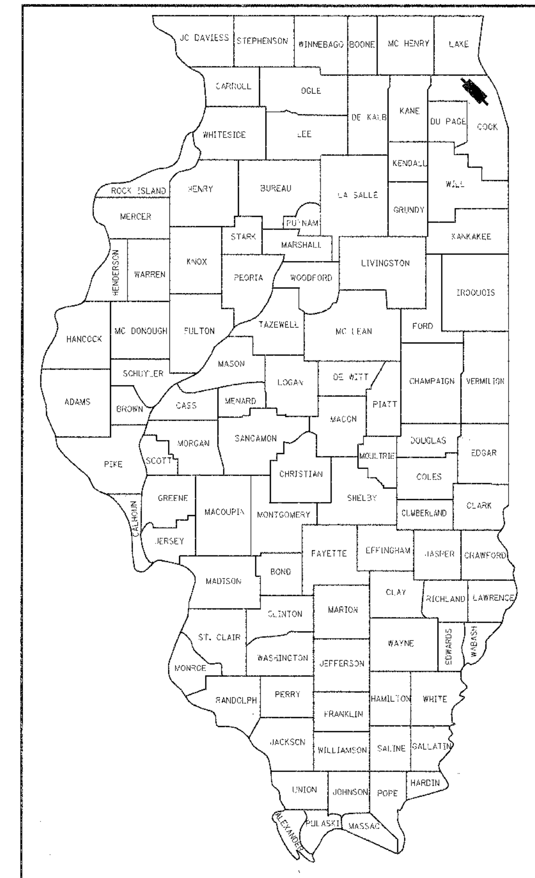
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	1

CONTRACT NO. 60D59

15
+4
19

D-91-048-02



FOR INDEX OF SHEETS, SEE SHEET 2.

PROJECT LOCATED IN
CITY OF PROSPECT HEIGHTS AND
FOREST PRESERVE DISTRICT OF COOK COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAP ROUTE 374 (IL ROUTE 21), MILWAUKEE AVE. OVER DES PLAINES RIVER
SECTION G-B-I-1
BEAM AND BEARING FABRICATION
COOK COUNTY
C-91-053-08

DESIGN DESIGNATION

2750 (20) OTHER PRINCIPAL
ARTERIAL 6.03 (PCC-20)

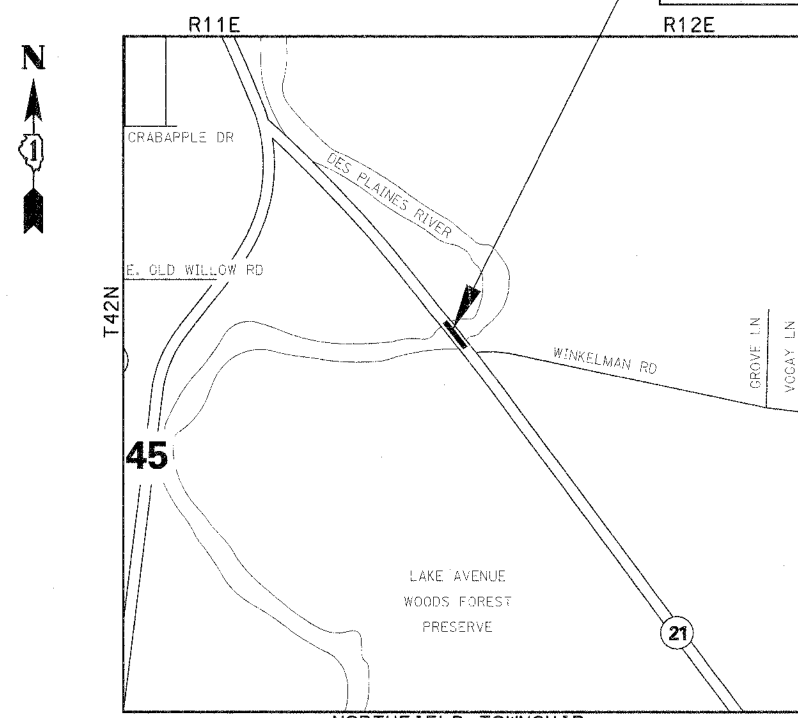
TRAFFIC DATA

ADT 24,530 (1998)
27,500 (2020)
33,000 (2030)

POSTED SPEED 40 MPH

DESIGN SPEED 45 MPH

BEAM AND BEARING FABRICATION FOR THE BRIDGE OVER DES PLAINES RIVER, STRUCTURE NO. 016-6566



LOCATION MAP
SCALE: 1"=500'

100' 200' 300' — 1" = 100'
10' 20' 30' — 1" = 10'
50' 100' — 1" = 50'
50' 100' — 1" = 40'
50' 100' — 1" = 30'
50' 100' — 1" = 20'

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123

CONTRACT NO. 60D59

GROSS LENGTH OF IMPROVEMENT 162'-6 1/4"
NET LENGTH OF IMPROVEMENT 162'-6 1/4"

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED August 27 2007
Diane O'Keefe/
DEPUTY DIRECTOR OF HIGHWAYS, REGION 1 ENGINEER
October 12, 2007
Eric E. Harm/
Interim ENGINEER OF DESIGN AND ENVIRONMENT
October 12, 2007
Milton R. Sees, P.E.
DIRECTOR, DIVISION OF HIGHWAYS

STATE OF ILLINOIS
JOHN A. NIEU
81-004960
OAK PARK
LICENSED STRUCTURAL ENGINEER
EXPIRES 11/30/08

SEAL

STV Incorporated
engineers/architects/scientists/construction managers
200 W Monroe - Suite 1650
Chicago, Illinois 60606
(312) 553-0655
FAX: (312) 553-0661

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DISTRICT ONE CONSULTANT PROJECT MANAGER KURT NAUS- (847) 705-4232

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	2
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

INDEX OF SHEETS

1 Title Sheet
2 Index of Sheets & Summary of Quantities
3 General Plan & Elevation
4 General Notes & Total Bill of Material
5 Stage Construction Sections
6 Screed Plan
7 Deck Elevations
8 Deck Elevations
9 Deck Elevations
10 Deck Elevations
11 Deck Cross Section
12 Framing Plan
13 Girder Elevation & Moment Table
14 Diaphragm/Splice Details
15 Bearing Details
15A.-15D. BRIDGE PLANS

SUMMARY OF QUANTITIES

CODE NO.	ITEM DESCRIPTION	UNIT	100% STATE URBAN TOTAL QUANTITY	CONSTRUCTION TYPE CODE SN 016-6566 X071-2A
50500205	Furnishing Structural Steel	L SUM	1	1
50500455	Storage of Structural Steel	CAL DA	60	60

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Chicago, IL 60606-5015
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566
INDEX OF SHEETS & SUMMARY OF QUANTITIES
DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	3
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

BENCHMARK

Square cut on NW corner of traffic signal handhole on SE corner of Milwaukee Ave. and Euclid Ave. Elevation 663.54

EXISTING STRUCTURE

S.N. 016-0242 was built in 1926 and was improved in 1976 including railing replacement and sidewalk removal. The existing three span structure utilizes simple span concrete T-beams with a 4" P.C.C. wearing surface and a 1½" bituminous surface on a 6" concrete deck. The structure is 53 feet wide out to out and 159 feet long. The structure is founded on untreated timber piles.

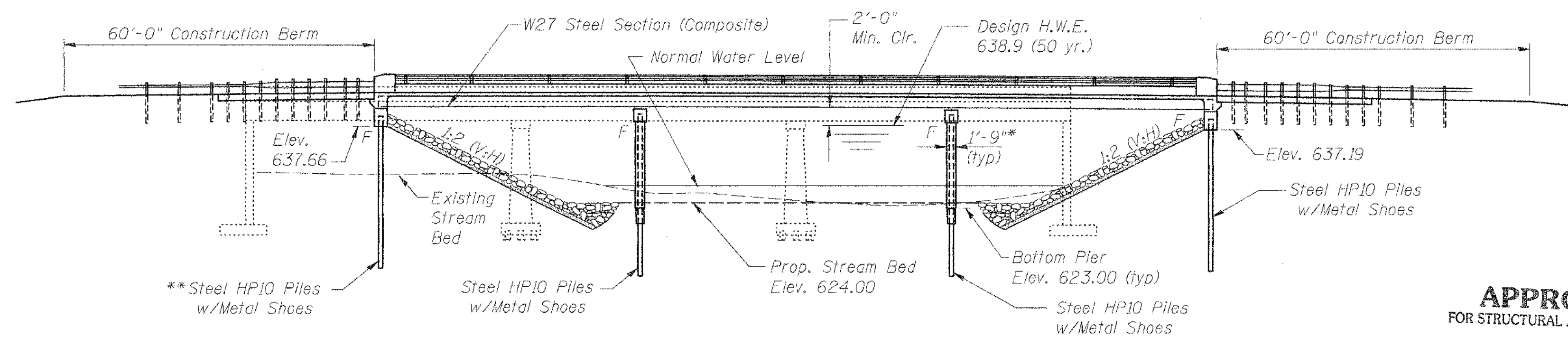
Stage construction will be utilized to maintain one lane of traffic in each direction at all times.

No Salvage.

STATION 130+82.50
BUILT 200_ BY
STATE OF ILLINOIS
F.A.P. RT. 374 SEC. 3268F-R-1
LOADING HS20
STR. NO. 016-6566

NAME PLATE

See Std. 515001



**Piles For N. Abut. Shall Be Driven Thru 18" ϕ Pre-Cored Holes Extending to Elev. 626.0

ELEVATION

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson (TD)
ENGINEER OF BRIDGES AND STRUCTURES

DESIGN SPECIFICATIONS

2002 AASHTO Std. Specifications, 17th Edition

LOADING HS20-44

Allow 50 lbs/sq. ft. future wearing surface

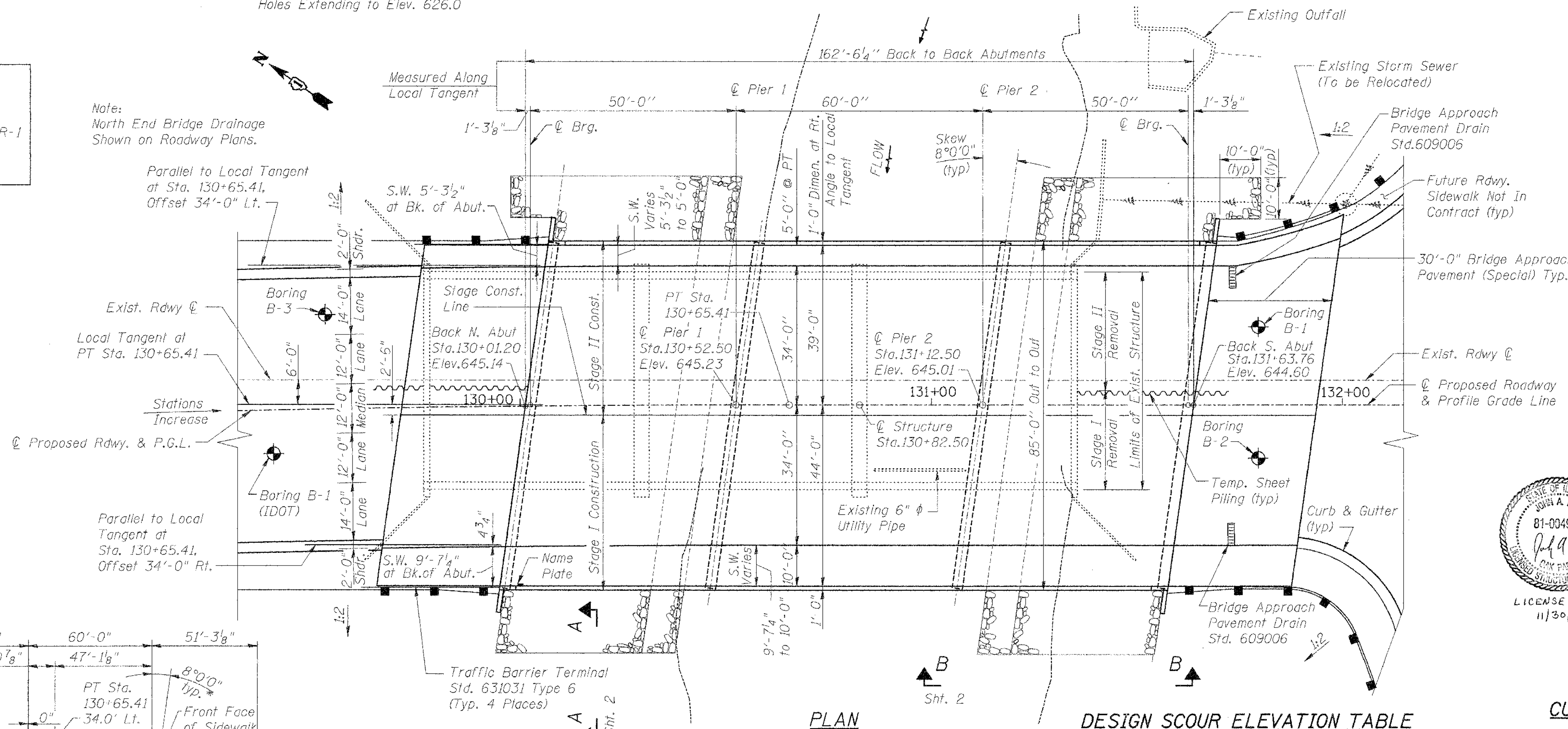
DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi (reinforcement)
fy = 50,000 psi (M270 Gr.50W Structural Steel)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.04g
Site Coefficient (S) = 1.2

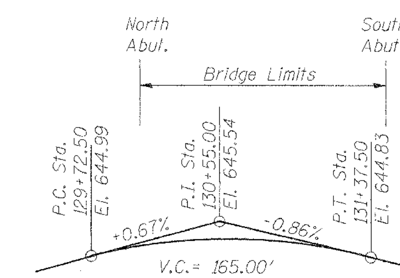
Note:
North End Bridge Drainage Shown on Roadway Plans.



