

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	101
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 17  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

**NOTES**

Inserts for  $\frac{3}{4}$ "  $\phi$  threaded dowel rods, when specified, are to be two strut, coil type for interior beams and single coil, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be  $\frac{1}{2}$ " and the nominal cross-sectional area shall be 0.153 sq. in.

Non-prestressing steel shall conform to AASHTO designation M-31 or M 322, Grade 60.

A minimum  $2\frac{1}{2}$ "  $\phi$  lifting pin shall be used to engage the lifting loops during handling.

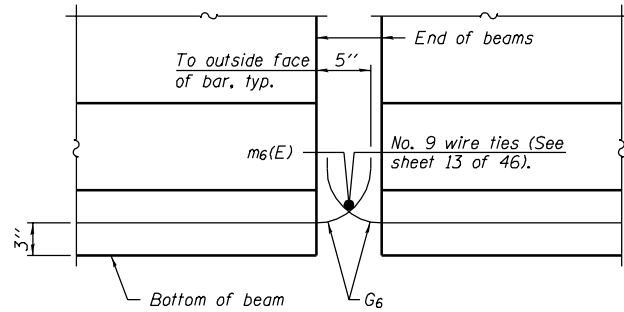
Reinforcement bars designated (E) shall be epoxy coated.

Cut G<sub>6</sub> bars when necessary to maintain  $\frac{1}{2}$ " clearance.

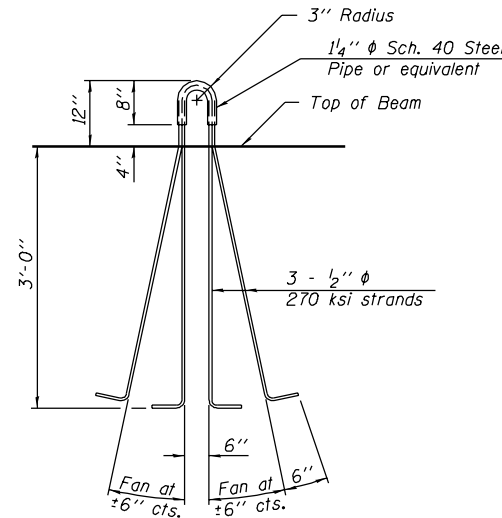
The bottom plates and studs shall be galvanized according to AASHTO M111 and ASTM A385.

Threaded rods shall be ASTM F 1554 Grade 55.

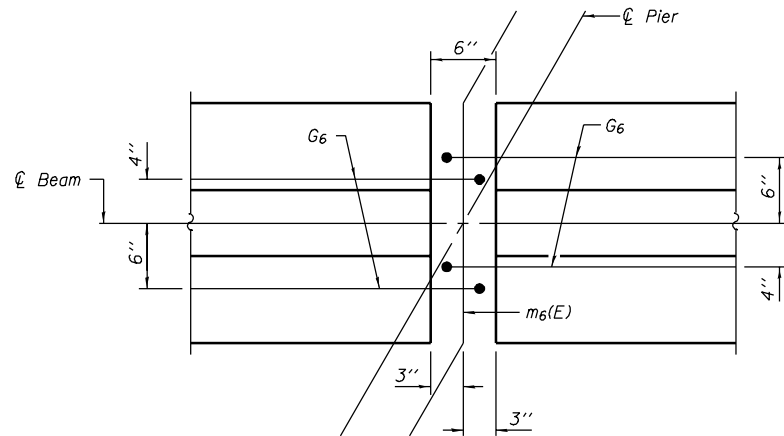
The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to all portions of the I-beam or Bulb-T beam, except the top surface of the top flange and the bottom surface of the bottom flange, starting at each beam end and extending out a distance of 42 inches. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam.



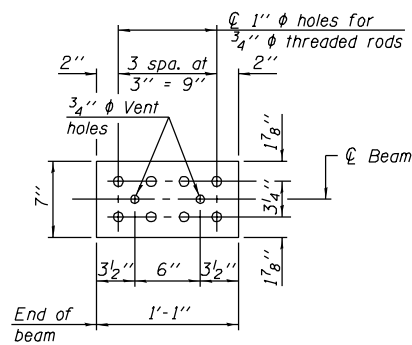
**ELEVATION OF BEAM AT PIER**



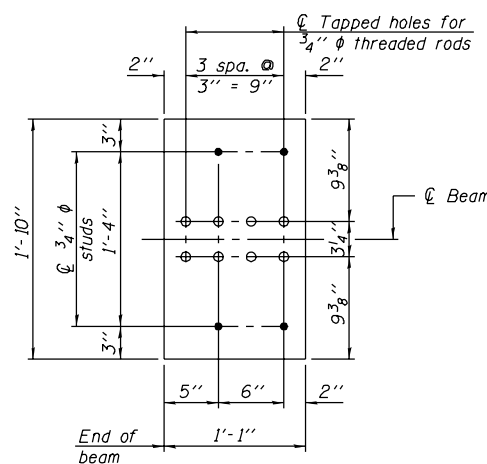
**LIFTING LOOP DETAIL**



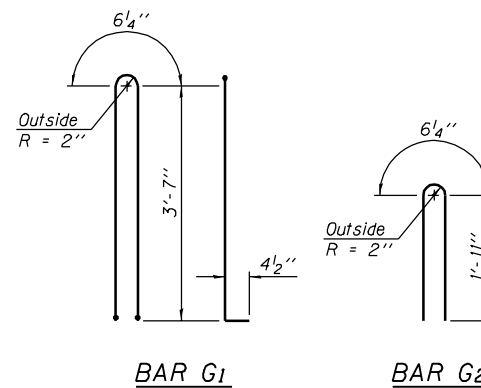
**PLAN OF BEAM AT PIER**



**TOP PLATE**

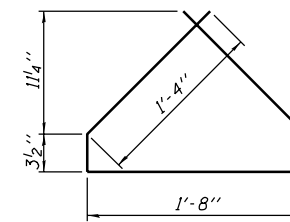


**BOTTOM PLATE**

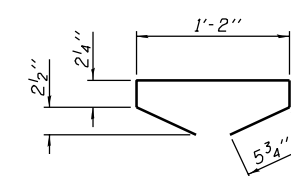


**BAR G1**

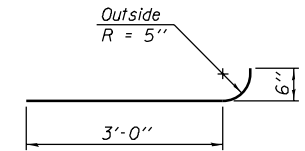
**BAR G2**



**BAR G4**



**BAR G5**



**BAR G6**

**BILL OF MATERIAL**

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 42"	Ft.	1195

**42" PPC I-BEAM DETAILS**  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86  
STRUCTURE NO. 021-0061

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006
EXAMINED <i>Thomas J. Domagala</i> ENGINEER OF BRIDGE DESIGN
PASSED <i>Ralph E. Anderson</i> ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	102
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 18  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire. The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed. The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted. Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming. The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Concrete Structures.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

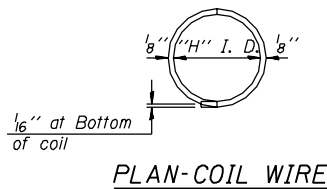
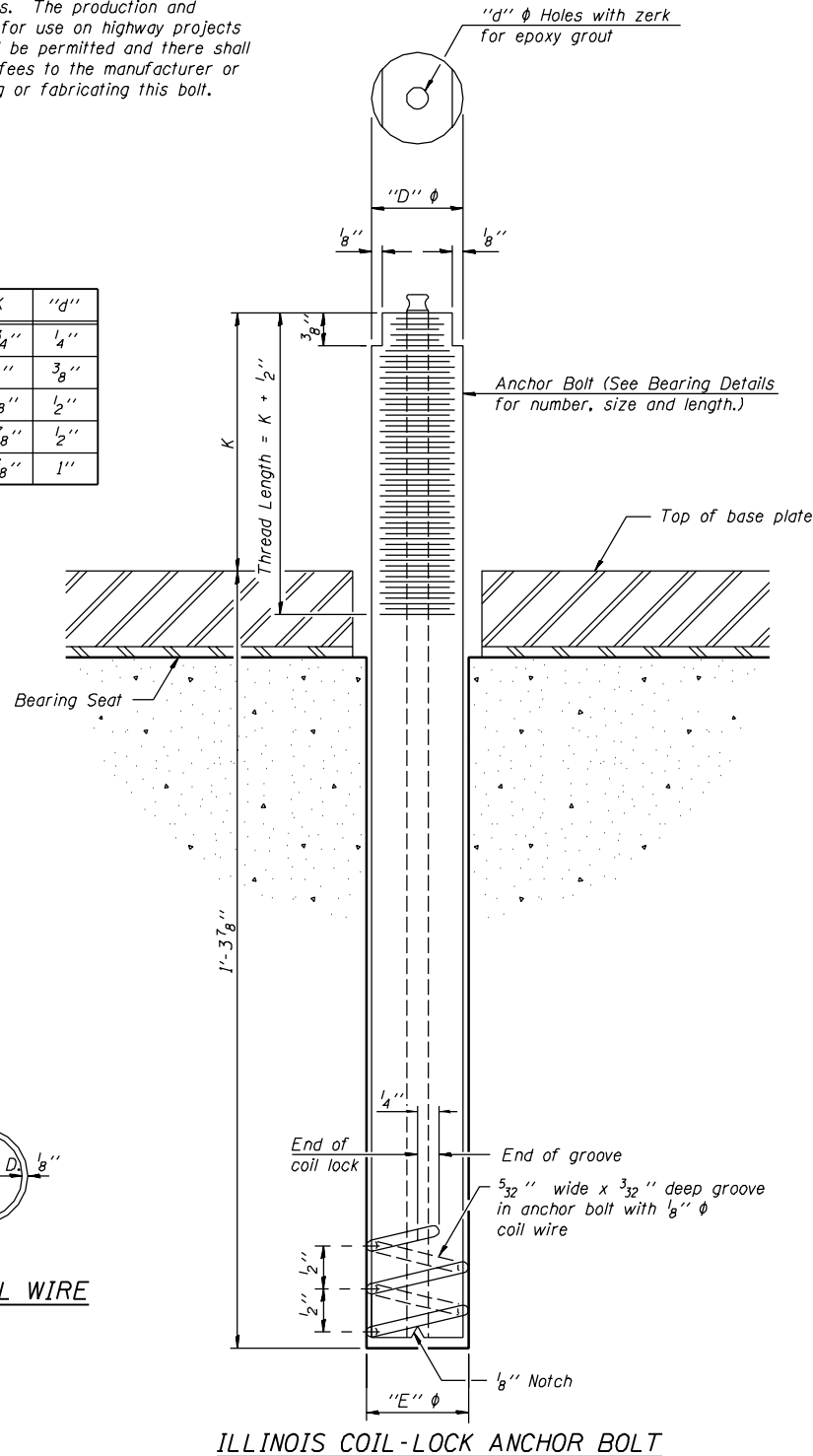
The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

- The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
  2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
Piers	A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
 EXAMINED *Thomas J. Domagala*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

ANCHOR BOLT DETAILS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86  
STRUCTURE NO. 021-0061

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

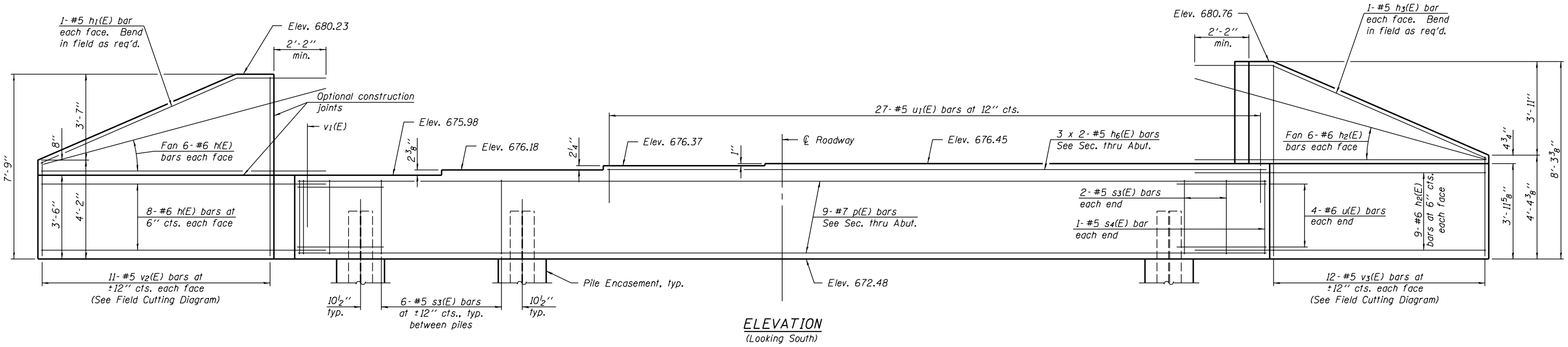
ROUTE NO. F.A.S. 1671	SECTION ‡	COUNTY DOUGLAS	TOTAL SHEETS 181	SHEET NO. 103
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-		

SHEET NO. 19  
46 SHEETS

Notes:

Pour steps monolithically with cap.  
Reinforcement bars designated (E) shall be epoxy coated.  
For Sec. thru Abut., Field Cutting Diagram, Pile Encasement, bar details and Bill of Material, see sheet 21 of 46.  
Bars indicated thus 3 x 2-#5 etc. indicates 3 lines of bars with 2 lengths per line.

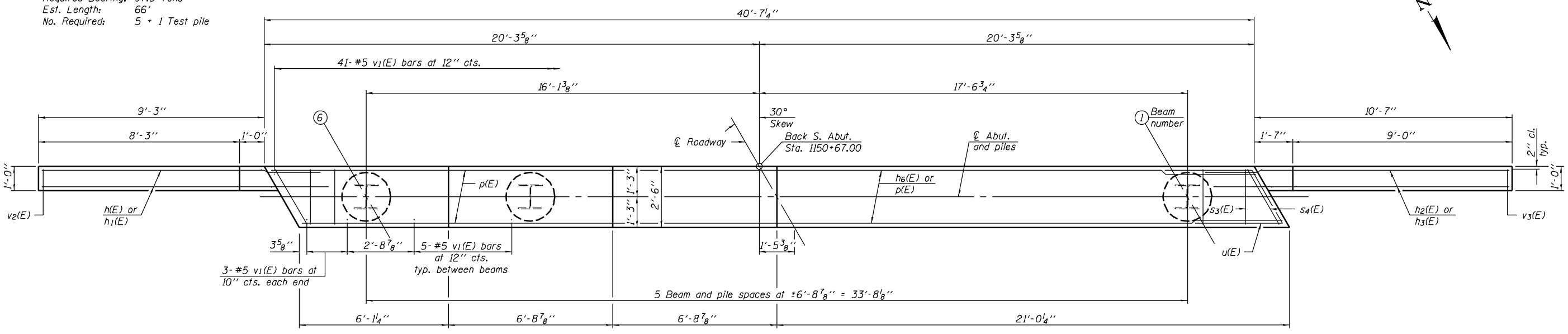
Contract #70258  
‡ 22VBR-1 and 144SBR-2



ELEVATION  
(Looking South)

PILE DATA

Type: HP 12x53  
Design Capacity: 57.1 Tons  
Required Bearing: 97.5 Tons  
Est. Length: 66'  
No. Required: 5 + 1 Test pile



PLAN

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

MINIMUM BAR LAP  
#5 bar = 2'-2"

SOUTH ABUTMENT  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86  
STRUCTURE NO. 021-0061

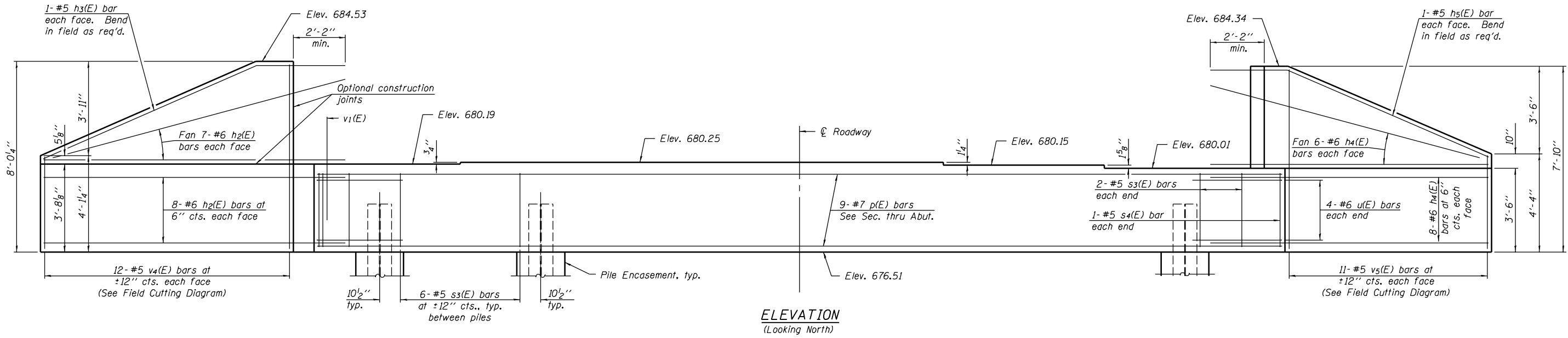
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 1671	SECTION ‡	COUNTY DOUGLAS	TOTAL SHEETS 181	SHEET NO. 104
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 20  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

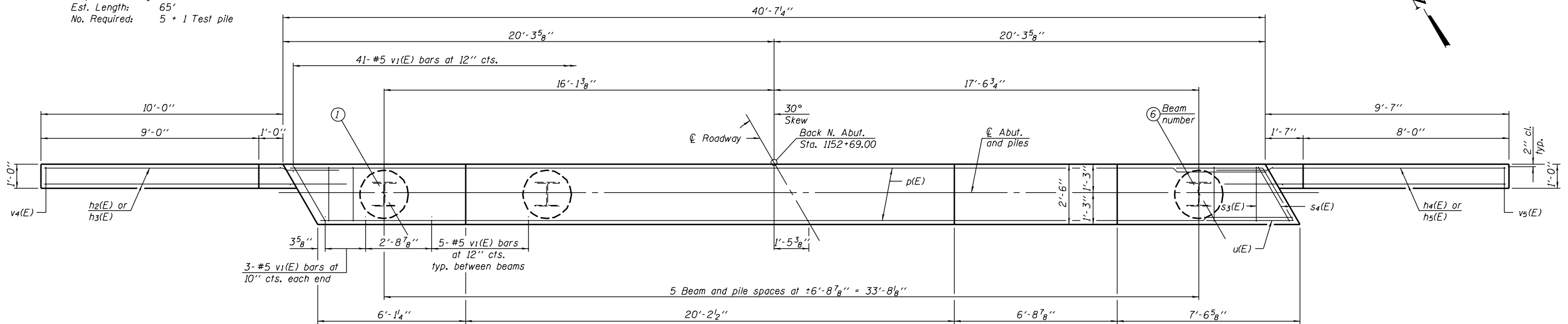
Notes:  
Four steps monolithically with cap.  
Reinforcement bars designated (E) shall be epoxy coated.  
For Sec. thru Abut., Field Cutting Diagram, Pile Encasement, bar details and Bill of Material, see sheet 21 of 46.



ELEVATION  
(Looking North)

PILE DATA

Type: HP 12x63  
Design Capacity: 57.1 Tons  
Required Bearing: 117.9 Tons  
Est. Length: 65'  
No. Required: 5 + 1 Test pile



PLAN

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Domagalak*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

NORTH ABUTMENT  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86  
STRUCTURE NO. 021-0061

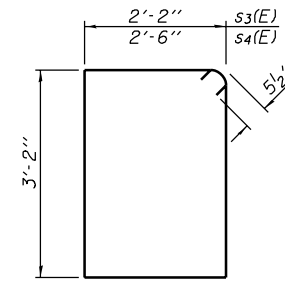
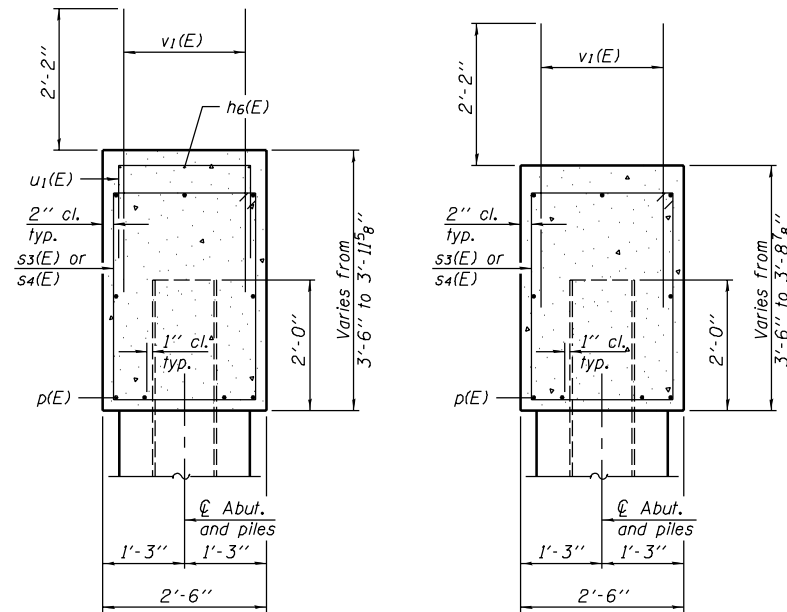
Contract #70258  
‡ 22VBR-1 and 144SBR-2

**SOUTH ABUTMENT  
BILL OF MATERIAL**

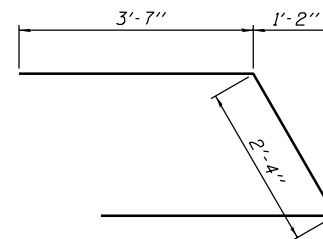
Bar	No.	Size	Length	Shape
h(E)	28	#6	12'-4"	—
h1(E)	2	#5	12'-6"	—
h2(E)	30	#6	13'-1"	—
h3(E)	2	#5	13'-4"	—
h6(E)	6	#5	14'-10"	—
p(E)	9	#7	40'-3"	—
s3(E)	34	#5	11'-7"	□
s4(E)	2	#5	12'-3"	□
u(E)	8	#6	9'-6"	∇
u1(E)	27	#5	4'-8"	□
v1(E)	72	#5	4'-4"	—
v2(E)	11	#5	11'-3"	—
v3(E)	12	#5	11'-11"	—
Concrete Structures	Cu. Yd.		19.4	
Reinforcement Bars, Epoxy Coated	Pound		3280	
Furnishing Steel Piles HP 12x53	Foot		330	
Driving Steel Piles	Foot		330	
Test Pile Steel HP 12x53	Each		1	
Structure Excavation	Cu. Yd.		95	

**NORTH ABUTMENT  
BILL OF MATERIAL**

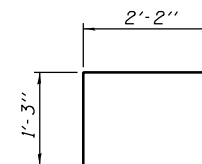
Bar	No.	Size	Length	Shape
h2(E)	30	#6	13'-1"	—
h3(E)	2	#5	13'-4"	—
h4(E)	28	#6	12'-0"	—
h5(E)	2	#5	12'-4"	—
p(E)	9	#7	40'-3"	—
s3(E)	34	#5	11'-7"	□
s4(E)	2	#5	12'-3"	□
u(E)	8	#6	9'-6"	∇
v1(E)	72	#5	4'-4"	—
v4(E)	12	#5	11'-5"	—
v5(E)	11	#5	11'-6"	—
Concrete Structures	Cu. Yd.		18.5	
Reinforcement Bars, Epoxy Coated	Pound		3040	
Furnishing Steel Piles HP 12x63	Foot		325	
Driving Steel Piles	Foot		325	
Test Pile Steel HP 12x63	Each		1	
Structure Excavation	Cu. Yd.		95	



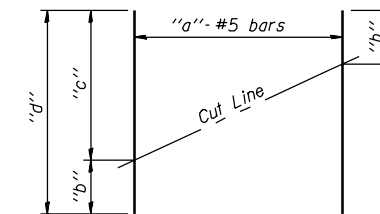
BARS s3(E) & s4(E)



BAR u(E)



BAR u1(E)



**FIELD CUTTING DIAGRAM**

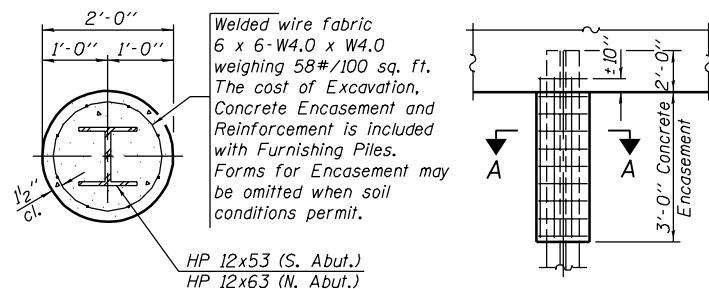
Order v2(E) thru vs(E) full length. Cut as shown and use remainder of bars in opposite face.

Bar	"a"	"b"	"c"	"d"
v2(E)	11	3'-10"	7'-5"	11'-3"
v3(E)	12	4'-0"	7'-11"	11'-11"
v4(E)	12	3'-9"	7'-8"	11'-5"
v5(E)	11	4'-0"	7'-6"	11'-6"

ABUTMENT DETAILS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86  
STRUCTURE NO. 021-0061

**SECTION THRU  
SOUTH ABUTMENT**

**SECTION THRU  
NORTH ABUTMENT**



SECTION A-A

**PILE ENCASEMENT DETAIL**

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

EXAMINED	Thomas J. Domagala	August 4, 2006
PASSED	Ralph E. Anderson	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	106
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

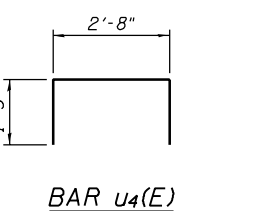
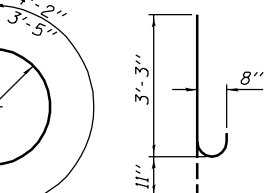
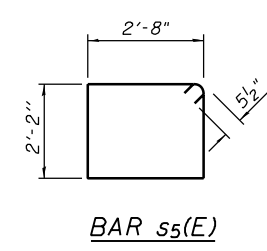
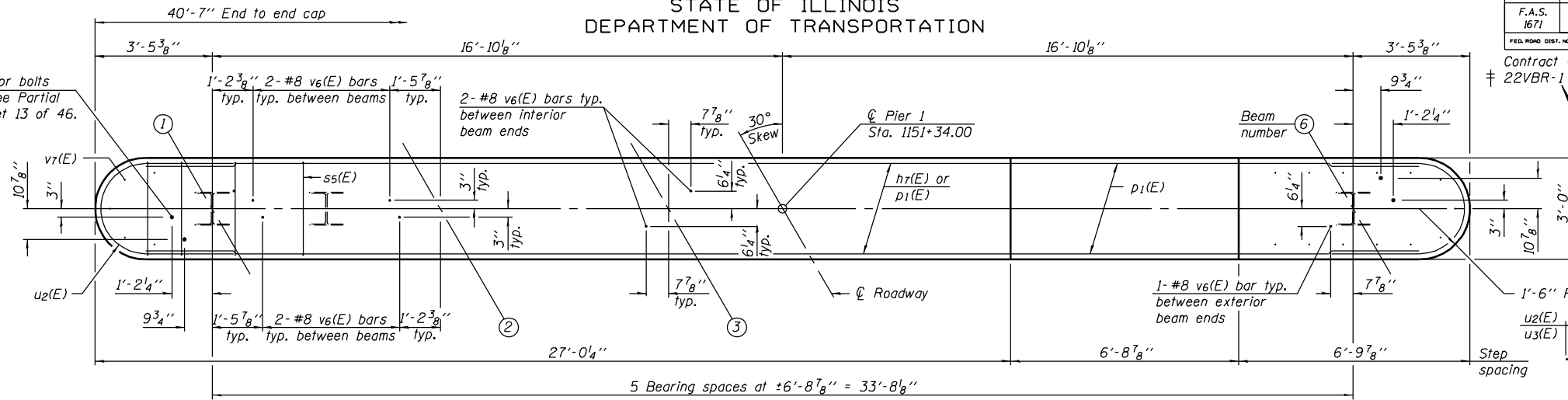
SHEET NO. 22  
46 SHEETS

Notes:  
Space Reinforcement in cap to miss anchor bolts.  
Four steps monolithically with cap.

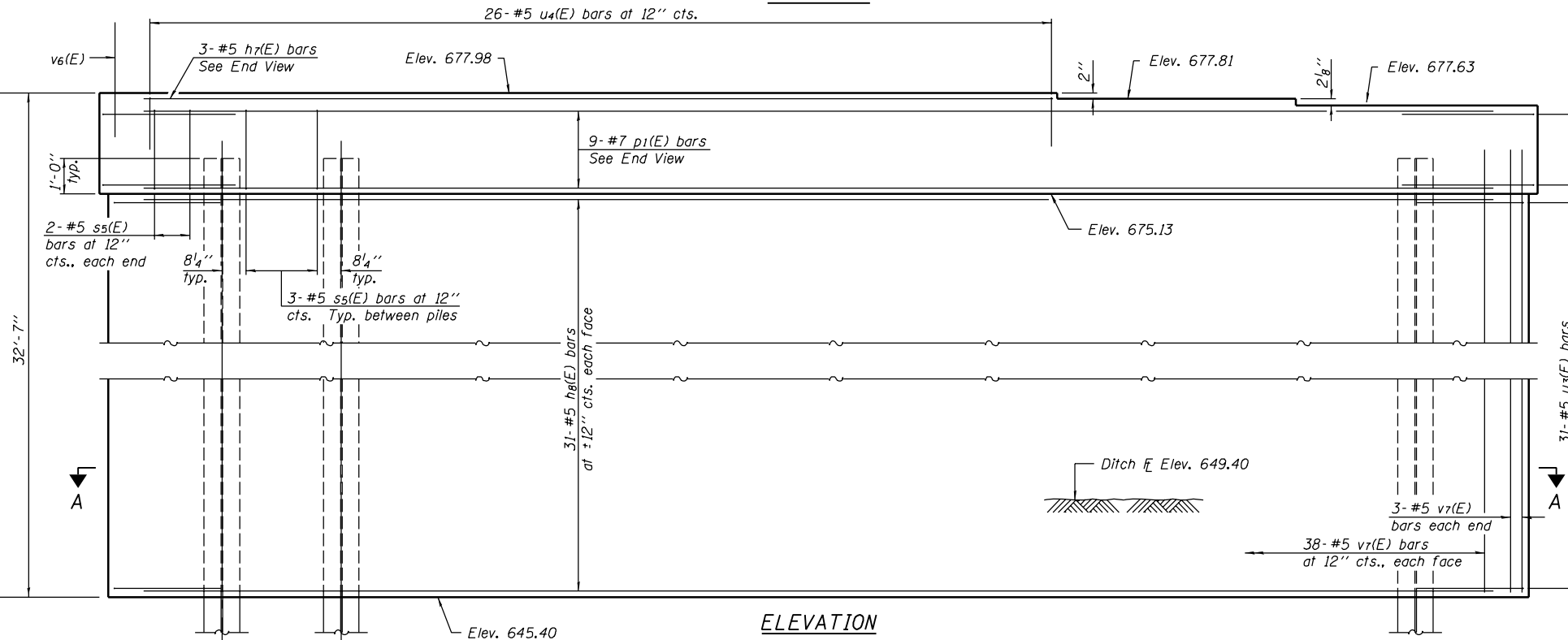
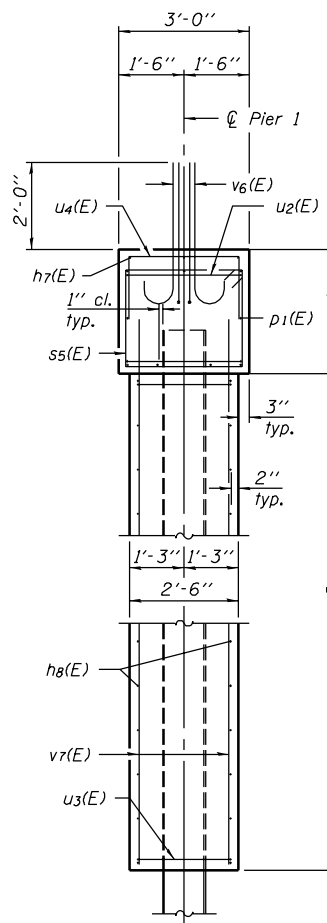
1/2"  $\phi$  x 1'-6" Anchor bolts  
For side retainer, see Partial Plan at Pier on sheet 13 of 46.  
(Typ. each end)

PILE DATA

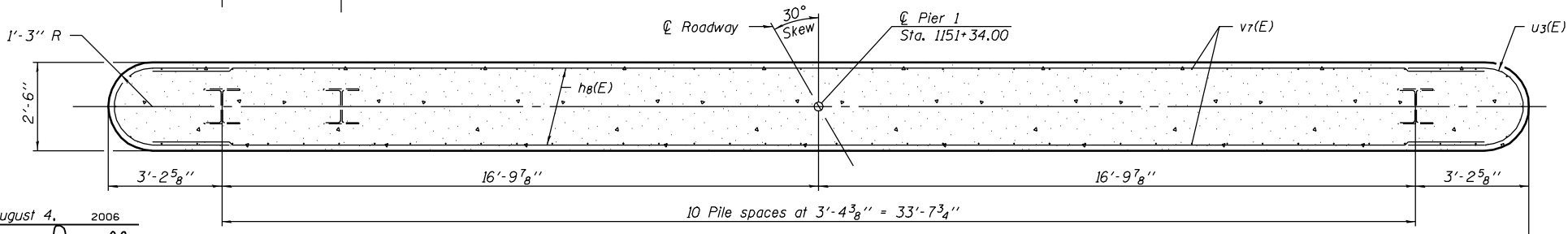
Type: HP 12x53  
Design Capacity: 66.6 Tons  
Required Bearing: 99.8 Tons  
Est. Length: 62'  
No. Req'd: 10 + 1 test pile



TOP PLAN



ELEVATION



SECTION A-A

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	3	#5	25'-4"	—
h8(E)	62	#5	37'-7"	—
p1(E)	9	#7	37'-7"	—
ss(E)	34	#5	10'-7"	□
u2(E)	6	#6	9'-4"	—
u3(E)	62	#5	7'-9"	—
u4(E)	26	#5	5'-2"	□
v6(E)	30	#8	4'-2"	—
v7(E)	82	#5	31'-2"	—

Concrete Structures	Cu. Yd.	121.3
Reinforcement Bars, Epoxy Coated	Pound	7300
Structure Excavation	Cu. Yd.	89
Furnishing Steel Piles HP 12x53	Foot	620
Driving Steel Piles HP 12x53	Foot	620
Test Pile Steel HP 12x53	Each	1

Reinforcement Bars designated (E) shall be epoxy coated.

PIER 1  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86  
STRUCTURE NO. 021-0061

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006	EXAMINED	Thomas J. Domagala
	PASSED	Ralph E. Anderson

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 1671	SECTION #	COUNTY DOUGLAS	STATION 181	SHEET NO. 107
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

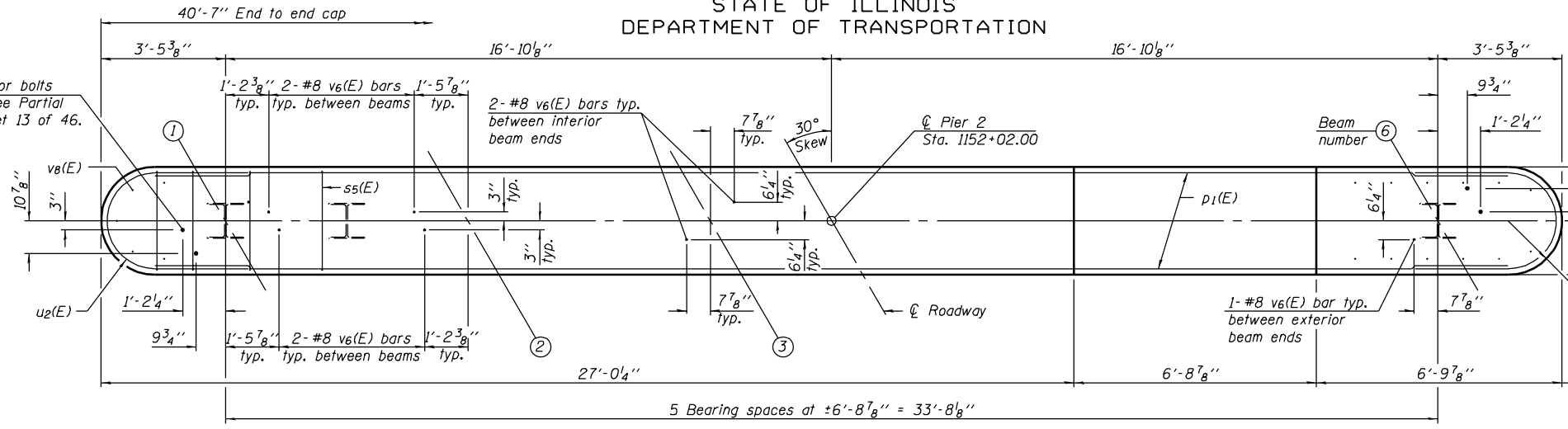
SHEET NO. 23  
46 SHEETS

Notes:  
Space Reinforcement in cap to miss anchor bolts.  
Four steps monolithically with cap.

