# This electronic collection of documents is provided for the convenience of the user and is Not a Certified Document –

The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.

This file or an individual page shall not be considered a certified document.

P-5705BA R/W SHEET NO.

PROJECT REFERENCE NO.

DATE: MARCH 16, 2018

APPROVED: <u>Rhonda B. Earl</u>y 3/15/2018 DATE: \_

**DOCUMENT NOT CONSIDERED FINAL** 

**UNLESS ALL SIGNATURES COMPLETED** 

TMP-2I

### TEMPORARY SHORING NOTES

# TEMPORARY SHORING NO. $\langle 4 \rangle$



FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE PIER INSTALLATION FROM STATION -Y2- 11+77.8+/-, 19.5'+/- RT, TO STATION -Y2- 12+75.2+/-, 19.2'+/- RT.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y2- 11+77.8+/-, 19.5'+/- LT, TO STATION -Y2- 12+75.2+/-, 19.2'+/- RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION.

> UNIT WEIGHT  $(\gamma) = 120 \text{ LB/CF}$ FRICTION ANGLE  $(\phi) = 32$  DEGREES COHESION (c) = 0 LB/SFGROUNDWATER ELEVATION = 710 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -Y2-11+77.8+/-,19.5'+/- RT, TO STATION -Y2- 12+75.2'+/-. 19.2'+/- RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y2- 11+77.8+/-, 19.5'+/- RT, TO STATION -Y2-12+75.2+/-, 19.2'+/- RT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y2- 11+77.8+/-, 19.5'+/-RT, TO STATION -Y2- 12+75.2+/-, 19.2'+/-RT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

# TEMPORARY SHORING NO. (5)



FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE PIER INSTALLATION FROM STATION -Y- 11+31.8+/-, 29.0'+/- LT, TO STATION -Y- 12+21.8+/-, 29.1'+/- LT.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y- 11+31.8+/-, 29.0'+/- LT., TO STATION -Y- 12+21.8+/-, 29.1'+/- LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER **ELEVATION.** 

> UNIT WEIGHT  $(\gamma) = 120 \text{ LB/CF}$ FRICTION ANGLE  $(\phi) = 34$  DEGREES COHESION (c) = 0 LB/SFGROUNDWATER ELEVATION = 712 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -Y-11+31.8+/-, 29.0'+/- LT, TO STATION -Y- 12+21.8'+/-29.1'+/- LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y- 11+31.8+/-, 29.0'+/- LT, TO STATION -Y-12+21.8+/-, 29.1'+/- LT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y- 11+31.8+/-, 29.0'+/- LT, TO STATION -Y- 12+21.8+/-, 29.1'+/- LT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

# TEMPORARY SHORING NO. $\langle 6 \rangle$



FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE PIER INSTALLATION FROM STATION -Y- 11+32.7+/-, 15.9'+/- RT, TO STATION -Y- 12+26.1+/-, 15.5'+/- RT.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y- 11+32.7+/-, 15.9'+/-RT., TO STATION -Y- 12+26.1+/-, 15.5'+/-RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION.

> UNIT WEIGHT  $(\gamma) = 120 \text{ LB/CF}$ FRICTION ANGLE  $(\phi)$  = 34 DEGREES COHESION (c) = 0 LB/SFGROUNDWATÈR ELEVATION = 712 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -Y-11+32.7+/-,15.9'+/- RT, TO STATION -Y- 12+26.1'+/-15.5'+/- RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y- 11+32.7+/-, 15.9'+/- RT, TO STATION -Y-12+26.1+/-, 15.5'+/- RT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y- 11+32.7+/-, 15.9'+/- RT, TO STATION -Y- 12+26.1+/-, 15.5'+/- RT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

NOTE: EACH STREET IS AN INDEPENDENT AREA AND MAY BE CONSTRUCTED IN ANY ORDER. CONTRACTOR MUST NOT CLOSE MULTIPLE ROADWAYS SIMULTANEOUSLY NOR HAVE LANE CLOSURES PRESENT ON A DETOUR ROUTE, UNLESS SPECIFICALLY APPROVED BY THE ENGINEER.

THE PEDESTRIAN WALKWAY CAN BE CONSTRUCTED IN COMBINATION WITH ANY OTHER AREA.