*Measured From Perpendicular to Local Tangent Line

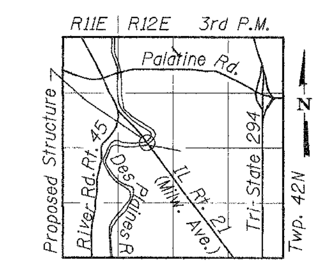
PLAN

PROFILE GRADE LINE



IL Route 21

81-004960
LICENSE EXPIRES 11/30/08



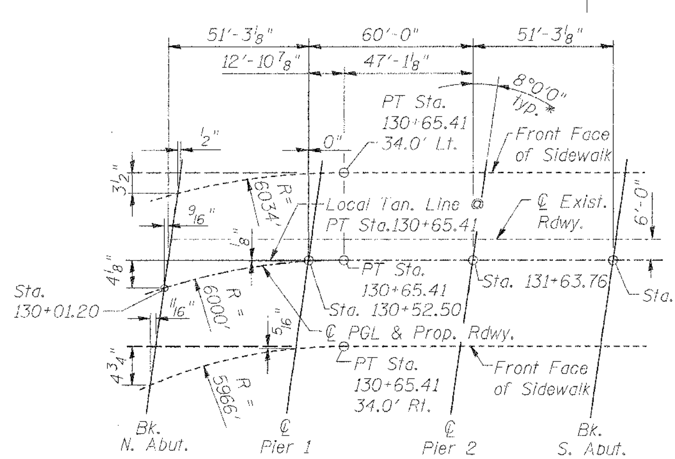
LOCATION SKETCH

CUT AND FILL IN FLOODWAY TABLE

	UNIT	CUT	FILL
Volume between Normal Water Level and 10 year Flood Level	CU YD	790	15845
Volume between 10 Year and 100 Year Flood Level	CU YD	385	12535

DESIGN SCOUR ELEVATION TABLE

	N. Abut.	S. Abut.	Piers
Design Scour Elevation (ft)	637.66	637.19	617.00



OFFSET SKETCH

HORIZONTAL CURVE DATA

Curve NX3

PI Sta. = 126+35.78	E = 15.47'
Δ = 8° 13' 10" (Rt)	e = Normal Crown
D = 0° 57' 18"	T.R. = N.A.
R = 6000.00'	S.E. Run = N.A.
T = 431.11'	P.C. Sta. = 122+04.67
L = 860.74'	P.T. Sta. = 130+65.41

WATERWAY INFORMATION

Drainage Area = 363.0 Sq.Mi.			Existing Low Grade Elev. 636.5 @ Sta. 118+00; Prop. Low Grade Elev. 638.0 @ Sta. 114+50						
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head-Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Overtopping	5	3000	977		636.1	0.4		636.5	
	10	4364	1122	1481	637.4	0.4	0.3	637.8	637.7
Design	50	5750	1290	1694	638.9	0.4	0.4	639.3	639.3
Base	100	6200	1335	1767	639.4	0.4	0.4	639.8	639.8
Max. Calc.	500	7359	1335	1915	640.5	0.4	0.4	640.9	640.9

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200 W. Monroe Street, Suite 1650
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

GENERAL PLAN & ELEVATION

DESIGN BY: AWH DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	4
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

GENERAL NOTES

Fasteners shall be high strength bolts (AASHTO M164, Type 3 in unpainted areas and mechanically galvanized AASHTO M 164, Type 1 or 2 in painted areas). Bolts 7/8" diameter, open holes 15/16" diameter, unless otherwise noted.

Calculated weight of Structural Steel:
AASHTO (M270 GR 50W) = 244,060 pounds

All structural steel shall be AASHTO M270 Grade 50W.

Field welding of construction accessories will not be permitted to beams or girders.

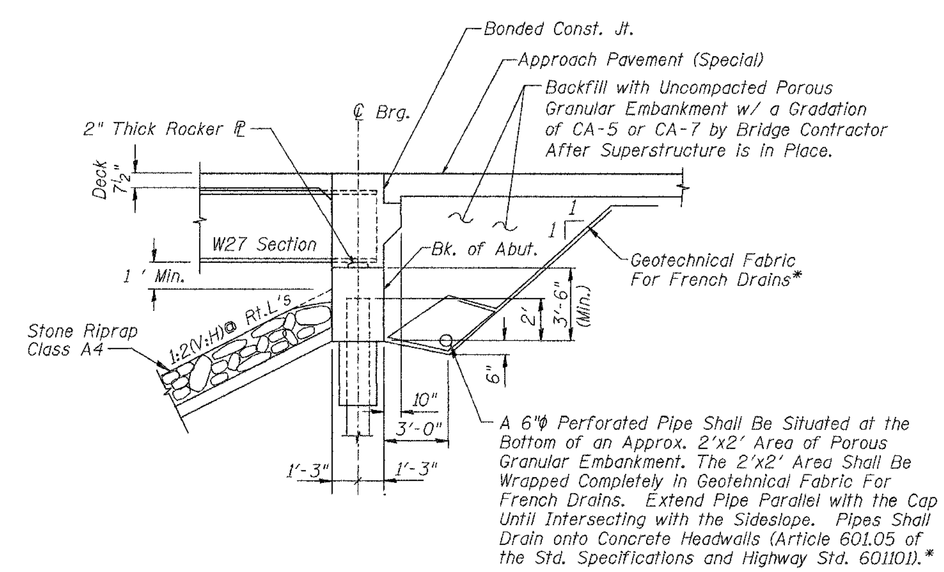
The main load carrying member components subjected to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate material except fill plates.

AASHTO M 270 Grade 50W structural steel shall only be painted, at the ends of the beams, for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Those areas shall be primed in the shop with an inorganic zinc rich primer per AASHTO M300, Type I. No field painting shall be required. All structural steel shall be cleaned as specified in the special provision for "Surface Preparation and Painting Requirements for Weathering Steel".

All embedded and separate bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 (as applicable).

TOTAL BILL OF MATERIAL

ITEM DESCRIPTION	UNIT	TOTAL
Furnishing Structural Steel	L SUM	1
Storage of Structural Steel	CAL DA	60



* Included in the cost of Porous Granular Embankment.

SECTION THRU INTEGRAL ABUTMENT

Dimensions at Rt. L's

REVISIONS NAME	DATE

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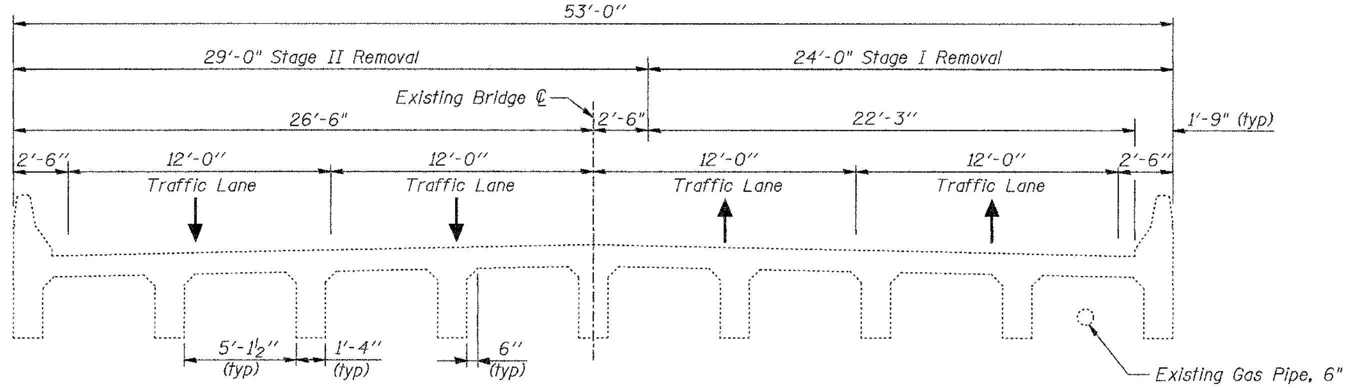
ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

GENERAL NOTES & TOTAL BILL OF MATERIAL

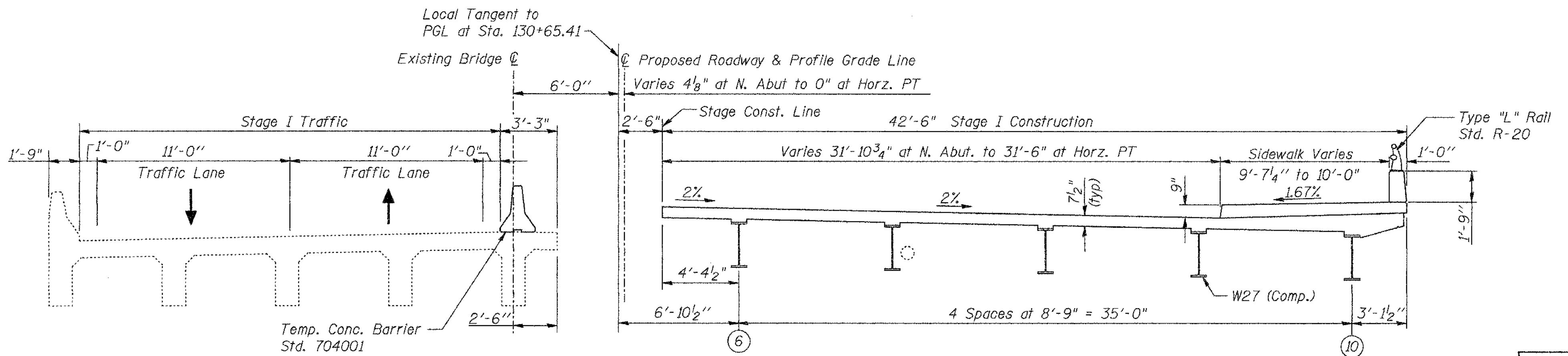
DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	5
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

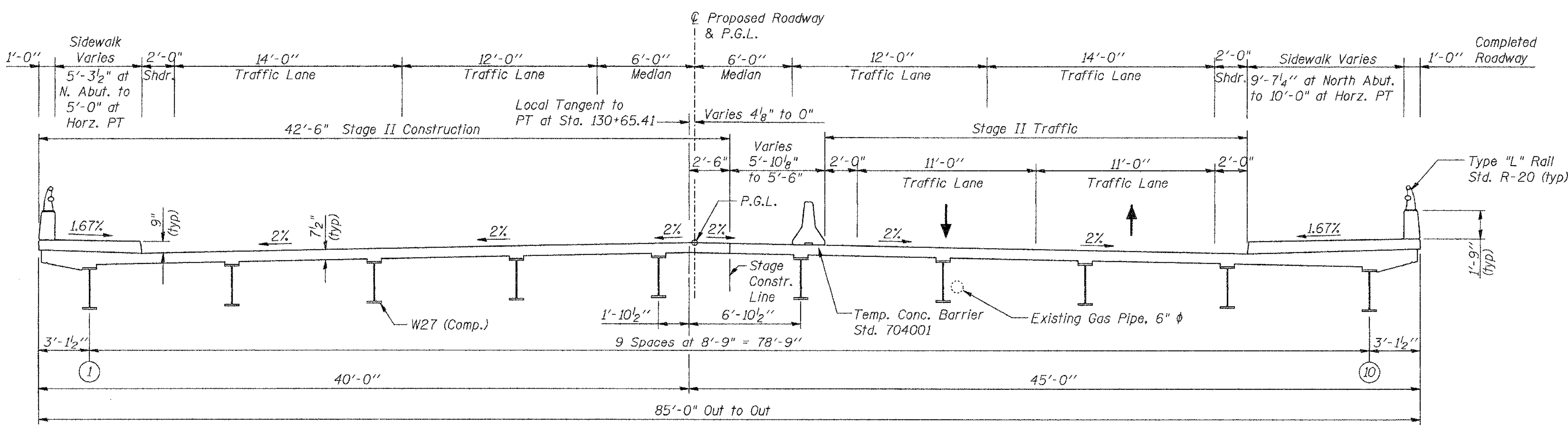


EXISTING BRIDGE CROSS SECTION
(Looking South)



STAGE I CONSTRUCTION
(Looking South)
(Horizontal Dimensions at Right L's to Local Tangent Line)

FOR INFORMATION ONLY



STAGE II CONSTRUCTION AND PROPOSED BRIDGE CROSS SECTION
(Looking South)
(Horizontal Dimensions at Right L's to Local Tangent Line)

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REVISIONS NAME	DATE

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ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

STAGE CONSTRUCTION SECTIONS

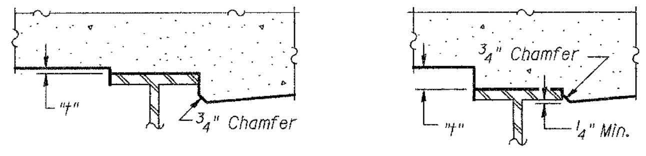
DESIGN BY: AWH DRAWN BY: AWH
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	6

STA. TO STA.

