9-22-06 Letting, Item 047

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	1
	ILLINOIS	FEDERAL AID PROJECT		
		CONTRACT NO. 97285		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FEDERAL - AID BRIDGE REPLACEMENT AND REHABILITATION PROGRAM

F.A.S. 1857 CH 3 (BLUFF ROAD) OVER MONROE CITY CREEK SECTION 03-00070-00-BR PROJECT NO. BR S-133(31) MONROE COUNTY C-98-301-06

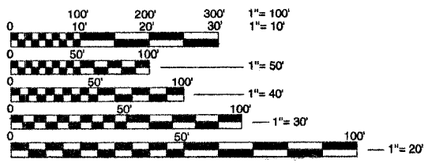
INDEX OF SHEETS

I.D.O.T. HIGHWAY STANDARDS

000001–04	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001–02	TEMPORARY EROSION CONTROL SYSTEMS
515001–02	NAME PLATE FOR BRIDGES
542401	METAL END SECTION FOR PIPE CULVERTS
630001–06	STEEL PLATE BEAM GUARD RAIL
630301–03	SHOULDER WIDENING FOR TYPE 1 GUARDRAIL TERMINALS
631026–02	TRAFFIC BARRIER TERMINAL, TYPE 5 & 5A
635006–02	REFLECTOR AND TERMINAL MARKER PLACEMENT
701001–01	OFF–ROAD OPERATIONS, 2L, 2W, MORE THAN 4.5M (15') AWAY
701006–02	OFF–ROAD OPERATIONS, 2L, 2W, 4.5M (15') TO 600MM (24") FROM PAVEMENT EDGE
701201–02	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
702001–06	TRAFFIC CONTROL DEVICES
BLR 21–6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 22–4	TYP. APPL. OF T.C.D. FOR RURAL LOC. HWYS. (2–LANE 2 WAY RURAL TRAFF.) (RD. CLOSED TO THRU TRAFF.)
BLR 23–1	TRAFFIC BARRIER TERMINAL TYPE 1
BLR 24–1	MAILBOX TURNOUT FOR LOCAL ROADS

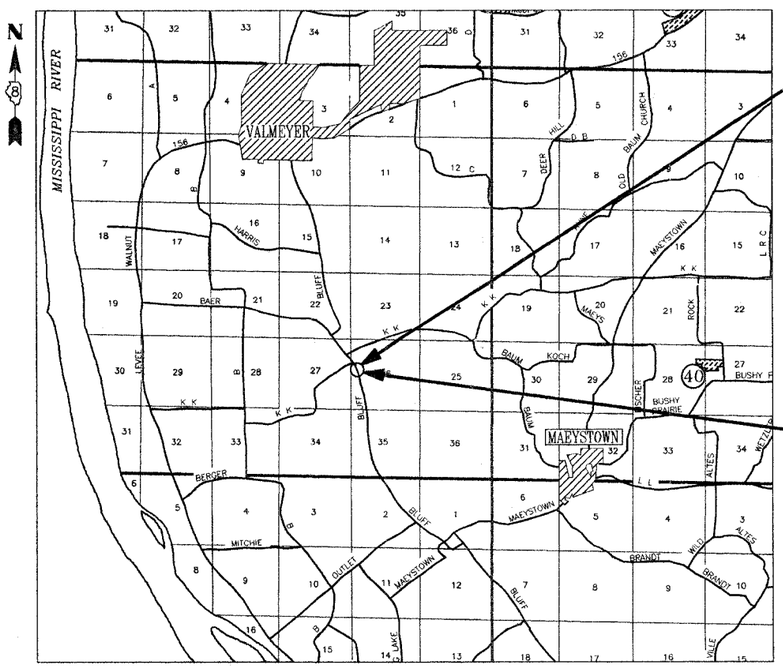
SOIL BORINGS (SEE SPECIFICATIONS)

DESIGN CLASSIFICATION: MAJOR COLLECTOR (RURAL)
ADT$_{2004}$: 480
ADT$_{2024}$: 600
DESIGN SPEED: 50 MPH



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

J.U.L.I.E.
JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS
1-800-892-0123 Website: http://julie1call.com/



NET LENGTH OF PROJECT: 1308.00 FT = 0.248 MI

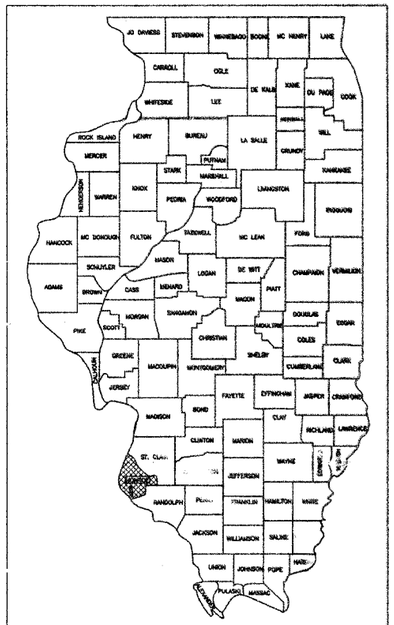
SECTION 03-00070-00-BR
INCLUDES THE RELOCATION OF A PORTION OF C.H. 3 (BLUFF ROAD) AND THE CONSTRUCTION OF A THREE (3) SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING C.H. 3 (BLUFF ROAD) OVER MONROE CITY CREEK.
122'-4 3/8" BK. TO BK. ABUTMENTS
45° AHEAD LEFT SKEW
EXISTING STRUCTURE NO. 067-3005
PROPOSED STRUCTURE NO. 067-3174

UTILITIES

ELECTRIC:
Monroe County Electric Co-Operative
6132 State Route 3, Waterloo, IL 62298
(618) 939-7171
(618) 939-3969 (fax)
(800) 757-7433 (toll-free)

TELEPHONE:
Harrisonville Telephone Company
213 South Main Street, Waterloo, IL 62298
(618) 939-6112

WATER:
Fountain Water District
732 Quarry Road, Valmeyer, IL 62295
(618) 935-2121



LOCATION OF SECTION INDICATED THUS: -

APPROVED June 9, 20 06
Ronald E. Webb
COUNTY ENGINEER

ACCEPTANCE OF THIS PROJECT IS BASED ON THE MINIMUM DESIGN CRITERIA FOR A FEDERAL-AID BRIDGE REPLACEMENT AND REHABILITATION PROGRAM.

PASSED July 7, 20 06
Jennifer Obenchain
DISTRICT ENGINEER OF LOCAL ROADS AND STREETS

APPROVED July 7, 20 06
Mary C. Lamie
MARY C. LAMIE
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRACY M. LAWLESS 47331 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

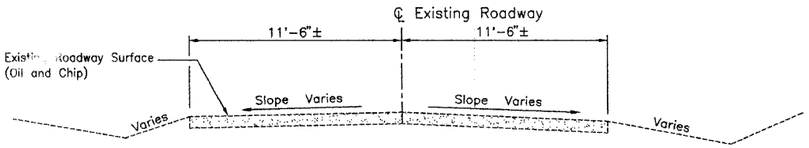
Tracy M Lawless
Tracy M Lawless
5-25-06
Date of Signing
11-30-07
Date of License Expiration

GARY L. HAHN 81-4853 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

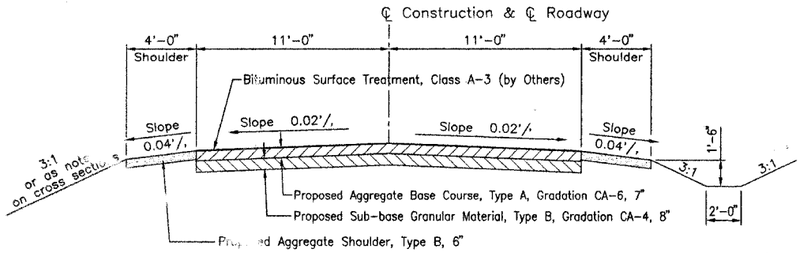
Gary L. Hahn
Gary L. Hahn
05.25.06
Date of Signing
11-30-06
Date of License Expiration

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
FREEBURG, ILLINOIS CENTRALIA, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184–000287

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	2
	ILLINOIS	FEDERAL AID PROJECT		
		CONTRACT NO. 97285		

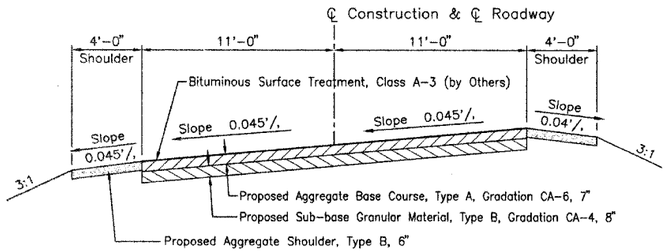


TYPICAL SECTION EXISTING C.H. 3 (BLUFF ROAD)



TYPICAL SECTION PROPOSED C.H. 3 (BLUFF ROAD)

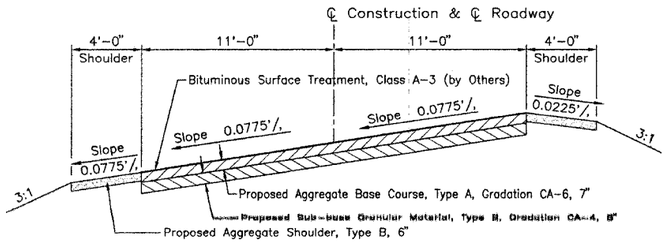
Sta. 3+00.00 to Sta. 3+12.52
Sta. 8+12.57 to Sta. 8+33.82
Sta. 9+56.18 to Sta. 9+90.95
Sta. 15+39.32 to Sta. 16+08.00



CURVE #1
SUPERELEVATION LEFT PROPOSED ROADWAY TYPICAL SECTION

Station 4+62.52 to Sta. 6+62.57

Note: Superelevation Attainment:
Sta. 3+12.52 to Sta. 4+62.52
Sta. 6+62.57 to Sta. 8+12.57



CURVE #2
SUPERELEVATION LEFT PROPOSED ROADWAY TYPICAL SECTION

Station 11+76.95 to Sta. 13+53.32

Note: Superelevation Attainment:
Sta. 9+90.95 to Sta. 11+76.95
Sta. 13+53.32 to Sta. 15+39.32

Note: Warp Cross Section to Match Existing at Termini:
Sta. 3+00.00 to Sta. 3+50.00
Sta. 15+58.00 to Sta. 16+08.00

GENERAL NOTES

Existing utilities shown are located from surface observations or information provided by the respective utilities and must be considered approximate. There may be others, the exact location of which are unknown and not shown. The Contractor will be responsible for notifying the respective utilities before work is begun. Field markings of underground utilities may be obtained by providing a minimum of 48 hours advance notice through the J.U.L.I.E. system by calling 1-800-892-0123 or by direct contact with non-members of J.U.L.I.E.

All construction shall be in accordance with Illinois Department Of Transportation Standard Specifications for Road and Bridge Construction, January 1, 2002, and the latest Supplemental Specifications and Recurring Special Provisions.

All earth surfaces disturbed during construction operations shall be seeded and mulched upon completion of all grading operations.

See cross sections for variable earth slopes and special ditch elevations.

