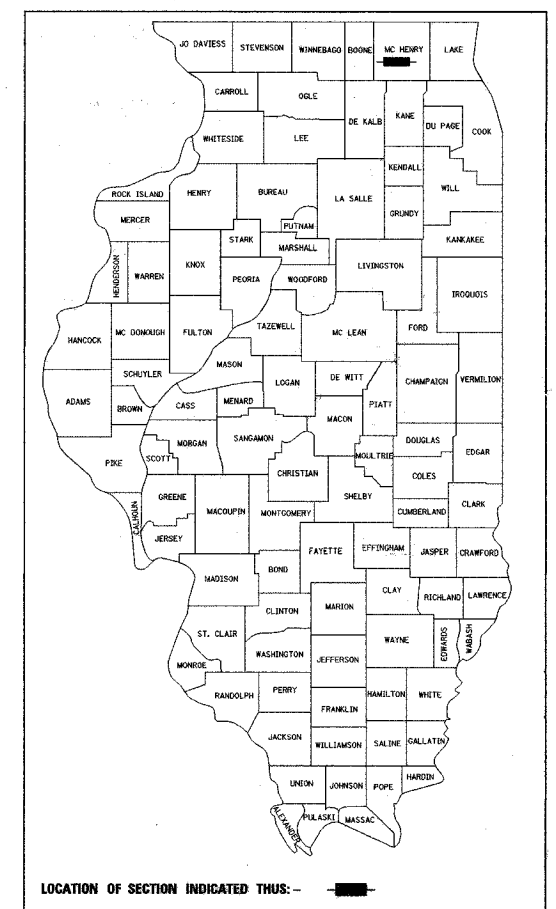


CONTRACT NO. 60D29	F.A. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	533	11R-1-I-1	MCHENRY	19	1
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY
F.A.P. ROUTE 533 (IL RTE 176)
OVER THE SOUTH BRANCH OF THE KISHWAUKEE RIVER
BEAM AND BEARING FABRICATION
SECTION 11R-1-I-1
PROJECT NO: BRF-0533(007)
MCHENRY COUNTY
C-91-373-07

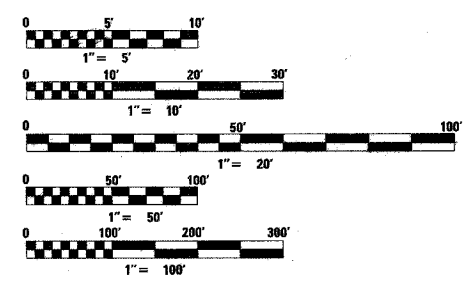
FQR INDEX OF SHEETS, SEE SHEET NO. 2

TRAFFIC DATA
 EXISTING ADT
 8,300 (1999)
 DESIGN ADT
 9,960 (2019)
 SPEED LIMIT 55 MPH

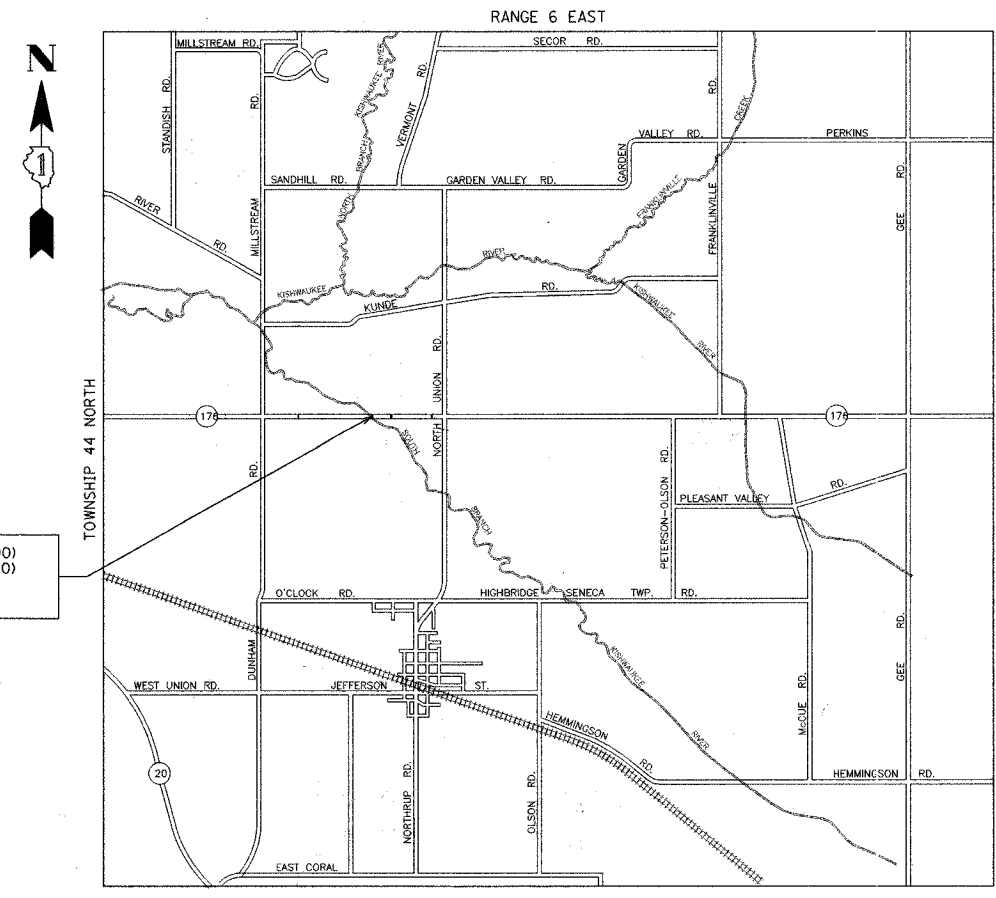


D-91-488-01

PROJECT LOCATED IN UNINCORPORATED MCHENRY COUNTY



S.N. EXISTING: 056-0004 (STA 50+00)
 S.N. PROPOSED: 056-0071 (STA 51+00)
 IL 176 OVER THE SOUTH BRANCH
 OF THE KISHWAUKEE RIVER



SENECA TOWNSHIP
 SCALE 1" = 2500 FEET

GROSS AND NET LENGTH OF PROJECT: 410 FT (0.078 MI)

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED 6-29 2007

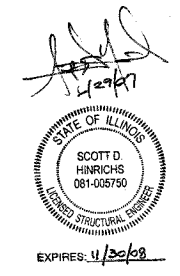
 DEPUTY DIRECTOR OF HIGHWAYS, REGION 1 ENGINEER

August 17 2007

 INTERIM ENGINEER OF DESIGN AND ENVIRONMENT

August 17 2007

 DIRECTOR, DIVISION OF HIGHWAYS



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 THE STATE OF ILLINOIS**

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC.
 ENGINEERS & SCIENTISTS
 8501 W. Higgins Road, Suite 280
 Chicago, Illinois 60631
 (773) 399-0112

DISTRICT ONE PLAN PREPARATION ENGINEER: JOSE DOMINGUEZ (847) 705-4385

CONTRACT NO. 60D29
 J.U.L.I.E. JOINT UTILITY LOCATION INFORMATION
 FOR EXCAVATION 1-800-892-0123

CONTRACT NO. 60D29

F.A. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
533	11R-1-I-1	McHENRY	19	2
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

INDEX OF SHEETS


- 1 TITLE SHEET
- 2 INDEX AND SUMMARY OF QUANTITIES
- 3-19 BRIDGE PLANS SN 056-0071

SUMMARY OF QUANTITIES

80% FED. / 20% STATE

BRIDGE
X071-2A

NUMBER	PAY ITEM	UNIT	QUANTITY
50500205	FURNISHING STRUCTURAL STEEL	L SUM	1
52100110	FURNISHING ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	12
52100120	FURNISHING ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12
X0320622	FIELD MEASUREMENT	L. SUM	1
X0322770	STORAGE OF STRUCTURAL STEEL AND BEARINGS	CAL DA	30

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION ILLINOIS ROUTE 176 OVER THE SOUTH BRANCH OF THE KISHWAUKEE RIVER INDEX OF DRAWINGS AND SUMMARY OF QUANTITIES DRAWN BY: AJR CHECKED BY: RJS DATE: 6-29-07
NAME	DATE	
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC. CHICAGO, ILLINOIS		

B.M. - Northwest corner of top step at house with address 18017 IL Rte. 176, El. 823.80

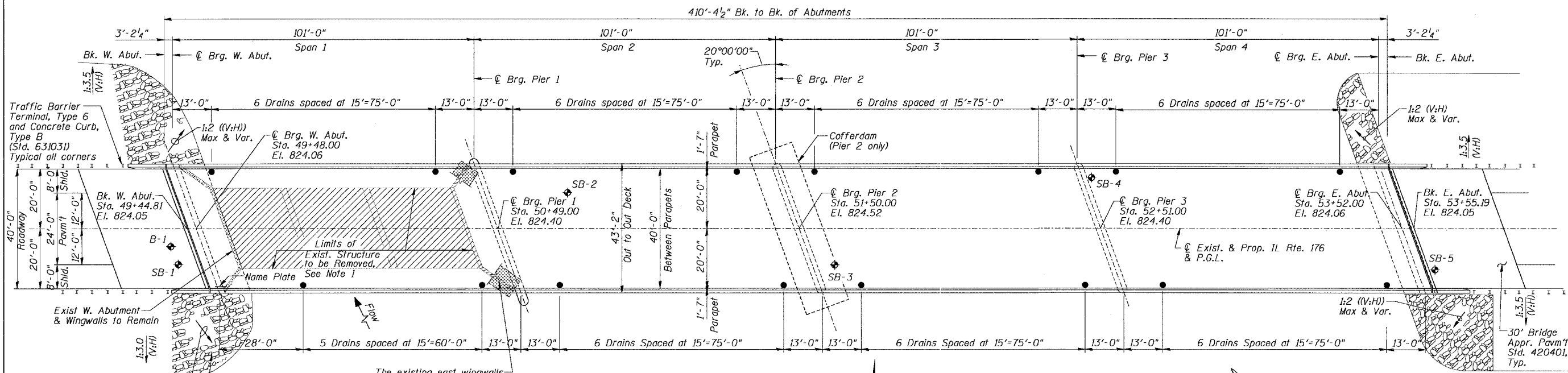
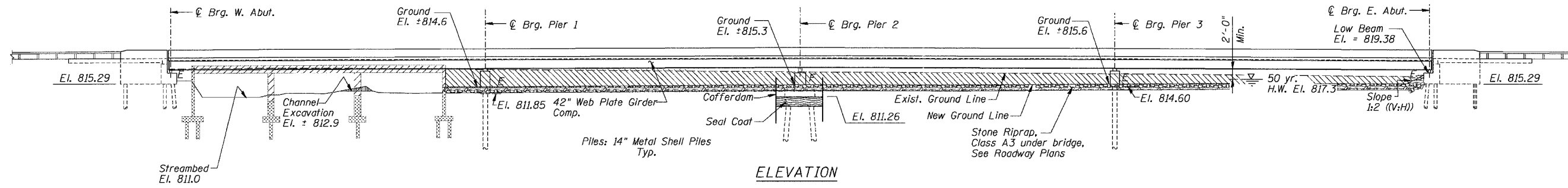
Existing Structure: S.N. 056-0004, built in 1932 as SBI-67. Reconstructed in 1971. The existing structure consists of a 3 (simple) span PPC deck beam superstructure on pile supported closed abutments and pile supported piers. The structure is ±78'-5" Bk. to Bk. abutments and 33'-0" O. to O. deck. The structure is to be removed and replaced, however, the West Abutment will remain in place.

No Stage Construction. Traffic will be detoured during construction.

No Salvage.

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO. OF 17 SHEETS
533	11 R-1-I-1	McHenry	19	3
FED. ROAD DIST. XXXX		ILLINOIS	FED. AID PROJECT	

Contract #60D29



LEGEND

- Existing Structure to be Removed
- Existing Structure to Remain in Place
- Stone Riprap, Class A5
- Earth Excavation See Roadway Plans
- Channel Excavation See Roadway Plans

- SB-1 - Soil Boring
- B-1 - Previous Boring at W. Abutment from 1996 Streambed Scour Study

STATION 51+50
BUILT 2001 BY
STATE OF ILLINOIS
F.A.P. RTE 533 SEC. 119R-1-B
LOADING HS20
STR. NO. 056-0071

NAME PLATE
See Std. 515001

WATERWAY INFORMATION

Drainage Area = 72.7 mi² Low Grade Elev. 822.5 ft @ Sta. 55+00 - 56+00

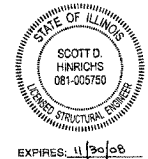
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
Overtop	2	1408	285	709	816.2	1.0	0.3	817.2	817.0
Design	50	3034	363	922	817.3	0.9	0.4	818.2	817.7
Base	100	3913	398	1100	817.8	0.8	0.5	818.6	818.3
Max. Calc.	500	5736	430	1389	818.6	0.5	0.6	819.1	819.2

NOTE:

1. Top of existing abutments is braced by existing superstructure. Removal of existing superstructure shall not occur until top of Exist. West Abutment has been secured to New West Abutment. See Sheet 12 of 17 for details.

APPROVED

FOR STRUCTURAL ADEQUACY ONLY
Robert E. Adams
ENGINEER OF BRIDGES AND STRUCTURES



DESIGN SPECIFICATIONS

1996 AASHTO with 1997, 1998, 1999, 2000 and 2002 Interims.

DESIGN STRESSES

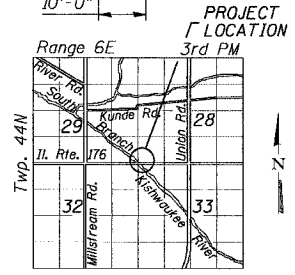
FIELD UNITS
f'_c = 3,500 psi
f_y = 60,000 psi (Reinforcement)
f_y = 50,000 psi (Structural Steel M270 Grade 50)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.035g
Site Coefficient (S) = 1.0

LOADING HS20-44

Allow 50 #/sq. ft. for Future Wearing Surface



LOCATION SKETCH

GENERAL PLAN
IL Route 176 over
South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-I-1
McHENRY COUNTY
STATION 51+50.00
S.N. 056-0071
DATE: 06-29-07

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

GENERAL NOTES

Fasteners shall be high strength bolts. Bolts 7/8" dia., open holes 5/16" dia. unless otherwise noted.

Calculated weight of Structural Steel = 405,802 lbs. (M 270, Gr. 50)
39,888 lbs. (M 270, Gr. 36)

The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges, webs and all splice plate material except fill plates.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type I Elastomeric Bearings, two 1/8" adjusting shims shall be provided for each bearing and placed as detailed.

The Inorganic zinc rich primer /Acrylic/ Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Reddish Brown, Munsell No. 2.5YR 3/4. See special provision for "Cleaning and Painting New Metal Structures". Field painting not included in this contract.

TOTAL BILL OF MATERIAL

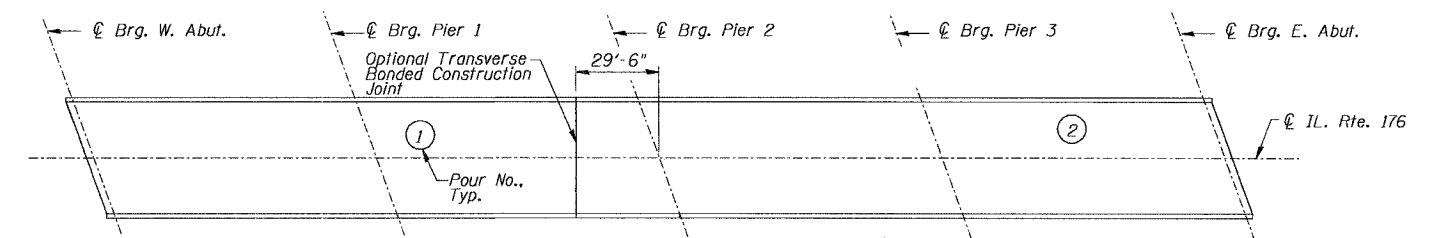
ITEMS	UNITS	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
Furnishing Structural Steel	L. SUM	1	-	1
Furnishing Elastomeric Bearing Assembly, Type I	EACH	12	-	12
Furnishing Elastomeric Bearing Assembly, Type II	EACH	12	-	12
* Storage of Structural Steel and Bearings	CAL. DAY	30	-	30
* Field Measurement	L. SUM	1	-	1

* See Special Provisions.

ROUTE NO.	DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
533	11 R-1-I-1	McHenry	19	4
FED. ROAD DIST. XXXX		ILLINOIS	FED. AID PROJECT	

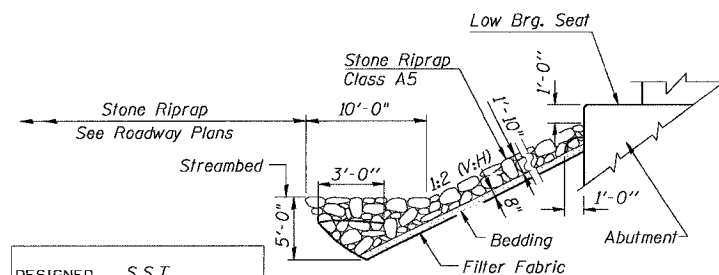
Contract #60D29

SHEET NO. 2 OF 17 SHEETS

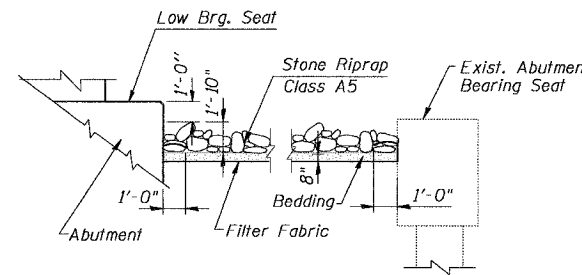


DECK POURING SEQUENCE

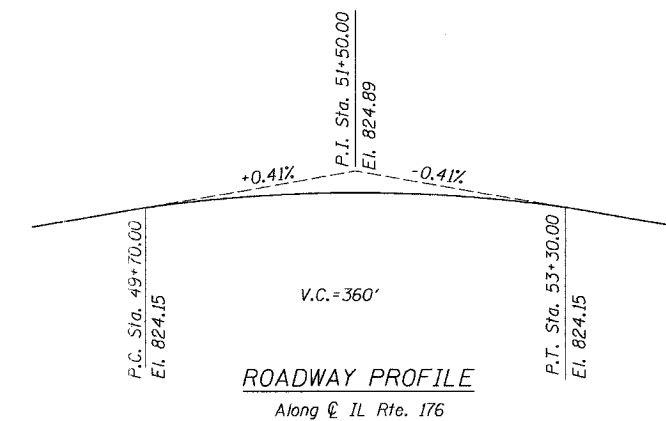
The Contractor may submit an alternate pouring sequence subject to the approval of the Engineer.