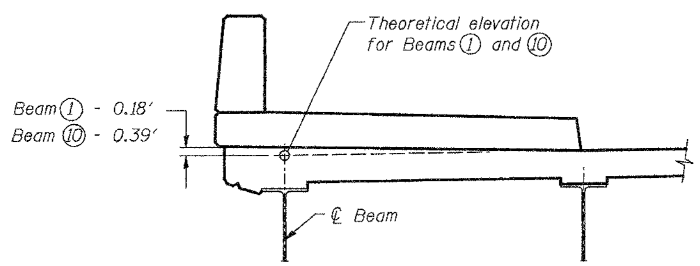
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

CONTRACT NO. 60D59

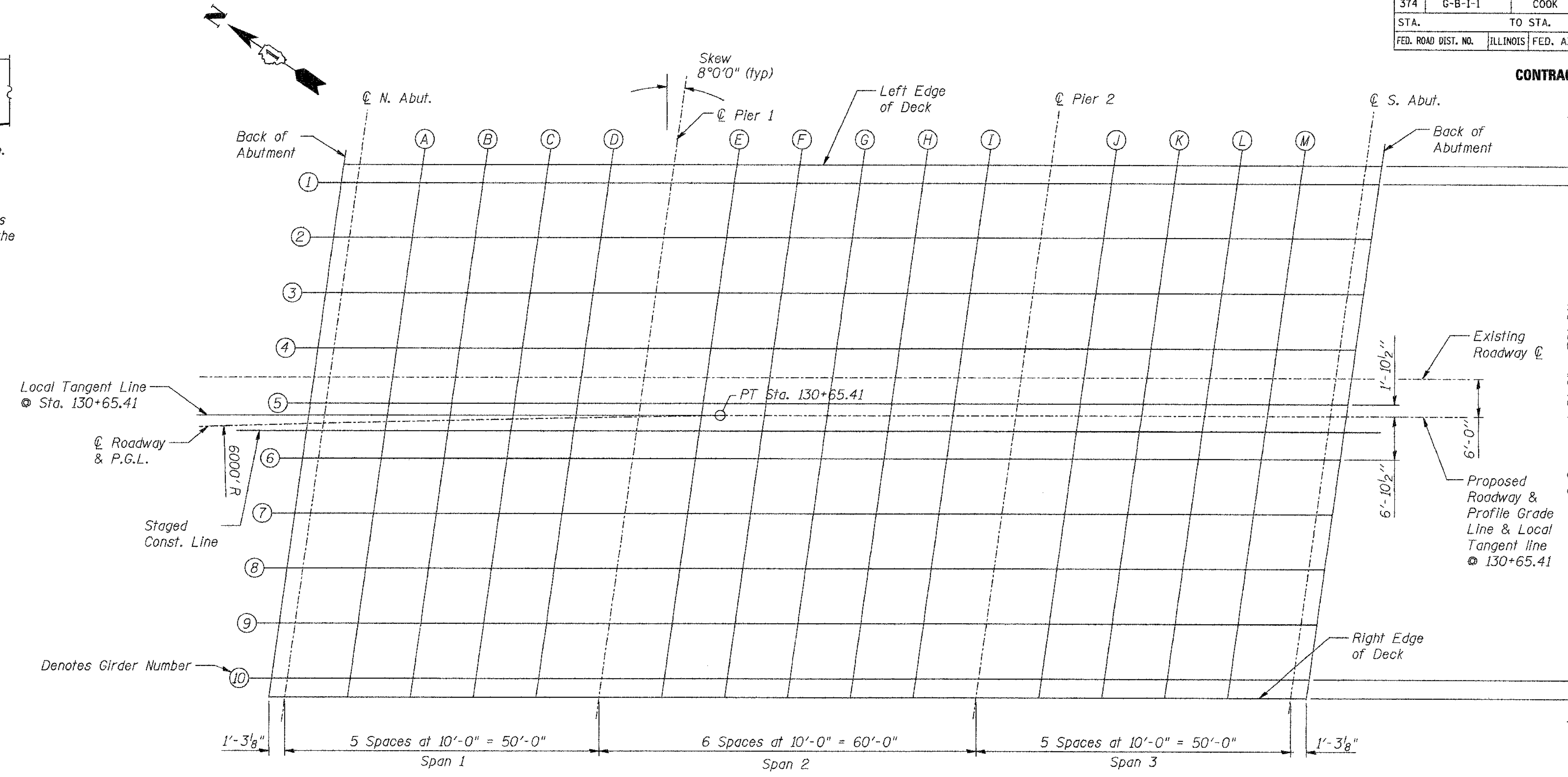


To determine fillet height "t", measure elevations at span quarter points as shown below after all steel has been erected. Add this number to the slab thickness and subtract the sum from the "Theoritical Grade Elev. Adjusted for Dead Load Deflection." This equals the fillet height above the beams.

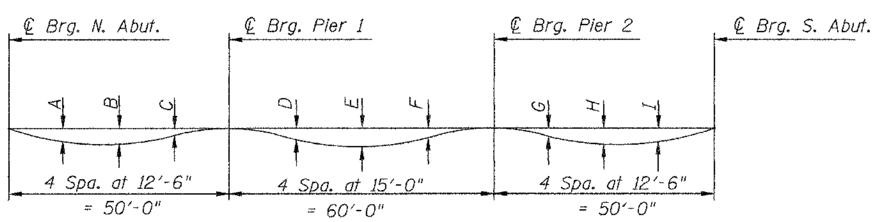
FILLET HEIGHTS



SIDEWALK SECTION



PLAN



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

FOR INFORMATION ONLY

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below. All dimensions are in inches except as noted. All offsets are in feet.

BEAM	A	B	C	D	E	F	G	H	I
Beams (1) through (10)	0.34	0.42	0.20	0.22	0.39	0.22	0.20	0.42	0.34

Note:
See Sheets 7 thru 10 for Deck Elevations.

REVISIONS NAME	DATE

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200 W. Monroe Street, Suite 1650
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312/553-0655, FAX 312/553-0661

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

SCREED PLAN

DESIGN BY: AWH DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	7
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

Left Edge of Deck

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13007.226	-40.117	644.702	644.702
North Bearing	13008.478	-40.105	644.706	644.706
A	13018.411	-40.018	644.732	644.756
B	13028.345	-39.948	644.749	644.785
C	13038.278	-39.895	644.758	644.787
D	13048.212	-39.858	644.758	644.770
Pier 1	13058.146	-39.837	644.749	644.749
E	13068.098	-39.833	644.732	644.742
F	13078.098	-39.833	644.706	644.732
G	13088.098	-39.833	644.670	644.703
H	13098.098	-39.833	644.626	644.651
I	13108.098	-39.833	644.572	644.582
Pier 2	13118.098	-39.833	644.508	644.508
J	13128.098	-39.833	644.436	644.447
K	13138.098	-39.833	644.354	644.383
L	13148.098	-39.833	644.268	644.303
M	13158.098	-39.833	644.182	644.205
South Bearing	13168.098	-39.833	644.096	644.096
Bk.S.Abt.	13169.358	-39.833	644.085	644.085

Beam 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13006.785	-37.163	644.595	644.595
North Bearing	13008.037	-37.151	644.599	644.599
A	13017.975	-37.064	644.625	644.649
B	13027.913	-36.993	644.643	644.679
C	13037.852	-36.939	644.652	644.682
D	13047.791	-36.901	644.652	644.664
Pier 1	13057.730	-36.880	644.644	644.644
E	13067.682	-36.875	644.628	644.638
F	13077.682	-36.875	644.602	644.627
G	13087.682	-36.875	644.567	644.599
H	13097.682	-36.875	644.522	644.548
I	13107.682	-36.875	644.468	644.478
Pier 2	13117.682	-36.875	644.405	644.405
J	13127.682	-36.875	644.333	644.345
K	13137.682	-36.875	644.252	644.281
L	13147.682	-36.875	644.166	644.201
M	13157.682	-36.875	644.080	644.103
South Bearing	13167.682	-36.875	643.994	643.994
Bk.S.Abt.	13168.942	-36.875	643.983	643.983

Beam 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13005.476	-28.426	644.589	644.589
North Bearing	13006.730	-28.413	644.594	644.594
A	13016.682	-28.324	644.626	644.650
B	13026.635	-28.251	644.649	644.685
C	13036.588	-28.195	644.662	644.692
D	13046.541	-28.155	644.666	644.678
Pier 1	13056.495	-28.132	644.660	644.660
E	13066.453	-28.125	644.645	644.655
F	13076.453	-28.125	644.620	644.646
G	13086.453	-28.125	644.586	644.619
H	13096.453	-28.125	644.543	644.569
I	13106.453	-28.125	644.490	644.500
Pier 2	13116.453	-28.125	644.428	644.428
J	13126.453	-28.125	644.357	644.369
K	13136.453	-28.125	644.277	644.307
L	13146.453	-28.125	644.191	644.227
M	13156.453	-28.125	644.105	644.129
South Bearing	13166.453	-28.125	644.019	644.019
Bk.S.Abt.	13167.713	-28.125	644.008	644.008

Beam 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13004.163	-19.689	644.759	644.759
North Bearing	13005.419	-19.676	644.764	644.764
A	13015.386	-19.584	644.798	644.821
B	13025.353	-19.509	644.822	644.857
C	13035.320	-19.451	644.836	644.866
D	13045.288	-19.409	644.841	644.853
Pier 1	13055.256	-19.384	644.837	644.837
E	13065.224	-19.375	644.822	644.832
F	13075.223	-19.375	644.799	644.824
G	13085.223	-19.375	644.766	644.798
H	13095.223	-19.375	644.724	644.749
I	13105.223	-19.375	644.672	644.682
Pier 2	13115.223	-19.375	644.612	644.612
J	13125.223	-19.375	644.542	644.553
K	13135.223	-19.375	644.462	644.492
L	13145.223	-19.375	644.377	644.412
M	13155.223	-19.375	644.291	644.314
South Bearing	13165.223	-19.375	644.205	644.205
Bk.S.Abt.	13166.483	-19.375	644.194	644.194

FOR INFORMATION ONLY

Notes:
See Sheet 6 for Screed Plan.

All Offsets Taken from Centerline of Roadway.

REVISIONS	
NAME	DATE

STV Incorporated
Engineers/Architects/Planners/Construction Managers
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ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

DECK ELEVATIONS

DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

Beam 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13002.846	-10.952	644.929	644.929
North Bearing	13004.104	-10.939	644.934	644.934
A	13014.085	-10.845	644.969	644.993
B	13024.067	-10.768	644.994	645.030
C	13034.049	-10.707	645.010	645.039
D	13044.031	-10.663	645.016	645.028
Pier 1	13054.013	-10.636	645.013	645.013
E	13063.996	-10.625	645.000	645.010
F	13073.993	-10.625	644.977	645.003
G	13083.993	-10.625	644.945	644.978
H	13093.993	-10.625	644.904	644.930
I	13103.993	-10.625	644.854	644.864
Pier 2	13113.993	-10.625	644.795	644.795
J	13123.993	-10.625	644.726	644.738
K	13133.993	-10.625	644.648	644.677
L	13143.993	-10.625	644.562	644.598
M	13153.993	-10.625	644.476	644.500
South Bearing	13163.993	-10.625	644.390	644.390
Bk.S.Abt.	13165.253	-10.625	644.379	644.379

Beam 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13001.526	-2.215	645.098	645.098
North Bearing	13002.785	-2.202	645.104	645.104
A	13012.781	-2.106	645.140	645.164
B	13022.778	-2.027	645.166	645.202
C	13032.774	-1.964	645.183	645.213
D	13042.771	-1.918	645.191	645.203
Pier 1	13052.767	-1.888	645.189	645.189
E	13062.764	-1.876	645.177	645.187
F	13072.764	-1.875	645.155	645.181
G	13082.764	-1.875	645.125	645.157
H	13092.764	-1.875	645.085	645.111
I	13102.764	-1.875	645.036	645.046
Pier 2	13112.764	-1.875	644.977	644.977
J	13122.764	-1.875	644.910	644.921
K	13132.764	-1.875	644.833	644.863
L	13142.764	-1.875	644.748	644.784
M	13152.764	-1.875	644.662	644.685
South Bearing	13162.764	-1.875	644.576	644.576
Bk.S.Abt.	13164.024	-1.875	644.565	644.565

Rdwy ℄

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13001.190	0.000	645.141	645.141
North Bearing	13002.452	0.000	645.146	645.146
A	13012.452	0.000	645.181	645.205
B	13022.452	0.000	645.206	645.242
C	13032.452	0.000	645.222	645.252
D	13042.452	0.000	645.229	645.241
Pier 1	13052.498	0.000	645.227	645.227
E	13062.498	0.000	645.215	645.225
F	13072.498	0.000	645.194	645.219
G	13082.498	0.000	645.163	645.196
H	13092.498	0.000	645.124	645.149
I	13102.498	0.000	645.075	645.085
Pier 2	13112.475	0.000	645.017	645.017
J	13122.475	0.000	644.949	644.961
K	13132.475	0.000	644.873	644.902
L	13142.475	0.000	644.788	644.824
M	13152.475	0.000	644.702	644.725
South Bearing	13162.394	0.000	644.616	644.616
Bk.S.Abt.	13163.651	0.000	644.606	644.606

Stage Const. Line

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13000.864	2.153	645.097	645.097
North Bearing	13002.125	2.166	645.102	645.102
A	13012.128	2.264	645.135	645.159
B	13022.131	2.344	645.159	645.194
C	13032.135	2.408	645.174	645.203
D	13042.139	2.455	645.180	645.192
Pier 1	13052.143	2.485	645.177	645.177
E	13062.147	2.499	645.165	645.175
F	13072.149	2.500	645.145	645.170
G	13082.149	2.500	645.114	645.147
H	13092.149	2.500	645.075	645.101
I	13102.149	2.500	645.027	645.037
Pier 2	13112.149	2.500	644.969	644.969
J	13122.149	2.500	644.902	644.913
K	13132.149	2.500	644.825	644.855
L	13142.149	2.500	644.741	644.776
M	13152.149	2.500	644.655	644.678
South Bearing	13162.149	2.500	644.569	644.569
Bk.S.Abt.	13163.409	2.500	644.558	644.558

FOR INFORMATION ONLY

Notes:
See Sheet 6 for Screed Plan.