See plan and profile sheet for R.O.W. widths.

Factors used for quantity calculations are as follows:

Aggregate = 2.05 Ton/Cu. Yd.
Bituminous Concrete = 0.056 Ton/Sq. Yd./inch

Any facilities or appurtenances which are the property of any public utility located within the limits of construction shall be relocated or adjusted by their respective owners. The Contractor shall notify and cooperate with the owners of any such facility in their removal and rearrangement operations in order that these operations and the construction of this project may progress in a reasonable manner.

The Contractor shall remove, maintain in a temporary location and permanently reset all mailboxes and traffic signs which interfere with construction operations in accordance with Articles 107.19 and 107.22 of the "Standard Specifications for Road and Bridge Construction".

The Contractor shall protect and carefully preserve all property markers and monuments until the owner and an authorized surveyor, or agent, has witnessed or otherwise referenced their location.

The Contractor shall confine his operations to the area located within the construction limit lines, shown on the plans. Any area disturbed beyond these limits shall be restored to its' original condition at the Contractor's expense.

The following items and approximate quantities are included in order to establish a unit cost for work which may be required to construct this section. The actual quantity of each item shall be determined by the Engineer in the field.

Temporary Aggregate: 100 ton
(Used to maintain access for residents located within the project limits)

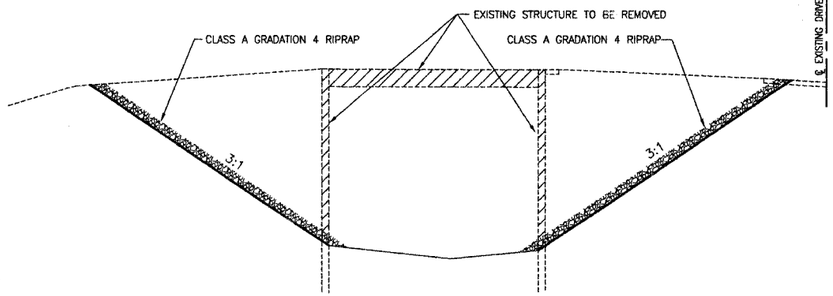
Traffic control and protection and proper barricades shall be maintained by the Contractor.

It shall be the responsibility of the Contractor for implementation and maintenance of erosion control in accordance with the I.E.P.A. Standard Specifications for soil erosion and sediment control, latest edition and as directed by the Engineer and as shown on the plans.

End sections to be added to ends of pipes are not included in the pipe length.

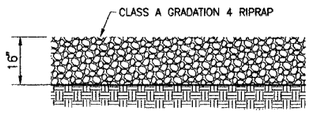
Topsoil stripped from areas disturbed by grading activities shall be stockpiled and used for final grading and seed bed preparation.

Centerline profiles refer to the finished surface.



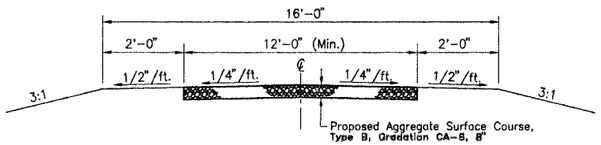
TYPICAL SECTION THRU EXISTING BRIDGE

N.T.S.

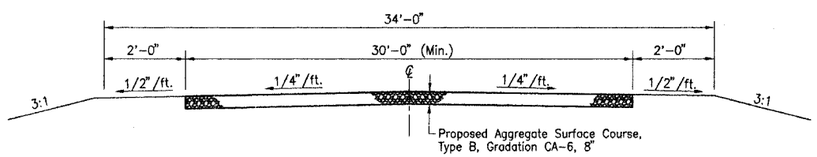


TYPICAL RIPRAP SECTION

N.T.S.



PROPOSED 12' WIDE DRIVEWAY

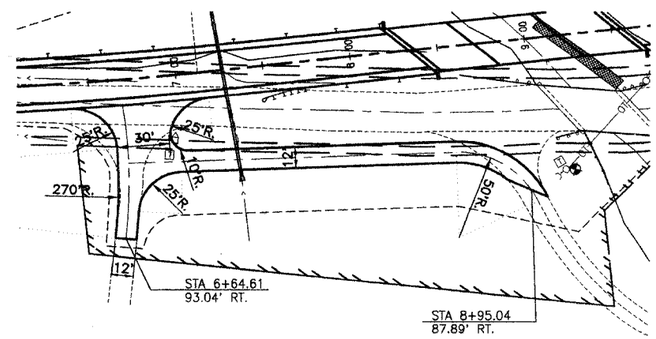


PROPOSED 30' WIDE ENTRANCE

Location

	Code No.	Item	Unit	Quantity	Bridge Sta. 8+33.82 - 9+56.18 Construct. Type Code XDBO - 2A	Road Sta. 3+00.00 - 8+33.82 9+56.18 - 16+08.00 Code FDOO
	20200100	EARTH EXCAVATION	CU YD	702	–	702
	20300100	CHANNEL EXCAVATION	CU YD	800	800	–
	20400800	FURNISHED EXCAVATION	CU YD	5873	–	5873
	20800150	TRENCH BACKFILL	CU YD	45	–	45
	21400100	GRADING AND SHAPING DITCHES	FOOT	96	–	96
	25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.94	–	0.94
	25100630	EROSION CONTROL BLANKET	SQ YD	440	–	440
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	470	–	470
	28000300	TEMPORARY DITCH CHECKS	EACH	6	–	6
	28000400	PERIMETER EROSION BARRIER	FOOT	2121	–	2121
	28000500	INLET AND PIPE PROTECTION	EACH	1	–	1
	28100707	STONE DUMPED RIPRAP, CLASS A4	SQ YD	1906	–	1906
	28400105	GABION REMOVAL	CU YD	75	–	75
*	31101600	SUB-BASE GRANULAR MATERIAL, TYPE B 8"	SQ YD	2900	–	2900
*	31200300	STABILIZED SUB-BASE (VARIABLE DEPTH)	TON	40	40	–
*	35100600	AGGREGATE BASE COURSE, TYPE A 7"	SQ YD	2900	–	2900
*	40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	235	–	235
*	44000100	PAVEMENT REMOVAL	SQ YD	3603	–	3603
*	48101200	AGGREGATE SHOULDERS, TYPE B	TON	361	–	361
	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1	–
	50105210	REMOVE EXISTING CULVERTS	FOOT	42	–	42
	50300225	CONCRETE STRUCTURES	CU YD	52	52	–
	50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	3360	3360	–
	50800105	REINFORCEMENT BARS	POUND	5740	5740	–
	50900205	STEEL RAILING, TYPE S1	FOOT	246	246	–
	51201600	FURNISHING STEEL PILES HP12X53	FOOT	1050	1050	–
	51202700	DRIVING STEEL PILES	FOOT	1050	1050	–
	51203600	TEST PILE STEEL HP12X53	EACH	1	1	–
	51204315	CONCRETE ENCASEMENT	CU YD	22.6	22.6	–
	51500100	NAME PLATES	EACH	1	1	–
	54200220	PIPE CULVERTS, CLASS C, TYPE 1 15"	FOOT	115	–	115
	54215550	METAL END SECTIONS 15"	EACH	2	–	2
	58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	375	375	–
	58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	720	720	–
*	63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	375	–	375
*	63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4	–	4
	63200310	GUARDRAIL REMOVAL	FOOT	113	–	113
	67100100	MOBILIZATION	L SUM	1	–	–
	70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1	–	1
*	LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	4	–	4
*	X4066414	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50	TON	63	63	–
	XX000372	TEMPORARY AGGREGATE	TON	100	–	100

*SPECIALTY ITEMS



DRIVEWAY DETAIL

SUMMARY OF QUANTITIES AND TYPICAL SECTIONS
PROPOSED BRIDGE CARRYING FAS 1857 OVER MONROE CITY CREEK
SECTION 03-00070-00-BR
MONROE COUNTY, ILLINOIS

Sheet 2 of 11
Job No. 41604

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
FREEBURG, ILLINOIS CENTRALIA, ILLINOIS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	3
STA. 1+00.00	TO STA. 17+00.00			
		ILLINOIS	FED. AID PROJECT	
		CONTRACT NO. 97285		

CURVE #1 DATA
P.I. STA. 5+62.76
Δ = 7°28'29"
D = 2°29'28"
R = 2300.00'
T = 150.24'
L = 300.05'
E = 4.90'
P.C. STA. 4+12.52
P.T. STA. = 7+12.57
S.E. = 0.045'/'
SUPERELEVATION ATTAINMENT
STA. 3+12.52 TO STA. 4+62.52
STA. 6+62.57 TO STA. 8+12.57

CURVE #2 DATA
P.I. STA. 12+66.45
Δ = 18°31'03"
D = 6°09'54"
R = 929.37'
T = 151.50'
L = 300.37'
E = 12.27'
P.C. STA. 11+14.95
P.T. STA. = 14+15.32
S.E. = 0.077'/'
SUPERELEVATION ATTAINMENT
STA. 9+90.95 TO STA. 11+76.95
STA. 13+53.32 TO STA. 15+39.32

