

FOR UTILITY LOCATION PURPOSES, THIS PROJECT IS LOCATED IN THE N.E. AND S.E. QUARTERS OF SECTION 13, TOWNSHIP 5 NORTH, RANGE 10 WEST OF THE THIRD PRINCIPAL MERIDIAN.

AGENCIES KNOWN TO HAVE UNDERGROUND FACILITIES WITHIN THE LIMITS OF THIS IMPROVEMENT ARE SHOWN BELOW (MEMBERS OF JULIE, PHONE (800) 892-0123, ARE INDICATED BY *).

- * TCI OF ILLINOIS, INC.
508 NIAGARA
EAST ALTON, IL 62024
(618) 251-2660
- * SBC COMMUNICATIONS
203 GOETHE
COLLINSVILLE, IL 62234
(618) 346-6400
- * AMEREN UE
700 OAKWOOD AVENUE
P.O. BOX 478
ALTON, IL 62002
(618) 463-4043 (GAS)
(618) 463-4051 (ELECTRIC)
- CITY OF ALTON
PUBLIC WORKS DEPARTMENT
#2 EMMA L. KAUS LANE
ALTON, IL 62002
(618) 463-3530
- * CENTER POINT ENERGY
(MISSISSIPPI RIVER TRANSMISSION CORP.)
11839 BLUFF ROAD
COLUMBIA, IL 62236
(618) 799-9098
- * ILLINOIS AMERICAN WATER CO.
4436 INDUSTRIAL DRIVE
P.O. BOX 186
ALTON, IL 62002
(618) 466-2131

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS FEDERAL AID HIGHWAY

INDIANA AVE. EXTENSION - PHASE II
SECTION 97-00208-01-GS
FAU ROUTE 8966
PROJECT HPD-0387 (002)
CITY OF ALTON
MADISON COUNTY
JOB C-98-047-00

CONTRACT NO. 97255

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	MADISON	34	1

FEDERAL AID PROJECT
* 97-00208-01-GS

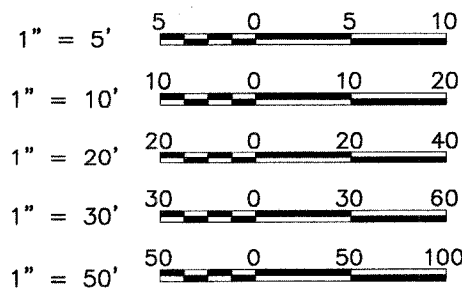
INDEX TO SHEETS

1. COVER SHEET
2. SUMMARY OF QUANTITIES, GENERAL NOTES & LEGEND
3. TYPICAL SECTIONS
4. TYPICAL EMBANKMENT SECTIONS AND DETAILS
5. TRAFFIC CONTROL PLAN, CONTROL POINTS & BENCHMARKS
- 6.-8. PLAN AND PROFILE SHEETS
9. EROSION CONTROL PLAN
10. CULVERT PLANS
- 11.-28. BRIDGE PLANS
- 29.-34. CROSS SECTIONS

HIGHWAY STANDARDS

- 280001-02
- 515001-02
- 601001
- 601101
- 702001-05

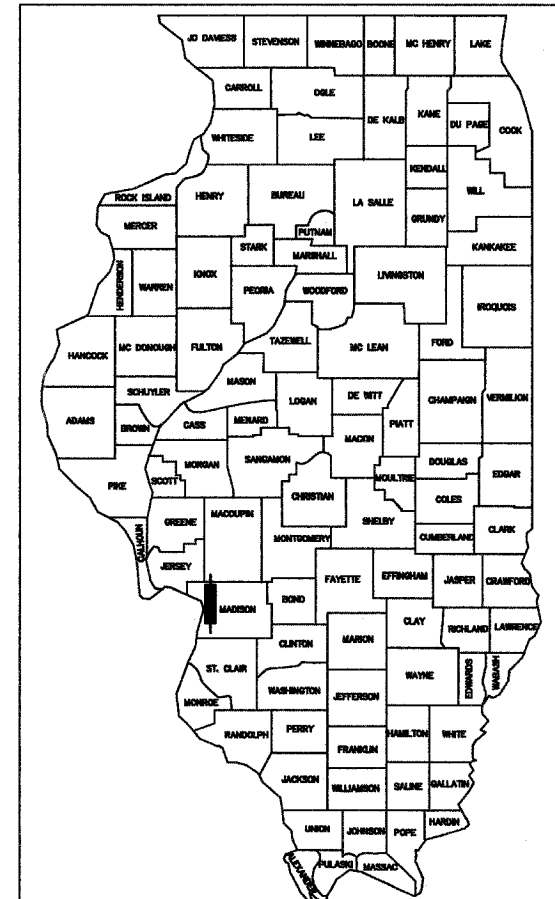
SCALES



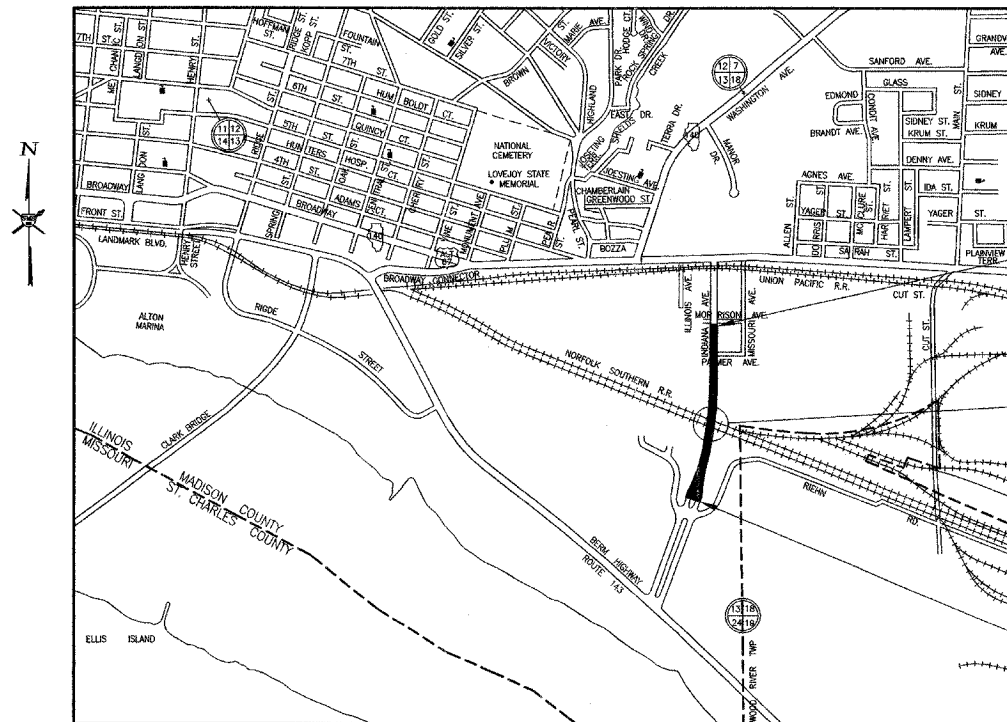
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS THE ABOVE SCALES MAY BE USED.

DESIGN DESIGNATION - DHV 1,420 (2025) URBAN COLLECTOR 8.856 (PCC-20)
DESIGN SPEED = 40 M.P.H.

CONTRACT NO. 97255



LOCATION OF SECTION INDICATED THUS:—



LOCATION MAP



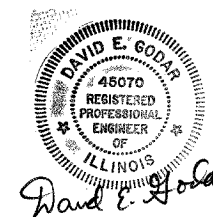
TOTAL NET LENGTH OF PROJECT = 2,000.00 FEET = 0.379 MILES

BEGIN IMPROVEMENT OF
INDIANA AVENUE
STA. 115+00

PROPOSED OVERPASS STRUCTURE
STA. 123+87.66 TO STA. 126+50.73

END IMPROVEMENT OF
INDIANA AVENUE
STA. 135+00

APPROVED	5-17	20 05
	<i>David E. Godar</i> LOCAL AGENCY REPRESENTATIVE	
PASSED	6-2	20 05
	<i>Annmarie Oberino</i> DISTRICT ENGINEER OF LOCAL ROADS & STREETS	
APPROVED	6-2	20 05
	<i>Mary C. Lamie</i> MARY C. LAMIE, P.E. DEPUTY DIRECTOR OF HIGHWAYS REGION FIVE ENGINEER	
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		



DATE SIGNED 5-16-2005
EXPIRATION DATE 11-30-2005



Sheppard Morgan & Schwaab, Inc.
CONSULTING ENGINEERS & LAND SURVEYORS
215 Market Street
Alton, Illinois 62002
P.O. Box E
618/462-9755

10 Central Industrial Dr
Northgate Center
Granite City, IL 62040
618/877-8700

GENERAL NOTES

- THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2002 AND THE SPECIAL PROVISIONS OF THE PROJECT CONTRACT.
- EXCEPT WHERE DESIGNATED OTHERWISE, THE LOCATIONS AND/OR DEPTHS OF UNDERGROUND UTILITIES SHOWN HAVE BEEN TAKEN FROM OFFICE RECORD INFORMATION FURNISHED BY THE UTILITY OWNERS AND MUST BE CONSIDERED APPROXIMATE.
- ALL ELEVATIONS REFER TO NATIONAL GEODETIC SURVEY (N.G.S.) DATUM.
- ANY REFERENCES TO "STANDARDS" THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARD OF THE DEPARTMENT AS SHOWN ON COVER SHEET.
- WHERE PERMANENT SURVEY MARKERS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED, THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THE LOCATIONS.
- THE CONTRACTOR SHALL USE EXTREME CAUTION NEAR THE EXISTING PIPELINES CROSSING THE ROADWAY NEAR STATION 127+35. THE CONTRACTOR WILL BE REQUIRED TO NOTIFY THE PIPELINE COMPANIES IN ADVANCE OF WORKING NEAR THE PIPELINES. TELEPHONE NUMBERS FOR THE PIPELINE COMPANIES ARE SHOWN ON THE COVER SHEET OF THESE PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING GEOTECHNICAL INSTRUMENTATION AT THE LOCATIONS SHOWN ON THE PLANS. THIS EQUIPMENT INCLUDES THE EXISTING PIEZOMETER READOUT STATION, EXISTING SETTLEMENT PLATFORMS AND EXISTING INCLINOMETERS. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY EQUIPMENT THAT IS DAMAGED BY HIS OPERATIONS. FOR PROTECTION OF THIS EQUIPMENT, THE CONTRACTOR SHALL ERECT AND MAINTAIN TEMPORARY FENCE. TEMPORARY FENCE SHALL CONSIST OF FLUORESCENT ORANGE HAZARD FENCE A MINIMUM OF 5 FEET BY 5 FEET AROUND THIS EQUIPMENT. UPON COMPLETION OF THIS PROJECT, THESE FENCES SHALL BE IN GOOD CONDITION, SHALL REMAIN IN PLACE AND SHALL BECOME THE PROPERTY OF THE CITY OF ALTON.

GENERAL LEGEND

- B-1 ● SOIL BORING LOCATION
- EXISTING SETTLEMENT PLATFORM
- I ○ EXISTING INCLINOMETER
- PROPOSED RIPRAP

SUMMARY OF QUANTITIES

SECTION 97-00208-01-GS
CONSTRUCTION TYPE CODE X171

CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
20101000	TEMPORARY FENCE	FOOT	400
20200100	EARTH EXCAVATION	CU YD	339
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	50
20400800	FURNISHED EXCAVATION	CU YD	1,668
20700110	POROUS GRANULAR EMBANKMENT	TON	272
25000200	SEEDING, CLASS 2	ACRE	3.0
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	540
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	540
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	540
25000700	AGRICULTURAL GROUND LIMESTONE	TON	12
25000750	MOWING	ACRE	3.0
25003200	INTERSEEDING, CLASS 2	ACRE	3.0
25100115	MULCH, METHOD 2	ACRE	3.0
25100630	EROSION CONTROL BLANKET	SQ YD	761
28000200	EARTH EXCAVATION FOR EROSION CONTROL	CU YD	6
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	600
28000300	TEMPORARY DITCH CHECKS	EACH	4
28000400	PERIMETER EROSION BARRIER	FOOT	859
28100207	STONE RIPRAP, CLASS A4	TON	240
28200200	FILTER FABRIC	SQ YD	278
50200100	STRUCTURE EXCAVATION	CU YD	2,580
50300100	FLOOR DRAINS	EACH	16
50300225	CONCRETE STRUCTURES	CU YD	399
50300255	CONCRETE SUPERSTRUCTURE	CU YD	546.2
50300260	BRIDGE DECK GROOVING	SQ YD	1,773
50300300	PROTECTIVE COAT	SQ YD	2,000
50300310	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	14
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	3,549
50800105	REINFORCEMENT BARS	POUND	25,410
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	192,380
51100100	SLOPE WALL 4 INCH	SQ YD	997
51201700	FURNISHING STEEL PILES HP12X74	FOOT	3,551
51202000	FURNISHING STEEL PILES HP14X102	FOOT	2,412
51202700	DRIVING STEEL PILES	FOOT	5,963
51203700	TEST PILE STEEL HP12X74	EACH	1
51204000	TEST PILE STEEL HP14X102	EACH	1
51204600	METAL SHOES	EACH	48
51205200	TEMPORARY SHEET PILING	SQ FT	2,987
51500100	NAME PLATES	EACH	1
54003000	CONCRETE BOX CULVERTS	CU YD	131.2
60100060	CONCRETE HEADWALL FOR PIPE DRAINS	EACH	2
60100905	PIPE DRAINS 4"	FOOT	40
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	18
70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1
X0301280	PLUG EXISTING DRAINS	EACH	2
X0003428	PIPE CULVERT REMOVAL (36")	FOOT	40
Z0002600	BAR SPLICERS	EACH	122
Z0010500	CLEANING CULVERTS	L SUM	1
Z0013825	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	90
Z0022300	EXTEND SETTLEMENT PLATFORMS	EACH	1
Z0041500	PLUG EXISTING CULVERTS	EACH	4
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1
67100100	MOBILIZATION	L SUM	1

LOCATION	STRUCTURE EXCAVATION (CU. YD.)
STA. 118+60 BOX CULVERT SEE TYPICAL SECTION SHEET NO. 4	2,203
STA. 123+87.66 TO STA. 126+50.73 BRIDGE SEE SHEET NO. 12	377
TOTAL	2,580

LOCATION	EARTH EXCAVATION (CU. YD.)	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE * (CU. YD.)	EMBANKMENT (FILL) (CU. YD.)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-) (CU. YD.)	FURNISHED EXCAVATION (CU. YD.)
118+55 TO 119+25	339	254	0	+254	
121+00 TO 123+87.66	0	0	1,922	-1,922	
TOTALS	339	254	1,922	-1,668	1,668

* ASSUME SHRINKAGE FACTOR = 25%

REVISIONS					
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SMS Sheppard, Morgan & Schwaab, Inc.
CONSULTING ENGINEERS AND LAND SURVEYORS
215 Market Street, P.O. Box E, Alton, IL 62002 618/462-5755 E-mail: ms@smsengineers.com
10 Central Industrial Drive, Granite City, IL 62040 618/877-4700 E-mail: ms@smsengineers.com

CITY OF ALTON, ILLINOIS
SECTION 97 - 00208 - 01 - GS
INDIANA AVE. EXTENSION - PHASE II
SUMMARY OF QUANTITIES, GENERAL NOTES & LEGEND

DWG. NO.
CONTROL POINTS.DWG
REF. BK. - PG. -
JOB NO. 406365.1
DSN. BY: DEG
CHK. BY: DEG
DATE: APRIL, 2005
SCALE: NONE
SHEET 2 OF 34

STRUCTURAL DESIGN DATA

INDIANA AVENUE EXTENSION

PAVEMENT TYPE: RIGID, REINFORCED JOINTED
 CLASS OF STREET: CLASS I
 DESIGN PERIOD: 20 YEARS
 TRAFFIC DATA: 2005 ADT = 9,200
 2015 ADT = 11,700 (SDT)
 2025 ADT = 14,200
 STRUCTURAL DESIGN TRAFFIC: 80% P.V. = 9,360
 10% S.U. = 1,170
 10% M.U. = 1,170
 TRAFFIC FACTOR : 8.856 (80,000 LB. TRUCK DESIGN)
 SHOULDER TYPE: TIED CURB AND GUTTER
 SUBGRADE SUPPORT RATING: POOR (ASSUMED)
 OVERLOADS: N/A (T.F. > 2.0)
 DESIGN SPECIFIED: SLAB THICKNESS - 8 1/4"
 JOINT SPACING - 15'
 DOWEL BARS - 1.5" DIAMETER
 SUBBASE - GRANULAR, 4"
 REINFORCEMENT - PAVEMENT FABRIC

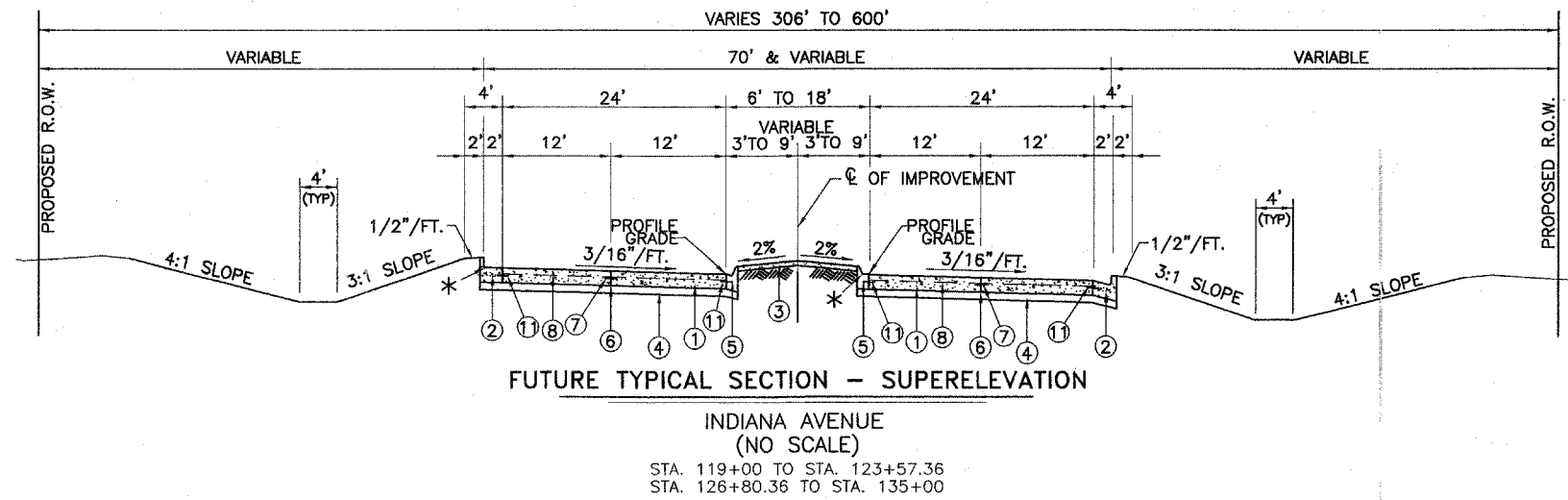
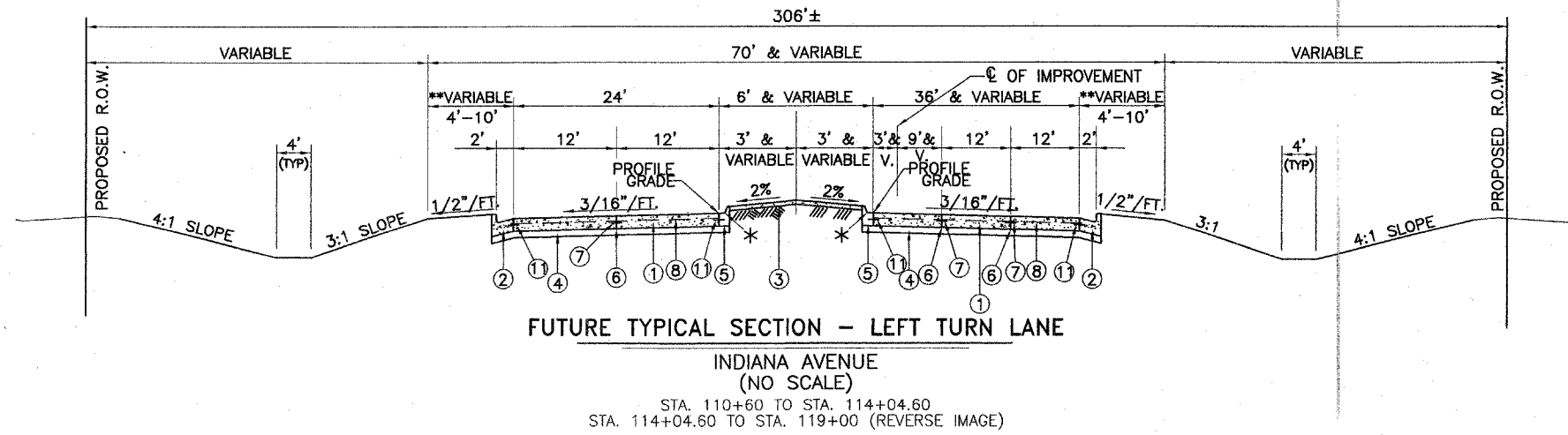
LEGEND

- ① PORTLAND CEMENT CONCRETE PAVEMENT 8 1/4" (JOINTED), PAVEMENT SHALL BE JOINTED PER STANDARD 420101 AND 420106 15' JOINT SPACING, 1-1/2" DIAMETER DOWEL BARS THICKEN PAVEMENT TO 10" ON BOTH SIDES OF R.R. CROSSING PER HWY. STD. 420501 (INCIDENTAL)
- ② COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.24
- ③ CONCRETE MEDIAN SURFACE, 4"
- ④ SUB-BASE GRANULAR MATERIAL TYPE A (4")
- ⑤ COMBINATION CONCRETE CURB & GUTTER, TYPE, M-6.12 (SOUTH SIDE OF UNION PACIFIC RAILROAD CROSSING)
- ⑥ SAWED OR KEYED LONGITUDINAL JOINT
- ⑦ #6 EPOXY COATED TIE BARS 30" LONG @ 30" CENTERS
- ⑧ PAVEMENT FABRIC, TYPE A
- ⑨ PORTLAND CEMENT CONCRETE SIDEWALK, 4" STA.108+52.27 TO STA.114+04.60
- ⑩ COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 (NORTH SIDE OF UNION PACIFIC RAILROAD CROSSING)
- ⑪ #6 EPOXY COATED TIE BARS 24" LONG @ 24" CENTERS
- * REVERSE GUTTER PAN SLOPE
- ** STA. 110+60 TO STA. 116+00 = 10'
 STA. 116+00 TO STA. 117+00 = TRANSITION 10' TO 4'
 STA. 117+00 TO STA. 119+00 = 4'

GENERAL NOTES:

- 1. STA. 123+57.36 TO STA. 123+87.66 - FUTURE BRIDGE APPROACH PAVEMENT STANDARD 420401
- STA. 123+87.66 TO STA. 126+50.73 - BRIDGE CONSTRUCTION UNDER THIS CONTRACT
- STA. 126+50.73 TO STA. 126+80.36 - FUTURE BRIDGE APPROACH PAVEMENT STANDARD 420401

CONTRACT NO. 97255



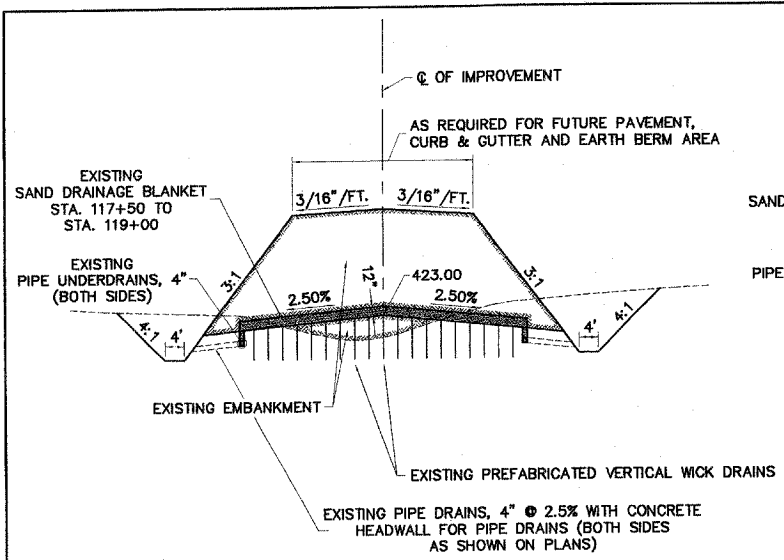
THIS PLAN SHEET IS PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY,
 PAVEMENT CONSTRUCTION WILL BE COMPLETED UNDER A FUTURE CONTRACT.

