ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	1
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	BRS-329(105)

* 07-00216-01-BR CONTRACT *87401

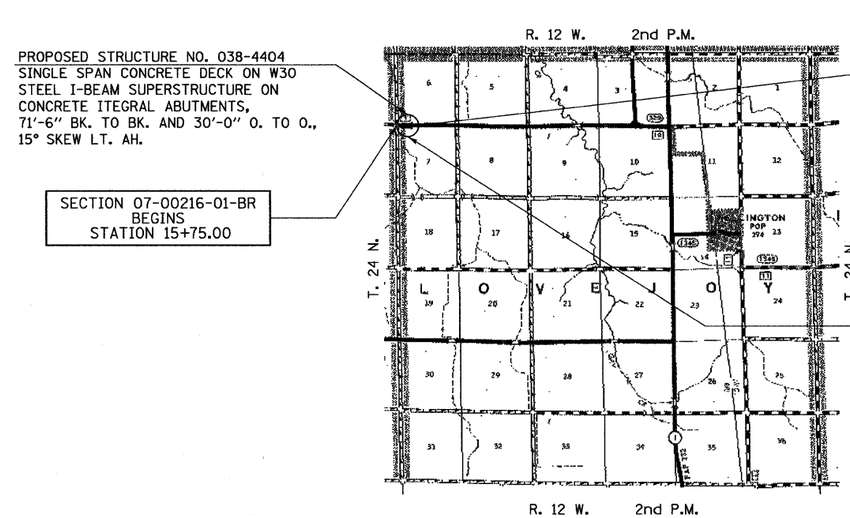
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM
IROQUOIS COUNTY
SECTION 07-00216-01-BR
F.A.S. 329 (CH 10) OVER FOUNTAIN CREEK TRIBUTARY
PROJECT NO. BRS-329(105)
JOB NUMBER C-93-111-09

INDEX OF SHEETS

REQUIRED HIGHWAY STANDARDS

000001-05
280001-04
515001-03
542301-02
601101-01
602301-02
604036-02
630301-05
631032-04
635006-03
701901-01
780001-02
BLR 21-8

SCALES
- PLAN, PROFILE HORIZ. } 50′ 0 50′
- PROFILE VERT. 5′ 0 5′
- CROSS SECTIONS HORIZ., CROSS SECTIONS VERT. } 5′ 0 5′



PROPOSED STRUCTURE NO. 038-4404
SINGLE SPAN CONCRETE DECK ON W30 STEEL I-BEAM SUPERSTRUCTURE ON CONCRETE ITEGRAL ABUTMENTS, 71′-6″ BK. TO BK. AND 30′-0″ O. TO O., 15° SKEW LT. AH.

SECTION 07-00216-01-BR BEGINS STATION 15+75.00

SECTION 07-00216-01-BR ENDS STATION 24+75.00

EXISTING STRUCTURE 038-0069
SINGLE SPAN REINFORCED CONCRETE SLAB ON CONCRETE CLOSED ABUTMENTS ON TIMBER PILE SUPPORTED CONCRETE FOOTINGS, 32′-6″ BK. TO BK., AND 33′-6″ O. TO O., NO SKEW (TO BE REMOVED)

LOCATION MAP

1 MI 0 1 MI
APPROXIMATE SCALE

LOCATION OF SECTION INDICATED THUS:- ■

PLANS DESIGNED IN ACCORDANCE WITH BUREAU OF LOCAL ROADS AND STREETS MANUAL GUIDELINES FOR TWO LANE RURAL COLLECTORS - RECONSTRUCTION

APPROVED March 25. 2009
IROQUOIS COUNTY ENGINEER

PASSED March 30 2009
DISTRICT THREE ENGINEER OF LOCAL ROADS & STREETS

Released For Bid Based on Limited Review March 30 2009
DEPUTY DIRECTOR OF HIGHWAYS, REGION TWO ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

UTILITY COMPANIES

VERIZON
BLOOMINGTON, ILLINOIS

EASTERN ILLINI ELECTRIC COOPERATIVE
PAXTON, ILLINOIS

CALL J.U.L.I.E.
BEFORE YOU DIG
1-800-892-0123 OR 811

CONTRACT NO. 87401

NET LENGTH OF PROJECT = 900.00 FEET = 0.170 MILES

DESIGN CLASSIFICATION: MAJOR-COLLECTOR (NON-URBAN)
DESIGN ADT = 600 (2029)
DESIGN SPEED = 50 MPH

Hutchison Engineering, Inc.
JACKSONVILLE ILLINOIS
SHOREWOOD ILLINOIS
2009 JOB#2598

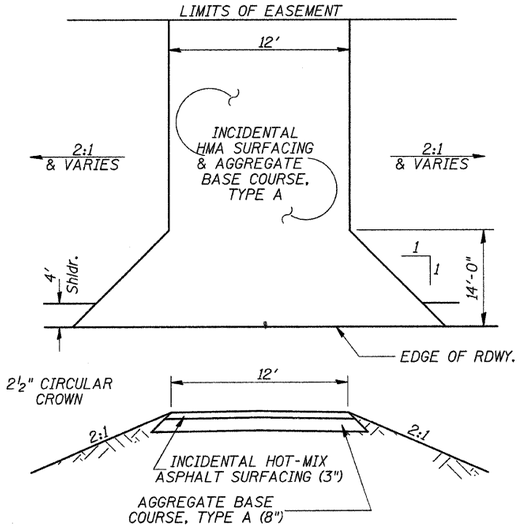
JOSEPH P. HUTCHISON 058335 REGISTERED PROFESSIONAL ENGINEER 3/27/2009 ILLINOIS
License Expires 11/30/2009
SIGNATURE
ENGINEERS SEAL

2598E001

COUNTY: IROQUOIS SECTION: 07-00216-01-BR ROUTE: CH 10

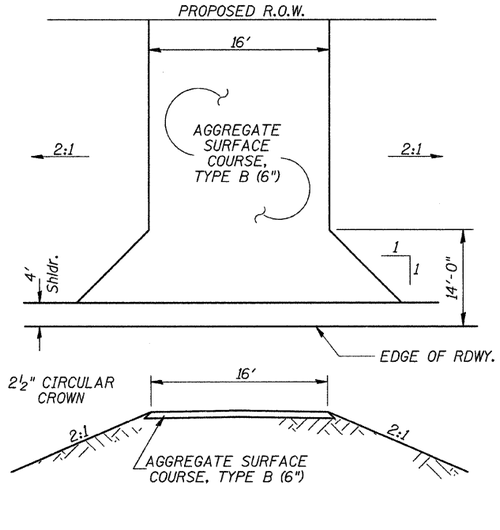
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	2
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-3294(05)		

* 07-00216-01-BR CONTRACT *87401



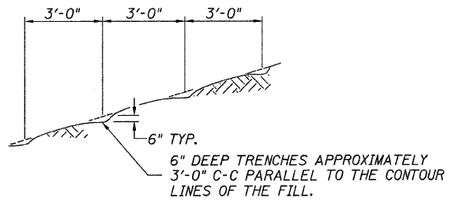
PROPOSED PRIVATE ENTRANCE

STA 18+80 LT



PROPOSED PRIVATE ENTRANCE

STA 23+23 RT



NOTE: ALL SLOPES 3:1 OR STEEPER AND GREATER THAN 5' IN HEIGHT SHALL BE CONTOUR PLOWED AS SHOWN IN DETAIL, COST SHALL BE INCLUDED WITH SEEDING, CLASS 2 (SPECIAL).

DETAIL OF CONTOUR PLOWING

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

	HMA BINDER	HMA SURFACE	INCIDENTAL SURFACING
PG GRADE	PG 64-22	PG 64-22	PG 64-22
MAX % RAP ALLOWABLE**	25%	15%	25%
DESIGN AIR VOIDS	4% @ N50	4% @ N50	4% @ N50
MIXTURE COMPOSITION	IL-19.0	IL-12.5 OR IL-9.5	IL-12.5 OR IL-9.5
FRICTION AGGREGATE		MIXTURE C	MIXTURE C
DENSITY TEST METHOD	CORES	CORES	SATISFACTION OF ENGINEER

* MATERIAL SHALL BE COMPACTED TO 93.0-97.4 PERCENT OF THE MAXIMUM THEORETICAL DENSITY, EXCEPT THAT WHEN PLACED AS FIRST LIFT ON AN UNIMPROVED SUBGRADE THE MINIMUM PERCENT COMPACTION SHALL BE 92.0 PERCENT. THE MAXIMUM THEORETICAL DENSITY SHALL BE DETERMINED FROM THE MOVING AVERAGE AS SPECIFIED IN THE QC/QA SPECIFICATION.

** WHEN MORE THAN 20% RAP IS USED, A SOFTER ASPHALT BINDER (PG 58-22) MAY BE REQUIRED AS DETERMINED BY THE ENGINEER.

STRUCTURAL DESIGN INFORMATION COUNTY HIGHWAY 10

ROAD CLASSIFICATION: CLASS III 80,000 lb./20 YEAR DESIGN
STRUCTURAL DESIGN TRAFFIC:
PV = 528 SU = 42 MU = 30
PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:
P = 88% S = 7% M = 5%
MINIMUM SUBGRADE SUPPORT RATING: GRANULAR
FLEXIBLE PAVEMENT DESIGN: MINIMUM TF = 0.162
ASPHALT PAVEMENT THICKNESS: 5"
AGGREGATE BASE COURSE, TYPE A: 8"

GENERAL NOTES

PLAN QUANTITIES FOR TREE REMOVAL HAVE BEEN BASED ON ALL TREES WITHIN THE LIMITS OF CONSTRUCTION. THIS QUANTITY MAY BE REVISED DURING CONSTRUCTION, AT THE DIRECTION OF THE ENGINEER, BY DELETING FROM THE TREE REMOVAL QUANTITIES, SUCH TREES THAT DO NOT INTERFERE WITH THE PROPOSED CONSTRUCTION.

THE REMOVAL OF EXISTING ASPHALT SURFACE AND GRAVEL BASE COURSE OR CONCRETE SLAB WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE NEW BRIDGE SHALL BE REMOVED AS EARTH EXCAVATION AND NO COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED.

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT THE CONTRACTOR'S EXPENSE.

ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENTS ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY THE SAID UTILITY ADJUSTMENTS.

THE PROFILE GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND IN THE STATION CROSS SECTIONS ARE TO THE TOP OF THE FINISHED SURFACE.

ALL EXISTING DRAINAGE STRUCTURES NOT BEING REMOVED BY THE CONTRACTOR THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

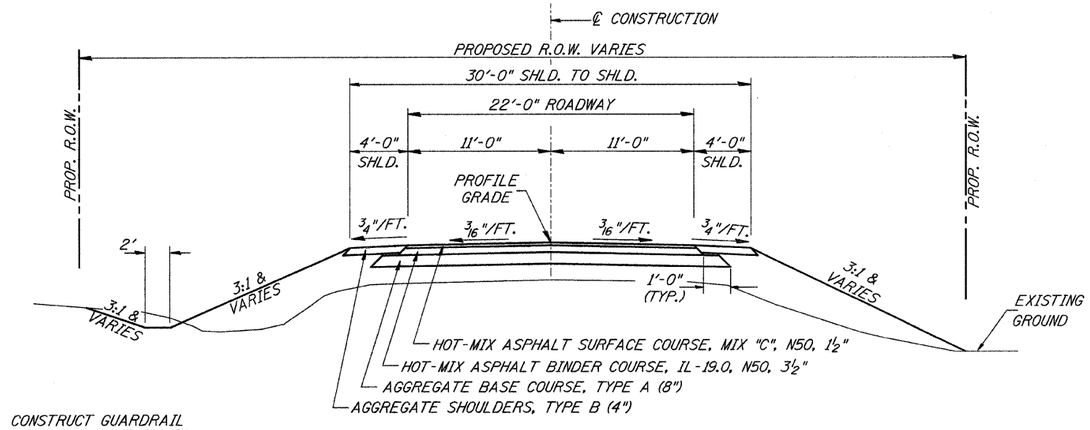
ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE COUNTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS GRADING AND TRENCHING OPERATIONS AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE PROPERTY MARKERS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

ALL ELEVATIONS SHOWN REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.

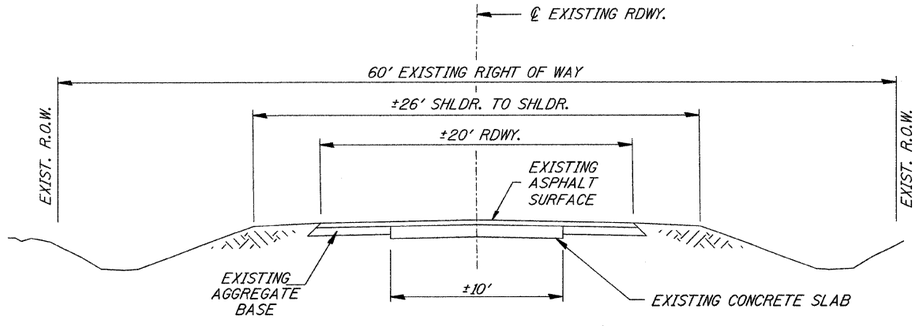


CONSTRUCT GUARDRAIL SHOULDER WIDENING IN ACCORDANCE WITH STD 630301

PROPOSED TYPICAL SECTION

STA. 15+75.00 TO STA. 19+66.85
STA. 20+38.35 TO STA. 24+75.00
EXCEPT TRANSITIONS

BRIDGE OMISSION
STA. 19+66.85 TO STA. 20+38.35



EXISTING TYPICAL SECTION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	3
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-329(10	5)

