

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	1

CONTRACT NO. 97356  
FEDERAL AID PROJECT

# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

## BRIDGE REPLACEMENT AND REHABILITATION PROGRAM PLANS FOR PROPOSED MADISON COUNTY SECTION 06-18111-00-BR TR-67 LIBBRA ROAD OVER SILVER CREEK OLIVE TOWNSHIP PROJECT 8ROS-119(67) JOB NO. C-98-323-08 KUBA BRIDGE

- INDEX OF SHEETS**
- COVER SHEET, SHEET INDEX, & HIGHWAY STANDARDS
  - SUMMARY OF QUANTITIES, & GENERAL NOTES
  - TYPICAL SECTIONS & TRAFFIC CONTROL PLAN
  - SCHEDULES OF QUANTITIES
  - PLAN /PROFILE SHEET
  - EROSION CONTROL PLAN
  - GENERAL PLAN AND ELEVATION
  - SUPERSTRUCTURE
  - 9.-10. SUPERSTRUCTURE DETAILS
  - ABUTMENT DETAIL
  - PIER DETAIL
  - BRIDGE RAIL DETAIL
  - NAME PLATE DETAIL
  - PILE & ENCASEMENT DETAIL
  - 16.-20. CROSS SECTION SHEETS

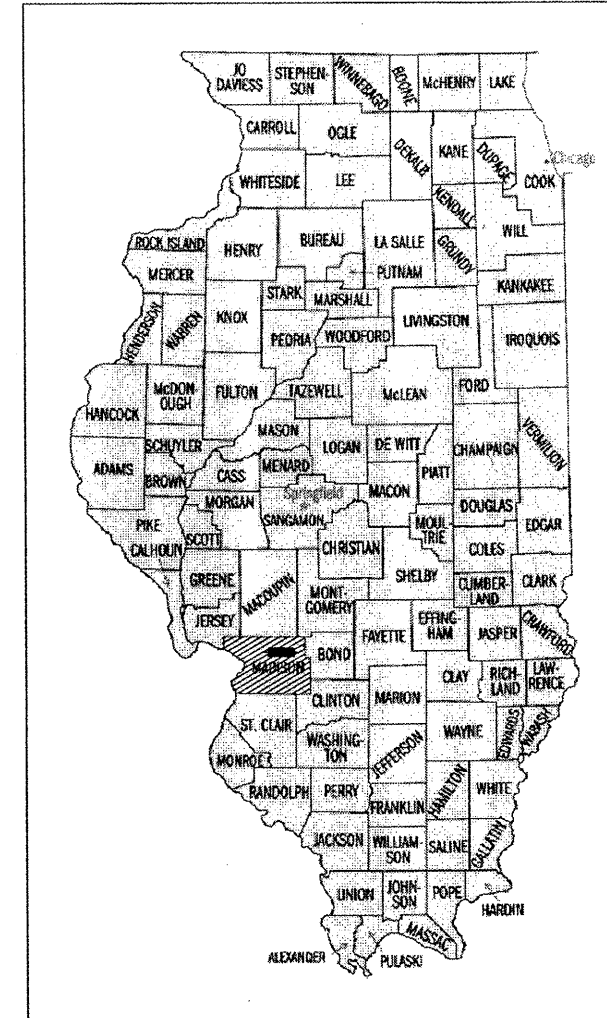
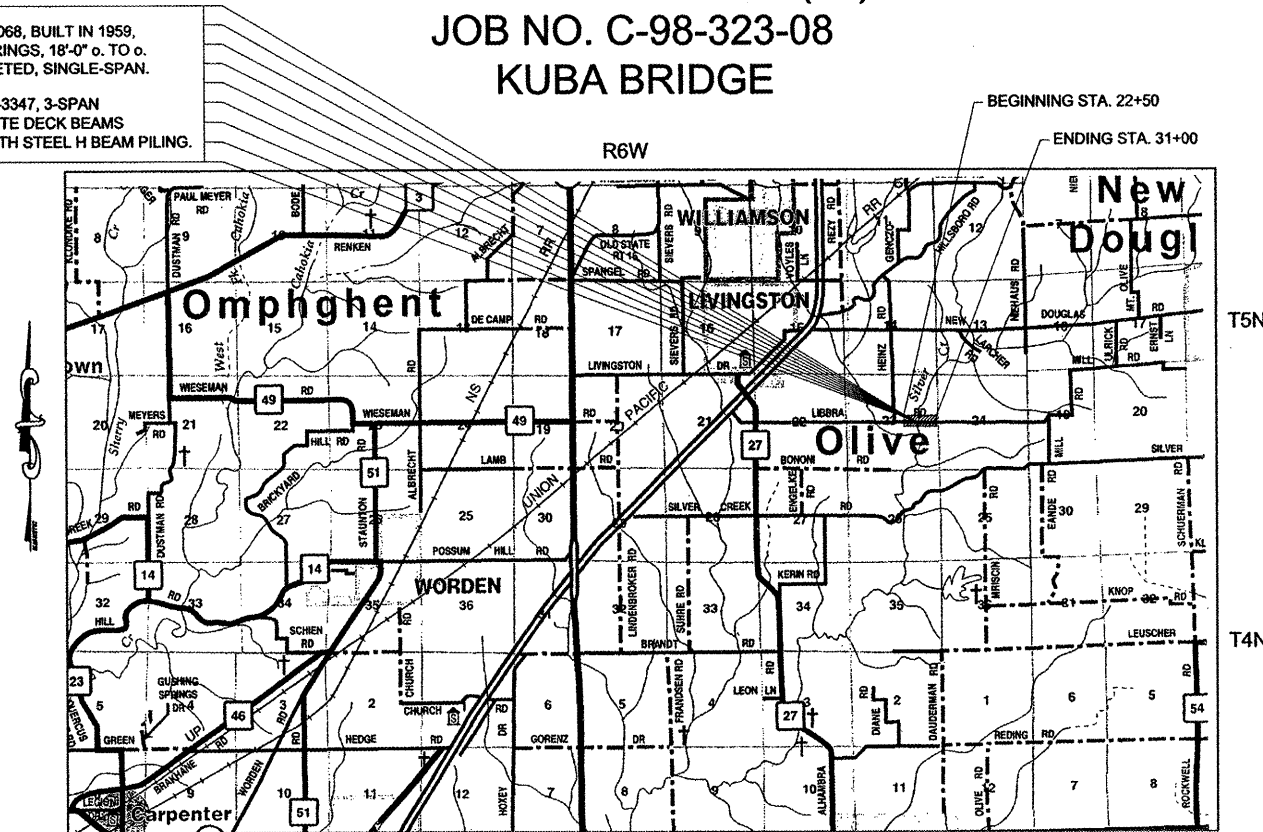
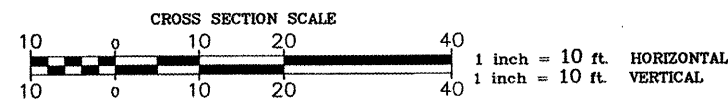
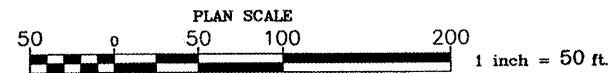
**HIGHWAY STANDARDS**

- 000001-05
- 280001-04
- 515001-02
- 630001-07
- 630301-04
- 631032-03
- 635006-02
- 635011-01
- 666001
- 701901
- B.L.R. 21-7

EXISTING STRUCTURE: S.N. 060-3068, BUILT IN 1959, 4 PANELS; 70'-0" c. TO c. END BEARINGS, 18'-0" o. TO o. WIDTH, PRATT PONY TRUSS - RIVETED, SINGLE-SPAN.

PROPOSED STRUCTURE: S.N. 060-3347, 3-SPAN PRECAST PRESTRESSED CONCRETE DECK BEAMS UPON SPILL-THRU ABUTMENTS WITH STEEL H BEAM PILING.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
THREE COUNTY PUBLIC WATER DISTRICT  
(217) 456-8231  
MADISON TELEPHONE COMPANY (618) 633-2267  
SOUTHWESTERN ELECTRIC CO-OP (800) 637-8667  
AMEREN ELECTRIC (217) 532-8225



THESE PLANS WERE PREPARED BY ME OR BY A FULL TIME MEMBER OF MY STAFF WORKING UNDER MY PERSONAL SUPERVISION.

*Gary F. Stahlhut* 7-8-08  
GARY F. STAHLHUT, P.E. No. 062-041472 DATE

MADISON COUNTY HIGHWAY DEPARTMENT  
7037 MARINE ROAD  
EDWARDSVILLE, IL 62025  
PHONE: (618) 692-7040  
FAX: (618) 692-7049



**LOCATION MAP**

SCALE: 1" = 5,000'  
NET LENGTH OF PROJECT: 0.16 MILES = 850 FEET  
DESIGN DESIGNATION: RURAL TWO-LANE LOCAL ROAD  
FUNCTIONAL CLASSIFICATION: LOCAL ROAD  
DESIGN SPEED: 30 MPH  
2006 ADT = 200

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

Approved *Robert S. Chubb* 7-11-08  
Highway Commissioner

Approved *Gary F. Stahlhut* 7-8-08  
MADISON COUNTY ENGINEER

Passed *D. Clark* 7-23-08  
District 8 Engineer of Local Roads & Streets

Releasing for Bid Based on Limited Review *Wendy A. Cairns* 7-23-08  
Deputy Director of Highways, Region 5 Engineer

GENERAL NOTES

- THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2007", AND SPECIAL PROVISIONS.
  - THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE PROVISIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER PERMIT AND IMPLEMENT THE EROSION CONTROL PLAN INCLUDED IN THESE PLANS, AS SPECIFIED IN ARTICLE 107.23, THE ENGINEER MUST GIVE PRIOR APPROVAL BEFORE DISTURBANCE OF ANY AREA CAN BEGIN.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATION, THE J.U.L.I.E. NUMBER IS 1-800-892-0123.
- THE LOCATION OF ALL UTILITIES ARE BASED ON INFORMATION PROVIDED BY OTHERS AND ARE INTENDED TO BE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE HIS CONSTRUCTION ACTIVITIES WITH THE VARIOUS UTILITY OWNERS. ALL POTENTIAL CONFLICTS SHALL BE INVESTIGATED AND REMEDIAL ACTION TAKEN PRIOR TO INTERRUPTION OF THE CONTRACTOR'S PROGRESS.
- ALL UTILITY FACILITIES THAT REQUIRE RELOCATION WITHIN COUNTY R.O.W. SHALL BE COMPLETED BY THE UTILITY COMPANY UNLESS OTHERWISE SHOWN ON THE PLANS.
- IN ADDITION TO FIELD SURVEYS, PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING FACILITIES HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION DUE TO A CHANGE IN THE SCOPE OF WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
  - ALL STATION AND OFFSET REFERENCES ARE TO THE SECTION LINE, WHICH IS ALSO THE PROPOSED ROADWAY CENTERLINE, UNLESS OTHERWISE NOTED. THE STATE PLANE COORDINATE SYSTEM HAS BEEN USED FOR THE HORIZONTAL CONTROL.
  - ALL ELEVATIONS SHOWN ON THE PLANS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.
  - ANY REFERENCE WITHIN THESE PLANS TO A STANDARD SHALL BE INTERPRETED TO MEAN THE EDITION INDICATED BY THE SUB-NUMBER LISTED ON THE COVER SHEET OR THE COPY INCLUDED IN THESE PLANS.
  - THE RESIDENT ENGINEER SHALL BE THE SOLE JUDGE CONCERNING CURING TIME FOR THE H-M-A SURFACE COURSE.
  - CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE IS MAINTAINED FROM THE ROADWAY DITCHES TO THE CHANNEL. ANY EXTRA REQUIRED GRADING SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
  - GRADING SHALL BE DONE BY HAND AROUND LIGHT POLES, UTILITY POLES, SIGN POSTS, SHRUBS, TREES OR OTHER NATURAL OR MAN-MADE OBJECTS WHERE SHALLOW FILLS OR CUTS ARE ADJACENT TO THE ITEMS. IT IS THE INTENT THAT THE LIMITS OF CONSTRUCTION BE SUCH AS TO PRESERVE IN THE ORIGINAL STATE AS MUCH AREA AS POSSIBLE. THE DECISION AS TO ITEMS TO REMAIN IN PLACE SHALL BE DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR EARTH EXCAVATION, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THE REMOVAL OF EXISTING ENTRANCE CULVERTS SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.
  - REMOVAL OF AGGREGATE MATERIAL AND OIL & CHIP BITUMINOUS MATERIAL SHALL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
  - SEEDING SHALL BE DONE ON ALL AREAS THAT ARE DISTURBED BY CONSTRUCTION OPERATIONS AS DIRECTED BY THE ENGINEER. SEEDING SHALL BE PAID FOR ONLY WITHIN THE PROPOSED RIGHT-OF-WAY OR EASEMENT LIMITS. ALL AREAS DISTURBED BY THE CONTRACTOR OUTSIDE THE PROPOSED CONSTRUCTION LIMITS SHALL BE SEED, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE. SEEDING WILL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET OR IN AN UNTILLABLE CONDITION.
  - FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

BITUMINOUS CONCRETE SURFACE COURSE	112 LBS/SQ YD - IN
ALL AGGREGATE	2.05 TONS/CU YD
BITUMINOUS MATERIALS (PRIME COAT)	0.5 GAL/SQ YD
AGGREGATE (PRIME COAT)	6 LBS/SQ YD
SEEDING FERTILIZER RATIO (NIT:PHOS:POT)	90:90:90 LBS/ACRE
MULCH	2 TONS/ACRE
TEMPORARY EROSION CONTROL SEEDING	100 LBS/ACRE
  - ACCESS TO ALL ENTRANCES SHALL BE MAINTAINED AT ALL TIMES.
  - ONLY THOSE TREES APPROVED FOR REMOVAL BY THE ENGINEER SHALL BE REMOVED. THE CONTRACTOR SHALL PROTECT ALL REMAINING TREES, PLANTS, AND WETLANDS FROM DAMAGE. ALL TREES AND STUMPS INDICATED ON THE PLANS FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
  - ALL PIPE CULVERTS SHALL BE PRECOATED GALVANIZED CORRUGATED STEEL PIPE.
  - FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SAND BAGS PER BARRICADE.

SUMMARY OF QUANTITIES			
			X081-2A
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNITS	22
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNITS	103
20100500	TREE REMOVAL, ACRES	ACRE	0.25
20200100	EARTH EXCAVATION	CU YD	2133
20400800	FURNISHED EXCAVATION	CU YD	1233
25000200	SEEDING, CLASS 2	ACRE	1.1
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	99
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	99
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	99
25100120	MULCH, METHOD 2	TON	4.4
25100630	EROSION CONTROL BLANKET	SQ YD	337
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	110
28000300	TEMPORARY DITCH CHECKS	EACH	9
28000400	PERIMETER EROSION BARRIER	FOOT	1945
28000500	INLET AND PIPE PROTECTION	EACH	2
28100107	STONE RIPRAP, CLASS A4	SQ YD	808
28200200	FILTER FABRIC	SQ YD	858
28300400	AGGREGATE DITCH	TON	51
40200100	AGGREGATE SURFACE COURSE, TYPE A	TON	891
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	73
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	53
50300225	CONCRETE STRUCTURES	CU YD	40.4
50300280	CONCRETE ENCASEMENT	CU YD	10.9
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	5400
50800105	REINFORCEMENT BARS	POUND	4540
* 50901050	STEEL RAILING, TYPE SM	FOOT	360
51201400	FURNISHING STEEL PILES HP10X42	FOOT	1430
51202305	DRIVING PILES	FOOT	1430
51203400	TEST PILE STEEL HP10X42	EACH	2
51500100	NAME PLATES	EACH	1
542C1069	PIPE CULVERT, CLASS C, TYPE 2, 24"	FOOT	103
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	600
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	1620
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	4
67100100	MOBILIZATION	L SUM	1
70103700	TRAFFIC CONTROL COMPLETE	L SUM	1
* 78200420	GUARD RAIL MARKERS, TYPE B	EACH	8
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1
X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1

