

**SUMMARY OF QUANTITES**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
---	99-00109-01-BT	DU PAGE	74	3
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	
<b>CONTRACT No. 83728</b>				

Specialty Item	ITEM	DESCRIPTION	UNIT	Y047 QUANTITY
	20100110	TREE REMOVAL (6-15 UNITS DIAMETER)	UNIT	65
	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	275
	20100500	TREE REMOVAL, ACRES	ACRE	0.42
	20101000	TEMPORARY FENCE	FOOT	490
*	20101200	TREE ROOT PRUNING	EACH	20
*	20101300	TREE PRUNING (1 TO 10 INCH DIAMETER)	EACH	20
*	20101350	TREE PRUNING (OVER 10 INCH DIAMETER)	EACH	20
	20200100	EARTH EXCAVATION	CU YD	8600
	20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	556
	20400800	FURNISHED EXCAVATION	CU YD	6700
	20700220	POROUS GRANULAR EMBANKMENT	CU YD	26
	20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	266
	20700420	POROUS GRANULAR EMBANKMENT, SUBGRADE	CU YD	556
	20800150	TRENCH BACKFILL	CU YD	50
	21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	2218
	21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	17100
*	25000310	SEEDING, CLASS 4	ACRE	5
*	25000400	NITROGEN FERTILIZER NUTRIENT	POUND	545
*	25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	545
*	25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	545
*	25100115	MULCH, METHOD 2	ACRE	5
	25100630	EROSION CONTROL BLANKET	SQ YD	3200
*	25200110	SODDING, SALT TOLERANT	SQ YD	500
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	550
	28000400	PERIMETER EROSION BARRIER	FOOT	10808
	28100107	STONE RIPRAP, CLASS A4	SQ YD	305
	28200200	FILTER FABRIC	SQ YD	305
	35102100	AGGREGATE BASE COURSE, TYPE B, 9"	SQ YD	16677
	40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX C, N50	TON	3150
	42000300	PORTLAND CEMENT CONCRETE PAVEMENT, 8"	SQ YD	75
	42400800	DETECTABLE WARNINGS	SQ FT	132
	44000200	DRIVEWAY PAVEMENT REMOVAL	SQ YD	329
	44000500	COMBINATION CONCRETE CURB AND GUTTER REMOVAL	FOOT	320
	44000600	SIDEWALK REMOVAL	SQ FT	11607
	50105220	PIPE CULVERT REMOVAL	FOOT	80
	50200100	STRUCTURE EXCAVATION	CU YD	885
	50300225	CONCRETE STRUCTURES	CU YD	309
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	26030
*	50901725	BICYCLE RAILING, SPECIAL	FOOT	201
	54200427	PIPE CULVERTS, TYPE 1, REINFORCED CONCRETE CULVERT PIPE 12"	FOOT	24
	54200430	PIPE CULVERTS, TYPE 1, REINFORCED CONCRETE CULVERT PIPE 15"	FOOT	24
	54200445	PIPE CULVERTS, TYPE 1, REINFORCED CONCRETE CULVERT PIPE 30"	FOOT	16
	54201279	PIPE CULVERTS, TYPE 2, REINFORCED CONCRETE CULVERT PIPE 24"	FOOT	64
	54207159	PIPE CULVERTS, TYPE 1, REINFORCED CONCRETE - ELLIPTICAL, EQUIVALENT ROUND-SIZE 24"	FOOT	16
	54213657	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 12"	EACH	2
	54213660	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 15"	EACH	2
	54213669	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 24"	EACH	2
	54213675	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 30"	EACH	2
	54214719	PRECAST REINFORCED CONCRETE FLARED END SECTIONS - ELLIPTICAL, EQUIVALENT ROUND-SIZE 24"	EACH	2
	54247100	GRATING FOR CONCRETE FLARED END SECTION 15"	EACH	2
	54247130	GRATING FOR CONCRETE FLARED END SECTION 24"	EACH	2
	54247150	GRATING FOR CONCRETE FLARED END SECTION 30"	EACH	2
	54248130	GRATING FOR CONCRETE FLARED END SECTION EQUIVALENT ROUND SIZE 24"	EACH	2
	56400400	FIRE HYDRANT TO BE RELOCATED	EACH	4
	60250200	CATCH BASIN TO BE ADJUSTED	EACH	1
	60255500	MANHOLES TO BE ADJUSTED	EACH	5
	60265700	VALVE VAULTS TO BE ADJUSTED	EACH	3
	60603800	COMBINATION CONCRETE CURB AND GUTTER TYPE B-6.12	FOOT	320
	67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	5
	67100100	MOBILIZATION	L. SUM	1

\* INDICATES SPECIALITY ITEM

Specialty Item	ITEM	DESCRIPTION	UNIT	Y047 QUANTITY
	70102620	TRAFFIC CONTROL AND PROTECTION - 701501	L. SUM	1
	70102635	TRAFFIC CONTROL AND PROTECTION - 701701	L. SUM	1
	70102640	TRAFFIC CONTROL AND PROTECTION - 701801	L. SUM	1
	72000100	SIGN PANEL TYPE 1	SQ FT	6.75
	72400900	REMOVE SIGN PANEL	EACH	1
	72900100	METAL POST TYPE A	FOOT	36
	78001110	PAINT PAVEMENT MARKING LINE, 4"	FOOT	12564
*	78000600	THERMOPLASTIC PAVEMENT MARKING LINE, 12"	FOOT	366
*	81400115	HANDHOLE TO BE ADJUSTED	EACH	3
	X0322671	STABILIZED CONSTRUCTION ENTRANCE	SQ YD	100
*	X0322508	PEDESTRIAN TRUSS SUPERSTRUCTURE (BRIDGE 1 AND 2)	SQ FT	3304
*	X0322855	WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE	POUND	545
	X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1
	X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1
	X5020503	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 3	EACH	1
	X5020504	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 4	EACH	1
	Z0013798	CONSTRUCTION LAYOUT	L. SUM	1
Δ	Z0076600	TRAINEES	HOUR	500
*	A2002320	TREE, BETULA NIGRA (RIVER BIRCH), 2 1/2" CALIPER, BALLED AND BURLAPPED	EACH	5
*	A2002920	TREE, CELTIS OCCIDENTALIS (COMMON HACKBERRY), 2 1/2" CALIPER, BALLED AND BURLAPPED	EACH	12
*	A2005820	TREE, PLATANUS OCCIDENTALIS (SYCAMORE) 2 1/2" CALIPER, BALLED AND BURLAPPED	EACH	3
*	A2006516	TREE, QUERCUS BICOLOR (SWAMP WHITE OAK) 2" CALIPER, BALLED AND BURLAPPED	EACH	11
*	B2005720	TREE, PYRUS CALLERYANA CHANTICLEER (CHANTICLEER GALLERY PEAR), 2 1/2" CALIPER, TREE FORM, BALLED AND BURLAPPED	EACH	19
*	B2010016	TREE, AMELANCHIER CANADENSIS (SHADBLOW SERVICEBERRY), 2" CALIPER, TREE FORM, BALLED AND BURLAPPED	EACH	2
*	K1005875	TREE TRANSPLANT	EACH	9
	XX000613	MODULAR BLOCK RETAINING WALL	SQ FT	1200
*	XX002185	RELOCATE EXISTING LIGHT POLE	EACH	5
	XX006066	SIGN TO BE RELOCATED	EACH	1
*	XX007657	TRAIL TREE ROOT BARRIER	FOOT	6490
	XX007983	AGGREGATE FOR TEMPORARY ACCESS	EACH	13
*	K1005460	SHADE MIX SEEDING	SQ YD	3200
	XX007981	TEMPORARY FENCE, 6-FOOT CHAIN LINK	FOOT	425
	XX007982	PRECAST CONCRETE BOX CULVERT, 6' X 1'	FOOT	22
*	25000830	HYDRAULIC SEEDING	ACRE	5

1. Revised 5-22-09

REVISIONS	
NAME	DATE
Quantity Change	5-22-09

ILLINOIS DEPARTMENT OF TRANSPORTATION

**SUMMARY OF QUANTITIES**

SCALE: VERT. NOT TO SCALE  
 HORIZ. DATE 3/30/2009

DRAWN BY EDT  
 CHECKED BY LMF

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 PLAN: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 PROFILE: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_

3/30/2009

NOTE: Camber Overall Bridge Profile 1% Of The Bridge Length But At No Point Along The Bridge Shall The Deck Slope Be Greater Than 5%. Taking Into Account The Difference In Bearing Elevations. In Addition, All Truss Verticals Shall Be Plumb.