All Offsets Taken from Centerline of Roadway.

REVISIONS NAME	DATE

STV Incorporated
Engineers/Architects/Planners/Construction Managers
200 W. Monroe Street, Suite 1650
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312/553-0655, FAX 312/553-0661

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

DECK ELEVATIONS

DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	9
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

Beam 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	13000.202	6.521	645.007	645.007
North Bearing	13001.463	6.535	645.012	645.012
A	13011.473	6.633	645.045	645.069
B	13021.484	6.714	645.070	645.106
C	13031.495	6.779	645.086	645.115
D	13041.507	6.827	645.092	645.104
Pier 1	13051.518	6.859	645.090	645.090
E	13061.529	6.874	645.079	645.089
F	13071.534	6.875	645.059	645.084
G	13081.534	6.875	645.029	645.062
H	13091.534	6.875	644.990	645.016
I	13101.534	6.875	644.942	644.952
Pier 2	13111.534	6.875	644.885	644.885
J	13121.534	6.875	644.818	644.830
K	13131.534	6.875	644.743	644.773
L	13141.534	6.875	644.658	644.694
M	13151.534	6.875	644.572	644.596
South Bearing	13161.534	6.875	644.486	644.486
Bk.S.Abt.	13162.794	6.875	644.475	644.475

Beam 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	12998.873	15.257	644.827	644.827
North Bearing	13000.137	15.271	644.832	644.832
A	13010.162	15.371	644.866	644.890
B	13020.187	15.455	644.892	644.928
C	13030.213	15.522	644.909	644.939
D	13040.239	15.572	644.917	644.929
Pier 1	13050.265	15.606	644.916	644.916
E	13060.291	15.623	644.906	644.916
F	13070.304	15.625	644.887	644.912
G	13080.304	15.625	644.858	644.891
H	13090.304	15.625	644.821	644.846
I	13100.304	15.625	644.774	644.784
Pier 2	13110.304	15.625	644.718	644.718
J	13120.304	15.625	644.652	644.664
K	13130.304	15.625	644.577	644.607
L	13140.304	15.625	644.494	644.530
M	13150.304	15.625	644.408	644.432
South Bearing	13160.304	15.625	644.322	644.322
Bk.S.Abt.	13161.564	15.625	644.311	644.311

Beam 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	12997.541	23.993	644.646	644.646
North Bearing	12998.806	24.007	644.651	644.651
A	13008.846	24.109	644.687	644.711
B	13018.886	24.195	644.714	644.750
C	13028.927	24.265	644.732	644.762
D	13038.967	24.317	644.741	644.753
Pier 1	13049.008	24.353	644.741	644.741
E	13059.048	24.372	644.732	644.742
F	13069.074	24.375	644.714	644.740
G	13079.074	24.375	644.687	644.720
H	13089.074	24.375	644.651	644.676
I	13099.074	24.375	644.605	644.615
Pier 2	13109.074	24.375	644.550	644.550
J	13119.074	24.375	644.486	644.498
K	13129.074	24.375	644.412	644.442
L	13139.074	24.375	644.329	644.365
M	13149.074	24.375	644.243	644.267
South Bearing	13159.074	24.375	644.157	644.157
Bk.S.Abt.	13160.334	24.375	644.147	644.147

Beam 9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	12996.206	32.728	644.465	644.465
North Bearing	12997.472	32.742	644.471	644.471
A	13007.527	32.847	644.508	644.532
B	13017.582	32.935	644.536	644.572
C	13027.637	33.007	644.556	644.585
D	13037.692	33.061	644.566	644.578
Pier 1	13047.747	33.099	644.567	644.567
E	13057.803	33.120	644.559	644.569
F	13067.845	33.125	644.542	644.568
G	13077.845	33.125	644.516	644.549
H	13087.845	33.125	644.481	644.506
I	13097.845	33.125	644.436	644.446
Pier 2	13107.845	33.125	644.382	644.382
J	13117.845	33.125	644.319	644.331
K	13127.845	33.125	644.247	644.277
L	13137.845	33.125	644.165	644.201
M	13147.845	33.125	644.079	644.103
South Bearing	13157.845	33.125	643.993	643.993
Bk.S.Abt.	13159.105	33.125	643.982	643.982

FOR INFORMATION ONLY

Notes:
See Sheet 6 for Screed Plan.

All Offsets Taken from Centerline of Roadway.

REVISIONS	
NAME	DATE

STV Incorporated
Engineers/Architects/Planners/Construction Managers
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312/553-0655. FAX 312/553-0661

ILLINOIS DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

DECK ELEVATIONS

DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

Beam 10

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	12994.866	41.463	644.635	644.635
North Bearing	12996.134	41.478	644.641	644.641
A	13006.204	41.585	644.685	644.709
B	13016.273	41.675	644.719	644.754
C	13026.343	41.749	644.742	644.772
D	13036.413	41.805	644.756	644.768
Pier 1	13046.483	41.845	644.761	644.761
E	13056.553	41.869	644.755	644.765
F	13066.615	41.875	644.739	644.765
G	13076.615	41.875	644.715	644.747
H	13086.615	41.875	644.680	644.706
I	13096.615	41.875	644.637	644.647
Pier 2	13106.615	41.875	644.584	644.584
J	13116.615	41.875	644.522	644.534
K	13126.615	41.875	644.451	644.481
L	13136.615	41.875	644.370	644.406
M	13146.615	41.875	644.284	644.308
South Bearing	13156.615	41.875	644.198	644.198
Bk.S.Abt.	13157.875	41.875	644.188	644.188

Right Edge of Deck

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abt.	12994.412	44.416	644.713	644.713
North Bearing	12995.681	44.431	644.719	644.719
A	13005.755	44.539	644.763	644.787
B	13015.830	44.630	644.797	644.833
C	13025.905	44.704	644.821	644.851
D	13035.979	44.761	644.836	644.848
Pier 1	13046.055	44.802	644.840	644.840
E	13056.130	44.826	644.835	644.845
F	13066.199	44.833	644.820	644.846
G	13076.199	44.833	644.795	644.828
H	13086.199	44.833	644.762	644.787
I	13096.199	44.833	644.719	644.729
Pier 2	13106.199	44.833	644.666	644.666
J	13116.199	44.833	644.605	644.616
K	13126.199	44.833	644.534	644.564
L	13136.199	44.833	644.454	644.489
M	13146.199	44.833	644.368	644.391
South Bearing	13156.199	44.833	644.282	644.282
Bk.S.Abt.	13157.459	44.833	644.271	644.271

FOR INFORMATION ONLY

Notes:
See Sheet 6 for Screed Plan.

All Offsets Taken from Centerline of Roadway.

STV Incorporated
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REVISIONS	
NAME	DATE

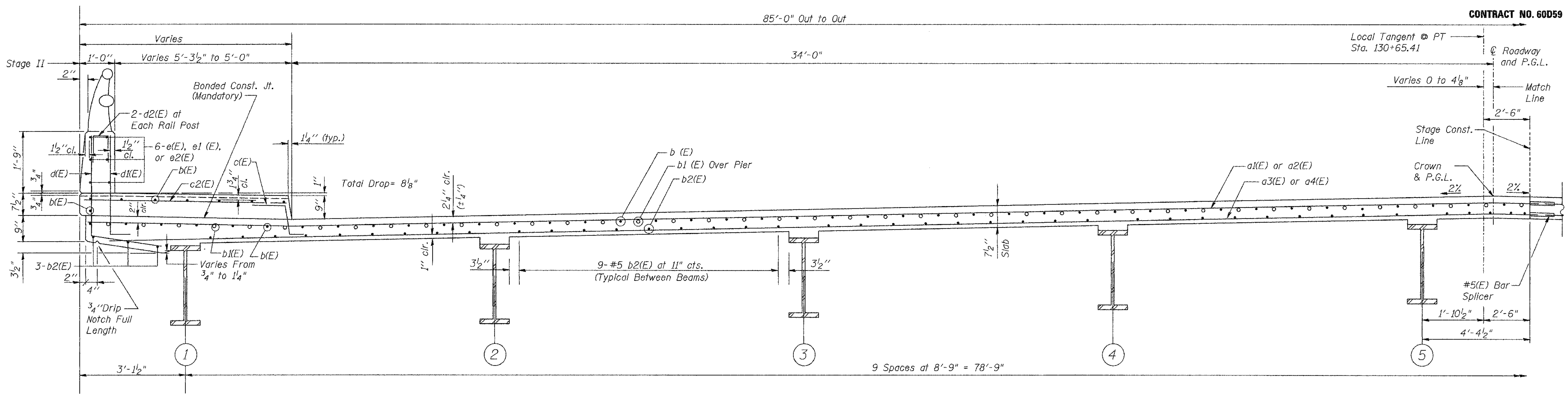
ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

DECK ELEVATIONS

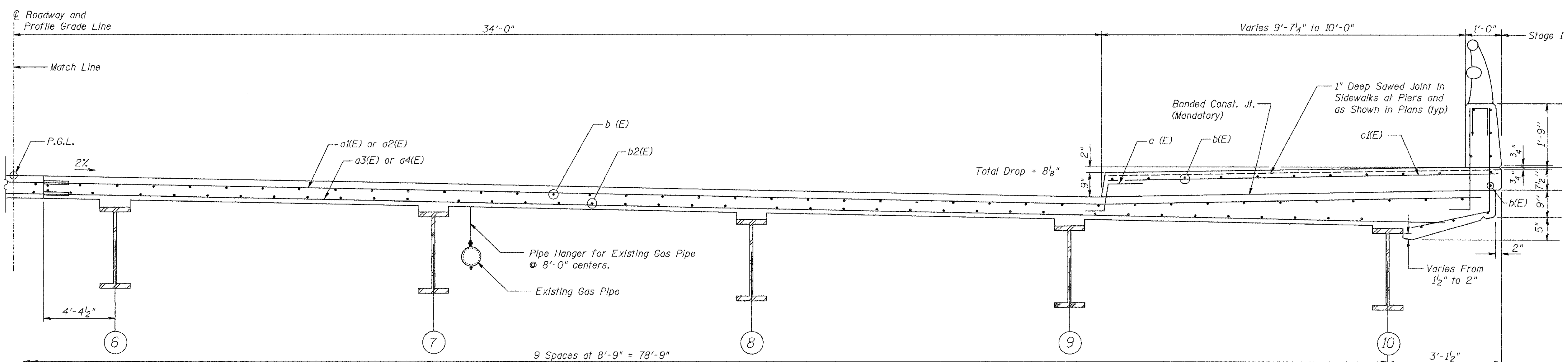
DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	11
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59