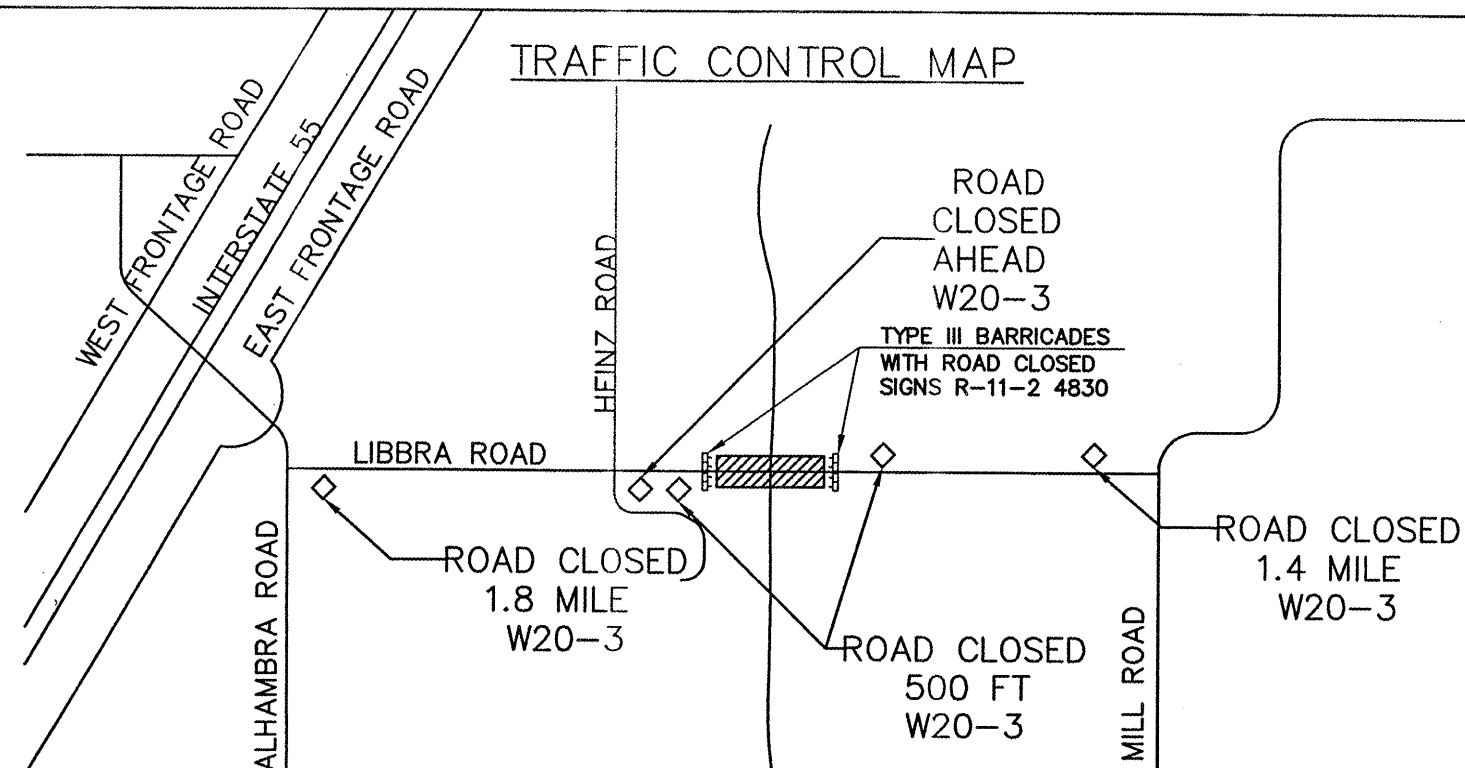
\* SPECIALTY ITEMS

SUMMARY OF QUANTITIES & GENERAL NOTES

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	3

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### TRAFFIC CONTROL MAP

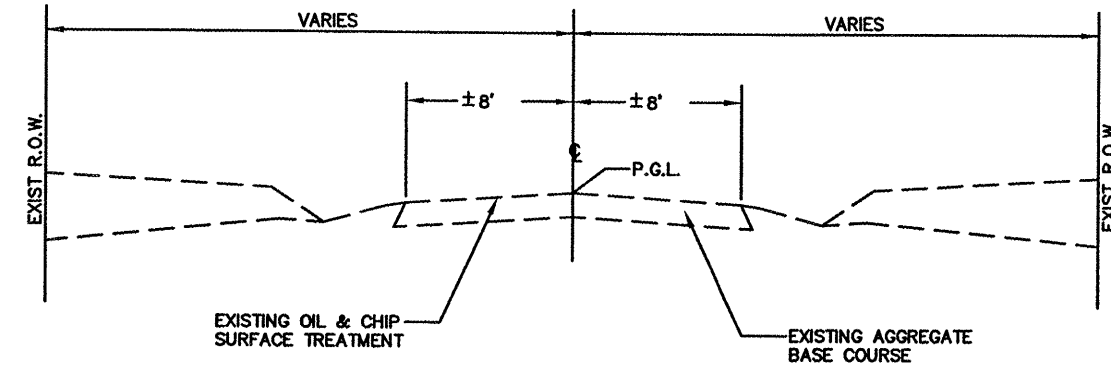


**NOTES:**

1. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER 72 HOURS PRIOR TO CLOSURE.
2. ALL TRAFFIC CONTROL DEVICES SHALL BE REFLECTIVE AND INCLUDE LOW INTENSITY FLASHING LIGHTS.
3. LOCATION OF TRAFFIC CONTROL DEVICES SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.
4. THE CONTRACTOR SHALL MAINTAIN TEMPORARY ACCESS TO DRIVEWAYS AFFECTED BY CONSTRUCTION.
5. FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SAND BAGS PER BARRICADE.
6. TRAFFIC CONTROL SHALL CONFORM TO IDOT HIGHWAY STANDARDS: 701901, B.L.R. 21-7

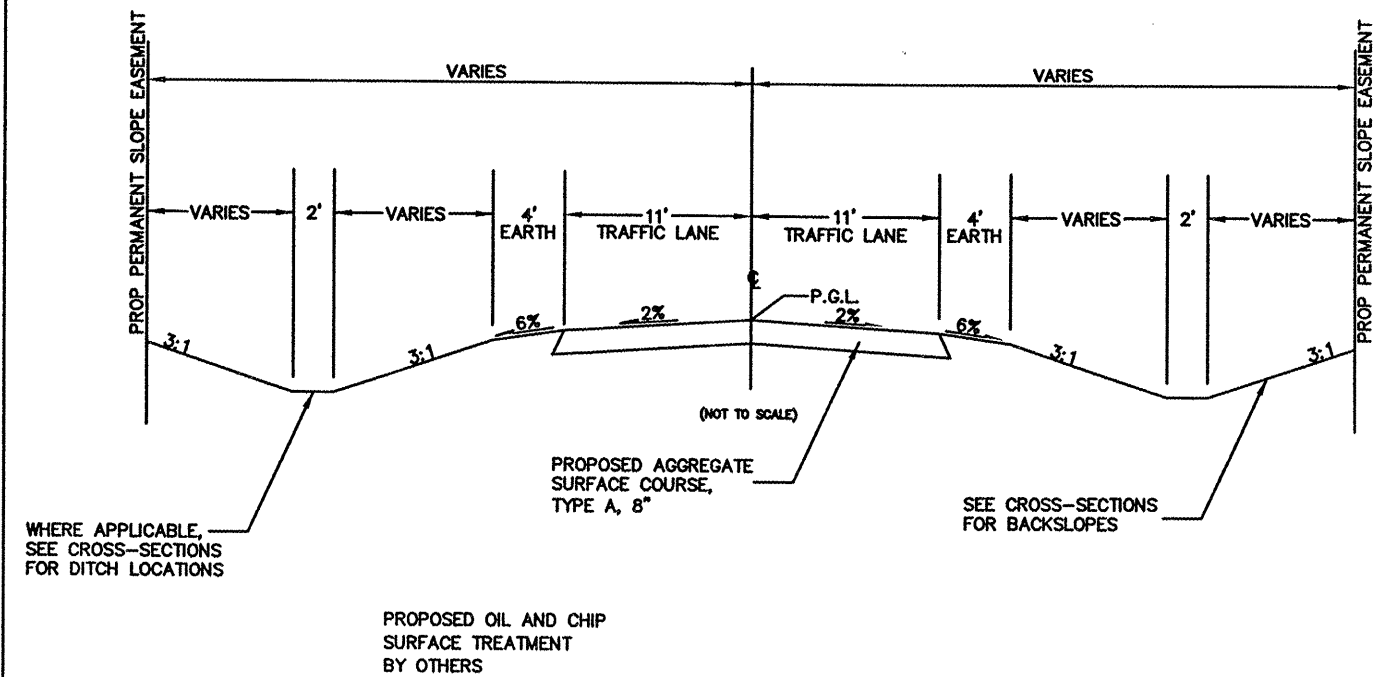
### EXISTING SECTIONS

EXISTING TYPICAL SECTION  
LIBBRA ROAD  
STA. 22+50 TO STA. 31+00  
(NOT TO SCALE)

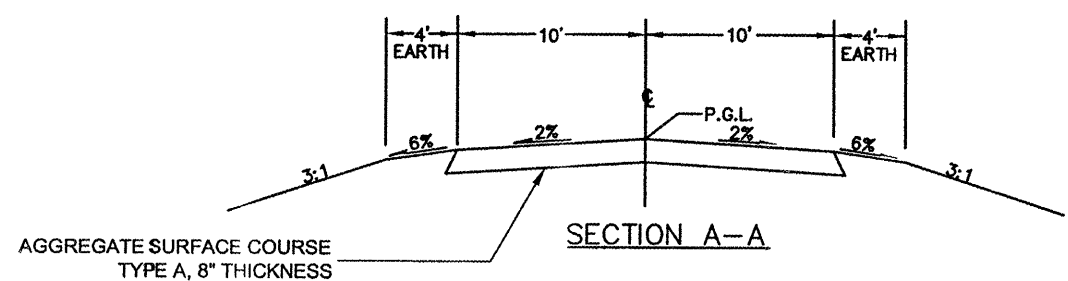
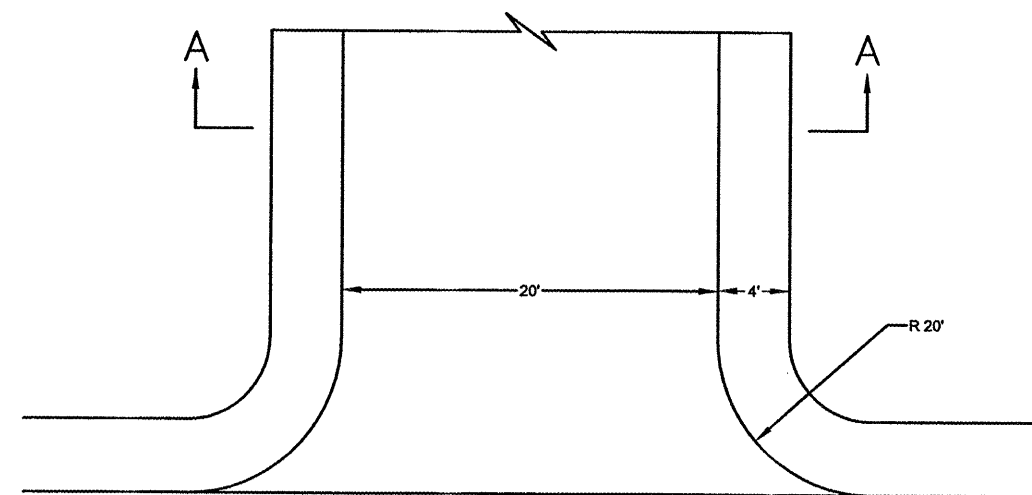


### PROPOSED TYPICAL SECTION LIBBRA ROAD

STA. 23+50 TO STA. 30+00  
BACK TO BACK ABUTMENTS  
STA. 25+35.25 TO STA. 27+16.75



### ENTRANCE DETAILS



TYPICAL SECTIONS & TRAFFIC CONTROL

**REMOVAL SCHEDULE**

LOCATION	REMOVE EXISTING STRUCTURE (EACH)	TREE REMOVAL (6 TO 15 UNITS DIAMETER) (UNITS)	TREE REMOVAL (OVER 15 UNITS DIAMETER) (UNITS)
STA 25+91.76 TO STA 26+63.02	1		
STA 25+75, 85.00' RT TO STA 27+50.00, 85.00' RT		22	
STA 29+25, 40.00' LT TO STA 29+50, 40' LT			103
TOTAL	1	22	103

**GUARDRAIL SCHEDULE**

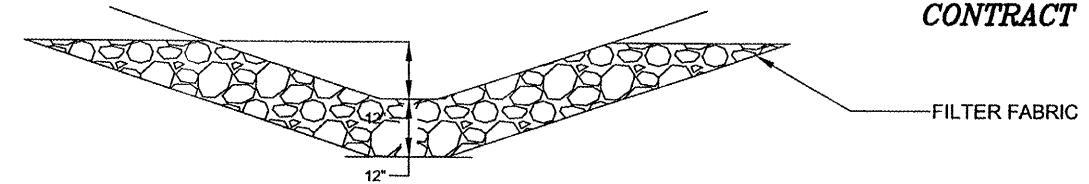
LOCATION	TRAFFIC BARRIER TERMINAL TYPE 6A (EACH)	TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL (TANGENT) (EACH)	TERMINAL MARKER DIRECT APPLIED (EACH)	GUARD RAIL MARKERS TYPE B
STA 24+41.50 LT TO STA 24+91.50 LT		1	1	
STA 24+91.50 LT TO STA 25+35.25 LT	1			
STA 24+91.50 LT				1
STA 25+35.25 LT				1
STA 27+16.75 LT				1
STA 27+16.75 LT TO STA 27+60.50 LT	1			
STA 27+60.50 LT				1
STA 27+60.50 LT TO STA 28+10.50 LT		1	1	
STA 24+41.50 RT TO STA 24+91.50 RT		1	1	
STA 24+91.50 RT TO STA 25+35.25 RT	1			
STA 24+91.50 RT				1
STA 25+35.25 RT				1
STA 27+16.75 RT				1
STA 27+16.75 RT TO STA 27+60.50 RT	1			
STA 27+60.50 RT				1
STA 27+60.75 RT TO STA 28+10.50 RT		1	1	
TOTAL	4	4	4	8

**PIPE SCHEDULE**

LOCATION	PIPE CULVERT CL C, TYPE 2, 24" (FOOT)
STA 23+22.31, 27.83' LT TO STA 23+78.74, 35.92' LT	57
STA 29+23.31, 39.03' LT TO STA 29+67.09, 53.13' LT	46
TOTAL	103

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**AGGREGATE DITCH DETAIL**

	RR3 TONS	FILTER FABRIC (SQ YD)
LT. STATION 26+02 - 26+08.87	5.0	13
LT. STATION 26+43.75 - 26+50	4.7	12
RT. STATION 26+02 - 26+08.87	5.0	13
RT. STATION 26+43.48 - 26+50	4.7	12
TOTAL	19.4	50

**AGGREGATE SCHEDULE**

LOCATION	AGGREGATE SURFACE COURSE TYPE A (TON)
LIBBRA ROAD:	
STA 22+50.00 TO STA 25+35.25	295
STA 27+16.75 TO STA 31+00.00	400
STA 23+50.00 LT FE	61
STA 29+46.12 LT FE	62
STA 29+36.12 RT FE	73
TOTAL	891

**EROSION CONTROL BLANKET SCHEDULE**

LOCATION	SQUARE YARDS
STA 25+00 TO STA 26+02 RT	91
STA 25+25 TO STA 26+02 LT	68
STA 26+50 TO STA 27+50 LT	88
STA 26+50 TO STA 27+50 RT	90
TOTAL	337