CONTRACT No. 83728

**BILL OF MATERIAL (BRIDGE 1)**

ITEM	DESCRIPTION	UNIT	QUANTITY
20700220	Porous Granular Embankment	Cu. Yd.	6
20700400	Porous Granular Embankment (Special)	Cu. Yd.	25
28100107	Stone Riprap, Class A4	Sq. Yd.	25
28200200	Filter Fabric	Sq. Yd.	25
50200100	Structure Excavation	Cu. Yd.	110
50300225	Concrete Structures	Cu. Yd.	41
50800205	Reinforcement Bars, Epoxy Coated	Lbs.	2500
X5020501	Underwater Structure Excavation Protection-Location 1	Each	1
X5020502	Underwater Structure Excavation Protection-Location 2	Each	1
X0322508	Pedestrian Truss Superstructure (Bridge 1)	Sq. Ft.	584

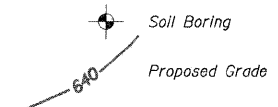
**BRIDGE REACTION TABLE**

ITEM	P (LBS) BRG.	H (LBS) ABUTMENT	L (LBS)
DEAD LOAD (2)	14,835	---	---
UNI. LIVE LOAD	12,410	---	---
VEHICLE LOAD	6,000	---	---
UPLIFT WIND 20 PSF	-4,655	---	---
WINDWARD/LEEWARD	-1,155	---	---
WIND	+720	3,725	---
THERMAL (2)	---	---	2,225

All Footings Have Been Designed Based On The Bridge Reactions Shown  
 "P"- Vertical Load Per Base Plate  
 "H"- Horizontal Load Per Footing  
 "L"- Longitudinal Load Per Base Plate  
 Bridge Lifting Weight = 17,000 Lbs (1)  
 Total Bridge Weight = 59,340 Lbs (2)

- (1) Does Not Include Weight Of Concrete Deck
- (2) Includes Weight Of Concrete Deck

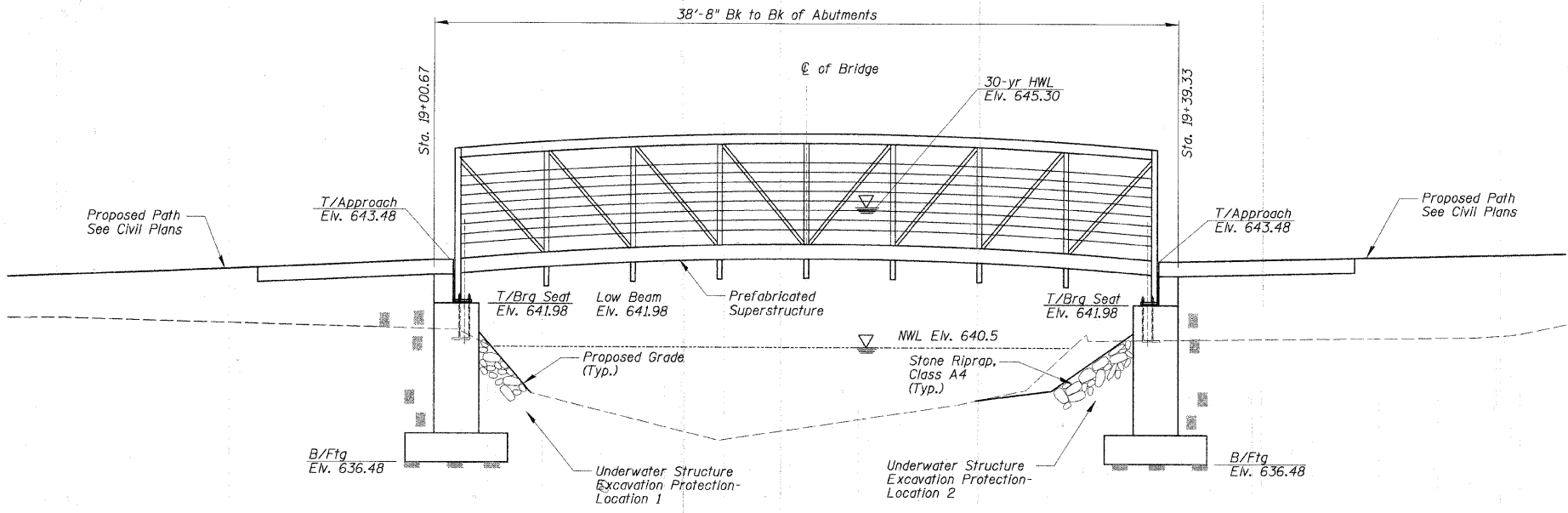
**LEGEND**



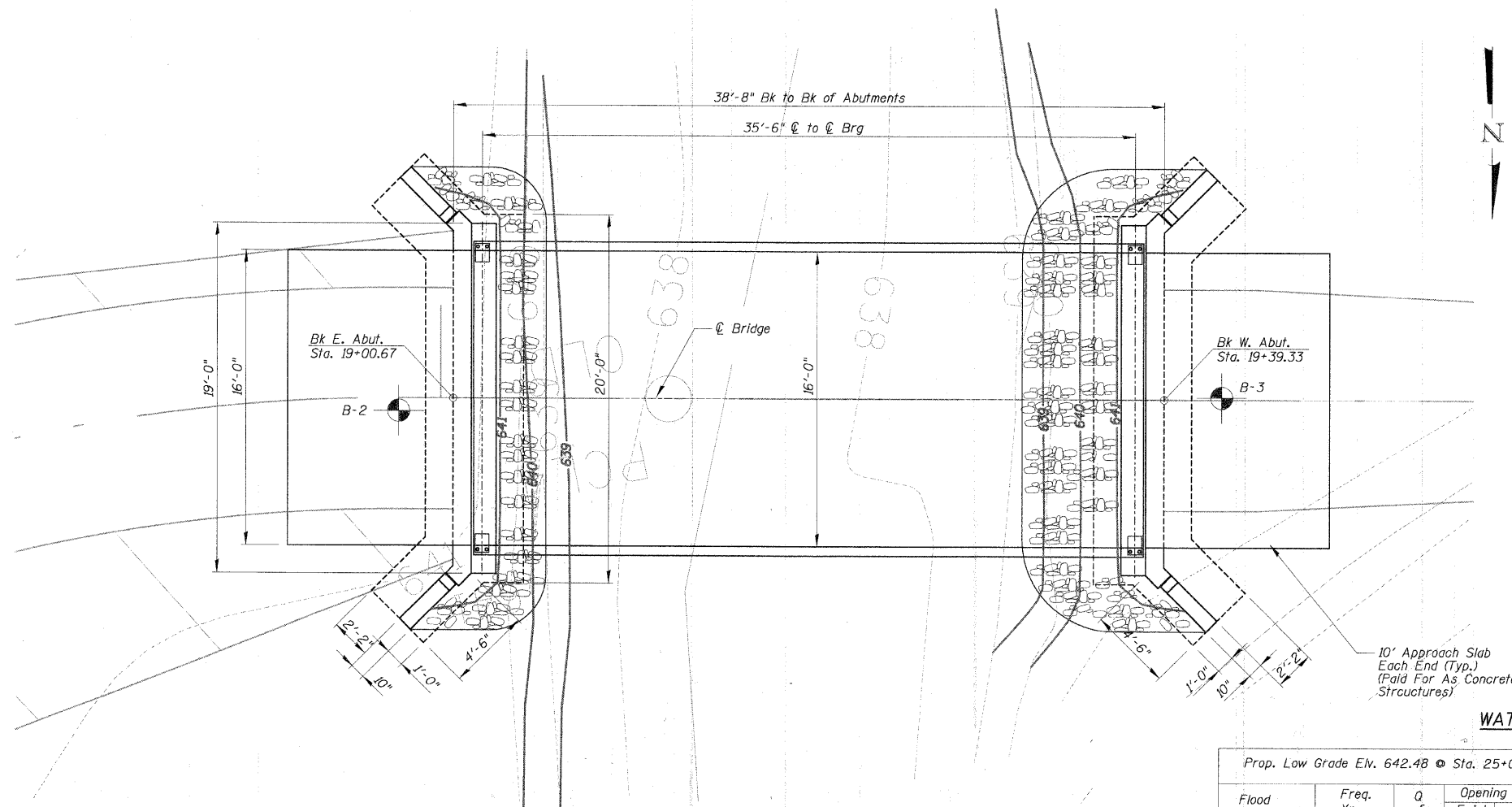
I Certify That To The Best Of My Knowledge, Information And Belief, This Bridge Design Is Structurally Adequate For The Design Loading Shown On The Plans. The Design Is An Economical One For The Style Of Structure And Complies With Requirements Of The Current "AASHTO Standard Specification For Highway And Bridges".



