# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
# BRIDGE DIVISION

PLAN OF

## ELEVENTH STREET OVER UTILITY CANAL

## (BRIDGE NO. M-28-017)(0R4)

IN THE TOWN OF

## MONTAGUE

## FRANKLIN COUNTY

**MONTAGUE**
**ELEVENTH STREET OVER UTILITY CANAL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| MA | ---- | -- | -- |
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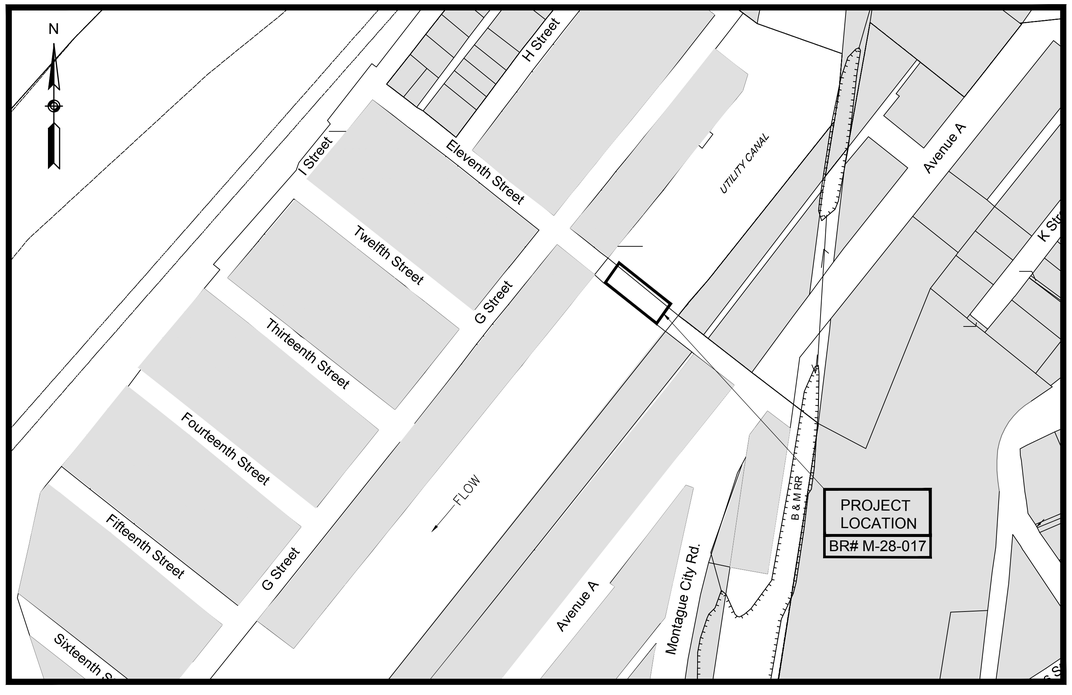
**TITLE SHEET AND INDEX**

THE MASSACHUSETTS HIGHWAY DEPARTMENT 2023 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, SUPPLEMENTAL SPECIFICATIONS TO THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES (JUNE 30, 2023), THE 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAYS LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

INDEX






0 150 300 450 600

SCALE: 1" = 150'

LENGTH OF PROJECT = 166.66 FEET = 0.032 MILES

| 8/21/2024 | ISSUED FOR CONSTRUCTION |
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# GENERAL NOTES

## DESIGN:

IN ACCORDANCE WITH THE 2020 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIM SPECIFICATIONS THROUGH 2022 FOR HL-93 LOADING.

## EXISTING BRIDGE PLANS:

IF REQUIRED, PLANS FOR THE EXISTING BRIDGE NO. M-28-017, DATED 1915, MAY BE SEEN AT THE OFFICE OF THE BRIDGE ENGINEER, MASSDOT – HIGHWAY DIVISION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

## EXISTING CONDITIONS:

ALL DIMENSIONS AND DETAILS SHOWN FOR THE EXISTING STRUCTURE ARE BASED UPON THE ORIGINAL BRIDGE PLANS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF AND NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL THEY HAVE MADE THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

THE OBSERVED WATER ELEVATION SHOWN ON THE PLANS WAS MEASURED ON THE DATES OF THE SURVEY AND DOES NOT NECESSARILY REPRESENT THE WATER LEVEL AT THE TIME OF CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THE WATER LEVELS. PARTICULAR ATTENTION SHOULD BE GIVEN TO UPSTREAM OR DOWNSTREAM FACILITIES AND CONTROL STRUCTURES WHICH MAY ADVERSELY AFFECT THE WATER LEVELS WITHIN THE WATER BODY WHICH MASSDOT HAS NO CONTROL OVER. THERE WILL BE NO ADDITIONAL COMPENSATION FOR WORK INVOLVING VARYING WATER LEVELS OR THOSE THAT DIFFER FROM THE INFORMATION RECORDED ON THE PLANS.

## SCALES:

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZE PRINTS (A3).

## FOUNDATIONS:

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH APPROVAL OF THE ENGINEER.

## UNSUITABLE MATERIAL:

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

## ANCHOR BOLTS:

ALL ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 105, GALVANIZATION AASHTO M 232 (GALVANIZED).

## CONCRETE MIX:

ALL CONCRETE SHALL BE 4000 HP CONCRETE EXCEPT AS NOTED BELOW: SIDEWALKS, WINGWALL COPINGS, AND HIGHWAY GUARDRAIL TRANSITIONS SHALL BE 5000 HP CONCRETE.

THE CEMENT CONCRETE SPECIFIED BELOW SHALL BE USED ON THE FOLLOWING BRIDGE COMPONENTS:

4000 PSI, 3/8", 660 CEMENT CONCRETE..... SUBSTRUCTURE CONCRETE REPAIRS

## REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

| MODIFICATION CONDITION | #4 BARS | #5 BARS | #6 BARS |
|---|---|---|---|
| 1. NONE | 16" | 19" | 23" |
| 2. 12" OF CONCRETE BELOW BAR | 20" | 25" | 30" |
| 3. COATED BARS, COVER < $3d_b$, OR CLEAR SPACING < $6d_b$ | 23" | 29" | 34" |
| 4. COATED BARS, ALL OTHER CASES | 18" | 23" | 27" |
| 5. CONDITION 2. AND 3. | 26" | 32" | 39" |
| 6. CONDITION 2. AND 4. | 24" | 30" | 36" |

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

## EPOXY COATED BARS:

REINFORCING PROTECTION PER ELEMENT SHALL BE AS FOLLOWS:

EPOXY COATED BARS: BRIDGE PIER.

## STRUCTURAL STEEL:

ALL STRUCTURAL STEEL, INCLUDING UTILITY SUPPORTS SHALL CONFORM TO AASHTO M270 GRADE 50 UNLESS OTHERWISE NOTED. STEEL FOR RAILINGS, SOLE PLATES, AND BEARINGS SHALL BE GRADE 36 UNLESS OTHERWISE NOTED. "STEEL REPAIRS TO RAILING SYSTEM SHALL BE GRADE 36 AND STEEL REPAIRS THROUGHUT THE REST OF THE BRIDGE STRUCTURE SHALL CONFORM TO AASHTO M270 GRADE 50.

## UTILITIES:

LOCATIONS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE ALL EXISTING UTILITIES. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE RESPECTIVE UTILITY OWNERS FOR ALL UTILITIES THAT ARE TO BE TEMPORARILY OR PERMANENTLY RELOCATED FOR BRIDGE REPLACEMENT WORK.