**INLET AND PIPE PROTECTION**

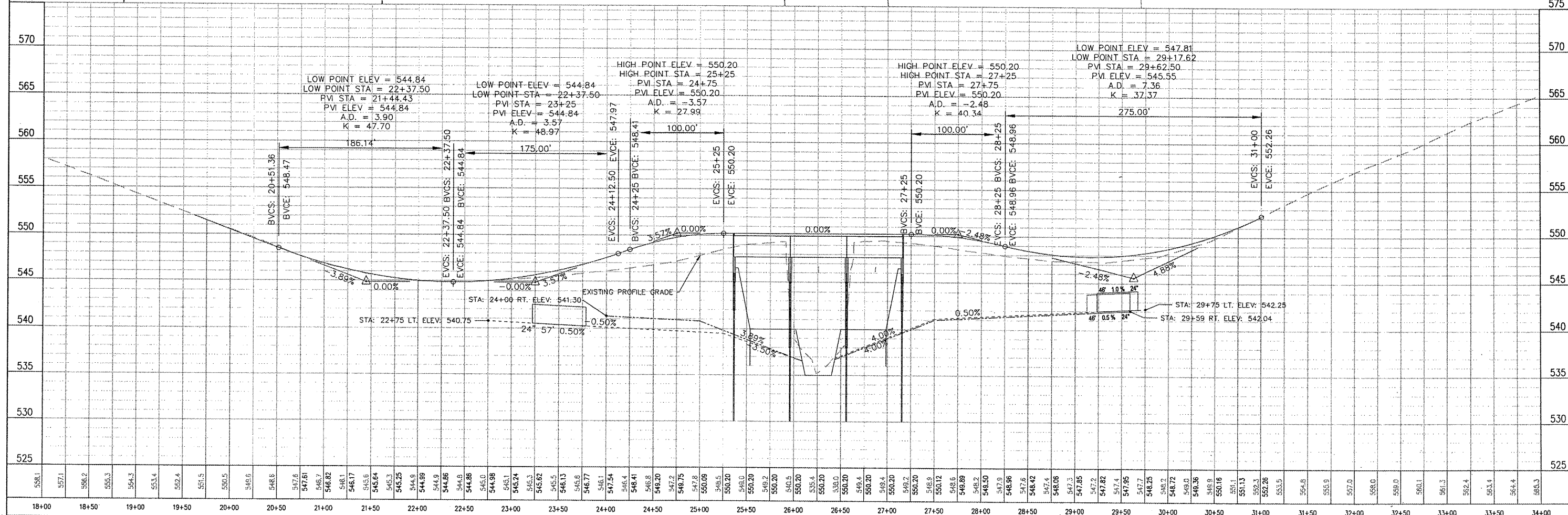
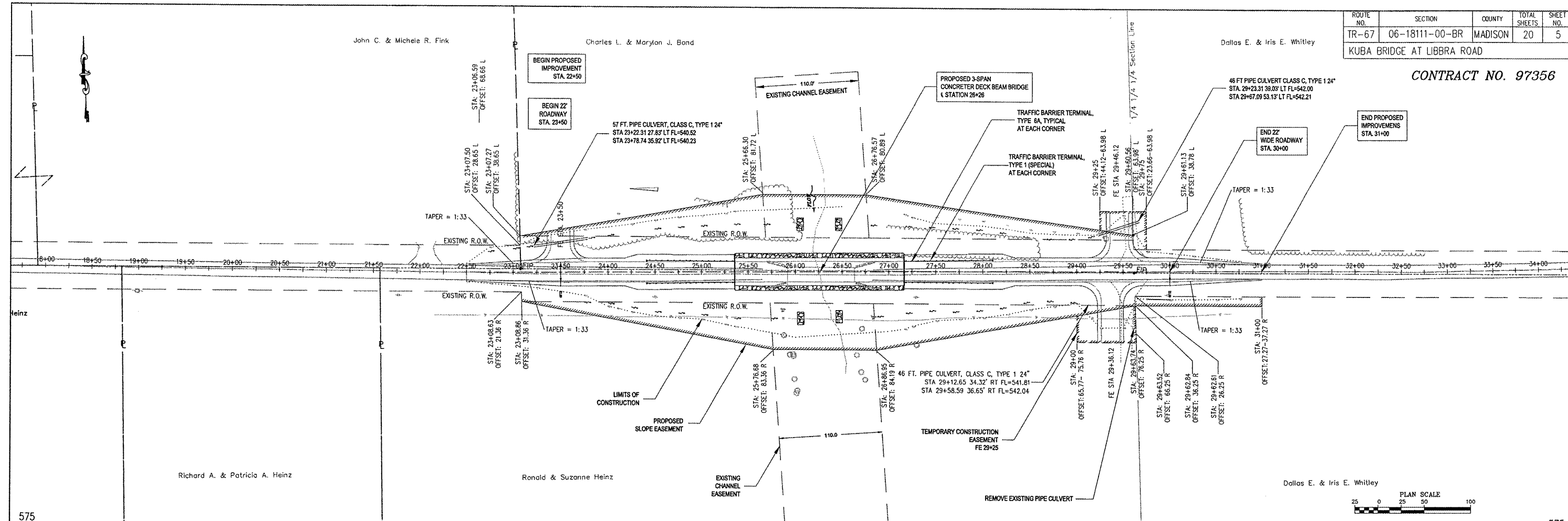
LOCATION	
STA 23+22.31 27.83' LT	1
STA 29+67.09 53.13' LT	1
TOTAL	2

SCHEDULES OF QUANTITIES



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR-67	06-18111-00-BR	MADISON	20	5
KUBA BRIDGE AT LIBBRA ROAD				






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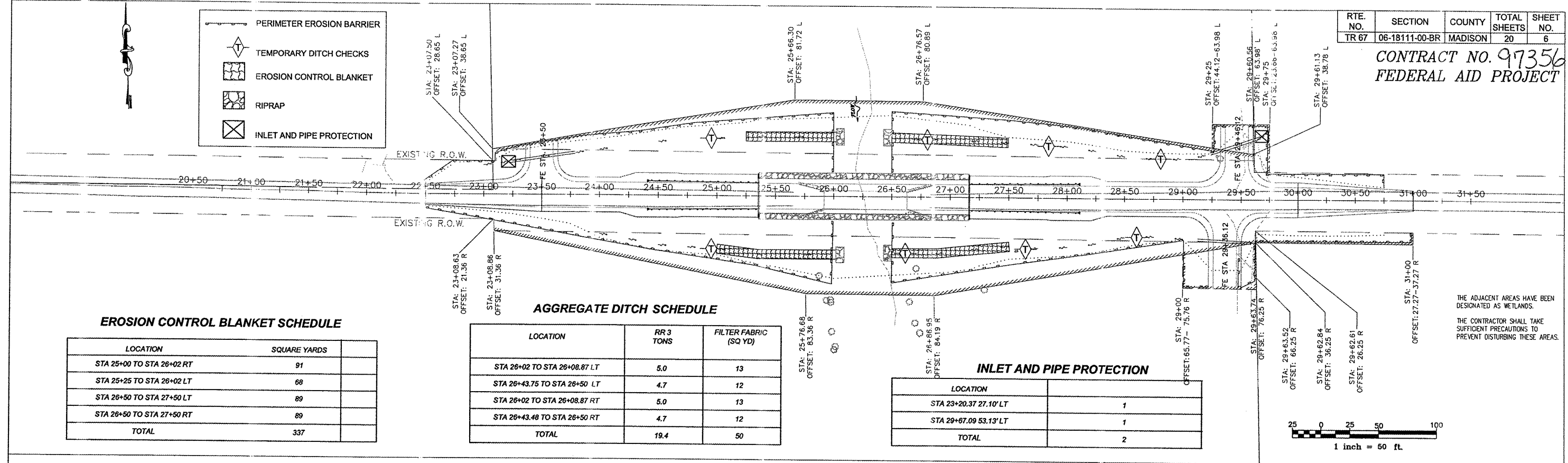


PLAN AND PROFILE

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	6

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-  PERIMETER EROSION BARRIER
-  TEMPORARY DITCH CHECKS
-  EROSION CONTROL BLANKET
-  RIPRAP
-  INLET AND PIPE PROTECTION



**EROSION CONTROL BLANKET SCHEDULE**

LOCATION	SQUARE YARDS
STA 25+00 TO STA 26+02 RT	91
STA 25+25 TO STA 26+02 LT	68
STA 26+50 TO STA 27+50 LT	89
STA 26+50 TO STA 27+50 RT	89
<b>TOTAL</b>	<b>337</b>

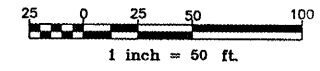
**AGGREGATE DITCH SCHEDULE**

LOCATION	RR 3 TONS	FILTER FABRIC (SQ YD)
STA 26+02 TO STA 26+08.87 LT	5.0	13
STA 26+43.75 TO STA 26+50 LT	4.7	12
STA 26+02 TO STA 26+08.87 RT	5.0	13
STA 26+43.48 TO STA 26+50 RT	4.7	12
<b>TOTAL</b>	<b>19.4</b>	<b>50</b>

**INLET AND PIPE PROTECTION**

LOCATION	
STA 23+20.37 27.10' LT	1
STA 29+67.09 53.13' LT	1
<b>TOTAL</b>	<b>2</b>

THE ADJACENT AREAS HAVE BEEN DESIGNATED AS WETLANDS.  
THE CONTRACTOR SHALL TAKE SUFFICIENT PRECAUTIONS TO PREVENT DISTURBING THESE AREAS.

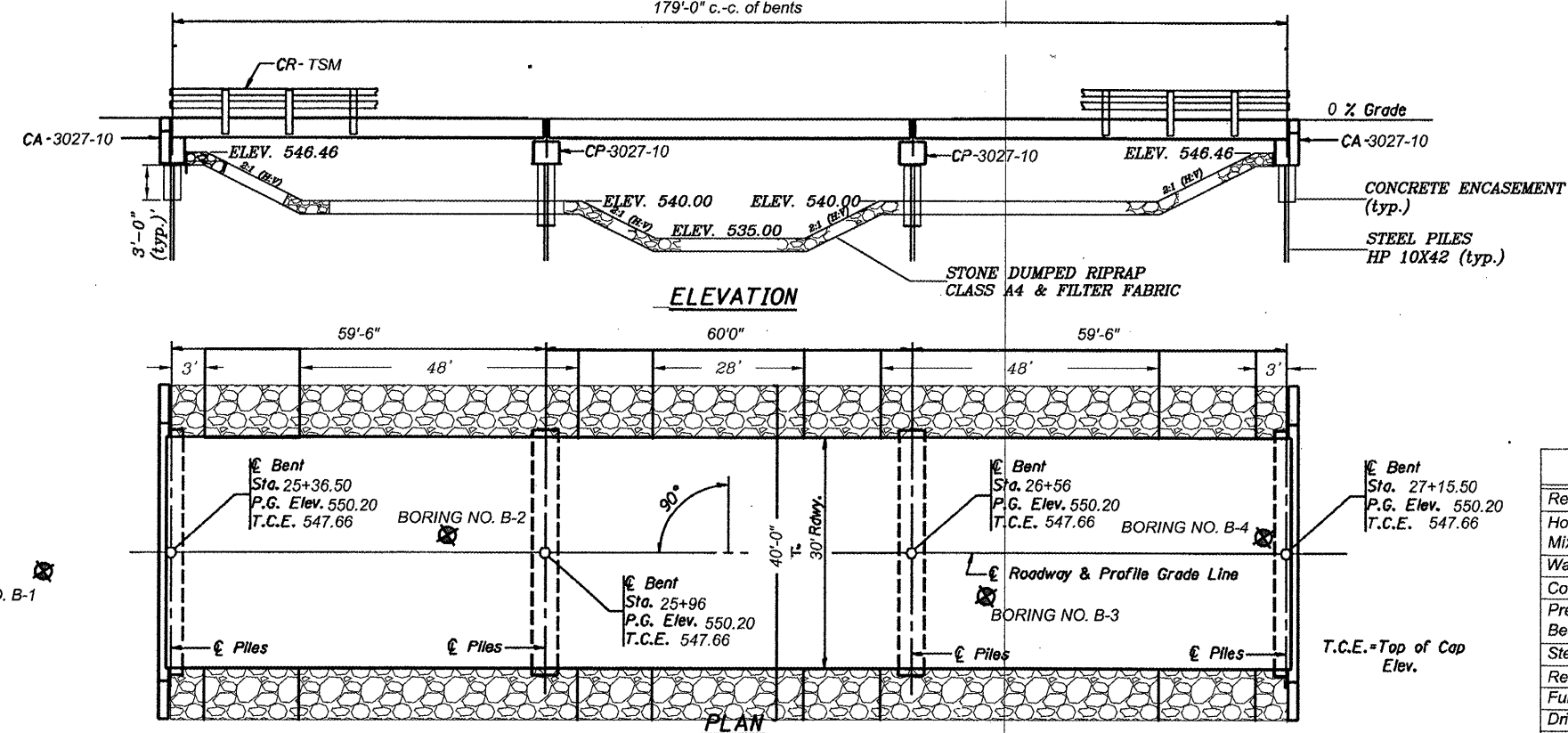


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B.M. = 546.21 R.R. SPIKE IN 24" TREE, STA. 25+66, 67' LEFT, & = 544.23 R.R. SPIKE IN 12' TREE, STA. 26+65, 105' RIGHT  
 EXISTING STRUCTURE- S.N. 060-3068. Built in 1959. Single Span 68'-9" c. to c. bearings. 15'-9" o. to o. width.  
 Timber deck with a riveted Pratt Pony Truss superstructure on closed timber abutments

SALVAGE-NONE



- GENERAL NOTES**
- The contractor shall drive 2 test piles, as specified in a permanent location as directed by the Engineer before ordering the remaining pile.
  - See Special Provision for boring logs.
  - All references to "Bituminous Concrete Surface Course, Class I", or "Overlay" on the standard bridge plan sheets included herewith should be interpreted as referring to -Hot-Mix Asphalt Surface Course, Mix "C", N50.
  - The Steel H-Piles shall be according to AASHTO M270 Grade 50.
  - The test piles shall be driven to 110 percent of the nominal required bearing indicated in the pile data information.

**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts	
Removal of Existing Structure					1
Hot-Mix Asphalt Surface Course, Mix "C", N50	Ton	73			73
Waterproofing Membrane System	Sq. Yd.	600			600
Concrete Structures	Cu. Yd.		18.2	22.2	40.4
Precast Prestressed Concrete Deck Beams (27" Depth)		5400			5400
Steel Railing, Type SM	Foot	360			360
Reinforcement Bars	Pound		1840	2700	4540
Furnishing Steel Piles, Hp 10X42	Foot		845	585	1430
Driving Piles	Foot		845	585	1430
Test Piles HP 10X42	Each		1	1	2
Name Plates	Each		1	1	2
Concrete Encasement	Cu. Yd.	1620	8.3	2.6	10.9
Portland Cement Mortar Fairing Course	Foot				1620



"I certify that to the best of my knowledge, information and belief, this bridge/ box culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO Standard Specifications for Highway Bridges. The capacity of the pile foundation, hydraulics and quantities were determined by Others and are not covered by this certification.

**DESIGN SPECIFICATIONS**  
 2002 AASHTO Standard Specifications - 17th ed.

**LOADING HS20-44**  
 Allow 25#/sq. ft. for future wearing surface.

**SESMIC DATA**  
 Seismic Performance Category (SPC) = A  
 Bedrock Acceleration Coefficient (A) = 0.83 g  
 Site Coefficient (S) = 1.5

**PILE DATA ( 2 PIERS)**

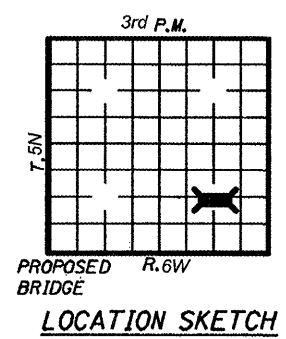
TYPE	HP 10X42
NOMINAL REQUIRED BEARING	335 KIPS
ALLOWABLE RESISTANCE AVAILABLE	112 KIPS
ESTIMATED LENGTH	65 FEET
NUMBER REQUIRED	14 (Includes 1 Test Pile located in bent # 2)

**PILE DATA ( 2 ABUTS)**

TYPE	HP 10X42
NOMINAL REQUIRED BEARING	335 KIPS
ALLOWABLE RESISTANCE AVAILABLE	112 KIPS
ESTIMATED LENGTH	65 FEET
NUMBER REQUIRED	10 (Includes 1 Test Pile located in bent # 4)

STATION 26+26  
 SILVER CREEK  
 SEC. 06-18111-00-BR BUILT 2008  
 OLIVE ROAD DISTRICT  
 MADISON COUNTY  
 LOADING HS20  
 STR. NO. 060-3347

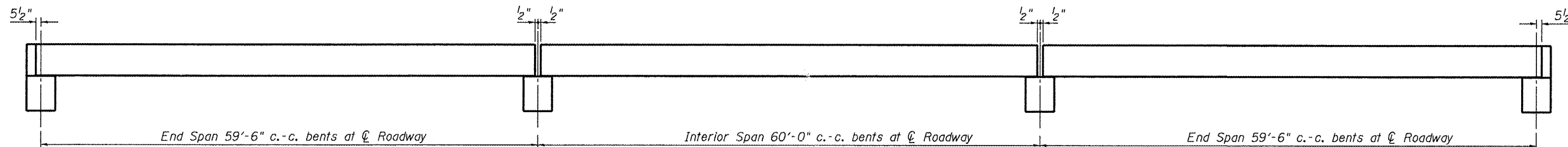
**LETTERING FOR NAME PLATE**  
 Locate Name Plate at South West Corner of Bridge (See Std. CN)



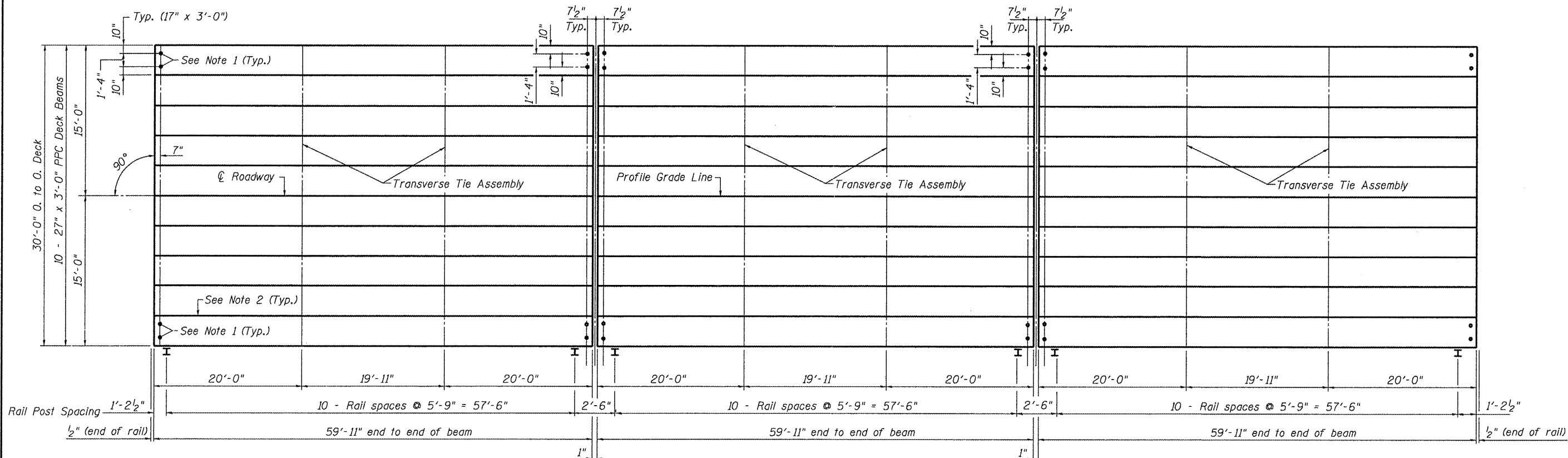
**WATERWAY INFORMATION**

Drainage Area = 21.81		Low Grade Elev. = 544.88		Sta. 22+25		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head - Ft.	Headwater EL.
Design	15	3431	624	969	544.28	0.98 0.49 545.26 544.77
Base	100	5502	696	1073	545.23	1.28 0.54 546.51 545.77
Overtopping						
Max. Calc.	500	7204	1142	1339	545.87	1.25 0.61 547.12 546.48