Near Pier



Near Midspan

FOR INFORMATION ONLY

CROSS SECTION
Looking South

REVISIONS	
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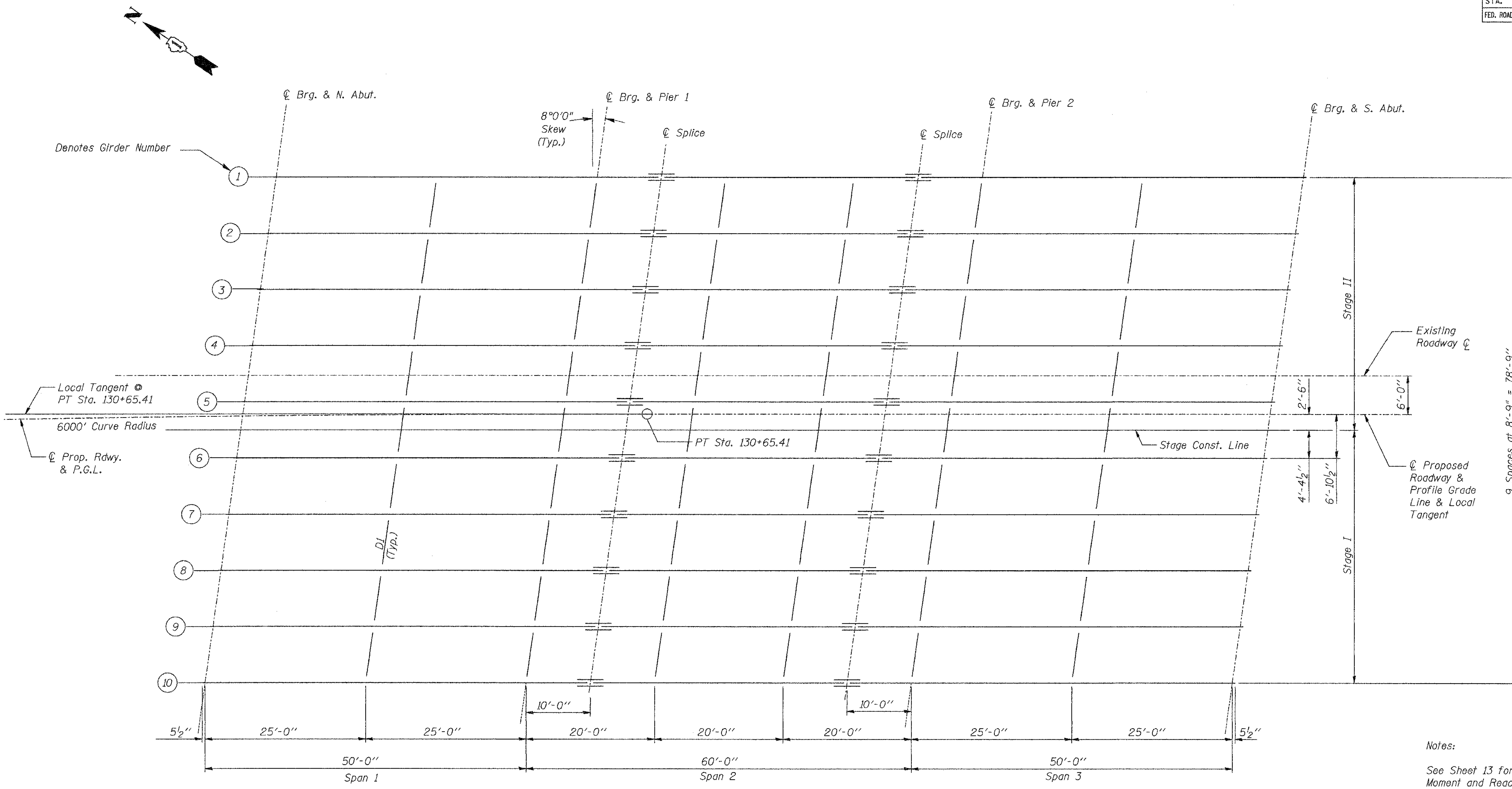
ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

DECK CROSS SECTION

DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	12
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59



FRAMING PLAN

Notes:

See Sheet 13 for Girder Moment and Reaction Tables.

See Sheet 14 for Diaphragm and Splice Details.

FOR INFORMATION ONLY

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200 W. Monroe Street, Suite 1650
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312/553-0655, FAX 312/553-0661

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

FRAMING PLAN

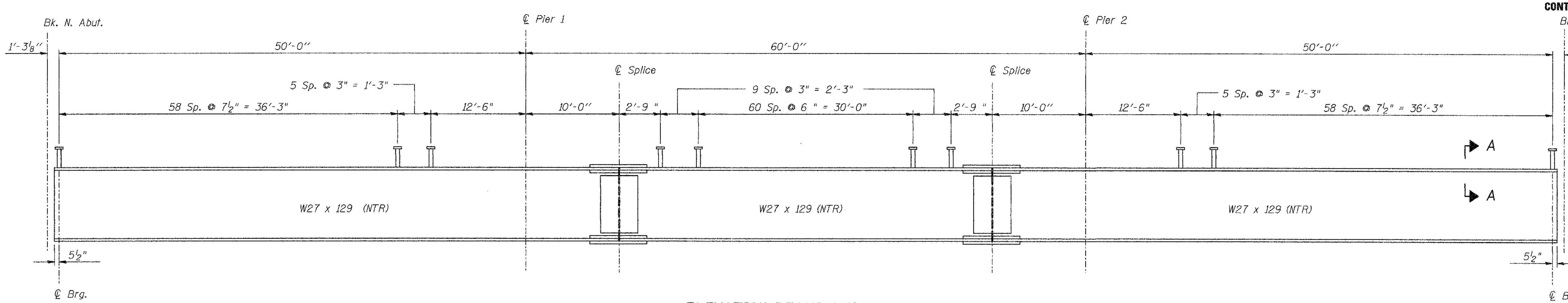
DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	13

STA. TO STA.

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

CONTRACT NO. 60D59



ELEVATION BEAMS 1-10

Interior Girder Moment Table				
		0.4 Sp.1/0.6 Sp.3	Pier	0.5 Sp.2
Is	(in ⁴)	4760	4760	4760
Ic (n)	(in ⁴)	13774		13774
Ic (3n)	(in ⁴)	10064		10064
Ss	(in ³)	345	345	345
Sc (n)	(in ³)	572		572
Sc (3n)	(in ³)	475		475
Z	(in ³)			
DL	(k/')	0.99	1.60	0.99
Mdl	(' k)	178	-444	147
s DL	(k/')	0.61		0.61
Ms DL	(' k)	125		129
M LL	(' k)	430	-238	444
M (Imp)	(' k)	123	-66	120
5/3[M LL + M(Imp)]	(' k)	922	-508	939
Ma	(' k)	1592	-1237	1580
Mu	(' k)	3223		3223
fs DL non-comp	(ksi)	6.2	15.4	5.1
fs DL (comp)	(ksi)	3.2		3.3
fs 5/3[M LL + M(Imp)]	(ksi)	21.0	17.7	21.4
fs (Overload)	(ksi)	30.3	33.1	29.8
fs (total)	(ksi)		43.0	
VR	(k)	62.5		47.7

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

VR is the maximum Live Load + Impact shear range in span.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

Ma (Applied Moment)=1.3[M_D + Ms_D + $\frac{5}{3}$(M_L + M(Imp))].

The Plastic Moment capacity (Mu) is computed according to AASHTO 10.48.1 and 10.50.1.1.

fs (Overload) is the sum of the stresses due to M_D + Ms_D + $\frac{5}{3}$(M_L + M(Imp)).

fs (Total) (Non-compact section) is the sum of the stresses due to 1.3[M_D + Ms_D + $\frac{5}{3}$(M_L + M(Imp))].

Interior Girder Reaction Table			
		Abutments	Pier
R_{DL}	(k)	31.1	96.9
R_{LL}	(k)	45.2	53.2
Imp.	(k)	12.9	14.8
R (Total)	(k)	89.2	164.9

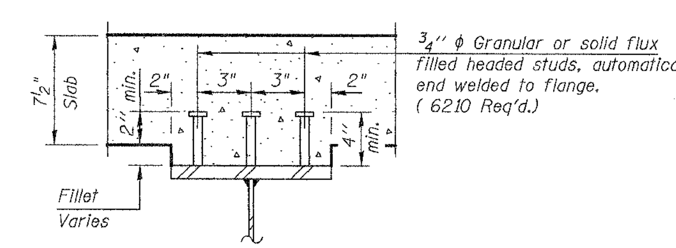
BILL OF MATERIAL

Item	Unit	Quantity
Furnishing Structural Steel	L. Sum	1

TOP OF GIRDER ELEVATIONS

(For Fabrication Only)

Beam	Location					
	℄ Brg. N. Abut.	℄ Brg. Pier 1	℄ Joint Splice 1	℄ Joint Splice 2	℄ Brg. Pier 2	℄ Brg. S. Abut.
1	643.76	643.77	643.77	643.60	643.53	643.17
2	643.93	643.94	643.95	643.78	643.71	643.35
3	644.10	644.12	644.12	643.96	643.89	643.54
4	644.27	644.29	644.30	644.15	644.08	643.72
5	644.44	644.47	644.48	644.33	644.26	643.91
6	644.35	644.37	644.37	644.24	644.17	643.82
7	644.17	644.20	644.20	644.07	644.00	643.65
8	643.99	644.02	644.03	643.90	643.83	643.49
9	643.81	643.85	643.86	643.73	643.66	643.33
10	643.63	643.67	643.68	643.56	643.50	643.16



SECTION A-A

STUD SHEAR CONNECTORS ARE NOT PART OF THIS CONTRACT

NOTES:

N.T.R. denotes members to which notch toughness requirements are applicable.

For splice details, see sheet 14.

All steel shown on this sheet shall be AASHTO M270 Grade 50W.

REVISIONS	
NAME	DATE

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ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

GIRDER ELEVATION & MOMENT TABLE

DESIGN BY: AWH DRAWN BY: AWH
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

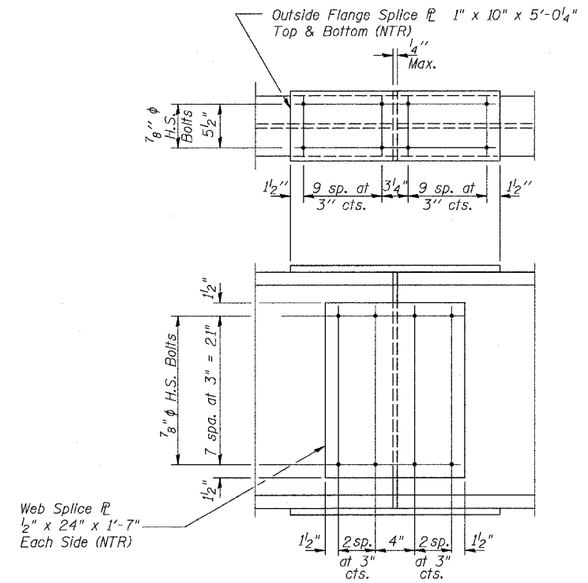
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	14
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

DIAPHRAGM D1

54-Required

* Provide 15/16"x 2" vertical slotted holes in angles for diaphragms in stage construction bay (West Side of Beam 5).



SPLICE

20-Required

Notes:

1) Two hardened washers shall be required over all oversize holes for diaphragms.
2) All splice plates shall conform to the supplemental requirements for Notch Toughness Zone 2. (NTR) in accordance with the General Notes.
3) Structural steel for diaphragms, filler plates and connection angles shall be AASHTO M270 Grade 50W.
4) Structural steel for splice plates shall be AASHTO M270 Grade 50W.

REVISIONS NAME	DATE

STV Incorporated
Engineers/Architects/Planners/Construction Managers
200 W. Monroe Street, Suite 1650
Chicago, IL 60606-5015
312/733-0655, FAX 312/553-0661

ILLINOIS DEPARTMENT OF TRANSPORTATION

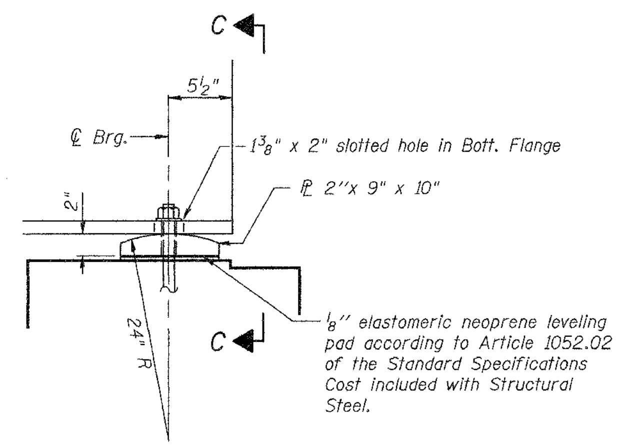
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

DIAPHRAGM/SPLICE DETAILS

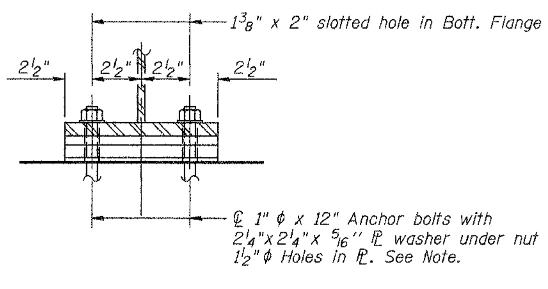
DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	15
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

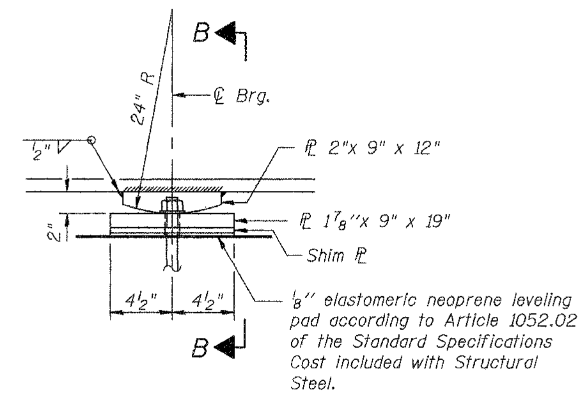


ELEVATION

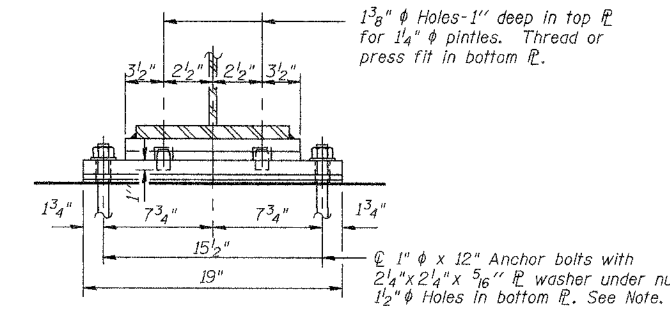


SECTION C-C

BEARING AT INTEGRAL ABUTMENT

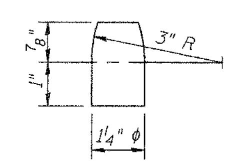


ELEVATION AT PIER



SECTION B-B

FIXED BEARING



PINTLE

Notes:

Structural steel for bearing plates shall be AASHTO M270, Grade 50W.