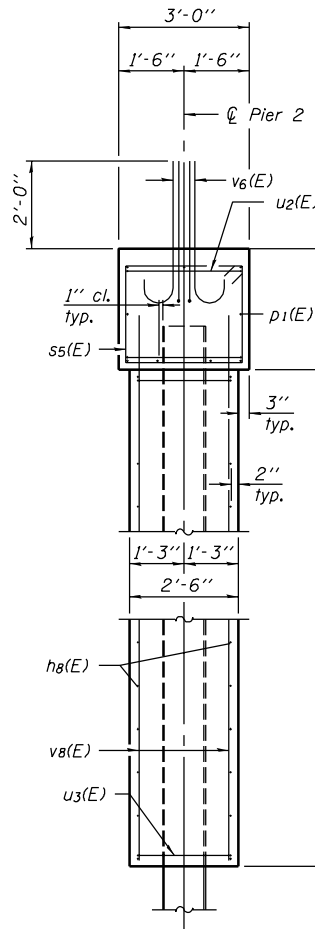
1/2"  $\phi$  x 1'-6" Anchor bolts  
For side retainer, see Partial Plan at Pier on sheet 13 of 46.  
(Typ. each end)

PILE DATA

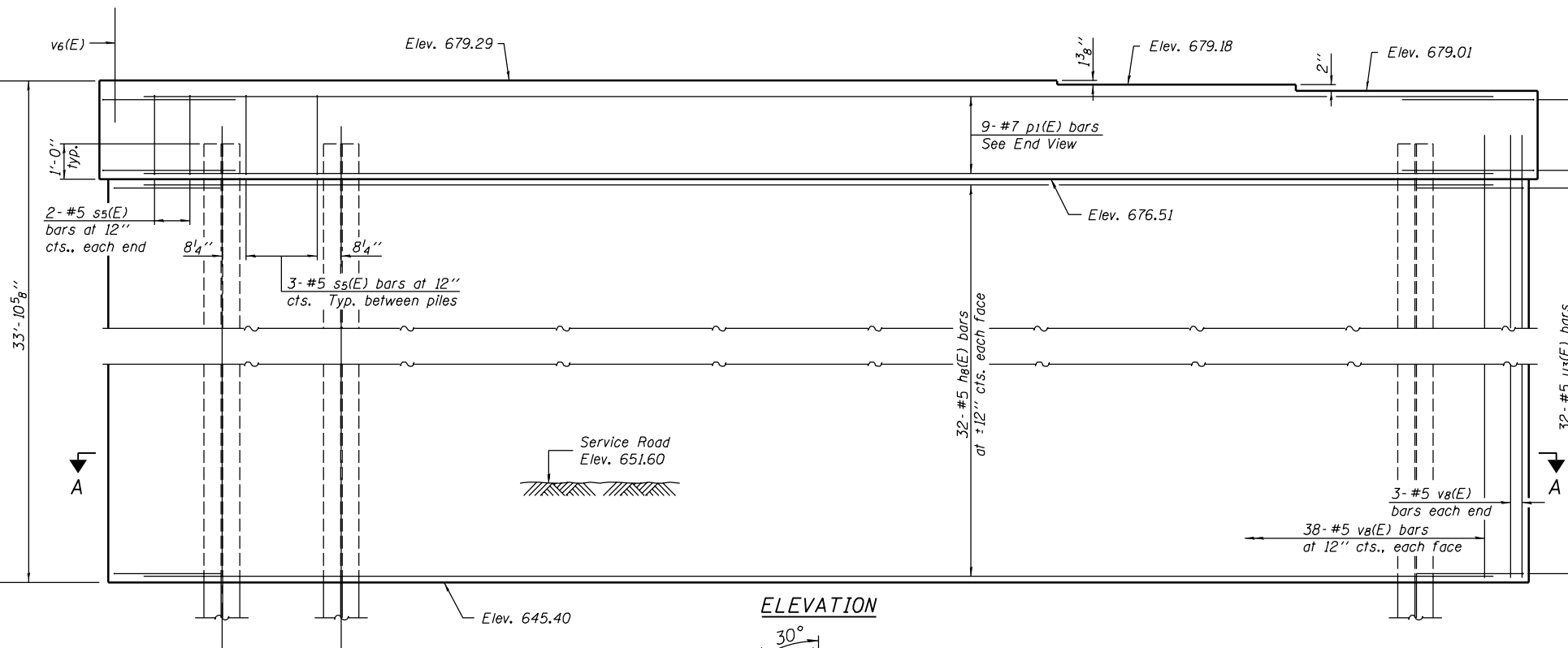
Type: HP 12x53  
Design Capacity: 66.6 Tons  
Required Bearing: 99.8 Tons  
Est. Length: 54'  
No. Req'd: 10 + 1 test pile



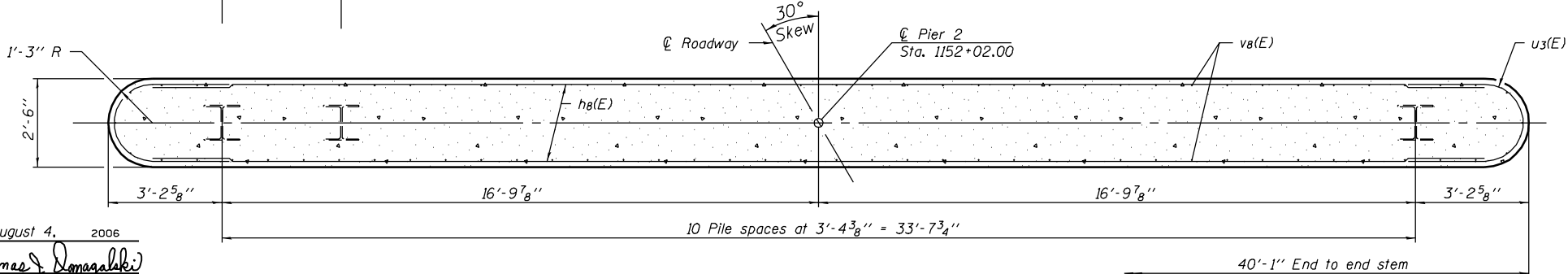
TOP PLAN



END VIEW

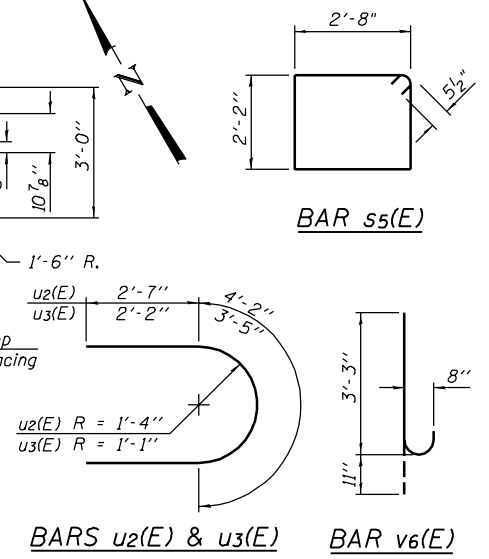


ELEVATION



SECTION A-A

Contract #70258  
22VBR-1 and 144SBR-2



BARS u2(E) & u3(E) BAR v6(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h8(E)	64	#5	37'-7"	—
p1(E)	9	#7	37'-7"	—
ss(E)	34	#5	10'-7"	□
u2(E)	6	#6	9'-4"	⊂
u3(E)	64	#5	7'-9"	⊂
v6(E)	30	#8	4'-2"	⊂
v8(E)	82	#5	32'-6"	—
Concrete Structures		Cu. Yd.	130.6	
Reinforcement Bars, Epoxy Coated		Pound	7290	
Structure Excavation		Cu. Yd.	67	
Furnishing Steel Piles HP 12x53		Foot	540	
Driving Steel Piles		Foot	540	
Test Pile Steel HP 12x53		Each	1	

Reinforcement Bars designated (E) shall be epoxy coated.

DESIGNED Curt M. Evoy  
CHECKED Rebecca L. Tharp  
DRAWN Michael B. Mossman  
CHECKED C.M.E. / R.L.T.

August 4, 2006  
EXAMINED Thomas J. Domagala  
PASSED Ralph E. Anderson  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

PIER 2  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86  
STRUCTURE NO. 021-0061

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	108
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 24  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

**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:

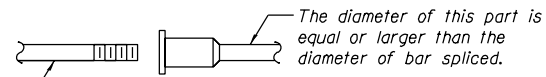
- ① Minimum Capacity =  $1.25 \times f_y \times A_s$   
(Tension in kips)
- ② Minimum \*Pull-out Strength =  $1.25 \times f_{s_{allow}} \times A_s$   
(Tension in kips)

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

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#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
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

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."

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

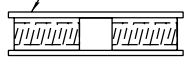


ROLLED THREAD DOWEL BAR



\*\* ONE PIECE

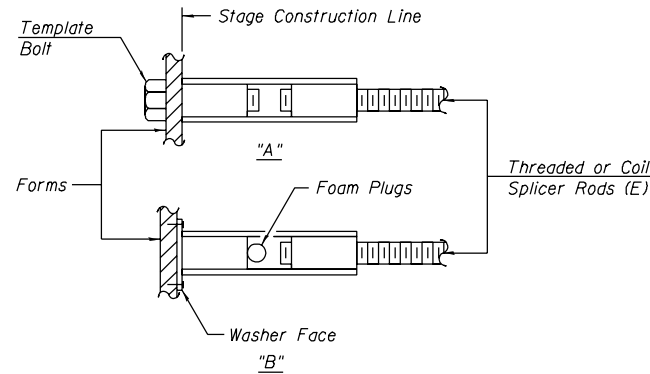
Wire Connector



WELDED SECTIONS

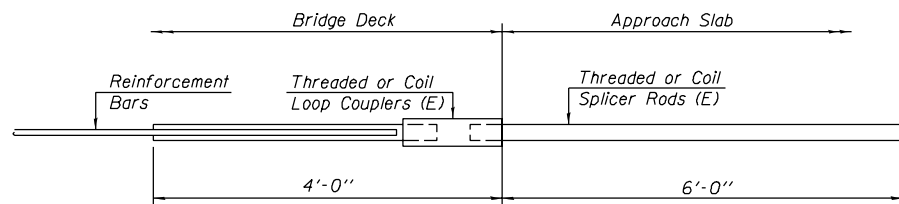
**BAR SPLICER ASSEMBLY ALTERNATIVES**

\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



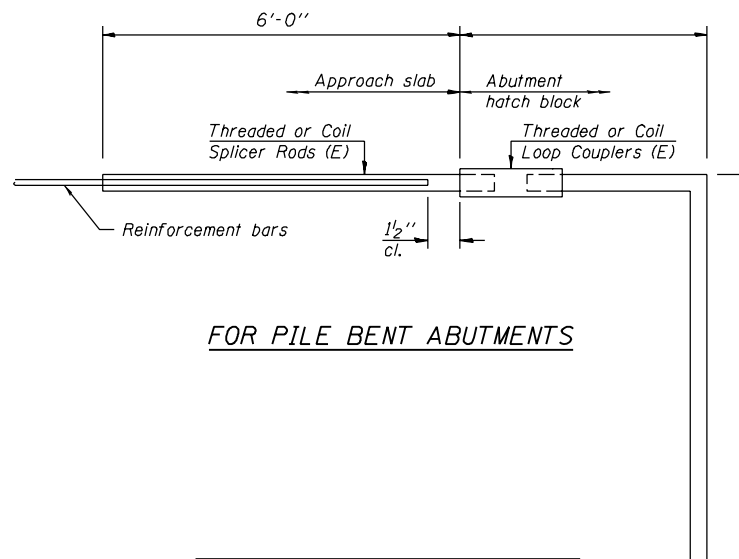
**INSTALLATION AND SETTING METHODS**

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



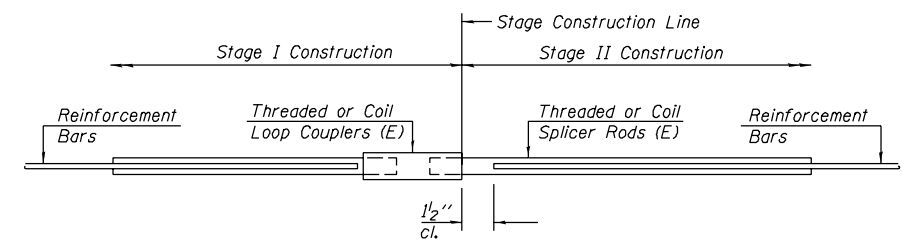
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 64



**FOR PILE BENT ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



**STANDARD**

Bar Size	No. Assemblies Required	Location

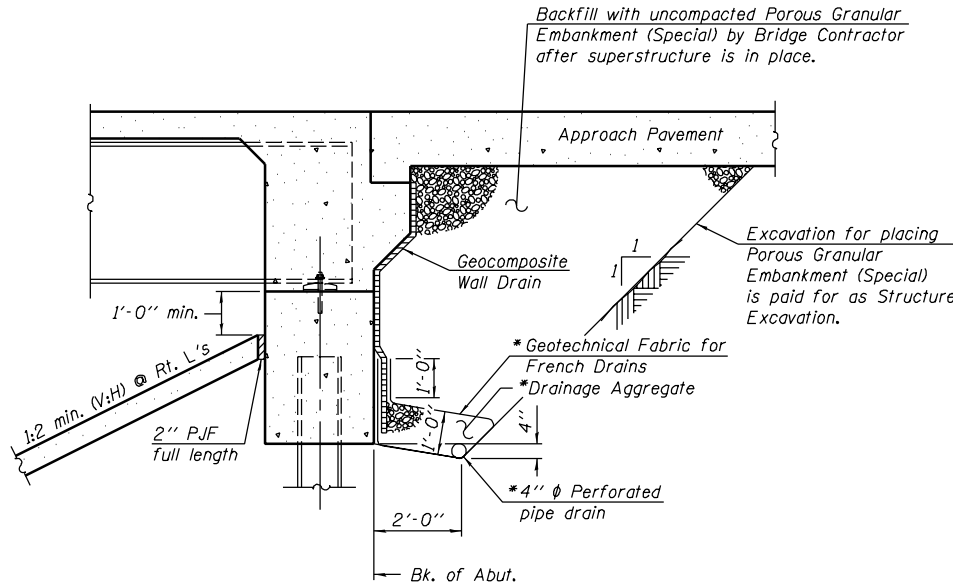
**BAR SPLICER ASSEMBLY DETAILS**  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86  
STRUCTURE NO. 021-0061

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006
EXAMINED <i>Thomas J. Domagalak</i>
PASSED <i>Ralph E. Anderson</i>
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES



Contract #70258  
‡ 22VBR-1 and 144SBR-2



**SECTION THRU INTEGRAL ABUTMENT**  
(Horiz. dim. @ Rt. L's)

\* Included in the cost of Pipe Underdrains for Structures, 4".

Note:  
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

**INDEX OF SHEETS**  
(for 021-0060)



25	General Details
26 - 31	Top of Slab Elevations
32	Superstructure
33	Superstructure Details
34	Diaphragm Details
35	Structural Steel
36	Structural Steel Details
37	Bearing Details
38	Anchor Bolt Details
39	South Abutment
40	North Abutment
41	Pier 1
42	Pier 2
43	Bar Splicer Assembly Details

STATION 1154+99.02  
BUILT 200 BY  
STATE OF ILLINOIS  
F.A.S. RT. 1671 SEC. 22VBR-1  
LOADING HS20-44  
STR. NO. 021-0060

**NAME PLATE**  
See Std. 515001

**CONSTRUCTION SEQUENCE**

1. Remove the superstructures on both sides of the existing Pier 9.
2. Drive temporary sheet piling at the location shown and excavate to the limits shown on the plan and elevation view.
3. Remove the existing substructure per plans and Section 501 of the Standard Specifications.
4. Fill and compact excavation with embankment material per Section 205 of the Standard Specifications.
5. Remove temporary sheeting.

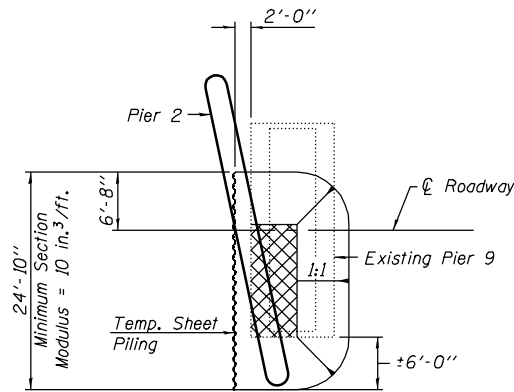
 Hatched area indicates Removal of Existing Structures.  
 Cross-hatched area indicates concrete to be removed as required to install piles for proposed pier. Cost included with Removal of Existing Structures.

**GENERAL NOTES**

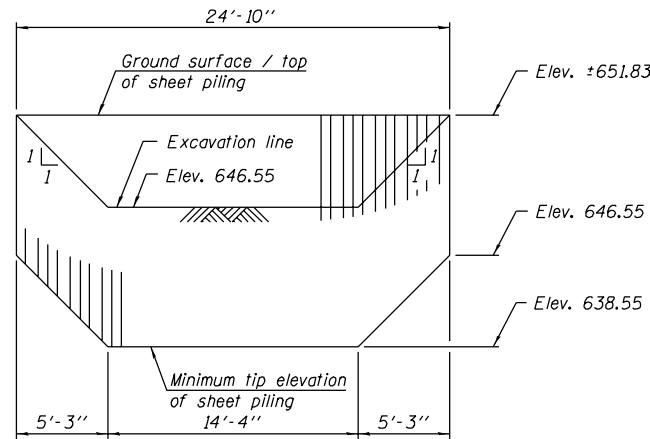
Fasteners shall be high strength bolts (AASHTO M 164, Type 3). Bolts 7/8"  $\phi$ , open holes 1 1/16"  $\phi$ , unless otherwise noted. Calculated weight of Structural Steel = 159,190 Lbs. All structural steel shall be AASHTO M 270 Grade 50W. Field welding of construction accessories will not be permitted to beams. Anchor bolts shall be set before bolting diaphragms over supports. 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 wide flange beams and all splice plate material. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. The Contractor shall drive two (2) HP 12x53 test piles in a permanent location, one at each abutment, and two (2) HP 12x74 test piles in a permanent location, one at each pier, as directed by the Engineer before ordering the remainder of the piles. 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 M 300, Type 1. 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".

**STRUCTURE NO. 021-0060**  
**BILL OF MATERIAL**

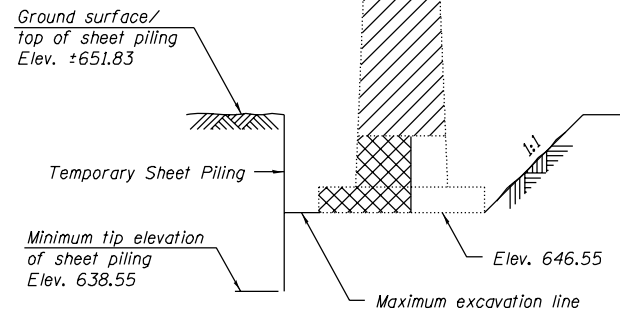
ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.		110	110
Removal of Existing Structures No. 2	Each			0.5
Structure Excavation	Cu. Yd.		236	236
Driving Steel Piles	Foot		1340	1340
Concrete Structures	Cu. Yd.		231.6	231.6
Concrete Superstructure	Cu. Yd.	232.3		232.3
Bridge Deck Grooving	Sq. Yd.	640		640
Protective Coat	Sq. Yd.	843		843
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	3330		3330
Reinforcement Bars, Epoxy Coated	Pound	49600	15750	65350
Slopedwall 4"	Sq. Yd.		27	27
Bituminous Coated Aggregate Slopedwall 6"	Sq. Yd.		489	489
Furnishing Steel Piles HP 12x53	Foot		645	645
Furnishing Steel Piles HP 12x74	Foot		695	695
Test Pile Steel HP 12x53	Each		2	2
Test Pile Steel HP 12x74	Each		2	2
Temporary Sheet Piling	Sq. Ft.		330	330
Name Plates	Each	1		1
Geocomposite Wall Drain	Sq. Yd.		62	62
Pipe Underdrains for Structures, 4"	Foot		132	132
Diamond Grinding (Bridge Section)	Sq. Yd.	821		821
Bar Splicers	Each	64		64



**PLAN**  
(at Pier 2)



**ELEVATION**



**SECTION THRU EXISTING PIER 9**

Note:  
If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

**TEMPORARY SHEET PILING**

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Donagale*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

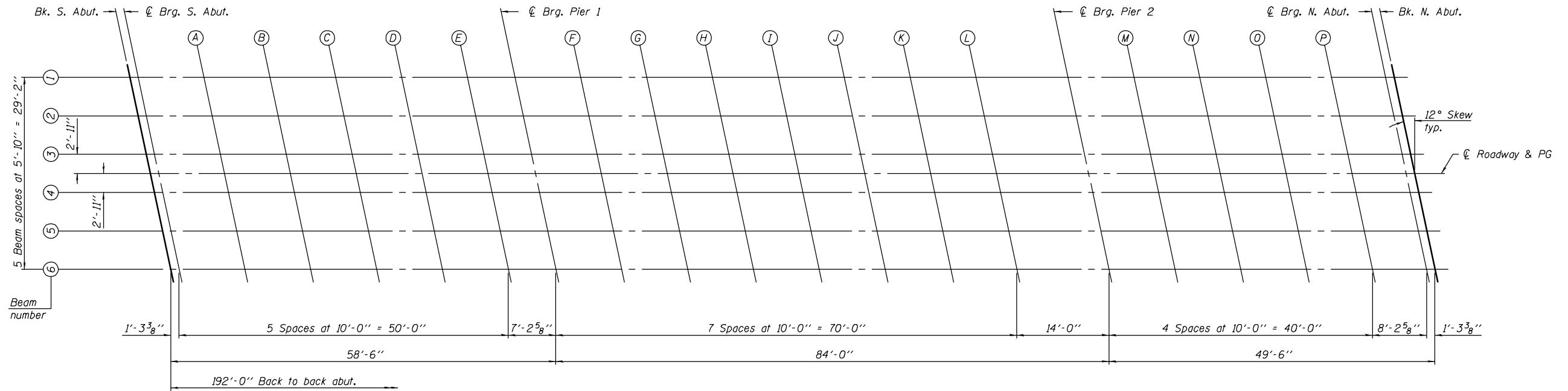
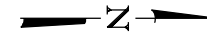
**GENERAL DETAILS**  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	110
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 26  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2



PLAN

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
 EXAMINED *Thomas J. Domagalaki*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

TOP OF SLAB ELEVATIONS  
 F.A.S. RT. 1671 - SEC. 22VBR-1  
 DOUGLAS COUNTY  
 STATION 1154+99.02  
 STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	111
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 27  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

**BEAM 1**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	1154+03.40	-14.58	684.98	685.00
⊕ Brg. S. Abut.	1154+04.68	-14.58	684.98	685.00
A	1154+14.68	-14.58	684.97	685.00
B	1154+24.68	-14.58	684.94	684.98
C	1154+34.68	-14.58	684.91	684.94
D	1154+44.68	-14.58	684.86	684.89
E	1154+54.68	-14.58	684.81	684.83
⊕ Brg. Pier 1	1154+61.90	-14.58	684.77	684.79
F	1154+71.90	-14.58	684.70	684.76
G	1154+81.90	-14.58	684.63	684.71
H	1154+91.90	-14.58	684.54	684.65
I	1155+01.90	-14.58	684.45	684.57
J	1155+11.90	-14.58	684.35	684.46
K	1155+21.90	-14.58	684.24	684.33
L	1155+31.90	-14.58	684.12	684.19
⊕ Brg. Pier 2	1155+45.90	-14.58	683.94	683.96
M	1155+55.90	-14.58	683.80	683.81
N	1155+65.90	-14.58	683.65	683.67
O	1155+75.90	-14.58	683.49	683.51
P	1155+85.90	-14.58	683.33	683.35
⊕ Brg. N. Abut.	1155+94.12	-14.58	683.18	683.20
Bk. N. Abut.	1155+95.40	-14.58	683.16	683.18

**BEAM 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	1154+04.64	-8.75	685.09	685.11
⊕ Brg. S. Abut.	1154+05.92	-8.75	685.09	685.11
A	1154+15.92	-8.75	685.07	685.10
B	1154+25.92	-8.75	685.04	685.08
C	1154+35.92	-8.75	685.01	685.04
D	1154+45.92	-8.75	684.96	684.99
E	1154+55.92	-8.75	684.91	684.93
⊕ Brg. Pier 1	1154+63.14	-8.75	684.87	684.89
F	1154+73.14	-8.75	684.80	684.85
G	1154+83.14	-8.75	684.72	684.81
H	1154+93.14	-8.75	684.64	684.74
I	1155+03.14	-8.75	684.54	684.67
J	1155+13.14	-8.75	684.44	684.55
K	1155+23.14	-8.75	684.33	684.42
L	1155+33.14	-8.75	684.21	684.28
⊕ Brg. Pier 2	1155+47.14	-8.75	684.03	684.05
M	1155+57.14	-8.75	683.89	683.90
N	1155+67.14	-8.75	683.74	683.75
O	1155+77.14	-8.75	683.58	683.60
P	1155+87.14	-8.75	683.41	683.43
⊕ Brg. N. Abut.	1155+95.36	-8.75	683.27	683.29
Bk. N. Abut.	1155+96.64	-8.75	683.24	683.26

**BEAM 3**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	1154+05.88	-2.92	685.18	685.20
⊕ Brg. S. Abut.	1154+07.16	-2.92	685.18	685.20
A	1154+17.16	-2.92	685.16	685.19
B	1154+27.16	-2.92	685.13	685.17
C	1154+37.16	-2.92	685.09	685.13
D	1154+47.16	-2.92	685.05	685.07
E	1154+57.16	-2.92	684.99	685.02
⊕ Brg. Pier 1	1154+64.38	-2.92	684.95	684.97
F	1154+74.38	-2.92	684.88	684.93
G	1154+84.38	-2.92	684.80	684.89
H	1154+94.38	-2.92	684.72	684.82
I	1155+04.38	-2.92	684.62	684.75
J	1155+14.38	-2.92	684.52	684.63
K	1155+24.38	-2.92	684.41	684.50
L	1155+34.38	-2.92	684.29	684.35
⊕ Brg. Pier 2	1155+48.38	-2.92	684.10	684.12
M	1155+58.38	-2.92	683.96	683.97
N	1155+68.38	-2.92	683.81	683.83
O	1155+78.38	-2.92	683.65	683.67
P	1155+88.38	-2.92	683.48	683.50
⊕ Brg. N. Abut.	1155+96.60	-2.92	683.34	683.36
Bk. N. Abut.	1155+97.88	-2.92	683.31	683.33

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
 EXAMINED *Thomas J. Domagala*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

TOP OF SLAB ELEVATIONS  
 F.A.S. RT. 1671 - SEC. 22VBR-1  
 DOUGLAS COUNTY  
 STATION 1154+99.02  
 STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	112
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 28  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

⊕ ROADWAY & PG

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	1154+06.50	0.00	685.22	685.24
⊕ Brg. S. Abut.	1154+07.78	0.00	685.22	685.24
A	1154+17.78	0.00	685.20	685.23
B	1154+27.78	0.00	685.17	685.21
C	1154+37.78	0.00	685.14	685.17
D	1154+47.78	0.00	685.09	685.12
E	1154+57.78	0.00	685.04	685.06
⊕ Brg. Pier 1	1154+65.00	0.00	684.99	685.01
F	1154+75.00	0.00	684.92	684.97
G	1154+85.00	0.00	684.85	684.93
H	1154+95.00	0.00	684.76	684.86
I	1155+05.00	0.00	684.66	684.78
J	1155+15.00	0.00	684.56	684.67
K	1155+25.00	0.00	684.45	684.54
L	1155+35.00	0.00	684.32	684.39
⊕ Brg. Pier 2	1155+49.00	0.00	684.14	684.16
M	1155+59.00	0.00	684.00	684.01
N	1155+69.00	0.00	683.84	683.86
O	1155+79.00	0.00	683.68	683.71
P	1155+89.00	0.00	683.52	683.54
⊕ Brg. N. Abut.	1155+97.22	0.00	683.37	683.39
Bk. N. Abut.	1155+98.50	0.00	683.35	683.37

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	1154+07.12	2.92	685.18	685.20
⊕ Brg. S. Abut.	1154+08.40	2.92	685.17	685.19
A	1154+18.40	2.92	685.15	685.19
B	1154+28.40	2.92	685.13	685.16
C	1154+38.40	2.92	685.09	685.12
D	1154+48.40	2.92	685.04	685.07
E	1154+58.40	2.92	684.99	685.01
⊕ Brg. Pier 1	1154+65.62	2.92	684.94	684.96
F	1154+75.62	2.92	684.87	684.92
G	1154+85.62	2.92	684.79	684.88
H	1154+95.62	2.92	684.71	684.81
I	1155+05.62	2.92	684.61	684.73
J	1155+15.62	2.92	684.51	684.62
K	1155+25.62	2.92	684.39	684.49
L	1155+35.62	2.92	684.27	684.34
⊕ Brg. Pier 2	1155+49.62	2.92	684.08	684.10
M	1155+59.62	2.92	683.94	683.96
N	1155+69.62	2.92	683.79	683.81
O	1155+79.62	2.92	683.63	683.65
P	1155+89.62	2.92	683.46	683.48
⊕ Brg. N. Abut.	1155+97.84	2.92	683.31	683.33
Bk. N. Abut.	1155+99.12	2.92	683.29	683.31

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	1154+08.36	8.75	685.08	685.10
⊕ Brg. S. Abut.	1154+09.64	8.75	685.08	685.10
A	1154+19.64	8.75	685.06	685.09
B	1154+29.64	8.75	685.03	685.07
C	1154+39.64	8.75	684.99	685.03
D	1154+49.64	8.75	684.94	684.97
E	1154+59.64	8.75	684.89	684.91
⊕ Brg. Pier 1	1154+66.86	8.75	684.84	684.86
F	1154+76.86	8.75	684.77	684.82
G	1154+86.86	8.75	684.69	684.77
H	1154+96.86	8.75	684.60	684.71
I	1155+06.86	8.75	684.51	684.63
J	1155+16.86	8.75	684.40	684.51
K	1155+26.86	8.75	684.29	684.38
L	1155+36.86	8.75	684.16	684.23
⊕ Brg. Pier 2	1155+50.86	8.75	683.98	684.00
M	1155+60.86	8.75	683.83	683.85
N	1155+70.86	8.75	683.68	683.70
O	1155+80.86	8.75	683.52	683.54
P	1155+90.86	8.75	683.35	683.37
⊕ Brg. N. Abut.	1155+99.08	8.75	683.20	683.22
Bk. N. Abut.	1156+00.36	8.75	683.18	683.20

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
 EXAMINED *Thomas J. Domagala*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

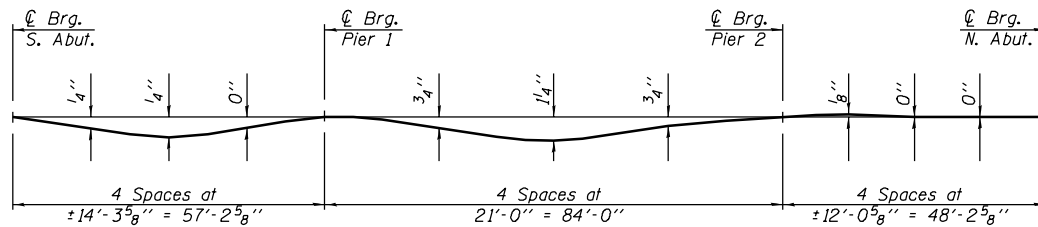
TOP OF SLAB ELEVATIONS  
 F.A.S. RT. 1671 - SEC. 22VBR-1  
 DOUGLAS COUNTY  
 STATION 1154+99.02  
 STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	113
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

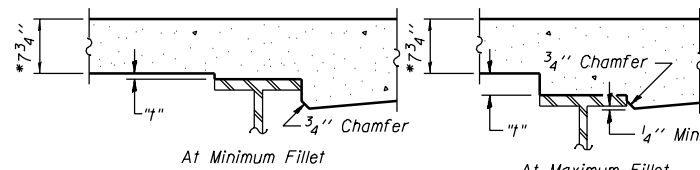
SHEET NO. 29  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2



**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 grade elevations adjusted for dead load deflections and grinding as shown on sheets 27 through 29 of 46.



\*Prior to Grinding

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet 26 of 46. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections and Grinding" shown on sheets 27 through 29 of 46, minus the 7 3/4" deck thickness, equals the fillet heights "t" above top flanges of beams. The slab is to be ground after curing to achieve smoothness, but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown on sheets 27 through 29 of 46. For grinding the deck, see Special Provisions.

**FILLET HEIGHTS**

**BEAM 6**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	1154+09.60	14.58	684.98	685.00
‡ Brg. S. Abut.	1154+10.88	14.58	684.97	684.99
A	1154+20.88	14.58	684.95	684.98
B	1154+30.88	14.58	684.92	684.96
C	1154+40.88	14.58	684.88	684.92
D	1154+50.88	14.58	684.83	684.86
E	1154+60.88	14.58	684.78	684.80
‡ Brg. Pier 1	1154+68.10	14.58	684.73	684.75
F	1154+78.10	14.58	684.66	684.71
G	1154+88.10	14.58	684.58	684.66
H	1154+98.10	14.58	684.49	684.59
I	1155+08.10	14.58	684.39	684.51
J	1155+18.10	14.58	684.28	684.39
K	1155+28.10	14.58	684.17	684.26
L	1155+38.10	14.58	684.04	684.11
‡ Brg. Pier 2	1155+52.10	14.58	683.85	683.87
M	1155+62.10	14.58	683.71	683.72
N	1155+72.10	14.58	683.55	683.57
O	1155+82.10	14.58	683.39	683.41
P	1155+92.10	14.58	683.22	683.24
‡ Brg. N. Abut.	1156+00.32	14.58	683.07	683.09
Bk. N. Abut.	1156+01.60	14.58	683.05	683.07

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

EXAMINED	August 4, 2006
PASSED	Thomas J. Domagala ENGINEER OF BRIDGE DESIGN
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

TOP OF SLAB ELEVATIONS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 1671	SECTION ‡	COUNTY DOUGLAS	TOTAL SHEETS 181	SHEET NO. 114
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 30  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

WEST CURB LINE

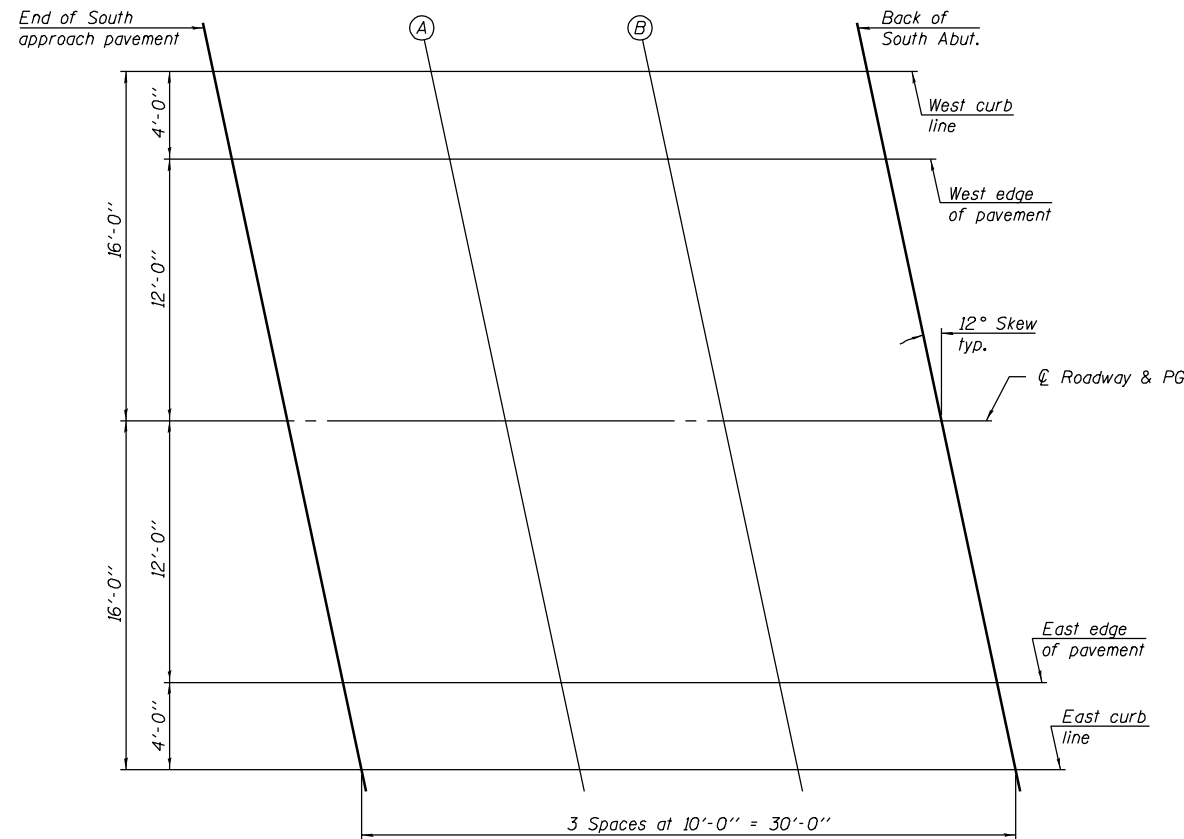
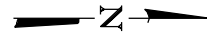
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
End S. Appr. Pav't.	1153+73.10	-16.00	684.95	684.97
A	1153+83.10	-16.00	684.96	684.98
B	1153+93.10	-16.00	684.96	684.98
Bk. S. Abut.	1154+03.10	-16.00	684.96	684.98

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
End S. Appr. Pav't.	1153+73.95	-12.00	685.03	685.05
A	1153+83.95	-12.00	685.04	685.06
B	1153+93.95	-12.00	685.04	685.06
Bk. S. Abut.	1154+03.95	-12.00	685.04	685.06

☉ ROADWAY & PG

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
End S. Appr. Pav't.	1153+76.50	0.00	685.22	685.24
A	1153+86.50	0.00	685.23	685.25
B	1153+96.50	0.00	685.23	685.25
Bk. S. Abut.	1154+06.50	0.00	685.22	685.24



PLAN

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
End S. Appr. Pav't.	1153+79.05	12.00	685.04	685.06
A	1153+89.05	12.00	685.05	685.07
B	1153+99.05	12.00	685.04	685.06
Bk. S. Abut.	1154+09.05	12.00	685.03	685.05

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
End S. Appr. Pav't.	1153+79.90	16.00	684.96	684.98
A	1153+89.90	16.00	684.96	684.98
B	1153+99.90	16.00	684.96	684.98
Bk. S. Abut.	1154+09.90	16.00	684.95	684.97

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

TOP OF SOUTH APPROACH  
SLAB ELEVATIONS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 1671	SECTION ‡	COUNTY DOUGLAS	TOTAL SHEETS 181	SHEET NO. 115
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 31  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

WEST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
Bk. N. Abut.	1155+95.10	-16.00	683.14	683.16
A	1156+05.10	-16.00	682.95	682.97
B	1156+15.10	-16.00	682.76	682.78
End N. Appr. Pav't.	1156+25.10	-16.00	682.56	682.58

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
Bk. N. Abut.	1155+95.95	-12.00	683.21	683.23
A	1156+05.95	-12.00	683.02	683.04
B	1156+15.95	-12.00	682.83	682.85
End N. Appr. Pav't.	1156+25.95	-12.00	682.63	682.65

☉ ROADWAY & PG

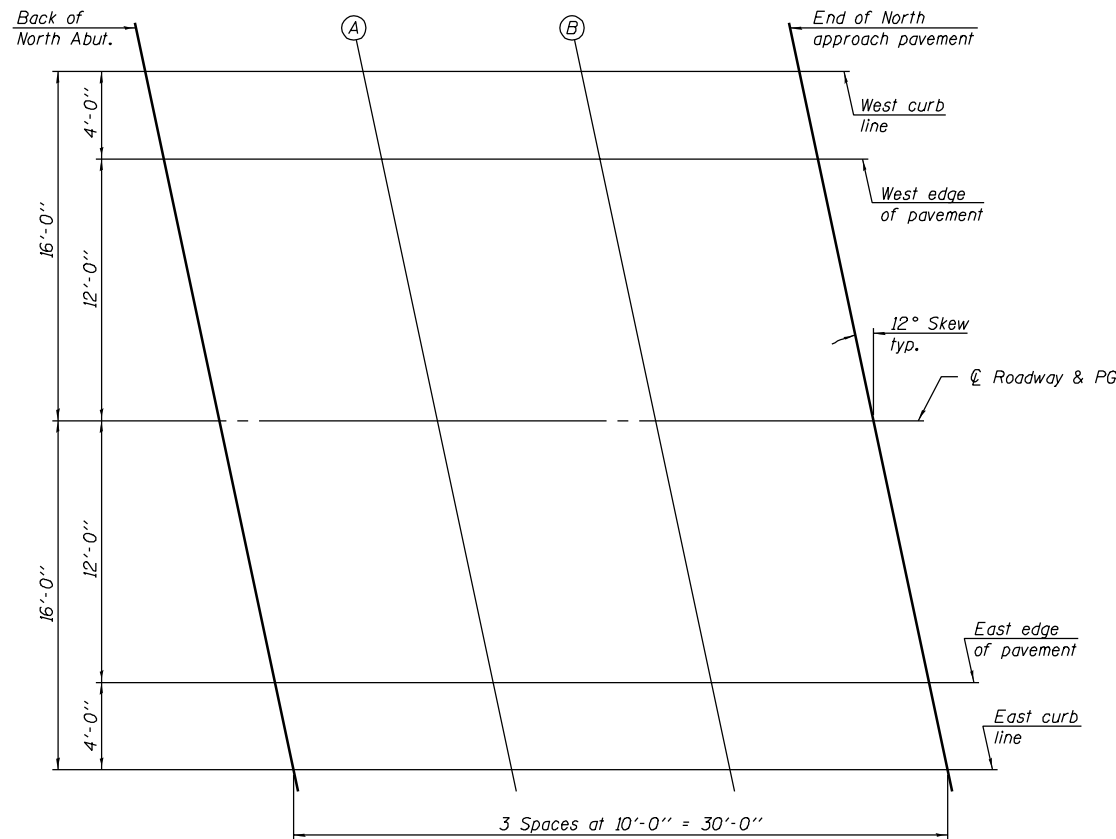
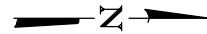
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
Bk. N. Abut.	1155+98.50	0.00	683.35	683.37
A	1156+08.50	0.00	683.16	683.18
B	1156+18.50	0.00	682.97	682.99
End N. Appr. Pav't.	1156+28.50	0.00	682.76	682.78

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
Bk. N. Abut.	1156+01.05	12.00	683.11	683.13
A	1156+11.05	12.00	682.92	682.94
B	1156+21.05	12.00	682.73	682.75
End N. Appr. Pav't.	1156+31.05	12.00	682.52	682.54

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
Bk. N. Abut.	1156+01.90	16.00	683.01	683.03
A	1156+11.90	16.00	682.82	682.84
B	1156+21.90	16.00	682.63	682.65
End N. Appr. Pav't.	1156+31.90	16.00	682.42	682.44