**GENERAL PLAN & ELEVATION**  
 TOWNSHIP ROUTE 67  
 LIBBRA ROAD OVER SILVER CK.  
 SECTION 06-18111-00-BR  
 MADISON COUNTY  
 STATION 26+26



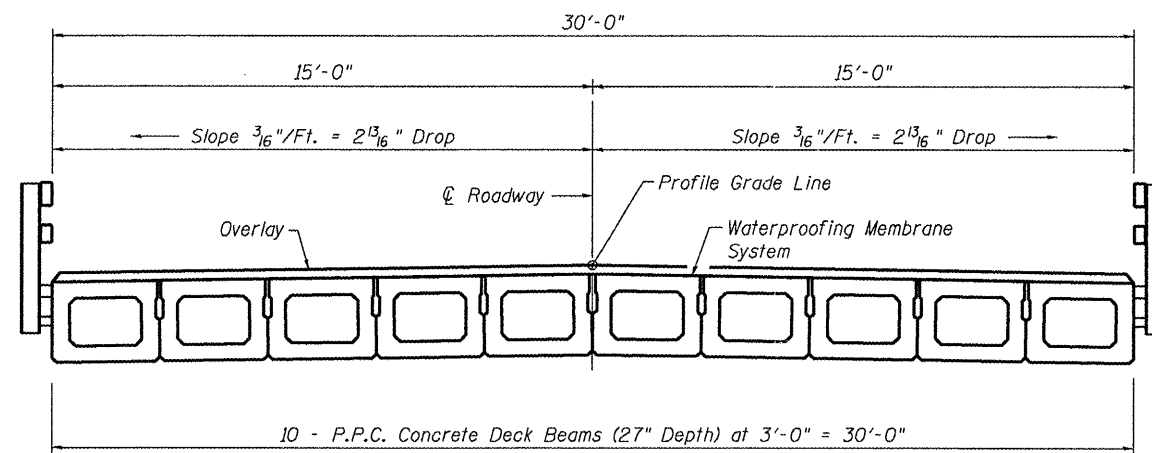
**ELEVATION**



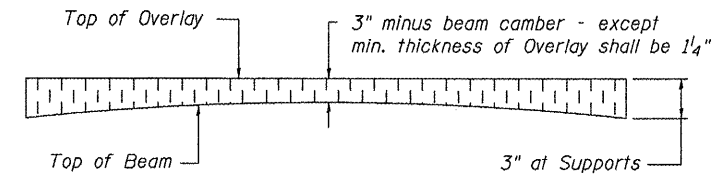
**PLAN**

**NOTES**

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Longitudinal keys shall be grouted.



**CROSS SECTION**



**PROFILE OF OVERLAY**

L:\Jobs\IDOT BBS\6956 BBS Various\Various\6956\05\CADD\Struct\Madison 06-18111-00-BR.dgn

USER NAME = dheber.ling	DESIGNED - SDS	REVISED
PLOT SCALE = 0.2,0000 1' / IN.	DRAWN - DLH	REVISED
PLOT DATE = 7/17/2008	CHECKED -	REVISED
	DATE -	REVISED

**WHKS & CO.**  
ENGINEERING

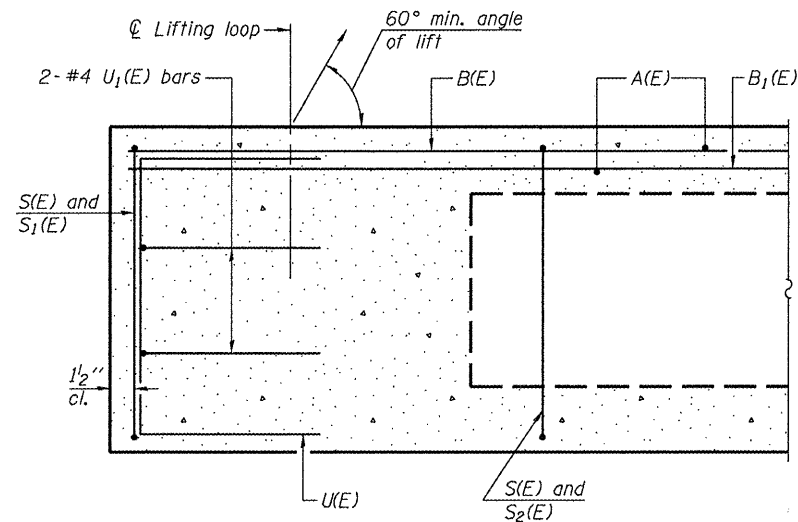
7018 KINGSMILL CT.,  
SPRINGFIELD, IL  
(217) 483-9457  
DESIGN FIRM #184001036

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

<b>SUPERSTRUCTURE</b>	
<b>27" x 36" PPC DECK BEAMS</b>	
SCALE:	STATION
SHEET NO. 8 OF 20 SHEETS	<math>\text{C}</math> STA.

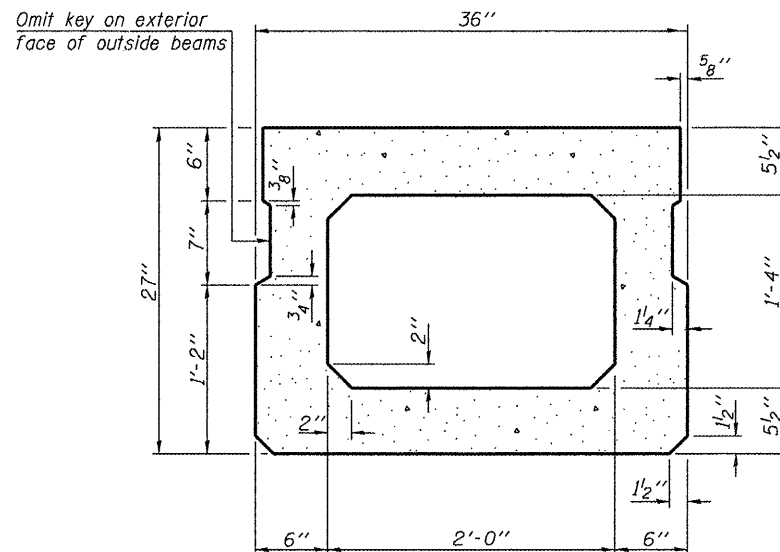
T.R. RTE. 67	SECTION 06-18111-00-BR	COUNTY MADISON	TOTAL SHEETS 20	SHEET NO. 8
S.N. -			CONTRACT 97356	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

L:\Jobs\DOT BBS\6956 BBS\6956\05\CADD\_Struct\Madison 06-1811-00-BR.dgn

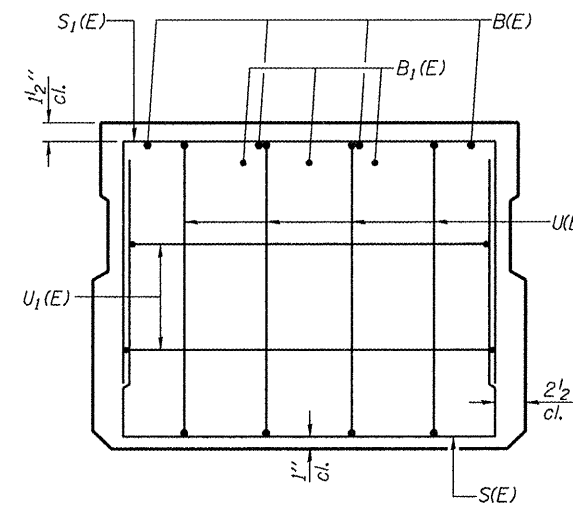


SECTION C-C

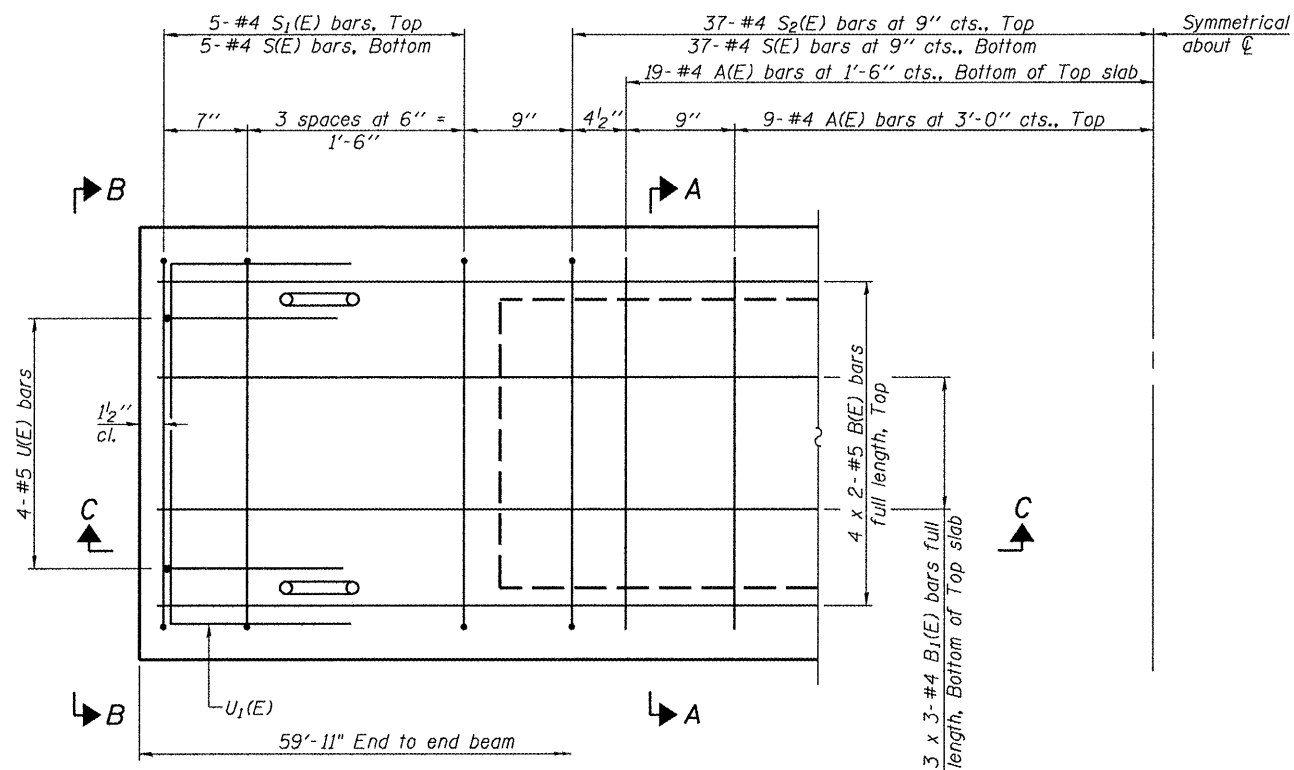
**MIN. BAP LAP**  
 #4 bar = 1'-8"  
 #5 bar = 2'-2"



SECTION A-A  
 (Showing dimensions)

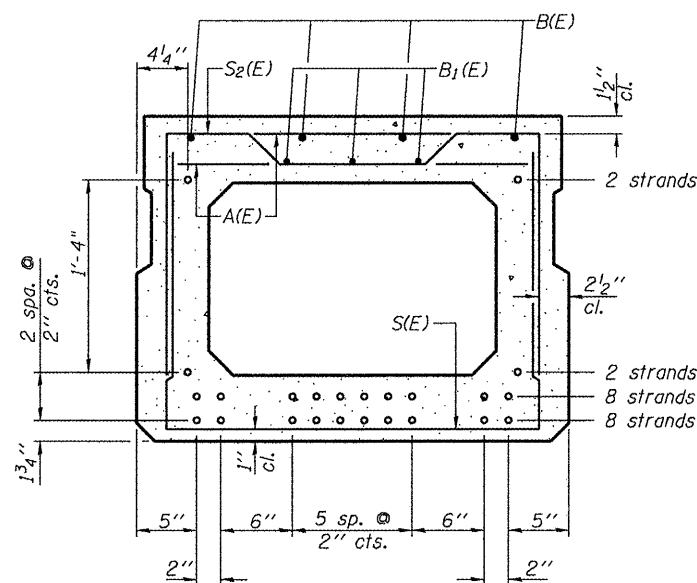


VIEW B-B



PLAN VIEW

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION A-A

(Showing reinforcement and permissible strand locations)  
 Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

**BAR LIST**  
**ONE BEAM ONLY**  
 (For information only)

Bar	No.	Size	Length	Shape
A(E)	56	#4	2'-7"	—
B(E)	8	#5	30'-11"	—
B1(E)	9	#4	21'-0"	—
S(E)	84	#4	6'-5"	—
S1(E)	10	#4	5'-11"	—
S2(E)	74	#4	6'-2"	—
U(E)	8	#5	4'-6"	—
U1(E)	4	#4	5'-0"	—

USER NAME = dheberling	DESIGNED - SDS	REVISED
PLOT SCALE = 0:2.0000 1/4" / IN.	DRAWN - DLH	REVISED
PLOT DATE = 7/17/2008	CHECKED -	REVISED
	DATE -	REVISED

**WHKS & CO.**  
**ENGINEERING**

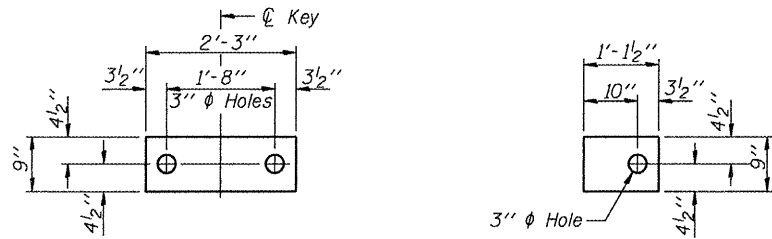
7018 KINGSMILL CT.  
 SPRINGFIELD, IL  
 (217) 483-9457  
 DESIGN FIRM #184001036

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

<b>SUPERSTRUCTURE DETAILS</b>	
<b>27" x 36" PPC DECK BEAMS</b>	
SCALE:	SHEET NO. 9 OF 20 SHEETS
	STA.

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67	06-18111-00-BR	MADISON	20	9
S.N. -	CONTRACT		97356	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



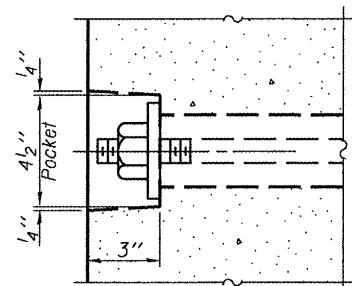


**FABRIC BEARING PAD**  
(Interior)

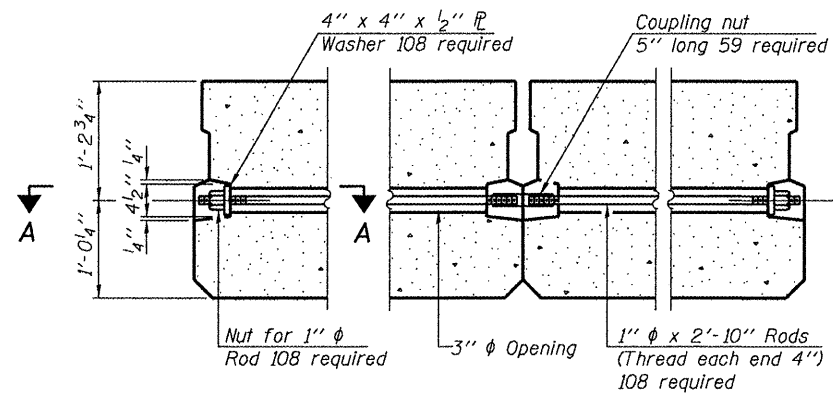
**FABRIC BEARING PAD**  
(Exterior)

**FIXED**

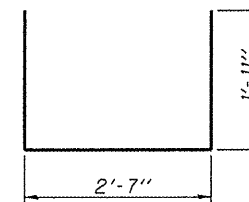
Note: Omit holes when using expansion bearings.