## TRAFFIC:

THE BRIDGE WILL BE MODIFIED TO CLOSE PEDESTRIAN TRAFFIC AT ONE SIDE OF THE BRIDGE DURING ALL PHASES OF REPAIR. SHOULDER WILL BE CLOSED AT ROADWAY APPROACHES FOR ALL PHASES OF REPAIR WORK.

## SUGGESTED CONSTRUCTION SEQUENCE:

1. MOBILIZE TO BRIDGE NO. M-28-017.
2. INSTALL MAINTENANCE AND PROTECTION OF TRAFFIC AT SIDEWALK AND SHOULDER ALONG EASTBOUND SIDE OF ROADWAY. COMPLETE REPAIRS TO SUBSTRUCTURE CONCRETE AT WEST PIER.
3. REPAIR BEARING AT WEST PIER.
4. REPAIR STEEL TO EXISTING RAILING.
5. REMOVE MAINTENANCE AND PROTECTION OF TRAFFIC AT SIDEWALK AND SHOULDER EASTBOUND SIDE OF ROADWAY.
6. DEMOBILIZE FROM BRIDGE NO. M-28-017.

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280170R4_BR2(GENERAL NOTES)_RECOVER_RECOVER.DWG Plotted on 5-Aug-2024 11:15 AM
26-SEPTEMBER-2023
100% DESIGN SUBMITTAL

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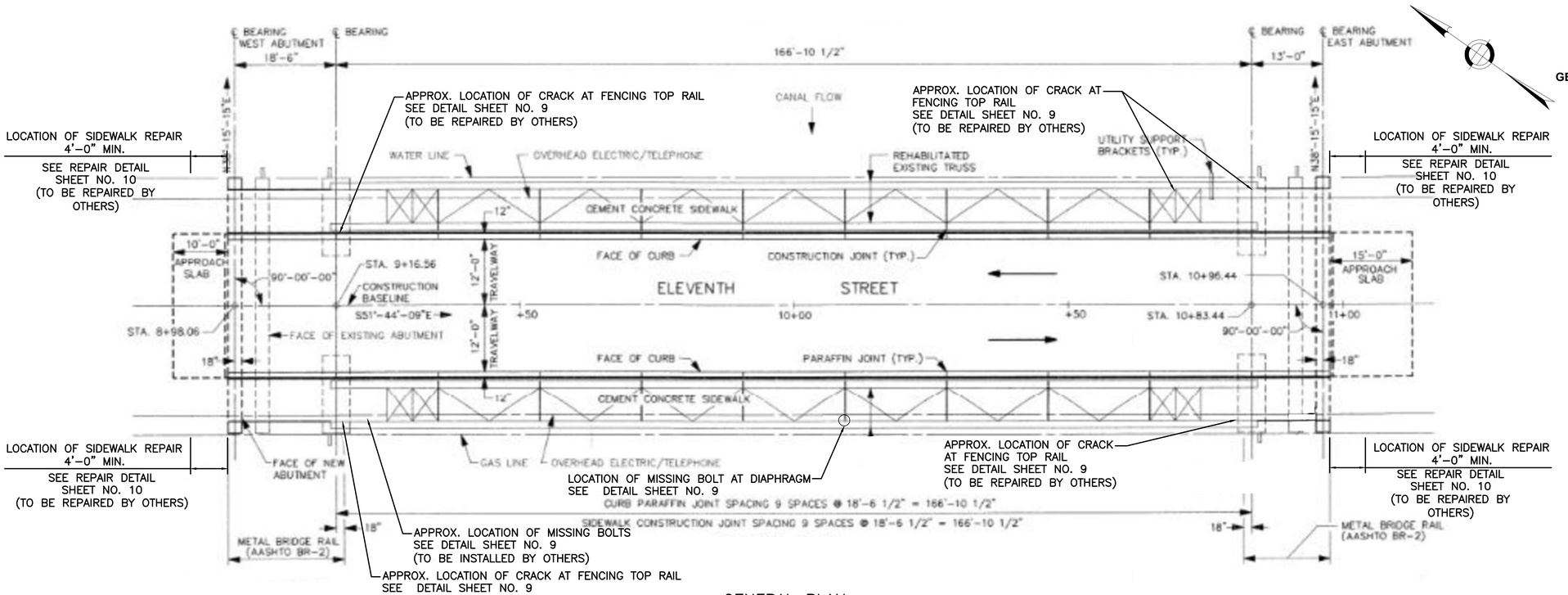
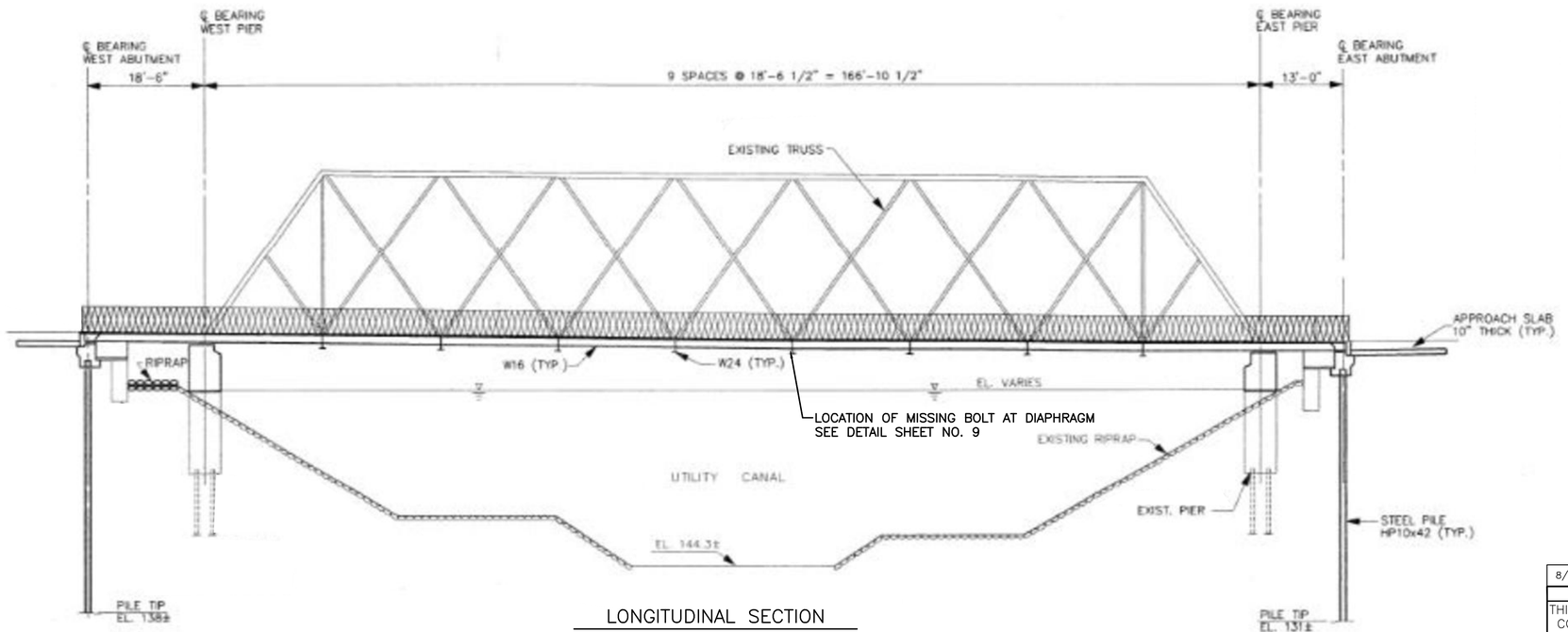
**GENERAL PLAN AND LONGITUDINAL SECTION**