PLAN

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

EXAMINED	August 4, 2006	<i>Thomas J. Domagala</i>
PASSED		<i>Ralph E. Anderson</i>

TOP OF NORTH APPROACH  
SLAB ELEVATIONS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

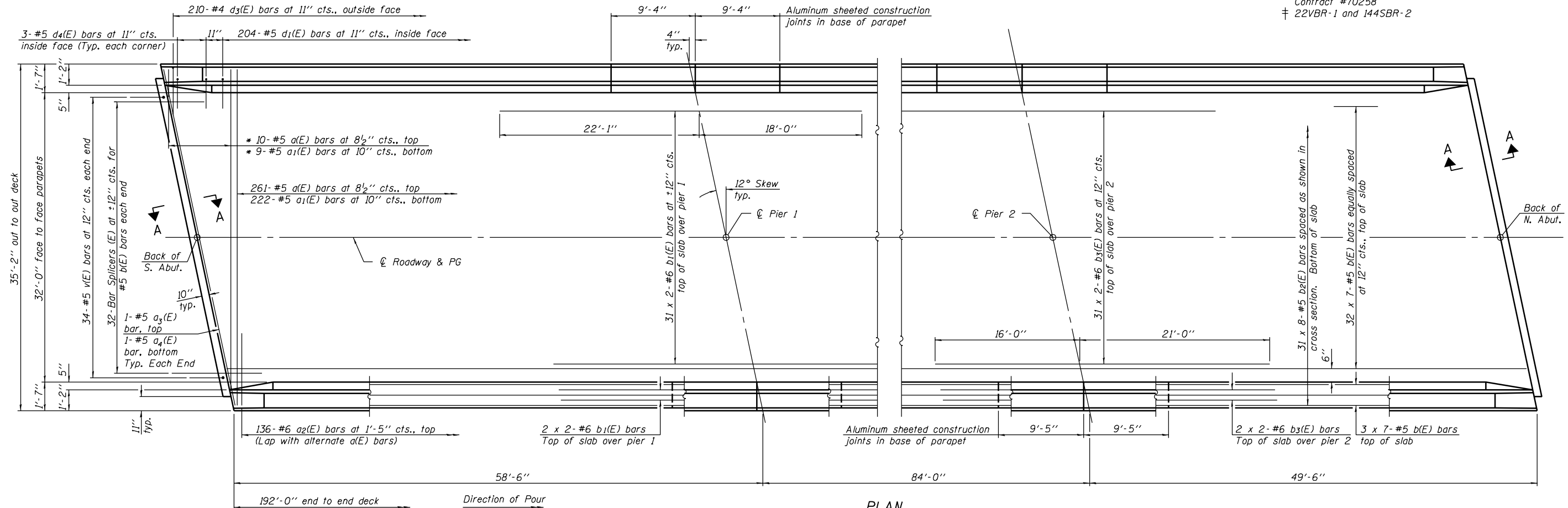
\* Order a(E) and a<sub>1</sub>(E) bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

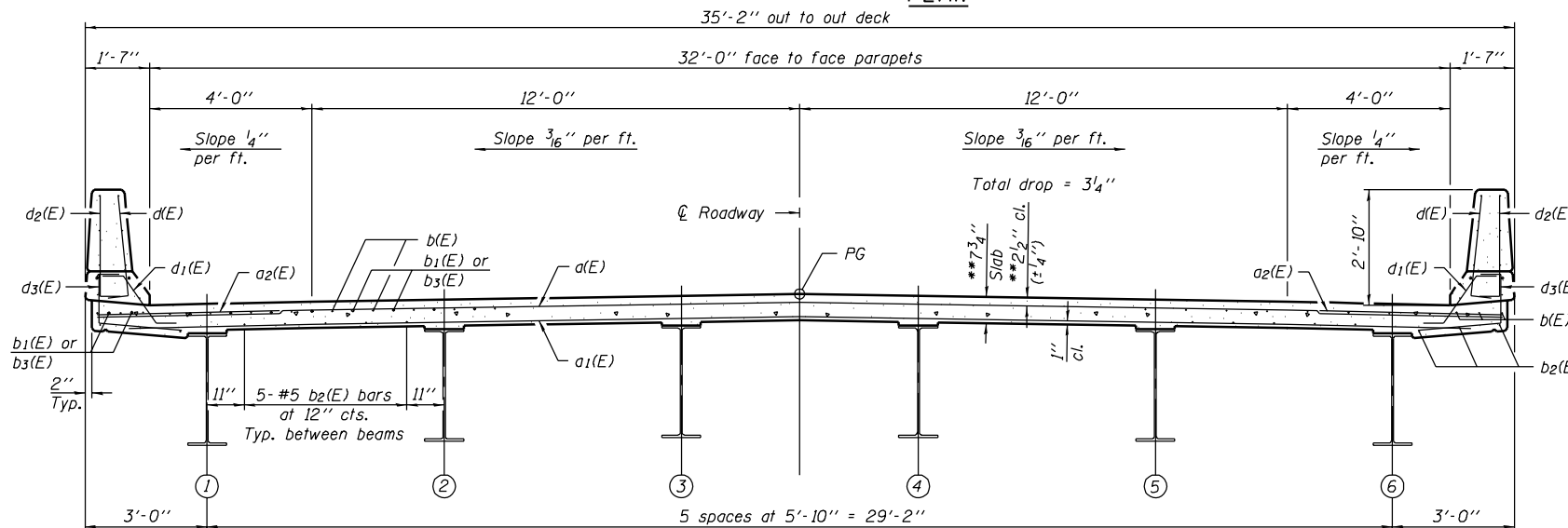
ROUTE NO. F.A.S. 1671	SECTION ‡	COUNTY DOUGLAS	TOTAL SHEETS 181	SHEET NO. 116
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 32  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2



Notes:  
See Sheet 33 of 46 for superstructure details and Bill of Material.  
Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 32 x 7-#5 etc. indicates 32 lines of bars with 7 lengths per line.  
See Sheet 33 of 46 for parapet reinforcement.  
For Section A-A and diaphragm details, see sheet 34 of 46.  
For bar splicer details, see sheet 43 of 46.  
See sheet 33 of 46 for details of v(E) bars.  
The Contractor shall be required to pour the deck starting at the South Abutment toward the North Abutment. See plan view for direction of pour. Pouring the deck from North to South is not allowed.



**MINIMUM BAR LAP**  
(Slab)  
#5 bar = 2'-2"  
#6 bar = 2'-7"

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

**CROSS SECTION**  
(Looking North)

\*\* Prior to grinding

**SUPERSTRUCTURE**  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060



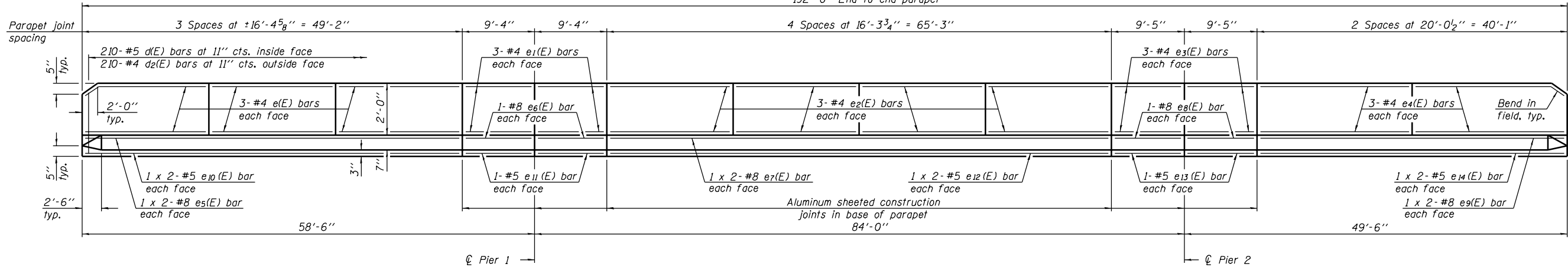
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 1671	SECTION ‡	COUNTY DOUGLAS	TOTAL SHEETS 181	SHEET NO. 117
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

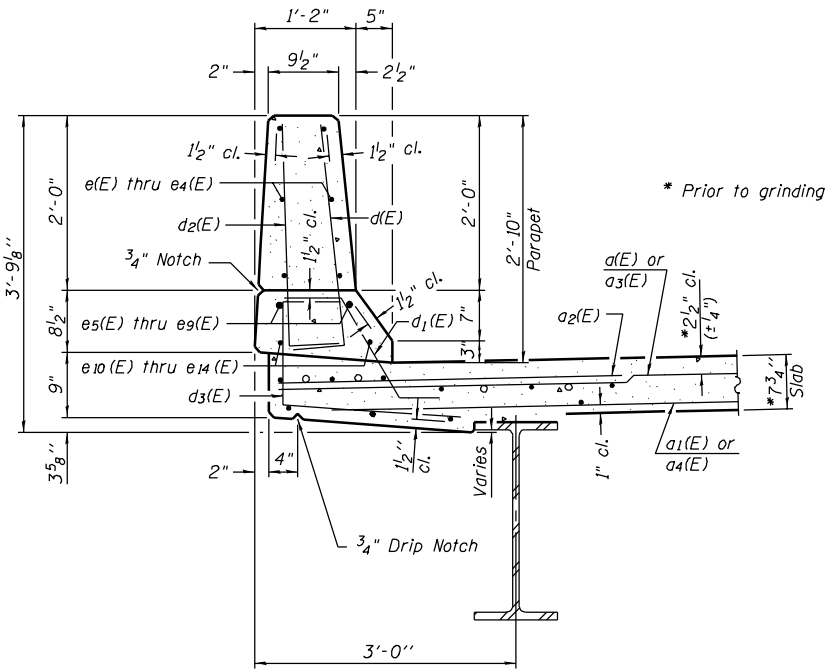
SHEET NO. 33  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

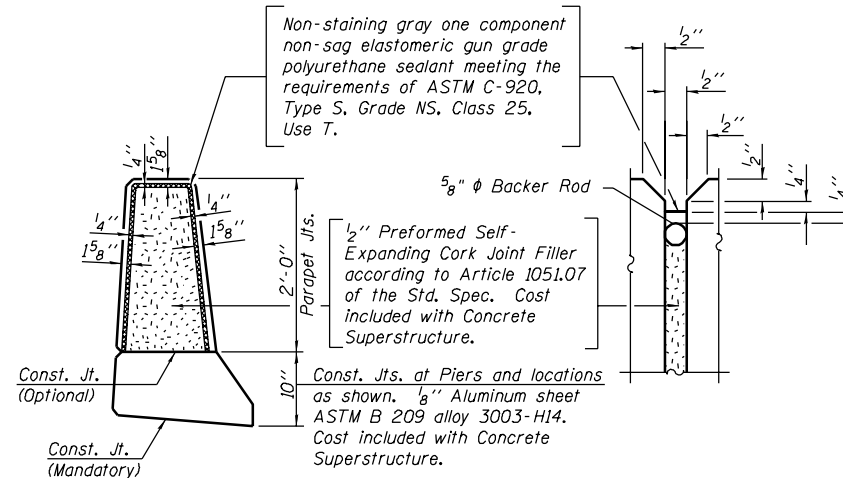
192'-0" End-to-end parapet



**INSIDE ELEVATION OF PARAPET**  
(West parapet shown, East parapet similar)



SECTION THRU PARAPET



PARAPET JOINT DETAILS

**SUPERSTRUCTURE  
BILL OF MATERIAL**

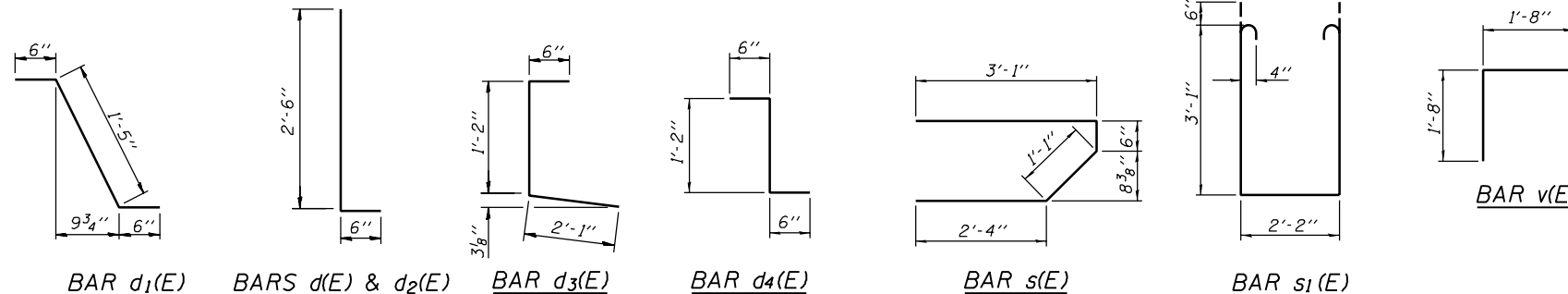
Bar	No.	Size	Length	Shape
a1(E)	271	#5	34'-7"	—
a2(E)	272	#6	4'-6"	—
a3(E)	2	#5	35'-4"	—
a4(E)	2	#5	33'-7"	—
b(E)	266	#5	29'-3"	—
b1(E)	70	#6	21'-4"	—
b2(E)	248	#5	25'-11"	—
b3(E)	70	#6	19'-10"	—
d(E)	420	#5	3'-0"	┌
d1(E)	408	#5	2'-5"	┌
d2(E)	420	#4	3'-0"	┌
d3(E)	420	#4	3'-9"	┌
d4(E)	12	#5	2'-2"	┌
e(E)	36	#4	16'-0"	—
e1(E)	24	#4	9'-0"	—
e2(E)	48	#4	15'-11"	—
e3(E)	24	#4	9'-1"	—
e4(E)	24	#4	19'-8"	—
e5(E)	8	#8	26'-2"	—
e6(E)	8	#8	9'-0"	—
e7(E)	8	#8	34'-2"	—
m(E)	4	#6	33'-9"	—
m1(E)	6	#6	35'-7"	—
m2(E)	16	#6	8'-9"	—
m3(E)	8	#6	7'-3"	—
m4(E)	10	#6	5'-8"	—
m5(E)	4	#6	2'-9"	—
s(E)	72	#5	7'-0"	┌
s1(E)	62	#4	9'-4"	┌
v(E)	68	#5	3'-4"	┌
Reinforcement Bars, Epoxy Coated	Pound		49600	
Concrete Superstructure	Cu. Yds.		232.3	

Bar	No.	Size	Length	Shape
ea(E)	8	#8	9'-1"	—
ea1(E)	8	#8	21'-7"	—
ea2(E)	8	#5	25'-3"	—
ea3(E)	8	#5	9'-0"	—
ea4(E)	8	#5	33'-4"	—
ea5(E)	8	#5	9'-1"	—
ea6(E)	8	#5	20'-9"	—
ma(E)	4	#6	33'-9"	—
ma1(E)	6	#6	35'-7"	—
ma2(E)	16	#6	8'-9"	—
ma3(E)	8	#6	7'-3"	—
ma4(E)	10	#6	5'-8"	—
ma5(E)	4	#6	2'-9"	—
sa(E)	72	#5	7'-0"	┌
sa1(E)	62	#4	9'-4"	┌
va(E)	68	#5	3'-4"	┌
Reinforcement Bars, Epoxy Coated	Pound		49600	
Concrete Superstructure	Cu. Yds.		232.3	

Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.

**MINIMUM BAR LAP**  
(Parapet)

#5 bar = 1'-8"  
#8 bar = 3'-5"



BAR v(E)

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

EXAMINED	August 4, 2006	Thomas J. Domagala
PASSED		Ralph E. Anderson

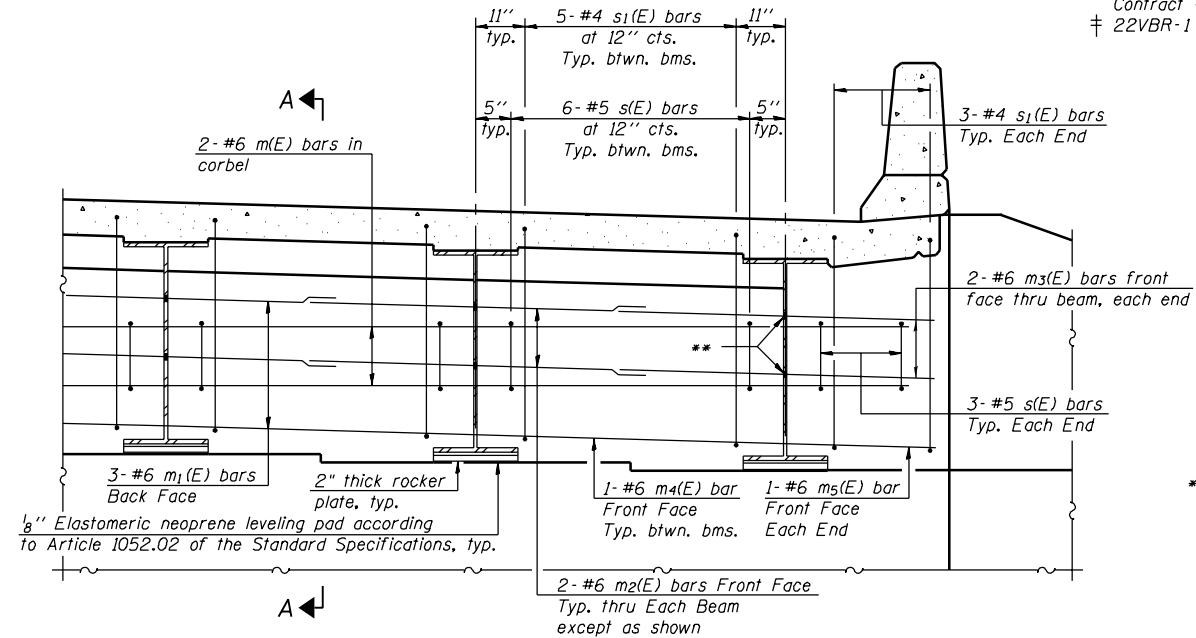
**SUPERSTRUCTURE DETAILS**  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	118
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 34  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2



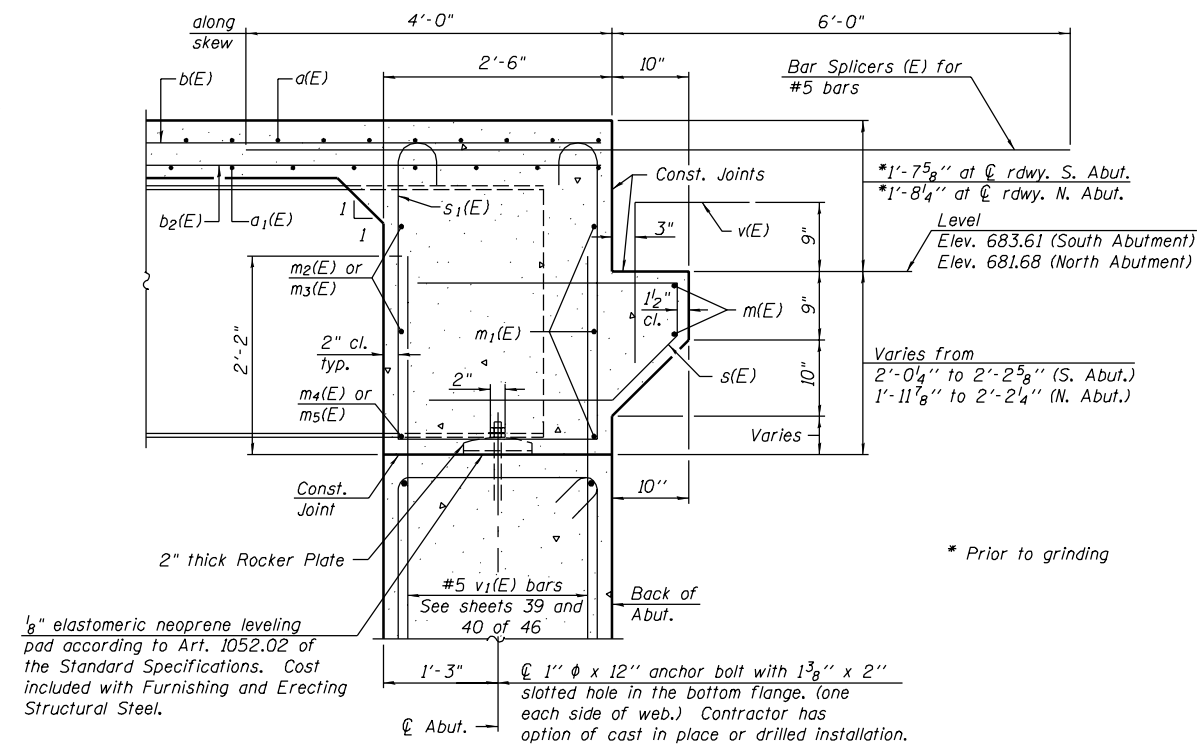
\*\* 1"  $\phi$  Holes thru web for  $m_2(E)$  or  $m_3(E)$  bars, typ.

DIAPHRAGM ELEVATION AT ABUTMENT

Notes:  
Reinforcement bars in diaphragm are billed with superstructure on sheet 33 of 46.  
Concrete in diaphragm is included with Concrete Superstructure on sheet 33 of 46.  
For details of bars  $s(E)$  &  $s_1(E)$  see sheet 33 of 46.  
The  $s(E)$  and  $s_1(E)$  bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.  
For anchor bolt details see sheet 38 of 46.  
For bar splicer details, see sheet 43 of 46.  
See sheet 36 of 46 for holes thru web for  $m_2(E)$  or  $m_3(E)$  bars.

MIN. BAR LAP

#6 bar = 2'-9"



SECTION A-A

Dimensions at right angles to abutment, except as shown.

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

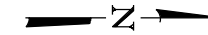
EXAMINED	August 4, 2006
PASSED	Thomas J. Domagala ENGINEER OF BRIDGE DESIGN
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

SI-DS1

11-30-05

DIAPHRAGM DETAILS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

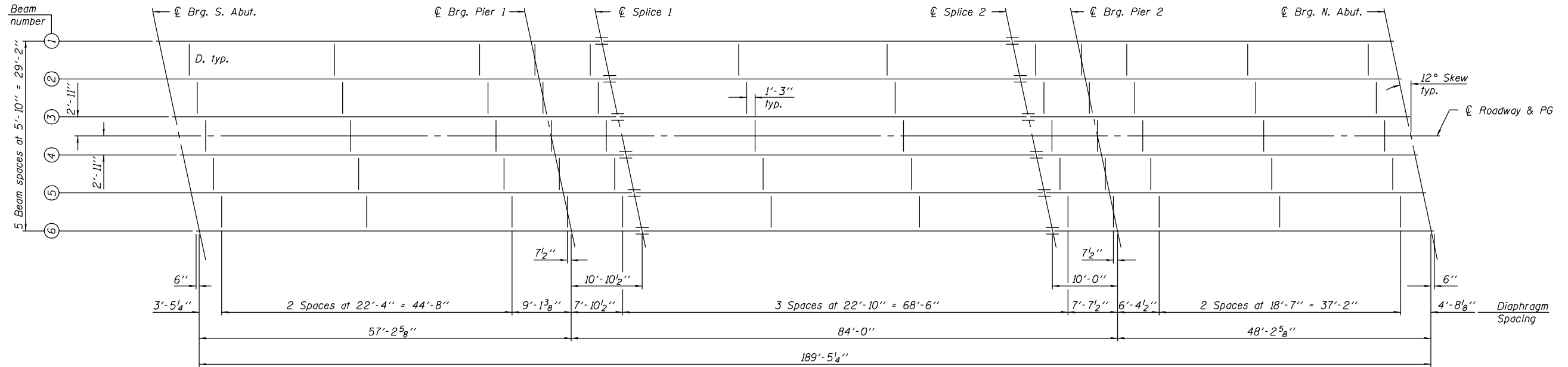
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



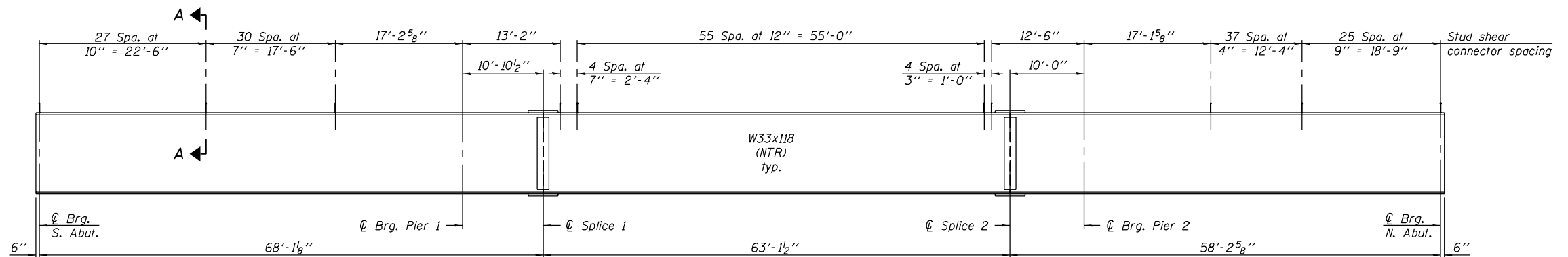
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	119
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 35  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2



PLAN



ELEVATION

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006

EXAMINED *Thomas J. Domagala*  
ENGINEER OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

Notes:  
NTR denotes members to which Notch Toughness Requirements are applicable.  
For Section A-A, see sheet 36 of 46.

STRUCTURAL STEEL  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	†	DOUGLAS	181	120
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 36  
46 SHEETS

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
$I_s$ (in <sup>4</sup> )	5900	5900	5900	5900	5900
$I_c$ (n) (in <sup>4</sup> )	15505	—	15505	—	15505
$I_c$ (3n) (in <sup>4</sup> )	11349	—	11349	—	11349
$S_s$ (in <sup>3</sup> )	359	359	359	359	359
$S_c$ (n) (in <sup>3</sup> )	526	—	526	—	526
$S_c$ (3n) (in <sup>3</sup> )	474	—	474	—	474
$Z$ (in <sup>3</sup> )	—	415	—	415	—
$D$ (k/ft.)	0.713	1.155	0.713	1.155	0.713
$M\phi$ (k)	125	572	259	520	58
$s\phi$ (k/ft.)	0.442	—	0.442	—	0.442
$M_s\phi$ (k)	100	—	214	—	56
$M_t$ (k)	342	238	470	226	267
$M$ (Imp) (k)	94	62	113	60	78
$5_3[M_t + M(\text{Imp})]$ (k)	727	500	972	477	575
$M_a$ (k)	1238	1394	1879	1296	896
$M_u$ (k)	264.3	1729	264.3	1729	264.3
$f_s\phi$ non-comp (k.s.i.)	4.2	19.1	8.7	17.4	1.9
$f_s\phi$ (comp) (k.s.i.)	2.5	—	5.4	—	1.4
$f_s 5_3(t + \text{Imp})$ (k.s.i.)	16.6	16.7	22.2	15.9	13.1
$f_s$ (Overload) (k.s.i.)	23.3	35.8	36.2	33.3	16.4
VR (k)	43.9	—	40.1	—	43.7

	S. Abut.	Pier 1	Pier 2	N. Abut.
$R\phi$ (k)	23.0	92.1	86.5	17.1
$R_t$ (k)	31.0	41.0	39.7	29.7
Imp. (k)	8.5	10.5	10.4	8.6
R (Total) (k)	62.5	143.6	136.6	55.4

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).

$I_{c(n)}$  and  $S_{c(n)}$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$I_{c(3n)}$  and  $S_{c(3n)}$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

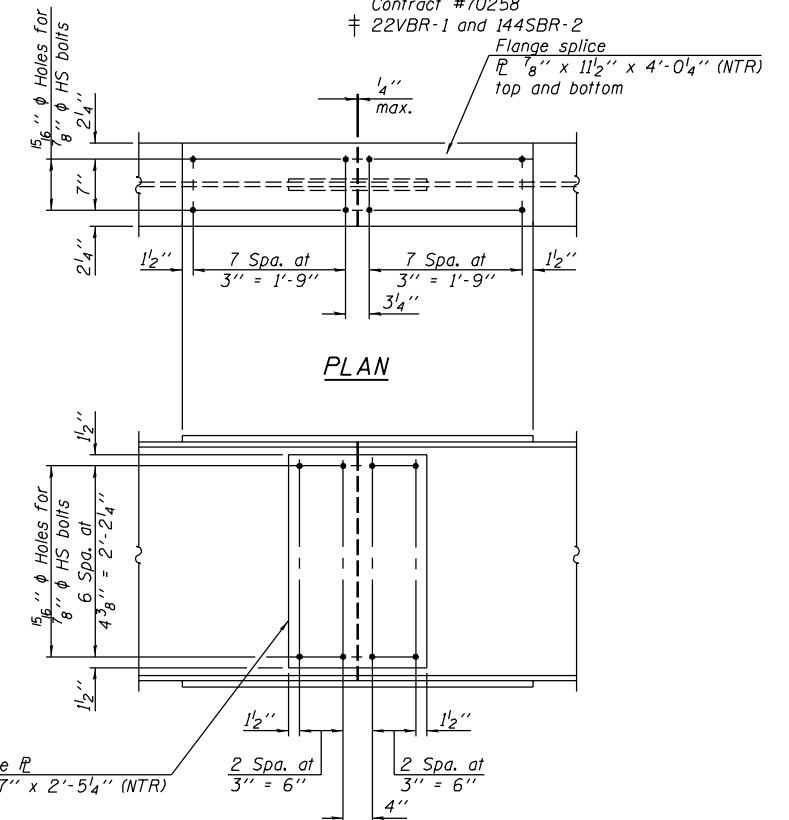
VR is the maximum Live Load + Impact shear range within the composite portion of the span.

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

$M_a$  (Applied Moment) =  $1.3[M\phi + M_s\phi + 5_3(M_t + M(\text{Imp}))]$ .

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

$f_s$  (Overload) is the sum of the stresses due to  $M\phi + M_s\phi + 5_3(M_t + M(\text{Imp}))$ .



ELEVATION

SPLICE DETAIL  
Typical for splice 1 and splice 2  
(12 Required)

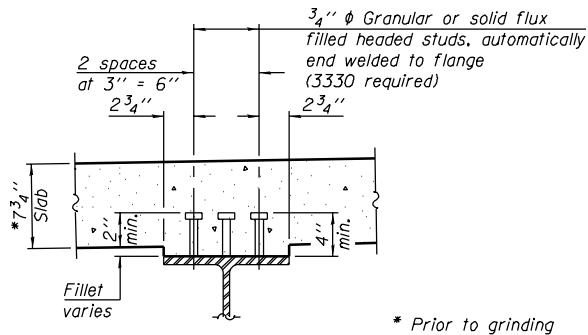
\*TOP OF BEAM ELEVATIONS

Beam	1	2	3	4	5	6
⊕ Brg. South Abutment	684.31	684.42	684.51	684.50	684.41	684.30
⊕ Brg. Pier 1	684.02	684.11	684.20	684.19	684.09	683.97
⊕ Splice 1	683.96	684.05	684.14	684.13	684.03	683.91
⊕ Splice 2	683.33	683.42	683.50	683.48	683.37	683.25
⊕ Brg. Pier 2	683.19	683.28	683.35	683.34	683.23	683.11
⊕ Brg. North Abutment	682.51	682.60	682.67	682.64	682.53	682.40

\* For fabrication only.

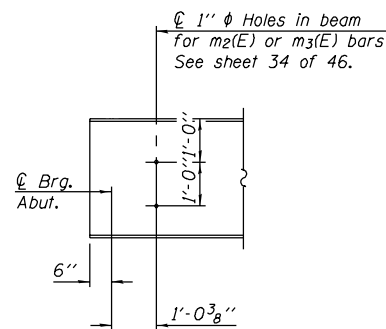
Notes:  
Two hardened washers shall be required over all oversize holes for diaphragms.  
NTR denotes members to which Notch Toughness Requirements are applicable.

STRUCTURAL STEEL DETAILS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

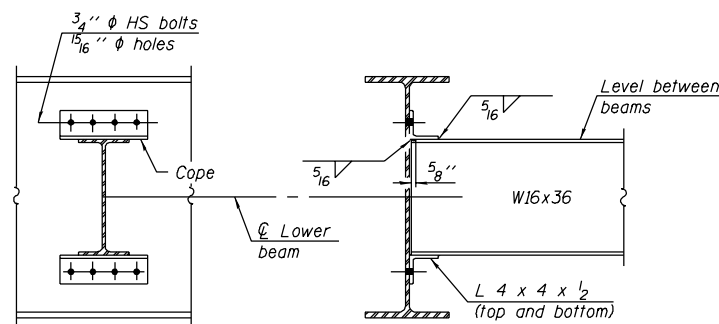


SECTION A-A

\* Prior to grinding



END OF BEAM  
ELEVATION



DIAPHRAGM D  
(60 Required)

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

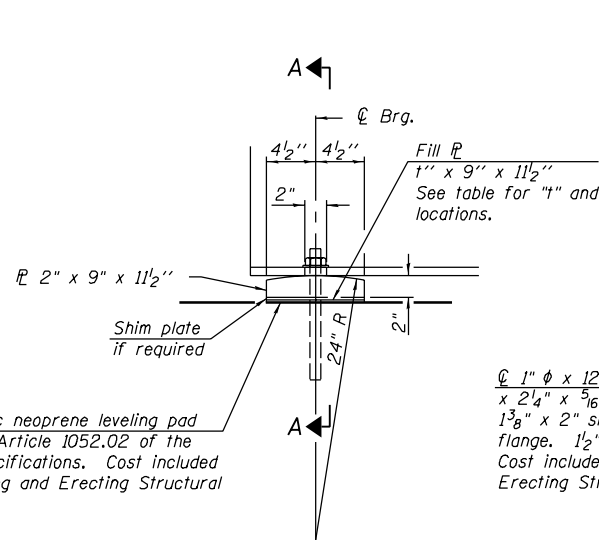
EXAMINED	Thomas J. Domagala	August 4, 2006
PASSED	Ralph E. Anderson	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	121
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

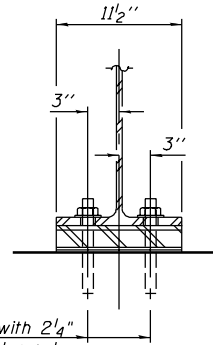
SHEET NO. 37  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

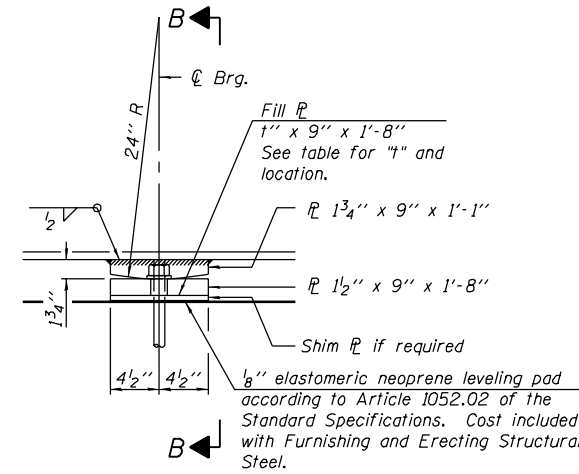


ELEVATION AT ABUTMENT

FIXED BEARING  
(12 Required)

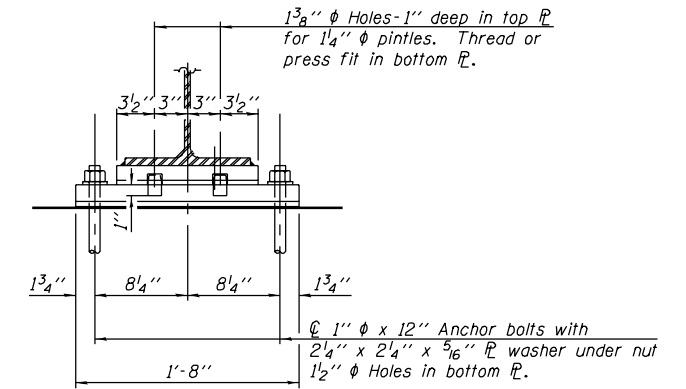


SECTION A-A



ELEVATION AT PIER

FIXED BEARING  
(12 Required)

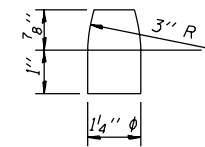


SECTION B-B

Notes:  
Contractor has the option of cast in place or drilled installation of anchor bolts.  
See sheet 38 of 46 for Anchor Bolt installation.

