CITY OF KANSAS CITY MISSOURI

REPAIR OF FIRE DAMAGE ON BEARDSLEY ROAD BRIDGE

KCMO PROJECT NO. 89005570

INDEX OF SHEETS

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 26+94, C.L.
END OF PROJECT	STA. 28+00, C.L.
PROJECT LENGTH	APPROX. 106 FT.

APPROVED BY:

JEFF MARTIN, P.E.
CITY ENGINEER

DATE

SHERRI McINTYRE, P.E.
DIRECTOR OF PUBLIC WORKS

DATE

PREPARED BY

TranSystems

MO STATE CERTIFICATE OF AUTHORITY # 273 ENGINEERING
2400 PERSHING ROAD
SUITE 400
KANSAS CITY, MO 64108
PHONE: (816) 329-8600
FAX: (816) 329-8602

STATE OF MISSOURI
LINDSAY C. MADSEN
NUMBER PE-2010008137
PROFESSIONAL ENGINEER

SHEETS 1-4

LINDSAY C. MADSEN, P.E.

03.11.2016
DATE

STATE OF MISSOURI
JAMES J. STANEK, JR.
NUMBER E-24826
PROFESSIONAL ENGINEER

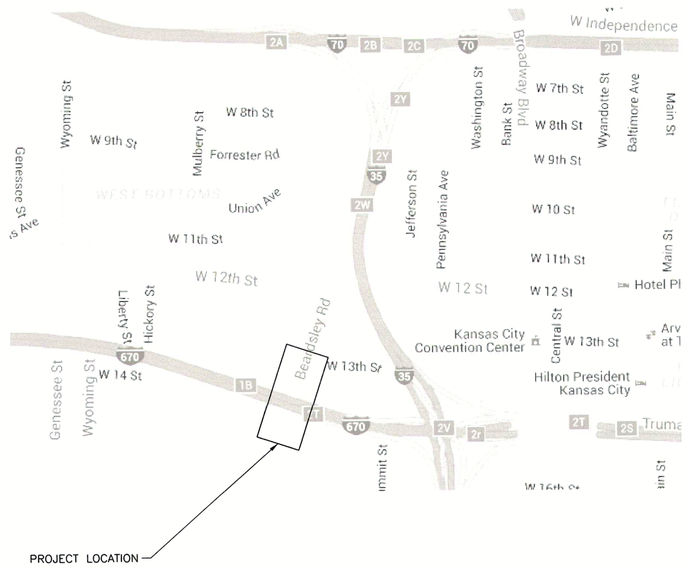
JAMES J. STANEK JR., P.E.

03-11-2016
DATE

DESIGN DESIGNATION

THIS PROJECT IS THE REHABILITATION OF AN EXISTING BRIDGE.

A.D.T. = 2870 (2016)
T. = 10%
V. = 40 M.P.H
ROADWAY CLASSIFICATION: LOCAL URBAN ARTERIAL



LOCATION MAP

KANSAS CITY, JACKSON COUNTY, MISSOURI
SECTION 6, TOWNSHIP 49N, RANGE 33W

NO SCALE

UTILITY CONTACTS

CALL BEFORE YOU DIG 1-800-DIG-RITE

TIME WARNER CABLE
MR. ROY BELLIS
8221 WEST 119TH STREET
OVERLAND PARK, KS. 66213
(913-643-1914)

AT&T
MR. MARK CROSSLEY
500 E 8TH STREET
KANSAS CITY, MO. 64106
(816-275-1640)

KANSAS CITY POWER & LIGHT
MS. CINDY ROBERTS
4400 EAST FRONT STREET
KANSAS CITY, MO. 64118
(816-245-3820)

MISSOURI GAS ENERGY
MR. DONNIE RICHARDS
7500 EAST 35TH TERRACE
KANSAS CITY, MO. 64129
(816-472-3464)

KANSAS CITY MO. WATER SERVICES
MR. REZA ZONNOOZ
4800 EAST 63RD STREET
KANSAS CITY, MO. 64130
(816-513-0309)

KANSAS CITY MO. TRAFFIC
MR. RANDY EDSON
414 EAST 12TH STREET
5TH FLOOR
KANSAS CITY, MO. 64106
(816-513-2670)

LEGEND

EDGE ASPHALT SURFACE
EDGE CONCRETE SURFACE
FLOW LINE
PIPES & CULVERTS
WOODS LINE
GRADING LIMITS
UNDERGROUND GAS LINE
TELEPHONE LINE PAINT/FLAG UNDGND
ELECTRIC LINE PAINT/FLAG UNDRGRN
OVERHEAD ELECTRIC
WATER LINE PAINT/FLAG UNDRGRND
GUARD FENCE
CHAIN LINK FENCE
WOOD FENCE
BARBED WIRE FENCE
HAND RAIL
DECORATIVE FENCE - PICKET/IRON

CONTROL/TRAVERSE STATION
BM 123 BENCH MARK
ELECTRIC PEDESTAL
GUY ANCHOR
POLE W/ 1 OR 2 LUMINARES
POWER POLE
ELECTRIC JUNCTION BOX
ELECTRIC METER
SHRUB
SAPPLING
TREE GENERIC
PINE TREE

TREE STUMP
GAS METER
GAS TEST STATION
GAS REGULATOR
GAS VALVE
GAS MARKER
VALVE COVER GENERIC
MANHOLE GENERIC
PEDESTRIAN SIGNAL BOX
SIGNAL PEDESTAL
SIGNAL POLE
TRAFFIC SIGNAL LIGHT POLE
BOLLARD
MAIL BOX
SIGN-SINGLE GENERIC

SIGN W/DOUBLE POSTS
TELEPHONE PEDESTAL
TELEPHONE MANHOLE
JUNCTION BOX TELEPHONE
FIBER OPTIC MARKER
TELEPHONE MARKER
TELEPHONE VAULT
CABLE TV SERVICE BOX
CABLE TV PEDESTAL
WATER VALVE
FIRE HYDRANT
WATER METER
CLEAN OUT
STORM DRAIN MANHOLE
SANITARY SEWER MANHOLE

CERTIFICATION

"I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED, AND THESE PLANS PREPARED, TO MEET OR EXCEED THE DESIGN CRITERIA OF KANSAS CITY, MISSOURI, IN CURRENT USAGE EXCEPT AS INDICATED BELOW."
EXCEPTIONS:

X _____
X _____
X _____
X _____
X _____
X _____

LINDSAY C. MADSEN, P.E.

03.11.2016
DATE

GENERAL NOTES

DESIGN SPECIFICATIONS:
2002 EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (FROM ORIGINAL DESIGN)

CONSTRUCTION SPECIFICATIONS:
2011 MISSOURI STANDARD SPECIFICATION BOOK FOR HIGHWAY CONSTRUCTION WITH PROJECT SPECIAL PROVISIONS (IF INCLUDED IN THE PROJECT MANUAL).
STANDARD SPECIFICATIONS AND DESIGN CRITERIA, CITY OF KANSAS CITY, MISSOURI.

INSPECTION REPORT:
REFER TO THE "BEARDSLEY ROAD FIRE DAMAGE–SPECIAL INSPECTION REPORT" (INSPECTION REPORT) DATED SEPTEMBER 8, 2015 (AVAILABLE UPON REQUEST FROM THE CITY'S PUBLIC WORKS DEPARTMENT). THE INSPECTION REPORT WILL BE REFERRED TO THROUGHOUT THESE NOTES FOR SPECIFIC ITEMS OF WORK.

EXISTING BRIDGE PLANS:
SPECIFIC SHEETS OF THE EXISTING PLANS ARE INCLUDED IN THIS PLAN FOR REFERENCE ONLY. A FULL SET OF EXISTING BRIDGE PLANS IS AVAILABLE UPON REQUEST FROM THE CITY'S PUBLIC WORKS DEPARTMENT.

SEQUENCE OF CONSTRUCTION:
THE GENERAL SEQUENCE OF CONSTRUCTION SHALL BE AS FOLLOWS:
1.HEAT STRAIGHTEN THE STRUCTURAL STEEL
2.BRIDGE CLEANING
3.BEARING DEVICE REPLACEMENT
4.BENT PLATE DIAPHRAGM REPLACEMENT
5.CONCRETE PATCHING OF PIER CAP
6.BRIDGE PAINTING
ANY DEVIATION TO THE SEQUENCE OF CONSTRUCTION MUST BE APPROVED BY THE ENGINEER.

BRIDGE CLEANING:
THIS BID ITEM SHALL CONSIST OF PRESSURE WASHING ALL EXPOSED SURFACES BENEATH THE DECK OF THE BRIDGE IN SPANS 1 AND 2 AS NOTED IN THE INSPECTION REPORT. THIS WORK ALSO INCLUDES PRESSURE WASHING AND REMOVING ALL DEBRIS FROM THE TOP OF THE PIER 1 CAP BEAM PRIOR TO REPLACEMENT OF THE BEARING DEVICES.

HEAT STRAIGHTENING OF STRUCTURAL STEEL:
HEAT STRAIGHTEN THE GIRDERS IN SPAN 2 OF THE BRIDGE. THE LIMITS OF THE WORK ARE DESCRIBED IN THE INSPECTION REPORT. THE CONTRACTOR SHALL SUBMIT THE SELECTED HEAT STRAIGHTENING CONTRACTOR AND PROPOSED METHOD OF HEAT STRAIGHTENING THE GIRDERS TO THE ENGINEER FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO BEGINNING THE WORK.