**EAST ABUTMENT
STONE RIPRAP DETAIL**



**WEST ABUTMENT
STONE RIPRAP DETAIL**



ROADWAY PROFILE
Along & IL Rte. 176

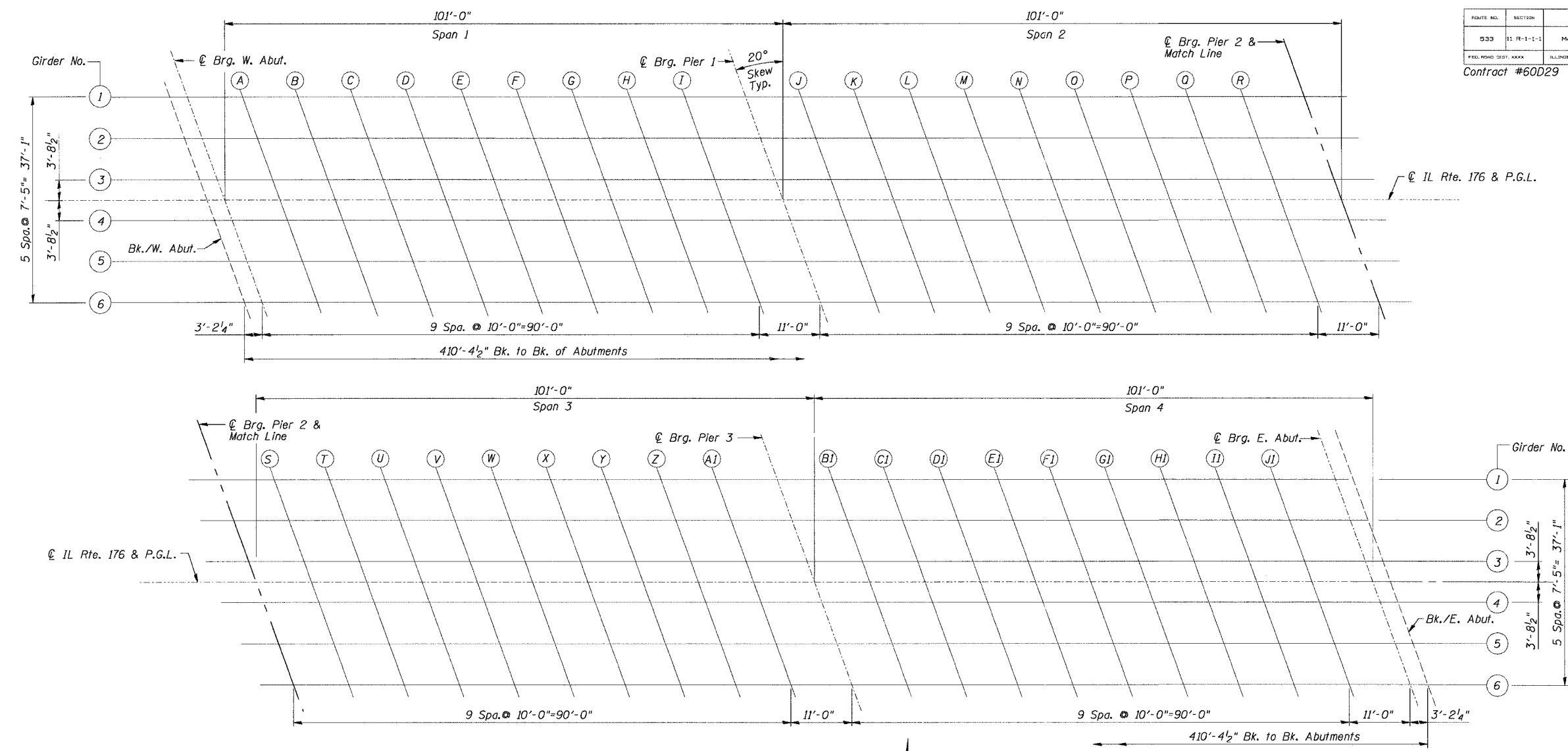
DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

GENERAL NOTES AND
TOTAL BILL OF MATERIAL
IL Route 176 over
South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-I-1
McHENRY COUNTY
STATION 51+50.00
DATE: 06-29-07 S.N. 056-0071
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

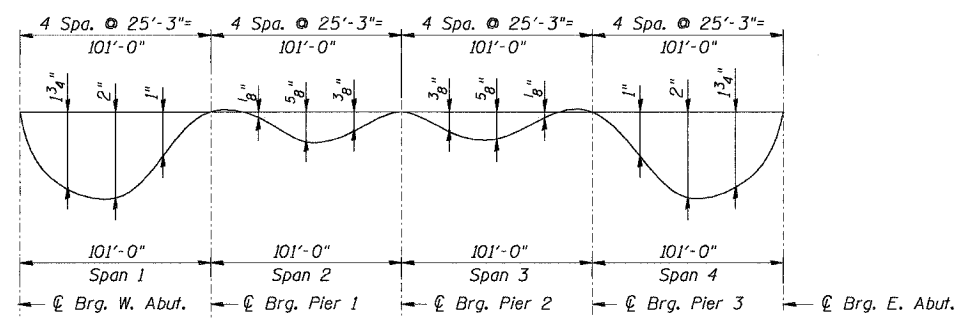
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
533	11 R-1-1-1	McHenry	19	5
FED. ROAD DIST. XXXX		ILLINOIS	FED. AID PROJECT-	

Contract #60D29

SHEET NO. 3 OF 17 SHEETS



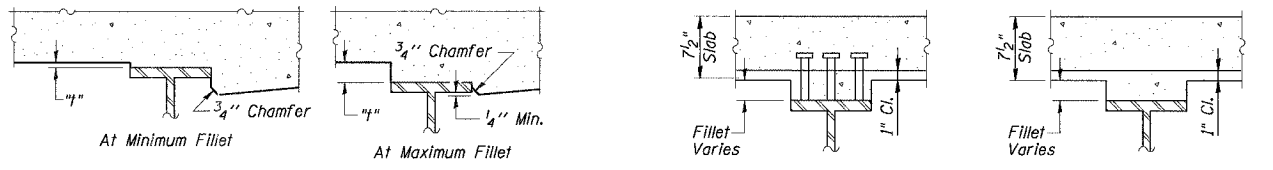
PLAN



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete deck and all superimposed dead loads except future wearing surface.)

NOTE:
The above deflections are not for use in the field if the engineer is working from the Theoretical Grade Elevations Adjusted for Dead Load Deflection as shown on Sheets 4 and 5 of 27.



FILLET HEIGHTS

To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets 4 and 5 of 27, minus slab thickness, equals the fillet heights "f" above top flange of beams.

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

FOR INFORMATION ONLY

TOP OF DECK SLAB ELEVATIONS
(1 OF 3)
IL Route 176 over
South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-1-1
McHENRY COUNTY
STATION 51+50.00
DATE: 06-29-07 S.N. 056-0071
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

N:\Jobs\06\1061\South Branch Steel\176-Screed.dgn
6/29/07
3:05:31 PM

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. Abut.	49+38.06	-18.542	823.71	823.71
☉ BRG. W. Abut.	49+41.25	-18.542	823.72	823.72
A	49+51.25	-18.542	823.76	823.83
B	49+61.25	-18.542	823.80	823.92
C	49+71.25	-18.542	823.84	824.00
D	49+81.25	-18.542	823.88	824.06
E	49+91.25	-18.542	823.92	824.09
F	50+01.25	-18.542	823.96	824.11
G	50+11.25	-18.542	823.99	824.10
H	50+21.25	-18.542	824.02	824.09
I	50+31.25	-18.542	824.05	824.08
☉ BRG. PIER 1	50+42.25	-18.542	824.08	824.08
J	50+52.25	-18.542	824.10	824.10
K	50+62.25	-18.542	824.12	824.13
L	50+72.25	-18.542	824.14	824.16
M	50+82.25	-18.542	824.16	824.20
N	50+92.25	-18.542	824.17	824.22
O	51+02.25	-18.542	824.18	824.23
P	51+12.25	-18.542	824.19	824.23
Q	51+22.25	-18.542	824.20	824.23
R	51+32.25	-18.542	824.21	824.21
☉ BRG. PIER 2	51+43.25	-18.542	824.21	824.21
S	51+53.25	-18.542	824.21	824.22
T	51+63.25	-18.542	824.21	824.23
U	51+73.25	-18.542	824.20	824.24
V	51+83.25	-18.542	824.20	824.25
W	51+93.25	-18.542	824.19	824.24
X	52+03.25	-18.542	824.18	824.22
Y	52+13.25	-18.542	824.16	824.19
Z	52+23.25	-18.542	824.15	824.15
A1	52+33.25	-18.542	824.13	824.13
☉ BRG. PIER 3	52+44.25	-18.542	824.11	824.11
B1	52+54.25	-18.542	824.09	824.11
C1	52+64.25	-18.542	824.06	824.13
D1	52+74.25	-18.542	824.03	824.15
E1	52+84.25	-18.542	824.00	824.15
F1	52+94.25	-18.542	823.97	824.14
G1	53+04.25	-18.542	823.94	824.11
H1	53+14.25	-18.542	823.90	824.06
I1	53+24.25	-18.542	823.86	823.98
J1	53+34.25	-18.542	823.82	823.89
☉ BRG. E. Abut.	53+45.25	-18.542	823.78	823.78
BK. E. Abut.	53+48.44	-18.542	823.76	823.76

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. Abut.	49+40.76	-11.125	823.86	823.86
☉ BRG. W. Abut.	49+43.95	-11.125	823.88	823.88
A	49+53.95	-11.125	823.92	823.98
B	49+63.95	-11.125	823.96	824.08
C	49+73.95	-11.125	824.00	824.15
D	49+83.95	-11.125	824.04	824.21
E	49+93.95	-11.125	824.08	824.25
F	50+03.95	-11.125	824.11	824.26
G	50+13.95	-11.125	824.14	824.25
H	50+23.95	-11.125	824.17	824.24
I	50+33.95	-11.125	824.20	824.23
☉ BRG. PIER 1	50+44.95	-11.125	824.23	824.23
J	50+54.95	-11.125	824.25	824.25
K	50+64.95	-11.125	824.27	824.28
L	50+74.95	-11.125	824.29	824.31
M	50+84.95	-11.125	824.30	824.34
N	50+94.95	-11.125	824.32	824.37
O	51+04.95	-11.125	824.33	824.38
P	51+14.95	-11.125	824.34	824.38
Q	51+24.95	-11.125	824.35	824.37
R	51+34.95	-11.125	824.35	824.36
☉ BRG. PIER 2	51+45.95	-11.125	824.35	824.35
S	51+55.95	-11.125	824.35	824.36
T	51+65.95	-11.125	824.35	824.38
U	51+75.95	-11.125	824.35	824.39
V	51+85.95	-11.125	824.34	824.39
W	51+95.95	-11.125	824.33	824.38
X	52+05.95	-11.125	824.32	824.36
Y	52+15.95	-11.125	824.30	824.33
Z	52+25.95	-11.125	824.29	824.29
A1	52+35.95	-11.125	824.27	824.27
☉ BRG. PIER 3	52+46.95	-11.125	824.25	824.25
B1	52+56.95	-11.125	824.22	824.25
C1	52+66.95	-11.125	824.20	824.27
D1	52+76.95	-11.125	824.17	824.28
E1	52+86.95	-11.125	824.14	824.29
F1	52+96.95	-11.125	824.11	824.28
G1	53+06.95	-11.125	824.07	824.25
H1	53+16.95	-11.125	824.04	824.19
I1	53+26.95	-11.125	824.00	824.11
J1	53+36.95	-11.125	823.95	824.02
☉ BRG. E. Abut.	53+47.95	-11.125	823.91	823.91
BK. E. Abut.	53+51.14	-11.125	823.90	823.90

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. Abut.	49+43.46	-3.708	823.99	823.99
☉ BRG. W. Abut.	49+46.65	-3.708	824.00	824.00
A	49+56.65	-3.708	824.04	824.10
B	49+66.65	-3.708	824.08	824.20
C	49+76.65	-3.708	824.12	824.28
D	49+86.65	-3.708	824.16	824.33
E	49+96.65	-3.708	824.20	824.37
F	50+06.65	-3.708	824.23	824.38
G	50+16.65	-3.708	824.26	824.37
H	50+26.65	-3.708	824.29	824.36
I	50+36.65	-3.708	824.32	824.35
☉ BRG. PIER 1	50+47.65	-3.708	824.34	824.34
J	50+57.65	-3.708	824.37	824.36
K	50+67.65	-3.708	824.39	824.39
L	50+77.65	-3.708	824.40	824.43
M	50+87.65	-3.708	824.42	824.46
N	50+97.65	-3.708	824.43	824.48
O	51+07.65	-3.708	824.44	824.49
P	51+17.65	-3.708	824.45	824.49
Q	51+27.65	-3.708	824.46	824.48
R	51+37.65	-3.708	824.46	824.47
☉ BRG. PIER 2	51+48.65	-3.708	824.46	824.46
S	51+58.65	-3.708	824.46	824.47
T	51+68.65	-3.708	824.46	824.49
U	51+78.65	-3.708	824.46	824.50
V	51+88.65	-3.708	824.45	824.50
W	51+98.65	-3.708	824.44	824.49
X	52+08.65	-3.708	824.43	824.46
Y	52+18.65	-3.708	824.41	824.43
Z	52+28.65	-3.708	824.39	824.40
A1	52+38.65	-3.708	824.37	824.37
☉ BRG. PIER 3	52+49.65	-3.708	824.35	824.35
B1	52+59.65	-3.708	824.33	824.36
C1	52+69.65	-3.708	824.30	824.37
D1	52+79.65	-3.708	824.27	824.38
E1	52+89.65	-3.708	824.24	824.39
F1	52+99.65	-3.708	824.21	824.38
G1	53+09.65	-3.708	824.17	824.35
H1	53+19.65	-3.708	824.14	824.29
I1	53+29.65	-3.708	824.10	824.22
J1	53+39.65	-3.708	824.05	824.12
☉ BRG. E. Abut.	53+50.65	-3.708	824.01	824.01
BK. E. Abut.	53+53.84	-3.708	824.00	824.00

CENTERLINE & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. Abut.	49+44.81	0.000	824.05	824.05
☉ BRG. W. Abut.	49+48.00	0.000	824.06	824.06
A	49+58.00	0.000	824.10	824.17
B	49+68.00	0.000	824.14	824.26
C	49+78.00	0.000	824.18	824.34
D	49+88.00	0.000	824.22	824.40
E	49+98.00	0.000	824.26	824.43
F	50+08.00	0.000	824.29	824.44
G	50+18.00	0.000	824.32	824.43
H	50+28.00	0.000	824.35	824.42
I	50+38.00	0.000	824.38	824.41
☉ BRG. PIER 1	50+49.00	0.000	824.40	824.40
J	50+59.00	0.000	824.43	824.42
K	50+69.00	0.000	824.45	824.45
L	50+79.00	0.000	824.46	824.49
M	50+89.00	0.000	824.48	824.52
N	50+99.00	0.000	824.49	824.54
O	51+09.00	0.000	824.50	824.55
P	51+19.00	0.000	824.51	824.55
Q	51+29.00	0.000	824.52	824.54
R	51+39.00	0.000	824.52	824.53
☉ BRG. PIER 2	51+50.00	0.000	824.52	824.52
S	51+60.00	0.000	824.52	824.53
T	51+70.00	0.000	824.52	824.54
U	51+80.00	0.000	824.51	824.55
V	51+90.00	0.000	824.50	824.55
W	52+00.00	0.000	824.49	824.54
X	52+10.00	0.000	824.48	824.52
Y	52+20.00	0.000	824.46	824.49
Z	52+30.00	0.000	824.45	824.45
A1	52+40.00	0.000	824.43	824.42
☉ BRG. PIER 3	52+51.00	0.000	824.40	824.40
B1	52+61.00	0.000	824.38	824.41
C1	52+71.00	0.000	824.35	824.42
D1	52+81.00	0.000	824.32	824.44
E1	52+91.00	0.000	824.29	824.44
F1	53+01.00	0.000	824.26	824.43
G1	53+11.00	0.000	824.22	824.40
H1	53+21.00	0.000	824.19	824.34
I1	53+31.00	0.000	824.15	824.27
J1	53+41.00	0.000	824.10	824.17
☉ BRG. E. Abut.	53+52.00	0.000	824.06	824.06
BK. E. Abut.	53+55.19	0.000	824.05	824.05

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

FOR INFORMATION ONLY

TOP OF DECK SLAB ELEVATIONS
(2 OF 3)
IL Route 176 over
South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-1-1
McHENRY COUNTY
STATION 51+50.00
DATE: 06-29-07 S.N. 056-0071
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

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GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. Abut.	49+46.16	3.708	824.00	824.00
☉ BRG. W. Abut.	49+49.35	3.708	824.01	824.01
A	49+59.35	3.708	824.05	824.11
B	49+69.35	3.708	824.09	824.21
C	49+79.35	3.708	824.13	824.29
D	49+89.35	3.708	824.17	824.34
E	49+99.35	3.708	824.21	824.38
F	50+09.35	3.708	824.24	824.39
G	50+19.35	3.708	824.27	824.38
H	50+29.35	3.708	824.30	824.37
I	50+39.35	3.708	824.32	824.35
☉ BRG. PIER 1	50+50.35	3.708	824.35	824.35
J	50+60.35	3.708	824.37	824.37
K	50+70.35	3.708	824.39	824.40
L	50+80.35	3.708	824.41	824.43
M	50+90.35	3.708	824.42	824.46
N	51+00.35	3.708	824.44	824.49
O	51+10.35	3.708	824.45	824.50
P	51+20.35	3.708	824.45	824.50
Q	51+30.35	3.708	824.46	824.49
R	51+40.35	3.708	824.46	824.47
☉ BRG. PIER 2	51+51.35	3.708	824.46	824.46
S	51+61.35	3.708	824.46	824.47
T	51+71.35	3.708	824.46	824.48
U	51+81.35	3.708	824.45	824.49
V	51+91.35	3.708	824.44	824.50
W	52+01.35	3.708	824.43	824.48
X	52+11.35	3.708	824.42	824.46
Y	52+21.35	3.708	824.41	824.43
Z	52+31.35	3.708	824.39	824.40
AI	52+41.35	3.708	824.37	824.37
☉ BRG. PIER 3	52+52.35	3.708	824.34	824.34
B1	52+62.35	3.708	824.32	824.35
C1	52+72.35	3.708	824.29	824.36
D1	52+82.35	3.708	824.26	824.38
E1	52+92.35	3.708	824.23	824.38
F1	53+02.35	3.708	824.20	824.37
G1	53+12.35	3.708	824.16	824.34
H1	53+22.35	3.708	824.13	824.28
I1	53+32.35	3.708	824.08	824.20
J1	53+42.35	3.708	824.04	824.11
☉ BRG. E. Abut.	53+53.35	3.708	824.00	824.00
BK. E. Abut.	53+56.54	3.708	823.99	823.99

