# PROJECT PRA/NPS-GWMP IA75, 77 SILVER BETHESDA OF SPRING GEORGE MACLEAN WASH. DC VIENNA GEALLS ARLINGTON CHURCH CHURCH SPRINGFIELD SPRINGFIEL

KEY MAP
WASHINGTON DC AND METROPOLITAN AREA

### CONVENTIONAL SIGNS STATE ROUTE \_\_\_\_ \_ \_ \_ R/W RIGHT-OF-WAY PROPOSED R/W ========== EXISTING ROADWAY CREEKS AND INTERMITENT DRAINAGE MARSH OR SWAMP TREELINE 000 PROPOSED PIPE CULVERT WITH INLET SINGLE OR MULTIPLE PIPE CULVERT WITH HEADWALL AND WINGWALL SINGLE OR MULTIPLE PIPE CULVERT WITH END SECTION SINGLE OR MULTIPLE BOX CULVERT WITH HEADWALL AND WINGWALL

PLANS PREPARED BY

## U.S.DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

EASTERN FEDERAL LANDS HIGHWAY DIVISION

STERLING, VIRGINIA

DESIGN DESIGNATION

GEORGE WASHINGTON

MEMORIAL PARKWAY

ADT(1996)\_\_\_\_\_\_ 42,800

ADT(2016)\_\_\_\_\_ 53,500

DHV\_\_\_\_\_ 7000

D\_\_\_\_\_ 60%

C/A\_\_\_\_ FULL

emax.\_\_\_\_\_ 8%

V\_\_\_\_\_ 80 km/h

T\_\_\_\_\_ 1½

June 1997

# U.S. DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

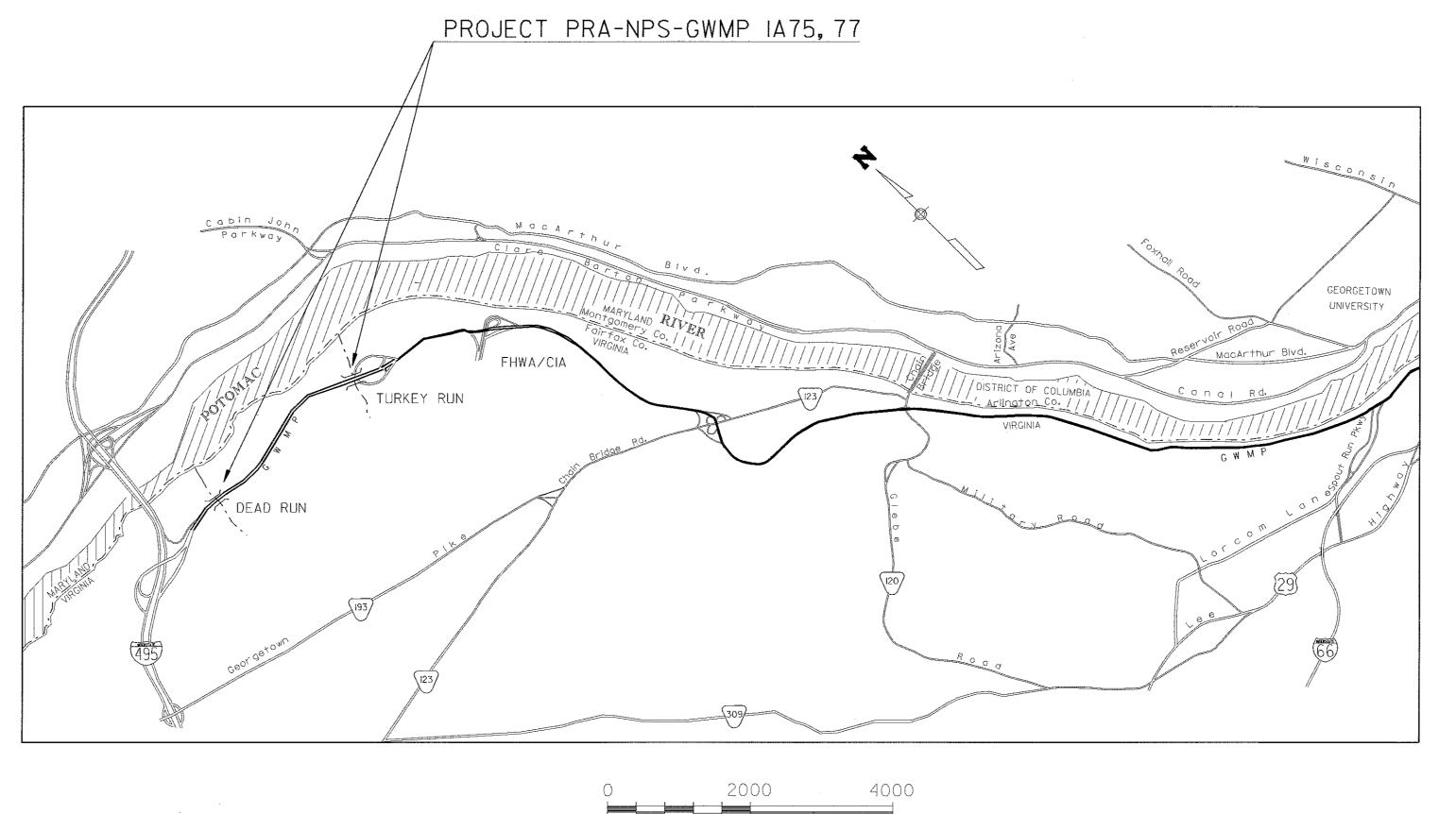
# GEORGE WASHINGTON MEMORIAL PARKWAY

PLANS FOR PROPOSED

# PROJECT PRA-NPS-GWMP 1A75, 77

REHABILITATION OF BRIDGES OVER DEAD RUN AND TURKEY RUN

FAIRFAX COUNTY VIRGINIA



SCALE IN METERS

### TOTAL PROJECT LENGTH

(Inventory No.)

BRIDGE I (Dead Run) 3300-00IP \_\_\_\_\_ 0.09 Kilometers

BRIDGE 2 (Turkey Run) 3300-002P \_\_\_\_ 0.12 Kilometers

TOTAL \_\_\_\_ 0.21 Kilometers

# DESCRIPTION OF PROJECT

IMPROVEMENT: Replacing deck and railing on Southbound Dead Run and Northbound & Southbound Turkey Run bridges. Constructing stone masonry guardwalls, and other miscellaneous work.

ROADWAY: George Washington MemorialParkway

Specifications:

"Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects", FP-96.