Anchors for bearing plates shall be 1"ϕx12" A307 Gr C, F 1554 Gr 36 or M314 Gr 36.

Structural steel for bearing plates shall be AASHTO M270, Grade 50W.

ANCHOR BOLTS ARE NOT
PART OF THIS CONTRACT

STV Incorporated
Engineers/Architects/Planners/Construction Managers
200 W. Monroe Street, Suite 1650
Chicago, IL 60606-5015
312/553-0655, FAX 312/553-0661

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

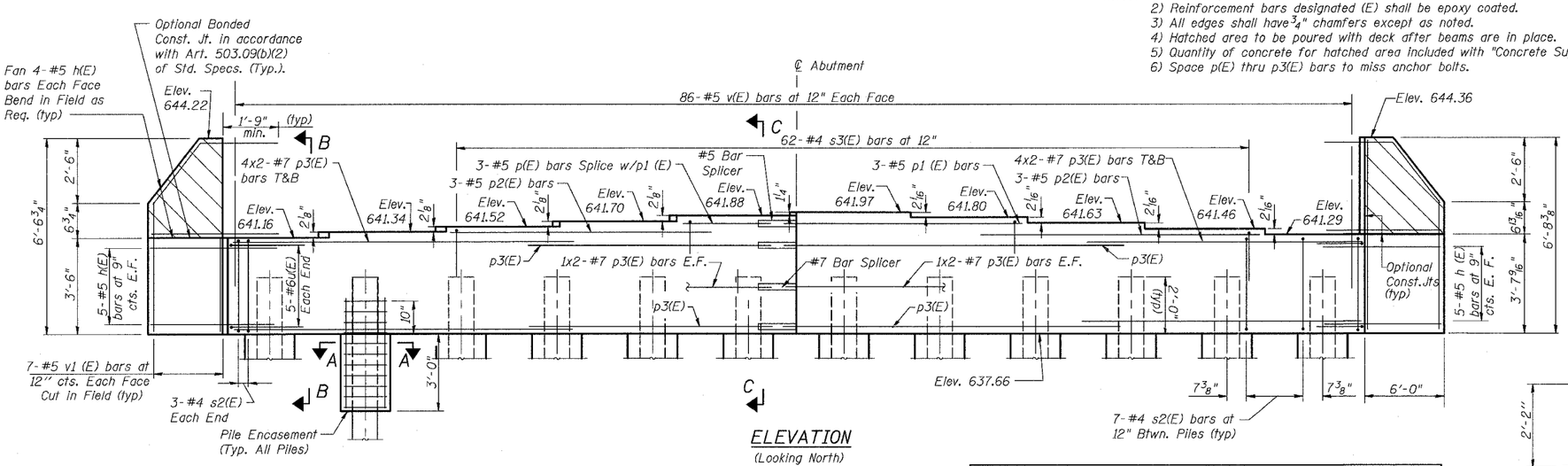
BEARING DETAILS

DESIGN BY: BTO DRAWN BY: BTO
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	15A
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

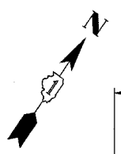
CONTRACT NO. 60D59

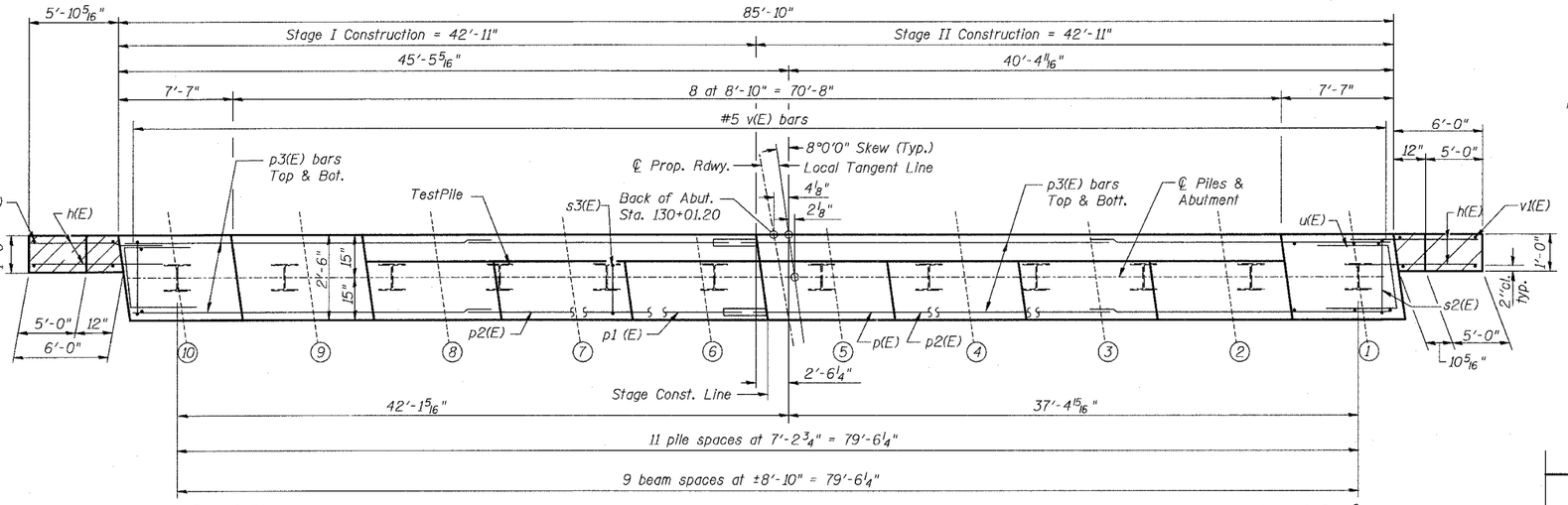
Notes:
1) Pour steps monolithically with cap.
2) Reinforcement bars designated (E) shall be epoxy coated.
3) All edges shall have $\frac{3}{4}$" chamfers except as noted.
4) Hatched area to be poured with deck after beams are in place.
5) Quantity of concrete for hatched area included with "Concrete Superstructure" on Sheet S-13.
6) Space p(E) thru p3(E) bars to miss anchor bolts.



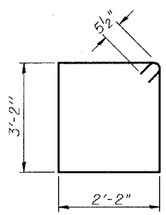
ELEVATION
(Looking North)

FOR INFORMATION ONLY

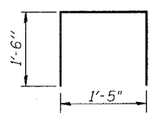




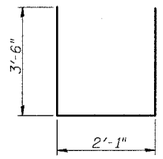
PLAN



BAR s2(E)



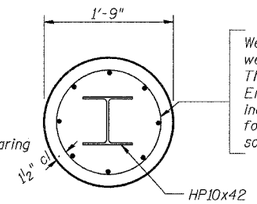
BAR s3(E)



BAR u(E)

PILE DATA

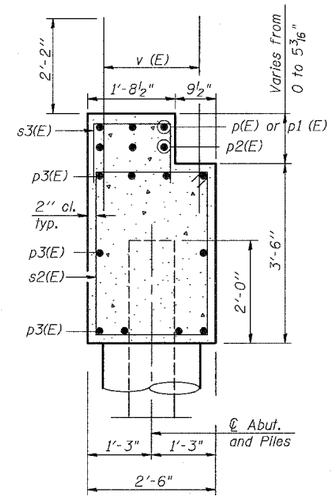
Type: Steel HP10x42
with Metal Shoes
Capacity: 55 Tons
Driven to 83 Ton Bearing
Est. Length: 58 Feet
No. Required: 11
Plus 1 Test Pile



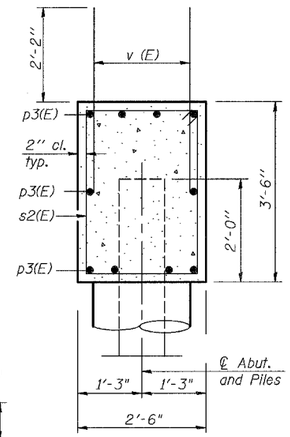
Welded wird fabric 6x6-W4.0xW4.0 weighing 58#/100 sq. ft
The cost of Excavation, Concrete Encasement and Reinforcement is included with furnishing piles. Form for encasement may be omitted when soil conditions will permit.

SECTION A-A

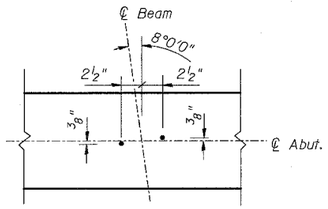
PILE ENCASEMENT DETAIL



SECTION C-C
ABUTMENT



SECTION B-B
ABUTMENT



ANCHOR BOLT SPACING

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	36	#5	8'-3"	——
p(E)	3	#5	8'-6"	——
p1(E)	3	#5	17'-4"	——
p2(E)	6	#5	19'-10"	——
p3(E)	40	#7	23'-0"	——
s2(E)	83	#4	11'-7"	⌐¬
s3(E)	62	#4	4'-5"	□
u(E)	10	#6	9'-1"	⌐¬
v(E)	172	#5	3'-3"	——
v1(E)	28	#5	6'-5"	——
Concrete Structures			Cu. Yd.	36.5
Reinforcement Bars, Epoxy Coated			Pound	4130
Furnishing Steel Piles HP 10x42			Foot	638
Driving Steel Piles			Foot	638
Metal Shoes			Each	12
Test PileSteel HP 10x42			Each	1

Min. Bar Splice Length
#5 = 2'-2"
#7 = 3'-5"

REVISIONS NAME	DATE

STV Incorporated
Engineers/Architects/Planners/Construction Managers
200 W. Monroe Street, Suite 1650
Chicago, IL 60606-5015
312/553-0655, FAX 312/553-0661

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

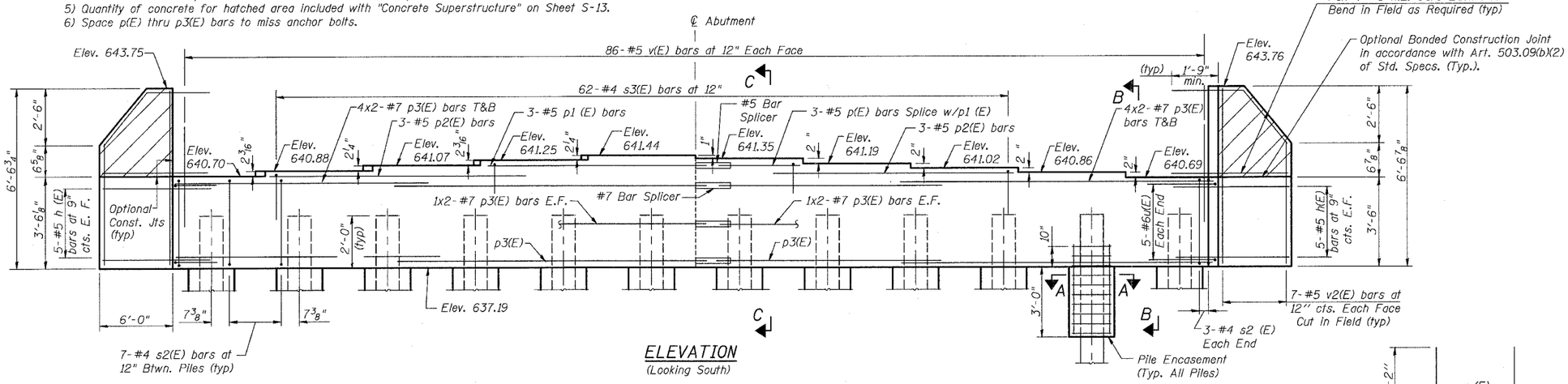
NORTH ABUTMENT

DESIGN BY: AWH DRAWN BY: AWH
DATE: 8/29/07 CHECKED BY: BTO CHECKED BY: JAW

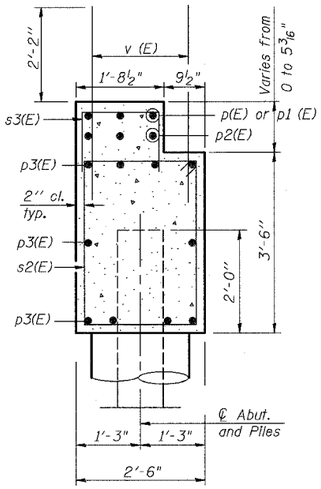
Notes:
1) Pour steps monolithically with cap.
2) Reinforcement bars designated (E) shall be epoxy coated.
3) All edges shall have $\frac{3}{4}$" chamfers except as noted.
4) Hatched area to be poured with deck after beams are in place.
5) Quantity of concrete for hatched area included with "Concrete Superstructure" on Sheet S-13.
6) Space p(E) thru p3(E) bars to miss anchor bolts.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	15B
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