5-22-09  
 MAJID MOBASSERI  
 STRUCTURAL ENGINEER  
 ILLINOIS REGISTRATION NO. 081-005058  
 EXPIRATION DATE: 11/30/10



**ELEVATION**



**PLAN**

**WATERWAY INFORMATION**

Flood	Freq. Yr.	Q cfs	Opening ft <sup>2</sup>		Nat. H.W.E.	Head - ft		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Prop.	10	3695	-	90.00	644.46	-	0.06	-	644.52
Design	30	4722	-	90.00	645.22	-	0.08	-	645.30
	50	5170	-	90.00	645.61	-	0.08	-	645.69
Base	100	5885	-	90.00	646.01	-	0.08	-	646.09
Max. Calc.	500	7880	-	90.00	647.27	-	0.08	-	647.35

REVISIONS	
NAME	DATE
L. PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BRIDGE 1**  
**STA. 19+20.00**  
**PLAN AND PROFILE**

SCALE: NOT TO SCALE  
 DATE 5/22/2009  
 DRAWN BY PDR  
 CHECKED BY PLB

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 PLAN NO. \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 PROFILE NO. \_\_\_\_\_

5/22/2009

CONTRACT No. 83728

### I GENERAL NOTES

- All work shall be done in accordance to the Illinois Department of Transportation (IDOT) Standard Specification For Road and Bridge Construction, Adopted January 1, 2007, and latest Supplemental Specifications and recurring Special Provisions, unless noted otherwise. Construction Plans and Subsequent Details are all to be considered as part of the Contract. Incidental Items or Accessories necessary to complete this work may not be specifically noted but are considered a part of this Contract.
- No Construction Plans shall be used for Construction unless specifically Marked For Construction. Prior to commencement of construction, the Contractor shall verify all dimensions and conditions affecting the work with the actual conditions. If there are discrepancies between the job site and what is shown on the construction plans, The contractor must immediately report to Engineer before doing any work, otherwise the Contractor shall assume full responsibility. In the event of disagreement between the plans and existing conditions and or details, the Contractor shall secure written instruction from the Engineer prior to proceeding with any part of the work affected by omissions or discrepancies. In failing to secure such instruction, the Contractor will be considered to have proceeded at his own risk and expense. In the event of any doubt or questions arising with respect to the true meaning of the Construction Plans or Specifications, the decision of the Engineer shall be final and conclusive.
- Contractor shall verify all topographic information and grade elevations adjacent to bridge prior to proceeding, inform Engineer of any variation.
- All compacted fill and backfill material shall be a clean granular material placed in lifts of twelve (12) inches or less in loose thickness and compacted to a minimum of 95 percent of the material's maximum standard proctor dry density (ASTM D-698).

### II CAST-IN-PLACE CONCRETE

- All cast-in-place concrete work and reinforcing steel work shall be in accordance with Sections 503 and 508 respectively of the IDOT Standard Specifications For Road And Bridge Construction, adopted January 1, 2007, and Supplemental Specifications and Recurring Special Provisions and as noted below.
- Cover from the face of concrete to face of reinforcement bars shall be 3" for surfaces cast against earth and 2" for all other surfaces unless otherwise shown.
- All reinforcement bars shall be epoxy coated.
- Reinforcement Bars shall conform to the requirements of AASTHO M-31, or M-322 Grade 60. Field bending or cutting shall not be permitted.
- Reinforcing bar bending dimensions are out to out.
- Reinforcing bar bending details shall be in accordance with the "Manual of Standard Practice for Detailing Reinforced Concrete Structures", ACI 315, latest edition. Shop bending and placement drawings shall be submitted to the Engineer for review and approval prior to fabrication.
- All C.I.P. concrete shall be class SI concrete and shall have a minimum compressive strength of 3,500 psi @ 28 days.
- All exposed concrete edges shall be beveled 3/4".
- All Walking Surfaces Shall Receive a "Broom" Finish.

### III PREFABRICATED PEDESTRIAN BRIDGE

The Prefabricated Pedestrian Bridge shall be designed, fabricated, delivered and erected according to the Special Provisions of "Pedestrian Truss Superstructure" and design plans.

- Style: Pratt Truss or Approved Equal.
- Span: 36' - 6" end to end of the bridge structure.
- Loading: Per AASHTO Guide Specification for Design of Pedestrian Bridges.  
Dead Load : Actual weight of the structure  
Live Load : 85 PSF or H6 (12,000 Lb) vertical load. Vertical impact is not required.  
Wind Load : 35 PSF on the full vertical projected area of the bridge, as if enclosed.  
The stream may over top the bridge deck and the bridge should be designed for stream flow pressure accordingly.
- Finishes: All steel shall be unpainted weathering steel conforming to the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel."
- Quality: The bridge manufacturer shall maintain proper records assuring that all steel, bolts, and materials used are in accordance with material specified. The bridge shall be identified and marked with a permanent nameplate showing the manufacturer's name, location, date of manufacture, and load carrying capacity. Structural material shall be traceable to each bridge. All welders shall be qualified in accordance with AWS D1.1-2002 structural welding code. All workmanship shall be in compliance with AASHTO and AISC standard practice. Full penetration weld details used in shop splices shall be submitted to the Engineer to determine testing required (if any).
- Delivery: Bridges shall be delivered by truck to a location nearest the site accessible by roads.
- Field welding of construction accessories will not be permitted to beams or girders.