	NPS NO.	REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
-	850 41,937	NC	VA	GWMP IA75,77		143

### INDEX TO SHEETS

SHEET NO	DESCRIPTION
	TITLE SHEET
2	LOCATION MAP
3-5	TYPICAL SECTIONS
6-8	TABULATION OF QUANTITIES
9-13	SIGN SCHEDULES
14-15	OVERVIEWS
16	GUARDWALL LOCATIONS
17-20	BRIDGE APPROACH PLANS
21	CROSS OVERS TEMPORARY PAVEMENT AND DRAINAGE PLAN
22	PERMANENT DRAINAGE PLAN
23	TURKEY RUN RIPRAP PLAN
24-27	DRAINAGE CROSS SECTIONS
28	CPM WORKSHEET
29-30	CONSTRUCTION TRAFFIC CONTROL NOTES
31-61	CONSTRUCTION TRAFFIC CONTROL PLANS
62-73	CROSS SECTIONS
74-96	STANDARD PLANS & DETAILS
97-143	BRIDGE PLANS



RECOMMENDED:

DATE:

DVISION ENGINEER, EASTERN FEDERAL LANDS
HIGHWAY DIVISION

477

These drawings have been prepared in compliance with

FEDERAL HIGHWAY ADMINISTRATION

preliminary design drawings approved by:

Commence of the substitution MEMORIAL PARKWAY

VSUPERINTENDENT, GEORGE WASHINGTON MEMORIAL PARKWAY,

NATIONAL PARK SERVICE

FIELD DIRECTOR, NATIONAL CAPITAL AREA
Acting
NATIONAL PARK SERVICE

APPROVED:

DATE:

PROJECT MANAGER, DENVER SERVICE CENTER NATIONAL PARK SERVICE

2/14/97

PROJECT MANAGER DESIGNERS

KEN ATKINS ANN DO / BOB BEUCLER

GUARDRAIL

### GENERAL NOTES

### A SPECIFICATIONS:

I.Design (Of New Elements): Standard Specifications for Highway Bridges, AASHTO 1992, and interim specifications, 1993 and 1994

- Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects FP-96 2.Construction:

### B.DESIGN LOADINGS:

I.Dead Loads: Unit Weight of Reinforced Concrete: 2,400 kg/m<sup>3</sup>

2. Live Loads(On New Elements): MS 18 with Impact

3. Thermal Forces: Ambient Temperature = 20°C

For Design: Temperature Rise = 12°C

Temperature Fall = 27°C

For Joints: Temperature Rise = 18°C

Temperature Fall = 32°C

### C.MATERIALS:

I.Concrete: Class D (AE) (Minimum 28 Day Compressive Strengths as Noted) a.Precast Deck Panels, and Cast-in-Place Closure at the End of Deck: 38 MPa. b. Bridge Curbs, Wingwalls, Wingwall Parapet, Wingwall Sidewalk, Top of Abutment Backwall: 28 MPa.

2. Concrete: Class E(AE)

a.Latex Modified Concrete Overlay: 28 MPa.

3. Reinforcing Steel: ASTM A 615M, Grade 400, Epoxy Coated. Cover for reinforcing steel is 40 mm unless otherwise dimensioned.

Lap splices are 30 bar diameters unless otherwise dimensioned

All bar sizes shown on plans are metric bar sizes. Metric numbers used to identify reinforcement convert to English size reinforcement as follows

METRIC	ENGLISH
*20	<b>*</b> 6
*/5	*5
*10	*4

### 4. Prestressing Steel:

a.Strand: AASHTO M 203, Grade 270, Low Relaxation.

b. Prestressing Parameters (Strand):

Apparent Modulus (For Calculation of Elongations): 193,000 MPa

Maximum Jacking Stress: 1,490 MPa (80% Ultimate).

Maximum Stress At Anchor After Anchor Set: 1,303 MPa (70% Ultimate).

i. Pretensioning:

Friction Coeffcient: 0.0

Wobble Coefficient: 0.0

Strand Diameter: 12.70 mm seven wire

ii. Post-Tensionina:

Anchor Set: 10 mm

Friction Coeffcient: 0.25

Wobble Coefficient: 0.0015

Strand Diameter: 1270 mm seven wire c. Tendon Ducts: Corrugated Sheathing as per Section 553 in \*Special Contract Requirements\*.

### D.ALLOWABLE STRESSES/ULTIMATE STRENGTH CAPACITIES:

I.Reinforced Concrete: As per AASHTO Allowable Stresses.

2. Prestressed Concrete:

a.Transverse Concrete Stress: 0.0 MPa.Minimum.

15 MPa, Compression.

0.0 MPa, Minimum (at Cast-In-Place Joints and Closure Pours)

b. Longitudinal Concrete Stress: 15 MPa, Compression.

3. Precast Deck Panel Casting and Erection: (Minimum Concrete Strengths and Panel Age)

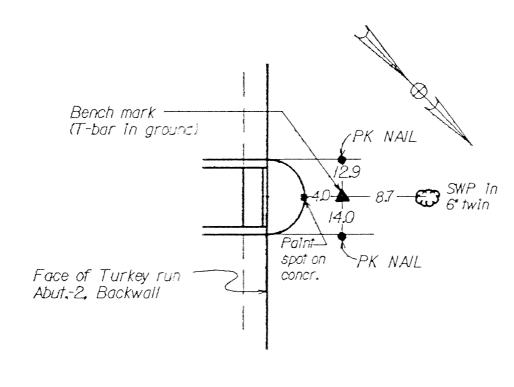
a. Prior to Transfering Pretensioned Strands: 28 MPa.

b.Prior to Lifting the Panel :28 MPa.

c.Prior to Stressing Longitudinal Post-Tensioning :38 MPa.(Precast Elements)

14 MPa (C.I.P.Transverse Joint between Panels)

d.Minimum Age of Panels at Time of Erection: 28 Days or 38 MPa.



BENCH MARK

### SCOPE OF WORK

Perform the following work for the rehabilitation of the Dead Run and Turkey Run bridges:

### A Turkey Run Northbound and Southbound, Dead Run Southbound

- I. Remove the existing bridge rail. Remove the existing deck in sections and replace with precast concrete deck panels.
  - a. Removal of deck (including curbs and rail): Pay Item 20303K
  - b. Manufacture and placement of precast panels including the following items; Pay Item 55228
    - 1. Concrete
    - 2. Reinforcing Steel
    - 3. Transverse Pretensioning Steel

    - 4. Scuppers and Panel Hold-down Clips
      5. Placement of grout pad under Panels
      6. Placement of Concrete in Transverse Joints between Panels
    - 7. Longitudinal Post-tensioning of Panels
  - c. Placement of cast-in-place end section of deck including the following items: Pay Item 55228
    - 1. Concrete
    - 2. Reinforcing Steel
- 2. Remove top of abutment backwalls and install new expansion dams.
  - a. Remove top of backwall: Pay Item 20309AB
  - b. Install new expansion dams and concrete for top of backwall
    - I. Expansion Dam: Pay Item 55502
    - 2. Concrete: Pay Item 5520ID 3. Reinforcing Steel: Pay Item 55402
- 3. Remove concrete from tops of wingwalls, remove wingwall sidewalks, and reconstruct tops of wingwalls with a masonry-faced parapet as shown on the plans.
  - a. Remove tops of wingwalls and wingwall sidewalks: Pay Item 20309AB
  - b. Reconstruct tops of wingwalls with masonry-faced parapet
    - 1. Concrete: Pay Item 5520ID
    - 2. Reinforcing Steel: Pay Item 55402
    - 3. Masonry Veneer: Pay Item 6200ICE
- 4. At the following locations, repair areas of spalled or deteriorated concrete as shown on the plans or directed by the CO: Pay Item 55209
  - a. Dead Run Southbound: Abutment I backwall and breastwall b. Turkey Run Southbound: Abutment 2 backwall and breastwall
- 5. Place curbs on bridge deck: Pay Item 55206DU
- 6. Install new rail on bridge: Pay Item 5560IBC
- 7. Place latex modified concrete overlay on bridge deck: Pay Item 55207EE
- 8. Place Class 2 riprap at locations beneath bridge scuppers as directed by the CO: Pay Item 25102B
- 9. Remove and dispose of all electrical equipment related to the existing cathodic protection system: Pay Item 20304AL

### B. Dead Run Northbound

- I. Remove existing bituminous bridge pavement: Pay Item 20303PFG
- 2. Remove top of abutment backwalls and ends of bridge deck as shown. Install new expansion
  - a. Remove top of backwall and ends of deck: Pay Item 20309AB
  - b. Install new expansion dams and concrete for top of backwall and ends of deck
    - I. Expansion Dam: Pay Item 55502 2. Concrete: Pay Item 5520ID
  - 3. Reinforcing Steel: Pay Item 55402
- 3. Remove concrete from tops of wingwalls, remove wingwall sidewalks, and reconstruct sidewalks and tops of wingwalls with a masonry-faced parapet as shown on the plans.
  - a. Remove tops of wingwalls and wingwall sidewalks: Pay Item 20309AB
  - b. Reconstruct sidewalks and tops of wingwalls with masonry-faced parapet
    - 1. Concrete: Pay Item 5520ID 2. Reinforcing Steel: Pay Item 55402 3. Masonry Veneer: Pay Item 6200ICE
- 4. At the abutment I backwall and breastwall, repair areas of spalled or deteriorated concrete as shown on the plans or directed by the CO: Pay Item 55209
- 5. Place latex modified concrete overlay on bridge deck: Pay Item 55207EE
- 6. Place Class 2 riprap at locations beneath bridge scuppers as directed by the CO: Pay Item 25/02B
- 7. Plug the existing scuppers.