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. Abut.	49+48.86	11.125	823.90	823.90
☉ BRG. W. Abut.	49+52.05	11.125	823.91	823.91
A	49+62.05	11.125	823.95	824.01
B	49+72.05	11.125	823.99	824.11
C	49+82.05	11.125	824.03	824.19
D	49+92.05	11.125	824.07	824.24
E	50+02.05	11.125	824.10	824.28
F	50+12.05	11.125	824.14	824.29
G	50+22.05	11.125	824.17	824.28
H	50+32.05	11.125	824.19	824.26
I	50+42.05	11.125	824.22	824.25
☉ BRG. PIER 1	50+53.05	11.125	824.25	824.25
J	50+63.05	11.125	824.27	824.26
K	50+73.05	11.125	824.29	824.29
L	50+83.05	11.125	824.30	824.32
M	50+93.05	11.125	824.32	824.36
N	51+03.05	11.125	824.33	824.38
O	51+13.05	11.125	824.34	824.39
P	51+23.05	11.125	824.34	824.39
Q	51+33.05	11.125	824.35	824.38
R	51+43.05	11.125	824.35	824.36
☉ BRG. PIER 2	51+54.05	11.125	824.35	824.35
S	51+64.05	11.125	824.35	824.36
T	51+74.05	11.125	824.35	824.37
U	51+84.05	11.125	824.34	824.38
V	51+94.05	11.125	824.33	824.38
W	52+04.05	11.125	824.32	824.37
X	52+14.05	11.125	824.31	824.35
Y	52+24.05	11.125	824.29	824.31
Z	52+34.05	11.125	824.27	824.28
AI	52+44.05	11.125	824.25	824.25
☉ BRG. PIER 3	52+55.05	11.125	824.23	824.23
B1	52+65.05	11.125	824.20	824.23
C1	52+75.05	11.125	824.17	824.25
D1	52+85.05	11.125	824.15	824.26
E1	52+95.05	11.125	824.11	824.26
F1	53+05.05	11.125	824.08	824.25
G1	53+15.05	11.125	824.04	824.22
H1	53+25.05	11.125	824.00	824.16
I1	53+35.05	11.125	823.96	824.08
J1	53+45.05	11.125	823.92	823.99
☉ BRG. E. Abut.	53+56.05	11.125	823.88	823.88
BK. E. Abut.	53+59.24	11.125	823.86	823.86

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. Abut.	49+51.56	18.542	823.76	823.76
☉ BRG. W. Abut.	49+54.75	18.542	823.78	823.78
A	49+64.75	18.542	823.82	823.88
B	49+74.75	18.542	823.86	823.98
C	49+84.75	18.542	823.90	824.05
D	49+94.75	18.542	823.93	824.11
E	50+04.75	18.542	823.97	824.14
F	50+14.75	18.542	824.00	824.15
G	50+24.75	18.542	824.03	824.14
H	50+34.75	18.542	824.06	824.13
I	50+44.75	18.542	824.08	824.11
☉ BRG. PIER 1	50+55.75	18.542	824.11	824.11
J	50+65.75	18.542	824.13	824.12
K	50+75.75	18.542	824.15	824.15
L	50+85.75	18.542	824.16	824.18
M	50+95.75	18.542	824.18	824.21
N	51+05.75	18.542	824.19	824.24
O	51+15.75	18.542	824.20	824.25
P	51+25.75	18.542	824.20	824.24
Q	51+35.75	18.542	824.21	824.23
R	51+45.75	18.542	824.21	824.22
☉ BRG. PIER 2	51+56.75	18.542	824.21	824.21
S	51+66.75	18.542	824.21	824.21
T	51+76.75	18.542	824.20	824.23
U	51+86.75	18.542	824.19	824.24
V	51+96.75	18.542	824.18	824.23
W	52+06.75	18.542	824.17	824.22
X	52+16.75	18.542	824.16	824.20
Y	52+26.75	18.542	824.14	824.16
Z	52+36.75	18.542	824.12	824.13
AI	52+46.75	18.542	824.10	824.10
☉ BRG. PIER 3	52+57.75	18.542	824.08	824.08
B1	52+67.75	18.542	824.05	824.08
C1	52+77.75	18.542	824.02	824.09
D1	52+87.75	18.542	823.99	824.11
E1	52+97.75	18.542	823.96	824.11
F1	53+07.75	18.542	823.93	824.10
G1	53+17.75	18.542	823.89	824.06
H1	53+27.75	18.542	823.85	824.00
I1	53+37.75	18.542	823.81	823.93
J1	53+47.75	18.542	823.77	823.83
☉ BRG. E. Abut.	53+58.75	18.542	823.72	823.72
BK. E. Abut.	53+61.94	18.542	823.71	823.71

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

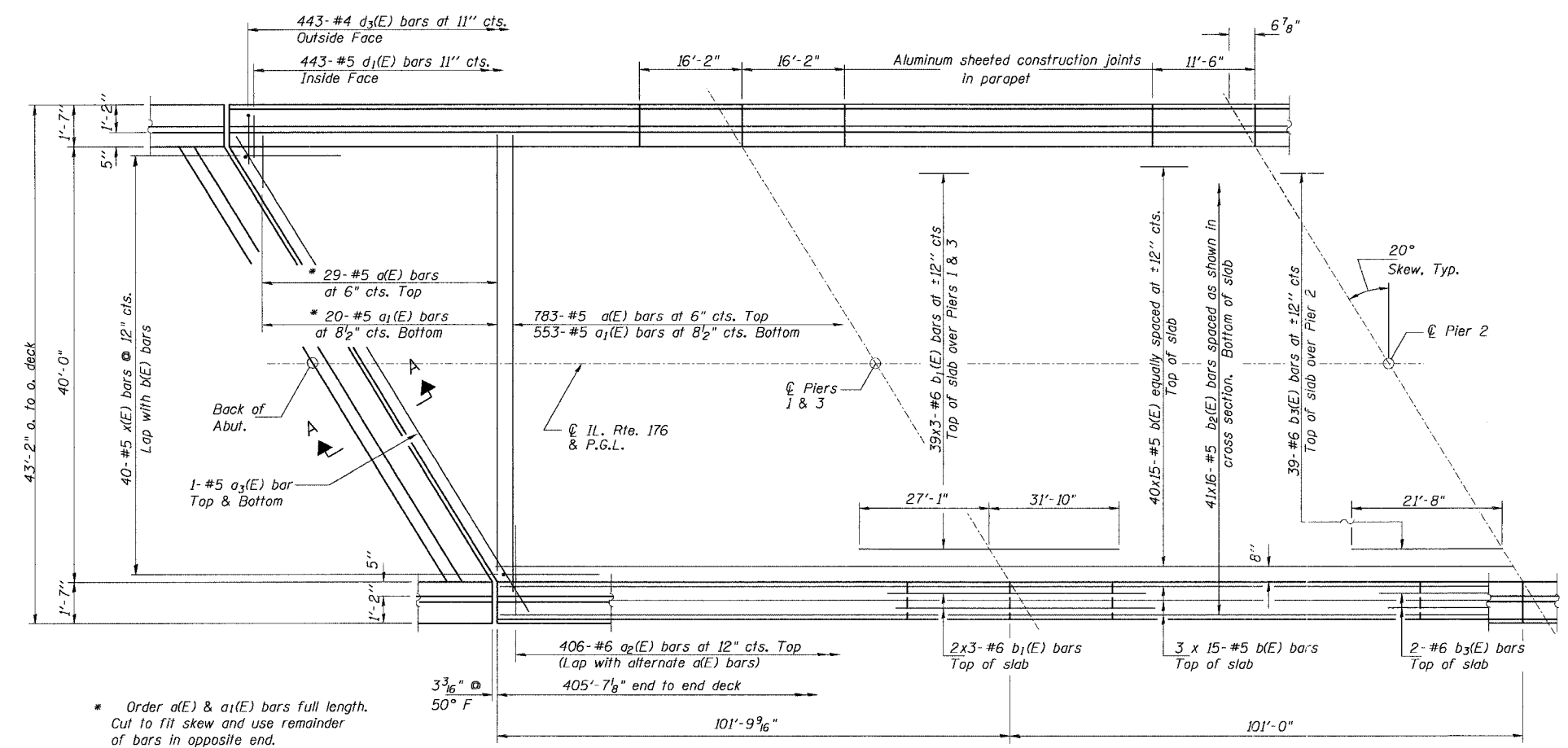
FOR INFORMATION ONLY

TOP OF DECK SLAB ELEVATIONS
(3 OF 3)
IL Route 176 over
South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-1-1
McHENRY COUNTY
STATION 51+50.00
DATE: 06-29-07 S.N. 056-0071
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
533	11 R-1-I-1	McHENRY	19	8
FED. ROAD DIST. YORK	ILLINOIS	FED. AID PROJECT		

SHEET NO. 6 OF 17 SHEETS

Contract #60D29



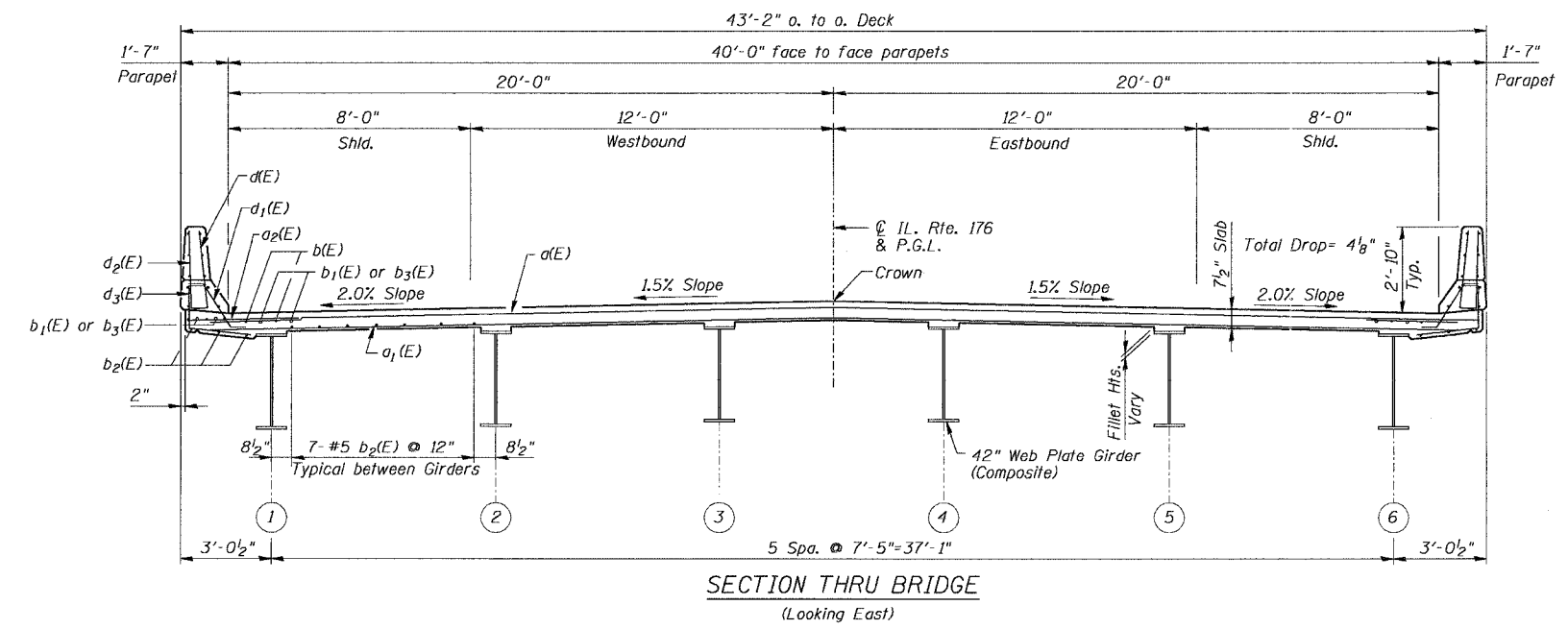
* Order a(E) & a1(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

HALF PLAN

Symmetrical about C of Pier 2

Min. Lap Length

Bars #4	- 1'-8"
Bars #5	- 2'-2"
Bars #6	- 2'-7"
Bars #8	- 4'-6"



SECTION THRU BRIDGE
(Looking East)

- NOTES:
1. See Sheet 7 of 27 for Section A-A, superstructure details and Bill of Material.
 2. Reinforcement bars designated (E) shall be epoxy coated.
 3. Bars indicated thus 20 x 3-#5 indicates 20 lines of bars with 3 lengths per line.
 4. See Sheet 7 of 27 for parapet reinforcement.
 5. For location of Floor Drains, See Sheet 1 of 27.

FOR INFORMATION ONLY

DECK PLAN AND CROSS SECTION
IL Route 176 over South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-I-1
McHENRY COUNTY
STATION 51+50.00
DATE: 06-29-07 S.N. 056-0071
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

DESIGNED	S.D.H.
CHECKED	S.S.T.
DRAWN	E.B.
CHECKED	S.D.H.

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
533	11 R-1-1-1	McHenry	19	9
FED. ROAD DIST. XXXX	ILLINOIS	FED. ROAD PROJECT		

Contract #60D29

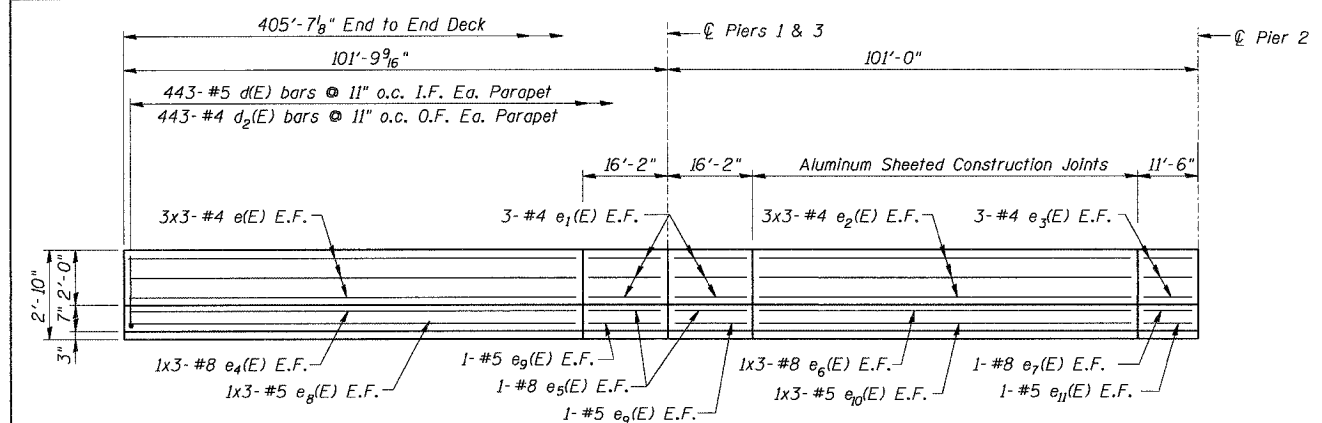
SHEET NO. 7 OF 17 SHEETS

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	812	#5	42'-6"	—
a ₁ (E)	573	#5	42'-2"	—
a ₂ (E)	812	#6	4'-6"	—
a ₃ (E)	4	#5	44'-3"	—
b(E)	690	#5	29'-1"	—
b ₁ (E)	258	#6	21'-5"	—
b ₂ (E)	656	#5	27'-5"	—
b ₃ (E)	43	#6	43'-4"	—
d(E)	886	#5	3'-0"	┌
d ₁ (E)	886	#5	2'-5"	└
d ₂ (E)	886	#4	3'-0"	┌
d ₃ (E)	886	#4	3'-7"	└
e(E)	72	#4	29'-7"	—
e ₁ (E)	48	#4	15'-10"	—
e ₂ (E)	72	#4	25'-6"	—
e ₃ (E)	24	#4	11'-2"	—
e ₄ (E)	24	#8	31'-6"	—
e ₅ (E)	16	#8	15'-10"	—
e ₆ (E)	24	#8	27'-4"	—
e ₇ (E)	8	#8	11'-2"	—
e ₈ (E)	24	#5	29'-11"	—
e ₉ (E)	16	#5	15'-10"	—
e ₁₀ (E)	24	#5	25'-10"	—
e ₁₁ (E)	8	#5	11'-2"	—
x(E)	80	#5	4'-1"	┌

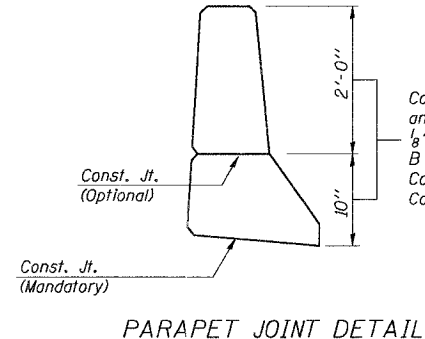
Floor Drains	Each	47
Concrete Superstructure	Cu. Yd.	509.0
Bridge Deck Grooving	Sq. Yd.	1,803
Protective Coat	Sq. Yd.	2,139
Reinforcement Bars, Epoxy Coated	Pound	136,670

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1 x 3-#5 etc. indicates 1 line of bars with 3 lengths per line.