GENERAL PLAN

SCALE: $\frac{3}{32}$" = 1'-0"




LONGITUDINAL SECTION

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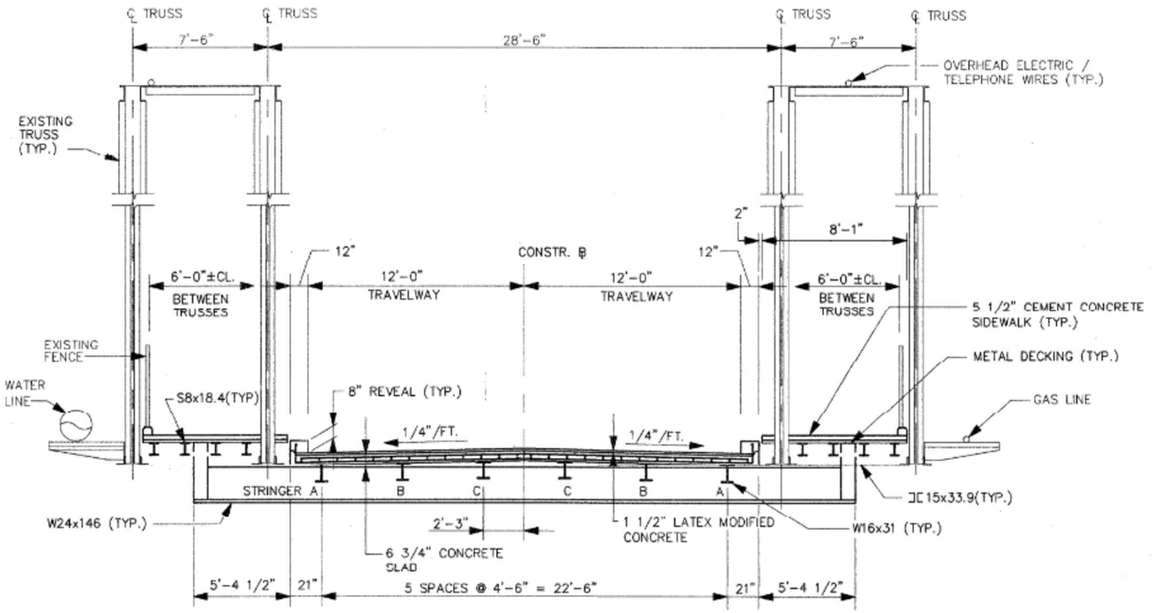
EXISTING TYPICAL SECTION




EXISTING TYPICAL SECTION

SCALE: $\frac{1}{4}$" = 1'-0"

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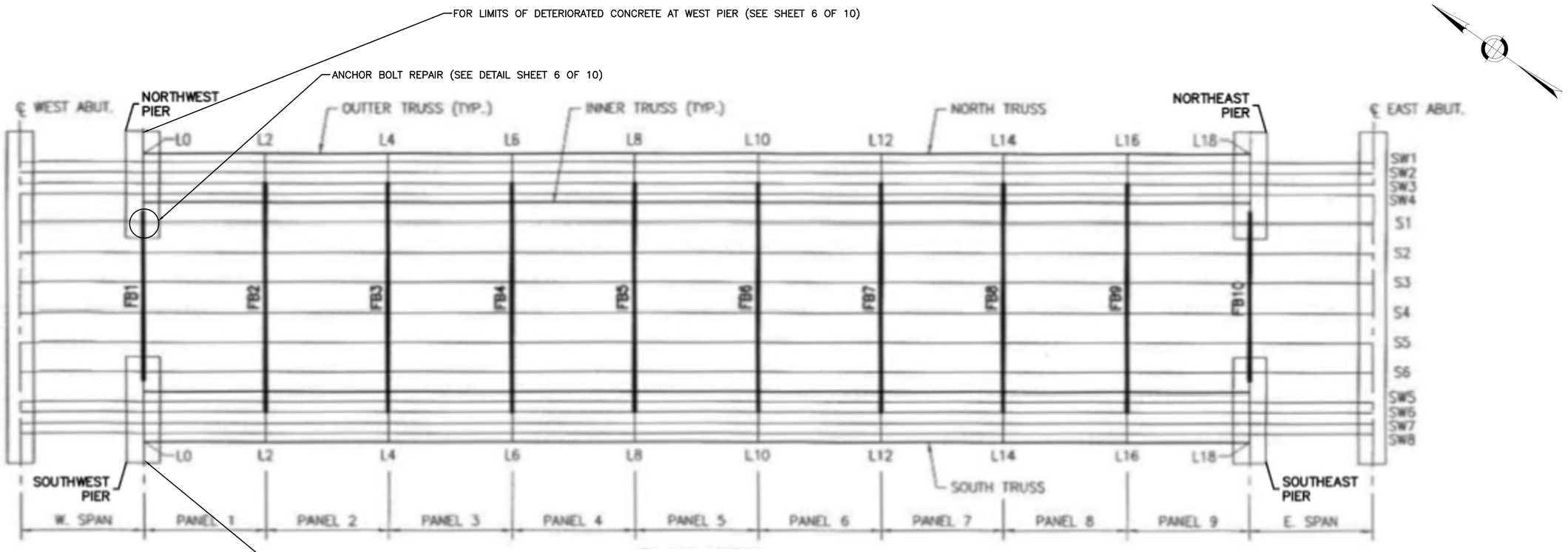
**EXISTING FRAMING PLAN**




EXISTING FRAMING PLAN

SCALE: $\frac{1}{8}$" = 1'–0"