FILL P LOCATION  
AND THICKNESS

Location	Beam	Size (t)
Pier 2	3	1/4"
North Abutment	3	3/4"
North Abutment	4	1/2"



PINTLE

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

EXAMINED	August 4, 2006
PASSED	Thomas J. Domagala ENGINEER OF BRIDGE DESIGN
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

BEARING DETAILS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	122
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 38  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire. The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed. The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted. Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming. The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

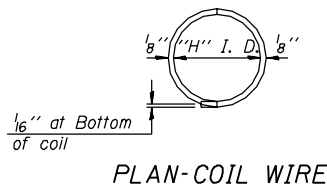
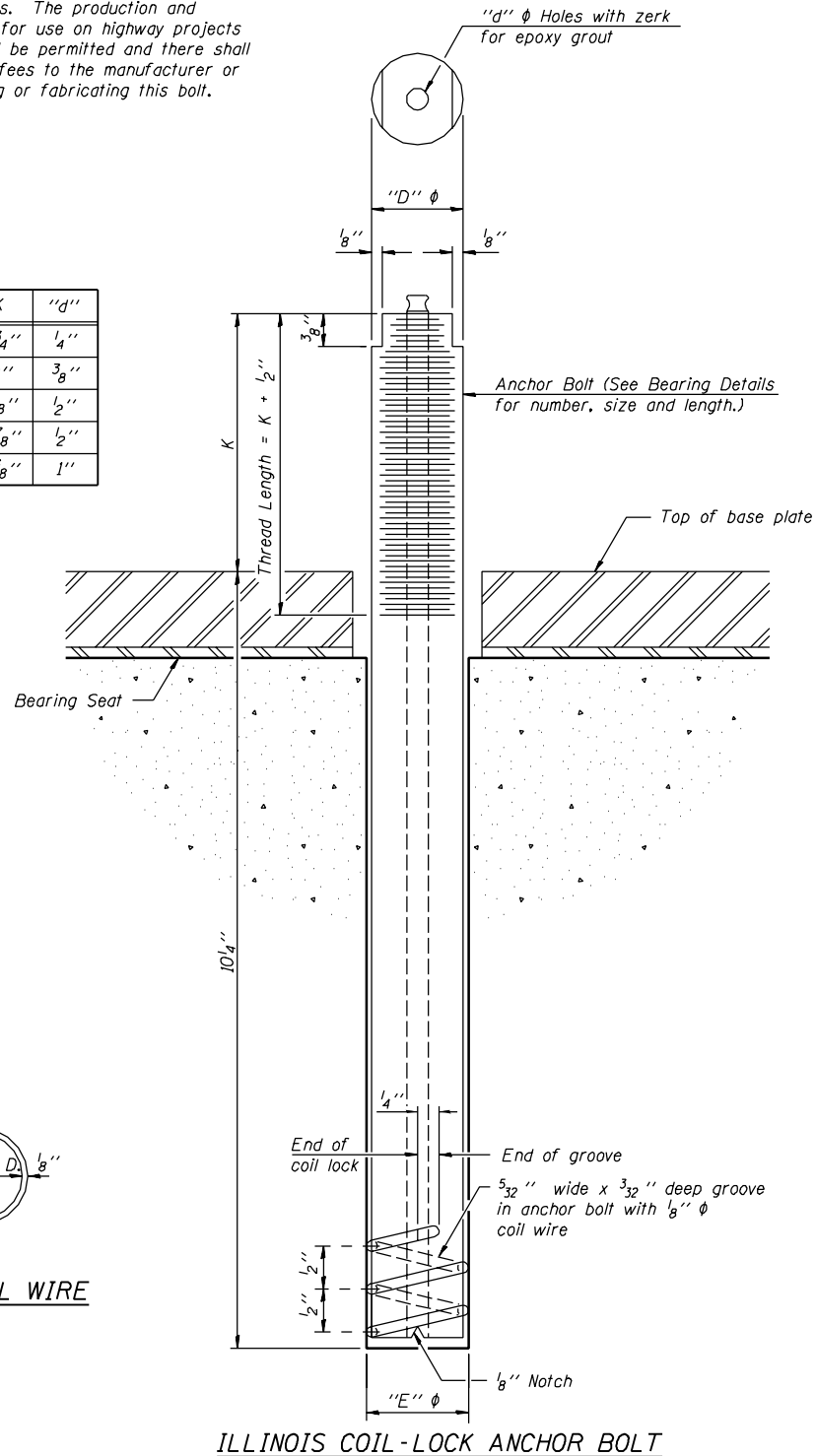
The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

- The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
  2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
Abutments	A 325
Piers	A 325

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



ILLINOIS COIL-LOCK ANCHOR BOLT

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

ABB-1 10-22-04

ANCHOR BOLT DETAILS  
FOR BEARINGS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

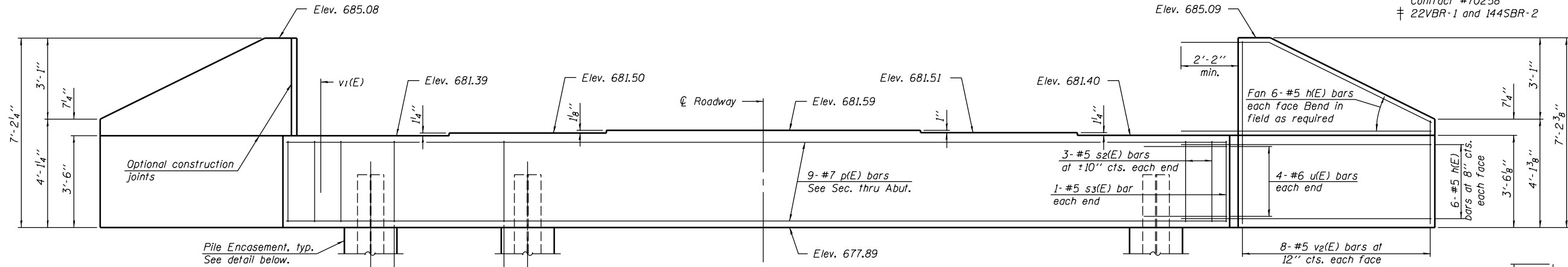
Notes: Four steps monolithically with cap.  
Reinforcement bars designated (E)  
shall be epoxy coated.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	123
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 39  
46 SHEETS

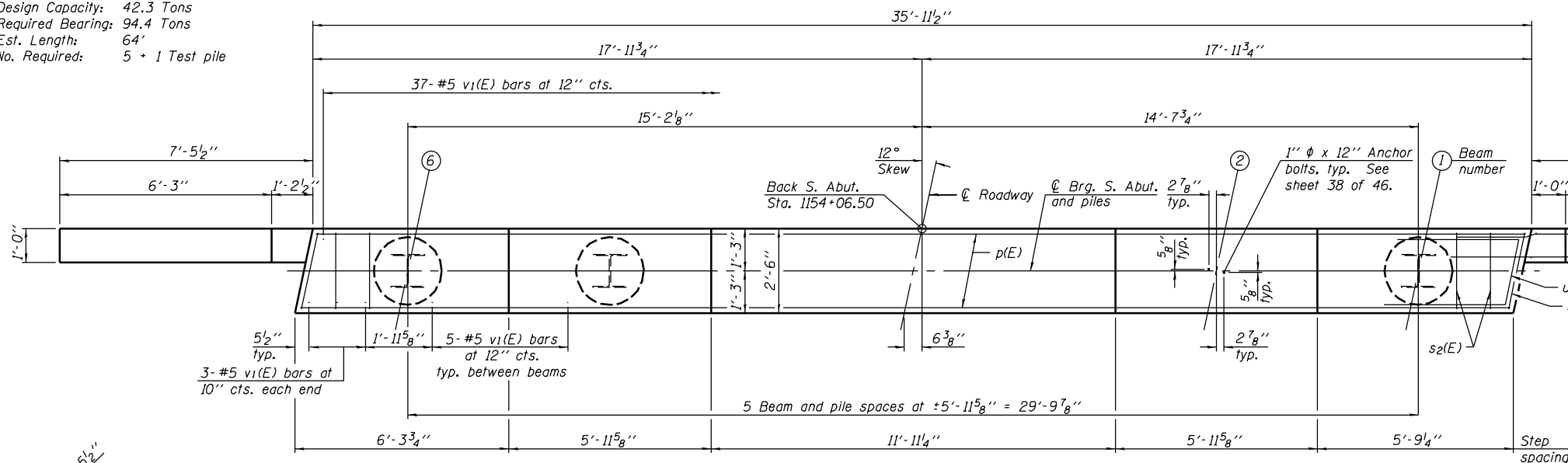
Contract #70258  
‡ 22VBR-1 and 144SBR-2



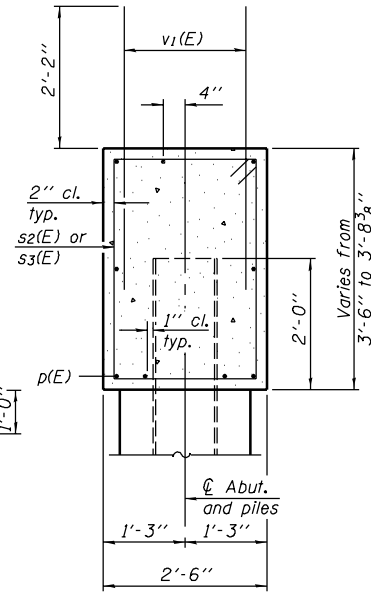
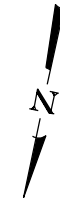
**PILE DATA**

Type: HP 12x53  
Design Capacity: 42.3 Tons  
Required Bearing: 94.4 Tons  
Est. Length: 64'  
No. Required: 5 + 1 Test pile

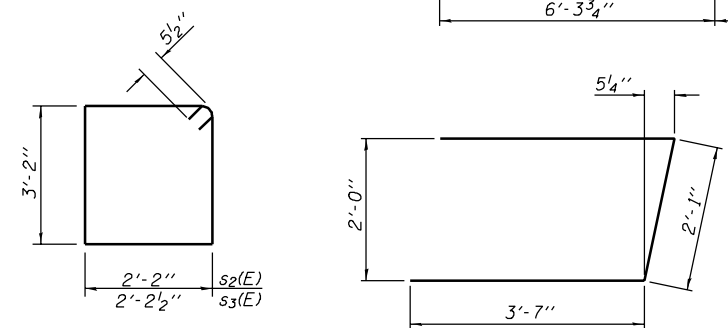
**ELEVATION**  
(Looking South)



**PLAN**

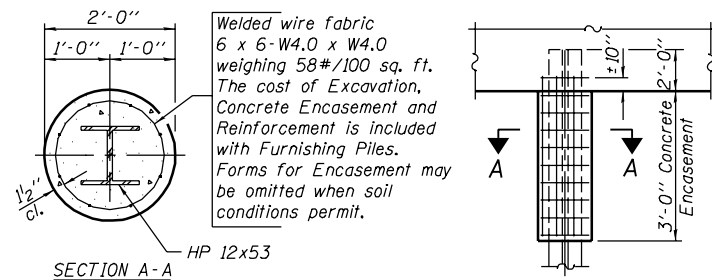


**SEC. THRU ABUT.**



**BARS s<sub>2</sub>(E) & s<sub>3</sub>(E)**

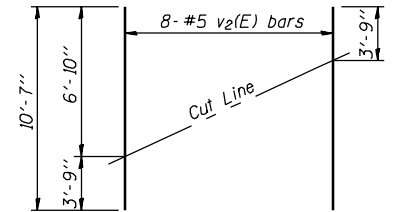
**BAR u(E)**



**PILE ENCASEMENT DETAIL**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	48	#5	10'-4"	—
p(E)	9	#7	35'-7"	—
s <sub>2</sub> (E)	31	#5	11'-7"	□
s <sub>3</sub> (E)	2	#5	11'-8"	□
u(E)	8	#6	9'-3"	—
v <sub>1</sub> (E)	68	#5	4'-4"	—
v <sub>2</sub> (E)	16	#5	10'-7"	—
Concrete Structures	Cu. Yd.		15.3	
Reinforcement Bars, Epoxy Coated	Pound		2170	
Furnishing Steel Piles HP 12x53	Foot		320	
Driving Steel Piles	Foot		320	
Test Pile Steel HP 12x53	Each		1	
Structure Excavation	Cu. Yd.		80	



**FIELD CUTTING DIAGRAM**  
Order v<sub>2</sub>(E) full length. Cut as shown and use remainder of bars in opposite face.

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

**SOUTH ABUTMENT**  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060





STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

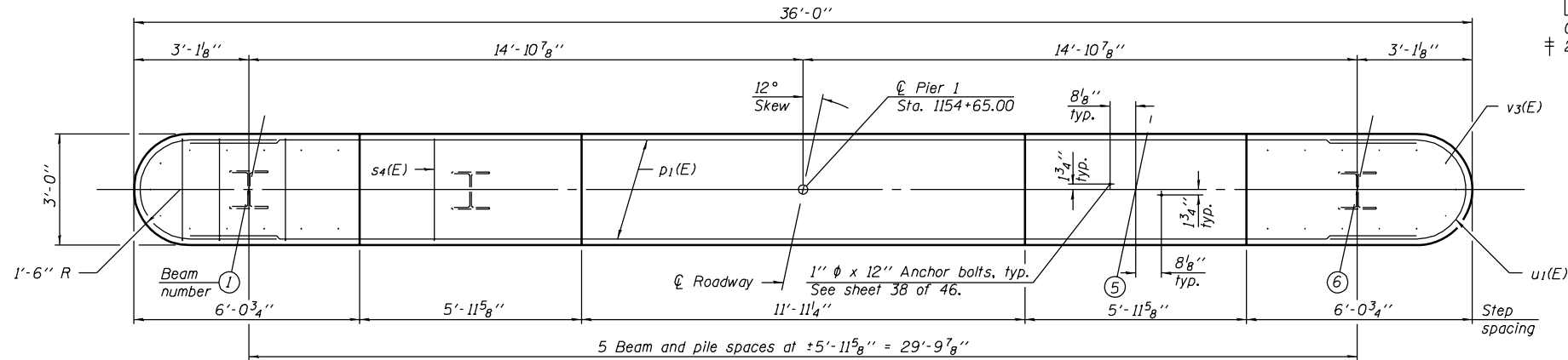
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	125
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 41  
46 SHEETS

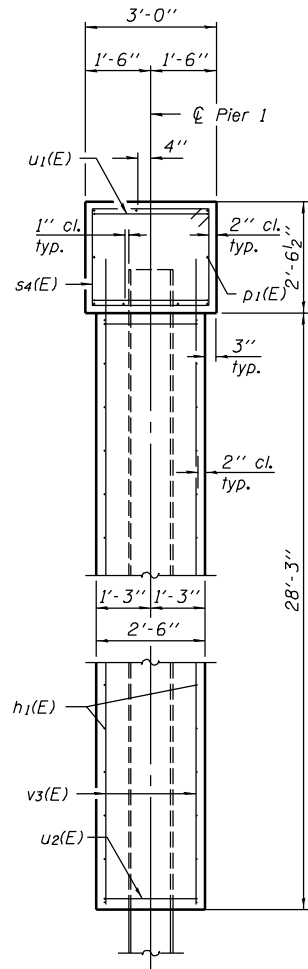
Note:  
Four steps monolithically with cap.

**PILE DATA**

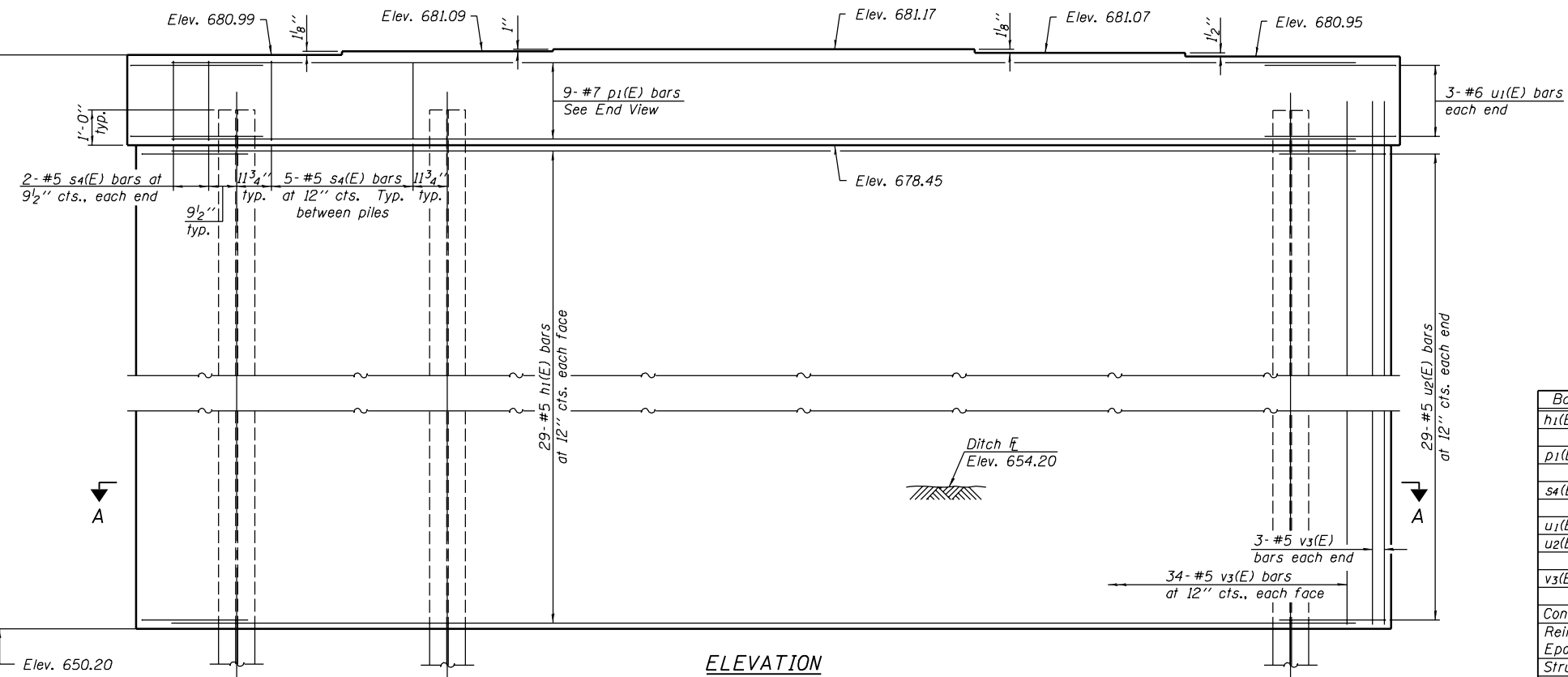
Type: HP 12x74  
Design Capacity: 95.0 Tons  
Required Bearing: 142.5 Tons  
Est. Length: 66'  
No. Req'd: 5 + 1 test pile



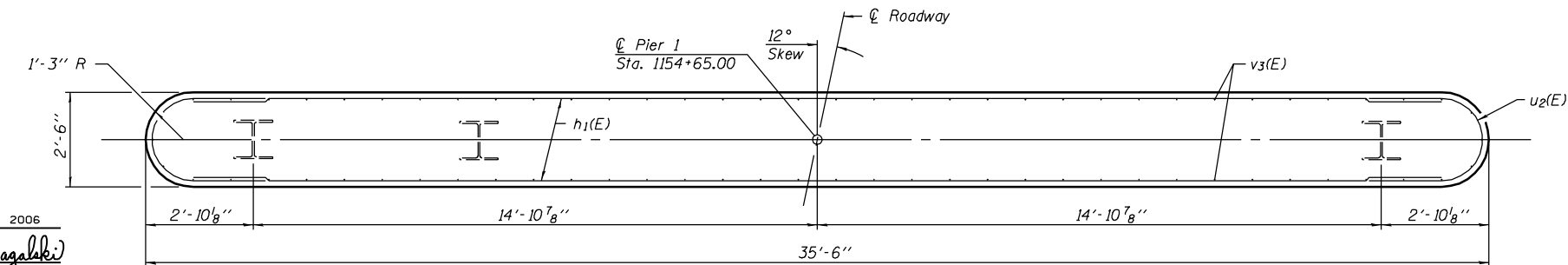
TOP PLAN



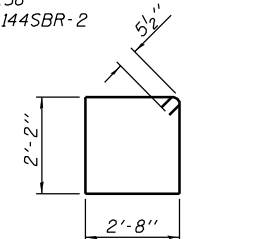
END VIEW



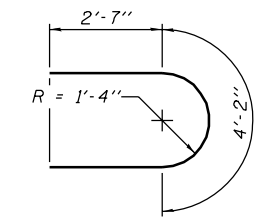
ELEVATION



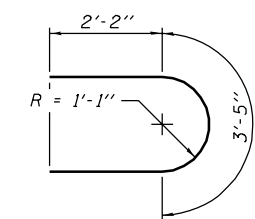
SECTION A-A



BAR s4(E)



BAR u1(E)



BAR u2(E)

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h1(E)	58	#5	33'-0"	—
p1(E)	9	#7	33'-0"	—
s4(E)	29	#5	10'-7"	□
u1(E)	6	#6	9'-4"	—
u2(E)	58	#5	7'-9"	—
v3(E)	74	#5	29'-10"	—
Concrete Structures		Cu. Yd.	101.8	
Reinforcement Bars, Epoxy Coated		Pound	5780	
Structure Excavation		Cu. Yd.	38	
Furnishing Steel Piles HP 12x74		Foot	330	
Driving Steel Piles		Foot	330	
Test Pile Steel HP 12x74		Each	1	

Reinforcement Bars designated (E) shall be epoxy coated.

PIER 1  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

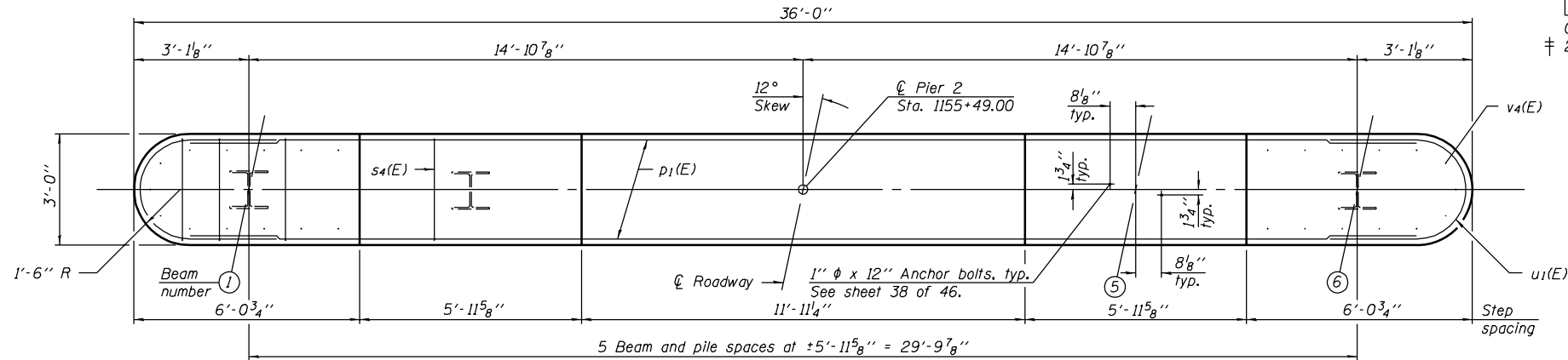
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	126
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 42  
46 SHEETS

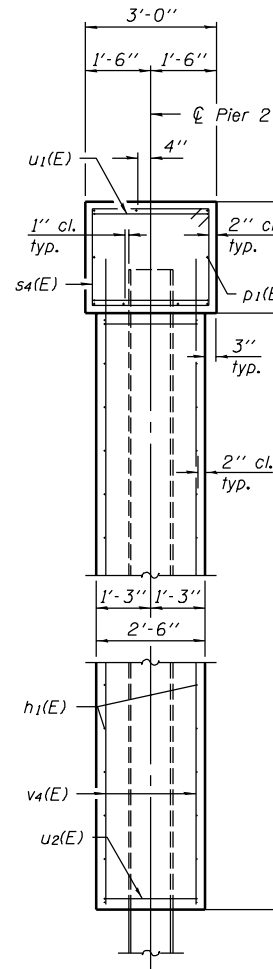
Note:  
Four steps monolithically with cap.

**PILE DATA**

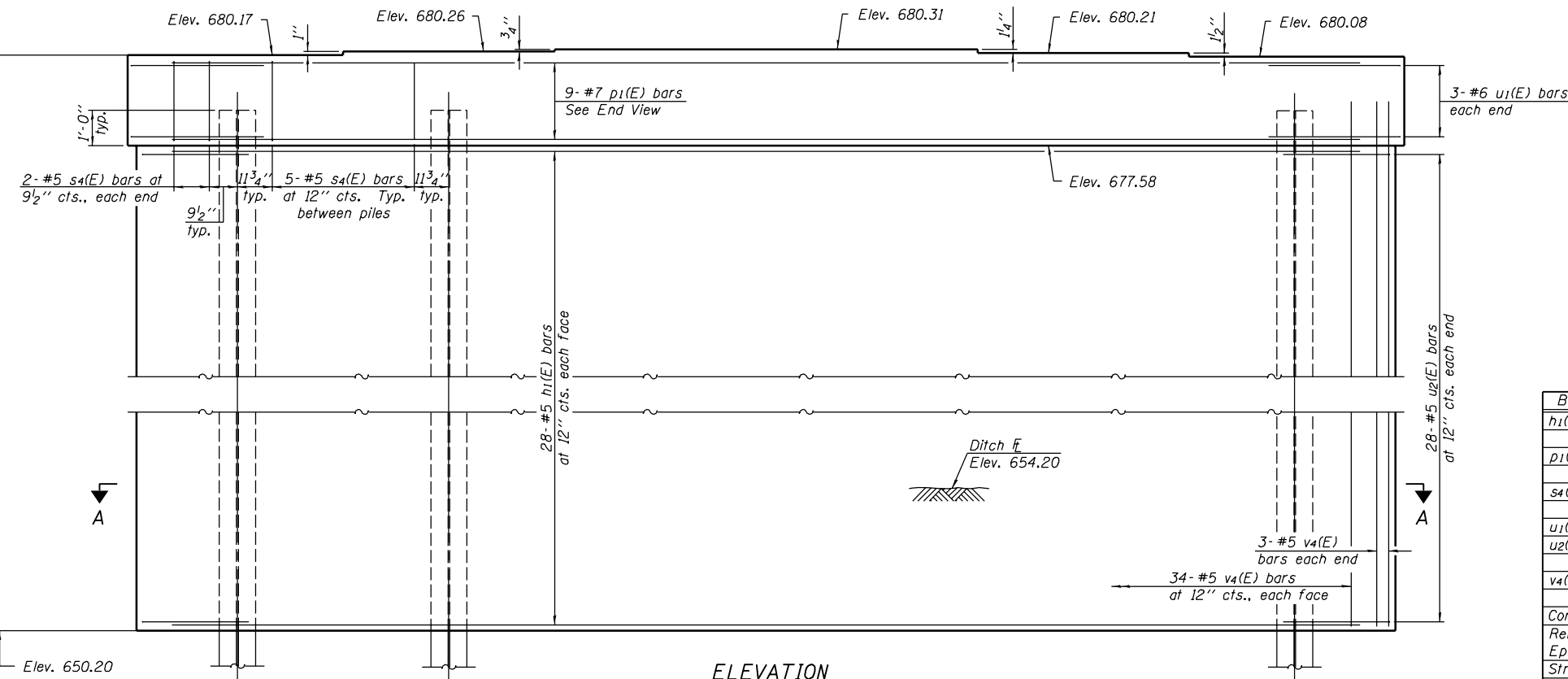
Type: HP 12x74  
Design Capacity: 95.0 Tons  
Required Bearing: 142.5 Tons  
Est. Length: 73'  
No. Req'd: 5 + 1 test pile



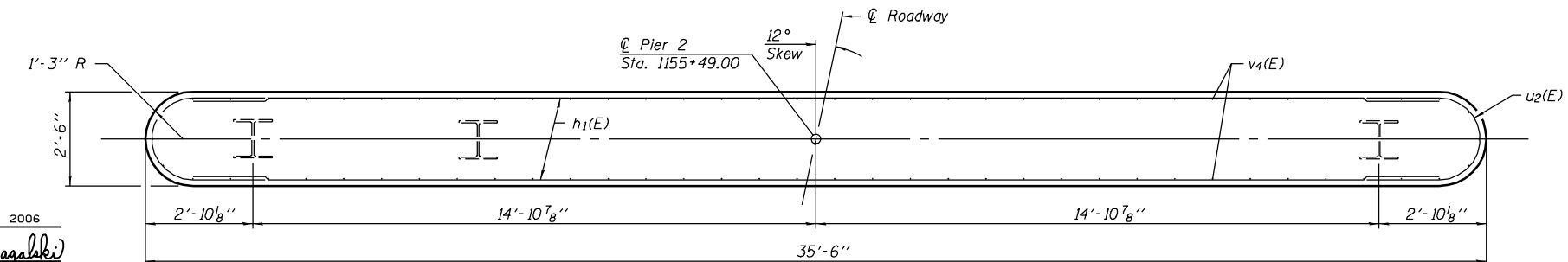
TOP PLAN



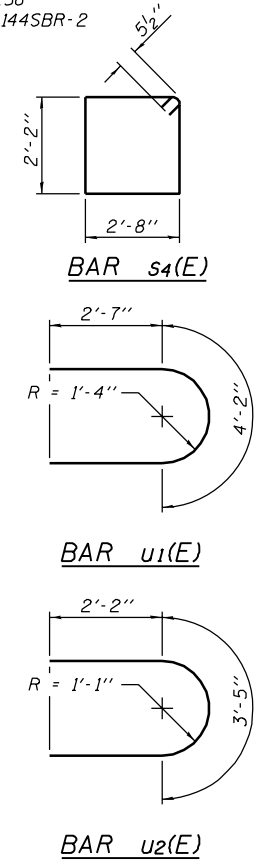
END VIEW



ELEVATION



SECTION A-A



**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h1(E)	56	#5	33'-0"	—
p1(E)	9	#7	33'-0"	—
s4(E)	29	#5	10'-7"	□
u1(E)	6	#6	9'-4"	—
u2(E)	56	#5	7'-9"	—
v4(E)	74	#5	29'-0"	—
Concrete Structures		Cu. Yd.	99.1	
Reinforcement Bars, Epoxy Coated		Pound	5630	
Structure Excavation		Cu. Yd.	38	
Furnishing Steel Piles HP 12x74		Foot	365	
Driving Steel Piles		Foot	365	
Test Pile Steel HP 12x74		Each	1	

Reinforcement Bars designated (E) shall be epoxy coated.

PIER 2  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 1671	SECTION ‡	COUNTY DOUGLAS	TOTAL SHEETS 181	SHEET NO. 127
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 43  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

**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:

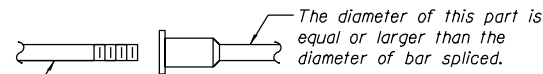
- ① Minimum Capacity =  $1.25 \times f_y \times A_t$   
(Tension in kips)
- ② Minimum \*Pull-out Strength =  $1.25 \times f_{sallow} \times A_t$   
(Tension in kips)

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

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#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
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

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."

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

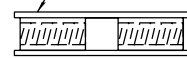


ROLLED THREAD DOWEL BAR



\*\* ONE PIECE

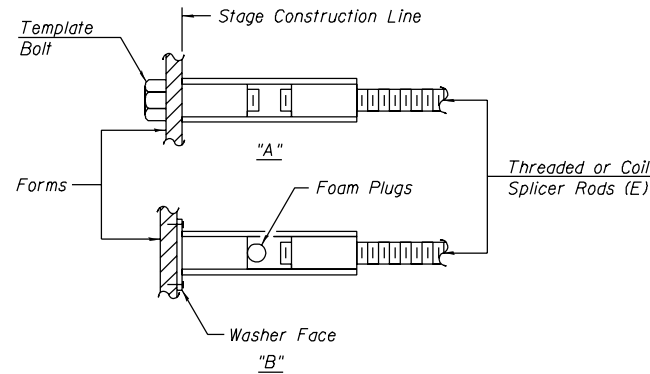
Wire Connector



WELDED SECTIONS

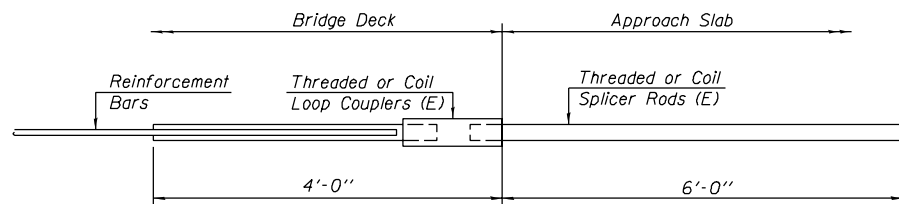
**BAR SPLICER ASSEMBLY ALTERNATIVES**

\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



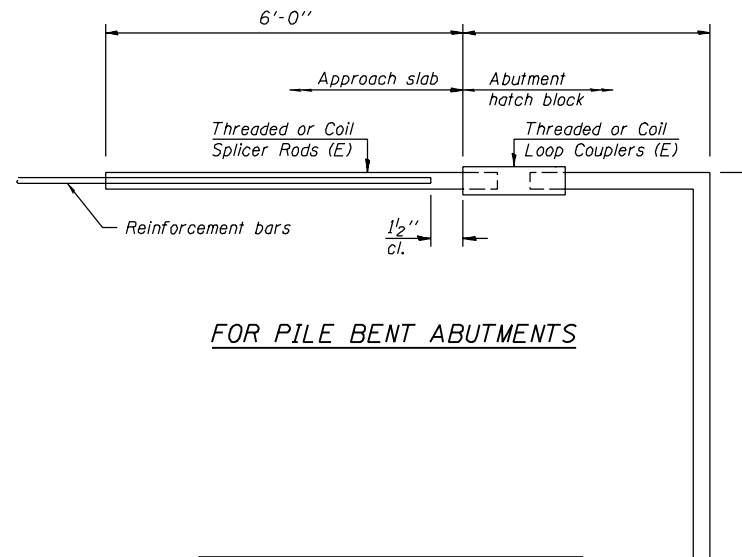
**INSTALLATION AND SETTING METHODS**

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



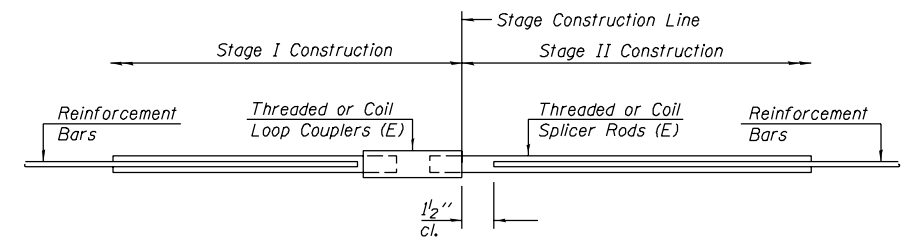
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 64



**FOR PILE BENT ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



**STANDARD**

Bar Size	No. Assemblies Required	Location

**BAR SPLICER ASSEMBLY DETAILS**  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1154+99.02  
STRUCTURE NO. 021-0060

DESIGNED	Curt M. Evoy
CHECKED	Rebecca L. Tharp
DRAWN	Michael B. Mossman
CHECKED	C.M.E. / R.L.T.

August 4, 2006
EXAMINED <i>Thomas J. Domagala</i>
PASSED <i>Ralph E. Anderson</i>
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	129
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 45  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

**Illinois Department of Transportation**  
Division of Highways  
DOT - District 5

**SOIL BORING LOG** Page 1 of 1  
Date 2/26/04

ROUTE FAS 1671 (US 45) DESCRIPTION Route 45 over the U.P. & C.S.X. R.R. Tracks LOGGED BY CNA  
SECTION 22VBR-1 LOCATION NE, SEC. 33, TWP. 16N, RNG. 8E, 3rd. PM  
COUNTY Douglas DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 021-0013(Exist.)  
Station 1153+86.5  
BORING NO. 3 Pier 2  
Station 1152+04  
Offset 19.0 ft Lt.  
Ground Surface Elev. 651.5 ft

DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE	DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE
0	Surface Water Elev. _____ ft			0	Surface Water Elev. _____ ft		
0	Stream Bed Elev. _____ ft			0	Stream Bed Elev. _____ ft		
0	Groundwater Elev.: _____ ft			0	Groundwater Elev.: _____ ft		
0	First Encounter _____ ft			0	First Encounter _____ ft		
0	Upon Completion _____ ft			0	Upon Completion _____ ft		
0	After _____ Hrs. _____ ft			0	After _____ Hrs. _____ ft		
0	Gray Clay Loam Till with interbedded Sand & Silt Seams (continued)			0	Gray Clay Loam Till with interbedded Sand & Silt Seams (continued)		
2				27			
3	0.8 B			43			9
4	4 B			50-4'			
646.0				629.5			
0	Brown/Gray Mottled Silty Clay Loam			0	Gray Sandy Clay Loam to Sand Loam Till		
1				1			
1	1.8 B			1	Green/Gray Sandy Clay Loam Till		
4	4 B			21			
644.5				625.5			
0	Brown Clay Loam Till			0			
2				17			
5	2.7 B			28	9.2 S		9
5	5 B			46	46 S		
642.0				619.5			
0	Gray Clay Loam Till			0	Gray Sandy Clay Loam Till		
2				2			
4	2.6 B			4	2.9 B		16
5	5 B			5	5 B		
637.5				37			
0	Gray Clay Loam Till with interbedded Sand & Silt Seams			0	End of Boring		
5	3.3 B			50-5'			8
10	10 B			616.5			
640.0				616.5			
0				0			
2				2			
4	2.0 B			4	2.7 B		14
5	5 E			4	4 B		
640.0				616.1			

An assumed centerline elevation of 100.00 and station of 10+00 is used when this information is not available.  
The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N Value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

**Illinois Department of Transportation**  
Division of Highways  
DOT - District 5

**SOIL BORING LOG** Page 1 of 1  
Date 2/26/04

ROUTE FAS 1671 (US 45) DESCRIPTION Route 45 over the U.P. & C.S.X. R.R. Tracks LOGGED BY CNA  
SECTION 22VBR-1 LOCATION NE, SEC. 33, TWP. 16N, RNG. 8E, 3rd. PM  
COUNTY Douglas DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 021-0013(Exist.)  
Station 1153+86.5  
BORING NO. 4 Pier 3  
Station 1152+39  
Offset 20.0 ft Rt.  
Ground Surface Elev. 651.1 ft

DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE	DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE
0	Surface Water Elev. _____ ft			0	Surface Water Elev. _____ ft		
0	Stream Bed Elev. _____ ft			0	Stream Bed Elev. _____ ft		
0	Groundwater Elev.: _____ ft			0	Groundwater Elev.: _____ ft		
0	First Encounter _____ ft			0	First Encounter _____ ft		
0	Upon Completion _____ ft			0	Upon Completion _____ ft		
0	After _____ Hrs. _____ ft			0	After _____ Hrs. _____ ft		
0	Brown/Gray Mottled Silty Clay Loam			0	Gray Clay Loam Till (continued)		
651.1				628.1			
0				0	Gray/Green Sand Loam Till		
1				9			
2	0.9 B			22			11
3	3 B			20			
644.1				625.1			
0	(Trace of Free Water)			0	Gray Sandy Clay Loam Till		
4				12			
5				23			10
644.1				27			
0				0			
1				1			
4	2.9 B			4	2.9 B		16
5	5 B			5	5 B		
644.1				37			
0				0	End of Boring		
2				25			
4	2.7 B			50-5'			8
4	4 B			616.1			
640.0				616.1			
0				0			
2				2			
4	2.7 B			4	2.7 B		14
4	4 B			4	4 B		
640.0				631.4			

An assumed centerline elevation of 100.00 and station of 10+00 is used when this information is not available.  
The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N Value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

**Illinois Department of Transportation**  
Division of Highways  
DOT - District 5

**SOIL BORING LOG** Page 1 of 1  
Date 12/3/04

ROUTE FAS 1671 (US 45) DESCRIPTION Route 45 over the U.P. & C.S.X. R.R. Tracks LOGGED BY CNA  
SECTION 22VBR-1 LOCATION NE, SEC. 33, TWP. 16N, RNG. 8E, 3rd. PM  
COUNTY Douglas DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 021-0013(Exist.)  
Station 1153+86.5  
BORING NO. 5 Pier 5 (Settlement)  
Station 1153+90  
Offset 25.0 ft Rt.  
Ground Surface Elev. 651.4 ft

DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE	DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE
0	Surface Water Elev. _____ ft			0	Surface Water Elev. _____ ft		
0	Stream Bed Elev. _____ ft			0	Stream Bed Elev. _____ ft		
0	Groundwater Elev.: _____ ft			0	Groundwater Elev.: _____ ft		
0	First Encounter _____ ft			0	First Encounter _____ ft		
0	Upon Completion _____ ft			0	Upon Completion _____ ft		
0	After _____ Hrs. _____ ft			0	After _____ Hrs. _____ ft		
0	Black Silty Clay with Roadpack			0	Black Silty Clay with Roadpack		
649.4				649.4			
0	Brown Mottled Silty Clay Loam (Trace of Sand)			0	Brown Mottled Silty Clay Loam (Trace of Sand)		
2				2			
4				4			23
3				3			
645.8				645.8			
0	Brown Sandy Clay Loam Till			0	Brown Sandy Clay Loam Till		
3				3			
5	2.6 S			5	2.6 S		15
5	5 S			5	5 S		
643.4				643.4			
0	Gray Clay Loam Till			0	Gray Clay Loam Till		
3				3			
4	3.3 S			4	3.3 S		14
5	5 S			5	5 S		
643.4				643.4			
0				0			
2				2			
6	3.9 S			6	3.9 S		14
9	9 S			9	9 S		
643.4				643.4			
0				0			
2				2			
4	2.1 B			4	2.1 B		14
6	6 B			6	6 B		
631.4				631.4			

An assumed centerline elevation of 100.00 and station of 10+00 is used when this information is not available.  
The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N Value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOGS  
F.A.S. RT. 1671 - SEC. 22VBR-1  
DOUGLAS COUNTY  
STATION 1151+65.86 (SOUTH)  
STATION 1154+99.02 (NORTH)  
STRUCTURE NO. 021-0061 (SOUTH)  
STRUCTURE NO. 021-0060 (NORTH)

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1671	‡	DOUGLAS	181	130
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 46  
46 SHEETS

Contract #70258  
‡ 22VBR-1 and 144SBR-2

**Illinois Department of Transportation**  
Division of Highways  
DOT - District 5

**SOIL BORING LOG** Page 1 of 1  
Date 2/6/04

ROUTE FAS 1671 (US 46) DESCRIPTION Route 46 over the U.P. & C.S.X. R.R. Tracks LOGGED BY CNA  
SECTION 22VBR-1 LOCATION NE, SEC. 33, TWP. 16N, RNG. 8E, 3rd. PM  
COUNTY Douglas DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 021-0013(Exist.)  
Station 1153+86.5  
BORING NO. 6 Flar 6  
Station 1153+71  
Offset 28.0 ft L  
Ground Surface Elev. 651.9 ft

DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE	DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE
0	Surface Water Elev. _____ ft			0	Stream Bed Elev. _____ ft		
	Groundwater Elev.: _____ ft				First Encounter _____ ft		
	Upon Completion _____ ft				After _____ Hrs. _____ ft		
0	Gray Clay Loam Till (continued)			0	Gray Clay Loam Till (continued)		
1	645.9			1	645.9		
2				2			
3	1.2 B			3	1.2 B		
4	4 B			4	4 B		
5				5			
6				6			
7				7			
8				8			
9				9			
10				10			
11				11			
12				12			
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92				92			
93				93			
94				94			
95				95			
96				96			
97				97			
98				98			
99				99			
100				100			

An assumed centerline elevation of 100.00 and station of 10+00 is used when this information is not available.  
The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N Value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