PERFORM THE HEAT STRAIGHTENING PROCEDURE COMPLYING WITH AASHTO/AWS D1.5 (EDITION REFERENCED IN SUBSECTION 705.2E.) "BRIDGE WELDING CODE" AND THE LATEST VERSIONS OF AASHTO'S "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES"; AASHTO'S "LRFD BRIDGE CONSTRUCTION SPECIFICATIONS"; AND THE FHWA REPORT, "HEAT –STRAIGHTENING REPAIRS OF DAMAGED STEEL BRIDGES". FOLLOWING THE STRAIGHTENING OF A BEND OR BUCKLE, THE SURFACE OF THE METAL WILL BE INSPECTED BY THE ENGINEER FOR EVIDENCE OF FRACTURE, USING THE DYE PENETRANT OR MAGNETIC PARTICLE INSPECTION METHOD.

DIAPHRAGM REPLACEMENT:
REPLACE THE BENT PLATE DIAPHRAGMS ONE AT A TIME AT PIER 1. SEE SHEET 4 FOR DETAILS.

BEARING DEVICE REPLACEMENT:
THE BEARING DEVICES AT PIER NO. 1 WILL BE REPLACED. THE CONTRACTOR SHALL SUBMIT HIS PROPOSED METHOD OF REPLACEMENT TO THE ENGINEER FOR APPROVAL 4 WEEKS PRIOR TO BEGINNING WORK. THE STEEL ROLLED BEAMS SHALL BE JACKED SIMULTANEOUSLY A DISTANCE NOT MORE THAN 1 INCH GREATER THAN THE HEIGHT OF THE EXISTING BEARING DEVICE AS DETAILED IN THE EXISTING PLANS. SUBMIT BEARING DEVICE SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL 4 WEEKS PRIOR TO BEGINNING FABRICATION. BEARING DEVICE REPLACEMENT SHALL BE PAID FOR AS "TYPE N PTFE BEARINGS".

STRUCTURAL STEEL COATING:
ONCE THE SPAN 1 GIRDERS HAVE BEEN CLEANED THE CONDITION OF THE PAINT NEAR THE GIRDER ENDS AT THE SOUTH ABUTMENT WILL BE ASSESSED. THE ENGINEER SHALL DETERMINE IF THE GIRDER ENDS NEED TO BE REPAINTED. IF REPAINTING IS REQUIRED, USE "FINISH FIELD COAT: SYSTEM H" AS DEFINED IN SECTION 1081 OF THE MISSOURI STANDARD SPECIFICATIONS. THIS WORK SHALL BE PAID FOR AS "FINISH FIELD COAT: SYSTEM H".

EXISTING STRUCTURE:
SPECIFIC SHEETS OF THE PLANS OF THE EXISTING STRUCTURE ARE INCLUDED IN THE PLAN SET FOR REFERENCE ONLY.

EXISTING DIMENSION VERIFICATION:
DIMENSIONS OF THE EXISTING STRUCTURE ARE BASED ON OLD PLANS. VERIFY, BY FIELD MEASUREMENT, THE AS BUILT DIMENSIONS OF THE EXISTING STRUCTURE AND SUBMIT SUCH VERIFICATION IN WRITING TO THE ENGINEER. THE VERIFICATION WILL INCLUDE SKETCHES, DRAWINGS, PHOTOGRAPHS AND DESCRIPTIONS AS NEEDED TO CLEARLY DEFINE THE AS BUILT DIMENSIONS THAT WILL BE INCORPORATED IN THE NEW CONSTRUCTION.

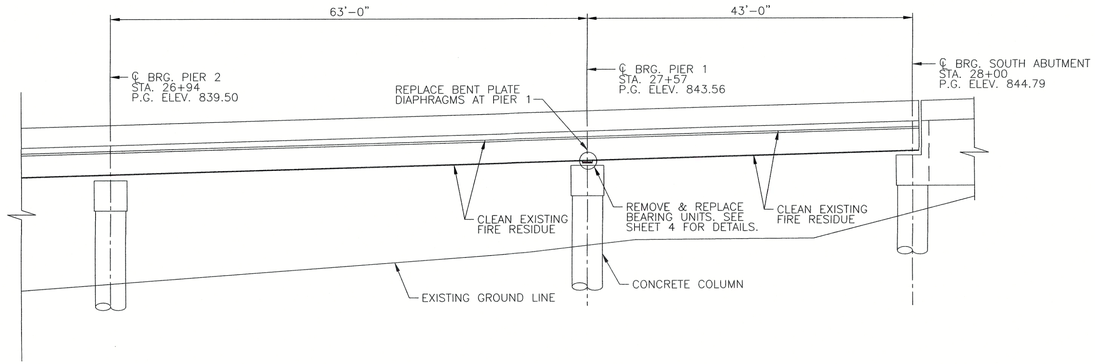
CONCRETE PATCHING:
PATCH THE SPALL ON THE NORTH FACE OF PIER 1 (APPROX. 2'X2'X$\frac{3}{8}$") WITH AN APPROVED NON–SHRINK GROUT. PAYMENT WILL BE MADE AS "CONCRETE PATCHING".

TRAFFIC CONTROL:
SEE SHEETS 5 & 6 FOR TRAFFIC CONTROL PLANS AND NOTES.

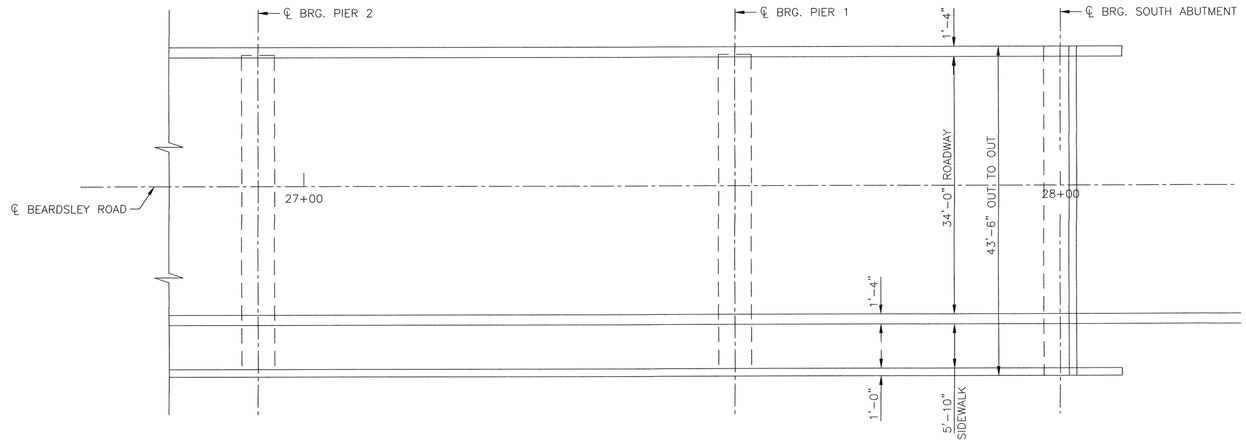
BRIDGE QUANTITIES		
ITEM	UNITS	UNITS
MOBILIZATION	LUMP SUM	1
SITE PROTECTION	LUMP SUM	1
HEAT STRAIGHTENING	LUMP SUM	1
TYPE N PTFE BEARINGS	EACH	5
BRIDGE CLEANING	LUMP SUM	1
STRUCTURAL STEEL (A709 GRADE 50W)*	LBS.	1099
FINISH FIELD COAT SYSTEM H	SQ. FT.	248
CONCRETE PATCHING	EACH	1
TRAFFIC CONTROL	LUMP SUM	1

* INCLUDES WEIGHT OF REPLACEMENT BENT PLATE DIAPHRAGMS AT PIER 1.

NOTE:
SUBSTRUCTURE DESIGNATIONS SHOWN FOR THESE REPAIR PLANS CORRESPOND WITH DESIGNATIONS IN THE INSPECTION REPORT. PIER 2, PIER 1 AND THE SOUTH ABUTMENT ARE DENOTED AS BENT 8, BENT 9 AND END BENT 10 RESPECTIVELY IN THE EXISTING BRIDGE PLANS.



ELEVATION



PLAN

TranSystems
2400 PERSHING ROAD
SUITE 400
KANSAS CITY-MO-64108
PHONE: 816-329-8600
FAX: 816-329-8601

STATE OF MISSOURI
LINDSAY C. MADSEN
NUMBER PE-2010007337
PROFESSIONAL ENGINEER
03.11.2016

CONSULTANTS:

BEARDSLEY ROAD BRIDGE REPAIR
KANSAS CITY, MISSOURI

REVISIONS: MARK | DATE | DESCRIPTION

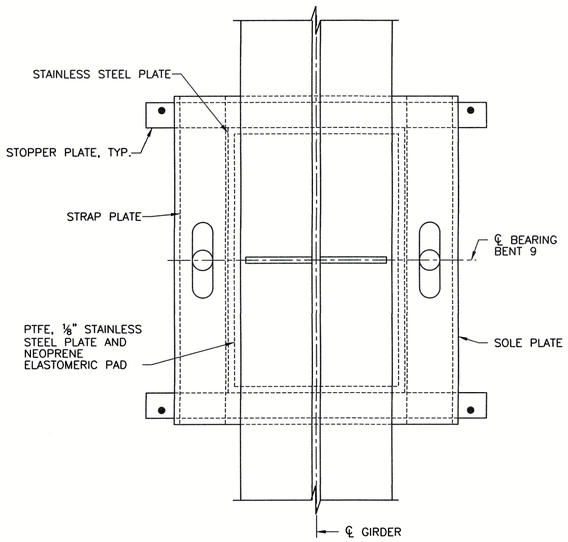
PROJ NO: P101150178
SCALE: NO SCALE
DATE: 3/11/2016
DESIGNED BY: SAS
DRAWN BY: CIS
CHECKED BY: LCM