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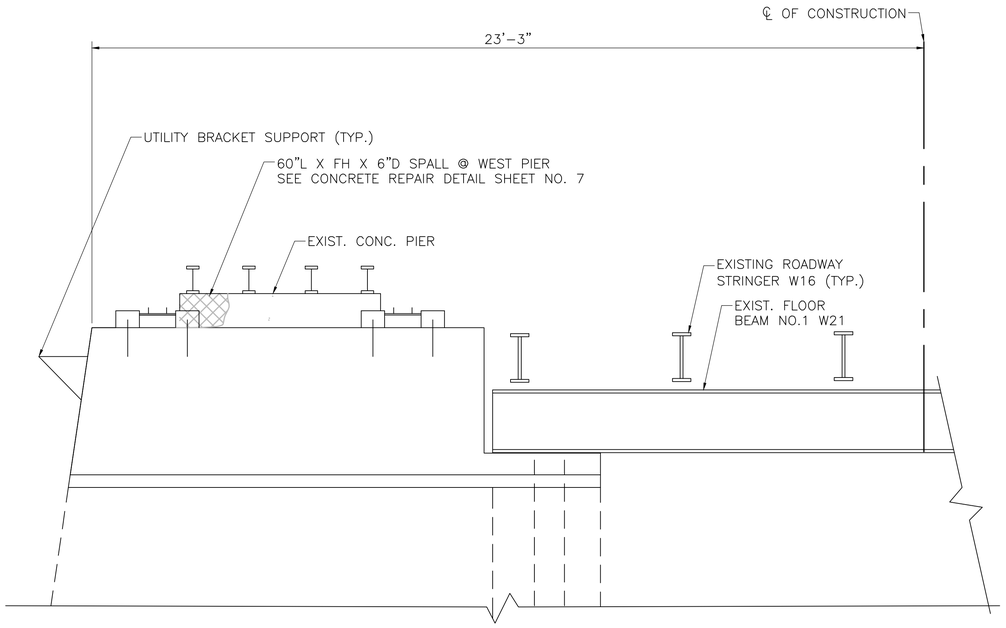
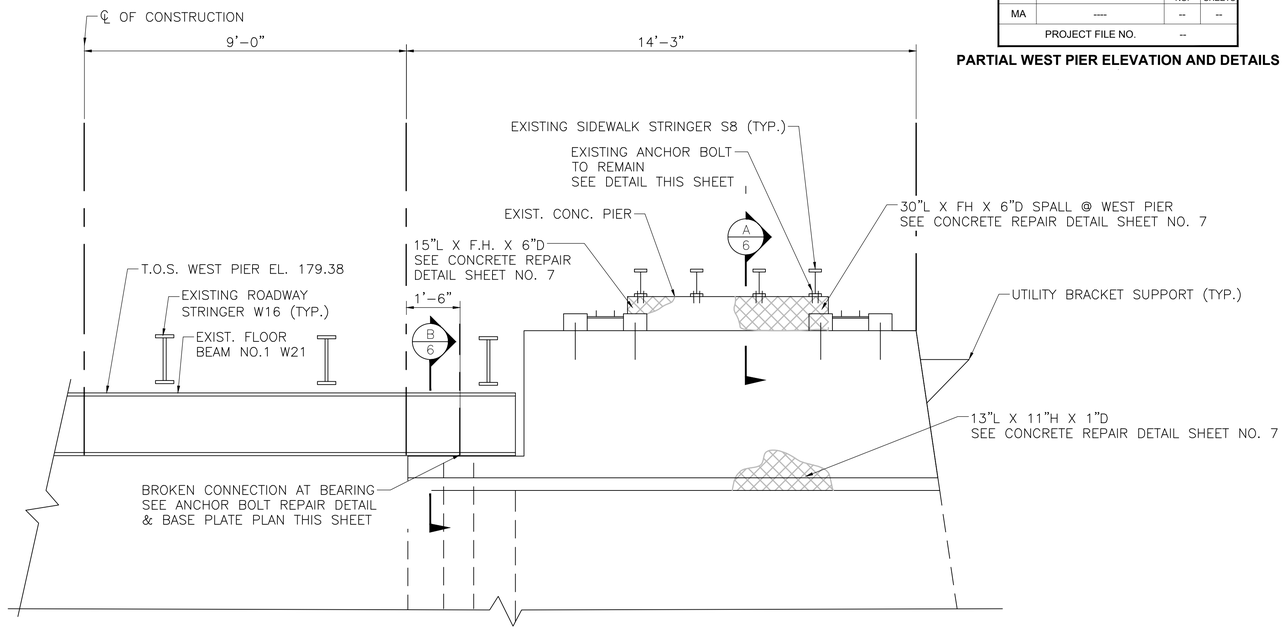
# PARTIAL WEST PIER ELEVATION AND DETAILS



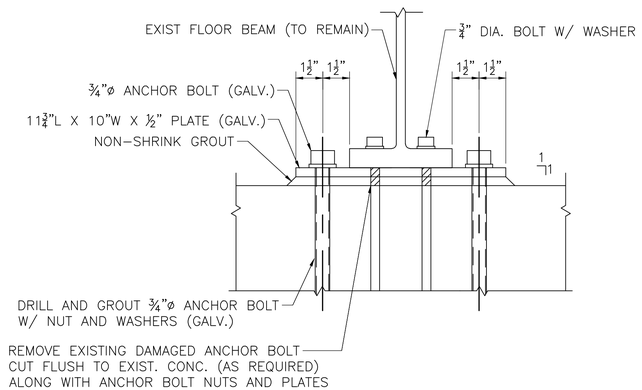

## PARTIAL SOUTHWEST PIER ELEVATION (EAST FACE OF PIER)

SCALE: $\frac{1}{4}$" = 1'–0"




## PARTIAL NORTHWEST PIER ELEVATION (EAST FACE OF PIER)

SCALE: $\frac{1}{4}$" = 1'–0"

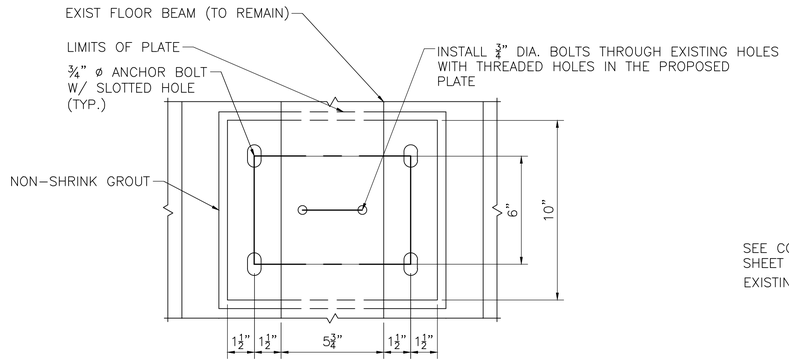



## SECTION B – BEARING REPAIR DETAIL

SCALE: 3" = 1'–0"

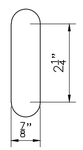
NOTE:

1. MATCH EXISTING COLOR WITH PROPOSED 3 COAT SYSTEM.



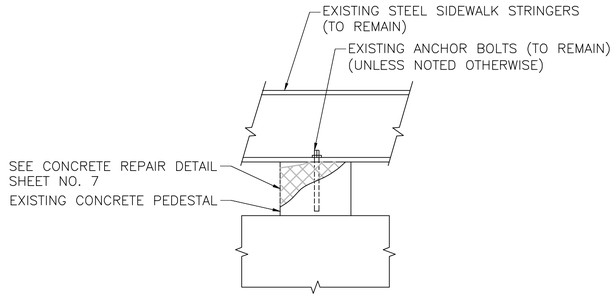

## BASE PLATE PLAN

SCALE: 3" = 1'–0"




## SLOTTED HOLE DETAIL

SCALE: 6" = 1'–0"




## SECTION A

SCALE: 1 ½ " = 1'–0"