### IV CONSTRUCTION

- Do not scale dimensions for construction. Scale, if shown, applies only to full size drawings.
- No construction joints, except those shown on the plans, will be allowed unless directed by the Engineer.
- Any information concerning type or location of underground and other utilities is not guaranteed to be accurate or all inclusive. The Contractor is responsible for making his own determinations as to the type and location of the utilities as may be necessary to avoid damage thereto. Contractor shall call J.U.L.I.E. and the City Of Naperville prior to excavation.
- Shop working or layout drawings pertaining to the construction of the work, as may be required, shall be submitted to the Engineer for approval prior to the start of construction.
- Upon completion, the contractor shall collect and remove all construction debris and excess material from the site. Damaged trees, shrubs, and other landscape features resulting from construction activities shall be replaced or repaired.
- All bearing surfaces must be true and level.
- Contractor must coordinate with Bridge Manufacturer to ensure proper placement of cast-in-place anchors. If the contractor elects to use post-installed anchors in lieu of cast-in-place anchors, he must coordinate the plate dimensions, bolt spacing and bolt quantity with the Bridge Manufacturer prior to construction.
- The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
- Bridge Seat Sealer shall be applied to the seat area of both abutments.

### V FOUNDATION NOTES

- The minimum allowable bearing capacity on undisturbed soil or firm compacted fill shall be 3000 PSF based on the soil report prepared by Testing Service Corporation, File No. L-67,825 dated Aug. 6, 2007. If the soil encountered at the proposed bottom of footing elevation does not meet the minimum bearing capacity, the soil shall be overexcavated until suitable soil is encountered. Overexcavated soil shall be replaced with crushed stone containing no fines complying with IDOT gradations CA-1 or CA-7, or 3" crushed rock. Each lift shall be densified using vibratory compaction equipment or by firmly tamping with a backhoe bucket. Overexcavated areas shall extend beyond the footing dimensions a minimum of 6" on each side per foot of overdig.
- The Contractor is responsible for design, installation and removal of all excavation support systems.
- The excavation and work area shall be properly drained at all times during construction. All wet, loose, frozen or other unsuitable material shall be removed prior to placement of concrete or compacted backfill.
- It shall be the responsibility of the Contractor to divert the stream flow during construction in order to keep the construction areas free of water. The method of water diversion shall be subject to the approval of the City and County. The cost shall be included with "Underwater Structure Excavation Protection" at the location shown in the plans.
- The Contractor shall submit a plan to the City and County for approval if dewatering is required. Any dewatering shall not be paid for separately, but shall be included in "Underwater Structure Excavation Protection" at the location shown in the plans.

BAR SIZE	CLASS "B" SPLICE
#4	1'-10"
#5	2'-3"
#6	2'-9"

NO.	NAME	DATE
1.	PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BRIDGE 1**  
**STA. 19 + 20.00**  
**GENERAL NOTES**

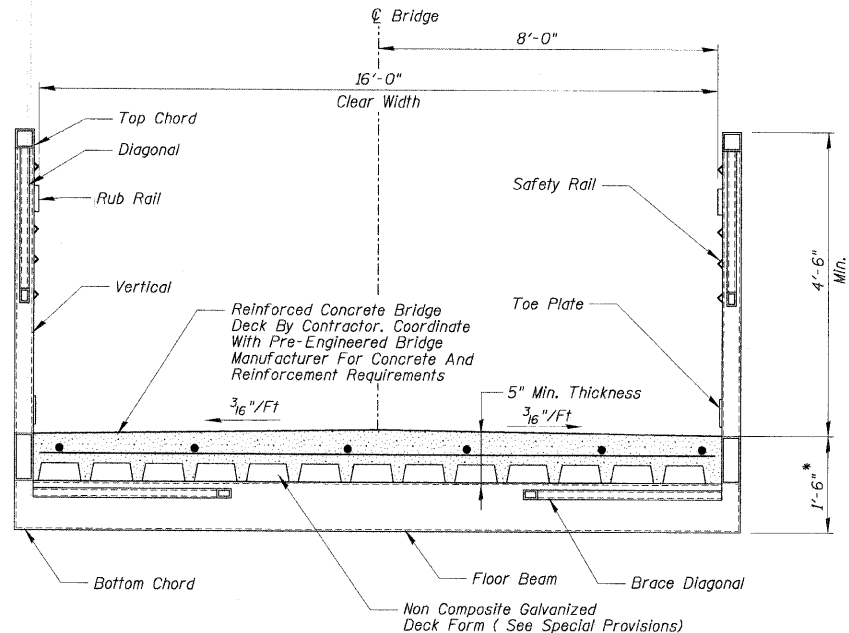
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CHECKED BY: PLB

DATE	BY	REVISIONS

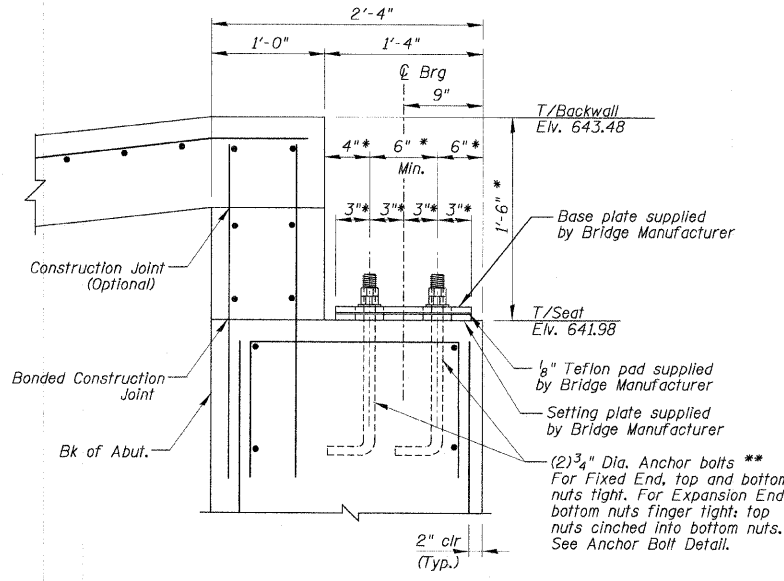
DATE	BY	REVISIONS

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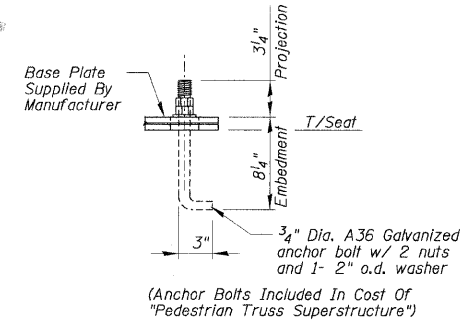
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STRUCTURE NOTATIONS



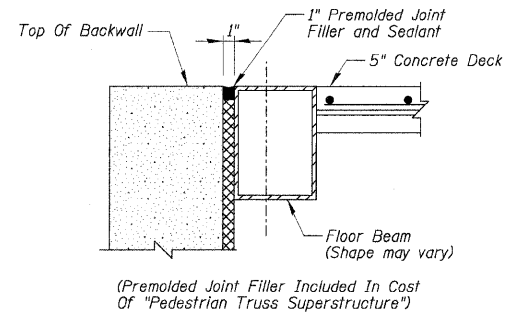
**SECTION THRU FABRICATED BRIDGE SUPERSTRUCTURE**