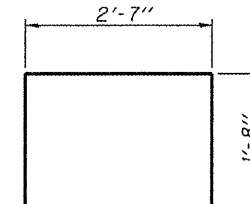
**SECTION A-A**



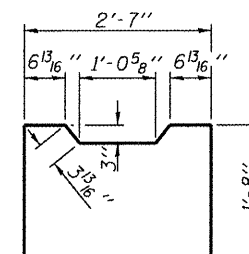
**TYPICAL TRANSVERSE TIE ASSEMBLY**



**BAR S1(E)**

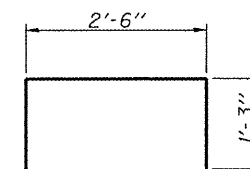


**BAR S2(E)**

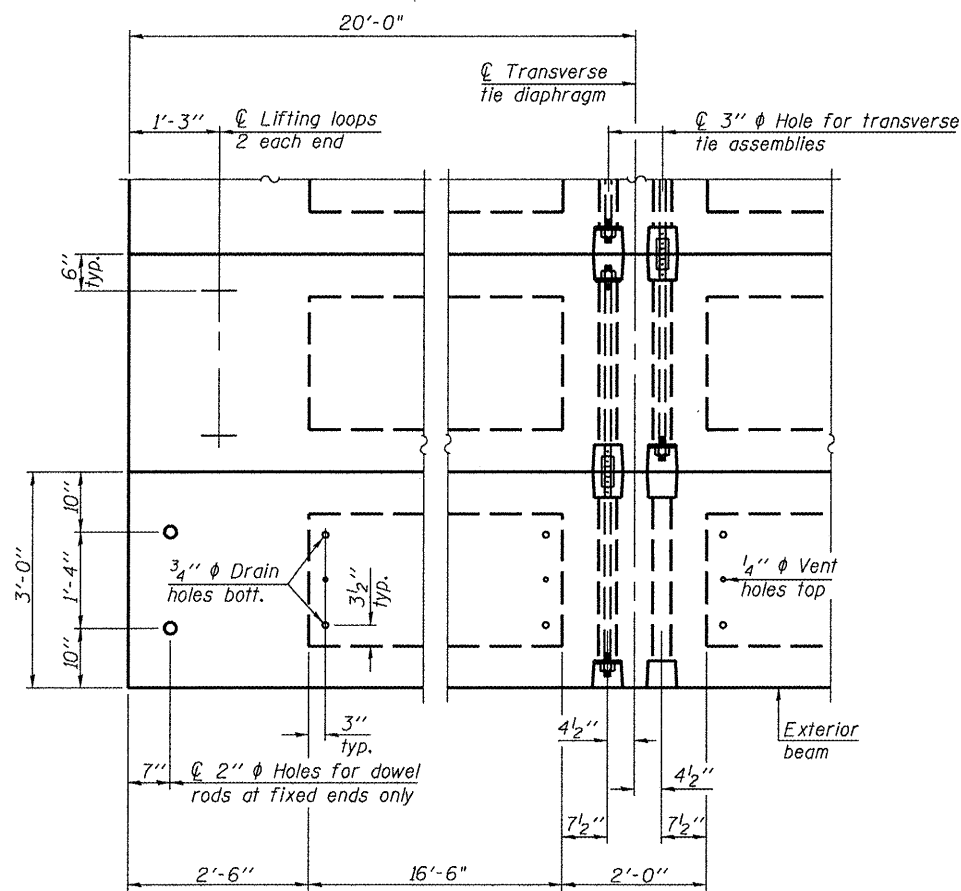


**BAR U1(E)**

**BAR S2(E)**



**BAR U2(E)**

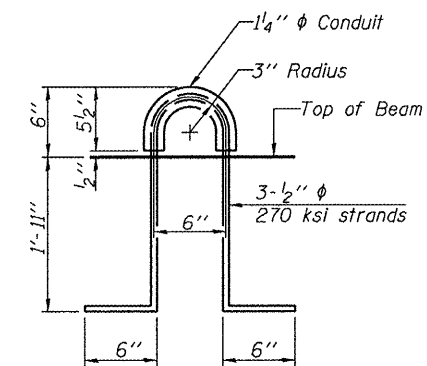


**PLAN VIEW**

Note: Connect beams in pairs with the transverse tie configuration shown.

**NOTES**

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
- Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
- Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	5,400
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L:\Jobs\1001\BBS\6956\BBS\_Various\_Various\6956\05\CADD\_Struct\Madison\_06-18111-00-BR.dgn

USER NAME = dhaberling	DESIGNED - SDS	REVISED
	DRAWN - DLH	REVISED
PLOT SCALE = 0:2.0000 ' = 1" IN.	CHECKED -	REVISED
PLOT DATE = 7/17/2008	DATE -	REVISED

**WHKS & CO.**  
ENGINEERING

7018 KINGSMILL CT.,  
SPRINGFIELD, IL  
(217) 483-9457  
DESIGN FIRM #184001036

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

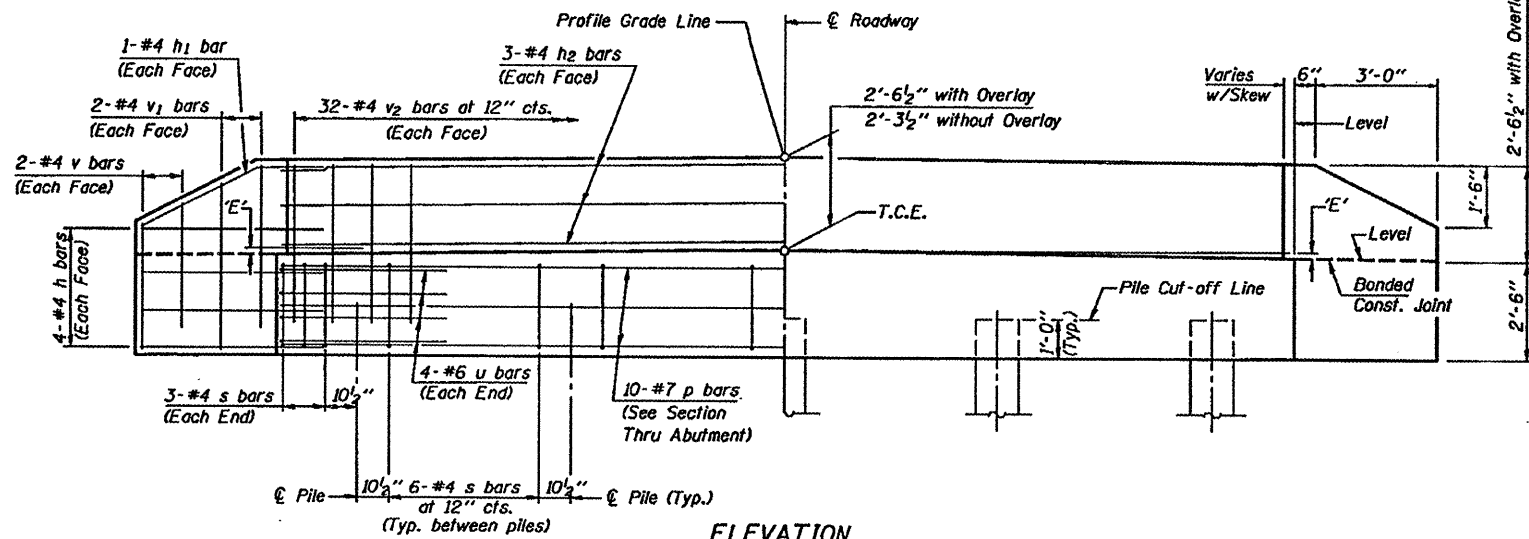
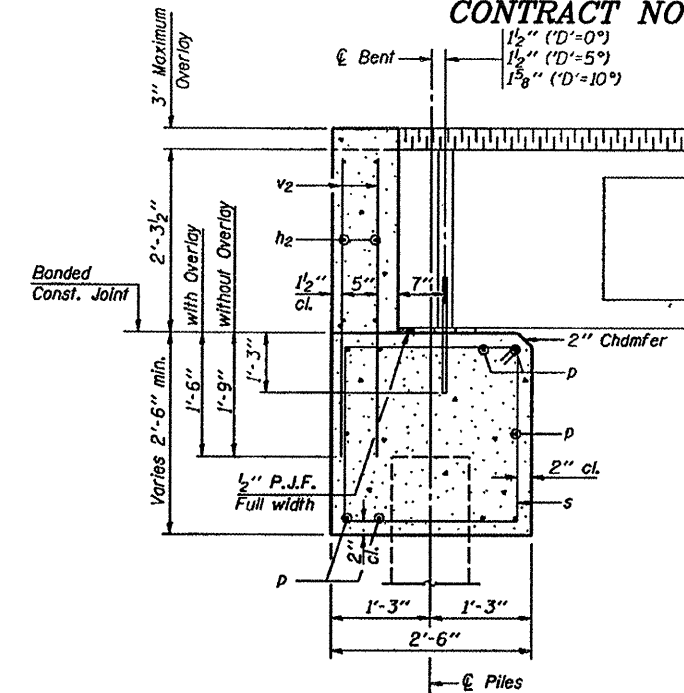
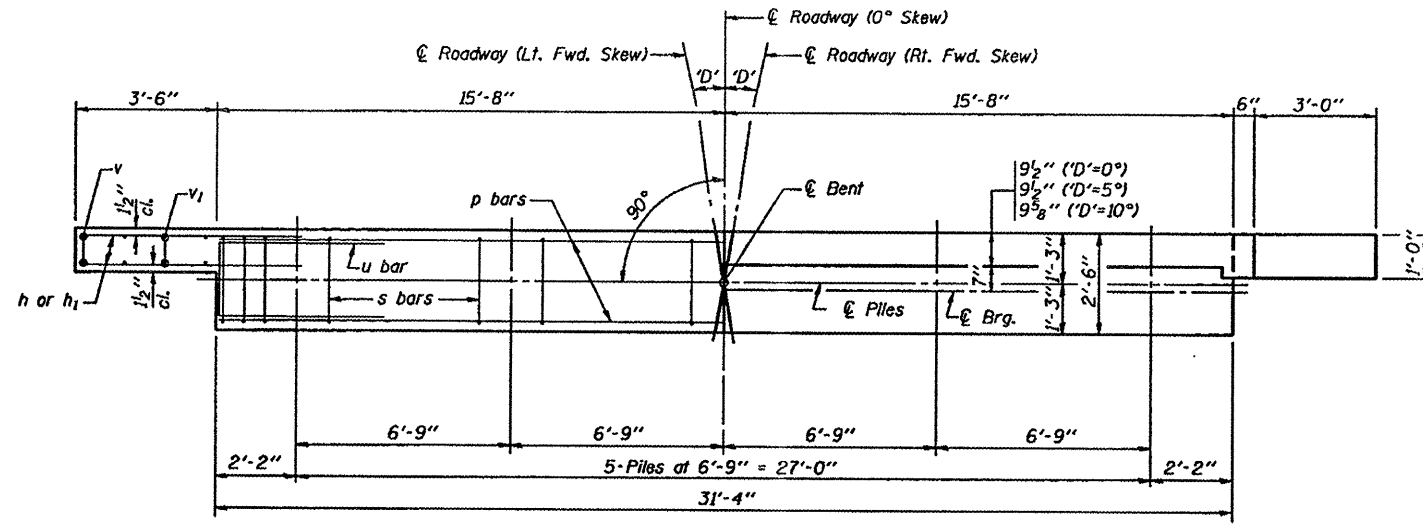
<b>SUPERSTRUCTURE DETAILS</b>		
<b>27" x 36" PPC DECK BEAMS</b>		
SCALE:	SHEET NO. 10 OF 20 SHEETS	STA.

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67	06-18111-00-BR	MADISON	20	10
S.N. -	CONTRACT		97356	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	11

CONTRACT NO. 97356

1 1/2" (D'=0°)  
1 1/2" (D'=5°)  
1 5/8" (D'=10°)



DIMENSION 'E'

GRADE	D'=0°		D'=5°		D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"
Over 0% to 1%	2 7/8"	2 7/8"	2 7/8"	3"	2 3/4"	3"
Over 1% to 2%	2 7/8"	2 7/8"	2 5/8"	3 1/2"	2 3/8"	3 3/8"
Over 2% to 3%	2 7/8"	2 7/8"	2 1/2"	3 3/8"	2 1/8"	3 3/4"
Over 3% to 4%	2 7/8"	2 7/8"	2 3/8"	3 1/2"	1 3/4"	4"

NOTES

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

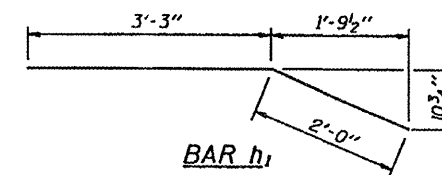
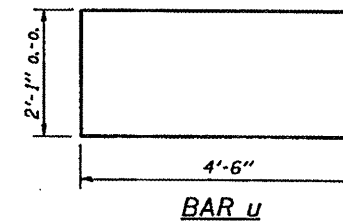
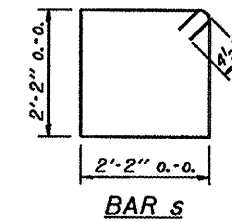
SPAN	TONS
40'	32
50'	36
60'	41

DESIGN STRESSES

f'c = 3,500 psi  
fy = 60,000 psi

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	31'-0"	—
p	10	#7	31'-0"	—
s	30	#4	9'-5"	□
u	8	#6	11'-1"	—
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	64	#4	3'-11"	—
Concrete Structures				11.1 Cu. Yds.
Reinforcement Bars				1350 Lb.

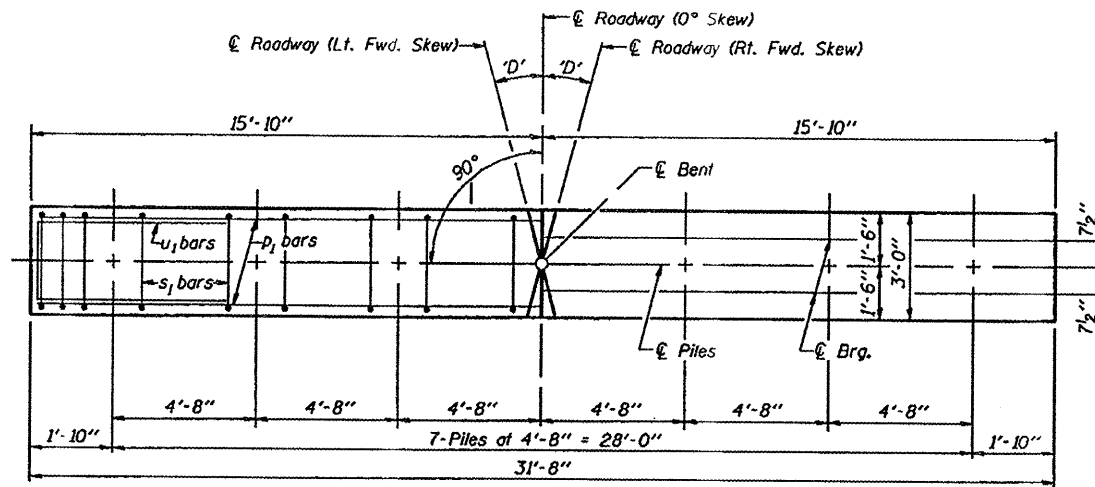


P.P.C. DECK BEAMS PILE BENT ABUTMENT		
30' RDWY.	27" BMS.	D'=0°, 5° OR 10°
STANDARD CA-3027-10		

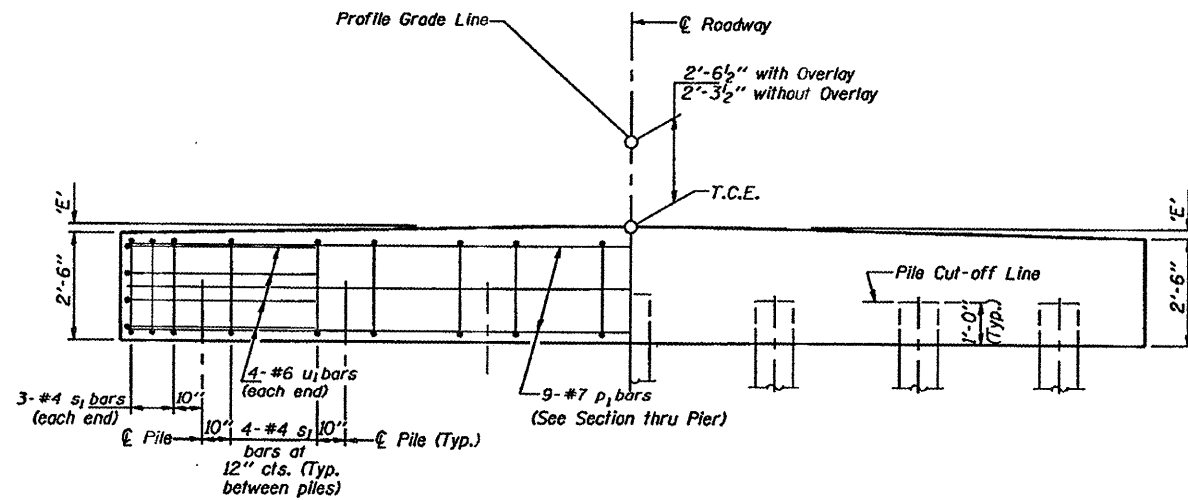
Illinois Department of Transportation  
PASSED APRIL 3, 2005  
Theresa J. ...  
APPROVED APRIL 4, 2005  
Ralph E. ...  
Engineer of Bridges and Structures

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	12

CONTRACT NO. 97356



PLAN  
(\*D' = Designated Skew Angle)



ELEVATION

DIMENSION 'E'

GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 1/8"	2 1/8"	2 1/8"	2 1/8"	2 1/8"	2 1/8"
Over 0% to 1%	2 1/8"	2 1/8"	2 1/8"	3"	2 3/4"	3"
Over 1% to 2%	2 1/8"	2 1/8"	2 5/8"	3 1/2"	2 3/8"	3 3/8"
Over 2% to 3%	2 1/8"	2 1/8"	2 1/2"	3 3/8"	2 1/2"	3 3/4"
Over 3% to 4%	2 1/8"	2 1/8"	2 3/8"	3 1/2"	1 3/4"	4"

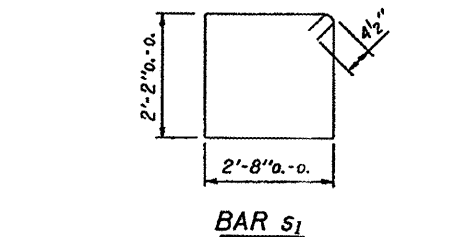
MAXIMUM PILE LOADS

SPAN	TONS
40'	33
50'	39
60'	44

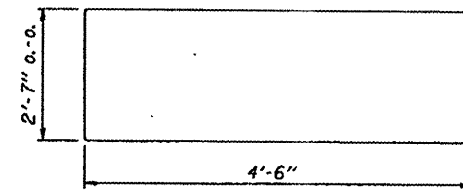
Longer of Either Span Supported by Pier.