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION

GEORGE WASHINGTON MEMORIAL PARKWAY BRIDGES OVER TURKEY RUN AND DEAD RUN

### GENERAL NOTES

PROJECT

GWMP 1A75, 77

SHEETS

143

NO.

98

STATE

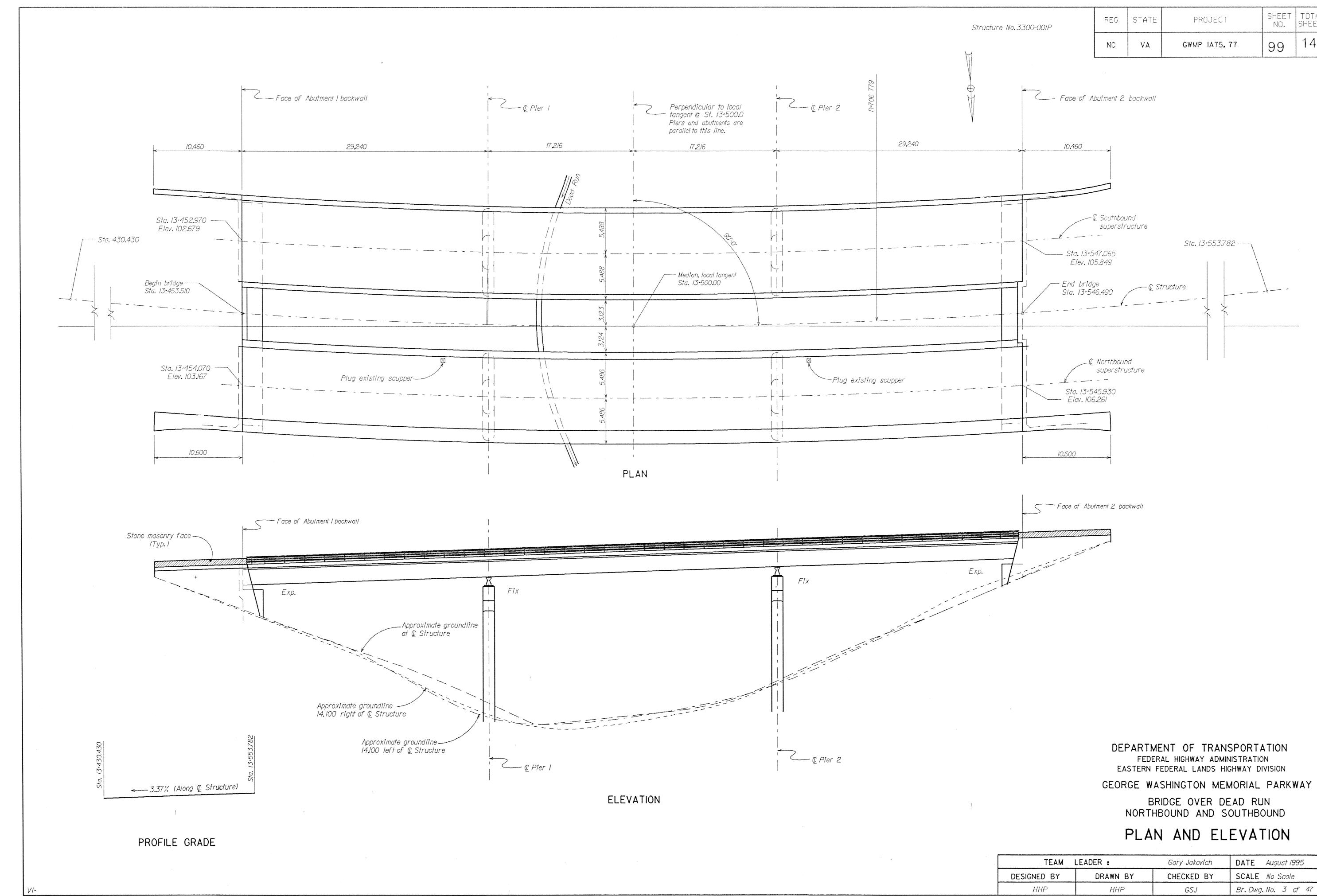
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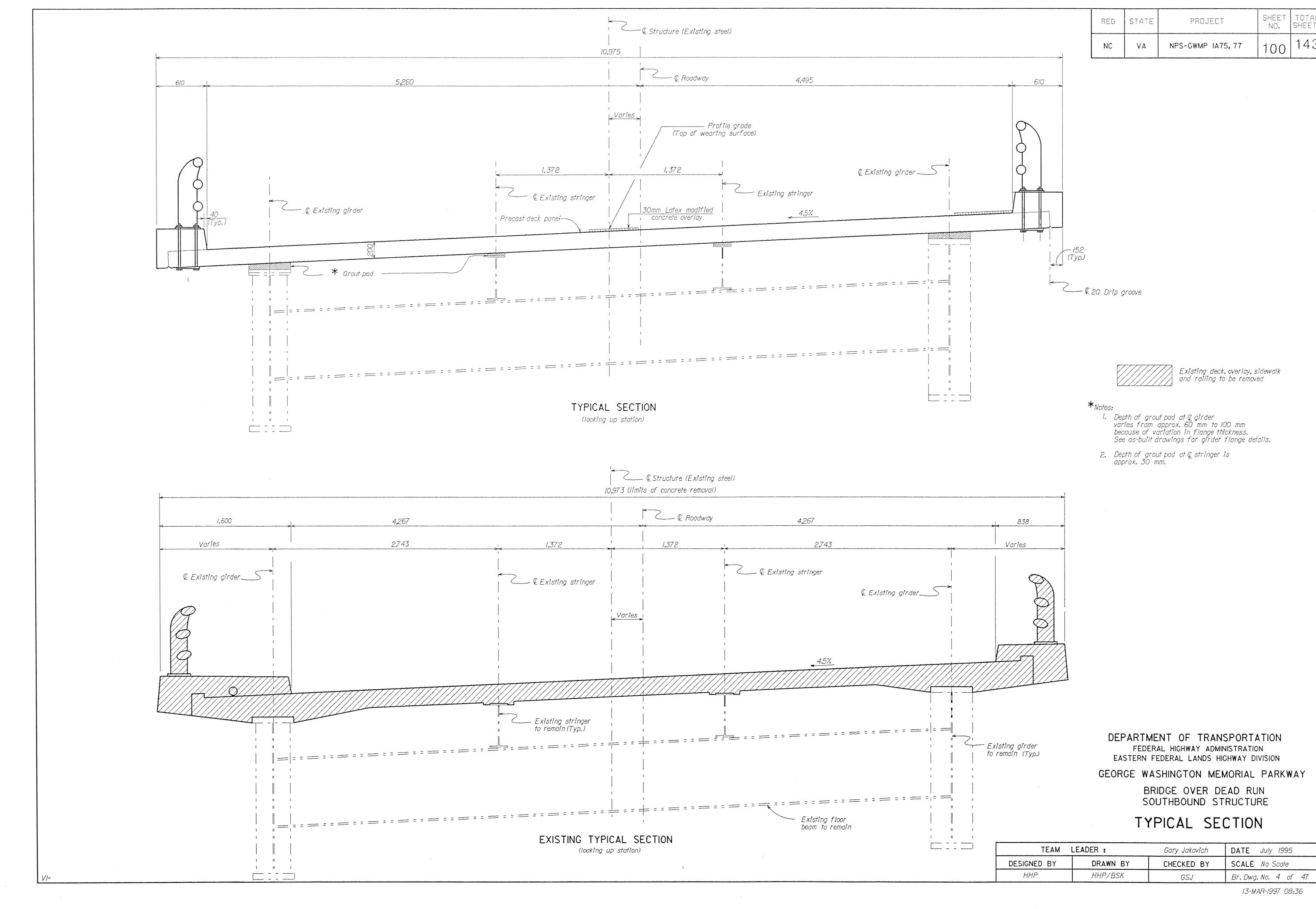
REG