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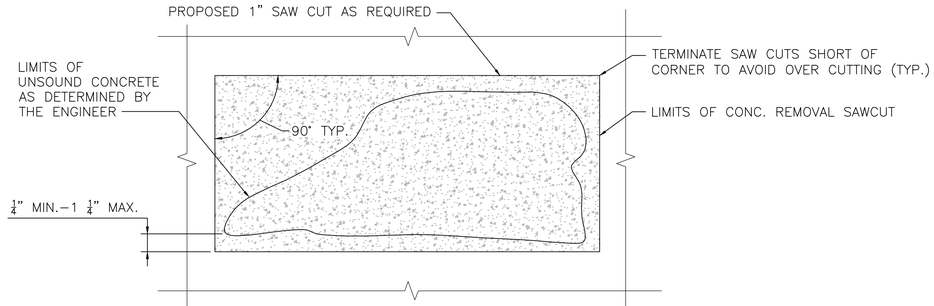
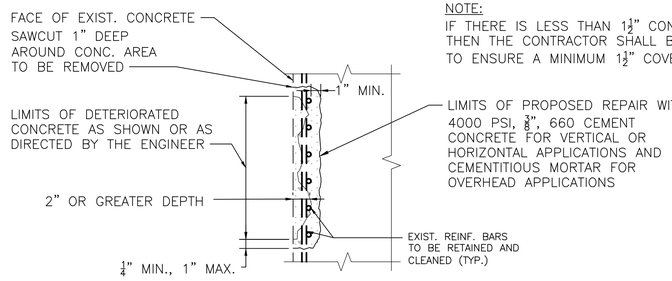
**CONCRETE REPAIR DETAILS**

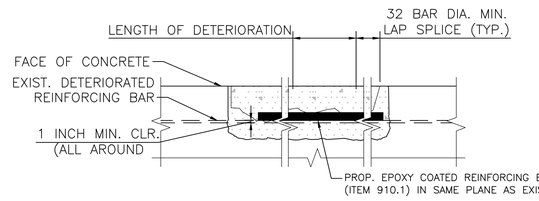



TYPICAL CONCRETE REPAIR – PLAN VIEW
SCALE: N.T.S.

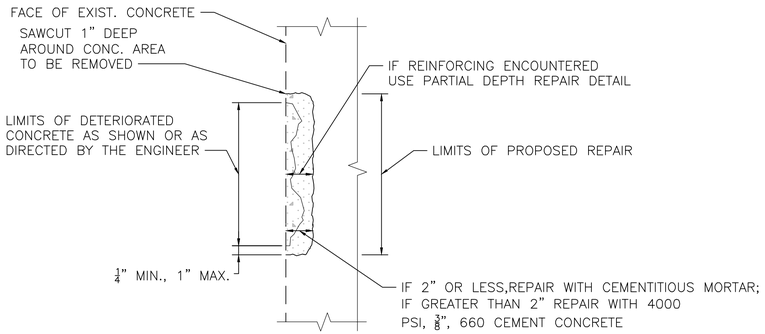



NOTE:
IF THERE IS LESS THAN 1½" CONCRETE COVER, THEN THE CONTRACTOR SHALL BUILD OUT THE FORM TO ENSURE A MINIMUM 1½" COVER.

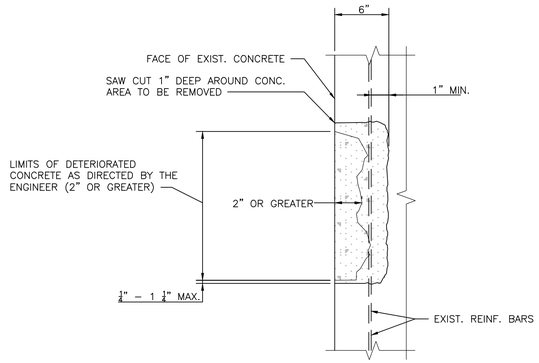
PARTIAL REPAIR DETAIL
SCALE: N.T.S.




DETERIORATED REINFORCING BAR REPAIR
SCALE: N.T.S.




SHALLOW DEPTH STRUCTURE REPAIR DETAIL
SCALE: N.T.S.




DEEP PATCH REPAIR DETAIL
SCALE: N.T.S.

## SUBSTRUCTURE CONCRETE REPAIR NOTES:

1. SUBSTRUCTURE REPAIRS SHALL CONSIST OF REMOVING DETERIORATED CONCRETE, PREPARING THE REPAIR SURFACE, FORMING WHERE REQUIRED, PLACING AND FINISHING NEW CONCRETE OR CEMENTITIOUS MORTAR. THE SCOPE OF REPAIRS MAY ALSO REQUIRE APPLYING ELECTROMETRIC COATING (ITEM 964.3) TO THE REPAIRED SUBSTRUCTURE UNITS. THE LIMITS FOR THE ELECTROMETRIC COATING WILL BE ESTABLISHED BY THE ENGINEER.
2. THE REPAIR IS DESIGNATED AS A DEEP PATCH WHEN THE EXCAVATED DEPTH TO SOUND CONCRETE EXCEEDS 2" FROM THE FACE OF THE CONCRETE OR REINFORCING STEEL IS ENCOUNTERED.
3. THE REPAIR IS DESIGNATED AS A SHALLOW DEPTH WHEN THE DEPTH OF SOUND CONCRETE IS REACHED AT OR LESS THAN 2" FROM THE FACE OF THE CONCRETE AND REINFORCING STEEL IS NOT ENCOUNTERED.
4. 4000 PSI ⅜" 660 CEMENT CONCRETE (ITEM 905) SHALL BE USED FOR ALL DEEP PATCH REPAIRS. ALL SHALLOW DEPTH REPAIRS SHALL BE PATCHED WITH CEMENTITIOUS MORTAR FOR PATCHING (ITEM 909.2) OR IF ITEM 909.2 IS NT INCLUDED IN THIS CONTRACT, MORTAR REPAIRS DIRECTED BY THE ENGINEER WILL BE PAID AS NON BID ITEMS. CEMENTITIOUS MORTAR SHALL BE SELECTED FROM MASSDOT QUALIFIED PRODUCT LIST AND APPROVED BY THE ENGINEER.
5. THE CONTRACTOR SHALL ESTABLISH LIMITS OF REPAIRS AT THE DIRECTION OF THE ENGINEER. THE EXTENT, LOCATION AND REPAIR TYPE (DEEP PATCH OR SHALLOW DEPTH REPAIR) ARE TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT THE REPAIR AREA. THE AREAS OF REPAIR SHALL BE MADE APPROXIMATELY RECTANGULAR WITH THE SIDES GENERALLY PERPENDICULAR TO THE SURFACE BEING REPAIRED.
6. THE DETERIORATED CONCRETE SHALL BE REMOVED AS REQUIRED TO PROVIDE GOOD SOUND CONCRETE ON WHICH NEW CONCRETE CAN BE PLACED AND SATISFACTORILY BONDED TO UNDAMAGED OR UNDISTURBED REINFORCEMENT.
7. SAW CUT ALONG NEAT LINES AROUND REPAIR AREA PRIOR TO CONCRETE EXCAVATION. USE SAW CUT DEPTH OF 1", OR AS REQUIRED TO AVOID CUTTING REINFORCING STEEL.
8. SUBSTRUCTURE REPAIR SHOULD INCLUDE THE REMOVAL OF ALL DETERIORATED, LOOSE, SPALLED, AND HOLLOW SOUNDING CONCRETE. THE DETERIORATED CONCRETE SHALL BE REMOVED FROM WITHIN THE REPAIR AREAS TO THE DEPTH OF SOUND CONCRETE. WHEN REINFORCING STEEL IS UNCOVERED, CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THE STEEL OR ITS BOND TO THE SURROUNDING CONCRETE. MAXIMUM 25 LB. HAMMERS WITH CHISEL POINTS SHALL BE USED FOR CONCRETE REMOVAL. MAXIMUM 15 LB. HAMMERS SHALL BE USED ONCE REINFORCING STEEL IS EXPOSED.
9. THE CONTRACTOR SHALL STOP REMOVING DETERIORATED CONCRETE WHEN A MAXIMUM DEPTH OF 6 INCHES IS REACHED. THE DISTRICT BRIDGE ENGINEER SHALL BE IMMEDIATELY NOTIFIED TO DETERMINE IF THE EXCAVATION CAN BE CONTINUED.
10. IF REINFORCING STEEL IS EXPOSED THEN CLEAN BY MECHANICAL CLEANING OR HIGH PRESSURE WASHING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. WHERE ACTIVE CORROSION HAS OCCURRED THAT WOULD INHIBIT BONDING, CLEAN STEEL USING ABRASIVE BLASTING METHODS ACCEPTABLE TO THE ENGINEER, THEN PAINT WITH A ZINC – RICH PRIMER CONFORMING TO MASSDOT STANDARD SPECIFICATION NO, M7.04.11