BERTRAM LAND TRUST
VIRGINIA BERTRUM, TRUSTEE
BOOK 204 PAGE 850
09-26-300-001

CARNEL & CATHERINE GILBERT
BOOK 219 PAGE 301
09-26-100-007

BERTRAM LAND TRUST
VIRGINIA BERTRUM, TRUSTEE
BOOK 204 PAGE 850
09-26-300-001

BEGIN CONSTRUCTION 3+00.00
END CONSTRUCTION 16+08.00
C.H. 3 (BLUFF ROAD)
K.K. ROAD
MONROE CITY CREEK
TRAFFIC BARRIER TERMINAL TYPE 1, STA. 5+30.57 TO STA. 5+55.57
LIMITS OF CONSTRUCTION
P.C. 4+12.52
P.T. 7+12.57
1395 S.Y. STONE DUMPED RIPRAP CLASS A, GRADATION 4 (SEE DETAIL, SHEET 2)
PROPOSED 115 L.F. PRECOATED GALVANIZED CORRUGATED STEEL CULVERT PIPE, TYPE 1, 15" 2 EA. METAL END SECTIONS, 15" U.S.F.L. ELEV. 399.73 D.S.F.L. ELEV. 391.91
STEEL PLATE BEAM GUARDRAIL TYPE A, 62.50 L.F. STA: 9+54.43 TO STA: 10+16.93
PROPOSED BRIDGE 122.36' BK. TO BK. ABUTMENTS, 45°00'00" A.R. SKEW
TRAFFIC BARRIER TERMINAL TYPE 5A, STA: 8+05.57 TO STA: 8+18.82
TRAFFIC BARRIER TERMINAL TYPE 5A, STA: 9+41.18 TO STA: 9+54.43
STEEL PLATE BEAM GUARDRAIL TYPE A, 250.00 L.F. STA. 5+55.57 TO STA. 8+05.57
REMOVE EXISTING STRUCTURE, 1 EA.
TRAFFIC BARRIER TERMINAL TYPE 1, STA. 10+16.93 TO STA. 10+41.93
F.E. STA. 11+19.13 TURF SURFACE
℄ PROPOSED ROADWAY
LIMITS OF CONSTRUCTION
P.E. STA. 6+68.43 AGGREGATE SURFACE
REMOVE EXISTING 12" CMP CULVERT, 42 L.F.
REMOVE AND RELOCATE EXISTING MAILBOX.
P.E. TO BE REMOVED
AGGREGATE SURFACE COURSE, TYPE B, 8", 235 TON
TRAFFIC BARRIER TERMINAL TYPE 1, STA. 7+48.07 TO STA. 7+73.07
STEEL PLATE BEAM GUARDRAIL TYPE A, 62.50 L.F STA: 7+73.07 TO STA: 8+35.57
SEE RELOCATED DRIVEWAY DETAIL, SHEET 2
TRAFFIC BARRIER TERMINAL TYPE 5A, STA: 8+35.57 TO STA: 8+48.82
℄ EXISTING ROADWAY
TRAFFIC BARRIER TERMINAL TYPE 1, STA: 9+84.43 TO STA: 10+09.43
TRAFFIC BARRIER TERMINAL TYPE 5A, STA: 9+71.18 TO STA: 9+84.43
REMOVE EXISTING GUARDRAIL, 113 L.F.
511 S.Y. STONE DUMPED RIPRAP CLASS A, GRADATION 4 (SEE DETAIL, SHEET 2)
PROPOSED PAVEMENT REMOVAL, 3603 S.Y.
REMOVE AND RELOCATE EXISTING TRAFFIC SIGN.
REGRADE EXISTING DITCH TO PROVIDE POSITIVE DRAINAGE FROM PROPOSED DITCH TO EXISTING 18" CMP. STA. 16+08.00 TO STA. 17+03.50
TBM 5-28-04"A"
TBM 5-28-04"B"
TBM 5-28-04"C"
NOTE: IN ALL PAVEMENT REMOVAL AREAS OUTSIDE OF PROPOSED PAVEMENT THE CONTRACTOR SHALL PERFORM REMOVAL AND FINAL GRADING IN A MANNER TO ESTABLISH A MINIMUM 12" THICK LAYER OF TOPSOIL FOR SEED BED PREPARATION. EARTH QUANTITY FOR THIS WORK IS INCLUDED IN FURNISHED EXCAVATION.

50 0 50 100
SCALE FEET

LEGEND

- EXISTING POWER POLE
- EXISTING GUYWIRE
- EXISTING MAILBOX
- EXISTING TRAFFIC SIGN
- EXISTING FLOWLINE
- EXISTING GUARD RAIL
- EXISTING TELEPHONE PEDESTAL
- EXISTING OVERHEAD ELECTRIC
- EXISTING OVERHEAD TELEPHONE
- EXISTING RIGHT-OF-WAY
- EXISTING CULVERT
- PROPOSED PIPE CULVERT
- PROPOSED RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED PERIMETER EROSION BARRIER
- PROPOSED TEMPORARY DITCH CHECKS
- PROPOSED PAVEMENT REMOVAL

LAND TIE INFORMATION

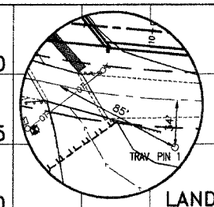
TRAV. PIN 1 – 85' NORTH OF CENTER OF OLD BRIDGE; 34' EAST OF ℄ OF BLUFF ROAD.
TRAV. PIN 2 – 39' SOUTHEAST OF P.K. NAIL AT ℄-℄ KK ROAD AND BLUFF ROAD; 14' EAST OF ℄ BLUFF ROAD.
TRAV. PIN 3 – 320' SOUTH OF CENTER OF OLD BRIDGE; 108' WEST OF ℄ BLUFF ROAD.
TRAV. PIN 4 – 241' SOUTH OF TELEPHONE PEDESTAL (STA. 5+34±); 12' WEST OF ℄ BLUFF ROAD.

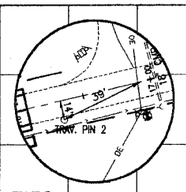
DESIGN CLASSIFICATION: MAJOR COLLECTOR (RURAL)
ADT2004 : 480
ADT2024 : 600
DESIGN SPEED – 50 MPH

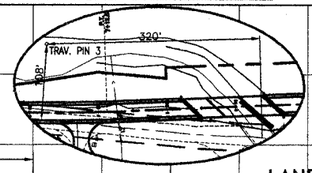
BENCHMARK DATA

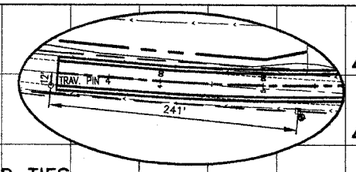
TBM 5-28-04"A" – RAILROAD SPIKE IN TELEPHONE POLE, 15' SOUTH OF CENTER OF OLD BRIDGE; 33' EAST OF ℄ BLUFF ROAD. ELEV. 404.84
TBM 5-28-04"B" – NAIL IN EAST SIDE OF TELEPHONE PEDESTAL, 405' SOUTH OF CENTER OF OLD BRIDGE; 18' EAST OF ℄ BLUFF ROAD. ELEV. 400.71
TBM 5-28-04"C" – RAILROAD SPIKE IN POWER POLE, 23' EAST OF ℄ BLUFF ROAD AT ℄ EXTENDED KK ROAD (WEST). ELEV. 397.16

LAND TIES









LAND TIES

205.80' VC
K = 108.55
220.00' VC
K = 110.03
275.00' VC
K = 110.24
320.00' VC
K = 158.07
P.V.C. 3+89.20 ELEV. 400.14
P.V.I. 4+72.10 (400.24) ELEV. 400.74
P.R.C. 5+95.00 ELEV. 402.50
P.V.I. 7+05.00 (404.50) ELEV. 403.96
P.V.I. 8+15.00 ELEV. 404.50
P.V.C. 9+75.00 ELEV. 404.50
P.V.I. 11+12.59 (404.50) ELEV. 403.65
P.R.C. 12+50.00 ELEV. 401.07
P.V.I. 14+10.00 (397.08) ELEV. 402.90
P.V.I. 15+70.00 ELEV. 396.33
PROPOSED STRUCTURE
PROPOSED ℄ ROAD
EXISTING STRUCTURE
EXISTING ℄ ROAD
EXISTING GROUND AT PROPOSED ℄ ROAD
DHW ELEV = 401.54
FLOW LINE ELEV = 390.0±
+0.10%
+2.000%
0.00%
-2.93%
-0.47%
BEGIN PROJECT 3+00.00 ELEV. 400.05
END PROJECT 16+08.00 ELEV. 396.15
BK. ABUT. 404.50
℄ PIER 404.50
℄ PIER 404.50
BK. ABUT. 404.50

EARTHWORK SCHEDULE

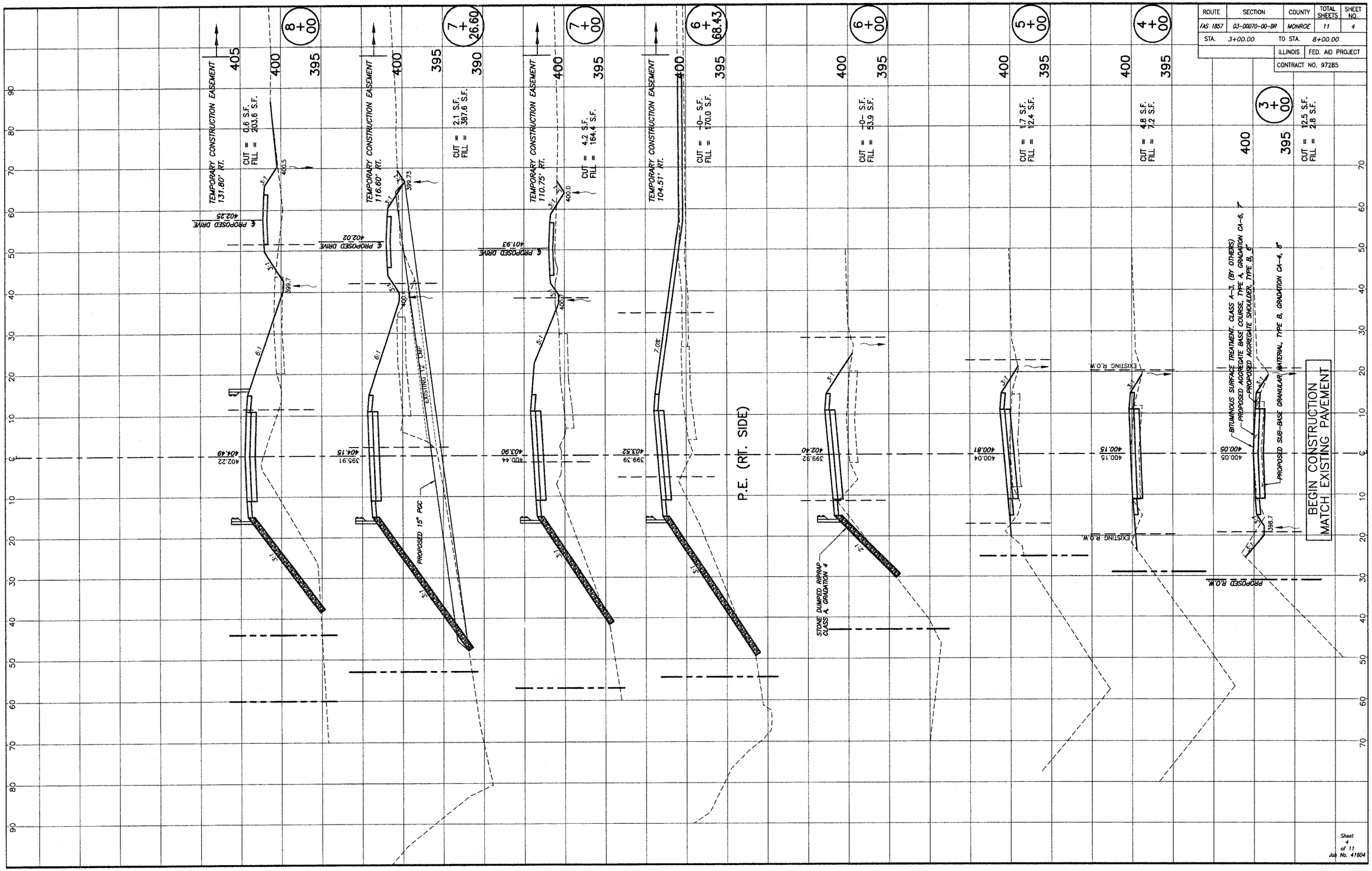
LOCATION	EARTH EXCAVATION (CU. YD.)	EARTH EXCAVATION ADJUSTED FOR 25% SHRINKAGE (CU. YD.)	EMBANKMENT (CU. YD.)	EARTHWORK BALANCE WASTE(+) OR SHORTAGE(-) (CU. YD.)
ROADWAY STA. 3+00.00 TO STA. 16+08.00	702	527	6,400	-5,873
TOTAL	702	527	6,400	-5,873