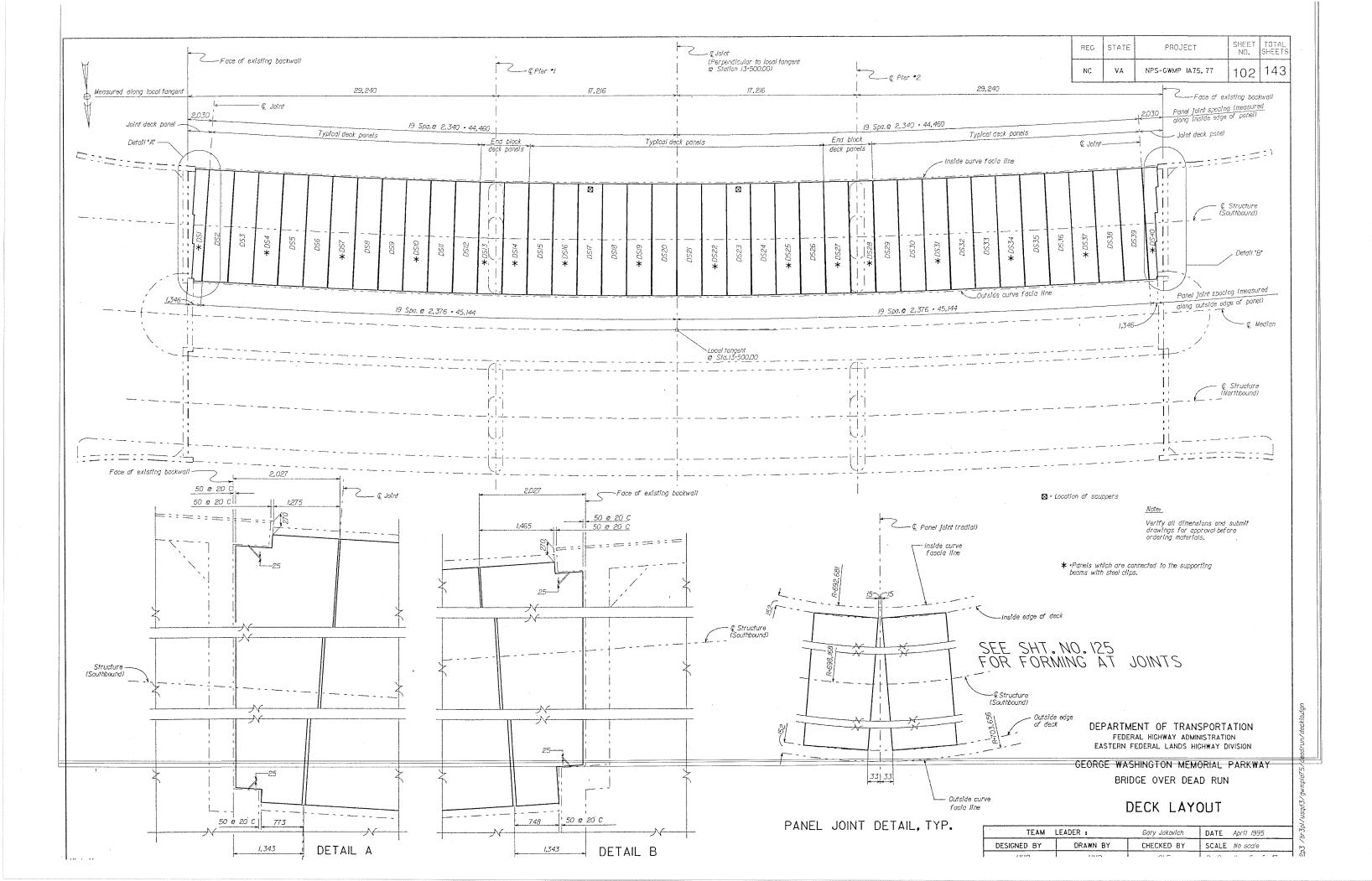
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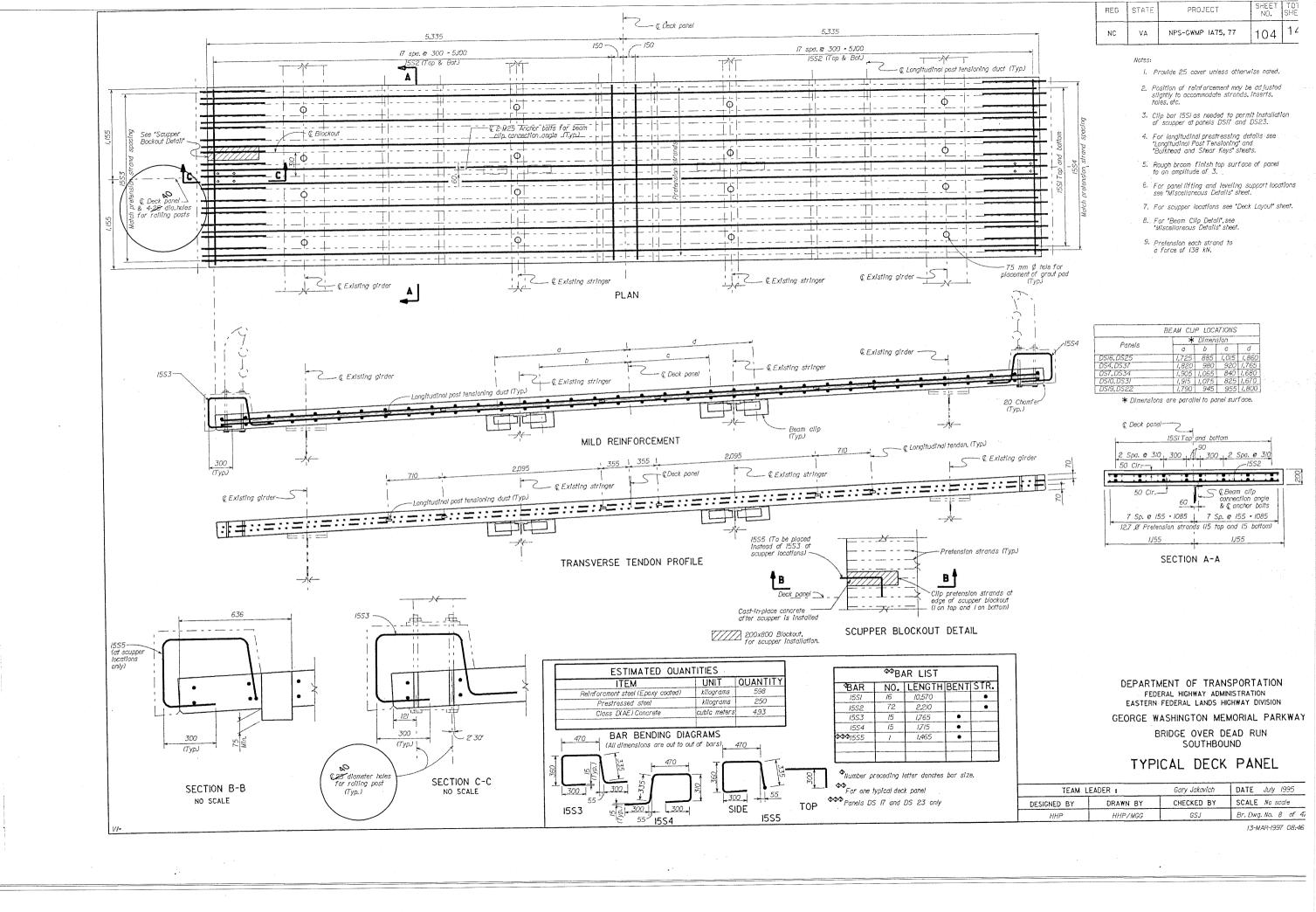
TEAM	LEADER:	Gary Jakovich	DATE August 1995
DESIGNED BY	DRAWN BY	CHECKED BY	SCALE No Scale
HHP	BSK	GSJ	Br. Dwg. No. 2 of 47