SHEET TITLE:
GENERAL PLAN AND NOTES

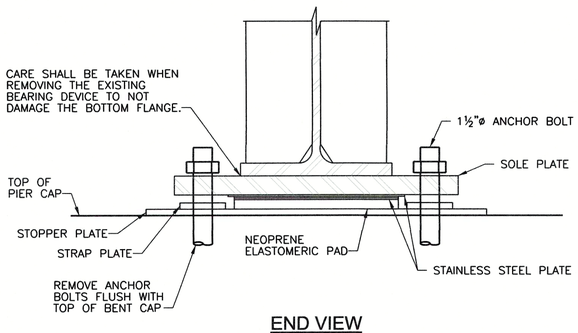
SHEET NO.
2

IF THIS DRAWING IS LESS THAN 22" X 34" IT IS A REDUCED SIZE DRAWING

EXISTING BEARING DEVICE

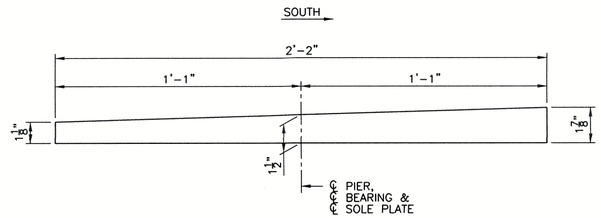


PLAN VIEW

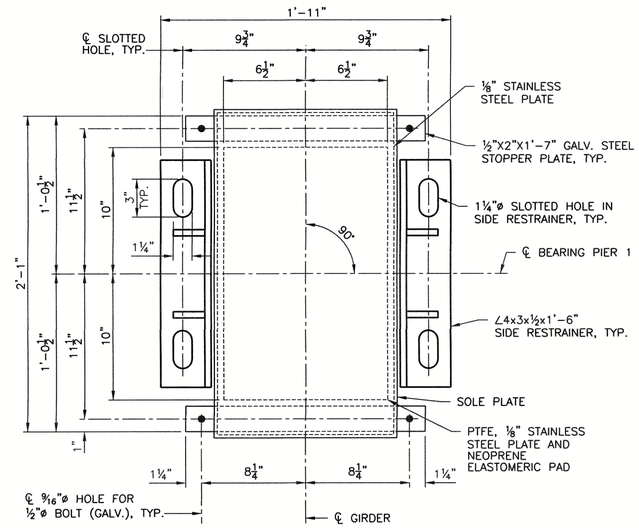


END VIEW

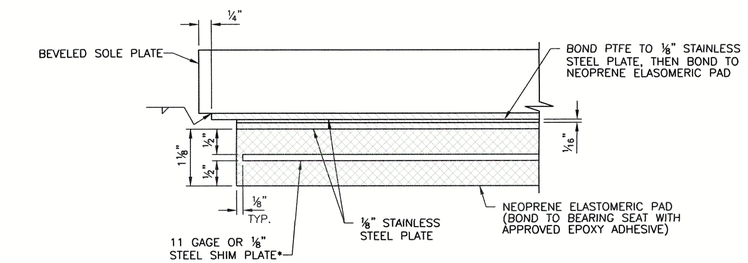
NOTE:
THE COST OF LABOR, EQUIPMENT AND INCIDENTALS REQUIRED FOR REMOVAL OF THE EXISTING BEARING DEVICES SHALL BE SUBSIDIARY TO THE BID ITEM "TYPE N PTFE BEARINGS".



BEVELED SOLE PLATE



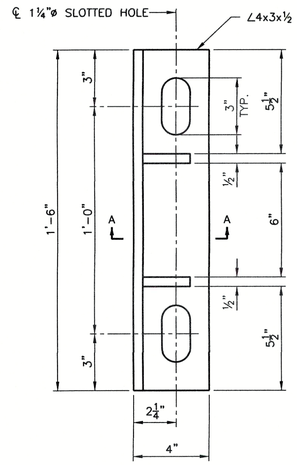
PLAN VIEW
(5 REQUIRED)



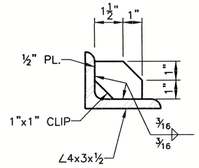
NEOPRENE ELASTOMERIC PAD

70 DUROMETER
NOT TO SCALE

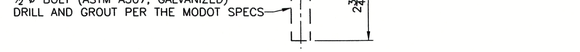
* SHIM PLATES SHALL BE PLACED BETWEEN SPECIFIED LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.



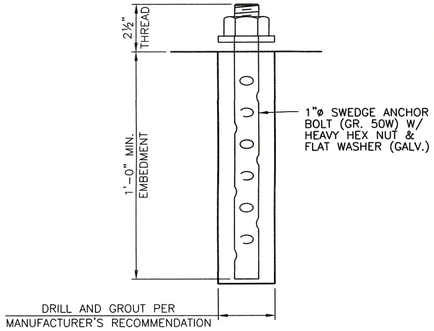
SIDE RESTRAINER PLAN VIEW



SECTION A-A

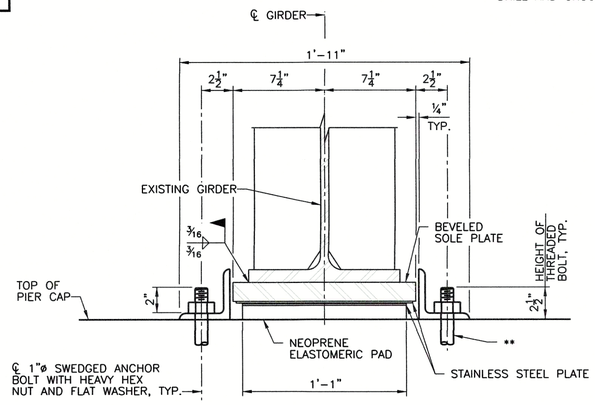


SECTION THRU STOPPER PLATE

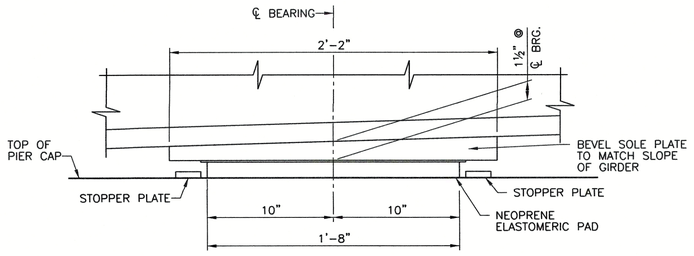


SWEDGE ANCHOR BOLT DETAIL
(20 REQUIRED)

NOTES:
ANCHOR BOLTS FOR PTFE BEARINGS SHALL BE 1"ø ASTM A709 GRADE 50W STEEL SWEDGED BOLTS AND SHALL EXTEND 12" MIN. INTO THE CONCRETE.
ALL ANCHOR BOLTS SHALL HAVE ASTM A194-2, 2H OR ASTM A563-C, C3, D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. SWEDGING SHALL BE 1" LESS THAN EXTENSION INTO THE CONCRETE.
ALL STRUCTURAL STEEL FOR THE ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE COATED WITH A MINIMUM OF TWO COATS OF INORGANIC ZINC PRIMER (5 MILS MINIMUM).
THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD WELDED TO THE GIRDERS.
STRUCTURAL STEEL FOR THE SOLE PLATE AND SIDE RESTRAINER ANGLES SHALL BE ASTM A709 GRADE 50W. THE STAINLESS STEEL PLATE SHALL BE PROTECTED FROM ANY COATING.
NEOPRENE ELASTOMERIC PADS FOR THE PTFE SLIDING BEARINGS SHALL BE 70 DUROMETER.
TO PREVENT SLIDING, THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE. THE TOP AND BOTTOM PLATES SHALL BE PROPERLY ALIGNED BEFORE GLUING PADS.
PROVIDE A ½" STOPPER PLATE TO PREVENT LOSS OF SUPPORT DUE TO CREEPING OF PTFE BEARINGS FROM UNDER GIRDER.
THE BOTTOM FACE OF THE ⅛" STAINLESS STEEL PLATE THAT IS WELDED TO THE SOLE PLATE SHALL BE LUBRICATED WITH A LUBRICANT THAT IS APPROVED BY THE BEARING MANUFACTURER.
CENTER THE NEOPRENE ELASTOMERIC PAD ON ℄ BEARING PIER. LOCATE THE SOLE PLATE CENTERED BENEATH THE BEARING STIFFENERS. THE HORIZONTAL OFFSET BETWEEN THESE TWO LOCATIONS SHOULD BE APPROXIMATELY 3⁄16" PER 10°F DIFFERENCE FROM 60°F. IF THE TEMPERATURE IS SIGNIFICANTLY DIFFERENT FROM 60°F, NOTIFY THE ENGINEER PRIOR TO PLACING THE BEARING DEVICE OR SOLE PLATE.
**DRILL AND GROUT THE 1"ø SWEDGED ANCHOR BOLT INTO THE PIER CAP. USE A PACHOMETER TO LOCATE AND AVOID THE EXISTING REINFORCING STEEL IN THE BENT CAP.
TIGHTEN THE NUT TO ACHIEVE A BOLT TENSION OF 10 KIPS BASED ON THE CALIBRATED WRENCH METHOD IN SECTION 712.7.5 OF THE MODOT STANDARD SPECIFICATIONS.



