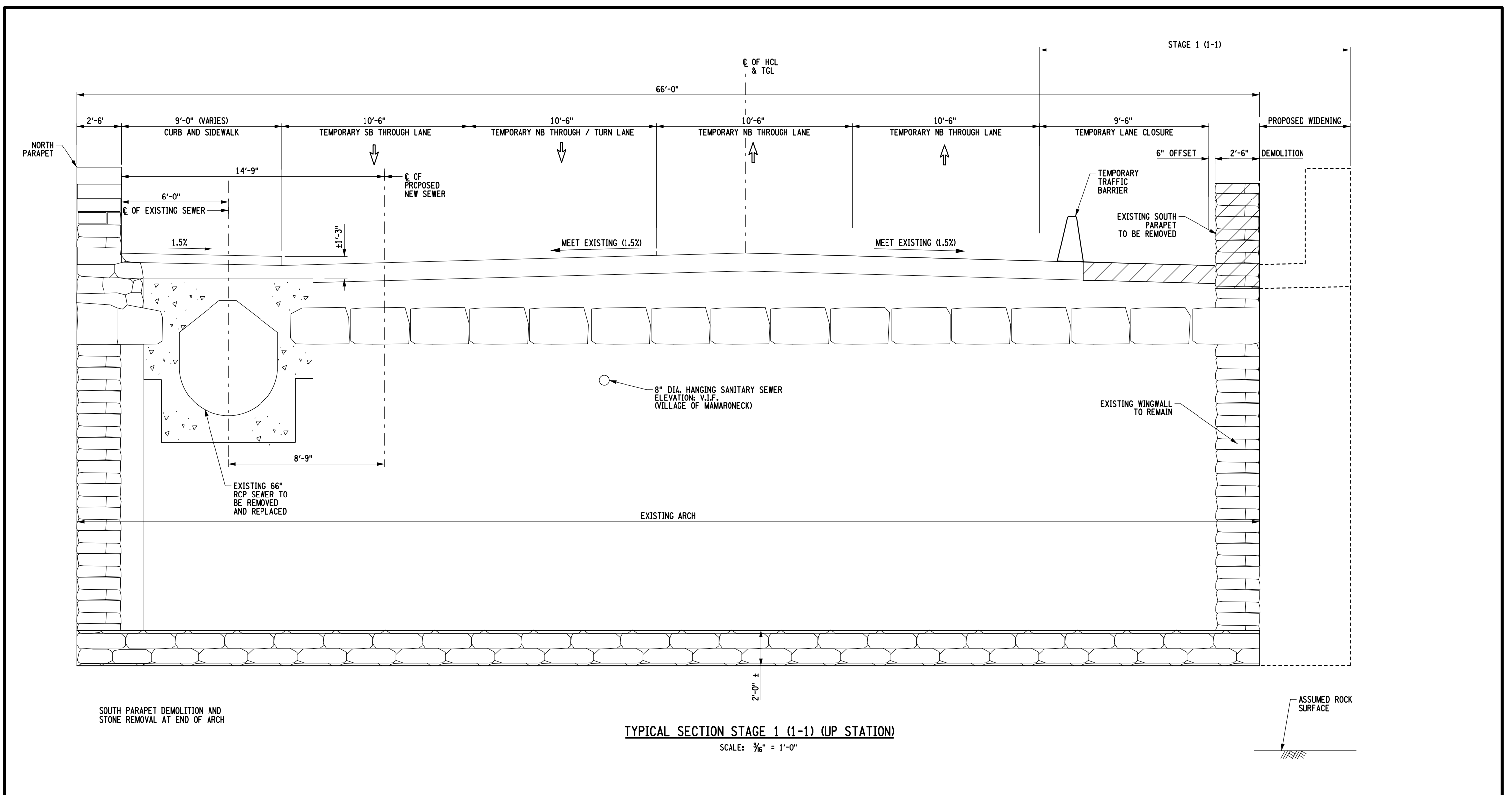


AFFIX SEAL: ON:		ALTERED BY: ON:		DESIGN QUALITY ASSURANCE ENGINEER WSP USA	
		DQAE		DATE	
		THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS			
		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:			
		RFC DESIGN			
DESIGN UNIT: DU16		DATE: 07/09/2021		PIN 8101.46	
US ROUTE 1 ARCH BRIDGE		OVER MAMARONECK RIVER		BRIDGES 1000040	
CITY OF MAMARONECK		COUNTY: WESTCHESTER		REGION: 8	
CONTRACT NUMBER D900049		DRAWING NO. ST5-11		SHEET NO. 016	
ARCH BRIDGE PROFILE		US ROUTE 1 OVER MAMARONECK RIVER		ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.







TYPICAL SECTION STAGE 1 (1-1) (UP STATION)

SCALE: 3/8" = 1'-0"

AFFIX SEAL: ON:		ALTERED BY: ON:		DESIGN QUALITY ASSURANCE ENGINEER WSP USA	
		DQAE _____ DATE _____		RFC DESIGN	
		THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS		DESIGN UNIT: DU16 Date: 07/09/2021	
		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		US ROUTE 1 ARCH BRIDGE	
				OVER MAMARONECK RIVER	
				CITY OF MAMARONECK	
				COUNTY: WESTCHESTER REGION: 8	
				PIN 8101.46	
				BRIDGES 1000040	
				CULVERTS	
				ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	
				CONTRACT NUMBER D900049	
				DRAWING NO. ST5-13	
				SHEET NO. 018	
				TYPICAL SECTION STAGE 1 (1-1) US ROUTE 1 OVER MAMARONECK RIVER	
				HALMAR International	
				McLaren ENGINEERING GROUP	
				NEW YORK STATE OF OPPORTUNITY	
				Department of Transportation	

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.





SCALE:  $\frac{3}{16}" = 1'-0"$

DESIGN UNIT: DU16  
Date: 07/09/2021

1. DRILLED SHAFTS ARE TO BE CONSTRUCTED DURING LATE NIGHT AND WEEKENDS.
2. NON-SHRINK GROUT SHALL CONFORM TO SECTIONS 701-05 OF NEW YORK STATE DOT STANDARD SPECIFICATIONS, MEET ASTM C1107 AND BE PAID FOR UNDER ITEM 564.2001008.

DQAE	DATE
THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS	

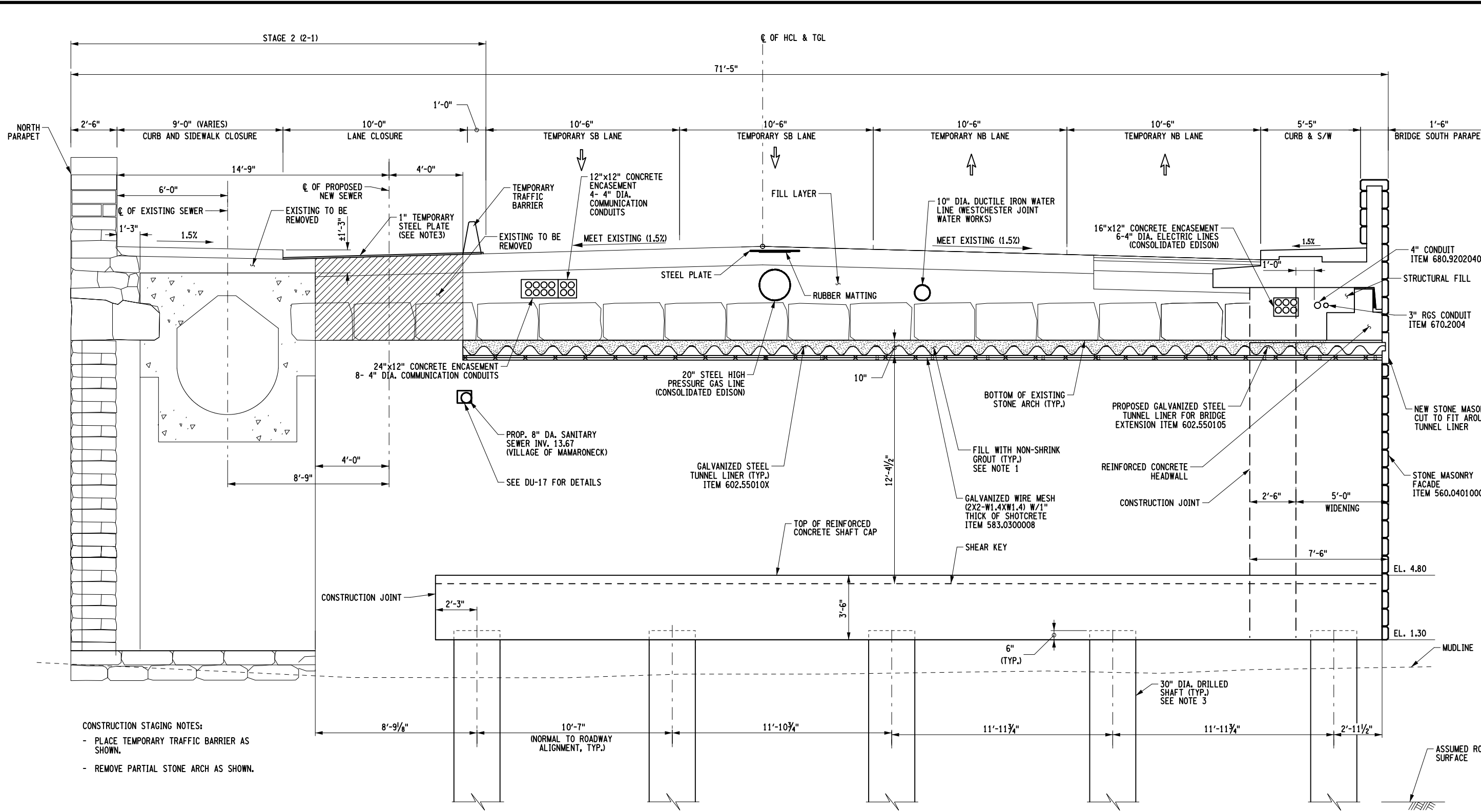
DRAWING NO. ST5-14  
SHEET NO. 019

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



FILE NAME = 847314\_sph\_00\_sec\_10p\_STAGE 2 (2-1).dgn  
DATE/TIME = 09-JUL-2021 17:06  
USER = rrozeik

PROJECT MANAGER G. BARTUCCI  
CHECK L. ARMENDINGER  
DRAFTING J. ISSA & R. ROZEIK  
CHECK P. LANTIGUA  
DESIGN J. MORALES  
JOB MANAGER K. SHAO

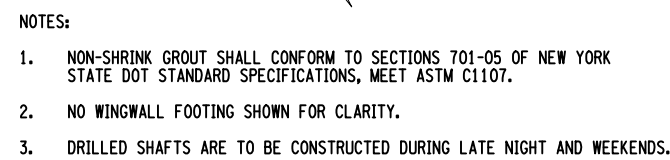


TYPICAL SECTION STAGE 2 (2-1) (UP STATION)

SCALE: 3/16" = 1'-0"

- NOTES:
1. NON-SHRINK GROUT SHALL CONFORM TO SECTIONS 701-05 OF NEW YORK STATE DOT STANDARD SPECIFICATIONS, MEET ASTM C1107.
  2. NO WINGWALL FOOTING SHOWN FOR CLARITY.
  3. 1" THICK STEEL PLATE SHALL BE PLACED WHEN FOUR LANES ARE OPEN TO COVER THE TRENCH AND SUPPORT TEMPORARY BARRIERS.

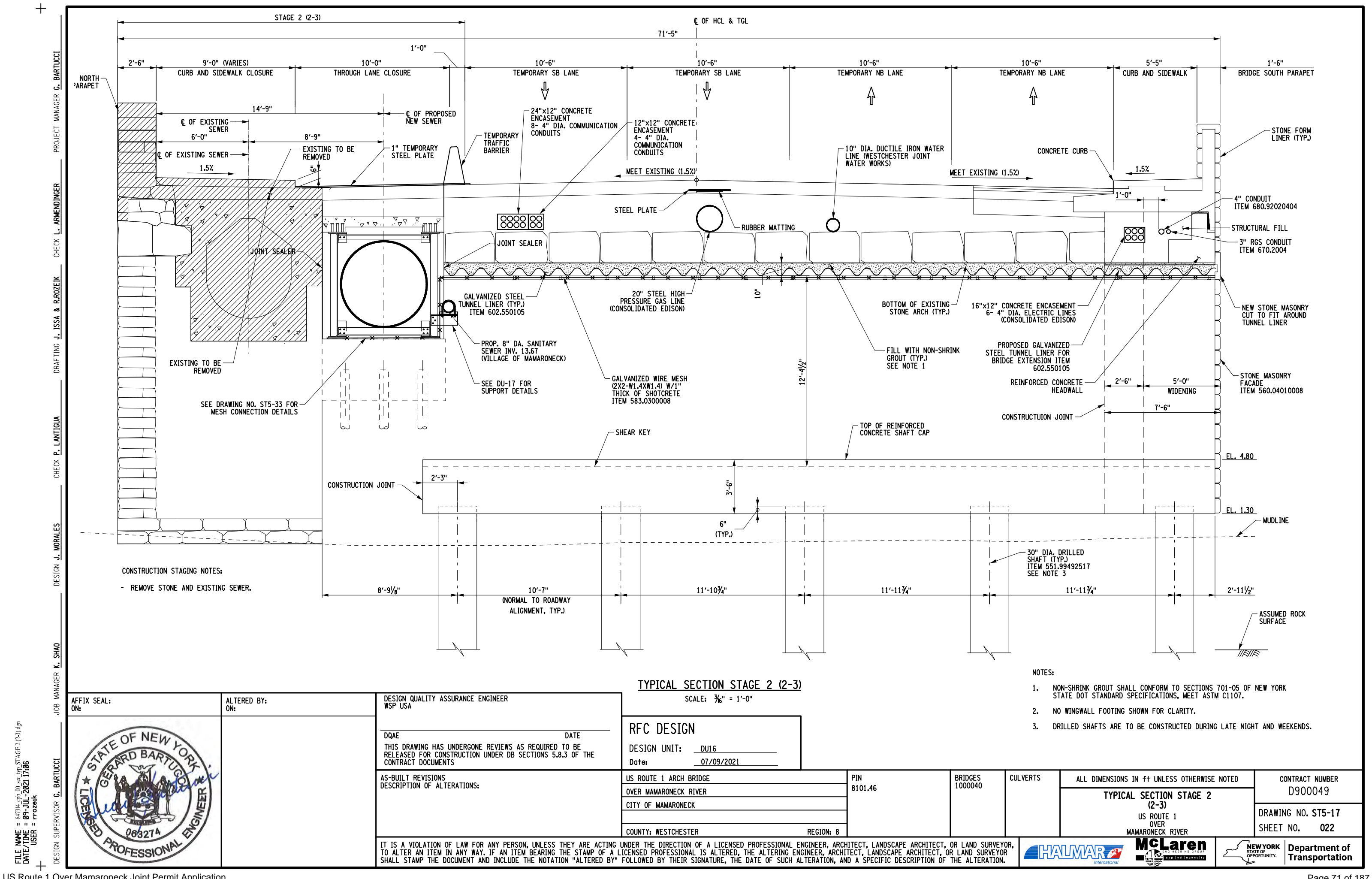
AFFIX SEAL: ON:		ALTERED BY: ON:		DESIGN QUALITY ASSURANCE ENGINEER WSP USA	
		DQAE		DATE	
		THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS			
		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:			
		RFC DESIGN			
DESIGN UNIT: DU16		DATE: 07/09/2021			
US ROUTE 1 ARCH BRIDGE		PIN 8101.46		BRIDGES 1000040	
OVER MAMARONECK RIVER					
CITY OF MAMARONECK					
COUNTY: WESTCHESTER		REGION: 8			
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.		CULVERTS		ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	
				TYPICAL SECTION STAGE 2 (2-1)	
				US ROUTE 1 OVER MAMARONECK RIVER	
				CONTRACT NUMBER D900049	
				DRAWING NO. ST5-15	
				SHEET NO. 020	



SCALE:  $\frac{3}{16}" = 1'-0"$

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.