REVISIONS

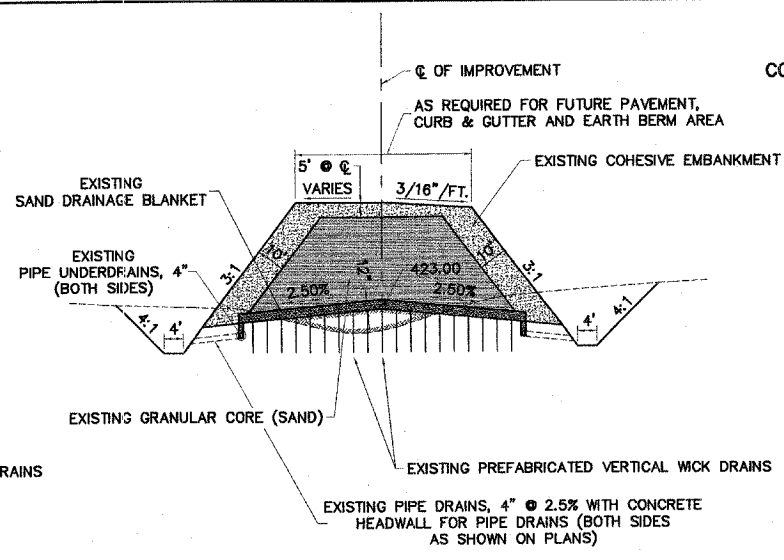
Sheppard Morgan & Schwaab, Inc.
 CONSULTING ENGINEERS LAND SURVEYORS
 215 Market Street
 P.O. BOX R
 Alton, Illinois 62012
 618/462-9756

CITY OF ALTON, ILLINOIS
 SECTION 97 - 00208 - 01 - GS
INDIANA AVE. EXTENSION-PHASE II
 TYPICAL SECTIONS

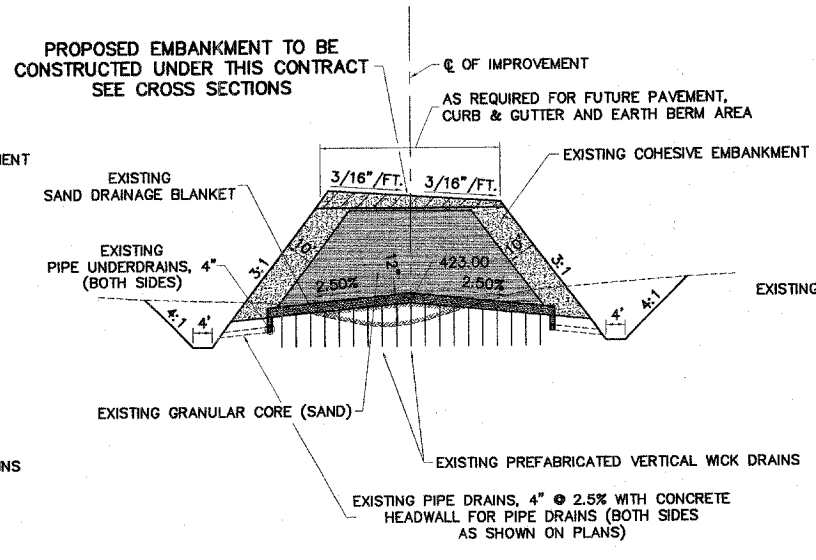
DWG. NO.	
REF. BK.	PG.
JOB NO.	406365.1
DSN. BY:	D.E.G.
DWN. BY:	CAD
CHK. BY:	D.E.G.
DATE:	APRIL, 2005
SCALE:	NO SCALE
SHEET	3 OF 34



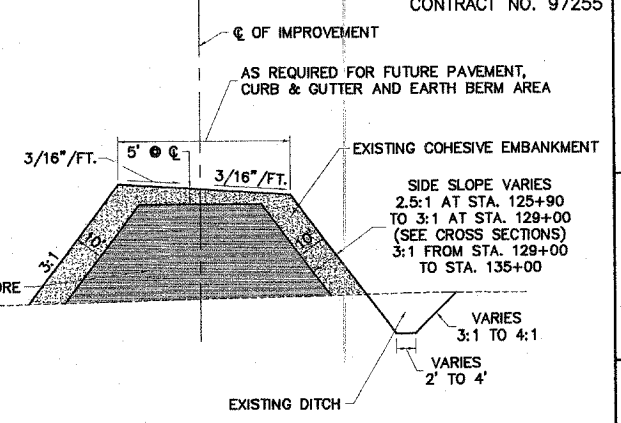
EXISTING TYPICAL EMBANKMENT SECTION
INDIANA AVENUE
STA. 115+00 TO STA. 119+00
NOT TO SCALE



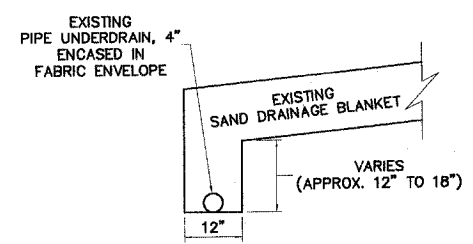
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INDIANA AVENUE
STA. 119+00 TO STA. 121+00
NOT TO SCALE



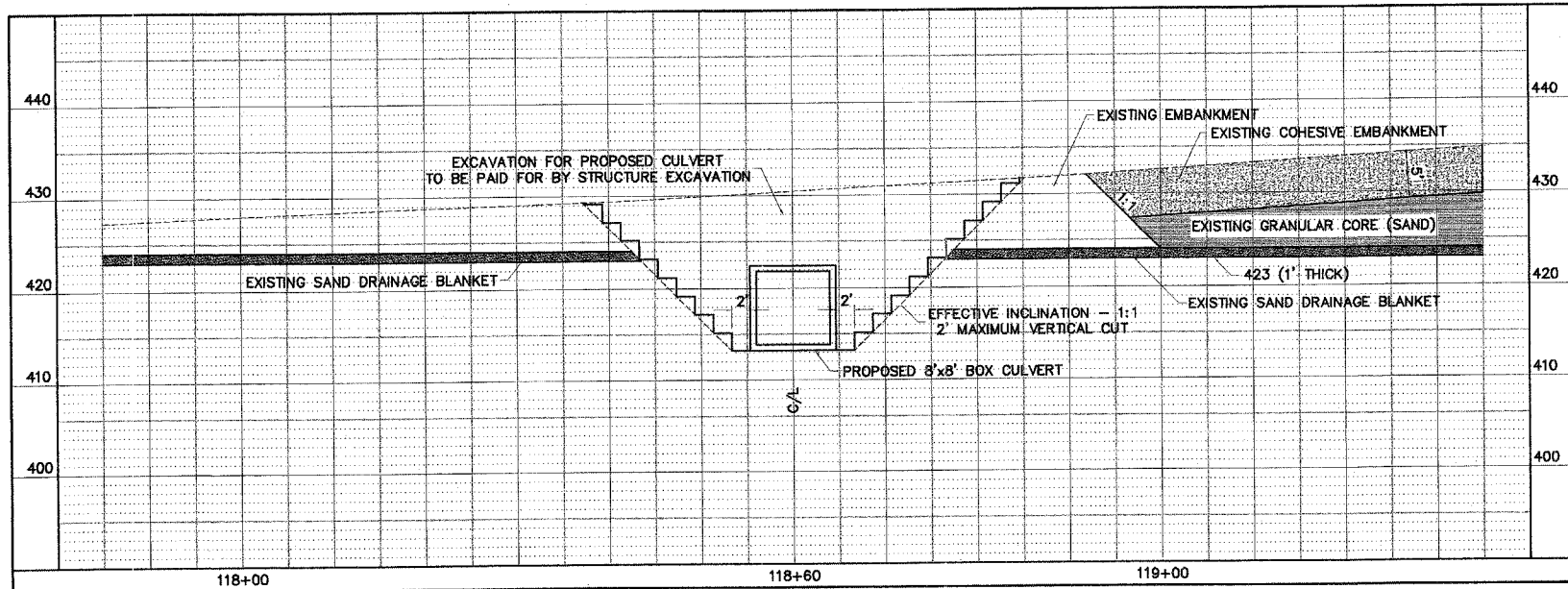
PROPOSED TYPICAL EMBANKMENT SECTION
INDIANA AVENUE
STA. 121+00 TO STA. 124+03
NOT TO SCALE



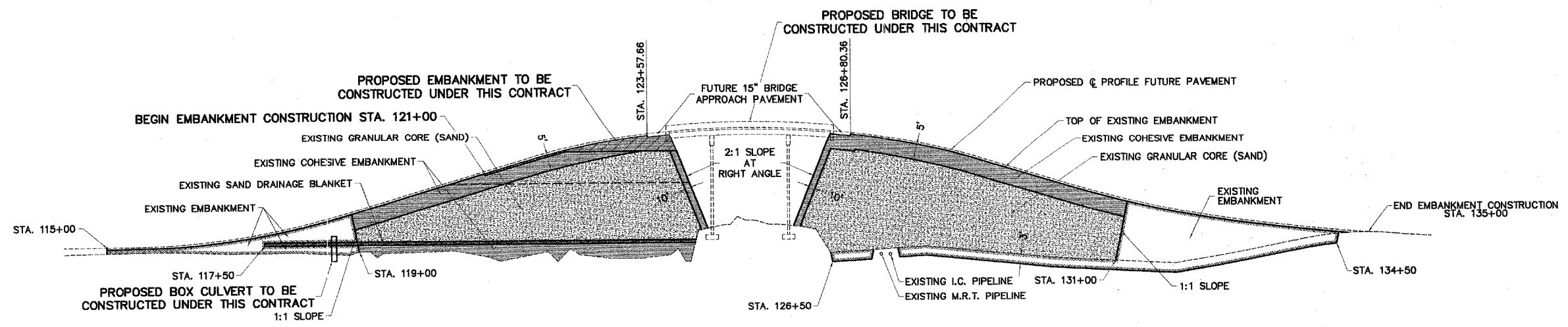
EXISTING TYPICAL EMBANKMENT SECTION
INDIANA AVENUE
STA. 125+90± TO STA. 131+00
NOT TO SCALE



EXISTING PIPE UNDERDRAIN DETAIL
NOT TO SCALE



TYPICAL SECTION
BOX CULVERT EXCAVATION
SCALE: 1" = 10' HORZ.
1" = 10' VERT.



PROFILE OF EMBANKMENT
SCALE: 1" = 100' HORZ.
1" = 10' VERT.

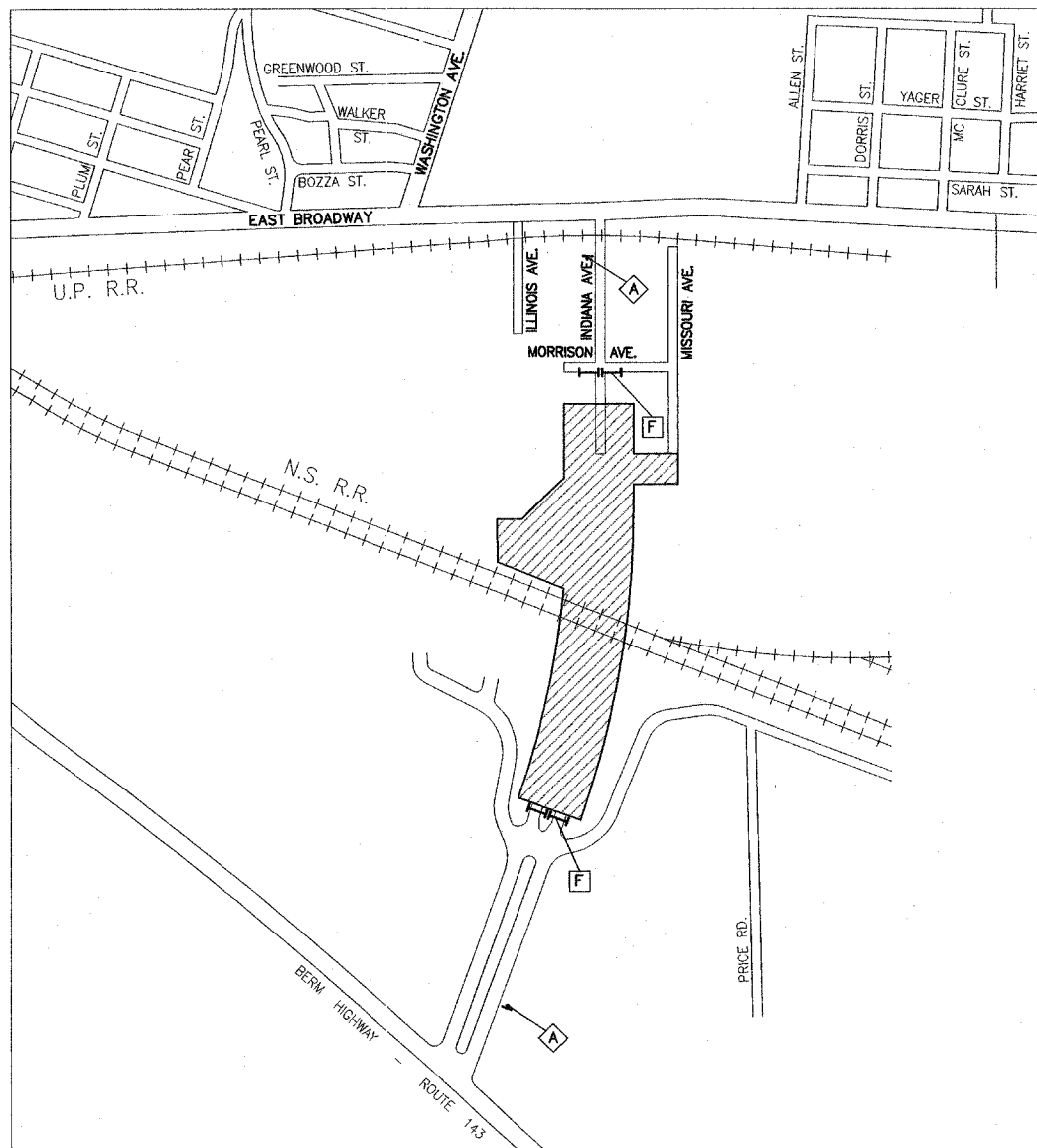
REVISIONS

Sheppard Morgan & Schwaab, Inc.
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10 Central Industrial Dr
Northgate Center
Greenville City, IL 62040
618/877-6700



CITY OF ALTON, ILLINOIS
SECTION 97 - 00208 - 01 - GS
INDIANA AVE. EXTENSION - PHASE II
TYPICAL EMBANKMENT SECTIONS AND DETAILS

DWG. NO. - EMBANKMENT.DWG
COGO FILE -
REF. BK. - PG. -
JOB NO. 406365.1
DSN. BY: DEG
DWN. BY: CAD
CHK. BY: DEG
DATE: APRIL, 2005
SCALE: AS SHOWN
SHEET 4 OF 34



GENERAL TRAFFIC CONTROL PLAN

- TRAFFIC CONTROL LEGEND**
- WORK AREA
 - TYPE III BARRICADE WITH FLASHING LIGHTS
 - SIGN "ROAD CONSTRUCTION AHEAD" W20-1(0) - 48
 - SIGN "ROAD CLOSED" R11-2-4830

- GENERAL NOTES**
1. ALL CONSTRUCTION SIGNS SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
 2. EXISTING SIGNS AND BARRICADES USED FOR TRAFFIC CONTROL AND PROTECTION OF SETTLEMENT PLATFORMS AND INCLINOMETERS ARE THE PROPERTY OF THE CITY OF ALTON. WHEN THE CONTRACTOR INSTALLS HIS TRAFFIC CONTROL, HE SHALL COLLECT THE CITY OF ALTON SIGNS AND BARRICADES AND NOTIFY THE PUBLIC WORKS DEPARTMENT TO ARRANGE PICKUP.
 3. UPON COMPLETION OF THIS PROJECT, THE TYPE III BARRICADES WITH FLASHING LIGHTS AND ROAD CLOSED SIGNS [F] SHALL BE IN GOOD CONDITION, SHALL REMAIN IN PLACE AND SHALL BECOME THE PROPERTY OF THE CITY OF ALTON.

SURVEY CONTROL POINTS				
CONTROL POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP #1	13,405.1013	5,526.8242	436.91	P.K. NAIL C/L STA. 109+00
CP #2	13,515.1795	5,441.2435	438.00	CUT CROSS IN CONCRETE
CP #3	13,237.3909	5,463.6323	427.15	REBAR w/ SMS CAP
CP #4	12,806.7448	5,465.3380	423.52	REBAR w/ SMS CAP
CP #5	12,348.8921	5,395.1583	421.65	REBAR w/ SMS CAP
CP #6	11,902.4546	5,391.8708	428.39	REBAR w/ SMS CAP
CP #7	11,750.6270	5,431.9123	427.06	REBAR w/ SMS CAP
CP #8	11,247.5006	5,271.4975	416.99	REBAR w/ SMS CAP
CP #9	10,741.4236	5,273.0869	423.95	CUT CROSS STA. 136+00
CP #10	10,968.0169	5,542.9496	417.52	REBAR w/ SMS CAP
CP #11	11,280.1769	5,643.0583	422.25	REBAR w/ SMS CAP
CP #12	11,666.3134	5,665.1913	428.36	REBAR w/ SMS CAP
CP #13	11,815.6115	5,654.9259	427.79	REBAR w/ SMS CAP
CP #14	12,104.9666	5,725.2143	419.45	REBAR w/ SMS CAP
CP #15	12,485.5175	5,641.2621	420.90	REBAR w/ SMS CAP
CP #16	12,855.2452	5,539.4063	422.01	REBAR w/ SMS CAP C/L STA. 114+50

BENCHMARKS		
B.M. #	ELEVATION	DESCRIPTION
B.M. #1	436.36	N. RIM SAN. M.H. E. SIDE OF INDIANA AVE. @ BROADWAY
B.M. #2	438.51	R.R. SPIKE IN P.P. E. SIDE OF ALTON PLAZA ENTRANCE @ BROADWAY
B.M. #3	424.13	P.K. NAIL IN P.P. 113+80 - 125'± RT.
B.M. #4	421.59	CHISELED SQUARE TOP OF SOUTH WINGWALL FOR 84" CULVERT, APPROX. STA. 121+58, 281'± RT.
B.M. #5	429.04	R.R. SPIKE IN P.P., APPROX. STA. 124+20, 90' RT.
B.M. #6	427.92	CHISELED SQUARE ON CONC. @ BASE OF N.E. CORNER FENCE @ TANK FARM
B.M. #7	415.72	R.R. SPIKE IN P.P. @ WELL PUMP, APPROX. STA. 132+20, 200' RT.
B.M. #8	416.09	R.R. SPIKE IN P.P. w/ UNDERGROUND ELECT., APPROX. STA. 131+30, 115' LT.

REVISIONS

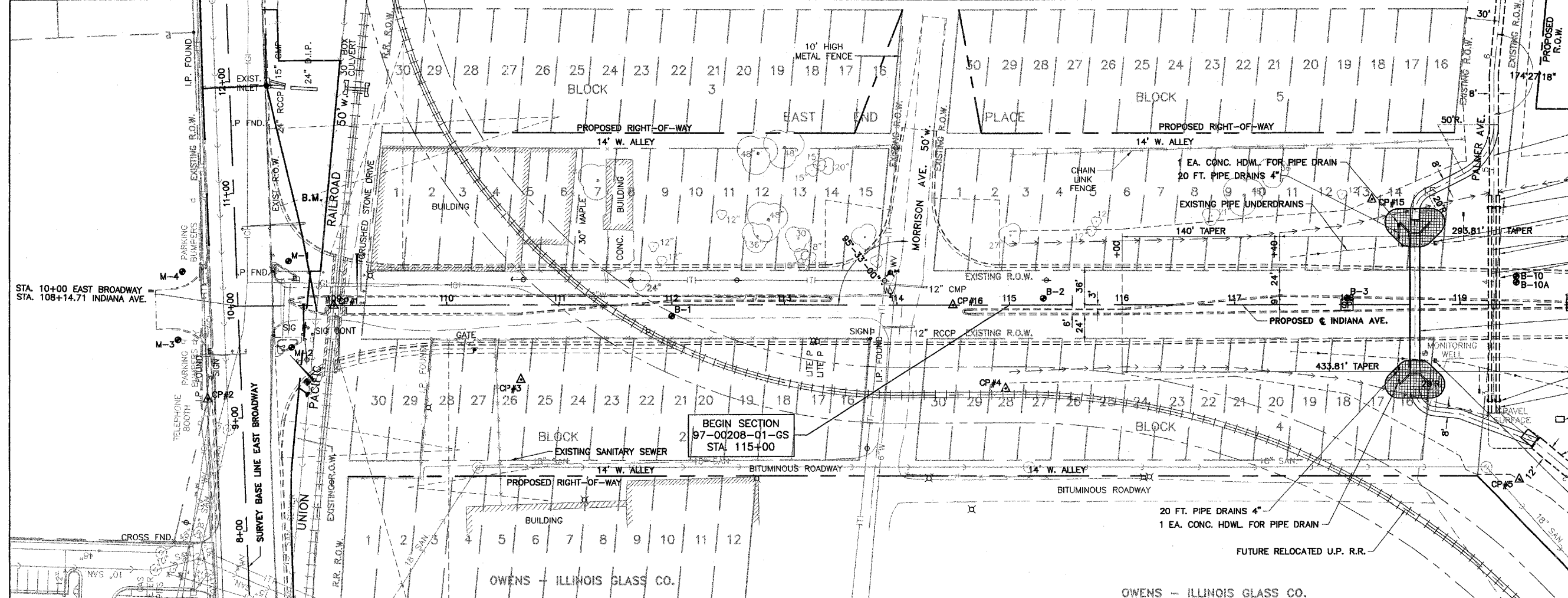
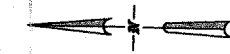
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Granite City, IL 62040
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CITY OF ALTON, ILLINOIS
SECTION 97 - 00208 - 01 - GS
INDIANA AVE. EXTENSION - PHASE II
TRAFFIC CONTROL PLAN, CONTROL POINTS & BENCHMARKS

DWG. NO. PH II TRAFFIC.DWG
CADD FILE
REF. BK. PG.
JOB NO. 406365.1
DSN. BY: DEC
DWN. BY: CAD
CHK. BY: DEC
DATE: APRIL, 2005
SCALE: NOT TO SCALE
SHEET 5 OF 34



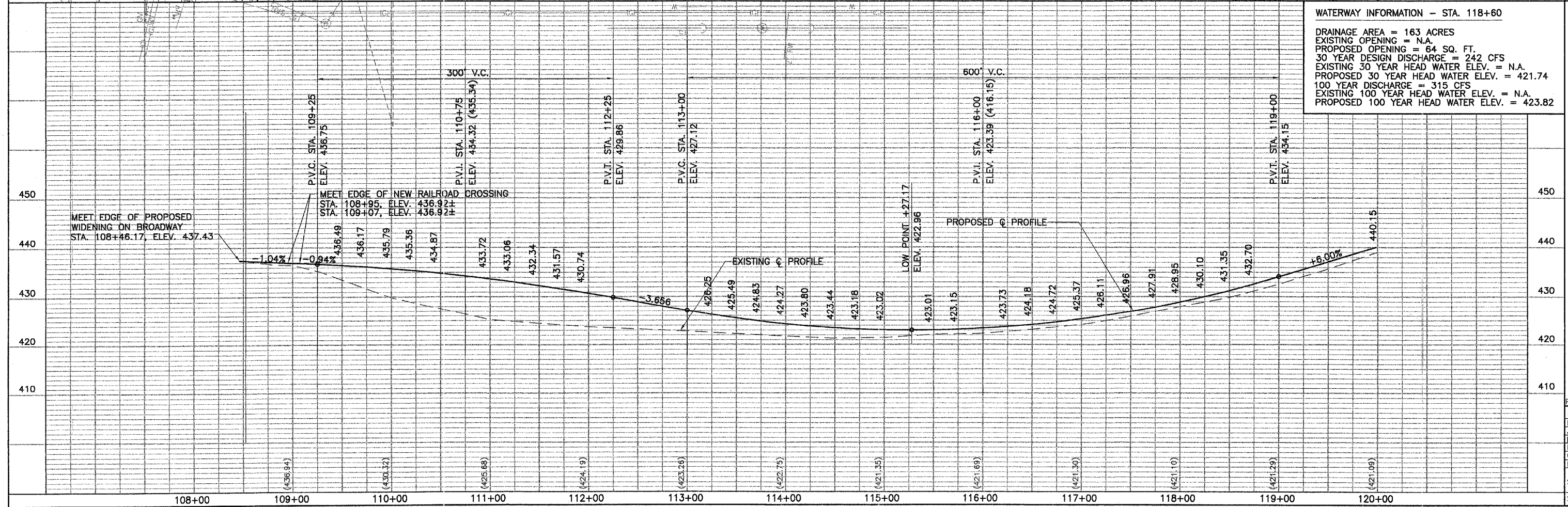
- EXISTING EAST-WEST DRAINAGE DITCH
- 20 FT. PIPE CULVERT REMOVAL (36")
- 2 EA. PLUG EXISTING CULVERTS
- 1 EA. PLUG EXISTING DRAIN
- 90 CU. YD. CONTROLLED LOW-STRENGTH MATERIAL (USED TO FILL CULVERTS)
- 1 L. SUM CLEANING CULVERTS
- PROPOSED 8'x8' BOX CULVERT SEE PLAN SHEET NO. 10
- 2 EA. PLUG EXISTING CULVERTS
- 20 FT. PIPE CULVERT REMOVAL (36")
- EXISTING PIEZOMETER READOUT STATION
- EXISTING EAST-WEST DRAINAGE DITCH
- 1 EA. PLUG EXISTING DRAIN

BEGIN SECTION
97-00208-01-GS
STA. 115+00

BENCHMARKS: SEE SHEET NO. 5

WATERWAY INFORMATION - STA. 118+60

DRAINAGE AREA = 163 ACRES
 EXISTING OPENING = N.A.
 PROPOSED OPENING = 64 SQ. FT.
 30 YEAR DESIGN DISCHARGE = 242 CFS
 EXISTING 30 YEAR HEAD WATER ELEV. = N.A.
 PROPOSED 30 YEAR HEAD WATER ELEV. = 421.74
 100 YEAR DISCHARGE = 315 CFS
 EXISTING 100 YEAR HEAD WATER ELEV. = N.A.
 PROPOSED 100 YEAR HEAD WATER ELEV. = 423.82

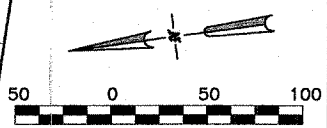
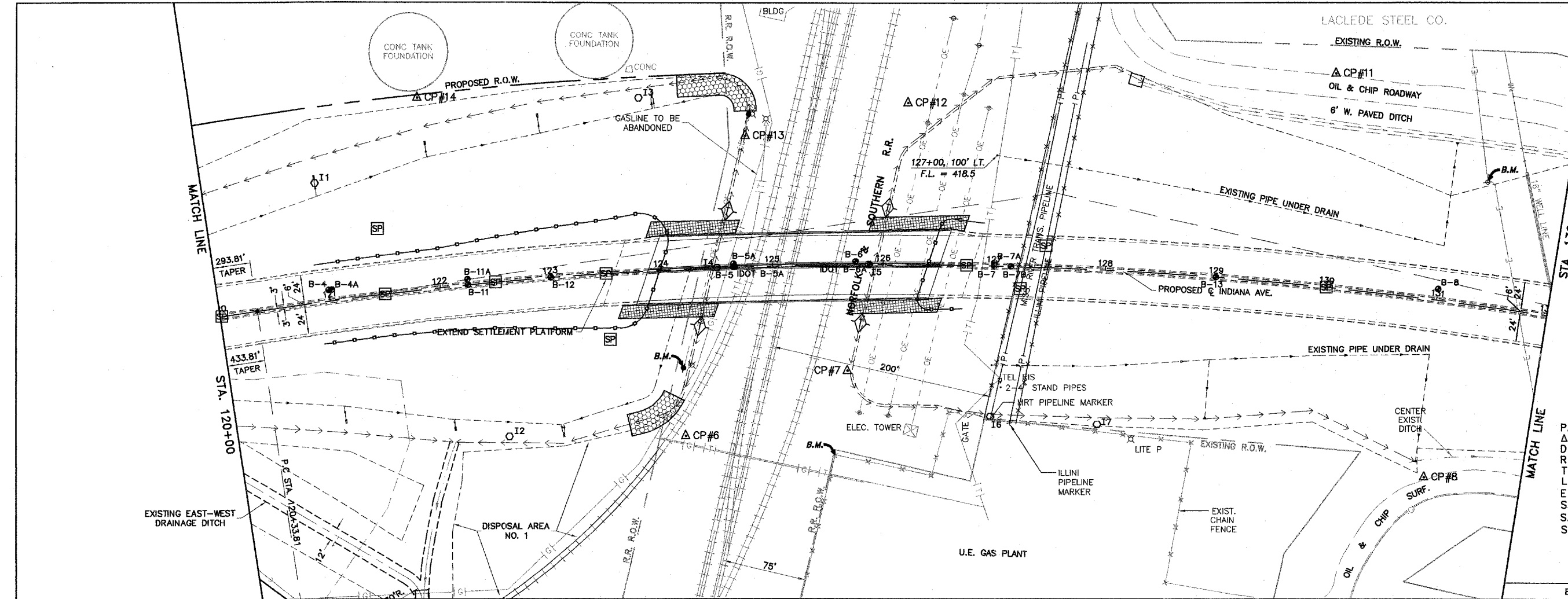