# 6TH STREET

#### PHASE I (SEE SHEET TMP-4)

COMPLETE THE WORK REQUIREMENTS OF 6TH STREET, PHASE I, STEP 1 BETWEEN 8:00 PM FRIDAY AND 5:00 AM MONDAY MORNING. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

- STEP 1 INSTALL DETOUR SIGNS AND CLOSE 6TH STREET TO PEDESTRIANS & TRAFFIC. REMOVE LOW BRIDGE. OPEN 6TH STREET TO PEDESTRIANS & TRAFFIC AND COVER DETOUR SIGNS. (SEE TMP-2A.)
- STEP 2 AWAY FROM TRAFFIC, BEGIN CONSTRUCTION OF ABUTMENTS 1 & 2, PIERS 1 & 2 AND SPANS A & C.
- STEP 3 DETOUR PEDESTRIANS TO SOUTH SIDE OF 6TH STREET AND USE WATCH DIAGRAMS 2, 13 AND 23 AS NEEDED TO INSTALL PROPOSED UTILITY IMPROVEMENTS AND REPAIR CURB & GUTTER.
- STEP 4 USING WATCH DIAGRAM 3 AS NEEDED TO CONSTRUCT PROPOSED SIDEWALK REPAIRS ON NORTH SIDE OF 6TH STREET.
- STEP 5 USING WATCH DIAGRAM 27 AS NEEDED, DETOUR PEDESTRIANS TO THE NORTH SIDE OF 6TH STREET. CONSTRUCT PROPOSED CURB & GUTTER AND SIDEWALK ON SOUTH SIDE OF 6TH STREET.

PHASE II (SEE SHEET TMP-5)

COMPLETE THE WORK REQUIREMENTS OF 6TH STREET, PHASE II, STEP 1 BETWEEN 8:00 PM FRIDAY AND 5:00 AM MONDAY MORNING. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

- STEP 1 UNCOVER DETOUR SIGNS AND CLOSE 6TH STREET TO TRAFFIC & PEDESTRIANS. HANG STEEL GIRDERS FOR SPAN B. REOPEN SIXTH STREET TO TRAFFIC & PEDESTRIANS. COVER / REMOVE DETOUR SIGNS.
- STEP 2 USING WATCH DIAGRAMS 2, 13 & 27 AS NEEDED, COMPLETE BRIDGE WORK, MILL AND RESURFACE 6TH STREET AND PLACE PAVEMENT MARKING.

## 5TH STREET

#### PHASE I (SEE SHEET TMP-6)

- STEP 1 AWAY FROM TRAFFIC, BEGIN CONSTRUCTION OF ABUTMENTS 1 AND 2.
  - USING WATCH DIAGRAMS 13 & 27, COMPLETE UTILITY WORK ON 5TH ST.
- STEP 2 USING WATCH DIAGRAM 2, CLOSE SIDEWALK ON WEST SIDE AND DETOUR PEDESTRIAN TRAFFIC TO EAST SIDE OF 5TH STREET. USING WATCH DIAGRAM 14A, PLACE PCB W/ CRASH CUSHION FROM STA 11+65+/- TO STA 13+45+/- TO CLOSE RIGHT LANE. MAINTAIN ACCESS TO PARKING DECK.
- STEP 3 INSTALL SHORING AND COMPLETE CONSTRUCTION OF ABUTMENT 2, PIER 2 AND BEGIN SPAN C.
- STEP 4 BEHIND BARRIER, REMOVE SHORING AND REPAIR PAVEMENT, CURB & GUTTER, AND CONSTRUCT PROPOSED SIDEWALK.
- STEP 5 REMOVE PCB AND OPEN 5TH STREET TO TWO LANE TRAFFIC AND SIDEWALK TO PEDESTRIANS.

#### PHASE II (SEE SHEET TMP-7)

- STEP 1 AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION OF ABUTMENT 1.
- STEP 2 USE WATCH DIAGRAM 2, CLOSE SIDEWALK ON EAST SIDE OF 5TH STREET AND DETOUR PEDESTRIAN TRAFFIC TO THE WEST SIDE OF 5TH STREET.