FILE NAME = 847314\_sph\_00\_sec\_00p\_STAGE 2 (2-3).dgn  
DATE/TIME = 09-JUL-2021 17:06  
USER = r-rozeik

PROJECT MANAGER G. BARTUCCI  
CHECK L. ARMENDINGER  
DRAFTING J. ISSA & R. ROZEIK  
CHECK P. LANTIGUA  
DESIGN J. MORALES  
JOB MANAGER K. SHAO

DESIGN SUPERVISOR G. BARTUCCI

AFFIX SEAL: ON:		ALTERED BY: ON:		DESIGN QUALITY ASSURANCE ENGINEER WSP USA	
		DQAE		DATE	
		THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS			
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		DESIGN UNIT: DU16		PIN 8101.46	
		DATE: 07/09/2021		BRIDGES 1000040	
		US ROUTE 1 ARCH BRIDGE		CULVERTS	
		OVER MAMARONECK RIVER		ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	
		CITY OF MAMARONECK		TYPICAL SECTION STAGE 2 (2-3)	
		COUNTY: WESTCHESTER REGION: 8		US ROUTE 1 OVER MAMARONECK RIVER	
		CONTRACT NUMBER D900049		DRAWING NO. ST5-17	
		SHEET NO. 022			
		IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.		HALMAR	
				McLaren	
		NEW YORK STATE OF OPPORTUNITY		Department of Transportation	



CONSTRUCTION STAGING NOTES:

- CONSTRUCT REST OF DRILLED SHAFTS.
- CONSTRUCT CONCRETE CAP ON DEILLED SHAFTS.
- COMPLETE INSTALLATION OF STEEL ARCH LINER.
- CONSTRUCT NEW SIDEWALK AT NORTH.
- EXISTING ROADWAY PAVEMENT TO BE RECONSTRUCTED DURING WEEKENDS AND NON-PEAK HOURS.

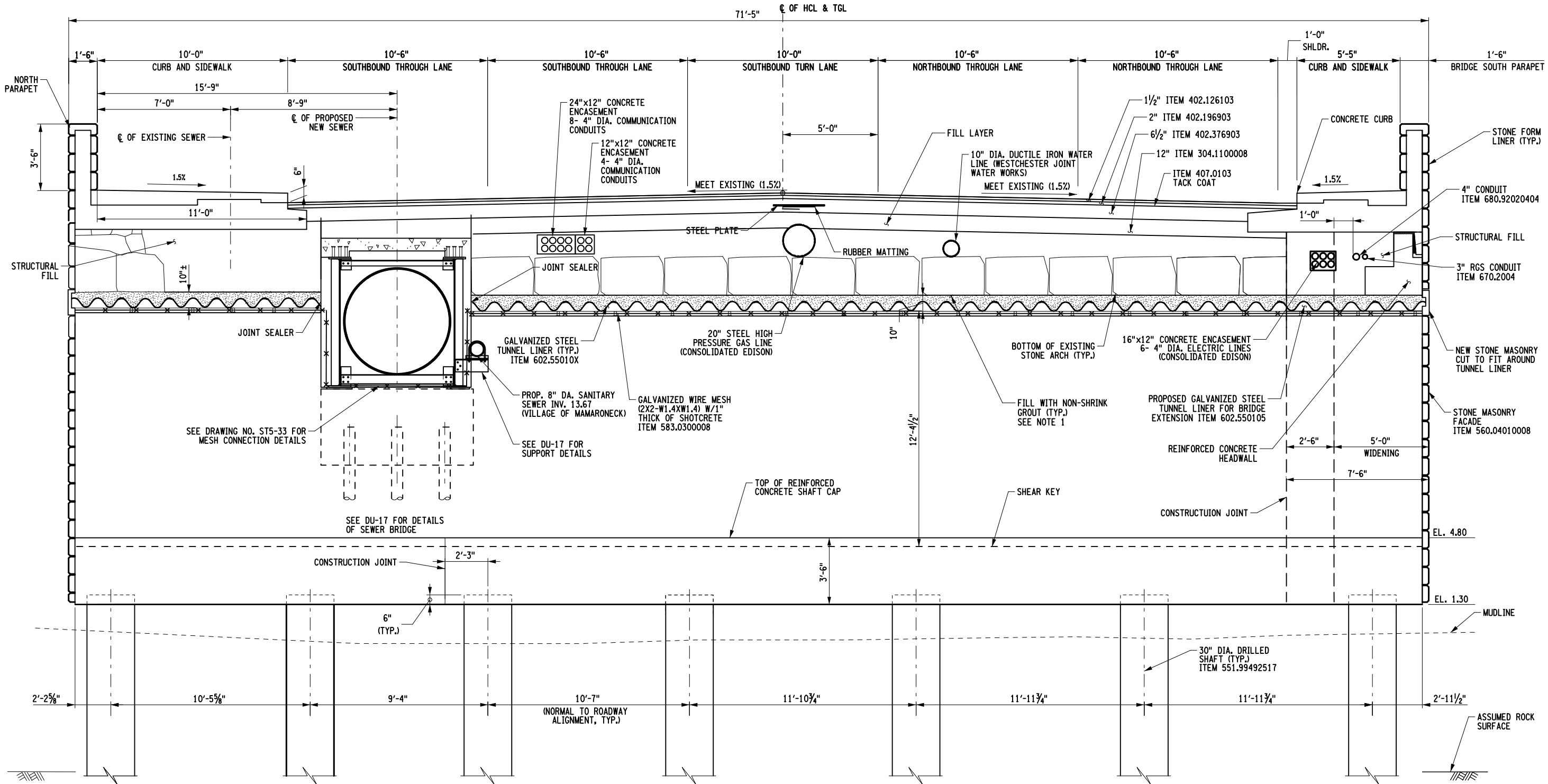
1. NON-SHRINK GROUT SHALL CONFORM TO SECTIONS 701-05 OF NEW YORK STATE DOT STANDARD SPECIFICATIONS, MEET ASTM C1107.
2. NO WINGWALL FOOTING SHOWN FOR CLARITY.
3. DRILLED SHAFT ROADWAY PAVEMENT AND UTILITIES ARE TO BE CONSTRUCTED OR INSTALLED DURING LATE NIGHT AND WEEKENDS.

Page 72 of 187



FILE NAME = 847314\_sph\_00\_sec\_10p\_STAGE.3 (2).dgn  
DATE/TIME = 09-JUL-2021 17:06  
USER = rrozeik

PROJECT MANAGER G. BARTUCCI  
CHECK L. ARMENDINGER  
DRAFTING J. ISSA & R. ROZEIK  
CHECK P. LANTIGUA  
DESIGN J. MORALES  
JOB MANAGER K. SHAO



FINAL CONDITION  
SCALE: 3/16" = 1'-0"

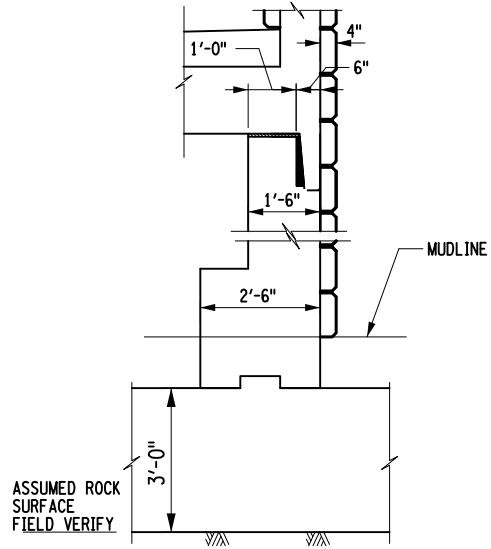
- NOTES:
- NON-SHRINK GROUT SHALL CONFORM TO SECTIONS 701-05 OF NEW YORK STATE DOT STANDARD SPECIFICATIONS, MEET ASTM C1107.
  - NO WINGWALL FOOTING SHOWN FOR CLARITY.

AFFIX SEAL: ON:	ALTERED BY: ON:	DESIGN QUALITY ASSURANCE ENGINEER WSP USA	RFC DESIGN		DESIGN UNIT: DU16		DATE: 07/09/2021		US ROUTE 1 ARCH BRIDGE		PIN 8101.46	BRIDGES 1000040	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER D900049
			DQAE DATE		THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		OVER MAMARONECK RIVER		COUNTY: WESTCHESTER	REGION: 8		US ROUTE 1 OVER MAMARONECK RIVER	DRAWING NO. ST5-19 SHEET NO. 024
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.															

FILE NAME = 847314\_sph\_00\_ahb\_pht.dgn  
DATE/TIME = 09-JUL-2021 17:06  
USER = rrozeik

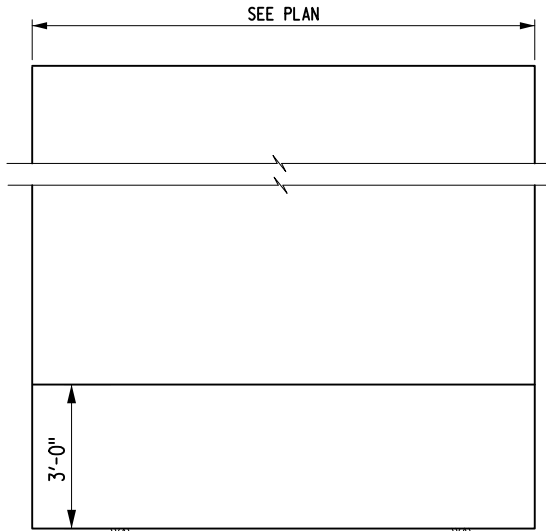
PROJECT MANAGER G. BARTUCCI  
CHECK L. ARMENDINGER  
DRAFTING J. ISSA & R. ROZEIK  
CHECK P. LANTIGUA  
DESIGN J. MORALES  
JOB MANAGER K. SHAO  
DESIGN SUPERVISOR G. BARTUCCI

BEGIN ABUTMENT SHAFT TABLE		END ABUTMENT SHAFT TABLE	
SHAFT NO.	LENGTH BELOW CUT-OFF	MICROPILE NO.	LENGTH BELOW CUT-OFF
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	



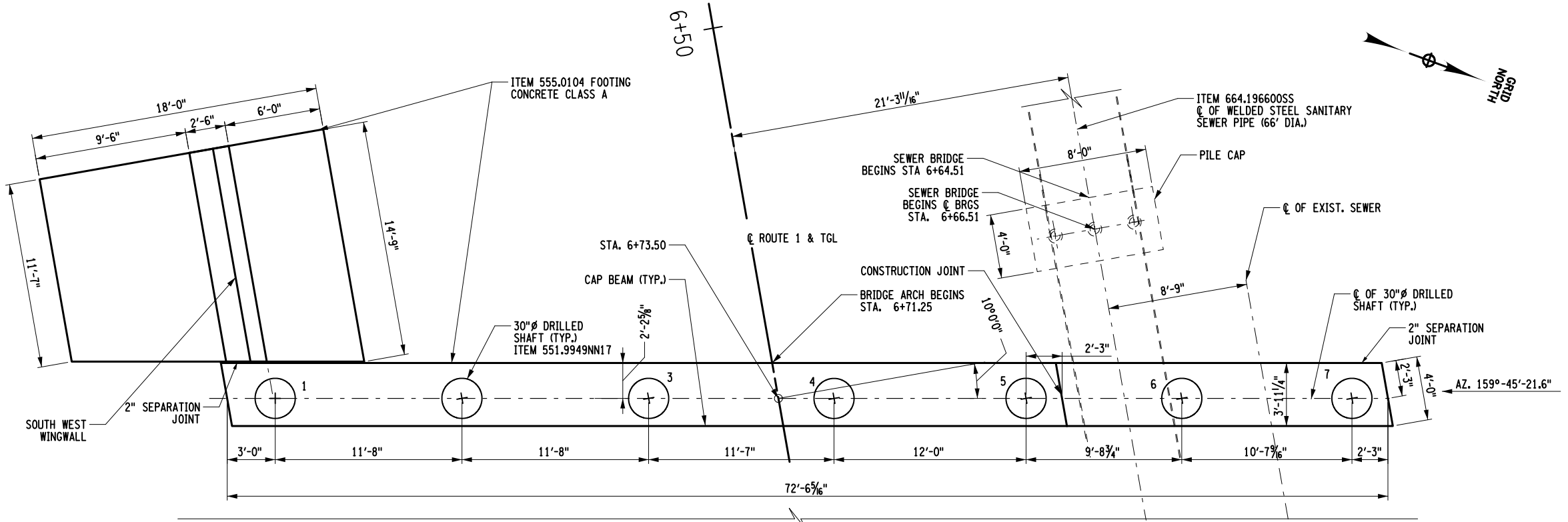
SOUTHEAST WINGWALL SECTION

SCALE: 1/4" = 1'-0"



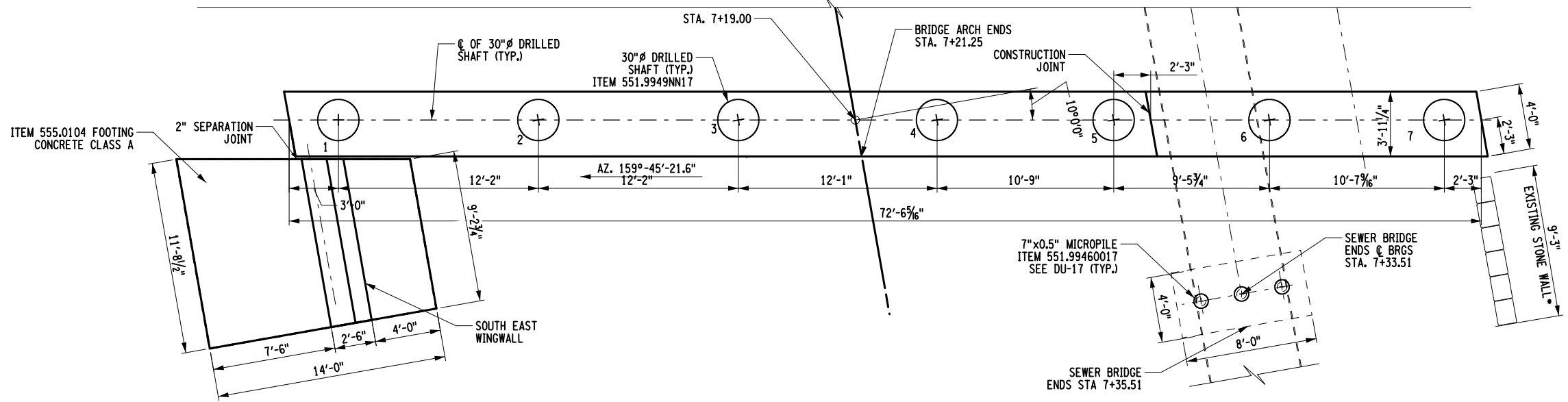
SOUTHEAST WINGWALL

SCALE: 1/4" = 1'-0"