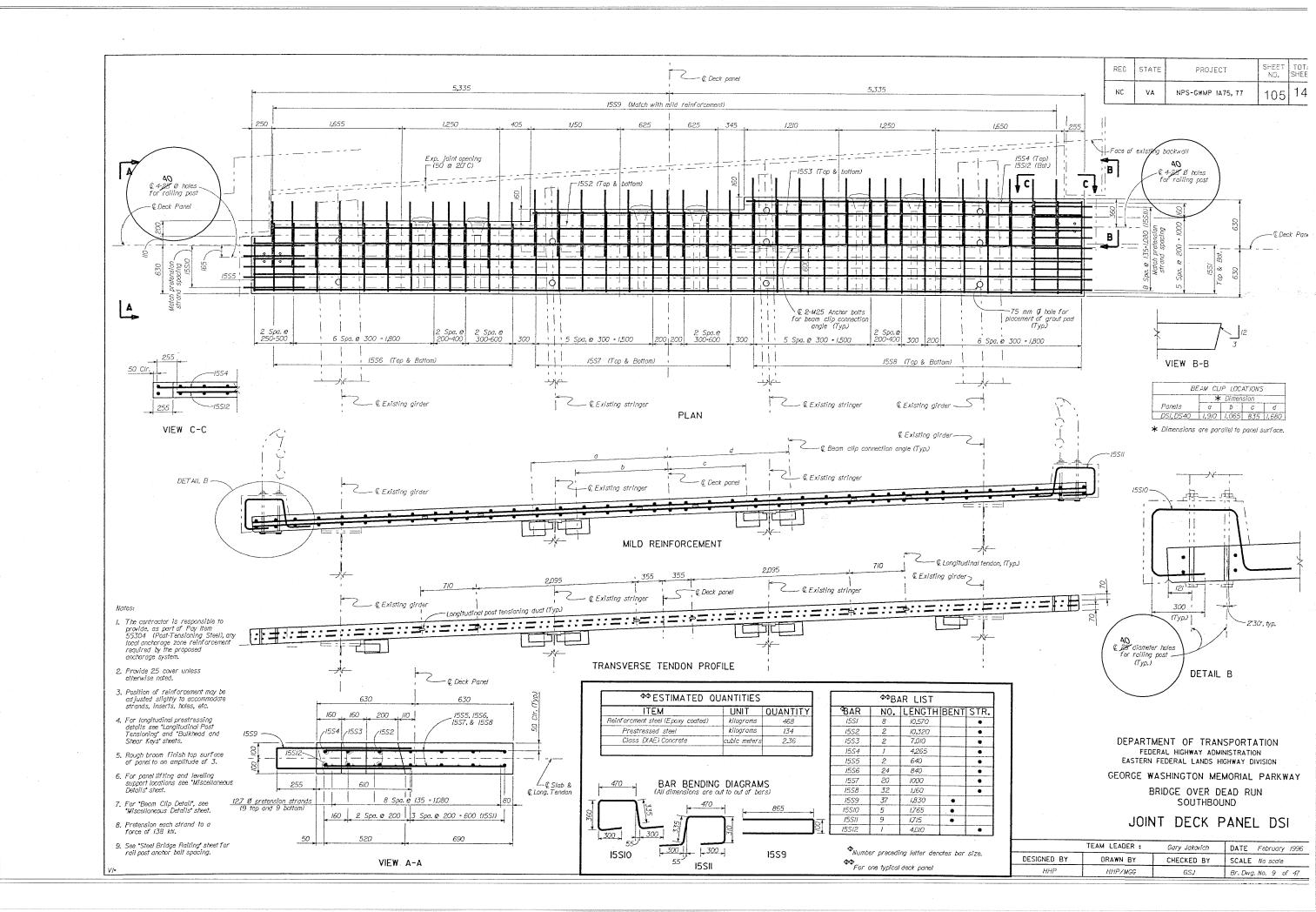
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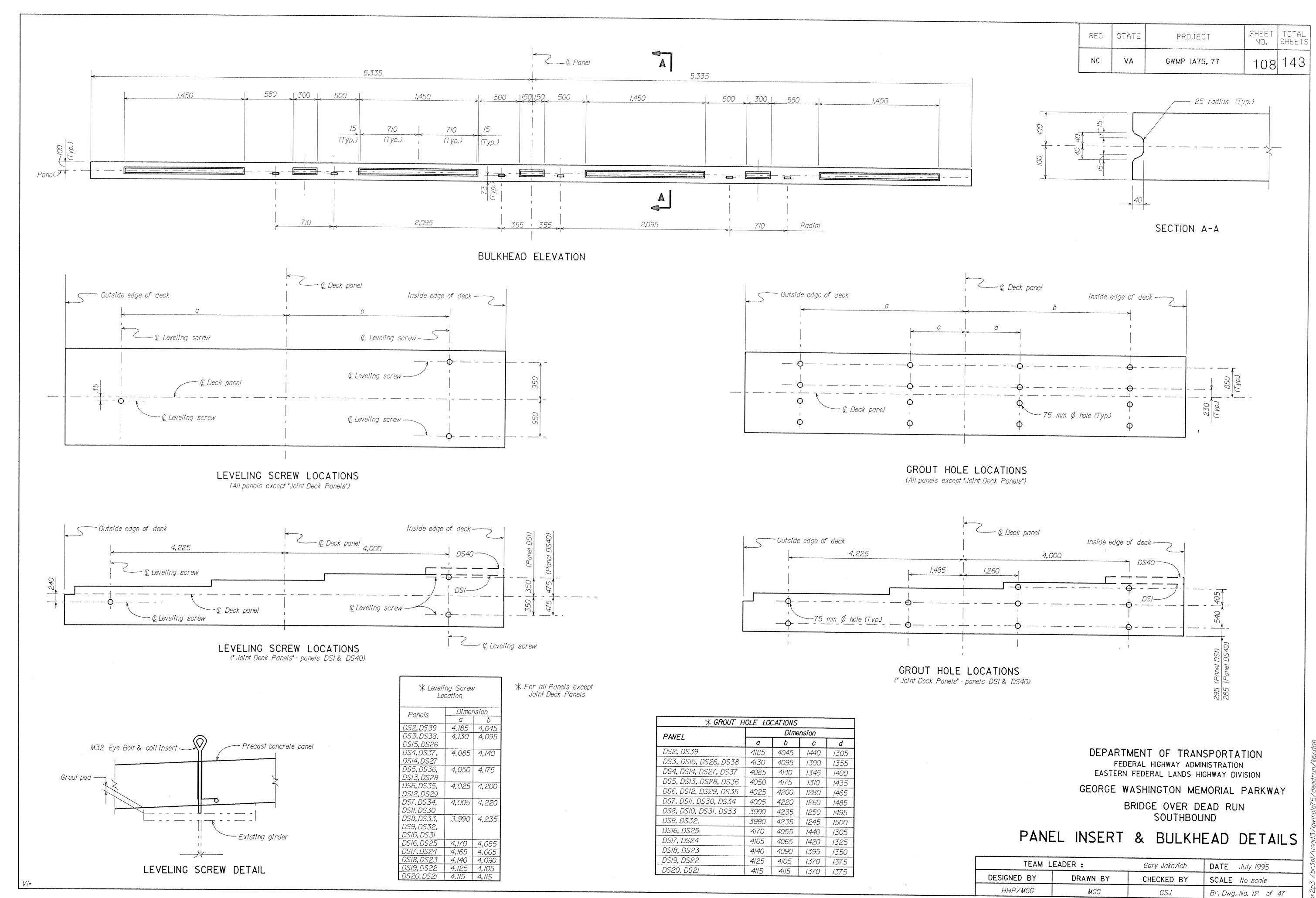




