



Thruway Authority Canal Corporation

BUFFALO DIVISION PLANS FOR REPAIR OF THE IMPACT DAMAGED BRIDGE AT MILEPOST 426.18 IN ERIE COUNTY

TAB 16-45B D214537
21 SHEETS BIN 5516240

TYPE OF CONSTRUCTION:
BRIDGE REHABILITATION

STANDARD SHEETS:

THE LATEST REVISIONS OF THE STANDARD SHEETS MAINTAINED BY NYS DOT, WHICH ARE CURRENT ON THE DATE OF ADVERTISEMENT FOR BIDS SHALL BE CONSIDERED TO BE IN EFFECT. ALL PAY ITEMS AND WORK CONTAINED IN THE CONTRACT AND ANY ADDITIONAL PAY ITEMS AND WORK ENCOUNTERED DURING THE COURSE OF THE CONTRACT SHALL BE SUBJECT TO THE APPLICABLE STANDARD SHEET(S) LISTED ON DWG. GN-1 UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

BRIDGE MAINTENANCE GUIDELINES

UPON COMPLETION OF THIS PROJECT, THE BRIDGE STRUCTURES REPAIRED, REHABILITATED OR RECONSTRUCTED HEREUNDER SHALL BE MAINTAINED IN ACCORDANCE WITH THE CURRENT AASHTO MANUAL FOR BRIDGE MAINTENANCE, AND THE NEW YORK STATE THRUWAY AUTHORITY MAINTENANCE DIRECTIVES:

BRIDGE MANAGEMENT PROGRAM MD 05-16, BRIDGE MANAGEMENT ACTIVITIES MD 05-3, AND BRIDGE INSPECTION PROGRAM MD 95-5.

SPECIAL MAINTENANCE REQUIREMENTS: NONE

NOTES:

ALL WORK CONTEMPLATED UNDER THIS CONTRACT IS TO BE COVERED BY AND IN CONFORMITY WITH THE STANDARD SPECIFICATIONS (US CUSTOMARY) REFERENCED IN THE CONTRACT "PROPOSAL" EXCEPT AS MODIFIED BY THESE PLANS OR CHANGES SET FORTH IN THE CONTRACT "PROPOSAL".

MAINTENANCE JURISDICTION

100% MUNICIPALITY

APPROACH GUIDE RAILING, APPROACH PAVEMENT, SHOULDERS, SIDEWALKS, APPROACH SLAB AND BRIDGE DECK WEARING COURSE, AND BRIDGE RAIL/BARRIER/PARAPET.

100% AUTHORITY

ALL OTHER BRIDGE ELEMENTS NOT LISTED ABOVE.

HL-93 LIVE LOADING, LRFR AND HS 22 LIVE LOADING, LFD or ASD.
INCLUDES FUTURE WEARING COURSE OF 0.025 ksf.

	PROJECT LIMITS		CONTRACT LIMITS	
			FROM STA.	TO STA.
MAINLINE	MP 425.0	MP 426.5	MP 424.9	MP 429.5
I-190	MP N0.0	MP N0.2	MP N0.0	MP N0.7

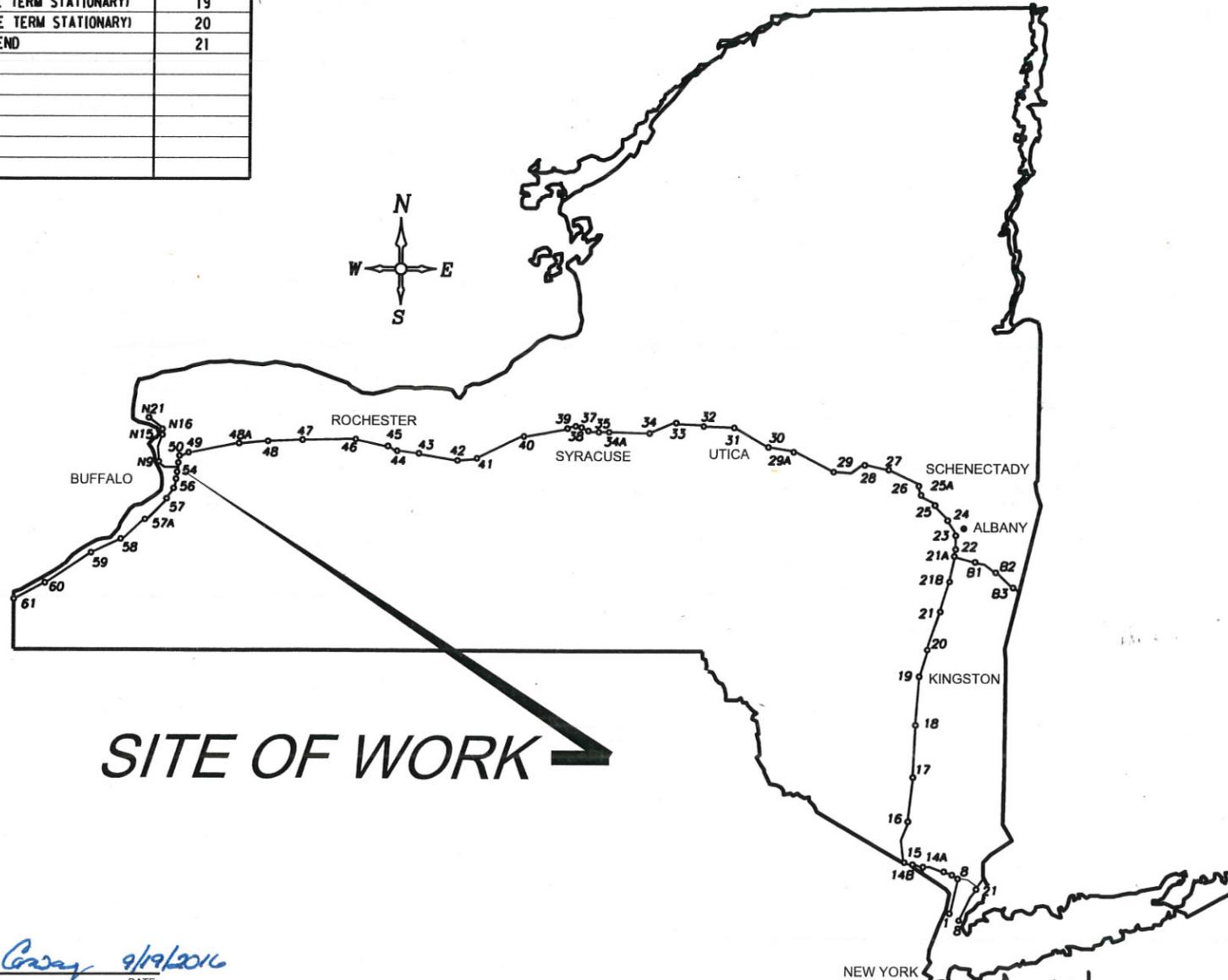
DIG SAFELY NEW YORK
UNDERGROUND FACILITIES PROTECTION ORGANIZATION
CALL 811

PREPARED AND RECOMMENDED BY:

CONSULTANT COMPANY NAME
CONSULTANT MANAGERS NAME
LICENSE NUMBER

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SITE OF WORK

CONTRACTOR'S NAME: _____
 AWARD DATE: _____
 COMPLETION DATE: _____
 FINAL ACCEPTANCE DATE: _____
 INSPECTION FIRM'S NAME: _____
 RESIDENT ENG./EIC: _____
 FINAL COST TOTAL: _____

FISCAL SHARE	COST(S)

INSPECTION FIRM CONSULTANT STAMP:

RECOMMENDED BY: *Timothy R. Cooney* 9/19/16
DIRECTOR, OFFICE OF DESIGN DATE

RECOMMENDED BY: *[Signature]* 9/19/16
DIVISION DIRECTOR DATE

RECOMMENDED BY: *[Signature]* 9/16/16
TRAFFIC ENGINEER DATE

RECOMMENDED BY: *[Signature]* 9/16/16
DIRECTOR, OFFICE OF CONSTRUCTION MANAGEMENT DATE

RECOMMENDED BY: *[Signature]* 9/19/16
DIRECTOR OF MAINTENANCE AND OPERATIONS DATE

APPROVED BY: *[Signature]* 9/19/16
CHIEF ENGINEER DATE

PROJECT MANAGER: *[Signature]*
REVIEWED BY: *[Signature]*
BUREAU DIRECTOR

DESCRIPTION:

THE WORK SHALL INCLUDE REPAIR OF DAMAGE TO STRUCTURAL STEEL COMPONENTS OF PRIMARY AND SECONDARY STRUCTURAL MEMBERS RESULTING FROM IMPACT, CORROSION LOSS, FATIGUE CRACKS, ETC., INCLUDING REPAIRS TO STRINGERS, GIRDERS, FLOOR BEAMS, COLUMNS, BENTS, STEEL PIER CAPS, DIAPHRAGMS, CROSS FRAMES, ETC. AS IDENTIFIED AND AS LOCATED ON THE PLANS OR OTHER CONTRACT DOCUMENTS. ALL WORK SHALL BE INCLUDED IN THE SPECIFIC STEEL REPAIR ITEM FOR THAT SITE.

UNDEFINED DAMAGE:

THE CONTRACTOR SHALL NOTE THAT ADDITIONAL REPAIR WORK MAY BE NECESSARY AS THE CONTRACT PROGRESSES. PRIOR TO MAKING ANY REPAIRS NOT IDENTIFIED ON THE CURRENT CONTRACT DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SUBMIT A DESCRIPTION OF THE DAMAGE TO THE AUTHORITY FOR EVALUATION AND PREPARATION OF REPAIR METHODS.

CONTRACTOR SUBMITTALS REQUIRING APPROVAL PRIOR TO THE START OF WORK:

1. WELDING PROCEDURE SPECIFICATIONS AND WHEN REQUIRED BY SECTION 8 OF THE NYSSCM, WELDING PROCEDURE QUALIFICATION RECORDS.
2. EVIDENCE THAT ALL WELDERS/WELDING OPERATORS ARE QUALIFIED TO PROCESS AND POSITION ETC. IN ACCORDANCE WITH SECTION 8 OF THE NYSSCM.
3. CERTIFICATIONS OF ALL PERSONNEL ENGAGED IN NONDESTRUCTIVE TESTING.

GENERAL REQUIREMENTS:

1. ALL STRUCTURAL STEEL FABRICATION, ERECTION, WELDING, HEATING, NONDESTRUCTIVE TESTING, ETC. SHALL BE PERFORMED IN ACCORDANCE WITH THE NEW YORK STATE STEEL CONSTRUCTION MANUAL (NYSSCM) WITH CURRENT ADDENDA, EXCEPT AS MODIFIED HEREIN.
2. THE MANUAL SHIELDED METAL ARC WELDING (SMAW) PROCESS SHALL BE USED FOR ALL FIELD REPAIR WELDING. THE FLUX CORED ARC WELDING (FCAW) PROCESS WITH EXTERNAL GAS SHIELDING OR THE SUBMERGED ARC WELDING (SAW) PROCESS MAY BE USED AS APPROPRIATE, SUBJECT TO APPROVAL OF THE DIRECTOR OF ENGINEERING SERVICES, AND SUBJECT TO QUALIFICATION AS REQUIRED BY THE NYS STEEL CONSTRUCTION MANUAL. ALL COSTS ASSOCIATED WITH THE QUALIFICATION OF THE FCAW AND SAW PROCESSES SHALL BE BORNE BY THE CONTRACTOR.
3. ALL NEW WELDS IN TENSION AREAS OF MAIN MEMBERS MUST BE TESTED FOR SOUNDNESS USING THE APPROPRIATE TEST METHOD, AS SHOWN IN THE CONTRACT DOCUMENTS. EXISTING WELDS IN TENSION AREAS, WELDS IN COMPRESSION AREAS OF MAIN MEMBERS; BASE METAL; AND SECONDARY MEMBERS MAY REQUIRE TESTING, AS SHOWN IN THE CONTRACT DOCUMENTS.
4. AFTER ALL REQUIRED REPAIRS ARE COMPLETE, A MAGNETIC PARTICLE INSPECTION SHALL BE PERFORMED ON AND WITHIN 12" OF ANY AREAS THAT WERE HEATED, STRAIGHTENED, GROUND TO REMOVE SCRAPES AND GOUGES OR WELDED.

MATERIALS:

1. ALL NEW STEEL COMPONENTS SHALL BE OF DOMESTIC ORIGIN. THIS SHALL INCLUDE STRUCTURAL STEEL SHAPES, PLATES, FASTENERS ETC.
2. NEW MATERIALS FOR THIS WORK MUST CONFORM TO THE LATEST EDITION OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, OFFICE OF ENGINEERING, INCLUDING CURRENT ADDENDA, OTHERWISE SHOWN IN THE CONTRACT DOCUMENTS OR OTHERWISE DESCRIBED HEREIN, AS FOLLOWS: (ALL REFERENCES TO METRIC DIMENSIONS SHALL BE CONVERTED TO ENGLISH)
3. TWO COPIES OF CERTIFIED MILL TEST REPORTS FOR ALL STRUCTURAL STEEL AND FASTENERS SHALL BE PROVIDED TO THE ENGINEER.
4. TWO COPIES OF CERTIFICATES OF CONFORMANCE FROM THE GALVANIZER FOR ALL GALVANIZED SURFACES SHALL BE PROVIDED TO THE ENGINEER.

A. STRUCTURAL STEEL - STANDARD SPECIFICATION 715-01

ALL NEW STRUCTURAL STEEL SHAPES AND PLATES SHALL BE ASTM A709 GR 36, UNLESS NOTED OTHERWISE. THE CONTRACTOR MAY SUBSTITUTE ASTM A709 GR 50 OR GR 50W, IF MATERIAL SUBSTITUTIONS ARE MADE, THE CONTRACTOR SHALL NOTIFY THE AUTHORITY PRIOR TO THEIR PURCHASE.

ALL NEW STRUCTURAL STEEL SHAPES AND PLATES USED IN AREAS SUBJECT TO TENSILE STRESS (GIRDER WEBS, FLANGES, COVER PLATES ETC.) SHALL BE FURNISHED TO MEET MINIMUM CVN-TOUGHNESS REQUIREMENTS (15 FT.LBS. @ 40°F.). THE DIRECTION OF ROLLING MUST BE PARALLEL TO THE DIRECTION OF PRIMARY STRESS. STRUCTURAL STEEL USED FOR REPLACEMENT CONNECTION PLATES AND DIAPHRAGMS SHALL NOT REQUIRE CVN TOUGHNESS TESTING.

B. HIGH STRENGTH BOLTS, NUTS AND WASHERS - STANDARD SPECIFICATION 715-14

ALL PLAIN FASTENERS SHALL BE ASTM A325 TYPE 1 HIGH STRENGTH BOLTS WITH ASTM A563 GR C, D, DH OR ASTM A194 GR 2, 2H NUTS AND TWO ASTM F436 WASHERS.

WHEN SHOWN ON THE CONTRACT DRAWINGS, GALVANIZED FASTENERS SHALL BE ASTM A325 TYPE 1 HIGH STRENGTH BOLTS WITH ASTM A563 GR DH OR ASTM A194 GR 2H NUTS AND TWO ASTM F436 WASHERS. GALVANIZING SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION 719-01, GALVANIZED COATINGS AND REPAIR METHODS, TYPE II, ZINC COATING (HOT DIP) ON IRON AND STEEL HARDWARE.

WASHERS SHALL BE INSTALLED UNDER BOTH THE BOLT HEAD AND NUT.

C. GALVANIZING - STANDARD SPECIFICATION 719-01
MATERIAL SHALL BE GALVANIZED WHEN SPECIFIED ON THE CONTRACT PLANS.

D. ANCHOR BOLTS (NON-STAINLESS STEEL) STANDARD SPECIFICATION 723-60

ANCHOR BOLTS SHALL BE OF THE DIAMETER, TYPE AND GRADE SPECIFIED ON THE CONTRACT PLANS.

BOLTED CONNECTIONS:

1. ALL BOLTED CONNECTIONS SHALL BE FRICTION TYPE. PRIOR TO ASSEMBLY, INNER PLIES SHALL BE FREE OF OIL, GREASE, LOOSE SCALE, BURRS, DIRT, PAINT AND OTHER FOREIGN MATERIAL THAT WILL PREVENT THE SOLID SEATING OF THE PARTS.
2. BOLT HOLES SHALL BE 1/16" LARGER IN DIAMETER THAN THE BOLT DIAMETER.
3. WHENEVER EXISTING HOLES IN STEEL MEMBERS ARE USED AS A TEMPLATE FOR THE DRILLING OF NEW HOLES, THE NEW BOLT HOLES SHALL BE MADE USING HOUGEN OR JANCY TYPE DRILLS. TWIST DRILLS WILL NOT BE ALLOWED.
4. BOLTING AND BOLT TENSION VERIFICATION SHALL BE IN ACCORDANCE WITH SECTION 10 OF THE NYSSCM.

WELDING:

1. ALL FIELD WELDING SHALL BE PERFORMED USING 5/32" DIAMETER PROPERLY DRIED E7018 ELECTRODES, AND APPROVED SMAW WELDING PROCEDURE SPECIFICATIONS
2. PROPERLY DRIED ELECTRODES SHALL BE DEFINED AS FOLLOWS: ALL SMAW ELECTRODES SHALL BE FURNISHED IN HERMETICALLY SEALED CONTAINERS AND SHALL BE DRIED AT LEAST TWO HOURS, BUT NOT TO EXCEED FOUR HOURS, BETWEEN 450°F (230°C) AND 500°F (260°C) BEFORE THEY ARE USED. AFTER DRYING, ELECTRODES SHALL IMMEDIATELY BE PLACED IN A STORAGE OVEN HELD CONTINUOUSLY AT 250°F (120°C) UNTIL THEY ARE USED IN THE WORK. ONE OVEN MAY BE USED PROVIDING PROPER TEMPERATURE CONTROLS ARE MAINTAINED. THE TIME THAT THE ELECTRODES MAY BE KEPT FROM THE OVEN BEFORE USE WILL BE AS DESCRIBED IN ARTICLE 711 OF THE NYSSCM.
3. ALL WELDING SHALL BE PERFORMED BY NEW YORK STATE CERTIFIED WELDERS/WELDING OPERATORS QUALIFIED TO PROCESS AND POSITION IN ACCORDANCE WITH SECTION 8 OF THE NYSSCM. ALL COSTS ASSOCIATED WITH WELDER/WELDING OPERATOR QUALIFICATION SHALL BE BORNE BY THE CONTRACTOR.
4. MINIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE 400°F, EXCEPT AS APPROVED BY THE DIRECTOR OF ENGINEERING SERVICES FOR SPECIFIC APPLICATIONS. HEAT MEASUREMENTS SHALL BE MADE AT LEAST 3 INCHES BOTH LATERALLY AND IN ADVANCE OF THE WELDING.
5. MINIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL ALSO APPLY TO THE INSTALLATION OF TACK WELDS.
6. TEMPERATURE INDICATING CRAYONS SHALL BE IN THE POSSESSION OF ALL WELDERS WHILE PERFORMING WORK.
7. THE INSTALLATION OF TEMPORARY ATTACHMENTS, TEMPORARY WELDS AND/OR TACK WELDS, NOT TO BE INCORPORATED INTO PERMANENT WELDS, WILL NOT BE ALLOWED UNLESS SPECIFICALLY APPROVED. ALL UNAUTHORIZED WELDING WILL BE CAUSE FOR THE REJECTION OF THE AFFECTED MATERIAL. THE COST TO REPAIR OR REPLACE THE REJECTED MATERIAL SHALL BE BORNE BY THE CONTRACTOR
8. ALL AIR CARBON ARC GOUGING SHALL BE FOLLOWED BY GRINDING TO REMOVE ANY CARBON PICK UP.

EVALUATING, REMOVING AND INSTALLING REPLACEMENT DIAPHRAGMS AND CONNECTION PLATES:

WHEN AN EXISTING DIAPHRAGM AND/OR CONNECTION PLATE IS TO BE REMOVED AND REPLACED, PAINT AND DEBRIS SHALL BE REMOVED FROM THE CONNECTION PLATE AND 12" ON EITHER SIDE OF THE CONNECTION PLATE WELDS AND ON BOTH SIDES OF THE GIRDER.

REMOVAL MAY BE BY AIR CARBON ARC GOUGING OR FLAME CUTTING.

CONNECTION PLATES SHALL BE REMOVED BY CUTTING TO WITHIN 1/8" MIN. OF ADJACENT BASE METAL. THE REMAINING WELD AND CONNECTION PLATE BASE METAL SHALL BE REMOVED BY GRINDING FLUSH WITH ADJACENT BASE METAL.

A VISUAL AND MAGNETIC PARTICLE TEST SHALL BE PERFORMED OF THE WELD REMOVAL AREA AND ADJACENT BASE METAL.

ALL REJECTABLE INDICATIONS SHALL BE REPORTED TO THE NYS THRUWAY AUTHORITY METALS ENGINEERING UNIT FOR DISPOSITION.