REVISIONS

SMS ENGINEERS
 Sheppard Morgan & Schwaab, Inc.
 CONSULTING ENGINEERS LAND SURVEYORS
 215 Market Street
 Alton, Illinois 62002
 618/877-8700

CITY OF ALTON, ILLINOIS
 SECTION 97 - 00208 - 01 - GS
 INDIANA AVENUE EXTENSION - PHASE II
 PLAN & PROFILE

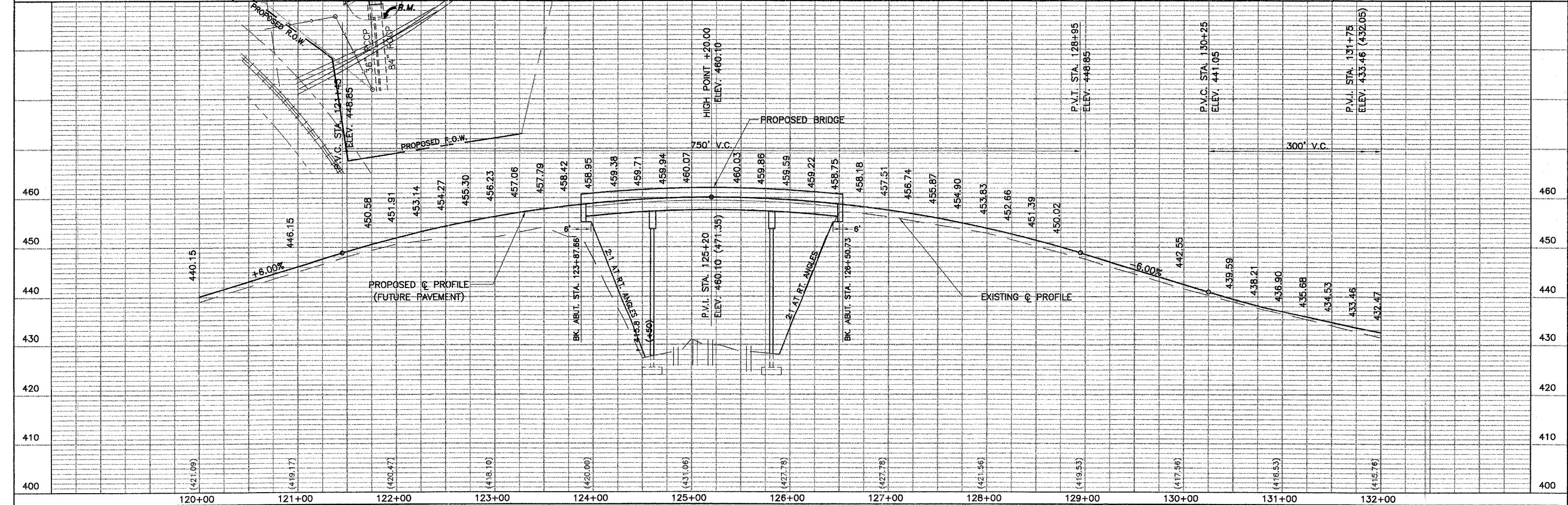
PP1-2005.DWG
 DWG. NO. PG.
 REF. BK. 406365.1
 JOB NO. 406365.1
 DSN. BY: DEG
 DWN. BY: CAD
 CHK. BY: DEG
 DATE: APRIL, 2005
 SCALE: VERT. 1" = 10'
 HORZ. 1" = 50'
 SHEET 6 OF 34



CENTERLINE CURVE DATA

P.I. STA. =	127+60.32
Δ =	21°-32'-17"
D =	1°-30'-00"
R =	3819.72'
T =	726.51'
L =	1435.87'
E =	68.48
S.E. =	3/16"/FT.
S.A. =	STA. 119+00 TO STA. 121+00
S.R. =	STA. 133+00 TO STA. 135+00

BENCHMARKS: SEE SHEET NO. 5

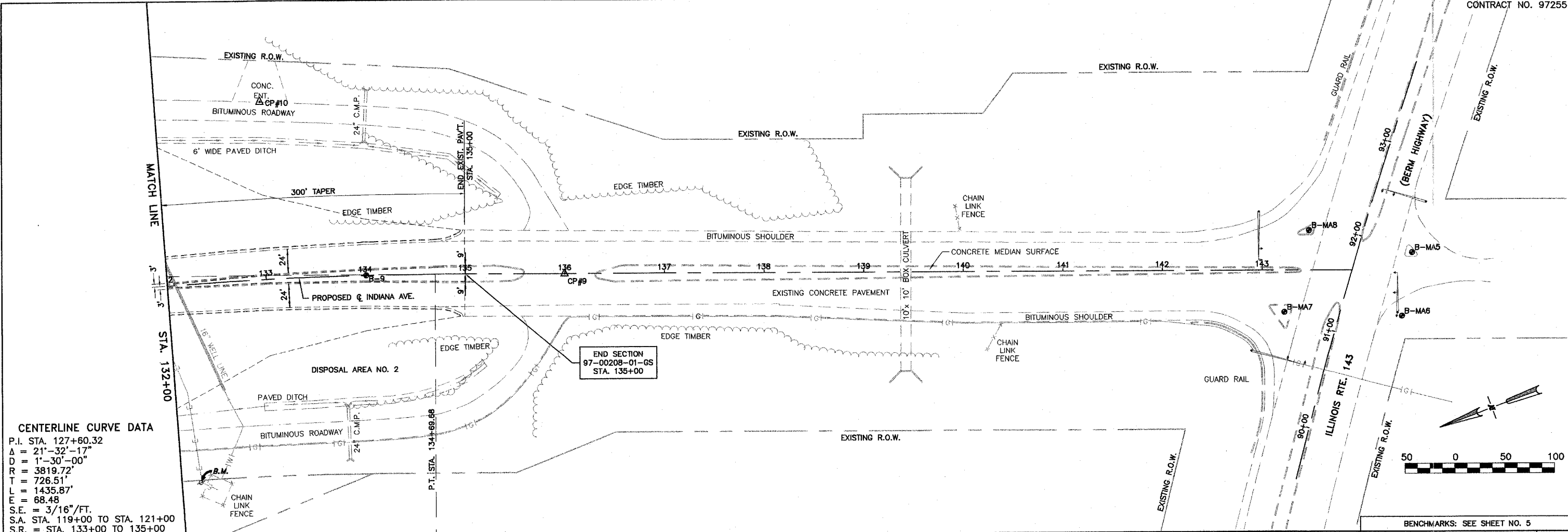


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 SHEPPARD MORGAN & SCHWAAB, INC.
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 618/997-8700

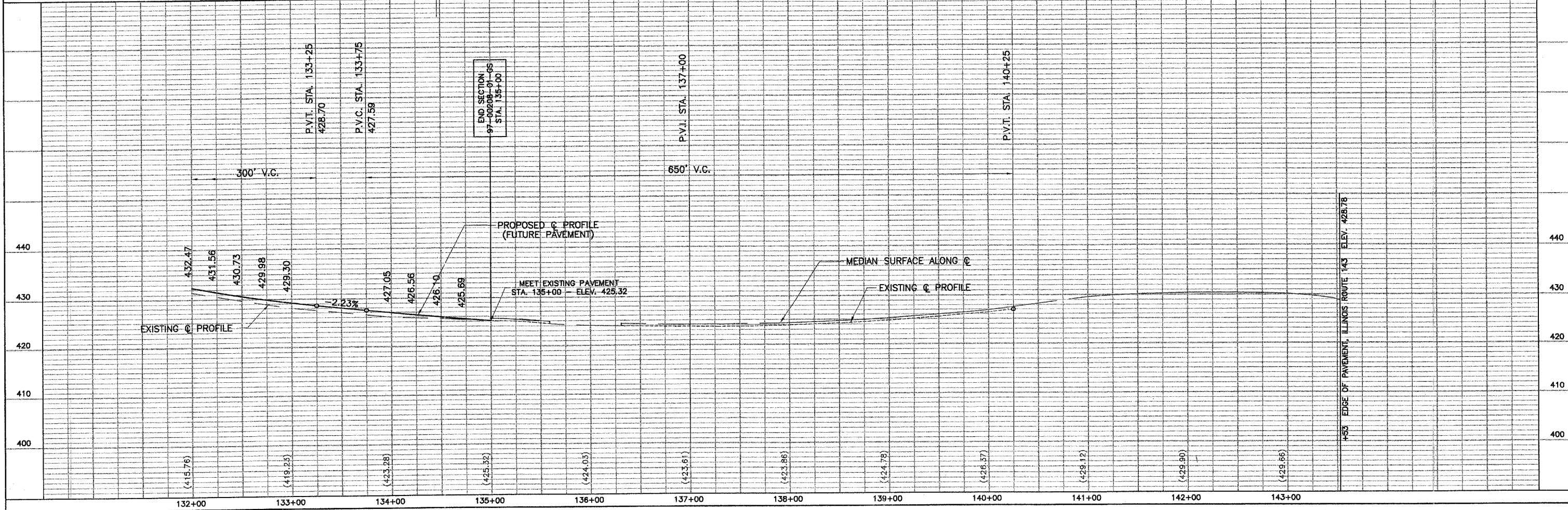
CITY OF ALTON, ILLINOIS
 SECTION 97 - 00208 - 01 - GS
INDIANA AVE. EXTENSION - PHASE II
 PLAN & PROFILE

PP2-2005.DWG
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 REF. BK. _____ PG. _____
 JOB NO. 406365.1
 DSN. BY: DEG
 DWN. BY: CAD
 CHK. BY: DEG
 DATE: APRIL 2005
 SCALE: VERT. 1" = 10'
 HORZ. 1" = 50'
 SHEET 7 OF 34



CENTERLINE CURVE DATA
 P.I. STA. 127+60.32
 Δ = 21°-32'-17"
 D = 1°-30'-00"
 R = 3819.72'
 T = 726.51'
 L = 1435.87'
 E = 68.48
 S.E. = 3/16"/FT.
 S.A. STA. 119+00 TO STA. 121+00
 S.R. = STA. 133+00 TO 135+00

END SECTION
 97-00208-01-GS
 STA. 135+00

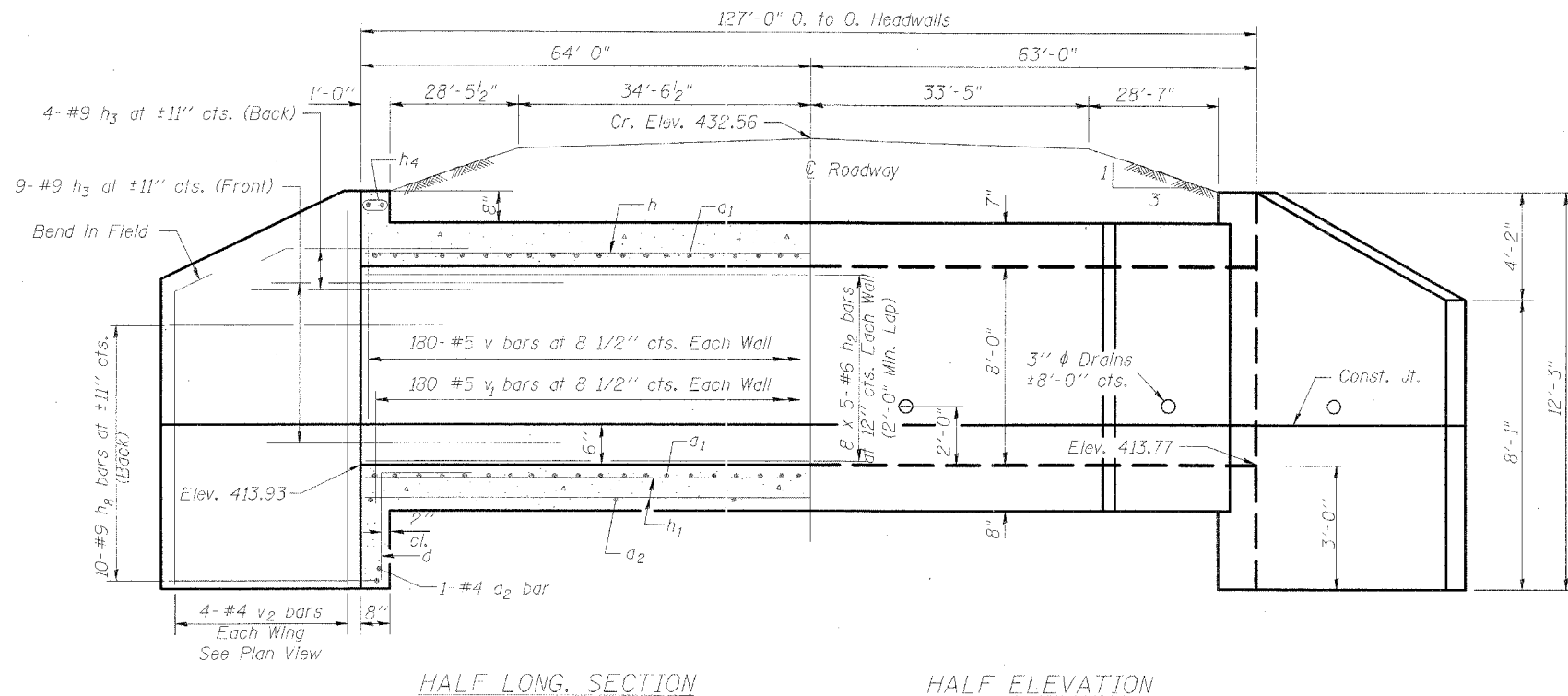


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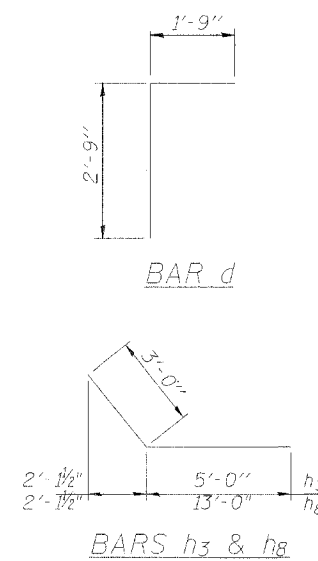
CITY OF ALTON, ILLINOIS
 SECTION 97 - 00208 - 01 - GS
INDIANA AVE. EXTENSION - PHASE II
 PLAN & PROFILE

PP3-2005.DWG
 DWG. NO. PG.
 JOB NO. 406365.1
 DSN. BY: DEG
 DWN. BY: DEG
 CHK. BY: DEG
 DATE: APRIL, 2005
 SCALE: VERT. 1" = 10'
 HORZ. 1" = 50'
 SHEET 8 OF 34

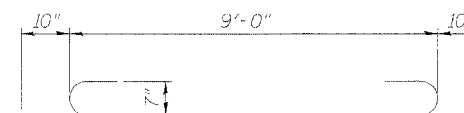


HALF LONG SECTION

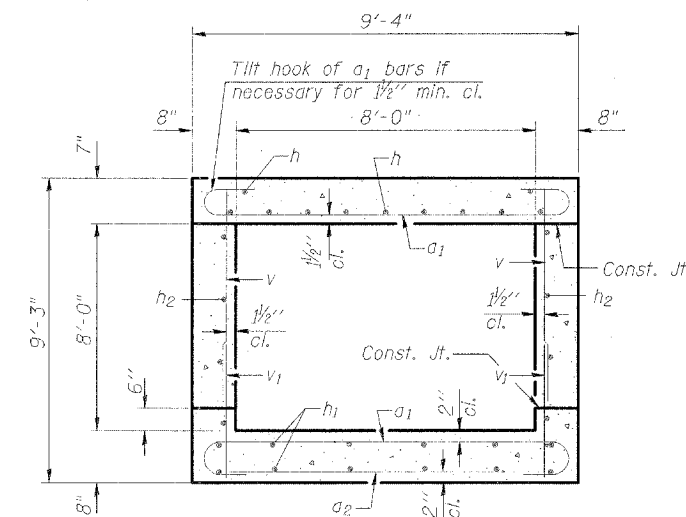
HALF ELEVATION



BARS h3 & h8



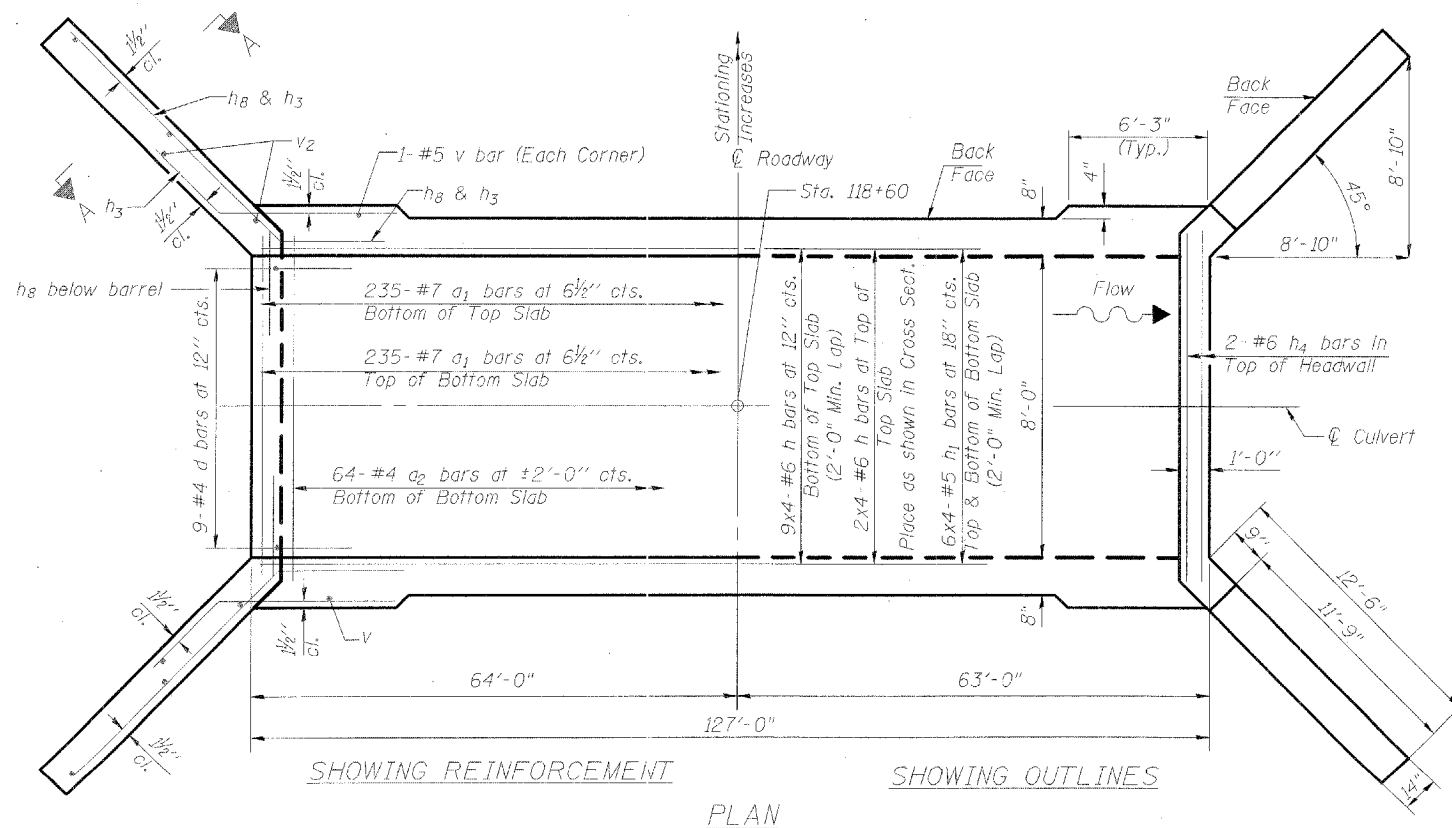
BAR a1



SECTION THRU BARREL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1	470	#7	10'-8"	
a2	66	#4	8'-6"	
d	18	#4	4'-6"	
h	44	#6	33'-3"	
h1	48	#5	33'-3"	
h2	80	#6	27'-0"	
h3	52	#9	8'-0"	
h4	4	#6	9'-0"	
h8	40	#9	16'-0"	
v	364	#5	8'-0"	
v1	360	#5	2'-2"	
v2	16	#4	12'-0"	
Concrete Box Culverts			Cu. Yd.	131.2
Reinforcement Bars			Pound	25410



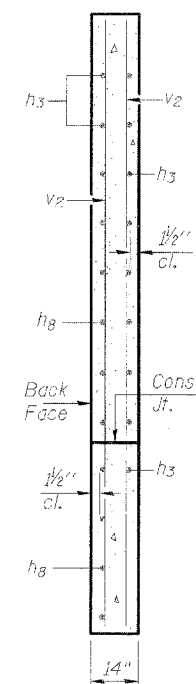
SHOWING REINFORCEMENT

SHOWING OUTLINES

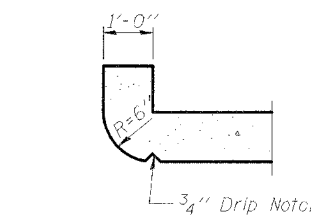
PLAN

NOTES

A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Reinforcement Bars shall conform to the requirements of AASHTO M31 or M53, Grade 60.
 Bars Indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 All construction joints shall be bonded.



SECTION A-A



SECTION THRU HEADWALL
(Up Stream End Only)

DESIGN STRESSES

$f_y = 60,000$ psi
 $f'_c = 3,500$ psi

LOADING HS 20-44

Corporate License Number 184-001-084

CULVERT
 INDIANA AVENUE STATION 118+60
 SEC. 97-00208-01-GS
 ALTON, ILLINOIS

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JOB NO.

95S10081

DATE

05/12/05

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.J.8966	SEC. 97-00208-01-05	MADISON	34	12
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

Note:
The Bridge Slab shall be placed in one continuous operation, or sequentially as described below.

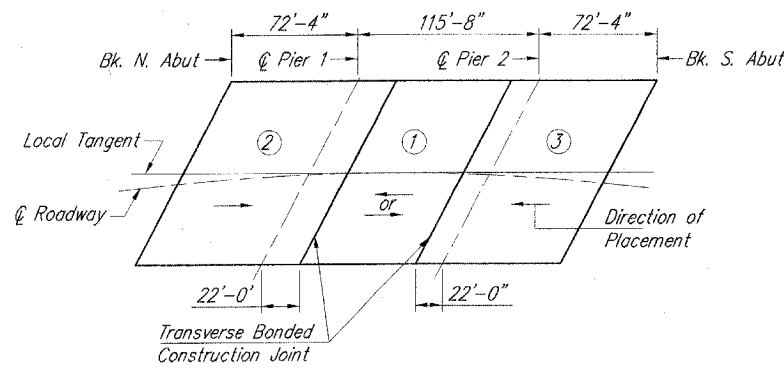
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER.	SUB.	TOTAL
Structure Excavation	Cu. Yd.	-	377	377
Bar Splicers	Each	122	-	122
Floor Drains	Each	16	-	16
Concrete Superstructure	Cu. Yd.	546.2	-	546.2
* Protective Coat	Sq. Yd.	2000	-	2000
Elastomeric Expansion Bearings, Type I	Each	14	-	14
Concrete Structures	Cu. Yd.	-	399.0	399.0
Furnishing & Erecting Structural Steel	L. Sum	1	-	1
Stud Shear Connectors	Each	3549	-	3549
Reinforcement Bars, Epoxy Coated	Pound	147130	45250	192380
Furnishing Steel Piles HP12x74	Foot	-	3551	3551
Furnishing Steel Piles HP14x102	Foot	-	2412	2412
Driving Steel Piles	Foot	-	5963	5963
Test Pile Steel HP12x74	Each	-	1	1
Test Pile Steel HP14x102	Each	-	1	1
Metal Shoes	Each	-	48	48
Name Plates	Each	1	-	1
Slopewall 4 inch	Sq. Yd.	-	997	997
Bridge Deck Grooving	Sq. Yd.	1773	-	1773
Porous Granular Embankment	Cu. Yd.	-	272	272
Temporary Sheet Piling	Sq. Ft.	-	2987	2987

* Quantity for Protective Coat includes bridge deck, and top and inside faces of parapets.

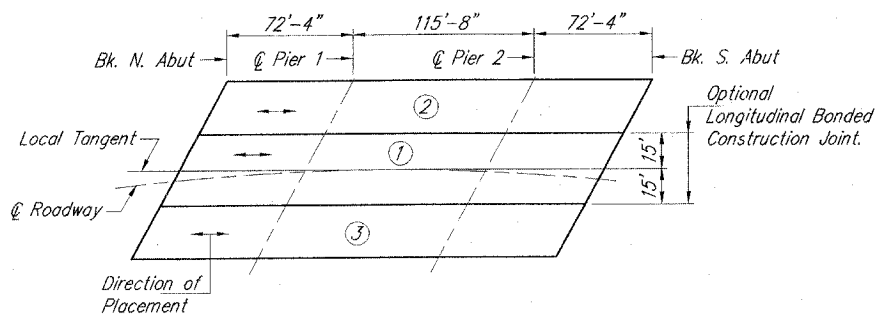
GENERAL NOTES

- See Sheet 18 of 18 for Borings 5A & 6A. Data for other project borings are included in the Proposal Booklet.
- Fasteners shall be high strength bolts. Bolts 3/4" ϕ , open holes 13/16" ϕ , unless otherwise noted.
- Calculated weight of Structural Steel = 167,171 lbs. (M270 Gr50) and 132,794 (M270 GR. 36)
- The inorganic zinc rich primer / Acrylic / Acrylic Point System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final Acrylic finish coat shall be Gray, Munsel No. 5B 7/1. See Special Provision "Cleaning and Painting New Metal Structures".
- Field welding of construction accessories will not be permitted girders.
- Anchor bolts shall be set before bolting diaphragms over supports.
- 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.
- Reinforcement bars shall conform to the requirements of AASHTO M31 or M53 Grade 60.
- Slope wall shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.
- The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
- 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 top plate at the pier locations and of the dimensions of the bottom bearing plate at the abutment locations, shall be provided for each bearing in addition to all other plates or shims.
- The contractor shall drive one HP14X102 test pile at the north abutment and one HP12X74 test pile at Pier 2 as directed by the Engineer before ordering the remainder of the piles.
- The contractor shall provide the following minimum temporary clearances at any necessary falsework, bracings or forms required to construct the highway overpass structure:
Vertical: 22'-0" above Top of High Rail
Horizontal: 13'-0" from centerline of track
The only exceptions will be the safety railings for the temporary sheet piling at Piers 1 & 2. See Special Provision for Protection of Railroad Interest.
- All construction joints shall be bonded.