	2+00	3+00	4+00	5+00	6+00	7+00	8+00	+33.82	+70.88	9+00	+19.12	+56.18	10+00	11+00	12+00	13+00	14+00	15+00	16+00	17+00
EXISTING	399.82	399.87	400.01	400.05	400.09	400.15	400.20	400.04	399.96	399.92	399.22	400.44	401.41	402.22	398.57	390.26	402.30	397.88	396.28	396.10	395.91	396.30	396.75	396.66	396.75	396.65	396.64	396.66	396.51	396.19	396.03	395.87
PROPOSED				400.05	400.10	400.15	400.37	400.81	401.49	402.40	403.26	403.90	404.31	404.49	404.50	404.50	404.50	404.47	404.25	403.79	403.11	402.21	401.07	399.90	398.89	398.04	397.35	396.81	396.44	396.19			

Sheet 3 of 11
Job No. 41604

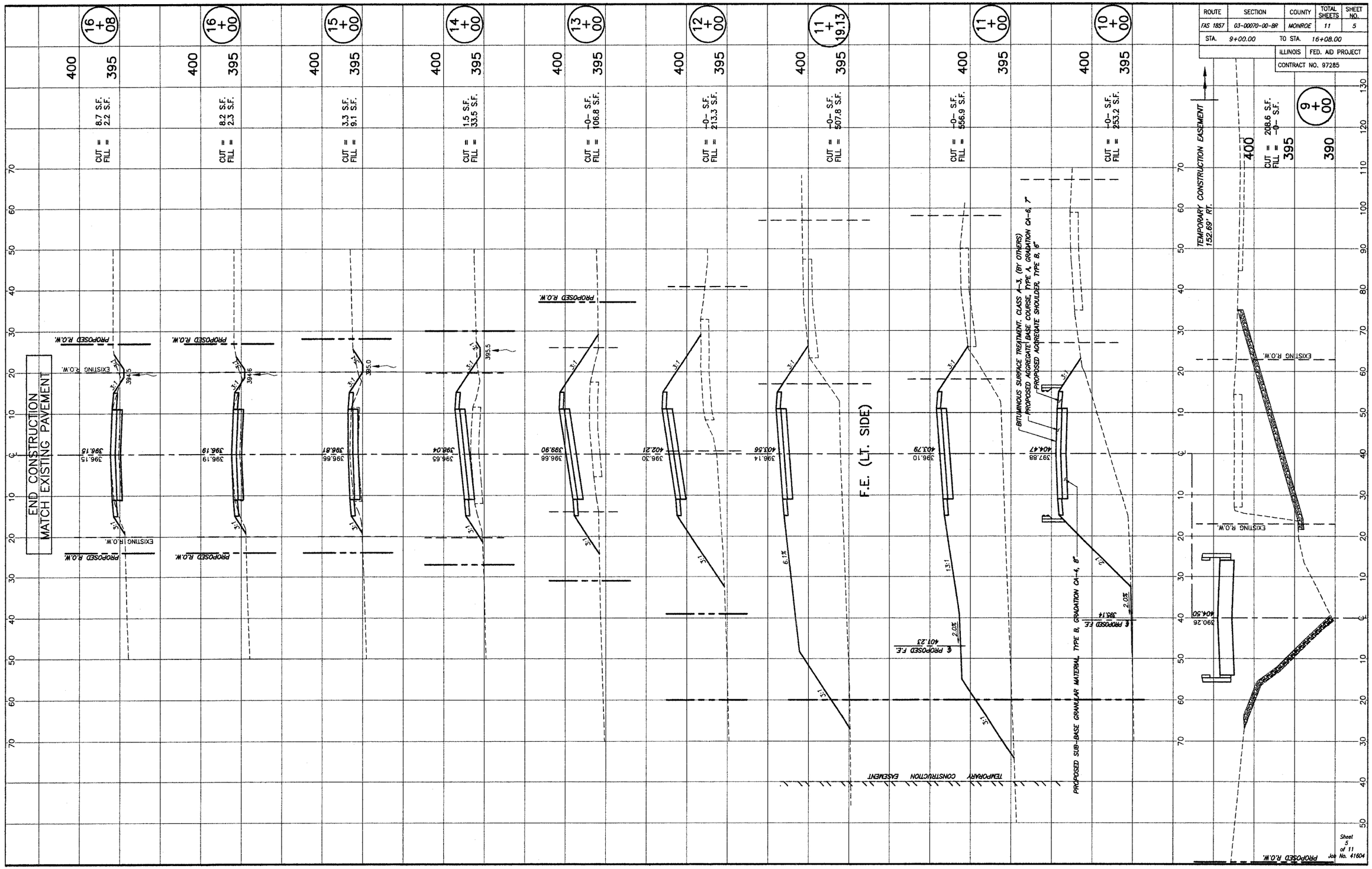
PLAN AND PROFILE OF ROADWAY BRIDGE OVER MONROE CITY CREEK
FAS 1857 C.H. 3 SECTION 03-00070-00-BR

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	4
STA. 3+00.00	TO STA. 8+00.00			
		ILLINOIS	FED. AID PROJECT	
		CONTRACT NO. 97285		



CROSS SECTIONS OF ROADWAY BRIDGE OVER MONROE CITY CREEK
FAS 1857 C.H. 3 SECTION 03-00070-00-BR

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	5
STA. 9+00.00	TO STA. 16+08.00			
	ILLINOIS	FED. AID PROJECT		
	CONTRACT NO. 97285			



CROSS SECTIONS OF ROADWAY BRIDGE OVER MONROE CITY CREEK
FAS 1857 C.H. 3 SECTION 03-00070-00-BR

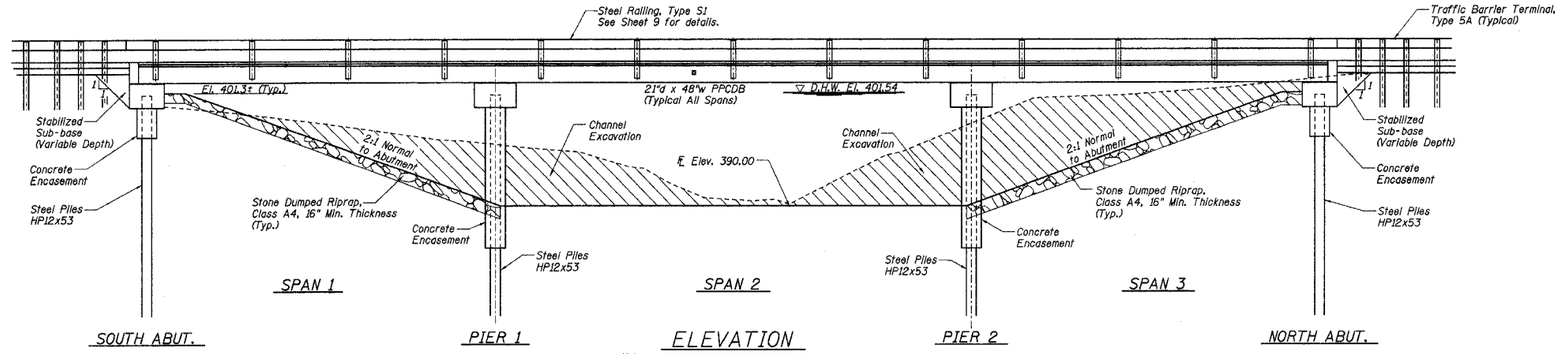
TBM 5-28-04"A" Railroad spike in telephone pole, 15' south of center of old bridge; 33' east of ℄ Bluff Road. Elev. 404.84.

TBM 5-28-04"B" Nail in east side of Telephone pedestal, 405' south of center of old bridge; 18' east of ℄ Bluff Road. Elev. 400.71.

TBM 5-28-04"C" Railroad spike in power pole, 23' east of ℄ Bluff Road at ℄ extended KK Road (West). Elev. 397.16.

Existing Structure: Single span bridge with concrete deck on steel stringers supported by concrete abutment caps on timber piles and timber wingwalls. 48.5'L x 25.0'W. 45° Ahead right skew. No Salvage.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	6
	ILLINOIS	FEDERAL AID PROJECT		
		CONTRACT NO. 97285		



ELEVATION

Note:

See Sheet 3 for Limits of Riprap and Quantities.

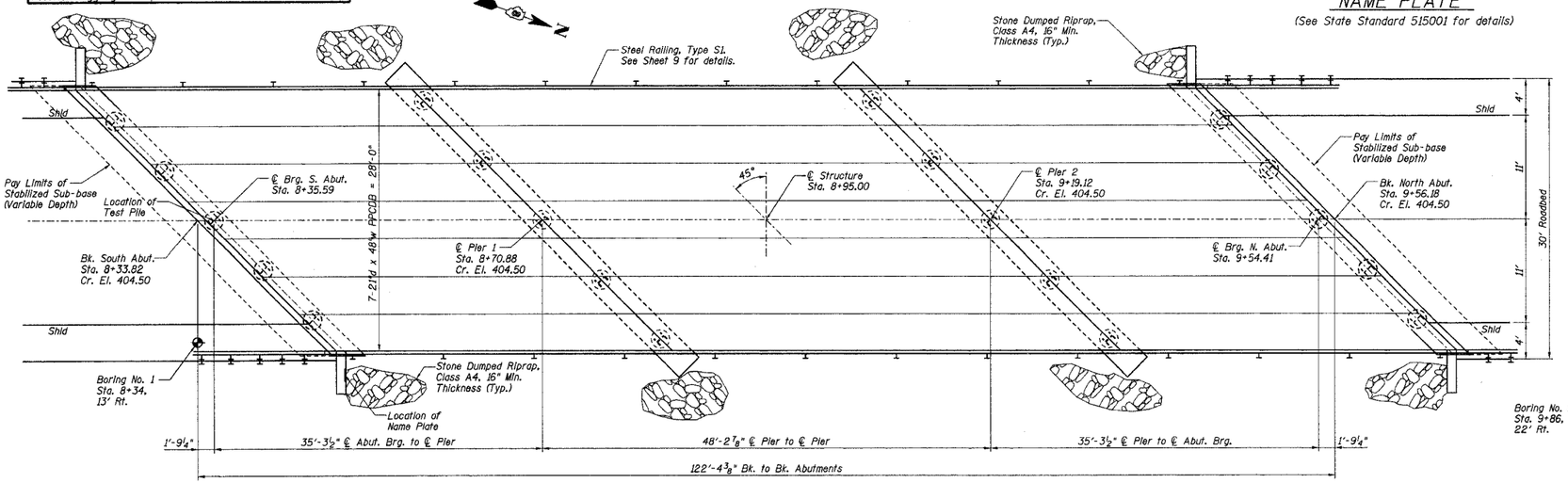
MIXTURE REQUIREMENTS

Location	Bridge Deck Overlay
Mixture Use:	BC Surf Cse, Super, Mix C, N50
AC/PG:	PG64-22
RAP % (Max.):	15
Design Air Voids:	4.0%, 50 Gyration Superpave Design
Mixture Composition: (Gradation Mixture)	
Friction Aggregate:	Mixture "C"

MONROE CITY CREEK
BUILT 200_ BY MONROE COUNTY
PROJECT NO. BROS-0133(031)
SEC. 03-00070-00-BR
LOADING HS-20
STRUCTURE NO. 067-3174

NAME PLATE

(See State Standard 515001 for details)



PLAN

BILL OF MATERIALS (BRIDGE ONLY)

ITEM	UNIT	SUB	SUPER	TOTAL
CHANNEL EXCAVATION	CU YD	800	-	800
STABILIZED SUB-BASE (VARIABLE DEPTH)	TON	40	-	40
REMOVAL OF EXISTING STRUCTURES	EACH	-	-	1
CONCRETE STRUCTURES	CU YD	52	-	52
PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	-	3360	3360
REINFORCEMENT BARS	POUND	5740	-	5740
STEEL RAILING, TYPE S1	FOOT	-	246	246
FURNISHING STEEL PILES HP 12x53	FOOT	1050	-	1050
DRIVING STEEL PILES	FOOT	1050	-	1050
TEST PILE STEEL HP12X53	EACH	1	-	1
CONCRETE ENCASEMENT	CU YD	22.6	-	22.6
NAME PLATES	EACH	1	-	1
WATERPROOFING MEMBRANE SYSTEM	SQ YD	-	375	375
PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	-	720	720
BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50	TON	-	63	63

GENERAL NOTES

See Section 502 of the Standard Specifications for Structural Excavation.