* 07-00216-01-BR CONTRACT *87401

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	QUANTITY
	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	48
	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	24
	20200100	EARTH EXCAVATION	CU YD	400
	20300100	CHANNEL EXCAVATION	CU YD	520
①	20400800	FURNISHED EXCAVATION	CU YD	1,855
①	20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	85
	20800150	TRENCH BACKFILL	CU YD	5
①	25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.9
	25100630	EROSION CONTROL BLANKET	SQ YD	115
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	500
	28000300	TEMPORARY DITCH CHECKS	EACH	13
	28000400	PERIMETER EROSION BARRIER	FOOT	810
	28000500	INLET AND PIPE PROTECTION	EACH	1
	28000510	INLET FILTERS	EACH	1
	28100209	STONE RIPRAP, CLASS A5	TON	480
	28200200	FILTER FABRIC	SQ YD	515
	28300400	AGGREGATE DITCH	TON	38
	35100100	AGGREGATE BASE COURSE, TYPE A	TON	1,022
	40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	21
	40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1,181
	40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	406
	40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	171
	40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	12
	48101200	AGGREGATE SHOULDERS, TYPE B	TON	167
①	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
①	50105220	PIPE CULVERT REMOVAL	FOOT	121
	50200100	STRUCTURE EXCAVATION	CU YD	115
	50300225	CONCRETE STRUCTURES	CU YD	25.9
	50300255	CONCRETE SUPERSTRUCTURE	CU YD	74.1
	50300260	BRIDGE DECK GROOVING	SQ YD	222
	50300280	CONCRETE ENCASEMENT	CU YD	4.6
	50300300	PROTECTIVE COAT	SQ YD	238
	50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
	50500505	STUD SHEAR CONNECTORS	EACH	900
①	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	18,790
	51200957	FURNISHING METAL SHELL PILES 12"x0.25"	FOOT	408
	51202305	DRIVING PILES	FOOT	408
	51203200	TEST PILE METAL SHELLS	EACH	2
	51204650	PILE SHOES	EACH	10
	51500100	NAME PLATES	EACH	1
	52100520	ANCHOR BOLTS, 1"	EACH	20
①	542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	28
	54213660	PRECAST REINFORCED CONCRETE FLARED END SECTION 15"	EACH	1
	550B0070	STORM SEWERS, CLASS B, TYPE 1 15"	FOOT	64
	59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	52
①	60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	120
	60236200	INLETS, TYPE A, TYPE 8 GRATE	EACH	1
	60500060	REMOVING INLETS	EACH	1
*	63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	2
*	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
①	63200310	GUARDRAIL REMOVAL	FOOT	723
	67100100	MOBILIZATION	L SUM	1
*	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1,800
*①	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
*	XX006199	STEEL BRIDGE RAIL, TYPE SM (SPECIAL)	FOOT	143

① SEE SPECIAL PROVISIONS

CONSTRUCTION CODE TYPE: X071-2A

* SPECIALTY ITEMS

PAVEMENT SCHEDULE

STATION TO STATION	WIDTH	LENGTH	AGGREGATE BASE COURSE, TYPE A	PRIME COAT** GALLON 0.50 GAL/SQ YD	HOT-MIX ASPHALT BINDER CSE TON 112#/SQ YD/IN	HOT-MIX ASPHALT SURF CSE TON 112#/SQ YD/IN	INC HOT-MIX ASPHALT SURF TON 112#/SQ YD/IN
15+75.00 - 16+25.00	24.71' AVG.	50.00'	58				
16+25.00 - 19+66.85	25.50'	341.85'	409				
20+38.35 - 24+25.00	25.50'	386.65'	462				
24+25.00 - 24+75.00	24.77' AVG.	50.00'	58				
15+75.00 - 16+25.00	24.04' AVG.	50.00'		67			
16+25.00 - 19+66.85	24.83'	341.85'		472			
20+38.35 - 24+25.00	24.83'	386.65'		533			
24+25.00 - 24+75.00	24.10' AVG.	50.00'		67			
15+75.00 - 16+25.00	21.75' AVG.	50.00'			24		
16+25.00 - 19+66.85	22.54'	341.85'			168		
20+38.35 - 24+25.00	22.54'	386.65'			190		
24+25.00 - 24+75.00	21.81' AVG.	50.00'			24		
15+75.00 - 16+25.00	21.34' AVG.	50.00'				10	
16+25.00 - 19+66.85	22.13'	341.85'				71	
20+38.35 - 24+25.00	22.13'	386.65'				80	
24+25.00 - 24+75.00	21.40' AVG.	50.00'				10	
ENT. 18+80.00 LT	12.00' & VAR.	38.60'	35	42			*12
		TOTAL	1,022	1,181	406	171	12

** PRIME COAT IS TO BE MC-30 ON AGGREGATE SURFACES AND RC-70 ON HMA/CONCRETE SURFACES

* 3" PAVEMENT THICKNESS

STORM SEWER SCHEDULE

STATION TO STATION	SIDE	OFFSET	TYPE	STORM SEWER, CLASS B, TYPE 1	INLETS TYPE A, STD 602301 W/ TYPE 8 GRATE	PRECAST REINFORCED CONCRETE FLARED END SECTION	TRENCH BACKFILL
				15"		15"	
		FOOT		FOOT	EACH	EACH	CU YD
18+50	LT	25.5	INLET		1		
			SS	64			5
19+14	LT	34.2	FES			1	
			TOTALS	64	1	1	5

AGGREGATE SURFACE COURSE, TYPE B

STATION TO STATION	WIDTH	LENGTH	TON
ENTR. - 23+23 RT	16' & VAR.	27'	21
		TOTAL	21

AGGREGATE DITCH***

STATION TO STATION	SIDE	WIDTH	TON	FILTER FABRIC (SQ YD)
19+20 - 19+80	LEFT	6'	21	40
23+00 - 23+50	LEFT	6'	17	34
		TOTAL	38	74

*** Aggregate Ditch shall conform to material type B-3 of the Standard Specifications

EARTHWORK SUMMARY

STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	FILL	WASTE (SHORTAGE)
	CU YD	CU YD	CU YD	CU YD	CU YD
RDWY 15+75.00 - 19+66.85	139			852	(748)
RDWY 20+38.35 - 24+75.00	259			1,299	(1,105)
CHANNEL		520			
STRUCTURE			115		
TOTAL	398	520	115	2,151	(1,853)
USE	400	520	115	-	(1,855)

(@ 25% SHRINKAGE)

AGGREGATE SHOULDERS, TYPE B****

STATION TO STATION	SIDE	WIDTH	LENGTH	TON
15+75.00 - 16+25.00	LEFT	3.73' AVG.	50.00'	4
15+75.00 - 16+25.00	RIGHT	3.73' AVG.	50.00'	4
16+25.00 - 18+63.00	LEFT	4.00'	238.00'	22
16+25.00 - 18+35.08	RIGHT	4.00'	210.08'	20
18+35.08 - 18+59.08	RIGHT	6.00' AVG.	24.00'	3
18+59.08 - 18+94.08	RIGHT	8.00'	35.00'	7
18+94.08 - 18+98.08	RIGHT	7.67' AVG.	4.00'	1
18+97.00 - 19+70.33	LEFT	4.00'	73.33'	7
18+98.08 - 19+50.04	RIGHT	7.33'	51.96'	9
19+50.04 - 19+63.37	RIGHT	5.67' AVG.	13.33'	2
20+34.87 - 23+02.33	RIGHT	4.00'	267.46'	25
20+41.83 - 20+55.16	LEFT	5.67' AVG.	13.33'	2
20+55.16 - 21+07.12	LEFT	7.33'	51.96'	9
21+07.12 - 21+11.12	LEFT	7.67' AVG.	4.00'	1
21+11.12 - 21+46.12	LEFT	8.00'	35.00'	7
21+46.12 - 21+70.12	LEFT	6.00' AVG.	24.00'	3
21+70.12 - 24+25.00	LEFT	4.00'	254.88'	24
23+35.50 - 24+25.00	RIGHT	4.00'	89.50'	8
24+25.00 - 27+75.00	LEFT	4.27' AVG.	50.00'	5
24+25.00 - 27+75.00	RIGHT	3.31' AVG.	50.00'	4
			TOTAL	167

**** RAP WILL NOT BE ALLOWED FOR USE WITH AGGREGATE SHOULDERS, TYPE B

REMOVING INLETS

STATION	SIDE	EACH
18+47	LEFT	1
	TOTAL	1

PIPE CULVERTS, CLASS D, TYPE 1 15"

STATION	SIDE	FOOT
23+23	RIGHT	28
	TOTAL	28

TEMPORARY DITCH CHECKS

STATION	SIDE	EACH
17+75	LEFT	1
19+50	LEFT	1
19+80	LEFT	1
20+25	LEFT	1
20+30	RIGHT	1
21+15	RIGHT	1
21+25	LEFT	1
22+00	RIGHT	1
22+25	LEFT	1
22+50	RIGHT	1
23+00	LEFT	1
23+25	LEFT	1
23+65	RIGHT	1
	TOTAL	13

PIPE CULVERT REMOVAL

℄ STATION	SIZE	SIDE	FOOT
18+85	15"	LEFT	71
23+20	15"	RIGHT	23
23+75	15"	RIGHT	27
		TOTAL	121

PERIMETER EROSION BARRIER

STATION TO STATION	SIDE	FOOT
15+75 - 17+00	LEFT	125
15+75 - 19+65	RIGHT	415
18+65 - 18+95	LEFT	30
23+00 - 23+35	RIGHT	40
23+50 - 24+75	LEFT	125
24+00 - 24+75	RIGHT	75
	TOTAL	810

TREE REMOVAL

STATION	OFFSET	SIDE	6 TO 15 UNITS	OVER 15 UNITS
18+65	39'	LEFT	12	
19+80	41'	LEFT	12	
19+90	41'	LEFT		24
20+42	40'	LEFT	12	
20+42	40'	LEFT	12	
		TOTAL	48	24

INLET FILTERS

STATION	SIDE	EACH
18+50	LEFT	1
	TOTAL	1

EROSION CONTROL BLANKET

STATION TO STATION	SIDE	WIDTH	LENGTH	AREA (SQ YD)
22+00.00 - 23+04.00	RIGHT	6'	104'	70
23+32.00 - 24+00.00	RIGHT	6'	68'	45
			TOTAL	115

GUARDRAIL REMOVAL

STATION TO STATION	SIDE	FOOT
17+69.00 - 19+84.00	RIGHT	215
18+94.00 - 19+84.00	LEFT	90
20+16.00 - 21+81.00	RIGHT	165
20+16.00 - 22+69.00	LEFT	253
	TOTAL	723

INLET & PIPE PROTECTION

STATION	SIDE	EACH
23+32	RIGHT	1
	TOTAL	1

TRAFFIC BARRIER TERMINAL, TYPE 6A

SIDE	STATION TO STATION	EACH
RIGHT	19+19.08 - 19+62.83	1
LEFT	20+42.37 - 20+86.12	1
	TOTAL	2

TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)

SIDE	STATION TO STATION	EACH
RIGHT	18+69.08 - 19+19.08	1
LEFT	20+86.12 - 21+36.12	1
	TOTAL	2

PAINT PAVEMENT MARKING - LINE 4"

STATION TO STATION	SIDE	DESCRIPTION	FOOT
15+75.00 - 24+75.00	℄	DOUBLE YELLOW	1,800
		TOTAL	1,800

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	4
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	BRS-3291(105)

* 07-00216-01-BR CONTRACT *87401

R 13 W, 2nd PM

R 12 W, 2nd PM

SECTION 1

SECTION 6

T 24 N

COUNTY HIGHWAY 10

SECTION 12

SECTION 7

R 13 W, 2nd PM

R 12 W, 2nd PM

1 ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY — R11-3

ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY

2 ROAD CLOSED 3/4 MILE AHEAD LOCAL TRAFFIC ONLY — R11-3

ROAD CLOSED
3/4 MILE AHEAD
LOCAL TRAFFIC ONLY

3 ROAD CLOSED AHEAD — W20-3

ROAD CLOSED
AHEAD

4 ROAD CLOSED 500 FT — W20-3

ROAD CLOSED
500 FT

5 TYPE III BARRICADES

SEE STANDARD BLR 21
AND SPECIAL PROVISIONS

1/4 MI 0 1/4 MI

GRAPHIC SCALE IN MILES

TRAFFIC CONTROL PLAN
COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY
SECTION 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

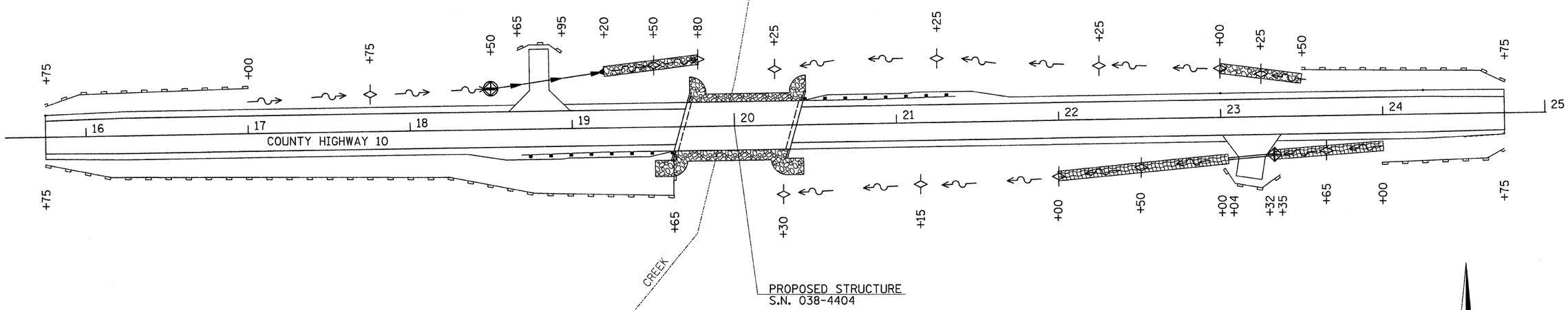
2598H001

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	5
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	BRS-3291(05)

* 07-00216-01-BR CONTRACT *87401

T 24 N, R 12 W, 2nd PM
SECTION 6

NOTE: TEMPORARY EROSION CONTROL SEEDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 280.04 OF THE STANDARD SPECIFICATIONS.