SLAB PLACING PLAN

(Without Longitudinal Bonded Construction Joints)

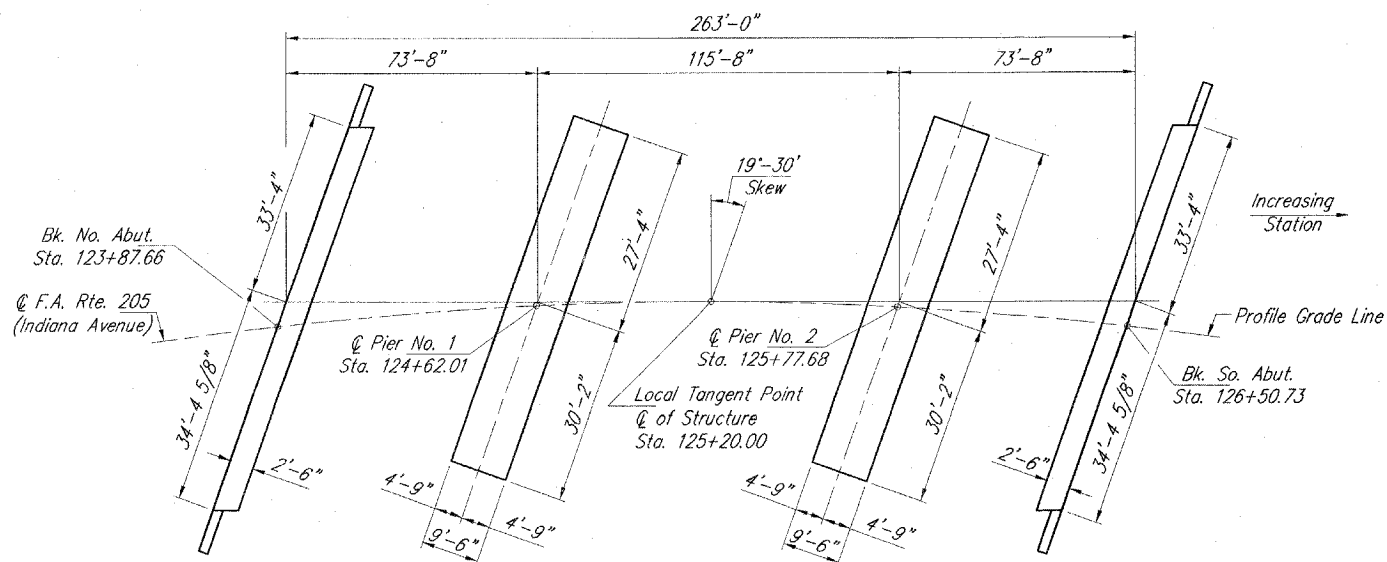


SLAB PLACING PLAN

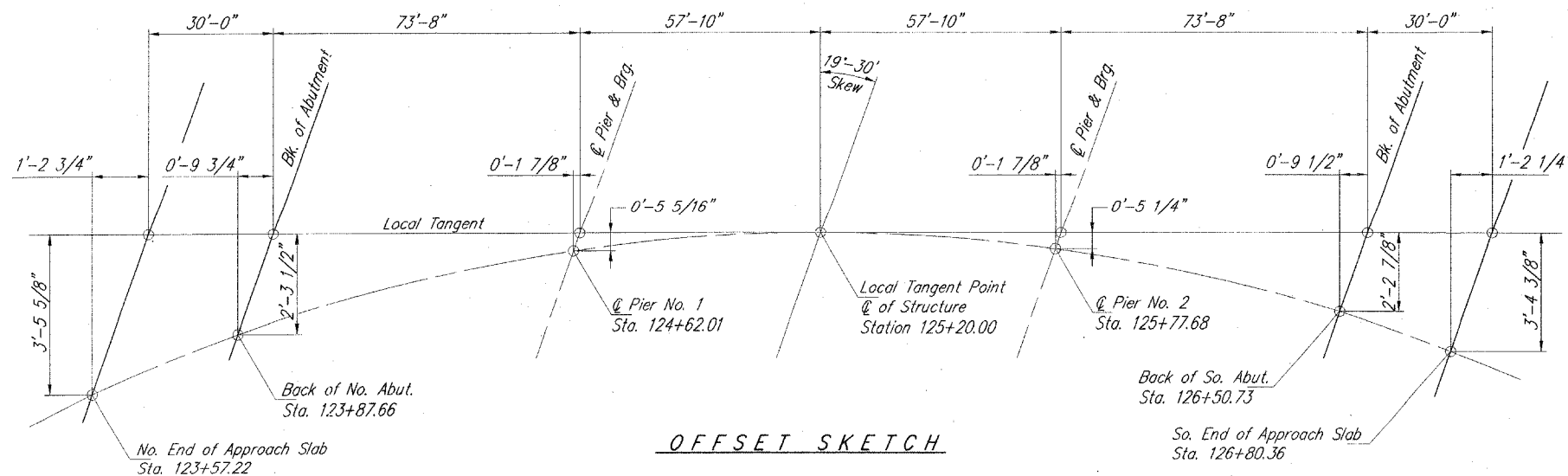
(With Longitudinal Bonded Construction Joints)

SLAB PLACING SEQUENCE

- Areas 1 thru 3 shall be placed consecutively and in the direction shown. If the deck pour is stopped for the day or more of the transverse joints as shown, the next pour shall not be made until both of the following requirements are met:
 - At least 72 hours shall have elapsed from the end of the previous pour.
 - The concrete shall have attained a minimum modulus of rupture of 650 psi or a minimum compressive strength of 3500 psi.
- The contractor may propose an alternative casting sequence, subject to approval by the engineer.



FOOTING LAYOUT



OFFSET SKETCH

Corporate License Number 184-001-084

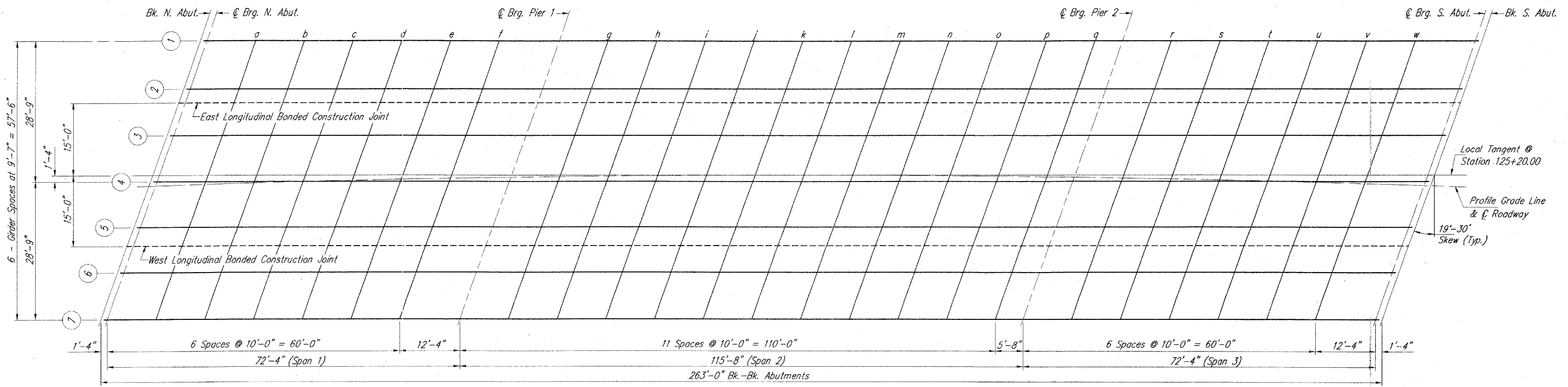
GENERAL NOTES & MISC. DETAILS
INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
SEC. 97-00208-01-GS
STATION 125+20.00
ALTON, ILLINOIS
STR. NO. 060-6110



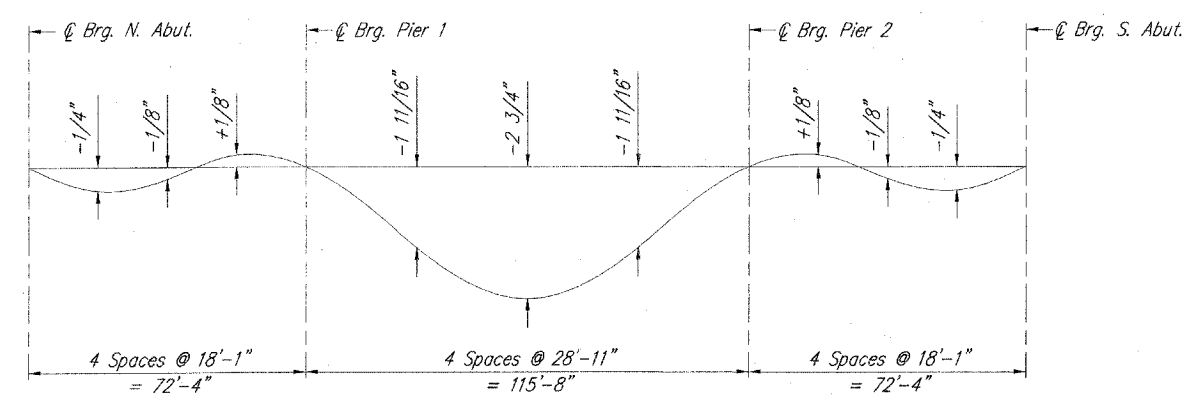
JOB NO. 9551008
DATE 05/12/05

10/16/96
 3/10/98
 3/31/05
 11/20/05
 7/11/04 DAB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U.8966	SEC. 97-00208-01-GS	MADISON	34	14
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			

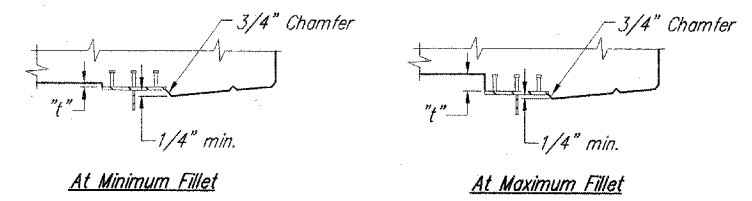


DIAGRAMMATIC PLAN - TOP OF SLAB ELEVATIONS
 Note: All Dimensions shown in plan are measured horizontally.



DEAD LOAD DEFLECTION DIAGRAM
 (Includes Weight of Concrete Only)

Note: The above deflections are not to be used in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" (Elev. B) shown in the "Top of Slab Elevations" table.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the girders shall be taken at intervals shown on the "Top of Slab Elevations" table. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown in the "Top of Slab Elevations" table minus slab thickness, equals the fillet heights "t" above top flange of girders.

FILLET HEIGHTS

Corporate License Number 184-001-084

TOP OF SLAB ELEVATIONS - SHEET 1
 INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
 SEC. 97-00208-01-GS
 STATION 125+20.00
 ALTON, ILLINOIS
 STR. NO. 060-6110

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JOB NO.
95S10081
DATE
05/12/05

LAYOUT: E.H. 12/16/97
 DRAWING: D.A.N. 12/18/97
 REVIEWED: D.F. 3/31/05
 195510081 (PROJECT) 05-12-05 10:47-10:51 AM MAY 11, 2005 7:32 AM DAB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U.9966	SEC. 97-00208-01-GS	MADISON	34	15
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

GIRDER 1

GIRDER 2

EAST LONGITUDINAL BONDED CONST. JT.

GIRDER 3

PROFILE GRADE LINE

	STATION	OFFSET	ELEV. A	ELEV. B		STATION	OFFSET	ELEV. A	ELEV. B		STATION	OFFSET	ELEV. A	ELEV. B		STATION	OFFSET	ELEV. A	ELEV. B					
Bk. N. Abut.	123+99.117	-29.344	459.389	459.389		123+95.441	-19.875	459.169	459.169		123+94.351	-17.076	459.104	459.104		123+91.747	-10.409	458.947	458.947		123+87.662	0.000	458.699	458.699
Q Brg. N. Abut.	124+00.440	-29.302	459.414	459.414		123+96.767	-19.831	459.195	459.195		123+95.677	-17.032	459.130	459.130		123+93.076	-10.364	458.973	458.973		123+89.012	0.000	458.727	458.727
a	124+10.359	-29.002	459.591	459.604		124+06.711	-19.522	459.378	459.391		124+05.629	-16.720	459.315	459.328		124+03.044	-10.045	459.163	459.175		123+99.136	0.000	458.931	458.944
b	124+20.281	-28.728	459.753	459.773		124+16.656	-19.238	459.546	459.566		124+15.581	-16.433	459.485	459.504		124+13.014	-9.752	459.337	459.356		124+09.249	0.000	459.119	459.138
c	124+30.203	-28.480	459.900	459.916		124+26.603	-18.981	459.699	459.715		124+25.535	-16.173	459.639	459.655		124+22.985	-9.485	459.495	459.512		124+19.352	0.000	459.290	459.306
d	124+40.127	-28.258	460.031	460.036		124+36.551	-18.749	459.836	459.841		124+35.491	-15.939	459.778	459.783		124+32.958	-9.244	459.638	459.643		124+29.445	0.000	459.444	459.449
e	124+50.052	-28.062	460.147	460.138		124+46.501	-18.544	459.958	459.949		124+45.447	-15.731	459.901	459.892		124+42.932	-9.029	459.766	459.757		124+39.527	0.000	459.582	459.573
f	124+59.978	-27.892	460.248	460.232		124+56.451	-18.364	460.064	460.049		124+55.405	-15.548	460.009	459.994		124+52.907	-8.841	459.878	459.863		124+49.600	0.000	459.704	459.688
Q Brg. Pier 1	124+72.221	-27.718	460.350	460.350		124+68.724	-18.179	460.174	460.174		124+67.687	-15.360	460.121	460.121		124+65.210	-8.644	459.995	459.995		124+62.009	0.000	459.831	459.831
g	124+82.148	-27.606	460.417	460.454		124+78.676	-18.058	460.246	460.283		124+77.647	-15.236	460.195	460.232		124+75.187	-8.513	460.072	460.110		124+72.059	0.000	459.916	459.954
h	124+92.076	-27.519	460.468	460.558		124+88.629	-17.963	460.302	460.392		124+87.606	-15.138	460.253	460.343		124+85.164	-8.409	460.134	460.224		124+82.099	0.000	459.985	460.075
i	125+02.005	-27.459	460.503	460.647		124+98.582	-17.894	460.343	460.487		124+97.567	-15.066	460.295	460.439		124+95.142	-8.331	460.181	460.325		124+92.130	0.000	460.038	460.182
j	125+11.933	-27.425	460.523	460.713		125+08.535	-17.851	460.368	460.558		125+07.527	-15.020	460.322	460.512		125+05.120	-8.279	460.212	460.401		125+02.152	0.000	460.075	460.264
k	125+21.862	-27.417	460.528	460.747		125+18.489	-17.834	460.378	460.597		125+17.488	-15.001	460.334	460.553		125+15.099	-8.253	460.227	460.446		125+12.164	0.000	460.095	460.314
l	125+31.791	-27.435	460.518	460.744		125+28.442	-17.843	460.373	460.600		125+27.449	-15.007	460.330	460.557		125+25.077	-8.253	460.227	460.453		125+22.166	0.000	460.100	460.326
m	125+41.719	-27.479	460.492	460.703		125+38.396	-17.878	460.352	460.564		125+37.410	-15.040	460.311	460.522		125+35.056	-8.280	460.211	460.423		125+32.160	0.000	460.088	460.300
n	125+51.648	-27.549	460.450	460.624		125+48.349	-17.939	460.316	460.489		125+47.370	-15.098	460.276	460.449		125+45.034	-8.332	460.180	460.353		125+42.144	0.000	460.061	460.234
o	125+61.575	-27.645	460.394	460.514		125+58.302	-18.026	460.264	460.385		125+57.331	-15.183	460.226	460.347		125+55.012	-8.411	460.133	460.254		125+52.119	0.000	460.017	460.138
p	125+71.503	-27.766	460.322	460.388		125+68.254	-18.140	460.197	460.263		125+67.290	-15.294	460.160	460.226		125+64.989	-8.516	460.071	460.137		125+62.085	0.000	459.958	460.024
q	125+81.429	-27.914	460.234	460.256		125+78.206	-18.279	460.115	460.136		125+77.249	-15.431	460.079	460.100		125+74.966	-8.646	459.993	460.015		125+72.043	0.000	459.883	459.905
Q Brg. Pier 2	125+87.054	-28.010	460.178	460.178		125+83.844	-18.369	460.061	460.061		125+82.892	-15.520	460.026	460.026		125+80.619	-8.732	459.942	459.942		125+77.681	0.000	459.834	459.834
r	125+96.979	-28.198	460.067	460.052		125+93.795	-18.550	459.954	459.940		125+92.850	-15.698	459.921	459.906		125+90.594	-8.904	459.840	459.826		125+87.625	0.000	459.734	459.720
s	126+06.903	-28.413	459.940	459.928		126+03.744	-18.756	459.832	459.821		126+02.807	-15.901	459.800	459.789		126+00.569	-9.102	459.723	459.712		125+97.560	0.000	459.619	459.607
t	126+16.826	-28.653	459.798	459.799		126+13.692	-18.988	459.694	459.696		126+12.763	-16.131	459.664	459.665		126+10.542	-9.326	459.590	459.592		126+07.486	0.000	459.488	459.489
u	126+26.748	-28.919	459.640	459.654		126+23.639	-19.246	459.541	459.556		126+22.717	-16.387	459.512	459.526		126+20.514	-9.576	459.441	459.456		126+17.404	0.000	459.341	459.355
v	126+36.668	-29.212	459.468	459.487		126+33.585	-19.531	459.373	459.393		126+32.670	-16.669	459.345	459.365		126+30.485	-9.852	459.277	459.297		126+27.314	0.000	459.179	459.198
w	126+46.587	-29.530	459.279	459.295		126+43.528	-19.841	459.189	459.204		126+42.621	-16.977	459.162	459.178		126+40.455	-10.154	459.098	459.113		126+37.215	0.000	459.001	459.016
Q Brg. S. Abut.	126+58.817	-29.959	459.026	459.026		126+55.790	-20.260	458.941	458.941		126+54.892	-17.392	458.916	458.916		126+52.748	-10.563	458.855	458.855		126+49.415	0.000	458.760	458.760
Bk. S. Abut.	126+60.140	-30.007	458.998	458.998		126+57.116	-20.307	458.913	458.913		126+56.219	-17.440	458.888	458.888		126+54.077	-10.609	458.828	458.828		126+50.733	0.000	458.733	458.733

GIRDER 4

GIRDER 5

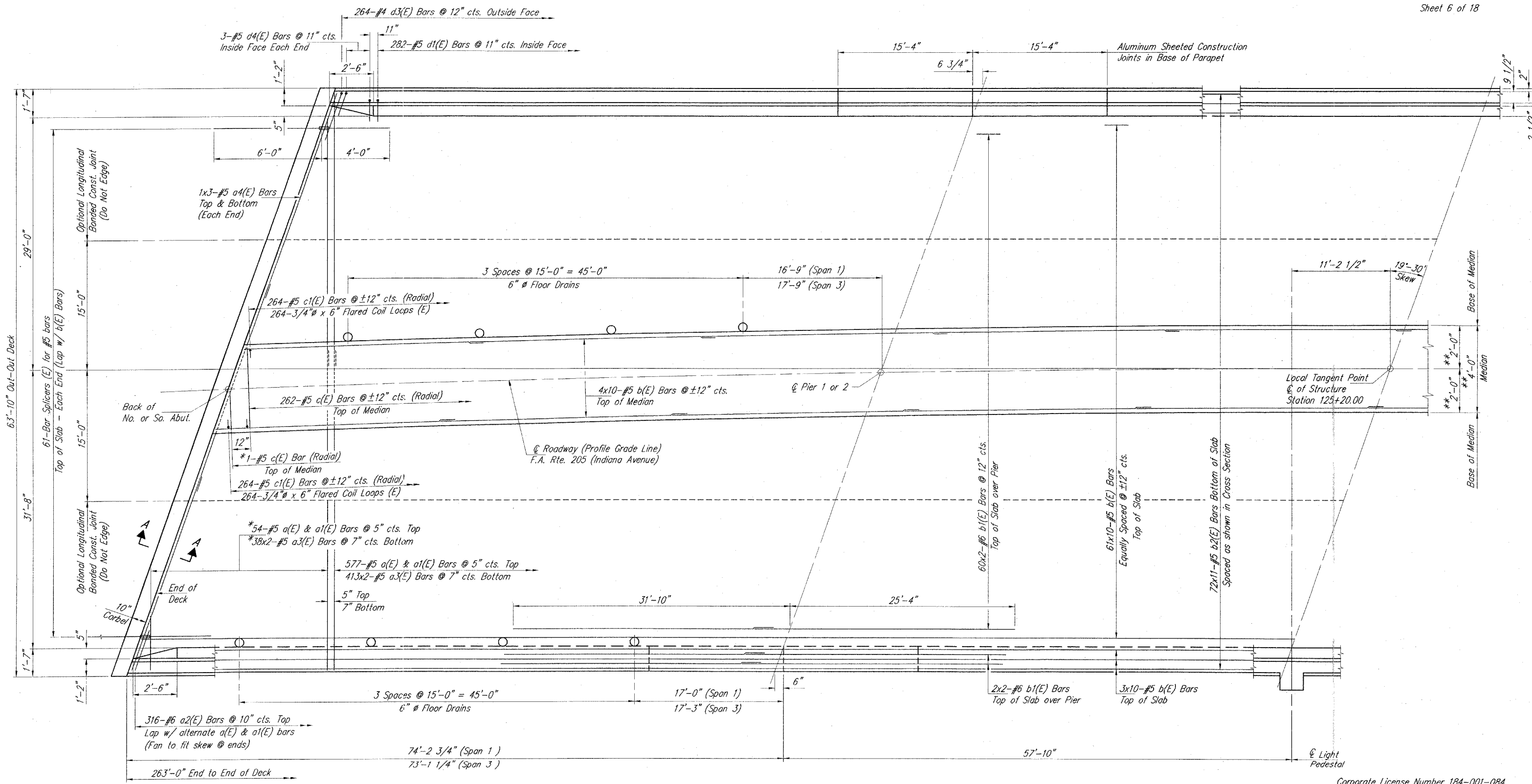
WEST LONGITUDINAL BONDED CONST. JT.

GIRDER 6

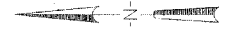
GIRDER 7

	STATION	OFFSET	ELEV. A	ELEV. B		STATION	OFFSET	ELEV. A	ELEV. B		STATION	OFFSET	ELEV. A	ELEV. B		STATION	OFFSET	ELEV. A	ELEV. B					
Bk. N. Abut.	123+88.034	-0.947	458.722	458.722		123+84.303	8.512	458.494	458.494		123+82.708	12.541	458.396	458.396		123+80.554	17.967	458.264	458.264		123+76.786	27.418	458.031	458.031
Q Brg. N. Abut.	123+89.367	-0.901	458.749	458.749		123+85.639	8.559	458.522	458.522		123+84.045	12.589	458.425	458.425		123+81.893	18.015	458.293	458.293		123+78.128	27.468	458.061	458.061
a	123+99.359	-0.572	458.945	458.957		123+95.656	8.698	458.724	458.737		123+94.073	12.931	458.629	458.642		123+91.934	18.364	458.501	458.514		123+88.194	27.826	458.275	458.288
b	124+09.353	-0.269	459.125	459.144		124+05.675	9.210	458.910	458.930		124+04.102	13.248	458.818	458.838		124+01.978	18.686	458.694	458.713		123+98.262	28.158	458.474	458.494
c	124+19.349	0.007	459.289	459.306		124+15.695	9.496	459.081	459.098		124+14.133	13.538	458.992	459.008		124+12.023	18.982	458.871	458.887		124+08.332	28.463	458.658	458.674
d	124+29.347	0.258	459.439	459.444		124+25.717	9.756	459.236	459.241		124+24.165	13.802	459.150	459.155		124+22.070	19.251	459.032	459.037		124+18.404	28.742	458.825	458.830
e	124+39.345	0.482	459.572	459.563		124+35.740	9.990	459.376	459.367		124+34.199	14.040	459.292	459.283		124+32.118	19.494	459.178	459.169		124+28.477	28.995	458.977	458.968
f	124+49.345	0.680	459.690	459.675		124+45.765	10.197	459.500	459.485		124+44.234	14.251	459.418	459.403		124+42.167	19.711	459.307	459.292		124+38.551	29.222	459.113	459.097
Q Brg. Pier 1	124+61.679	0.888	459.814	459.814		12																		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U.8966	SEC. 97-00208-01-GS	MADISON	34	16
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	



HALF PLAN



MIN. BAR LAPS
 (Unless otherwise noted)
 #5 Bars = 1'-8"
 #6 Bars = 2'-2"

* Order bars full length. Cut to fit skew & use remainder of bars in opposite end.
 ** Radial Dimensions

NOTES:

1. See Sheet 7 of 18 for Deck Cross Section.
2. See Sheet 8 of 18 for Bill of Material & Superstructure Details.
3. See Sheet 9 of 18 for Parapet Elevations.
4. See Sheet 17 of 18 for Bar Splicer (Coupler) Details.
5. Reinforcement Bars designated (E) shall be epoxy coated.
6. Bars indicated thus: 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
7. The cost of Epoxy Coated Flared Coil Loops is incidental to "Reinforcement Bars, Epoxy Coated".

Corporate License Number 184-001-084

SUPERSTRUCTURE - HALF PLAN
INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
 SEC. 97-00208-01-GS
 STATION 125+20.00
 ALTON, ILLINOIS
 STR. NO. 060-6110

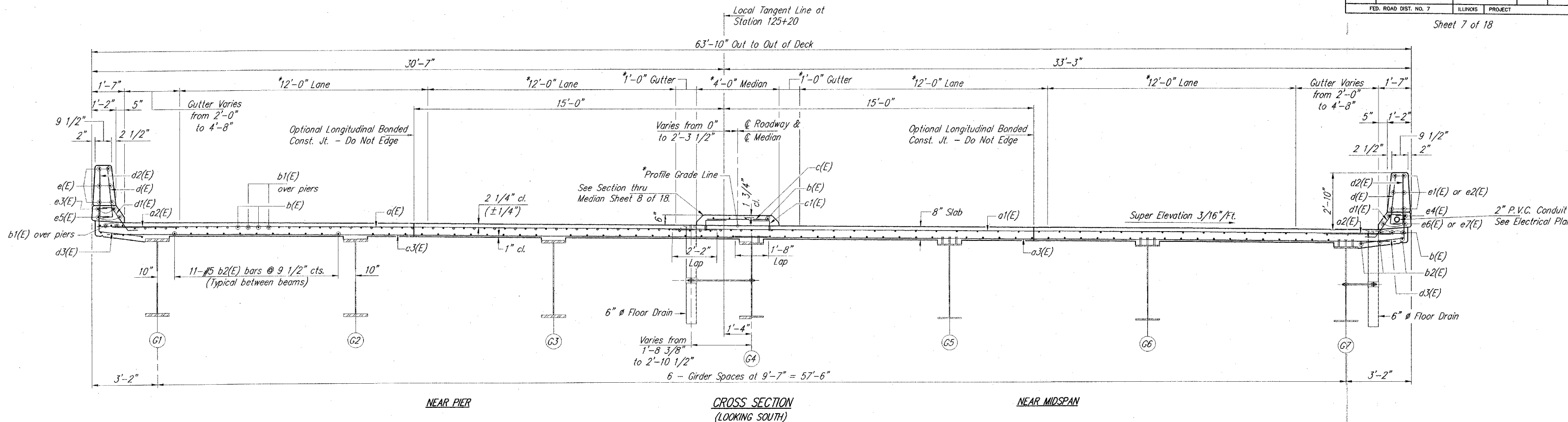
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JOB NO.
95510081
 DATE
05/12/05

LAYOUT: D.E. 11/25/97
 DRAWN: D.A.N. 11/19/97
 REVISION: T.E.H. 3/31/05
 1:95510081 (85510081) BRIDGE 05-12-05 106-SUPERSTR.DWG MAY 13, 2005 7:33AM DAG

ROUTE NO. F.A.U. 8966	SECTION SEC. 97-00208-01-GS	COUNTY MADISON	TOTAL SHEETS 34	SHEET NO. 17
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT		

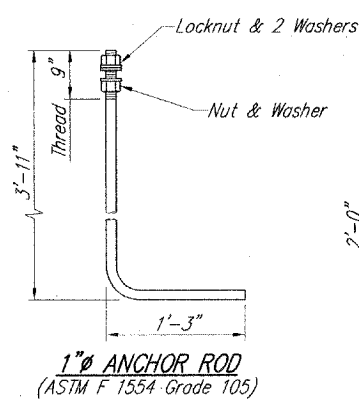


*These dimensions are measured radially.
All other dimensions are perpendicular to the local tangent.