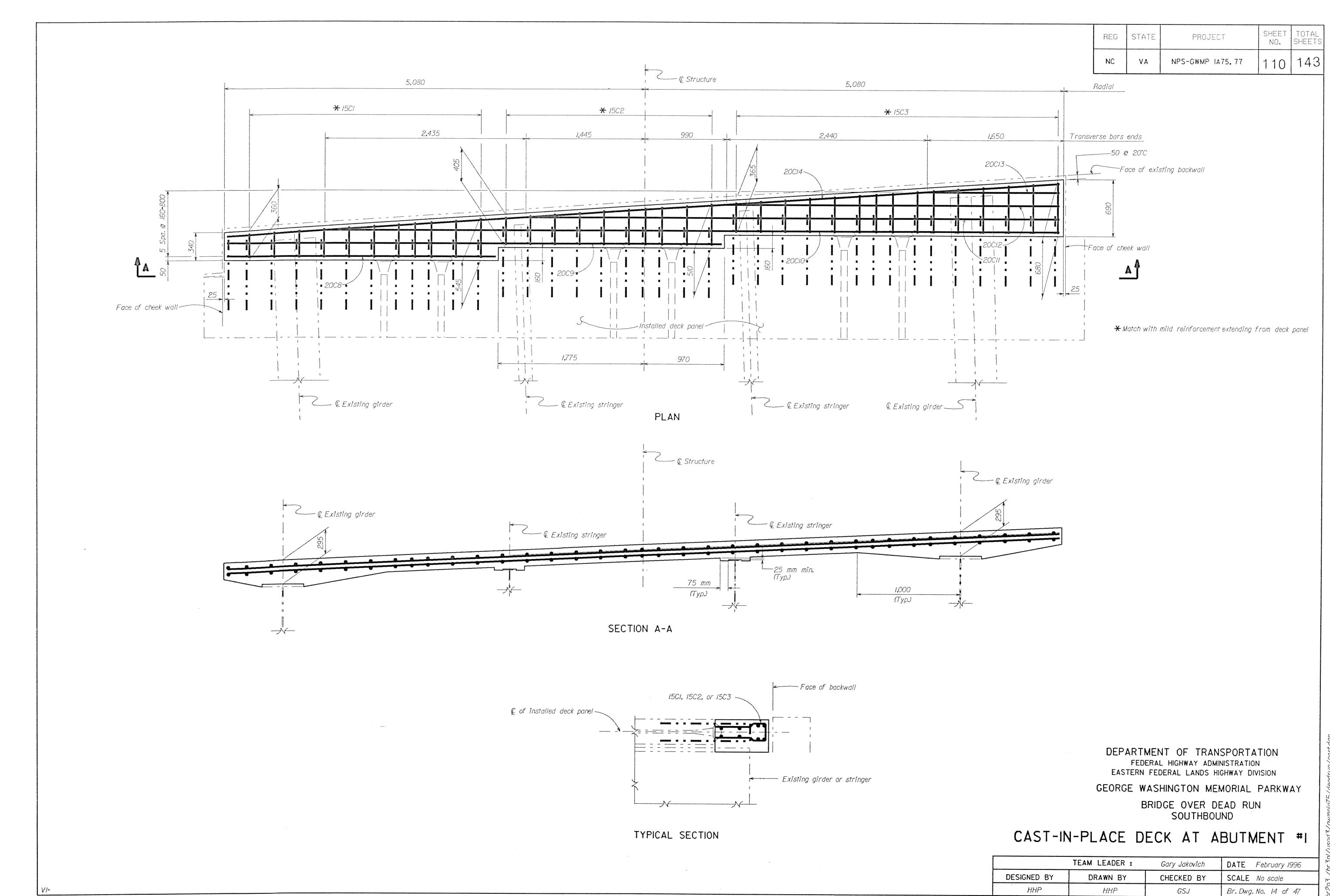




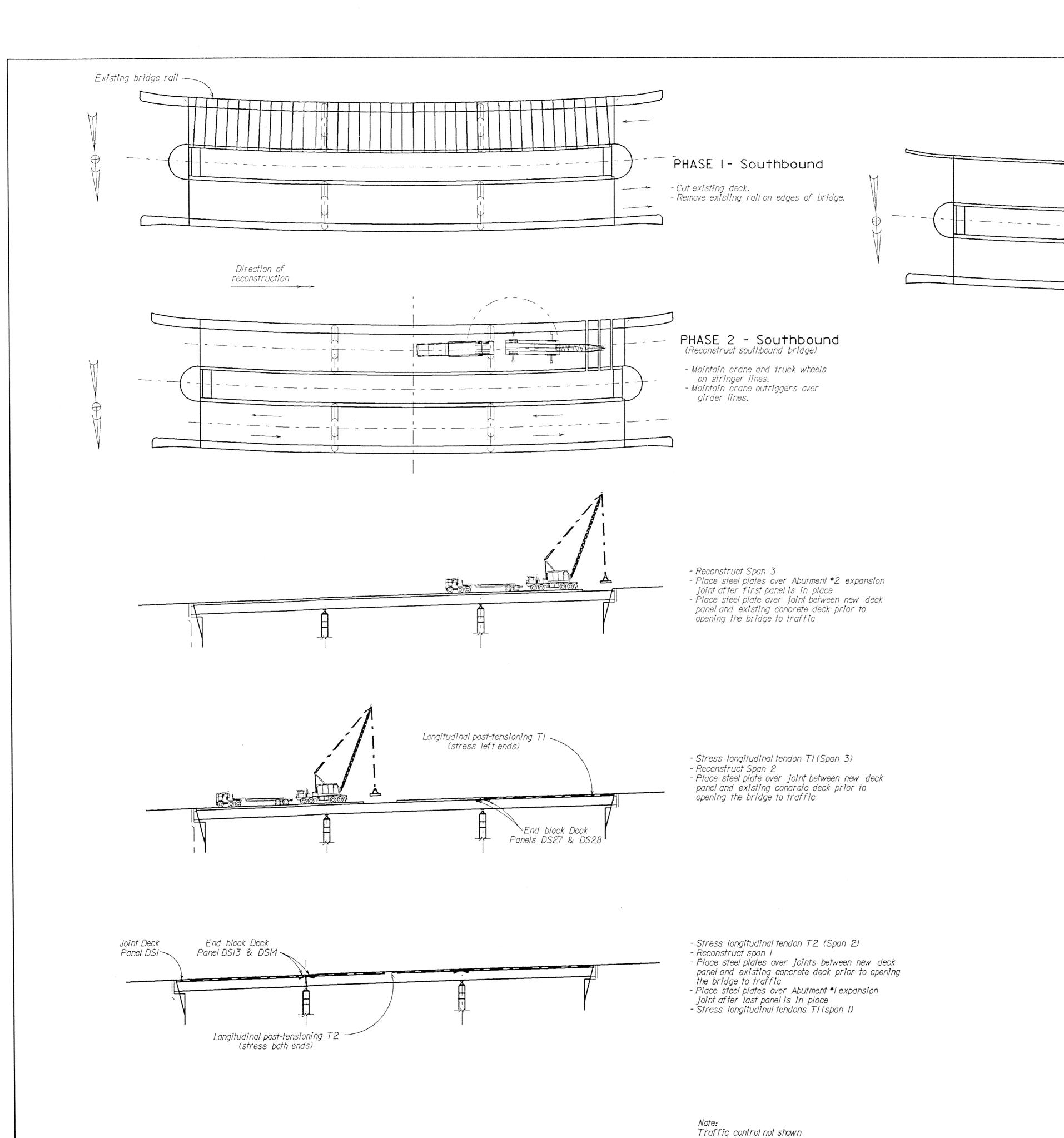




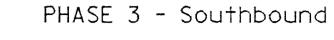
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PROJECT REG STATE 122 1431 ٧A GWMP 1A75, 77



Construct curb and rail
Install expansion joints
Place latex modified concrete overlay