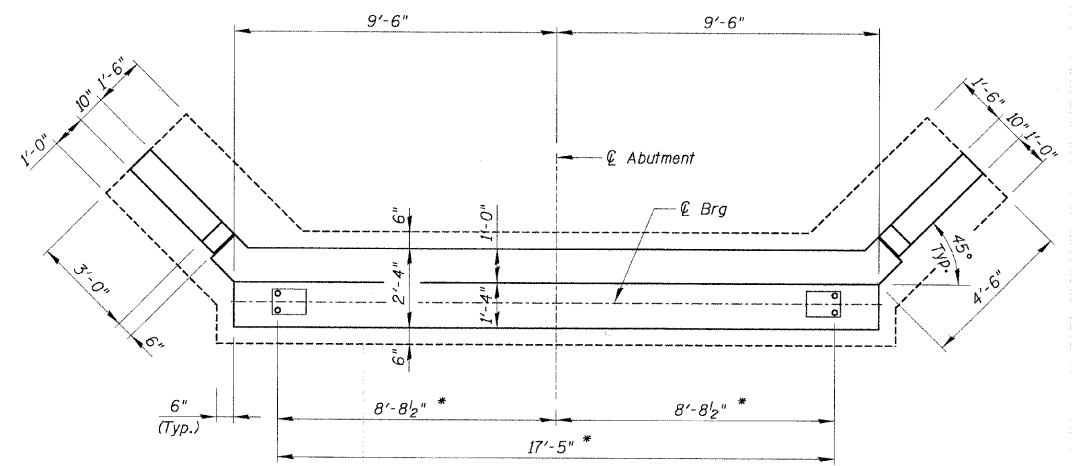
**BEARING DETAIL AT ABUTMENTS**



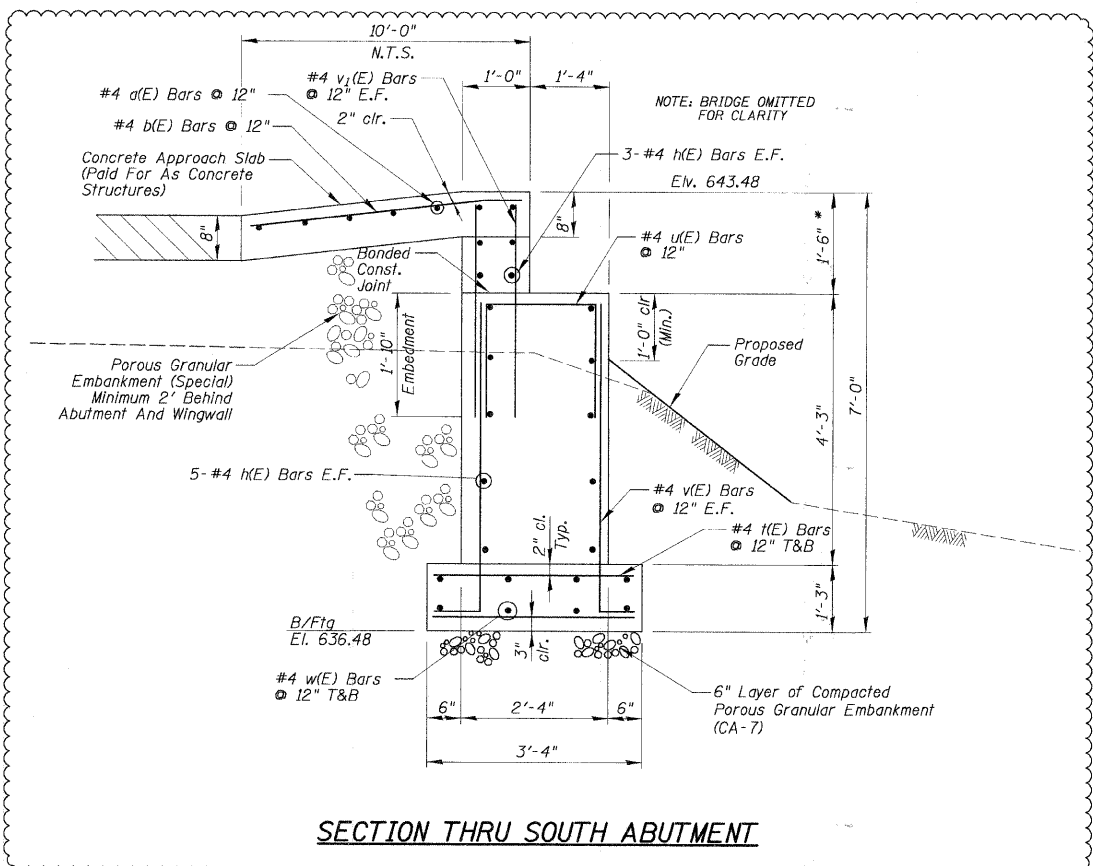
**ANCHOR BOLT DETAIL**



**JOINT SEAL AT ABUTMENT**

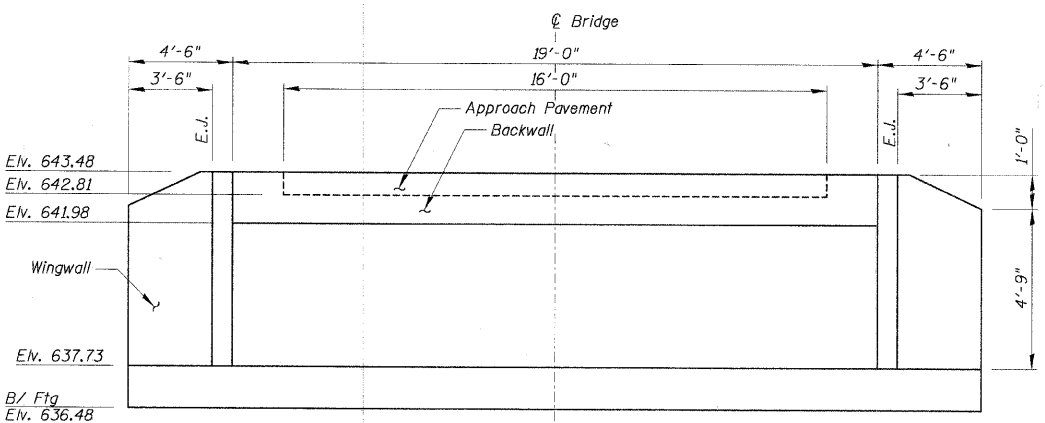


**TYPICAL ABUTMENT PLAN**



**SECTION THRU SOUTH ABUTMENT**

NOTES:  
 \* Contractor shall coordinate all dimensions with Bridge Manufacturer prior to construction.  
 \*\* Contractor has the option of substituting anchor bolts with 4-3/4 inch diameter HILTI HAS-EE AISI 304 SS Bolts embedded 6 5/8 inches into HIT HY 150 Injection adhesive. Bolts shall not be placed less than 5 inches from the edge of the structure or less than 6 inches apart. Contractor shall coordinate plate dimensions, bolt spacing and bolt quantity with Bridge Manufacturer prior to construction.



**TYPICAL ABUTMENT ELEVATION  
(DIMENSION ALONG FACE OF WALL)**

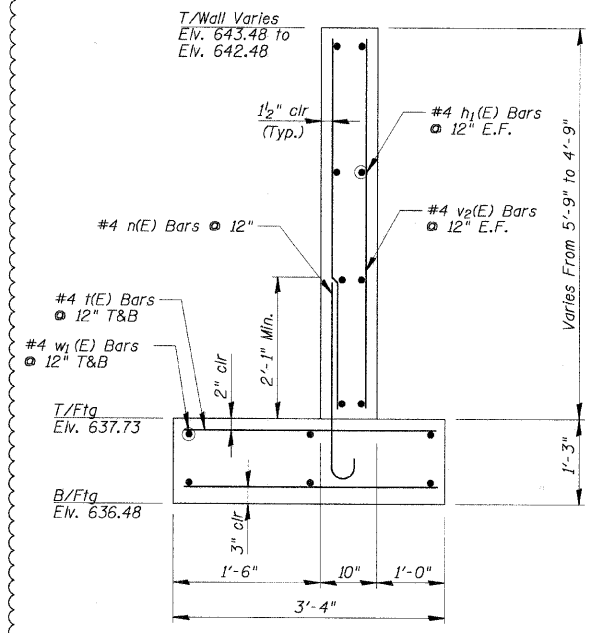
REVISIONS	
NAME	DATE
1. PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BRIDGE 1**  
**STA. 19 + 20.00**  
**ABUTMENT AND BRIDGE SECTIONS**