BEGIN ABUTMENT SHAFT LAYOUT PLAN

SCALE: 1/8" = 1'-0"

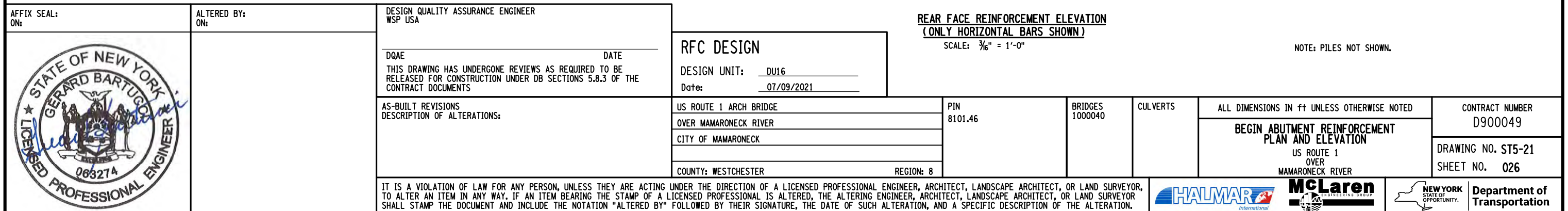


END ABUTMENT SHAFT LAYOUT PLAN

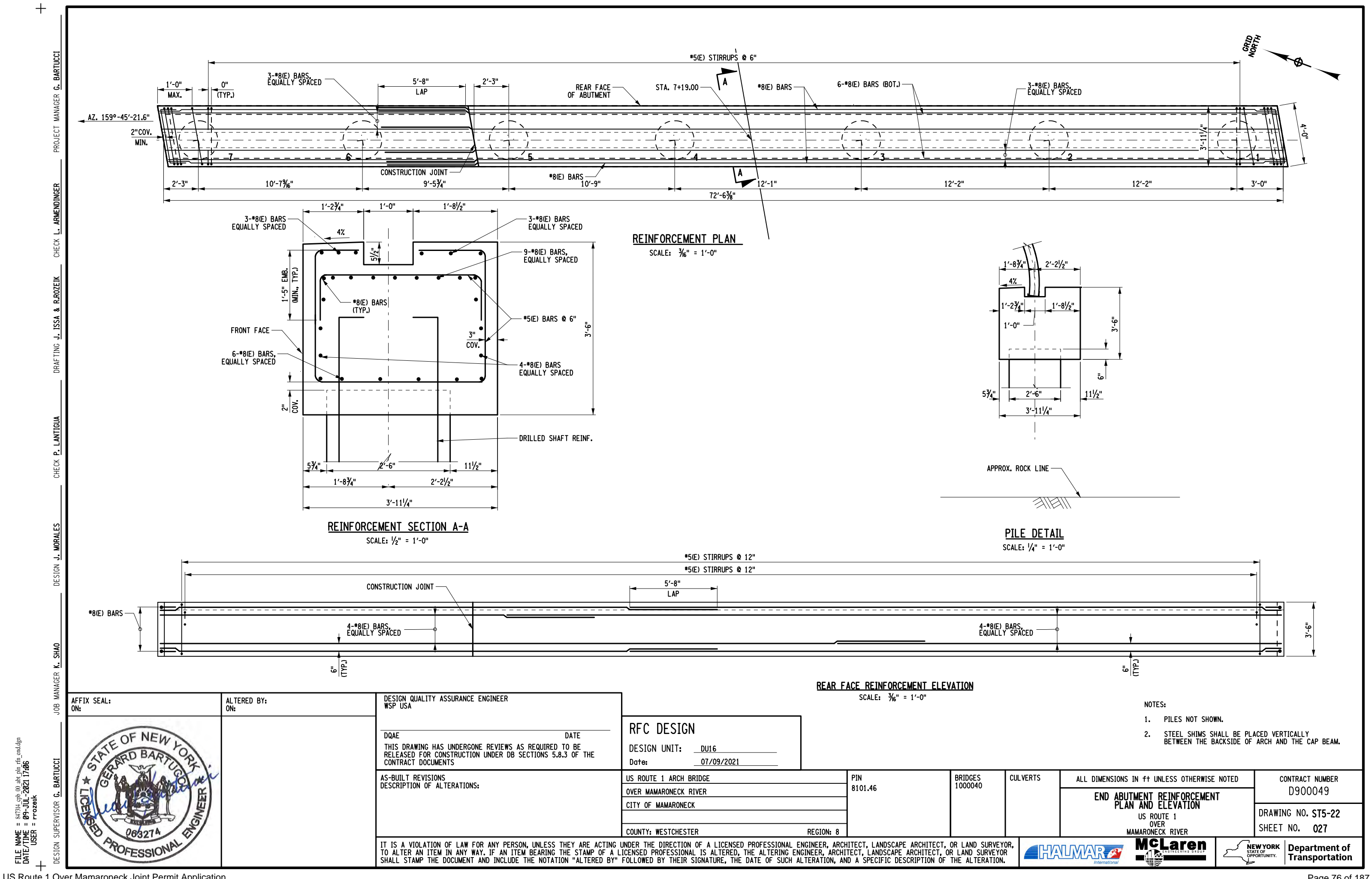
SCALE: 1/8" = 1'-0"

SEE ST5-25 FOR SIDEWALK AND WALL SECTION OVER THE STONE WALL.

AFFIX SEAL: ON:	ALTERED BY: ON:	DESIGN QUALITY ASSURANCE ENGINEER WSP USA	RFC DESIGN		PIN 8101.46		BRIDGES 1000040		CULVERTS		ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED		CONTRACT NUMBER D900049		
		DQAE THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS	DATE 07/09/2021	DESIGN UNIT: DU16								BEGIN & END ABUTMENT PLAN		DRAWING NO. ST5-20	
		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		US ROUTE 1 ARCH BRIDGE										SHEET NO. 025	
				OVER MAMARONECK RIVER											
				CITY OF MAMARONECK											
				COUNTY: WESTCHESTER		REGION: 8						US ROUTE 1 OVER MAMARONECK RIVER		Department of Transportation	
		IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.													







FILE NAME = 847314\_sph\_00\_ahh\_pht\_rfd.dgn  
DATE/TIME = 09-JUL-2021 17:06  
USER = rrozeik

DESIGN SUPERVISOR G. BARTUCCI

JOB MANAGER K. SHAO

DESIGN J. MORALES

DRAFTING J. ISSA & R. ROZEIK

CHECK L. ARMENDINGER

PROJECT MANAGER G. BARTUCCI

AFFIX SEAL:  
ON:



ALTERED BY:  
ON:

DESIGN QUALITY ASSURANCE ENGINEER  
WSP USA

DQAE DATE  
THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE  
RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE  
CONTRACT DOCUMENTS

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

RFC DESIGN

DESIGN UNIT: DU16  
Date: 07/09/2021

US ROUTE 1 ARCH BRIDGE

OVER MAMARONECK RIVER

CITY OF MAMARONECK

COUNTY: WESTCHESTER

REGION: 8

PIN  
8101.46

BRIDGES  
1000040

CULVERTS

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

WINGWALL REINFORCEMENT DETAILS

US ROUTE 1  
OVER  
MAMARONECK RIVER

CONTRACT NUMBER  
D900049

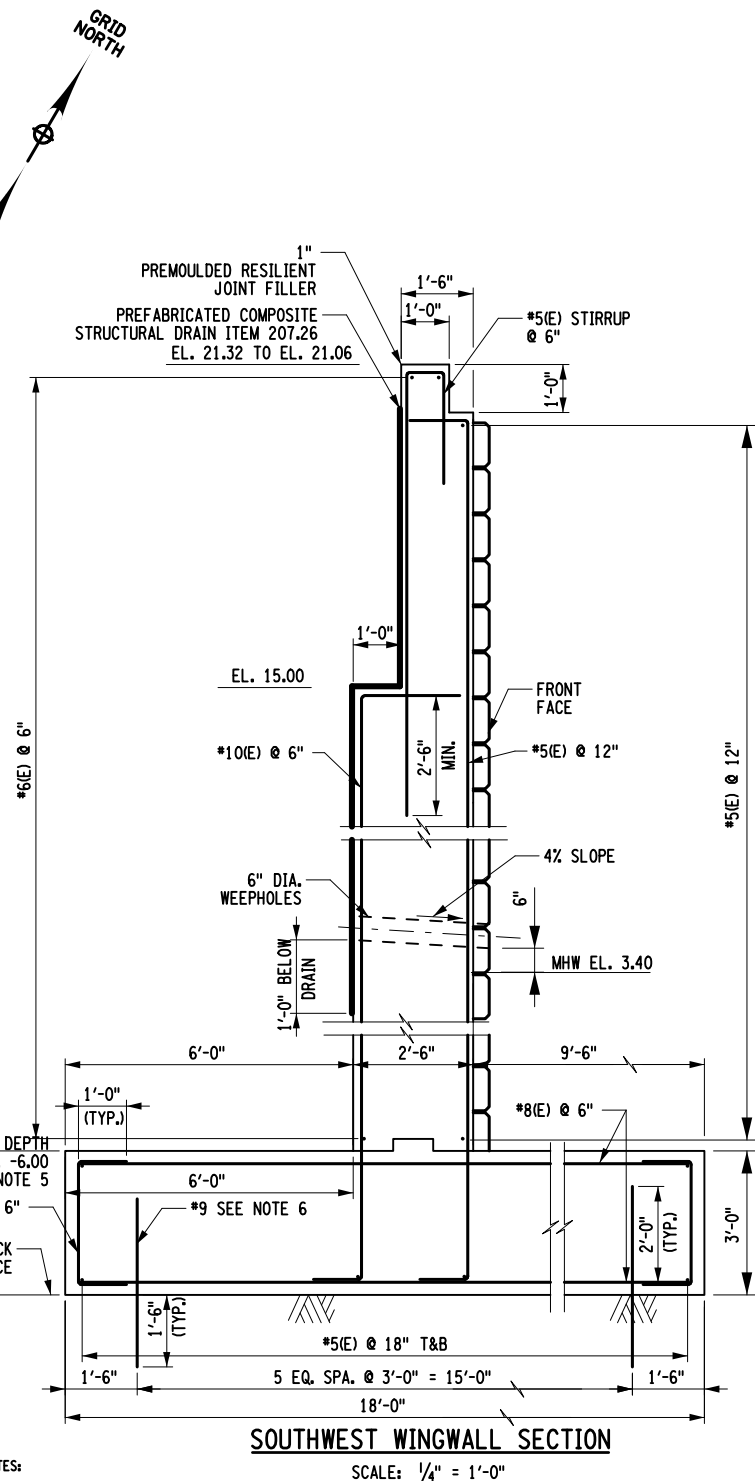
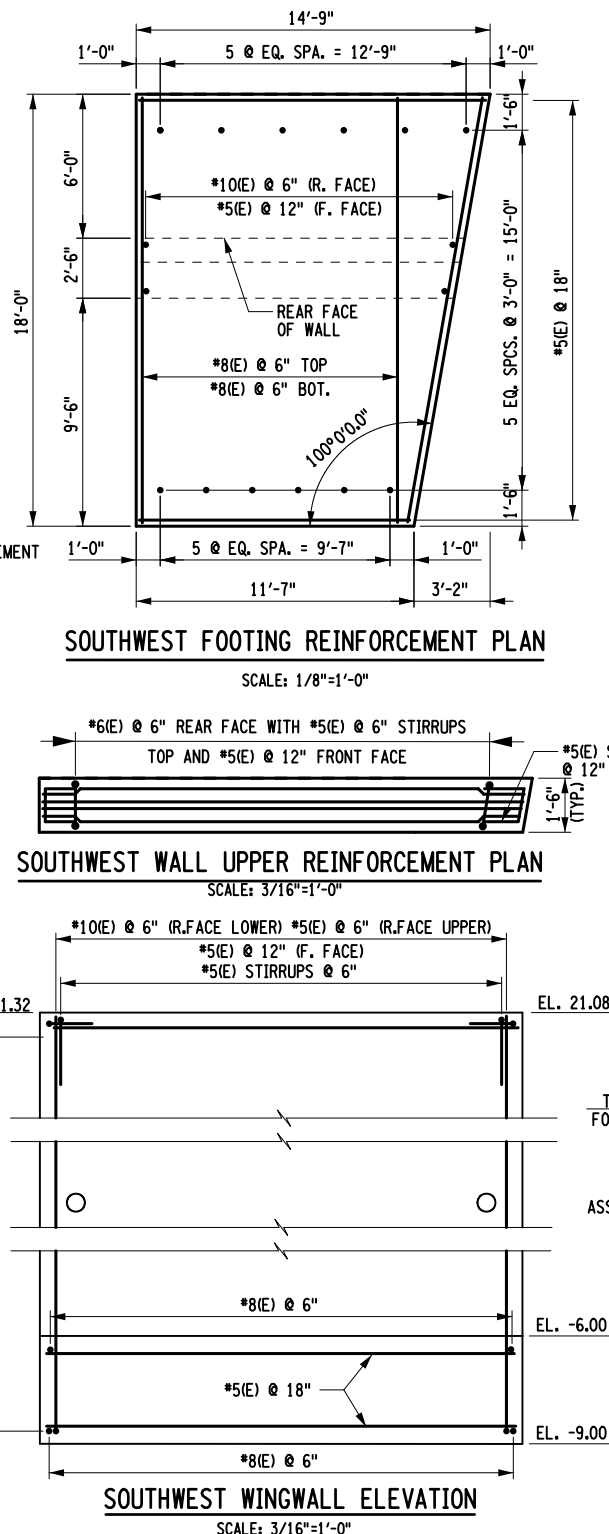
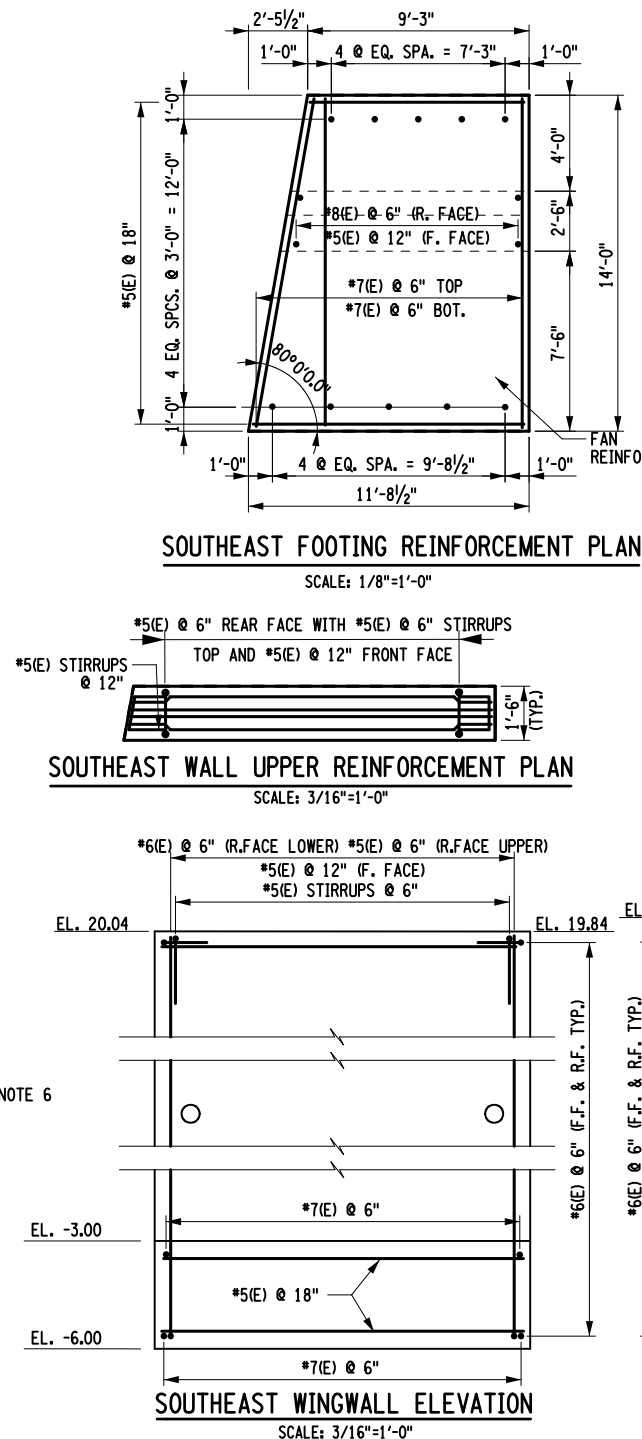
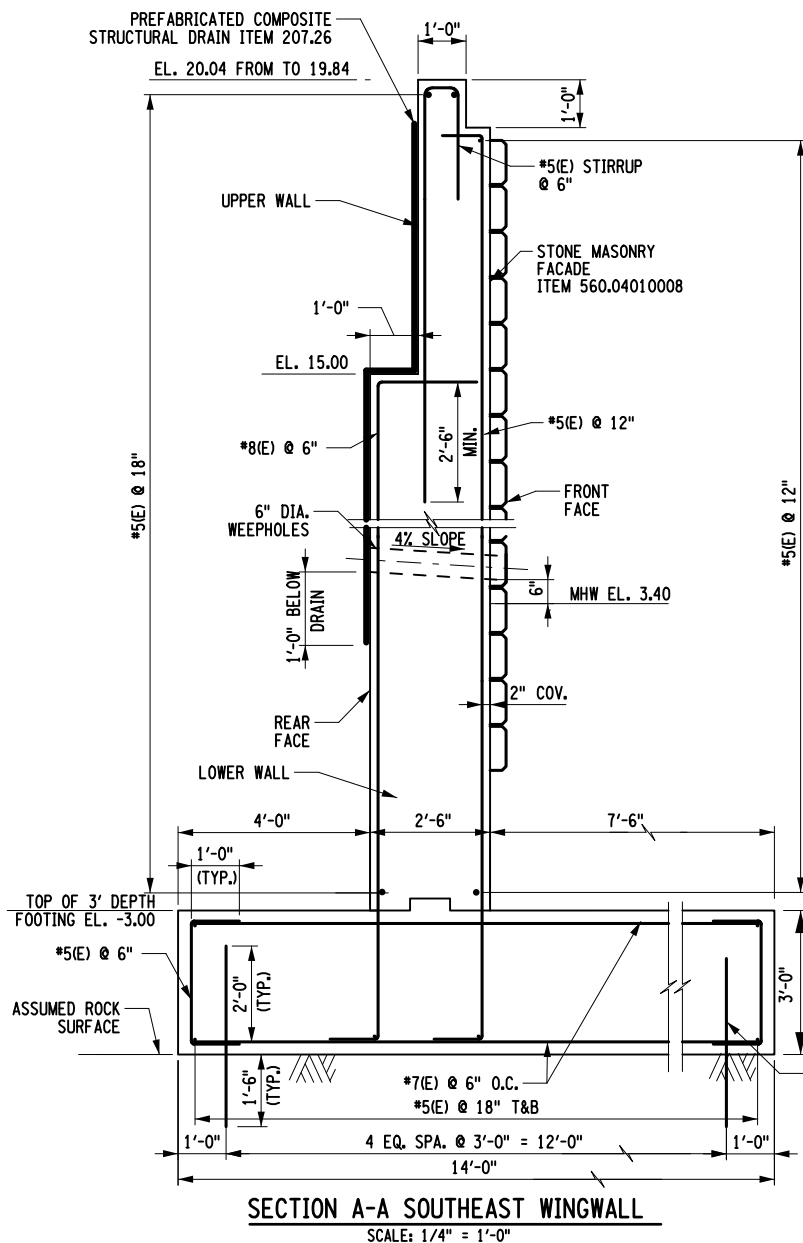
DRAWING NO. ST5-23  
SHEET NO. 028