LEGEND

- PERIMETER EROSION BARRIER
- TEMPORARY DITCH CHECK
- INLET & PIPE PROTECTION
- INLET FILTERS
- SPECIAL DITCH - FLOW LINE AND DIRECTION
- EROSION CONTROL BLANKET
- PROPOSED RIPRAP / AGGREGATE DITCH PLACEMENT

30' 0' 30'
GRAPHIC SCALE IN FEET

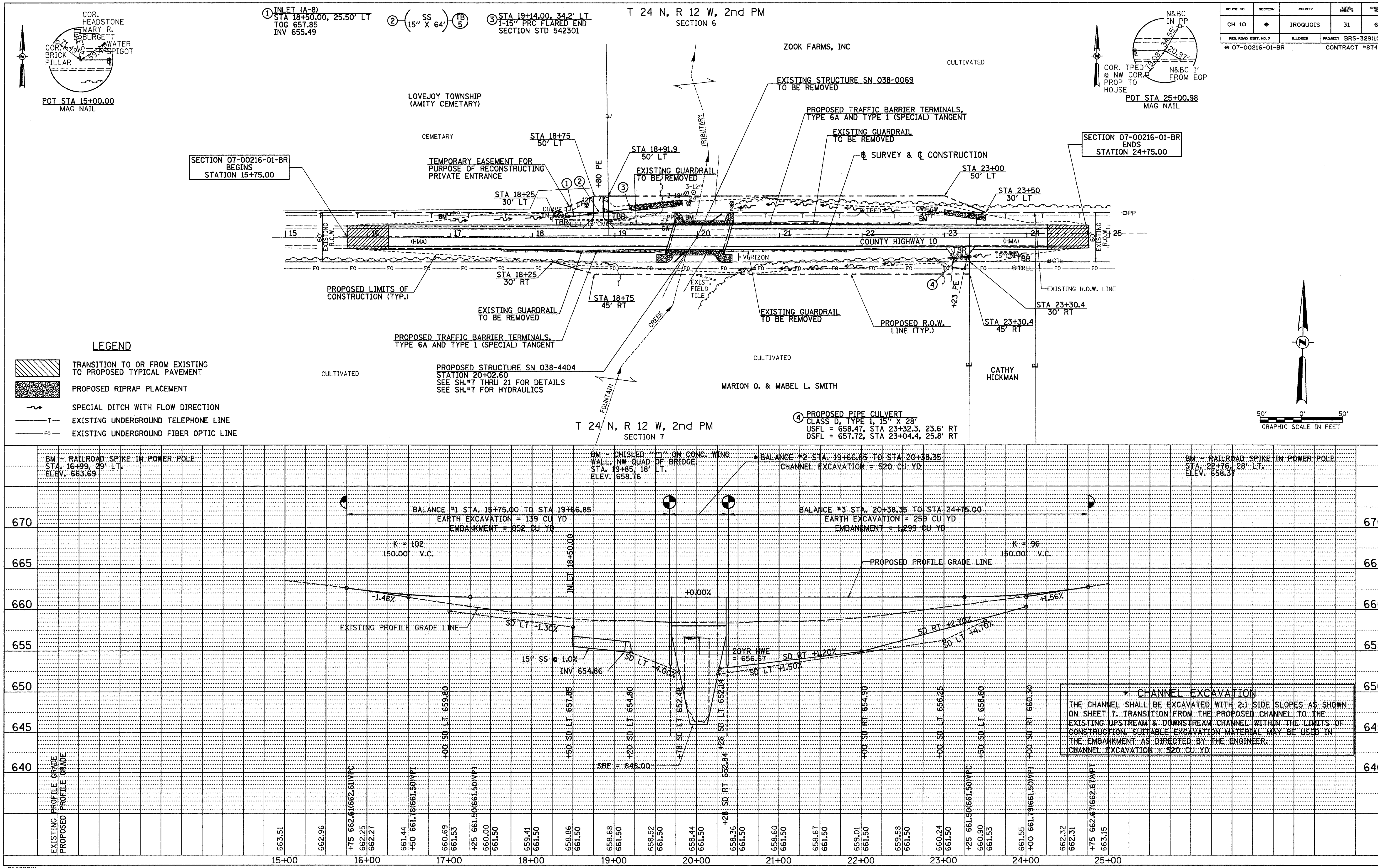
STORMWATER POLLUTION PREVENTION PLAN
COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY
SECTION 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

T 24 N, R 12 W, 2nd PM
SECTION 7

2598S001

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	6
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		

* 07-00216-01-BR CONTRACT #87401



PLAN: SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED / CADD FILE NAME / NOTE BOOK / NO. / BY / DATE

PROFILE: SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTAT'NS CH'KD / NOTE BOOK / NO. / BY / DATE

PLOT DATE = 3/24/2009
FILE NAME = V:\Bridge\2598 Iroquois\2598p001.dgn
PLOT SCALE = 50.0000 ' / IN.
USER NAME = cthomas

2598P001

COUNTY HIGHWAY 10 (FAS 329) PLAN & PROFILE

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	7
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-329(105)	

*07-00216-01-BR CONTRACT *87401

SHEET NO. 1 OF 15 SHEETS

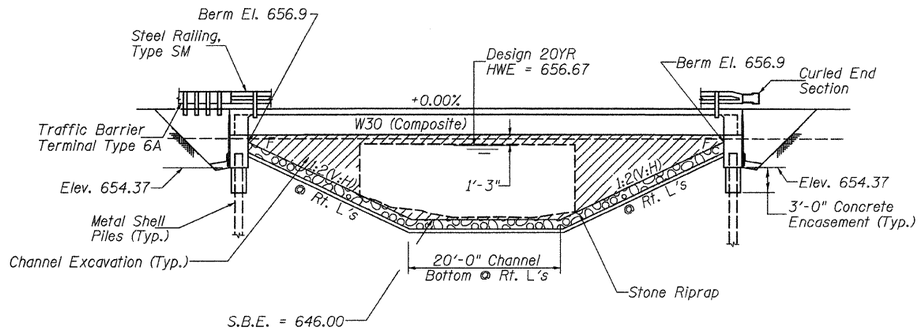
B.M.: RR Spike in Power Pole
Sta. 16+99, 29' Lt.
Elev. 663.69

RR Spike in Power Pole
Sta. 22+76, 28' Lt.
Elev. 658.37

Existing Structure:
Single span reinforced concrete slab with curb mounted steel rail on concrete closed abutments on timber pile supported concrete footings. The structure is 32'-6" back to back of abutments, 33'-6" out to out of deck with a 30'-0" driving surface, no skew. Existing Structure to be removed and replaced by Contractor.
Str. No. 038-0069

Salvage: None

Road to be closed to traffic during construction.

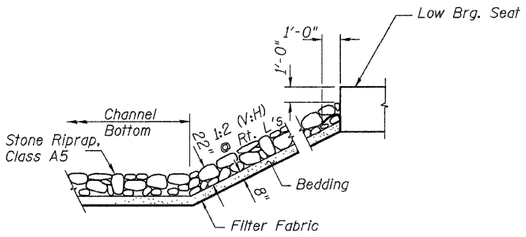


ELEVATION

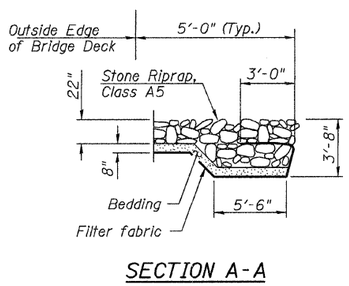
NOTE:
For Bill of Material and General Notes, See Sheet 2 of 15.

DESIGN SCOUR TABLE

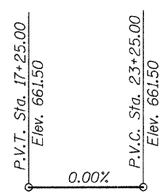
Location	W. Abut	E. Abut
Design Scour Elevation	654.37	654.37



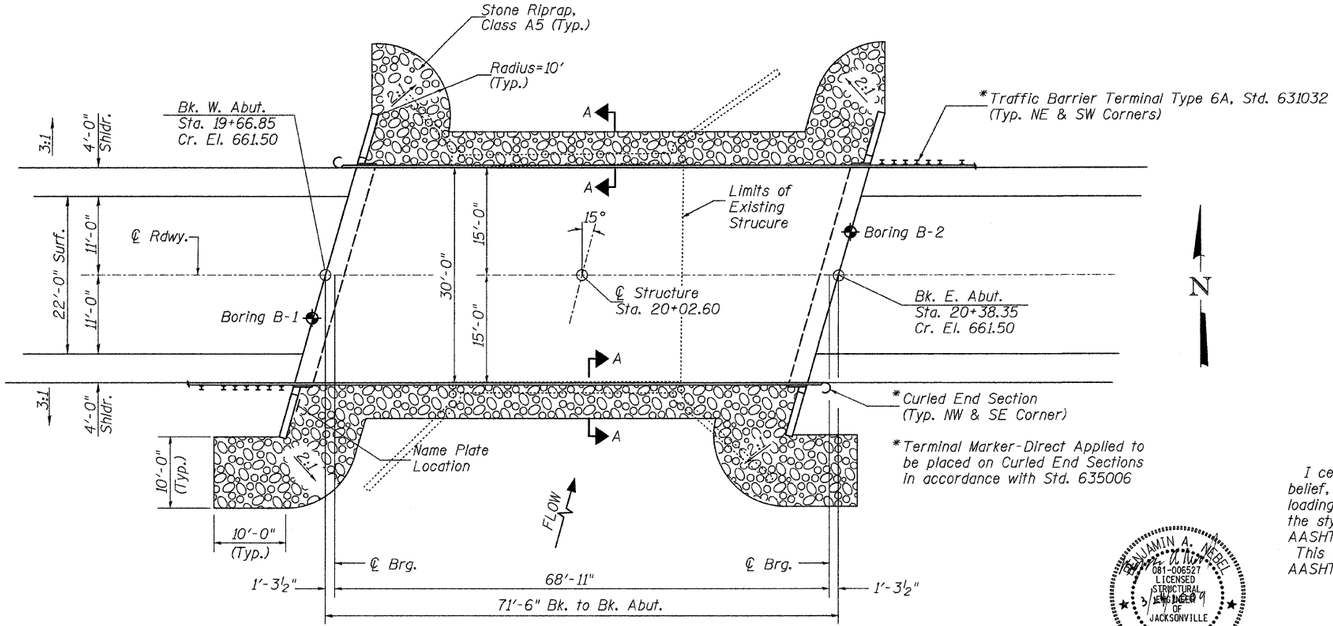
STONE RIPRAP DETAIL



SECTION A-A



PROFILE GRADE



PLAN

FOUNTAIN CREEK TRIBUTARY
BUILT 20 BY
IROQUOIS COUNTY
SEC. 07-00216-01-BR
C.H. 10 STATION 20+02.60
F.A. PROJ. BRS-329(101)
STR. NO. 038-4404 LOADING HL-93

NAME PLATE

Locate Name Plate at S.W. Wingwall Corner of Bridge (See Std. 515001)

WATERWAY INFORMATION

Drainage Area = 16.69 Sq. Mi. Low Grade Elev. = 661.50 @ Sta. 20+02.60

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	20	1,935	288	441	656.67	0.77	0.15	657.44	656.82
Base	100	2,850	288	493	657.48	1.71	0.29	659.19	657.77

Construction of this project complies with IDNR, Office of Water Resources Statewide Permit No. 2

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications, 4th Edition with Interims

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA

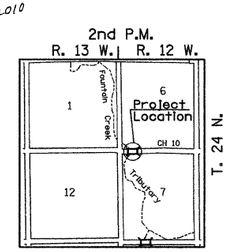
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.05g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.11g
Soil Site Class = D

DESIGNED	B.A.N.
CHECKED	J.O.H.
DRAWN	T.A.C.
CHECKED	B.A.N.

I certify that to the best of my knowledge, information and belief, this bridge 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 LRFD Bridge Design Specifications.
This design complies with all requirements of the current AASHTO Guide Specifications for Seismic Design of highway bridges.

BENJAMIN A. NEBEL 081-006527 LICENSED STRUCTURAL ENGINEER OF JACKSONVILLE ILLINOIS
Lic. Exp. 11/30/2010

Benjamin A. Nebel 3/24/2009
Illinois Structural No. 6527
Expires 11/30/2010



LOCATION SKETCH

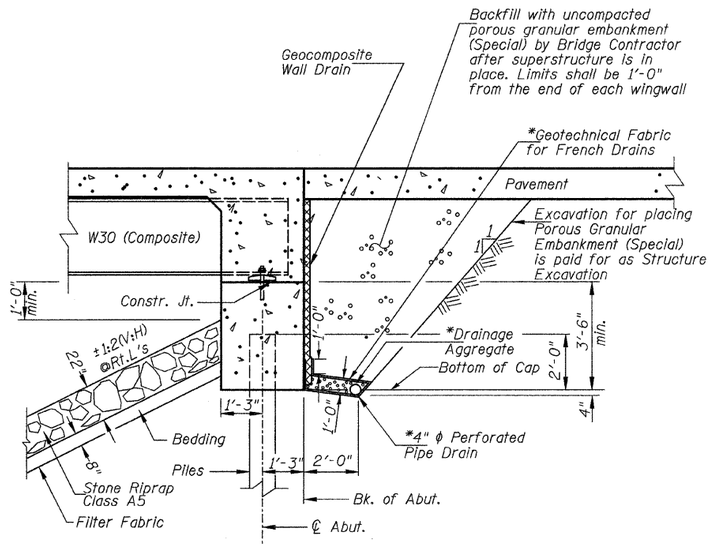
GENERAL PLAN & ELEVATION
COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60
STRUCTURE NO. 038-4404

2598b001

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	8
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-3291(05)	

*07-00216-01-BR CONTRACT #87401

SHEET NO. 2 OF 15 SHEETS



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

SECTION THRU ABUTMENTS

(Horiz. dim. @ Rt. L's)

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
(1)	Removal of Existing Structures	EACH	——	——	1
	Structure Excavation	CU YD	——	115	115
	Channel Excavation	CU YD	——	520	520
	Concrete Superstructure	CU YD	74.1	——	74.1
	Concrete Structures	CU YD	——	25.9	25.9
	Furnishing Metal Shell Piles 12"x0.25"	FOOT	——	408	408
	Driving Piles	FOOT	——	408	408
	Test Pile Metal Shells	EACH	——	2	2
	Pile Shoes	EACH	——	10	10
	Concrete Encasement	CU YD	——	4.6	4.6
	Furnishing and Erecting Structural Steel	L SUM	1	——	1
	Anchor Bolts, 1"	EACH	——	20	20
(1)	Reinforcement Bars, Epoxy Coated	POUND	15,280	3,510	18,790
	Stone Riprap, Class A5	TON	——	480	480
	Filter Fabric	SQ YD	——	440	440
	Steel Bridge Rail, Type SM (Special)	EACH	143	——	143
	Protective Coat	SQ YD	238	——	238
	Bridge Deck Grooving	SQ YD	222	——	222
	Stud Shear Connectors	EACH	900	——	900
	Name Plates	EACH	1	——	1
(1)	Porous Granular Embankment, Special	CU YD	——	85	85
(1)	Pipe Underdrains For Structures 4"	FOOT	——	120	120
	Geocomposite Wall Drain	SQ YD	——	52	52

(1) See Special Provisions

GENERAL NOTES

All structural steel shall be AASHTO M 270 Grade 50W.

Calculated weight of Structural Steel = 49,350 lbs, Grade 50W.

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts (in painted areas and M164 Type 3 in unpainted areas). Bolts $\frac{3}{4}$in. ϕ, holes $\frac{15}{16}$in. ϕ, unless otherwise noted.

No field welding is permitted except as specified in the contract documents.