## SUBSTRUCTURE CONCRETE REPAIR NOTES (CONT.):

11. EXISTING REINFORCING BARS, WHICH ARE BROKEN OR HAVE LOST 25% OR MORE OF THEIR CROSS SECTIONAL AREA, OR AS ORDERED REPAIRED BY THE ENGINEER, SHALL BE REPAIRED BY SPLICING IN NEW REINFORCING BARS OF THE SAME DIAMETER. SEE EXISTING BRIDGE PLANS FOR BAR SIZES. SPLICE LAPS ARE TO BE AT LEAST 32 BAR DIAMETERS. MISSING OR DETERIORATED REINFORCING STEEL SHALL BE REPLACED AS DIRECTED BY THE ENGINEER AND WILL BE PAID UNDER ITEM 910.1.1.
12. EXISTING REINFORCING BARS, WHICH ARE BROKEN OR HAVE LOST 25% OR MORE OF THEIR CROSS SECTIONAL AREA, OR AS ORDERED BY THE ENGINEER, SHALL BE REPAIRED BY SPLICING IN NEW REINFORCING BARS OF THE SAME DIAMETER. SEE EXISTING BRIDGE PLANS FOR BAR SIZES. SPLICE LAPS ARE TO BE AT LEAST 32 BAR DIAMETERS. MISSING OR DETERIORATED REINFORCING STEEL SHALL BE REPLACED AS DIRECTED BY THE ENGINEER AND WILL BE PAID UNDER ITEM 910.1.
13. ALL SURFACES WHERE NEW CONCRETE WILL BE BONDED TO EXISTING CONCRETE SHALL BE PRE–WETTED WITH CLEAN WATER TO SATURATED SURFACE DRY (SSD) CONDITION (WITH NO STANDING WATER) IMMEDIATELY PRIOR TO THE CONCRETE PLACEMENT. IF INDICATED ON THE PLANS OR THE PLANS OR DIRECTED BY THE ENGINEER, APPLY EPOXY BONDING COMPOUND SUITABLE FOR BONDING FRESH CONCRETE TO HARDENED CONCRETE FOR LOAD BEARING APPLICATIONS TO INTERFACE BETWEEN NEW AND EXISTING CONCRETE. EACH APPLICATION AND SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE SPECIAL PROVISIONS. THE COST ASSOCIATED WITH THIS WORK WILL BE PAID UNDER ITEM 964.1.
14. IN GENERAL, EPOXY BONDING COMPOUND (ITEM 964.1) SHALL BE USED FOR ALL SHALLOW DEPTH REPAIR AND HORIZONTAL SURFACES OF DEEP PATCH REPAIR, SUCH AT TOP EXCAVATED SURFACES OF PIER CAP AND BEAM SEAT.
15. IF EPOXY BONDING COMPOUND IS USED, THE FORMS SHALL BE INSTALLED AT LEAST ONCE PRIOR TO APPLICATION OF THE EPOXY BONDING COMPOUND IN ORDER TO ENSURE FORMS CAN BE REINSTALLED AND FILLED BEFORE THE EPOXY BONDING COMPOUND HARDENS.
16. ALL CONCRETE SURFACES ONCE CURED, SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH TO MATCH EXISTING SURFACES. WET CURING IN ACCORDANCE WITH THE SUPPLEMENTAL SPECIFICATIONS FOR HIGHWAYS AND BRIDGES SECTION 901.65, SUB–SECTION A–2 WILL BE REQUIRED.

## EXCAVATION AND SURFACE REPAIR NOTES:

1. THE CONTRACTOR SHALL EXERCISE CARE WHEN REMOVING CONCRETE AROUND REINFORCEMENT TO ONLY REMOVE DETERIORATED CONCRETE AND TO LIMIT THE SOUND CONCRETE REMOVED TO THE MINIMUM NECESSARY TO EFFECT A GOOD REPAIR.
2. THE CONTRACTOR SHALL ESTABLISH LIMITS OF VARIOUS REPAIRS AS SHOWN N THE PLANS AND AT THE DIRECTION OF THE ENGINEER. THE LOCATIONS SHOWN ON THE PLANS ARE BASED UPON RECORDS OF BRIDGE INSPECTIONS AND OBSERVATION FROM THE GROUND AND ARE NOT GUARANTEED. THE LOCATION AND EXTENT OF ALL CONCRETE REPAIRS ARE TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT THE REPAIR AREAS. REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARE CORNERS.
3. THE LIMITS OF THE REPAIRS SHALL BE SAW CUT ALONG NEAT LINES TO A DEPTH OF 1" TO PRODUCE A CLEAN EDGE.
4. REMOVE DETERIORATED AND UNSOUND CONCRETE AS WELL AS SOUND CONCRETE WHERE NECESSARY TO A MINIMUM OF 1" BEYOND SURFACE REINFORCEMENT.
5. EXPOSED REINFORCEMENT IS TO BE CLEANED BY MECHANICAL CLEANING AND HIGH PRESSURE WASHING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. WHERE ACTIVE CORROSION HAS OCCURRED (THAT WHICH WOULD INHIBIT BONDING) SANDBLAST STEEL TO SSPC–SP5.
6. MISSING OR DETERIORATED REINFORCING STEEL SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. AFTER REMOVAL AND EDGE PREPARATION ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, GREASE, LOOSELY BONDED AGGREGATE) BY ABRASION BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. CHECK THE CONCRETE SURFACES AFTER CLEANING TO INSURE THAT THE SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
7. 4000 PSI ⅜" 660 CEMENT CONCRETE SHALL BE USED TO PERFORM THE REPAIRS.
8. PRESOAK CONCRETE SUBSTRATE WITH A WATER HOSE FOR 25 HOURS OR AS LONG AS SITE CONSTRAINTS PERMIT. AT TIME OF REPAIR CONCRETE PLACEMENT, SUBSTRATE SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER.
9. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH TO MATCH EXISTING SURFACES.
10. IF AN EPOXY BONDING COMPOUND IS USED (AS DIRECTED BY THE ENGINEER), THE MATERIALS SHALL MEET AASHTO M235 TYPE V. GRADE AND CLASS SHALL BE SPECIFIED FOR EACH INDIVIDUAL APPLICATION. THE EPOXY COMPOUND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. IN NO CASE WILL THE EPOXY BONDING COMPOUND BE ALLOWED TO CURE TO A HARDENED STATE PRIOR TO CONCRETE PLACEMENT. IF THIS DOES OCCUR IT MUST BE COMPLETELY REMOVED.