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NOTES:

- (E) DENOTES EPOXY COATED BARS.
- COVER FOR STEEL REINFORCEMENT SHALL BE 2" UNLESS OTHERWISE NOTED.
- ALL DOWEL BARS TO BE CORROSION RESISTANT AND HAVE MINIMUM EMBEDMENT LENGTH OF 18" INTO COMPETENT ROCK. DOWELS TO BE GROUTED WITH HILTI-HIT RES500 V3 ADHESIVE.
- MAXIMUM SLOPE OF BOTTOM OF FOOTING SHALL BE NO GREATER THAN 15 PERCENT. FOOTING WILL NEED TO BE STEPPED SHOULD THE SLOPE BE GREATER THAN 15 PERCENT.
- CONTRACTOR TO INFORM THE ENGINEER IN THE EVENT THAT A STEPPED FOOTING IS REQUIRED DURING CONSTRUCTION.
- DRILL AND GROUT 2" DIA. HOLES FOR #9 DOWELS EMBEDDED 18" INTO ROCK WITH A SPACE OF 3'-0" IN BOTH DIRECTIONS.

\* \* REFER TO ELEVATIONS FOR HORIZONTAL  
BAR REINFORCEMENT  
(NO) - INDICATES CONCRETE PLACEMENT NUMBER



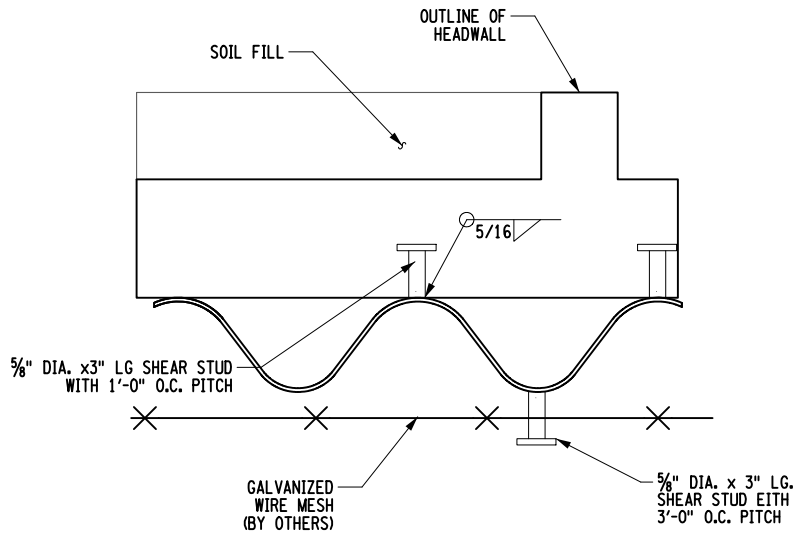




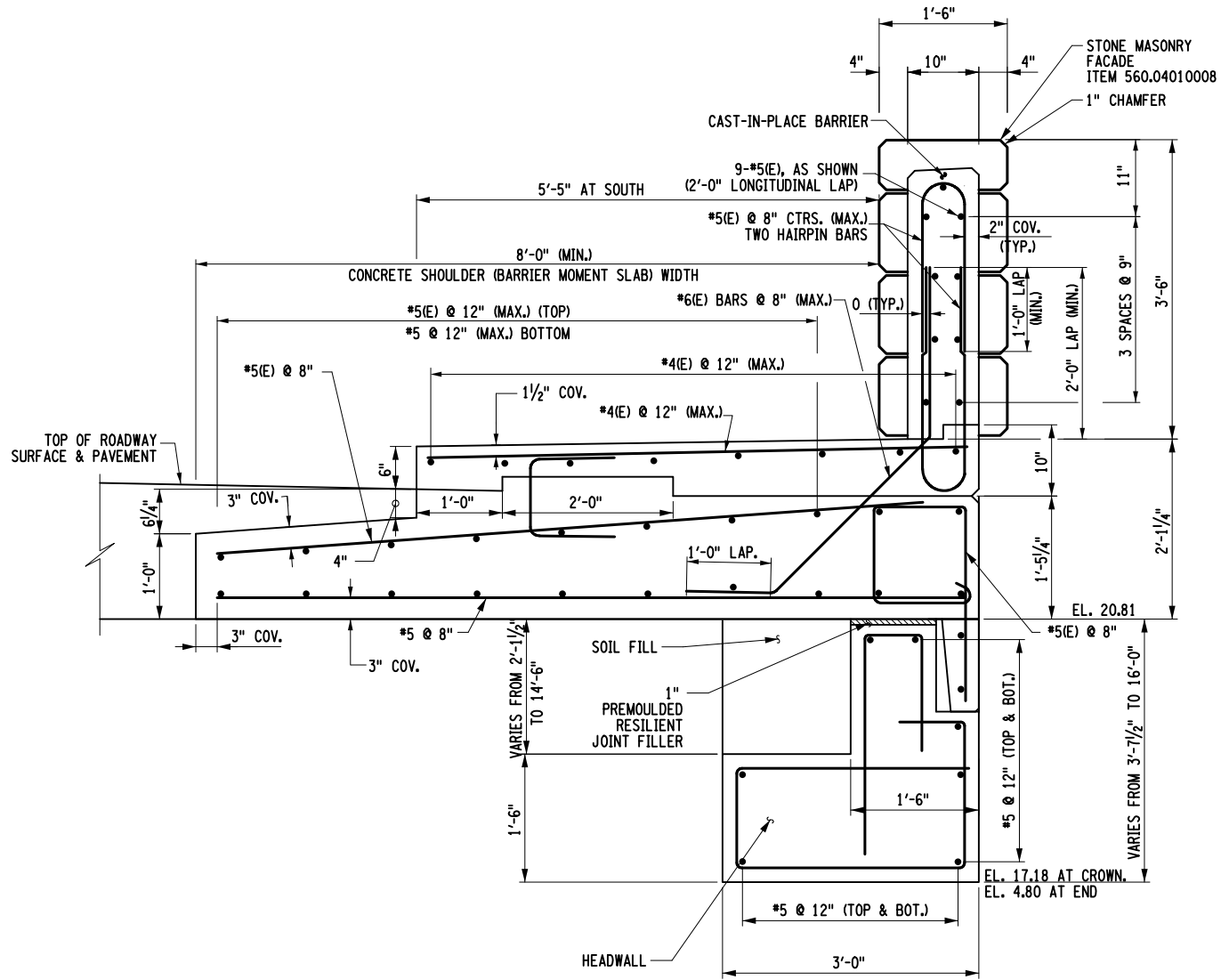


FILE NAME = 847314\_sph-01.dwg  
DATE/TIME = 09-JUL-2021 17:06  
USER = rrozeik

DESIGN SUPERVISOR G. BARTUCCI  
JOB MANAGER K. SHAO  
DESIGN J. MORALES  
CHECK P. LANTIGUA  
DRAFTING J. ISSA & R. ROZEIK  
CHECK L. ARMENDINGER  
PROJECT MANAGER G. BARTUCCI



SHEAR STUD TO STEEL LINER CONNECTION  
SCALE: N.T.S.



REINFORCEMENT SECTION  
AT SOUTH  
SCALE: N.T.S.

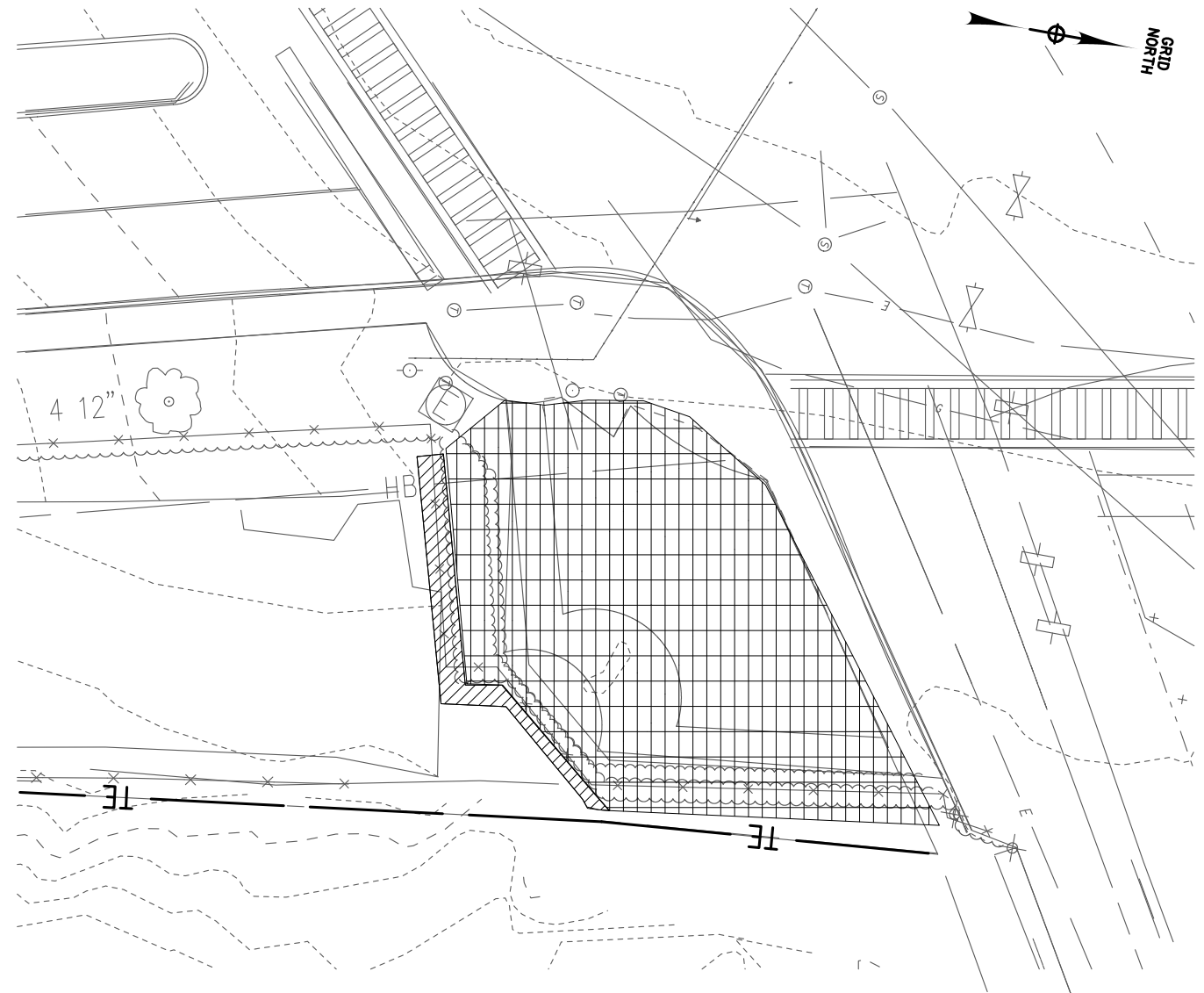
TRAFFIC BARRIER AND MOMENT SLAB NOTES

1. MINIMUM TOTAL LENGTH OF BARRIER MOMENT SLAB IS 20 ft. WHEN PINNED TO AN ADJACENT SLAB; 30 ft. WHEN PLACED UNDER ASPHALT.
2. PLACE EXPANSION JOINTS IN BARRIER TO MATCH WITH PAVEMENT JOINTS. DO NOT LOCATE THE BARRIER EXPANSION JOINT WITHIN 6 ft. FROM CENTERLINE OF LIGHT POLE OR 2 ft. FROM CENTERLINE OF JUNCTION BOX.
3. EPOXY REINFORCING BARS SHOWN FOR ILLUSTRATIVE PURPOSES. OTHER CORROSION PROTECTION METHODS ACCEPTABLE.