**Illinois Department of Transportation**  
Division of Highways  
DOT - District 5

**SOIL BORING LOG** Page 1 of 1  
Date 12/30/04

ROUTE FAS 1671 (US 46) DESCRIPTION Route 46 over the U.P. & C.S.X. R.R. Tracks LOGGED BY CNA  
SECTION 22VBR-1 LOCATION NE, SEC. 33, TWP. 16N, RNG. 8E, 3rd. PM  
COUNTY Douglas DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 021-0013(Exist.)  
Station 1153+86.5  
BORING NO. 7 Flar 7  
Station 1154+46  
Offset 26.0 ft R  
Ground Surface Elev. 650.9 ft

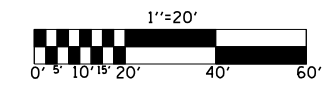
DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE	DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE
0	Surface Water Elev. _____ ft			0	Stream Bed Elev. _____ ft		
	Groundwater Elev.: _____ ft				First Encounter _____ ft		
	Upon Completion _____ ft				After _____ Hrs. _____ ft		
0	Black/Brown Mottled Silty Clay Loam			0	Black/Brown Mottled Silty Clay Loam		
1	650.9			1	650.9		
2				2			
3				3			
4				4			
5				5			
6				6			
7				7			
8				8			
9				9			
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92				92			
93				93			
94				94			
95				95			
96				96			
97				97			
98				98			
99				99			
100				100			

An assumed centerline elevation of 100.00 and station of 10+00 is used when this information is not available.  
The Unconfined Compressive Strength (UCS) Failure Mode is Ind

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	131

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

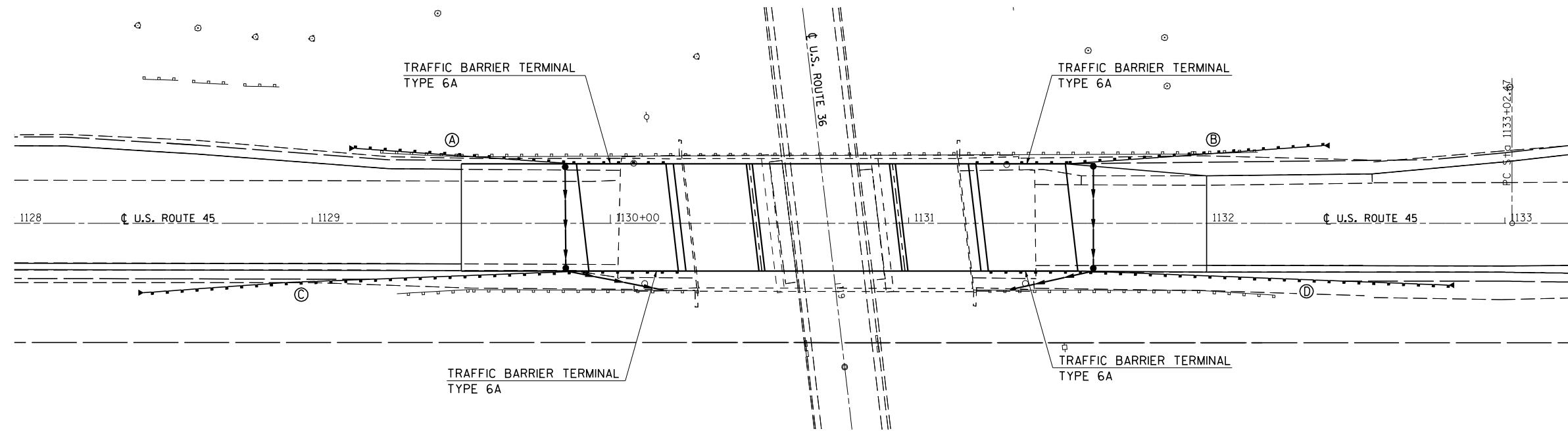
• 144SBR-2 & 22VBR-1



# GUARDRAIL DETAIL

## S.N. 021-0062

- SEGMENT (A) 25' SPBGTA @ 1:4 FLARE, 1 TRAFFIC BARRIER TERMINAL TYPE I, SPECIAL (FLARED) @ 1:4 FLARE
- SEGMENT (B) 37.5' SPBGTA @ 1:4 FLARE, 1 TRAFFIC BARRIER TERMINAL TYPE I, SPECIAL (FLARED) @ 1:4 FLARE
- SEGMENT (C) 100' SPBGTA @ 1:26 FLARE, 1 TRAFFIC BARRIER TERMINAL TYPE I, SPECIAL (FLARED) @ 1:4 FLARE
- SEGMENT (D) 75' SPBGTA @ 1:26 FLARE, 1 TRAFFIC BARRIER TERMINAL TYPE I, SPECIAL (FLARED) @ 1:26 FLARE



PLOT DATE = 7/10/2006  
 FILE NAME = c:\projects\0505202 (v8)\70258det\01s.dgn  
 PLOT SCALE = 1/2"=20' / IN.  
 USER NAME = pier sonbr

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GUARDRAIL DETAIL**  
**S.N. 021-0062**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 144SBR-2 & 22VBR-1  
 DOUGLAS COUNTY

SCALE: 1" = 20'  
 DATE: 06/07/06

DRAWN BY: B.B.P.  
 CHECKED BY: C.R.G.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	132
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
			• 144SBR-2 & 22VBR-1	

## DETAIL OF BOX CULVERT END SECTION LT. & RT. STATION 1155 + 80.00

### BILL OF MATERIAL (ONE HEADWALL)

Bar	No.	Size	Length	Shape
b	2	#4	8'-10"	—
b <sub>1</sub>	1	#4	11'-3"	—
b <sub>2</sub>	1	#4	13'-7"	—
b <sub>3</sub>	1	#4	16'-0"	—
b <sub>4</sub>	2	#4	18'-0"	—
d	12	#4	5'-4"	⌋
h	1	#4	23'-0"	⌋
h <sub>1</sub>	2	#4	7'-8"	—
h <sub>2</sub>	2	#4	7'-6"	—
s	2	#4	23'-8"	⌋
v	2	#4	6'-8"	⌋
v <sub>1</sub>	2	#4	6'-3"	⌋
v <sub>2</sub>	2	#4	5'-10"	⌋
v <sub>3</sub>	2	#4	5'-6"	⌋
v <sub>4</sub>	2	#4	5'-2"	⌋
v <sub>5</sub>	2	#4	4'-10"	⌋
v <sub>6</sub>	2	#4	4'-6"	⌋
v <sub>7</sub>	2	#4	4'-2"	⌋
w	6	#4	3'-10"	—
w <sub>1</sub>	2	#4	3'-8"	—
w <sub>2</sub>	2	#4	2'-10"	—
w <sub>3</sub>	2	#4	2'-0"	—
Reinforcement bars		Lb.	250.0	
Class SI Concrete		Cu. Yd.	4.8	

Item	Unit	Qty.
Box Culvert End Section	Each	2

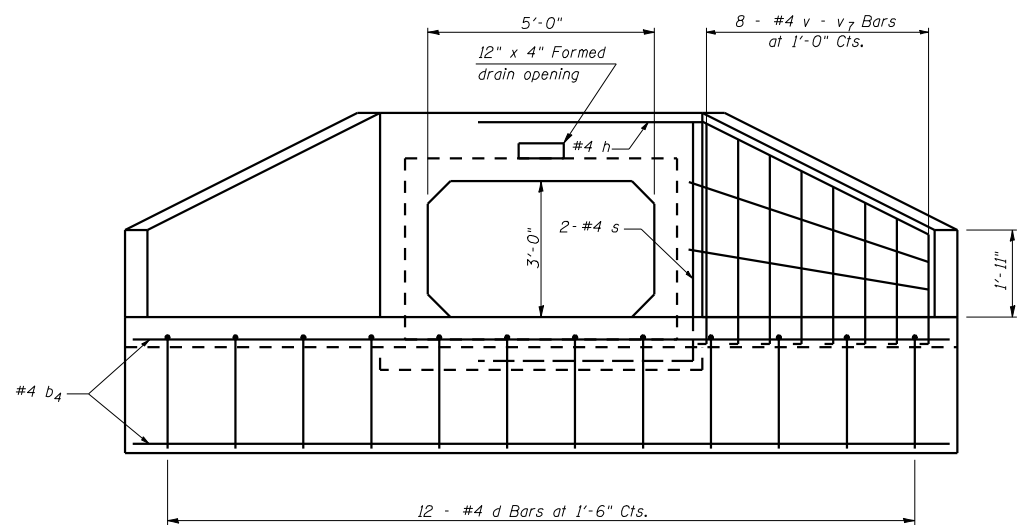
### NOTES

- All bars should be rounded and shall conform to the requirements of Art. 1006.10 of Standard Specs.
- Class SI Concrete shall be used throughout.
- The Precast Concrete Box Culvert Sections shall conform to the requirements of AASHTO M259.
- All dimensions are in FEET (')-INCHES (") unless otherwise noted.
- Concrete and Rebar quantities and lengths calculated for the cast-in-place End Sections will vary based on the precast box culverts supplied.
- End Sections will be paid for at the contract unit price each for BOX CULVERT END SECTION, as outlined in Art. 540.08, which prices shall include all concrete, rebar, and all other items necessary to complete the proposed work.
- Drain holes shall be provided in accordance with Art. 503.12.
- Drawings not to scale.

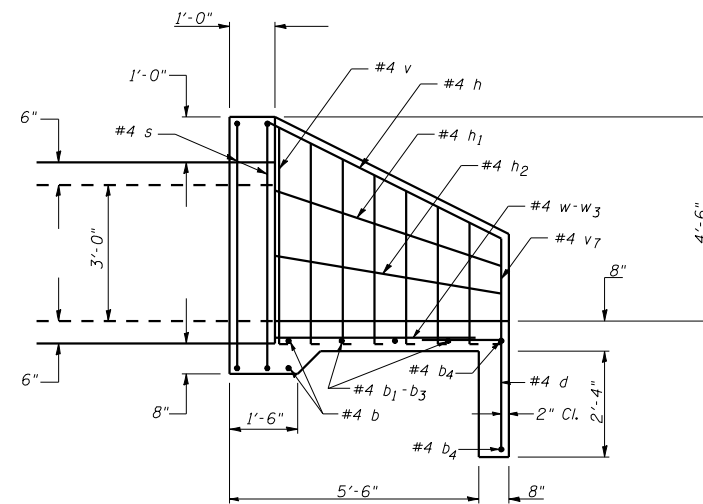
BOX CULVERT END SECTIONS (CAST IN PLACE)  
2 @ 5.0' X 3.0'  
STA. 1155+80.000 NO SKEW  
REINFORCED CONCRETE HEADWALL DETAILS

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BOX CULVERT END SECTION DETAIL**  
**LT. & RT. STATION 1155+80.00**  
F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
SECTION 144SBR-2 & 22VBR-1  
DOUGLAS COUNTY

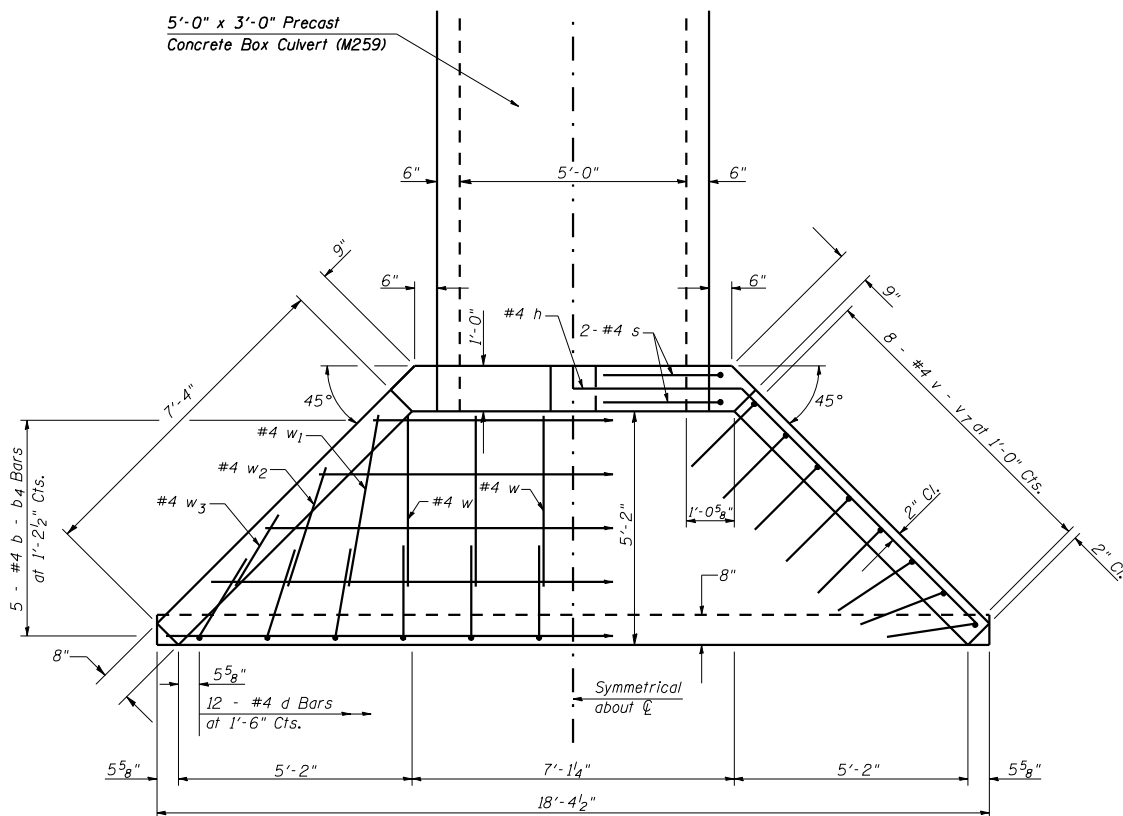
SCALE: NOT TO SCALE  
DATE: 07/06/06  
DRAWN BY: B.B.P.  
CHECKED BY: G.A.E.



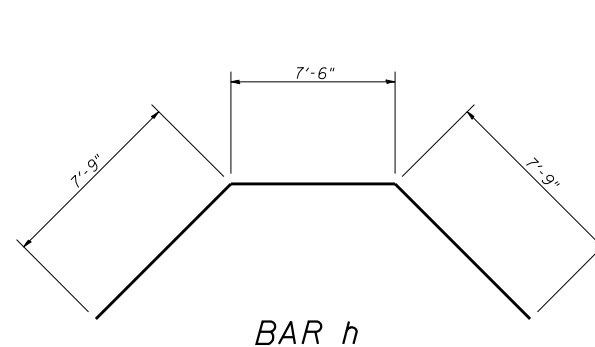
**END ELEVATION**



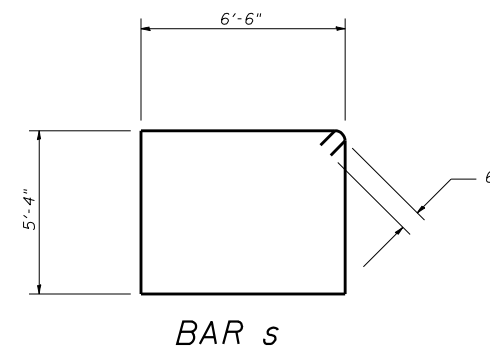
**HALF SIDE ELEVATION**



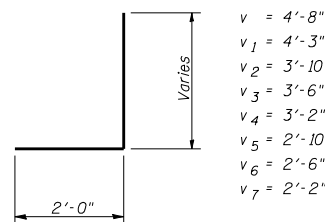
**PLAN**



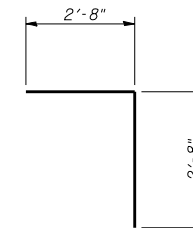
**BAR h**



**BAR s**



**v BARS**



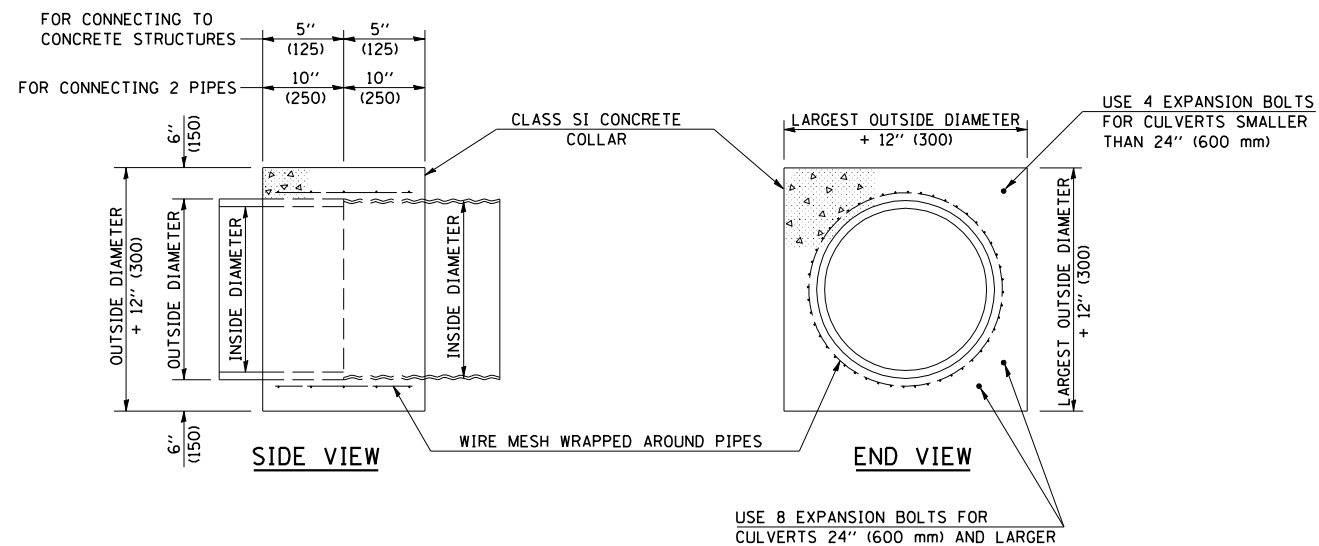
**BAR d**



F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	133
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• 144SBR-2 & 22VBR-1

### DETAIL OF CONCRETE COLLARS



INSIDE DIAMETER OF PIPE	ESTIMATED CLASS SI CONCRETE REQUIRED
INCH (mm)	20" (500 mm) WIDTH CU. YD. (m <sup>3</sup> )
4" (100)	0.14 (0.11)
6" (150)	0.16 (0.12)
8" (200)	0.19 (0.14)
10" (250)	0.22 (0.17)
12" (300)	0.25 (0.19)
15" (375)	0.30 (0.23)
18" (450)	0.35 (0.27)
24" (600)	0.45 (0.35)
30" (750)	0.57 (0.43)
36" (900)	0.69 (0.53)
42" (1050)	0.83 (0.63)
48" (1200)	0.97 (0.74)
54" (1350)	1.12 (0.86)
60" (1500)	1.28 (0.98)

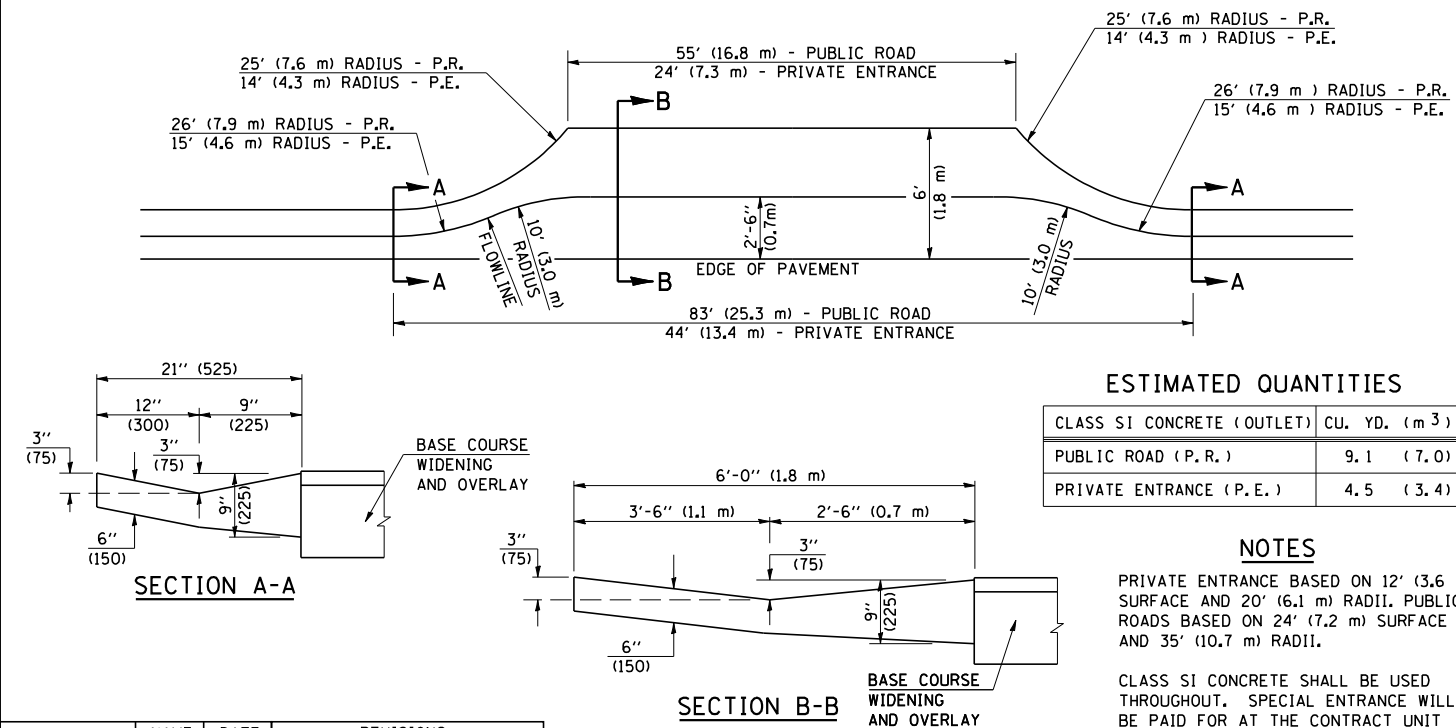
INSIDE DIAMETER OF PIPE	ESTIMATED CLASS SI CONCRETE REQUIRED
INCH (mm)	20" (500 mm) WIDTH CU. YD. (m <sup>3</sup> )
4" (100)	0.12 (0.09)
6" (150)	0.14 (0.11)
8" (200)	0.16 (0.12)
10" (250)	0.19 (0.14)
12" (300)	0.21 (0.16)
15" (375)	0.25 (0.19)
18" (450)	0.29 (0.22)
24" (600)	0.38 (0.29)
30" (750)	0.47 (0.36)
36" (900)	0.59 (0.45)
42" (1050)	0.69 (0.53)
48" (1200)	0.81 (0.62)
54" (1350)	0.93 (0.71)
60" (1500)	1.05 (0.81)

### GENERAL NOTES

- CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
- WHEN CONCRETE COLLARS ARE USED TO CONNECT PIPES OF DIFFERENT OUTSIDE DIAMETERS, THE CONCRETE COLLAR SHALL BE FORMED USING THE LARGEST OUTSIDE DIAMETER (SEE END VIEW).
- THE WIRE MESH SHALL WEIGH NOT LESS THAN 54#/100 SQ. FT. (2.63 kg/m<sup>2</sup>).
- WHEN CONCRETE COLLARS ARE CONSTRUCTED ADJACENT TO AN EXISTING CONCRETE STRUCTURE (HEADWALLS, ETC.) EXPANSION BOLTS, SHALL BE USED AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, EACH, FOR EXPANSION BOLTS OF THE SIZE SPECIFIED IN THE PLANS.
- CONCRETE COLLARS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, PER CUBIC YARD (CUBIC METER), FOR CONCRETE COLLARS INCLUDING ALL MATERIAL AND LABOR SPECIFIED TO COMPLETE THE WORK IN PLACE.

### DETAIL OF SPECIAL ENTRANCE FOR TYPE B GUTTER (MODIFIED)

(NEXT TO RESURFACING)



### ESTIMATED QUANTITIES

CLASS SI CONCRETE (OUTLET)	CU. YD. (m <sup>3</sup> )
PUBLIC ROAD (P.R.)	9.1 (7.0)
PRIVATE ENTRANCE (P.E.)	4.5 (3.4)

### NOTES

PRIVATE ENTRANCE BASED ON 12' (3.6 m) SURFACE AND 20' (6.1 m) RADII. PUBLIC ROADS BASED ON 24' (7.2 m) SURFACE AND 35' (10.7 m) RADII.

CLASS SI CONCRETE SHALL BE USED THROUGHOUT. SPECIAL ENTRANCE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD (CUBIC METER) FOR CLASS SI CONCRETE (OUTLET).

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

	NAME		DATE	
	DESIGNED	CHECKED	DATE	REVISIONS
	D.L.P.	B.K.T.	3-17-95	5-25-95
				K.A.G.
				06/03
				A-1.12

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

	NAME	DATE	REVISIONS
DESIGNED	J.M.H.	4-80	
CHECKED	P.E.K.	4-80	
CADD NO.	J-5,45		

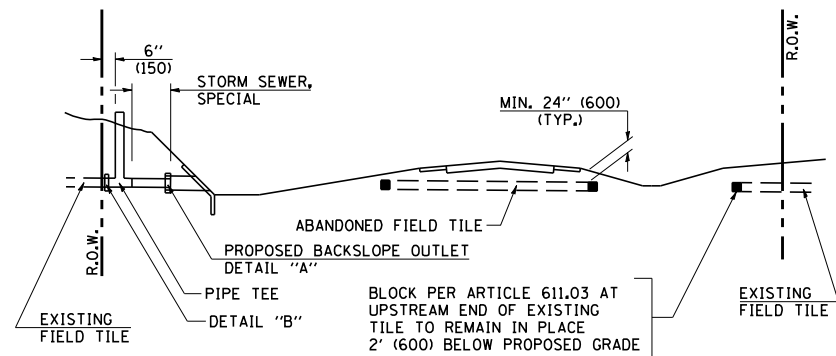
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**SPECIAL ENTRANCE & CONCRETE COLLARS DETAILS**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 144SBR-2 & 22VBR-1  
 DOUGLAS COUNTY

SCALE: 1" = 20'  
 DATE: 06/07/06

DRAWN BY: B.B.P.  
 CHECKED BY: C.R.G.

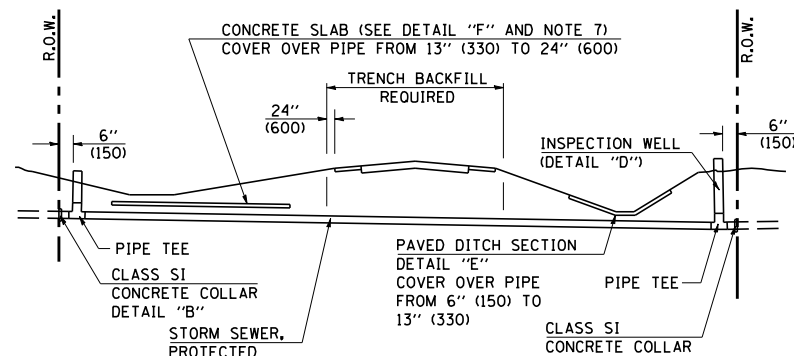
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	134
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

### DETAIL FOR TREATMENT OF EXISTING FIELD TILE SYSTEMS



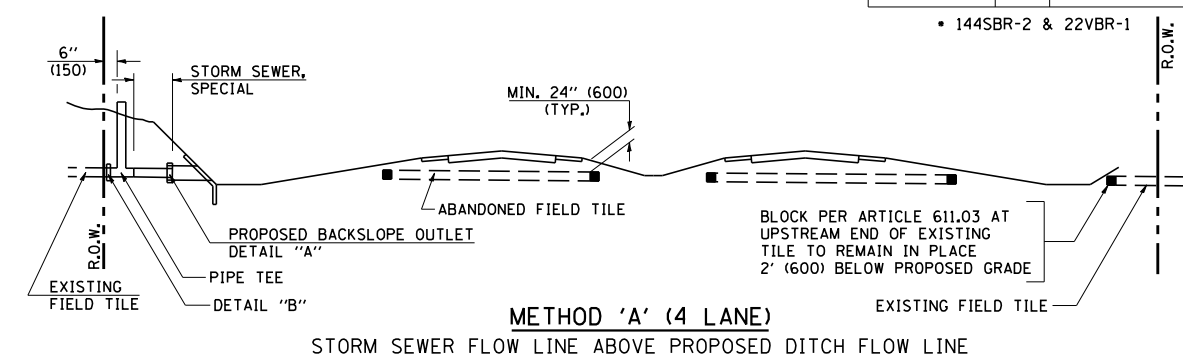
METHOD 'A' (2 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE



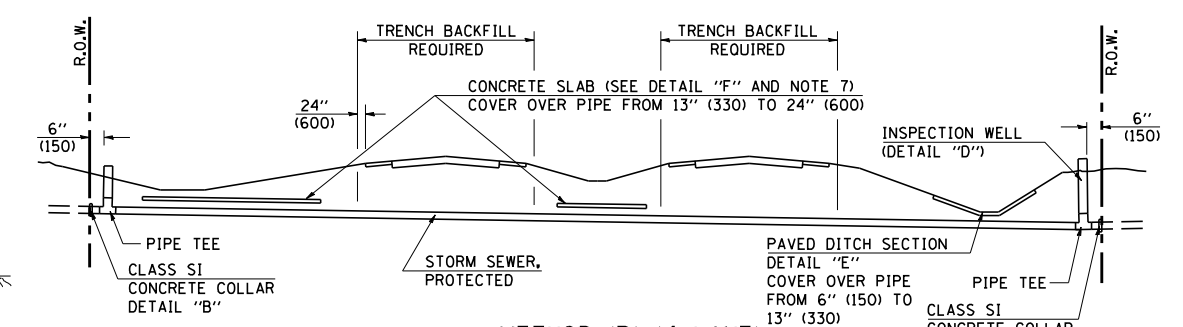
METHOD 'B' (2 LANE)

STORM SEWER LESS THAN 2' (600 mm) BELOW DITCH FLOW LINE AND STORM SEWERS CROSSING UNDER PAVEMENT AND PAVED DITCH



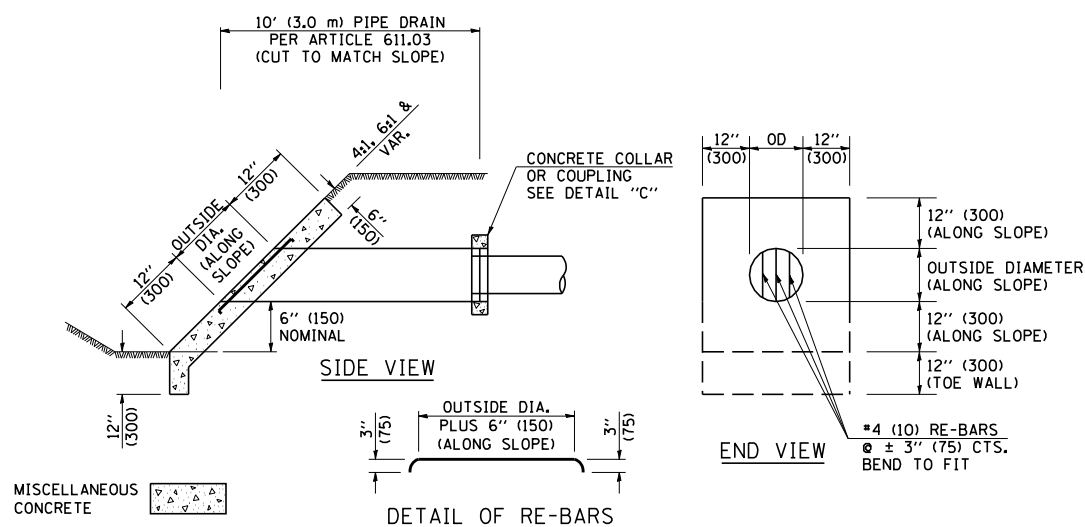
METHOD 'A' (4 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE



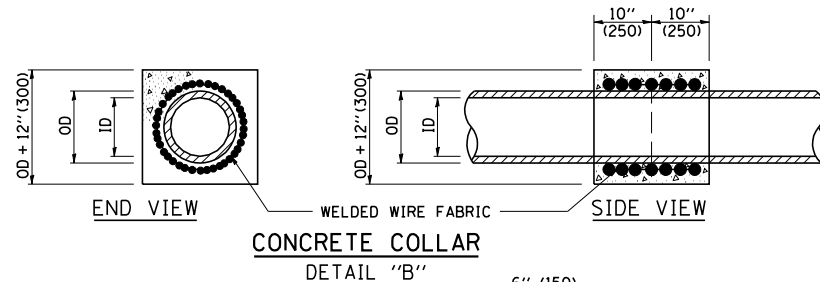
METHOD 'B' (4 LANE)

STORM SEWER LESS THAN 2' (600 mm) BELOW DITCH FLOW LINE AND STORM SEWERS CROSSING UNDER PAVEMENTS AND PAVED DITCHES



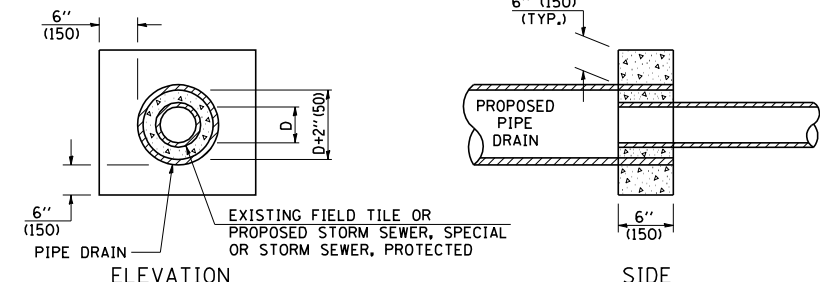
HEADWALL FOR BACKSLOPE OUTLET

DETAIL "A"



CONCRETE COLLAR

DETAIL "B"

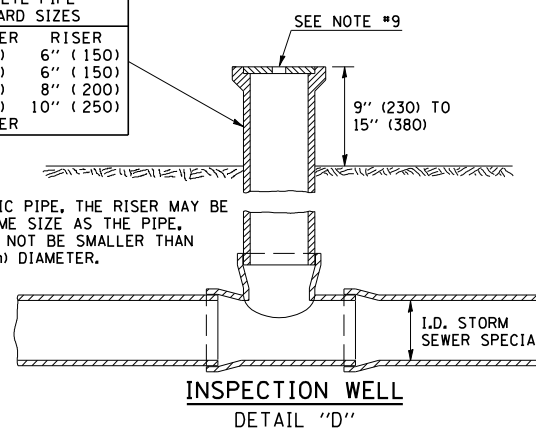


CLASS SI COLLAR

DETAIL "C"

STORM SEWER	RISE
6" (150)	6" (150)
8" (200)	6" (150)
10" (250)	8" (200)
12" (300)	10" (250)
OR GREATER	

FOR PLASTIC PIPE, THE RISER MAY BE OF THE SAME SIZE AS THE PIPE, BUT SHALL NOT BE SMALLER THAN 4" (100 mm) DIAMETER.

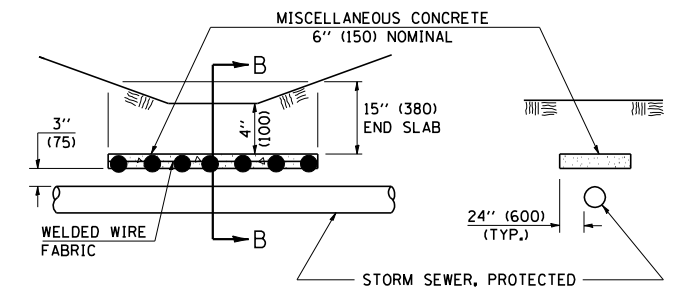


INSPECTION WELL

DETAIL "D"

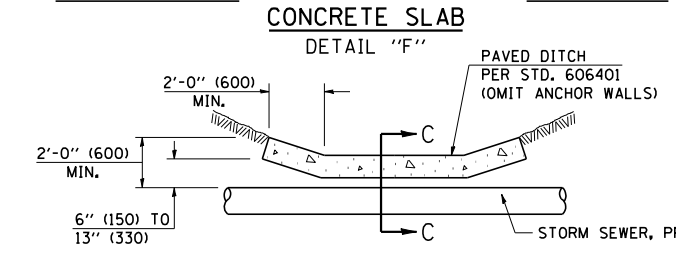
#### GENERAL NOTES

- EXISTING FIELD TILE ENCOUNTERED BY EXPLORATION TRENCH SHALL BE INSPECTED BY THE ENGINEER FOR UNOBSTRUCTED FLOW WITHIN THE LIMITS OF THE RIGHT-OF-WAY.
- ONLY FIELD TILE THAT DOES NOT HAVE SATISFACTORY FLOW AND OR HAS VISIBLE SIGNS OF DETERIORATION (SINK HOLES, ETC.) SHALL BE REPLACED WITHIN THE LIMITS OF THE RIGHT-OF-WAY IN ACCORDANCE WITH METHOD "B".
- INSPECTION WELLS SHALL BE CONSTRUCTED APPROXIMATELY 6" (150 mm) INSIDE OF BOTH RIGHT-OF-WAY LINES AT ALL FIELD TILE LOCATIONS.
- EXISTING FIELD TILE ABANDONED UNDER EXISTING PAVEMENTS OR PAVED SHOULDERS SHALL BE FILLED WITH FLOWABLE GROUT AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR ACCORDING TO ARTICLE 109.04.
- NON-CIRCULAR FIELD TILE SHALL BE REPLACED WITH STORM SEWER, SPECIAL OF AT LEAST THE SAME CROSS SECTIONAL AREA. ALL EXISTING FIELD TILE SHALL BE REPLACED WITH STORM SEWER OF THE TYPE REQUIRED FOR THE MINIMUM DEPTH OF COVER.
- THE 6" (150 mm) CONCRETE SLAB OR DITCH LINING SHALL BE POURED THE LENGTH OF THE TRENCH AT ALL DITCH FLOW LINE LOCATIONS WITHIN THE RIGHT-OF-WAY WITH LESS THAN 2' (600 mm) OF EARTH COVER. MISCELLANEOUS CONCRETE SHALL BE USED ACCORDING TO SECTION 611.
- ALL MISCELLANEOUS SLABS, APRONS AND DITCH LININGS SHALL BE REINFORCED WITH WELDED WIRE FABRIC AS SHOWN FOR PAVED DITCH IN STANDARD 606401.
- HEADWALL FOR BACKSLOPE OUTLET MAY BE USED FOR PIPE DRAIN DIAMETERS UP TO 10" (250 mm). SPECIAL DESIGNS WILL BE REQUIRED FOR LARGER SIZES.
- THE INSPECTION WELL LID FOR P.C.C. PIPE SHALL BE CONSTRUCTED OF 3/8" (10 mm) CAST IRON AND PROVIDED WITH A 1" (25 mm) DIAMETER HOLE IN CENTER. THE LID FOR THE OTHER PIPE MATERIALS SHALL BE A GRATE ASSEMBLY PREFABRICATED FOR AND COMPATIBLE WITH THE PIPE SYSTEM.



SLAB ELEVATION

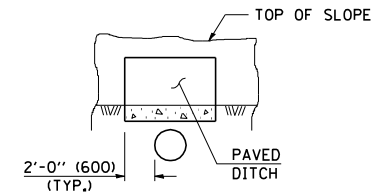
SECTION B-B



CONCRETE SLAB

DETAIL "F"

PAVED DITCH ELEVATION



SECTION C-C

PAVED DITCH

DETAIL "E"

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**DETAIL FOR TREATMENT OF EXISTING FIELD TILE SYSTEMS**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 144SBR-2 & 22VBR-1  
 DOUGLAS COUNTY

SCALE: NOT TO SCALE  
 DATE: 06/16/06  
 DRAWN BY: B.B.P.  
 CHECKED BY: C.R.G.