REPAIR OF NICKS, SCRAPES AND GOUGES:

1. NICKS, SCRAPES AND GOUGES IN COMPONENTS OF STEEL MEMBERS MAY BE REPAIRED BY GRINDING TO A SLOPE OF 1 ON 10, AND BLENDING IN SMOOTHLY TO ADJACENT BASE METAL, PROVIDING:

- A. THE THICKNESS OF THE MATERIAL IS NOT REDUCED BY MORE THAN 20% OF THE ORIGINAL NOMINAL THICKNESS.
 - B. THE WIDTH OF THE FLANGE OR COVER PLATE IS NOT REDUCED BY MORE THAN 5% OF THE ORIGINAL NOMINAL WIDTH.
 - C. THE GOUGE DOES NOT REDUCE THE NOMINAL CROSS SECTIONAL AREA OF THE COMPONENT BY MORE THAN 5% OF THE ORIGINAL NOMINAL CROSS SECTION. A COMPONENT IS DEFINED AS A WEB OR FLANGE OF A PLATE GIRDER, A WEB OR FLANGE OF A ROLLED BEAM GIRDER, A COVER PLATE EXCLUSIVE OF WELDS, A LEG OF AN ANGLE, ETC.
2. NICKS, SCRAPES AND GOUGES THAT EXCEED THE ABOVE LIMITS MUST BE REPAIRED USING AN APPROVED PROCEDURE SIMILAR TO THE FOLLOWING:
- A. PREPARE THE SURFACE BY GRINDING.
 - B. WELD WITH APPROVED PROCEDURES TO COMPLETELY FILL THE GOUGE.
 - C. GRIND FLUSH AND SMOOTH WITH THE ADJACENT BASE METAL.
 - D. ULTRASONIC TEST THE REPAIR WELD.
3. ALL FINAL GRINDING MUST BE PARALLEL TO THE DIRECTION OF APPLIED STRESS IN THE MEMBER UNLESS THE SURFACE ROUGHNESS MEETS OR EXCEEDS AN ANSI 125 FINISH.

INSPECTION AND NONDESTRUCTIVE TESTING:

QUALIFICATIONS

1. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF QUALIFIED PERSONNEL TO PERFORM INSPECTION AND TESTING OF THE WORK. THE TYPE OF INSPECTION AND THE LOCATION SHALL BE AS SHOWN IN THE CONTRACT DOCUMENTS. THE FOLLOWING ARE CONSIDERED ACCEPTABLE QUALIFICATIONS:
2. PERSONNEL PERFORMING VISUAL INSPECTION SHALL POSSESS A CURRENT CERTIFICATION AS AN AMERICAN WELDING SOCIETY(AWS) CERTIFIED WELDING INSPECTOR (CWI) IN ACCORDANCE WITH THE PROVISIONS OF AWS QCI, STANDARD AND GUIDE FOR QUALIFICATION AND CERTIFICATION OF WELDING INSPECTORS.
3. PERSONNEL PERFORMING DYE PENETRANT, MAGNETIC PARTICLE OR RADIOGRAPHIC INSPECTION SHALL BE QUALIFIED IN ACCORDANCE WITH THE CURRENT EDITION OF THE AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING RECOMMENDED PRACTICE NO. SNT-TC-1A. ONLY INDIVIDUALS QUALIFIED FOR NOT LEVEL I AND WORKING UNDER THE SUPERVISION OF AN INDIVIDUAL QUALIFIED TO NOT LEVEL II, OR AN INDIVIDUAL QUALIFIED FOR NOT LEVEL II MAY PERFORM NONDESTRUCTIVE TESTING.
4. PERSONNEL PERFORMING ULTRASONIC TESTING MUST BE CERTIFIED BY TESTS ADMINISTERED BY NYSOOT. A LIST OF NYSOOT CERTIFIED ULTRASONIC TECHNICIANS IS AVAILABLE UPON REQUEST.

NONDESTRUCTIVE TESTING:

1. RADIOGRAPHIC INSPECTION (RT), WHEN REQUIRED, SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16 OF THE NYSSCM.
2. ULTRASONIC TESTING (UT), WHEN REQUIRED, SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 17 OF THE NYSSCM. WELD FLAWS SHALL BE EVALUATED FOR ACCEPTANCE OR REJECTION IN ACCORDANCE WITH TABLE 1700B-HIGHWAY & RAILWAY BRIDGES.
3. MAGNETIC PARTICLE INSPECTION (MT), WHEN REQUIRED, MUST BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 18 OF THE NYSSCM USING THE YOKE TECHNIQUE, EXCEPT THAT SEPARATE TESTS MUST BE PERFORMED USING BOTH AC OUTPUT CURRENT TO INSPECT FOR SURFACE DISCONTINUITIES AND HALF WAVE RECTIFIED DC OUTPUT CURRENT TO INSPECT FOR NEAR SURFACE DISCONTINUITIES. THE YOKE MUST BE CAPABLE OF PRODUCING A FIELD STRENGTH OF 10 POUNDS (4.5 KG) MINIMUM FOR ALTERNATING CURRENT AND 40 POUNDS (18 KG) MINIMUM FOR DIRECT CURRENT AT THE MAXIMUM POLE SPACING TO BE USED IN THE WORK. THE PROD METHOD SHALL NOT BE USED.
4. DYE PENETRANT INSPECTION (PT), WHEN REQUIRED, MUST BE PERFORMED IN ACCORDANCE WITH SECTION 19 OF THE NYSSCM. DYE PENETRANT TESTING MAY BE SUBSTITUTED FOR MAGNETIC PARTICLE TESTING WHEN APPROVED BY THE ENGINEER.

FILED BY: K. KAYSER
 CHECKED BY: J. DISHON
 DRAFTED BY: M. CIOFFI
 CHECKED BY: M. CIOFFI
 DESIGNED BY: K. KAYSER
 DESIGN SUPERVISOR: M. CIOFFI

ALTERED ON:	AFFIXED ON: 9/16/16
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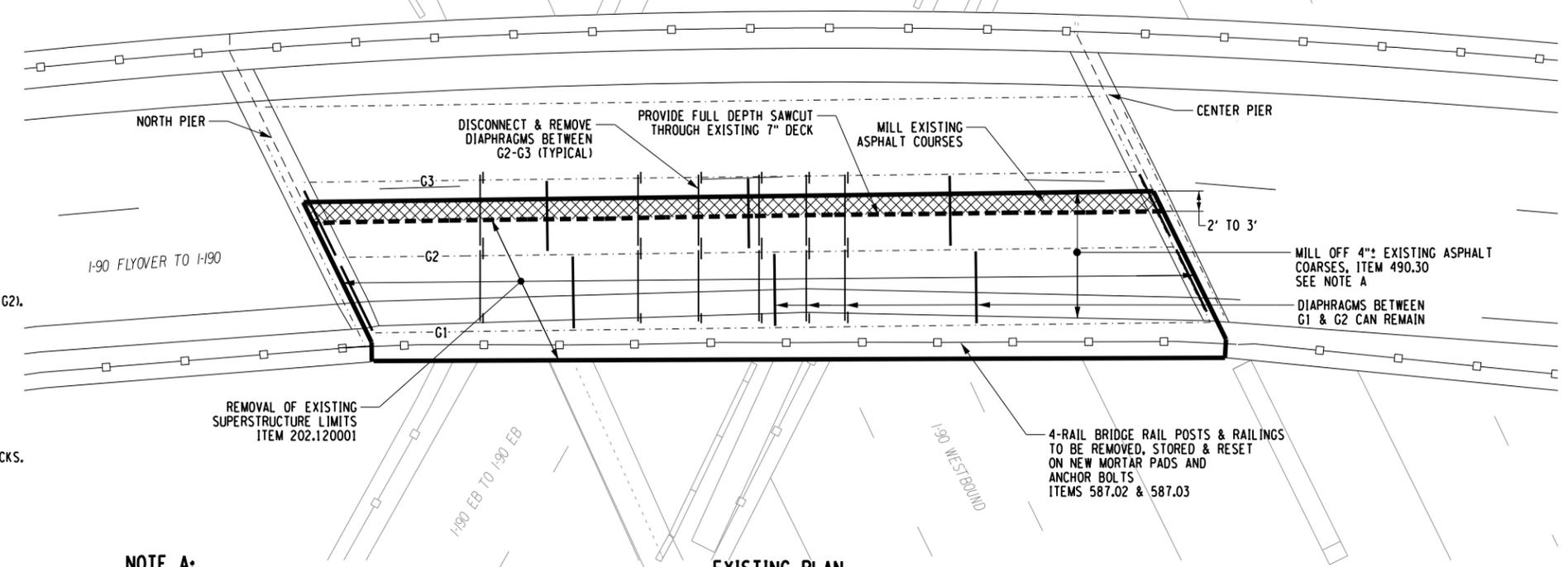
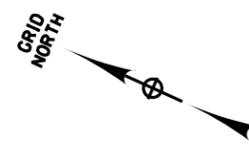
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, 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.

REVISIONS			
DATE	DESCRIPTION	BY	SYM

 Thruway Authority Canal Corporation	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT M.P. 426.18	CONTRACT NUMBER: TAB 16-45B
	LOCATION OF PROJECT INTERCHANGE 53 RAMP BRIDGE OVER I-90	DATE: 8/25/16
	TITLE OF DRAWING GENERAL NOTES	DRAWING NUMBER: GN

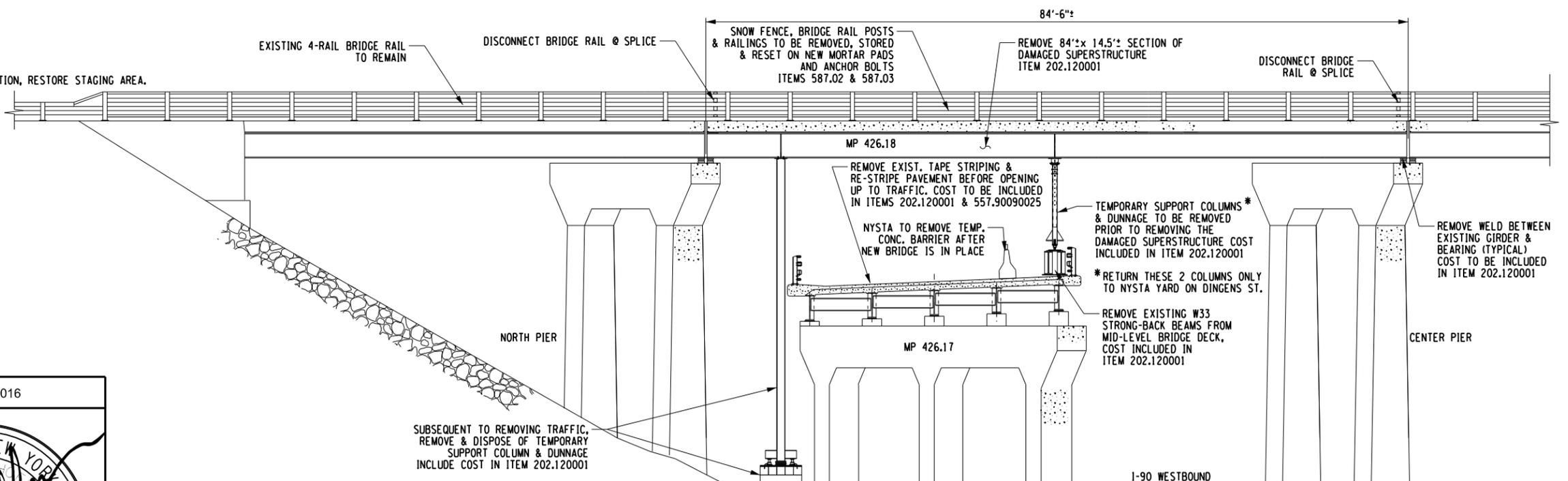
SCOPE OF WORK:

1. CONTRACTOR TO COORDINATE SCHEDULING AND TIMING FOR ANY PREPARATORY WORK DIRECTLY WITH NYSTA BUFFALO MAINTENANCE DIVISION.
2. COORDINATE THE SCHEDULING OF A FRIDAY EVENING TO MONDAY MORNING CLOSURE OF BOTH RAMPS.
3. CONTRACTOR IS RESPONSIBLE FOR WORK ZONE TRAFFIC CONTROL INCLUDING:
 - CLOSURE AND REOPENING OF TOP LEVEL RAMP INCLUDING INSTALLATION AND REMOVAL OF DETOUR SIGNAGE.
 - CLOSURE AND REOPENING OF MID-LEVEL RAMP INCLUDING INSTALLATION AND REMOVAL OF DETOUR SIGNAGE.
 - DAYTIME AND NIGHT-TIME LANE CLOSURES ON I-90 WB AS PERMITTED BY NYSTA BUFFALO DIVISION TRAFFIC.
 - COORDINATE FOR SHORT TERM CLOSURE OF ALL 3 90-WB LANES WHEN REMOVING EXISTING BRIDGE & INSTALLING NEW UNIT.
4. COORDINATE DIRECTLY WITH FORT MILLER & NYSTA DIVISION FOR EXACT TIME & LOCATION FOR DELIVERY OF SUPERSTRUCTURE REPLACEMENT UNIT.
5. AS NEEDED OR WARRANTED, EXCAVATE EMBANKMENT AND CONSTRUCT 25-35 FT. RADIUS - LEVEL STAGING AREA FOR CRANE PLACEMENT (POTENTIALLY ON EXISTING HAUL ROAD). REMOVE TREES AND CONSTRUCT LEVEL LAYDOWN AREA FOR REMOVAL OF DAMAGED SUPERSTRUCTURE SECTION.
6. REMOVE 100 FT. GUIDE RAIL FROM 90 WB RIGHT SHOULDER AND INSTALL 200 TO 300 FT. TEMPORARY BARRIER AS NEEDED ALONG EDGE OF DRIVING LANE.
7. CRANE DELIVERY AND CRANE & COUNTERWEIGHT SET UP.
8. DURING THE DESIGNATED WEEKEND (FROM FRIDAY EVENING TO MONDAY MORNING), SHUT DOWN BOTH RAMPS TO PERFORM THE FOLLOWING:
 - a. NYSTA WILL REMOVE THEIR TEMPORARY CONCRETE BARRIER ON MID-LEVEL RAMP.
 - b. REMOVE TEMPORARY COLUMNS, STRONGBACKS AND OTHER TEMPORARY WORKS.
 - c. DISCONNECT DIAPHRAGMS BETWEEN GIRDERS G2 AND G3, REMOVE INTERFERING CABLE RESTRAINERS ON G1 & G2).
 - d. MILL OFF THE EXISTING ASPHALT OVERLAY FROM SPAN BEING REMOVED.
 - e. MARK OUT SAWCUT AND LIMITS OF SUPERSTRUCTURE REMOVAL. CONFIRM WITH ENGINEER.
 - f. LONGITUDINAL SAWCUT DECK AND ARMORED JOINT.
 - g. DISCONNECT EXISTING GIRDERS FROM EXISTING BEARINGS.
 - h. DISCONNECT BRIDGE RAILING AT BOTH ENDS OF SPAN.
 - i. REMOVE THE DAMAGED SUPERSTRUCTURE SECTION (G1 & G2).
 - j. REMOVE & STORE EXISTING BRIDGE RAIL & SNOW FENCE.
9. REMOVE CLOSURES AND OPEN TOP LEVEL BRIDGES AND MID-LEVEL BRIDGE TO TRAFFIC.
10. REMOVE DETOUR SIGNS.
11. COMPLETE DEMOLITION OF EXISTING BRIDGE DECK AND GIRDERS AND DISPOSE OF ALL MATERIALS.
12. DISMANTLE AND DEMOBILIZE CRANE.
13. RE-INSTALL BOX BEAM RAILING ALONG 90 WB DRIVING LANE SHOULDER.
14. REMOVE TEMPORARY BARRIER AND RE-OPEN 90 WB SHOULDER.
15. RECONSTRUCT EMBANKMENT, REPLACE LIGHT STONE FILL SLOPE PROTECTION, RESTORE STAGING AREA.
16. TOUCH UP PAINTING OF WELDS, BOLTS, ETC.



NOTE A:

MILLING OF EXISTING ASPHALT FROM ON DAMAGED DECK IS SOLELY TO REDUCE WEIGHT. IF REMOVING EXISTING SPAN IN 2 PIECES, MILLING OF THIS AREA MAY BE OMITTED.



ALTERED ON:	AFFIXED ON: 09/15/2016
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REVISIONS			
DATE	DESCRIPTION	BY	SYM.

NEW YORK STATE OF OPPORTUNITY

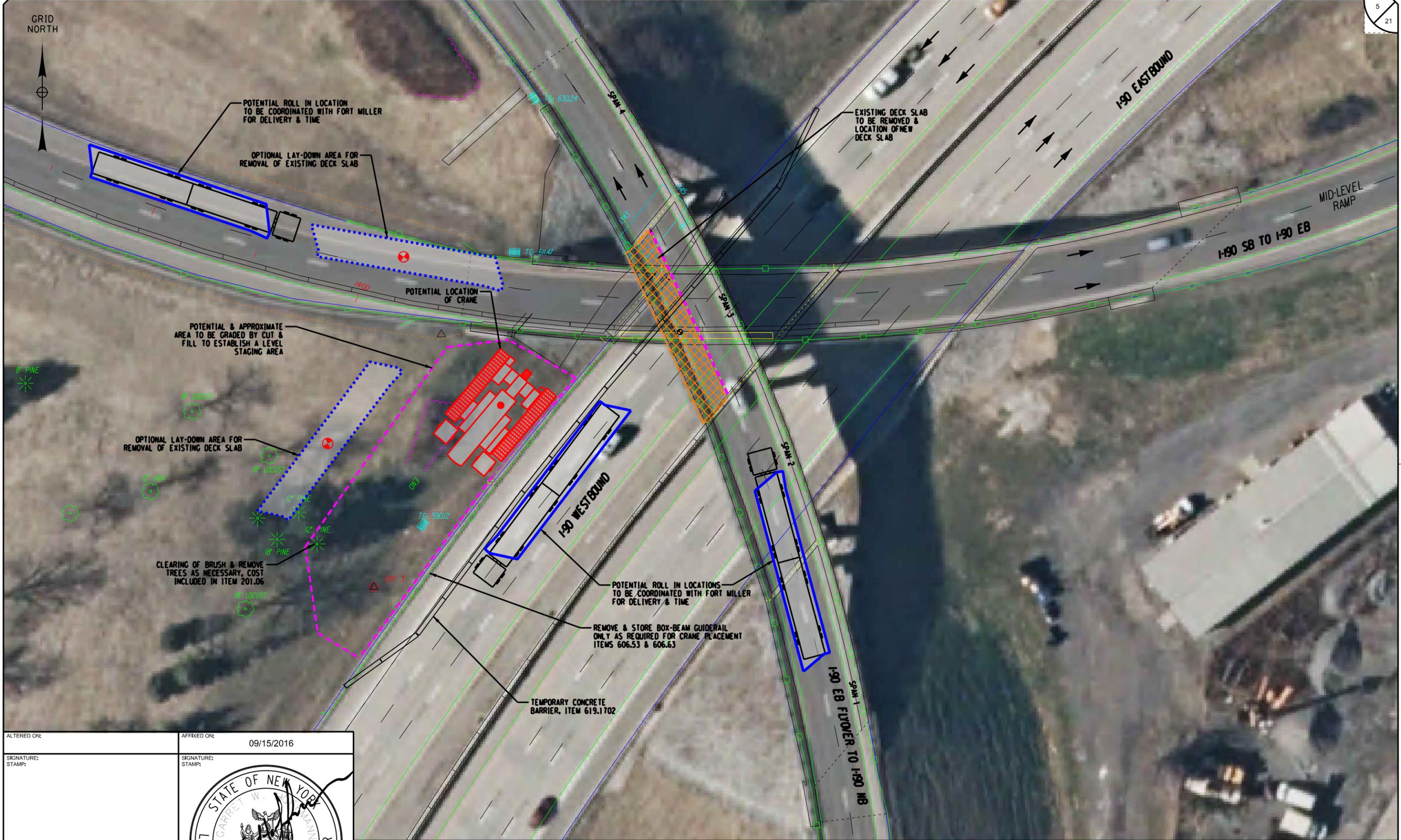
Thruway Authority | **Canal Corporation**

CHA

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TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
TITLE OF DRAWING GENERAL PLAN, ELEVATION & SCOPE OF WORK	DRAWING NUMBER: S-1

FILE NAME = V:\Projects\BNY\21414\Reports\426.18_190_Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\5-1-General Plan & Elevation.dgn
 DATE/TIME = 9/16/2016
 USER = 1719
 DESIGN SUPERVISOR: G. HOFFMANN
 DESIGNED BY: S. KINSIMAN
 CHECKED BY: G. HOFFMANN
 DRAFTED BY: J. HARTWELL
 CHECKED BY: S. SCHUKRAFT



CHECKED BY: S. SCHUKRAFT
 DRAFTED BY: J. HARTWELL
 CHECKED BY: G. HOFFMANN
 DESIGNED BY: S. KINSIMAN
 DESIGN SUPERVISOR: G. HOFFMANN

FILE NAME = V:\Projects\BNY\21414\Reports\426.18 190 Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\S-2 Aerial Plan - Potential Staging Notes.dgn
 DATE/TIME = 9/16/2016
 USER = 1719