  USE WATCH DIAGRAM 15, PLACE PCB W/ CRASH CUSHION FROM STA

  11+65+/- TO STA 13+58+/- TO CLOSE LEFT LANE OF 5TH STREET.
- STEP 3 BEHIND PCB, INSTALL SHORING AND CONSTRUCT PIER 1 AND BEGIN CONSTRUCTION OF SPAN A.
- STEP 4 UPON COMPLETION OF PIER 1 AND BEHIND BARRIER, REMOVE SHORING AND REPAIR PAVEMENT, CURB AND GUTTER AND CONSTRUCT SIDEWALK.
- STEP 5 REMOVE PCB AND LANE CLOSURE. OPEN 5TH STREET TO TWO LANE TRAFFIC AND SIDEWALK TO PEDESTRIAN TRAFFIC.

# 5TH STREET (continued)

#### PHASE III (NOT SHOWN)

COMPLETE THE WORK REQUIREMENTS OF 5TH STREET, PHASE III, STEP 1 BETWEEN 8:00 PM FRIDAY AND 5:00 AM MONDAY MORNING. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

- STEP 1 PLACE DETOUR SIGNS AS SHOWN ON SHEET TMP-2C. (REFER TO TMP-2D FOR ALTERNATE DETOUR.) USE WATCH DIAGRAM 26 TO DETOUR 5TH STREET TRAFFIC & PEDESTRIANS TO HANG STEEL FOR SPAN B. OPEN 5TH STREET TO TRAFFIC & PEDESTRIANS AND COVER / REMOVE DETOUR SIGNING.
- STEP 2 USING WATCH DIAGRAM 27, MILL, RESURFACE AND PLACE PAVEMENT MARKINGS ON 5TH STREET.

USING WATCH DIAGRAMS 2, 15 & 27 AS NEEDED, COMPLETE STRUCTURE WORK.

#### TRADE STREET

#### PHASE I (SEE SHEET TMP-8)

- NOTE: STEPS 1 & 2 MAY BE COMPLETED IN ANY ORDER; HOWEVER, THE SIDEWALK MUST REMAIN OPEN ON AT LEAST ONE SIDE AT ALL TIMES.
- NOTE: REFER TO SPECIAL PROVISIONS FOR GOLD LINE COORDINATION REQUIREMENTS.
- STEP 1 USING WATCH DIAGRAMS 2 AND 27, CLOSE NB OUTSIDE LANE AND SIDEWALK. DETOUR PEDESTRIAN TRAFFIC TO OTHER SIDE. INSTALL SHORING AND CONSTRUCT ABUTMENT 1, PIER 1 AND BEGIN SPAN A. REMOVE SHORING AND REPAIR SIDEWALK.
- STEP 2 USING WATCH DIAGRAMS 2 AND 27, CLOSE SB OUTSIDE LANE AND SIDEWALK. DETOUR PEDESTRIAN TRAFFIC TO OTHER SIDE. INSTALL SHORING AND CONSTRUCT ABUTMENTS 2, PIERS 2 AND BEGIN SPAN D. REMOVE SHORING AND REPAIR SIDEWALK.
- STEP 3 PLACE AND COVER DETOUR SIGNS AS SHOWN ON SHEET TMP-2E.

#### PHASE II (NOT SHOWN)

COMPLETE THE WORK REQUIREMENTS OF TRADE STREET, PHASE II, STEP 1 THRU STEP 2 BETWEEN 8:00 PM FRIDAY AND 5:00 AM MONDAY MORNING. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

- STEP 1 USING WATCH DIAGRAMS 2 AND 26, CLOSE TRADE STREET TO TRAFFIC AND PEDESTIANS TO HANG STEEL FOR SPANS B AND C.
- NOTE: COORDINATE GIRDER ERECTION WITH GOLDLINE STREETCAR ALLOWABLE CRANE SWING OVER TIMES DUE TO ELECTRIFIED OVERHEAD CATENARY SYSTEM.
- STEP 2 OPEN TRADE STREET TO TRAFFIC AND PEDESTRIANS.
- STEP 3 USE WATCH DIAGRAM 13 & 16 TO MILL AND RESURFACE TRADE STREET AND PLACE PAVEMENT MARKING.