Existing gabion baskets and their contents shall be removed as directed by the Engineer.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel at the ROW line. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the South Abutment as directed by the Engineer before ordering the remainder of the piles.

In addition to all other requirements of Section 512 of the Standard Specifications, splices for Steel H-piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the Contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder certifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.

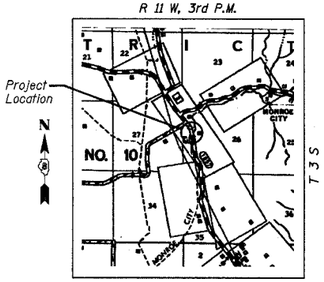
A Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for Precast Prestressed Concrete Deck Beams.

The abutment and pier bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

See Specifications for Soil Borings.

Do not scale these drawings.

R 11 W, 3rd P.M.



LOCATION SKETCH

WATERWAY DATA

Drainage Area = 7.22 Sq. Mi. Low Grade Elev. 396.16 @ Sta. 16+08.00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	<5	2260	408	548	401.54	0.19	0.31	401.73	401.85
Base									
Max. Calc.									

SEISMIC

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.12g
Site Coefficient (S) = 1.5

DESIGN SPECIFICATIONS

AASHTO - 2002 17th Edition

LOADING HS 20-44

Allow 25#/sq. ft. for future wearing surface.

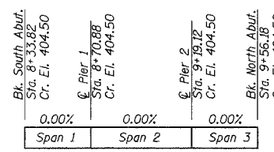
DESIGN STRESSES

FIELD UNITS

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

PRECAST PRESTRESSED UNITS

f'_c = 5,000 psi
f'_{ci} = 4,000 psi
f'_s = 270,000 psi (½"ϕ strands)
f'_{si} = 189,000 psi (½"ϕ strands)



GRADE ON STRUCTURE

Crown Elevation shown is elevation at top of Bituminous Concrete Bridge Deck Overlay, 3" thick at end of Deck Beams.

I certify that to the best of my information, knowledge, and belief, this bridge is structurally adequate for the design loading shown on plans. The design is an economical one for the structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.

GARY L. HAHN
81-4853
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

Gary L. Hahn 05-25-06

GARY L. HAHN
CENTRALIA, ILLINOIS
ILLINOIS LICENSED STRUCTURAL ENGINEER NO. 81-4853
EXPIRES NOV. 30, 2006

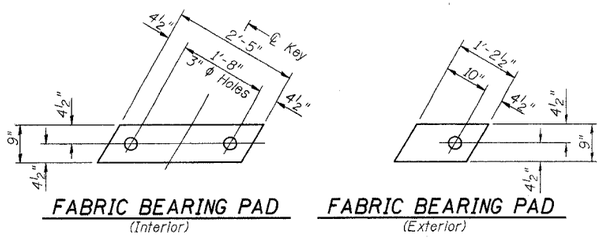
GENERAL PLAN AND ELEVATION
PROPOSED BRIDGE CARRYING FAS 1857 OVER MONROE CITY CREEK
SECTION 03-00070-00-BR
MONROE COUNTY, ILLINOIS

Sheet 6 of 11
Job No. 41604

05/31/2006

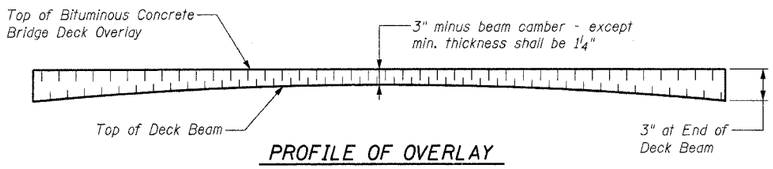
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	7
	ILLINOIS	FEDERAL AID PROJECT		
		CONTRACT NO. 97285		

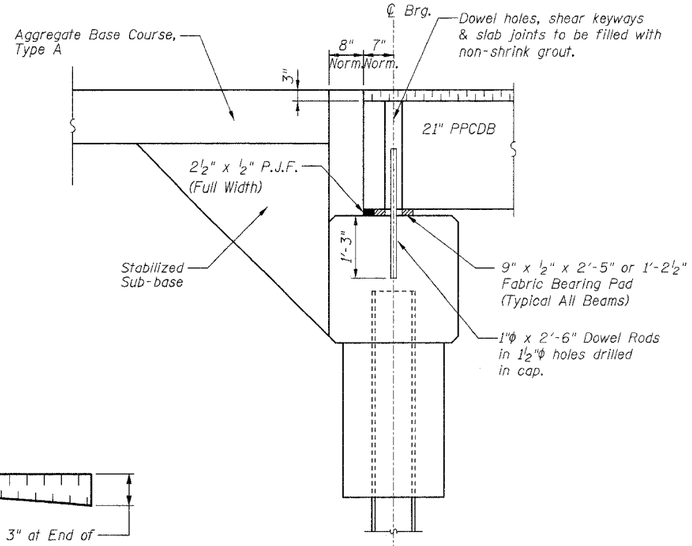


FABRIC BEARING PAD
(Interior)

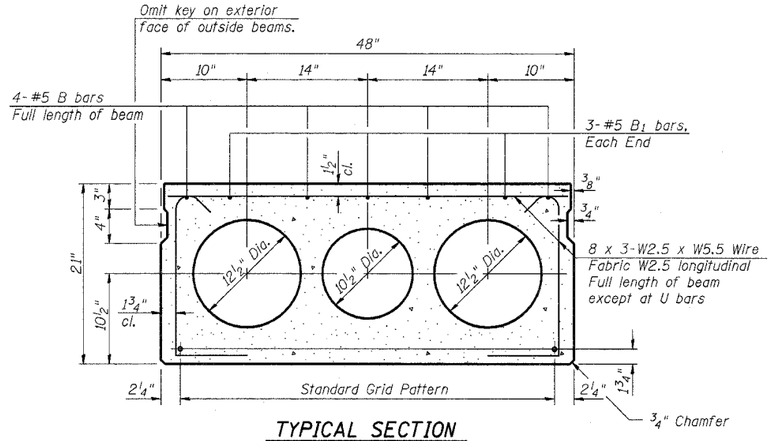
FABRIC BEARING PAD
(Exterior)



PROFILE OF OVERLAY



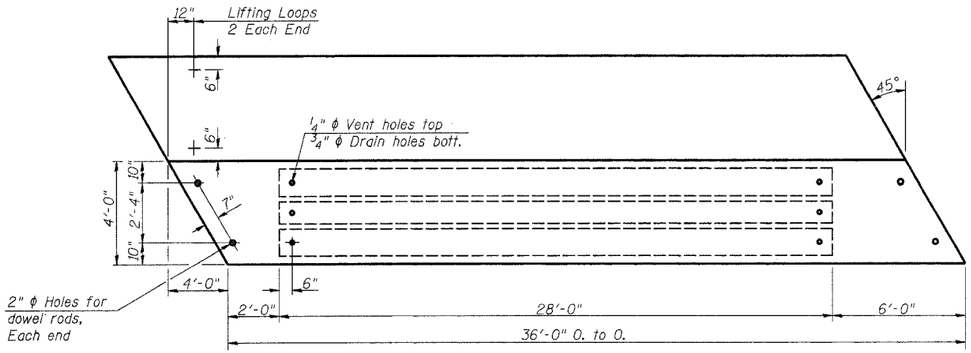
RESTRAINED BEARING
ABUTMENT



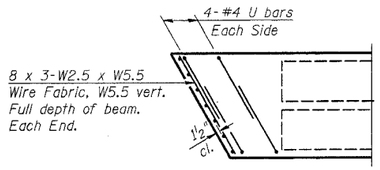
TYPICAL SECTION

10 - ½" ϕ Strands, Each Strand Stressed to 28,900 Lbs.
10 - Strands 1¾" up

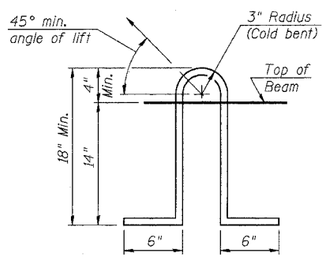
Note:
Place strands symmetrically about ℄ of beam.



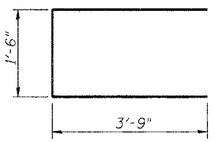
PLAN



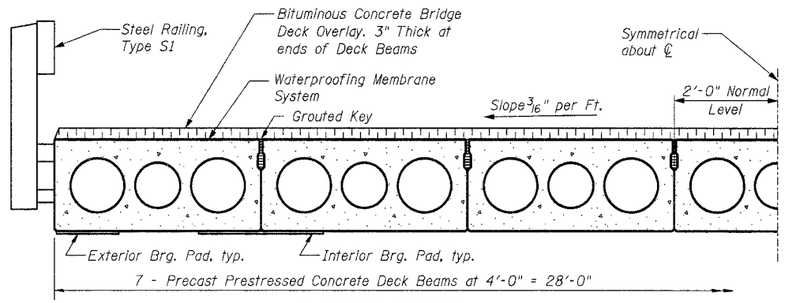
END PLAN



LIFTING LOOP DETAIL



BAR U



HALF CROSS SECTION

NOTES

Prestressing steel shall be uncoated high strength, stress-relieved 7-wire strand, Grade 270.

Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

An equal substitution of the low-relaxation strands for the stress-relieved strands will be permitted. However, all strands shall be stressed to a maximum of 28,900 pounds per strand.

Lifting loops shall be 3 - ½" ϕ-270 ksi strands, as shown.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

When Waterproofing Membrane System is specified, the top surfaces of the beams shall be finished in accordance with Article 504.06 of the Standard Specification except that the surface shall not be roughened by brooming. The finish surface shall be free of depressions or high spots with sharp corners, and the top edge of the keys shall be rounded or chamfered a minimum of ¼".

Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

Required Release Strength, f'ci, shall be 4,000 p.s.i.

Portland Cement Mortar Fairing Course shall be placed as required for fairing out any unevenness between adjacent deck beams as specified in Section 583 of the Standard Specifications.