DESIGN STRESSES

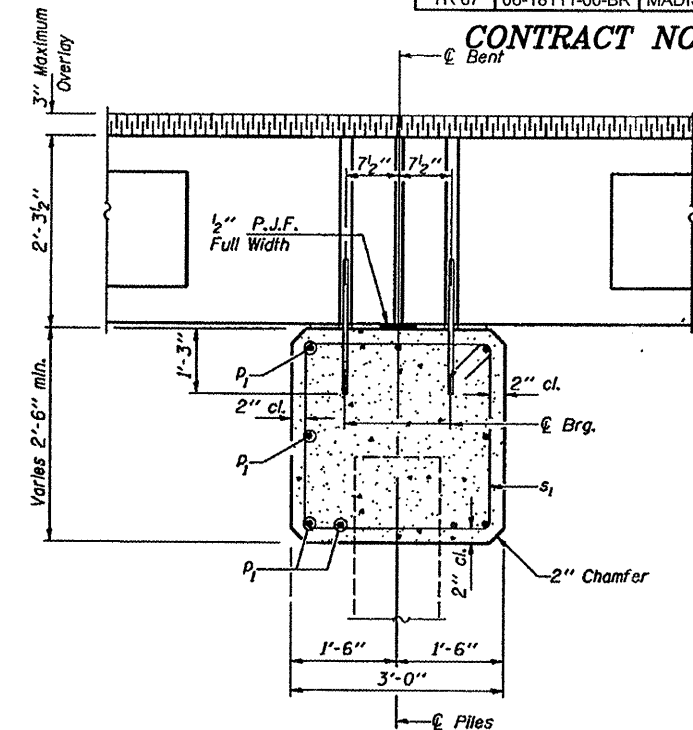
f'c = 3,500 psi  
fy = 60,000 psi



BAR s1



BAR u1



SECTION THRU PIER  
(At Right Angles)

BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p1	9	#7	31'-4"	—
s1	30	#4	10'-5"	□
u1	8	#6	11'-7"	—
Concrete Structures			9.1 Cu. Yds.	
Reinforcement Bars			920 Lb.	

P.P.C. DECK BEAMS  
PILE BENT PIER

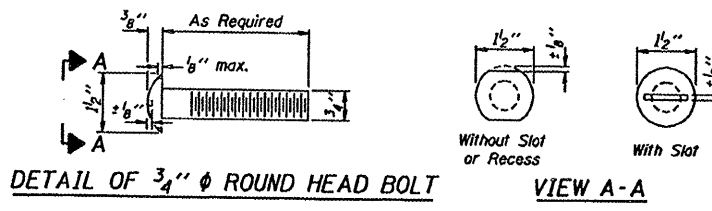
30' RDWY. | 27" BMS. | 'D'=0°, 5° OR 10°

STANDARD CP-3027-10

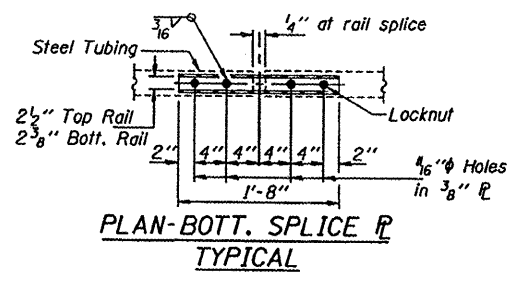
Illinois Department of Transportation  
PASSED APRIL 4, 2005  
Thomson Design  
Engineer of Bridge Design  
APPROVED APRIL 4, 2005  
Ralph E. Anderson  
Engineer of Bridges and Structures

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	13

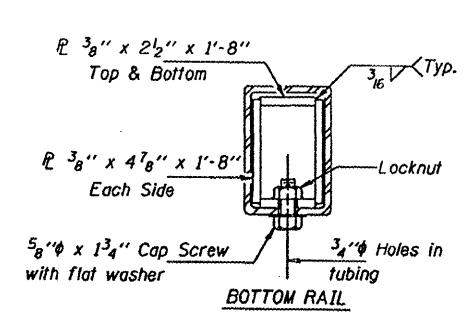
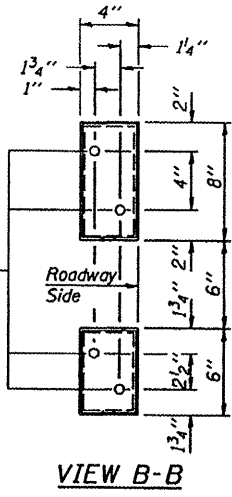
CONTRACT NO. 97356



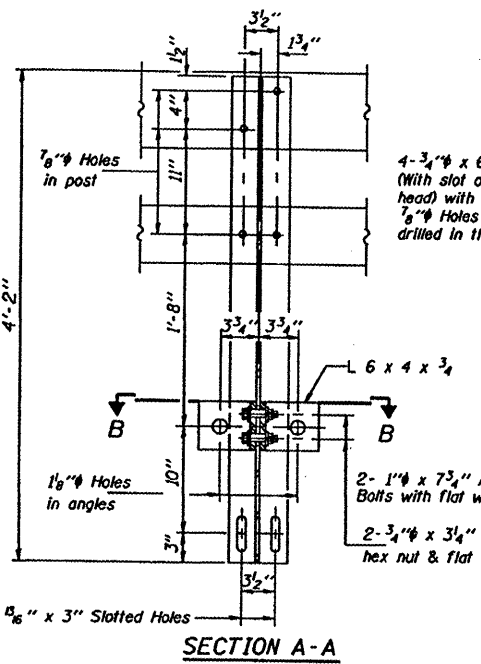
VIEW A-A



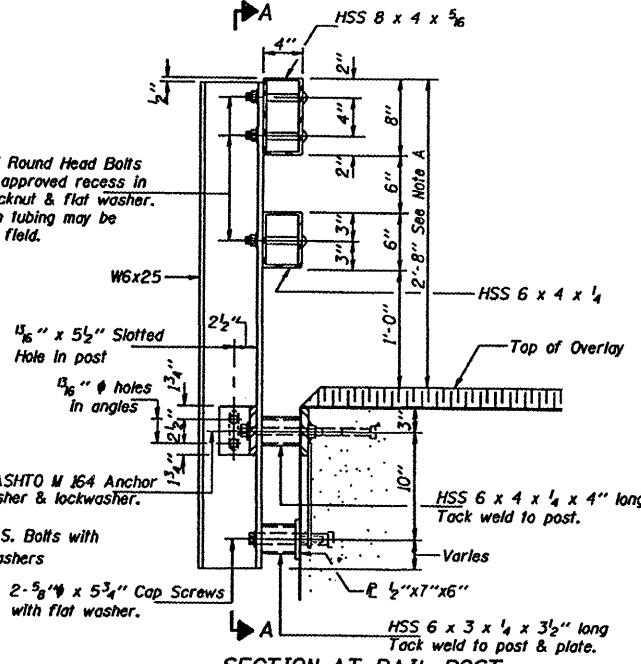
4 - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



SECTIONS AT RAIL SPLICE

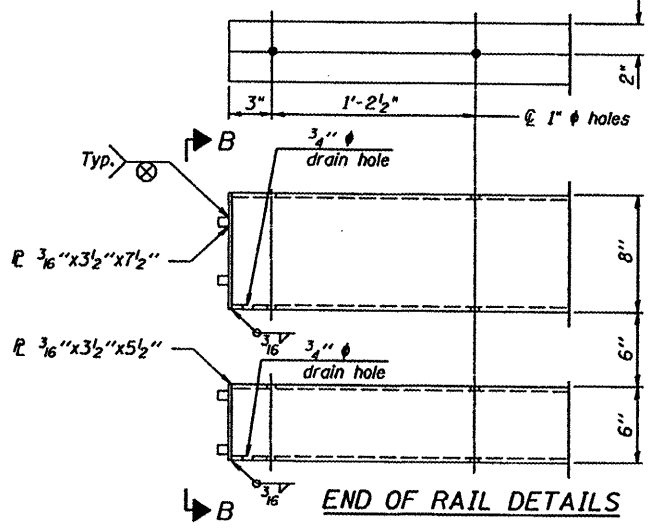


SECTION A-A

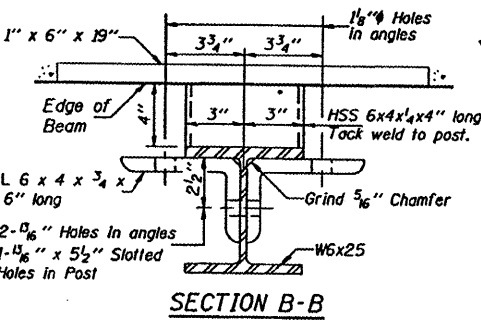


SECTION AT RAIL POST

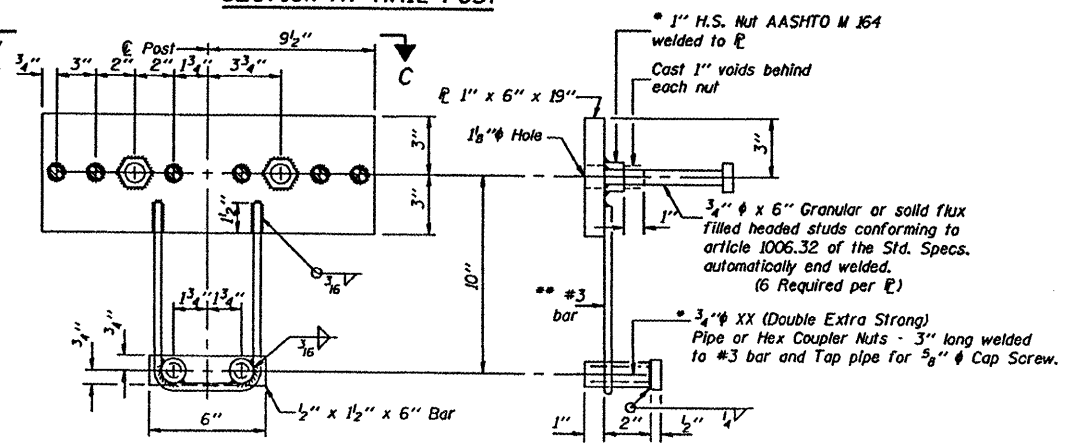
Note A: Where no overlay is to be provided, adjust top of rail to lay parallel to grade 2'-10" max. above top of beam



END OF RAIL DETAILS

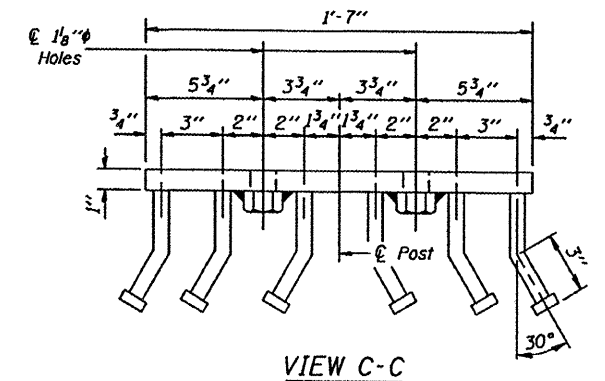


SECTION B-B

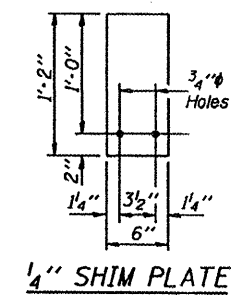


ANCHOR DEVICE

\* Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.  
 \*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



VIEW C-C



1/4" SHIM PLATE

NOTES

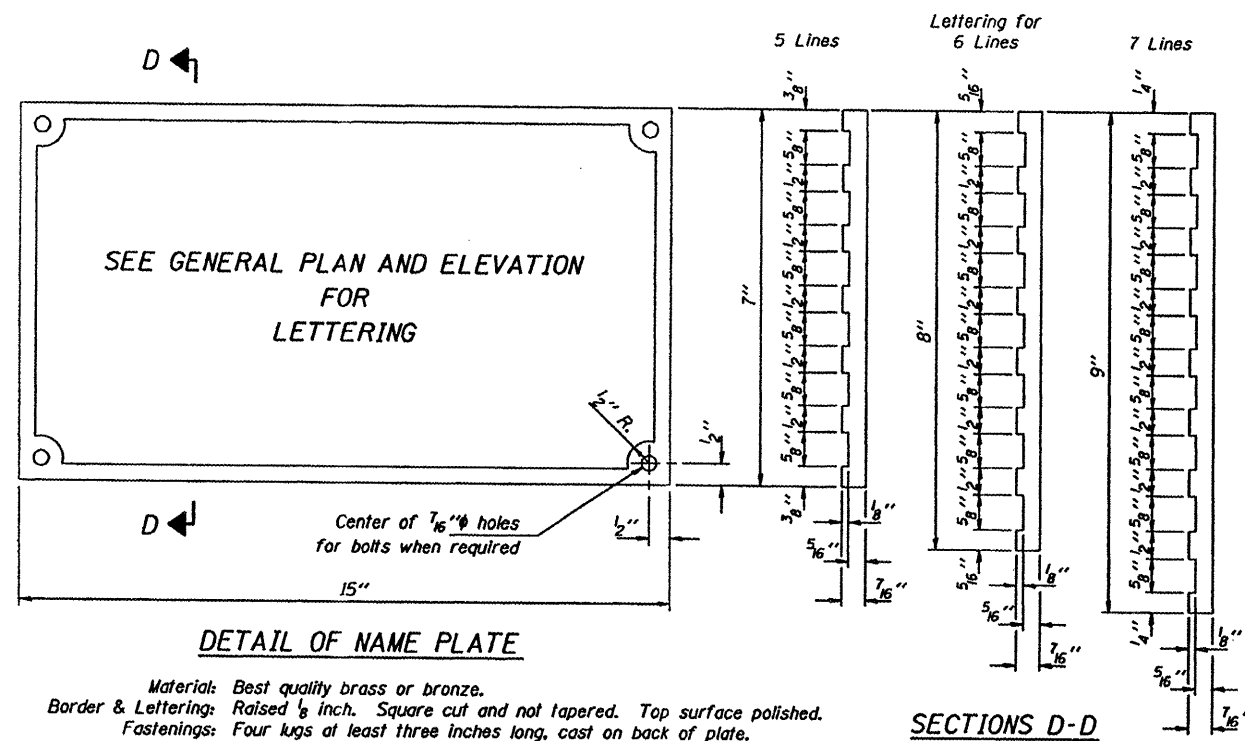
Follow structural steel tubing shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.  
 All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50.  
 Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.  
 All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.  
 All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M III and ASTM A 385. Galvanized rail shall not be painted.  
 Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE SM.  
 All field drilled holes shall be coated with an approved zinc rich paint before erection.  
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL BRIDGE RAIL, TYPE SM.  
 The 1/2" x 7" x 6" plates that come in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8" fabric bearing pads between the plates and concrete.  
 The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04(FX2) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/2 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.  
 The Maximum allowable rail post spacing shall be 6'-3".