AFFIX SEAL: ON:		ALTERED BY: ON:		DESIGN QUALITY ASSURANCE ENGINEER WSP USA					
		DQAE _____ DATE _____		RFC DESIGN					
		THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS		DESIGN UNIT: DU16					
		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		Date: 07/09/2021					
		US ROUTE 1 ARCH BRIDGE		PIN 8101.46	BRIDGES 1000040	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER D900049	
		OVER MAMARONECK RIVER					BRIDGE CONCRETE BARRIER (SHEET 2 OF 2) US ROUTE 1 OVER MAMARONECK RIVER	DRAWING NO. ST5-26	
		CITY OF MAMARONECK						SHEET NO. 031	
		COUNTY: WESTCHESTER REGION: 8							
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.									

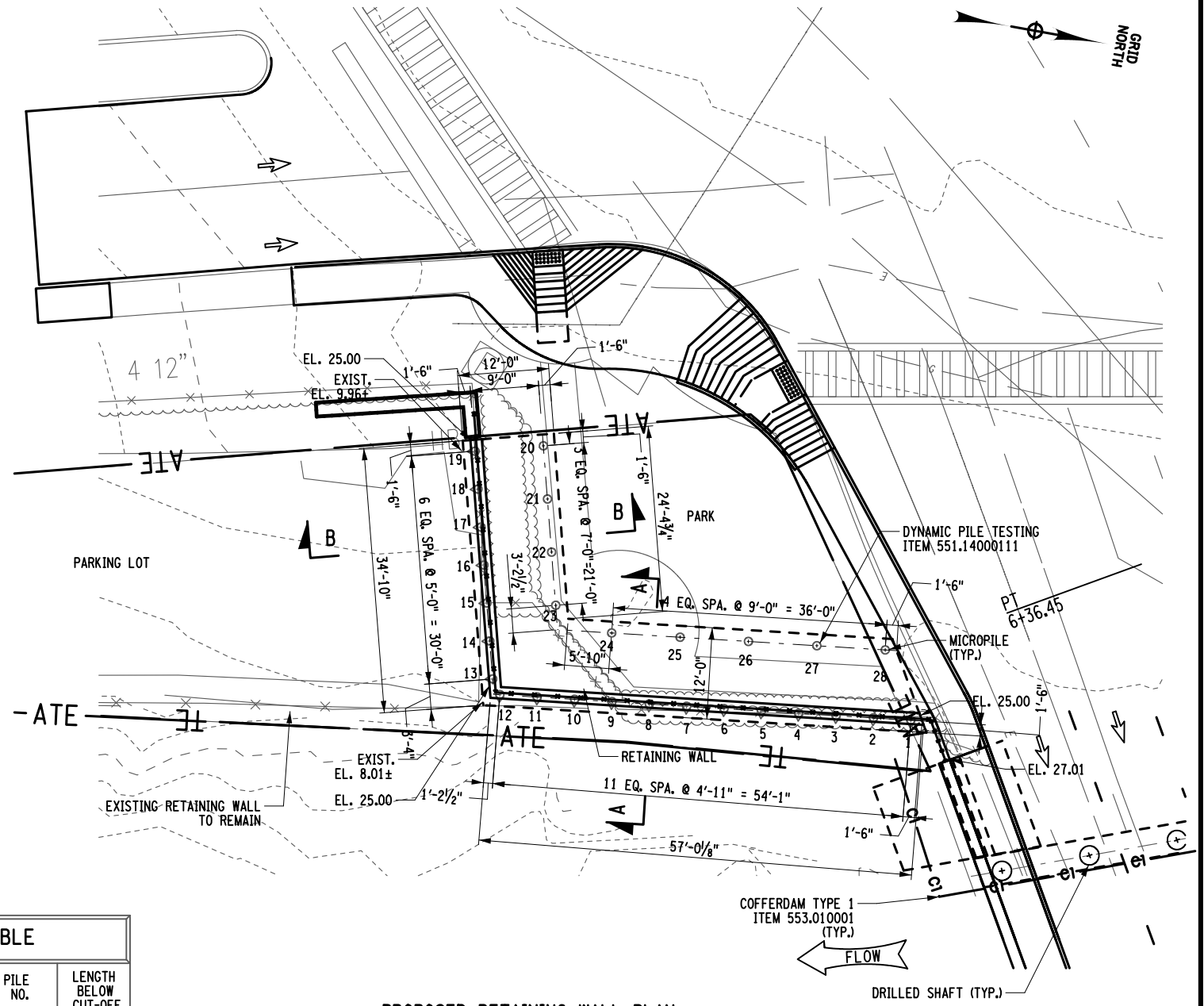
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DATE/TIME = 09-JUL-2021 17:06  
USER = rrozeik

DESIGN SUPERVISOR G. BARTUCCI  
JOB MANAGER K. SHAO  
DESIGN J. MORALES  
CHECK P. LANTIGUA  
DRAFTING J. ISSA & R. ROZEIK  
CHECK L. ARMENDINGER  
PROJECT MANAGER G. BARTUCCI



DEMOLITION EXISTING RETAINING WALL  
SCALE: 1" = 20'-0"

LEGEND  
— WALL TO BE REMOVED



PROPOSED RETAINING WALL PLAN  
SCALE: 1" = 20'-0"

LEGEND  
+ CAST-IN-PLACE PILE, ITEM NO. 551.99460017  
7"x0.5" MICROPILE.  
+ BATTERED 7"x0.5" 6 ON 1 BATTER  
(SEE ST5-29 FOR DETAILS)  
ITEM 551.99460017

PILE TABLE			
PILE NO.	LENGTH BELOW CUT-OFF	PILE NO.	LENGTH BELOW CUT-OFF
1		15	
2		16	
3		17	
4		18	
5		19	
6		20	
7		21	
8		22	
9		23	
10		24	
11		25	
12		26	
13		27	
15		28	

- PILE NOTES:
- 7"x0.5" MICROPILE, ITEM 551.99460017 WITH A #18 REBAR AND ROCK BOND LENGTH OF 10', ESTIMATE LENGTH OF 20' WITH TIP AT EL. -15.0. GROUTING OF VOIDS IN EXISTING MASONRY AND AT INTERFACE WITH ROCK. 6 ON 1 PILE BATTER.
  - MICROPILE CUTOFF TO BE AT EL. 4.50.
- NOTE:
- THE LAYOUT OF EXISTING RETAINING WALL IS TO BE SURVEYED AND VERIFIED.

RFC DESIGN  
DESIGN UNIT: DU16  
Date: 07/09/2021

DESIGN QUALITY ASSURANCE ENGINEER  
WSP USA  
DQAE DATE  
THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS  
AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:  
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

US ROUTE 1 ARCH BRIDGE  
OVER MAMARONECK RIVER  
CITY OF MAMARONECK  
COUNTY: WESTCHESTER REGION: 8

PIN  
8101.46

BRIDGES  
1000040

CULVERTS

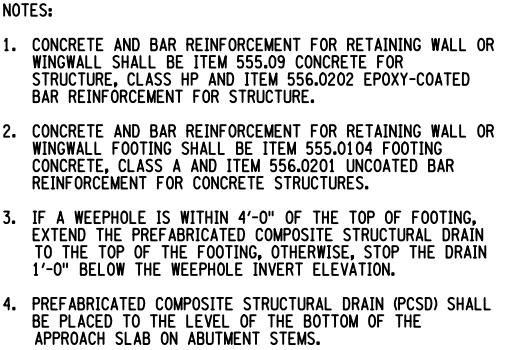
ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
RETAINING WALL PLAN  
US ROUTE 1  
OVER  
MAMARONECK RIVER

CONTRACT NUMBER  
D900049  
DRAWING NO. ST5-27  
SHEET NO. 032




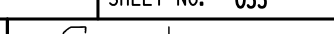


Department of Transportation





**REINFORCEMENT OF RETAINING WALL SECTION A-A**  
SCALE:  $\frac{1}{2}" = 1'-0"$

AFFIX SEAL: ON:		ALTERED BY: ON:		DESIGN QUALITY ASSURANCE ENGINEER WSP USA		REINFORCEMENT OF RETAINING WALL SECTION A-A SCALE: 1/2" = 1'-0"	
		DATE THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS		RFC DESIGN			
				DESIGN UNIT: <u>DU16</u>			
				Date: <u>07/09/2021</u>			
				AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		US ROUTE 1 ARCH BRIDGE OVER MAMARONECK RIVER CITY OF MAMARONECK COUNTY: WESTCHESTER REGION: 8	
				BRIDGES 1000040		CULVERTS	
				ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  RETAINING WALL TYPICAL SECTION  US ROUTE 1 OVER MAMARONECK RIVER		CONTRACT NUMBER D900049  DRAWING NO. ST5-28 SHEET NO. 033	
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.							
							

FILE NAME = 847314\_gph\_00\_wal\_sec2.dgn  
DATE/TIME = 09-JUL-2021 17:06  
USER = r-rozeik

DESIGN SUPERVISOR G. BARTUCCI

DESIGN J. MORALES

CHECK P. LANTIGUA

DRAFTING J. ISSA & R. ROZEIK

CHECK L. ARMENDINGER

PROJECT MANAGER G. BARTUCCI

AFFIX SEAL:  
ON:



ALTERED BY:  
ON:

DESIGN QUALITY ASSURANCE ENGINEER  
WSP USA

DQAE DATE  
THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE  
RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE  
CONTRACT DOCUMENTS

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

## RFC DESIGN

DESIGN UNIT: DU16  
Date: 07/09/2021

US ROUTE 1 ARCH BRIDGE

OVER MAMARONECK RIVER

CITY OF MAMARONECK

COUNTY: WESTCHESTER

REGION: 8

PIN  
8101.46

BRIDGES  
1000040

CULVERTS

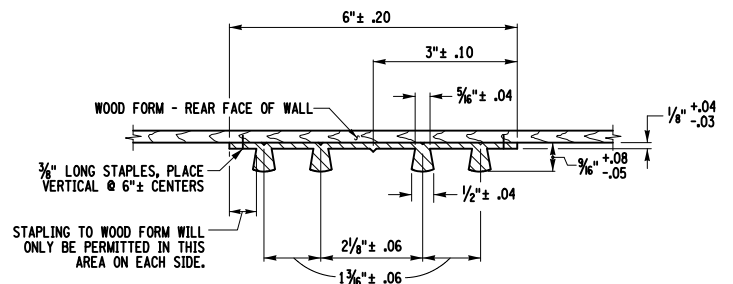
ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

RETAINING WALL DETAILS

US ROUTE 1  
OVER  
MAMARONECK RIVER

CONTRACT NUMBER  
D900049

DRAWING NO. ST5-29  
SHEET NO. 034

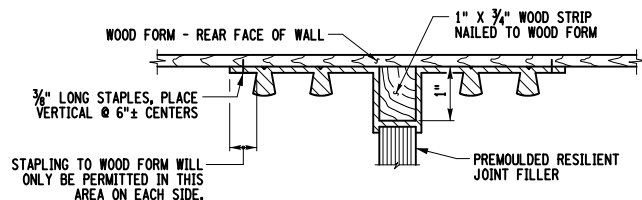


TYPE D WATERSTOP  
NOT TO SCALE

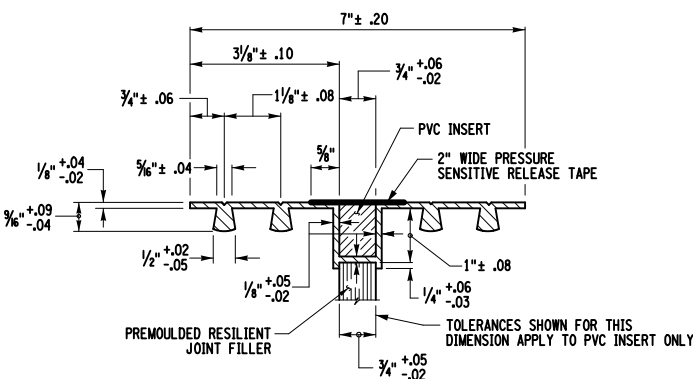
### NOTES:

HOLES MUST NOT BE MADE IN WATERSTOP FOR ANY  
PURPOSE EXCEPT AS REQUIRED FOR STAPLING TO FORMS.

TYPE D WATERSTOP SHALL BE LIGHT GRAY IN COLOR.



STAGE ONE - PRIOR TO POURING CONCRETE



STAGE TWO - AFTER FORMS HAVE BEEN REMOVED  
TYPE E WATERSTOP

### NOTES:

HOLES MUST NOT BE MADE IN WATERSTOP FOR ANY  
PURPOSE EXCEPT AS REQUIRED FOR STAPLING TO FORMS.

PVC INSERT AND PRESSURE SENSITIVE RELEASE TAPE SHALL BE  
INSTALLED IN THE FIELD PRIOR TO PLACING THE BACKFILL.

### NOTES:

HOLES MUST NOT BE MADE IN WATERSTOP FOR ANY  
PURPOSE EXCEPT AS REQUIRED FOR STAPLING TO FORMS.

TYPE E WATERSTOP AND PVC INSERT SHALL BE LIGHT GRAY IN COLOR.  
PVC INSERT SHALL BE CLOSED CELL POLYVINYL (CP) GRADE VC-45  
AS PER ASTM D1667 OR CLOSED CELL RUBBER GRADE RE-45,  
CLASS E, AS PER ASTM D1056.

PVC INSERT AND PRESSURE SENSITIVE RELEASE TAPE SHALL BE  
INSTALLED IN THE FIELD PRIOR TO PLACING THE BACKFILL.

### NOTE:

DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE  
INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL  
OTHER DETAILS, FOR WHICH NO SCALE IS SHOWN, ARE DRAWN  
PROPORTIONAL AND ARE FULLY DIMENSIONED.

### NOTES:

PVC USED IN WATERSTOPS SHALL CONFORM TO THE REQUIREMENTS  
OF N.Y.S. STANDARD SPECIFICATIONS SUBSECTION 705-11.

THE COST OF FURNISHING AND PLACING WATERSTOPS SHALL BE  
INCLUDED IN THE UNIT PRICES BID FOR THE CONCRETE ITEMS.