For Soil Boring Logs, see sheet 14 & 15 of 15.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions

Reinforcement bars designated (E) shall be epoxy coated.

Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Those areas shall be primed in the shop with a Department approved zinc rich primer. No field painting shall be required. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".

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

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

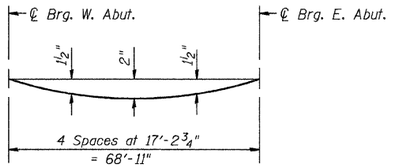
GENERAL NOTES & BILL OF MATERIAL
COUNTY HIGHWAY 10 OVER
FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

2598b002

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	9
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	BRS-3291(05)

*07-00216-01-BR CONTRACT #87401

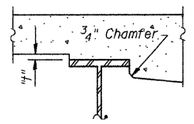
SHEET NO. 3 OF 15 SHEETS



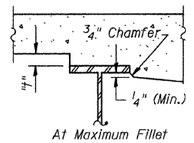
DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjused for dead load deflections as shown in the tables on sheet 4 of 15.



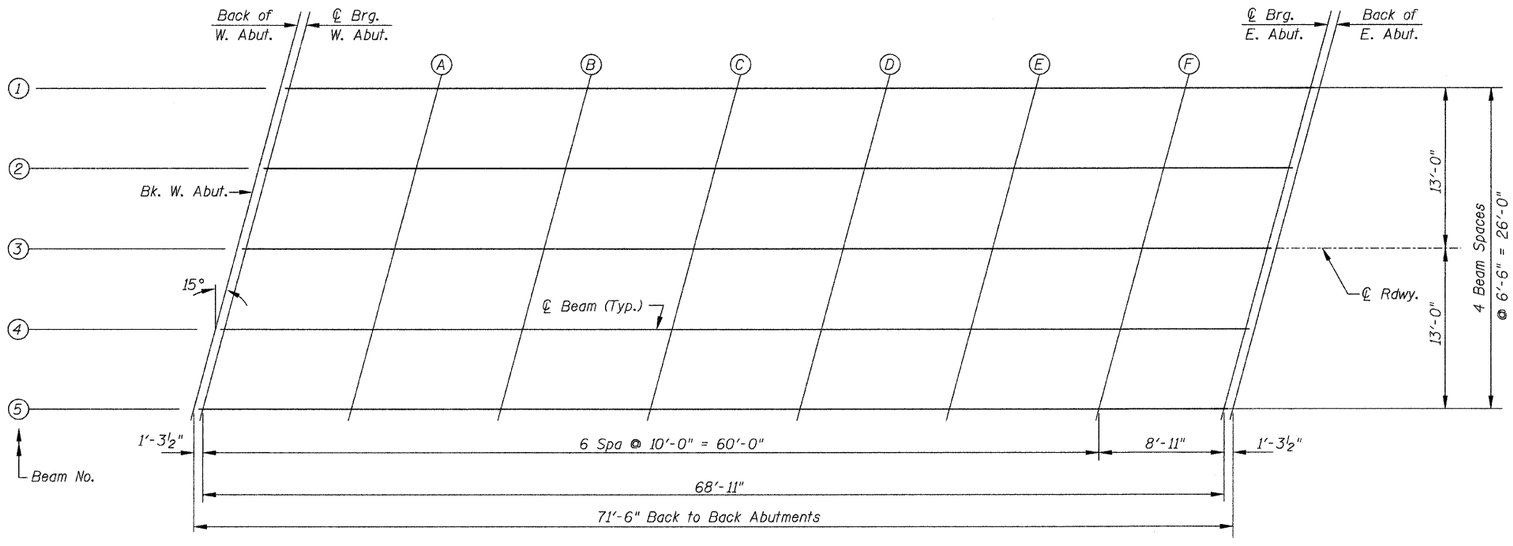
At Minimum Fillet



At Maximum Fillet

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

FILLET HEIGHTS



PLAN (DECK ELEVATIONS)

TOP OF SLAB ELEVATIONS
COUNTY HIGHWAY 10 OVER
FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

2598b003

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	10
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	BRS-3291(105)

SHEET NO. 4 OF 15 SHEETS

*07-00216-01-BR CONTRACT #87401

BEAM #1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk W. Abutment	1970.33	-13.00	661.29	661.29
CL Brg W. Abut.	1971.63	-13.00	661.29	661.29
A	1981.63	-13.00	661.29	661.36
B	1991.63	-13.00	661.29	661.42
C	2001.63	-13.00	661.29	661.46
D	2011.63	-13.00	661.29	661.45
E	2021.63	-13.00	661.29	661.42
F	2031.63	-13.00	661.29	661.36
CL Brg E. Abut.	2040.54	-13.00	661.29	661.29
Bk E. Abutment	2041.83	-13.00	661.29	661.29

BEAM #2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk W. Abutment	1968.59	-6.50	661.40	661.40
CL Brg W. Abut.	1969.89	-6.50	661.40	661.40
A	1979.89	-6.50	661.40	661.48
B	1989.89	-6.50	661.40	661.54
C	1999.89	-6.50	661.40	661.57
D	2009.89	-6.50	661.40	661.57
E	2019.89	-6.50	661.40	661.53
F	2029.89	-6.50	661.40	661.47
CL Brg E. Abut.	2038.80	-6.50	661.40	661.40
Bk E. Abutment	2040.09	-6.50	661.40	661.40

PROFILE GRADE & BEAM #3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk W. Abutment	1966.85	0.00	661.50	661.50
CL Brg W. Abut.	1968.14	0.00	661.50	661.50
A	1978.14	0.00	661.50	661.58
B	1988.14	0.00	661.50	661.64
C	1998.14	0.00	661.50	661.67
D	2008.14	0.00	661.50	661.67
E	2018.14	0.00	661.50	661.63
F	2028.14	0.00	661.50	661.57
CL Brg E. Abut.	2037.06	0.00	661.50	661.50
Bk E. Abutment	2038.35	0.00	661.50	661.50

BEAM #4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk W. Abutment	1965.11	6.50	661.40	661.40
CL Brg W. Abut.	1966.40	6.50	661.40	661.40
A	1976.40	6.50	661.40	661.48
B	1986.40	6.50	661.40	661.54
C	1996.40	6.50	661.40	661.57
D	2006.40	6.50	661.40	661.57
E	2016.40	6.50	661.40	661.53
F	2026.40	6.50	661.40	661.47
CL Brg E. Abut.	2035.31	6.50	661.40	661.40
Bk E. Abutment	2036.61	6.50	661.40	661.40

BEAM #5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk W. Abutment	1963.37	13.00	661.29	661.29
CL Brg W. Abut.	1964.66	13.00	661.29	661.29
A	1974.66	13.00	661.29	661.36
B	1984.66	13.00	661.29	661.42
C	1994.66	13.00	661.29	661.46
D	2004.66	13.00	661.29	661.45
E	2014.66	13.00	661.29	661.42
F	2024.66	13.00	661.29	661.36
CL Brg E. Abut.	2033.57	13.00	661.29	661.29
Bk E. Abutment	2034.87	13.00	661.29	661.29

TOP OF SLAB ELEVATIONS
COUNTY HIGHWAY 10 OVER
FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

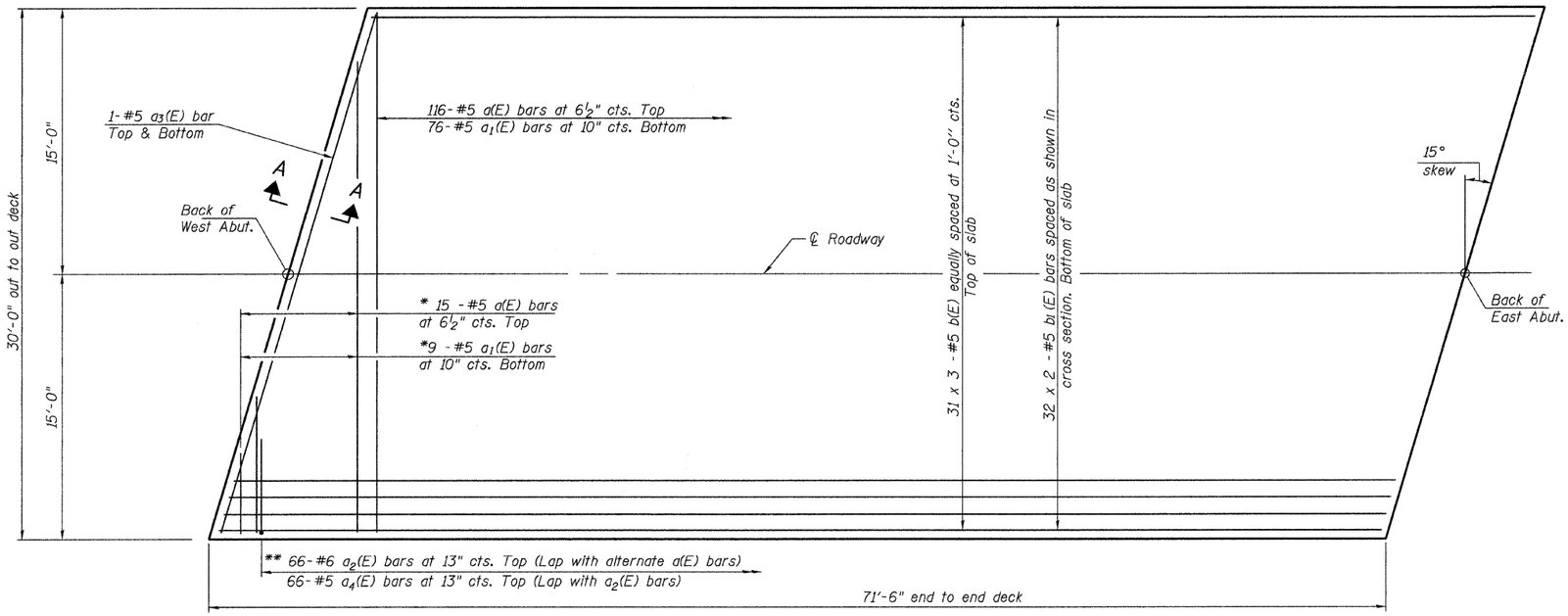
2598b004

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	11
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-3291(105)	

*07-00216-01-BR CONTRACT #87401

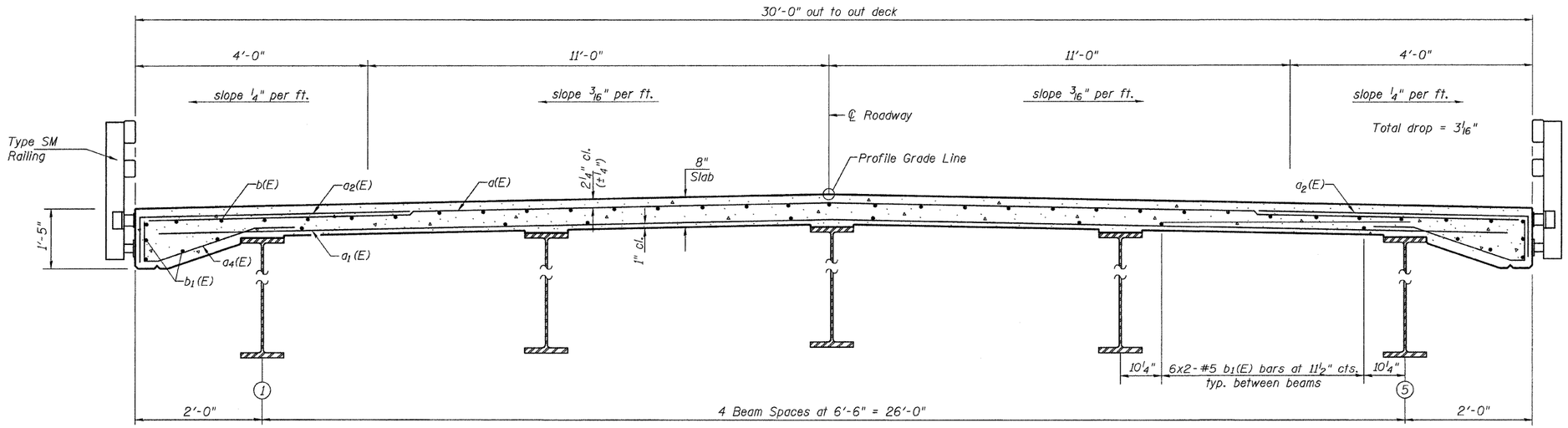
SHEET NO. 5 OF 15 SHEETS

*Order d(E) & a_1(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.



** Add 2 additional #6 @ (E) bars at 13" cts. at each railpost anchor location (Lap with alternate d(E) bars).

PLAN



CROSS SECTION
(Looking East)

MIN. BAR LAP
#5 = 1'-8"

Notes:
See Sheet 6 of 15 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 7 of 15 for Section A-A and diaphragm details.