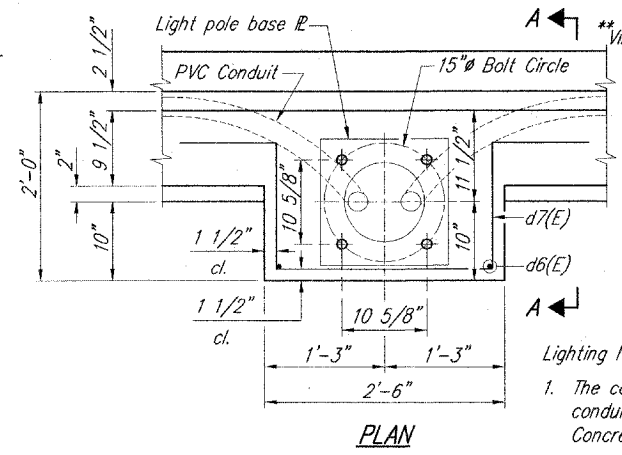
**MEDIAN LAYOUT
TABLE OF DIMENSIONS**

"x" (ft.)	"y" Lt. (ft.)	"y" Rt. (ft.)
-133.029	-	4.318
-131.594	-0.266	-
-120.000	0.116	3.886
-110.000	0.417	3.585
-100.000	0.691	3.310
-90.000	0.940	3.061
-80.000	1.163	2.838
-70.000	1.359	2.642
-60.000	1.529	2.472
-50.000	1.673	2.327
-40.000	1.791	2.210
-30.000	1.882	2.118
-20.000	1.948	2.052
-10.000	1.987	2.013
0.000	2.000	2.000
10.000	1.987	2.013
20.000	1.948	2.052
30.000	1.882	2.118
40.000	1.791	2.210
50.000	1.673	2.327
60.000	1.529	2.472
70.000	1.359	2.642
80.000	1.163	2.838
90.000	0.940	3.061
100.000	0.691	3.310
110.000	0.417	3.585
120.000	0.116	3.886
130.008	-	4.214
131.408	-0.260	-

"x" dimensions are measured along the local tangent.
"y" dimensions are measured perpendicular to the local tangent.

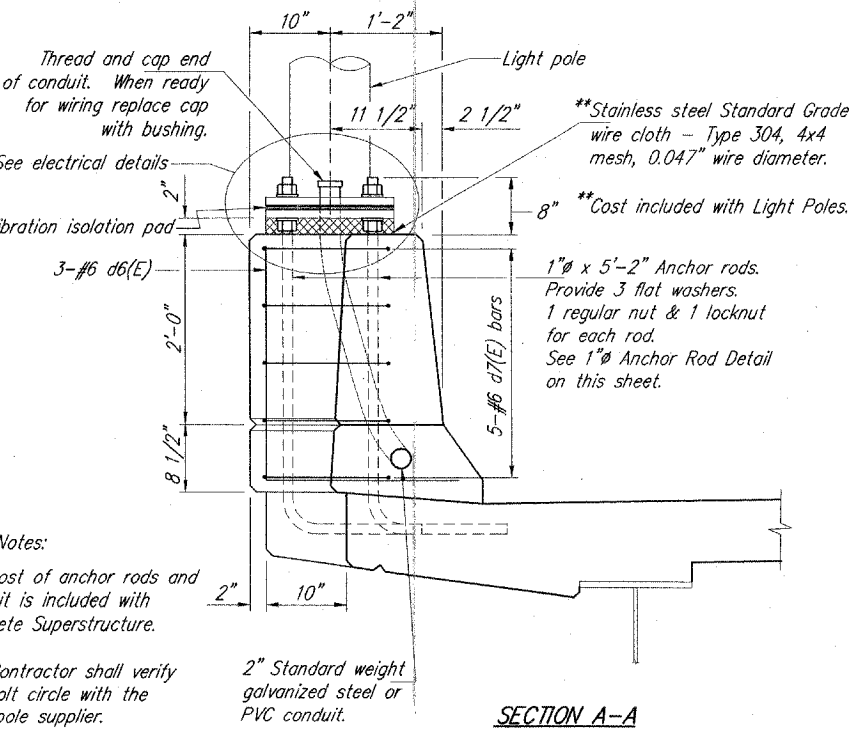


**1" ANCHOR ROD
(ASTM F 1554-Grade 105)**

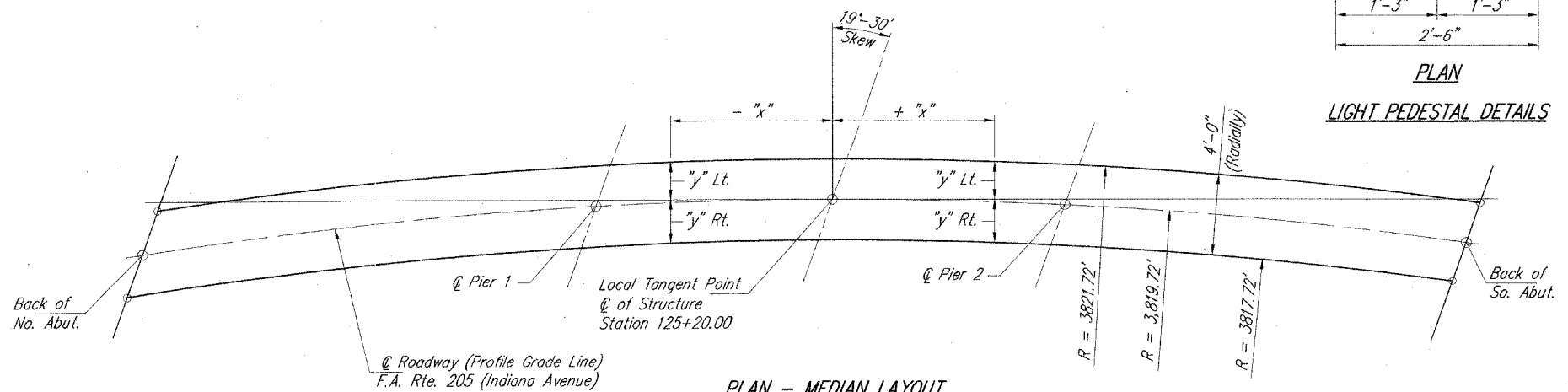


**PLAN
LIGHT PEDESTAL DETAILS**

- Lighting Notes:**
- The cost of anchor rods and conduit is included with Concrete Superstructure.
 - The Contractor shall verify the bolt circle with the light pole supplier.



SECTION A-A



PLAN - MEDIAN LAYOUT

Corporate License Number 184-001-084

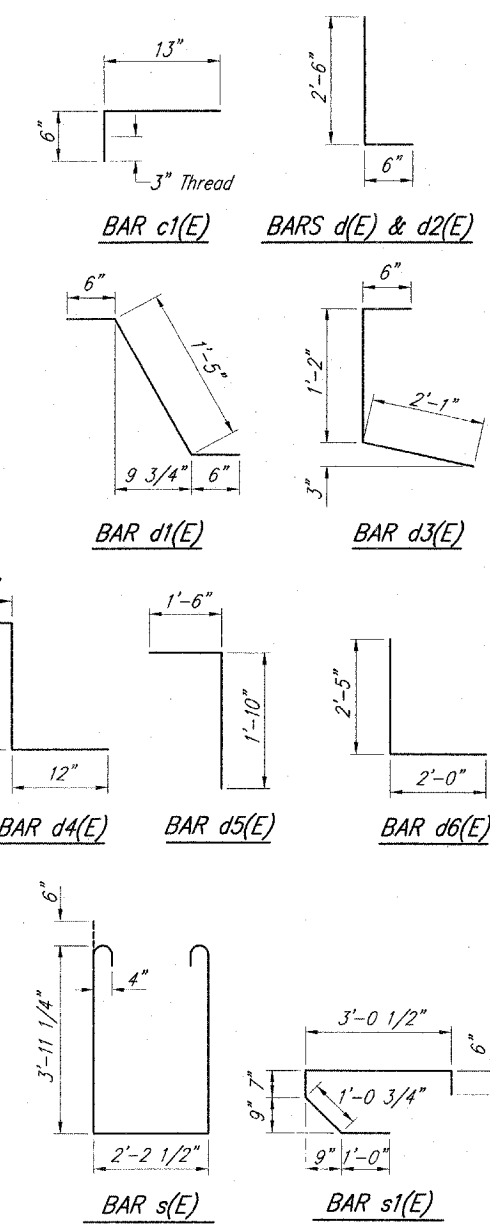
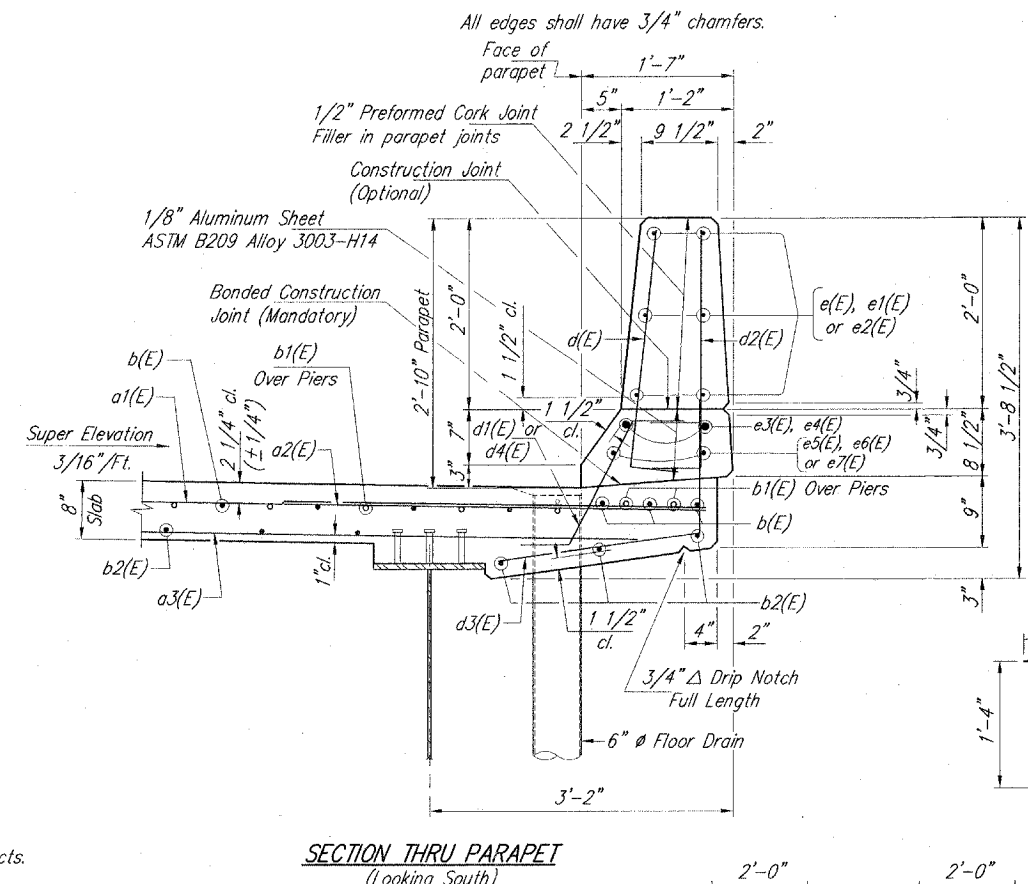
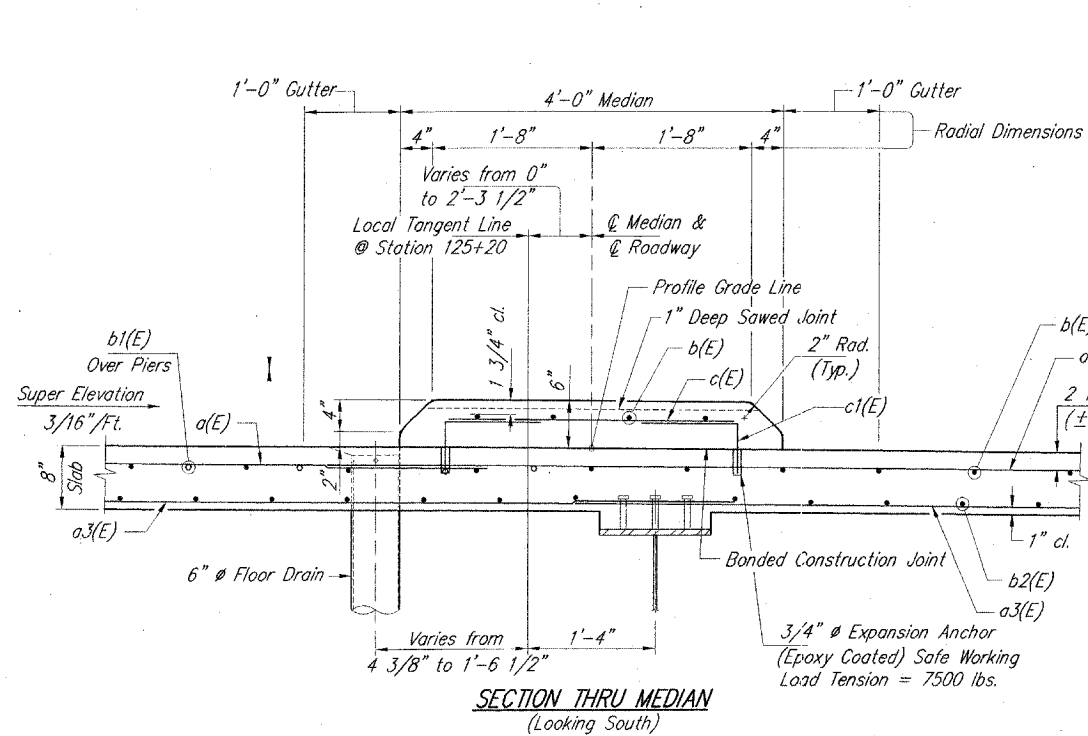
SUPERSTRUCTURE - CROSS SECTION
INDIANA AVENUE over NORFOLK SOUTHERN RAILWA
SEC. 97-00208-01-GS
STATION 125+20.00
ALTON, ILLINOIS
STR. NO. 060-6110

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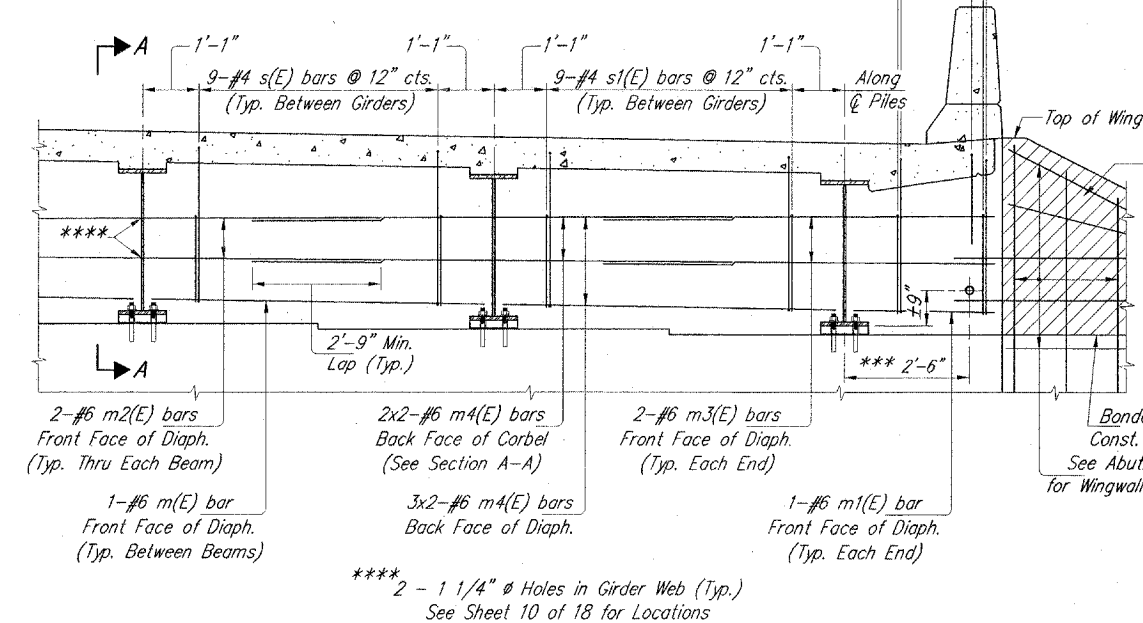
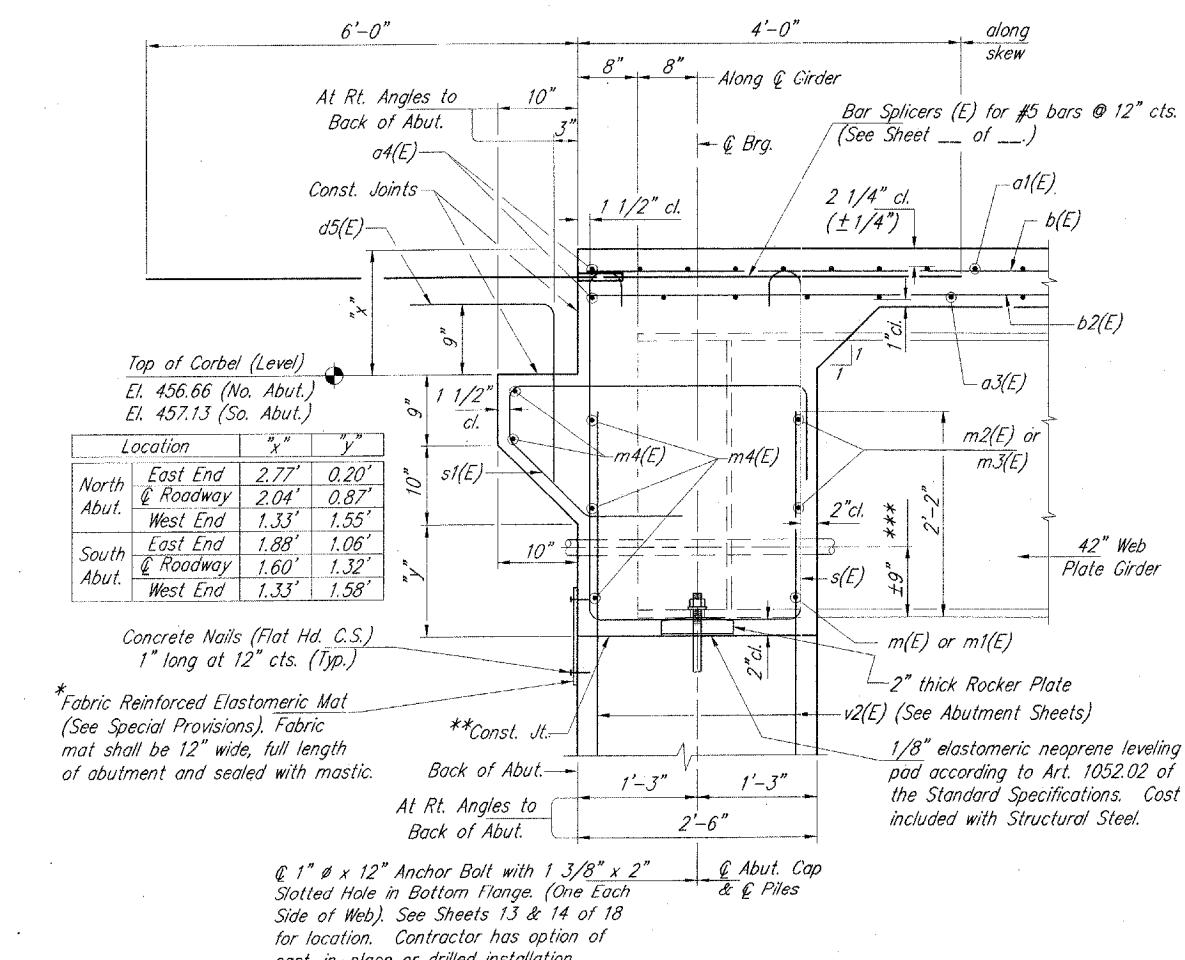
9551008
DATE 05/12/05

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 8966	SEC. 97-00208-01-GS	MADISON	34	18
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



BILL OF MATERIAL SUPERSTRUCTURE

BAR NO.	NO.	SIZE	LENGTH	SHAPE
a(E)	631	#5	30'-2"	
a1(E)	631	#5	35'-2"	
a2(E)	632	#6	4'-0"	
a3(E)	902	#5	31'-9"	
a4(E)	12	#5	23'-6"	
b(E)	710	#5	27'-10"	
b1(E)	256	#6	29'-8"	
b2(E)	792	#5	25'-5"	
c(E)	263	#5	3'-0"	
c1(E)	528	#5	1'-7"	
d(E)	576	#5	3'-0"	
d1(E)	564	#5	2'-5"	
d2(E)	528	#4	3'-0"	
d3(E)	528	#4	3'-9"	
d4(E)	12	#5	2'-10"	
d5(E)	136	#5	3'-4"	
d6(E)	3	#6	4'-5"	
d7(E)	5	#6	8'-11"	
e(E)	48	#4	15'-0"	
e1(E)	60	#4	16'-8"	
e2(E)	72	#4	19'-0"	
e3(E)	16	#8	15'-0"	
e4(E)	28	#8	31'-3"	
e5(E)	16	#5	15'-0"	
e6(E)	12	#5	29'-8"	
e7(E)	16	#5	30'-1"	
m(E)	12	#6	9'-10"	
m1(E)	4	#6	2'-10"	
m2(E)	20	#6	12'-11"	
m3(E)	8	#6	9'-6"	
m4(E)	20	#6	35'-1"	
s(E)	120	#4	11'-1"	
s1(E)	120	#4	5'-9"	
Concrete Superstructure	Cu. Yd.		546.2	
Reinforcement Bars, Epoxy Coated	Lbs.		147130	
Bar Splicer	Each		122	



* Included in the cost of Concrete Superstructure.

** Bonded Construction Joints in accordance with Article 503.09 (a)(2) of the Std. Specifications.

*** Locate 3" P.V.C. Sleeves in Abutments for conduit. Seal 2" Conduit in 3" Sleeve with Silicone Joint Sealer. Cost included with Concrete Superstructure.

SECTION A-A AT ABUTMENT (At Rt. Angles to Abutment)

Concrete in diaphragm is included with Concrete Superstructure.

Corporate License Number 184-001-084

SUPERSTRUCTURE DETAILS - SHEET 2

INDIANA AVENUE over NORFOLK SOUTHERN RAILWA

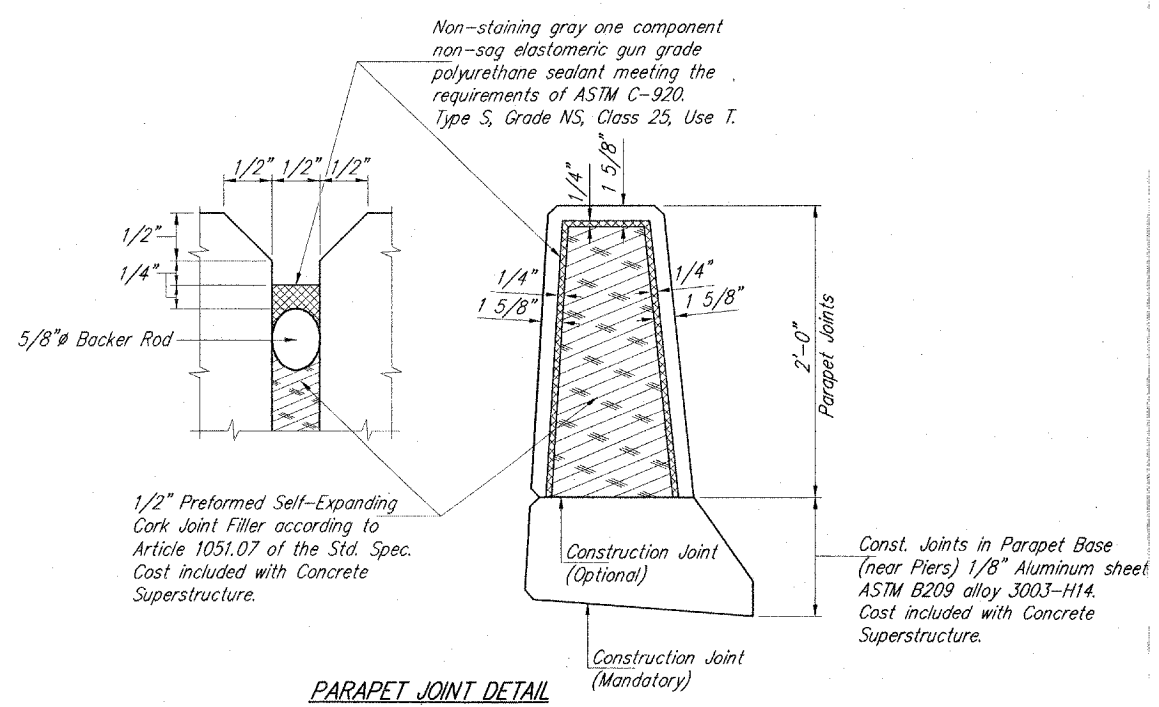
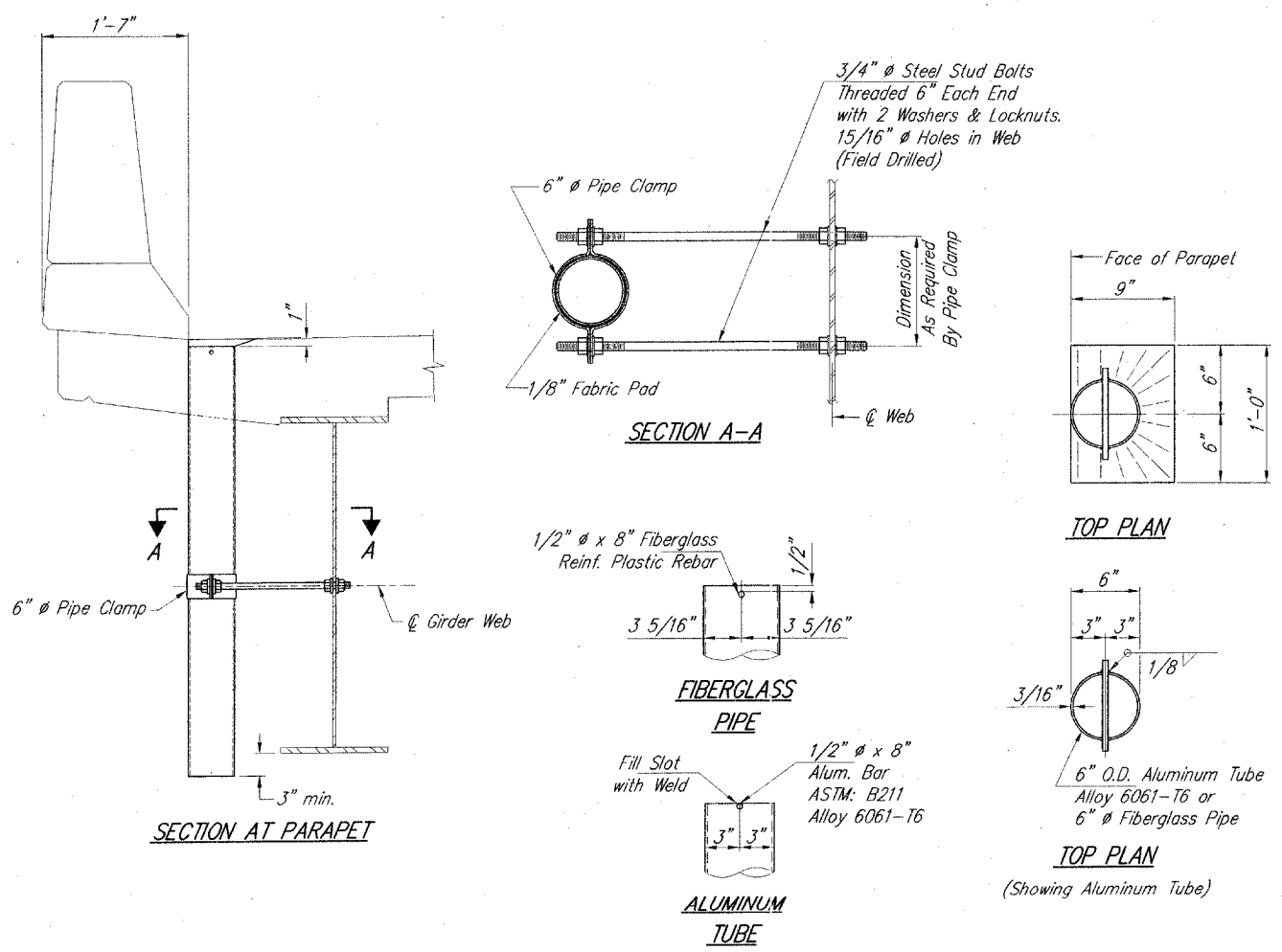
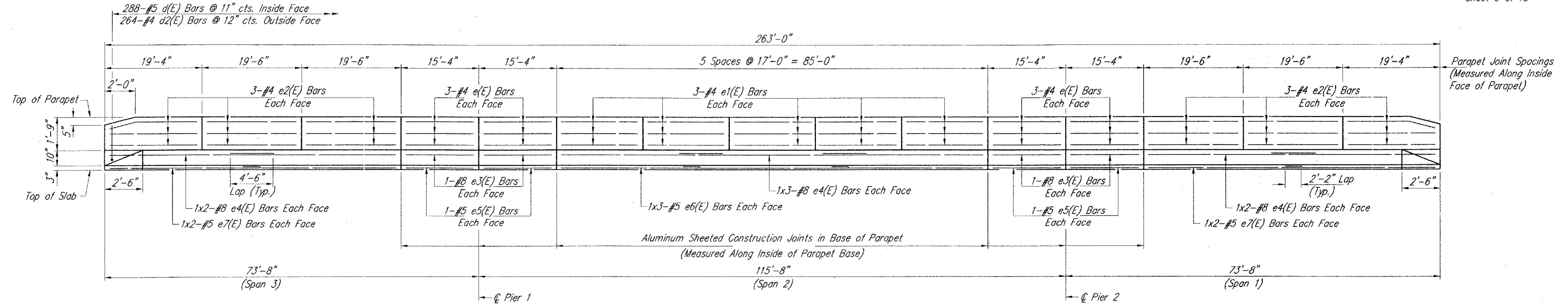
SEC. 97-00208-01-GS