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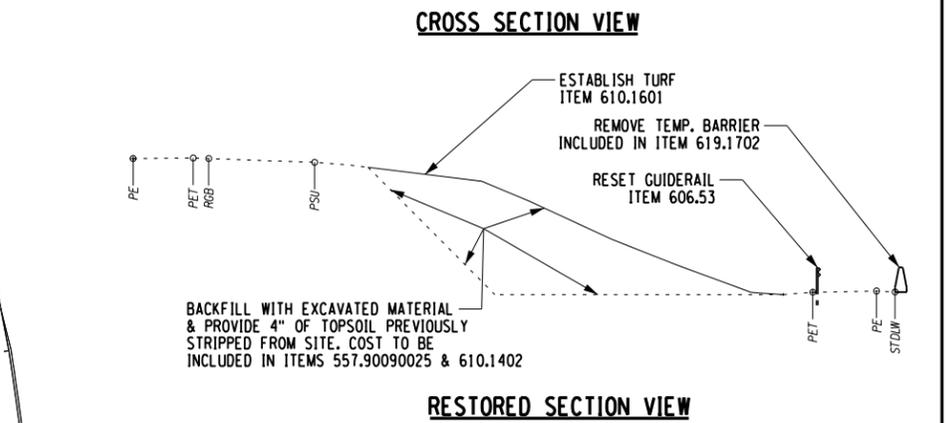
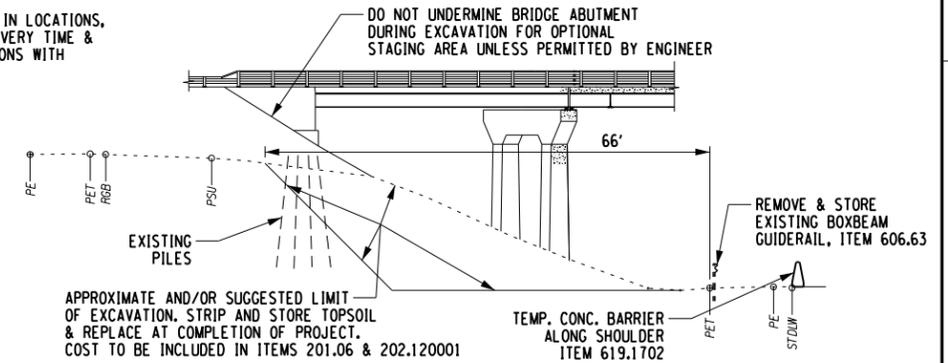
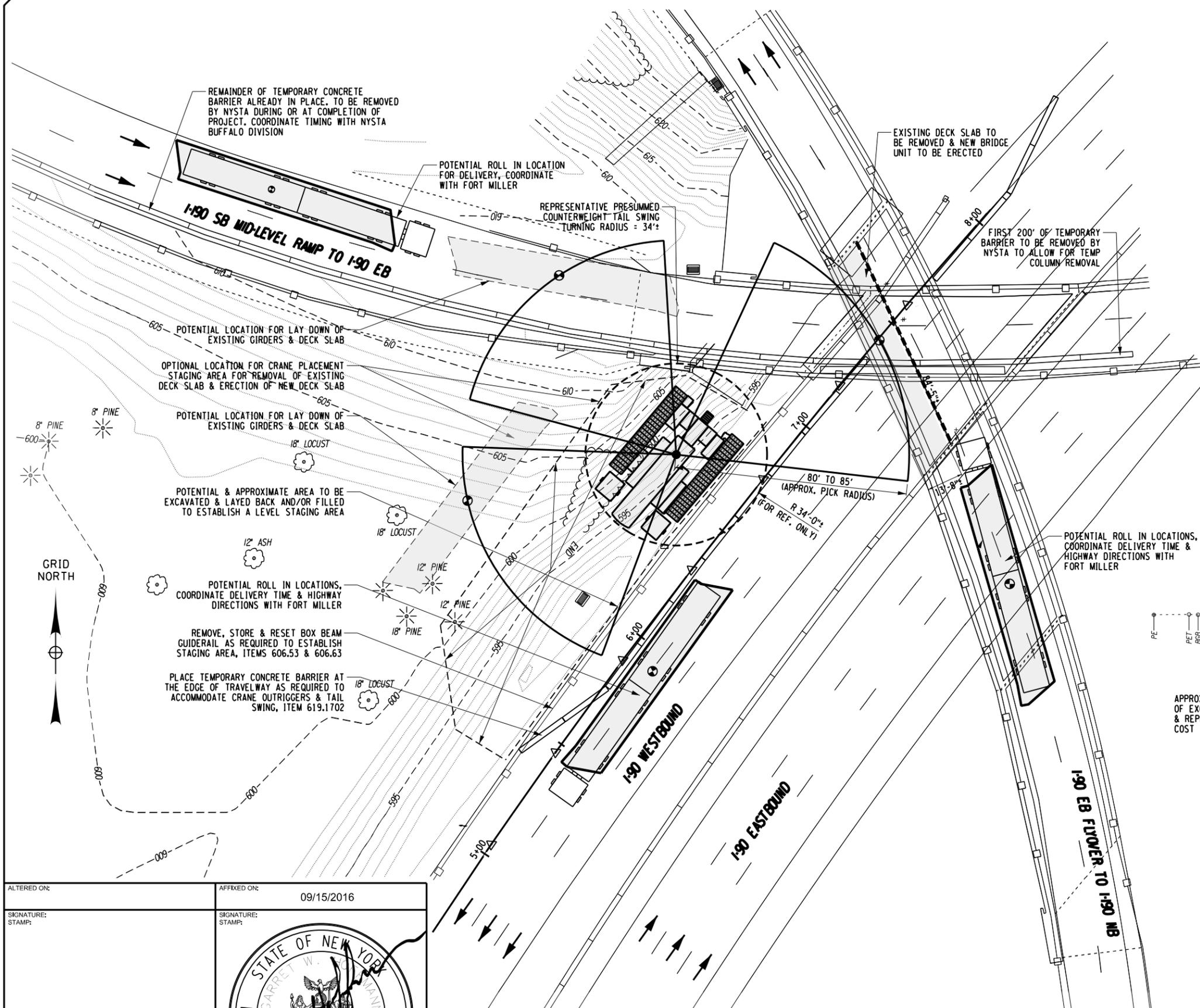
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, 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	DESCRIPTION	BY	SYM.

	Thruway Authority 	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18 LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL) TITLE OF DRAWING AERIAL PLAN POTENTIAL STAGING AREA	CONTRACT NUMBER: TAB 16-45B D214537 DATE: 09/15/16 DRAWING NUMBER: S-2

NOTES:

- COORDINATE DIRECTLY WITH FORT MILLER FOR SCHEDULE, LOCATION & DIRECTION FOR DELIVERY OF SUPERSTRUCTURE REPLACEMENT SECTION.
- CONTRACTOR SHALL DETERMINE LOCATION OF STAGING AREA. POTENTIAL STAGING AREA SHOWN ONLY FOR SUGGESTED EXAMPLE.
- CONTRACTOR SHALL DETERMINE LIMITS OF EXCAVATION TO ESTABLISH A SUITABLE LEVEL STAGING AREA AND LAYDOWN AREA. DO NOT UNDERMINE EXISTING BRIDGE ABUTMENT FOOTING DURING EXCAVATION. POTENTIAL EXCAVATION LIMITS ARE SHOWN. EXCAVATE EMBANKMENT AND CONSTRUCT 25-35 FT. RADIUS - LEVEL AREA FOR CRANE PLACEMENT ON EXISTING HAUL ROAD. REMOVE ONLY THOSE INTERFERING TREES NECESSARY TO ESTABLISH STAGING AREA. REMOVAL OF TREES SHALL BE APPROVED BY THE NYSTA
- APPROXIMATE LIMITS OF GUIDE RAIL REMOVAL AND TEMPORARY CONCRETE BARRIER ARE SHOWN. REMOVE 100' FT. GUIDE RAIL FROM 90 WB AND INSTALL 200' TO 300' FT. TEMPORARY BARRIER AS NEEDED ALONG EDGE OF DRIVING LANE.
- CONTRACTOR SHALL DETERMINE LOCATION OF EXISTING DECK SLAB LAY DOWN AREA AND NEW DECK ROLL-IN LOCATION OF NEW DECK SLAB. POTENTIAL LOCATIONS ARE SHOWN FOR ILLUSTRATION.
- WORK TO RESTORE THE STAGING AREA INCLUDES, BUT IS NOT LIMITED TO:
 - DEMOLITION & REMOVAL OF EXISTING DECK SLAB FROM THE STAGING AREA AND OR SITE
 - DEMOLITION OF THE CRANE
 - BACKFILL STAGING AREA AND RECONSTRUCTED EMBANKMENT WITH PREVIOUSLY EXCAVATED MATERIAL
 - PLACE AND GRADE TOPSOIL OVER BACKFILL
 - ESTABLISH TURF WITH SEED AND MULCH
 - RESET STORED BOX BEAM GUIDE RAIL
 - REMOVE TEMPORARY CONCRETE BARRIER FROM I-90 WESTBOUND
 - REPLACE LIGHT STONE FILL SLOPE PROTECTION UNDER & ADJACENT TO ABUTMENT SLOPE



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 DRAFTED BY: J. HARTWELL
 CHECKED BY: G. HOFFMANN
 DESIGNED BY: S. KINSIMAN
 DESIGN SUPERVISOR: G. HOFFMANN

FILE NAME = V:\Projects\BNY\24144\Reports\426.18_190_Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\5-3_Site Plan & Sections.dgn
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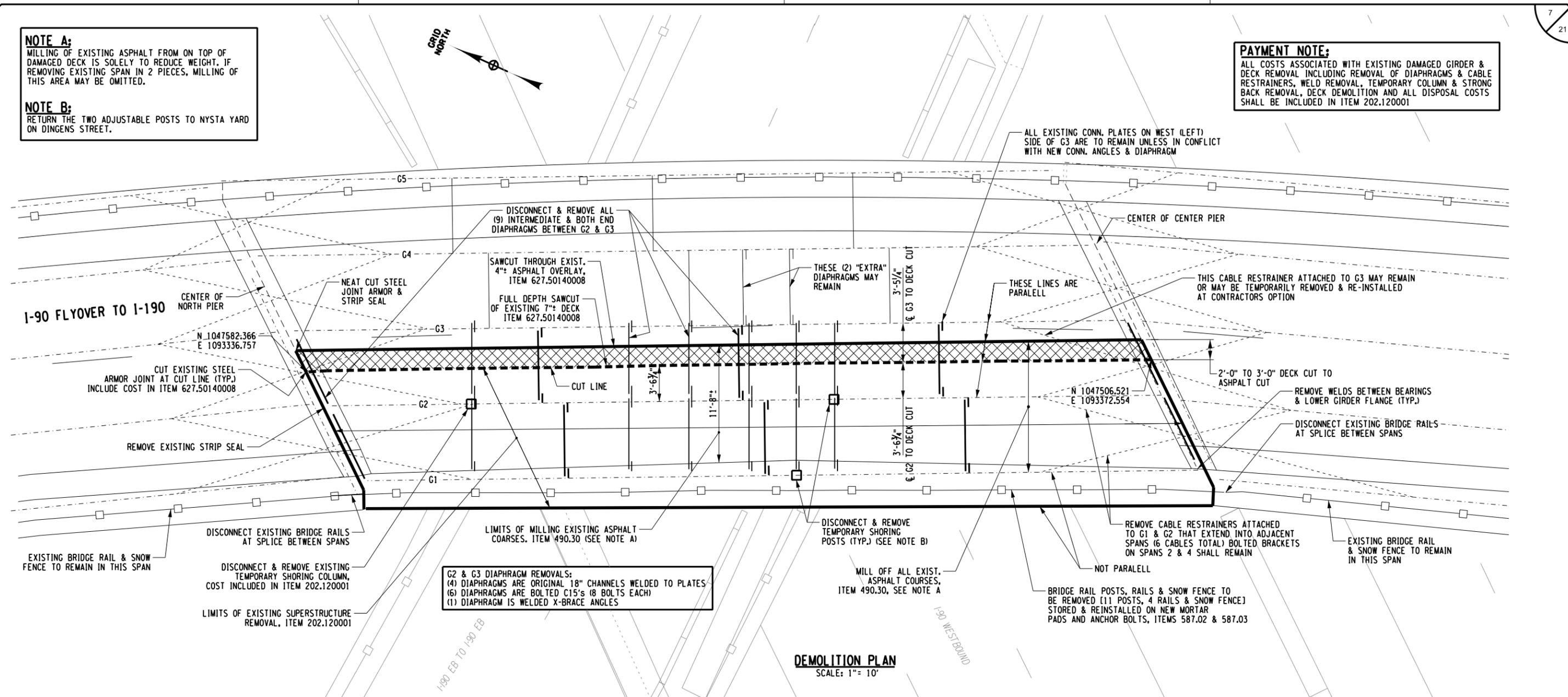
REVISIONS			
DATE	DESCRIPTION	BY	SYM.

Thruway Authority 	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
	LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
	TITLE OF DRAWING SITE PLAN & SECTIONS	DRAWING NUMBER: S-3

NOTE A:
MILLING OF EXISTING ASPHALT FROM ON TOP OF DAMAGED DECK IS SOLELY TO REDUCE WEIGHT. IF REMOVING EXISTING SPAN IN 2 PIECES, MILLING OF THIS AREA MAY BE OMITTED.

NOTE B:
RETURN THE TWO ADJUSTABLE POSTS TO NYSTA YARD ON DINGENS STREET.

PAYMENT NOTE:
ALL COSTS ASSOCIATED WITH EXISTING DAMAGED GIRDER & DECK REMOVAL INCLUDING REMOVAL OF DIAPHRAGMS & CABLE RESTRAINERS, WELD REMOVAL, TEMPORARY COLUMN & STRONG BACK REMOVAL, DECK DEMOLITION AND ALL DISPOSAL COSTS SHALL BE INCLUDED IN ITEM 202.120001



G2 & G3 DIAPHRAGM REMOVALS:
(4) DIAPHRAGMS ARE ORIGINAL 18" CHANNELS WELDED TO PLATES
(6) DIAPHRAGMS ARE BOLTED C15's (8 BOLTS EACH)
(1) DIAPHRAGM IS WELDED X-BRACE ANGLES

DEMOLITION PLAN
SCALE: 1" = 10'

REMOVAL OF DAMAGED SUPERSTRUCTURE SECTION

1. DISCONNECT, REMOVE AND STORE EXISTING 4-RAIL BRIDGE, SNOW FENCE AND GUIDE RAIL POSTS
2. MILL OFF 4" ASPHALT FROM TOP OF DAMAGED SPAN AND REMOVE ADD'L 2' TO 3' WIDE STRIP OF EXISTING ASPHALT OVERLAY ALONG CUT LINE LOCATED BETWEEN GIRDER G2 AND GIRDER G3.
3. MARK OUT SAWCUT LIMITS OF SUPERSTRUCTURE REMOVAL CONFIRM WITH ENGINEER
4. FOR THE SPAN TO BE REMOVED CUT THROUGH STEEL ARMOR EXPANSION JOINT AT BOTH PIERS. REMOVE EXISTING PREFORMED CLOSED CELL FOAM JOINT MATERIAL AT BOTH PIERS.

5. PROVIDE FULL DEPTH LONGITUDINAL SAW CUT THROUGH THE EXISTING SLAB ALONG CUT LINE
6. REMOVE WELDS BETWEEN EXISTING BEARINGS AND GIRDER FLANGES - JACK GIRDERS G1 & G2, TO CONFIRM THEY ARE FREE FROM BEARINGS.
7. DISCONNECT AND REMOVE BOTH END DIAPHRAGMS AND 9 INTERMEDIATE DIAPHRAGMS BETWEEN GIRDERS G2 AND G3. EXISTING CONNECTION PLATES ON THE WEST (LEFT) SIDE OF G3 SHALL REMAIN IN PLACE UNLESS THEY INTERFERE WITH THE NEW CONNECTION ANGLES OR DIAPHRAGMS. EXISTING CONNECTION PLATES THAT INTERFERE SHALL BE REMOVED.
8. DISCONNECT AND REMOVE THE 3 TEMPORARY SHORING POSTS BELOW G1 AND G2 (NOTE 2).
9. DISCONNECT AND REMOVE INTERFERING STEEL RESTRAINER CABLES FROM G1 AND G2 AT BOTH PIERS (6 TOTAL).
10. CORE HOLES THROUGH DECK AS NEEDED TO ACCOMODATE SLINGS & RIGGING. HOOK CRANE TO SLINGS & SPREADERS ON EXISTING BRIDGE. THIS CAN BE CONCURRENT WHILE WAITING ON OTHER TASK TO FINISH.
11. PICK EXISTING GIRDERS & DECK AND LOWER TO GROUND.
12. DEMOLISH EXISTING DECK AND REMOVE EXISTING BRIDGE COMPONENTS FROM STAGING AREA.

BRIDGE REMOVAL/ERECTION NOTES:

1. THE EXISTING SPAN BEING REMOVED WEIGHS APPROXIMATELY 97.5 TONS, INCLUDING THE RAILING, BUT EXCLUDING ANY ASPHALT. THE CONTRACTOR SHALL INDEPENDENTLY CHECK THIS WEIGHT AND ADD ANY SLINGS RIGGING OR HOOK WEIGHTS TO DETERMINE THE TOTAL PICK WEIGHT.
2. THIS WEIGHT ASSUMES THE FULL 7" DECK IS STILL PRESENT. THE CONTRACTOR MAY ELECT TO MILL ADDITIONAL CONCRETE THICKNESS (1" OFF FROM THE TOP OF THE DECK OR MILL OFF THE 4" CONCRETE "SWALE" TO THE RAILING TO REDUCE THE TOTAL WEIGHT. THE CONTRACTOR MAY ELECT TO REMOVE AN ADDITIONAL PORTION OF THE DECK "OVERHANG" BETWEEN G3-G3 BEYOND THE CUT LINE TO REDUCE WEIGHT.
3. THE CONTRACTOR MAY ALSO ELECT TO REMOVE THE BRIDGE RAILINGS, FENCING AND/OR POSTS IN ADVANCE OF SPAN REMOVAL TO REDUCE WEIGHT.
4. THE CONTRACTOR SHALL HAVE THE OPTION TO REMOVE THE EXISTING SPAN IN TWO PIECES, ONE GIRDER AT A TIME. THIS MAY REQUIRE THAT THE LONGITUDINAL CUT AND SOME DIAPHRAGM REMOVAL OCCUR AFTER THE FIRST GIRDER WERE REMOVED AND MAY REQUIRE THE CRANE TO BE HOOKED TO THE SECOND GIRDER PRIOR TO DIAPHRAGM REMOVAL, OR OTHER MEANS EMPLOYED TO ENSURE GIRDR STABILITY.
5. THE MEANS, METHODS AND SEQUENCE OF SPAN REMOVAL AND TYPE AND PLACEMENT OF THE CRANE IS HE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT A DEMOLITION PLAN TO THE ENGINEER 1 WEEK PRIOR TO SPAN REMOVAL. THE DEMOLITION / ERECTION PLAN SHALL PROVIDE INFORMATION ON THE TYPE OF CRANE, CRANE LOCATION, CRANE MATS, ALL RIGGING, PICK RADIUS, PICK WEIGHTS, CRANE CAPACITY CHARTS, RIGGING CAPACITIES, LOCATION OF SPAN LAYDOWN AREA, LOCATION OF NEW UNITS FOR LIFTING, SEQUENCE OF OPERATIONS AND ANY OTHER PERTINENT INFORMATION. THE CONTRACTOR AND ERECTOR SHALL REVIEW THE PROCEDURE, SEQUENCE AND SCHEDULE OF DEMOLITION AND ERECTION WITH THE E.I.C. THE DAY BEFORE DEMOLITION BEGINS.