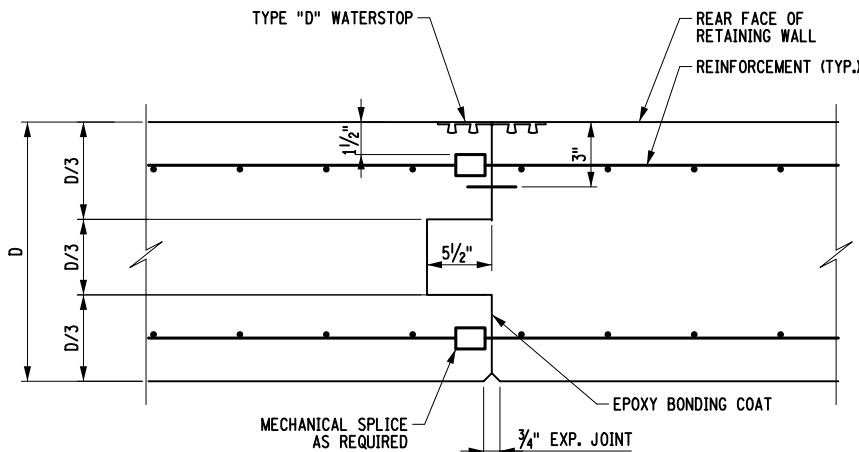
FIELD SPLICES SHOULD BE AVOIDED IF POSSIBLE, HOWEVER,  
HEAT WELDED BUTT SPLICES WILL BE PERMITTED ON  
LONG STRAIGHT RUNS (GENERALLY IN EXCESS OF 50  
FEET) AT POINTS APPROVED BY THE ENGINEER.

WATERSTOP SHALL BE SHIPPED IN STRAIGHT SECTIONS HAVING  
A MINIMUM LENGTH OF 10 FEET UNLESS SHORTER LENGTHS ARE  
REQUIRED.

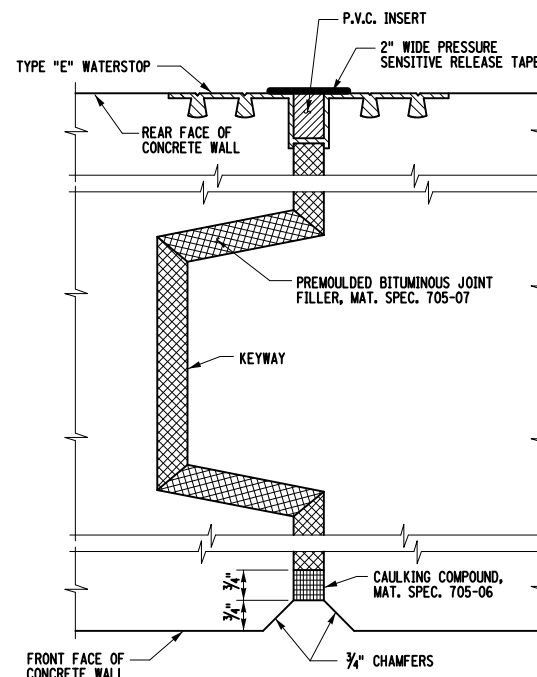
PREMOULDED RESILIENT JOINT FILLER SHALL CONFORM TO THE  
REQUIREMENTS OF N.Y.S. STANDARD SPECIFICATION SUBSECTION 705-07.

DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE  
INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL  
OTHER DETAILS, FOR WHICH NO SCALE IS SHOWN, ARE DRAWN  
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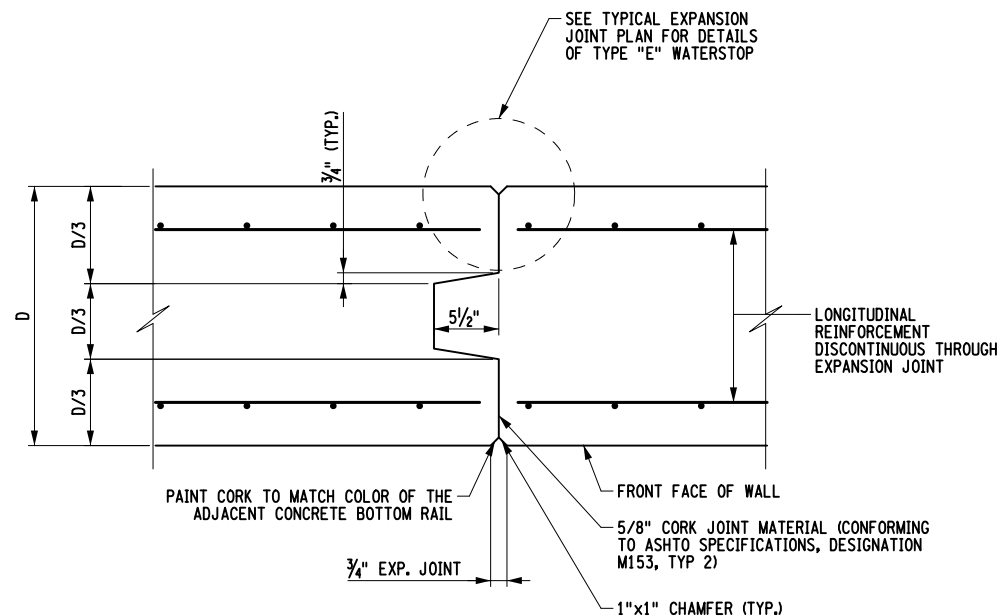
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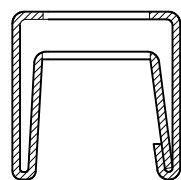
CONSTRUCTION JOINT  
NOT TO SCALE



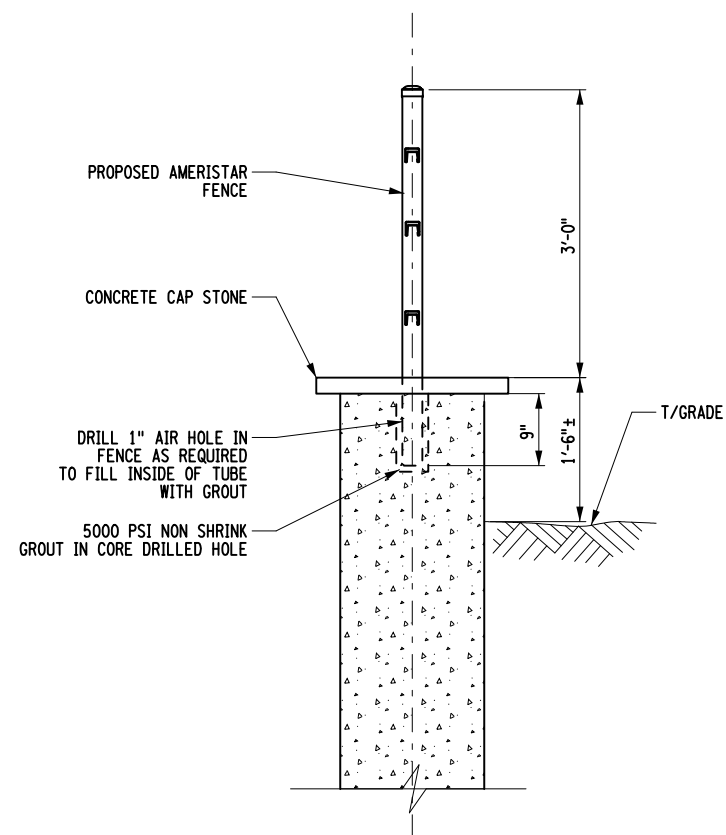
TYPICAL EXPANSION JOINT PLAN  
NOT TO SCALE



KEYED EXPANSION JOINT  
NOT TO SCALE




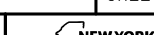
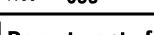


TYPICAL FORERUNNER RAIL SECTION  
SCALE: N.T.S.



DETAIL OF TYPICAL POST SECTION  
SCALE: N.T.S.

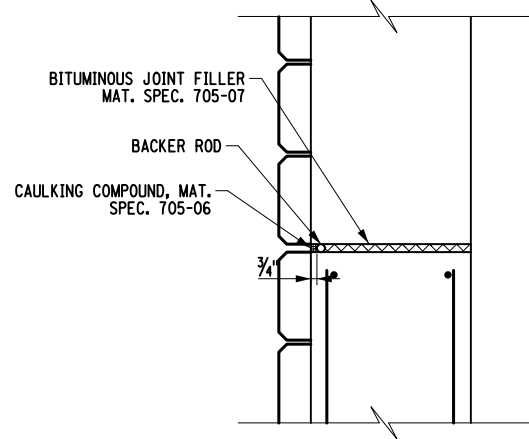
1. PRIOR TO THE FABRICATION THE CONTRACTOR IS REQUIRED TO SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL. THESE SHALL BE BASED ON ACTUAL FIELD CONFLICTS. POSTS SHALL BE EVENLY SPACED ALONG THE ELEVATION OF THE STRUCTURE. ALL FENCE POSTS SHALL BE LOCATED AT THE CENTERLINE OF THE PARAPET.
2. THE CONTRACTOR SHALL SUPPLY TO THE ENGINEER CATALOG CUTS OR ACTUAL SAMPLES OF ALL FITTINGS AND CONNECTIONS TO BE USED IN THIS WORK FOR THE ENGINEERS APPROVAL.
3. AFTER THE FENCING IS ERECTED, THE EXPOSED THREADS OF ALL BOLTS ON THE PEDESTRIAN TRAFFIC SIDE SHALL BE DEFORMED, AS DIRECTED BY THE ENGINEER, TO PREVENT REMOVAL OF THE NUTS.
4. PROVIDE GROUNDING PER SPECIFICATION.

AFFIX SEAL: ON:		ALTERED BY: ON:		DESIGN QUALITY ASSURANCE ENGINEER WSP USA		RFC DESIGN  DESIGN UNIT: <u>DU16</u> Date: <u>07/09/2021</u>		3. AFTER THE FENCING IS ERECTED, THE EXPOSED THREADS OF ALL BOLTS ON THE PEDESTRIAN TRAFFIC SIDE SHALL BE DEFORMED, AS DIRECTED BY THE ENGINEER, TO PREVENT REMOVAL OF THE NUTS.		4. PROVIDE GROUNDING PER SPECIFICATION.											
		DQAE _____ DATE _____ THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		US ROUTE 1 ARCH BRIDGE		PIN 8101.46		BRIDGES 1000040		CULVERTS		ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  <b>RETAINING WALL FENCE DETAILS</b>  US ROUTE 1 OVER MAMARONECK RIVER		CONTRACT NUMBER D900049					
						OVER MAMARONECK RIVER										DRAWING NO. ST5-30					
						CITY OF MAMARONECK										SHEET NO. 035					
						COUNTY: WESTCHESTER REGION: 8															
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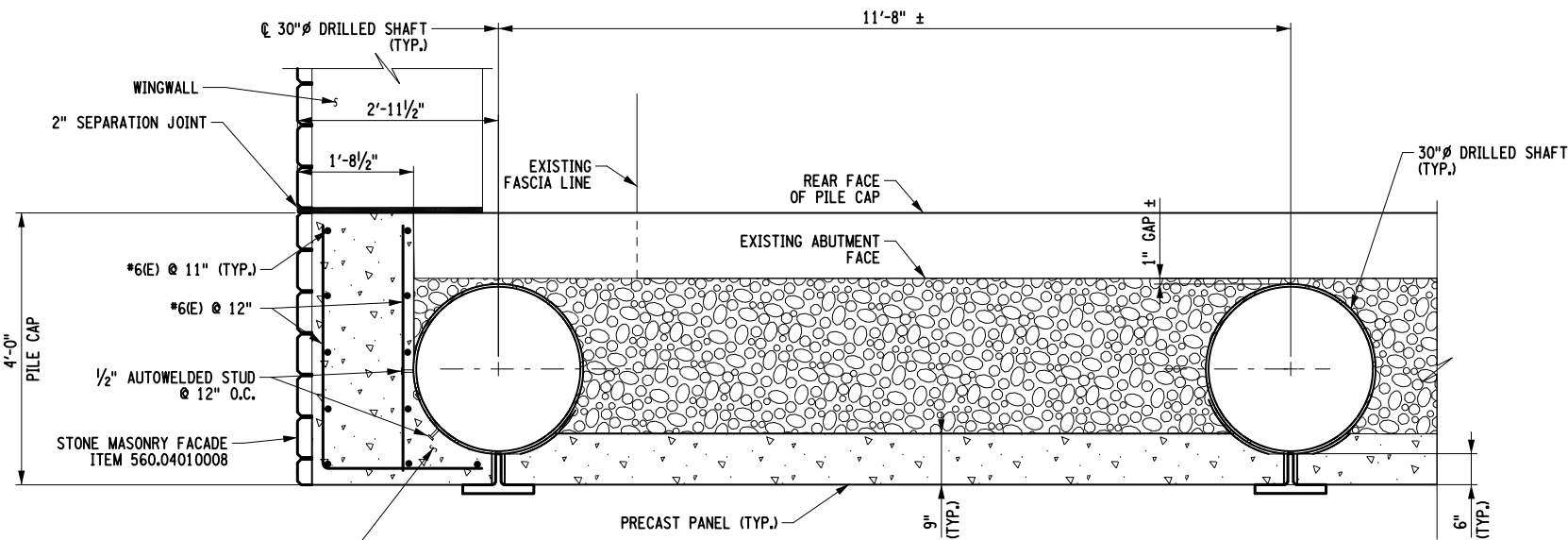
DESIGN SUPERVISOR G. BARTUCCI  
JOB MANAGER K. SHAO  
DESIGN J. MORALES  
CHECK P. LANTIGUA  
DRAFTING J. ISSA & R. ROZEIK  
CHECK L. ARMENDINGER  
PROJECT MANAGER G. BARTUCCI



SEPARATION JOINT PLAN  
SCALE: 1/2" = 1'-0"

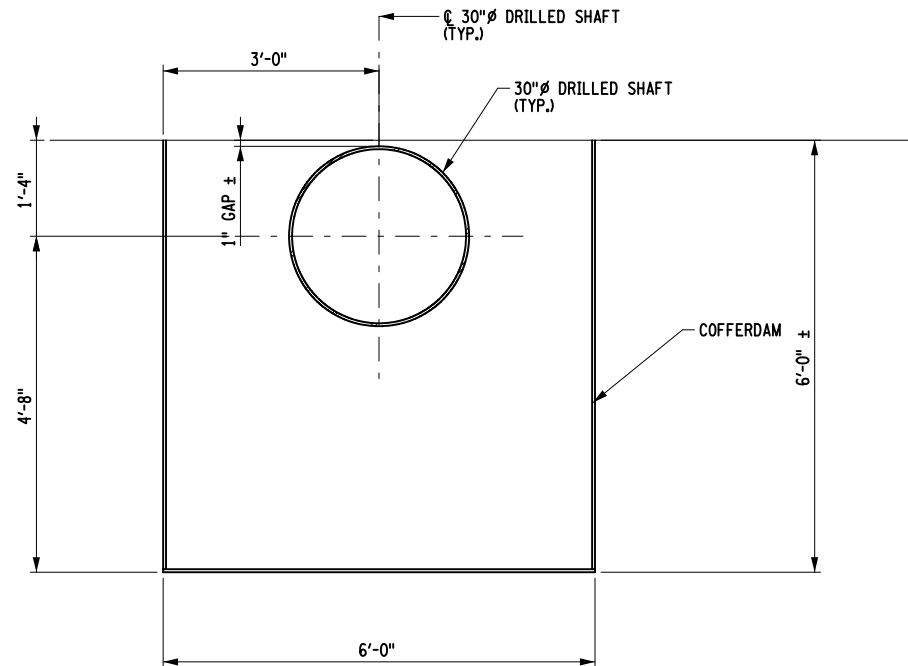
NOTES:

1. CONTRACTOR TO FIELD VERIFY VARIABLE GNEISS (ROCK) PROFILE DURING EXCAVATION.
2. CONTRACTOR TO DIG TO COMPETENT ROCK (GNEISS) BEFORE END PANEL IS CAST IN PLACE.
3. ROCK IRREGULARITIES AT BASE OF END PANEL SHALL BE LIMITED TO 2" TO ALLOW FOR REBAR PLACEMENT.
4. ALL DOWEL BARS TO BE CORROSION RESISTANT AND HAVE MINIMUM EMBEDMENT LENGTH OF 18" INTO COMPETENT ROCK. DOWELS TO BE GROUTED WITH HILTI-HIT RE-500 V3 ADHESIVE.