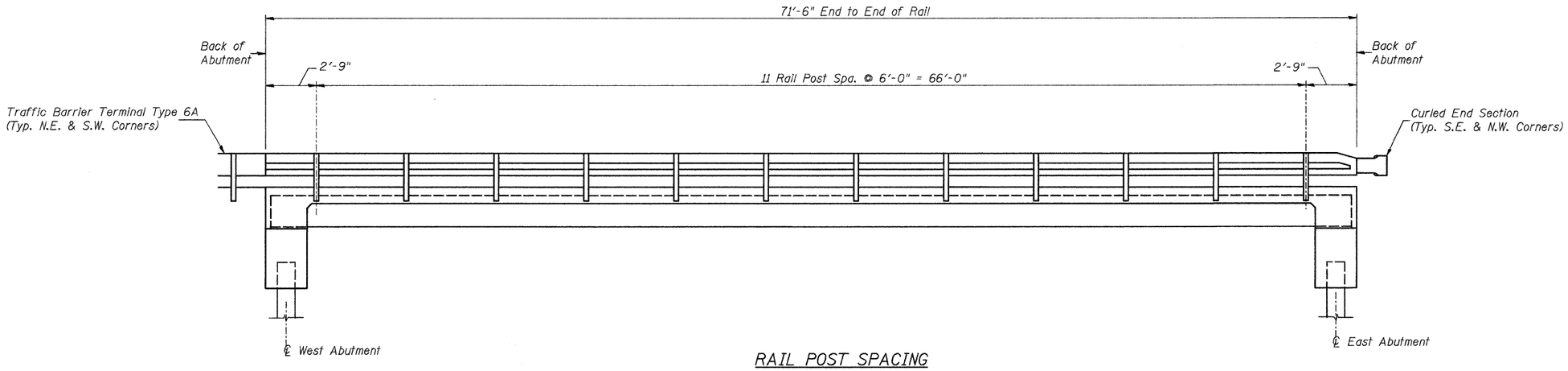
SUPERSTRUCTURE
COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

2598b005

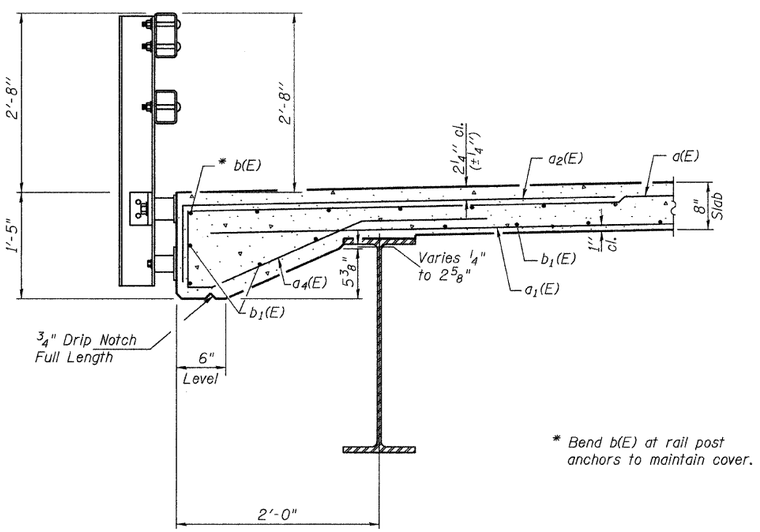
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	12
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-329(105)	

*07-00216-01-BR CONTRACT #87401

SHEET NO. 6 OF 15 SHEETS



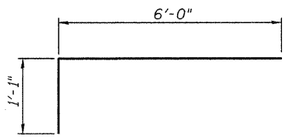
RAIL POST SPACING



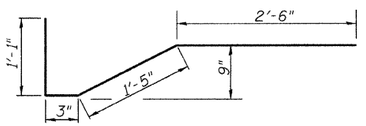
* Bend b(E) at rail post anchors to maintain cover.

SECTION THRU PARAPET

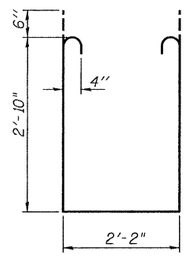
See Sheet 8 of 15 for Rail Post Anchor Details



BAR a2(E)



BAR a4(E)



BAR s(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	131	#5	29'-9"	
a_1(E)	85	#5	28'-9"	
a_2(E)	180	#6	7'-1"	
a_3(E)	4	#5	30'-9"	
a_4(E)	132	#5	5'-3"	
b(E)	93	#5	24'-11"	
b_1(E)	64	#5	37'-4"	
m(E)	6	#6	30'-8"	
m_1(E)	20	#6	8'-4"	
m_2(E)	4	#6	1'-10"	
m_3(E)	8	#6	6'-7"	
s(E)	64	#4	8'-10"	
(1) Reinforcement Bars, Epoxy Coated			Pound	15,280
Concrete Superstructure			Cu. Yds.	74.1

(1) See Special Provisions

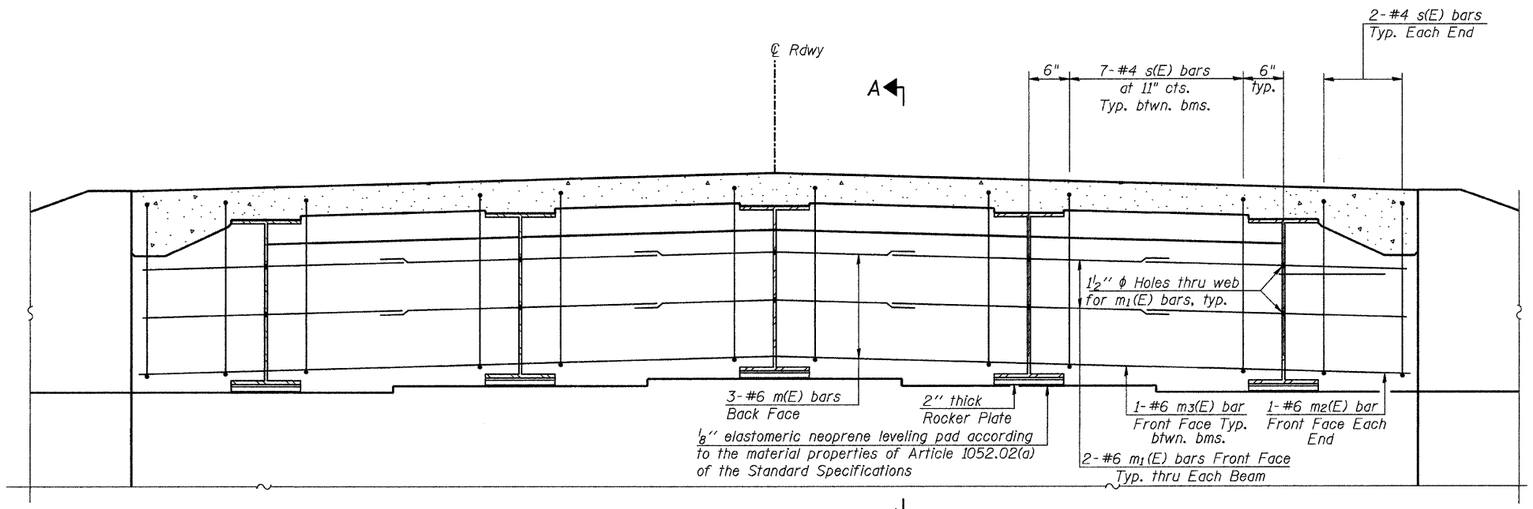
SUPERSTRUCTURE DETAILS
COUNTY HIGHWAY 10 OVER
FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

2598b006

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	13
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-329(105)	

*07-00216-01-BR CONTRACT #87401

SHEET NO. 7 OF 15 SHEETS

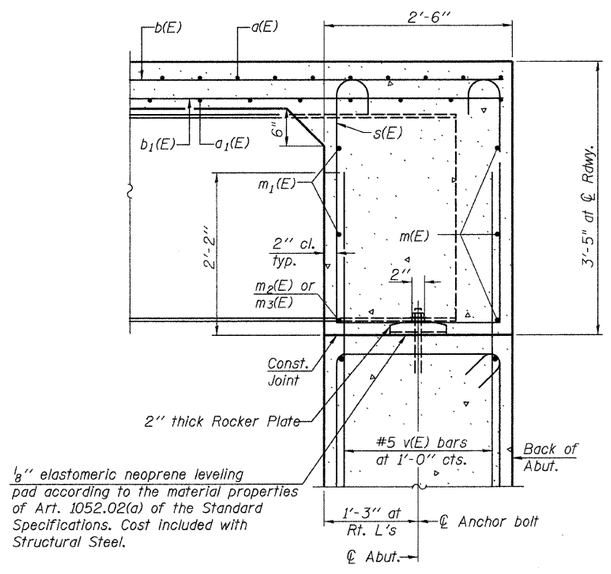


DIAPHRAGM ELEVATION AT ABUTMENT

Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet 6 of 15.
Concrete in diaphragm is included with Concrete Superstructure on sheet 6 of 15.
For details of bar s(E) see sheet 6 of 15.
The s(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
For placement of v(E) bars see sheet 12 of 15.

MIN. BAR LAP

#6 bar = 2'-9"



SECTION A-A

Dimensions at right angles to abutment, except as shown.

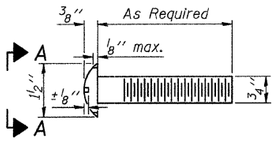
DIAPHRAGM DETAILS
COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

2598b007

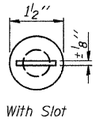
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	14
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-3291(105)		
*07-00216-01-BR		CONTRACT #87401		

SHEET NO. 8 OF 15 SHEETS

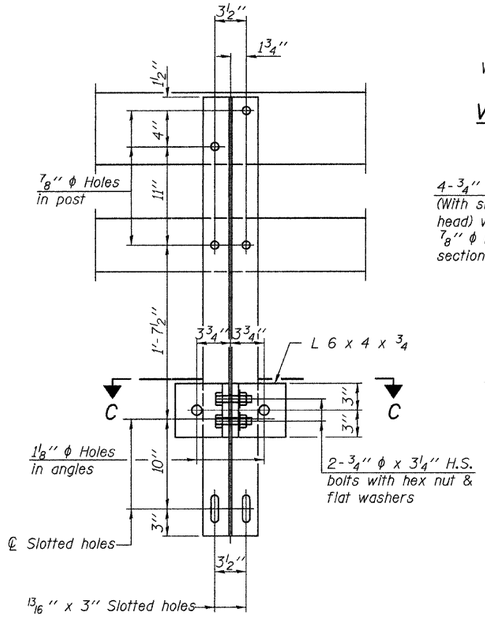
FOR RAIL POST SPACING SEE SH.#6 OF 15.



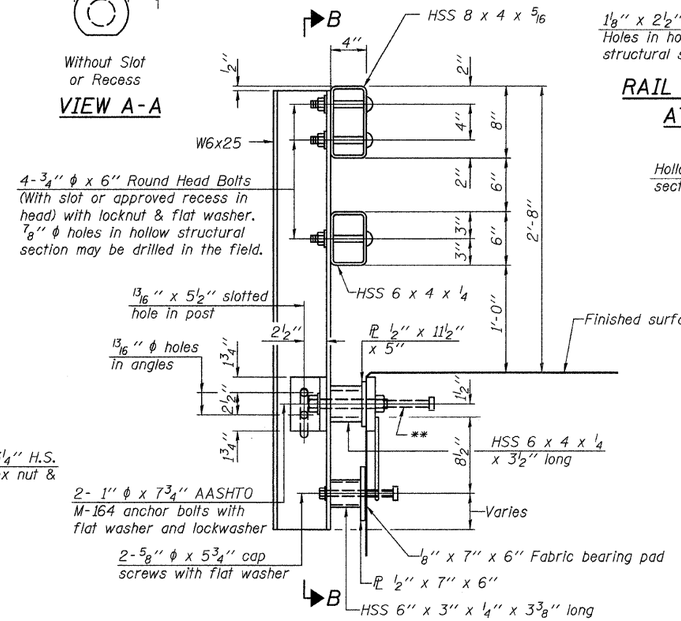
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



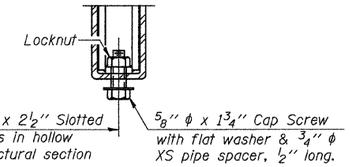
VIEW A-A



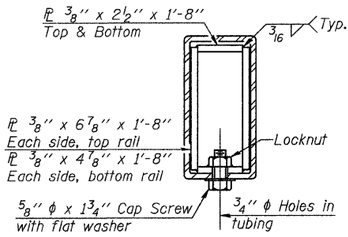
SECTION B-B



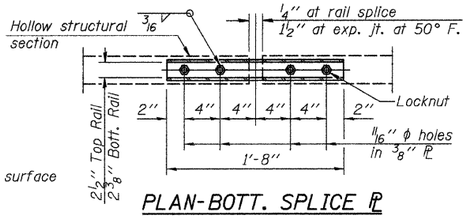
SECTION AT RAIL POST



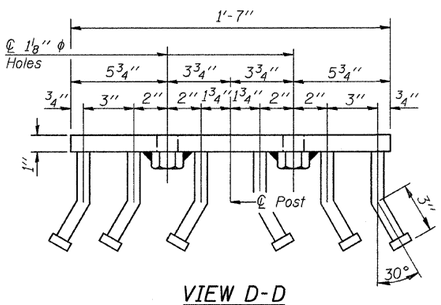
RAIL SPLICE CONNECTION AT EXPANSION JT.



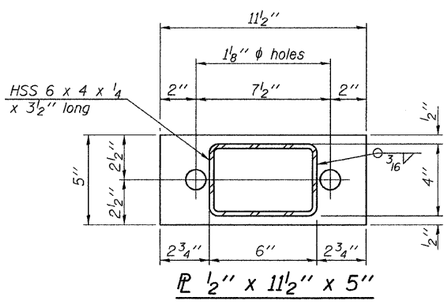
SECTION AT RAIL SPLICE

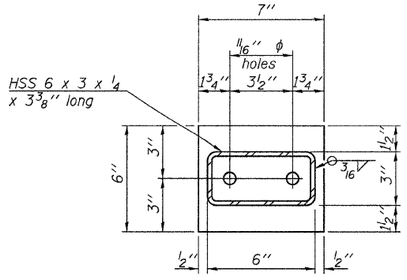


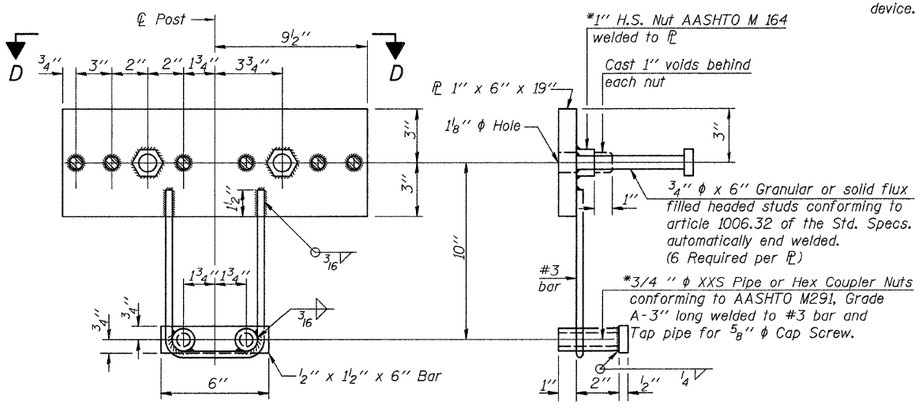
PLAN-BOTT. SPLICE PL TYPICAL



VIEW D-D







ANCHOR DEVICE

*Threaded areas shall be plugged or blocked off during casting of deck. Galvanized after fabrication.

Notes:

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 (Special).

Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Rail, Type SM (Special)	Foot	143

STEEL RAILING, TYPE SM (SPECIAL) COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY SEC. 07-00216-01-BR IROQUOIS COUNTY STATION 20+02.60

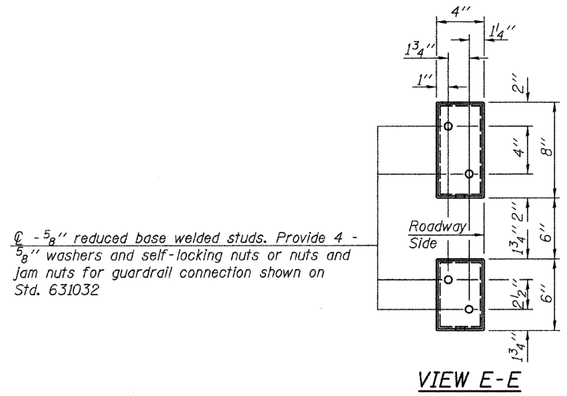
(Sheet 1 of 2)

2598b008

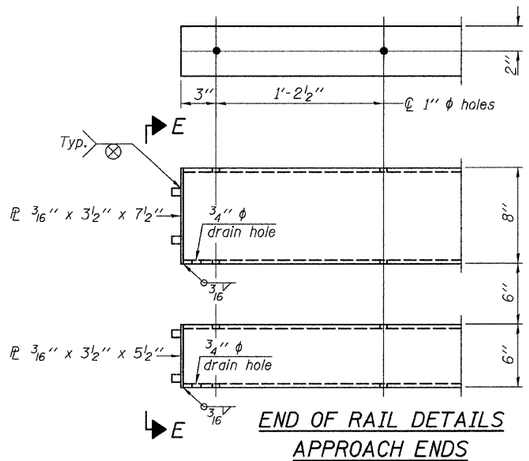
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	15
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-329(105)	

*07-00216-01-BR CONTRACT #87401

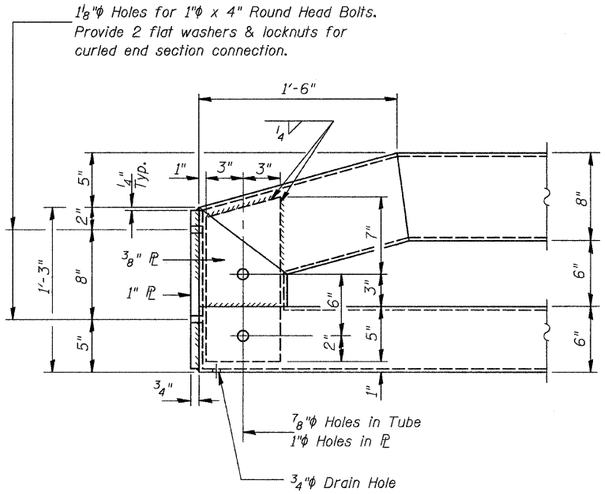
SHEET NO. 9 OF 15 SHEETS

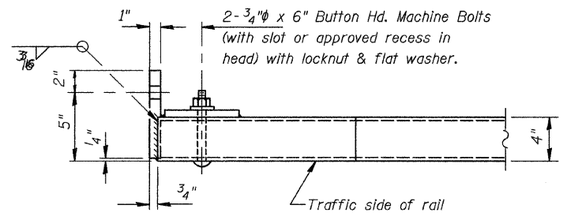


VIEW E-E

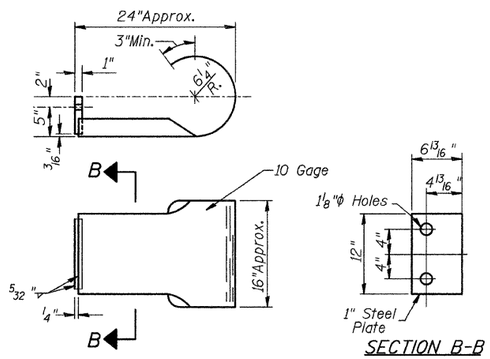


END OF RAIL DETAILS
APPROACH ENDS





END OF RAIL DETAILS
DEPARTURE ENDS



SECTION B-B

CURLED END SECTION

(2 Req'd) Cost Included with Steel Bridge Rail, Type SM (Special). Terminal Markers - Direct Applied shall be placed on end of each Curled End Section. (N.W. & S.E. Corner)

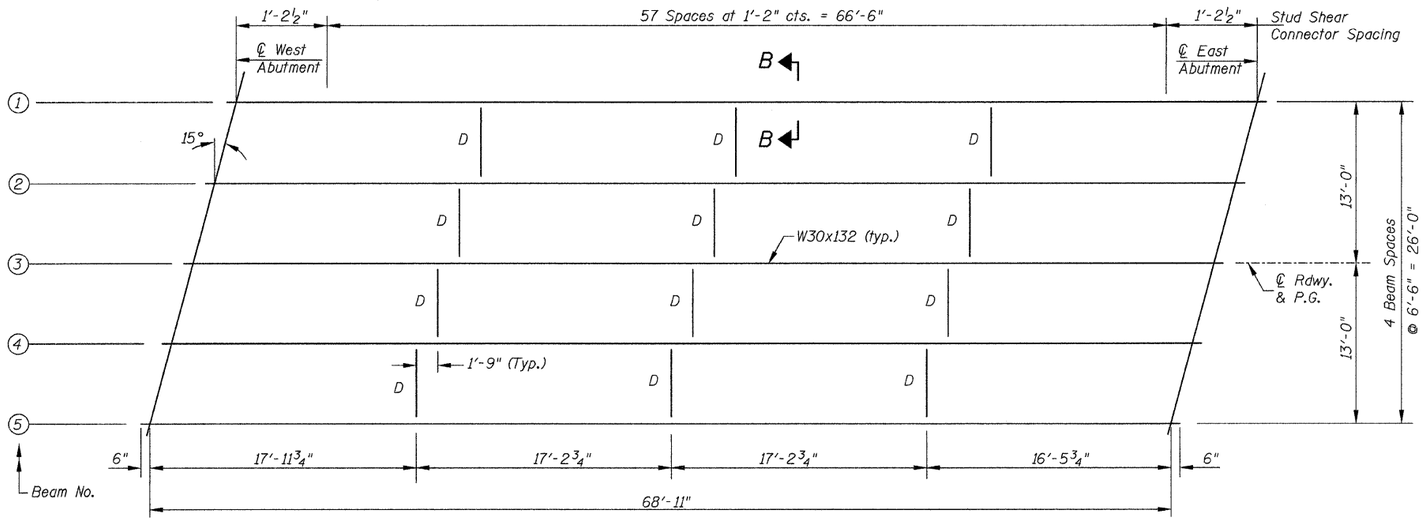
STEEL RAILING, TYPE SM (SPECIAL)
COUNTY HIGHWAY 10 OVER
FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60
(Sheet 2 of 2)

2598b009

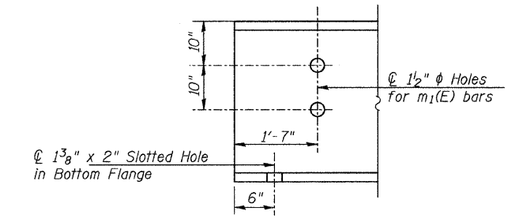
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	16
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		

SHEET NO. 16 OF 15 SHEETS

*07-00216-01-BR CONTRACT #87401



FRAMING PLAN



TYPICAL END OF BEAM DETAIL

Note:
All beams are W30x132 AASHTO M270 Gr. 50W NTR.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements of Notch Toughness, Zone 2.

INTERIOR GIRDER MOMENT TABLE		0.5 Sp. 1
I_s	(in^4)	5770
$I_c(n)$	(in^4)	15278
$I_c(3n)$	(in^4)	11210
S_s	(in^3)	380
$S_c(n)$	(in^3)	557
$S_c(3n)$	(in^3)	503
DC1	(k/')	0.818
M_{DC1}	('k)	487
DC2	(k/')	0.020
M_{DC2}	('k)	12
DW	(k/')	0.325
M_{DW}	('k)	193
M_{L+IM}	('k)	965
M_u (Strength I)	('k)	2602
* $\phi_f M_n$	('k)	2898
f_s DC1	(ksi)	15.38
f_s DC2	(ksi)	0.29
f_s DW	(ksi)	4.60
f_s 1.3(L+IM)	(ksi)	27.03
f_s (Service II)	(ksi)	47.30
V_r	(k)	16.3

* Compact sections

INTERIOR GIRDER REACTION TABLE		Abutment
R_{DC1}	(k)	28.2
R_{DC2}	(k)	0.7
R_{DW}	(k)	11.2
R_{L+IM}	(k)	78.1
R_{Total}	(k)	118.2

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads ($in.^4$ and $in.^3$).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) due to short-term composite live loads ($in.^4$ and $in.^3$).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

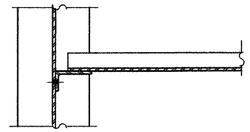
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

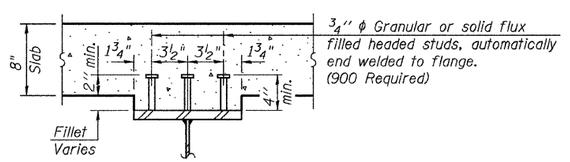
$\phi_f M_n$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$

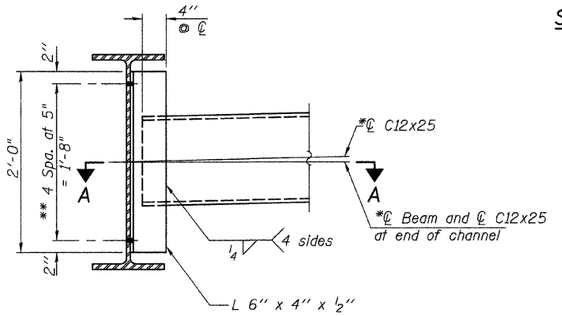
V_r: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.



SECTION A-A



SECTION B-B



INTERIOR DIAPHRAGM D

(12 req'd)

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.
**¾" ϕ HS bolts, 15/16" ϕ holes

**TOP OF BEAM ELEVATIONS

LOCATION	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
W. Abut.	660.58	660.69	660.79	660.69	660.58
E. Abut.	660.58	660.69	660.79	660.69	660.58

**For fabrication only.

STRUCTURAL STEEL COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY SEC. 07-00216-01-BR IROQUOIS COUNTY STATION 20+02.60

2598b010

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	17
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-3291(05)	

*07-00216-01-BR CONTRACT #87401

Notes:

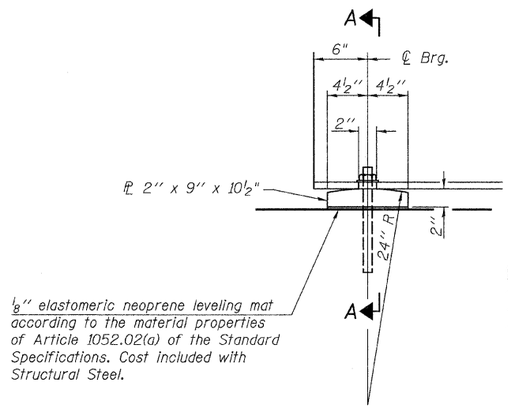
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

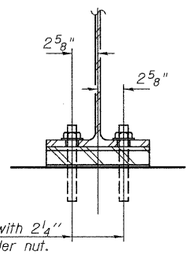
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

All bearing plates shall conform to the requirements of AASHTO M270, Grade 50W.

Anchors shall be set and grout cured for a minimum of 24 hours prior to forming the bridge deck.



ELEVATION AT ABUTMENT



SECTION A-A

FIXED BEARING
(10 Required)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Anchor Bolts, 1"	Each	20

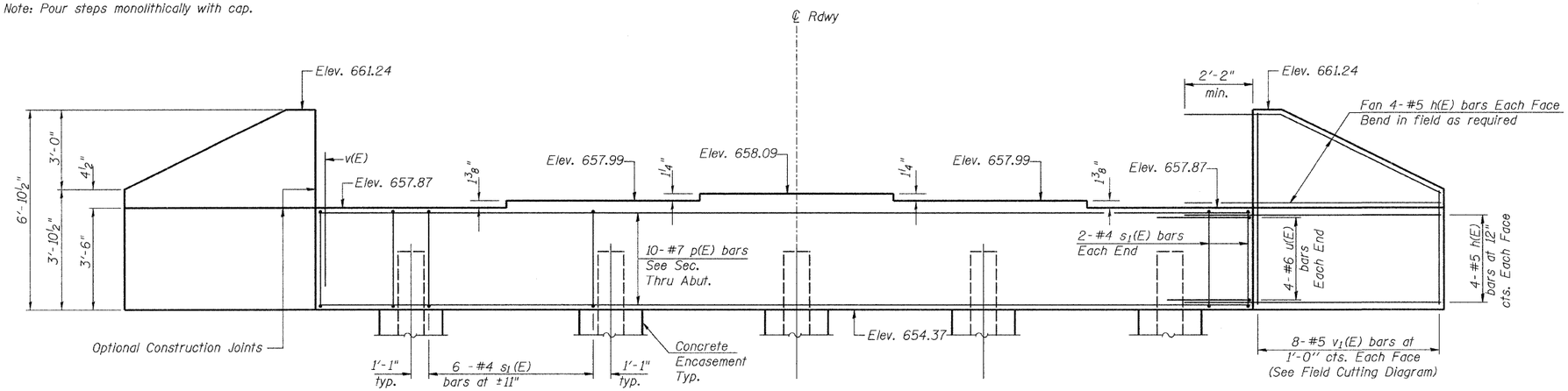
BEARING DETAILS
COUNTY HIGHWAY 10 OVER
FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

2598b011

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	18
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-329(105)	

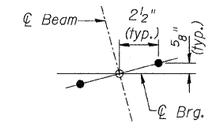
*07-00216-01-BR CONTRACT #87401

Note: Pour steps monolithically with cap.