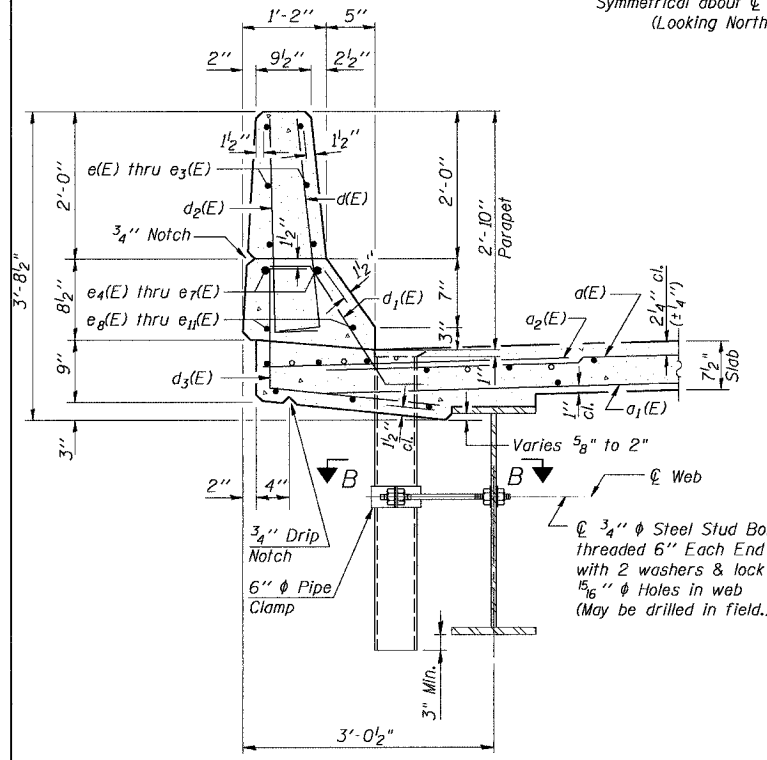
HALF PARAPET INSIDE ELEVATION

Symmetrical about Pier 2
(Looking North)



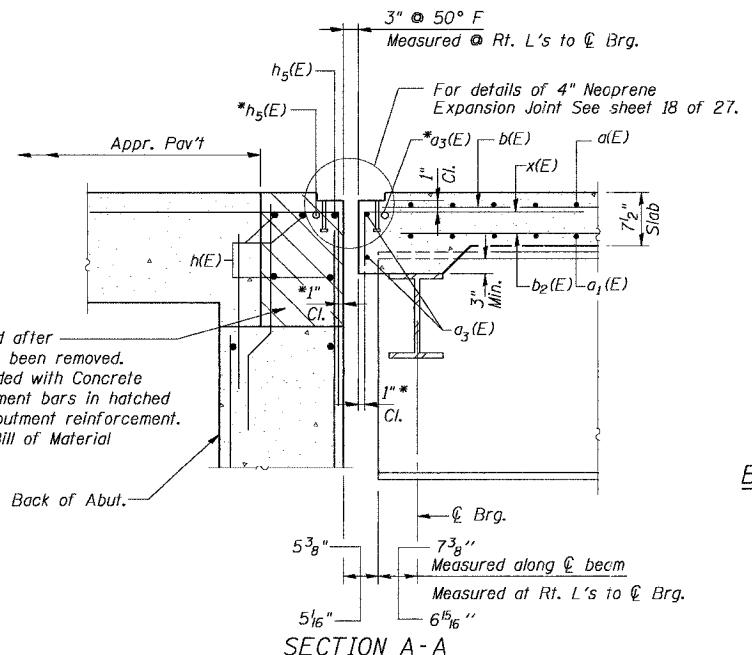
PARAPET JOINT DETAIL

Const. Joints at Piers and locations as shown
1/8\"/>



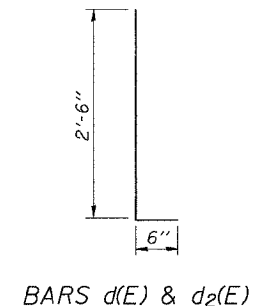
SECTION THRU PARAPET

Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure. Reinforcement bars in hatched area are billed with the abutment reinforcement. See Sheet 14 of 27 for Bill of Material

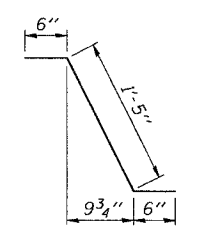


SECTION A-A

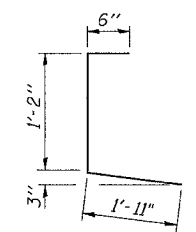
* Place a₃(E) and h₅(E) bars in back of anchor bolt as shown if required to maintain 1\"/>



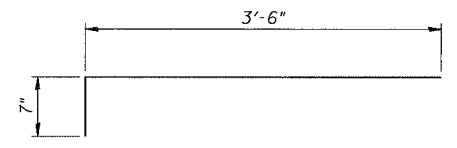
BARS d(E) & d₂(E)



BAR d₁(E)

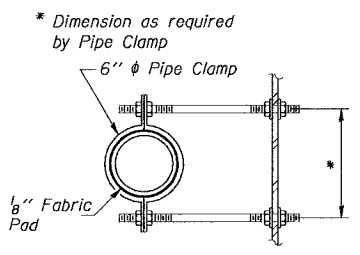


BAR d₃(E)

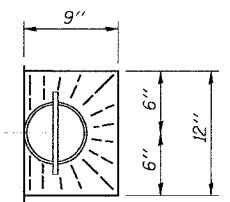


BAR x(E)

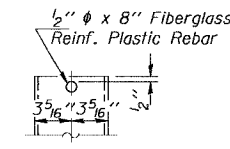
DESIGNED	S.D.H.
CHECKED	S.S.T.
DRAWN	E.B.
CHECKED	S.D.H.



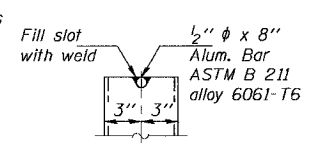
SECTION B-B



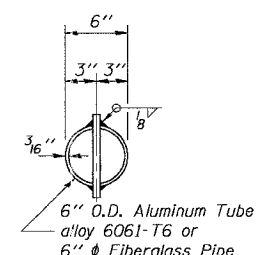
TOP PLAN



FIBERGLASS PIPE



ALUMINUM TUBE



TOP PLAN (Showing Aluminum Tube)

Notes:
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Steel Structures Painting Council's Spec. SSPC-SP1 prior to painting.
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

FOR INFORMATION ONLY

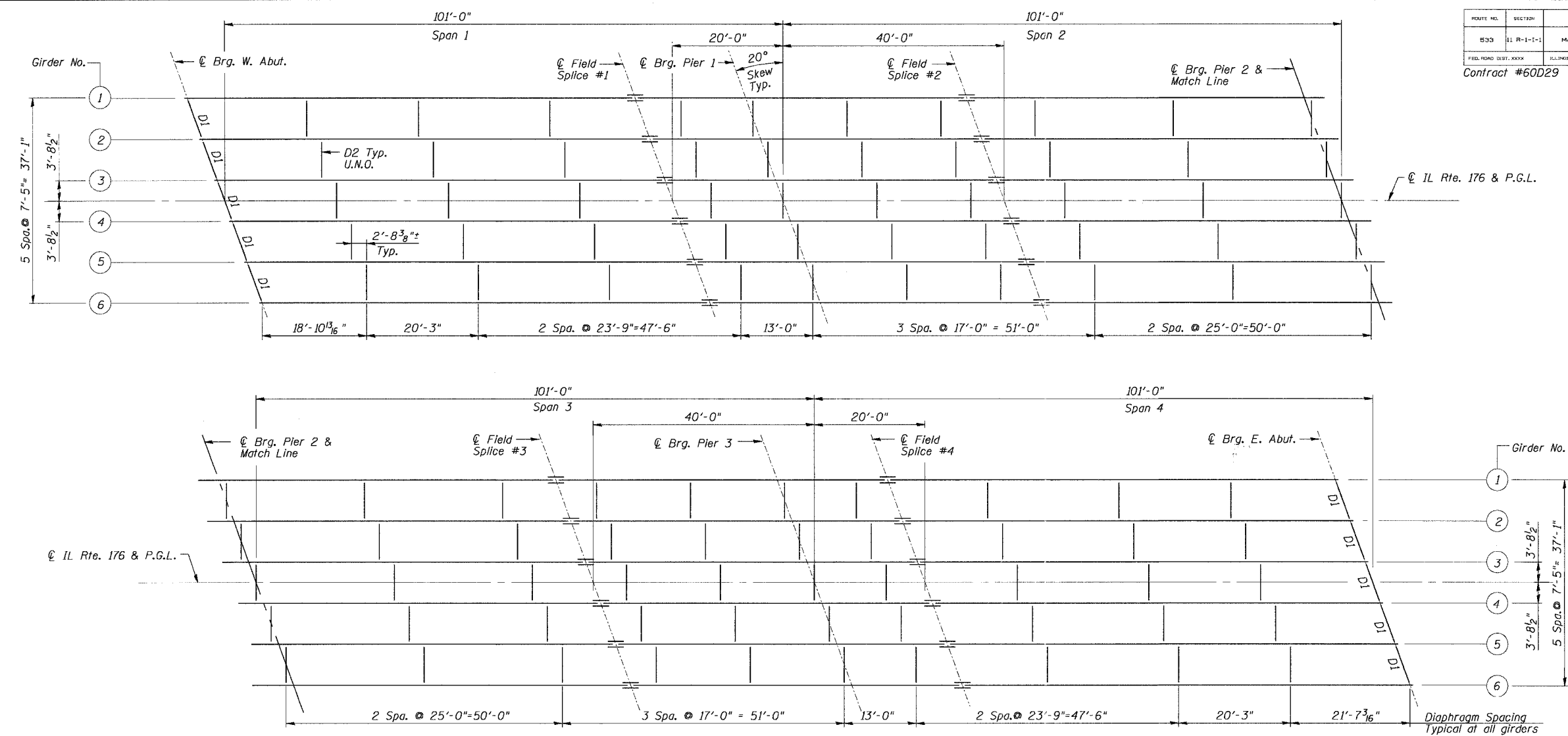
DECK DETAILS
IL Route 176 over South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-1-1
McHENRY COUNTY
STATION 51+50.00
DATE: 06-29-07 S.N. 056-0071
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
533	11 R-1-1-1	McHenry	19	18
FED. ROAD DIST. XXXX		ILLINOIS	FED. AID PROJECT	

Contract #60D29

SHEET NO. 8 OF 17 SHEETS



FRAMING PLAN

	0.4 Sp. 1 & 0.6 Sp. 4	Pier 1 & Pier 3	0.5 Sp. 2 & 0.5 Sp. 3	Pier 2
I_s (in ⁴)	13635	20816	13962	13962
I_c (in ⁴)	37633	-	32950	-
I_c (3n) (in ⁴)	27184	-	24684	-
S_s (in ³)	728.8	930.1	638.1	638.1
S_c (in ³)	1013.0	-	859.9	-
S_c (3n) (in ³)	931.6	-	790.6	-
\bar{D} (k/ft.)	0.89	1.45	0.90	1.41
$M\bar{D}$ (k)	642	1600	295	930
$S\bar{D}$ (k/ft.)	0.51	-	0.51	-
$M_s\bar{D}$ (k)	415	-	221	-
M_t (k)	869	630	750	518
M (Imp) (k)	192	139	166	115
$S_3[M_t + M(imp)]$ (k)	1768	1282	1527	1055
M_a (k)	3678	3749	2662	2582
M_u (k)	4210	-	4276	-
$f_s\bar{D}$ non-comp (k.s.i.)	10.58	20.65	5.56	17.48
$f_s\bar{D}$ (comp) (k.s.i.)	5.34	-	3.36	-
$f_s\bar{D}_3(4 + imp)$ (k.s.i.)	20.95	16.52	21.31	19.82
f_s (Overload) (k.s.i.)	36.87	37.17	30.23	37.30
f_s (Total) (k.s.i.)	-	48.36	-	48.55
VR (k)	57.48	-	50.47	-

	E. & W. Abut.	Pier 1 & 3	Pier 2
$R\bar{D}$ (k)	54.1	164.5	127.3
R_t (k)	43.2	69.1	65.3
Imp. (k)	9.6	15.3	14.5
R (Total) (k)	106.9	248.9	207.1

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 $I_{c(n)}$ and $S_{c(n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 $I_{c(3n)}$ and $S_{c(3n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads.
 VR is the maximum Live Load + Impact shear range in span.

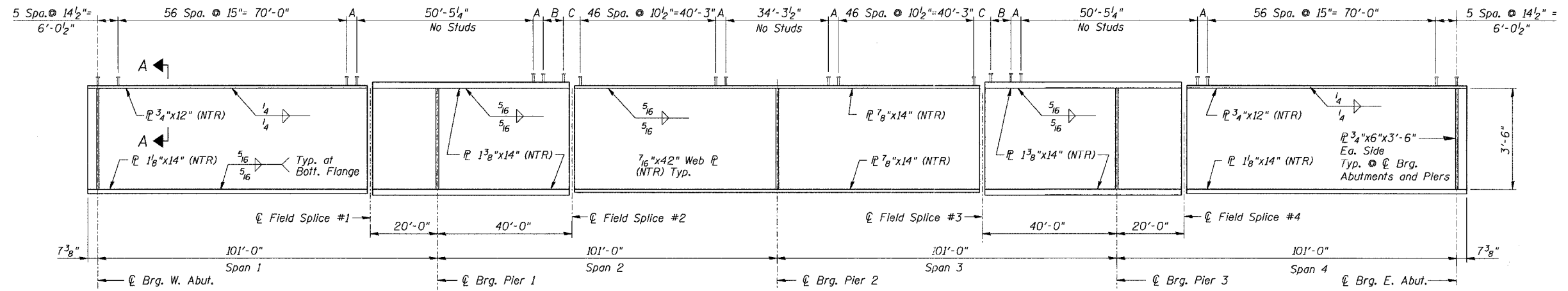
Note:
 Work this Sheet with Sheets 9 and 10 of 17.

M_a (Applied Moment) = $1.3(M\bar{D} + M_s\bar{D} + S_3(M_t + M(imp)))$.
 The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to $M\bar{D} + M_s\bar{D} + S_3(M_t + M(imp))$.
 f_s (Total) (Non-compact section) is the sum of the stresses due to $1.3(M\bar{D} + M_s\bar{D} + S_3(M_t + M(imp)))$.

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

FRAMING PLAN
 IL Route 176 over
 South Branch of the Kishwaukee River
 F.A.P. RTE 533, SECTION 11 R-1-1-1
 McHENRY COUNTY
 STATION 51+50.00
 DATE: 06-29-07 S.N. 056-0071
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
 CHICAGO ILLINOIS

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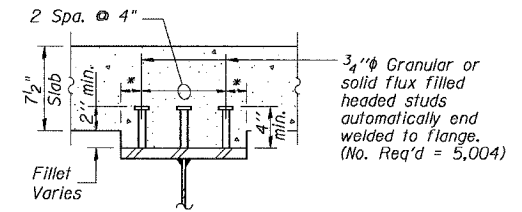
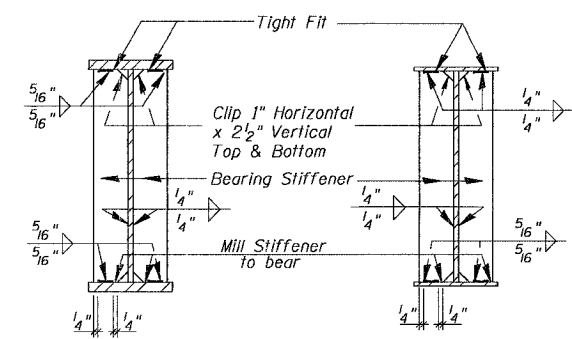


A = 5 Spacing @ 4" = 1'-8"
 B = 11 Spacing @ 10 1/2" = 9'-7 1/2"
 C = 3'-6" (See Field Splice #2 and #3 Detail on Sheet 10 of 17)

GIRDER ELEVATION

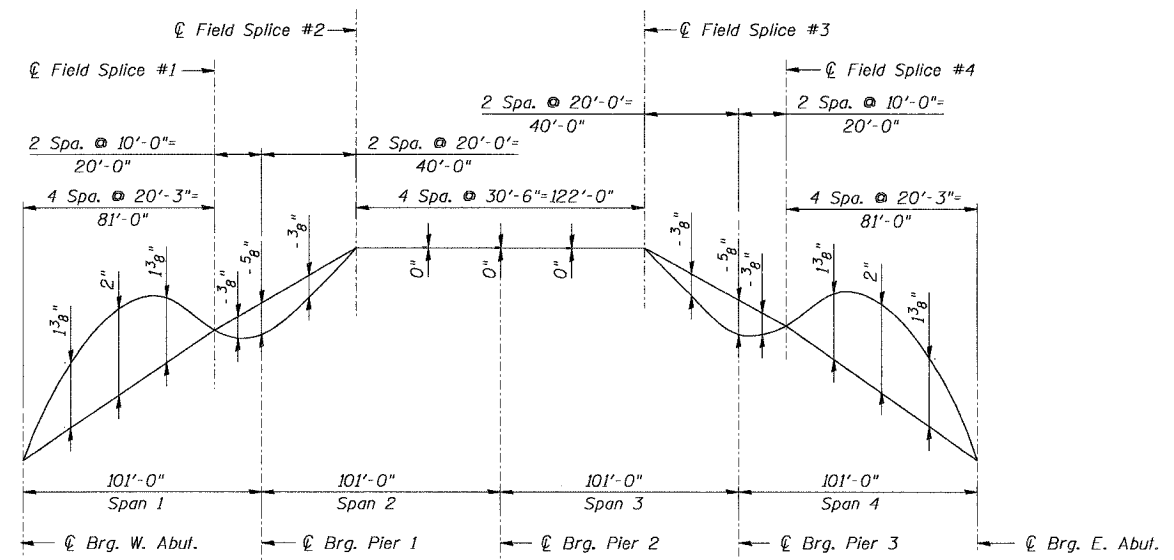
TOP OF GIRDER WEB ELEVATIONS
 (For Fabrication Use Only)

Girder No.	℄ Brg. W. Abut.	Splice #1	℄ Brg. Pier 1	Splice #2	℄ Brg. Pier 2	Splice #3	℄ Brg. Pier 3	Splice #4	℄ Brg. E. Abut.
1	822.971	823.225	823.216	823.342	823.355	823.361	823.247	823.262	823.026
2	823.126	823.376	823.366	823.490	823.499	823.501	823.385	823.399	823.159
3	823.248	823.495	823.484	823.605	823.610	823.609	823.490	823.503	823.260
4	823.260	823.503	823.490	823.609	823.610	823.605	823.484	823.495	823.248
5	823.159	823.399	823.385	823.501	823.499	823.490	823.366	823.376	823.126
6	823.026	823.262	823.247	823.361	823.355	823.342	823.216	823.225	822.971



* = 2" for 12" wide flange
 * = 3" for 14" wide flange

- Notes:
1. Work this Sheet with Sheets 8 and 10 of 17.
 2. NTR denotes steel subject to supplemental Requirements for Notch Toughness (Zone 2).
 3. All Structural Steel on this Sheet shall be AASHTO M270 Grade 50 Steel.
 4. Longitudinal dimensions for Girder are shown horizontal, exclusive of rise.
 5. Stud Shear Connectors not included in this Contract.



CAMBER DIAGRAM

Camber includes correction for vertical curve.
 Upward camber is positive.