END VIEW
STOPPER PLATE NOT SHOWN



SIDE VIEW
SIDE RESTRAINER AND ANCHOR BOLTS NOT SHOWN

TranSystems
2400 PERSHING ROAD
SUITE 400
KANSAS CITY-MO-64108
PHONE: 816-329-8600
FAX: 816-329-8601

STATE OF MISSOURI
LINDSAY C. MADSEN
NUMBER PE-2010003337
PROFESSIONAL ENGINEER
03.11.2016

CONSULTANTS:

BEARDSLEY ROAD BRIDGE REPAIR
KANSAS CITY, MISSOURI

REVISIONS:		
MARK	DATE	DESCRIPTION

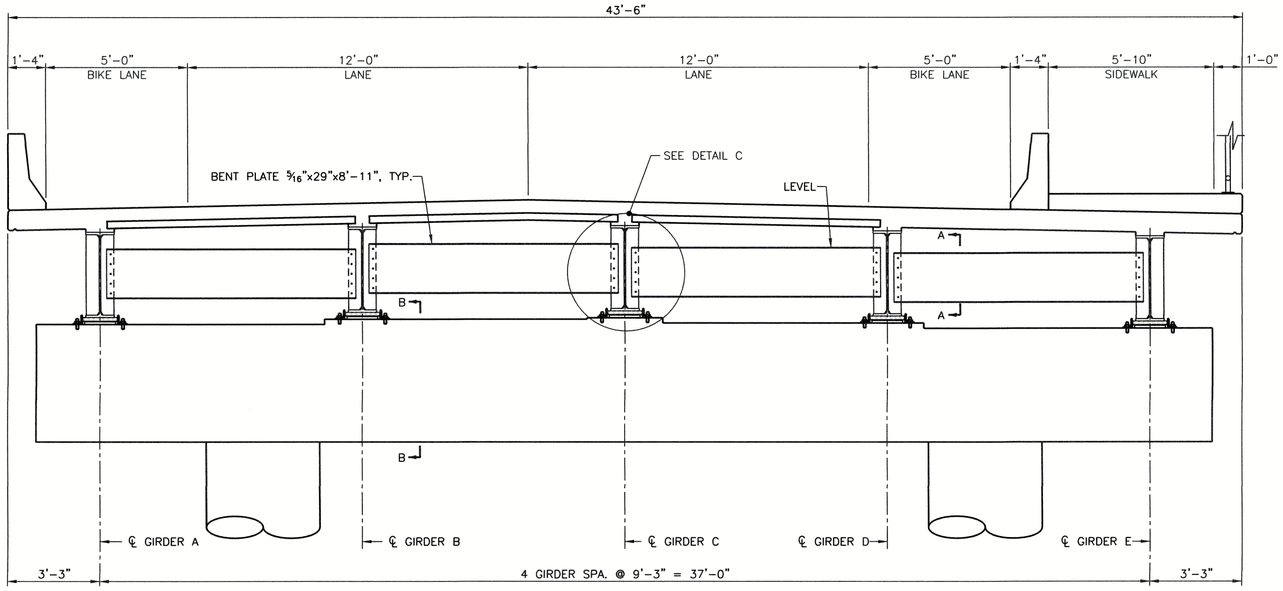
PROJ NO:	P101150178
SCALE:	NO SCALE
DATE:	3/11/2016
DESIGNED BY:	SAS
DRAWN BY:	NVW
CHECKED BY:	LCM

SHEET TITLE:
BEARING DEVICE DETAILS

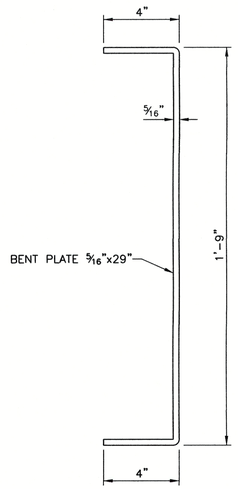
SHEET NO.
3

IF THIS DRAWING IS LESS THAN 22" X 34" IT IS A REDUCED SIZE DRAWING

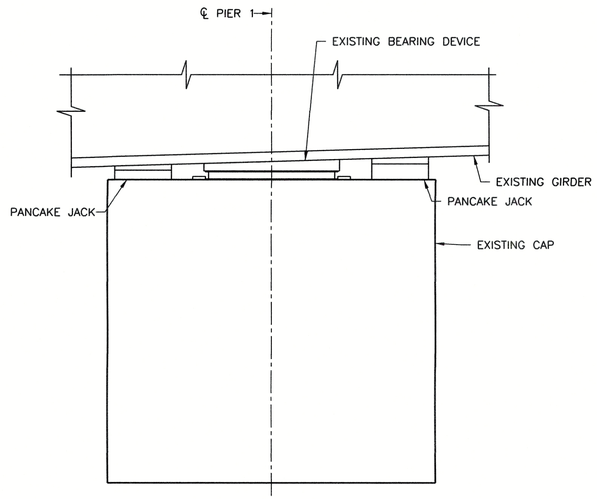
AJDINKEL
3/11/2016 - 3:07:10 PM - pw:\\hq-pwint01.e-b.transystems.com:transystems-pw1\Documents\Projects\KC\101 - Kansas City\P101150178 - Beardsley Road Bridge Fire Damage Inspection\304.00 - Bridge\304.04 - Sheets\Bearings



SECTION AT PIER 1

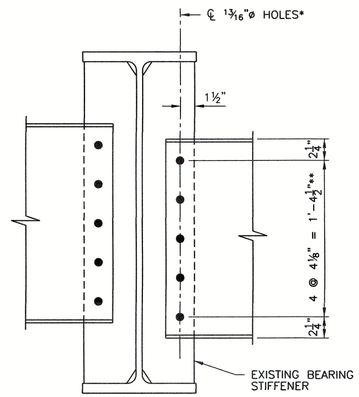


SECTION A-A



SECTION B-B

SHOWING SCHEMATIC JACKING ARRANGEMENT, ANCHOR BOLTS AND SIDE RESTRAINERS NOT SHOWN



DETAIL C

* FIELD DRILL AND CONNECT TO THE EXISTING BEARING STIFFENERS.

** BOLT HOLE SPACING IN EXISTING BEARING STIFFENER.

NOTES:

ALL STRUCTURAL STEEL FOR DIAPHRAGMS SHALL CONFORM TO ASTM A709 GRADE 50W REQUIREMENTS.

ALL BOLTS SHALL BE ¾"ø HIGH STRENGTH BOLTS, ASTM A325 (TYPE 3). DO NOT REAM DURING FIELD ERECTION. ACCURATELY ALIGN ALL CONNECTIONS BY DRIVING 13/16"ø DRIFT PINS IN ALL CORNERS AND IN ¼ OF THE REMAINING HOLES IN EACH PLATE.

BENT PLATE DIAPHRAGMS SHALL BE REMOVED AND REPLACED ONE AT A TIME.

TranSystems
2400 PERSHING ROAD
SUITE 400
KANSAS CITY-MO-64108
PHONE: 816-329-8600
FAX: 816-329-8601

STATE OF MISSOURI
LINDSAY C. MADSEN
NUMBER PE-2010003137
PROFESSIONAL ENGINEER
03.11.2016

CONSULTANTS:

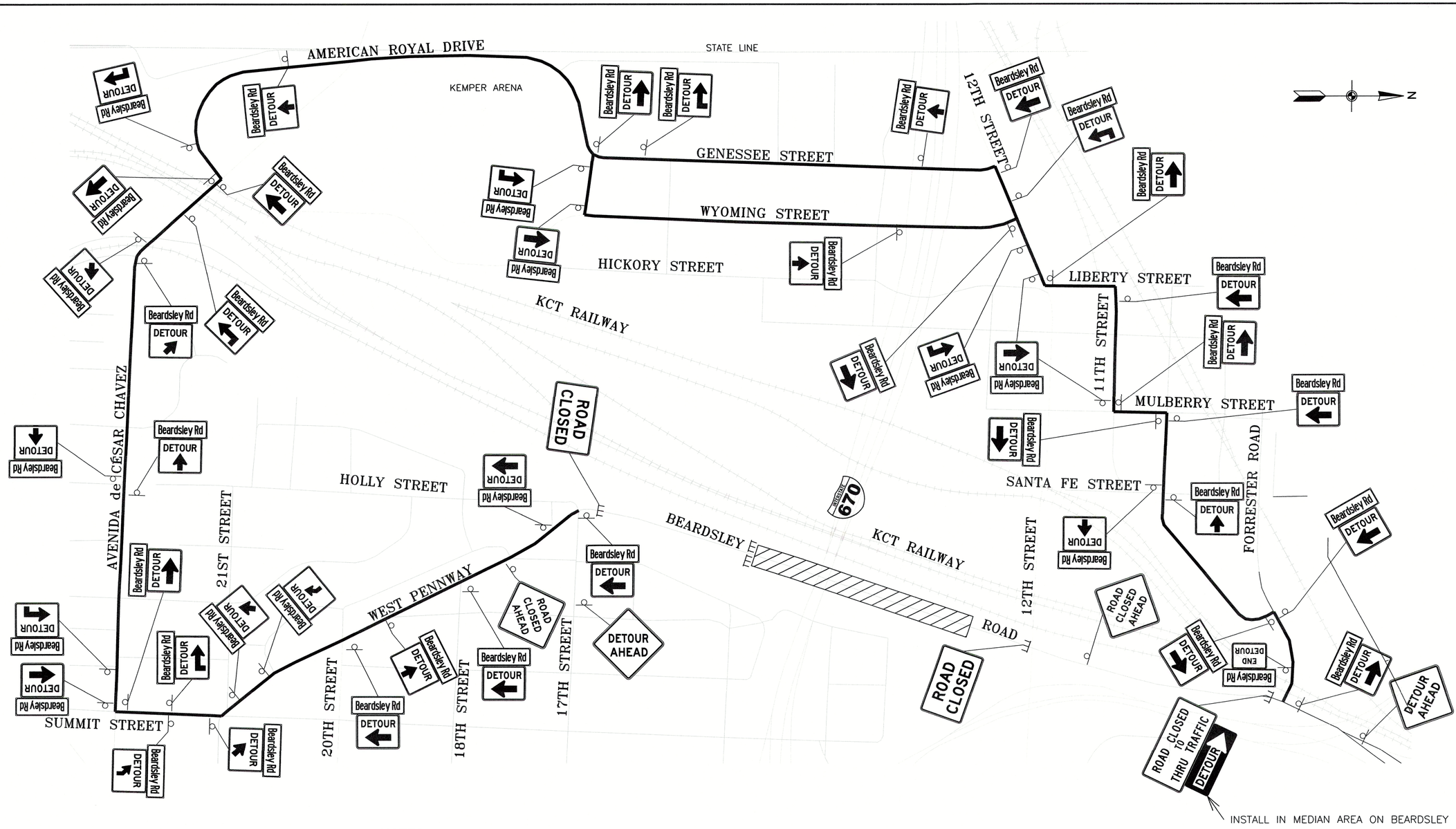
BEARDSLEY ROAD BRIDGE REPAIR
KANSAS CITY, MISSOURI

REVISIONS:			
MARK	DATE	DESCRIPTION	

PROJ NO:	P101150178
SCALE:	NO SCALE
DATE:	3/11/2016
DESIGNED BY:	SAS
DRAWN BY:	NVW
CHECKED BY:	LCM

SHEET TITLE:
MISCELLANEOUS STEEL DETAILS

SHEET NO.
4



NOTES

1. ALL SIGNS, BARRICADES, CHANNELIZERS, MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, AS WELL AS SPECIFICATIONS OF THE MISSOURI DEPARTMENT OF TRANSPORTATION (MoDOT). FOR DEVICE DETAILS AND DIMENSIONS, SEE MoDOT STANDARD SHEET 616.10.