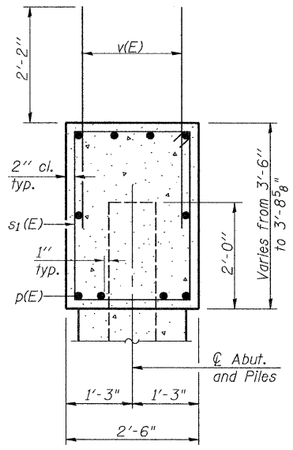


ELEVATION

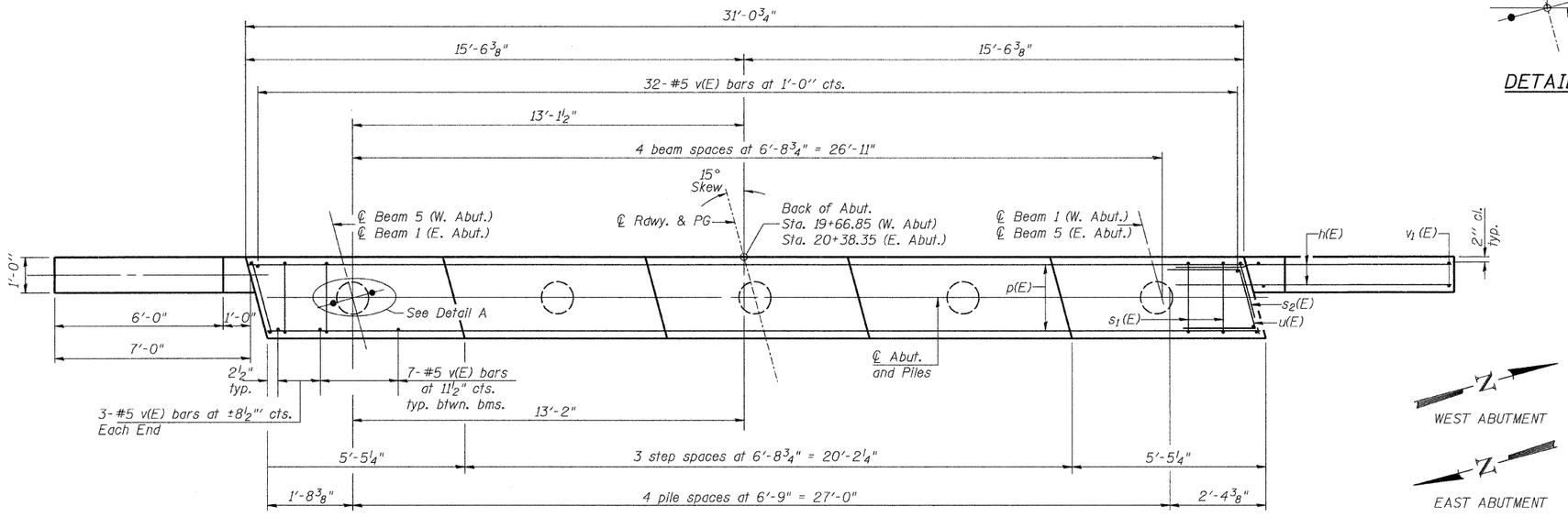
(Looking West at West Abutment)
(Looking East at East Abutment)



DETAIL A



SEC. THRU ABUT.



PLAN

TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	64	#5	9'-2"	
p(E)	20	#7	30'-6"	
s1(E)	56	#4	11'-5"	
s2(E)	4	#4	11'-7"	
u(E)	16	#6	10'-2"	
v(E)	136	#5	4'-4"	
v1(E)	32	#5	10'-0"	
Structure Excavation			Cu. Yd.	115
Concrete Structures			Cu. Yd.	25.9
(1) Reinforcement Bars, Epoxy Coated			Pound	3,510
Furnishing Metal Shell Piles 12"x0.25"			Foot	408
Driving Piles			Foot	408
Test Pile Metal Shells			Each	2
Pile Shoes			Each	10
Concrete Encasement			Cu. Yd.	4.6

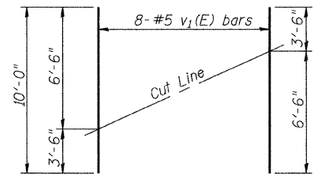
(1) See Special Provisions

For details of piles and Concrete Encasement, see sheet 13 of 15.

Space reinforcement in cap to miss anchor bolts.

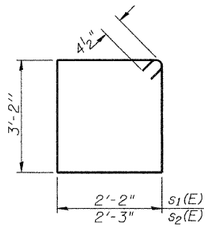
PILE DATA

Type: Metal Shell-12"ΦX0.25" walls w/ Pile Shoes
Nominal Required Bearing: 280 k
Factored Resistance Available: 140 k
Est. Length: 51'
No. Production Piles: 8 (4 at each abutment)
No. Test Piles: 2 (1 at each abutment)

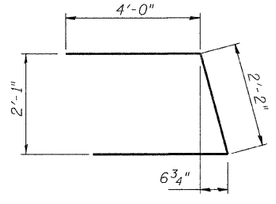


FIELD CUTTING DIAGRAM

Order v1(E) full length. Cut as shown and use remainder of bars in opposite face.



BARS s1(E) & s2(E)



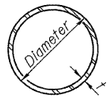
BAR u(E)

ABUTMENTS COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY SEC. 07-00216-01-BR IROQUOIS COUNTY STATION 20+02.60

2598b012

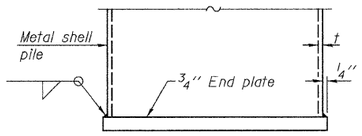
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	19
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-329(105)	
*07-00216-01-BR		CONTRACT *87401		

SHEET NO. 13 OF 15 SHEETS

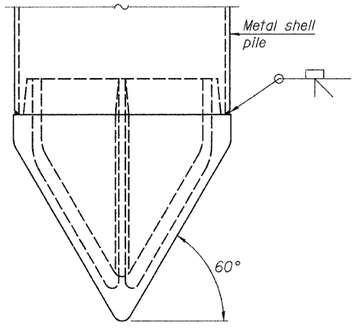


METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume ($yd.^3$/ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



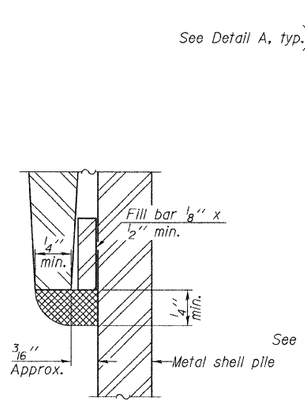
END PLATE ATTACHMENT



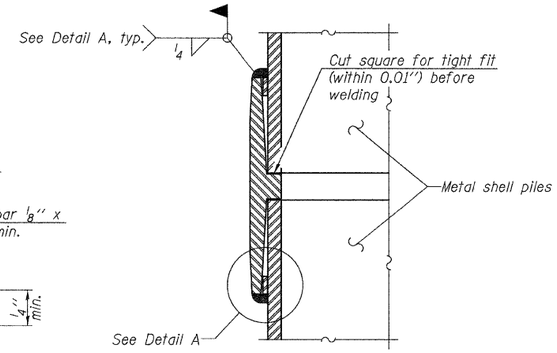
Note A:
When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

METAL SHELL PILE SHOE ATTACHMENT

(See Note A)

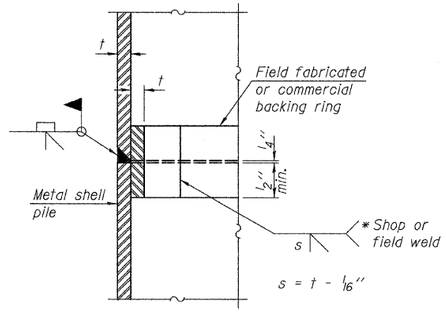


DETAIL A



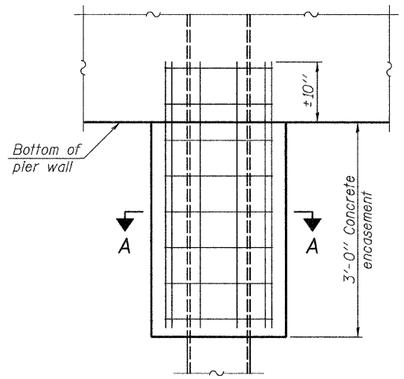
Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE

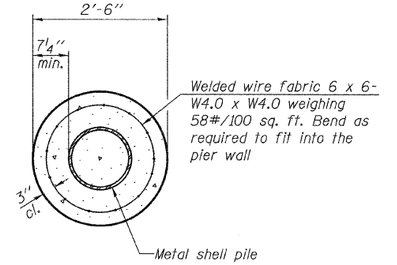


COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



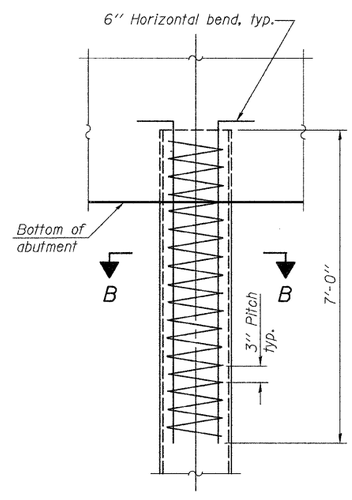
ELEVATION



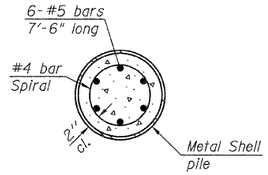
SECTION A-A

Note:
Forms for encasement may be omitted when soil conditions permit.

CONCRETE ENCASEMENT AT PIERS



ELEVATION



SECTION B-B

METAL SHELL REINFORCEMENT AT ABUTMENTS

Note:
The metal shell piles shall be according to ASTM A 252 Grade 3.

METAL SHELL PILE DETAILS
COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY
SEC. 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

F-MS 10-1-08

2598b013

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	20
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-3291(05)	

*07-00216-01-BR CONTRACT #87401

SHEET NO. 14 OF 15 SHEETS

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
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e-mail: mts376@comcast.net

BORING LOG

Sheet 1 of 3

Client: Hutchison Engineering, Inc.
Project Name: Bridge on C.H. 10 over Fountain Creek
Project Site: Lovejoy Twp. Iroquois County, IL
Section No.: 07-00216-01-BR

Boring No. B-1
Surface Elev. 658.51
Auger Depth 61.00 Rotary Depth NA
Start Date 02/06/09 Finish Date 02/06/09

Location: West Abutment
19+65 6' RT

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu. (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
658.51	Bituminous over Aggregate										
657.51	Stiff Brown/Gray Silty Clay Fill		1	1	SS	1.2	9	B	23		
656.51			2								
655.51			3								
654.51			4								
653.51	Stiff Black Silty Clay		5	2	SS	1.1	9	B	24		
652.51			6								
651.51	Stiff Gray Brown Silty Clay		7	3	SS	1.0	9	B	29		
650.51			8								
649.51			9								
648.51			10	4	SS	1.0	9	B	28		
647.51			11								
646.51			12								
645.51	Very Stiff Gray Silty Clay Till		13	5	SS	3.5	13	B	21		
644.51			14								
643.51			15								
642.51			16	6	SS	5.0	26	B	19		
641.51			17								
640.51			18	7	SS	3.9	16	B	20		
639.51			19								
638.51	Medium Dense Gray Silt		20	8	SS	---	15	---	23		

Groundwater Data: Water 5' below top of ground after auger removal.
Comments: *Creek bed ± 12' below deck.*

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BORING LOG

Sheet 2 of 3

Client: Hutchison Engineering, Inc.
Project Name: Bridge on C.H. 10 over Fountain Creek
Project Site: Lovejoy Twp. Iroquois County, IL
Section No.: 07-00216-01-BR

Boring No. B-1
Surface Elev. 658.51
Auger Depth 61.00 Rotary Depth NA
Start Date 02/06/09 Finish Date 02/06/09

Location: West Abutment
19+65 6' RT

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu. (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
637.51			22								
636.51			23	9	SS	1.4	15	B	16		
635.51	Stiff Gray Silty Clay Loam Till		24								
634.51			25								
633.51			26	10	SS	1.6	17	B	14		
632.51			27								
631.51			28	11	SS	3.1	16	B	24		
630.51			29								
629.51	Stiff/Very Stiff Gray Clay Till with Sand Seams		30								
628.51			31	12	SS	3.0	15	B	24		
627.51			32								
626.51			33	13	SS	4.1	20	B	19		
625.51	Very Stiff/Hard Silty Clay Till		34								
624.51			35								
623.51			36	14	SS	5.4	26	B	12		
622.51			37								
621.51			38								
620.51			39								
619.51	Very Dense Gray Sand & Gravel		40								
618.51			41	15	SS	2.5	19	B	16		
617.51	Very Stiff Gray Silty Clay Loam Till with Sand Seams										

First Water

Groundwater Data: Water 5' below top of ground after auger removal.
Comments: *Creek bed +12' below deck.*

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BORING LOG

Sheet 3 of 3

Client: Hutchison Engineering, Inc.
Project Name: Bridge on C.H. 10 over Fountain Creek
Project Site: Lovejoy Twp. Iroquois County, IL
Section No.: 07-00216-01-BR

Boring No. B-1
Surface Elev. 658.51
Auger Depth 61.00 Rotary Depth NA
Start Date 02/06/09 Finish Date 02/06/09

Location: West Abutment
19+65 6' RT

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu. (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
616.51			43								
615.51	Very Stiff Gray Silty Clay Loam Till with Sand Seams		44								
614.51			45								
613.51			46	20	SS	---	26	---	11		
612.51			47								
611.51			48								
610.51			49								
609.51			50								
608.51			51	21	SS	---	70 6"	---	9		
607.51			52								
606.51	Very Dense Sand & Gravel with Cobbles		53								
605.51			54								
604.51			55								
603.51			56	22	SS	---	70 6"	---	9		
602.51			57								
601.51			58								
600.51	Hard Gray Silty Clay Till		59								
599.51			60								
598.51			61	23	SS	7.4	68	S	10		
597.51			62								
596.51	Bottom of Boring										

Groundwater Data: Water 5' below top of ground after auger removal.
Comments: *Creek bed ± 12' below deck.*

SOIL BORING LOGS
COUNTY HIGHWAY 10 OVER
FOUNTAIN CREEK TRIBUTARY
SECTION 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

2598B014

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	21
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-3291(05)	

*07-00216-01-BR CONTRACT #87401

SHEET NO. 15 OF 15 SHEETS

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

BORING LOG

Sheet 1 of 3

Client: Hutchison Engineering, Inc.
Project Name: Bridge on C.H. 10 over Fountain Creek
Project Site: Lovejoy Twp. Iroquois County, IL
Section No.: 07-00216-01-BR

Boring No. B-2
Surface Elev. 658.10
Auger Depth 61.00 Rotary Depth NA
Start Date 02/06/09 Finish Date 02/06/09

Location: East Abutment
20+40 6' LT

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
658.10	Bituminous over Aggregate										
657.10			1								
656.10			2								
655.10	Stiff Brown/Gray Silty Clay Till		3	1	SS	1.1	9	B	23		
654.10			4								
653.10			5	2	SS	1.2	9	B	23		
652.10			6								
651.10			7								
650.10	Stiff Gray Brown Silty Clay		8	3	SS	1.0	9	B	26		
649.10			9								
648.10			10								
647.10	Brown/Gray Gravely Loam		11	4	SS	---	11	---	25		
646.10			12								
645.10			13	5	SS	---	11	---	25		
644.10			14								
643.10			15								
642.10	Very Stiff Gray Silty Clay Till		16	6	SS	3.9	19	B	23		
641.10			17								
640.10			18	7	SS	3.0	13	B	22		
639.10			19								
638.10	Medium Dense Gray/Brown Silt		20	8	SS	---	11	---	22		