Illinois Department of Transportation  
 PASSED APRIL 4, 2005  
 Theresa J. ...  
 APPROVED APRIL 4, 2005  
 Ralph C. ...  
 Engineer of Bridges and Structures

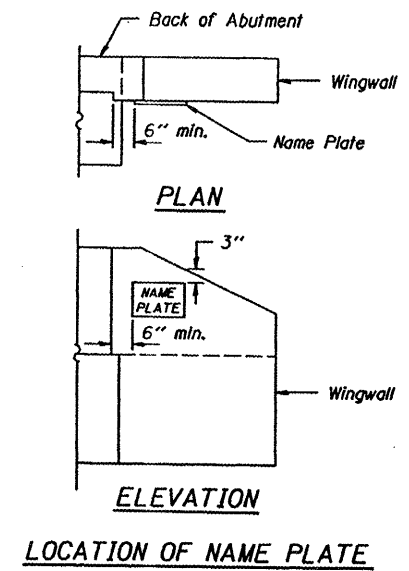
STEEL BRIDGE RAIL, TYPE SM  
 STANDARD CR-TSM

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	14

CONTRACT NO. 97356



Material: Best quality brass or bronze.  
 Border & Lettering: Raised  $\frac{1}{8}$  inch. Square cut and not tapered. Top surface polished.  
 Fastenings: Four lugs at least three inches long, cast on back of plate.



Illinois Department of Transportation

PASSED APRIL 4, 2005

Thomas J. Romanowski  
 Engineer of Bridge Design

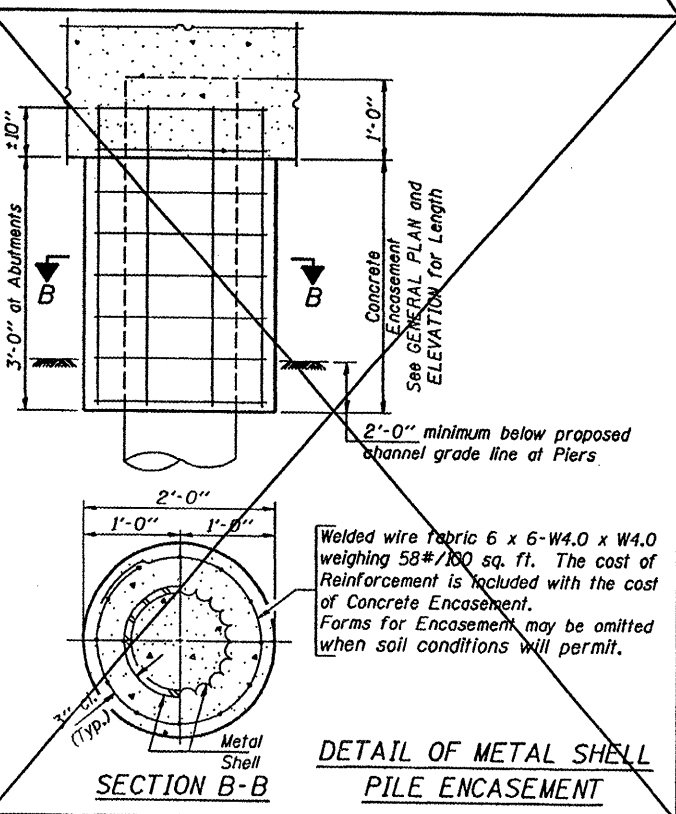
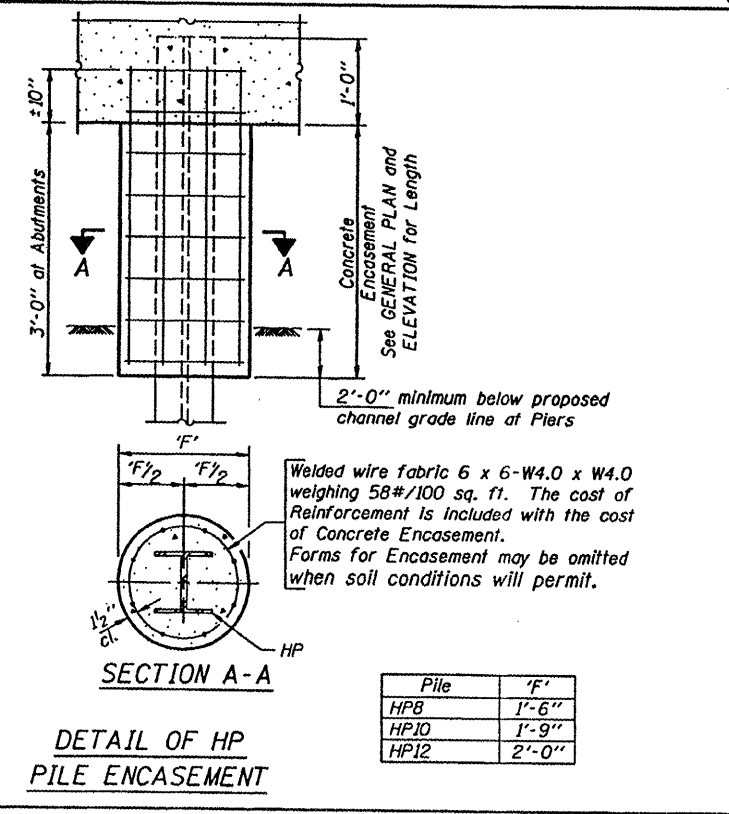
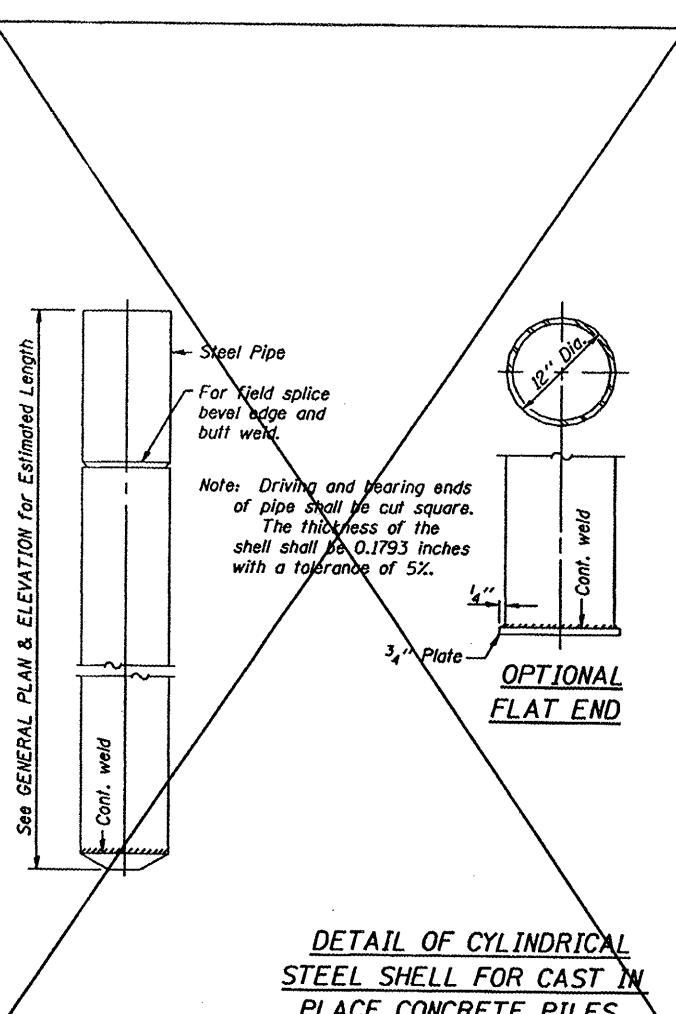
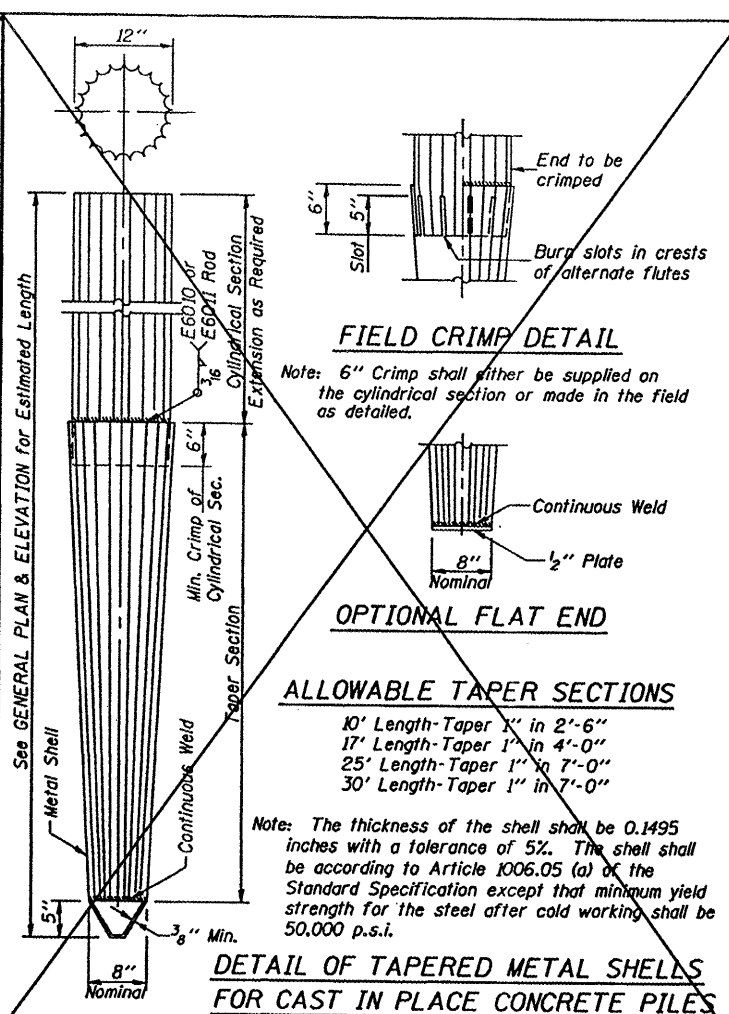
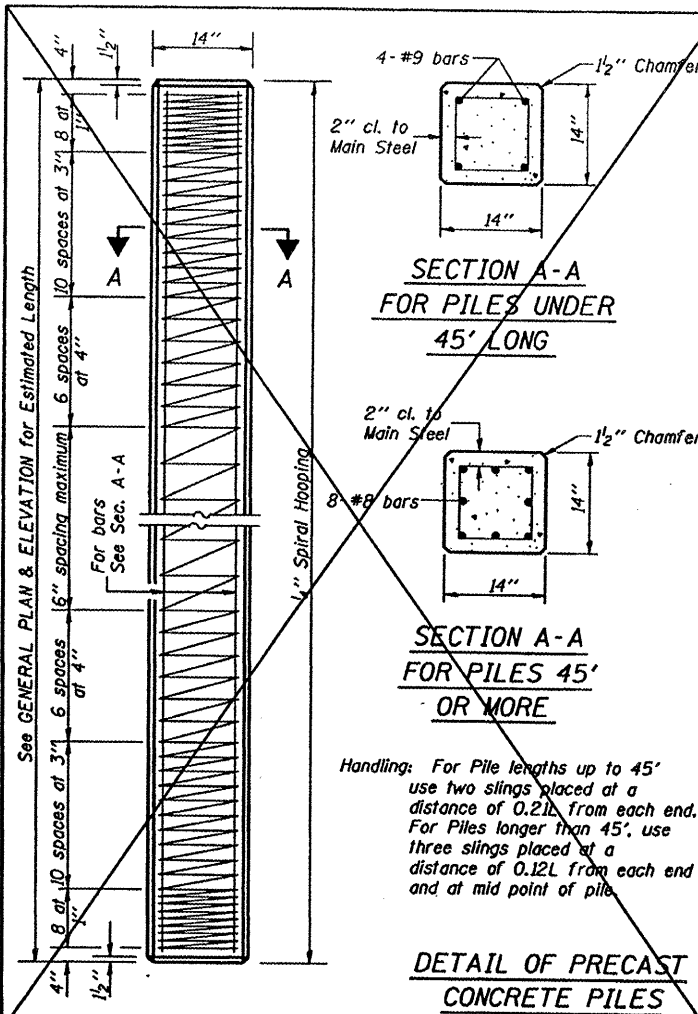
APPROVED APRIL 4, 2005

Ralph E. Robinson  
 Engineer of Bridges and Structures

588-1-4 03/05/07

NAME PLATE  
 STANDARD CN





**QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)**

Pile Size	Item	Quantity
HP8	Concrete Encasement	0.063 C.Y.
HP10	Concrete Encasement	0.086 C.Y.
HP12	Concrete Encasement	0.112 C.Y.

**(METAL SHELL PILES)**

Pile Size	Item	Quantity
12" Dia.	Concrete Encasement	0.087 C.Y.

Illinois Department of Transportation

PASSED FEBRUARY 1, 2000  
Thomas J. Demas (Seal)  
Engineer of Bridge Design

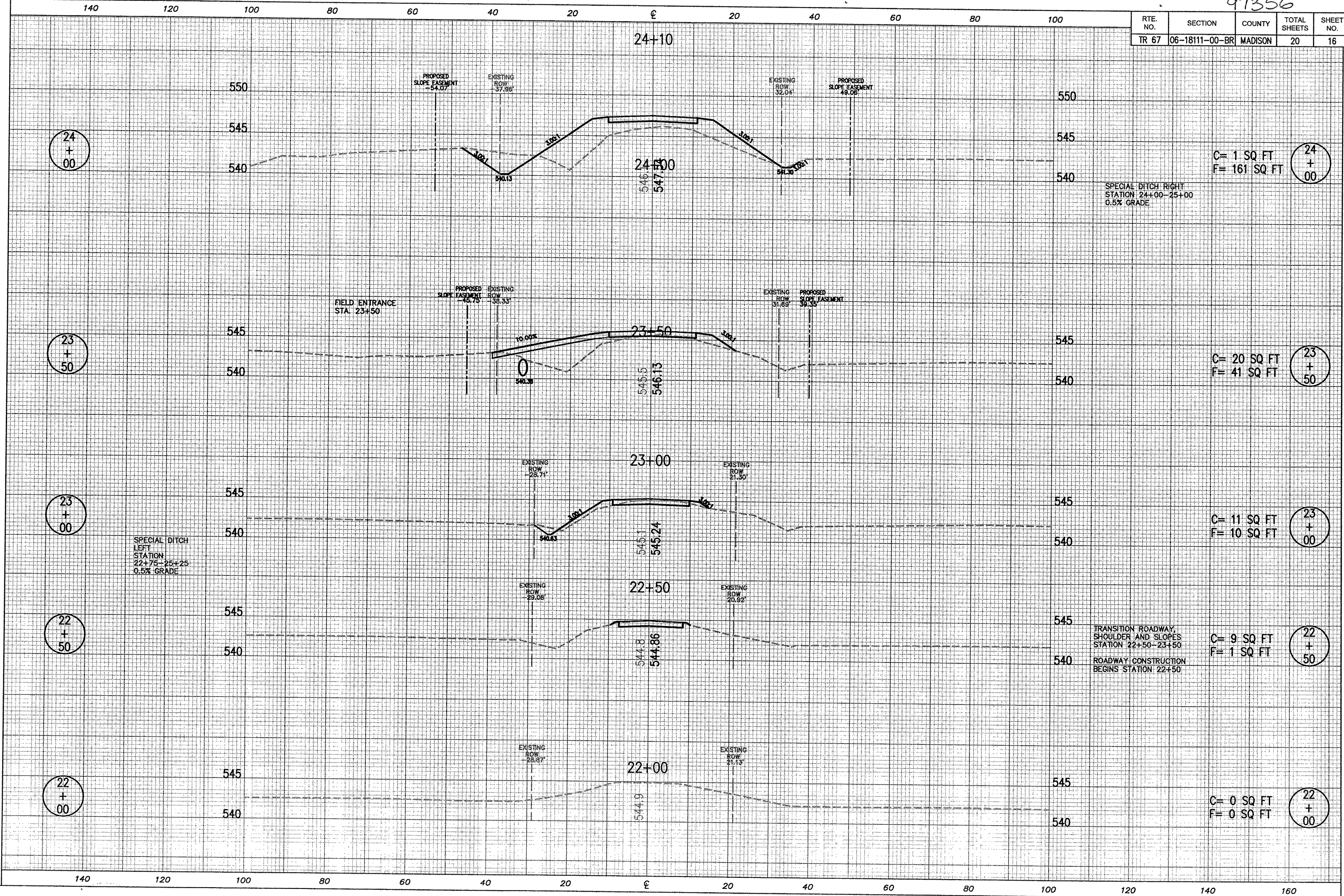
APPROVED FEBRUARY 1, 2000  
Ralph E. Carlson (Seal)  
Engineer of Bridges and Structures