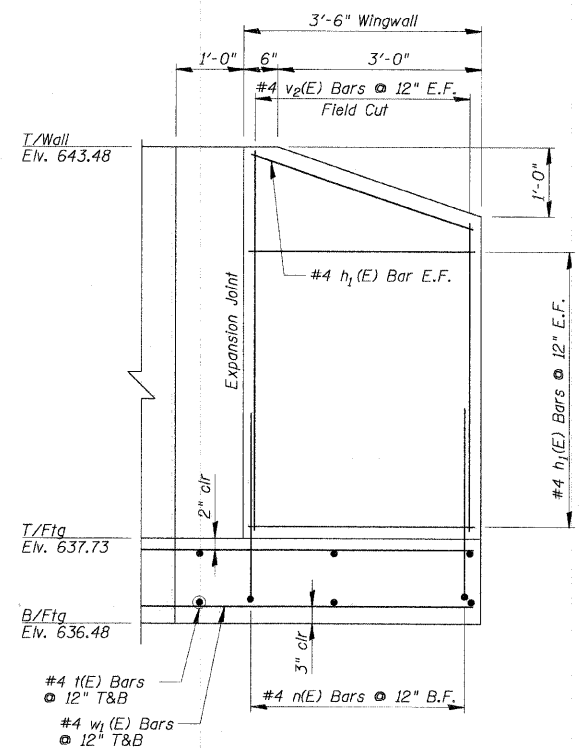
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 DATE 5/22/2009  
 DRAWN BY PDR  
 CHECKED BY PLB

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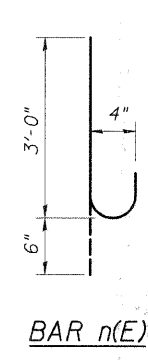
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 BRIDGE: \_\_\_\_\_  
 STRUCTURE: \_\_\_\_\_  
 NO. \_\_\_\_\_



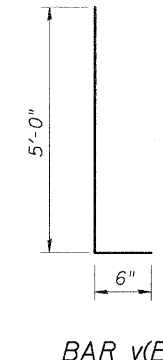
**TYPICAL WINGWALL SECTION**



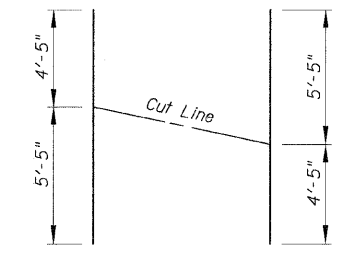
**TYPICAL WINGWALL ELEVATION**



**BAR n(E)**



**BAR v(E)**

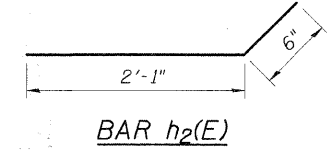


**CUTTING DIAGRAM v2(E) BARS**

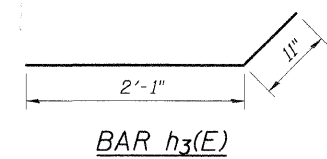
**BILL OF MATERIAL PER ABUTMENT**

Bar	No.	Size	Length	Shape
a(E)	10	#4	15'-8"	—
b(E)	17	#4	9'-8"	—
h(E)	16	#4	18'-8"	—
h1(E)	24	#4	3'-2"	—
h2(E)	12	#4	2'-7"	┘
h3(E)	12	#4	3'-0"	—
n(E)	12	#4	3'-6"	┘
t(E)	66	#4	3'-0"	—
u(E)	30	#4	5'-4"	┘
v(E)	40	#4	5'-6"	┘
v1(E)	40	#4	3'-2"	—
v2(E)	8	#4	9'-10"	—
v3(E)	4	#4	5'-5"	—
w(E)	8	#4	19'-8"	—
w1(E)	16	#4	6'-1"	—
Concrete Structures			Cu. Yd.	20.5
Reinforcement Bars, Epoxy Coated			Pound	1,250

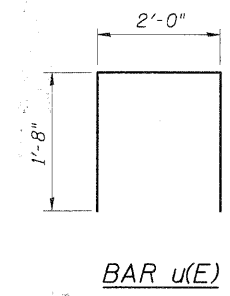
\* Includes Approach Slab and Wingwalls



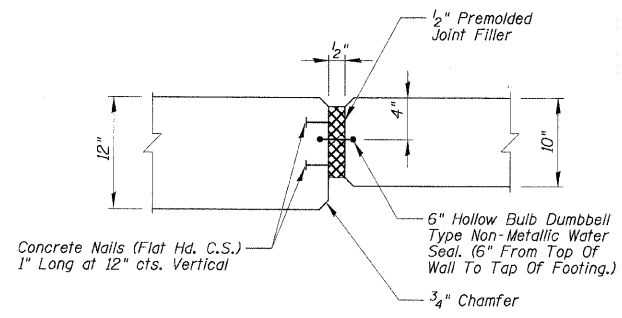
**BAR h2(E)**



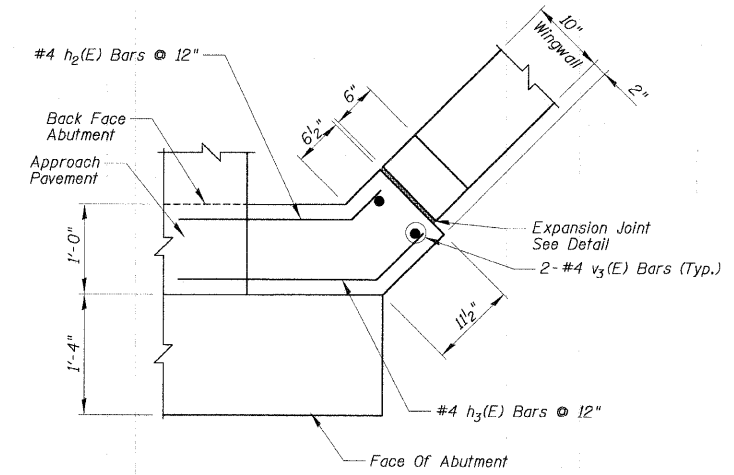
**BAR h3(E)**



**BAR u(E)**



**TYPICAL EXPANSION JOINT DETAIL**



**CORNER DETAIL**

REVISIONS	
NAME	DATE
1. PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BRIDGE 1**  
**STA. 19 + 20.00**  
**WINGWALL AND DETAILS**

SCALE: NOT TO SCALE  
 DATE: 5/22/2009  
 DRAWN BY: PDR  
 CHECKED BY: PLB

NOTE: Camber Overall Bridge Profile 1% Of The Bridge Length But At No Point Along The Bridge Shall The Deck Slope Be Greater Than 5%. Taking Into Account The Difference In Bearing Elevations. In Addition, All Truss Verticals Shall Be Plumb.