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| DATE | DESCRIPTION |

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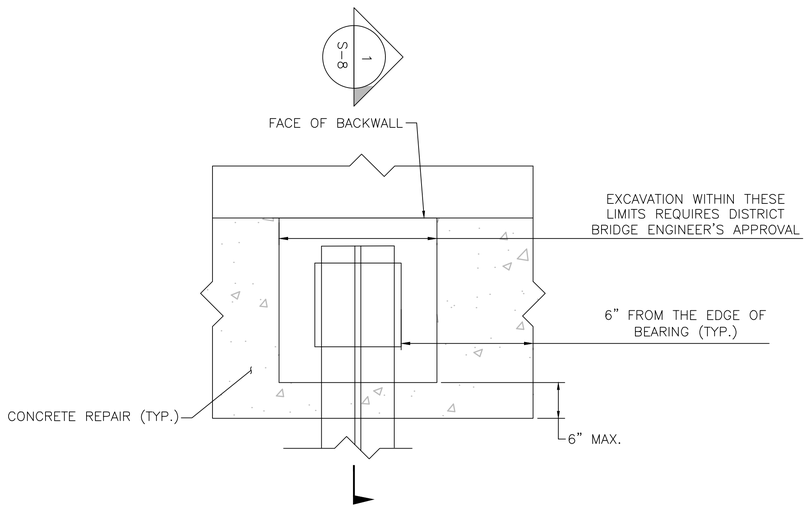
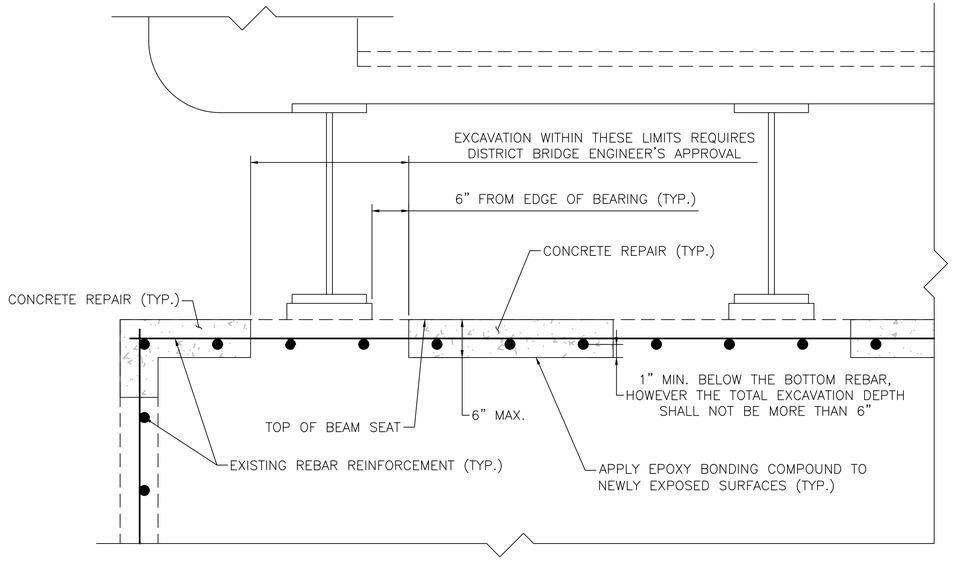



PLAN




ELEVATION

ABUTMENT DEEP PATCH REPAIR LIMITS

SCALE: N.T.S.

**MONTAGUE**
**ELEVENTH STREET OVER UTILITY CANAL**

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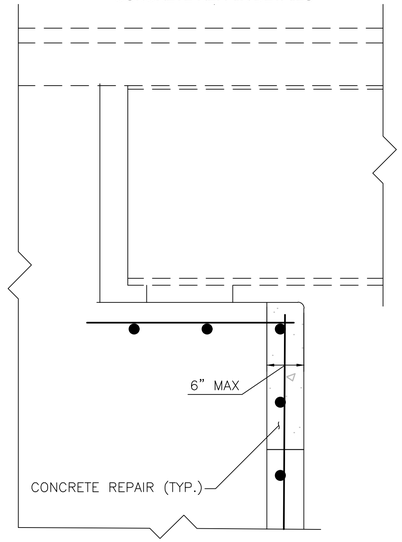
|---|---|---|---|
| MA | ---- | -- | -- |
| PROJECT FILE NO. | | -- | |

**CONCRETE REPAIR DETAILS**




1 / S-8 SECTION

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Plotted on 5-Aug-2024 11:22 AM
280170R4_BR7(CONCRETE REPAIR DETAILS)_RECOVER_RECOVER.DWG
26-SEPTEMBER-2023
100% DESIGN SUBMITTAL

**MONTAGUE**
**ELEVENTH STREET OVER UTILITY CANAL**

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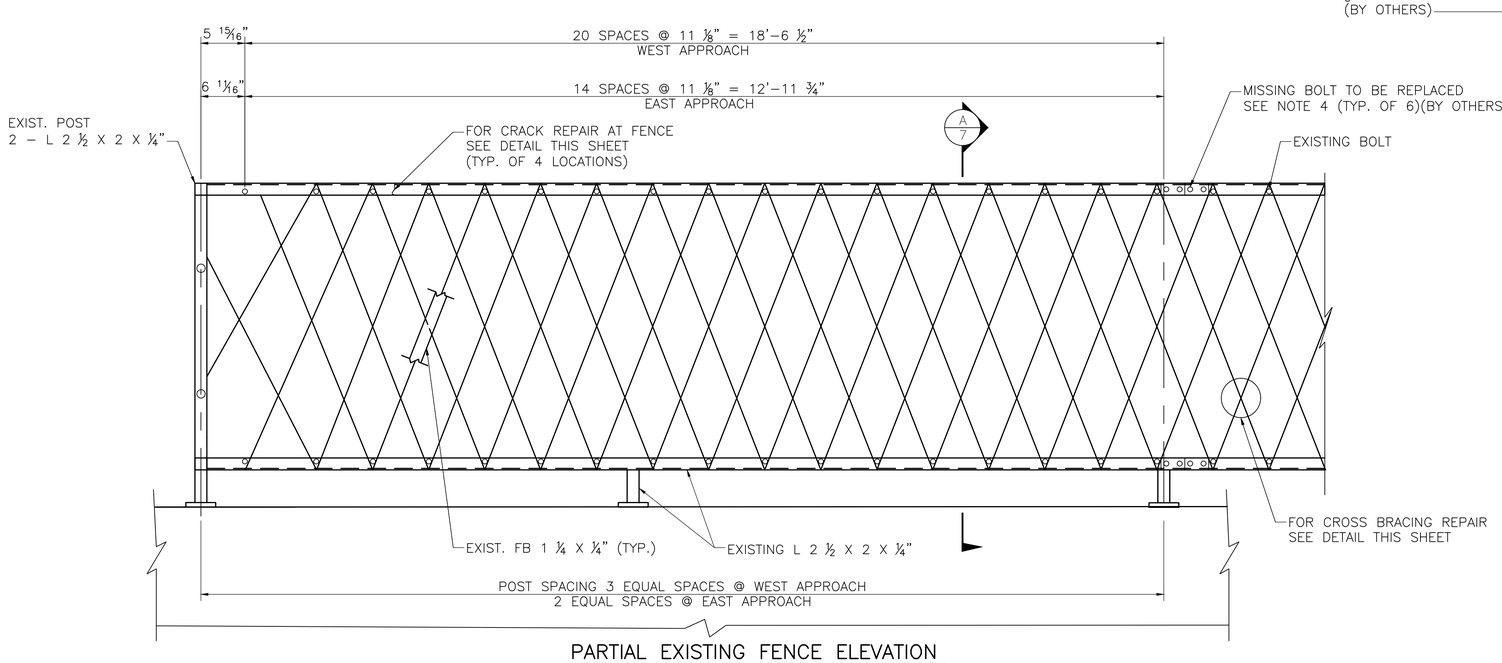
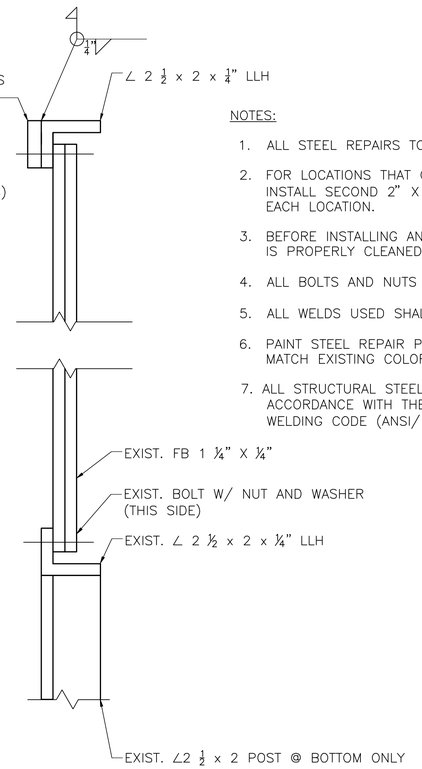
| PROJECT FILE NO. | | -- | |