USING WATCH DIAGRAMS 2, 26 & 27 AS NEEDED, COMPLETE SPANS A, B, C AND D.

# 4TH STREET

#### PHASE I (SEE SHEET TMP-9)

STEP 1 USING WATCH DIAGRAMS 2 & 19, INSTALL PROPOSED WATERLINE RIGHTMOST EASTBOUND LANE.

USING WATCH DIAGRAM 18, CONSTRUCT UTILITY WORK IN INSIDE WESTBOUND LANE.

AWAY FROM TRAFFIC, BEGIN ABUTMENT 1.

PLACE AND COVER DETOUR SIGNS AS SHOWN ON SHEET TMP-2F.

COMPLETE THE WORK REQUIREMENTS OF 4TH STREET, PHASE I, STEP 2 BETWEEN 8:00 PM AND 5:00 AM THE FOLLOWING MORNING. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

STEP 2 UNCOVER DETOUR SIGNS AND CLOSE 4TH STREET TO TRAFFIC AS SHOWN ON TMP-2F. COMPLETE INSTALLATION OF WATERLINES CROSSING 4TH STREET. REPAIR PAVEMENT AND REOPEN 4TH STREET TO TRAFFIC. COVER DETOUR SIGNS.

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

4TH STREET

(continued)

DATE: MARCH 16, 2018

P-5705BA

BUNGSHEET NO.

APPROVED: Rhonda B. Early.

SHEET NO.

TH CARO

SEAL

023521

TMP-3

PROJECT REFERENCE NO.

DATE: \_\_\_\_\_\_4/5/2018

SEAL

DOCUMENT NOT CONSIDERED FINAL

**UNLESS ALL SIGNATURES COMPLETED** 

#### PHASE I (continued)

- STEP 3 USING WATCH DIAGRAMS 2, 13, 18 AND 19 AS NEEDED TO CLOSE SIDEWALK AND SHIFT EASTBOUND TRAFFIC INTO A ONE-LANE PATTERN AND COMPLETE THE FOLLOWING:
  - INSTALL SHORING, CONSTRUCT PIER 2, CONSTRUCT ABUTMENT 2 AND BEGIN CONSTRUCTION OF SPAN C.
  - REMOVE SHORING UPON COMPLETION OF PIER 2.
  - CONSTRUCT CURB & GUTTER AND SIDEWALK ADJACENT TO CLOSED LANE.
  - OPEN LANE AND SIDEWALK TO TRAFFIC.

#### PHASE II (SEE SHEET TMP-10)

- STEP 1 USING WATCH DIAGRAMS 2 AND 13 TO CLOSE SIDEWALK AND SHIFT WESTBOUND TRAFFIC INTO A ONE-LANE PATTERN AND PLACE PCB WITH CRASH CUSHIONS FROM STA 10+10+/- TO STA 12+85+/-.
- STEP 2 AWAY FROM TRAFFIC AND BEHIND BARRIER, COMPLETE THE FOLLOWING:
  - INSTALL SHORING
  - CONSTRUCT PIER 1 AND COMPLETE ABUTMENT 1
  - BEGIN CONSTRUCTION OF SPAN A
  - UPON COMPLETION OF PIER 1. REMOVE SHORING
  - CONSTRUCT SIDEWALK, REPAIR PAVEMENT AND CURB & GUTTER
- STEP 3 REMOVE PCB AND LANE CLOSURE FROM WESTBOUND LANE.
- STEP 4 PLACE AND COVER DETOUR SIGNING AS SHOWN ON TMP-2F.

#### PHASE III (NOT SHOWN)

COMPLETE THE WORK REQUIREMENTS OF 4TH STREET, PHASE III, STEP 1 BETWEEN 8:00 PM FRIDAY AND 5:00 AM MONDAY MORNING. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

- STEP 1 USING WATCH DIAGRAMS 2 & 26, CLOSE 4TH STREET TO TRAFFIC AND PEDESTRIANS TO HANG STEEL FOR SPAN B. OPEN 4TH STREET TO TRAFFIC AND REMOVE DETOUR SIGNS.
- STEP 2 USE WATCH DIAGRAM 13, MILL AND RESURFACE 4TH STREET AND PLACE PAVEMENT MARKING.