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TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
TITLE OF DRAWING DEMOLITION PLAN & REMOVAL NOTES	DRAWING NUMBER: S-4

FILE NAME = V:\Projects\BNY\21414\Reports\426.18_190 Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\S-4_Demolition Plan & Removal Notes.dgn
 DATE/TIME = 9/16/2016 17:19
 USER = G. HOFFMANN
 DESIGN SUPERVISOR: G. HOFFMANN
 CHECKED BY: S. KINSIMAN
 DRAFTED BY: G. HOFFMANN
 CHECKED BY: J. HARTWELL
 CHECKED BY: S. SCHUKRAFT



CHECKED BY: S. SCHUKRAFT

DRAFTED BY: J. HARTWELL

CHECKED BY: G. HOFFMANN

DESIGNED BY: S. KINSIMAN

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CONCRETE BARRIER TO BE REMOVED BY NYSTA PRIOR TO REMOVING THE COLUMNS

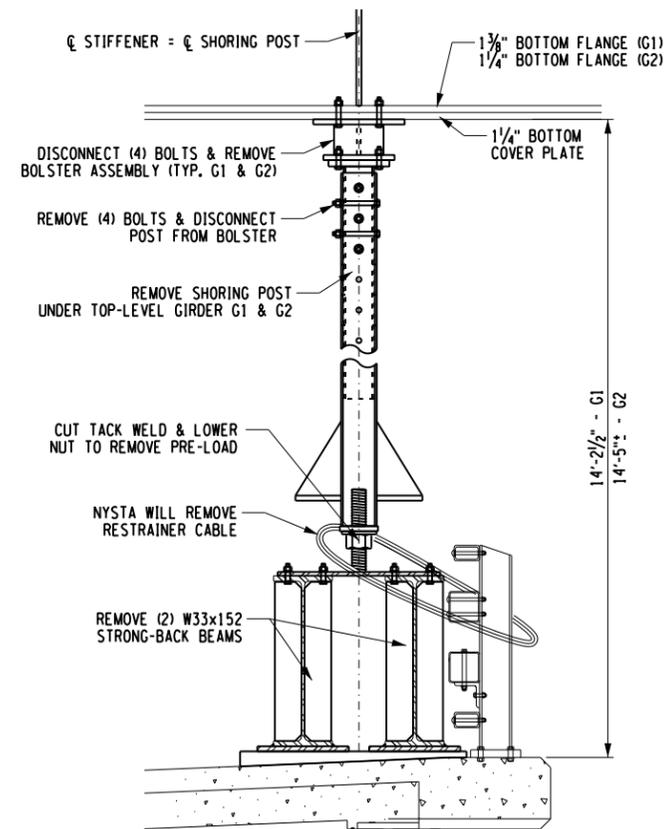
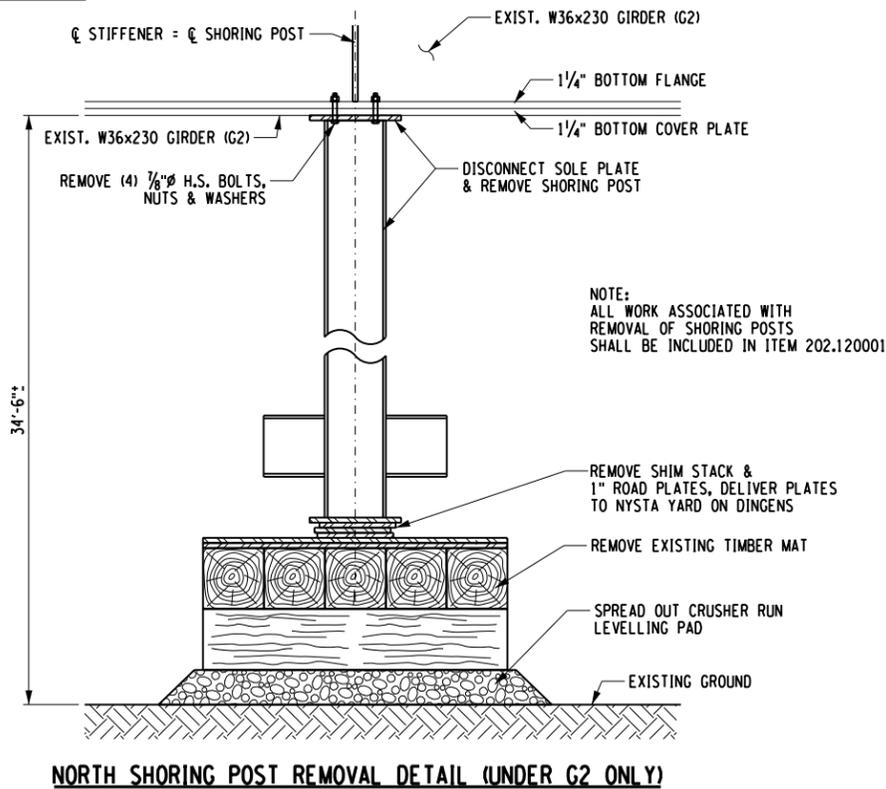
REMOVE SHORING POST UNDER TOP-LEVEL GIRDERS G1 & G2

RETURN THE TWO ADJUSTABLE POSTS TO NYSTA YARD ON DINGENS STREET



DISCONNECT & REMOVE RESTRAINER CABLE FROM G1 & G2 ITEM 202.120101

DISCONNECT & REMOVE SHORING POSTS ITEM 202.120001



NORTH SHORING POST REMOVAL DETAIL (UNDER G2 ONLY)

SOUTH SHORING POST REMOVAL DETAIL (UNDER G1 & G2)

NOTE: REMOVE & DISPOSE OF RUBBER PAD & PLYWOOD SHIMS AT BOTH ENDS OF GIRDERS (GIRDERS ARE NOT ANCHORED TO DECK)

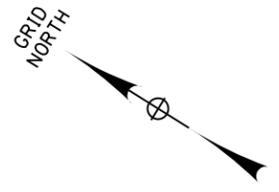
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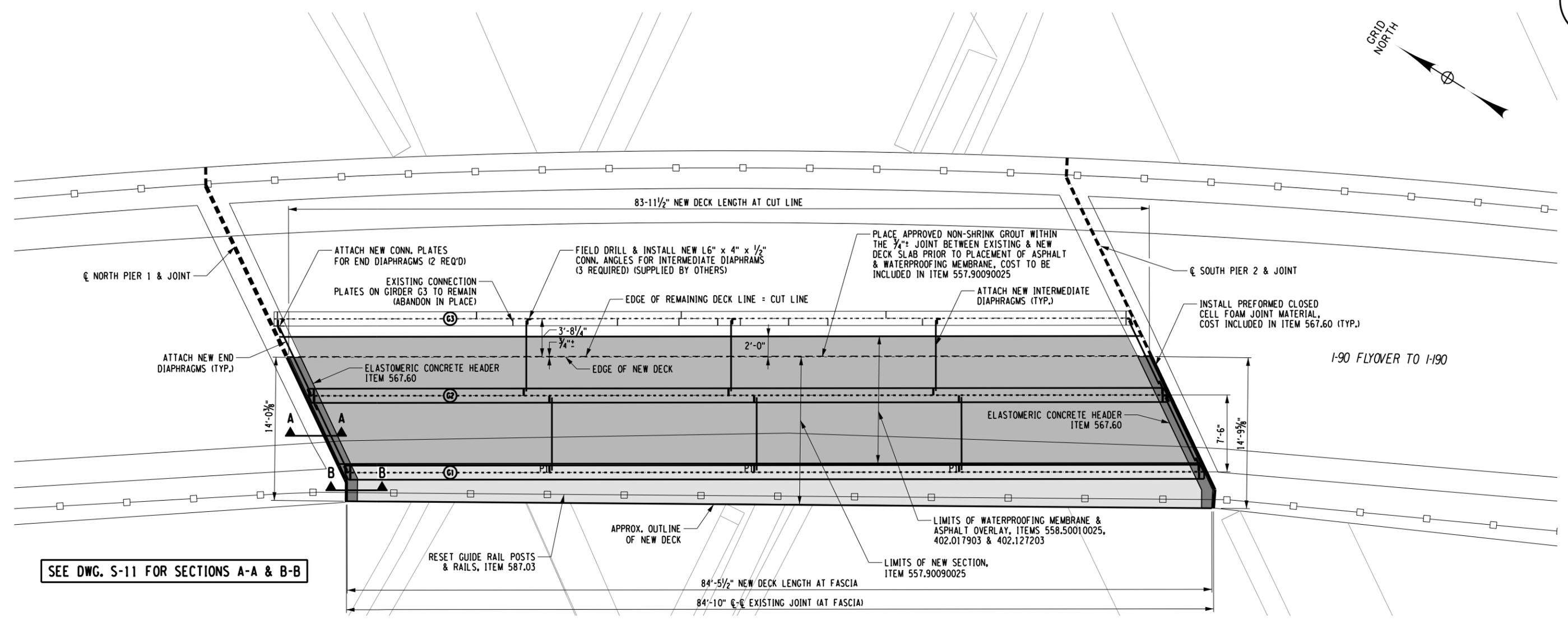
Thruway Authority Canal Corporation	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
	LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
	TITLE OF DRAWING DEMOLITION DETAILS	DRAWING NUMBER: S-5

FILE NAME = V:\Projects\BNY\21414\Reports\426.18_190_Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\S-5_Demo_details.dgn
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 DESIGNED BY: S. KINSIMAN
 DESIGN SUPERVISOR: G. HOFFMANN

FILE NAME = V:\Projects\BNY\21414\Reports\426.18_190_Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\S-6_Proposed Plan & Erection Notes.dgn
 DATE/TIME = 9/16/2016
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SEE DWG. S-11 FOR SECTIONS A-A & B-B

- LIMITS OF NEW ASPHALT OVERLAY
- ELASTOMERIC CONCRETE HEADER
- CONCRETE DECK "WASH/SWALE"

PROPOSED DECK PLAN

ERECTION OF NEW SUPERSTRUCTURE SECTION

1. COORDINATE DIRECTLY WITH FORT MILLER FOR DELIVERY & LOCATION OF REPLACEMENT SUPERSTRUCTURE UNIT.
2. CLEAN OFF EXISTING BEARINGS OF DEBRIS.
3. TRANSFER RIGGING, SLINGS & SPREADERS TO NEW BRIDGE SUPERSTRUCTURE SECTION AND HOOK TO CRANE. TEST NEW UNIT LIFT IN PLACE IF WARRANTED.
4. LIFT & SWING NEW BRIDGE INTO PLACE AND SET ON EXISTING BEARINGS.
5. ENGINEER AND CONTRACTOR SHALL EXAMINE HOW WELL THE NEW UNIT SITS ON BEARINGS, AND HOW WELL NEW DECK IS ALIGNED WITH BOTTOM OF EXISTING DECK AND HOW WELL THE EXPANSION JOINTS ARE ALIGNED VERTICALLY & HORIZONTALLY.
6. LIFT UNIT UP SLIGHTLY OFF BEARINGS AND USE SHIM PLATES BETWEEN BEARINGS AND GIRDERS AS REQUIRED TO RESET ELEVATION OF DECK TO MATCH EXISTING BOTTOM OF DECK AND BETTER MATCH ALIGNMENT AT THE JOINTS.
7. LINE UP LONGITUDINAL CONNECTION ANGLES, DRILL HOLES AND ATTACH TO BOTTOM SIDE OF EXISTING DECK WITH EXPANSION ANCHORS.
8. DRILL & INSTALL EXPANSION ANCHORS AND INSTALL LONGITUDINAL JOINT ANGLE.
9. JOIN THE TWO DECKS TIGHT TOGETHER AND BOLT CONNECTION BRACKETS TOGETHER.
10. ATTACH END AND INTERMEDIATE DIAPHRAGM CONNECTION PLATES OR ANGLES TO G3.
11. INSTALL END AND INTERMEDIATE DIAPHRAGMS BETWEEN G2 AND G3.
12. PLACE A APPROVED NON-SHRINK GROUT ALONG LONGITUDINAL JOINT BETWEEN EXISTING AND NEW DECK SLABS.
13. WELD GIRDERS TO BEARINGS.
14. INSTALL ELASTOMERIC JOINT HEADERS.
15. INSTALL NEW WATERPROOFING MEMBRANE.
16. INSTALL NEW ASPHALT OVERLAY.
17. CONSTRUCT BRIDGE RAIL CEMENT MORTAR PADS.
18. REINSTALL STORED GUIDE RAIL/FENCE POSTS, GUIDE RAILS AND SNOW FENCING.
19. PLACE PREFORMED CLOSED CELL FOAM JOINT MATERIAL.
20. SPLICE BRIDGE RAILING.
21. TOUCH UP PAINTING OF WELDS, BOLTS, ETC.
22. REFER TO DRAWINGS S-8 TO S-12 FOR CONNECTION DETAILS.

TOTAL WEIGHT OF NEW PRECAST UNIT = 91 TONS, EXCL. ANY SLINGS OR RIGGING

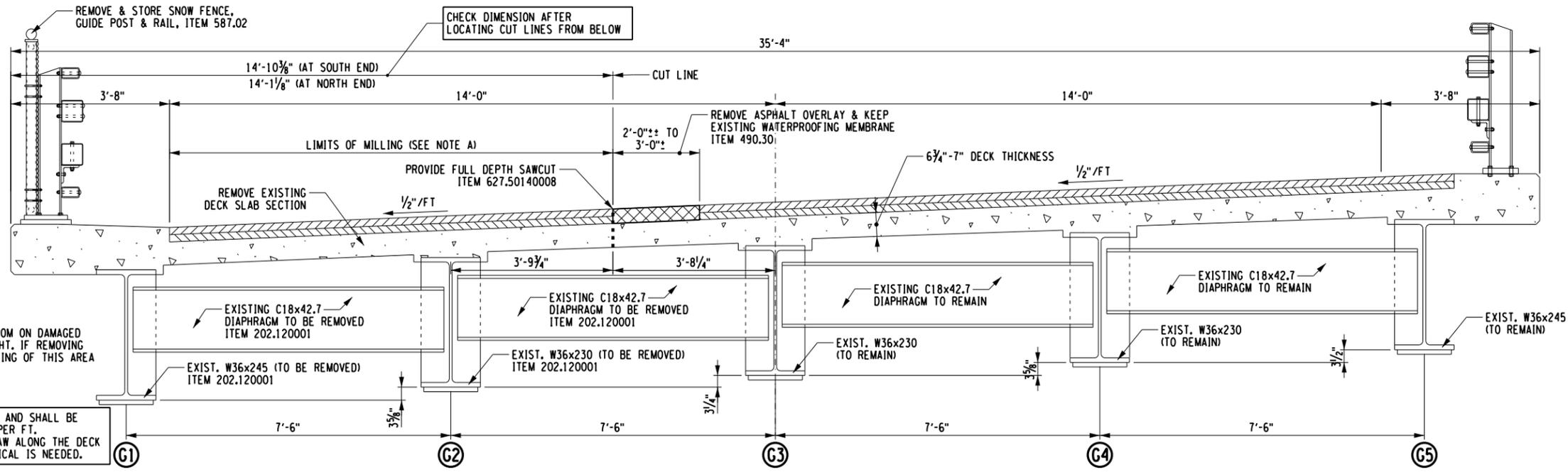
PAYMENT NOTE:
 ALL WORK SHOWN ON THESE DRAWINGS REQUIRE FOR ERECTING THE NEW SPAN IS INCLUDED IN ITEM 557.00090025. THIS ITEM SHALL INCLUDE:
 -EXCAVATION AND LEVELLING OF STAGING AREA
 -MOBILIZATION, OPERATION AND DEMOBILIZATION OF THE CRANE.
 -ERECTION OF THE NEW SPAN UNIT
 -INSTALLATION OF DIAPHRAGMS
 -INSTALLATION OF LONGITUDINAL JOINT STEEL INCLUDING SUPPLYING AND INSTALLING EXPANSION ANCHORS.
 -GROUTING OF THE JOINT BETWEEN OLD & NEW DECKS
 -WELDING NEW GIRDERS TO EXISTING BEARINGS
 -ANY TOUCH UP PAINTING OR COLD SPRAY GALVANIZING
 -RESTORATION OF EMBANKMENT AND STAGING AREA.
 -ANY OTHER WORK ASSOCIATED WITH NEW SPAN ERECTION

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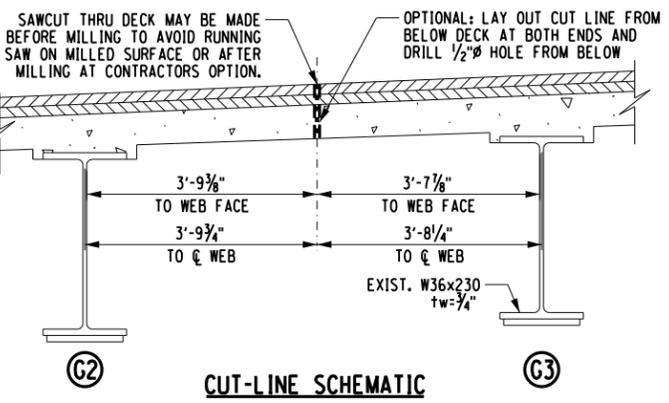
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DATE	DESCRIPTION	BY	SYM.

	Thruway Authority 		TITLE OF PROJECT: REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18 LOCATION OF PROJECT: EXIT 53 RAMP - MP426.18 (TOP LEVEL) TITLE OF DRAWING: PROPOSED PLAN & ERECTION NOTES
CONTRACT NUMBER: TAB 16-45B D214537			DATE: 09/15/16
DRAWING NUMBER: S-6			

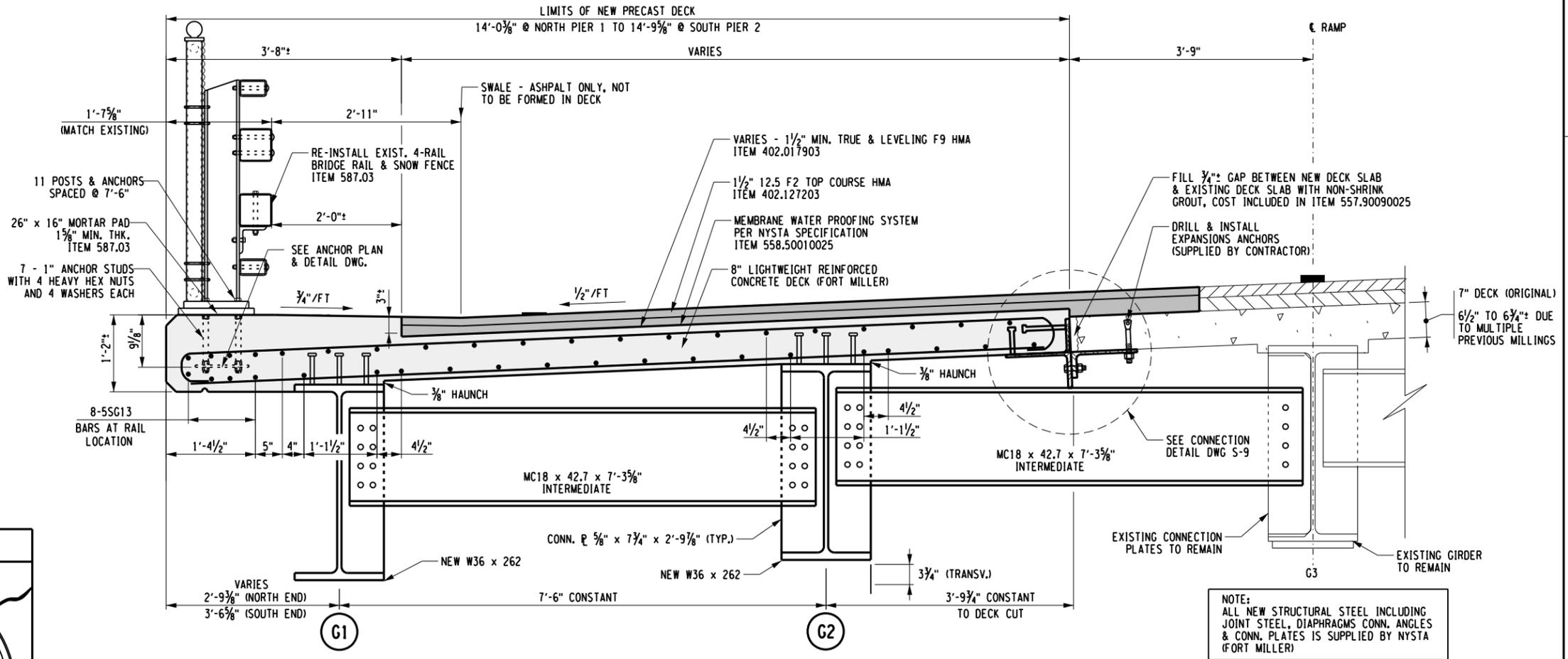


NOTE 'A'
MILLING OF EXISTING ASPHALT FROM ON DAMAGED DECK IS SOLELY TO REDUCE WEIGHT. IF REMOVING EXISTING SPAN IN 2 PIECES, MILLING OF THIS AREA MAY BE OMITTED.

NOTE: CUT LINE IS NOT VERTICAL AND SHALL BE CUT PERPENDICULAR TO THE 1/2" PER FT. CROSS-SLOPE, SIMPLY RUN THE SAW ALONG THE DECK AS IS, NO ADJUSTMENT FOR VERTICAL IS NEEDED.



EXISTING TRANSVERSE SECTION
(MIDSPAN OF SPAN 2)



NOTE:
ALL NEW STRUCTURAL STEEL INCLUDING JOINT STEEL, DIAPHRAGMS CONN. ANGLES & CONN. PLATES IS SUPPLIED BY NYSTA (FORT MILLER)

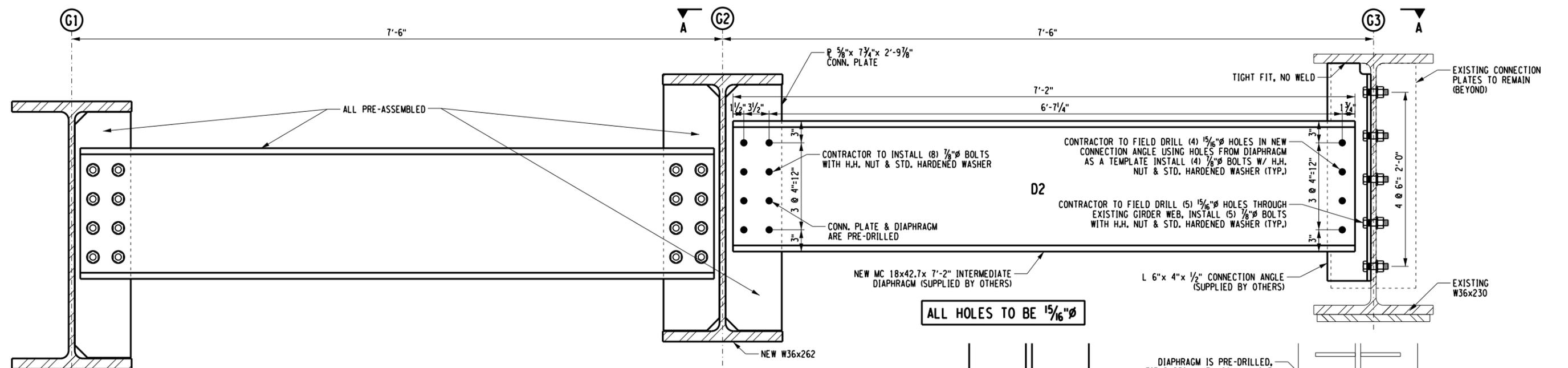
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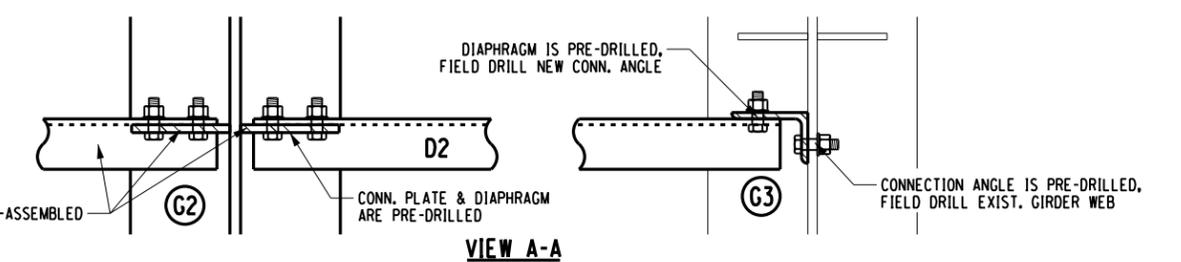
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DATE	DESCRIPTION	BY	SYM.