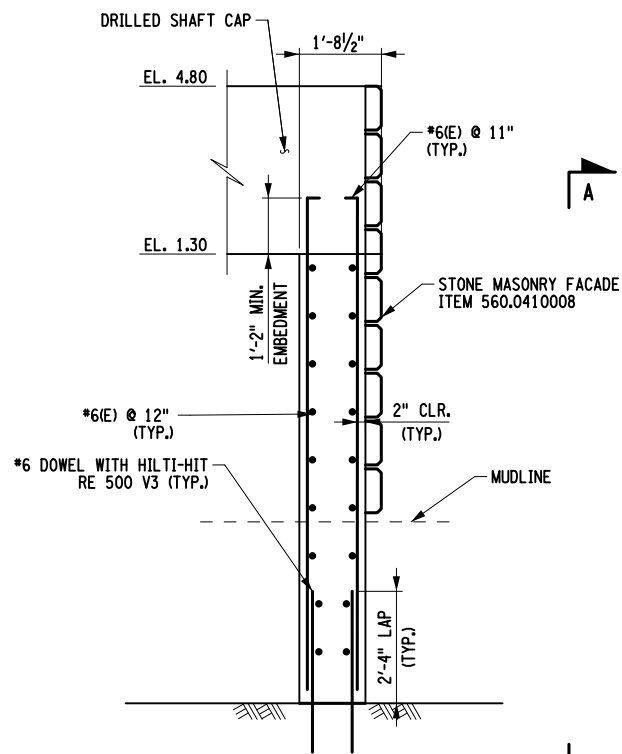
DRILLED SHAFT WITH PRECAST  
REINFORCED CONCRETE PANEL DETAILS

SCALE: 3/8" = 1'-0"



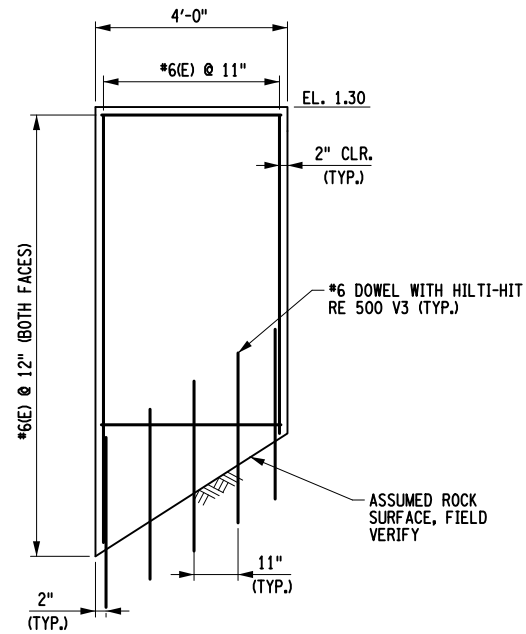
COFFERDAM DETAILS

SCALE: 3/8" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"



PILE CAP END PANEL ELEVATION

SCALE: 1/4" = 1'-0"

SOUTHWEST END PILE CAP SHOWN, SOUTHEAST END SIMILAR.

AFFIX SEAL: ON:	ALTERED BY: ON:	DESIGN QUALITY ASSURANCE ENGINEER WSP USA
		DQAE _____ DATE _____ THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS
	AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

RFC DESIGN	
DESIGN UNIT:	DU16
Date:	07/09/2021

US ROUTE 1 ARCH BRIDGE	PIN 8101.46	BRIDGES 1000040	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER D900049
OVER MAMARONECK RIVER				COFFERDAM MISCELLANEOUS DETAILS	DRAWING NO. ST5-31
CITY OF MAMARONECK				US ROUTE 1 OVER MAMARONECK RIVER	SHEET NO. 036
COUNTY: WESTCHESTER	REGION: 8				

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1. PERMANENT OUTER CASING SHALL BE 7" O.D. X 0.500" WALL THICKNESS PIPE FABRICATED FLUSH JOINT, UNCOATED, THREADED STEEL CASING CONFORMING TO MECHANICAL PROPERTIES OF ASTM A252 GRADE 3, 45 KSI.
2. A CENTRALIZED, UNCOATED #18 GR. 75 THREADBARS WILL BE ADDED TO EACH PRODUCTION MICROPILE TO MEET THE CONSTRUCTIBILITY REQUIREMENTS OF THE NYSDOT STANDARD SPECIFICATIONS. THE THREADBARS WILL BE INSTALLED FOR FULL PILE LENGTH AND CONFORM TO THE REQUIREMENTS OF ASTM A722 AS MANUFACTURED BY DVI/DAG, SAS STRESSTEEL, WILLIAMS, OR APPROVED EQUAL. COUPLERS WILL BE UTILIZED WHERE REQUIRED AND PROVIDED IN ACCORDANCE WITH THE THREADBAR MANUFACTURERS RECOMMENDATIONS.
3. CENTRALIZERS FOR THREADBARS WILL BE PROVIDED AT 10'-0" MAXIMUM SPACING AND AT NO MORE THAN 2 FT FROM TOP AND BOTTOM OF THE BAR.
4. GROUT MIX SHALL CONSIST OF CLEAN POTABLE WATER AND TYPE II CEMENT IN RATIO OF 5 GALLONS OF WATER TO EACH 94 LB BAG OF CEMENT. GROUT WILL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI.
5. OTHER THAN FOR LOAD TESTING PURPOSES, STRUCTURAL MEMBERS SHALL BE NEW MATERIAL HAVING EQUIVALENT STRENGTH (OR BETTER) OF THE MEMBERS SHOWN AND SHALL CONFORM TO THE FOLLOWING MINIMUM SPECIFICATION:
  - a) W SECTION (TEST BEAM): ASTM A572 GRADE 50
  - b) BEARING PLATE: ASTM A572 GRADE 50
  - c) PLATES AND MISCELLANEOUS STEEL ASTM A36 GRADE 36

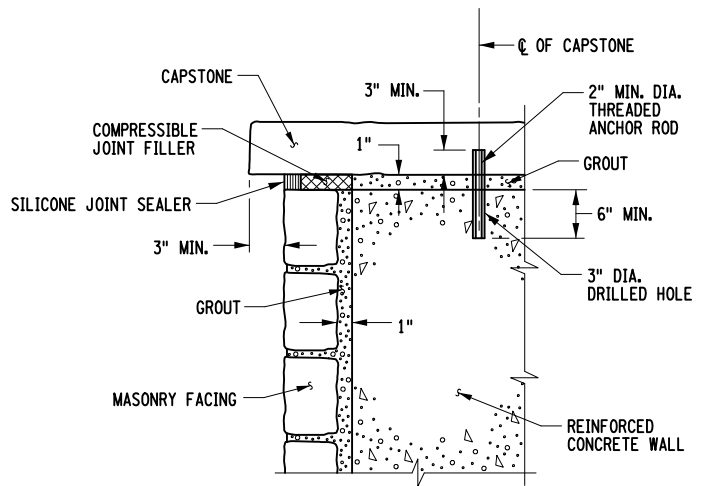
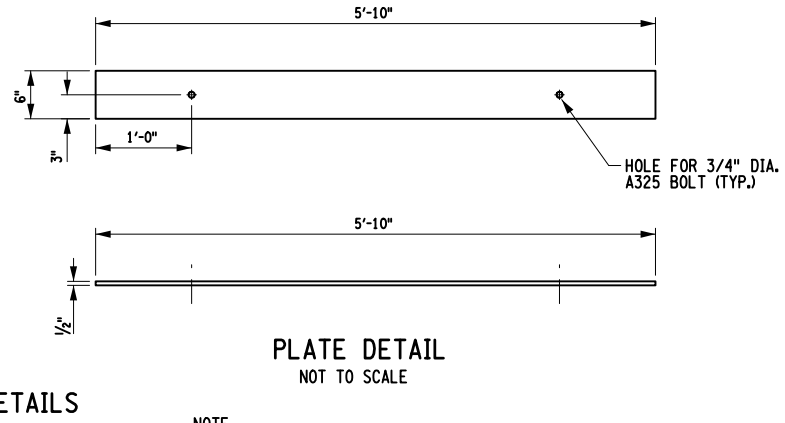
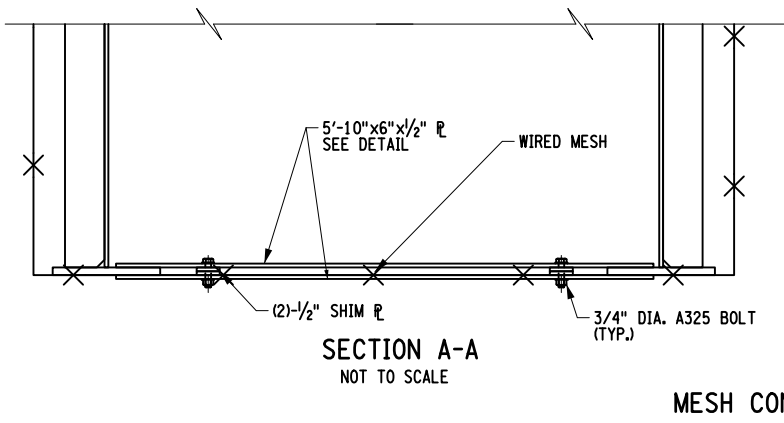
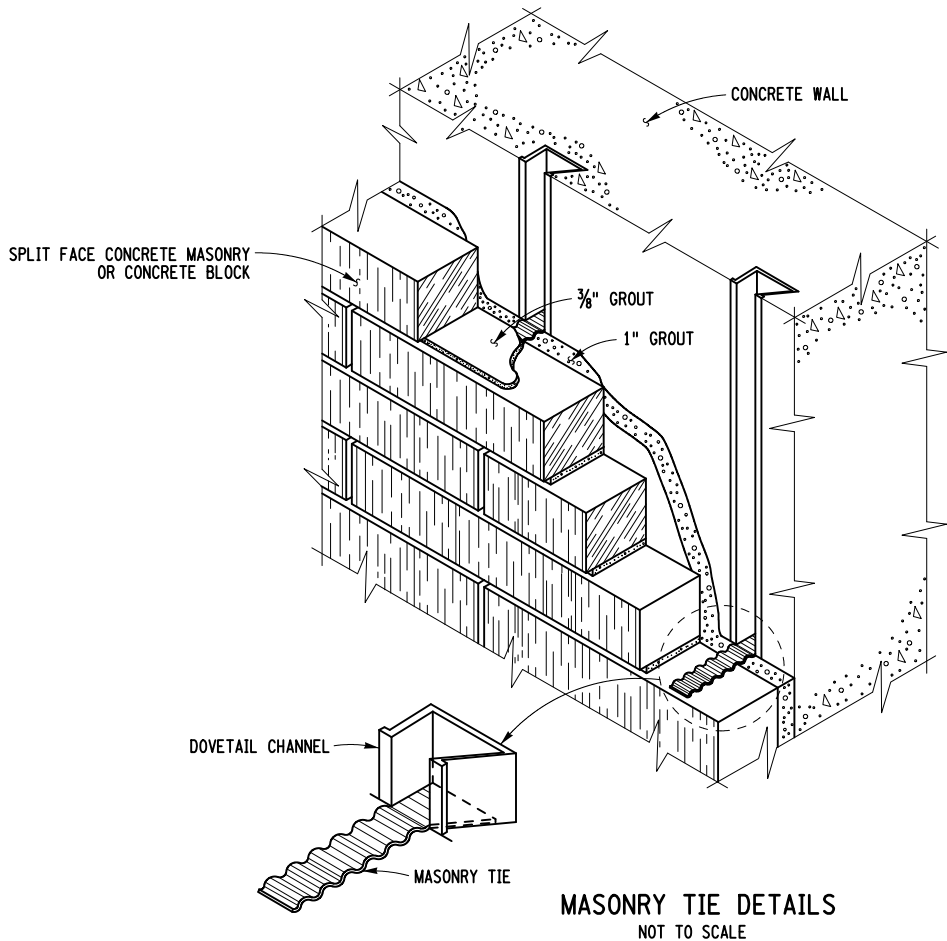
SEE NOTE 2 OF INSTALLATION PROCEDURE

10'-0" (MIN.)

SEE NOTE 2 OF INSTALLATION PROCEDURE

FILE NAME = 847314\_sph\_dtl\_mis.05.dgn  
DATE/TIME = 09-JUL-2021 17:06  
USER = rrozeik

PROJECT MANAGER G. BARTUCCI  
CHECK L. ARMENDINGER  
DRAFTING J. ISSA & R. ROZEIK  
CHECK P. LANTIGUA  
DESIGN J. MORALES  
JOB MANAGER K. SHAO  
DESIGN SUPERVISOR G. BARTUCCI