2. THE LOCATIONS OF THE DETOUR SIGNS ON THIS PLAN ARE SHOWN IN AN APPROXIMATE MANNER ONLY. UNLESS OTHERWISE SHOWN, THE TYPICAL APPROXIMATE LOCATION FOR VARIOUS SIGNS SHALL BE AS FOLLOWS:

   - DIRECTIONAL ASSEMBLIES: AT THE NEAR RIGHT CORNER OF THE INTERSECTION
   - ADVANCE ROUTE TURN ASSEMBLIES: 150'–200' IN ADVANCE OF THE DIRECTIONAL ASSEMBLY
   - END DETOUR ASSEMBLIES: 100' IN ADVANCE OF OR BEYOND THE ADJACENT INTERSECTION
   - DETOUR/ROAD CLOSED AHEAD SIGNS: 150'–300' IN ADVANCE OF THE DOWNSTREAM WORK ZONE SIGN OR CLOSURE AREA

3. OTHER SIGNS SHALL BE PLACED AT THE APPROXIMATE LOCATION SHOWN ON THE PLAN AND SHALL BE FIELD ADJUSTED IF NECESSARY TO AVOID CONFLICTS WITH EXISTING SIGNS. THE DESIRED MINIMUM SPACING BETWEEN ADJACENT SIGNS IS 150 FEET. THE CONTRACTOR SHALL COORDINATE THE ACTUAL LOCATION FOR ALL PROPOSED TRAFFIC CONTROL DEVICES WITH THE INSPECTOR.

4. TYPE III BARRICADES SHOWN FOR THE ROADWAY CLOSURES SHALL BE USED TO COMPLETELY CLOSE ACCESS TO THE ROADWAY AT THESE POINTS. THE CONTRACTOR SHALL SECURE THE BARRICADES IN SUCH A MANNER THAT THESE DEVICES CANNOT BE EASILY MOVED BY THE PUBLIC.

5. SEE SHEET TC–102 FOR DETOUR SIGNS AND DETAILS.

LEGEND

- TRAFFIC CONTROL SIGN
- AREA OF ROAD CLOSURE
- TYPE III MOVABLE BARRICADE

TranSystems
2400 PERSHING ROAD
SUITE 400
KANSAS CITY-MO-64108
PHONE: 816-329-8600
FAX: 816-329-8601

STATE OF MISSOURI
JAMES J. STANEK, JR.
NUMBER E-24826
PROFESSIONAL ENGINEER
03-11-2016

CONSULTANTS:

BEARDSLEY ROAD BRIDGE REPAIR
KANSAS CITY, MISSOURI

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO:	P101150178
SCALE:	NTS
DATE:	3/11/2016
DESIGNED BY:	SMW
DRAWN BY:	SMW
CHECKED BY:	JJS

SHEET TITLE:

BEARDSLEY ROAD DETOUR ROUTE PLAN

SHEET NO.
5

IF THIS DRAWING IS LESS THAN 22" X 34" IT IS A REDUCED SIZE DRAWING

SIGN LEGEND

W20-2
36" x 36"

W20-3
36" x 36"

R11-4
60" x 30"

R11-2
48" x 30"

M4-10L
48" x 18"

M4-10R
48" x 18"

M4-9L
30" x 24"

M4-9R
30" x 24"

M4-9LA
30" x 24"

M4-9RA
30" x 24"

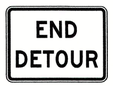
M4-9LD
30" x 24"

M4-9RD
30" x 24"

M4-9LDA
30" x 24"

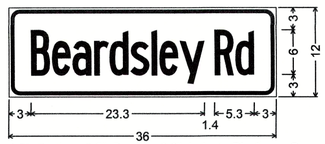
M4-9RDA
30" x 24"

M4-9S
30" x 24"



M4-8A
24" x 18"

SP-01
36" x 12"
SEE DETAIL AT RIGHT



1.5" Radius, 0.5" Border, 0.3" Indent, Black on Orange;
[Beardsley Rd] B 23% spacing;
Table of distances between letter and object lefts.

3.0	B 2.8	e 2.8	a 2.9	r 2.1	d 2.8	s 2.8	l 1.1	e 2.7	y 4.7	R 2.8	d 2.5	3.0

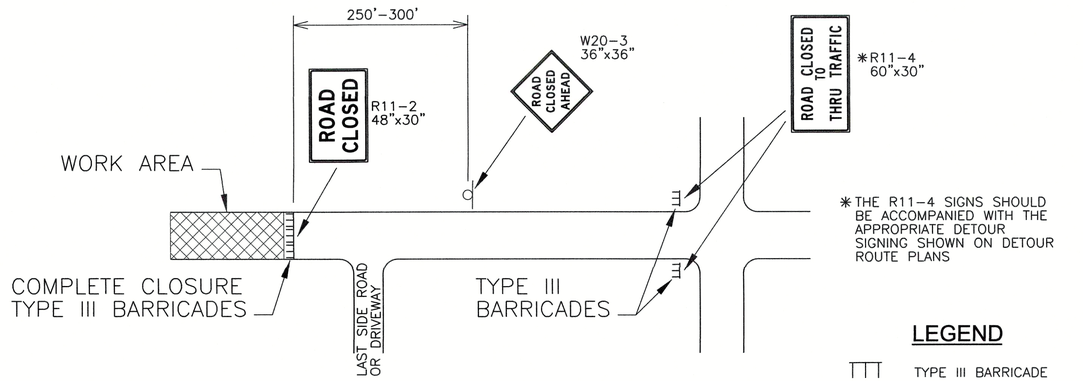
TRAFFIC CONTROL SUMMARY OF QUANTITIES

SIGN TYPE	SIZE (SF)	UNIT	TOTAL NEEDED
M4-8A (24"x18") END DETOUR	3	EA.	1
M4-9R (30"x24") DETOUR (RIGHT ARROW)	5	EA.	10
M4-9L (30"x24") DETOUR (LEFT ARROW)	5	EA.	12
M4-9S (30"x24") DETOUR (STRAIGHT ARROW)	5	EA.	8
M4-9RA (30"x24") DETOUR (ADVANCE RIGHT ARROW)	5	EA.	3
M4-9LA (30"x24") DETOUR (ADVANCE LEFT ARROW)	5	EA.	5
M4-9LD (30"x24") DETOUR (SOFT LEFT ARROW)	5	EA.	2
M4-9RD (30"x24") DETOUR (SOFT RIGHT ARROW)	5	EA.	2
M4-9LDA (30"x24") DETOUR (SOFT LEFT ADVANCE ARROW)	5	EA.	1
M4-9RDA (30"x24") DETOUR (SOFT RIGHT ADVANCE ARROW)	5	EA.	1
M4-10R (48"x18") RIGHT ARROW WITH DETOUR	6	EA.	1
R11-2 (48"x30") ROAD CLOSED	10	EA.	2
R11-4 (60"x30") ROAD CLOSED TO THRU TRAFFIC	12.5	EA.	1
W20-2 (36"x36") DETOUR AHEAD	9	EA.	2
W20-3 (36"x36") ROAD CLOSED AHEAD	9	EA.	2
SPECIAL 1 (36"x12") BEARDSLEY RD	3	EA.	45
TYPE III MOVABLE BARRICADE		EA.	14

RECAPITULATION OF TRAFFIC CONTROL BID ITEMS

ITEM DESCRIPTION	TOTAL	UNIT
TRAFFIC CONTROL	1	L.S.