PLOT DATE = 7/10/2006  
 FILE NAME = c:\p\proj\144sbr-2\0505202 (v8)\170258det\011s.dgn  
 USER NAME = pfrsonbr

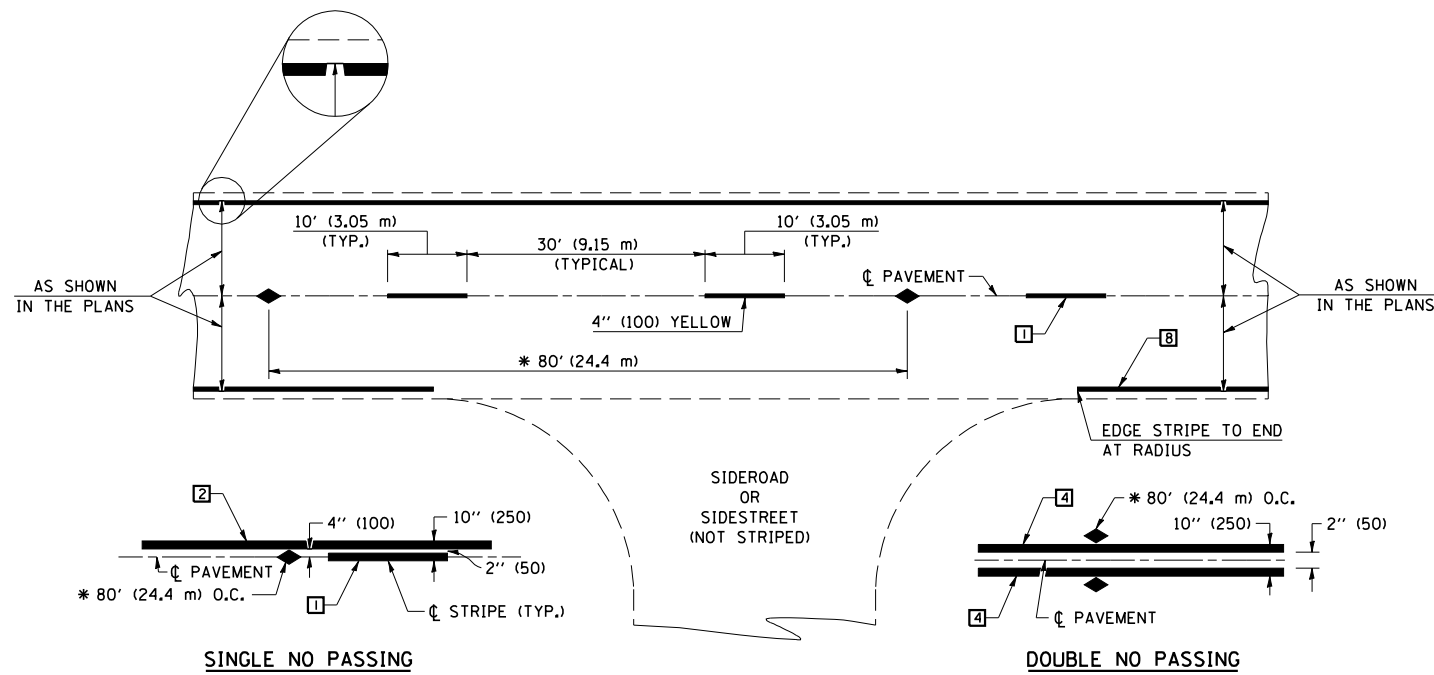
DESIGNED	NAME	DATE	REVISIONS	DATE
D.L.P.		12/98		
CHECKED	S.A.C.	12/98		07/02
CADD NO.	A-18.02		K.A.G.	06/03

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	.	DOUGLAS	181	135
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• 144SBR-2 & 22VBR-1

# TYPICAL APPLICATIONS OF PAVEMENT MARKINGS AND MARKERS



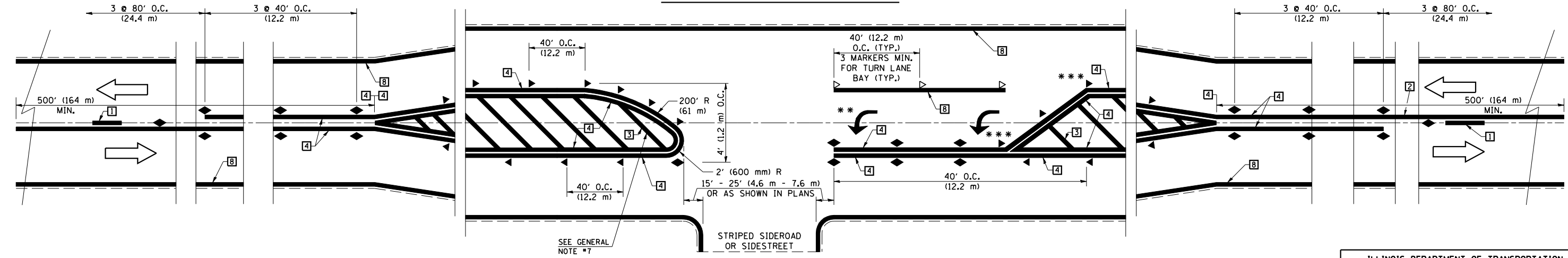
## TYPICAL PAVEMENT MARKING LEGEND

- 1 4" (100) SKIP-DASH (YELLOW)
- 2 4" (100) SOLID (YELLOW)
- 3 12" (300) DIAGONAL (YELLOW)
- 4 4" (100) DOUBLE YELLOW (NARROW)
- 5 RESERVED
- 6 RESERVED
- 7 4" (100) SKIP-DASH (WHITE)
- 8 4" (100) SOLID (WHITE)
- 9 12" (300) DIAGONAL (WHITE)
- 10 6" (150) CROSS WALK (WHITE)
- 11 24" (600) STOP BAR (WHITE)
- 12 8" (200) SOLID (WHITE)
- 13 4" (100) LANE LINE EXTENSIONS (WHITE)
- 14 4" (100) PARKING WHITE

## TYPICAL PAVEMENT MARKERS LEGEND

- ◆ TWO-WAY AMBER MARKER
- ▶ ONE-WAY AMBER MARKER
- ▷ ONE-WAY CRYSTAL MARKER

## DETAIL OF RURAL LEFT TURN LANE



\*\*\* REDUCE SPACING IF NECESSARY TO ASSURE MARKERS AT CORNER POINTS.  
 \*\* TURN ARROWS SHALL BE PLACED AS SHOWN ON SHEET #2.

### SHEET 1 OF 4

DESIGNED	NAME	DATE	REVISIONS	DATE
J.M.H.	J.M.H.	5/85	NAME	07/02
FMS	FMS	6/88	GEOMETRICS/K.A.G.	09/05
CADD NO.	F-5,25		K.A.G.	

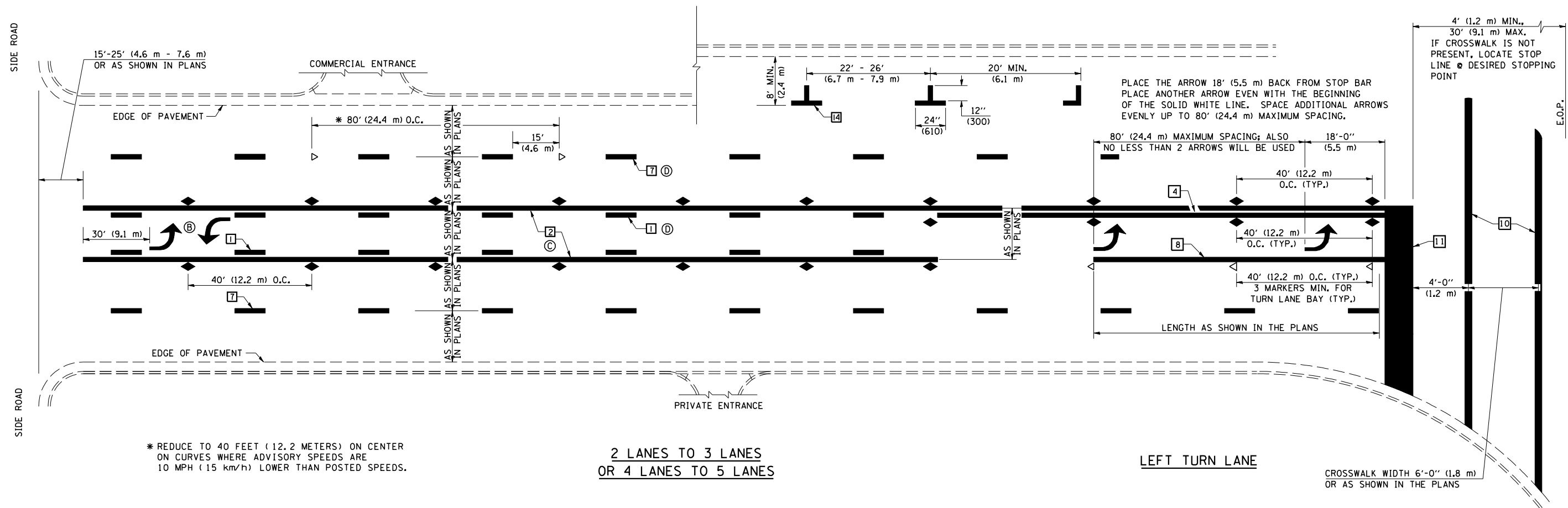
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS AND MARKINGS DETAIL**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 144SBR-2 & 22VBR-1  
 DOUGLAS COUNTY  
 Sheet 1 of 4  
 SCALE: NOT TO SCALE  
 DATE: 06/16/06  
 DRAWN BY: B.B.P.  
 CHECKED BY: C.R.G.

PLOT DATE = 7/10/2006  
 FILE NAME = c:\projects\144SBR-2\144SBR-2.dgn  
 USER NAME = pier.sombir

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	136
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• 144SBR-2 & 22VBR-1				

## TYPICAL APPLICATIONS OF PAVEMENT MARKINGS AND MARKERS



\* REDUCE TO 40 FEET (12.2 METERS) ON CENTER ON CURVES WHERE ADVISORY SPEEDS ARE 10 MPH (15 km/h) LOWER THAN POSTED SPEEDS.

2 LANES TO 3 LANES  
OR 4 LANES TO 5 LANES

LEFT TURN LANE

CROSSWALK WIDTH 6'-0" (1.8 m)  
OR AS SHOWN IN THE PLANS

PLOT DATE = 7/10/2006  
 FILE NAME = c:\projects\144SBR-2 & 22VBR-1\1671\10258det\10258det.dgn  
 USER NAME = pier.sombir

**SHEET 2 OF 4**

	NAME	DATE	REVISIONS	
DESIGNED	J.M.H.	5/85	NAME	DATE
CHECKED	FMS	6/88	GEOMETRICS/K.A.G.	07/02
CADD NO.	F-5.25	6/88	K.A.G.	09/05

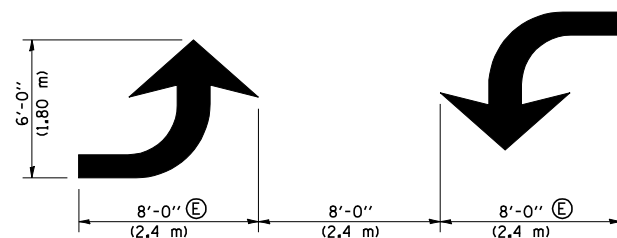
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS AND MARKINGS DETAIL**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 144SBR-2 & 22VBR-1  
 DOUGLAS COUNTY  
 Sheet 2 of 4  
 SCALE: NOT TO SCALE  
 DATE: 06/16/06  
 DRAWN BY: B.B.P.  
 CHECKED BY: C.R.G.

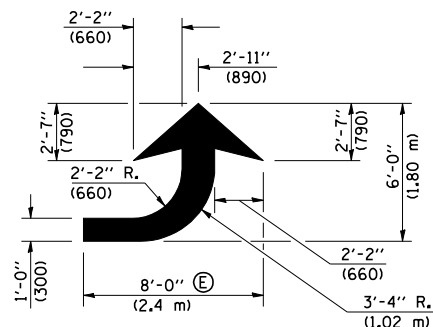
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	137
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• 144SBR-2 & 22VBR-1

### TYPICAL APPLICATIONS OF PAVEMENT MARKINGS AND MARKERS

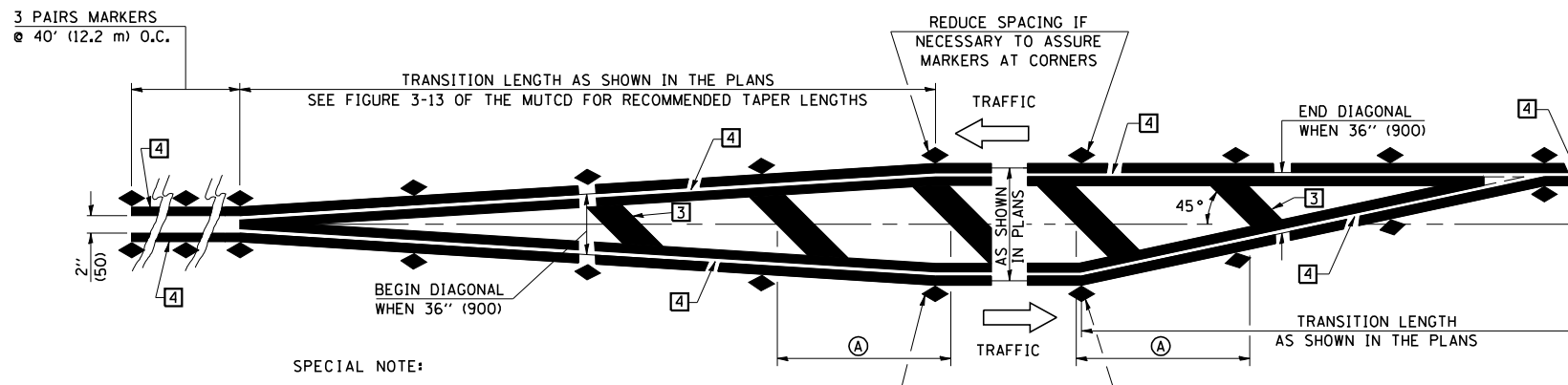


TYPICAL DOUBLE TURN ARROWS (WHITE)



LEFT ARROW

REVERSE FOR RIGHT ARROW  
AREA = 15.6 SQ. FT. (1.47 m<sup>2</sup>)  
(WHITE)



SPECIAL NOTE:

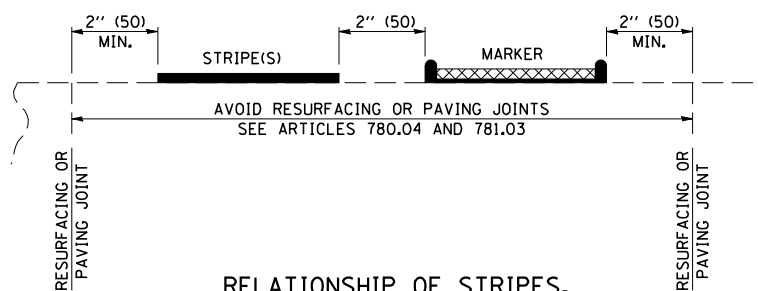
THE ACTUAL MEDIAN CONFIGURATION WILL BE AS SHOWN IN THE PLANS (TAPER OR REVERSE CURVE).  
RUMBLE & MOUNTABLE MEDIANS SHALL BE OUTLINED WITH [2].

REDUCE SPACING IF NECESSARY TO ASSURE MARKERS AT CORNERS

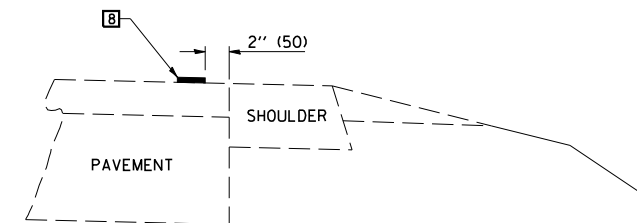
REDUCE SPACING IF NECESSARY TO ASSURE MARKERS AT CORNERS

NOTE (A)  
SEE GENERAL NOTE # 7

TYPICAL MEDIAN TRANSITIONS



RELATIONSHIP OF STRIPES, MARKERS AND JOINTS



RELATIONSHIP OF EDGE STRIPE TO SAFETY SHOULDER OR PAVED SURFACE

SPECIAL NOTES:

- (B) TURN ARROW PAIRS SHALL BE PLACED AT 250' (75 m) INTERVALS AND SHALL BE EVENLY SPACED BETWEEN BOTH ENDS OF THE BIDIRECTIONAL LEFT TURN LANE.
- (C) THE SOLID YELLOW PAVEMENT MARKINGS [2] SHOULD GENERALLY START OR END NEAR THE RADIUS POINT OF EACH STREET RETURN EXCEPT WHERE ONE OR BOTH ENDS WOULD INCLUDE STOP BARS.
- (D) THE SKIP-DASH PAVEMENT MARKINGS [1] OR [7] SHOULD BE CENTERED BETWEEN BOTH ENDS OF EACH CITY BLOCK AND SHALL BE PLACED SO THEY LINE UP ACROSS FROM EACH OTHER. SEE EXAMPLE ON SHEET 2 OF 3.
- (E) TURN ARROW SIZE DEPENDS ON THE LOCATION.  
RURAL LOCATION - LARGE ARROW SIZE  
URBAN LOCATION - SMALL ARROW SIZE

GENERAL NOTES

1. WHEN MEDIANS ARE PRESENT, PAVEMENT MARKINGS ARE TO BE PLACED ADJACENT TO MEDIANS.
2. SCALE: NONE
3. SOME OF THE INFORMATION INCLUDED WITH THIS DETAIL MAY NOT BE APPLICABLE TO THIS IMPROVEMENT.
4. PAVEMENT MARKINGS ARE TO BE EXTENDED THROUGH OMISSIONS WHEN APPLICABLE.
5. A STRIPING KEY IS AVAILABLE ELSEWHERE AND SHALL BE SHOWN WHERE THE QUANTITIES ARE LISTED.
6. FINAL PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO PLACING ANY RAISED REFLECTIVE PAVEMENT MARKERS.
7. THE FOLLOWING CRITERIA SHALL BE USED FOR SELECTING THE DIAGONAL PAVEMENT MARKING SPACING,  
< 30 MPH USE 15' (< 50 km/h USE 4.5 m)  
30-45 MPH USE 20' (50-75 km/h USE 6.0 m)  
> 45 MPH USE 30' (> 75 km/h USE 9.0 m)

PLOT DATE = 7/10/2006  
 FILE NAME = c:\p\projects\144SBR-2 & 22VBR-1\144SBR-2 & 22VBR-1.dgn  
 USER NAME = pfersonbr

SHEET 3 OF 4

	NAME	DATE	REVISIONS	
DESIGNED	J.M.H.	5/85	NAME	DATE
CHECKED	FMS	6/88	GEOMETRICS/K.A.G.	07/02
CADD NO.	F-5.25	6/88	K.A.G.	09/05

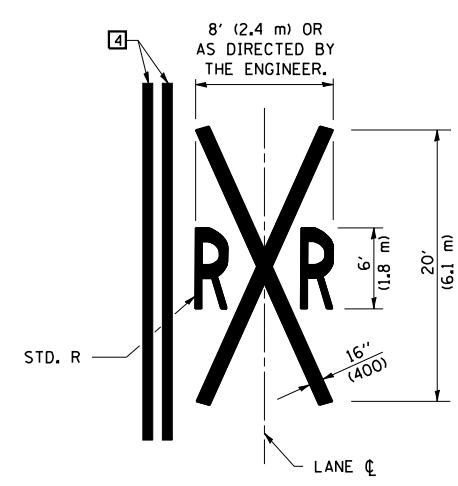
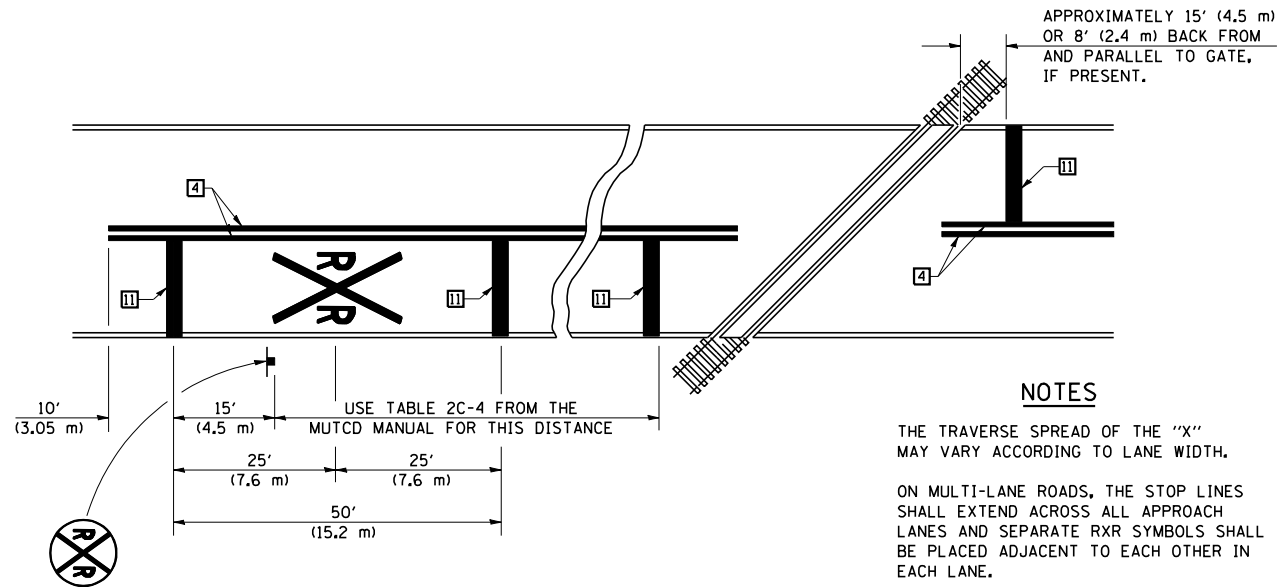
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)  
UNLESS OTHERWISE SHOWN.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
AND MARKINGS DETAIL**  
F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
SECTION 144SBR-2 & 22VBR-1  
DOUGLAS COUNTY  
Sheet 3 of 4

SCALE: NOT TO SCALE  
DATE: 06/16/06  
DRAWN BY: B.B.P.  
CHECKED BY: C.R.G.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	138
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• 144SBR-2 & 22VBR-1				

### TYPICAL APPLICATIONS OF PAVEMENT MARKINGS AND MARKERS



**NOTES**

THE TRAVERSE SPREAD OF THE "X" MAY VARY ACCORDING TO LANE WIDTH.

ON MULTI-LANE ROADS, THE STOP LINES SHALL EXTEND ACROSS ALL APPROACH LANES AND SEPARATE RXR SYMBOLS SHALL BE PLACED ADJACENT TO EACH OTHER IN EACH LANE.

WHEN THE PAVEMENT MARKING SYMBOL IS USED, A PORTION OF THE SYMBOL SHOULD BE LOCATED DIRECTLY ADJACENT TO THE ADVANCE WARNING SIGN (W10-1) AS PLACED BY TABLE II-1, CONDITION B OF THE MUTCD.

**PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSING**

PLOT DATE = 7/10/2006  
 FILE NAME = c:\projects\0505202 (v8)\70258det\01s.dgn  
 USER NAME = pier.sombir

**SHEET 4 OF 4**

	NAME	DATE	REVISIONS
DESIGNED	J.M.H.	5/85	NAME
CHECKED	FMS	6/88	DATE
CADD NO.	F-5.25	6/88	GEOMETRICS/K.A.G.
			K.A.G.

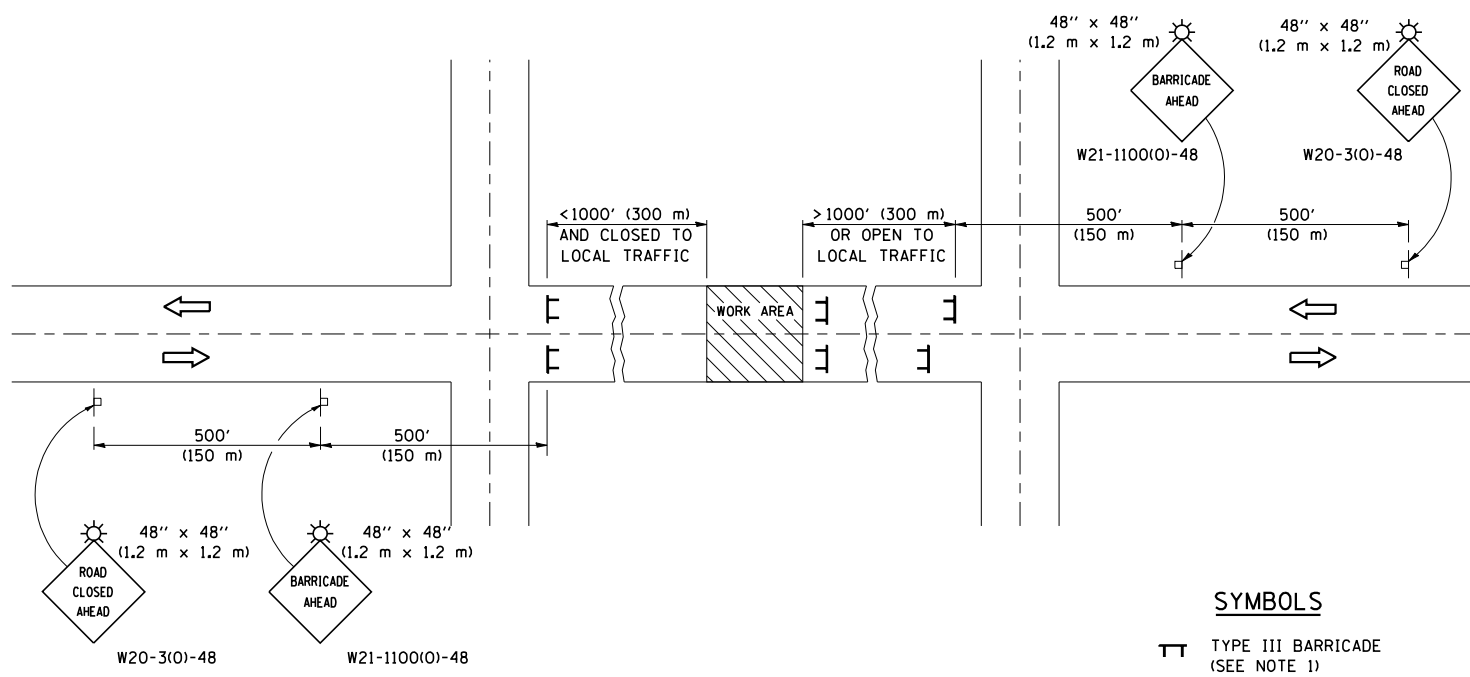
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS AND MARKINGS DETAIL**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 144SBR-2 & 22VBR-1  
 DOUGLAS COUNTY  
*Sheet 4 of 4*  
 SCALE: NOT TO SCALE  
 DATE: 06/16/06  
 DRAWN BY: B.B.P.  
 CHECKED BY: C.R.G.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	139
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• 144SBR-2 & 22VBR-1

## TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR ROAD CLOSURE



### SYMBOLS

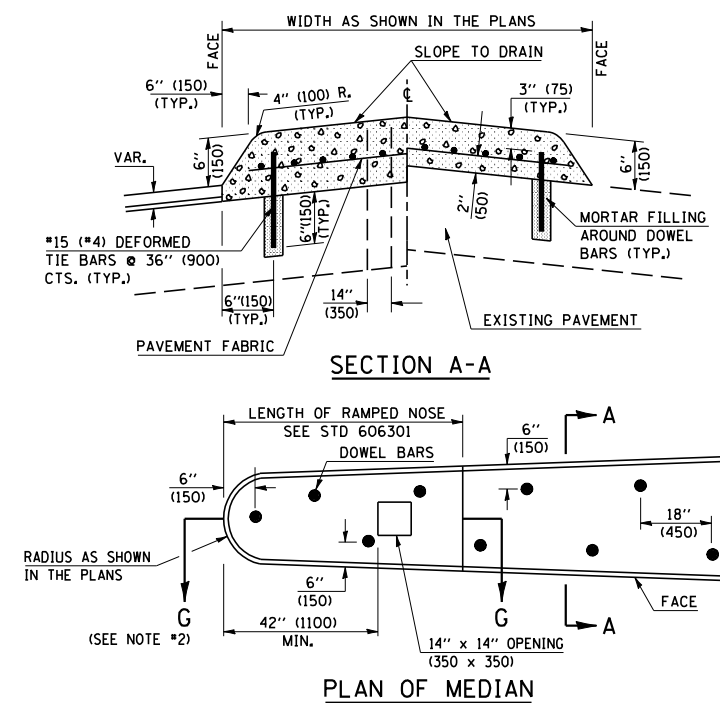
- ▬ TYPE III BARRICADE (SEE NOTE 1)
- ⚡ FLASHING AMBER LIGHT (TYPE A)

### GENERAL NOTES

- TYPE III BARRICADES SHALL BE AS SHOWN ON STANDARD 702001 "TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD". EACH TYPE III BARRICADE SHALL HAVE TWO FLASHING AMBER LIGHTS MOUNTED ABOVE IT.
- IF THE ROAD IS OPEN TO LOCAL TRAFFIC OR EXCEEDS 1000' (300 m), ANOTHER SET OF TYPE III BARRICADES, EQUIPPED AS IN NOTE 1 ABOVE, SHALL BE PLACED AT EACH END OF THE WORK AREA.
- WHEN A STOP CONDITION EXISTS, NO SIGNS ARE REQUIRED IN ADVANCE OF THE "STOP" SIGN WHEN THE ROAD IS CLOSED WITHIN 100' (30 m) OF THE INTERSECTION.
- STANDARD 702001 SHALL APPLY FOR THE PLACEMENT & DESIGN OF TYPE III BARRICADES.
- IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 IS NOT AVAILABLE, THE SIGNS MAY BE MOUNTED ON AN NCHRP 350 TEMPORARY SIGN SUPPORT DIRECTLY IN FRONT OF THE BARRICADE.
- REFLECTORIZED STRIPING SHALL APPEAR ON BOTH SIDES OF THE TYPE III BARRICADES IF ROAD IS OPEN TO LOCAL TRAFFIC.
- ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
- A MINIMUM OF TWO FLASHING LIGHTS SHALL BE USED AT NIGHT ON EACH APPROACH IN ADVANCE OF THE WORK AREA. FLASHING LIGHTS SHALL BE INSTALLED ABOVE THE FIRST TWO SIGNS IN THE SERIES.
- LONGITUDINAL DIMENSIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS.
- FORMS BT, 725 AND BT, 726 ARE REQUIRED.
- WHEN A SIDEROAD INTERSECTS THE HIGHWAY ON WHICH WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC DEVICES SHALL BE ERECTED AND PROVIDED AS DIRECTED BY THE ENGINEER.
- AN ADDITIONAL SIGN MAY BE REQUIRED AT A MAJOR INTERSECTING ROAD IN ADVANCE OF THE CLOSURE. THE ADDITIONAL SIGN SHALL GIVE THE DISTANCE TO THE BARRICADE IN MILES OR FRACTIONS OF A MILE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

## DETAIL OF CONCRETE MEDIAN, TYPE SM-6 (SM-15) (DOWELED)

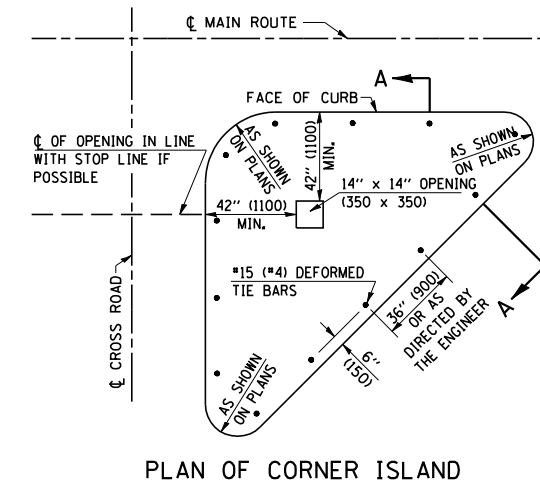


		REVISIONS	
DESIGNED	NAME	DATE	DATE
DESIGNED	J.M.H.	1-89	
CHECKED	F.M.S.	1-89	06/02
CADD NO.	A-5.07	K.A.G.	06/03

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

### GENERAL NOTES

- THE GENERAL NOTES FOR STANDARD 606301 SHALL APPLY.
- SECTION G-G SHALL BE THE SAME AS SHOWN ON STANDARD 606301.
- DOWEL BARS @ 36" (900) CTS. OR AS DIRECTED BY THE ENGINEER.
- THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SO FOOT (M<sup>2</sup>) FOR CONCRETE MEDIAN, TYPE SM-6 (SM-15) (DOWELED), INCLUDING THE COST OF FURNISHING AND INSTALLING THE DOWEL BARS, MORTAR FILLING, PAVEMENT FABRIC AND THE REMOVAL AND DISPOSAL OF THE EXISTING PAVEMENT FOR THE 14" x 14" (350 x 350) OPENING, IF REQUIRED, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



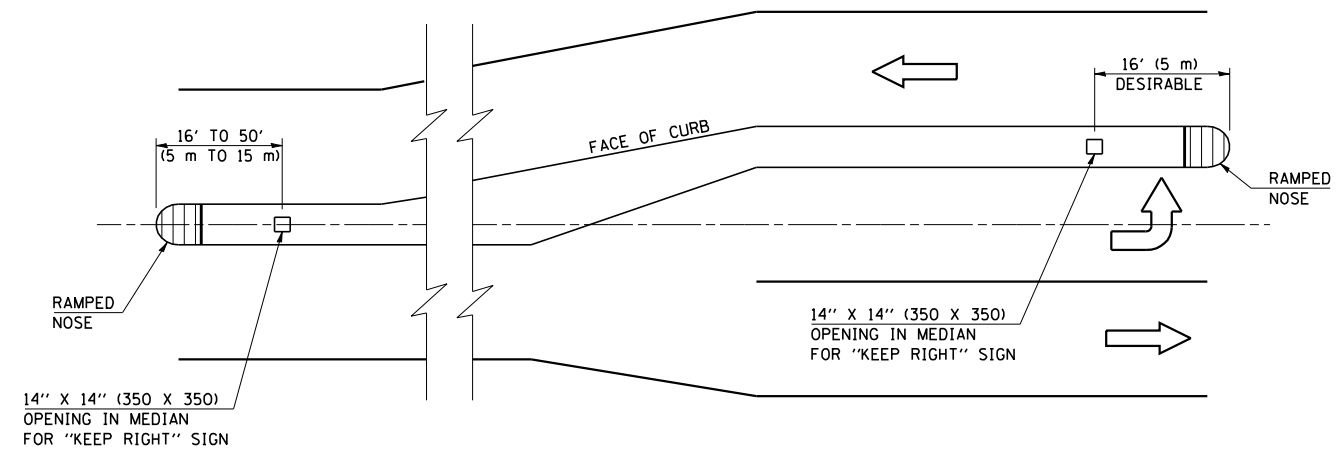
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		REVISIONS	
DESIGNED	NAME	DATE	DATE
DESIGNED	J.H.M.	8-11-87	
CHECKED	P.E.K.	8-25-87	12/97
CADD NO.	F-5.03	C.P./K.A.G.	01/05

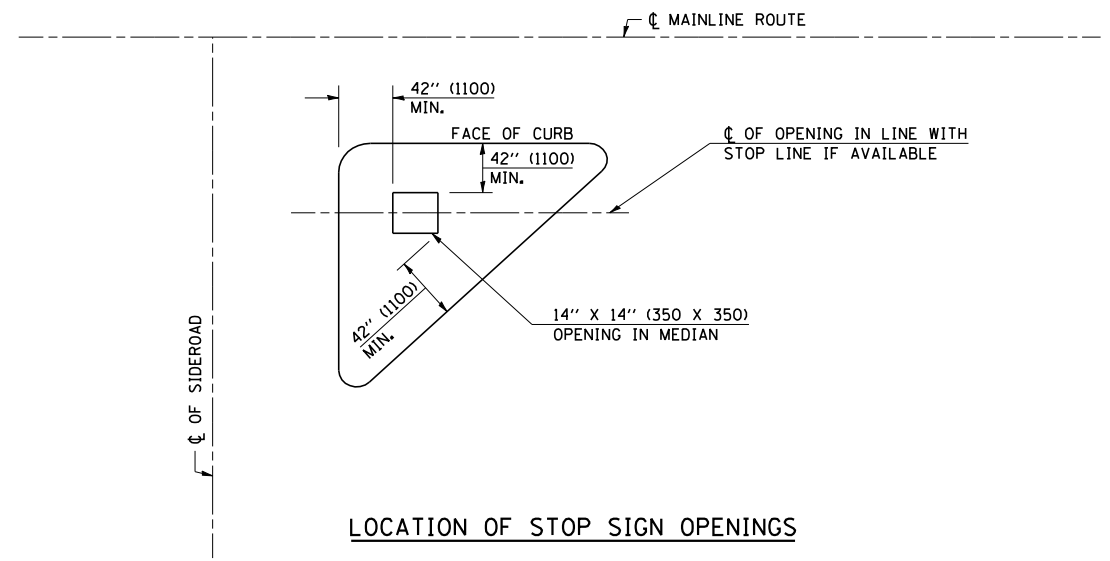
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL DEVICES & SM-6 DOWELLED MEDIAN DETAILS**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 144SBR-2 & 22VBR-1  
 DOUGLAS COUNTY  
 SCALE: NOT TO SCALE DRAWN BY: B.B.P.  
 DATE: 06/19/06 CHECKED BY: C.R.G.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	.	DOUGLAS	181	140
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• 144SBR-2 & 22VBR-1				

### LOCATION & DESIGN OF BLOCKOUTS FOR SIGN POSTS



LOCATION OF OPENINGS FOR "KEEP RIGHT" SIGNS



LOCATION OF STOP SIGN OPENINGS

#### GENERAL NOTES

1. ALL SMALL ISLANDS SHALL BE CONSTRUCTED WITH THE STOP SIGN ISLANDS AS SHOWN, UNLESS OTHERWISE SPECIFIED.
2. OPENINGS FOR SIGNS IN MEDIANS SHALL BE AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE TYPE OF MEDIAN SPECIFIED IN THE PLANS AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

	NAME	DATE	REVISIONS	
DESIGNED	J.M.H.	8/25/87	NAME	DATE
CHECKED	P.E.K.	8/25/87	D.L.P.	07/98
CADD NO.	A-5.03		K.A.G.	06/03

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**LOCATION & DESIGN OF BLOCKOUTS  
 FOR SIGN POSTS DETAIL**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 144SBR-2 & 22VBR-1  
 DOUGLAS COUNTY

SCALE: NOT TO SCALE  
 DATE: 06/19/06  
 DRAWN BY: B.B.P.  
 CHECKED BY: C.R.G.