Thruway Authority Canal Corporation	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
	LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
	TITLE OF DRAWING TRANSVERSE BRIDGE SECTIONS	DRAWING NUMBER: S-7

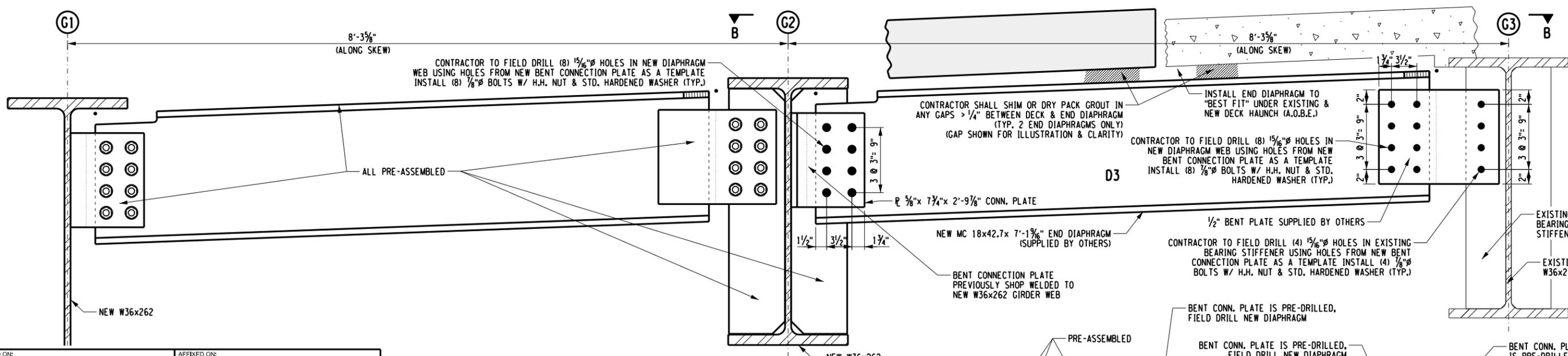
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 DATE/TIME = 9/16/2016
 USER = 1719
 DESIGN SUPERVISOR: G. HOFFMANN
 DESIGNED BY: S. KINSIMAN
 CHECKED BY: G. HOFFMANN
 DRAFTED BY: J. HARTWELL
 CHECKED BY: S. SCHUKRAFT



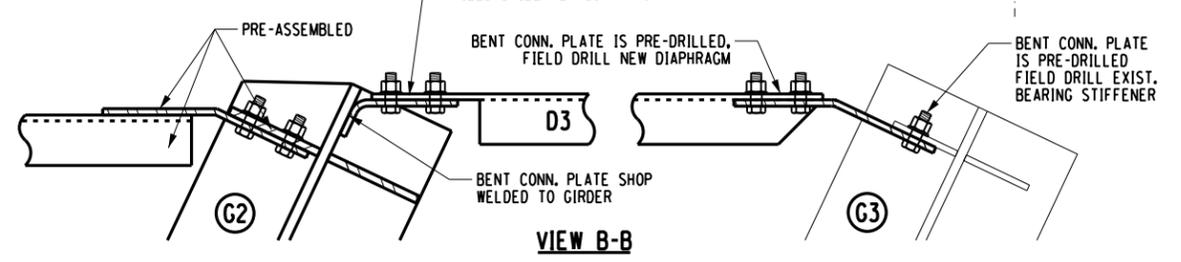
INTERMEDIATE DIAPHRAGM CONNECTION DETAIL
(LOOKING NORTH)
(TYP. ALL 3 LOCATIONS)



NOTE: ALL FIELD PARTS (DIAPHRAGMS, CONNECTION ANGLES, BENT PLATES & ALL FIELD BOLTS WILL BE SUPPLIED BY NYSTA (FORT MILLER)



NORTH END DIAPHRAGM CONNECTION DETAIL
(LOOKING NORTH - NORTH PIER)
(SOUTH END DIAPHRAGMS SIMILAR)



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STATE OF NEW YORK
GARRET W. KINNAMAN
LICENSED PROFESSIONAL ENGINEER
No. 070686

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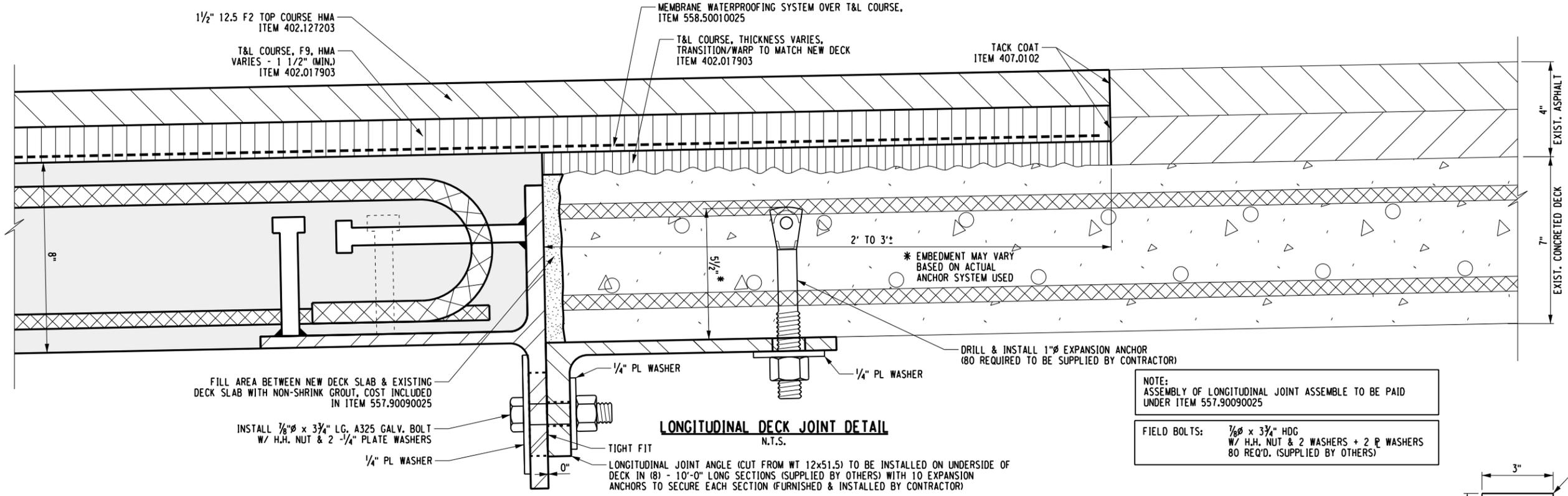
REVISIONS			
DATE	DESCRIPTION	BY	SYM.

<p>Thruway Authority Canal Corporation</p>	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
	LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
	TITLE OF DRAWING END & INTERMEDIATE DIAPHRAGM DETAILS	DRAWING NUMBER: S-8

FILE NAME = V:\Projects\BNY\2144\Reports\426.18_190_Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\S-8_End & Int. Diaphragm Details.dgn
 DATE/TIME = 9/16/2016 17:19
 USER = S. SCHUKRAFT
 CHECKED BY: S. SCHUKRAFT
 DRAFTED BY: J. HARTWELL
 CHECKED BY: G. HOFFMANN
 DESIGNED BY: S. KINSMAN
 DESIGN SUPERVISOR: G. HOFFMANN

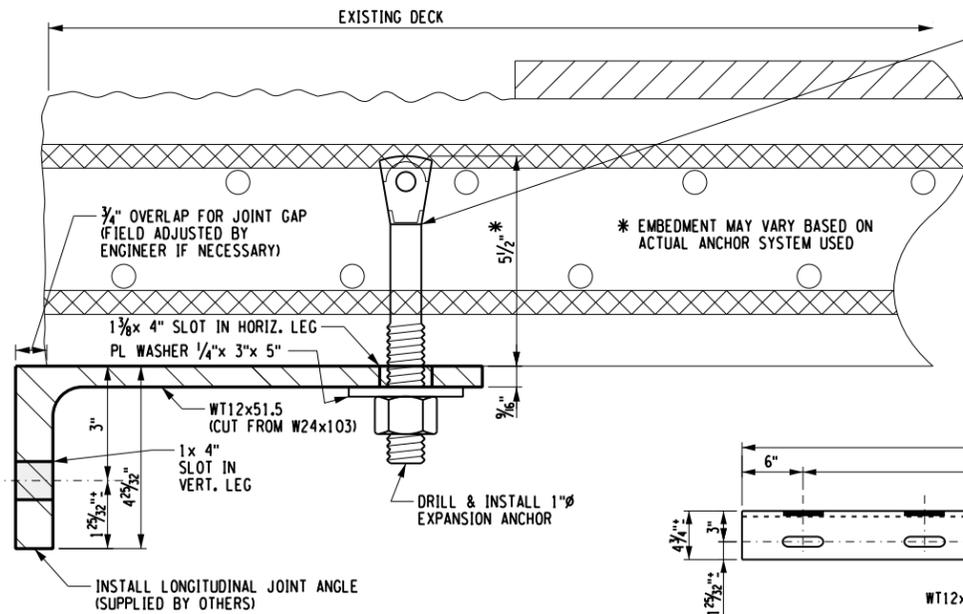
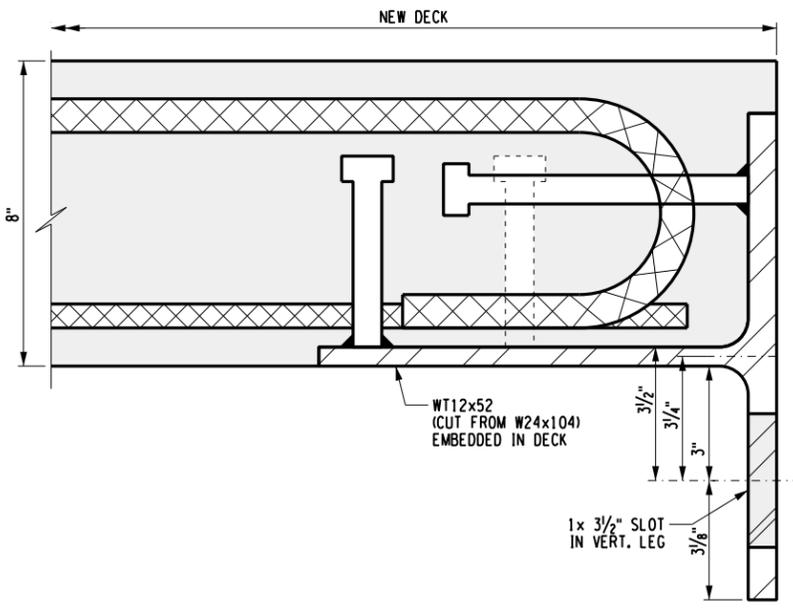
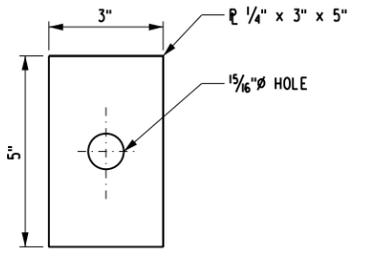
CHECKED BY: S. SCHUKRAFT
 DRAFTED BY: J. HARTWELL
 CHECKED BY: G. HOFFMANN
 DESIGNED BY: S. KINSIMAN
 DESIGN SUPERVISOR: G. HOFFMANN

FILE NAME = V:\Projects\BNY\24144\Reports\426.18_190_Ramp_Top_Level\1\2016 - Bridge Hit\CADD\Final Plans\5-9_Longitudinal Connection Details.dgn
 DATE/TIME = 9/16/2016
 USER = 1719



NOTE:
ASSEMBLY OF LONGITUDINAL JOINT ASSEMBLY TO BE PAID
UNDER ITEM 557.90090025

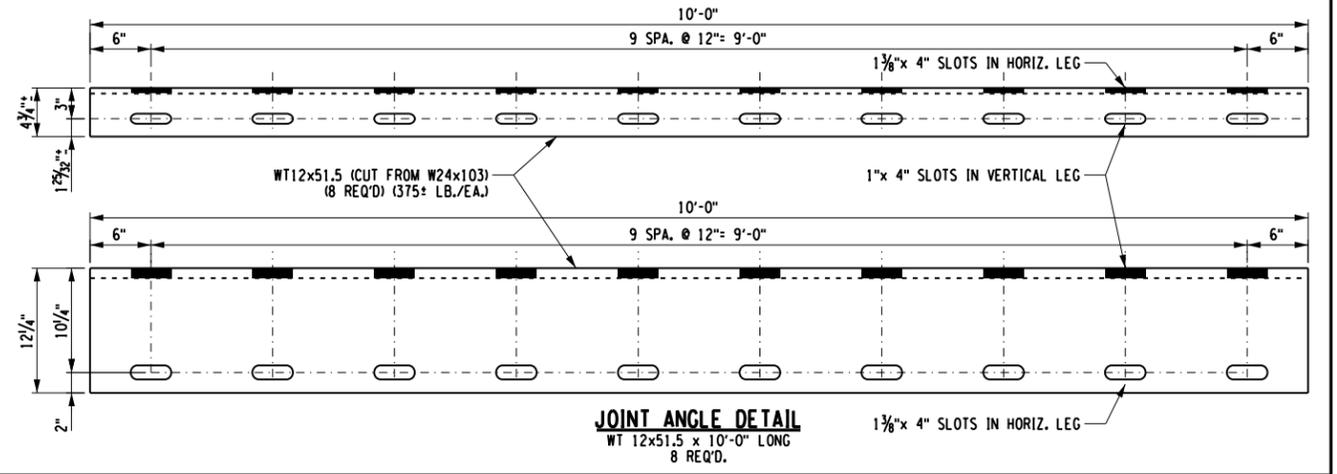
FIELD BOLTS: 7/8" Ø x 3 3/4" HDG
W/ H.H. NUT & 2 WASHERS + 2 PL WASHERS
80 REQ'D. (SUPPLIED BY OTHERS)



HILTI M24 x 9/4" HSL-3 HEAVY DUTY SLEEVE ANCHOR
OR
1" Ø x 9" KWIK BOLT III EXPANSION WEDGE ANCHOR
OR
POWERS FASTENERS 1" Ø x 9" POWER BOLT
OR
POWERS FASTENERS 1" Ø x 9" POWER STUD WEDGE ANCHOR
(ALL FASTENERS TO BE GALVANIZED & SUPPLIED BY G.C.)

ALTERNATE 1" Ø FASTENER MAY BE PERMITTED IF ULTIMATE
SHEAR STRENGTH > 32 KIPS

80 ANCHORS REQUIRED SUPPLIED BY CONTRACTOR,
TO BE PAID UNDER ITEM 557.90090025



ALTERED ON:	AFFIXED ON: 09/15/2016
SIGNATURE: STAMP:	SIGNATURE: STAMP:

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.

REVISIONS			
DATE	DESCRIPTION	BY	SYM.
	ALL STEEL A709 GR. 50KS NO C.V.N. CERTIFICATION ALL STEEL GALVANIZED		

NEW YORK STATE OF OPPORTUNITY.

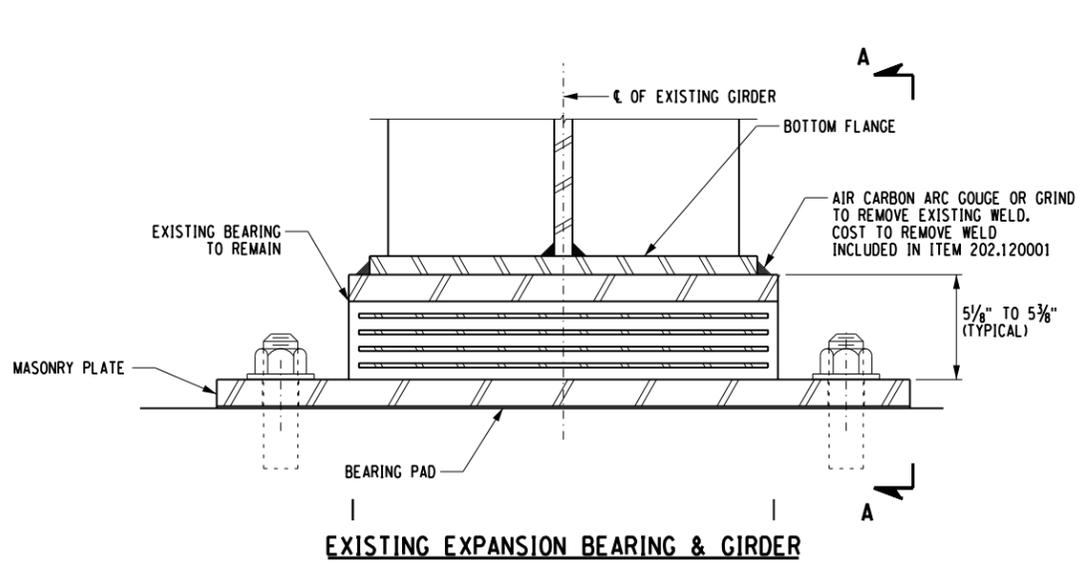
Thruway Authority | **Canal Corporation**

CHA
2300 Main Place Tower
Buffalo, NY 14202-3722
716.847.6330 • www.cha.companies.com

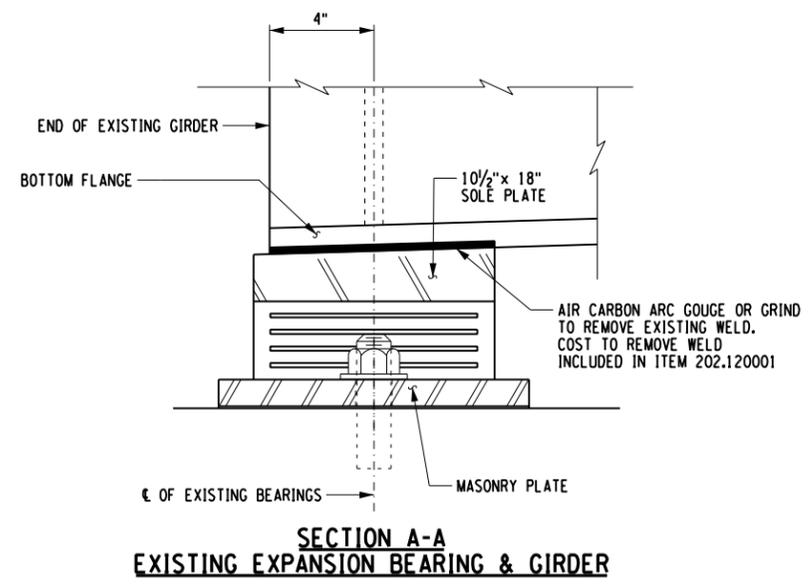
TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
TITLE OF DRAWING LONGITUDINAL CONNECTION DETAILS	DRAWING NUMBER: S-9

CHECKED BY: S. SCHUKRAFT
DRAFTED BY: J. HARTWELL
CHECKED BY: G. HOFFMANN
DESIGNED BY: S. KINSIMAN
DESIGN SUPERVISOR: G. HOFFMANN

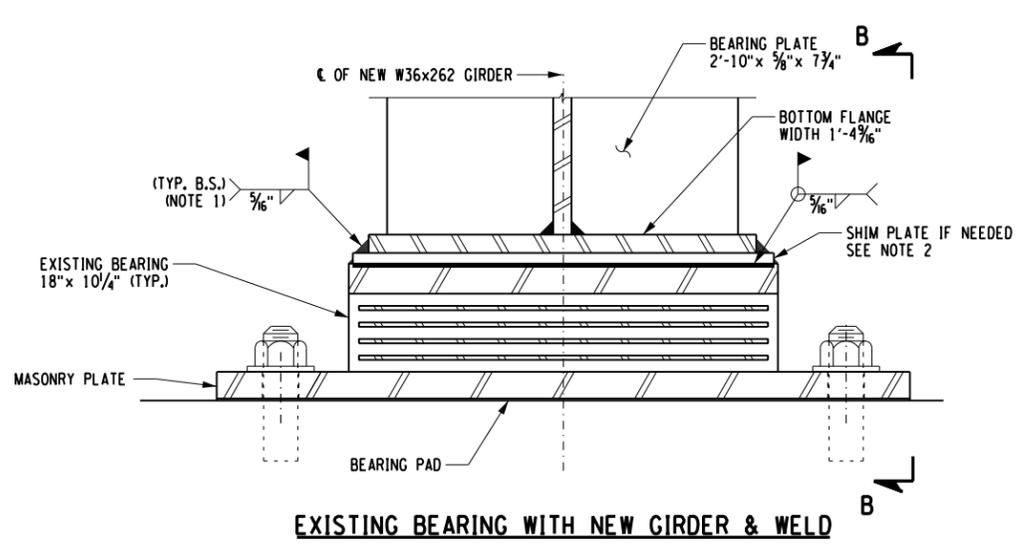
FILE NAME = V:\Projects\BNY\24144\Reports\426.18_190_Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\5-10_Bearing Details.dgn
DATE/TIME = 9/16/2016
USER = 1719