BILL OF MATERIAL (ONE BEAM)

Bar	No.	Size	Length	Shape
B	4	#5	35'-8"	——
B_1	6	#5	7'-3"	——
U	16	#4	9'-0"	▭
Precast Prestressed Conc. Deck Bms.		Sq. Ft.	144	
Reinforcement Bars		Pound	290	
Beam Weight		Pound	28140	

SPAN 1 OR 3

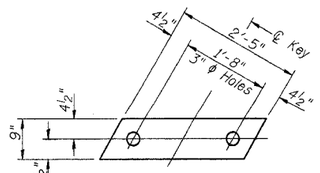
PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS
PROPOSED BRIDGE CARRYING FAS 1857 OVER MONROE CITY CREEK
SECTION 03-00070-00-BR
MONROE COUNTY, ILLINOIS

Sheet 7 of 11
Job No. 41604

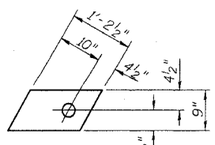
05/31/2006

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

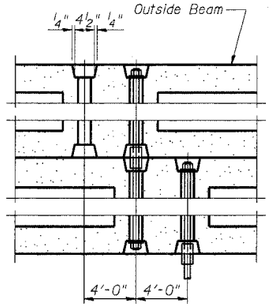
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	8
	ILLINOIS	FEDERAL AID PROJECT		
		CONTRACT NO. 97285		

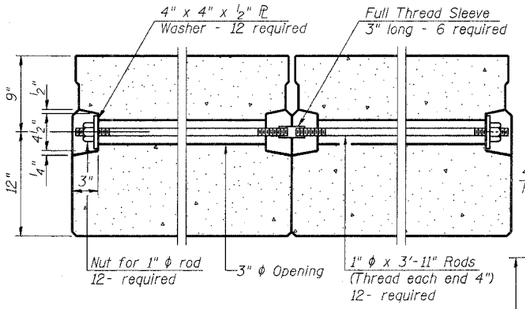


FABRIC BEARING PAD
(Interior)

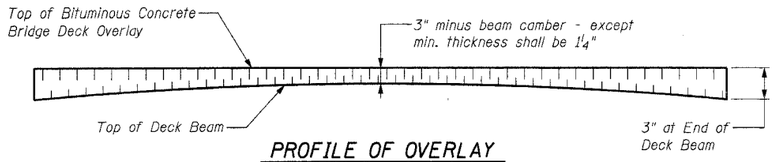


FABRIC BEARING PAD
(Exterior)

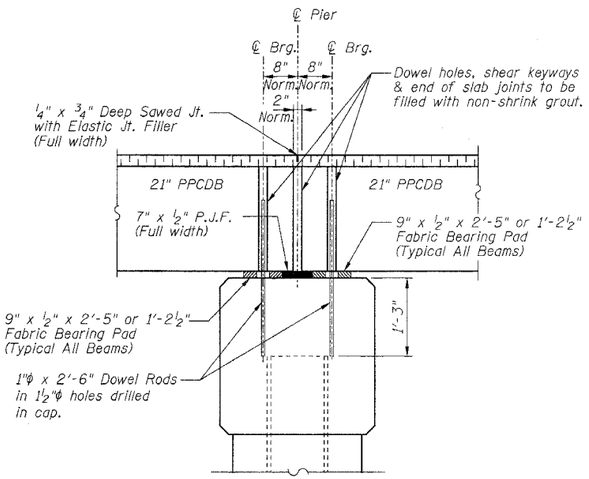




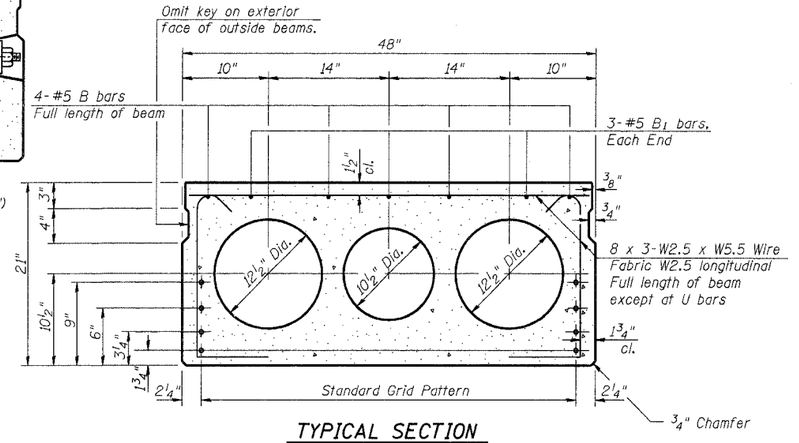
TYPICAL TRANSVERSE TIE ASSEMBLY



PROFILE OF OVERLAY



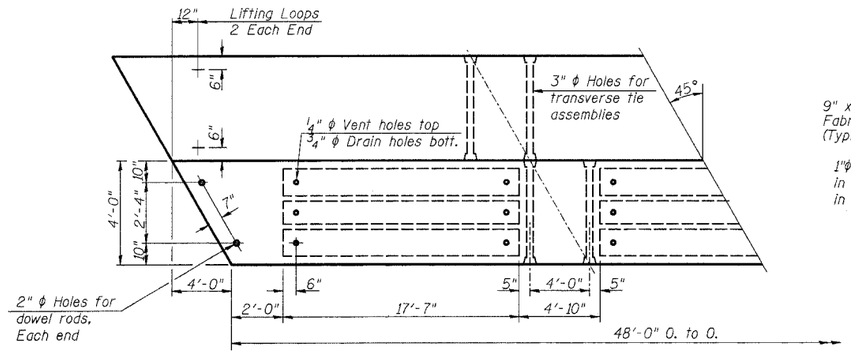
RESTRAINED BEARING
PIER



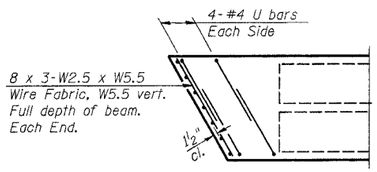
TYPICAL SECTION

20 - ½" ϕ Strands, Each Strand Stressed to 28,900 Lbs.
14 - Strands 1¾" up, 2 - Strands 3¼" up,
2 - Strands 6" up, 2 - Strands 9" up.

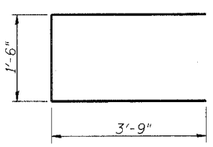
Note:
Place strands symmetrically about ℄ of beam.



PLAN



END PLAN



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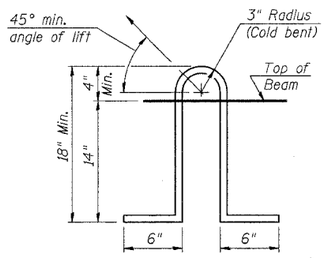
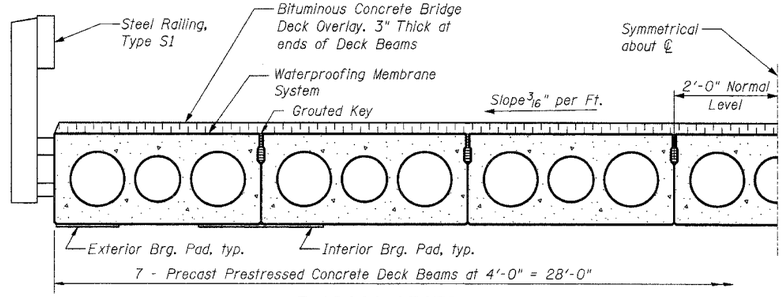


LIFTING LOOP DETAIL



HALF CROSS SECTION

NOTES

Prestressing steel shall be uncoated high strength, stress-relieved 7-wire strand, Grade 270.

Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

An equal substitution of the low-relaxation strands for the stress-relieved strands will be permitted. However, all strands shall be stressed to a maximum of 28,900 pounds per strand.

Lifting loops shall be 3 - ½" ϕ-270 ksi strands, as shown.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

When Waterproofing Membrane System is specified, the top surfaces of the beams shall be finished in accordance with Article 504.06 of the Standard Specification except that the surface shall not be roughened by brooming. The finish surface shall be free of depressions or high spots with sharp corners, and the top edge of the keys shall be rounded or chamfered a minimum of ¼".

Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

Required Release Strength, f'ci, shall be 4,000 p.s.i.

Portland Cement Mortar Fairing Course shall be placed as required for fairing out any unevenness between adjacent deck beams as specified in Section 583 of the Standard Specifications.

BILL OF MATERIAL (ONE BEAM)

Bar	No.	Size	Length	Shape
B	8	#5	25'-6"	—
B_1	6	#5	9'-9"	—
U	16	#4	9'-0"	⊏
Precast Prestressed Conc. Deck Bms.		Sq. Ft.	192	
Reinforcement Bars		Pound	370	
Beam Weight		Pound	38240	

SPAN 2

PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS
PROPOSED BRIDGE CARRYING FAS 1857 OVER MONROE CITY CREEK
SECTION 03-00070-00-BR
MONROE COUNTY, ILLINOIS

Sheet 8 of 11
Job No. 41604

05/31/2006

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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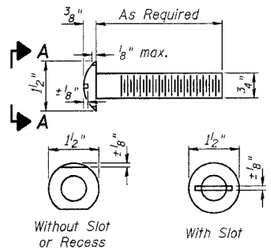
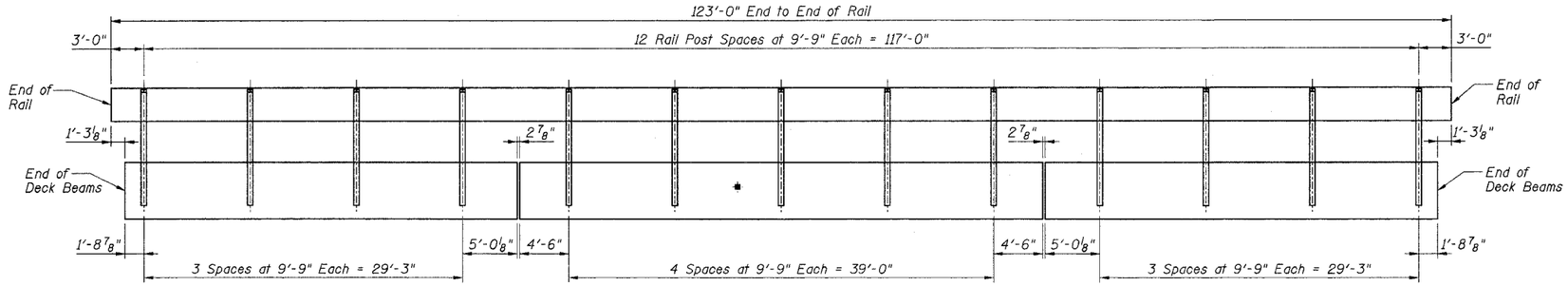
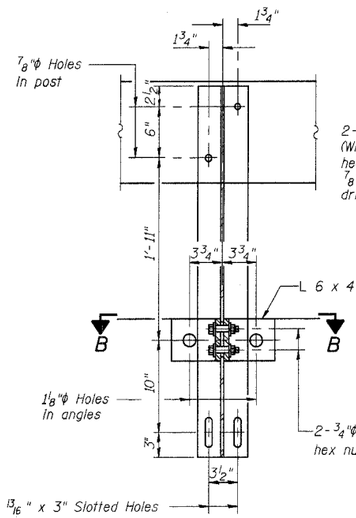
	ILLINOIS	FEDERAL AID PROJECT		
		CONTRACT NO. 97285		