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

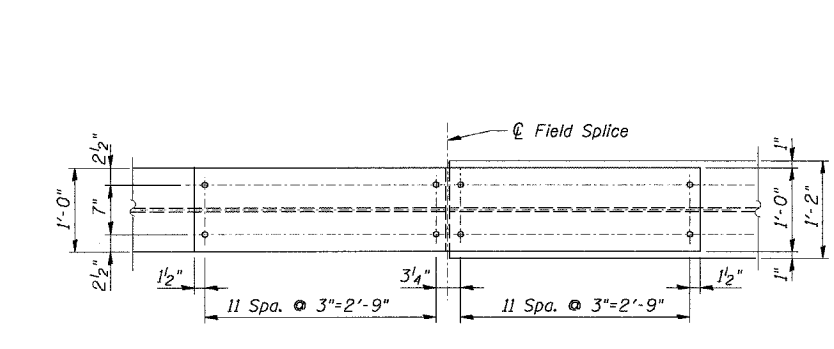
BILL OF MATERIAL

Item	Unit	Quantity
Furnishing Structural Steel	L. Sum	1

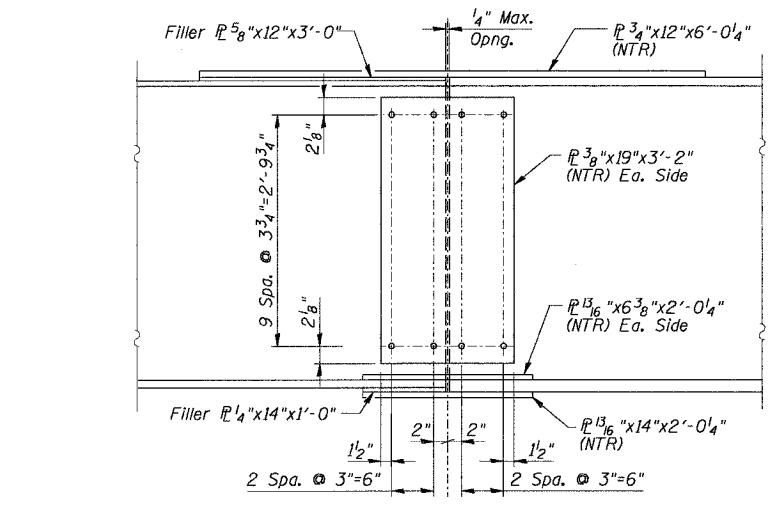
GIRDER ELEVATION
 IL Route 176 over
 South Branch of the Kishwaukee River
 F.A.P. RTE 533, SECTION 11 R-1-1-1
 McHENRY COUNTY
 STATION 51+50.00
 DATE: 06-29-07 S.N. 056-0071
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
 CHICAGO ILLINOIS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
533	11 R-1-1-1	McHenry	19	12
FED. ROAD DIST. AREA		ILLINOIS	FED. AID PROJECT	
Contract #60D29				

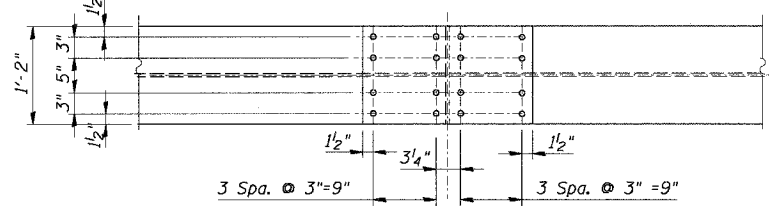
SHEET NO. 10 OF 17 SHEETS



TOP PLAN

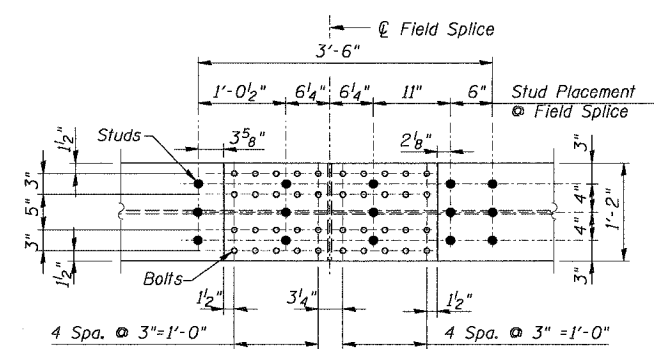


ELEVATION

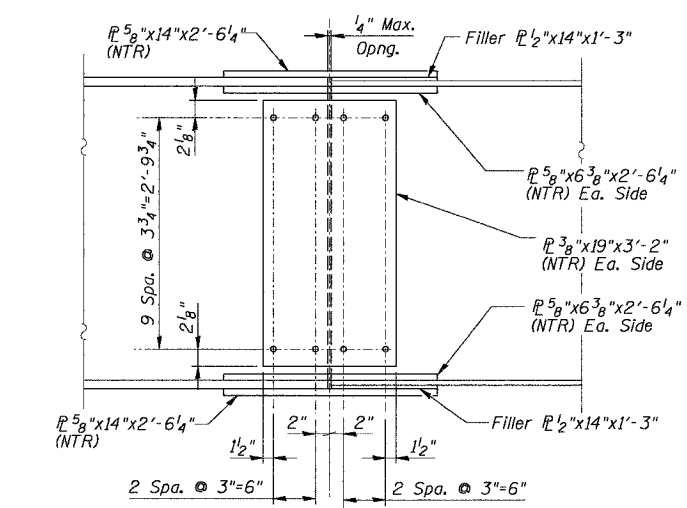


BOTTOM PLAN

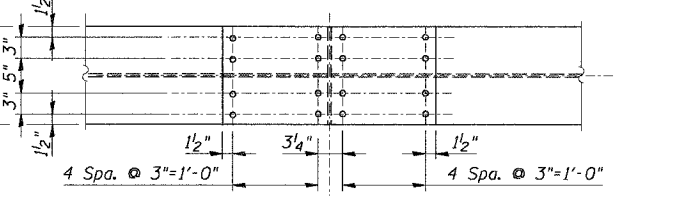
FIELD SPLICE #1
FIELD SPLICE #4 (OPP. HAND)



TOP PLAN



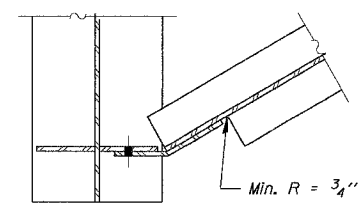
ELEVATION



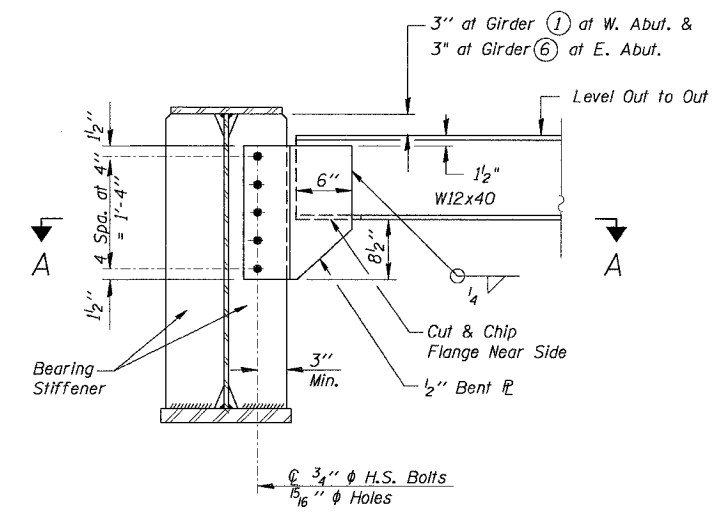
BOTTOM PLAN

FIELD SPLICE #2
FIELD SPLICE #3 (OPP. HAND)

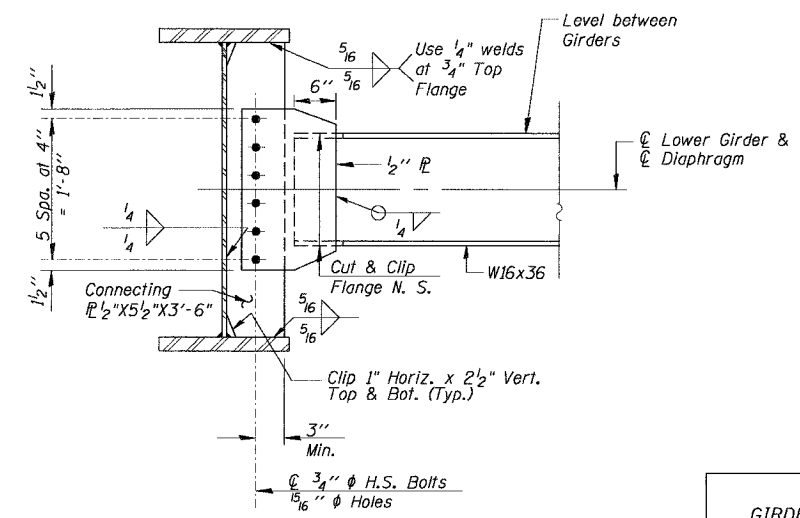
- Notes:
- Two hardened washers shall be required over all oversized holes.
 - All Structural Steel on this Sheet shall be AASHTO M270 Grade 50 except diaphragms and diaphragm connecting plates which shall be AASHTO M270 Grade 36.
 - NTR denotes steel subject to supplemental requirements for Notch Toughness (Zone 2)
 - Stud Shear Connectors not included in this Contract.



SECTION A-A



END DIAPHRAGM, D1
10 Required



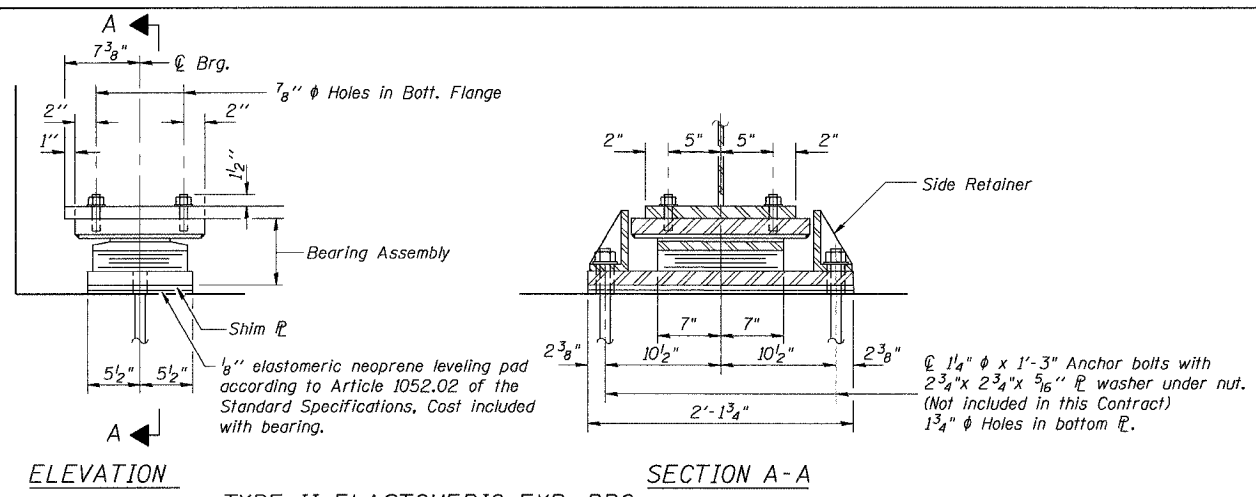
INTERIOR DIAPHRAGM, D2
95 Required

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

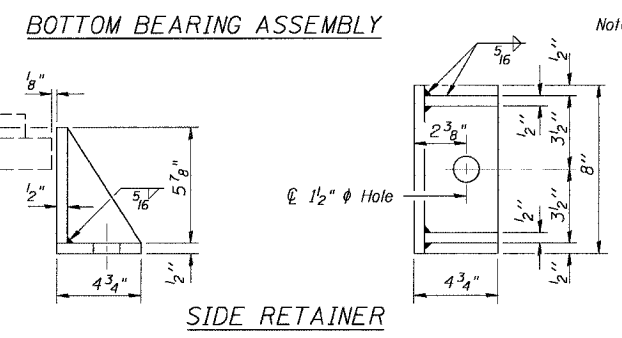
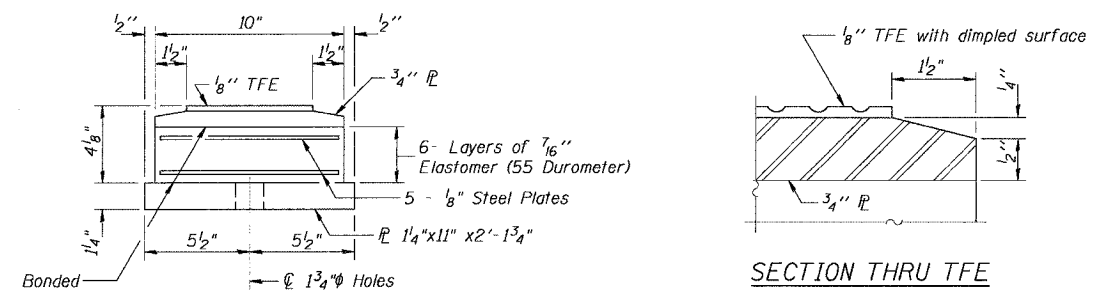
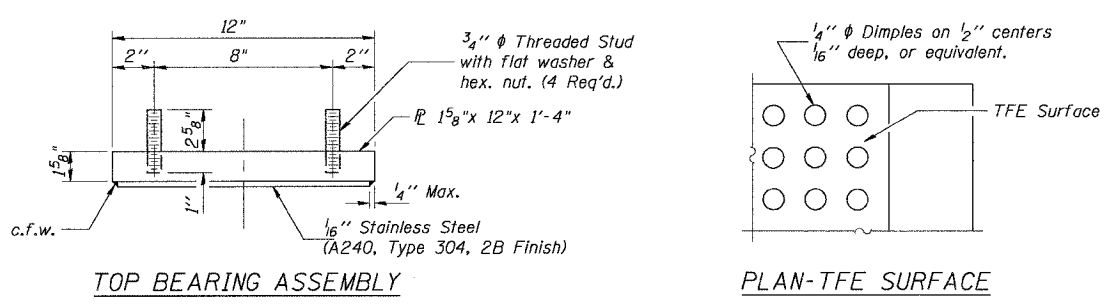
GIRDER AND FRAMING DETAILS
IL Route 176 over
South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-1-1
McHENRY COUNTY
STATION 51+50.00
DATE: 06-29-07 S.N. 056-0071
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
533	11 R-1-1-1	McHenry	19	13
FED. ROAD DIST. XXXX		ILLINOIS		FED. AID PROJECT



TYPE II ELASTOMERIC EXP. BRG. AT ABUTMENTS



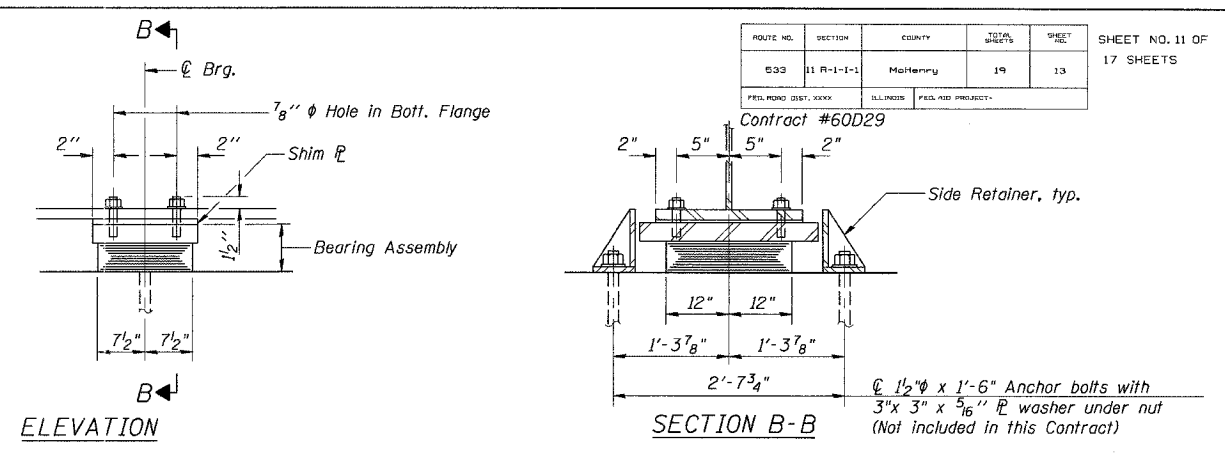
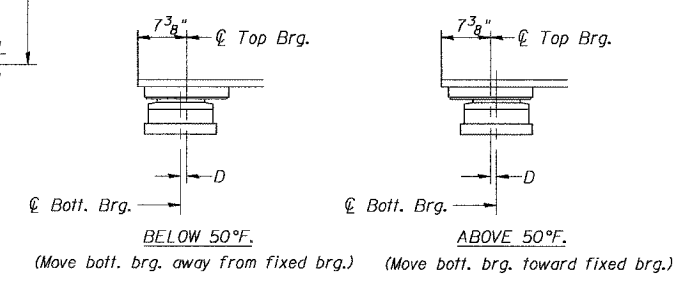
DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

BILL OF MATERIAL

Item	Unit	Total
Furnishing Elastomeric Bearing Assembly, Type II	Each	12

Notes: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

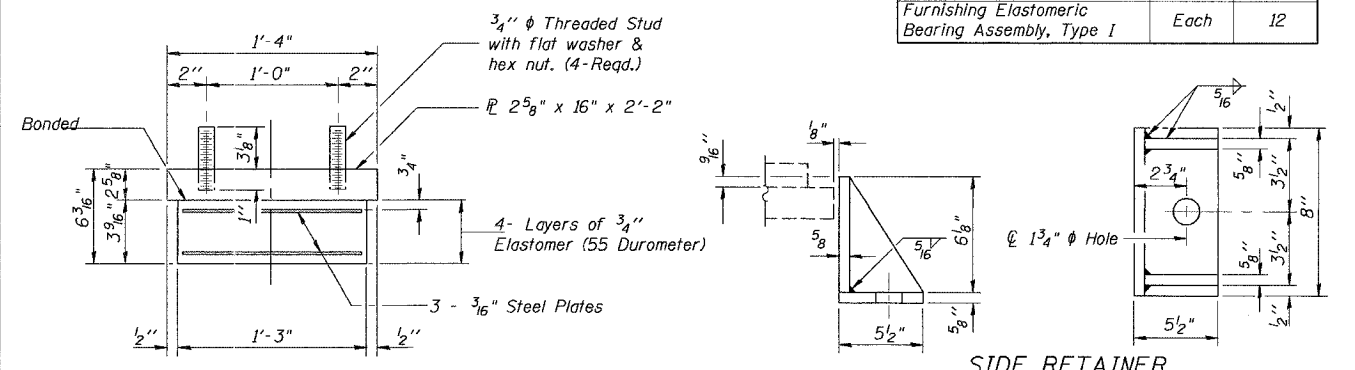
Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



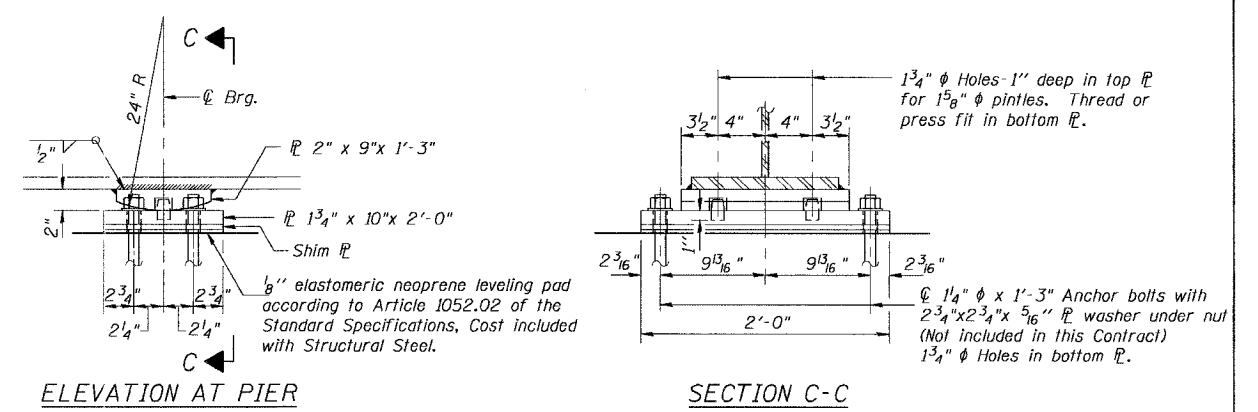
TYPE I ELASTOMERIC EXP. BRG. AT PIER 1 & 3

BILL OF MATERIAL

Item	Unit	Total
Furnishing Elastomeric Bearing Assembly, Type I	Each	12

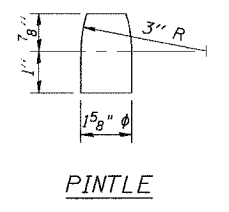


Note: Shim plates shall not be placed under Bearing Assembly.



FIXED BEARING AT PIER 2 (6 Req'd)

Notes: Anchor bolts at fixed bearings may be built into the masonry. All Structural Steel on this sheet to be AASHTO M-270, Grade 50 Unless Noted Otherwise.