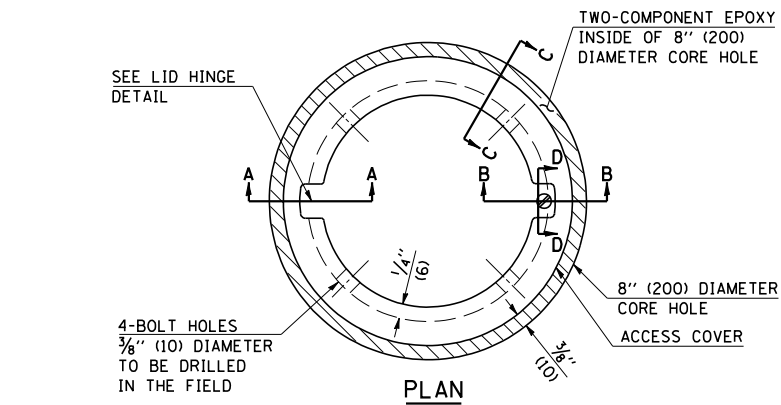
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 USER NAME = pkrsonbr



F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	141
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

### Z0070100 - SURVEY MONUMENT COVER ASSEMBLY

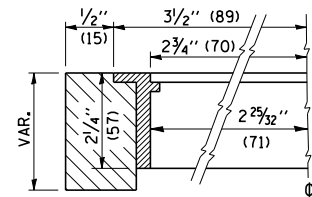
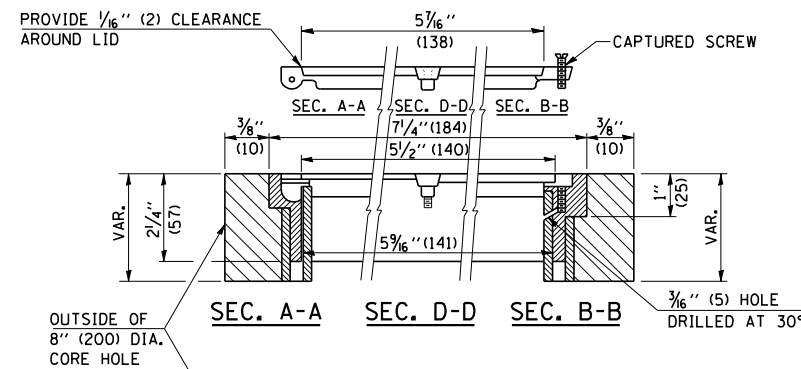
TO BE INSTALLED IN ALL PAVEMENT TYPES FOR PRESERVING PERMANENT SURVEY MARKERS (PI'S, PT'S, PC'S, POC'S, & POT'S) AND LAND SURVEY MONUMENTS (SECTION OR SUBSECTION CORNERS)



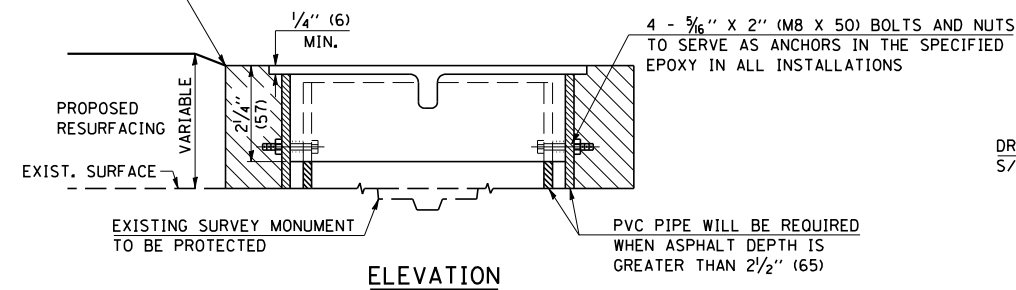
SPECIFICATIONS FOR ACCESS COVER FOR USE WITH SURVEY MARKER VAULT(S) AND SURVEY MARKER COVER ASSEMBLY(S): THE ACCESS COVER WILL BE CAST FROM A SPECIAL ALUMINUM ALLOY THAT IS COMPARABLE TO BRONZE IN HARDNESS. THE ACCESS COVER SHALL BE SPECIALLY ENGINEERED AND DESIGNED TO PROVIDE A SNUG FIT, INCORPORATING EQUIDISTANT LOCKING RIDGES, INSIDE A STANDARD 6" (150 mm) DIAMETER, OR OUTSIDE A STANDARD 5" (125 mm) DIAMETER, SCHEDULE 40 PVC PIPE. THE ACCESS COVER SHALL HAVE SPECIAL UNIFORM 1" (25 mm) THICK TOP SURFACE TO PERMIT INFORMATION TO BE EASILY MACHINE-STAMPED INTO IT. THE ACCESS COVER SHALL INCLUDE A STAINLESS CAPTURED SCREW AND AN OPPOSING RECESSED HINGE ASSEMBLY AS ITS LOCKING MECHANISM. THE ACCESS COVER SHALL INCORPORATE A SPECIAL ACCESS HOLE FOR CLEANING AND DRAINAGE, DRILLED AT 30° INSIDE THE RING OF THE ACCESS COVER, TO THE DRILLED AND TAPPED HOLE PROVIDED FOR THE STAINLESS CAPTURED SCREW. COMPOSITION: ALUMINUM 92-93%; MAGNESIUM 6.5-7.5%. STRENGTH: YIELD - 19,000-21,000 PSI (131-145 MPa); TENSILE - 38,000-44,000 PSI (262-303 MPa); ELONGATION - 10-15% IN 2" (50 mm). SPECIFICATIONS: ALLOY 535.0; 00-A-601Es. NO EXCEPTIONS.

#### LEGEND

- ALUMINUM CASTING
- 5" (125) OR 6" (150) P.V.C. PIPE
- TWO-COMPONENT EPOXY



SECTION C-C



ELEVATION

#### GENERAL NOTES

- WORK SHALL NOT START ON THIS ITEM UNTIL THE FINAL LIFT OF SURFACE HAS BEEN COMPLETED.
- THE SURVEY MONUMENT COVER ASSEMBLY SHALL BE CENTERED ABOVE THE SURVEY MONUMENT TO BE PROTECTED.
- MODIFICATION OF THE ALUMINUM CASTING SHALL BE DONE BY GRINDING OR SAWING WHEN HEIGHT REDUCTION IS REQUIRED.
- ALL SURVEY MONUMENT COVER ASSEMBLIES SHALL BE PLACED 1/4" (6 mm) ± BELOW THE FINAL SURFACE.
- ALUMINUM CASTING SHALL BE PLACED OVER A 5" (125 mm) P.V.C. PIPE OR INSIDE OF A 6" (150 mm) P.V.C. PIPE WHEN AN INCREASE IN HEIGHT IS REQUIRED.
- THE CASTING SHALL BE ANCHORED IN THE 8" (200 mm) DIAMETER CORE HOLE WITH TWO-COMPONENT EPOXY CONFORMING TO APPLICABLE PORTIONS OF ARTICLE 1025.01 OF THE STANDARD SPECIFICATIONS.
- THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR SURVEY MONUMENT COVER ASSEMBLY WHICH PRICE SHALL INCLUDE ALL LABOR AND MATERIAL AS SPECIFIED INCLUDING CORING THE NEW PAVEMENT SURFACE AND EPOXY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE 8" (200 mm) DIAMETER CORE HOLE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

#### BILL OF MATERIAL

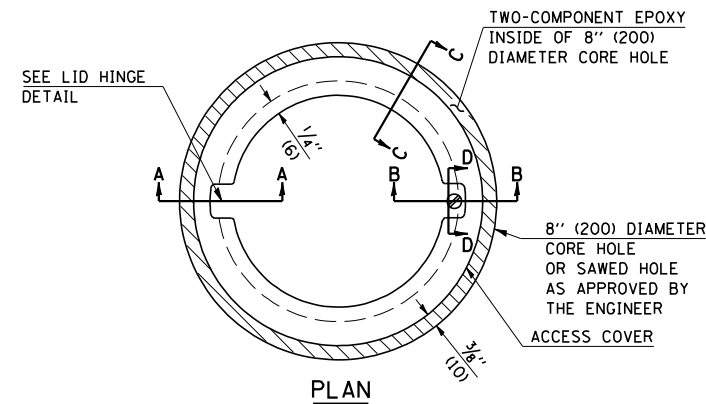
ALUMINUM CASTING OF THE DIMENSIONS AND SPECIFICATIONS SHOWN OR OTHER SUBJECT TO ENGINEER'S APPROVAL OF SHOP DRAWINGS, 4 EACH - 5/16" X 2" (M8 X 50) BOLTS WITH NUTS, EPOXY, 5" OR 6" (125 mm OR 150 mm) DIAMETER P.V.C. PIPE, SCHEDULE 40 (WHEN REQUIRED).

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

DESIGNED	NAME	DATE	REVISIONS	NAME	DATE
CHECKED	A.W.H.	2-28-91		D.L.P.	10/96
CADD NO.	J.H.M.	2-28-91		K.A.G.	08/04
	D-1.04				

### X0301232 - SURVEY MARKER VAULT

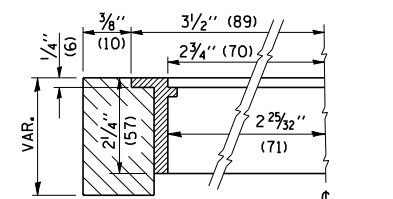
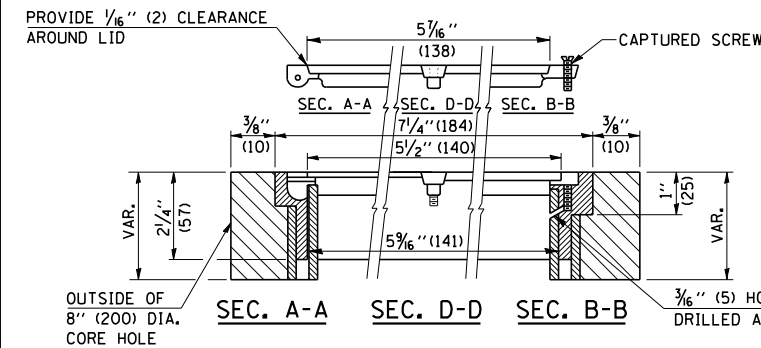
TO BE INSTALLED IN RIGID OR COMPOSITE PAVEMENT FOR PRESERVING LAND SURVEY MONUMENTS (SECTION OR SUBSECTION CORNERS)



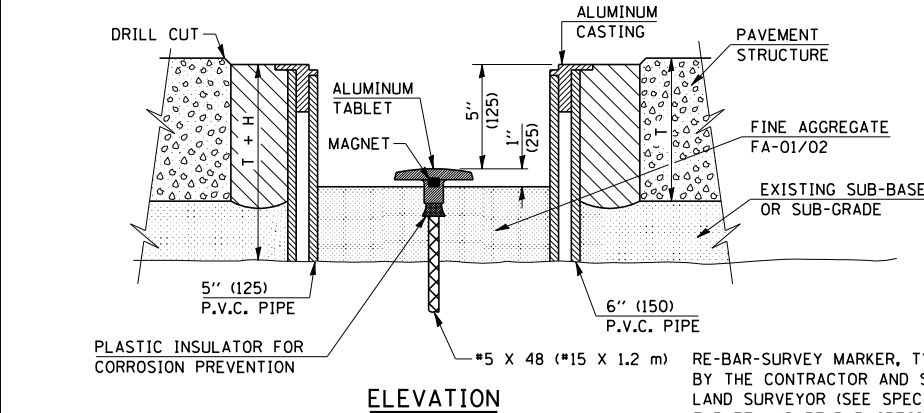
SPECIFICATIONS FOR ACCESS COVER FOR USE WITH SURVEY MARKER VAULT(S) AND SURVEY MARKER COVER ASSEMBLY(S): THE ACCESS COVER WILL BE CAST FROM A SPECIAL ALUMINUM ALLOY THAT IS COMPARABLE TO BRONZE IN HARDNESS. THE ACCESS COVER SHALL BE SPECIALLY ENGINEERED AND DESIGNED TO PROVIDE A SNUG FIT, INCORPORATING EQUIDISTANT LOCKING RIDGES, INSIDE A STANDARD 6" (150 mm) DIAMETER, OR OUTSIDE A STANDARD 5" (125 mm) DIAMETER, SCHEDULE 40 PVC PIPE. THE ACCESS COVER SHALL HAVE SPECIAL UNIFORM 1" (25 mm) THICK TOP SURFACE TO PERMIT INFORMATION TO BE EASILY MACHINE-STAMPED INTO IT. THE ACCESS COVER SHALL INCLUDE A STAINLESS CAPTURED SCREW AND AN OPPOSING RECESSED HINGE ASSEMBLY AS ITS LOCKING MECHANISM. THE ACCESS COVER SHALL INCORPORATE A SPECIAL ACCESS HOLE FOR CLEANING AND DRAINAGE, DRILLED AT 30° INSIDE THE RING OF THE ACCESS COVER, TO THE DRILLED AND TAPPED HOLE PROVIDED FOR THE STAINLESS CAPTURED SCREW. COMPOSITION: ALUMINUM 92-93%; MAGNESIUM 6.5-7.5%. STRENGTH: YIELD - 19,000-21,000 PSI (131-145 MPa); TENSILE - 38,000-44,000 PSI (262-303 MPa); ELONGATION - 10-15% IN 2" (50 mm). SPECIFICATIONS: ALLOY 535.0; 00-A-601Es. NO EXCEPTIONS.

#### LEGEND

- ALUMINUM CASTING
- 5" (125) OR 6" (150) P.V.C. PIPE
- TWO-COMPONENT EPOXY
- T = THICKNESS OF PAVEMENT STRUCTURE
- H = THE THICKNESS OF THE SUB-BASE GRANULAR + 1" (25)



SECTION C-C



ELEVATION

#### GENERAL NOTES

- ALUMINUM CASTING SHALL BE EITHER PLACED OVER A 5" (125 mm) P.V.C. PIPE OR INSIDE OF A 6" (150 mm) P.V.C. PIPE.
- BACKFILL WITH FINE AGGREGATE - FA-01/02.
- WORK SHALL NOT START ON THIS ITEM UNTIL THE FINAL LIFT OF SURFACE HAS BEEN COMPLETED.
- THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR SURVEY MARKER VAULT WHICH PRICE SHALL INCLUDE ALL LABOR AND MATERIAL AS SPECIFIED INCLUDING CORING, EPOXY AND FA-01/02 AGGREGATE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE CASTING SHALL BE ANCHORED IN THE 8" (200 mm) DIAMETER CORE HOLE WITH TWO-COMPONENT EPOXY CONFORMING TO APPLICABLE PORTIONS OF ARTICLE 1025.01 OF THE STANDARD SPECIFICATIONS.
- ALL SURVEY MARKER (VAULTS) SHALL BE PLACED 1/4" (6 mm) ± BELOW THE FINAL SURFACE.
- THE 8" (200 mm) DIAMETER CORE HOLE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

#### BILL OF MATERIAL

ALUMINUM CASTING OF THE DIMENSIONS AND SPECIFICATIONS SHOWN OR OTHER SUBJECT TO ENGINEER'S APPROVAL OF SHOP DRAWINGS, 5" OR 6" (125 mm OR 150 mm) DIAMETER P.V.C. PIPE, SCHEDULE 40, ALUMINUM TABLET, STAMPED IN ACCORDANCE WITH STANDARD 667101, 5/8" X 48" (#15 X 1.2 m) RE-BAR, EPOXY AND FA-01/02 AGGREGATE.

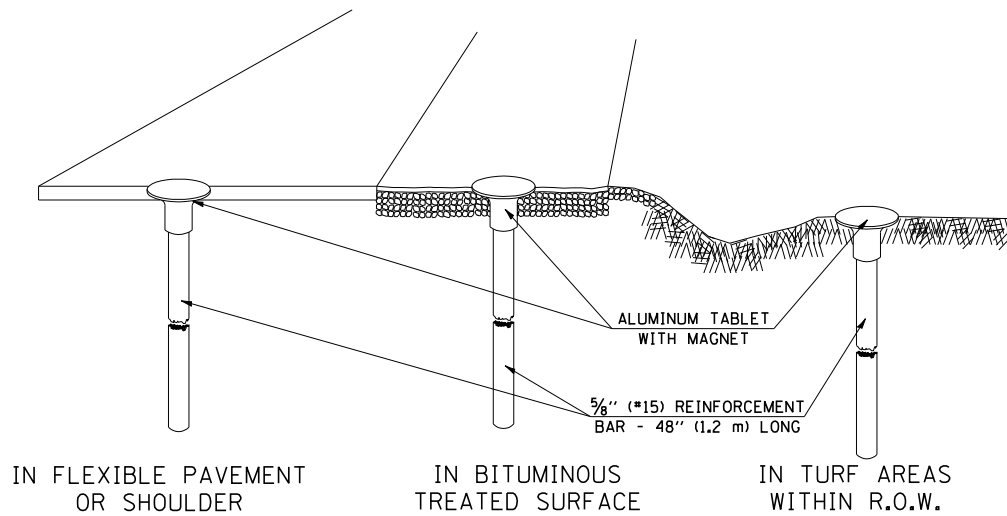
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**SURVEY MONUMENT COVER ASSEMBLY & SURVEY MARKER VAULT DETAILS**  
 F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
 SECTION 1445BR-2 & 22VBR-1  
 DOUGLAS COUNTY

SCALE: NOT TO SCALE  
 DATE: 06/19/06  
 DRAWN BY: B.B.P.  
 CHECKED BY: C.R.G.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671		DOUGLAS	181	142
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• 144SBR-2 & 22VBR-1				

### XZ193300 – SURVEY MARKER, TYPE 1 (SPECIAL)

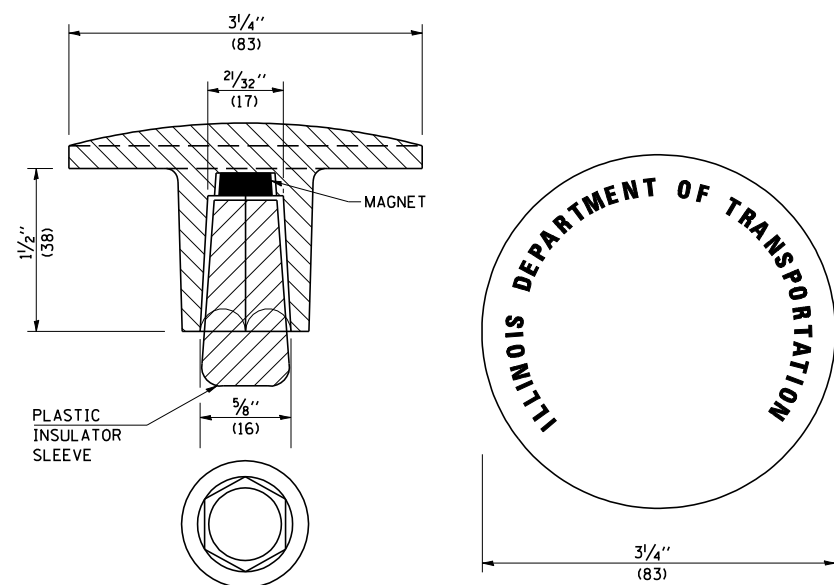
TO BE INSTALLED IN FLEXIBLE PAVEMENT OR SHOULDER, BITUMINOUS TREATED SURFACE AND TURF AREAS WITHIN THE RIGHT-OF-WAY FOR PRESERVING PERMANENT SURVEY MARKERS (PI'S, PT'S, PC'S, POC'S, & POT'S)



IN FLEXIBLE PAVEMENT OR SHOULDER

IN BITUMINOUS TREATED SURFACE

IN TURF AREAS WITHIN R.O.W.



THE DIMENSIONS SHOWN SHALL BE EXACT, OTHERS MAY VARY, BUT SHALL BE SHOWN ON SHOP DRAWINGS.

#### GENERAL NOTES

1. THE CONTRACT UNIT PRICE, EACH, FOR SURVEY MARKER, TYPE I, (SPECIAL) SHALL BE PAYMENT IN FULL FOR FURNISHING THE SURVEY MARKER.
2. ALL SURVEY MARKERS, TYPE I, (SPECIAL) SHALL BE PLACED ± 1/4" (6 mm) BELOW THE FINAL SURFACE.
3. WHEN THE TABLET AND REBAR ARE PLACED AS PART OF A SURVEY MARKER VAULT, THEY SHALL BE CONSIDERED AS INCLUDED IN THAT PAY ITEM AND THERE WILL BE NO PAYMENT FOR THE SURVEY MARKER, TYPE I, (SPECIAL).

#### SPECIFICATIONS FOR ALUMINUM TABLET

SURVEY CAP FOR REBAR. 3/4" (83 mm) CONVEX SURVEY CAP FOR 5/8" (15 mm) REBAR WITH ILLINOIS DEPARTMENT OF TRANSPORTATION LOGO. THIS LOGO SHALL PROVIDE LETTERS RECESSED INTO THE SURFACE A MINIMUM OF 1/32" (0.8 mm) FOR EASY AND LONG-TERM LEGIBILITY. THE ALUMINUM CAP FOR REBAR SHALL BE PRODUCED BY THE PROCESS OF ORBITAL FORGING TO PRODUCE A HIGH-STRENGTH AND DURABLE MARKER CAP WHICH WILL NOT CHIP OR BREAK AND PROVIDE A SMOOTH FINISH FOR STAMPING OF DATA IN THE FIELD. THE ALUMINUM CAP FOR REBAR SHALL BE TAPERED FOR A PERFECT COMPRESSION FIT. A SPECIAL PLASTIC INSULATOR SHALL BE INSTALLED TO PREVENT DISSIMILAR METAL CONTACT AND CORROSION. THE PLASTIC INSULATOR SHALL FORM READILY TO THE OUTER SHAPE OF THE REBAR AND TO THE INNER SHAPE OF THE ALUMINUM CAP SOCKET. THE PLASTIC INSULATOR SHALL BE LOW DENSITY POLYETHYLENE, A MINIMUM 1/2" (38 mm) LONG AND CONFORM TO FEDERAL SPECIFICATION L-P 390.

COMPOSITION: ALUMINUM 98.3-98.7%; OTHER 1.3-1.7%; STRENGTH: YIELD 28 KSI (193 MPa), ULTIMATE 32 KSI (221 MPa), ELONGATION 15% [IN 2" (50 mm)]. SPECIFICATIONS: ALUMINUM ALLOY 6101-0; ASTM B317-83 (EXCEPT TEMPER) AS FORGED. NO EXCEPTIONS.

#### SPECIFICATIONS FOR REBAR

REBAR FOR ALUMINUM TABLET. REINFORCEMENT BAR SHALL BE 5/8" (#15) X 48" (1.2 m) (DEFORMED).

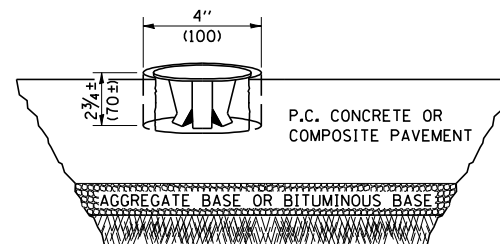
INSPECTION OF REINFORCEMENT BAR 5/8" (#15) SHALL BE DONE BY DISTRICT PERSONNEL OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS.

#### DESIGN NOTE

BDE 58-8.02 "PLACE MARKERS AT THE PT'S AND PC'S OF ALL HORIZONTAL CURVES AND SPACE THEM ALONG TANGENTS SO THAT TWO MARKERS ARE ALWAYS INTERVISIBLE."

### XZ193400 – SURVEY MARKER, TYPE 2 (SPECIAL)

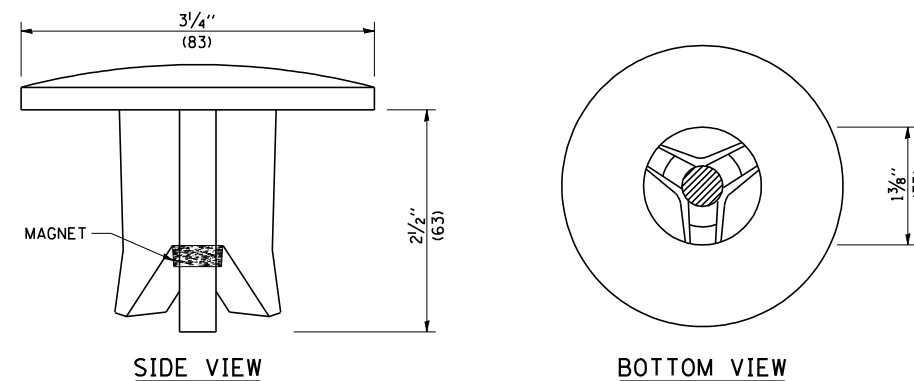
TO BE INSTALLED IN RIGID OR COMPOSITE PAVEMENT FOR PRESERVING PERMANENT SURVEY MARKERS (PI'S, PT'S, PC'S, POC'S, & POT'S)



#### SPECIFICATIONS FOR ALUMINUM TABLET (FORKED)

ALUMINUM TABLET (FORKED) FOR USE WITH "SURVEY MARKER, TYPE 2, (SPECIAL)" SHALL BE AS SHOWN ON THE DETAIL FOR THE 3/4" (83 mm) CONVEX SURVEY TABLET WITH ILLINOIS DEPARTMENT OF TRANSPORTATION LOGO. THIS LOGO SHALL PROVIDE FOR LETTERS RECESSED INTO THE SURFACE A MINIMUM OF 1/32" (0.8 mm) FOR EASY AND LONG-TERM LEGIBILITY. THE ALUMINUM TABLET SHALL BE PRODUCED BY THE PROCESS OF ORBITAL FORGING TO PRODUCE A HIGH-STRENGTH AND DURABLE MARKER CAP WHICH WILL NOT CHIP OR BREAK AND PROVIDE A SMOOTH FINISH FOR STAMPING OF DATA IN THE FIELD. THE ALUMINUM TABLET SHALL BE DESIGNED NOT TO TURN OR ROTATE. THREE PRONGS ON A 2 1/2" (63 mm) STEM SHALL BE SUCH THAT THE ALUMINUM TABLET CANNOT BE EASILY REMOVED.

COMPOSITION: ALUMINUM 92-93%; MAGNESIUM 6.5-7.5%. STRENGTH: YIELD 19,000-21,000 PSI (131-145 MPa); TENSILE 38,000-44,000 PSI (262-303 MPa); ELONGATION 10-15% [IN 2" (50 mm)]. SPECIFICATIONS: ALLOY 535.0; 00-A-601ES. NO EXCEPTIONS.



THE DIMENSIONS SHOWN SHALL BE EXACT, OTHERS MAY VARY, BUT SHALL BE SHOWN ON SHOP DRAWINGS.

#### GENERAL NOTES

1. WORK ON THIS ITEM SHALL NOT START UNTIL THE FINAL SURFACE IS COMPLETED.
2. THE ALUMINUM TABLET (FORKED) SHALL REST UPON THE BOTTOM OF THE 4" (100 mm) CORE HOLE. IF THE HOLE IS TOO DEEP, EPOXY GROUT MUST BE USED TO DECREASE THE DEPTH AND ALLOWED TO HARDEN BEFORE PROCEEDING.
3. THE ALUMINUM TABLET SHALL BE ANCHORED IN THE 4" (100 mm) DIAMETER HOLE IN THE NEW PAVEMENT WITH TWO-COMPONENT EPOXY CONFORMING TO APPLICABLE PORTIONS OF ARTICLE 1025.01 OF THE STANDARD SPECIFICATIONS.
4. THE 4" (100 mm) CORE HOLE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
5. THE CONTRACT PRICE, EACH, FOR SURVEY MARKER, TYPE 2 (SPECIAL) SHALL BE PAYMENT IN FULL FOR FURNISHING THE ALUMINUM TABLET AND ALL LABOR AND MATERIAL TO SET THE MARKER IN PLACE, AS SPECIFIED, INCLUDING CORING THE NEW PAVEMENT.
6. ALL SURVEY MARKERS, TYPE 2 (SPECIAL) SHALL BE PLACED ± 1/4" (6 mm) BELOW THE FINAL SURFACE.

#### ILLINOIS DEPARTMENT OF TRANSPORTATION SURVEY MARKER TYPE 1 (SPECIAL) SURVEY MARKER TYPE 2 (SPECIAL)

DETAILS  
F.A.S. ROUTE 1671 (U.S. ROUTE 45)  
SECTION 144SBR-2 & 22VBR-1  
DOUGLAS COUNTY

SCALE: NOT TO SCALE  
DATE: 06/19/06  
DRAWN BY: B.B.P.  
CHECKED BY: C.R.G.

PLOT DATE = 7/10/2006  
FILE NAME = c:\p\projects\144SBR-2\144SBR-2.dgn  
USER NAME = p1er50n0r

	NAME	DATE	REVISIONS	
DESIGNED	AWH	8/17/91	NAME	DATE
CHECKED	PEK	8/17/91	D.L.P.	10-96
CADD NO.	D-1.05		K.A.G.	08-04

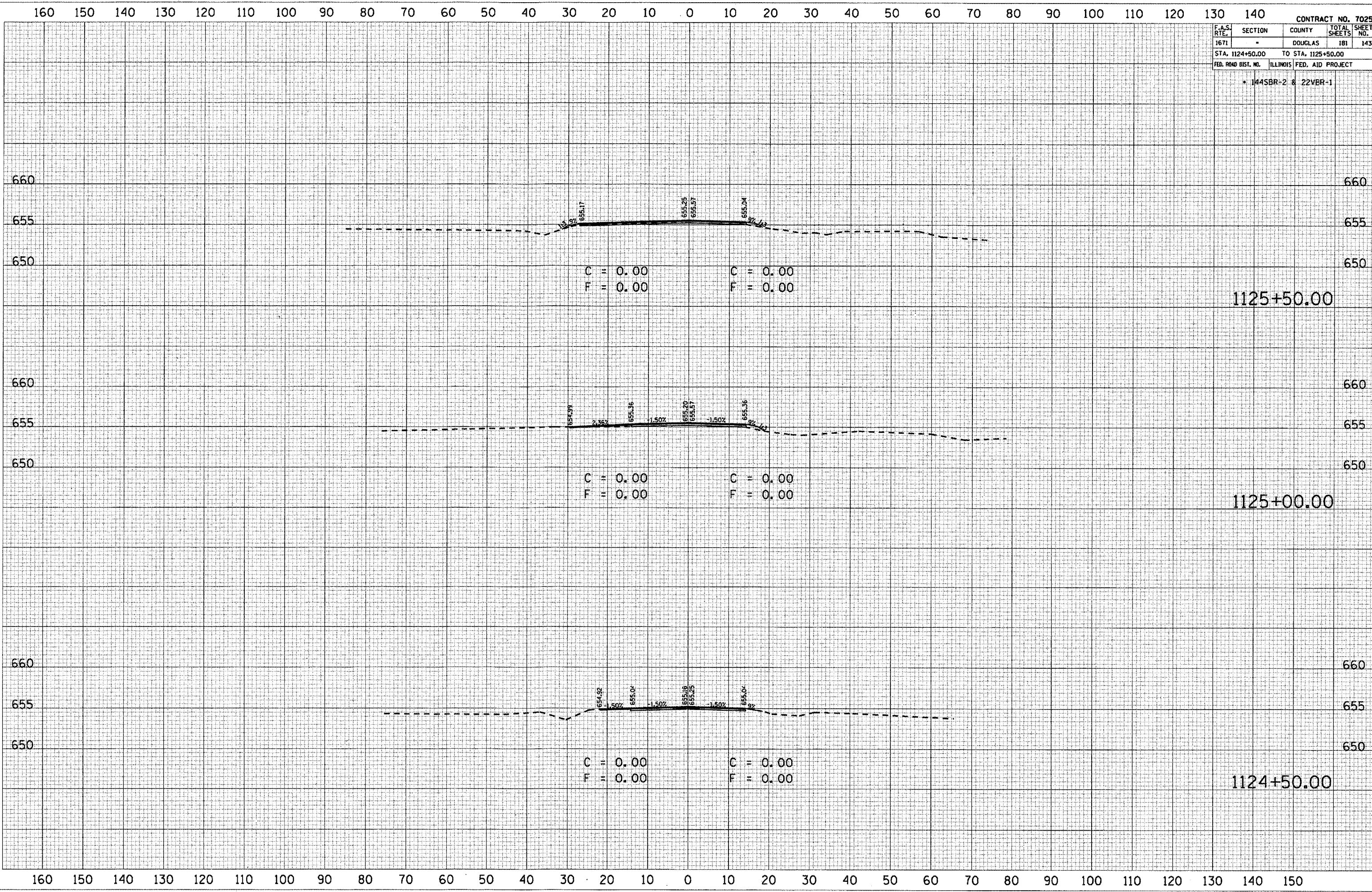
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	-	DOUGLAS	181	143
STA. 1124+50.00		TO STA. 1125+50.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
			1445BR-2 & 22VBR-1	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
NO.	
AREAS CHECKED	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
NO.	
AREAS CHECKED	

PLOT DATE : 7/10/2006  
 FILE NAME : 401733  
 PLOT SCALE : 21.1733 / IN.  
 USER NAME : p1445br







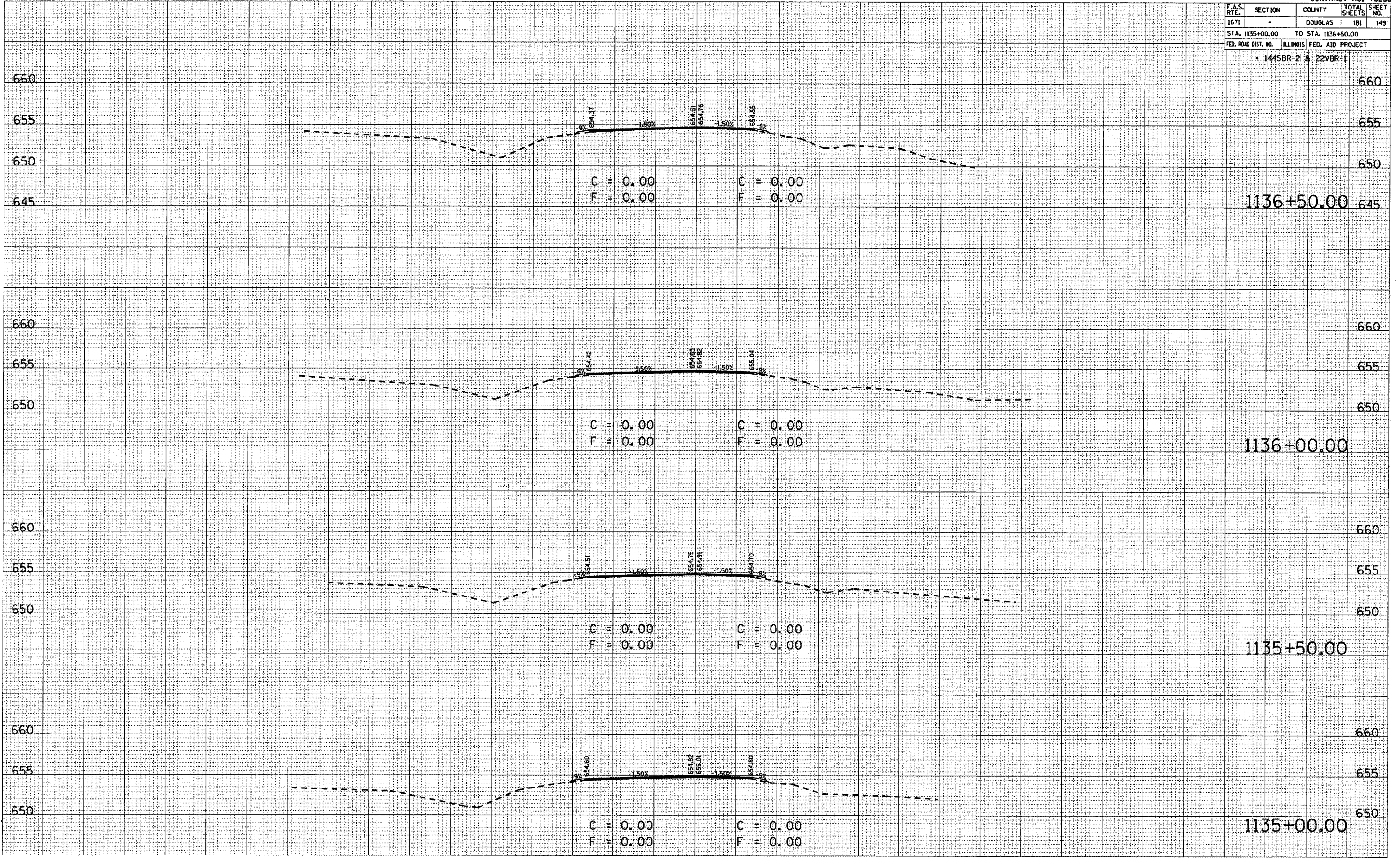








F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	149
STA. 1135+00.00		TO STA. 1136+50.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* 144SBR-2 & 22VBR-1				



DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 FINAL SURVEY NOTE BOOK NO. \_\_\_\_\_  
 AREAS CHECKED: \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 ORIGINAL SURVEY NOTE BOOK NO. \_\_\_\_\_  
 AREAS CHECKED: \_\_\_\_\_

DATE: 7/12/2006  
 FILE NAME: 1135+00.00.dwg  
 PLOT SCALE: 1" = 20' / IN.  
 USER NAME: p149

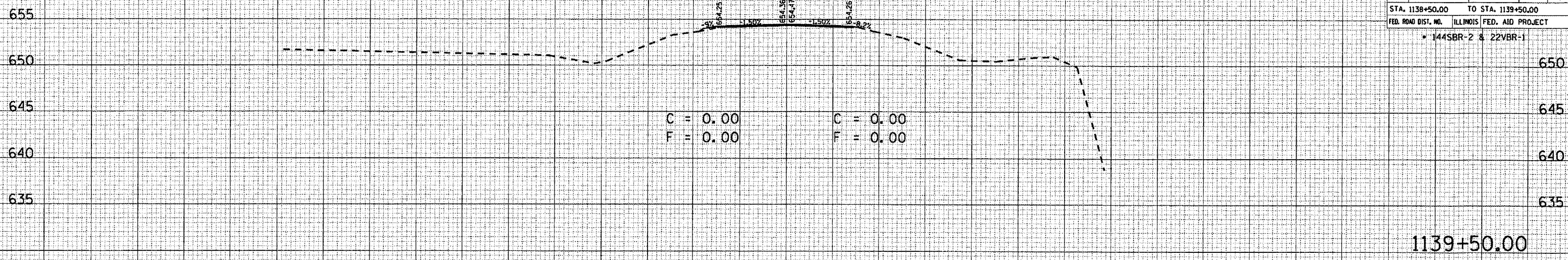


160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

CONTRACT NO. 70258

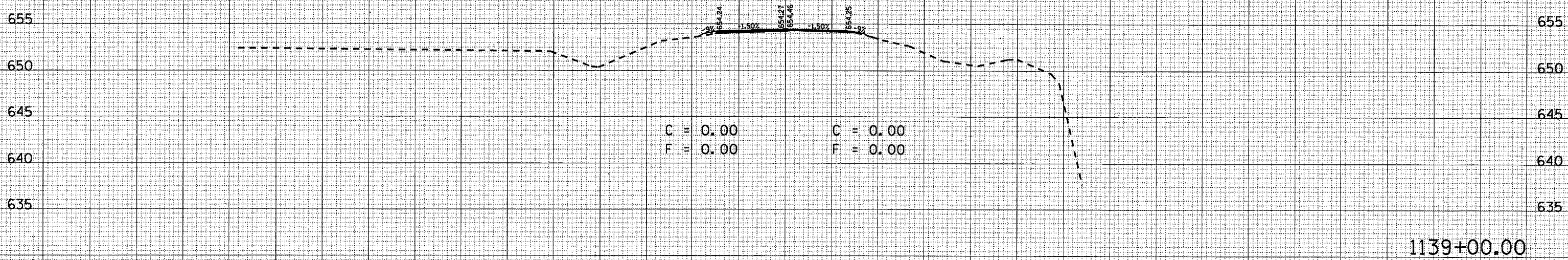
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS
1671	*	DOUGLAS	181
STA. 1138+50.00		TO STA. 1139+50.00	
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT
* I44SBR-2 & 22VBR-1			

BY	DATE
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMP. DATE
	AREAS CHECKED



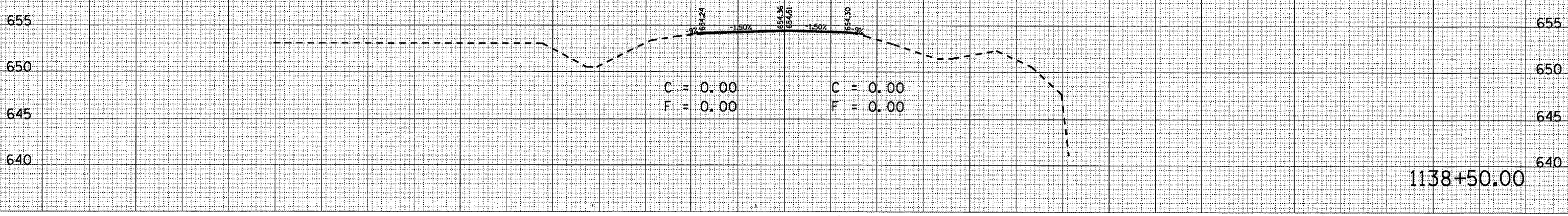
1139+50.00

BY	DATE
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMP. DATE
	AREAS CHECKED



1139+00.00

BY	DATE
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMP. DATE
	AREAS CHECKED