STATION 125+20.00

ALTON, ILLINOIS

STR. NO. 060-6110

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U.8966	SEC. 97-00208-01-GS	MADISON	34	19
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



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 surface of the drains shall be cleaned according to Steel Structures Painting Council's Spec. SSPC-SPI prior to painting.

Fiberglass Pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

Corporate License Number 184-001-084

SUPERSTRUCTURE DETAILS - SHEET 1

INDIANA AVENUE over NORFOLK SOUTHERN RAILWA

SEC. 97-00208-01-GS

STATION 125+20.00

ALTON, ILLINOIS

STR. NO. 060-6110

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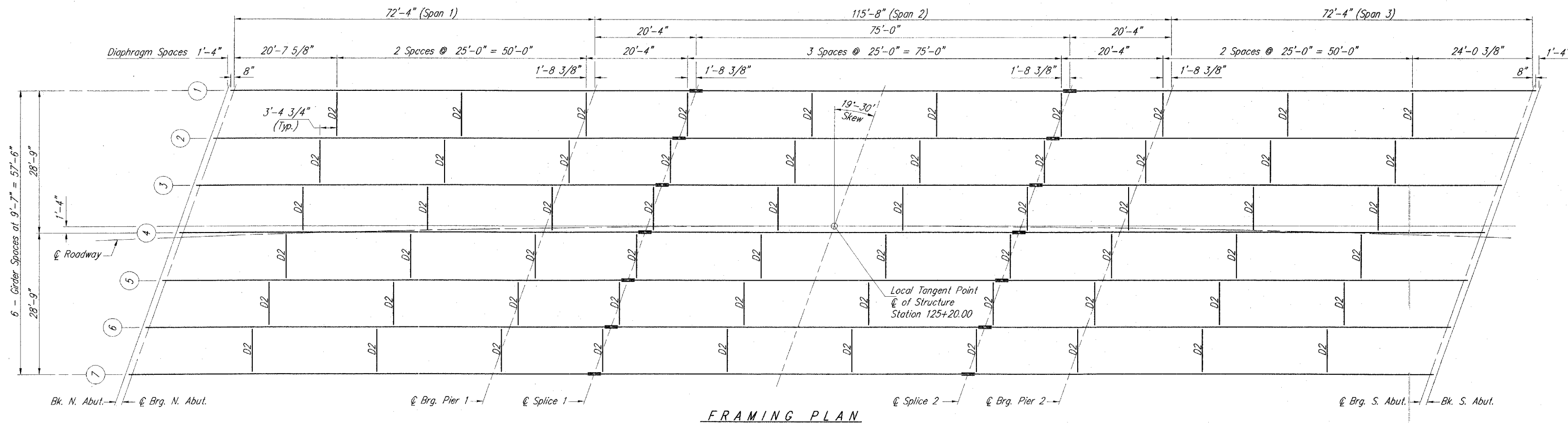
Hanson Professional Services Inc.

9551008

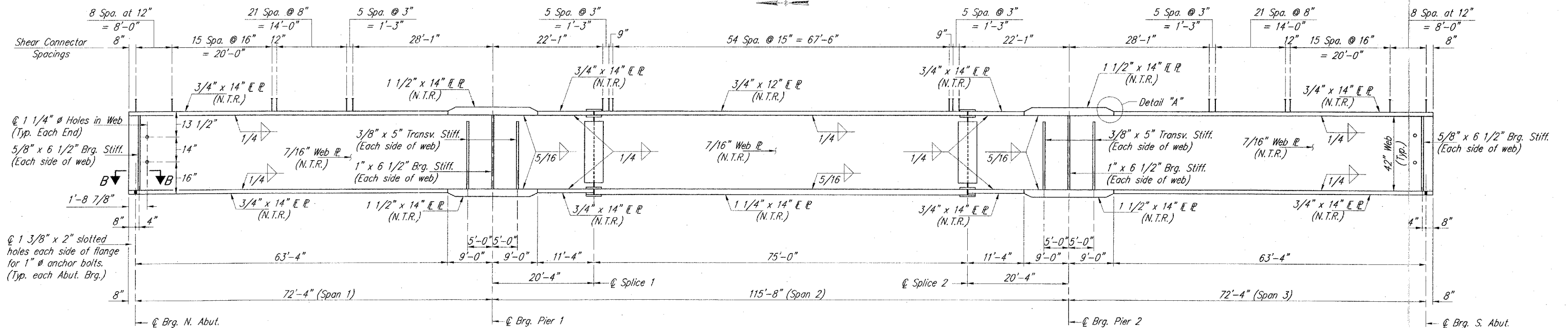
05/12/05

LAYOUT D.F. 11/5/97
 DRAWN D.A.N. 11/24/97
 REVIEWED D.F. 3/31/05
 SUPERSTRUCTURE DETAILS - SHEET 1
 SEC. 97-00208-01-GS
 STATION 125+20.00
 ALTON, ILLINOIS
 STR. NO. 060-6110

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
F.A.U.8966	SEC. 97-00208-01-GS	MADISON	34
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	

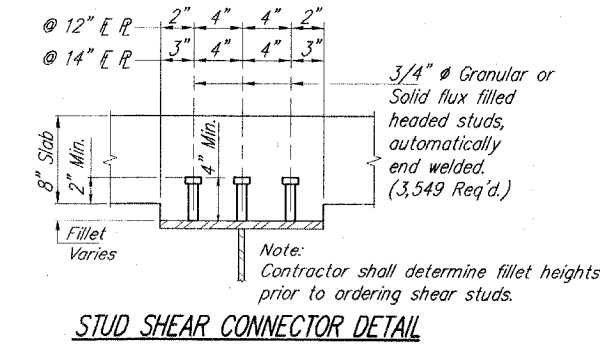
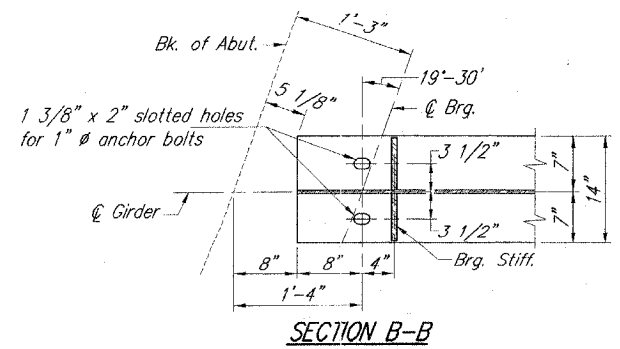
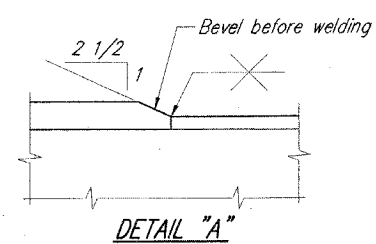


FRAMING PLAN



GIRDER ELEVATION

- NOTES:
1. N.T.R. refers to the Supplemental Requirements for Notch Toughness.
 2. All Girder Flange and Flange Splice Plates are M270 Grade 50.
 3. All Girder Web Plates, Diaphragms, Connection Plates, Bearing Stiffeners, Bearing Plates and Shim Plates are M270 Grade 36.



Corporate License Number 184-001-084

STRUCTURAL STEEL FRAMING PLAN
 INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
 SEC. 97-00208-01-GS
 STATION 125+20.00
 ALTON, ILLINOIS
 STR. NO. 060-6110

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DRAWN: D.A.N. 11/23/07
 CHECKED: T.E.H. 1/15/08
 DATE: 11/23/07
 PROJECT: I-55/US-52 BRIDGE 05-12-0510-SIP/PLAN/DWG MAY 13, 2005 7:35AM DAB

ROUTE NO. F.A.U. 8966	SECTION SEC. 97-00208-01-GS	COUNTY MADISON	TOTAL SHEETS 34	SHEET NO. 21
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT		

INTERIOR GIRDER MOMENT TABLE

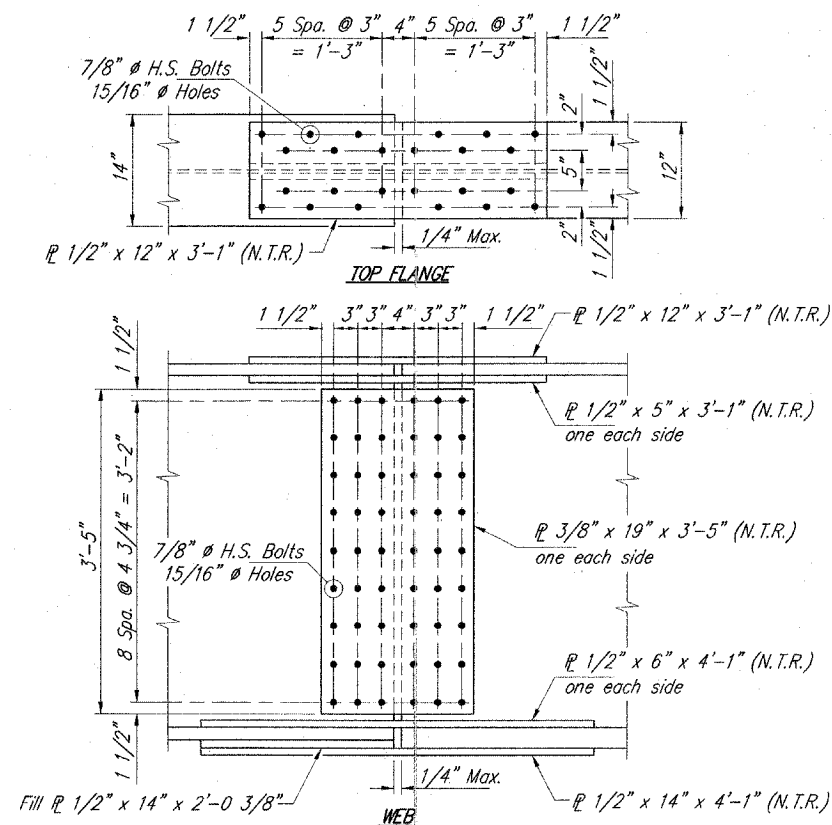
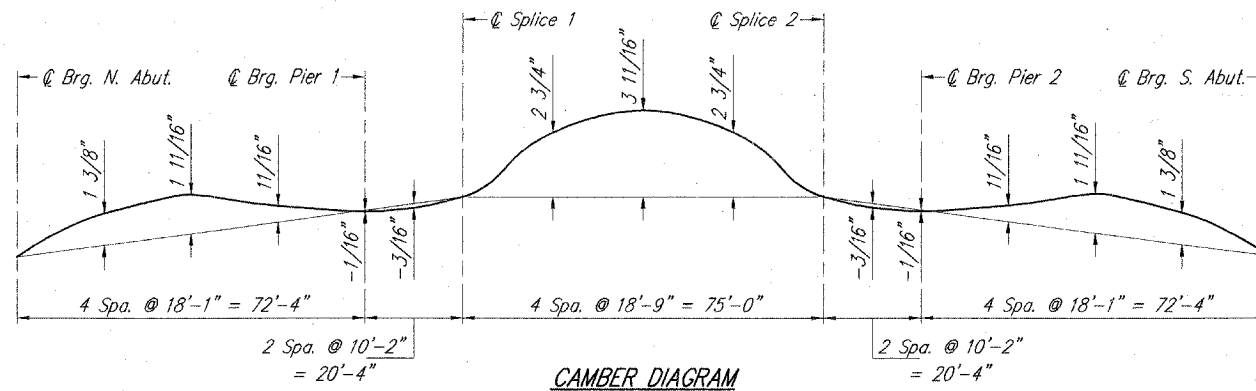
	0.4 Span 1	Pier No.1	0.5 Span 2
Is (in. ⁴)	12297	22578	13635
Ic (n=27) (in. ⁴)	23628	-	28650
Ic (n=9) (in. ⁴)	30972	-	38893
Ss (in. ³)	565	1004	729
Sc (n=27) (in. ³)	723	-	941
Sc (n=9) (in. ³)	783	-	1016
Q (K/')	1.134	1.572	1.149
M Q (K)	238	1512	732
S Q (K/')	0.357	-	0.357
MS Q (K)	98	-	282
M L (K)	739	719	1127
M (Imp) (K)	188	166	234
5/3(M L + M(Imp)) (K)	1543	1474	2269
Ma (K)	2443	3882	4268
Mu (K)	3346	-	4471
fs Q non-comp (ksi)	5.0	18.1	12.0
fs Q (comp) (ksi)	1.6	-	3.6
fs 5/3(M L + M(Imp)) (ksi)	23.7	17.6	26.8
fs (Overload) (ksi)	30.3	35.7	42.4
fs (Total) (ksi)	-	46.4	-
VR (K)	79	-	65

TOP OF WEB ELEVATIONS

	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7
Q Brg. N. Abut.	458.623	458.365	458.182	457.957	457.730	457.501	457.269
Q Brg. Pier 1	459.496	459.289	459.141	458.960	458.777	458.592	458.404
Q Splice 1	459.749	459.554	459.416	459.247	459.075	458.902	458.726
Q Splice 2	459.637	459.488	459.382	459.252	459.121	458.988	458.853
Q Brg. Pier 2	459.324	459.186	459.088	458.968	458.847	458.724	458.600
Q Brg. S. Abut.	458.235	458.135	458.064	457.976	457.888	457.798	457.708

INTERIOR GIRDER REACTION TABLE

	N. Abut.	Pier 1	Pier 2	S. Abut.
R Q (K)	33	162	162	33
R L (K)	56	84	84	56
IMP (K)	14	19	19	14
R TOTAL (K)	103	265	265	103



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.

VR is the maximum L + Impact shear range within the composite portion of the span.

The Plastic Moment capacity (Mu) is computed according to AASHTO 10.48 & 10.50.1.1. (Not applicable)

fs (Total) is the sum of the stresses due to

$$1.3 [M Q + M_s Q + \frac{5}{3}(M L + M(Imp))]$$

fs (Overload) is the sum of the stresses due to

$$M Q + M_s Q + \frac{5}{3}(M L + M(Imp))$$

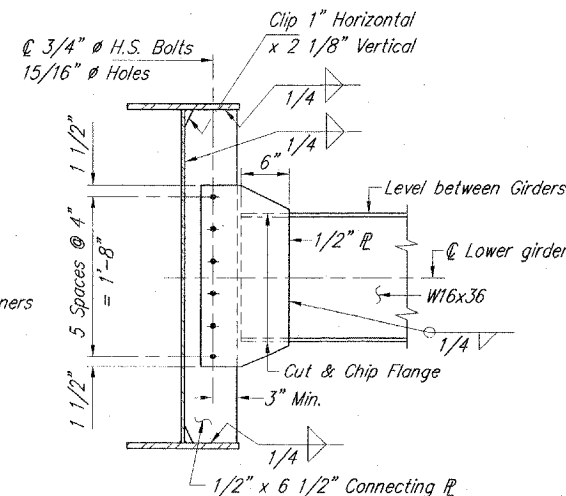
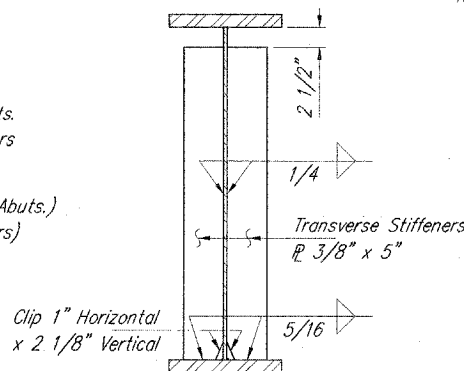
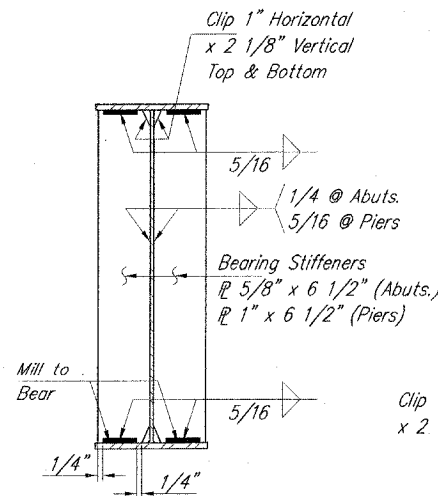
M Q - Moment due to dead loads on non-composite section.

Ms Q - Moment due to dead loads on composite section.

M L - Moment due to live load on non-composite or composite section.

M (Imp) = Moment due to Live Load Impact on non-composite or composite section.

$$M_o \text{ (Applied Moment)} = 1.3 [M Q + M_s Q + \frac{5}{3}(M L + M(Imp))]$$



BEARING STIFFENERS

TRANSVERSE STIFFENERS

INTERIOR DIAPHRAGMS - D2

(60 - Required)

Note:
Two hardened washer shall be required over all oversized holes.

Corporate License Number 184-001-084

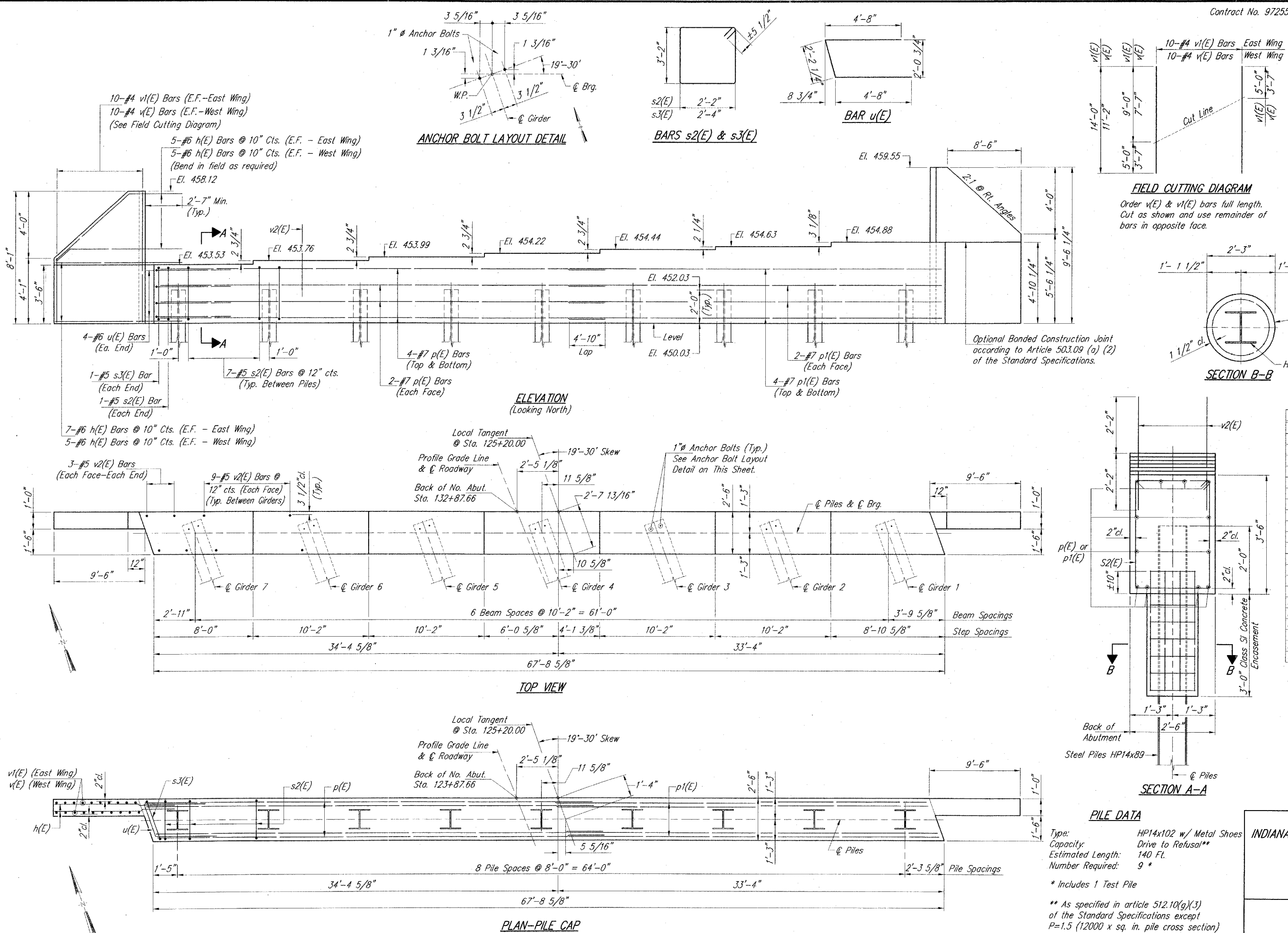
STRUCTURAL STEEL DETAILS
INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
SEC. 97-00208-01-GS
STATION 125+20.00
ALTON, ILLINOIS
STR. NO. 060-6110



JOB NO.
9551008
DATE
05/12/03

11/14/97
 3/31/03
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 1.05(06) 1905(008) BRIDGE 05-12-05(1)-STUDET.DWG, MAY 13, 2005 7:36AM DAB
 11/14/97
 3/31/03
 05-12-05(1)-STUDET.DWG, MAY 13, 2005 7:36AM DAB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 8986	SEC. 97-00208-01-GS	MADISON	34	2
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	



NOTES:
 All edges shall have standard 3/4" chamfers except as noted.
 Four steps monolithically with cap.
 Bars indicated thus: 1x3 indicates 1 line with 3 lengths per line.

Welded wire fabric 6x6-W4.0xW4.0 weighing 58#/100 sq. ft. The Cost of Excavation and Reinforcement is included with the cost of Class SI Concrete Encasement. Forms for encasement may be omitted when soil conditions will permit.

**BILL OF MATERIAL
 NORTH ABUTMENT**

Bar	No.	Size	Length	Shape	
h(E)	44	#6	12'-0"	—	
p(E)	12	#7	39'-6"	—	
p1(E)	12	#7	32'-9"	—	
s2(E)	60	#5	11'-7"	□	
s3(E)	2	#5	11'-11"	□	
u(E)	8	#6	11'-7"	—	
v(E)	10	#4	11'-2"	—	
v1(E)	10	#4	14'-0"	—	
v2(E)	120	#5	4'-4"	—	
Concrete Structures				Cu. Yd.	31.1
Reinf. Bars (Epoxy Coated)				Pound	4310
Furn. Steel Piles-HP14x102				Foot	1260
Driving Steel Piles				Foot	1260
Test Pile HP14x102				Each	1
Metal Shoes				Each	8
Structure Excavation				Cu. Yd.	48

Reinforcement bars designated (E) shall be epoxy coated.