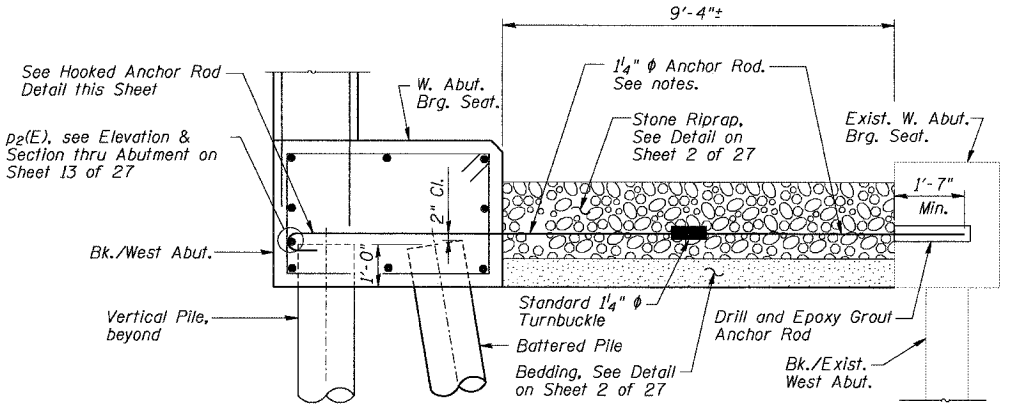
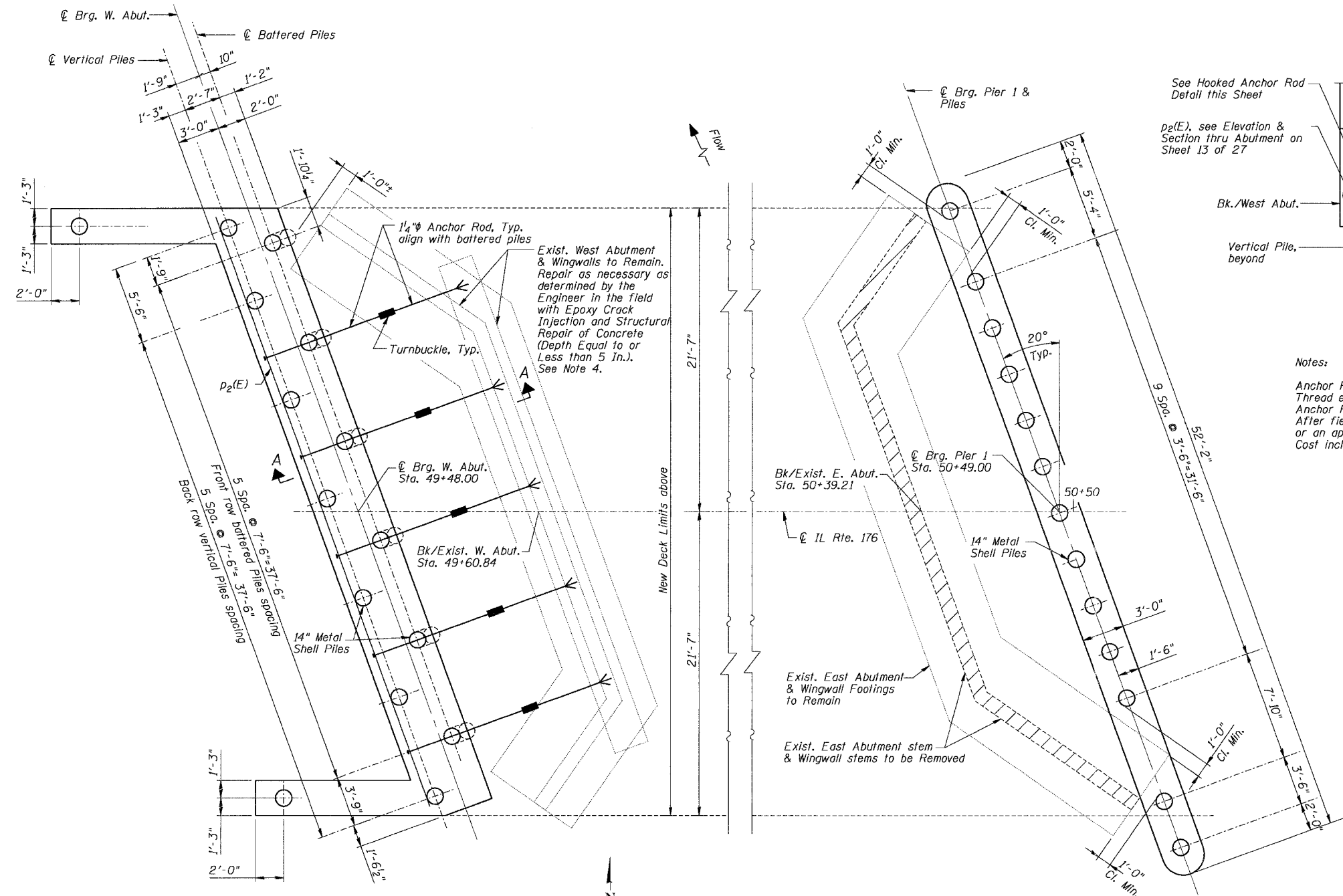


ELASTOMERIC EXPANSION & FIXED BEARINGS

IL Route 176 over South Branch of the Kishwaukee River F.A.P. RTE 533, SECTION 11 R-1-1-1 McHENRY COUNTY STATION 51+50.00 DATE: 06-29-07 S.N. 056-0071 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC ILLINOIS CHICAGO

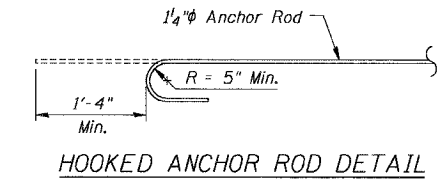
ROUTE NO.	SECTION	COUNTY	DATE SHEETS	SHEET NO.	SHEET NO. 12 OF 17 SHEETS
533	11 R-1-I-1	McHenry	19	14	
FED. ROAD DIST. XXXX		ILLINOIS		FED. AID PROJECT	

Contract #60D29



SECTION A-A

Notes:
 Anchor Rods shall conform to the requirements of AASHTO M 270, Grade 36. Thread end of Anchor Rod at Turnbuckle min. 9". Anchor Rods and Turnbuckle shall be given one shop coat of Inorganic Zinc Rich Primer. After field installation, tied Anchor Rods and Turnbuckle shall be wrapped with "Tapecoat-CT" or an approved equal in accordance with the manufacturer's recommendations. Cost included in payment for Pay Item "Furnishing and Installing Tied Anchor Rod Assembly".



BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	20
Structural Repair of Concrete (Depth Equal to or Less than 5 In.)	Sq. Ft.	20
Furnishing and Installing Tied Anchor Rod Assembly	Each	5

FOR INFORMATION ONLY

WEST ABUTMENT & PIER 1
 PILE LAYOUT
 IL Route 176 over
 South Branch of the Kishwaukee River
 F.A.P. RTE 533, SECTION 11 R-1-I-1
 McHENRY COUNTY
 STATION 51+50.00
 DATE: 06-29-07 S.N. 056-0071
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
 CHICAGO ILLINOIS

LEGEND

	- Existing Structure to remain in place
	- Existing Structure to be removed
	- New Structures

- Notes:
1. Work this Sheet with Sheets 13 and 15 of 27.
 2. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
 3. Top of exist. abutments are braced by exist. superstructure. Removal of existing superstructure shall not occur until top of Existing West Abutment has been secured to New West Abutment. See Section A-A this Sheet.
 4. Quantities for Epoxy Crack Injection and Structural Repair of Concrete (Depth Equal to or Less than 5 In.) have been estimated. Actual quantities will be determined by the Engineer in the field. Payment will be made for actual quantities furnished.

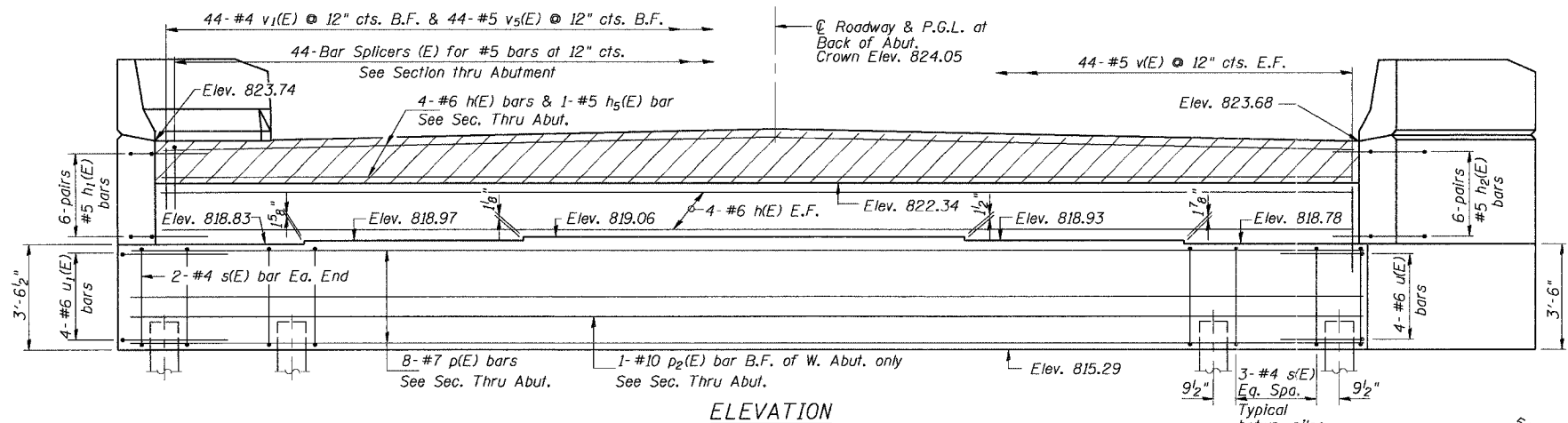
DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

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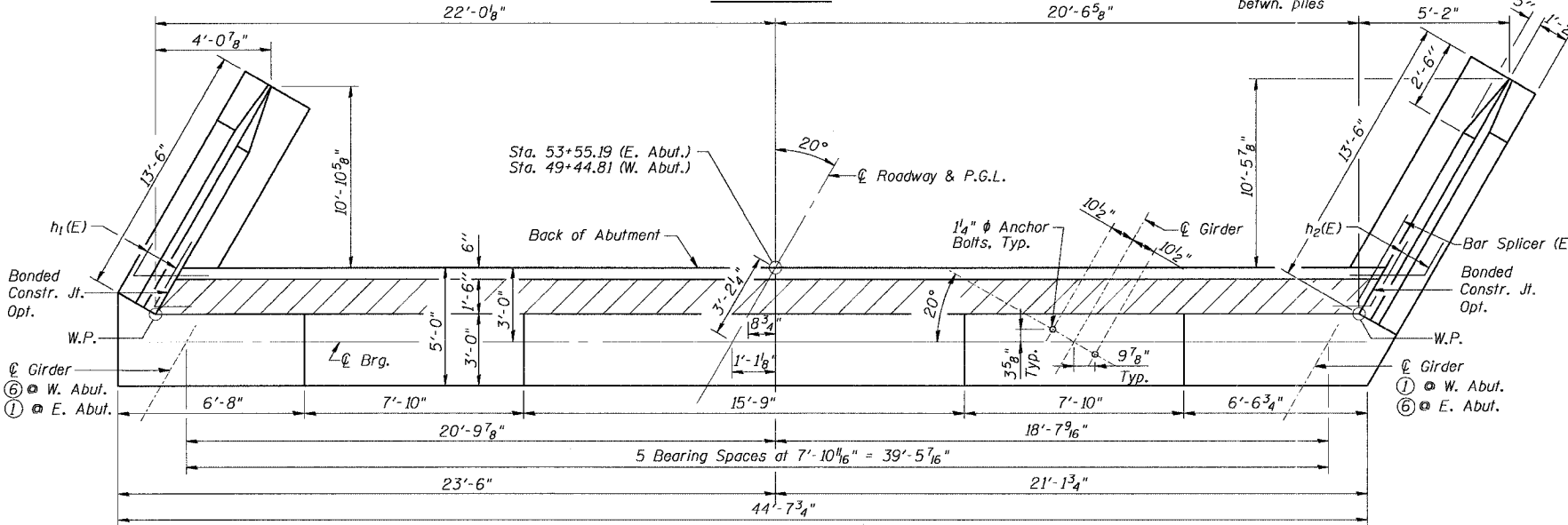
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
533	11 R-1-1-1	McHenry	19	15
FED. ROAD DIST. XXXX		BALANCE	FED. AID PROJECT	

Contract #60D29

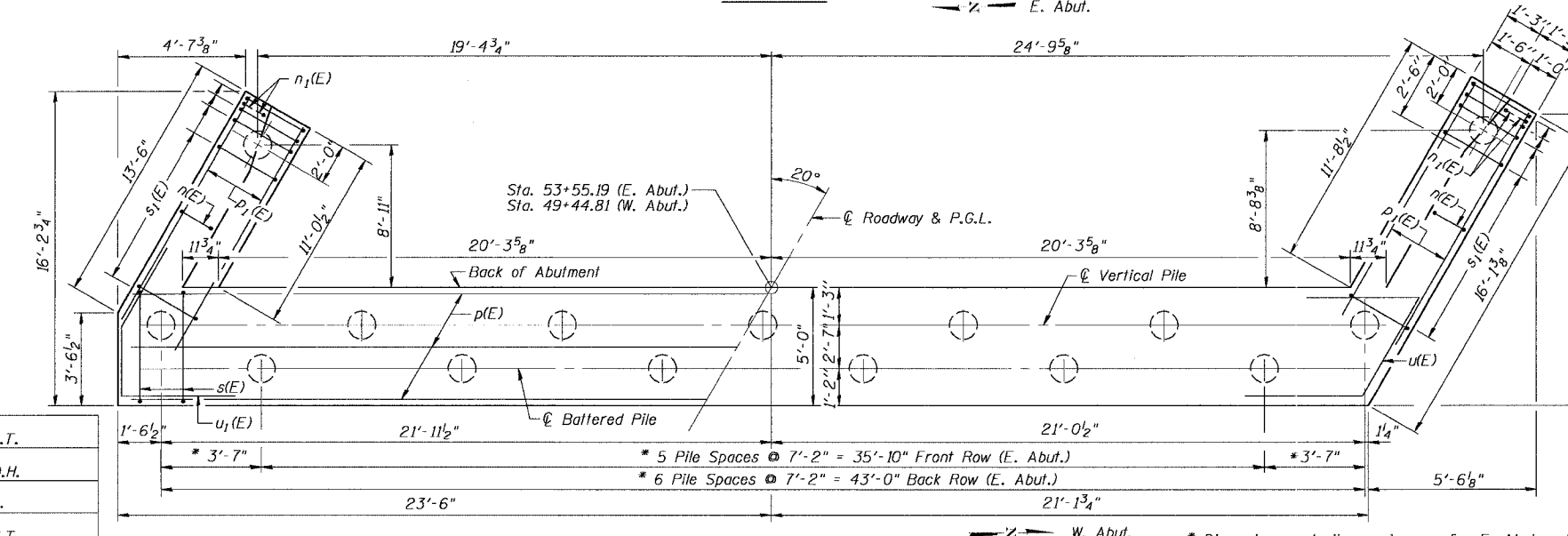
SHEET NO. 13 OF 17 SHEETS



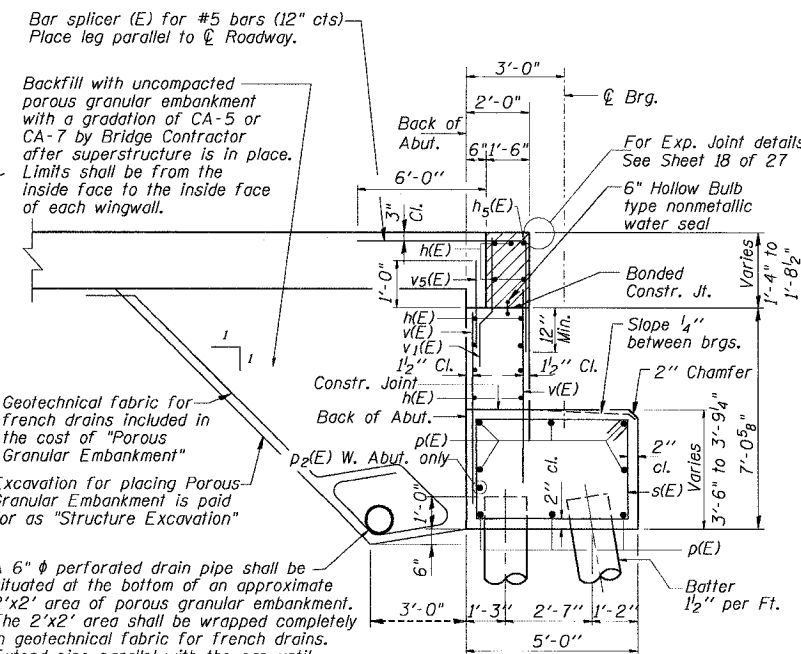
ELEVATION



TOP VIEW



PLAN-PILE CAP



SECTION THRU ABUT.

Backfill with uncompacted porous granular embankment with a gradation of CA-5 or CA-7 by Bridge Contractor after superstructure is in place. Limits shall be from the inside face to the inside face of each wingwall.

Geotechnical fabric for French drains included in the cost of "Porous Granular Embankment"

Excavation for placing Porous Granular Embankment is paid for as "Structure Excavation"

A 6" ϕ perforated drain pipe shall be situated at the bottom of an approximate 2'x2' area of porous granular embankment. The 2'x2' area shall be wrapped completely in geotechnical fabric for french drains. Extend pipe parallel with the cap until intersecting with the sideslope. Pipes shall drain onto concrete headwalls (Article 601.05 of the Standard Specifications and Highway Standard 60110). Included in the cost of "Porous Granular Embankment".

- Notes:
- Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure. For additional details of reinforcement bars at hatched area, see Section A-A on Sheet 7 of 27.
 - Space reinforcement in cap to miss anchor bolts.
 - Pour steps monolithically with cap.
 - For anchor rods at W Abut., See Partial Plan & Section A-A on Sheet 12 of 27.

PILE DATA

Type: 14" Metal Shell Pile
 Capacity: 50 Tons
 Est. Length: 79 Ft. \odot E. Abut.
 55 Ft. \odot W. Abut.
 No. Required: 14 + 1 Test Pile \odot E. Abut.
 14 + 1 Test Pile \odot W. Abut.