1138+50.00

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

7/13/2006  
 1138+50.00  
 21.75" x 33.75" IN.  
 USER NAME: p11111111

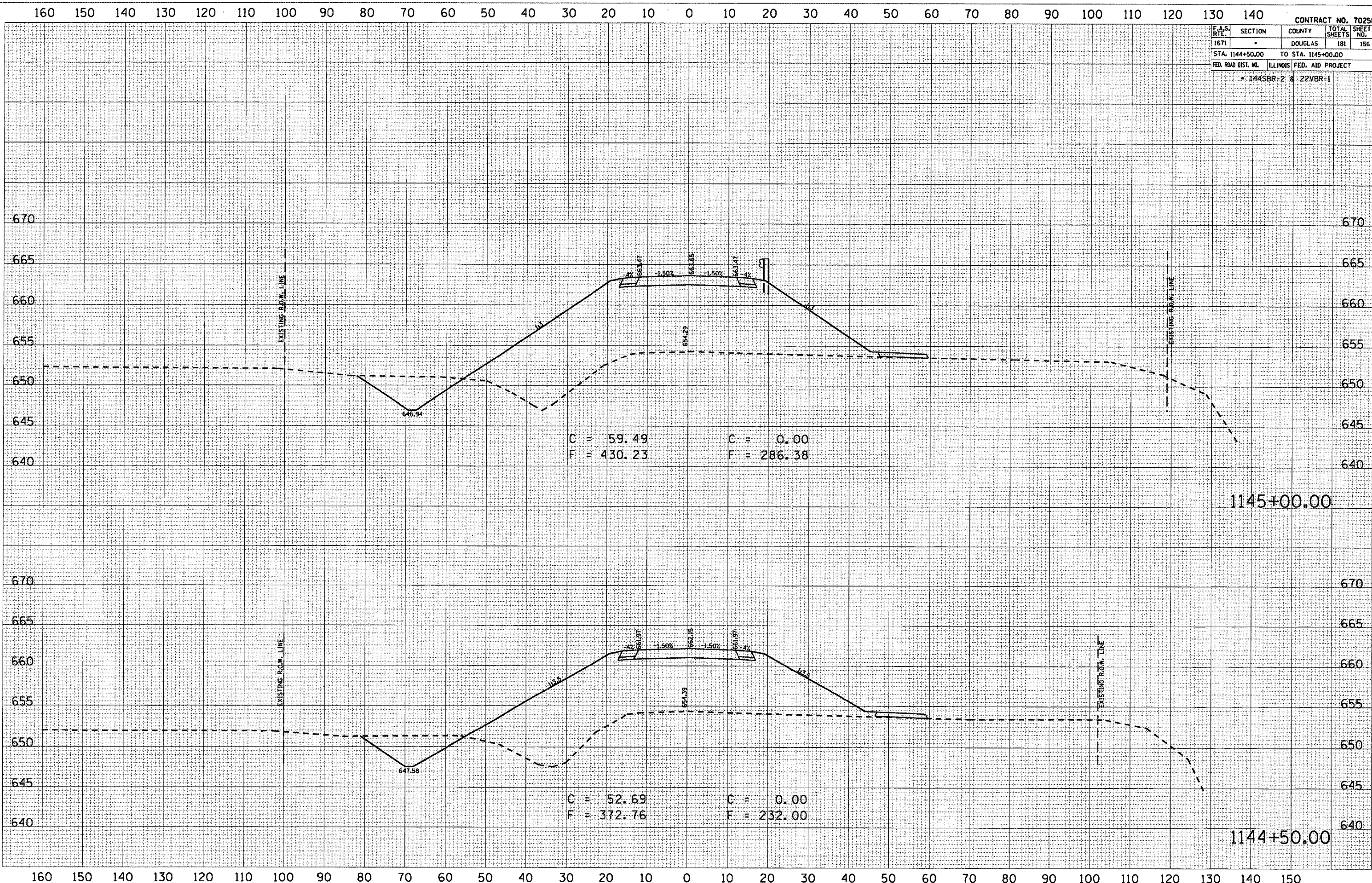








F.A.S. DATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	156
STA. 1144+50.00		TO STA. 1145+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 144SBR-2 & 22VBR-1				



DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 TEMPLATE: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 AREAS CHECKED: \_\_\_\_\_

DATE: 7/12/2006  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 TEMPLATE: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 AREAS CHECKED: \_\_\_\_\_

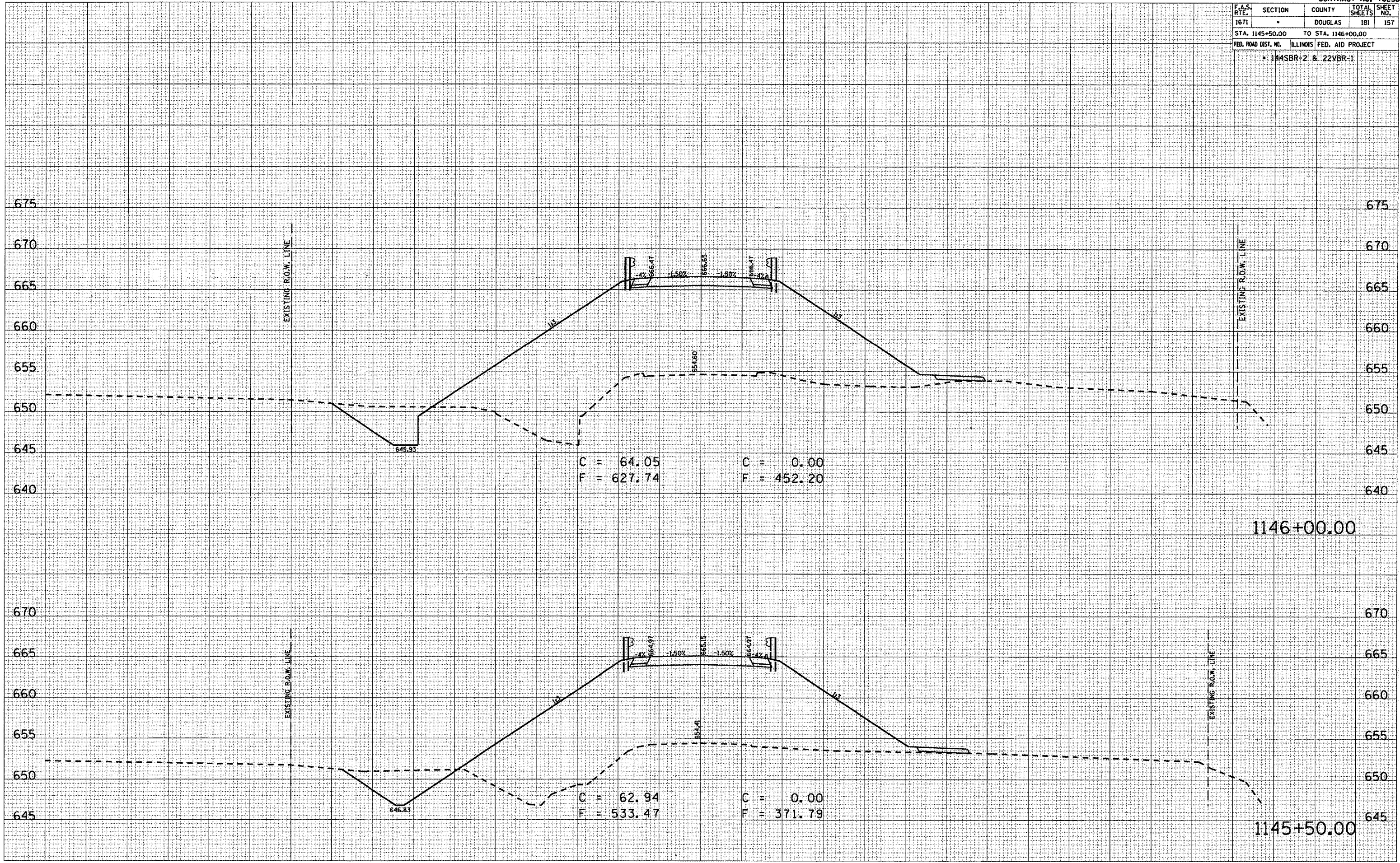


F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	-	DOUGLAS	181	157
STA. 1145+50.00		TO STA. 1146+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 1145BR-2 & 22VBR-1				

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK NO.	PLOTTED	
	TEMPLATE	
	SCALE	
	AREAS CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK NO.	PLOTTED	
	TEMPLATE	
	SCALE	
	AREAS CHECKED	

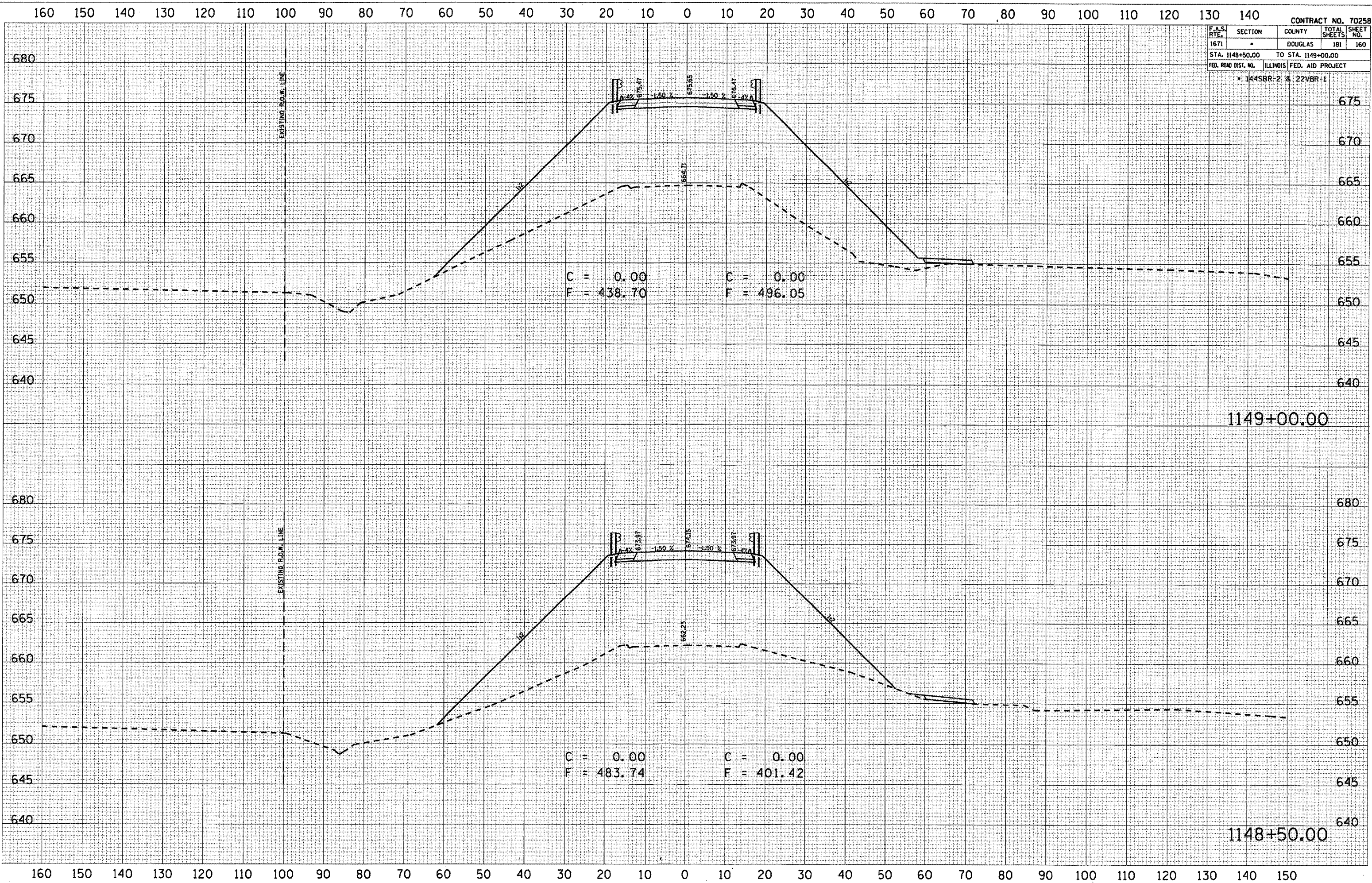
PLOT DATE: 7/13/2006  
 PLOT SCALE: 1" = 40'  
 USER NAME: [unclear]







F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	-	DOUGLAS	181	160
STA. 1148+50.00		TO STA. 1149+00.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* 1445BR-2 & 22VBR-1				



DATE	
BY	
NO. _____	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO. _____	TEMPLATE
	AREAS CHECKED

DATE	
BY	
NO. _____	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO. _____	TEMPLATE
	AREAS CHECKED

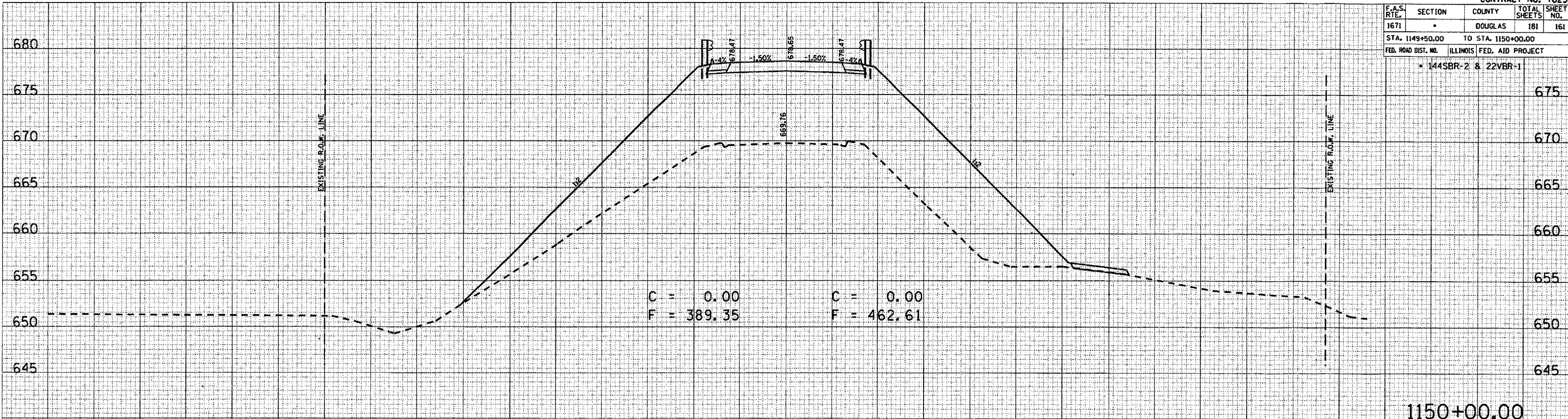
PLOT DATE : 7/13/2006  
 FILE NAME : c:\p\1148+50.00.dwg  
 PLOT SCALE : 21.1703 / IN.  
 USER NAME : p1148+50

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

CONTRACT NO. 70258

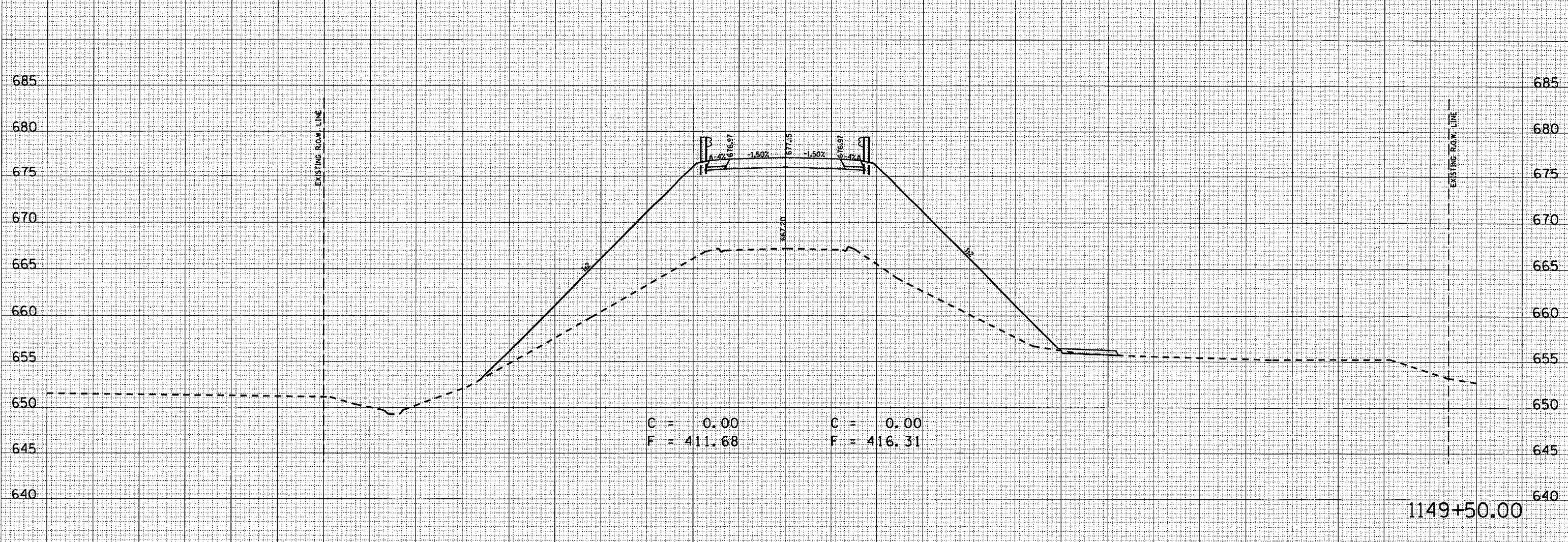
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	161
STA. 1149+50.00		TO STA. 1150+00.00		
FED. ROAD DIST. NO. (ILLINOIS) FED. AID PROJECT				
* 144SBR-2 & 22VBR-1				

DATE  
BY  
SURVEYED  
PLOTTED  
NOTE BOOK  
AREAS CHECKED



1150+00.00

DATE  
BY  
SURVEYED  
PLOTTED  
NOTE BOOK  
AREAS CHECKED



1149+50.00

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PLOT DATE: 7/13/2006  
FILE NAME: o:\projeas\02022 (b)\shashed\p02022.dwg  
PLOT SCALE: 21.765' / IN.  
USER NAME: p1050mb





160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

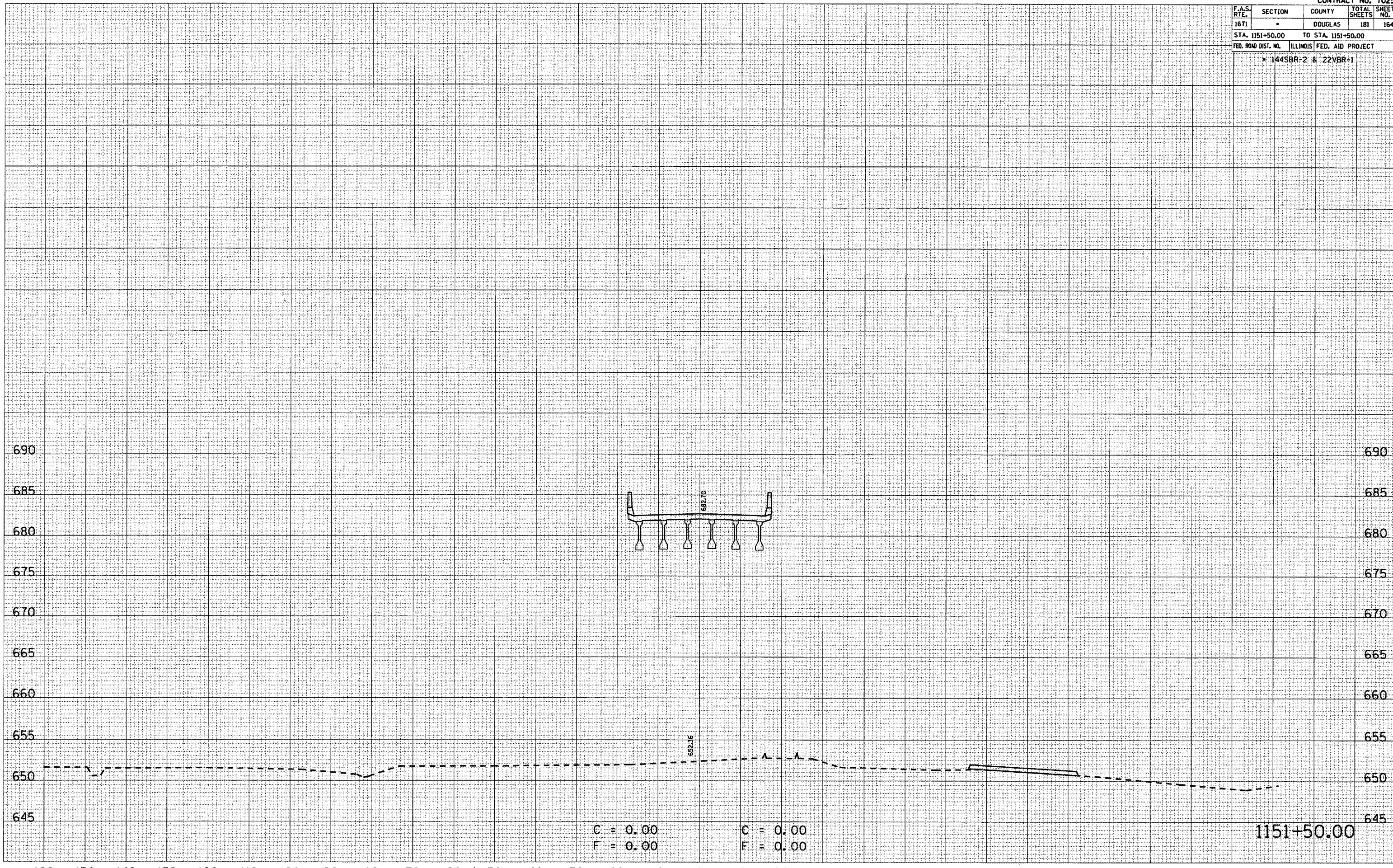
CONTRACT NO. 70258

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	164
STA. 1151+50.00		TO STA. 1151+50.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
		* 144SBR-2 & 22VBR-1		

FINAL SURVEY	BY	DATE
NOTE BOOK NO.		
SWICHEL		
PLOTTED		
TEMPLATE		
AREAS CHECKED		

ORIGINAL SURVEY	BY	DATE
PLOTTED		
TEMPLATE		
AREAS CHECKED		

PLOT DATE : 7/13/2006  
 FILE NAME : 1151+50.00.dwg  
 PLOT SCALE : 21/175" / IN.  
 USER NAME : p1e1a0n0r



C = 0.00  
 F = 0.00

1151+50.00

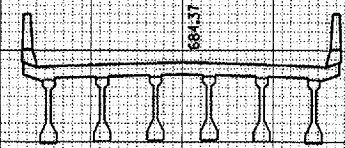
160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



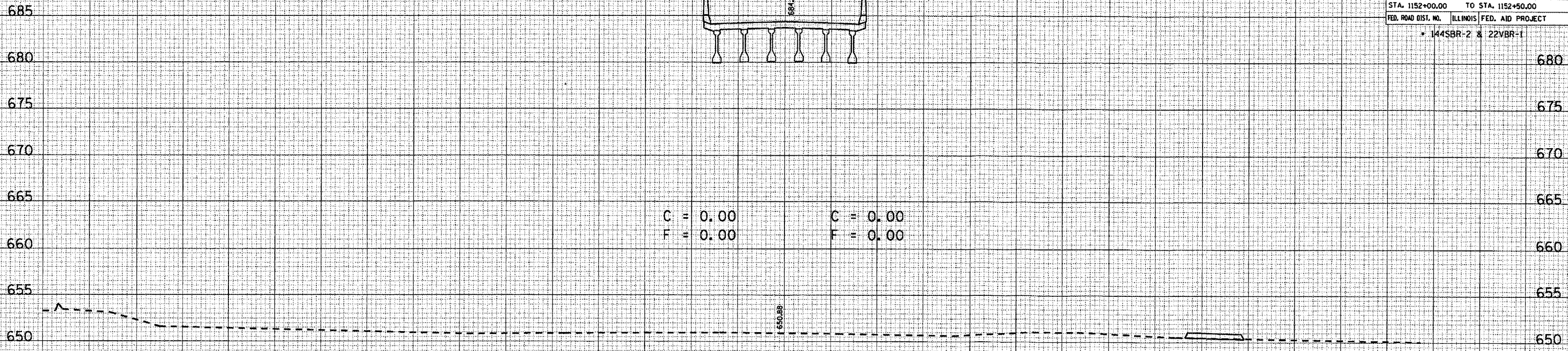
160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

CONTRACT NO. 70258

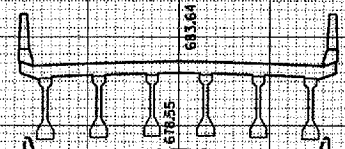
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	165
STA. 1152+00.00		TO STA. 1152+50.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 1445BR-2 & 22VBR-1				



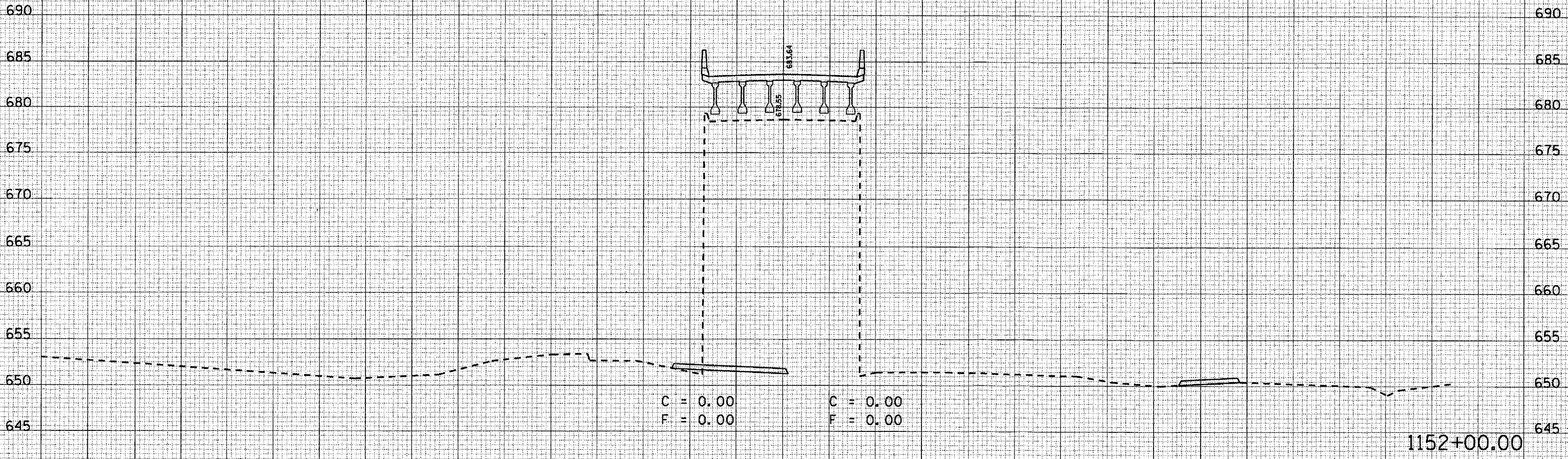
C = 0.00  
F = 0.00



1152+50.00



C = 0.00  
F = 0.00



1152+00.00

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

DATE  
BY  
SURVEYED  
PLOTTED  
NOTE BOOK  
AREAS CHECKED

DATE  
BY  
SURVEYED  
PLOTTED  
NOTE BOOK  
AREAS CHECKED

PLOT DATE: 7/12/2006  
FILE NAME: C:\work\1152+00 to 1152+50.dwg  
PLOT SCALE: 21/768" / IN.  
USER NAME: p1152+00





















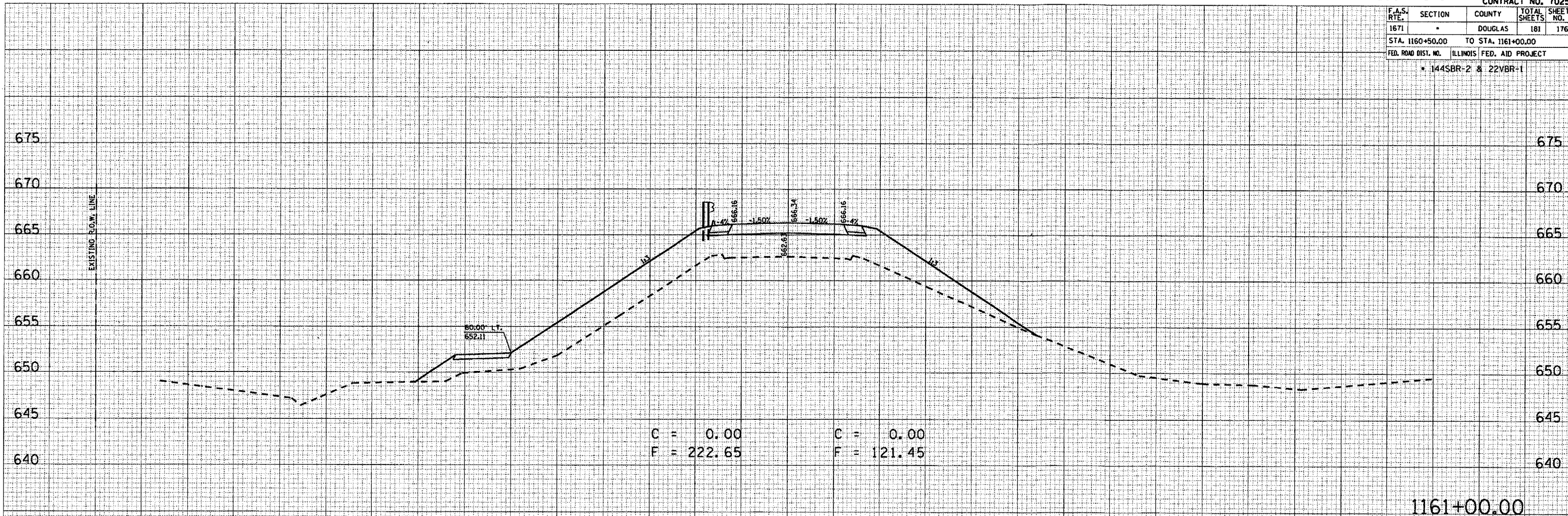


160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

CONTRACT NO. 70258

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	176
STA. 1160+50.00		TO STA. 1161+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 1445BR-2 & 22VBR-1				

DATE \_\_\_\_\_  
BY \_\_\_\_\_  
SURVEYED \_\_\_\_\_  
PLOTTED \_\_\_\_\_  
NOTE BOOK \_\_\_\_\_  
AREAS CHECKED \_\_\_\_\_



DATE \_\_\_\_\_  
BY \_\_\_\_\_  
SURVEYED \_\_\_\_\_  
PLOTTED \_\_\_\_\_  
NOTE BOOK \_\_\_\_\_  
AREAS CHECKED \_\_\_\_\_



PLOT DATE: 7/12/2006  
FILE NAME: C:\Users\p11111111\Documents\1160+50.00\1160+50.00.dwg  
PLOT SCALE: 1/8" = 1'-0"  
USER NAME: p11111111

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

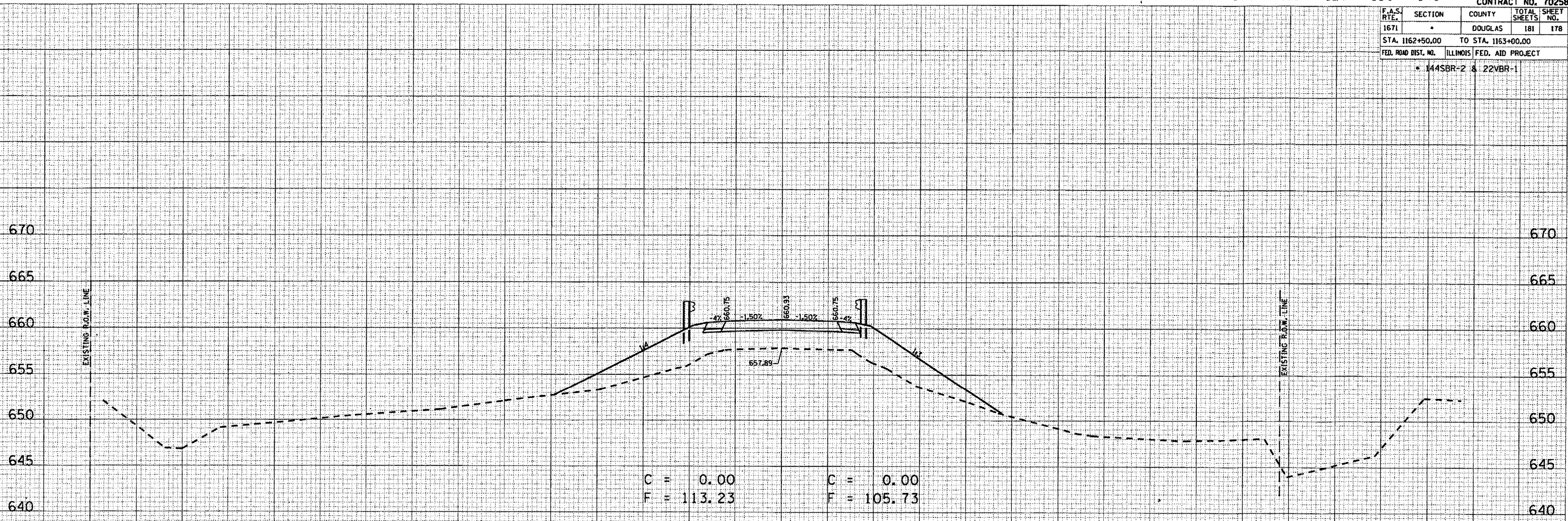


160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

CONTRACT NO. 70258

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	178
STA. 1162+50.00		TO STA. 1163+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 144SBR-2 & 22VBR-1				

FINAL SURVEY	DATE
SUPERVISOR	BY
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

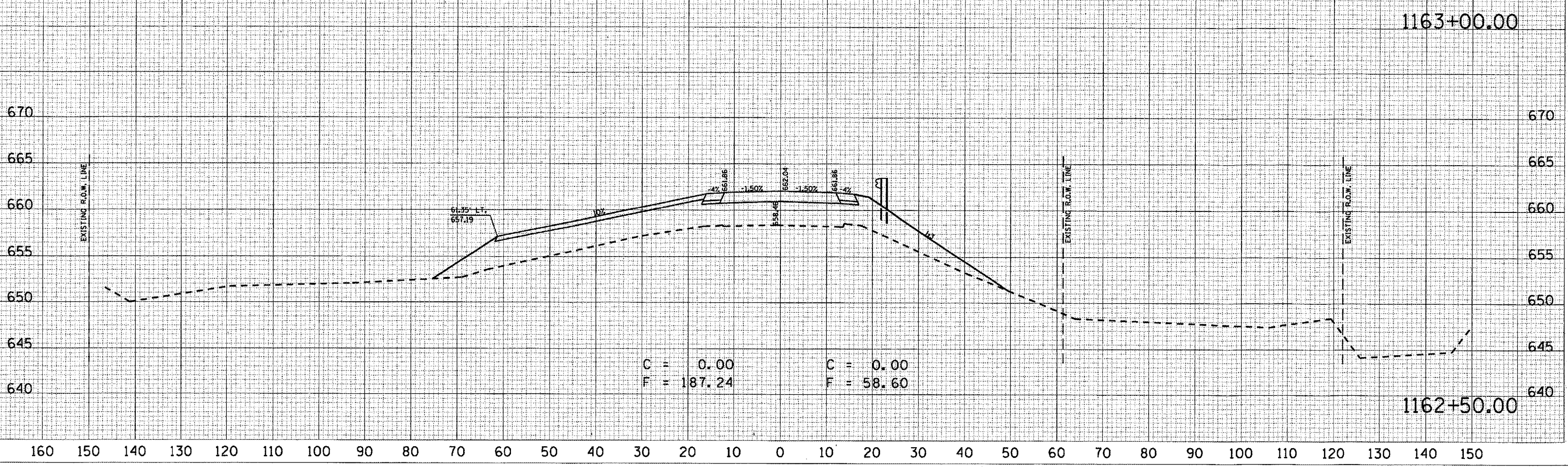


C = 0.00  
F = 113.23

C = 0.00  
F = 105.73

1163+00.00

ORIGINAL SURVEY	DATE
SUPERVISOR	BY
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



C = 0.00  
F = 187.24

C = 0.00  
F = 58.60

1162+50.00

PLOT DATE = 7/17/2006  
PLOT SCALE = 20/1000  
USER NAME = p1000000

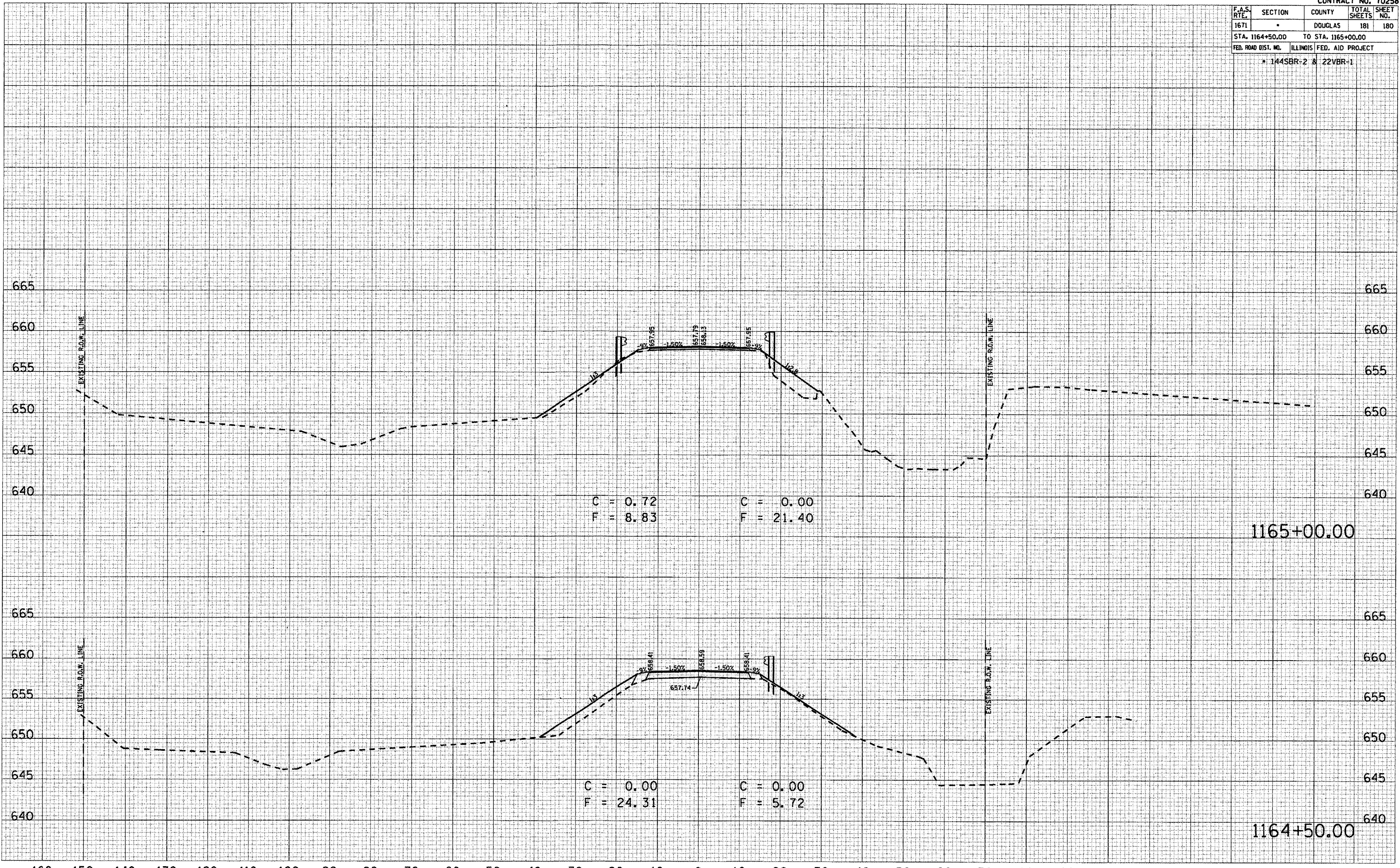


F.A.S. R/L	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1671	*	DOUGLAS	181	180
STA. 1164+50.00		TO STA. 1165+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
1445BR-2		22VBR-1		

DATE	
BY	
FINAL SURVEY	
SHRINKED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
SHRINKED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	

PLOT DATE : 7/13/2006  
 FILE NAME : c:\arcswork\116450\116450.dwg  
 PLOT SCALE : 21/768" / 1"  
 USER NAME : piersonbr



1165+00.00

1164+50.00