Corporate License Number 184-001-084

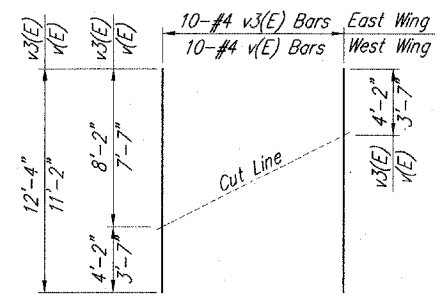
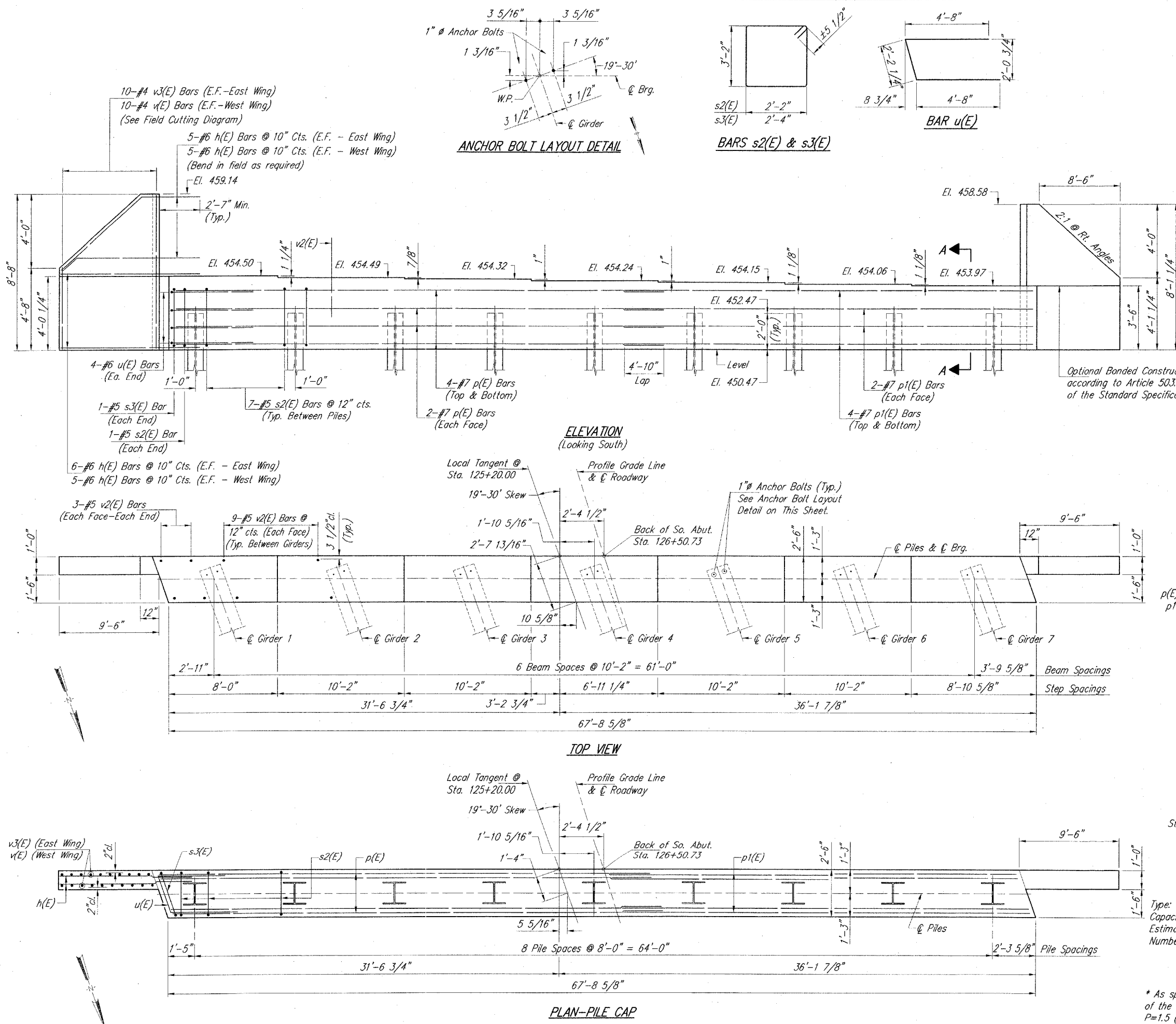
**NORTH ABUTMENT
 INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
 SEC. 97-00208-01-GS
 STATION 125+20.00
 ALTON, ILLINOIS
 STR. NO. 060-6110**

PILE DATA
 Type: HP14x102 w/ Metal Shoes
 Capacity: Drive to Refusal**
 Estimated Length: 140 Ft.
 Number Required: 9 *
 * Includes 1 Test Pile

** As specified in article 512.10(g)(3) of the Standard Specifications except P=1.5 (12000 x sq. in. pile cross section)

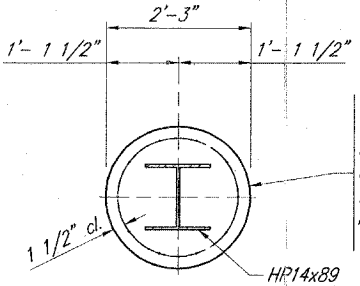
DRAWN: D.A.N. 3/31/05
 CHECKED: T.E.H. 1/22/05
 DATE: 1/22/05
 PROJECT: ILLINOIS 05-12-05 13-ABUT.DWG MAY 13, 2005 7:37AM DMB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 8966	SEC. 97-00208-01-GS	MADISON	34	2
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	



FIELD CUTTING DIAGRAM

Order v(E) & v3(E) bars full length. Cut as shown and use remainder of bars in opposite face.



SECTION B-B

NOTES:
All edges shall have standard 3/4\"/>

Four steps monolithically with cap.
Bars indicated thus: 1x3 indicates 1 line with 3 lengths per line.

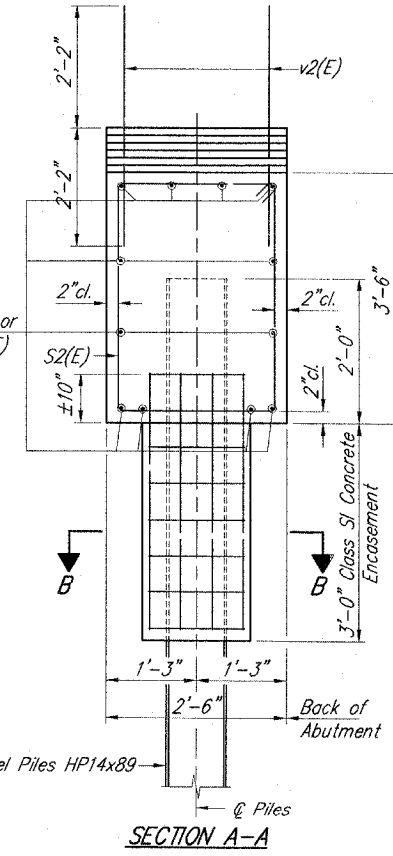
Welded wire fabric 6x6-W4.0xW4.0 weighing 58#/100 sq. ft. The cost of excavation, concrete encasement and reinforcement is included with furnishing piles. Forms for encasement may be omitted when soil conditions will permit.

BILL OF MATERIAL SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	42	#6	12'-0"	
p(E)	12	#7	39'-6"	
p1(E)	12	#7	32'-9"	
s2(E)	60	#5	11'-7"	□
s3(E)	2	#5	11'-11"	□
u(E)	8	#6	11'-7"	
v(E)	10	#4	11'-2"	
v2(E)	120	#5	4'-4"	
v3(E)	10	#4	12'-4"	

Concrete Structures	Cu. Yd.	28.1
Reinf. Bars (Epoxy Coated)	Pound	4250
Furn. Steel Piles HP14x102	Foot	1152
Driving Steel Piles	Foot	1152
Metal Shoes	Each	9
Structure Excavation	Cu. Yd.	49

Reinforcement bars designated (E) shall be epoxy coated.



SECTION A-A

PILE DATA

Type: HP14x102 w/ Metal Shoes
Capacity: Drive to Refusal*
Estimated Length: 144 Ft.
Number Required: 9

* As specified in article 512.10(g)(3) of the Standard Specifications except P=1.5 (12000 x sq. in. pile cross section)

Corporate License Number 184-001-084

SOUTH ABUTMENT
INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
SEC. 97-00208-01-GS
STATION 125+20.00
ALTON, ILLINOIS
STR. NO. 060-6110

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Hanson Professional Services Inc.

LAYOUT: E.H. 1/22/08
 DRAWN: D.A.N. 2/19/08
 PREPARED: E.H. 3/31/05
 BRIDGE 05-12-05 14-SABUT.DWG MAY 13, 2005 7:38AM DAG

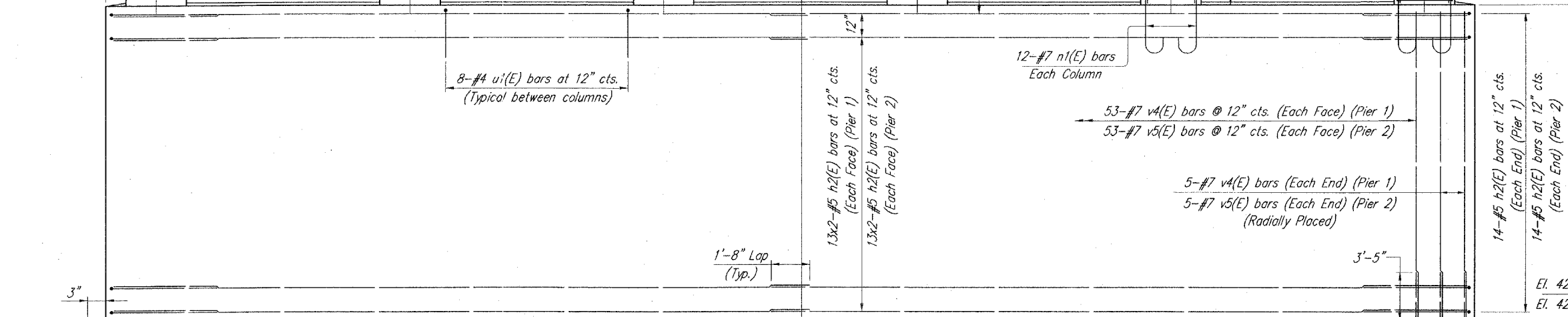
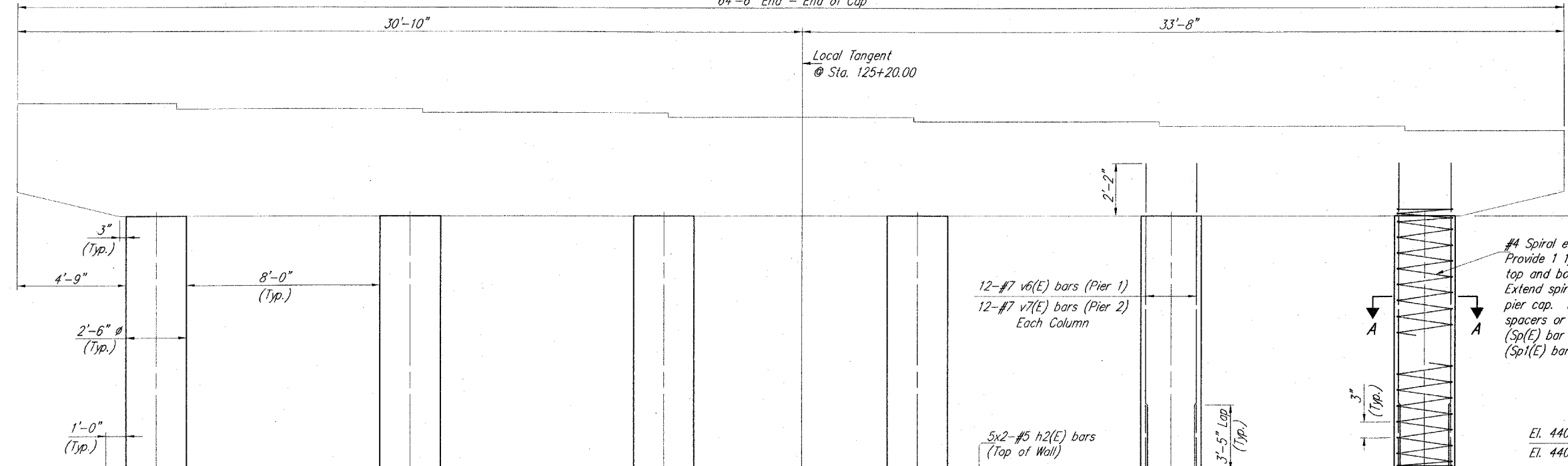
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 8966	SEC. 97-00208-01-GS	MADISON	34	2
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

64'-6" End - End of Cap

30'-10"

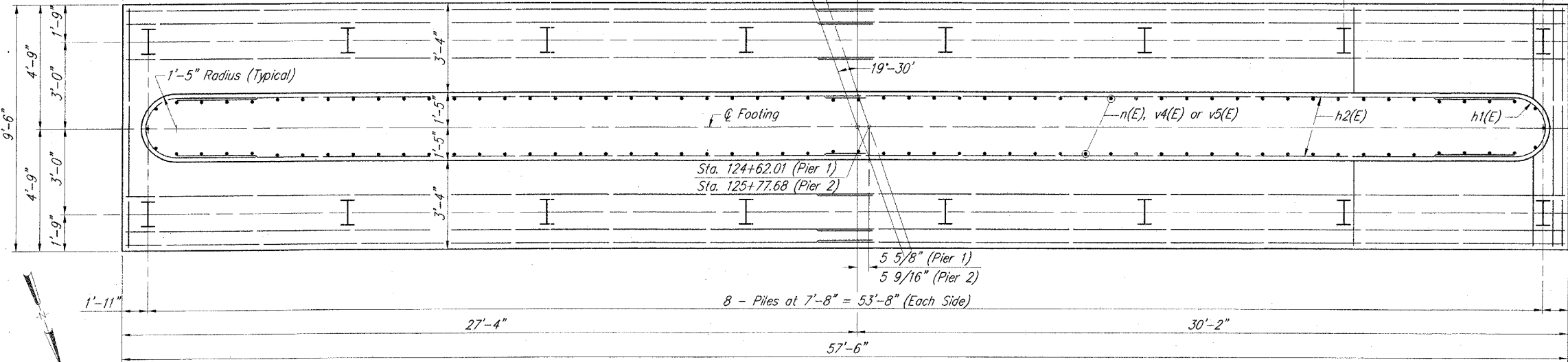
33'-8"

Local Tangent @ Sta. 125+20.00



ELEVATION (Looking South)

Local Tangent @ Sta. 125+20.00 Profile Grade Line & Roadway



FOOTING PLAN

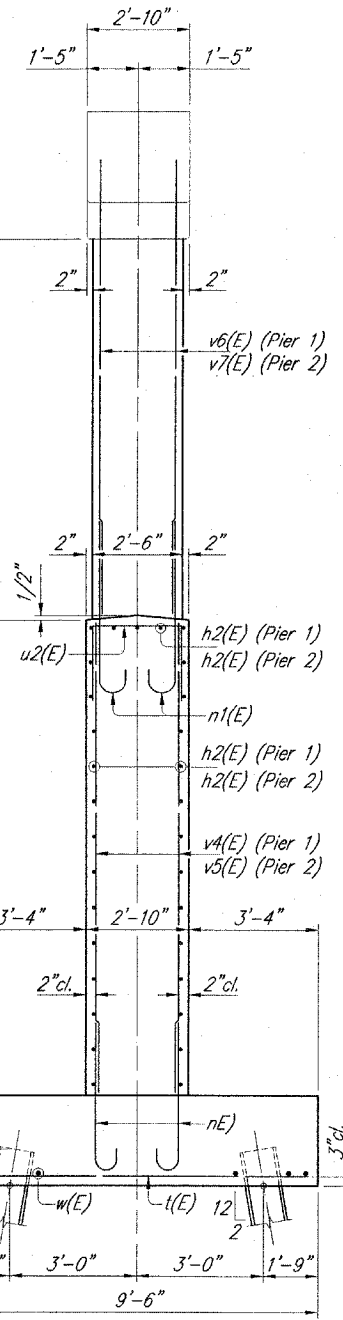
El. 450.86 (Pier 1)
El. 451.06 (Pier 2)

#4 Spiral each column. Provide 1 1/2 extra turns top and bottom. Extend spiral 2" into pier cap. Provide 4-#4 spacers or equivalent. (Sp(E) bar - Pier 1) (Sp1(E) bar - Pier 2)

El. 440.20 (Pier 1)
El. 440.60 (Pier 2)

El. 426.30 (Pier 1)
El. 426.90 (Pier 2)

El. 423.80 (Pier 1)
El. 424.40 (Pier 2)



END VIEW

PILE DATA - 2 PIERS

Type: HP12x74 w/ Metal Shoe
Capacity: Driven to Refusal
Estimated Length: 113 Ft. (Pier 1)
Estimated Length: 116 Ft. (Pier 2)
Number Required: 16 (Pier 1)
Number Required: *16 (Pier 2)
*Includes One Test Pile

SECTION A-A

** As specified in article 512.10(g)(3) of the Standard Specifications, except P=1.5 (12000 x sq. in. pile cross section)

Corporate License Number 184-001-084

PIERS 1 & 2 - SHEET 1 OF 2
INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
SEC. 97-00208-01-GS
STATION 125+20.00
ALTON, ILLINOIS
STR. NO. 060-6110



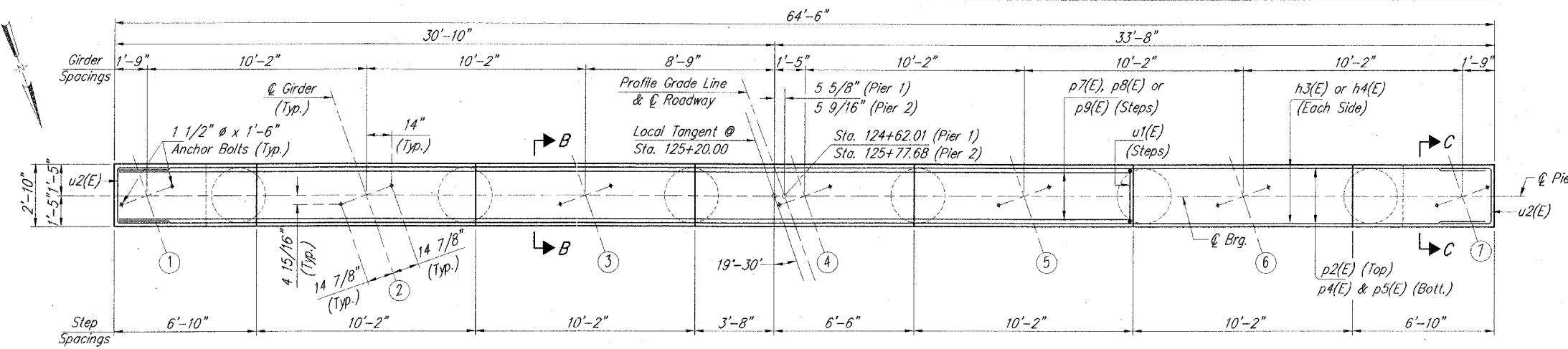
DATE: 05/12/06

LAYOUT: 2/20/06
 DRAWN: D.A.N. 3/10/06
 REVIEWED: D.E. 3/31/06
 1:35:26; 95310281; BRIDGE 05-12-05115-PIERS/PI/DRG MAY 11, 2006 7:38AM DWG

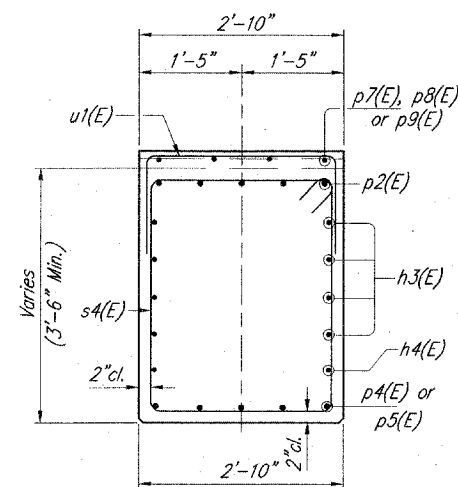
Contract No. 97255

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U.8986	SEC. 97-00208-01-05	MADISON	34	26
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

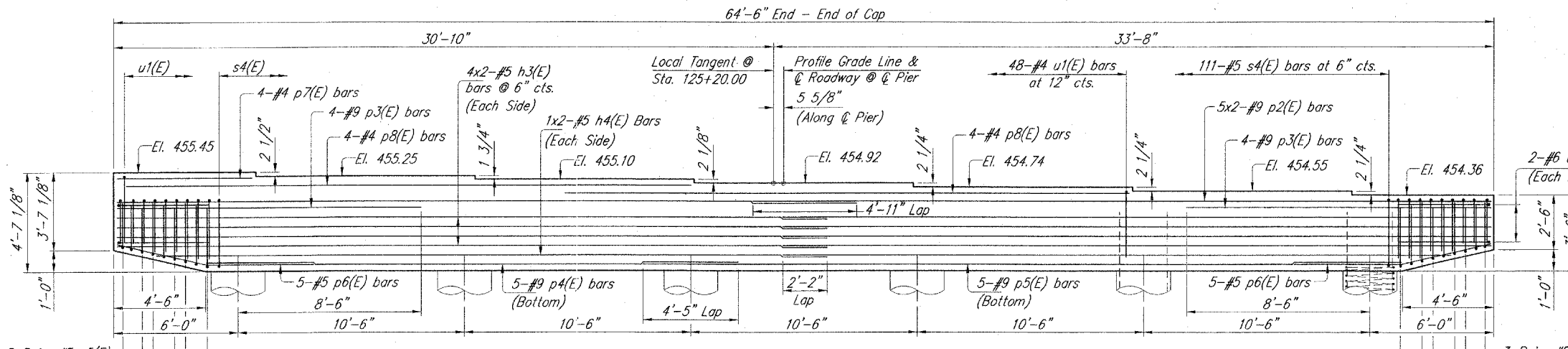
Sheet 16 of 18



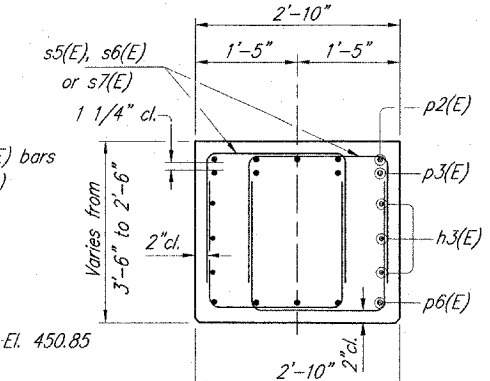
TOP PLAN - PIERS 1 & 2



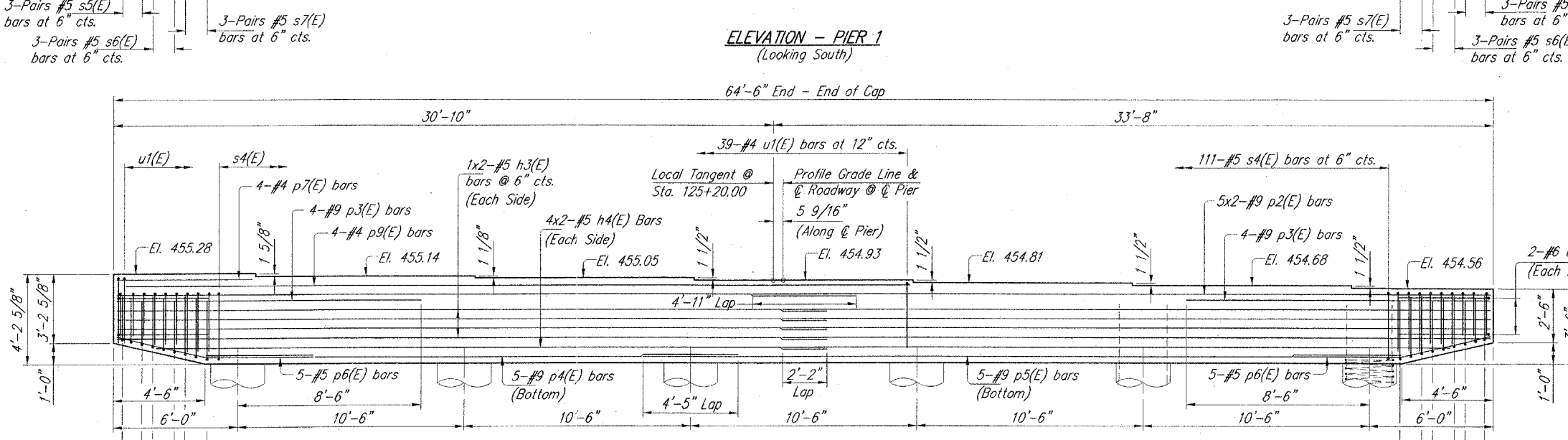
SECTION B-B



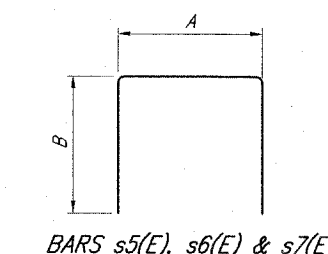
ELEVATION - PIER 1 (Looking South)



SECTION C-C



ELEVATION - PIER 2 (Looking South)



Bar	A	B
s5(E)	1'-11"	2'-2"
s6(E)	1'-11"	2'-5"
s7(E)	1'-11"	2'-9"

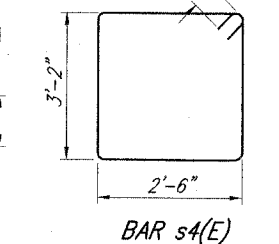
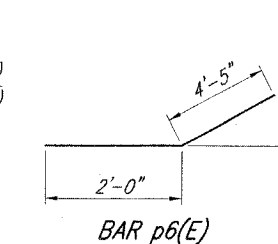
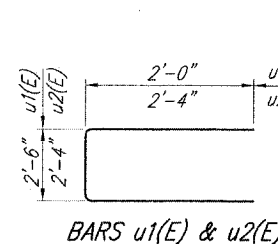
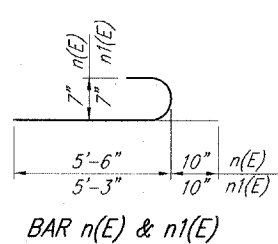
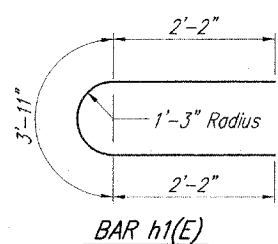
BILL OF MATERIAL - 2 PIERS

Bar	No.	Size	Length	Shape
h1(E)	56	#5	8'-3"	
h2(E)	124	#5	28'-0"	
h3(E)	32	#5	33'-2"	
h4(E)	8	#5	31'-1"	
n(E)	232	#7	6'-4"	
n1(E)	144	#7	6'-1"	
p2(E)	20	#9	34'-7"	
p3(E)	16	#9	14'-4"	
p4(E)	10	#9	24'-9"	
p5(E)	10	#9	35'-3"	
p6(E)	20	#5	6'-5"	
p7(E)	8	#4	6'-6"	
p8(E)	8	#4	26'-8"	
p9(E)	4	#4	36'-4"	
s4(E)	222	#5	12'-3"	
s5(E)	24	#5	6'-3"	
s6(E)	24	#5	6'-9"	
s7(E)	24	#5	7'-5"	
*Sp(E)	6	#4	347'-0"	
*Sp1(E)	6	#4	343'-0"	
l(E)	148	#7	9'-0"	
u1(E)	167	#4	6'-6"	
u2(E)	8	#6	7'-0"	
v4(E)	116	#7	13'-6"	
v5(E)	116	#7	13'-3"	
v6(E)	72	#7	12'-10"	
v7(E)	72	#7	12'-8"	
w(E)	36	#5	29'-7"	

Reinforcement Bars, Epoxy Coated	Lbs.	36690
Concrete Structures	Cu. Yds.	339.8
Furn. Sll. Piles HP12x74	Foot	3551
Driving Steel Piles	Foot	3551
Test Pile HP12x74	Each	1
Metal Shoes	Each	31
Structure Excavation	Cu. Yds.	280

*Includes 5 - 2'-0" Laps

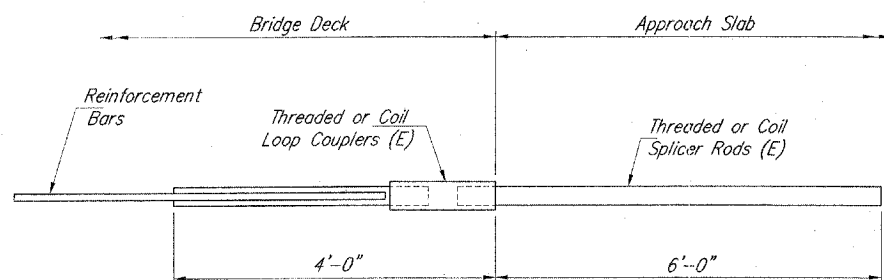
- Notes:
1. Cast steps monolithically with cap.
 2. All edges shall have standard 3/4" chamfers except as noted.
 3. Space cap reinforcement to miss anchor bolts.
 4. Minimum lap for spirals = 2'-0"



Corporate License Number 184-001-084
PIERS 1 & 2 - SHEET 2 OF 2
INDIANA AVENUE over NORFOLK SOUTHERN RAILWAY
 SEC. 97-00208-01-GS
 STATION 125+20.00
 ALTON, ILLINOIS
 STR. NO. 060-6110

LAYOUT 10/31/97
 DRAWN 3/10/99
 CHECKED 3/31/05
 DESIGNED 05/12/05
 PROJECT 16-PIERS/2-DWG MAY 12, 2005 7:59AM DAB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 8966	SEC. 97-00208-01-GS	MADISON	34	27
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



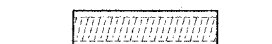
**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #5 BAR**

Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 122

The diameter of this part is the same as the diameter of the bar spliced.