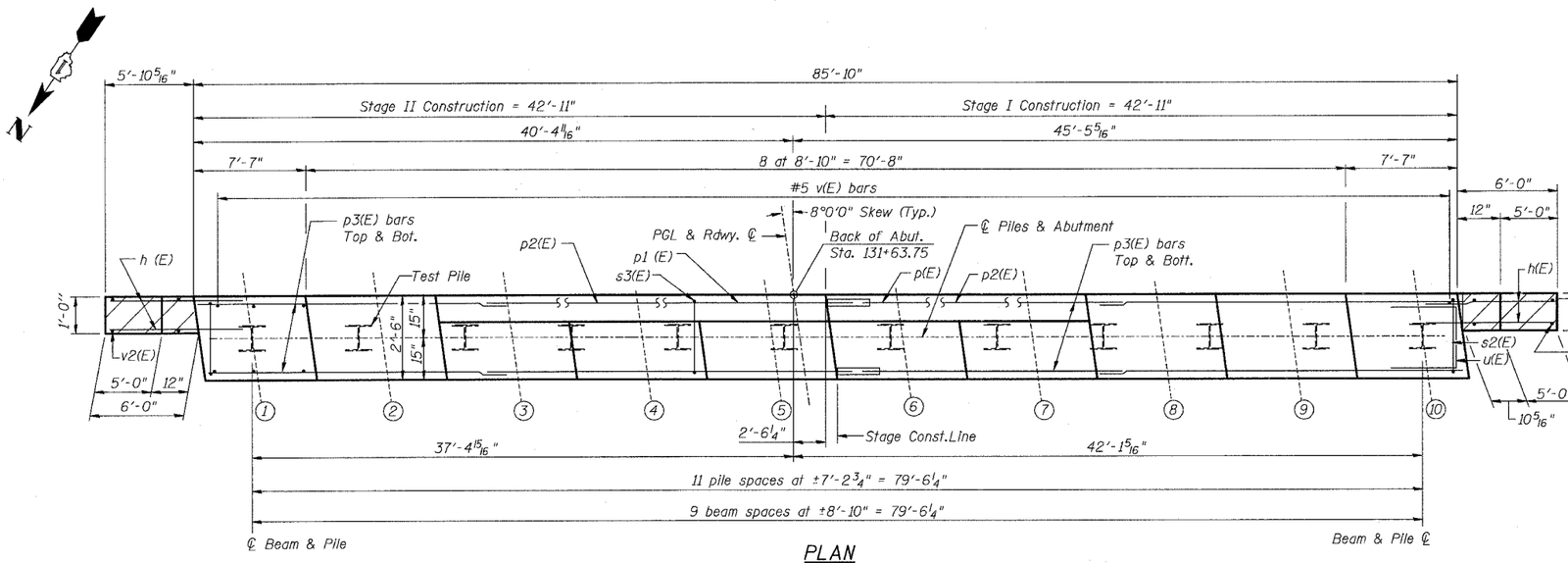
CONTRACT NO. 60D59



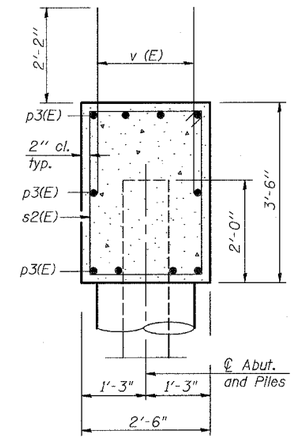
ELEVATION
(Looking South)



SECTION C-C
ABUTMENT



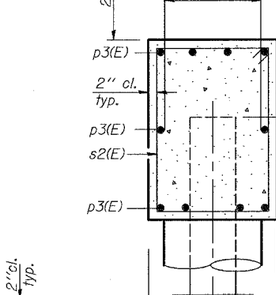
PLAN



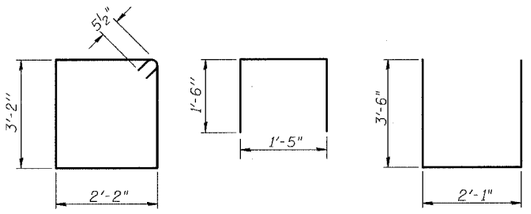
SECTION B-B
ABUTMENT

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	36	#5	8'-3"	——
p(E)	3	#5	8'-6"	——
p1(E)	3	#5	17'-4"	——
p2(E)	6	#5	19'-10"	——
p3(E)	40	#7	23'-0"	——
s2(E)	83	#4	11'-7"	⌐
s3(E)	62	#4	4'-5"	⌐
u(E)	10	#6	9'-1"	⌐
v(E)	172	#5	3'-3"	——
v2(E)	28	#5	6'-3"	——
Concrete Structures			Cu. Yd.	36.5
Reinforcement Bars, Epoxy Coated			Pound	4130
Structure Excavation			Cu. Yd.	137
Furnishing Steel Piles HP 10x42			Foot	495
Driving Steel Piles			Foot	495
Metal Shoes			Each	12
Test Pile Steel HP 10x42			Each	1



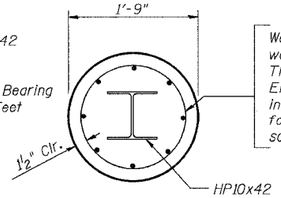
ANCHOR BOLT SPACING



BAR s2(E) BAR s3(E) BAR u(E)

PILE DATA

Type: Steel HP10x42
with Metal Shoes
Capacity: 55 Tons
Driven to 83 Ton Bearing
Est. Length: 45 Feet
No. Required: 11
Plus 1 Test Pile



Welded wird fabric 6x6-W4.0xW4.0 weighing 58#/100 sq. ft
The cost of Excavation, Concrete Encasement and Reinforcement is included with furnishing piles. Form for encasement may be omitted when soil conditions will permit.

SECTION A-A
PILE ENCASEMENT DETAIL

FOR INFORMATION ONLY

Min.Bar Splice Length
#5 = 2'-2"
#7 = 3'-5"

REVISIONS NAME	DATE

STV Incorporated
Engineers/Architects/Planners/Construction Managers
200 W. Monroe Street, Suite 1650
Chicago, IL 60606-5015
312/553-0655, FAX 312/553-0661

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

SOUTH ABUTMENT

DESIGN BY: AWH DRAWN BY: AWH
DATE: 8/29/07 CHECKED BY: BTO CHECKED BY: JAW

Notes:
All edges shall have standard $\frac{3}{4}$" chamfer except as noted.

Space reinforcement in cap to miss anchor bolts.

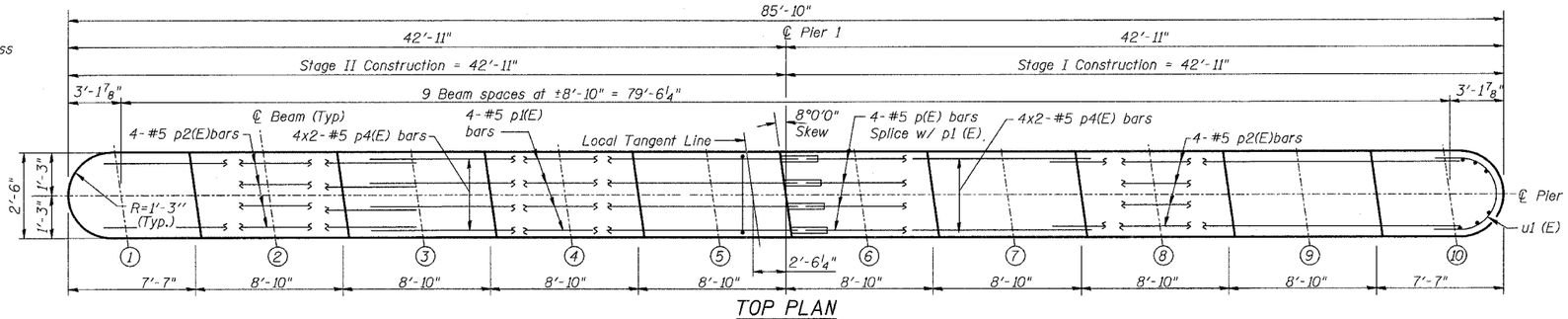
Pour steps monolithically with cap.

Minimum Rebar Splice Length:
#5 - 2'-2"
#7 - 3'-5"

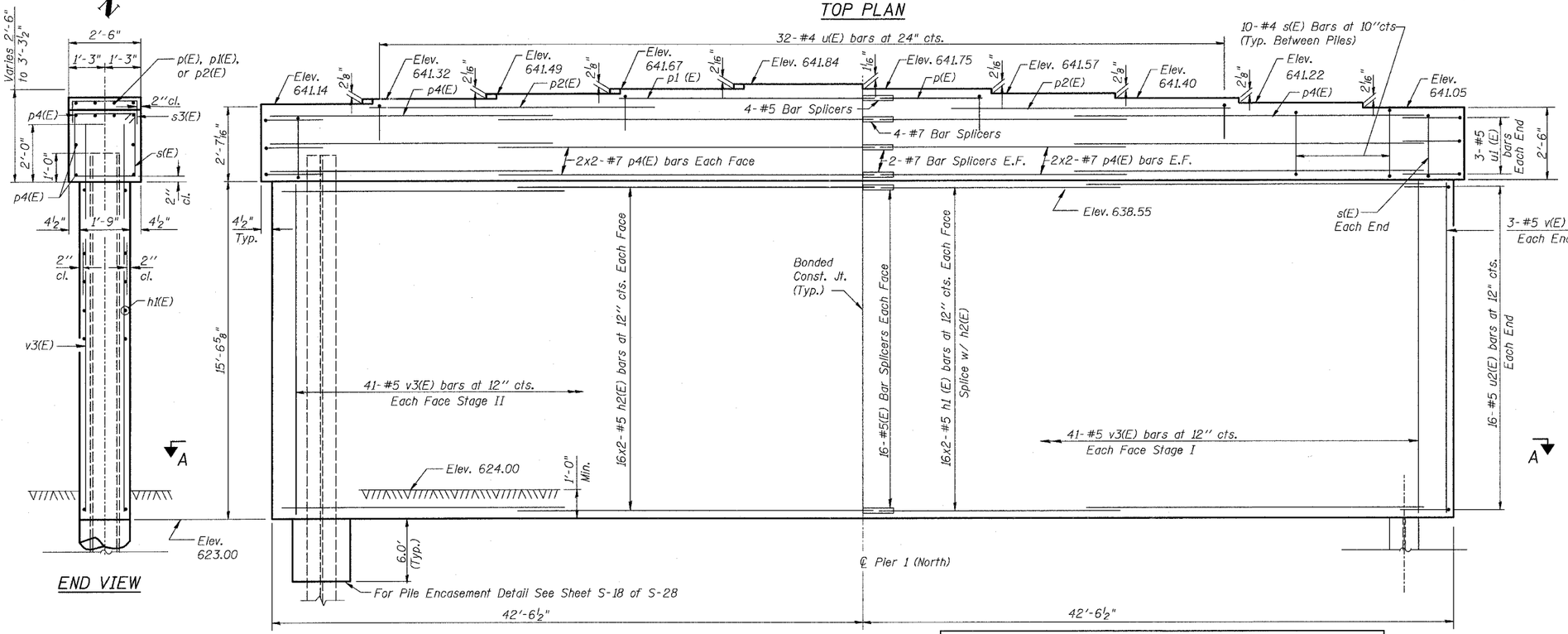
Bars indicated thus 16x2-#5 h1(E) etc., indicates 16 lines of bars 2 lengths per line.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-1-1	COOK	15	15C
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59



TOP PLAN



END VIEW

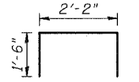
SECTION A-A

ELEVATION
(Looking South)

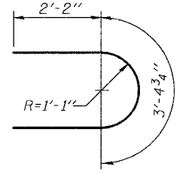
FOR INFORMATION ONLY

PILE DATA

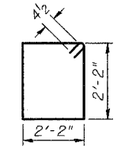
Type: Steel HP 10x42
with Metal Shoes
Capacity: 55 Tons
Driven to 83 Ton Bearing
Est. Length: 61 feet
No. Required: 15
Plus 1 Steel Test Pile HP 10x42



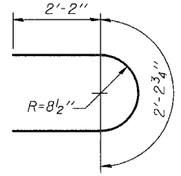
BAR s3 (E)



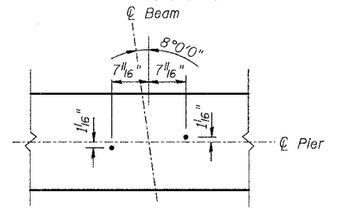
BAR u1 (E)



BAR s(E)



BAR u2(E)



ANCHOR BOLT SPACING

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	128	#5	21'-11"	——
p(E)	4	#5	8'-6"	——
p1(E)	4	#5	17'-4"	——
p2(E)	8	#5	19'-10"	——
p4(E)	32	#7	22'-6"	——
s(E)	92	#4	9'-5"	□
s3(E)	62	#4	5'-2"	⊓
u1(E)	6	#5	7'-9"	⊃
u2(E)	32	#5	6'-7"	⊃
v3(E)	170	#5	17'-5"	——
Reinforcement Bars, Epoxy Coated			Pound	8820
Concrete Structures			Cu. Yd.	114.7
Test Piles Steel HP 10x42			Each	1
Furnishing Steel Piles HP 10x42			Feet	915
Driving Steel Piles			Feet	915
Metal Shoes			Each	15
Underwater Structure Excavation Protection			Each	1
Structure Excavation			Cu. Yd.	60

Reinforcement bars designated (E) shall be epoxy coated.