TYPICAL ROAD CLOSURE DETAILS



*THE R11-4 SIGNS SHOULD BE ACCOMPANIED WITH THE APPROPRIATE DETOUR SIGNING SHOWN ON DETOUR ROUTE PLANS

LEGEND

- TYPE III BARRICADE
- TRAFFIC CONTROL SIGN
- WORK AREA

TranSystems
2400 PERSHING ROAD
SUITE 400
KANSAS CITY-MO-64108
PHONE: 816-329-8600
FAX: 816-329-8601

STATE OF MISSOURI
JAMES J. STANEK, JR.
NUMBER E-24826
PROFESSIONAL ENGINEER
3-11-2016

CONSULTANTS:

BEARDSLEY ROAD BRIDGE REPAIR
KANSAS CITY, MISSOURI

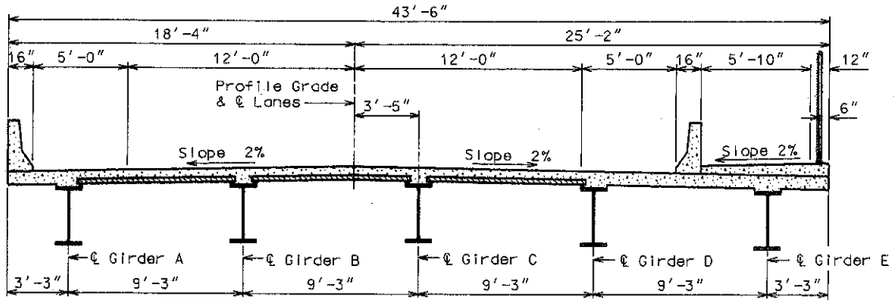
REVISIONS:	MARK	DATE	DESCRIPTION

PROJ NO: P101150178
SCALE: NTS
DATE: 3/11/2016
DESIGNED BY: SMW
DRAWN BY: SMW
CHECKED BY: JJS

SHEET TITLE:
BEARDSLEY ROAD TRAFFIC CONTROL NOTES AND DETAILS

SHEET NO.
6

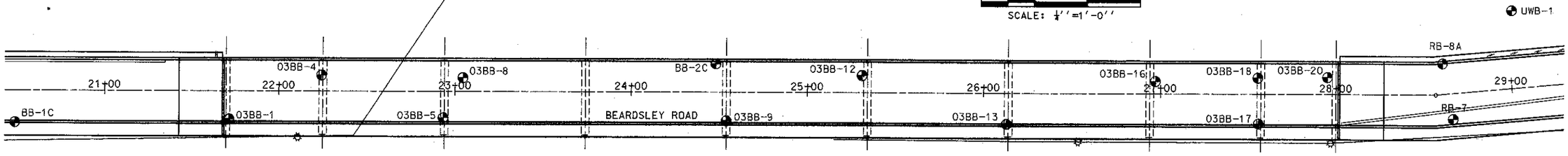
STATE	PROJ. NO.	SHEET NO.
MD.	–	



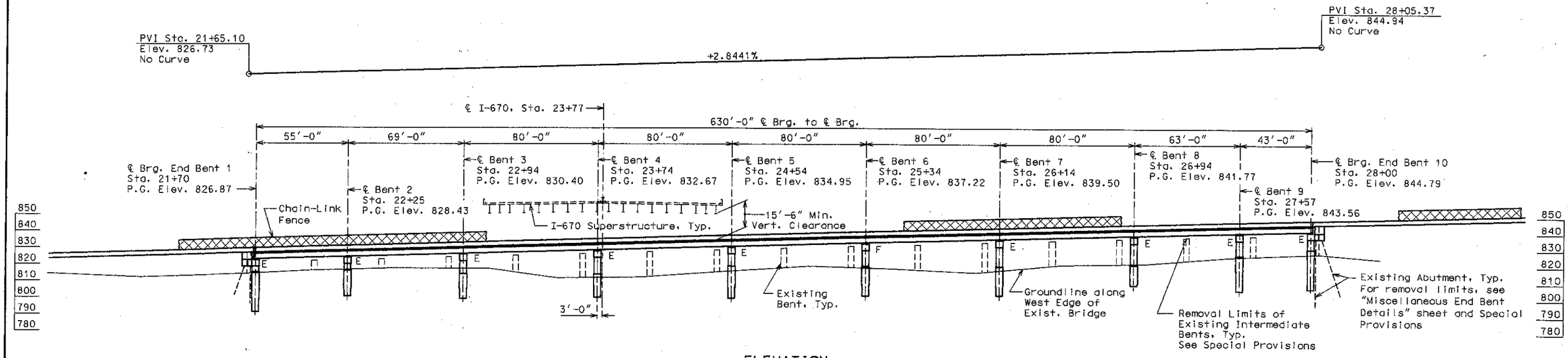
TYPICAL ROADWAY SECTION

4 2 0 4 8

SCALE: 1/4"=1'-0"



PLAN



ELEVATION

BORING LOCATIONS					
NUMBER	STATION	OFFSET	NUMBER	STATION	OFFSET
RB-7	28+65.62	14.10' RT.	03BB-8	23+04.52	7.64' LT.
RB-8A	28+61.98	17.07' LT.	03BB-9	24+53.94	15.90' RT.
BB-1C	20+48.18	17.78' RT.	03BB-12	25+30.98	9.58' LT.
BB-2C	24+47.89	15.71' LT.	03BB-13	26+12.97	17.15' RT.
UWB-1	29+03.27	43.99' LT.	03BB-16	26+97.10	6.96' LT.
03BB-1	21+71.73	15.63' RT.	03BB-17	27+55.70	16.46' RT.
03BB-4	22+24.20	8.87' LT.	03BB-18	27+55.31	9.02' LT.
03BB-5	22+93.40	14.60' RT.	03BB-20	27+95.11	9.44' LT.

Notes:
For Bench Mark and Control Point information, see "Plan and Profile" sheets.
For utility information, see "Plan of Existing Utilities" sheet.

SCALE
0 30 60 90

DETAILED BK
CHECKED LLS

11:31:58 AM/20/2005 s:\beardsley rd\bridge*gpe.dgn

STATE OF MARYLAND
DOUGLAS M. WALTEMATH
NUMBER 21610
REGISTERED PROFESSIONAL ENGINEER
5-18-05

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

BEARDSLEY ROAD AND
BRIDGE RECONSTRUCTION
12TH STREET TO 17TH STREET

BRIDGE PLAN AND ELEVATION

S030B42

HARRINGTON & CORTELYOU, INC.
Consulting Engineers

SHEET 54 OF 103

STATE	PROJ. NO.	SHEET NO.
MO.	--	

CONSTRUCTION:

Scope of work consists of the construction of end bents, intermediate bents, structural steel girders, composite deck slab, safety barrier curbs, sidewalk, and all incidentals and other work as shown on the plans or in the Special Provisions.

Utility companies whose facilities are shown on the plans or are known to be within the construction limits shall be notified by the contractor at the construction start date. For more information, see "Plan of Existing Utilities" sheet and Special Provisions.

All dimensions are horizontal unless otherwise noted.

SPECIFICATIONS:

Design: 2002 Edition of the AASHTO Standard Specifications for Highway Bridges.

Construction: Missouri State Highway Commission Standard Specifications for Highway Construction, 1999 Edition, plus project Special Provisions.

Standard Specifications and Design Criteria, City of Kansas City, Missouri.

DESIGN LOADING:

Load Factor Design Method - Bridge superstructure and substructure (except footings and rock socket end bearing). Steel girder spans are continuous non-composite for dead load and continuous composite for safety barrier curbs, future wearing surface, sidewalk, fence and live load.

Live Load - HS20 - Modified.

Dead Load - An allowance of 35 lbs/sq. ft. of roadway for future wearing surface is included in the dead load.

Concrete Weight - 150 lbs./cu. ft.

Earth Weight - 120 lbs./cu. ft.

Equivalent Fluid Pressure - 45 lbs. per cu. ft.

Seismic Performance - Category A (Acceleration Coefficient = 0.04g)

Fatigue Stress - Case II

DESIGN UNIT STRESSES:

Class B Concrete (Substructure)	f'c = 4,000 psi
Special Aggregate Concrete (Superstructure)	f'c = 4,000 psi
Drilled Shaft Concrete	f'c = 4,000 psi
Reinforcing Steel (Grade 60)	fs = 24,000 psi
	fy = 60,000 psi
Structural Steel (ASTM A709 Grade 50W)	fy = 50,000 psi

For Precast Prestressed Panel Stresses, see "Precast Prestressed Panel Details" sheet.

CONCRETE:

All exposed edges of concrete shall be beveled $\frac{3}{4}$" unless otherwise shown or noted.

Construction joints shall be made only at locations shown on the plans, except with the approval of the Engineer.

Keys shall be provided for all construction joints unless otherwise shown.

All concrete for bridge deck, safety barrier curbs, and sidewalk shall be Special Aggregate Concrete and shall conform to the requirements of Section 03320 of the Project Manual.

All substructure concrete shall be bid as Class B concrete and shall conform to the requirements of MCIB Mix No. WA552-$\frac{3}{4}$-4-0.462 unless otherwise noted or shown.

All concrete for the drilled shafts and rock sockets shall conform to MCIB No. WA552-$\frac{3}{4}$-4-0.462 and Section 2970 of the Project Manual.

COATING:

Protective Coating: System H by the contractor. See Special Provisions.

Portions of the structural steel embedded in or in contact with concrete, including but not limited to the top flange of girders, shall be coated with not less than 2.0 mils of the prime coat for System H.

Prime Coat: The prime coat shall be applied in the fabrication shop. The cost of the prime coat shall be included in the contract unit price of the Fabricated Structural Steel.

The surface of all structural steel located under expansion joints shall be coated with complete System H within a distance of 1$\frac{1}{2}$ times the girder depth, but not less than 10 feet from the centerline of all deck joints. Within this limit, items to be coated shall include all surfaces of girders, diaphragms, stiffeners, bearings and miscellaneous structural steel items.

Field Coat: The color of the finish coat shall be brown (Federal Standard #30045). The cost of the intermediate and finish coats shall be included in the contract unit price of the Fabricated Structural Steel. At the option of the contractor, the intermediate and/or finish field coats may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling, erection and pouring of the slab to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

Protective coating of the bent caps with "Deleterious Agents" at End Bents 1 & 10 shall be required in accordance with the Special Provisions. The protective coating shall be applied to all surfaces of the End Bents down to a line 8" below the top of the cap and pads except for areas directly under neoprene bearing pads.

BRIDGE DECK:

Bridge Deck shall have an overall minimum thickness of 8$\frac{1}{2}$".