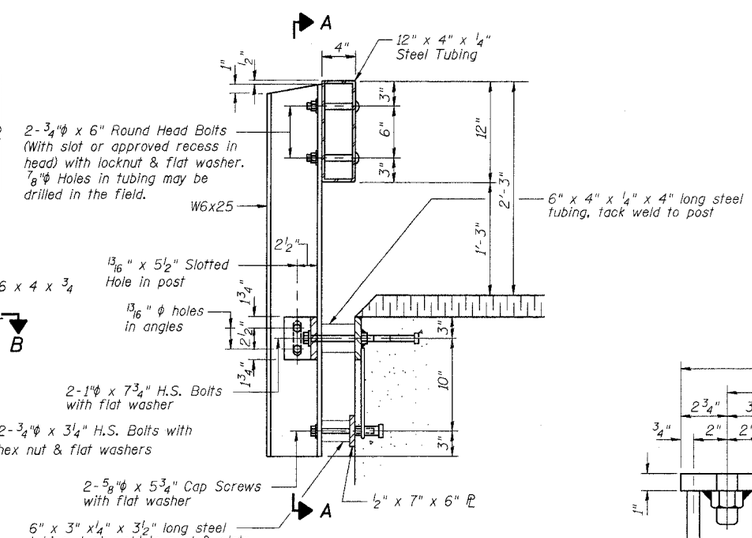
VIEW A-A
ROUND HEAD BOLT



ELEVATION

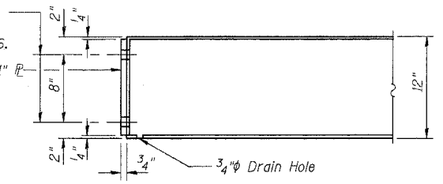


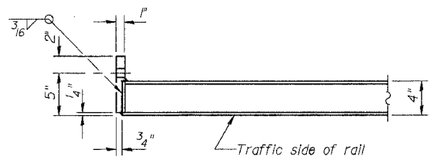
SECTION A-A



SECTION AT RAIL POST

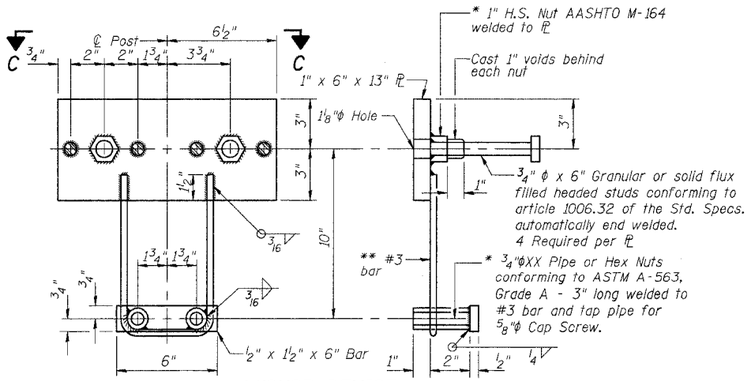
1 1/8"φ Holes for 1"φ x 4" Round Head Bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Std. 631026.





END OF RAIL DETAILS

VIEW C-C



ANCHOR DEVICE

* Threaded areas shall be plugged or blocked off during casting of beam.

** 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".

NOTES

Hollow 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 requirement 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 in accordance with AASHTO M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.

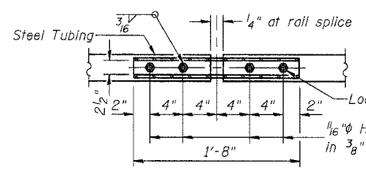
Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S1.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

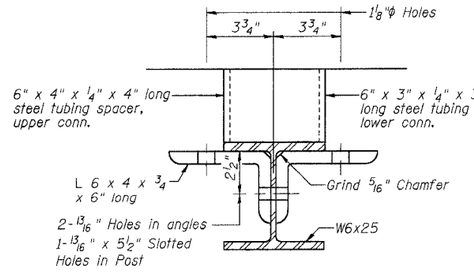
The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8" fabric bearing pad between the post and concrete.

The 3/4"φ high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 505.04(f)(2) of the Standard Specifications. The 1"φ high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8"φ cap screws in bottom of posts shall be tightened to a snug fit only.

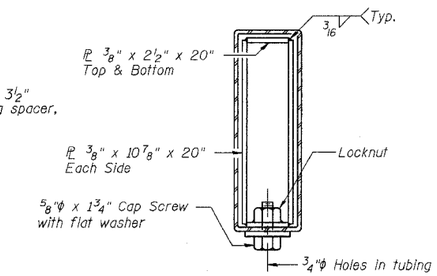
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING TYPE S1.



PLAN-BOTT. SPLICE PL TYPICAL



SECTION B-B



SECTIONS AT RAIL SPLICE

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	246

STEEL RAILING, TYPE S1 DETAILS
PROPOSED BRIDGE CARRYING FAS 1857 OVER MONROE CITY CREEK
SECTION 03-00070-00-BR
MONROE COUNTY, ILLINOIS

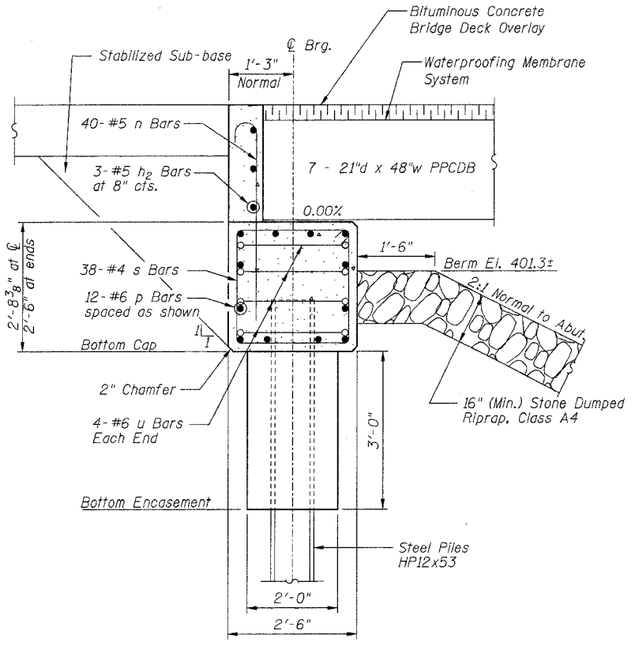
Sheet 9 of 11

Job No. 41604

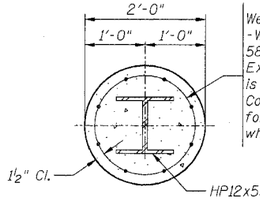
05/26/2006

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

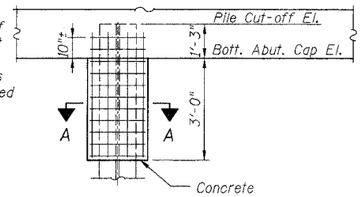
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	10
	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 97285		



SECTION THRU ABUTMENT



SECTION A-A



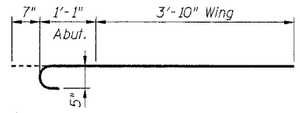
PILE ENCASEMENT DETAIL

GENERAL NOTES

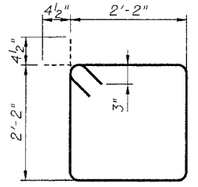
All exposed edges shall have standard $\frac{3}{4}$" chamfer, unless otherwise noted.

All clearances between rebar and form surface shall be 2", unless otherwise noted.

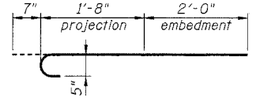
Space reinforcement in cap to miss PPCDB dowel rods.



#5 h BARS



#4 s BARS



#5 n BARS

PILE DATA

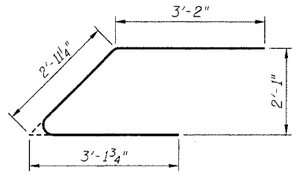
Type:
South Abutment Steel HP12x53
North Abutment Steel HP12x53

Estimated Length:
South Abutment 50 Foot
North Abutment 50 Foot

Number Required:
South Abutment 4+1 Test Pile
North Abutment 5

Total Estimated Length (Both Abutments):
(Does not include Test Pile)
Steel HP12x53 450 Foot

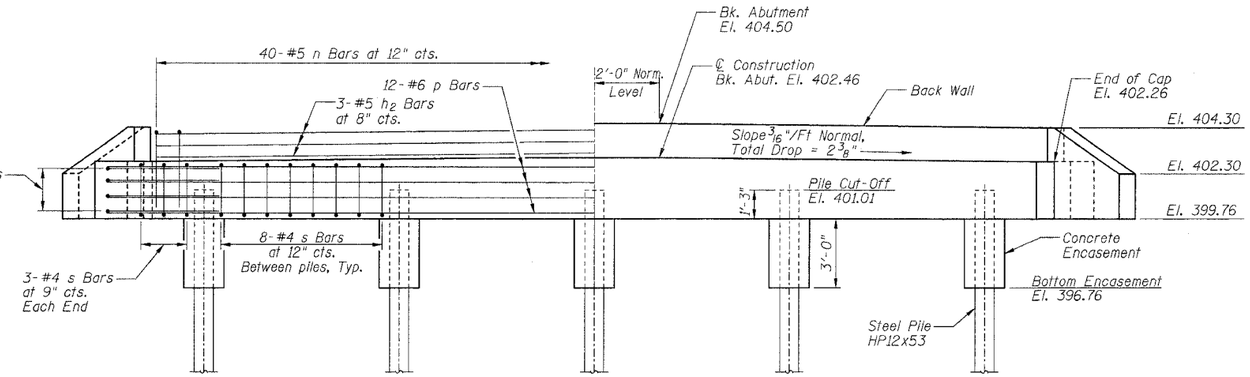
Capacity: Drive to Refusal



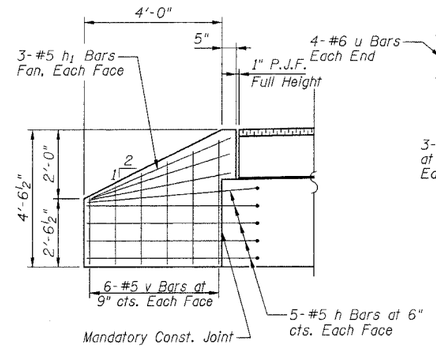
#6 u BARS

BILL OF MATERIALS
ONE ABUTMENT w/ WINGWALLS

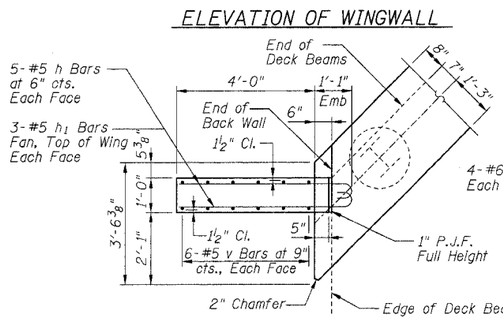
Bar	No.	Size	Length	Shape
h	20	#5	5'-6"	
h_1	12	#5	4'-8"	
h_2	3	#5	39'-0"	
n	40	#5	4'-3"	
p	12	#6	40'-8"	
s	38	#4	9'-5"	
u	8	#6	9'-3"	
v	24	#5	4'-0"	CUT IN FIELD
Concrete Structures		Cu. Yd.	13.0	
Reinforcement Bars		Pound	1660	
Concrete Encasement		Cu. Yd.	1.7	