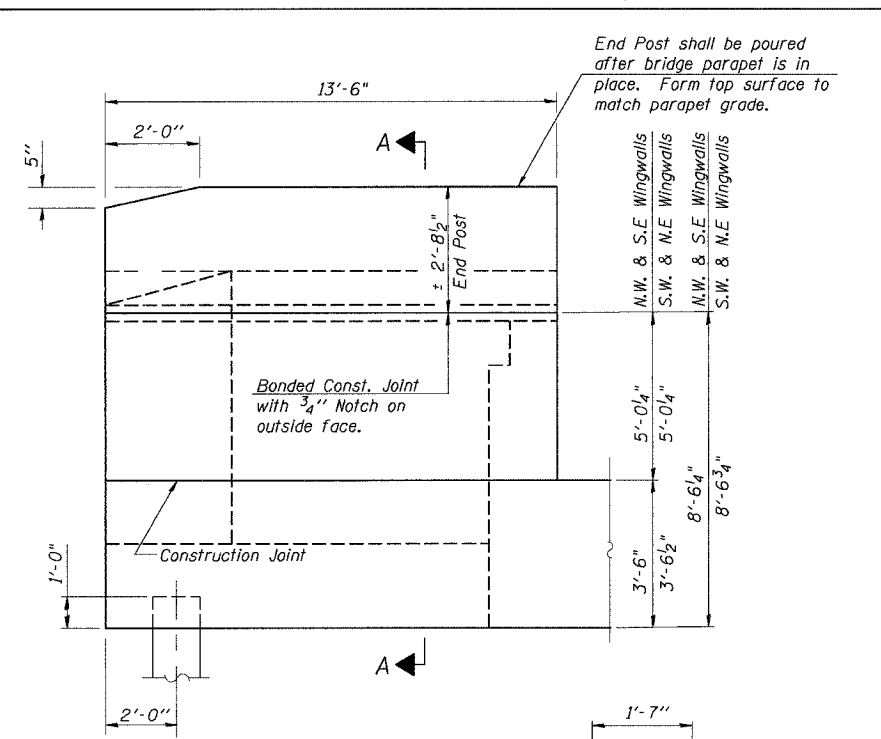
* Dimensions and pile spacing are for E. Abut. only. See Sheet 12 of 27 for pile location at W. Abut.

FOR INFORMATION ONLY

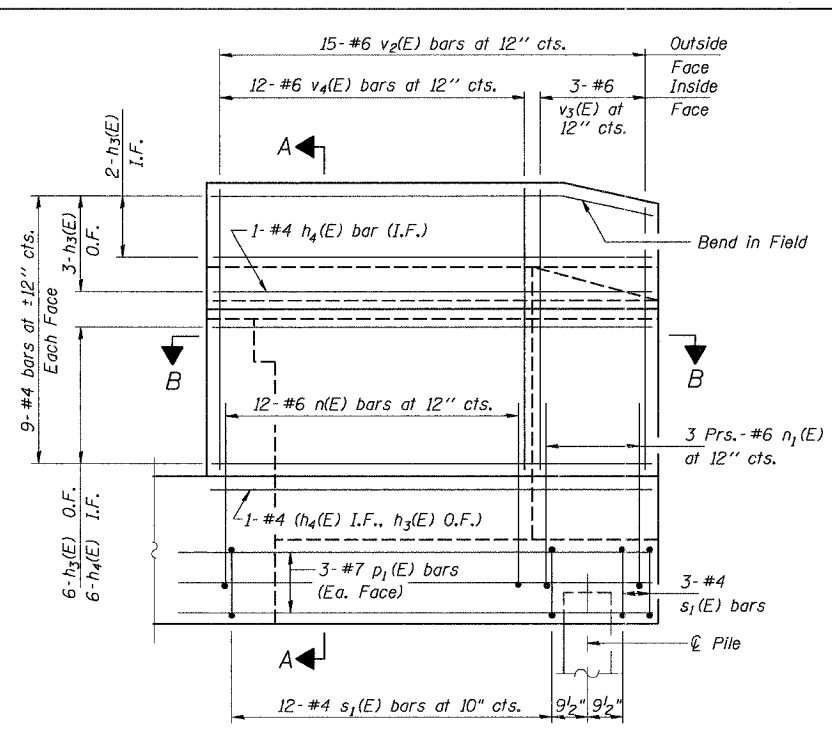
WEST & EAST ABUTMENTS
 IL Route 176 over
 South Branch of the Kishwaukee River
 F.A.P. RTE 533, SECTION 11 R-1-1-1
 McHENRY COUNTY
 STATION 51+50.00
 DATE: 06-29-07 S.N. 056-0071
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
 CHICAGO ILLINOIS

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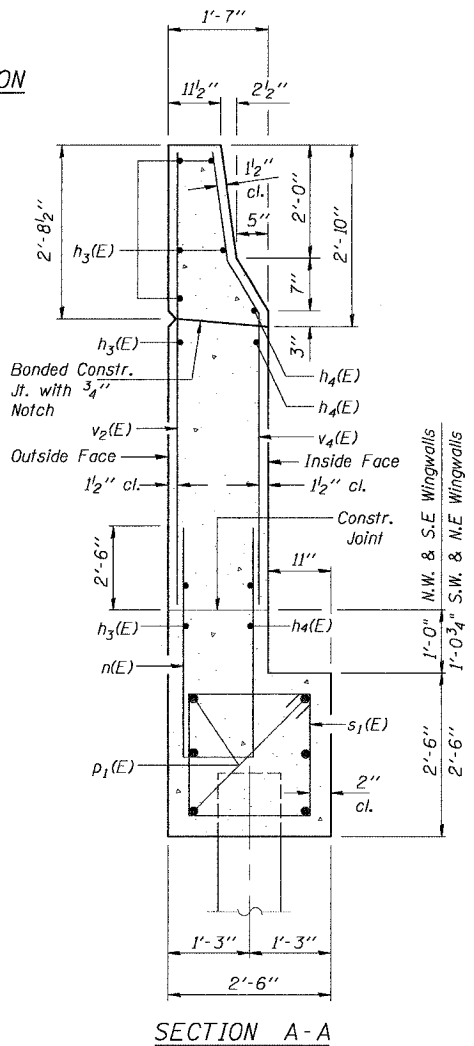
DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.



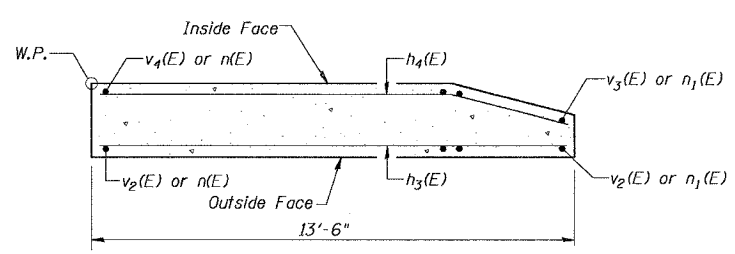
WING WALL ELEVATION
Showing Dimensions



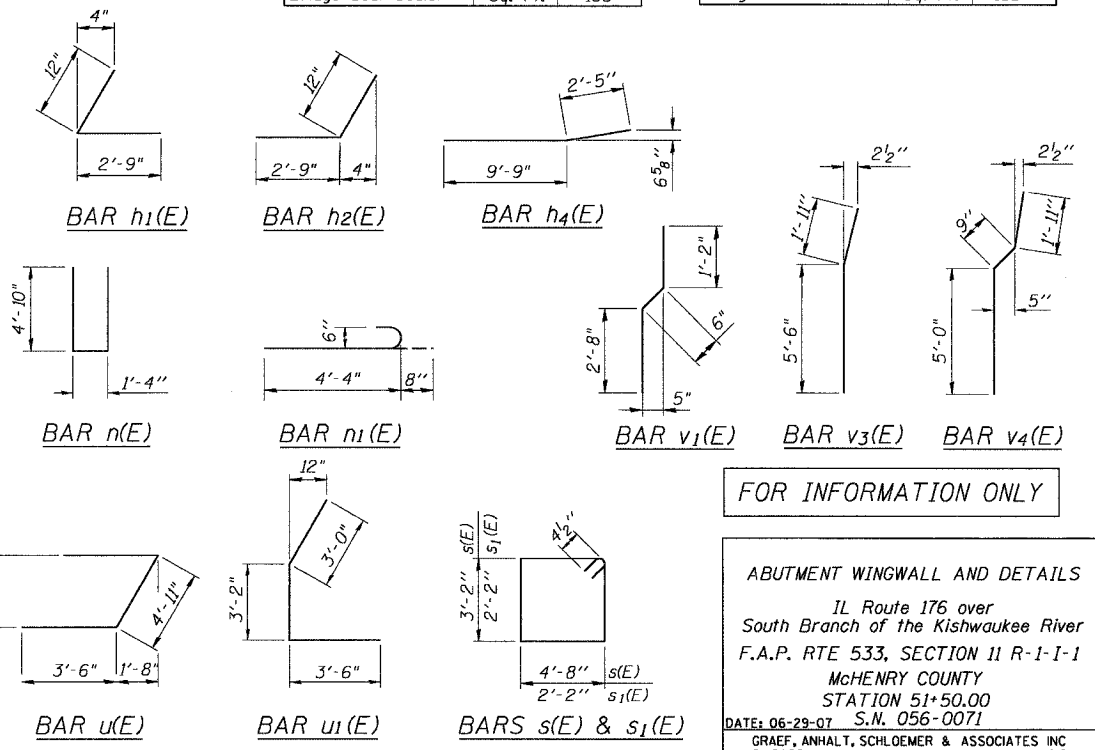
WING WALL ELEVATION
Showing Reinforcement



SECTION A-A



SECTION B-B



- Notes:
1. Reinforcement bars designated (E) shall be epoxy coated.
 2. Quantity of concrete in end post included with Concrete Superstructure on sheet 7 of 27.

EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	12	#6	42'-3"	
h1(E)	12	#5	3'-9"	L
h2(E)	12	#5	3'-9"	L
h3(E)	24	#4	12'-2"	
h4(E)	16	#4	12'-2"	
h5(E)	1	#5	42'-3"	
n(E)	24	#6	11'-0"	
n1(E)	12	#6	5'-0"	
p(E)	8	#7	44'-3"	
p1(E)	12	#7	13'-2"	
s(E)	40	#4	16'-5"	□
s1(E)	30	#4	11'-5"	□
u(E)	4	#6	11'-11"	L
u1(E)	4	#6	9'-8"	L
v(E)	88	#5	5'-3"	
v1(E)	44	#4	3'-0"	
v2(E)	30	#6	7'-6"	
v3(E)	6	#6	7'-5"	
v4(E)	24	#6	7'-8"	
v5(E)	44	#5	2'-6"	
Porous Granular Embankment		Cu. Yd.	83	
Structure Excavation		Cu. Yd.	106	
Concrete Structures		Cu. Yd.	55.0	
Reinforcement Bars, Epoxy Coated		Pound	4,920	
Bar Splicers		Each	44	
Furnishing Metal Shell Piles 14"		Foot	770	
Driving Piles		Foot	770	
Test Pile Metal Shells		Each	1	
Bridge Seal Sealer		Sq. Ft.	135	

WEST ABUTMENT
BILL OF MATERIAL

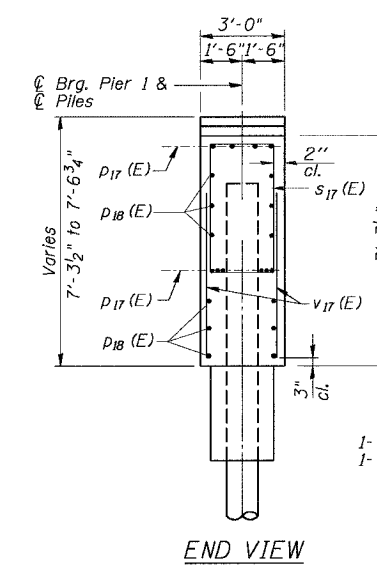
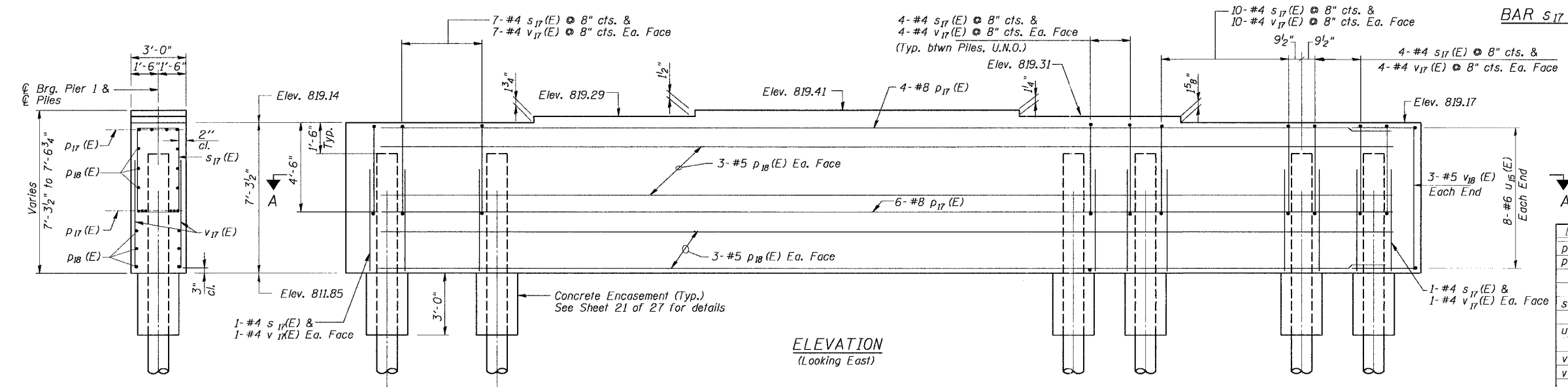
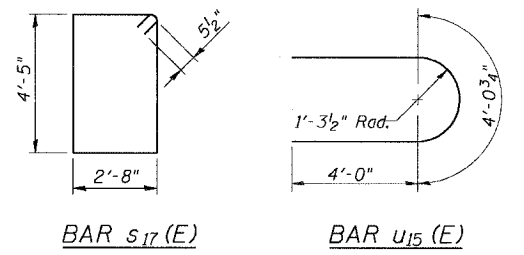
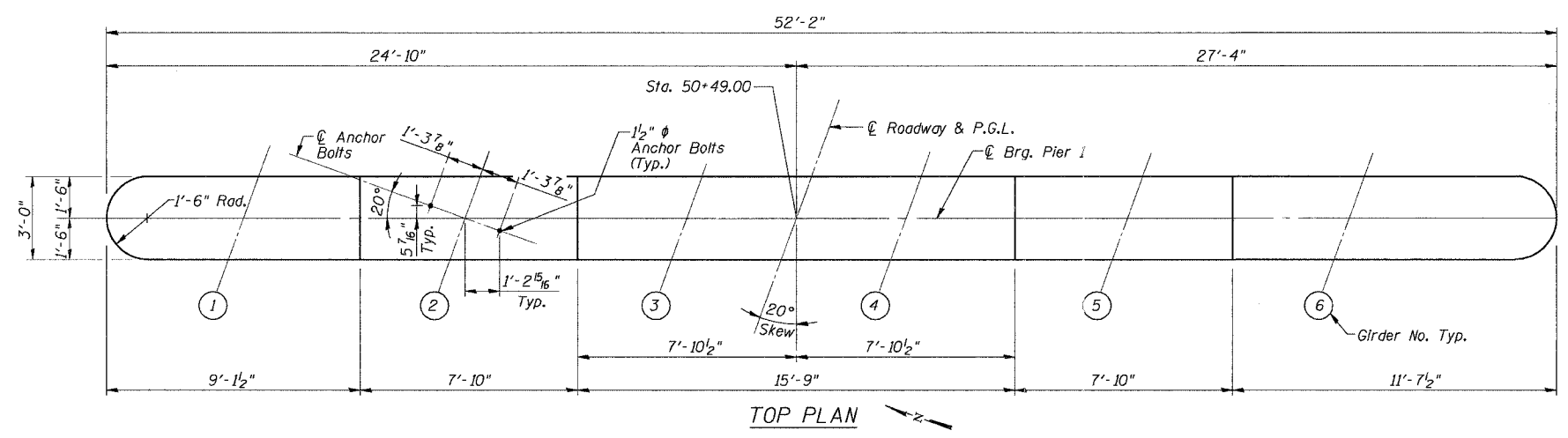
Bar	No.	Size	Length	Shape
h(E)	12	#6	42'-3"	
h1(E)	12	#5	3'-9"	L
h2(E)	12	#5	3'-9"	L
h3(E)	24	#4	12'-2"	
h4(E)	16	#4	12'-2"	
h5(E)	1	#5	42'-3"	
n(E)	24	#6	11'-0"	
n1(E)	12	#6	5'-0"	
p(E)	8	#7	44'-3"	
p1(E)	12	#7	13'-2"	
p2(E)	1	#10	44'-3"	
s(E)	40	#4	16'-5"	□
s1(E)	30	#4	11'-5"	□
u(E)	4	#6	11'-11"	L
u1(E)	4	#6	9'-8"	L
v(E)	88	#5	5'-3"	
v1(E)	44	#4	3'-0"	
v2(E)	30	#6	7'-6"	
v3(E)	6	#6	7'-5"	
v4(E)	24	#6	7'-8"	
v5(E)	44	#5	2'-6"	
Porous Granular Embankment		Cu. Yd.	83	
Structure Excavation		Cu. Yd.	133	
Concrete Structures		Cu. Yd.	55.0	
Reinforcement Bars, Epoxy Coated		Pound	5,110	
Bar Splicers		Each	44	
Furnishing Metal Shell Piles 14"		Foot	1,106	
Driving Piles		Foot	1,106	
Test Pile Metal Shells		Each	1	
Bridge Seal Sealer		Sq. Ft.	135	

FOR INFORMATION ONLY

ABUTMENT WINGWALL AND DETAILS
IL Route 176 over
South Branch of the Kishwaukee River
F.A.P. RTE 533, SECTION 11 R-1-1-1
McHENRY COUNTY
STATION 51+50.00
DATE: 06-29-07 S.N. 056-0071
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
533	11 R-1-1-1	McHenry	19	17
FED. ROAD DIST. NO.		SHEETS		FED. AID PROJECT
Contract #60D29				

SHEET NO. 15 OF 17 SHEETS



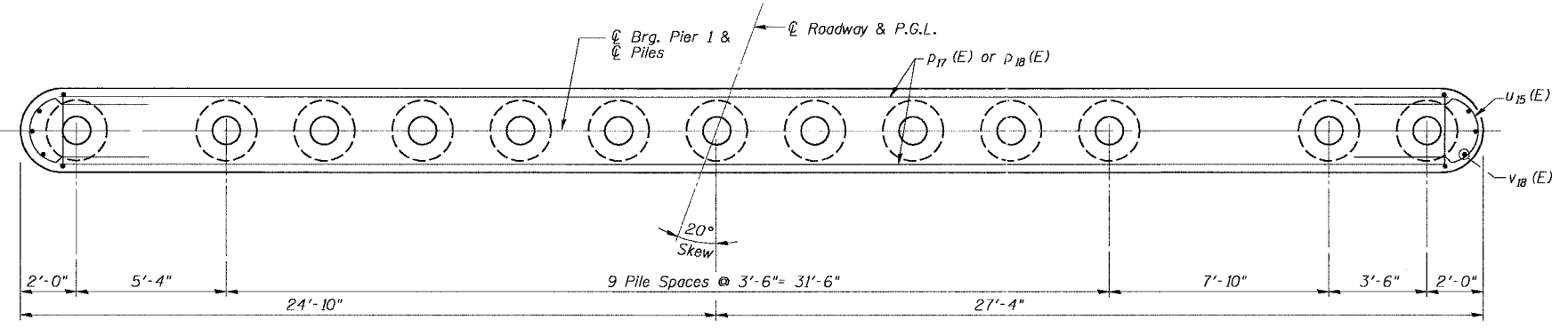
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p17 (E)	10	#8	49'-0"	—
p18 (E)	12	#5	49'-0"	—
s17 (E)	59	#4	15'-1"	D
u15 (E)	16	#6	12'-1"	U
v17 (E)	118	#4	4'-3"	—
v18 (E)	6	#5	6'-10"	—
Structure Excavation		Cu. Yd.	122	
Concrete Structures		Cu. Yd.	42.3	
Concrete Encasement		Cu. Yd.	4.2	
Reinforcement Bars, Epoxy Coated		Pound	3,180	
Furnishing Metal Shell Piles 14"		Foot	516	
Driving Piles		Foot	516	
Test Pile Metal Shells		Each	1	
Underwater Structure Excavation Protection Location 1		Each	1	

Reinforcement Bars designated (E) shall be epoxy coated.

