BENT REPAIR STAGING SEQUENCE

STAGING SEQUENCE BELOW IS FOR BENT 1. BENT 3 STAGING SEQUENCE IS SIMILAR.
PEDESTAL REFERS TO RAISED PORTION OF BRIDGE SEAT ON SPAN A OR SPAN D SIDE OF BENT.

STEP 1:
- REMOVE PORTIONS OF PEDESTALS BETWEEN GIRDERS AS SHOWN. A FOUR FT WIDE PORTION OF PEDESTAL BENEATH EACH SPAN A GIRDER SHALL REMAIN.
- PEDESTAL SHALL BE REMOVED TO ELEVATION THAT MATCHES ADJACENT SPAN B SEAT.

STEP 2:
- INSTALL JACKING SADDLES AS SHOWN BENEATH GIRDERS 2 THRU 12.

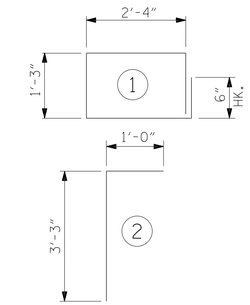
STEP 3:
- REMOVE NUTS FROM SPAN A BEARING ANCHOR BOLTS FOR GIRDERS 1 THRU 13.
- INSTALL SHIMS BETWEEN JACKING SADDLES AND SPAN B BOTTOM OF GIRDERS FOR GIRDERS 2 THRU 12 AND LOW PROFILE JACKS BENEATH GIRDERS 1 AND 13.
- INSTALL JACKS (AND SHIMS AS REQUIRED) BETWEEN JACKING SADDLES AND SPAN A BOTTOM OF GIRDERS FOR GIRDERS 1 THRU 13.
- SURVEYOR TO MEASURE BOTTOM OF GIRDER ELEVATIONS FOR SPAN A GIRDERS 1 THRU 13 AT BEARINGS.
- JACK SPAN A GIRDERS 1 THRU 13 UPWARD AT AN EQUAL RATE AS DESCRIBED ON SHEET S-15 FOR A MAXIMUM DISTANCE OF 1/4 INCH.
- SURVEYOR TO RE-MEASURE BOTTOM OF GIRDER ELEVATIONS FOR SPAN A GIRDERS 1 THRU 13 IN JACKED POSITION AT BEARINGS.

STEP 4:
- SEVER EXISTING ANCHOR BOLTS FOR GIRDERS 1 THRU 13. REMOVE BEARINGS FOR GIRDERS 1 THRU 13.
- REMOVE PEDESTALS FOR GIRDERS 2 THRU 12 TO ELEVATION THAT MATCHES ADJACENT SPAN B SEAT.

STEP 5:
- LOCATE MAIN CAP REINFORCEMENT IN CAP (SEE NOTES).
- PLACE MARK ON CAP AT HOLE LOCATIONS FOR GIRDERS 1 AND 13. DRILL 2½" Ø HOLES IN CAP AT GIRDERS 1 AND 13. HOLES SHALL BE DRILLED 1'-3" DEEP TO MATCH ANCHOR BOLT EMBEDMENT. INSTALL ANCHOR BOLTS USING ADHESIVE ANCHORS AFTER BEARING PLATE P2 AND ELASTOMERIC PAD HAVE BEEN PLACED.
- DRILL HOLES IN CAP FOR #6 "B" BARS IN AREAS AWAY FROM MAIN CAP REINFORCEMENT. INSTALL #6 "B" BARS USING ADHESIVE ANCHORS. TEST ANCHORS USING LEVEL I FIELD TESTING AS DESCRIBED IN SPECIFICATIONS. INSTALL REMAINING SEAT REINFORCEMENT.
- PLACE FORMING FOR NEW BRIDGE PEDESTALS. TOP OF FORM ELEVATION TO BE ESTABLISHED BY MEASURING GAP BETWEEN BOTTOM OF SPAN A GIRDERS AND TOP OF FORM. GAP SHALL BE TOTAL BEARING DEPTH PLUS JACKING DEPTH (JACKING DEPTH IS DIFFERENCE BETWEEN BOTTOM OF JACKED GIRDER ELEVATION AND BOTTOM OF UNJACKED GIRDER ELEVATION).
- POUR CONCRETE FOR NEW PEDESTALS.