Groundwater Data: Water 5' below top of ground after auger removal.
Comments: *Creek bed ± 12' below deck.*

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Peru, IL 61354
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e-mail: mts37@comcast.net

BORING LOG

Sheet 2 of 3

Client: Hutchison Engineering, Inc.
Project Name: Bridge on C.H. 10 over Fountain Creek
Project Site: Lovejoy Twp. Iroquois County, IL
Section No.: 07-00216-01-BR

Boring No. B-2
Surface Elev. 658.10
Auger Depth 61.00 Rotary Depth NA
Start Date 02/06/09 Finish Date 02/06/09

Location: East Abutment
20+40 6' LT

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
637.10											
636.10			22								
635.10	Stiff Gray Silty Clay Loam Till		23	9	SS	2.3	11	B	18		
634.10			24								
633.10			25								First Water
632.10	Medium Dense Gray Medium/Coarse Sand		26	10	SS	---	19	---	12		
631.10			27								
630.10			28	11	SS	3.1	19	B	21		
629.10			29								
628.10			30								
627.10			31	12	SS	3.1	20	B	21		
626.10	Stiff/Very Stiff Gray Silty Clay Till with Silt and Sand Seams		32								
625.10			33	13	SS	4.1	24	B	19		
624.10			34								
623.10			35								
622.10			36	14	SS	---	31	---	18		
621.10			37								
620.10			38								
619.10			39								
618.10			40								
617.10	Very Stiff Gray Silty Clay Till		41	15	SS	4.7	27	B	16		

Groundwater Data: Water 5' below top of ground after auger removal.
Comments: *Creek bed +12' below deck.*

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BORING LOG

Sheet 3 of 3

Client: Hutchison Engineering, Inc.
Project Name: Bridge on C.H. 10 over Fountain Creek
Project Site: Lovejoy Twp. Iroquois County, IL
Section No.: 07-00216-01-BR

Boring No. B-2
Surface Elev. 658.10
Auger Depth 61.00 Rotary Depth NA
Start Date 02/06/09 Finish Date 02/06/09

Location: East Abutment
20+40 6' LT

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
616.10											
615.10	Very Stiff Gray Silty Clay Till		43								
614.10	Very Dense Medium Sand		44								
613.10			45								
612.10			46	20	SS	---	70	---	10		
611.10	Very Dense Gray Silty Clay Till		47								
610.10			48								
609.10			49								
608.10			50								
607.10			51	21	SS	---	50/6"	---	9		
606.10			52								
605.10	Very Dense Sand & Gravel with Cobbles		53								
604.10			54								
603.10			55								
602.10			56	22	SS	---	50/6"	---	9		
601.10			57								
600.10			58								
599.10	Hard Gray Silty Clay Till		59								
598.10			60								
597.10			61	23	SS	7.4	63	S	10		
596.10	Bottom of Boring		62								

Groundwater Data: Water 5' below top of ground after auger removal.
Comments: *Creek bed +12' below deck.*

SOIL BORING LOGS
COUNTY HIGHWAY 10 OVER
FOUNTAIN CREEK TRIBUTARY
SECTION 07-00216-01-BR
IROQUOIS COUNTY
STATION 20+02.60

2598B015

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	22
STA. 15+50.00 TO STA. 16+50.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		
* 07-00216-01-BR	CONTRACT #87401			

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

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

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

665
660
655

EXIST. ROW

3:1

661.78

3:1

C = 19 F = 1

16 + 50

16.7:1

662.27

5.7:1

C = 28 F = 0

16 + 00

SEC 07-00216-01-BR
BEGINS STA 15+75.00
C = 27 F = 0 AH
C = 0 F = 0 BK

15 + 50

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	23
STA. 17+00.00 TO STA. 17+75.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		
*07-00216-01-BR		CONTRACT #87401		

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

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

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

665
660
655

EXIST. ROW
3:1
SD 658.8
661.50
C = 2 F = 45
EXIST. ROW
17 + 75

EXIST. ROW
3:1
SD 659.2
661.50
C = 1 F = 30
EXIST. ROW
17 + 50

SP DT LT BEGINS
STA 17+00.00
GRADE = -1.30%
ELEV. 659.80

EXIST. ROW
3:1
659.8
661.53
C = 6 F = 8
EXIST. ROW
17 + 00

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	24
STA. 18+00.00 TO STA. 18+50.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		
* 07-00216-01-BR	CONTRACT #87401			

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

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

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

665 660 655 650

SP DT LT ENDS
STA 18+50.00
GRADE = -1.30%
ELEV. 657.85

TEMP. EASEMENT — EXIST. ROW — 3:1 — SD 657.9 — INV. 655.49 — TBR — 661.50 — C = 8 F = 103 — 3:1 — EXIST. ROW — PROP. ROW

18 + 50

665 660 655

TEMP. EASEMENT — EXIST. ROW — 3:1 — 3:1 — SD 658.2 — 661.50 — C = 4 F = 75 — 3:1 — PROP. ROW — EXIST. ROW

18 + 25

665 660 655

EXIST. ROW — 3:1 — 3:1 — SD 658.5 — 661.50 — C = 2 F = 60 — 3:1 — EXIST. ROW

18 + 00

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	25
STA. 18+75.00 TO STA. 19+00.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		
* 07-00216-01-BR		CONTRACT #87401		

FINAL SURVEY
NOTE BOOK
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AREAS CHECKED
BY
DATE

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

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

660
655
650

PROP ROW
EXIST ROW
15" SS
INV. 655.00
TBR
661.50
3:1
3:1
C = 0 F = 112
EXIST ROW
PROP ROW
18 + 00

665
660
655

TEMP EASEMENT
EXIST ROW
4%
661.50
15" SS
INV. 655.20
TBR
ENT - C = 7 F = 8
18 + 80
PE LT

665
660
655
650

TEMP EASEMENT
EXIST ROW
661.50
15" SS
INV. 655.25
TBR
C = 0 F = 108
4%
EXIST ROW
PROP ROW
18 + 75

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	26
STA. 19+25.00 TO STA. 19+50.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		
* 07-00216-01-BR		CONTRACT *87401		

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

STA 20+38.35
C = 30 F = 235 AH
C = 0 F = 0 BK

BRIDGE OMMISSION

STA 19+66.85
C = 0 F = 9 AH
C = 17 F = 183 BK

SP DT LT ENDS
STA 19+78.00
GRADE = -4.00%
ELEV. 652.48

661.50

3:1

3:1

PROP ROW

EXIST ROW

EXIST ROW

PROP ROW

SD 653.6

C = 12 F = 159

665
660
655
650

19 + 50

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

661.50

3:1

3:1

PROP ROW

EXIST ROW

EXIST ROW

PROP ROW

SD 654.6

C = 8 F = 152

SP DT LT BEGINS
STA 19+20.00
GRADE = -4.00%
ELEV. 654.80

665
660
655
650

19 + 25

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	27
STA. 20+50.00 TO STA. 21+00.00				
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-329(105)	
* 07-00216-01-BR			CONTRACT #87401	

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

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

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

665 660 655 650

PROP. ROW — EXIST. ROW — EXIST. ROW — PROP. ROW

661.50

3:1 — 3:1 — 3:1 — 3:1

3:1 — 3:1

SD 653.3 — C = 12 F = 159 — SD 653.7

21 + 00

661.50

3:1 — 3:1 — 3:1 — 3:1

3:1 — 3:1

SD 652.9 — C = 18 F = 179 — SD 653.4

20 + 75

SP DT LT BEGINS
STA 20+26.00
GRADE = +1.50%
ELEV. 652.14

661.50

3:1 — 3:1 — 3:1 — 3:1

3:1 — 3:1

SD 652.5 — C = 25 F = 176 — SD 653.1

SP DT RT BEGINS
STA 20+28.00
GRADE = +1.20%
ELEV. 652.84

20 + 50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	28
STA. 21+25.00 TO STA. 21+75.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		
*07-00216-01-BR		CONTRACT #87401		

FINAL SURVEY
NOTE BOOK
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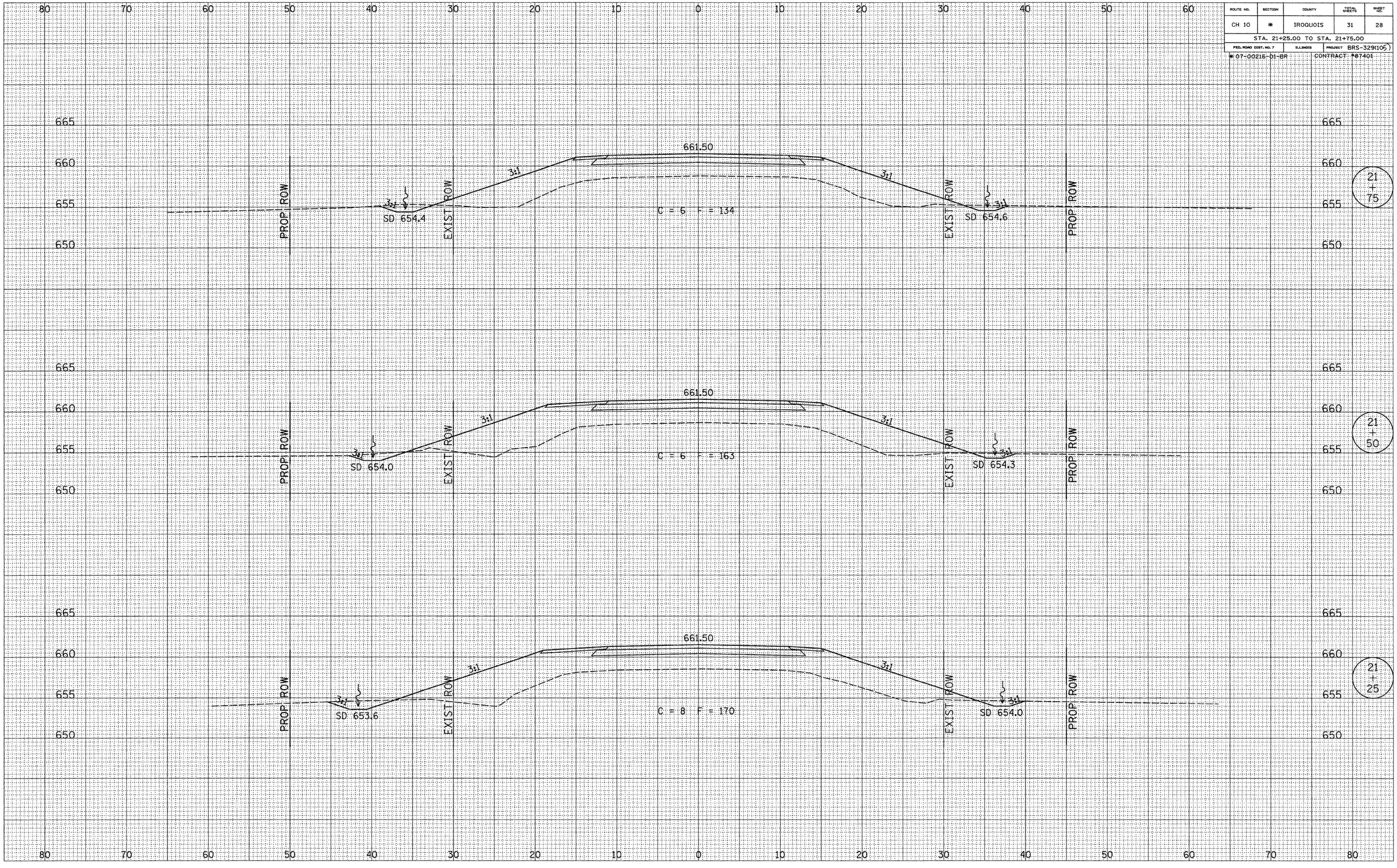
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

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



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	29
STA. 22+00.00 TO STA. 22+50.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		
* 07-00216-01-BR		CONTRACT *87401		

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

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

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

665 660 655 650

PROP ROW — EXIST ROW — 3:1 — SD 655.5 — 661.50 — C = 6 F = 77 — SD 656.3 — EXIST ROW — PROP ROW — 22+50

PROP ROW — EXIST ROW — 3:1 — SD 655.1 — 661.50 — C = 8 F = 96 — SD 655.6 — EXIST ROW — PROP ROW — 22+25

PROP ROW — EXIST ROW — 3:1 — SD 654.80 — 661.50 — C = 5 F = 122 — SD 654.9 — EXIST ROW — PROP ROW — 22+00

SP DT RT BEGINS
STA 22+00.00
GRADE = +2.70%
ELEV. 654.90

SP DT RT ENDS
STA 22+00.00
GRADE = +1.20%
ELEV. 654.90

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	30
STA. 23+00.00 TO STA. 23+50.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		
* 07-00216-01-BR		CONTRACT #67401		

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

SP DT LT ENDS
STA 23+50.00
GRADE = +4.70%
ELEV. 658.60

EXIST ROW
PROP ROW
SD 658.6
3:1
661.53
SD 659.0
C = 30 F = 5
EXIST ROW

23 + 50

661.50
3.3%
TBR
15" CL. D
INV 658.11
ENT - C = 3 F = 1
EXIST ROW
PROP ROW

23 + 23
PE RT ON SKEW

ORIGINAL SURVEY NOTE BOOK
SURVEYED PLOTTED TEMPLATE AREAS AREAS CHECKED BY DATE

SP DT LT BEGINS
STA 23+00.00
GRADE = +4.70%
ELEV. 656.25

SP DT LT ENDS
STA 23+00.00
GRADE = +1.50%
ELEV. 656.25

PROP ROW
EXIST ROW
SD 656.3
661.50
SD 657.6
C = 23 F = 33
EXIST ROW
PROP ROW

23 + 00

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80
665 660 655 650

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	31
STA. 24+00.00 TO STA. 25+00.00				
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	BRS-329(105)
*07-00216-01-BR			CONTRACT *87401	

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

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

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

665 660 670 655

EXIST ROW

SEC 07-00216-01-BR
ENDS STA 24+75.00
C = 0 F = 0 AH
C = 27 F = 0 BK

662.31

3:1

C = 27 F = 1

661.79

SD 660.3

C = 21 F = 1

SP DT RT ENDS
STA 24+00.00
GRADE = +2.70%
ELEV. 660.30

25 + 00

24 + 50

24 + 00