PILE DETAILS

STANDARD CX-1

97356

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	16



C= 1 SQ FT  
F= 161 SQ FT

24  
+  
00

SPECIAL DITCH RIGHT  
STATION 24+00-25+00  
0.5% GRADE

C= 20 SQ FT  
F= 41 SQ FT

23  
+  
50

C= 11 SQ FT  
F= 10 SQ FT

23  
+  
00

C= 9 SQ FT  
F= 1 SQ FT

22  
+  
50

C= 0 SQ FT  
F= 0 SQ FT

22  
+  
00

TRANSITION ROADWAY  
SHOULDER AND SLOPES  
STATION 22+50-23+50  
ROADWAY CONSTRUCTION  
BEGINS STATION 22+50

SPECIAL DITCH LEFT  
STATION  
22+75-25+25  
0.5% GRADE

140

120

100

80

60

40

20

0

20

40

60

80

100

140

120

100

80

60

40

20

0

20

40

60

80

100

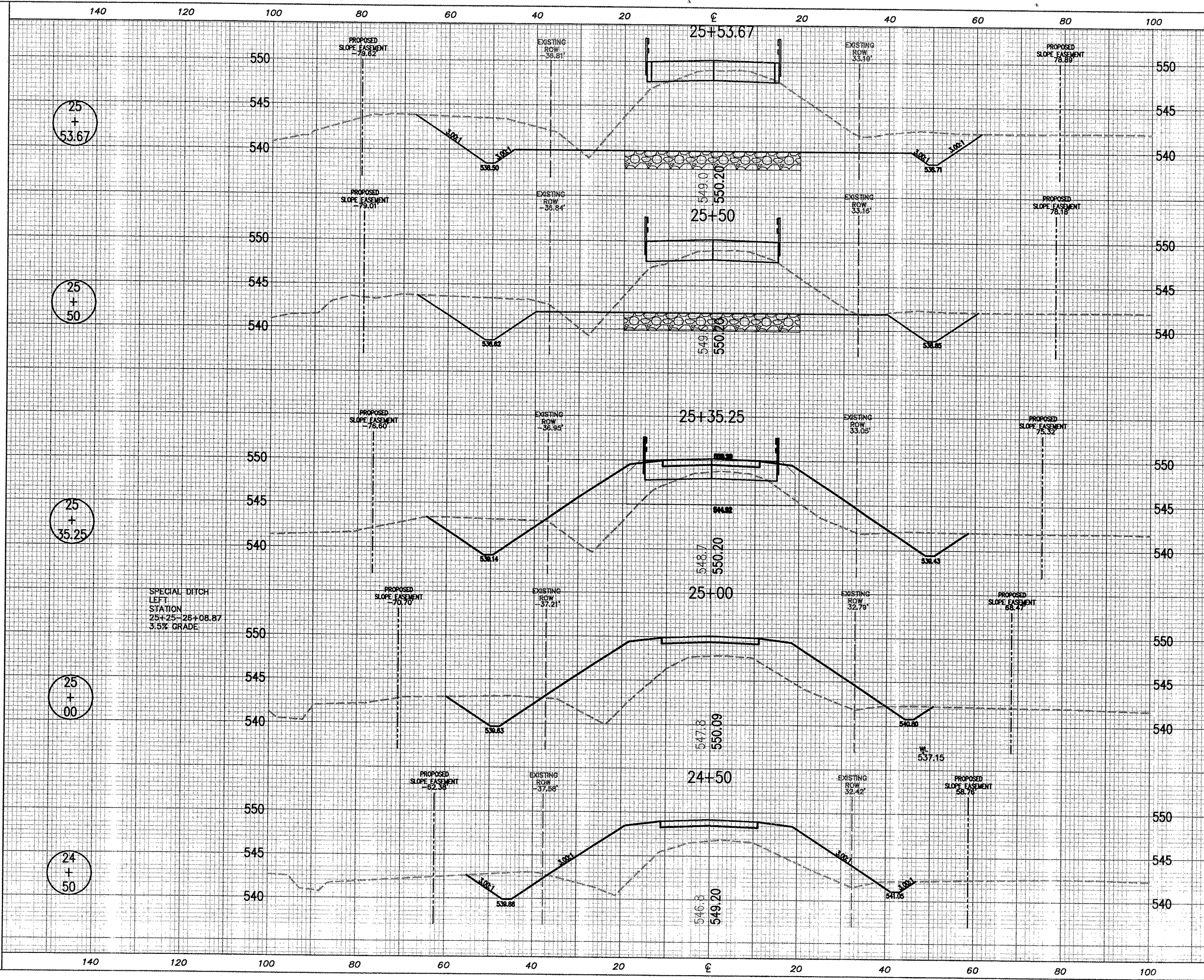
120

140

160



RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	17



C= 535 SQ FT  
F= 2 SQ FT

25 + 53.67

C= 385 SQ FT  
F= 15 SQ FT

25 + 50

C= 87 SQ FT  
F= 202 SQ FT

25 + 35.25

C= 51 SQ FT  
F= 259 SQ FT

25 + 00

C= 38 SQ FT  
F= 231 SQ FT

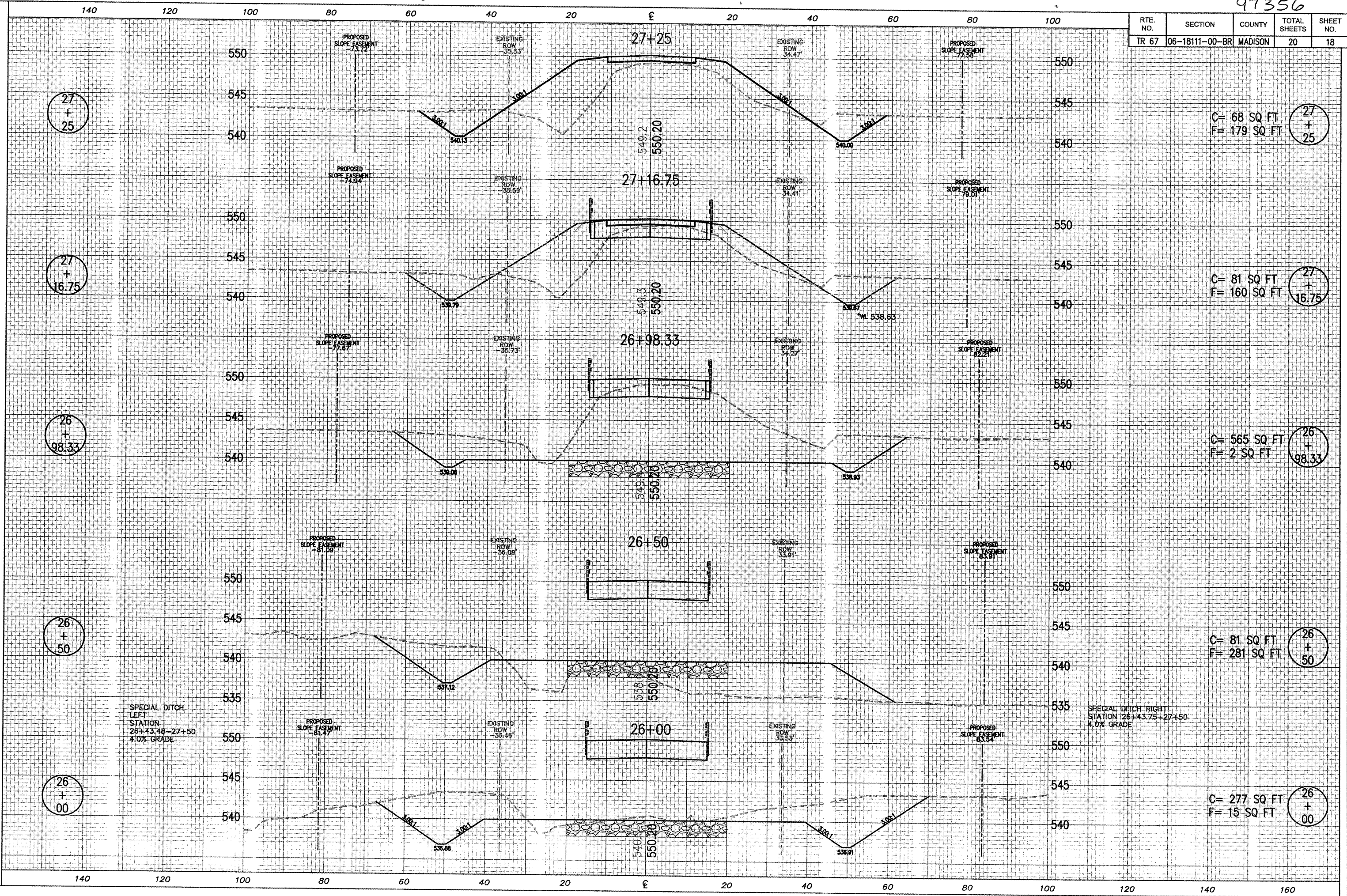
24 + 50

SPECIAL DITCH LEFT  
STATION 25+25-26+08.87  
3.5% GRADE

SPECIAL DITCH RIGHT  
STATION 25+00-26+08.87  
3.89% GRADE



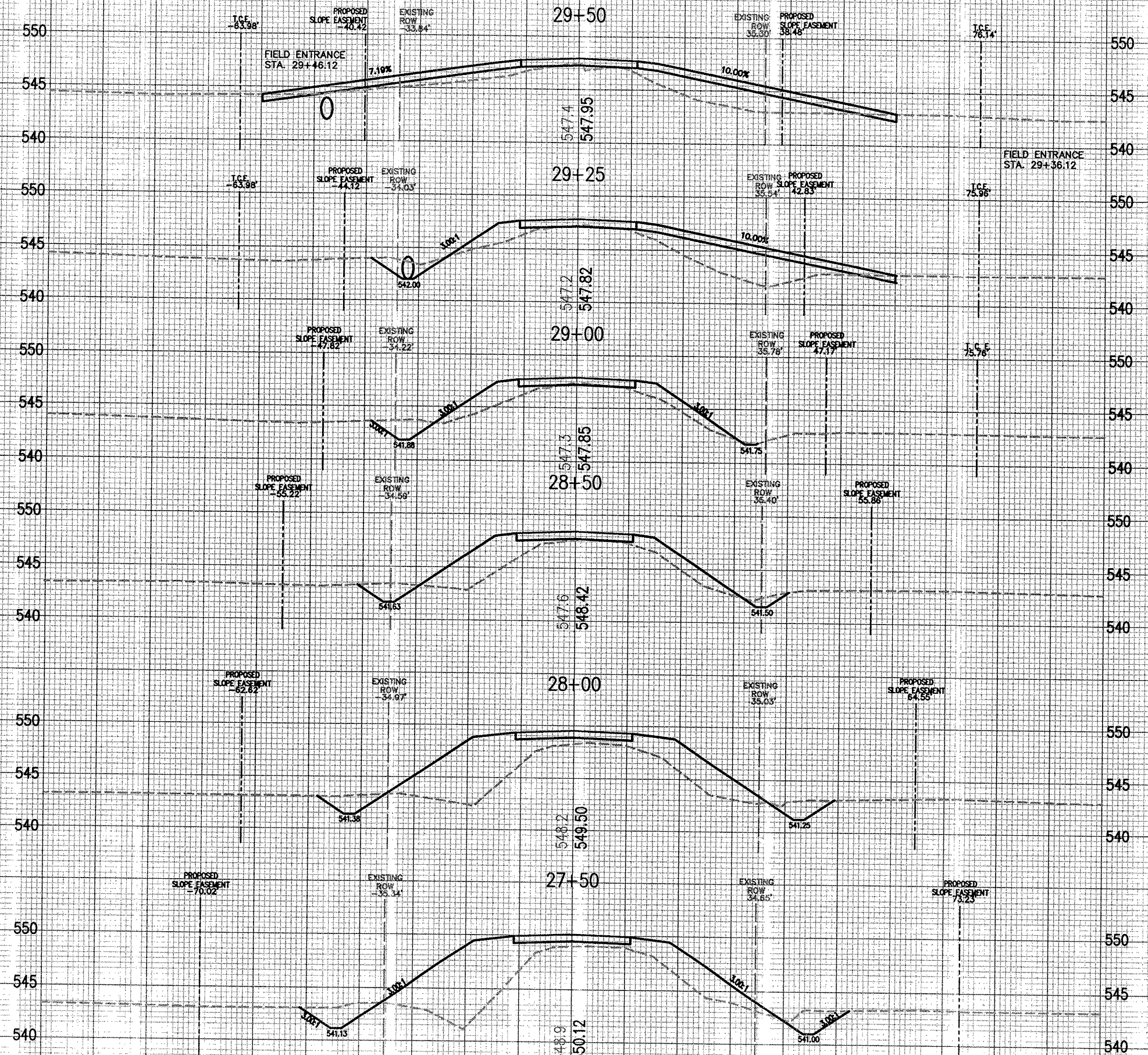
RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	18





97356

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	19



29  
+  
50

C= 1 SQ FT  
F= 137 SQ FT

29  
+  
25

C= 17 SQ FT  
F= 118 SQ FT

29  
+  
00

C= 19 SQ FT  
F= 44 SQ FT

28  
+  
50

C= 25 SQ FT  
F= 74 SQ FT

28  
+  
00

C= 39 SQ FT  
F= 161 SQ FT

27  
+  
50

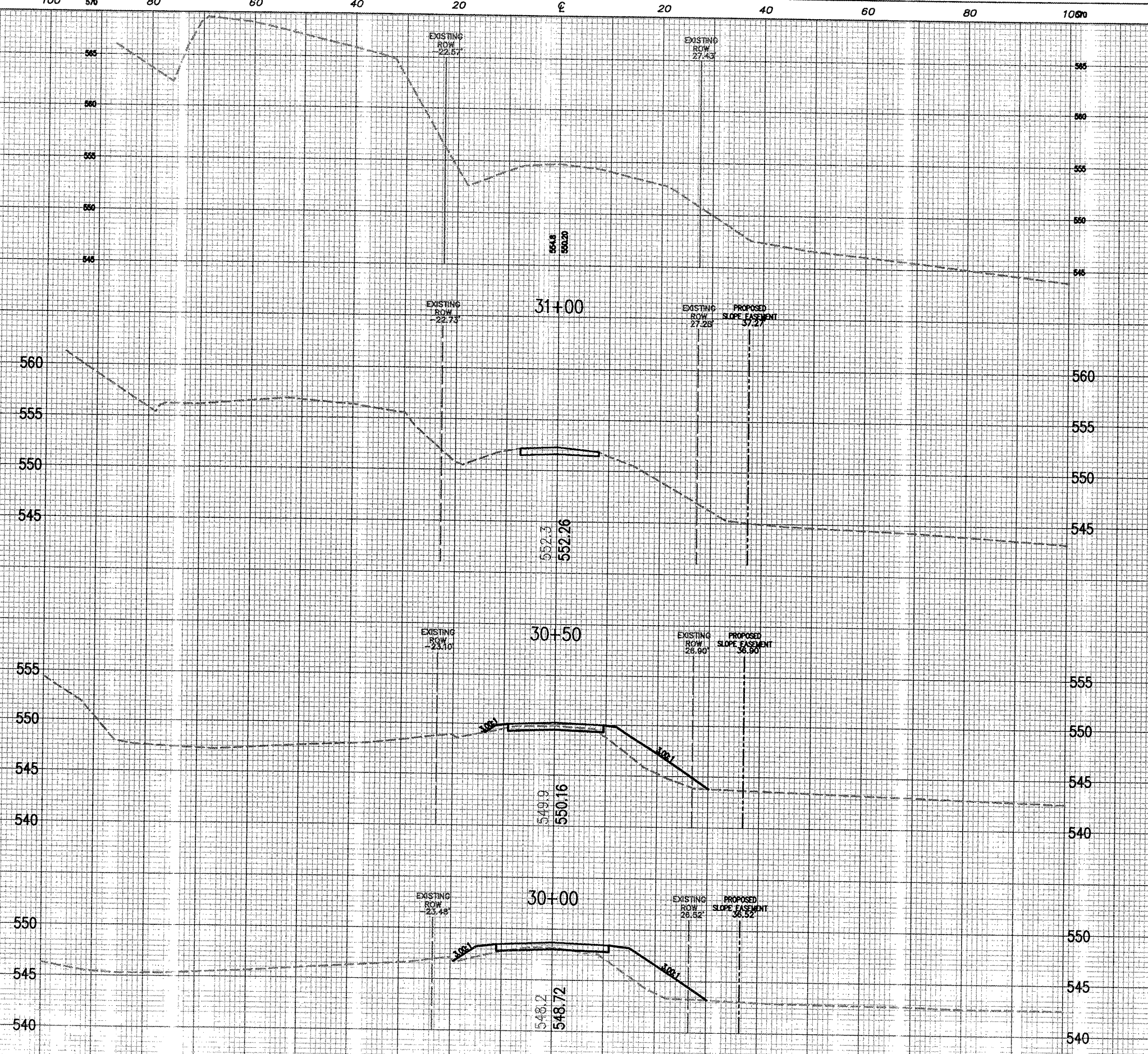
C= 53 SQ FT  
F= 176 SQ FT

SPECIAL DITCH LEFT  
STATION: 27+50-29+75  
0.5% GRADE

SPECIAL DITCH RIGHT  
STATION: 27+50-29+59  
0.5% GRADE



RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 67	06-18111-00-BR	MADISON	20	20



31  
+  
50

C= 0 SQ FT  
F= 0 SQ FT

31  
+  
50

31  
+  
00

C= 0 SQ FT  
F= 0 SQ FT

31  
+  
00

30  
+  
50

C= 6 SQ FT  
F= 33 SQ FT

30  
+  
50

30  
+  
00

C= 2 SQ FT  
F= 48 SQ FT

30  
+  
00