STEP 6:
- AFTER CONCRETE HAS SET, REMOVE FORMS AND INSTALL NEW BEARINGS FOR SPAN A GIRDERS 2 THRU 12.
- AFTER CONCRETE HAS REACHED FULL STRENGTH, UNJACK GIRDERS TO REST ON NEW BEARINGS (AND ON EXISTING BEARINGS FOR GIRDERS 1 AND 13). REMOVE JACKS AND SADDLES.
- PORTIONS OF SPAN A BRIDGE SEAT BETWEEN SADDLES TO BE GROUND TO A SMOOTH SURFACE.
- INSTALL GROUT IN BEARING GROUT CANS. AFTER GROUT HAS SET, TIGHTEN NUTS ON ANCHOR BOLTS FOR GIRDERS 1 THRU 13.
- INSTALL EPOXY PROTECTIVE COATING ON CAP.
- PAINT ENDS OF BEAMS AS DESCRIBED IN PLAN NOTES AND SPECIFICATIONS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #1 REPAIRS

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B11	66	#6	STR	3'-3"	322
B12	44	#6	2	4'-3"	281
S1	44	#4	1	7'-8"	225

REINFORCING STEEL (FOR BENT No. 1) 828 LBS.

CLASS A CONCRETE BREAKDOWN (FOR BENT NO. 1)

POUR #1 PEDESTALS	2.9 C.Y.
TOTAL CLASS A CONCRETE	2.9 C.Y.
1¾" Ø × 1'-8½" ANCHOR BOLTS	NO: 22
PIPE SYSTEM FOR ANCHOR BOLTS	NO: 22

BILL OF MATERIAL
BENT #3 REPAIRS

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B11	66	#6	STR	3'-3"	322
B12	44	#6	2	4'-3"	281
S1	44	#4	1	7'-8"	225

REINFORCING STEEL (FOR BENT No. 3) 828 LBS.

CLASS A CONCRETE BREAKDOWN (FOR BENT NO. 3)

POUR #1 PEDESTALS	2.9 C.Y.
TOTAL CLASS A CONCRETE	2.9 C.Y.
1¾" Ø × 1'-8½" ANCHOR BOLTS	NO: 22
PIPE SYSTEM FOR ANCHOR BOLTS	NO: 22

NOTES

CONTRACTOR TO UTILIZE X-RAY IMAGERY OR PACHOMETER TO LOCATE EXISTING CAP REINFORCEMENT BEFORE DRILLING HOLES FOR NEW PEDESTAL DOWELS. CONTRACTOR MAY UTILIZE LIGHTWEIGHT PNEUMATIC HAMMER (17 LB. MAXIMUM) WITH POINTS THAT DO NOT EXCEED WIDTH OF SHANK (OR HAND PICKS AND CHISELS) TO DEMO CAP CONCRETE AS NECESSARY TO LOCATE EXISTING CAP REINFORCEMENT. ALTERNATIVELY, HYDRO-DEMOLITION METHODS MAY BE UTILIZED TO DEMO CAP CONCRETE AS NECESSARY. THE METHOD UTILIZED SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL AND SHALL NOT DAMAGE CAP REINFORCEMENT OR DAMAGE CAP CONCRETE ANY MORE THAN NECESSARY TO LOCATE EXISTING REINFORCEMENT.

PROJECT NO. 17BP.5.H.4
WAKE COUNTY
BRIDGE NO. 316

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

DocuSigned by: David Ruggles C46276BDF412422...
6/12/2018

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENTS 1 & 3
STAGING & BOM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			16

DRAWN BY: E. PHELPS DATE : 06-17
CHECKED BY: D. RUGGLES DATE : 09-17
DESIGN ENGINEER OF RECORD: D. RUGGLES DATE : 09-17

WAKE 316
5/9/2018
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USER:ephelps