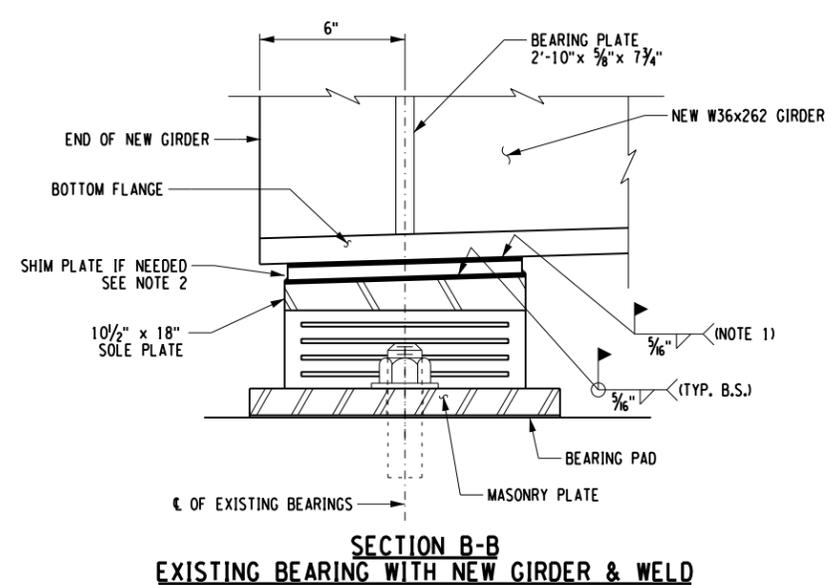
EXISTING EXPANSION BEARING & GIRDER



SECTION A-A
EXISTING EXPANSION BEARING & GIRDER



EXISTING BEARING WITH NEW GIRDER & WELD



SECTION B-B
EXISTING BEARING WITH NEW GIRDER & WELD

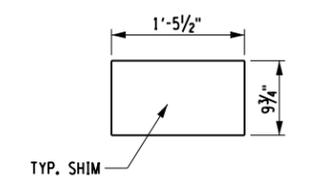


G1 NORTH PIER BEARING



G1 NORTH PIER BEARING

- NOTES:
1. THE FIELD WELD CONNECTING THE BOTTOM FLANGE TO THE SOLE PLATE SHALL BE MADE ON BOTH SIDES OF THE FLANGE. AREAS OF METALIZING DAMAGED BY WELDING SHALL BE COATED WITH ZINC RICH PAINT. ALL WORK TO BE INCLUDED IN ITEM 557.90090025.
 2. FOR SHIMMING GIRDER ON BEARING TO ALLOW FOR VERTICAL ADJUSTMENT THE FOLLOWING SHIMS WILL BE PROVIDED TO BE USED IF REQ'D.
- | | | | | | | | |
|----------|---|------|---|------|---|-----------|---------|
| Mk. 2SM1 | - | 1/8" | x | 9/4" | x | 1'-5 1/2" | (QTY 2) |
| Mk. 2SM2 | - | 1/2" | x | 9/4" | x | 1'-5 1/2" | (QTY 2) |
| Mk. 2SM3 | - | 3/8" | x | 9/4" | x | 1'-5 1/2" | (QTY 2) |
| Mk. 2SM4 | - | 1/4" | x | 9/4" | x | 1'-5 1/2" | (QTY 2) |
- COST TO BE INCLUDED IN ITEM 557.90090021

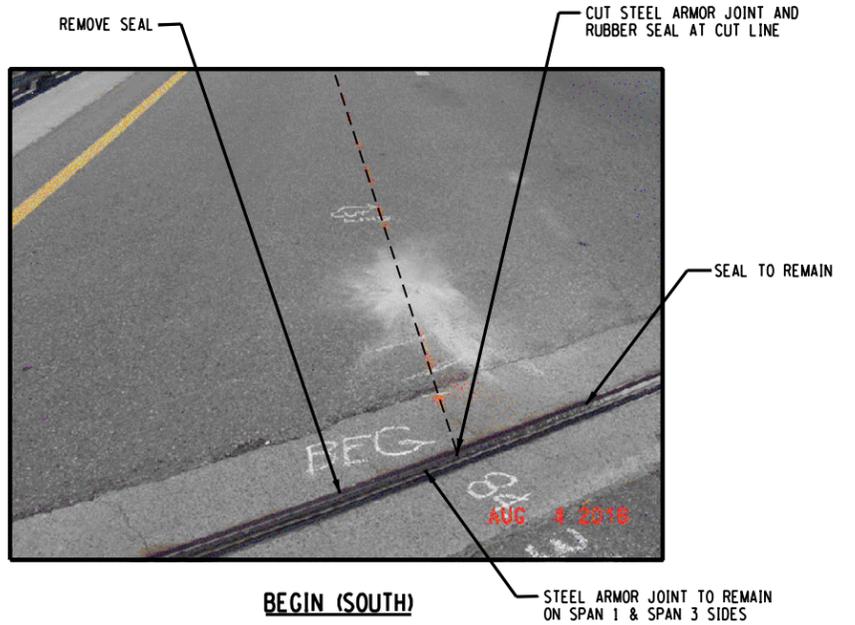
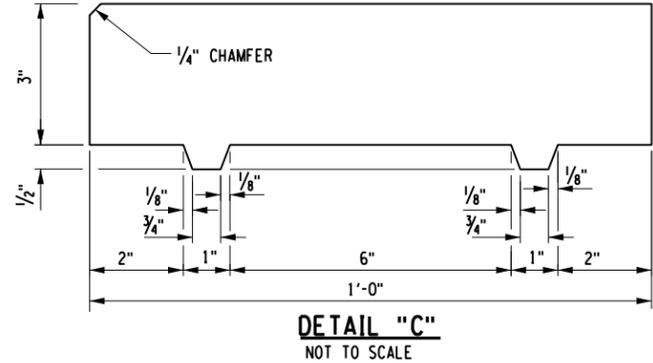
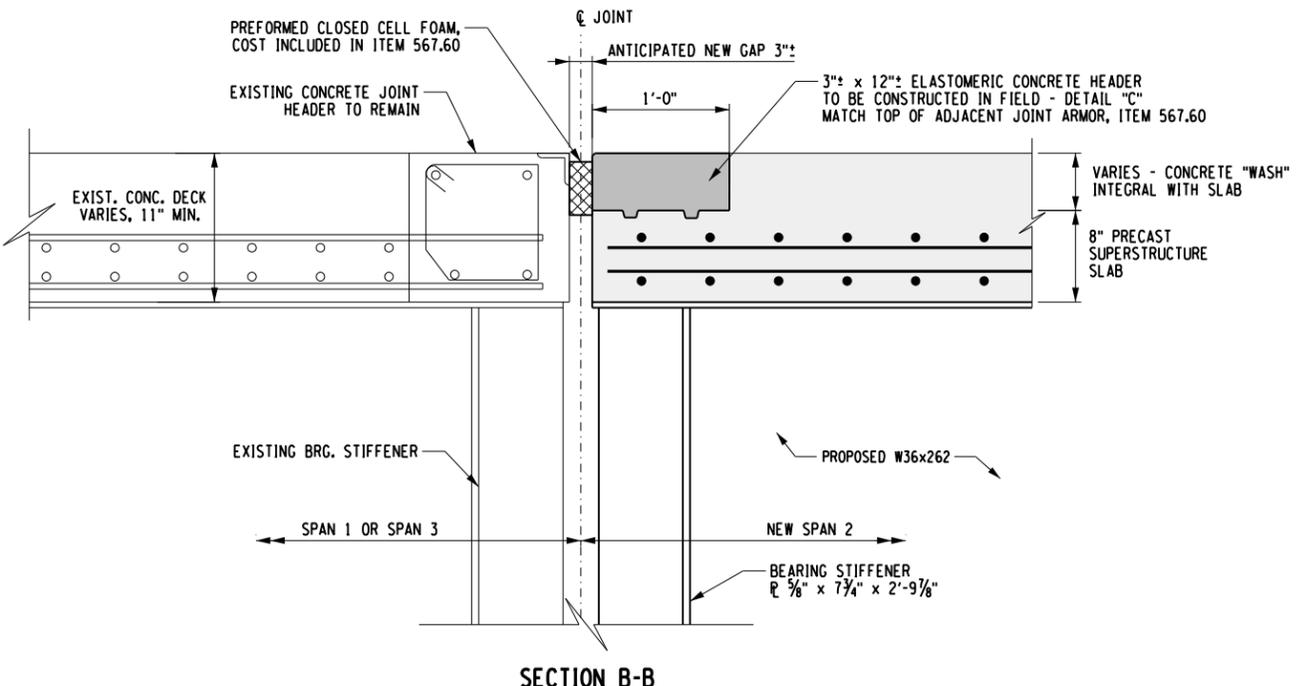
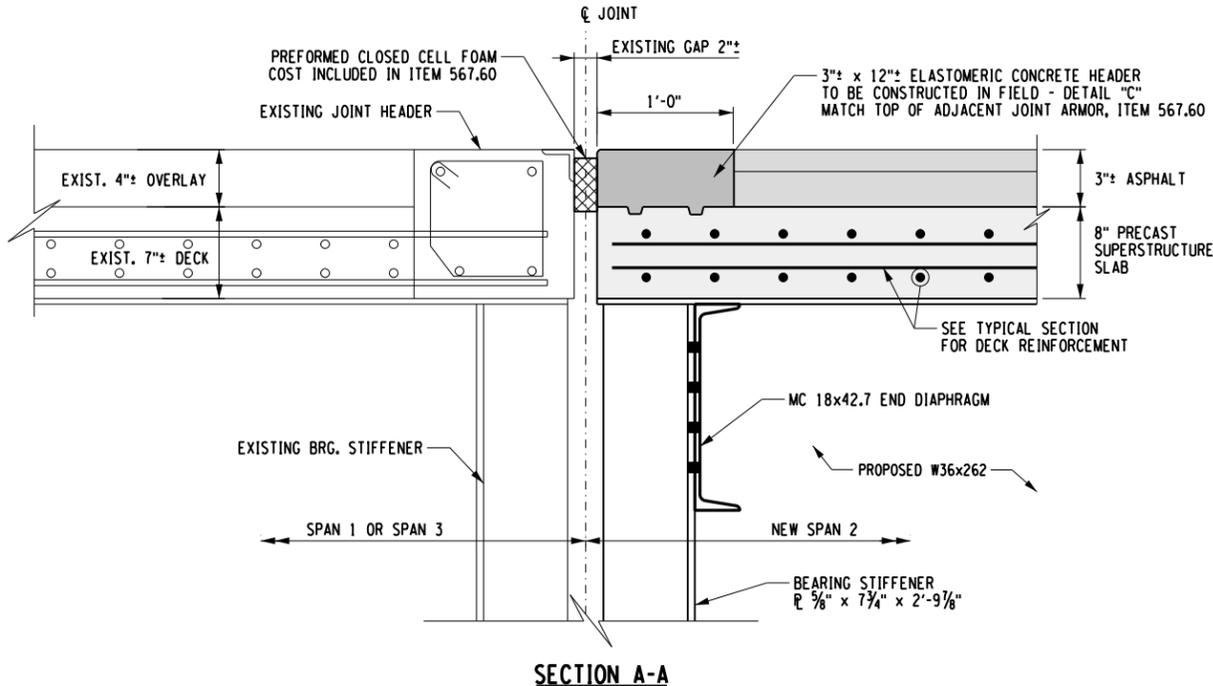


ALTERED ON:	AFFIXED ON: 09/15/2016
SIGNATURE: STAMP:	SIGNATURE: STAMP:

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.

REVISIONS			
DATE	DESCRIPTION	BY	SYM.

Thruway Authority Canal Corporation	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
	LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
	TITLE OF DRAWING BEARING DETAILS	DRAWING NUMBER: S-10



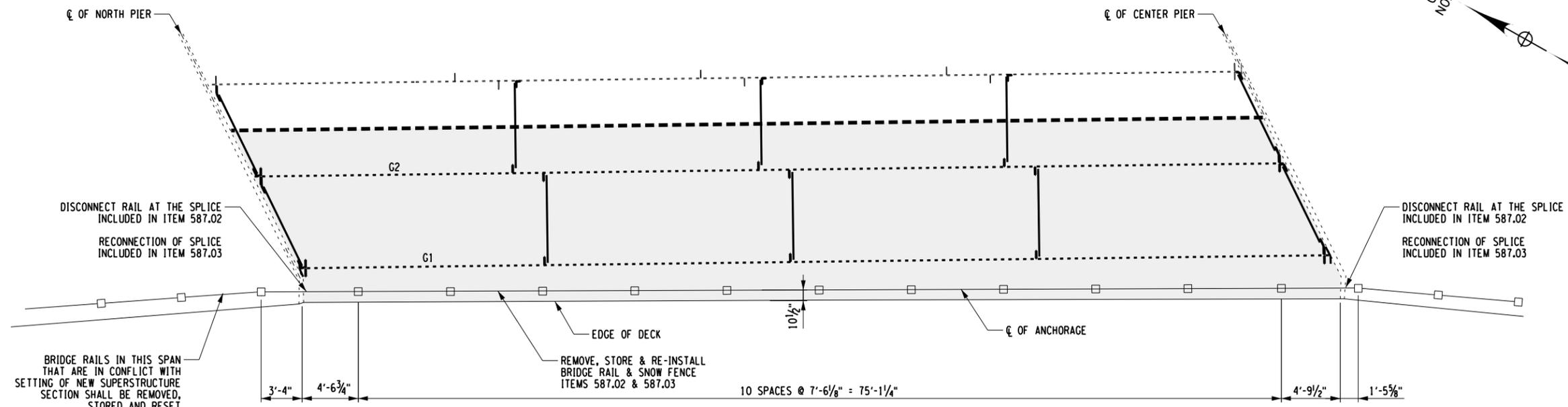
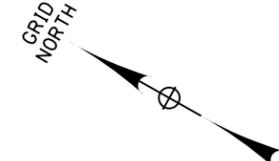
ALTERED ON:	AFFIXED ON: 09/15/2016
SIGNATURE: STAMP:	SIGNATURE: STAMP:

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REVISIONS			
DATE	DESCRIPTION	BY	SYMBOL

Thruway Authority Canal Corporation	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
	LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
	TITLE OF DRAWING JOINT DETAILS	DRAWING NUMBER: S-11

FILE NAME = V:\Projects\BNY\2144\Reports\426.18_190_Ramp_Top_Level\1\2016 - Bridge Hit\CADD\Final Plans\5-11_Joint_Details.dgn
 DATE/TIME = 9/16/2016
 USER = 1719
 DESIGN SUPERVISOR: G. HOFFMANN
 DESIGNED BY: S. KINSIMAN
 CHECKED BY: G. HOFFMANN
 DRAFTED BY: J. HARTWELL
 CHECKED BY: S. SCHUKRAFT



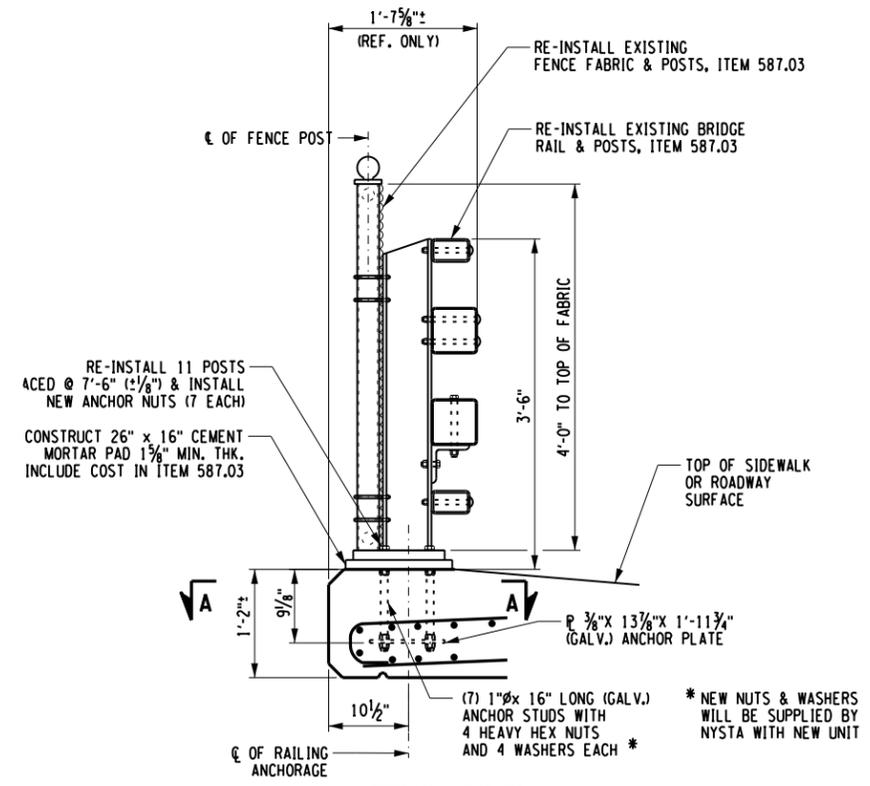
BRIDGE RAIL LAYOUT PLAN

BRIDGE RAILS IN THIS SPAN THAT ARE IN CONFLICT WITH SETTING OF NEW SUPERSTRUCTURE SECTION SHALL BE REMOVED, STORED AND RESET ITEMS 587.02 & 587.03

REMOVE, STORE & RE-INSTALL BRIDGE RAIL & SNOW FENCE ITEMS 587.02 & 587.03

RE-USE EXISTING SPLICE BARS & SPLICE TUBES AT BOTH ENDS PROVIDE NEW BOLTS/HARDWARE IF DAMAGED DURING REMOVAL

CONTRACTOR TO SPLICE EXIST. SNOW FENCE TOGETHER AT BOTH JOINTS IN A MANNER SATISFACTORY TO THE ENGINEER



TYPICAL SECTION SNOW FENCE & GUIDERAIL ANCHORAGE



BRIDGE RAIL SPLICE (SOUTH PIER)



BRIDGE RAIL SPLICE (NORTH PIER)

ALTERED ON:	AFFIXED ON: 09/15/2016
SIGNATURE: STAMP:	SIGNATURE: STAMP:

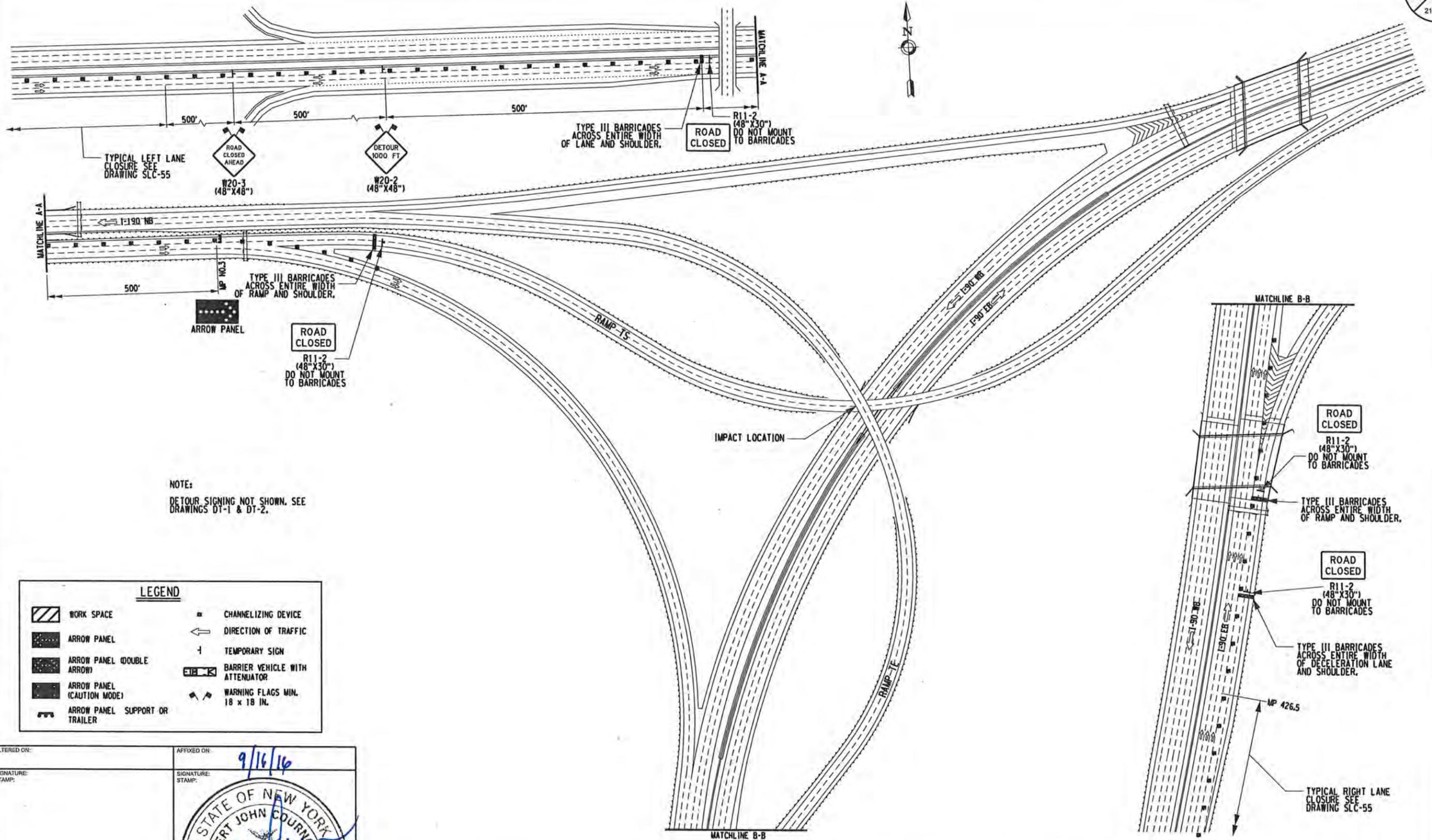
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, 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.