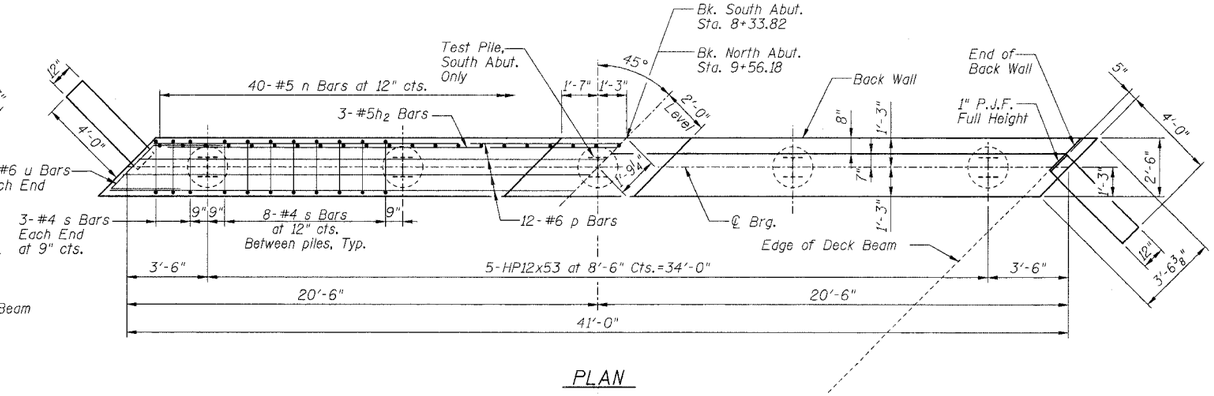
ELEVATION



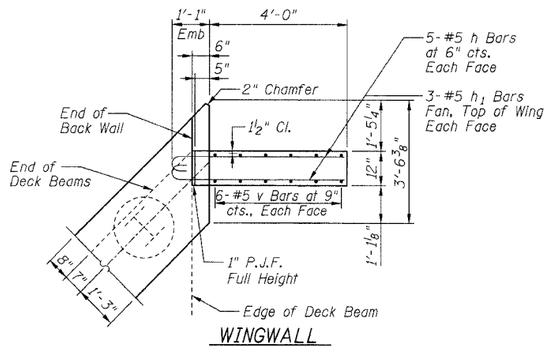
ELEVATION OF WINGWALL



WINGWALL CONNECTION DETAIL



PLAN



WINGWALL CONNECTION DETAIL

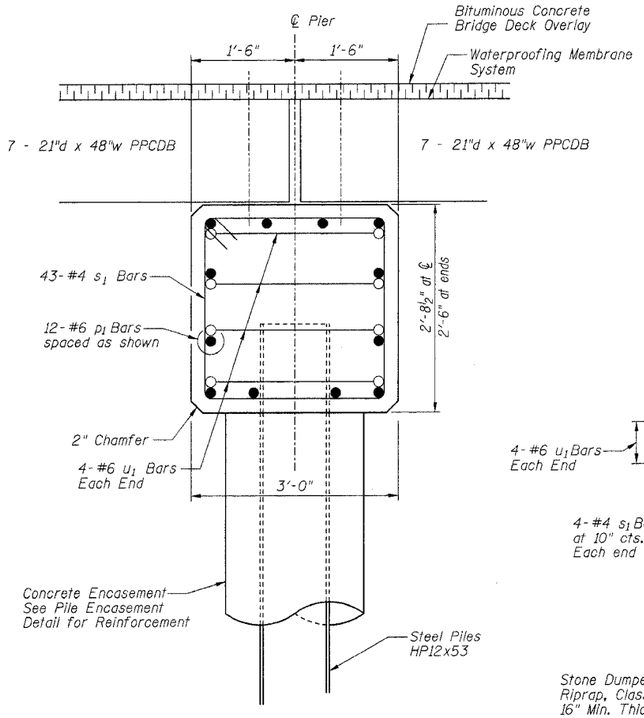
ABUTMENT DETAILS
PROPOSED BRIDGE CARRYING FAS 1857 OVER MONROE CITY CREEK
SECTION 03-00070-00-BR
MONROE COUNTY, ILLINOIS

Sheet 10 of 11
Job No. 41604

05/26/2006

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1857	03-00070-00-BR	MONROE	11	11
	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 97285		



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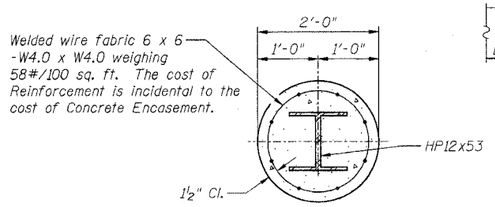
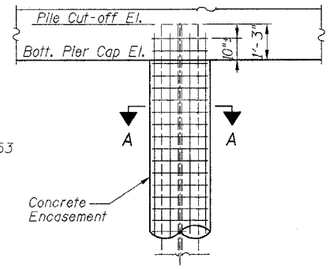
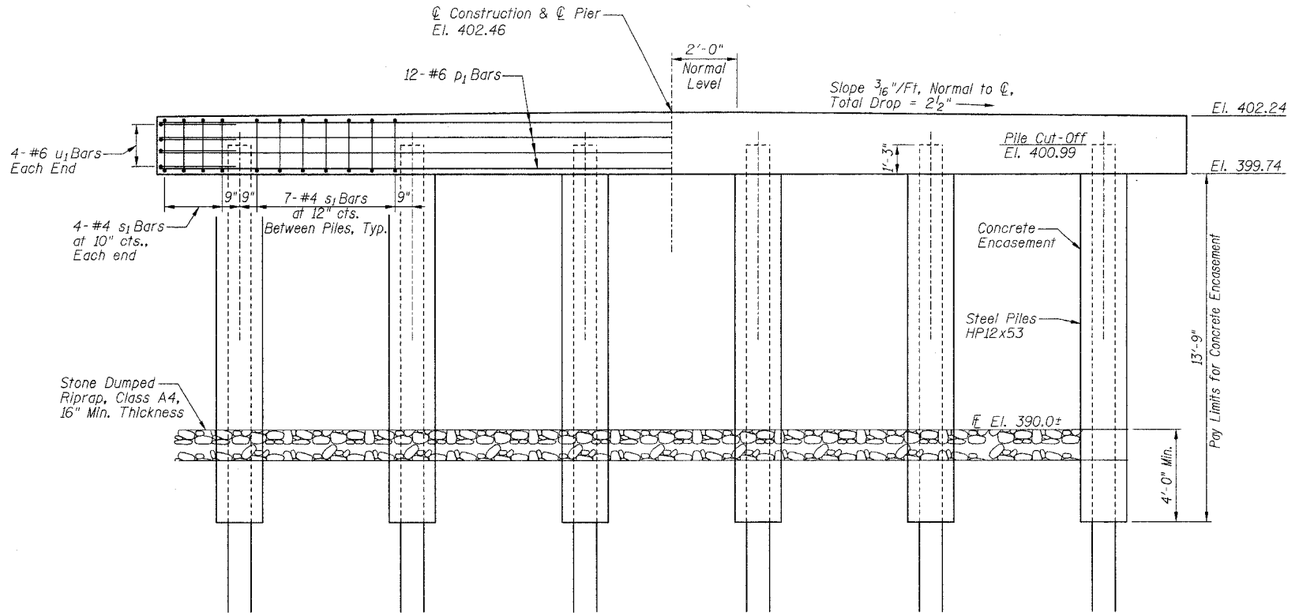


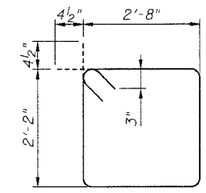
SECTION A-A



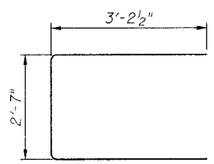
PILE ENCASEMENT DETAIL



ELEVATION



#4 s_1 BARS



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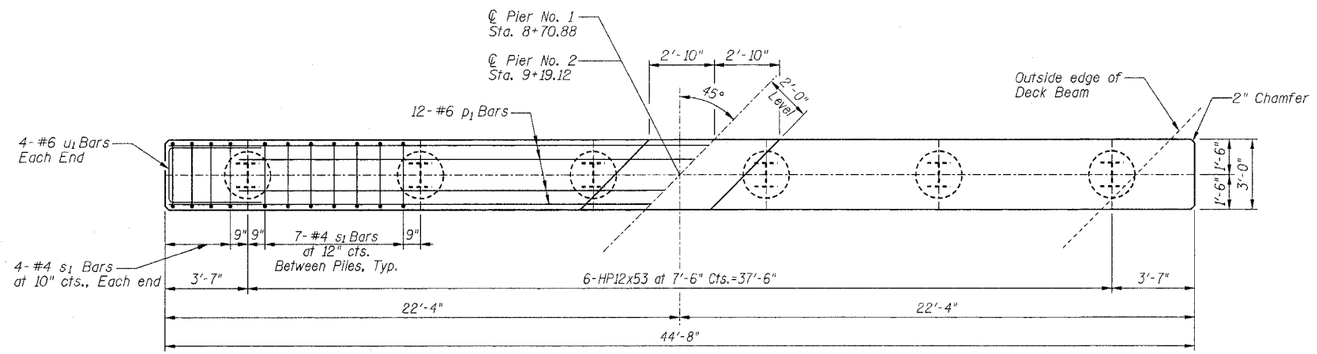

PLAN

PILE DATA

Type:
- Pier No. 1 — Steel HP12x53
- Pier No. 2 — Steel HP12x53

Estimated Length:
- Pier No. 1 — 50 Foot
- Pier No. 2 — 50 Foot

Number Required:
- Pier No. 1 — 6
- Pier No. 2 — 6

Total Estimated Length (Both Piers):
- Steel HP12x53 — 600 Foot

Capacity: Drive to Refusal

BILL OF MATERIALS
ONE PIER

Bar	No.	Size	Length	Shape
p_1	12	#6	44'-4"	
s_1	43	#4	10'-5"	
u_1	8	#6	9'-0"	
Concrete Structures			Cu. Yd.	13.0
Reinforcement Bars			Pound	1210
Concrete Encasement			Cu. Yd.	9.6

GENERAL NOTES

All exposed edges shall have 2" chamfer, unless otherwise noted.

All clearances between rebar and form surface shall be 2", unless otherwise noted.

Space reinforcement in cap to miss PPCDB dowel rods.

05/26/2006

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

PIER DETAILS
PROPOSED BRIDGE CARRYING FAS 1857 OVER MONROE CITY CREEK
SECTION 03-00070-00-BR
MONROE COUNTY, ILLINOIS