The diameter of this part is equal or larger than the diameter of bar spliced.

ROLLED THREAD DOWEL BAR



**** ONE PIECE**

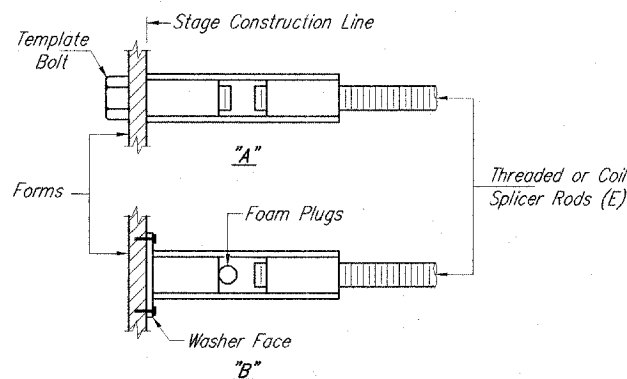
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 56.3, Grade C, D or DH may be used.



INSTALLATION & SETTING METHODS

"A": Set bar splicer assembly by means of template bolt.
 "B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E): Indicates epoxy coating.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
 All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
 Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
- ② Minimum *Pull-out Strength = $1.25 \times f_{s \text{ allow}} \times A_t$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 $f_{s \text{ allow}}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete.

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

Corporate License Number 184-001-084

BAR SPLICER ASSEMBLY DETAILS
 INDIANA AVENUE over NORFOLK SOUTHERN RAILWA.
 SEC. 97-00208-01-GS
 STATION 125+20.00
 ALTON, ILLINOIS
 STR. NO. 060-6110

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JOB NO.

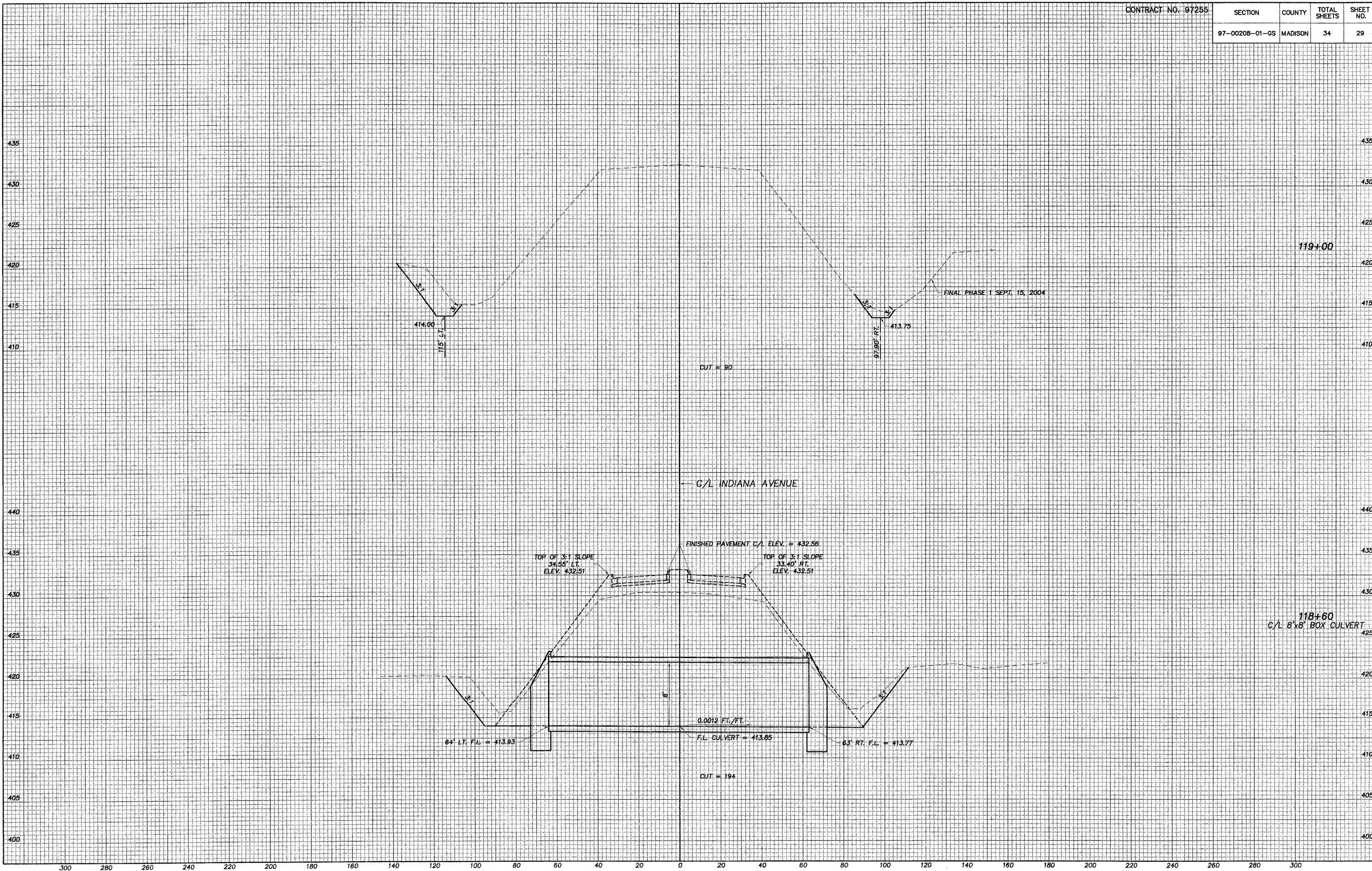
95S1008

DATE

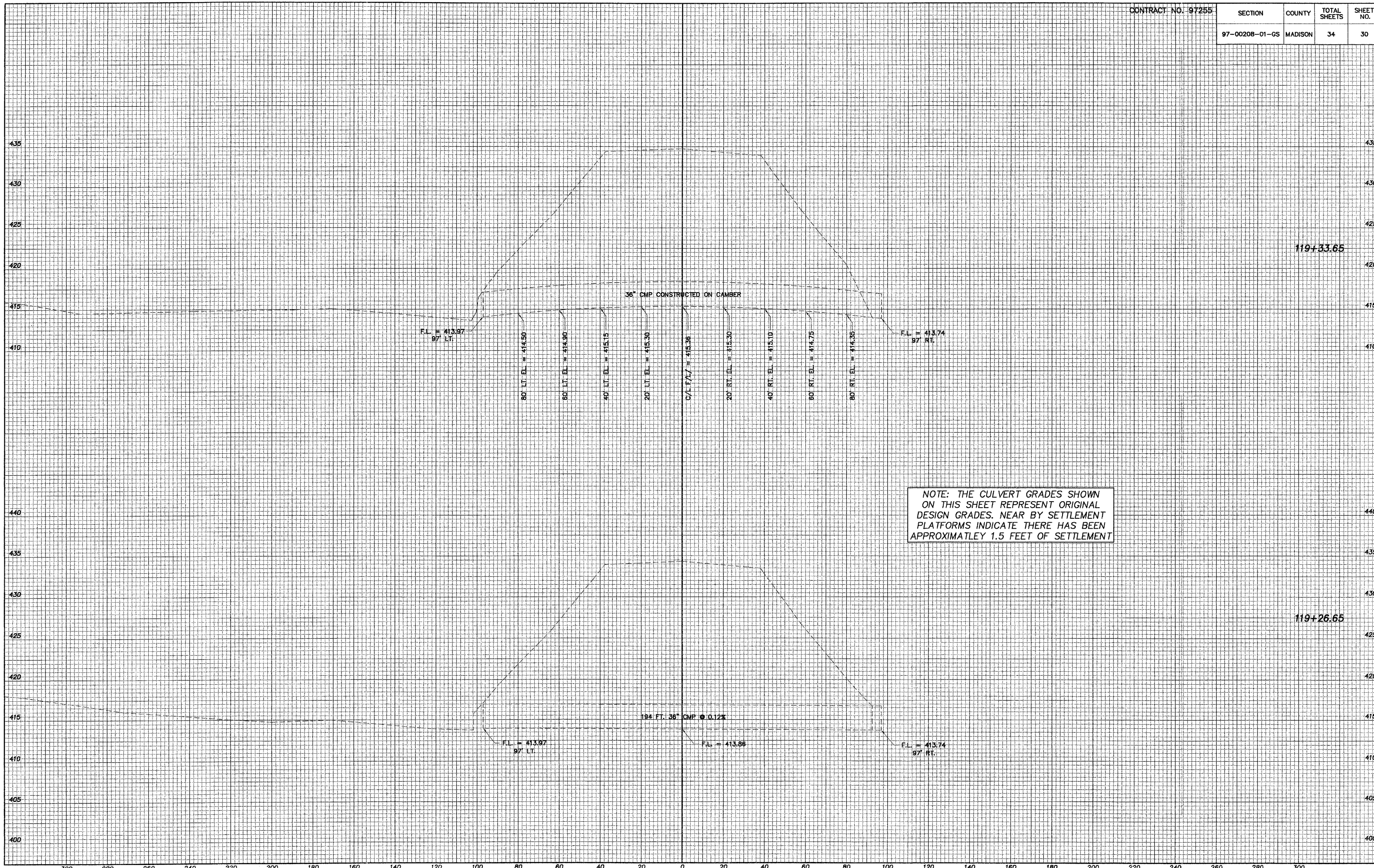
05/12/05

3/9/98
 D.F.
 3/10/98
 D.A.N.
 3/31/05
 T.E.H.
 155510281 BRIDGE 05-12-05 17-SPLICERS.DWG MAY 13, 2005 T. SWAN DAB

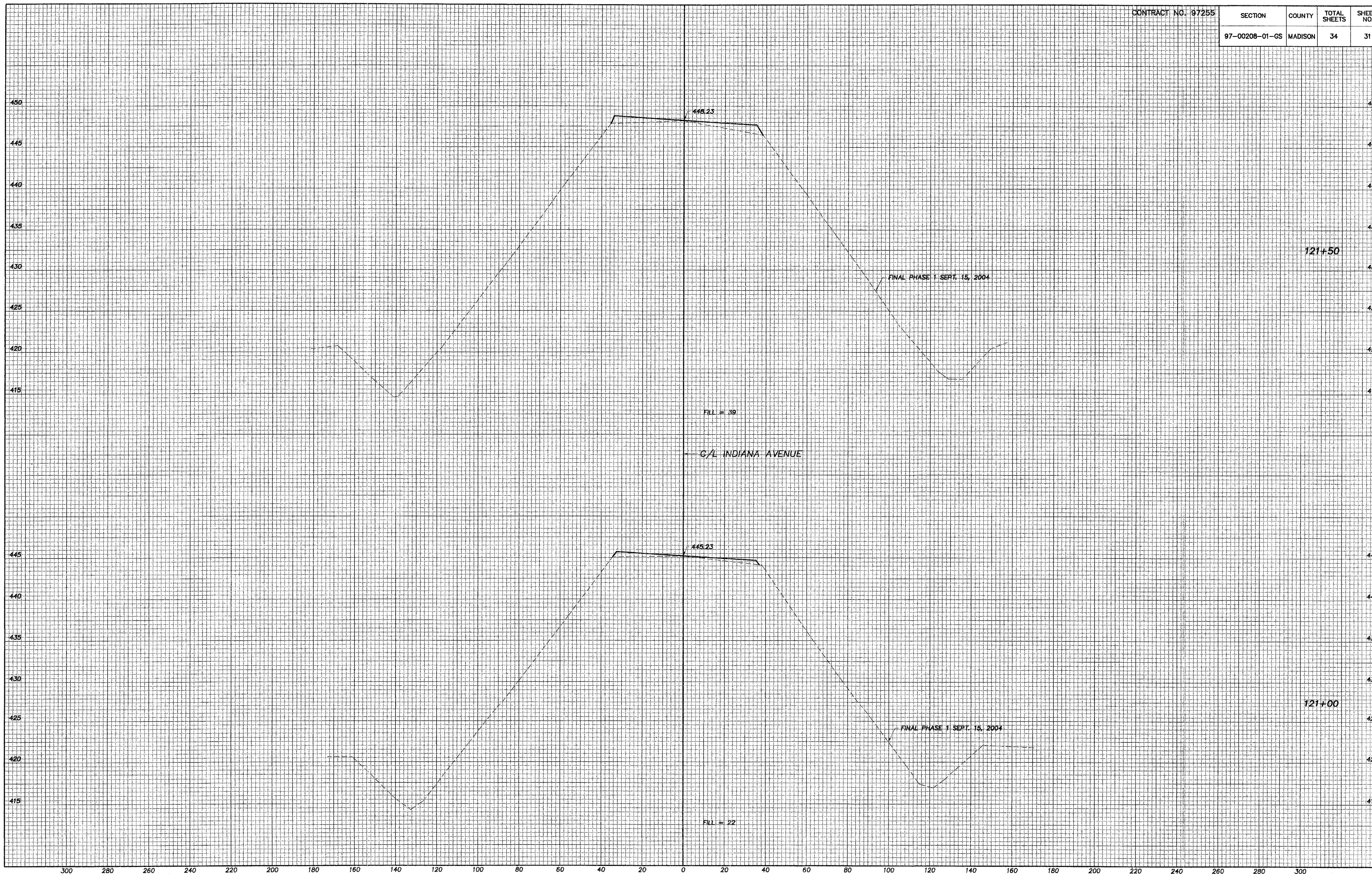
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
97-00208-01-GS	MADISON	34	29



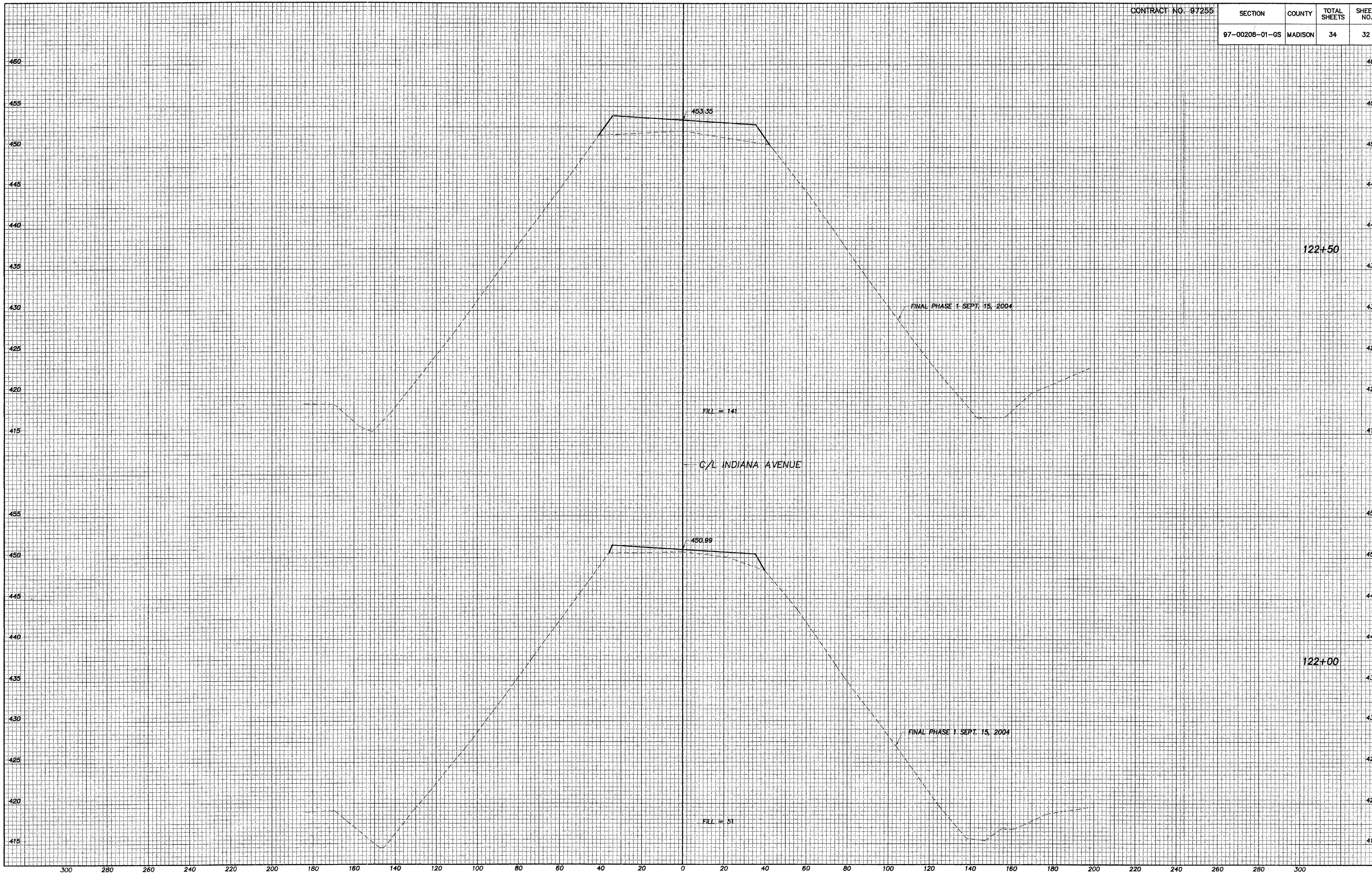
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97-00208-01-GS	MADISON	34	30



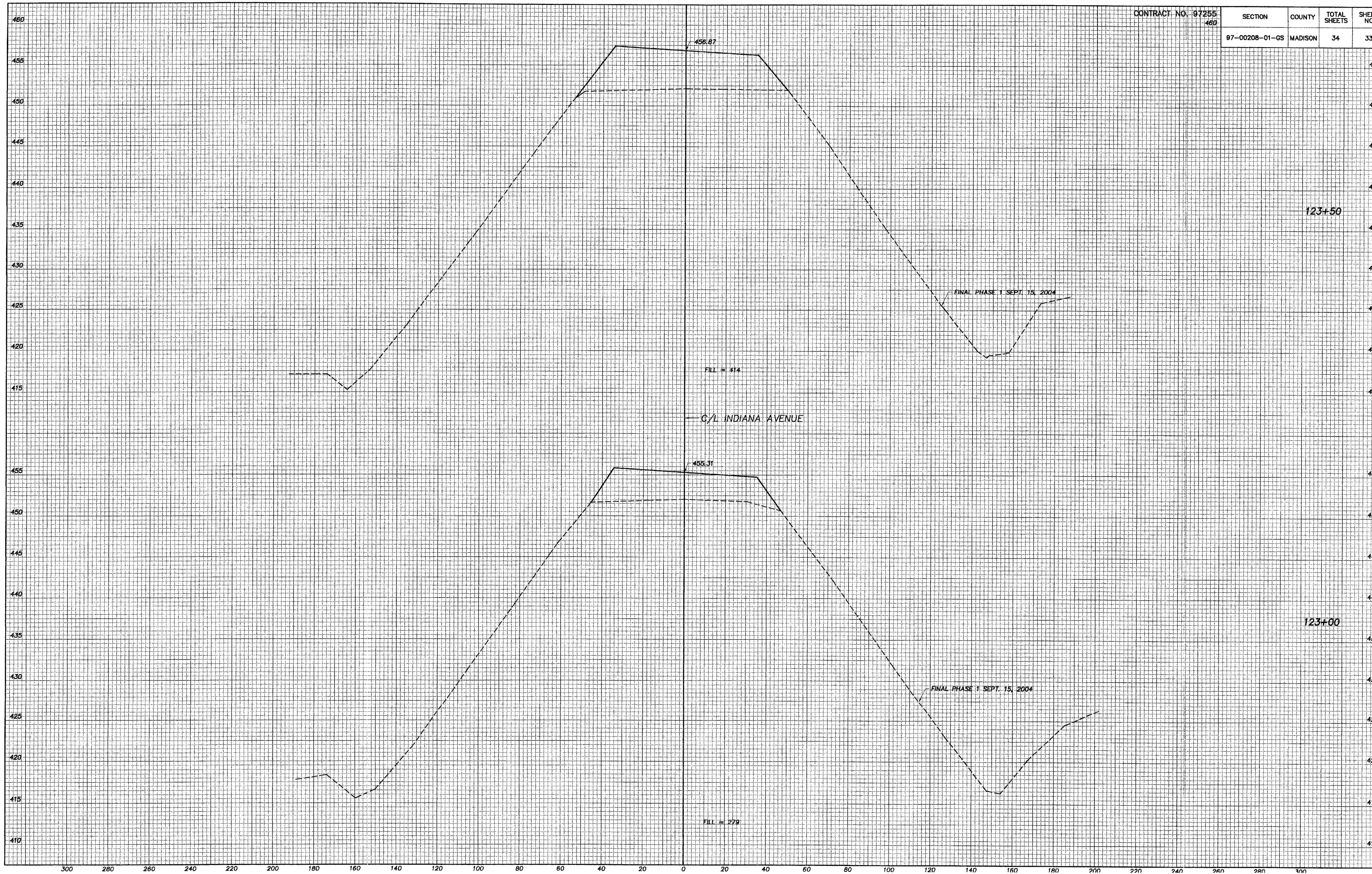
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
97-00208-01-GS	MADISON	34	31



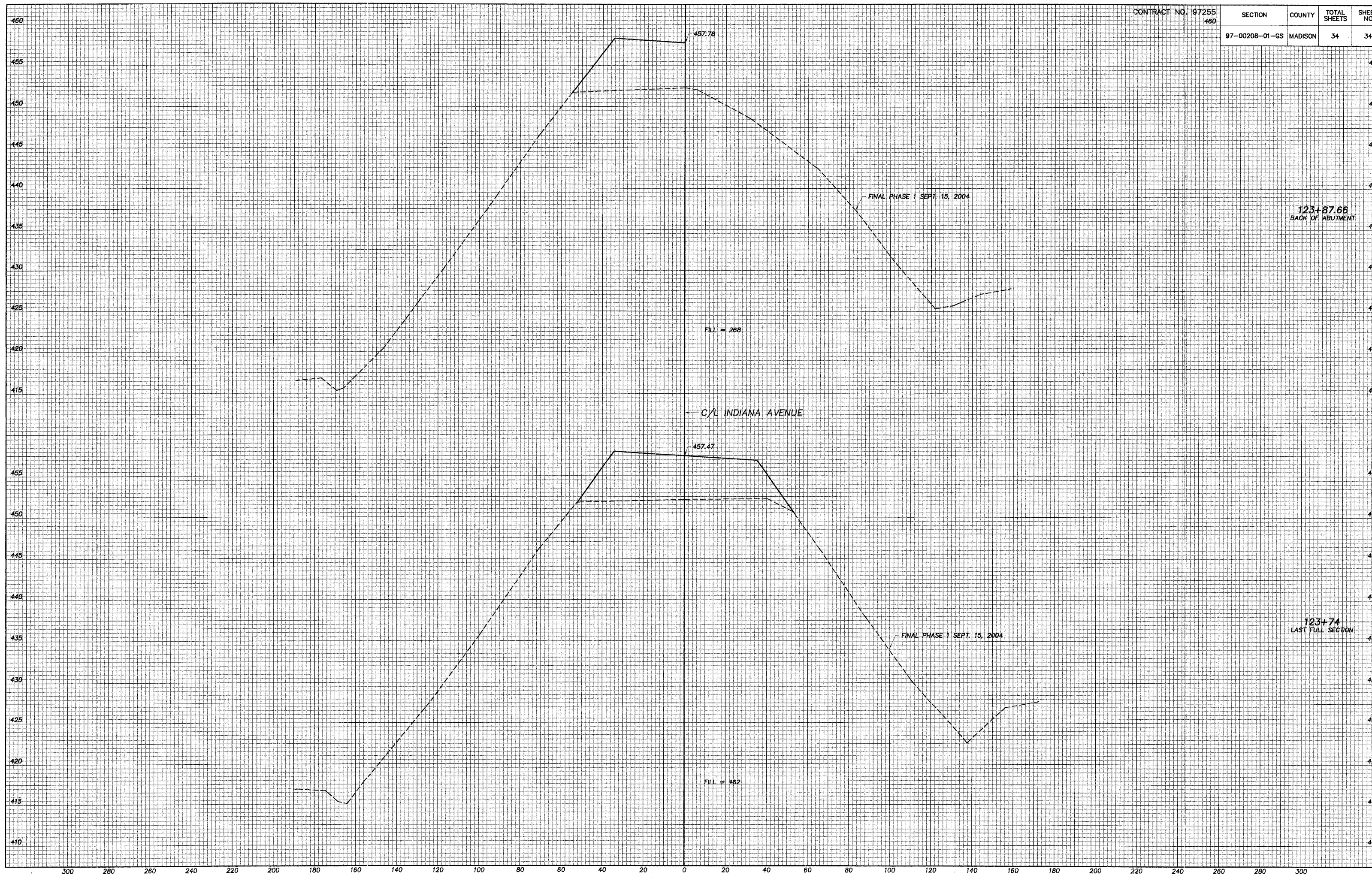
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
97-00208-01-GS	MADISON	34	32



SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
97-00208-01-GS	MADISON	34	33



SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
97-00208-01-GS	MADISON	34	34



457.78

FINAL PHASE 1 SEPT. 15, 2004

FILL = 268

C/L INDIANA AVENUE

457.47

FINAL PHASE 1 SEPT. 15, 2004

FILL = 462

123+87.66
BACK OF ABUTMENT

123+74
LAST FULL SECTION