PILE DATA

Type: 14" Metal Shell Pile
 Capacity: 65 Tons/Pile
 Est. Length: 43 Ft.
 No. Req'd: 12 + 1 Test Pile



SECTION A-A
PIER 1

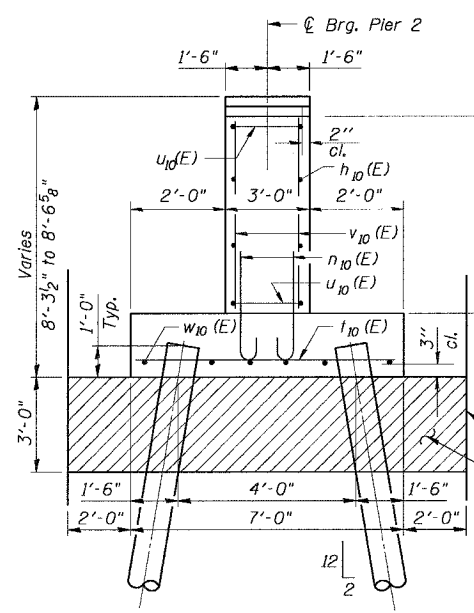
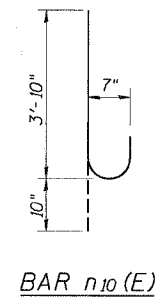
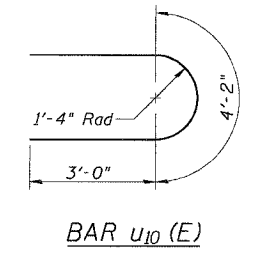
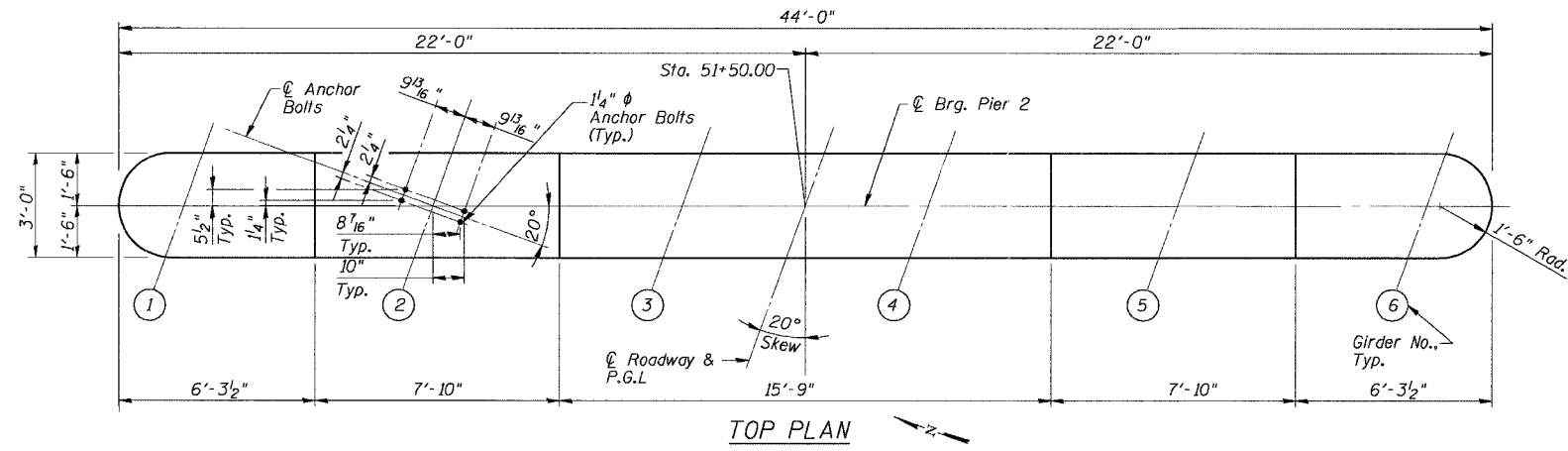
- Notes:
1. Space reinforcement in cap to miss anchor bolts.
 2. Pour steps monolithically with cap.
 3. Work this Sheet With Sheet 12 of 27

FOR INFORMATION ONLY

PIER 1
 IL Route 176 over
 South Branch of the Kishwaukee River
 F.A.P. RTE 533, SECTION 11 R-1-1-1
 McHENRY COUNTY
 STATION 51+50.00
 DATE: 06-29-07 S.N. 056-0071
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
 CHICAGO ILLINOIS

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

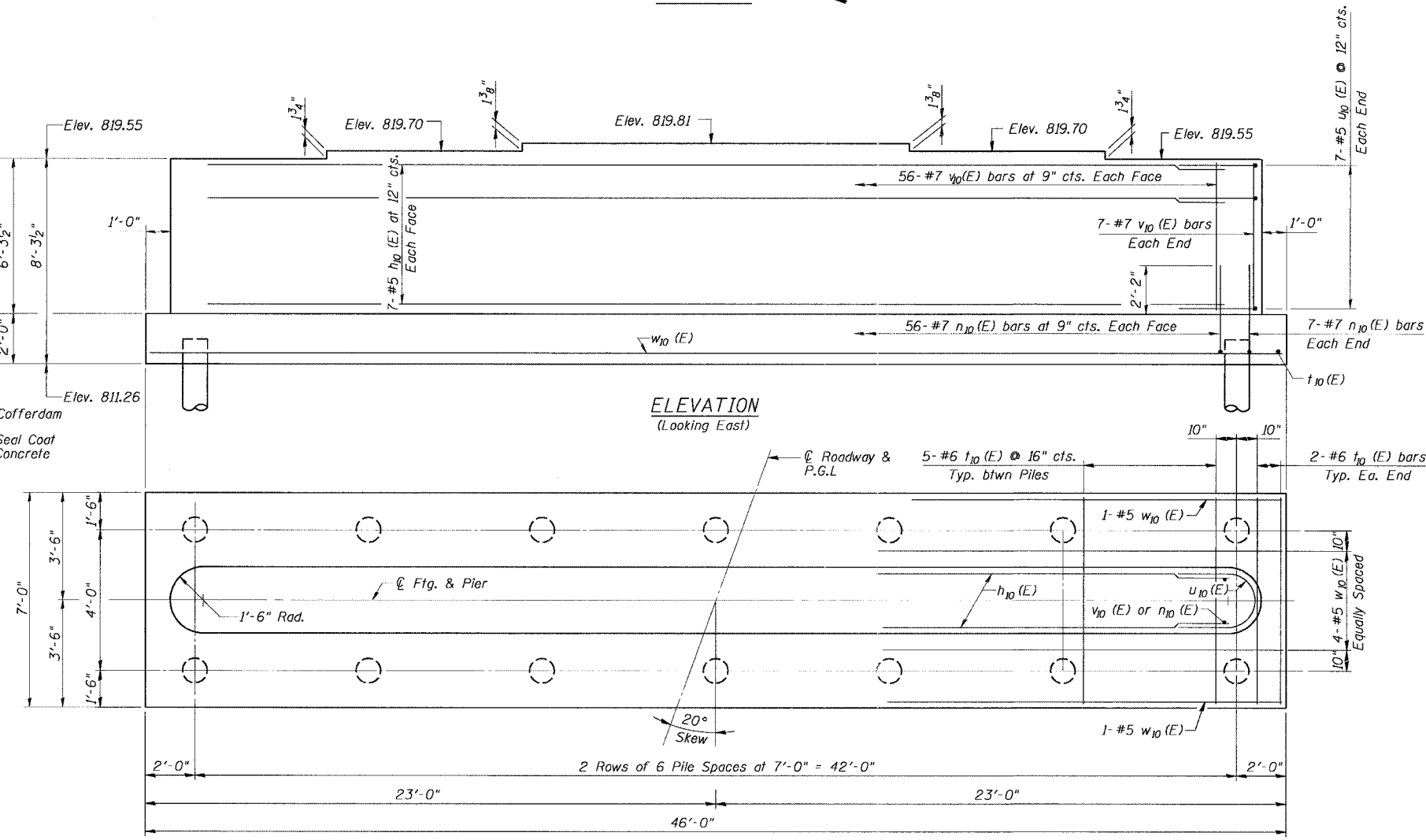
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PILE DATA

Type: 14" Metal Shell Pile
 Capacity: 51 Tons/Pile
 Est. Length: 42 Ft.
 No. Req'd: 13 + 1 Test Pile

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{10}(E)$	14	#5	41'-0"	—
$n_{10}(E)$	126	#7	4'-8"	U
$t_{10}(E)$	34	#6	6'-6"	—
$u_{10}(E)$	14	#5	10'-2"	U
$v_{10}(E)$	126	#7	6'-0"	—
$w_{10}(E)$	6	#5	45'-6"	—
Cofferdam Excavation	Cu. Yd.	143		
Cofferdams	Each	1		
Concrete Structures	Cu. Yd.	54.7		
Seal Coat Concrete	Cu. Yd.	61.1		
Reinforcement Bars, Epoxy Coated	Pound	4,110		
Furnishing Metal Shell Piles 14"	Foot	546		
Driving Piles	Foot	546		
Test Pile Metal Shells	Each	1		

Reinforcement Bars designated (E) shall be epoxy coated.

FOR INFORMATION ONLY

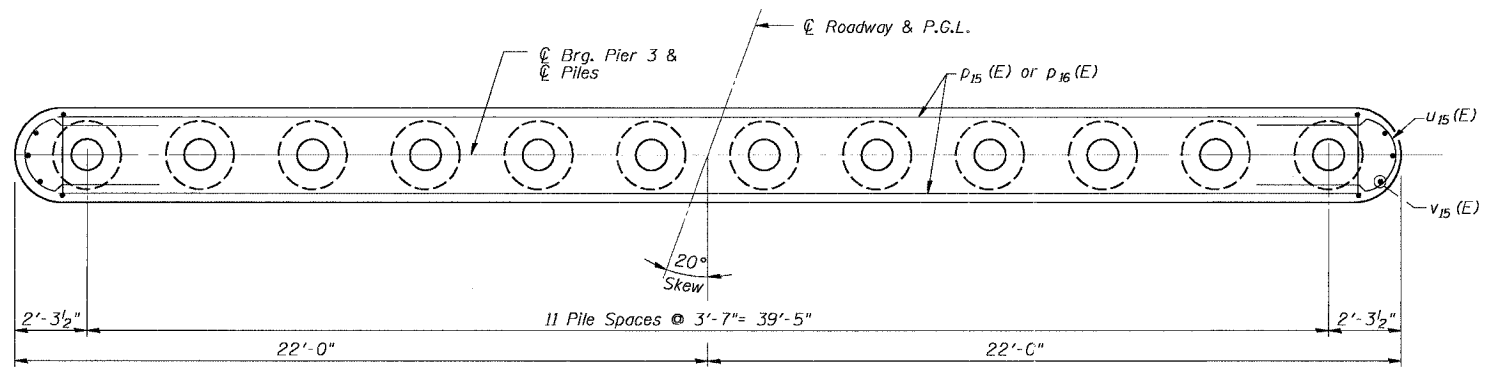
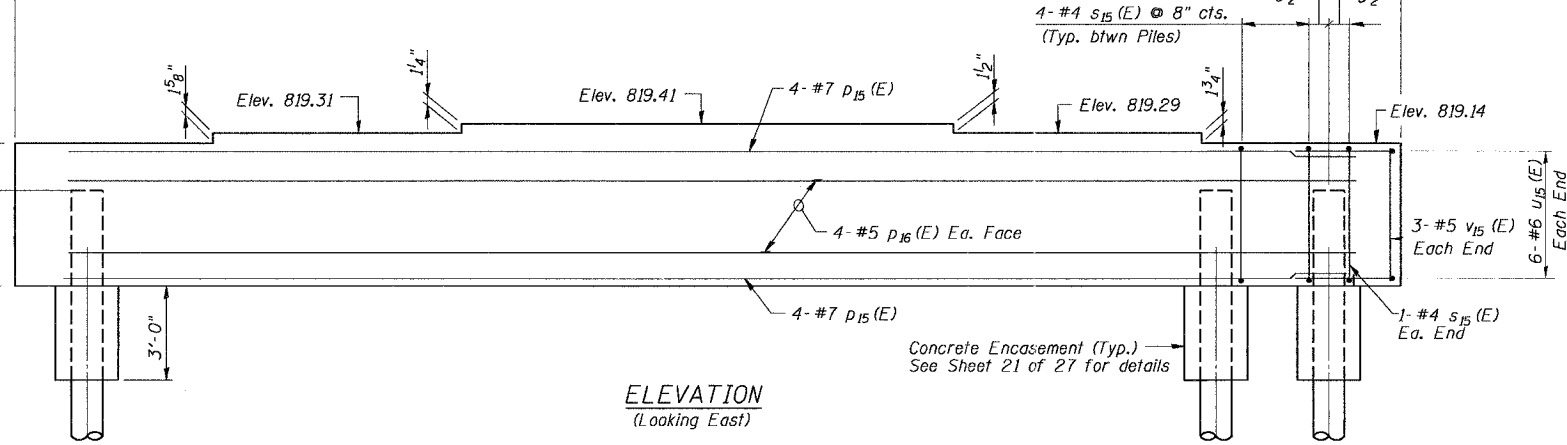
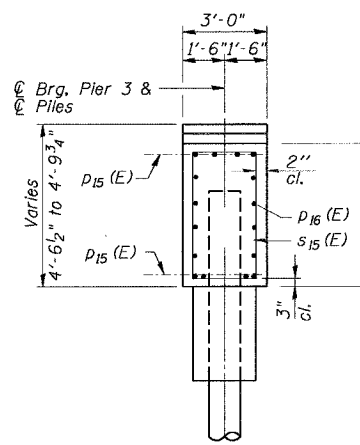
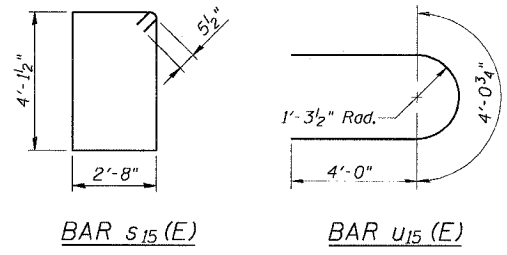
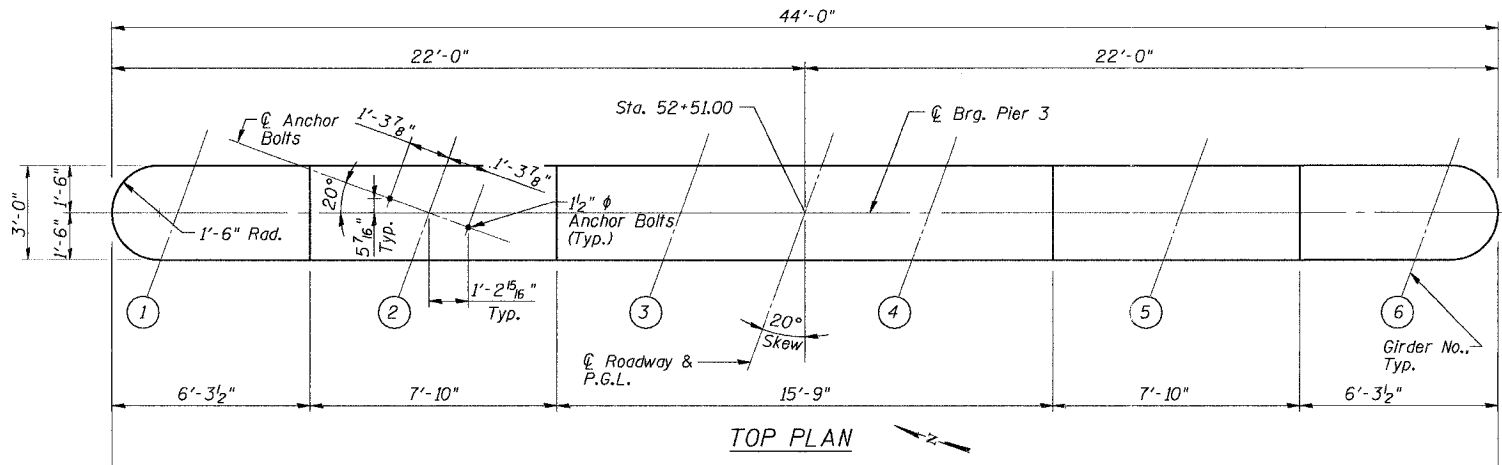
PIER 2
 IL Route 176 over
 South Branch of the Kishwaukee River
 F.A.P. RTE 533, SECTION 11 R-1-1-1
 McHENRY COUNTY
 STATION 51+50.00
 DATE: 06-29-07 S.N. 056-0071
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
 CHICAGO ILLINOIS

- Notes:
- The cofferdam design Water Elevation = 816.3
 - The plan dimensions of the Seal Coat Concrete is 11' x 50'.
 - The Seal-Coat Concrete thickness is 3'-0".
 - Space reinforcement in cap to miss anchor bolts.
 - Pour steps monolithically with cap.

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
533	II R-1-1-1	McHenry	19	19
FED. ROAD EST. NO.		ILLINOIS	FED. AID PROJECT	
Contract #60D29				

SHEET NO. 17 OF 17 SHEETS



END VIEW

ELEVATION (Looking East)

SECTION A-A

PIER 3

PILE DATA

Type: 14" Metal Shell Pile
 Capacity: 65 Tons/Pile
 Est. Length: 41 Ft.
 No. Req'd: 11 + 1 Test Pile

DESIGNED	S.S.T.
CHECKED	S.D.H.
DRAWN	E.B.
CHECKED	S.S.T.

- Notes:
1. Space reinforcement in cap to miss anchor bolts.
 2. Pour steps monolithically with cap.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p15 (E)	8	#7	41'-0"	—
p16 (E)	8	#5	41'-0"	—
s15 (E)	46	#4	14'-6"	□
u15 (E)	12	#6	12'-1"	—
v15 (E)	6	#5	4'-1"	—
Structure Excavation			Cu. Yd.	52
Concrete Structures			Cu. Yd.	22.4
Concrete Encasement			Cu. Yd.	3.9
Reinforcement Bars, Epoxy Coated			Pound	1,700
Furnishing Metal Shell Piles 14"			Foot	451
Driving Piles			Foot	451
Test Pile Metal Shells			Each	1

Reinforcement Bars designated (E) shall be epoxy coated.

FOR INFORMATION ONLY

PIER 3
 IL Route 176 over
 South Branch of the Kishwaukee River
 F.A.P. RTE 533, SECTION II R-1-1-1
 McHENRY COUNTY
 STATION 51+50.00
 DATE: 06-29-07 S.N. 056-0071
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
 CHICAGO ILLINOIS

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