Slab type Precast Panel Forms shall be used, except where a full depth cast-in-place slab is indicated.

JOINT FILLER:

All joint filler shall meet the requirements of Section 1057.2.4 of the Missouri Standard Specifications, except as noted.

REINFORCING STEEL:

Reinforcing steel shall be deformed billet steel bars conforming to ASTM A615, Grade 60. All dimensions to reinforcing steel on the detail drawings are to centerline of bar, except where clear distance is noted from the face of concrete.

All reinforcing bars in the top of substructure beams shall be spaced to clear anchor bolts for bearings by at least $\frac{1}{2}$".

Minimum clearance to reinforcing steel shall be 1$\frac{1}{2}$" unless otherwise shown.

Reinforcing steel shall be lapped in accordance with AASHTO Standard Specifications for Highway Bridges Section 8.32 unless otherwise noted.

The epoxy coated reinforcing bars shall be coated in accordance with Section 710 of the Missouri Standard Specifications for Highway Construction.

REINFORCING BAR TAGS:

Tags for reinforcing steel shall be marked with a prefix to indicate the individual superstructure or substructure element in which it is to be placed.

All costs associated with bar tags shall be incidental to the cost for reinforcing steel.

Examples: Tag Bent 2-#8-V2 indicates #8-V2 bars in Bent 2.

NEOPRENE BEARINGS:

Neoprene elastomeric pads for fixed bearings shall be 60 durometer. Neoprene elastomeric pads for PTFE sliding bearings shall be 70 durometer. The neoprene pad shall be bonded to the bearing seat with an epoxy adhesive as approved by the bearing manufacturer for bonding neoprene to concrete.

STRUCTURAL STEEL:

Fabrication: All dimensions shown on drawings are measured at a normal temperature of 60° F.

Shop welded splices may be fabricated by the contractor when detailed on the shop drawings and approved by the engineer. No additional payment will be made for optional shop welded splices. No shop splices will be permitted within 20 feet of ℄ bent.

Payment: Payment for structural steel will be paid for as "Fabricated Structural Low Alloy Steel (I-Beam) ASTM A709 Grade 50W". The estimated quantity of "Fabricated Structural Low Alloy Steel (I-Beam) ASTM A709 Grade 50W" includes the weight of shear connector studs.

Material: All material shown on the plans shall be structural low alloy steel Grade 50W except shear connector studs and other items as noted. Shear connector studs shall be ASTM A-102 $\frac{7}{8}$"Ø x 6". Shear connector studs shall meet the requirements of Section 1037 of the Missouri Standard Specifications. High Strength bolts, nuts, and washers shall be sampled for quality as specified in Standard Specification 106 of Missouri Standard Specifications and Field Section (FS-712) from the Materials Manual.

Connectors: All connectors shall be $\frac{3}{4}$"Ø high strength bolts conforming to ASTM A325-Type 3 unless otherwise indicated. Connectors for field splices shall be $\frac{7}{8}$"Ø high strength bolts conforming to ASTM A325 Type 3.

DETAILED BK

CHECKED LLS

11:32:00 AM/20/2005 s:\beardsley rd\bridge\gen-notes.dgn

DOUGLAS M. WALTSMITH NUMBER E-13270 REGISTERED PROFESSIONAL ENGINEER

5-18-05

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

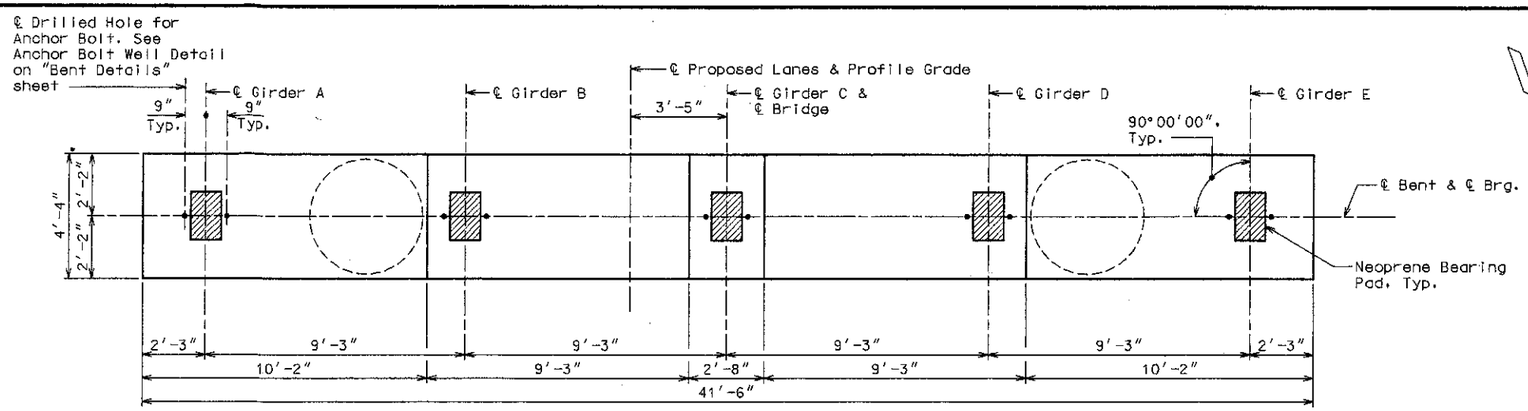
BEARDSLEY ROAD AND BRIDGE RECONSTRUCTION 12TH STREET TO 17TH STREET

BRIDGE GENERAL NOTES

S030842

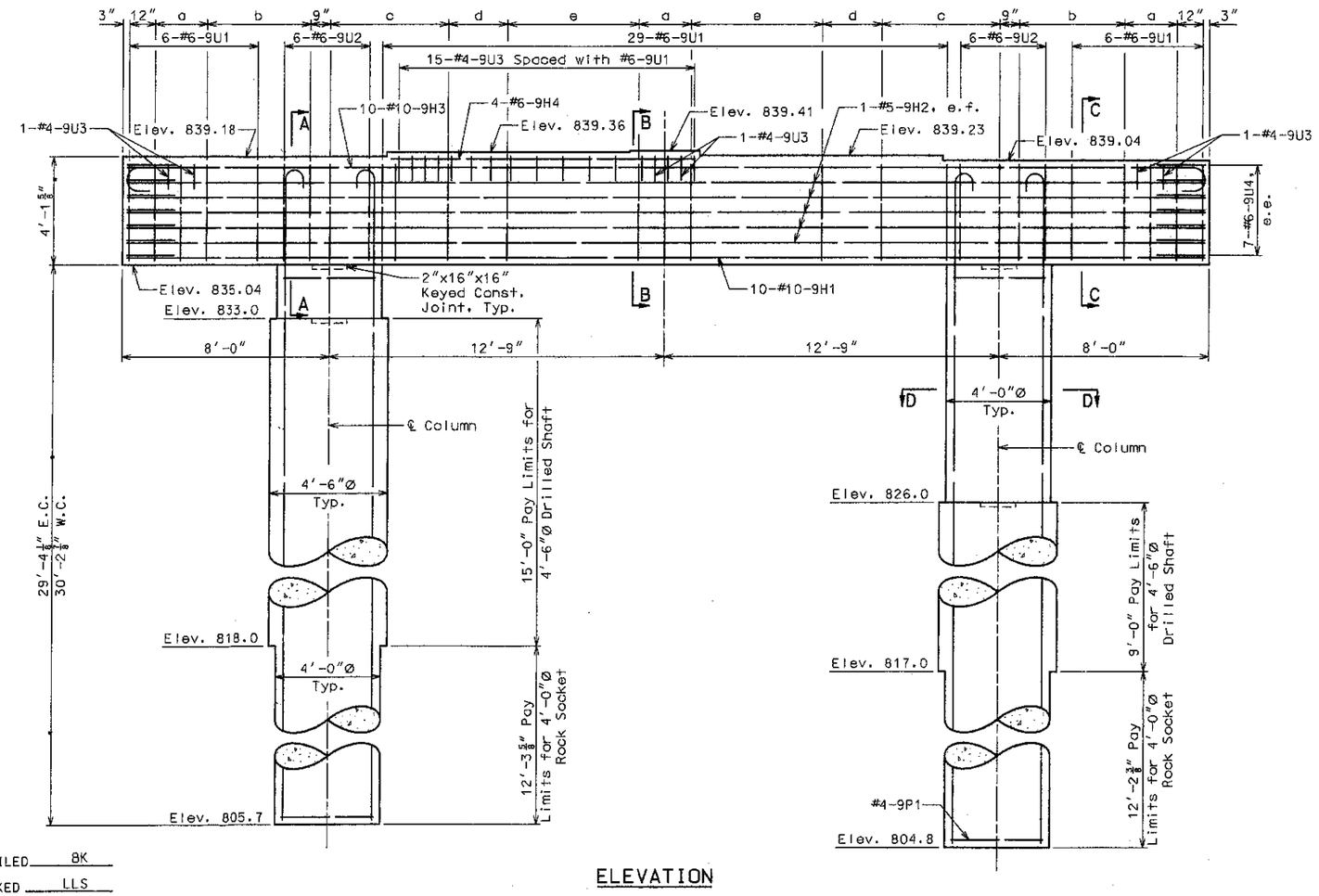
HARRINGTON & CORTELYOU, INC. Consulting Engineers