NOTE:
Forms shall be placed below Elev. 623.00 after excavation for pier walls. Reinforcement and Class SI Concrete Encasement shall be placed underwater into forms. The cost of class SI Concrete Encasement, reinforcement, form excavation, and furnishing and placing forms is incidental to furnishing piles. If a portion of the pier wall is underwater, Class SI Concrete shall be tremied underwater into the forms in accordance with Article 503.08(a) of the Standard Specifications. Concrete shall be tremied to an elevation 12" above the water level at the time of construction.

REVISIONS	
NAME	DATE

STV Incorporated
Engineers/Architects/Planners/Construction Managers
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Chicago, IL 60606-5015
312/553-0655, FAX 312/553-0661

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-1-1
COOK COUNTY, SN 016-6566

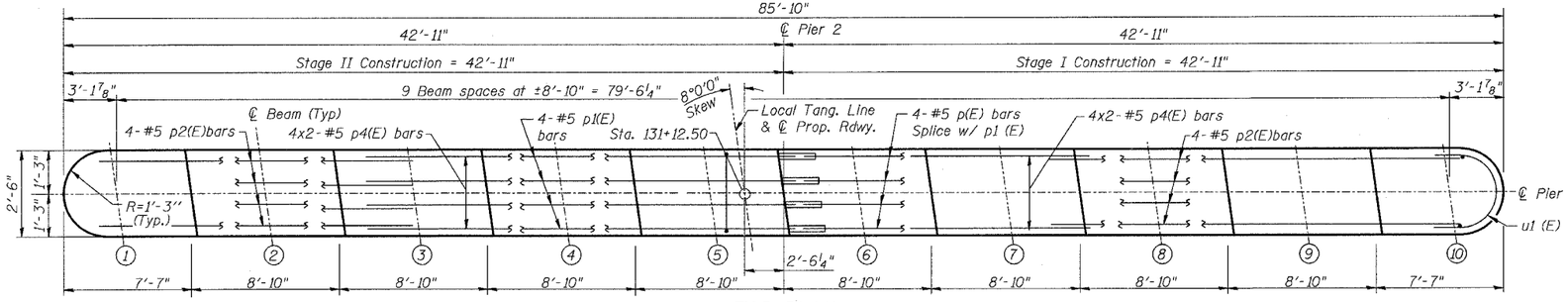
PIER 1 ELEVATION & PLAN

DESIGN BY: AWH DRAWN BY: AWH
DATE: 8/29/07 CHECKED BY: JAW CHECKED BY: JAW

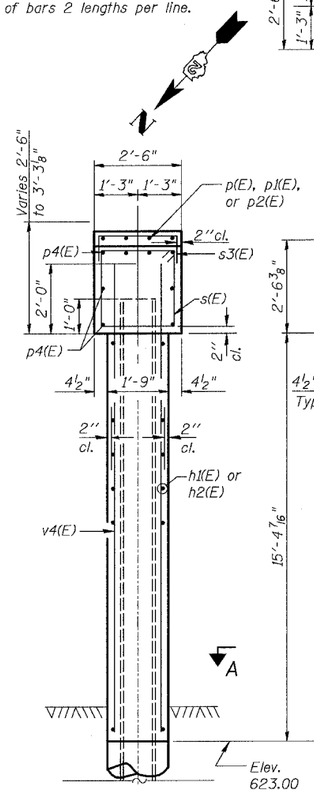
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
374	G-B-I-1	COOK	15	15D
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60D59

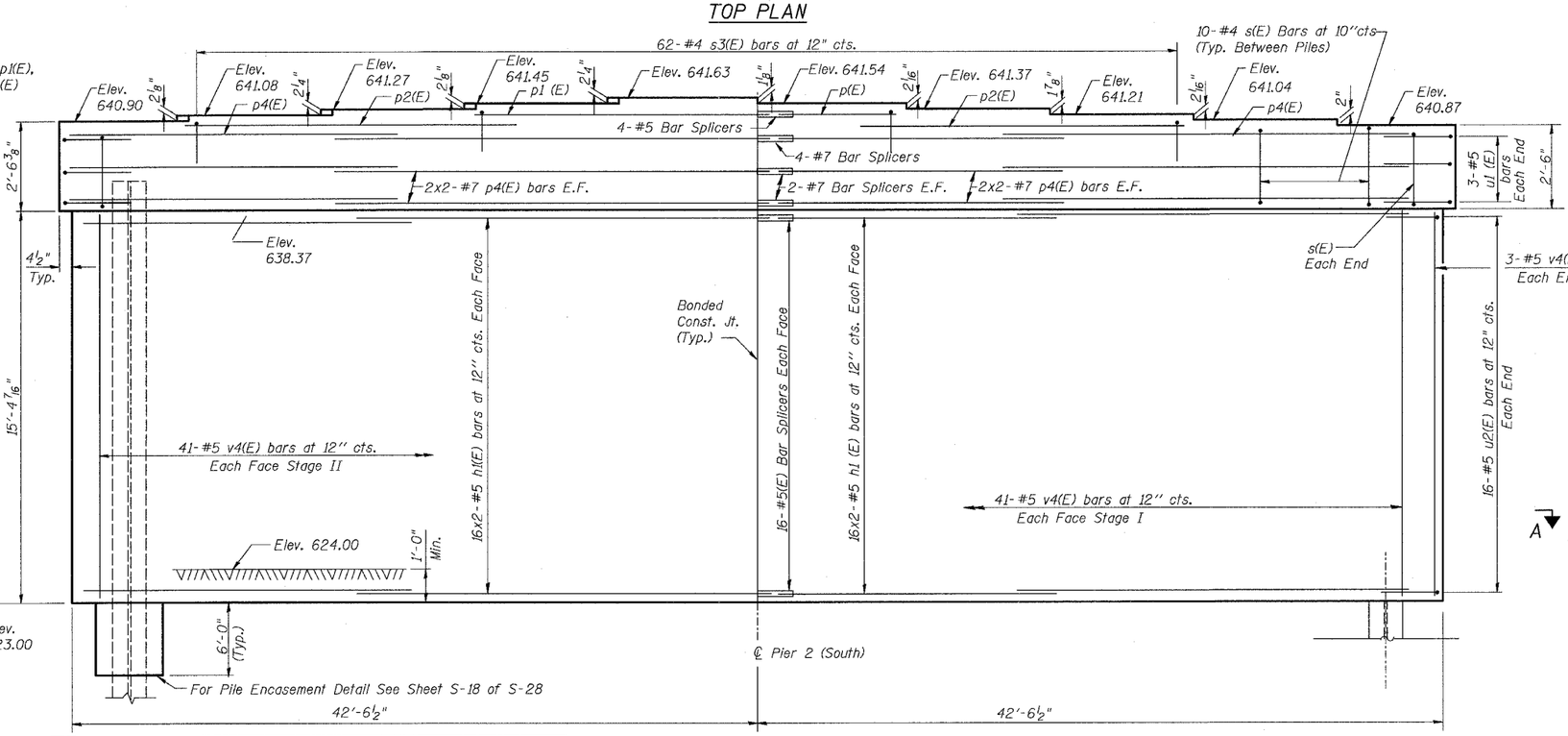
Notes:
All edges shall have standard $\frac{3}{4}$" chamfer except as noted.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Minimum Rebar Splice Length:
#5 - 2'-2"
#7 - 3'-5"
Bars indicated thus 16x2-#5 h1(E) etc., indicates 16 lines of bars 2 lengths per line.



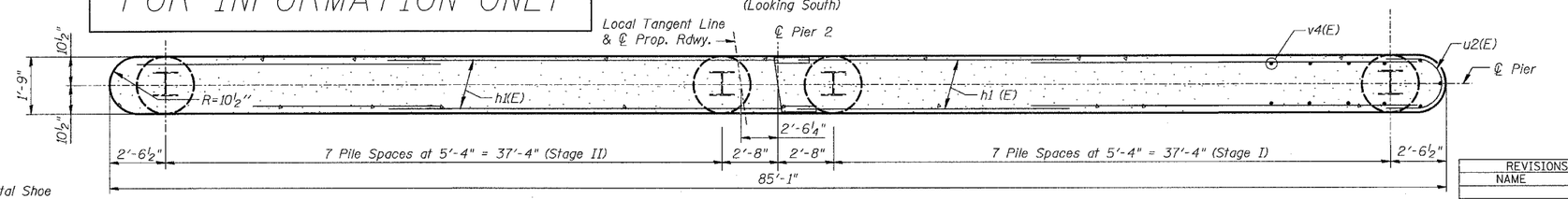
TOP PLAN



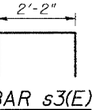
END VIEW



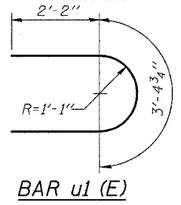
ELEVATION
(Looking South)



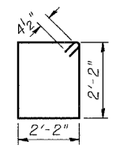
SECTION A-A



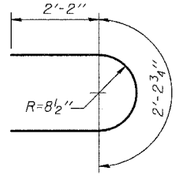
BAR s3(E)



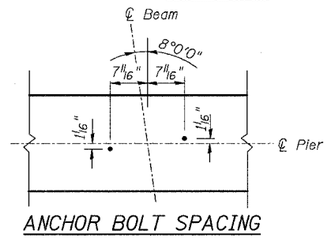
BAR u1 (E)



BAR s(E)



BAR u2(E)



ANCHOR BOLT SPACING

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
				I
h1(E)	128	#5	21'-11"	——
p(E)	4	#5	8'-6"	——
p1(E)	4	#5	17'-4"	——
p2(E)	8	#5	19'-10"	——
p4(E)	32	#7	22'-6"	——
s(E)	92	#4	9'-5"	□
s3(E)	62	#4	5'-2"	□
u1(E)	6	#5	7'-9"	⊃
u2(E)	32	#5	6'-7"	⊃
v4(E)	170	#5	17'-3"	——
Reinforcement Bars, Epoxy Coated		Pound	8800	
Concrete Structures		Cu. Yd.	113.5	
Test Piles Steel HP 10x42		Each	1	
Furnishing Steel Piles HP 10x42		Feet	765	
Driving Steel Piles		Feet	765	
Metal Shoes		Each	15	
Underwater Structure Excavation Protection		Each	1	
Structure Excavation		Cu. Yd.	32	

Reinforcement bars designated (E) shall be epoxy coated.

FOR INFORMATION ONLY

PILE DATA
Type: Steel HP 10x42 with Metal Shoe
Capacity: 55 Tons
Driven to 83 Ton Bearing
Est. Length: 51 Feet
No. Required: 15 Plus 1 Test Pile

NOTE:
Forms shall be placed below Elev. 623.00 after excavation for pier walls. Reinforcement and Class SI Concrete Encasement shall be placed underwater into forms. The cost of class SI Concrete Encasement, reinforcement, form excavation, and furnishing and placing forms is incidental to furnishing piles. If a portion of the pier wall is underwater, Class SI Concrete shall be tremied underwater into the forms in accordance with Article 503.08(a) of the Standard Specifications. Concrete shall be tremied to an elevation 12" above the water level at the time of construction.

REVISIONS	
NAME	DATE

STV Incorporated
Engineers/Architects/Planners/Construction Managers
200 W. Monroe Street, Suite 1650
Chicago, IL 60606-5015
312/553-0655, FAX 312/553-0661

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 21
MILWAUKEE AVE. OVER DES PLAINES RIVER
F.A.P. ROUTE 374 SECTION G-B-I-1
COOK COUNTY, SN 016-6566

PIER 2 ELEVATION & PLAN

DESIGN BY: AWH DRAWN BY: AWH
DATE: 8/29/07 CHECKED BY: JAN CHECKED BY: JAW