USING WATCH DIAGRAMS 2, 13, 19 & 26 AS NEEDED, COMPLETE STRUCTURE WORK.

# PEDESTRIAN WALKWAY

#### PHASE I (SEE SHEET TMP-11)

- NOTE: THE CONTRACTOR'S ATTENTION OS DIRECTED TO ACCESS RESTICTIONS IN THIS AREA DETAILED ELSEWHERE IN THE CONTRACT.
- STEP 1 PROVIDE A PROTECTED PEDESTRIAN WALKWAY ENCLOSURE AND DRUMS TO DIRECT PEDESTRIAN TRAFFIC PRIOR TO ANY BRIDGE CONSTRUCTION. REFER TO SPECIAL PROVISIONS FOR PEDESTRIAN WALKWAY ENCLOSURE REQUIREMENTS.

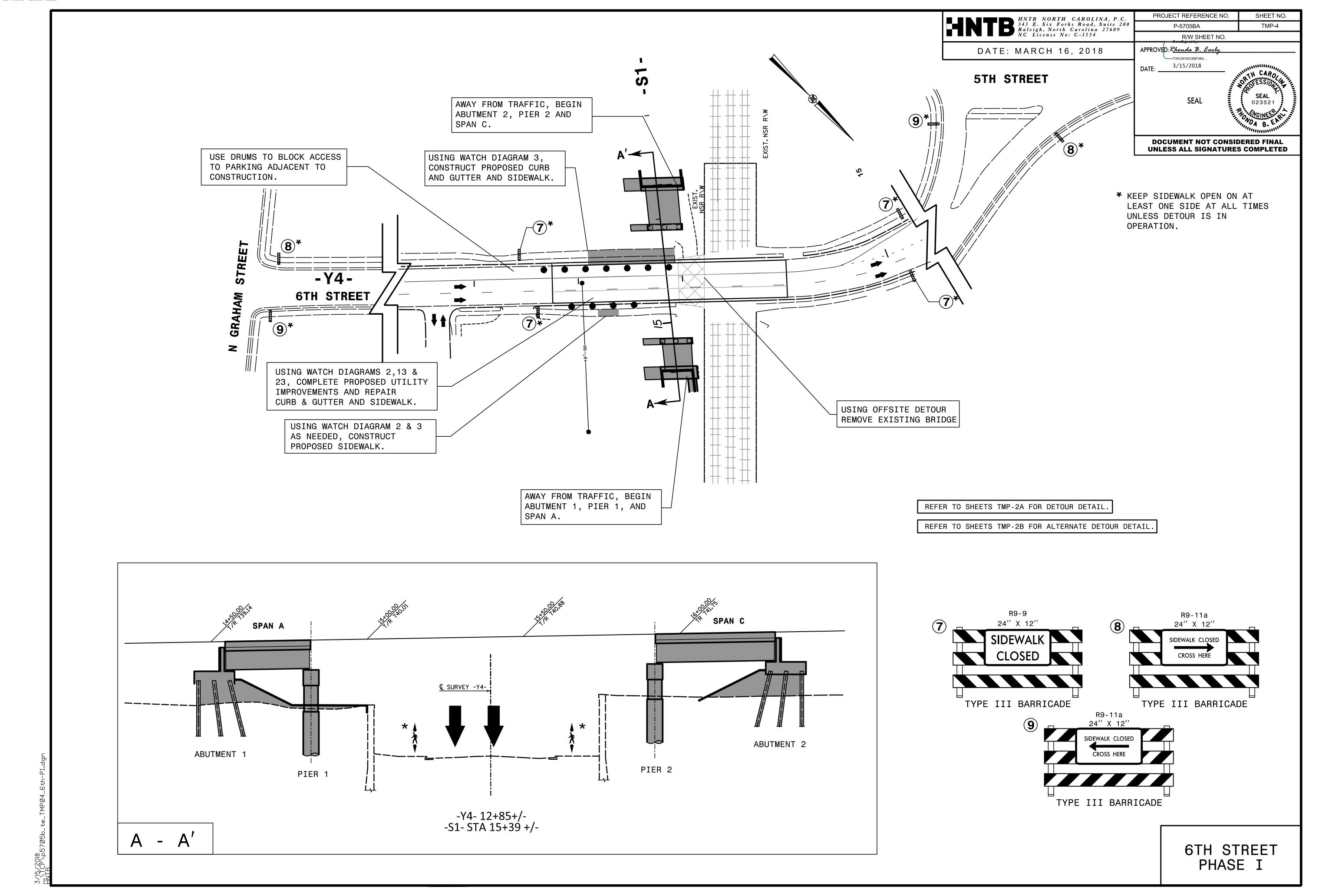
COMPLETE THE WORK REQUIREMENTS OF PEDESTRIAN WALKWAY, PHASE I, STEP 2 IN FOURTEEN (14) CALENDAR DAYS. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