SHEET 55 OF 103

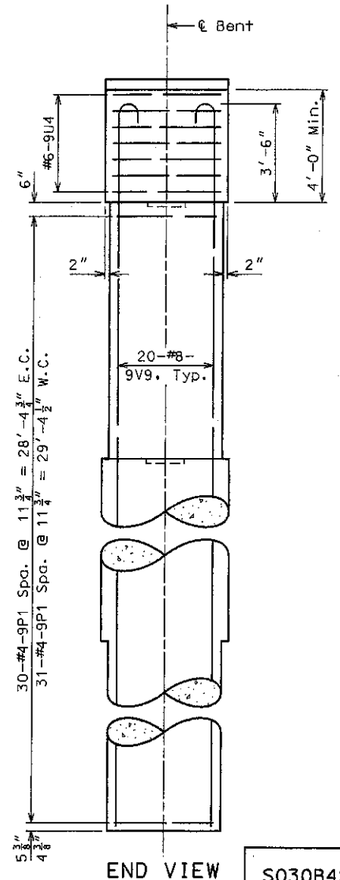


CAP PLAN

a = 4 Spa. @ 6" = 2'-0"
b = 4 Spa. @ 12" = 4'-0"
c = 9 Spa. @ 6" = 4'-6"
d = 3 Spa. @ 9" = 2'-3"
e = 5 Spa. @ 12" = 5'-0"



ELEVATION



END VIEW

STATE	PROJ. NO.	SHEET NO.
NO.	–	

SUBSTRUCTURE QUANTITY TABLE FOR BENT 9

ITEM		QUANTITY
Drilled Shafts (4'-6" diameter)	Lin. Ft.	24.0
Rock Sockets (4'-0" diameter)	Lin. Ft.	24.5
Class B Concrete (Substr.)	Cu. Yds.	32.9
Reinforcing Steel (Bridges) **	Lbs.	10,190

These quantities are included in the Estimated Quantities table on the "Bridge Quantities" sheet.
** Includes reinforcing steel in Drilled Shafts and Rock Sockets.

Notes:
e.f. denotes each face.
e.e. denotes each end.
E.C. denotes East Column.
W.C. denotes West Column.
For Neoprene Bearing Pads, see "Bearing Details - Expansion" sheet.
For Section A-A, B-B, C-C and D-D, see "Bent Details" sheet.
For design bearing values, see Foundation Data table on "Bridge Quantities" sheet.

2 1 0 2 4 6
SCALE: 3/8"=1'-0"

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

BEARDSLEY ROAD AND BRIDGE RECONSTRUCTION
12TH STREET TO 17TH STREET

BENT 9 PLAN & ELEVATION

S030B42

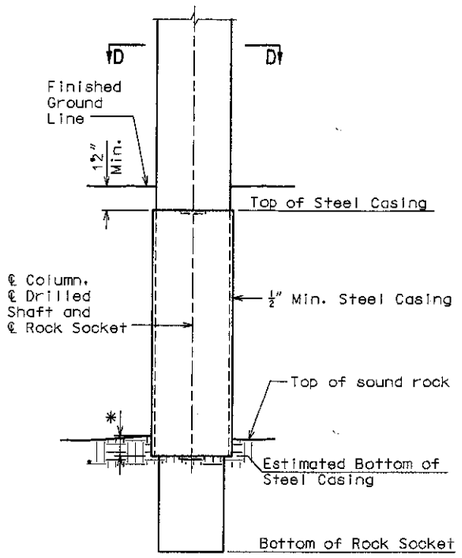
HARRINGTON & CORTELYOU, INC. Consulting Engineers

SHEET 76 OF 103

DETAILED BK
CHECKED LLS

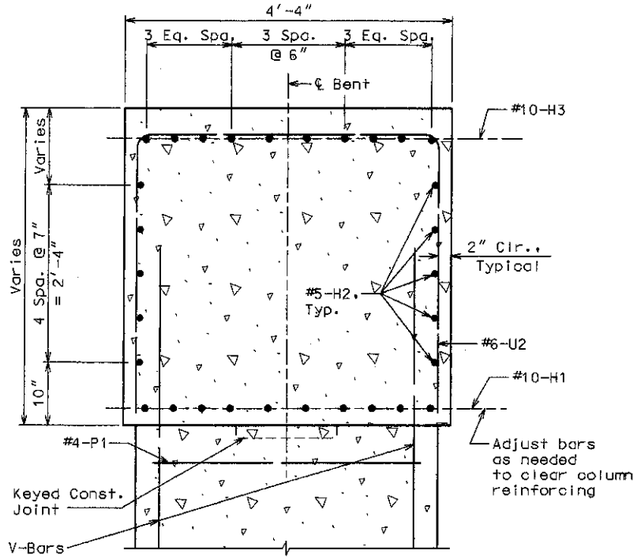
10:27:03 AM 4/20/2005 s:\Beardsley rd\Bridge\Bent 9.dgn

STATE	PROJ. NO.	SHEET NO.
MD.	—	

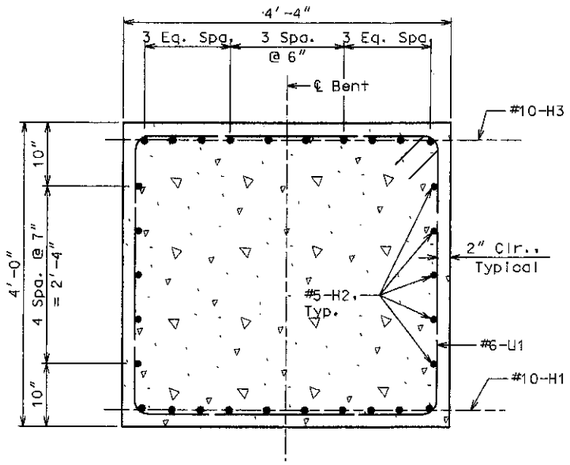


DRILLED SHAFT DETAIL
NOT TO SCALE

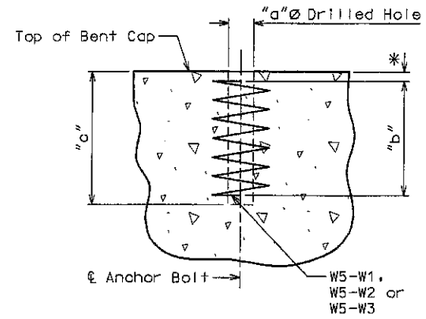
* Seat steel shells 12" min. into sound rock, see Special Provisions.



SECTION A-A

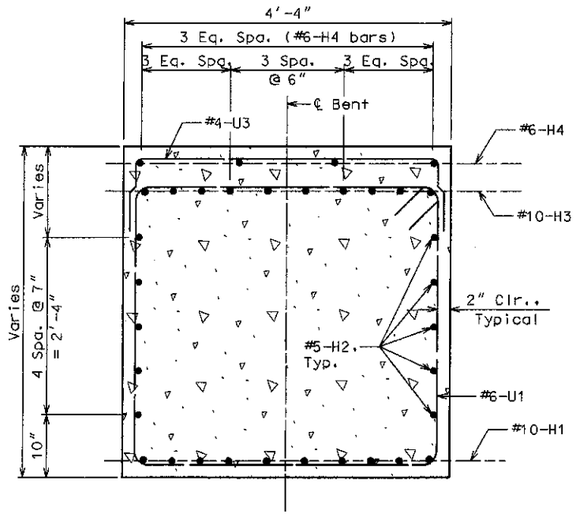


SECTION C-C

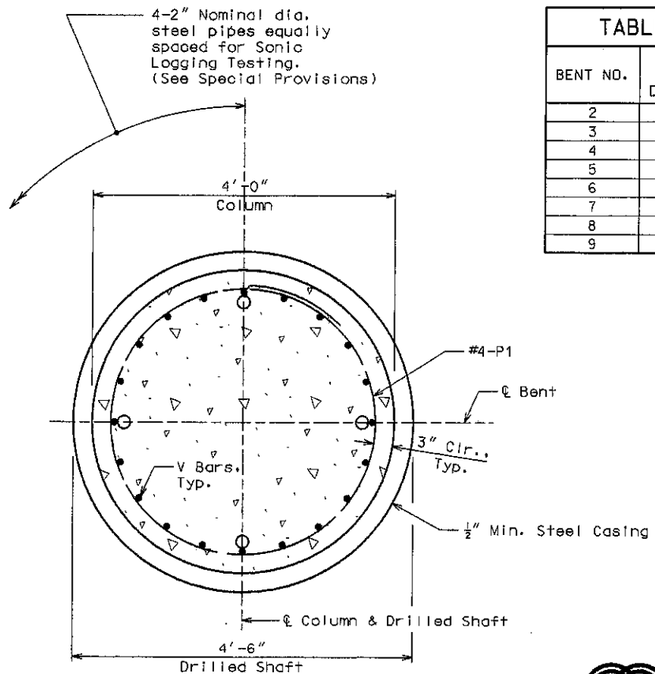


ANCHOR BOLT WELL DETAIL
NOT TO SCALE

* Clear top of reinforcement (tie top of spiral to longitudinal reinforcement).



SECTION B-B



SECTION D-D

TABLE OF ANCHOR BOLT WELLS				
BENT NO.	"a" HOLE DIAMETER	"b" SPIRAL DEPTH	"c" HOLE DEPTH	W5-W
2	2"	15"	18"	W5-W1
3	2"	15"	18"	W5-W1
4	2½"	18"	21"	W5-W2
5	2½"	18"	21"	W5-W2
6	3"	25"	28"	W5-W3
7	2½"	18"	21"	W5-W2
8	2½"	18"	21"	W5-W2
9	2"	15"	18"	W5-W1

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

DETAILED BK
CHECKED LLS

10:27:01 AM/20/2005 s:\beardsley rd\bridge\bent-dtls.dgn

STATE OF MARYLAND
DOUGLAS M. WALTSMITH
NUMBER 21270
REGISTERED PROFESSIONAL ENGINEER
5-18-05

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

BEARDSLEY ROAD AND BRIDGE RECONSTRUCTION
12TH STREET TO 17TH STREET

BENT DETAILS

S030B42

HARRINGTON & CORTELYOU, INC.
Consulting Engineers