Reconstruct approach sidewalks and guardwall

PHASE 4 - Northbound

- Remove existing wearing surface - Sawcut and remove existing expansion joints

PHASE 5 - Northbound

- Install new expansion joints - Place latex modified concrete overlay

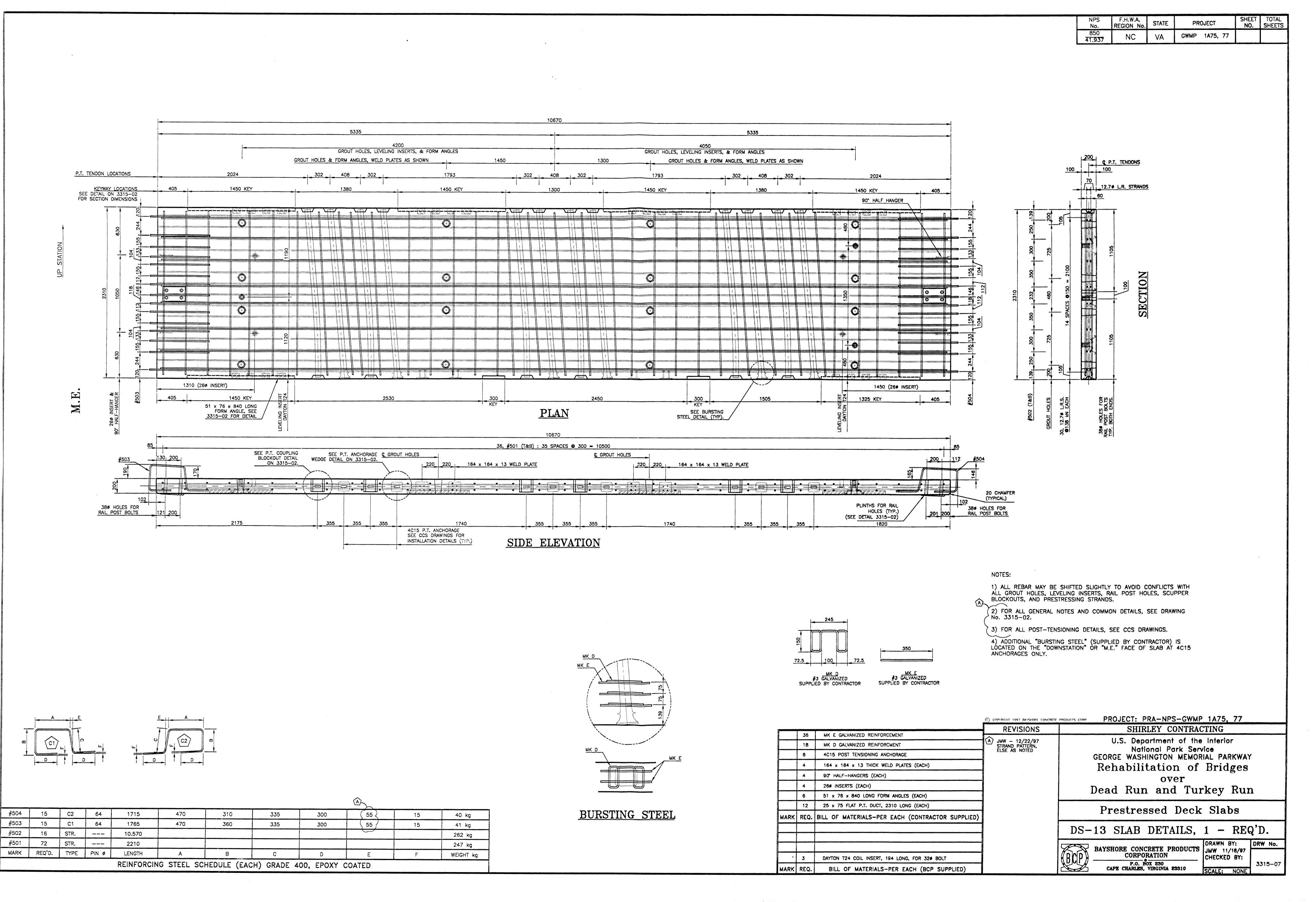
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION

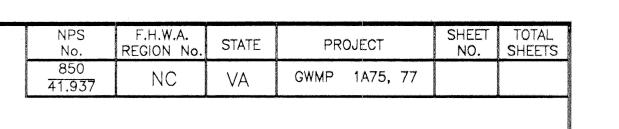
GEORGE WASHINGTON MEMORIAL PARKWAY

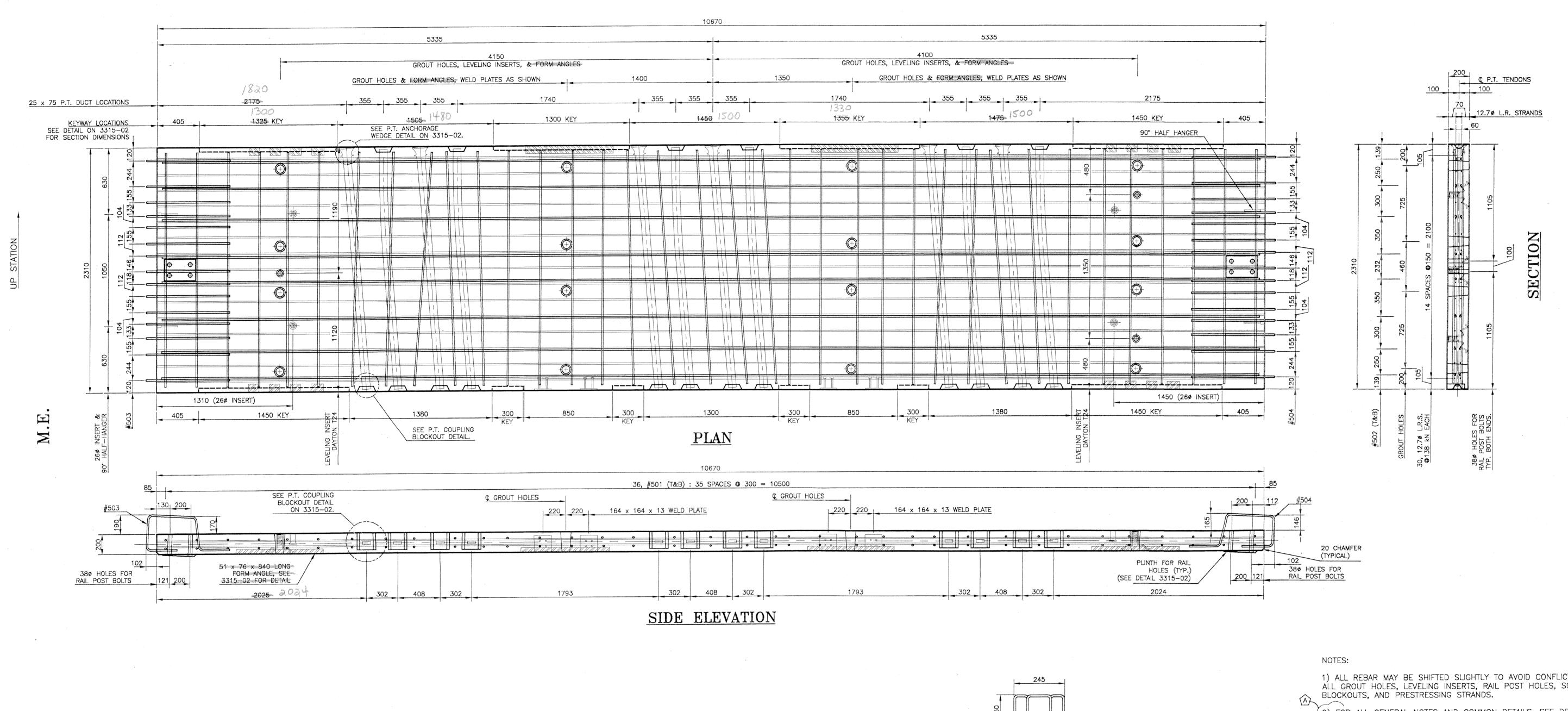
BRIDGE OVER DEAD RUN NORTHBOUND AND SOUTHBOUND

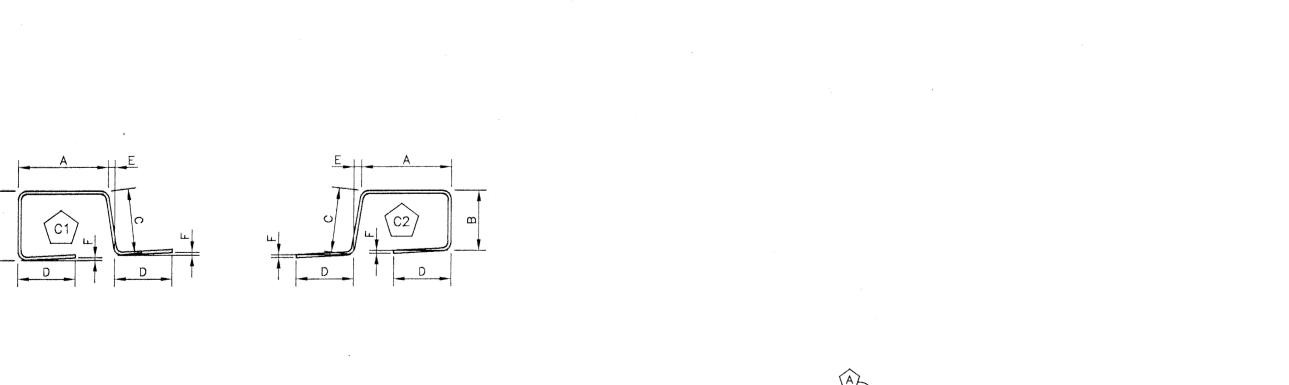
BRIDGE CONSTRUCTION SEQUENCE

TEAM L	EADER :	Gary Jakovich	DATE March 1995
DESIGNED BY	DRAWN BY	CHECKED BY	SCALE No scale
HHP	TGR/HHP	GSJ	Br. Dwg. No. 26 of 47

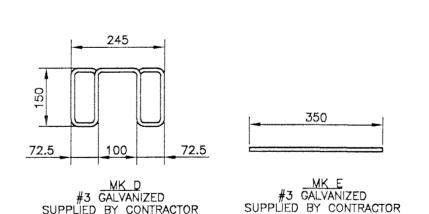








504	15	C2	64	1715	470	310	335	300	55 \	15	40 kg
503	15	C1	64	1765	470	360	335	300	55	15	41 kg
502	16	STR.		10.570		No. of the last of	The state of the s			NAME OF THE PROPERTY OF THE PR	262 kg
501	72	STR.		2210		C C C C C C C C C C C C C C C C C C C	The state of the s		Control of the Contro	Terrimonal Programme Constitution Constituti	247 kg
\RK	REQ'D.	TYPE	PIN Ø	LENGTH	А	В	С	D	E	F:	WEIGHT kg
<del></del>				REINFORCI	NG STEEL SO	HEDULE (EA	CH) GRADE 4	00, EPOXY	COATED		



1) ALL REBAR MAY BE SHIFTED SLIGHTLY TO AVOID CONFLICTS WITH ALL GROUT HOLES, LEVELING INSERTS, RAIL POST HOLES, SCUPPER BLOCKOUTS, AND PRESTRESSING STRANDS.

(2) FOR ALL GENERAL NOTES AND COMMON DETAILS, SEE DRAWING No. 3315−02.

3) FOR ALL POST-TENSIONING DETAILS, SEE CCS DRAWINGS. 4) ADDITIONAL "BUSRSTING STEEL" (SUPPLIED BY CONTRACTOR) IS LOCATED ON THE "UPSTATION" FACE OF SLAB AT 4C15 ANCHORAGES

REVISIONS 4C15 POST TENSIONING ANCHORAGE A JMW – 12/22/97 STRAND PATTERN, ELSE AS NOTED 36 MK E GALVANIZED REINFORCEMENT 18 MK D GALVANIZED REINFORCEMENT 164 x 164 x 13 THICK WELD PLATES (EACH) 4 90° HALF-HANGERS (EACH) 26ø INSERTS (EACH) 6 51 x 76 x 840 LONG FORM ANGLES (EACH) 6 25 x 75 FLAT P.T. DUCT, 2310 LONG (EACH) MARK REQ. BILL OF MATERIALS-PER EACH (CONTRACTOR SUPPLIED)

DAYTON T24 COIL INSERT, 194 LONG, FOR 320 BOLT

BILL OF MATERIALS-PER EACH (BCP SUPPLIED)

SHIRLEY CONTRACTING U.S. Department of the Interior National Park Service GEORGE WASHINGTON MEMORIAL PARKWAY Rehabilitation of Bridges Dead Run and Turkey Run

PROJECT: PRA-NPS-GWMP 1A75, 77

Prestressed Deck Slabs

DS-14 SLAB DETAILS, 1 - REQ'D.

BAYSHORE CONCRETE PRODUCTS

CORPORATION

CHECKED BY: P.O. BOX 230 CAPE CHARLES, VIRGINIA 23310 3315-08

BURSTING
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