CONTRACT No. 83728

**BILL OF MATERIAL (BRIDGE 2)**

ITEM	DESCRIPTION	UNIT	QUANTITY
* 20700400	Porous Granular Embankment, Special	Cu. Yd.	135
28100107	Stone Riprap, Class A4	Sq. Yd.	140
28200200	Filter Fabric	Sq. Yd.	140
50200100	Structure Excavation	Cu. Yd.	375
50300225	Concrete Structures	Cu. Yd.	166
50800205	Reinforcement Bars, Epoxy Coated	Pound	13,240
* X5020503	Underwater Structure Excavation Protection-Location 3	Each	1
* X5020504	Underwater Structure Excavation Protection-Location 4	Each	1
50901725	Bicycle Rolling, Special	L.F.	66
* X0322508	Pedestrian Truss Superstructure (Bridge 2)	Sq. Ft.	2,720

**BRIDGE REACTION TABLE (90'-0" SPAN)**

ITEM	P (LBS) BRG.	H (LBS) ABUTMENT	L (LBS)
DEAD LOAD (2)	22,950	---	---
UNI. LIVE LOAD	23,460	---	---
VEHICLE LOAD	6,000	---	---
UPLIFT WIND 20 PSF WINDWARD/LEEWARD	-8,970/	---	---
WIND	+2,690	7,765	---
THERMAL (2)	---	---	3,445

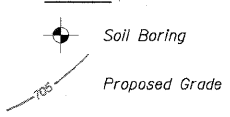
- (1) Bridge Lifting Weight : 32,200
- (2) Total Bridge Weight : 91,800

**BRIDGE REACTION TABLE (132'-5" SPAN)**

ITEM	P (LBS) BRG.	H (LBS) ABUTMENT	L (LBS)
DEAD LOAD (2)	45,430	---	---
UNI. LIVE LOAD	33,915	---	---
VEHICLE LOAD	6,000	---	---
UPLIFT WIND 20 PSF WINDWARD/LEEWARD	-13,635/	---	---
WIND	+7,385	18,810	---
THERMAL (2)	---	---	6,815

- (1) Bridge Lifting Weight : 66,000
- (2) Total Bridge Weight : 181,720

**LEGEND**



All Footings Have Been Designed Based On The Bridge Reactions Shown  
 "P" - Vertical Load Per Base Plate  
 "H" - Horizontal Load Per Footing  
 "L" - Longitudinal Load Per Base Plate

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 Standard Specification For Highway And Bridges".

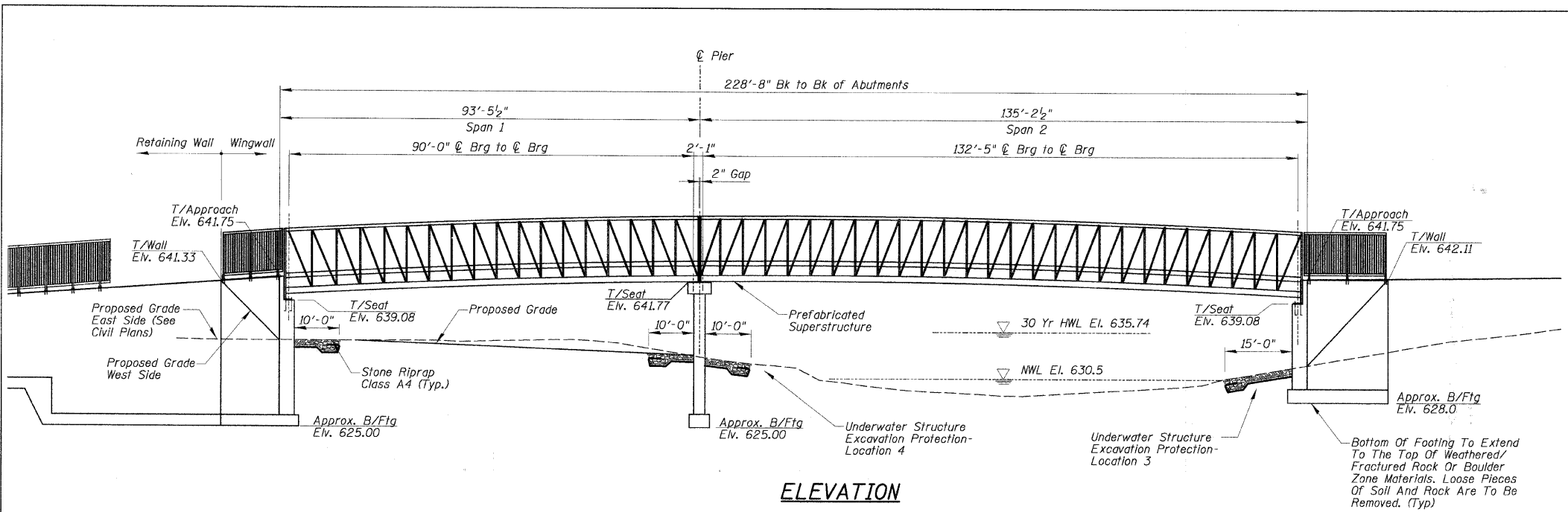


5-22-09  
 MAJID MOBASSERI  
 STRUCTURAL ENGINEER  
 ILLINOIS REGISTRATION No. 081-005058  
 EXPIRATION DATE: 11/30/10

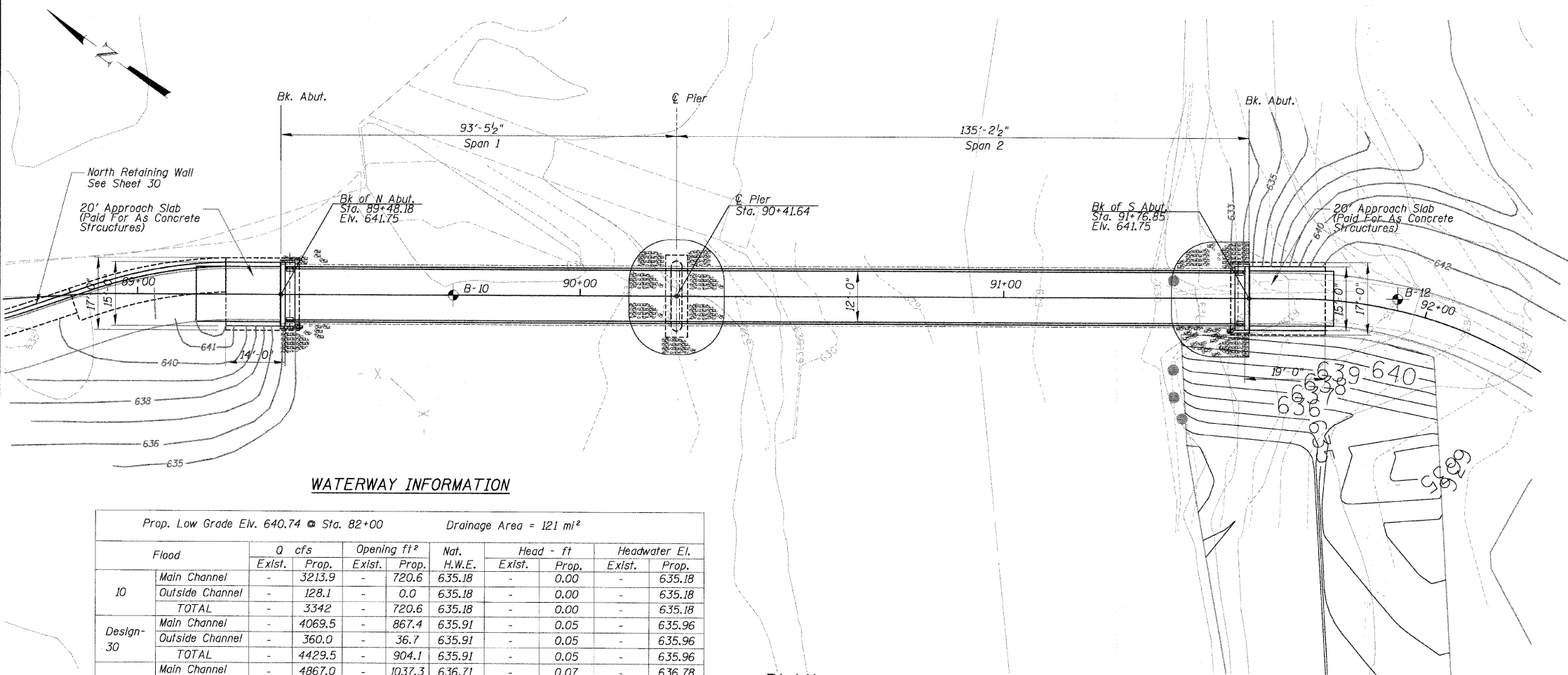
REVISIONS	
NAME	DATE
1. PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BRIDGE 2**  
**STA. 90+40.00**  
**PLAN AND PROFILE**