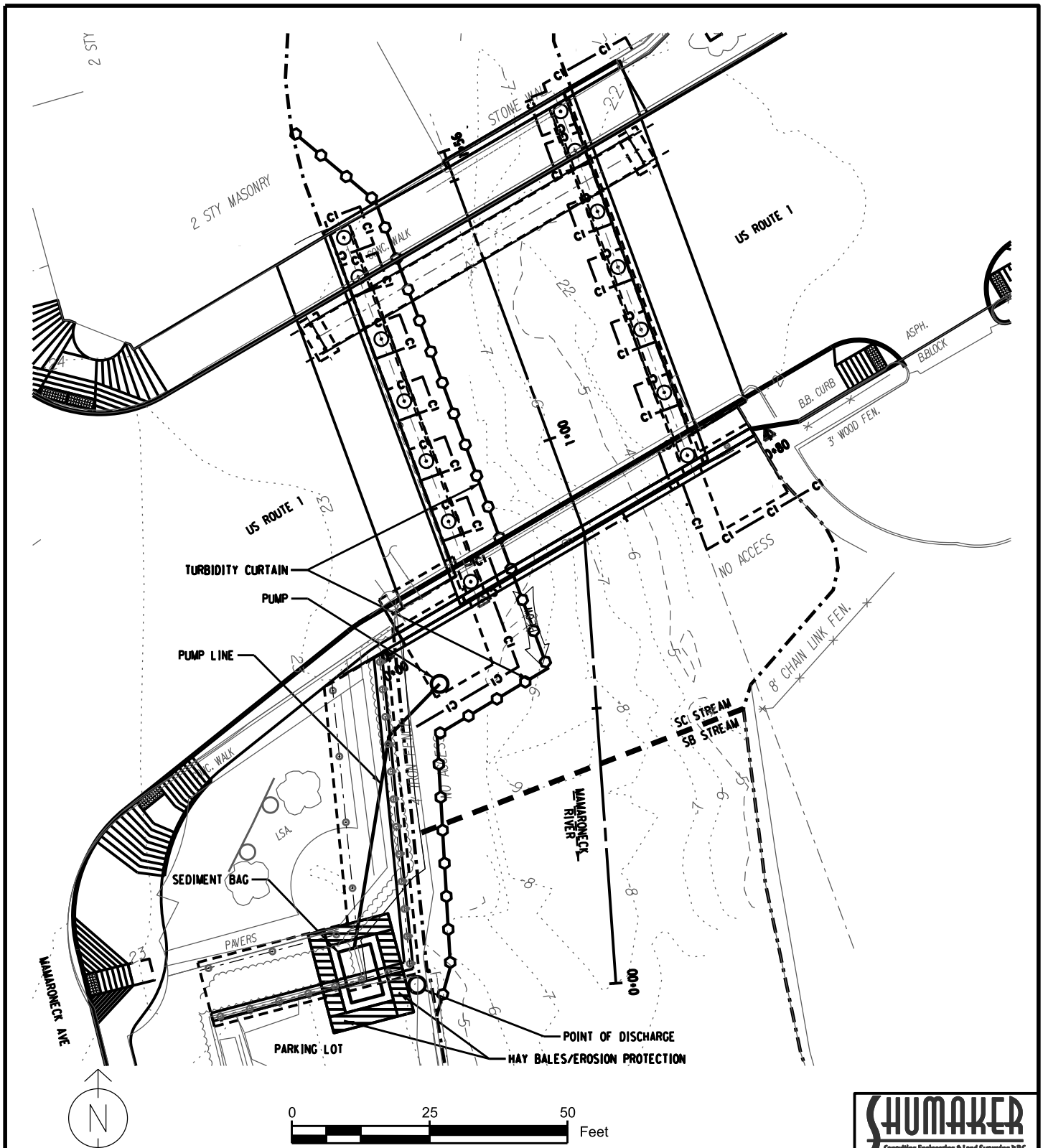
CAPSTONE DETAIL  
NOT TO SCALE

CAPSTONE NOTES:  
CAPSTONES MAY BE STONE MASONRY, PRECAST CONCRETE OR CAST-IN-PLACE CONCRETE.  
CAPSTONES SHALL BE FULL WIDTH OF WALL PLUS OVERHANG. OVERHANG SHALL BE PROVIDED WHENEVER POSSIBLE. LARGER OVERHANGS SHALL HAVE A DRIP GROOVE.  
PRECAST AND STONE MASONRY CAPSTONES SHALL HAVE A MINIMUM OF 2 ANCHORS PER SEGMENT. ANCHORS SHALL BE PLACED 6" MINIMUM FROM THE SEGMENT ENDS. ANCHORS MAY BE GALVANIZED OR STAINLESS STEEL AND MAY BE CAST IN THE WALL OR DRILLED AND GROUTED.  
SEE BD-AB9E FOR STONE VENEER PANEL WALL DETAILS.

NOTE  
1. SEE DU-17 FOR THE SPACE OF STEEL MESH CONNECTIONS.

AFFIX SEAL: ON:		ALTERED BY: ON:		DESIGN QUALITY ASSURANCE ENGINEER WSP USA		RFC DESIGN		PIN 8101.46		BRIDGES 1000040		CULVERTS		ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED		CONTRACT NUMBER D900049	
		DQAE DATE THIS DRAWING HAS UNDERGONE REVIEWS AS REQUIRED TO BE RELEASED FOR CONSTRUCTION UNDER DB SECTIONS 5.8.3 OF THE CONTRACT DOCUMENTS		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		DESIGN UNIT: DU16		US ROUTE 1 ARCH BRIDGE OVER MAMARONECK RIVER CITY OF MAMARONECK COUNTY: WESTCHESTER REGION: 8						MISCELLANEOUS DETAILS US ROUTE 1 OVER MAMARONECK RIVER		DRAWING NO. ST5-33	
						Date: 07/09/2021										SHEET NO. 038	
<p>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</p>																	





**SHUMAKER**  
Consulting Engineering & Land Surveying, P.C.

### LEGEND

- HAY BALES/EROSION PROTECTION
- ORDINARY HIGH WATER MARK
- STREAM CLASSIFICATION BOUNDARY
- EXISTING CONTOUR
- PROPOSED COFFERDAM
- TURBIDITY CURTAIN

### DEWATERING LOCATION FIGURE

US ROUTE 1  
OVER  
MAMARONECK RIVER

US ROUTE 1 - WESTCHESTER COUNTY  
CITY OF MAMARONECK, NY

SCE PROJECT NO.  
19137.03

DATE  
SEPTEMBER 2021

DRAWING NO.  
FIGURE - 1



**ATTACHMENT H: MITIGATION & MONITORING PLAN AND DRAWINGS**

N/A



**ATTACHMENT I: ENVIRONMENTAL REPORTS AND CORRESPONDENCE**

NYSDEC, USFWS, NYSOPRHP, FHWA, NYSDOT

**FHWA/NOAA Programmatic Concurrence Dated 4/1/21**



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**New York Division**

April 1, 2021

Leo W. O'Brien Federal Building  
11A Clinton Avenue, Suite 719  
Albany, NY 12207  
518-431-4127  
Fax: 518-431-4121  
NewYork.FHWA@dot.gov

In Reply Refer To:  
HPD-NY

Kathleen Wolfanger  
Regional Environmental Contact  
New York State Department of Transportation, Region 8  
4 Burnett Boulevard  
Poughkeepsie, NY 12063

Subject: PIN 8473.14 - Threatened and Endangered Species and Essential  
Fish Habitat Consultation  
US 1 over Mamaroneck River Bridge Replacement (BIN 1000040)  
Village of Mamaroneck, Westchester County

Dear Ms. Wolfanger:

We have reviewed the documentation dated February 19 regarding consultation under Section 7 of the Endangered Species Act (ESA) and Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for the subject project. The New York State Department of Transportation (NYSDOT) previously coordinated with the Federal Highway Administration (FHWA) under Section 7 of the ESA and Section 305(b) of the MSA on March 15, 2019. Since the initial consultation, the proposed design solution has changed and the existing concrete arch bridge will be lined with a tunnel liner plate instead of complete demolition and replacement.

Based on our review of the proposed work, the Federal Highway Administration (FHWA) continues to concur with the determination that the subject project, as proposed by the New York State Department of Transportation (NYSDOT), "*May Affect, but is Not Likely to Adversely Affect*" the federally-listed Atlantic Sturgeon, Shortnose Sturgeon, Green Sea Turtle, Kemp's Ridley Sea Turtle, Loggerhead Sea Turtle, and Leatherback Sea Turtle.

Concurrence was sought from the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) through the Greater Atlantic Regional Fisheries Office (GARFO) Protected Resources Division (PRD) under Section 7 of the ESA. The FHWA consulted with GARFO PRD under the *FHWA Transportation Projects, Design Criteria, and Procedures for Authorization under a Programmatic Determination of Not Likely to Adversely Affect Select ESA-Listed Species in the Greater Atlantic Region* and submitted the completed verification form on March 10. GARFO PRD replied on March 18, concurring with FHWA's determination that the proposed project complies with the programmatic agreement with the justifications provided in the verification form. The signed verification form is enclosed.



FHWA also continues to concur that “*Adverse Effects to Essential Fish Habitat (EFH) will not be Substantial*” as a result of the proposed project activities and the project is consistent with the *FHWA Programmatic Essential Fish Habitat Consultation For Select Transportation Actions in the NMFS Greater Atlantic Region*. Winter Flounder and River Herring timing restrictions will be followed.

The MSA requires federal agencies to consult with NMFS through the GARFO Habitat Conservation Division (HCD) on any action or proposed action by the agency that may adversely effect EFH identified under the MSA. Concurrence was sought from NMFS through GARFO HCD under Section 305(b) of the MSA following the procedures outlined in 50 CFR 600.920 regarding the EFH programmatic agreement. The FHWA consulted with GARFO HCD and submitted the completed verification form on March 10. GARFO HCD replied on April 1, concurring with FHWA's determination that the project is consistent with the programmatic EFH consultation.

The following list contains Environmental Performance Commitments that were established through the ESA and MSA re-consultation with NMFS and must be included in the contract documents and followed:

#### Underwater Noise:

- No driven piles or sheeting may be used
- Between January 15 and June 30, work must be isolated behind sealed, dewatered cofferdams to avoid impacts to winter flounder and diadromous fish species and impeding fish migration
- No more than 50 piles below mean high water may be installed for any new pile-supported structure
- Rock sockets and drilled shafts may not exceed 36 inches in diameter and must be installed in the dry within sealed cofferdams

#### Impingement/Entrainment and Entanglement:

- Properly secure and monitor turbidity control measures to ensure aquatic species are not entangled or trapped in the project area

#### Water Quality/Turbidity:

- No dredging may occur
- No blasting or use of explosives may occur
- Cofferdam systems that require the use of a percussive, hydraulic, or vibratory hammer may not be used
- Soil erosion, sediment, and turbidity controls must be installed and maintained in effective operating condition during construction. The controls must be removed upon completion of work, after all exposed soil and other fills, as well as any work waterward of ordinary high water or the high tide line, are permanently stabilized
- Any in-water soil erosion, sediment, and turbidity controls must be installed or removed between July 1 and January 14
- No more than minimal turbidity or sedimentation may occur between January 15 and June 30
- Construction debris and sediment must not enter aquatic areas and all construction debris and excess materials shall be removed and disposed of in an upland area

- Excavated materials shall either be moved to an upland location and stabilized to prevent reentry into the waterway or disposed of at a previously approved disposal site
- Creosote piles, if present, must be completely removed and cannot be reused
- No installation of new creosote piles may occur
- Abandoned piles must be completely removed or cut off 3 feet below the mudline
- Wet pours of concrete must be confined within sealed forms until the concrete is set, or pre-cast members installed; raw concrete must not contact the water

#### Habitat Alteration:

- A riprap bedding layer (such as gravel filter blanket or geotextile) must be installed prior to riprap placement, if used, to prevent underlying soils from washing through the riprap during high water
- Areas impacted by temporary activities, fills, or structures must be restored to the pre-construction or better condition, including elevations and substrate
- Any fill must be free of all non-native or invasive species and/or contaminants; an invasive species control plan must be included if clean fill cannot be guaranteed
- Any new waterward encroachment and permanent filling must be minimized

#### Fish Passage:

- Soil erosion, sediment and turbidity controls must not encroach greater than 50% of the stream's width as measured from mean high water

#### Vessel traffic:

- No barges shall be used
- Project vessels are limited to small crew boats that cannot exceed 10 knots
- The number of project vessels must be limited to the greatest extent possible
- A 300-foot buffer between project vessels and ESA-listed sea turtles must be maintained

If at any time during construction the presence of federally-listed species, or their habitat, is discovered or suspected, construction activities must be halted. Activities cannot resume until FHWA and NMFS are consulted.

If you have any questions, please feel free to contact me at (518) 431-8855.

Sincerely,

**JARED ANDREW GROSS** Digitally signed by JARED ANDREW GROSS  
Date: 2021.04.02 07:52:54 -04'00'

Jared A. Gross, P.E.  
Area Engineer

Enclosure

cc: M. Ahmed, Engineer-in-Charge, NYSDOT, Region 8  
M. Toni, FHWA, HEA-NY

**S7 Verification Form Signed 3/18/21**

## Endangered Species Act Verification Form

Federal Highway Administration (FHWA) or the applicable state Department of Transportation (DOT) shall submit a signed version of this completed form, together with any project plans, maps, supporting analyses, etc., to NOAA's National Marine Fisheries Service (NMFS), Greater Atlantic Regional Fisheries Office, Protected Resources Division (GARFO PRD) at nmfs.gar.esa.section7@noaa.gov with "FHWA GARFO NLAA Program: [Project Title or Number]" in the subject line. **Note:** project design contractors and/or consultants may assist in preparing the form, but only FHWA/DOT staff shall sign off on it on the final page.

### Project Activity Type (check all that apply to the entire action):

- ☒ 1. Bridge repair, demolition, or replacement project
- ☐ 2. Culvert repair or replacement project
- ☐ 3. Dock, pier, or waterway access project (includes construction, demolition, and repairs)
- ☐ 4. Slope stabilization project

### Transportation Project Information

Name of Project:	Route 1 over Mamaroneck River, NYSDOT PIN 8473.14		
Reinitiation (Yes/No):	Yes		
State DOT/Program:	NYSDOT		
DOT ID Code:	PIN 8473.14		
Contact Person:	Kathleen Wolfanger		
Phone:	(845) 431-2317	Email:	Kathleen.Wolfanger@dot.ny.g
Project Latitude (e.g., 42.625884):	40.948902		
Project Longitude (e.g., -70.646114):	-73.732589		
Maximum Water Depth (m)	3.0		
Anticipated Project Start Date:	7/1/2021	Anticipated Project End Date:	1/31/2022
City/Town:	Mamaroneck	Water body:	Mamaroneck River
Project/Action Description and Purpose:	This project will restore the Route 1 bridge over the Mamaroneck River to a fully functional and non-deficient condition, meet the minimum 2-foot required freeboard for the 50-year storm and allow for the passage of the 100-year storm. The bridge is located in a highly urbanized area approximately 0.9 miles upstream of the mouth of the Mamaroneck River into the Long Island Sound. Bridge restoration work will occur behind cofferdams and project vessels will be limited to small crew boats that will not exceed 10 knots. See attached project summary and site assessment for more info.		



**ESA-listed species and/or critical habitats in the action area (Check all that apply)**

<input checked="" type="checkbox"/>	Atlantic sturgeon (all DPSs)	<input checked="" type="checkbox"/>	Kemp's ridley sea turtle
<input type="checkbox"/>	Atlantic sturgeon critical habitat Indicate which DPS (GOM, NYB, Chesapeake Bay DPSs): <div>Select DPS</div>	<input checked="" type="checkbox"/>	Loggerhead sea turtle (Northwest Atlantic DPS)
<input checked="" type="checkbox"/>	Shortnose sturgeon	<input checked="" type="checkbox"/>	Leatherback sea turtle
<input type="checkbox"/>	Atlantic salmon (GOM DPS)	<input type="checkbox"/>	North Atlantic right whale
<input type="checkbox"/>	Atlantic salmon critical habitat (GOM DPS)	<input type="checkbox"/>	North Atlantic right whale critical habitat
<input checked="" type="checkbox"/>	Green sea turtle (North Atlantic DPS)	<input type="checkbox"/>	Fin whale

\* Please consult GARFO PRD's ESA Section 7 Mapper for ESA-listed species and critical habitat information for your action area at: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater>.

**The following stressors are applicable to the action:**

- ☒ Underwater Noise
- ☒ Impingement/Entrainment and Entanglement
- ☒ Water Quality/Turbidity
- ☒ Habitat Alteration
- ☐ Vessel Traffic

**Impacts Table**

Habitat Alteration		
	Permanent (acres)	Temporary (acres)
Sand (saline)		
Silt/Mud/Clay (saline)	0.02	0.04
Hard bottom (saline)	0.01	0.01
Submerged Aquatic Vegetation (SAV) (saline)		
Sand (freshwater)	0.00	0.00
Silt/Mud/Clay (freshwater)	0.00	0.00
Hard bottom (freshwater)	0.00	0.00
Submerged Aquatic Vegetation (SAV) (freshwater)	0.00	0.00
<b>Total amount of habitat alteration</b>	0.03	
In-water Construction Impacts		
	Amount in meters	
Width of water body in action area (m)	16.0	
Stressor category that extends furthest distance into water body (e.g.: underwater noise, turbidity plume)	Underwater noise	
Maximum extent of stressor into the water body (m)	8.0	