# PARTIAL EXISTING FENCE ELEVATION, SECTION, AND REPAIR DETAILS




## PARTIAL EXISTING FENCE ELEVATION

SCALE: 1" = 1'-0"

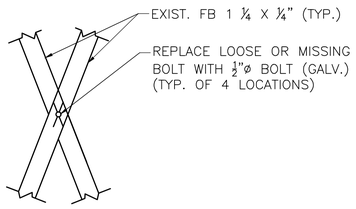



## SECTION A

NOT TO SCALE

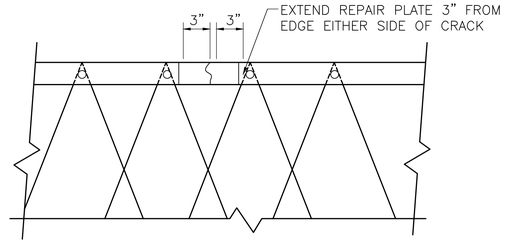
NOTES:

1. ALL STEEL REPAIRS TO BE A36 STEEL.
2. FOR LOCATIONS THAT CRACKS MITIGATE ONTO TOP EDGE OF ANGLE, INSTALL SECOND 2" X 3/8" PLATE OF SIMILAR DIMENSIONS TO STIFFEN AT EACH LOCATION.
3. BEFORE INSTALLING ANY REPAIRS, ENSURE THE CURRENT STEEL SURFACE IS PROPERLY CLEANED OF ANY RUST, OIL OR OTHER FOREIGN DEBRIS.
4. ALL BOLTS AND NUTS SHALL BE A325. (GALV)
5. ALL WELDS USED SHALL BE 1/4" ALL AROUND.
6. PAINT STEEL REPAIR PLATE, BOLTS AND SPOT PAINT REPAIR AREAS. MATCH EXISTING COLOR USING 3 COAT SYSTEM.
7. ALL STRUCTURAL STEEL AND MISCELLANEOUS STEEL SHALL BE WELDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO/ AWS BRIDGE WELDING CODE (ANSI/ AASHTO/ AWS D1.5)



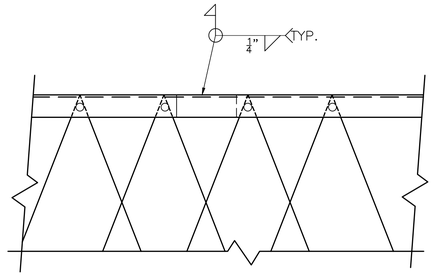

## TYPICAL RAIL CROSS BRACE BOLT DETAIL (BY OTHERS)

SCALE: 1 1/2" = 1'-0"




## EXISTING FENCE TOP RAIL CRACK DETAIL (BY OTHERS)

SCALE: 1 1/2" = 1'-0"




## FENCE REPAIR DETAIL (BY OTHERS)

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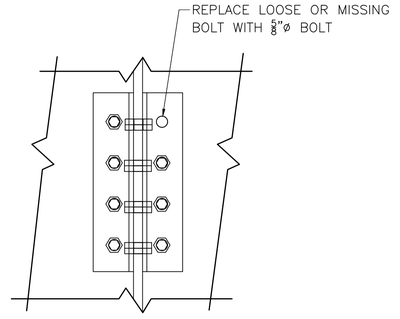


## DIAPHRAGM BOLT REPLACEMENT DETAIL

SCALE: 1 1/2" = 1'-0"

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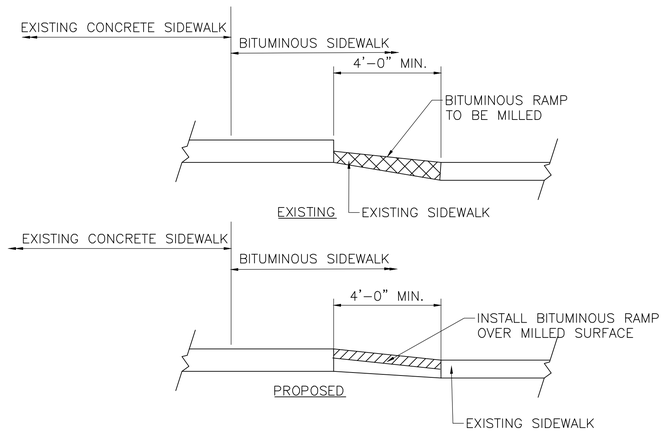
**SIDEWALK REPAIR DETAILS**




SIDEWALK REPAIR DETAIL (BY OTHERS)
SCALE: N.T.S.

## SEQUENCE OF CONSTRUCTION FOR SPALL REPAIRS:

1. REMOVE CONCRETE SURROUNDING SPALL TO SOUND CONCRETE.
2. CLEAN EXISTING REINFORCING STEEL, STRUCTURAL STEEL, AND CONCRETE (NEWLY EXPOSED). MISSING OR DETERIORATED REINFORCING STEEL SHALL BE REPLACED, AS DIRECTED BY THE ENGINEER.
3. APPLY EPOXY BONDING COMPOUND TO ALL EXISTING REINFORCING STEEL AND CONCRETE (NEWLY EXPOSED) IMMEDIATELY PRIOR TO PLACING CONCRETE.
4. FORM AND PATCH SURFACE.
5. A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN PLACING OF CONCRETE AND START OF NEXT PATCH ON A MEMBER.

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28017OR4_BR7A(CONCRETE REPAIR DETAILS)_RECOVER_RECOVER.DWG Plotted on 27-Aug-2024 10:59 AM
26-SEPTEMBER-2023 100% DESIGN SUBMITTAL