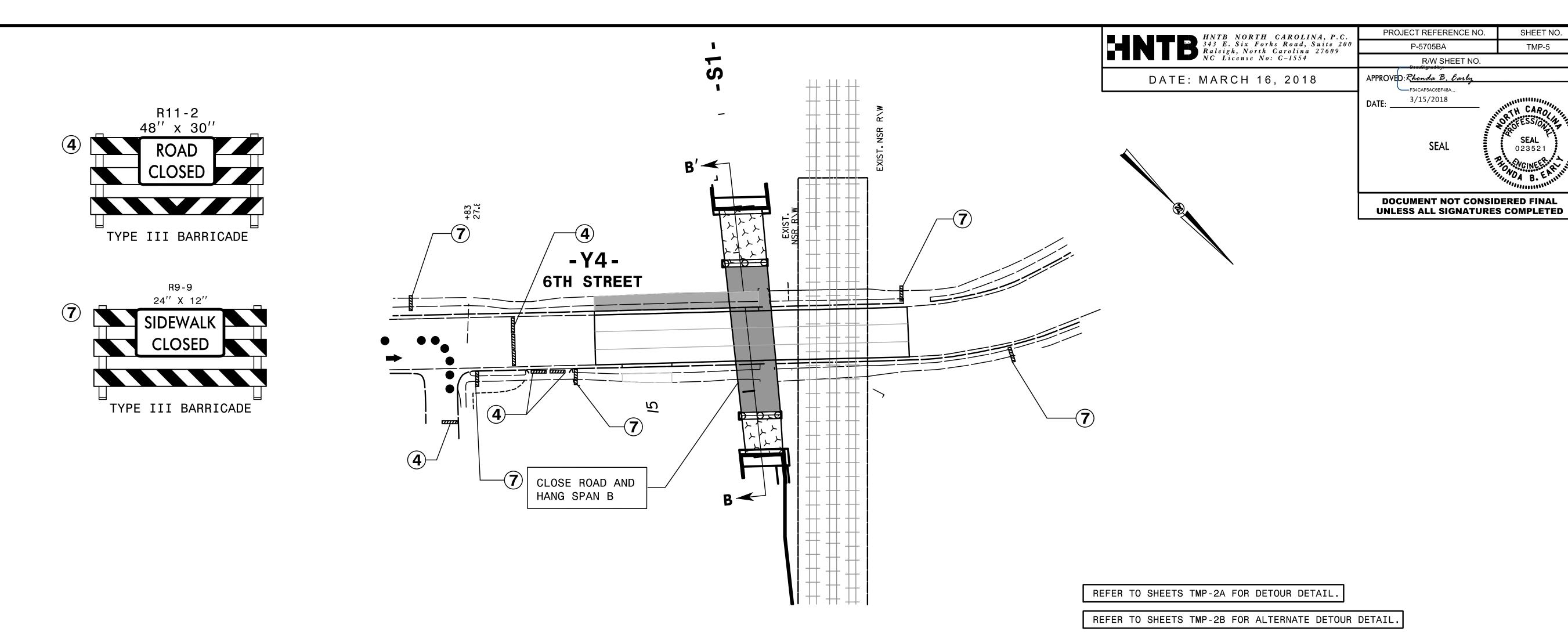
STEP 2 CLOSE PEDESTRIAN WALKWAY, COMPLETE DEMOLITION OF EXISTING BRIDGE AND OPEN PROTECTED PEDESTRIAN WALKWAY ENCLOSURE.