REVISIONS			
DATE	DESCRIPTION	BY	SYMBOL

Thruway Authority Canal Corporation	TITLE OF PROJECT REPAIRS TO THE IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B D214537
	LOCATION OF PROJECT EXIT 53 RAMP - MP426.18 (TOP LEVEL)	DATE: 09/15/16
	TITLE OF DRAWING BRIDGE RAIL PLAN & DETAILS	DRAWING NUMBER: S-12

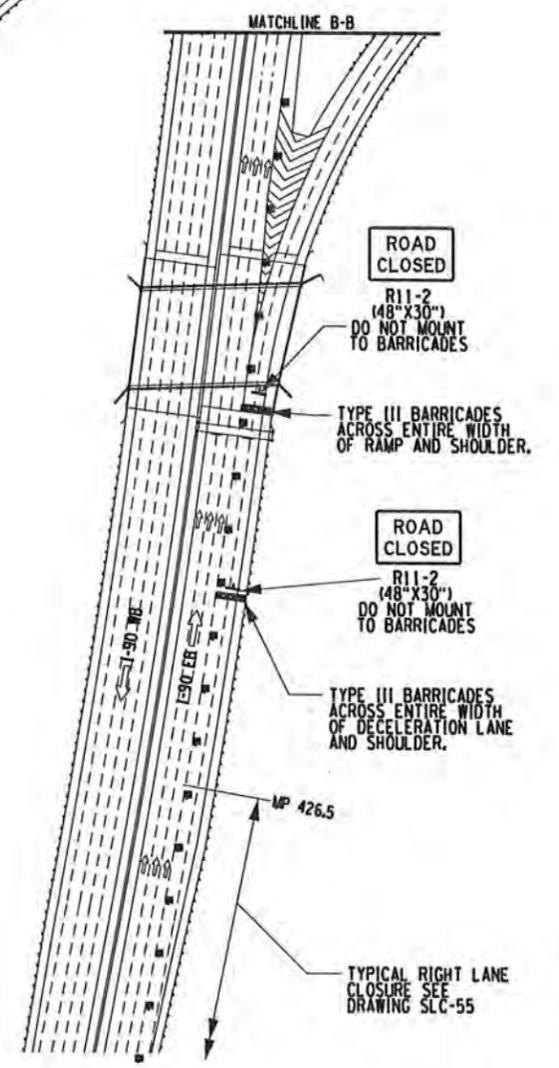
FILE NAME = V:\Projects\BNY\24144\Reports\426.18_190_Ramp (Top Level)\2016 - Bridge Hit\CADD\Final Plans\5-12_Bridge Rail Plan & Details.dgn
 DATE/TIME = 9/16/2016
 USER = 1719
 DESIGN SUPERVISOR: G. HOFFMANN
 CHECKED BY: S. KINSIMAN
 DRAFTED BY: J. HARTWELL
 CHECKED BY: S. SCHUKRAFT

FILED BY: J. SHINSKI
 CHECKED BY: J. SHINSKI
 DRAFTED BY: J. DISHON
 CHECKED BY: M. CIOFFI
 DESIGNED BY: J. SHINSKI
 DESIGN SUPERVISOR: M. CIOFFI



NOTE:
DETOUR SIGNING NOT SHOWN. SEE DRAWINGS DT-1 & DT-2.

LEGEND	
	WORK SPACE
	ARROW PANEL
	ARROW PANEL (DOUBLE ARROW)
	ARROW PANEL (CAUTION MODE)
	ARROW PANEL SUPPORT OR TRAILER
	CHANNELIZING DEVICE
	DIRECTION OF TRAFFIC
	TEMPORARY SIGN
	BARRIER VEHICLE WITH ATTENUATOR
	WARNING FLAGS MIN. 18 x 18 IN.



ALTERED ON:	AFFIXED ON: 9/16/16
SIGNATURE: STAMP:	SIGNATURE: STAMP:

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REVISIONS			
DATE	DESCRIPTION	BY	SYM



TITLE OF PROJECT REPAIR OF IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B
LOCATION OF PROJECT INTERCHANGE 53 RAMP BRIDGE OVER I-90	DATE: 9/16
TITLE OF DRAWING RAMP CLOSURE WZTC PLAN	DRAWING NUMBER: WZTC-1

CHECKED BY: J. SHINSKI
 DRAFTER BY: J. DISHON
 CHECKED BY: M. COFFI
 DESIGN SUPERVISOR: M. COFFI

- | | |
|--|---|
| <p>DETOUR M4-8
(30"x15")
(Bk on Or)</p> <p>TO M4-5
(30"x15")
(Wh on Blue)</p> <p>EAST M3-2
(30"x15")
(Wh on Blue)</p> <p>INTERSTATE 90 M1-1
(36"x36")</p> <p>↑ M6-3
(21"x15")
(Wh on Blue)</p> <p>(A)</p> <p>DETOUR M4-8
(30"x15")
(Bk on Or)</p> <p>TO M4-5
(30"x15")
(Wh on Blue)</p> <p>EAST M3-2
(30"x15")
(Wh on Blue)</p> <p>INTERSTATE 90 M1-1
(36"x36")</p> <p>↗ M5-2R
(21"x15")
(Wh on Blue)</p> <p>(C)</p> | <p>DETOUR M4-8
(30"x15")
(Bk on Or)</p> <p>TO M4-5
(30"x15")
(Wh on Blue)</p> <p>EAST M3-2
(30"x15")
(Wh on Blue)</p> <p>INTERSTATE 90 M1-1
(36"x36")</p> <p>← M6-1L
(21"x15")
(Wh on Blue)</p> <p>(B)</p> <p>DETOUR M4-8
(30"x15")
(Bk on Or)</p> <p>TO M4-5
(30"x15")
(Wh on Blue)</p> <p>EAST M3-2
(30"x15")
(Wh on Blue)</p> <p>INTERSTATE 90 M1-1
(36"x36")</p> <p>↗ M6-2R
(21"x15")
(Wh on Blue)</p> <p>(D)</p> |
|--|---|

- (N)** PVMS ON I-190
- | | |
|-----------------------------------|--------------------------|
| RAMP TO I-90
EB CLOSED | FOLLOW
DETOUR |
| SUGGESTED
DISPLAY * 1 | SUGGESTED
DISPLAY * 2 |
- END
DETOUR** M4-8a
(30"x18")
(Bk on Or)
- (L)**

LEGEND

⊥ - SIGN

I - PORTABLE VMS

NOTE:
SIGN LOCATIONS ARE
APPROXIMATE ONLY. THE EXACT
LOCATIONS SHALL BE A.O.B.E.



ALTERED ON:	AFFIXED ON: 9/16/16
SIGNATURE: STAMP:	SIGNATURE: STAMP:

Professional Engineer Seal: STATE OF NEW YORK, ROBERT JOHN COURNEVER, LICENSED PROFESSIONAL ENGINEER, 081452

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REVISIONS			
DATE	DESCRIPTION	BY	SYM.



NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TITLE OF PROJECT: REPAIRS TO THE IMPACT
DAMAGED BRIDGE AT M.P. 426.18
LOCATION OF PROJECT: BRIDGE OVER I-90
INTERCHANGE 53 RAMP

CONTRACT NUMBER: TAB 16-45B
DATE: 9/16

TITLE OF DRAWING: RAMP CLOSURE DETOUR
SIGN PLAN I-90 EB

DRAWING NUMBER: DT-1

DESIGN SUPERVISOR: M. CIOFFI
DESIGNED BY: J. SHINSKI
CHECKED BY: M. CIOFFI
DESIGNED BY: J. DISHON
CHECKED BY: J. SHINSKI

DETOUR M4-8 (30"x15") (Bk on Or)
TO M4-5 (30"x15") (Wh on Blue)
NORTH M3-1 (30"x15") (Wh on Blue)
INTERSTATE 190 M1-1 (45"x36")
↑ M6-3 (21"x15") (Wh on Blue)
E

DETOUR M4-8 (30"x15") (Bk on Or)
TO M4-5 (30"x15") (Wh on Blue)
NORTH M3-1 (30"x15") (Wh on Blue)
INTERSTATE 190 M1-1 (45"x36")
← M6-1L (21"x15") (Wh on Blue)
F

DETOUR M4-8 (30"x15") (Bk on Or)
TO M4-5 (30"x15") (Wh on Blue)
NORTH M3-1 (30"x15") (Wh on Blue)
INTERSTATE 190 M1-1 (45"x36")
↗ M5-2R (21"x15") (Wh on Blue)
G

DETOUR M4-8 (30"x15") (Bk on Or)
TO M4-5 (30"x15") (Wh on Blue)
NORTH M3-1 (30"x15") (Wh on Blue)
INTERSTATE 190 M1-1 (45"x36")
↗ M6-2R (21"x15") (Wh on Blue)
H

M PVMS ON I-90
RAMP TO I-190 CLOSED
FOLLOW DETOUR

END DETOUR M4-8a (30"x18") (Bk on Or)
L

SUGGESTED DISPLAY 1
SUGGESTED DISPLAY 2

LEGEND
├ - SIGN
┆ - PORTABLE VMS

NOTE:
SIGN LOCATIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS SHALL BE A.O.B.E.



ALTERED ON: _____
AFFIXED ON: 9/16/16
SIGNATURE: _____
STAMP: _____
SIGNATURE: _____
STAMP: _____



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REVISIONS			
DATE	DESCRIPTION	BY	SYM.



NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

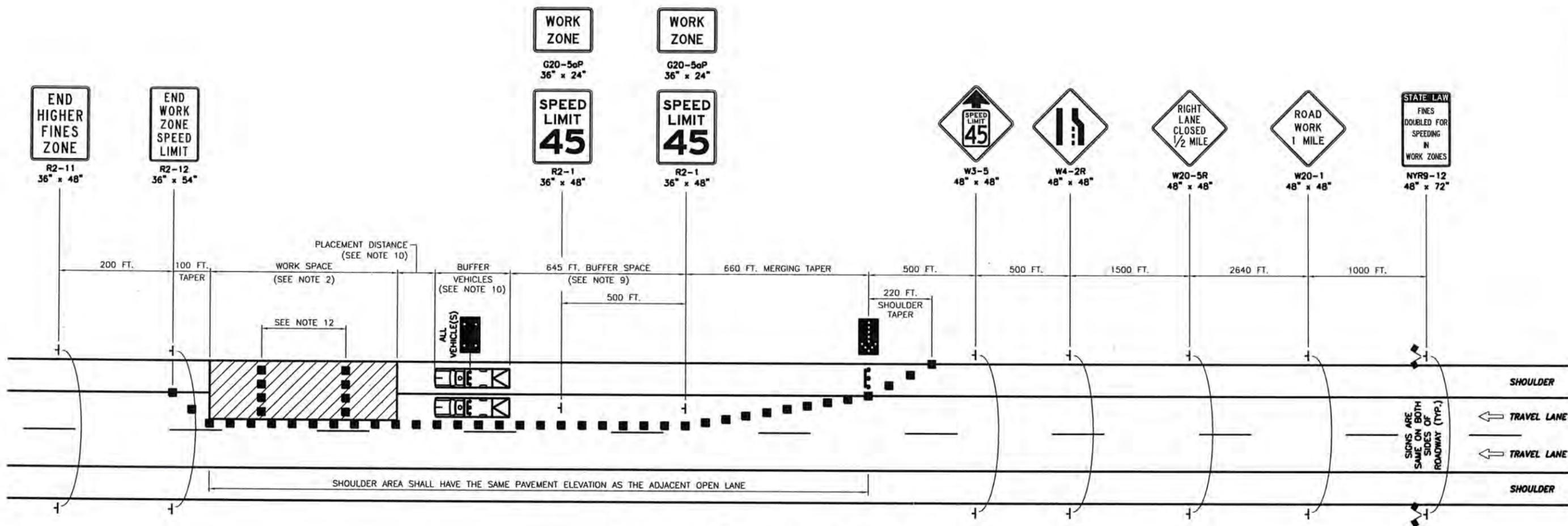
TITLE OF PROJECT: REPAIRS TO THE IMPACT DAMAGED BRIDGE AT M.P. 426.18
LOCATION OF PROJECT: BRIDGE OVER I-90 INTERCHANGE 53 RAMP

CONTRACT NUMBER: TAB 16-45B
DATE: 9/16

TITLE OF DRAWING: RAMP CLOSURE DETOUR SIGN PLAN I-90 WB

DRAWING NUMBER: DT-2

SLC-30-009
 CHECKED BY: TA
 DESIGNED BY: R. COURNOYER
 CHECKED BY: J. SHINSKI
 DESIGN SUPERVISOR: T. MAHAR



WORK ZONE TRAFFIC CONTROL PLAN
N.T.S.

NOTES:

- THIS PLAN APPLIES TO TWO-, THREE-, FOUR-, AND FIVE-LANE SECTIONS.
- THE MAXIMUM LENGTH OF ANY CONTINUOUS WORK SPACE SHALL NOT EXCEED 3 MILES (2 MILES FOR MILLING AND PAVING OPERATIONS). ALL TRAFFIC SHALL BE RE-ESTABLISHED TO ITS NORMAL LANE CONFIGURATION FOR A MINIMUM 2 MILES PRIOR TO A SUCCESSIVE LANE CLOSURE. (THE SEPARATION BETWEEN SUCCESSIVE LANE CLOSURES IS MEASURED FROM THE LAST SIGN OF THE FIRST LANE CLOSURE TO THE BEGINNING OF THE MERGING TAPER OF THE SECOND LANE CLOSURE).
- THE PLAN SHOWN IS FOR A STATIONARY RIGHT LANE CLOSURE. FOR A STATIONARY LEFT LANE CLOSURE, SUBSTITUTE "LEFT LANE CLOSED 1/2 MILE" SIGN (W20-5L) FOR THE "RIGHT LANE CLOSED 1/2 MILE" SIGN (W20-5R) AND LEFT LANE ENDS SYMBOL SIGN (W4-2L) FOR THE RIGHT LANE ENDS SYMBOL SIGN (W4-2R). THE STATIONARY LEFT LANE CLOSURE PLAN SHALL BE THE MIRROR IMAGE OF THE PLAN SHOWN WITH THE EXCEPTION THAT THE "WORK ZONE/SPEED LIMIT 45" SIGNS (G20-50P/R2-1) AND THE "SPEED LIMIT 55" SIGN (R2-1) AT THE END OF THE WORK ZONE SHALL BE INSTALLED ON THE RIGHT SIDE OF THE ROADWAY.
- FOR A STATIONARY LANE CLOSURE IN AN AREA WHERE THE USABLE LEFT SHOULDER/MEDIAN WIDTH IS LESS THAN 6 FEET, LEFT SIDE SIGNS SHALL BE MOUNTED ON THE MEDIAN BARRIER. IF THE TOTAL MEDIAN WIDTH IS LESS THAN 6 FEET, LEFT SIDE SIGNS SHALL NOT BE REQUIRED.
- ON ROADWAY SECTIONS WHERE THE USABLE SHOULDER IS LESS THAN 8 FEET, A MOBILE LANE CLOSURE PLAN SHALL BE USED TO INSTALL AND REMOVE TEMPORARY TRAFFIC CONTROL DEVICES. THE SAME SHALL ALSO APPLY WHEN COVERING AND UNCOVERING PREVIOUSLY INSTALLED SIGNS.
- WHEN TRAFFIC IS REDUCED TO A SINGLE LANE, THE "WORK ZONE/SPEED LIMIT 45" SIGNS (G20-50P/R2-1) AND THE "SPEED LIMIT 55" SIGN (R2-1) AT THE END OF THE WORK ZONE SHALL BE INSTALLED ON BOTH SIDES OF THE ROADWAY.
- WHEN THE DISTANCE BETWEEN THE SECOND "WORK ZONE/SPEED LIMIT 45" SIGN (G20-50P/R2-1) AND THE END OF THE WORK SPACE EXCEEDS 1/2 MILE, ADDITIONAL "WORK ZONE/SPEED LIMIT 45" SIGN(S) (G20-50P/R2-1) SHALL BE INSTALLED ON THE RIGHT SIDE OF THE OPEN TRAVEL LANE, OR BOTH SIDES OF MULTIPLE OPEN TRAVEL LANES, TO MAINTAIN A MAXIMUM SPACING OF 1/2 MILE.
- IN ADDITION TO THE SIGNING SHOWN, "ROAD WORK AHEAD" (W20-1) AND "WORK ZONE/SPEED LIMIT 45" (G20-50P/R2-1) SIGNS SHALL BE PLACED ALONG ANY ENTRANCE RAMP THAT TERMINATES WITHIN THE WORK ZONE TRAFFIC CONTROL LIMITS. THE LOCATION OF THESE SIGNS SHALL BE DETERMINED BY THE ENGINEER.
- THE LENGTH OF THE BUFFER SPACE SHALL BE EXTENDED, AS ORDERED BY THE ENGINEER, TO ENSURE ADEQUATE SIGHT DISTANCE FOR VEHICLES APPROACHING THE LANE CLOSURE TAPER. IN CASES WHERE RESTRICTIVE FEATURES ARE PRESENT, A REDUCTION IN THE BUFFER SPACE LENGTH MAY BE PERMITTED WITH THE APPROVAL OF THE ENGINEER.
- BARRIER VEHICLES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 619 OF THE STANDARD SPECIFICATIONS. FOR BARRIER VEHICLE USE AND PLACEMENT REQUIREMENTS, SEE TABLES NY1-A AND NY2-A ON THE "WORK ZONE TRAFFIC CONTROL TABLES AND LEGEND" DRAWING.
- EXISTING PAVEMENT MARKINGS SHALL BE MAINTAINED BY THE CONTRACTOR WITHIN THE WORK ZONE TRAFFIC CONTROL LIMITS.
- IN LONG WORK SPACES (1500 FEET AND GREATER), TWO DRUMS, TWO TALL CONES, OR TWO OVERSIZED VERTICAL PANELS SHALL BE PLACED TRANSVERSELY ACROSS EACH CLOSED LANE (AND SHOULDER IF WIDTH IS 8 FEET OR GREATER) AT MAXIMUM INTERVALS OF 800 FEET. IN ADDITION, TWO DRUMS, TWO TALL CONES, OR TWO OVERSIZED VERTICAL PANELS SHALL BE SIMILARLY PLACED IN ADVANCE OF ANY TRANSVERSE DROP-OFF OF 1 1/2 INCHES OR GREATER.

REVISIONS			
DATE	DESCRIPTION	BY	SYM

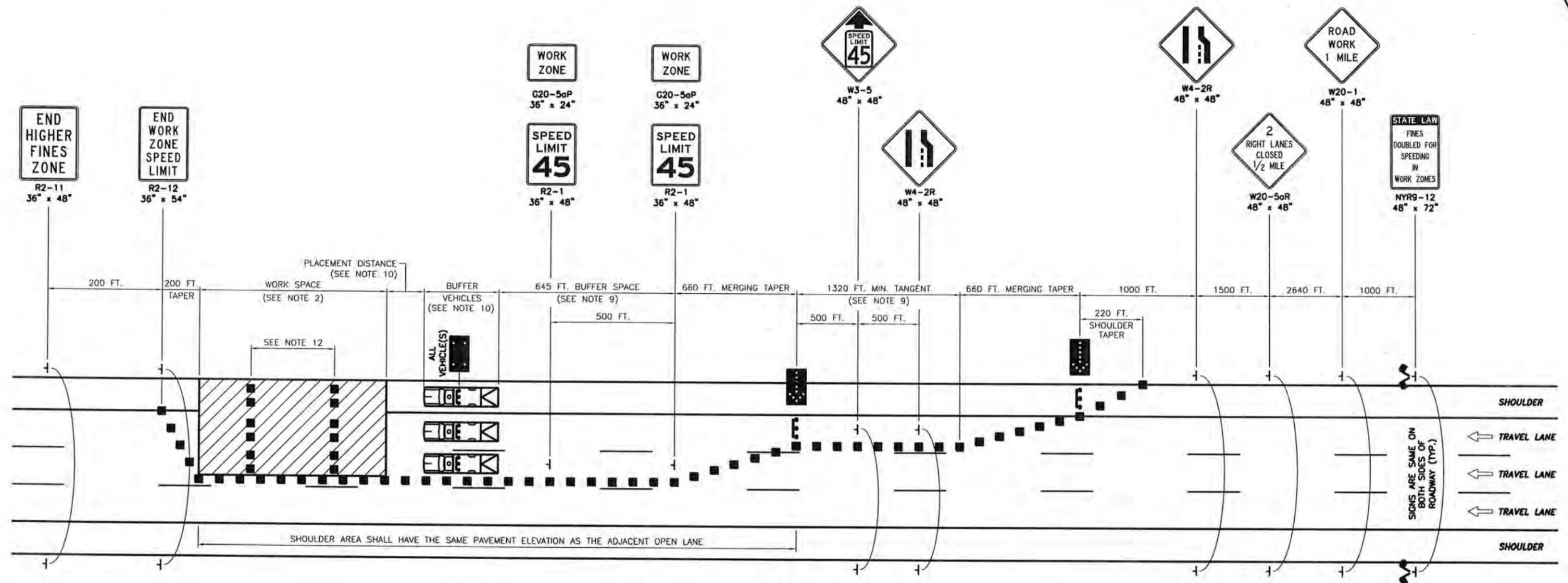


NEW YORK STATE THRUWAY AUTHORITY
 DEPARTMENT OF ENGINEERING
 200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TITLE OF PROJECT: REPAIR OF IMPACT DAMAGED BRIDGE AT MP 426.18
 LOCATION OF PROJECT: INTERCHANGE 53 RAMP BRIDGE OVER I-90
 TITLE OF DRAWING: SINGLE LANE CLOSURE (SHORT- OR INTERMEDIATE-TERM STATIONARY)

CONTRACT NUMBER: TAB 16-45B
 DATE: 02/13
 DRAWING NUMBER: SLC-55

DESIGNED BY: T. MAHAR
 CHECKED BY: R. COURNOYER
 DRAFTED BY: J. SHINSKI
 CHECKED BY: CAO
 D.C. 55-079
 TA



WORK ZONE TRAFFIC CONTROL PLAN
N.T.S.