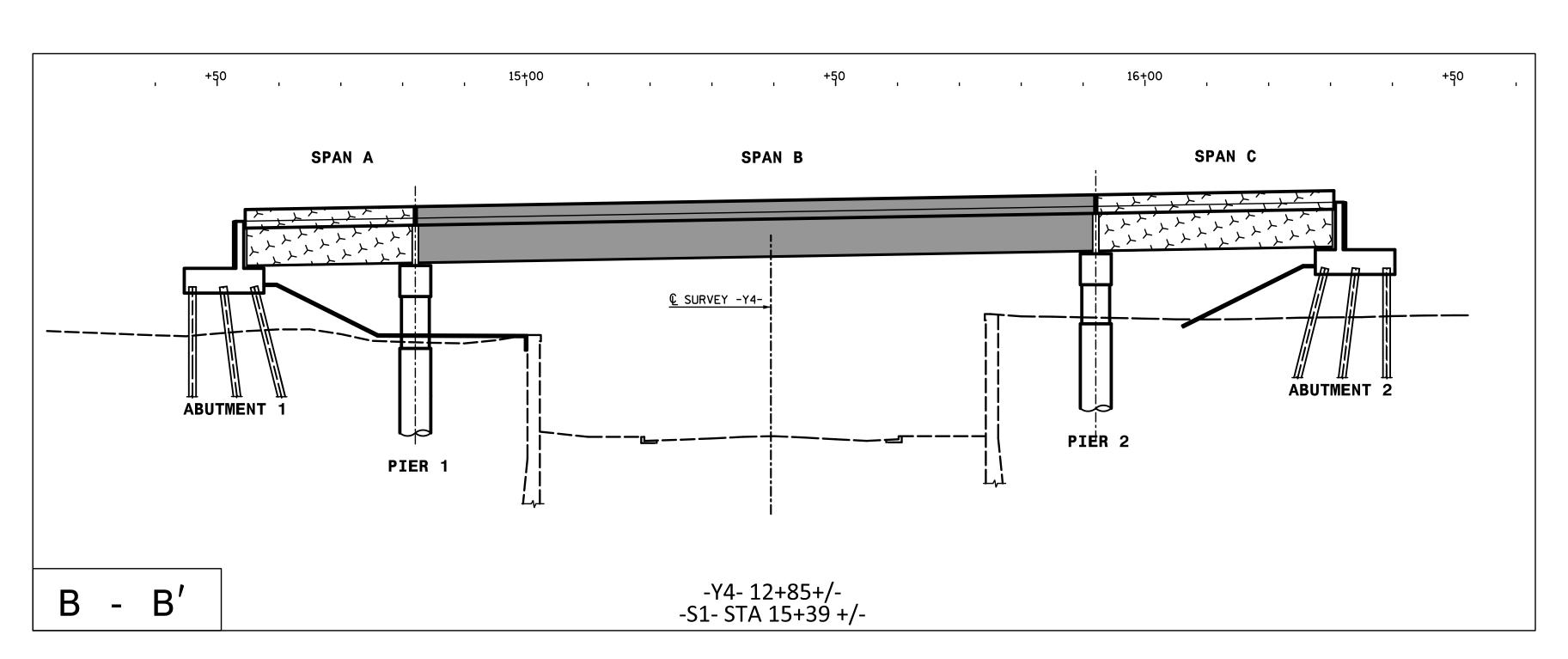
COMPLETE THE WORK REQUIREMENTS OF PEDESTRIAN WALKWAY, PHASE I, STEP 3 BETWEEN 8:00 PM FRIDAY AND 5:00 AM MONDAY MORNING. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

- STEP 3 CLOSE PEDESTRIAN WALKWAY, HANG PROPOSED BRIDGE GIRDERS, AND OPEN PROTECTED PEDESTRIAN WALKWAY ENCLOSURE
- STEP 4 COMPLETE ALL REMAINING WORK IN AREA
  THEN REMOVE THE WALKWAY ENCLOSURE PLACED
  IN STEP 1 AND OPEN COMPLETED ACCESS
  TO WALKWAY.

**PHASING** 







6TH STREET PHASE II

SHEET NO.

TMP-5