NOTES:

- THIS PLAN APPLIES TO THREE-, FOUR-, AND FIVE-LANE SECTIONS.
- THE MAXIMUM LENGTH OF ANY CONTINUOUS WORK SPACE SHALL NOT EXCEED 3 MILES (2 MILES FOR MILLING AND PAVING OPERATIONS). ALL TRAFFIC SHALL BE RE-ESTABLISHED TO ITS NORMAL LANE CONFIGURATION FOR A MINIMUM 2 MILES PRIOR TO A SUCCESSIVE LANE CLOSURE. (THE SEPARATION BETWEEN SUCCESSIVE LANE CLOSURES IS MEASURED FROM THE LAST SIGN OF THE FIRST LANE CLOSURE TO THE BEGINNING OF THE MERGING TAPER OF THE SECOND LANE CLOSURE).
- THE PLAN SHOWN IS FOR A STATIONARY RIGHT DOUBLE LANE CLOSURE. FOR A STATIONARY LEFT DOUBLE LANE CLOSURE, SUBSTITUTE "LEFT TWO LANES CLOSED 1/2 MILE" SIGN (W20-5aL) FOR THE "RIGHT TWO LANES CLOSED 1/2 MILE" SIGN (W20-5aR) AND LEFT LANE ENDS SYMBOL SIGN (W4-2L) FOR THE RIGHT LANE ENDS SYMBOL SIGN (W4-2R). THE STATIONARY LEFT DOUBLE LANE CLOSURE PLAN SHALL BE THE MIRROR IMAGE OF THE PLAN SHOWN WITH THE EXCEPTION THAT THE "WORK ZONE/SPEED LIMIT 45" SIGNS (G20-5aP/R2-1) SHALL BE INSTALLED ON THE RIGHT SIDE OF THE ROADWAY.
- FOR A STATIONARY DOUBLE LANE CLOSURE IN AN AREA WHERE THE USABLE LEFT SHOULDER/MEDIAN WIDTH IS LESS THAN 6 FEET, LEFT SIDE SIGNS SHALL BE MOUNTED ON THE MEDIAN BARRIER. IF THE TOTAL MEDIAN WIDTH IS LESS THAN 6 FEET, LEFT SIDE SIGNS SHALL NOT BE REQUIRED.
- ON ROADWAY SECTIONS WHERE THE USABLE SHOULDER IS LESS THAN 8 FEET, A MOBILE LANE CLOSURE PLAN SHALL BE USED TO INSTALL AND REMOVE TEMPORARY TRAFFIC CONTROL DEVICES. THE SAME SHALL ALSO APPLY WHEN COVERING AND UNCOVERING PREVIOUSLY INSTALLED SIGNS.
- WHEN TRAFFIC IS REDUCED TO A SINGLE LANE, THE "WORK ZONE/SPEED LIMIT 45" SIGNS (G20-5aP/R2-1) SHALL BE INSTALLED ON THE RIGHT SIDE OF THE ROADWAY ONLY. IF MULTIPLE LANES ARE OPEN TO TRAFFIC, THE SIGNS SHALL BE INSTALLED ON BOTH SIDES OF THE ROADWAY.
- WHEN THE DISTANCE BETWEEN THE SECOND "WORK ZONE/SPEED LIMIT 45" SIGN (G20-5aP/R2-1) AND THE END OF THE WORK SPACE EXCEEDS 1/2 MILE, ADDITIONAL "WORK ZONE/SPEED LIMIT 45" SIGN(S) (G20-5aP/R2-1) SHALL BE INSTALLED ON THE RIGHT SIDE OF THE OPEN TRAVEL LANE, OR BOTH SIDES OF MULTIPLE OPEN TRAVEL LANES, TO MAINTAIN A MAXIMUM SPACING OF 1/2 MILE.
- IN ADDITION TO THE SIGNING SHOWN, "ROAD WORK AHEAD" (W20-1) AND "WORK ZONE/SPEED LIMIT 45" (G20-5aP/R2-1) SIGNS SHALL BE PLACED ALONG ANY ENTRANCE RAMP THAT TERMINATES WITHIN THE WORK ZONE TRAFFIC CONTROL LIMITS. THE LOCATION OF THESE SIGNS SHALL BE DETERMINED BY THE ENGINEER.
- THE LENGTH OF THE TANGENT AND/OR BUFFER SPACE SHALL BE EXTENDED, AS ORDERED BY THE ENGINEER, TO ENSURE ADEQUATE SIGHT DISTANCE FOR VEHICLES APPROACHING THE LANE CLOSURE TAPER(S). IN CASES WHERE RESTRICTIVE FEATURES ARE PRESENT, A REDUCTION IN THE TANGENT AND/OR BUFFER SPACE LENGTH MAY BE PERMITTED WITH THE APPROVAL OF THE ENGINEER.
- BARRIER VEHICLES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 619 OF THE STANDARD SPECIFICATIONS. FOR BARRIER VEHICLE USE AND PLACEMENT REQUIREMENTS, SEE TABLES NY1-A AND NY2-A ON THE "WORK ZONE TRAFFIC CONTROL TABLES AND LEGEND" DRAWING.
- EXISTING PAVEMENT MARKINGS SHALL BE MAINTAINED BY THE CONTRACTOR WITHIN THE WORK ZONE TRAFFIC CONTROL LIMITS.
- IN LONG WORK SPACES (1500 FEET AND GREATER), TWO DRUMS, TWO TALL CONES, OR TWO OVERSIZED VERTICAL PANELS SHALL BE PLACED TRANSVERSELY ACROSS EACH CLOSED LANE (AND SHOULDER IF WIDTH IS 8 FEET OR GREATER) AT MAXIMUM INTERVALS OF 800 FEET. IN ADDITION, TWO DRUMS, TWO TALL CONES, OR TWO OVERSIZED VERTICAL PANELS SHALL BE SIMILARLY PLACED IN ADVANCE OF ANY TRANSVERSE DROP-OFF OF 1 1/2 INCHES OR GREATER.

REVISIONS			
DATE	DESCRIPTION	BY	SYM



NEW YORK STATE THRUWAY AUTHORITY DEPARTMENT OF ENGINEERING 200 SOUTHERN BLVD., ALBANY, N.Y. 12209	TITLE OF PROJECT REPAIR OF IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B
	LOCATION OF PROJECT INTERCHANGE 53 RAMP BRIDGE OVER I-90	DATE: 02/13
	TITLE OF DRAWING DOUBLE LANE CLOSURE (SHORT- OR INTERMEDIATE- TERM STATIONARY)	DRAWING NUMBER: DLC-55

**TABLE NY1-A
BARRIER VEHICLE USE REQUIREMENTS
(LONG TERM, INTERMEDIATE TERM & SHORT TERM STATIONARY CLOSURES)**

CLOSURE TYPE	EXPOSURE CONDITION ¹	USE REQUIREMENTS ^{4,5}			
		FREEWAY	NON-FREEWAY (PRECONSTRUCTION POSTED SPEED LIMIT)		
		≥ 45 MPH	35-40 MPH	≤ 30 MPH	
LANE CLOSURE	WORKERS ON FOOT OR IN VEHICLES EXPOSED TO TRAFFIC	REQUIRED ³	REQUIRED ³	REQUIRED ³	OPTIONAL ²
	NON-TRAVERSABLE HAZARD (IE. EQUIPMENT, MATERIALS, EXCAVATION) ONLY NO WORKERS EXPOSED	REQUIRED ³	REQUIRED ³	OPTIONAL ²	OPTIONAL ²
SHOULDER CLOSURE	WORKERS ON FOOT OR IN VEHICLES EXPOSED TO TRAFFIC	REQUIRED ³	REQUIRED ³	OPTIONAL ²	OPTIONAL ²
	NON-TRAVERSABLE HAZARD (IE. EQUIPMENT, MATERIALS, EXCAVATION) ONLY NO WORKERS EXPOSED	REQUIRED ³	OPTIONAL ²	OPTIONAL ²	OPTIONAL ²

1. THE EXPOSURE CONDITIONS DESCRIBED IN TABLE NY1-A ASSUMES THERE IS NO POSITIVE PROTECTION (TEMPORARY TRAFFIC BARRIER) PRESENT. WHERE WORKERS OR HAZARDS ARE PROTECTED BY A TEMPORARY TRAFFIC BARRIER, BARRIER VEHICLES ARE NOT REQUIRED.
2. WHERE THE REQUIREMENT IS "OPTIONAL", EITHER A BARRIER VEHICLE OR THE STANDARD LONGITUDINAL BUFFER SPACE (TABLE 6C-2) SHALL BE PROVIDED.
3. REQUIREMENTS SHALL INCLUDE PROVIDING A SEPARATE BARRIER VEHICLE FOR EACH CLOSED LANE AND EACH CLOSED SHOULDER 8 FEET OR GREATER IN WIDTH. IF THE WORK SPACE MOVES WITHIN THE STATIONARY CLOSURE, THE BARRIER VEHICLE SHALL BE REPOSITIONED ACCORDINGLY. BARRIER VEHICLES PROTECTING NON-TRAVERSABLE HAZARDS SHALL REMAIN IN PLACE DURING BOTH WORKING AND NON-WORKING HOURS UNTIL THE HAZARD NO LONGER EXISTS. EXCEPTIONS TO THESE REQUIREMENTS MAY BE MADE, AS APPROVED BY THE ENGINEER, WHERE BARRIER VEHICLE PLACEMENT WOULD BE INEFFECTIVE OR WOULD INTERFERE WITH THE SAFE OPERATION OF TRAFFIC.
4. BARRIER VEHICLES ARE NOT REQUIRED FOR MILLING AND/OR PAVING OPERATIONS, BUT THE STANDARD LONGITUDINAL BUFFER SPACE (TABLE 6C-2) SHALL BE PROVIDED.
5. BARRIER VEHICLES ARE NOT REQUIRED FOR FLAGGING OPERATIONS.

**TABLE NY1-B
SHADOW VEHICLE USE REQUIREMENTS
(MOBILE CLOSURES¹)**

CLOSURE TYPE	EXPOSURE CONDITION	USE REQUIREMENTS			
		FREEWAY	NON-FREEWAY (PRECONSTRUCTION POSTED SPEED LIMIT)		
		≥ 45 MPH	35-40 MPH	≤ 30 MPH	
LANE CLOSURE	WHEN ANY WORKERS, VEHICLES, OR OTHER HAZARD IS EXPOSED TO TRAFFIC	REQUIRED ^{2,4}	REQUIRED ^{2,4}	REQUIRED ^{2,4}	REQUIRED ^{3,4}
SHOULDER CLOSURE	WHEN ANY WORKERS, VEHICLES, OR OTHER HAZARD IS EXPOSED TO TRAFFIC	REQUIRED ^{2,4}	REQUIRED ^{2,4}	REQUIRED ^{3,4}	REQUIRED ^{3,4}

1. A MOBILE CLOSURE SHALL BE USED FOR ANY WORK ACTIVITY THAT MOVES CONTINUOUSLY OR INTERMITTENTLY ALONG THE TRAVELED WAY OR SHOULDER SLOWER THAN THE PREVAILING SPEED OF TRAFFIC. CHANNELIZING DEVICES ARE NOT USED FOR MOBILE CLOSURES.
2. SHADOW VEHICLES SHALL BE EQUIPPED WITH AN APPROVED REAR MOUNTED ATTENUATOR (TRUCK-MOUNTED OR TRAILER MOUNTED) FOR THE FOLLOWING MOBILE CLOSURES: LANE CLOSURES ON FREEWAYS, LANE CLOSURES ON NON-FREEWAY ROADWAYS HAVING A PRE-CONSTRUCTION POSTED SPEED LIMIT OF 35 MPH OR MORE, SHOULDER CLOSURES ON FREEWAYS, AND SHOULDER CLOSURES ON NON-FREEWAY ROADWAYS HAVING A PRE-CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE.
3. FOR MOBILE LANE CLOSURES ON NON-FREEWAY ROADWAYS HAVING A PRE-CONSTRUCTION POSTED SPEED LIMIT OF 30 MPH OR LESS AND MOBILE SHOULDER CLOSURES ON NON-FREEWAY ROADWAYS HAVING A PRE-CONSTRUCTION SPEED LIMIT OF 40 MPH OR LESS, SHADOW VEHICLES ARE NOT REQUIRED TO BE EQUIPPED WITH A REAR MOUNTED ATTENUATOR.
4. A SHADOW VEHICLE IS USED TO PROTECT EXPOSED WORKERS (ON FOOT OR IN A VEHICLE) AND SHALL BE REQUIRED FOR ALL MOBILE CLOSURES. SHADOW VEHICLE REQUIREMENTS SHALL INCLUDE PROVIDING A SEPARATE SHADOW VEHICLE FOR EACH CLOSED LANE AND EACH CLOSED SHOULDER 8 FEET OR GREATER IN WIDTH. ADDITIONAL SHADOW VEHICLES MAY BE REQUIRED TO PROMOTE THE SAFE OPERATION OF TRAFFIC AND THE INCREASED PROTECTION OF EXPOSED WORKERS, AS DIRECTED BY THE ENGINEER.

**TABLE NY2-A
PLACEMENT DISTANCE FOR BARRIER VEHICLES**

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	PLACEMENT DISTANCE (FT)			
	BARRIER VEHICLES			
	18000 LBS.		24000 LBS.	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
> 55	100 FT	200 FT	100 FT	200 FT
45 - 55	100 FT	200 FT	80 FT	160 FT
< 45	80 FT	160 FT	50 FT	100 FT

AS DEFINED IN NYS DOT STANDARD SPECIFICATION 619:
BARRIER VEHICLE: VEHICLE USED FOR STATIONARY SHOULDER CLOSURES, LANE CLOSURES AND OTHER STATIONARY WORK ZONES.
 MINIMUM DISTANCE SHOWN REFLECTS THE ACTUAL ROLL AHEAD DISTANCE FROM MANUFACTURER.

**TABLE NY2-B
PLACEMENT DISTANCE FOR SHADOW VEHICLES**

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	PLACEMENT DISTANCE (FT)			
	SHADOW VEHICLES			
	18000 LBS.		24000 LBS.	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
> 55	230 FT	325 FT	180 FT	280 FT
45 - 55	180 FT	280 FT	150 FT	250 FT
< 45	100 FT	200 FT	100 FT	200 FT

AS DEFINED IN NYS DOT STANDARD SPECIFICATION 619:
SHADOW VEHICLE: VEHICLE USED FOR MOBILE OR SHORT DURATION WORK OPERATIONS.
 MINIMUM DISTANCE SHOWN REFLECTS THE ACTUAL ROLL AHEAD DISTANCE FROM MANUFACTURER.

**TABLE NY6H-3
ADVANCE WARNING SIGN SPACING**

ROAD TYPE	DISTANCE BETWEEN SIGNS			SIGN LEGEND	
	A (FT)	B (FT)	C (FT)	XX	YY
URBAN (130 MPH*)	100	100	100	AHEAD	AHEAD
URBAN (35-40 MPH*)	200	200	200	AHEAD	AHEAD
URBAN (w45 MPH*)	350	350	350	1000 FT	AHEAD
RURAL	500	500	500	1500 FT	1000 FT
EXPRESSWAY/FREEWAY	1,000	1,500	2,640	1 MILE	1/2 MILE

* PRECONSTRUCTION POSTED SPEED LIMIT

URBAN: ANY AREA EXHIBITING AT LEAST TWO OF THE FOLLOWING CHARACTERISTICS: SIDEWALKS, BICYCLE USAGE, CURBING, CLOSED DRAINAGE SYSTEMS, DRIVEWAY DENSITIES GREATER THAN 24 DRIVEWAYS PER MILE, MINOR COMMERCIAL DRIVEWAY DENSITIES OF 10 DRIVEWAYS PER MILE OR GREATER, MAJOR COMMERCIAL DRIVEWAYS, NUMEROUS RIGHT-OF-WAY CONSTRAINTS, HIGH DENSITY OF CROSS STREETS, OPERATING SPEEDS OF 45 MPH OR LESS.

RURAL: ANY AREA EXHIBITING NO MORE THAN ONE OF ABOVE CHARACTERISTICS.

EXPRESSWAY: DIVIDED HIGHWAYS FOR THROUGH TRAFFIC WITH FULL OR PARTIAL CONTROL OF ACCESS AND GENERALLY WITH GRADE SEPARATIONS AT MAJOR CROSSROADS.

FREEWAY/INTERSTATE: LOCAL OR INTERREGIONAL HIGH-SPEED, DIVIDED, HIGH-VOLUME FACILITIES WITH FULL OR PARTIAL CONTROL OF ACCESS.

THRUWAY WORK DURATION DEFINITIONS

LONG-TERM STATIONARY IS WORK THAT OCCUPIES A LOCATION MORE THAN 3 CONSECUTIVE DAYS.

INTERMEDIATE-TERM STATIONARY IS WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO 3 CONSECUTIVE DAYS, OR NIGHTTIME WORK LASTING MORE THAN 1 HOUR.

SHORT-TERM STATIONARY IS DAYTIME WORK THAT OCCUPIES A LOCATION WITHIN A SINGLE DAYLIGHT PERIOD.

SHORT DURATION IS DAYTIME WORK THAT OCCUPIES A LOCATION UP TO 2 HOURS, OR NIGHTTIME WORK LASTING UP TO 1 HOUR.

MOBILE IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

**TABLE 619-4
FLARE RATES FOR POSITIVE BARRIER**

TYPE OF POSITIVE BARRIER	PRECONSTRUCTION POSTED SPEED LIMIT				
	30 MPH	40 MPH	50 MPH	55 MPH	65 MPH
TEMPORARY CONCRETE BARRIER	8:1	11:1	14:1	16:1	20:1
BOX BEAM OR HEAVY POST CORRUGATED BEAM	7:1	9:1	11:1	12:1	15:1

**TABLE 6C-2
LONGITUDINAL BUFFER SPACE**

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	DISTANCE
25	155 FT
30	200 FT
35	250 FT
40	305 FT
45	360 FT
50	425 FT
55	495 FT
60	570 FT
65	645 FT

TABLE 6H-4 FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S) (MPH)	TAPER LENGTH (L) (FEET)	
40 MPH OR LESS	$L = WS^2/60$	L = TAPER LENGTH (FEET) W = WIDTH OF OFFSET (FEET) S = PRE-CONSTRUCTION POSTED SPEED LIMIT (MPH)
45 MPH OR MORE	$L = WS$	

STANDARD TAPER LENGTHS

LATERAL SHIFT OF TRAFFIC FLOW PATH	WORK ZONE PRE-CONSTRUCTION POSTED SPEED LIMIT									
	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	
4 FT	40 FT	60 FT	80 FT	105 FT	180 FT	200 FT	220 FT	240 FT	260 FT	
5 FT	50 FT	75 FT	100 FT	135 FT	225 FT	250 FT	275 FT	300 FT	325 FT	
6 FT	65 FT	90 FT	125 FT	160 FT	270 FT	300 FT	330 FT	360 FT	390 FT	
7 FT	75 FT	105 FT	145 FT	185 FT	315 FT	350 FT	385 FT	420 FT	455 FT	
8 FT	85 FT	120 FT	165 FT	215 FT	360 FT	400 FT	440 FT	480 FT	520 FT	
9 FT	95 FT	135 FT	185 FT	240 FT	405 FT	450 FT	495 FT	540 FT	585 FT	
10 FT	105 FT	150 FT	205 FT	265 FT	450 FT	500 FT	550 FT	600 FT	650 FT	
11 FT	115 FT	165 FT	225 FT	295 FT	495 FT	550 FT	605 FT	660 FT	715 FT	
12 FT	125 FT	180 FT	245 FT	320 FT	540 FT	600 FT	660 FT	720 FT	780 FT	

WORK ZONE TRAFFIC CONTROL LEGEND

SYMBOL	DESCRIPTION
	ARROW PANEL
	ARROW PANEL, CAUTION MODE
	ARROW PANEL SUPPORT OR TRAILER
	CHANGEABLE MESSAGE SIGN (PVMS)
	CHANNELIZING DEVICE
	CRASH CUSHION/TEMPORARY IMPACT ATTENUATOR
	DIRECTION OF TEMPORARY TRAFFIC DETOUR
	DIRECTION OF TRAFFIC
	FLAGGER
	FLAG TREE
	LUMINAIRE
	PAVEMENT MARKINGS THAT SHALL BE REMOVED FOR A LONG TERM PROJECT
	SIGN, TEMPORARY
	TEMPORARY BARRIER
	TEMPORARY BARRIER WITH WARNING LIGHTS
	TRAFFIC OR PEDESTRIAN SIGNAL
	TYPE III BARRICADE
	WARNING LIGHTS
	WORK SPACE
	WORK VEHICLE
	WORK VEHICLE W/ TRUCK MOUNTED ATTENUATOR
	TEMP/INTERIM PAVEMENT MARKING

**TABLE 6C-3
TAPER LENGTH CRITERIA
FOR WORK ZONES**

TYPE OF TAPER	TAPER LENGTH (L)
MERGING TAPER	L
SHIFTING TAPER	L/2
SHOULDER TAPER	L/3
ONE-LANE, TWO-WAY TRAFFIC TAPER	100 FT MAXIMUM
DOWNSTREAM TAPER	100 FT PER LANE

REVISIONS

DATE	DESCRIPTION	BY	SYM.



NEW YORK STATE THRUWAY AUTHORITY
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 200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TITLE OF PROJECT REPAIR OF IMPACT DAMAGED BRIDGE AT MP 426.18	CONTRACT NUMBER: TAB 16-45B
LOCATION OF PROJECT INTERCHANGE 53 RAMP BRIDGE OVER I-90	DATE: 03/18
TITLE OF DRAWING WORK ZONE TRAFFIC CONTROL TABLES AND LEGEND	DRAWING NUMBER: TL

CHECKED BY: TA
 DRAFTED BY: CAO
 CHECKED BY: J. SHINSKI
 DESIGNED BY: R. COURNOYER
 DESIGN SUPERVISOR: T. MAHAR