SCALE: NOT TO SCALE  
 DATE: 5/22/2009  
 DRAWN BY: PDR  
 CHECKED BY: PLB



**ELEVATION**



**PLAN**

**WATERWAY INFORMATION**

Prop. Low Grade Elev. 640.74 @ Sta. 82+00      Drainage Area = 121 mi<sup>2</sup>

Flood	Channel	Q cfs		Opening ft <sup>2</sup>		Nat. H.W.E.	Head - ft		Headwater El.	
		Exlst.	Prop.	Exlst.	Prop.		Exlst.	Prop.	Exlst.	Prop.
10	Main Channel	-	3213.9	-	720.6	635.18	-	0.00	-	635.18
	Outside Channel	-	128.1	-	0.0	635.18	-	0.00	-	635.18
	TOTAL	-	3342	-	720.6	635.18	-	0.00	-	635.18
Design-30	Main Channel	-	4069.5	-	867.4	635.91	-	0.05	-	635.96
	Outside Channel	-	360.0	-	36.7	635.91	-	0.05	-	635.96
	TOTAL	-	4429.5	-	904.1	635.91	-	0.05	-	635.96
100	Main Channel	-	4867.0	-	1037.3	636.71	-	0.07	-	636.78
	Outside Channel	-	796.0	-	164.0	636.71	-	0.07	-	636.78
	TOTAL	-	5663.0	-	1201.3	636.71	-	0.07	-	636.78
500	Main Channel	-	5947.4	-	1284.7	637.62	-	0.00	-	637.62
	Outside Channel	-	1452.6	-	346.8	637.62	-	0.00	-	637.62
	TOTAL	-	7400.0	-	1631.5	637.62	-	0.00	-	637.62

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 ALIGNED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 CAD FILE NAME: \_\_\_\_\_

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 PROFILE: \_\_\_\_\_  
 BRIDGE: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 STRUCTURE NOTATION: \_\_\_\_\_

5/22/2009



CONTRACT No. 83728

**I GENERAL NOTES**

- All work shall be done in accordance to the Illinois Department of Transportation (IDOT) Standard Specification For Road and Bridge Construction, Adopted January 1, 2007, and latest Supplemental Specifications and recurring Special Provisions, unless noted otherwise. Construction Plans and Subsequent Details are all to be considered as part of the Contract. Incidental Items or Accessories necessary to complete this work may not be specifically noted but are considered a part of this Contract.
- No Construction Plans shall be used for Construction unless specifically Marked For Construction. Prior to commencement of construction, the Contractor shall verify all dimensions and conditions affecting the work with the actual conditions. If there are discrepancies between the job site and what is shown on the construction plans, the contractor must immediately report to Engineer before doing any work, otherwise the Contractor shall assume full responsibility. In the event of disagreement between the plans and existing conditions and or details, the Contractor shall secure written instruction from the Engineer prior to proceeding with any part of the work affected by omissions or discrepancies. In failing to secure such instruction, the Contractor will be considered to have proceeded at his own risk and expense. In the event of any doubt or questions arising with respect to the true meaning of the Construction Plans or Specifications, the decision of the Engineer shall be final and conclusive.
- Contractor shall verify all topographic information and grade elevations adjacent to bridge prior to proceeding, Inform Engineer of any variation.
- All compacted fill and backfill material shall be a clean granular material placed in lifts of twelve (12) inches or less in loose thickness and compacted to a minimum of 95 percent of the material's maximum standard proctor dry density (ASTM D-698).

**II CAST-IN-PLACE CONCRETE**

- All cast-in-place concrete work and reinforcing steel work shall be in accordance with Sections 503 and 508 respectively of the IDOT Standard Specifications For Road And Bridge Construction, adopted January 1, 2007, and Supplemental Specifications and Recurring Special Provisions and as noted below.
- Cover from the face of concrete to face of reinforcement bars shall be 3" for surfaces cast against earth and 2" for all other surfaces unless otherwise shown.
- All reinforcement bars shall be epoxy coated.
- Reinforcement Bars shall conform to the requirements of AASTHO M-31, or M-322 Grade 60. Field bending or cutting shall not be permitted.
- Reinforcing bar bending dimensions are out to out.
- Reinforcing bar bending details shall be in accordance with the "Manual of Standard Practice for Detailing Reinforced Concrete Structures", ACI-315, latest edition. Shop bending and placement drawings shall be submitted to the Engineer for review and approval prior to fabrication.
- All C.I.P. concrete shall be class SI concrete and shall have a minimum compressive strength of 3,500 psi @ 28 days.
- All exposed concrete edges shall be beveled 3/4".
- All Walking Surfaces Shall Receive a "Broom" Finish.

**III PREFABRICATED PEDESTRIAN BRIDGE**

The Prefabricated Pedestrian Bridge shall be designed, fabricated, delivered and erected according to the Special Provisions of "Pedestrian Truss Superstructure" and design plans.

- Style: Pratt Truss or Approved Equal.
- Span: 90'-0" & 132'-5"  $\perp$  to  $\perp$  of bearing of the bridge structures.
- Loading: Per AASHTO Guide Specification for Design of Pedestrian Bridges. Dead Load : Actual weight of the structure  
Live Load : 85 PSF or H6 (12,000 Lb) vertical load. Vertical impact is not required.  
Wind Load : 35 PSF on the full vertical projected area of the bridge, as if enclosed.
- Finishes: All steel shall be unpainted weathering steel conforming to the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel."
- Quality: The bridge manufacturer shall maintain proper records assuring that all steel, bolts, and materials used are in accordance with material specified. The bridge shall be identified and marked with a permanent nameplate showing the manufacturer's name, location, date of manufacture, and load carrying capacity. Structural material shall be traceable to each bridge. All welders shall be qualified in accordance with AWS D1.1-2002 structural welding code. All workmanship shall be in compliance with AASHTO and AISC standard practice. Full penetration weld details used in shop splices shall be submitted to the Engineer to determine testing required (if any).
- Delivery: Bridges shall be delivered by truck to a location nearest the site accessible by roads.
- Field welding of construction accessories will not be permitted to beams or girders.

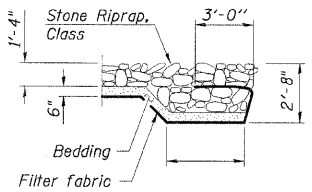
**IV CONSTRUCTION**

- Do not scale dimensions for construction. Scale, if shown, applies only to full size drawings.
- No construction joints, except those shown on the plans, will be allowed unless directed by the Engineer.
- Any information concerning type or location of underground and other utilities is not guaranteed to be accurate or all inclusive. The Contractor is responsible for making his own determinations as to the type and location of the utilities as may be necessary to avoid damage thereto. Contractor shall call J.U.L.I.E. and the City of Naperville, prior to excavation.
- Shop working or layout drawings pertaining to the construction of the work, as may be required, shall be submitted to the Engineer for approval prior to the start of construction.
- Upon completion, the contractor shall collect and remove all construction debris and excess material from the site. Damaged trees, shrubs, and other landscape features resulting from construction activities shall be replaced or repaired.
- All bearing surfaces must be true and level.
- Contractor must coordinate with Bridge Manufacturer to ensure proper placement of cast-in-place anchors. If the contractor elects to use post-installed anchors in lieu of cast-in-place anchors, he must coordinate the plate dimensions, bolt spacing and bolt quantity with the Bridge Manufacturer prior to construction.
- The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
- Bridge Seat Sealer shall be applied to the seat area of both abutments.

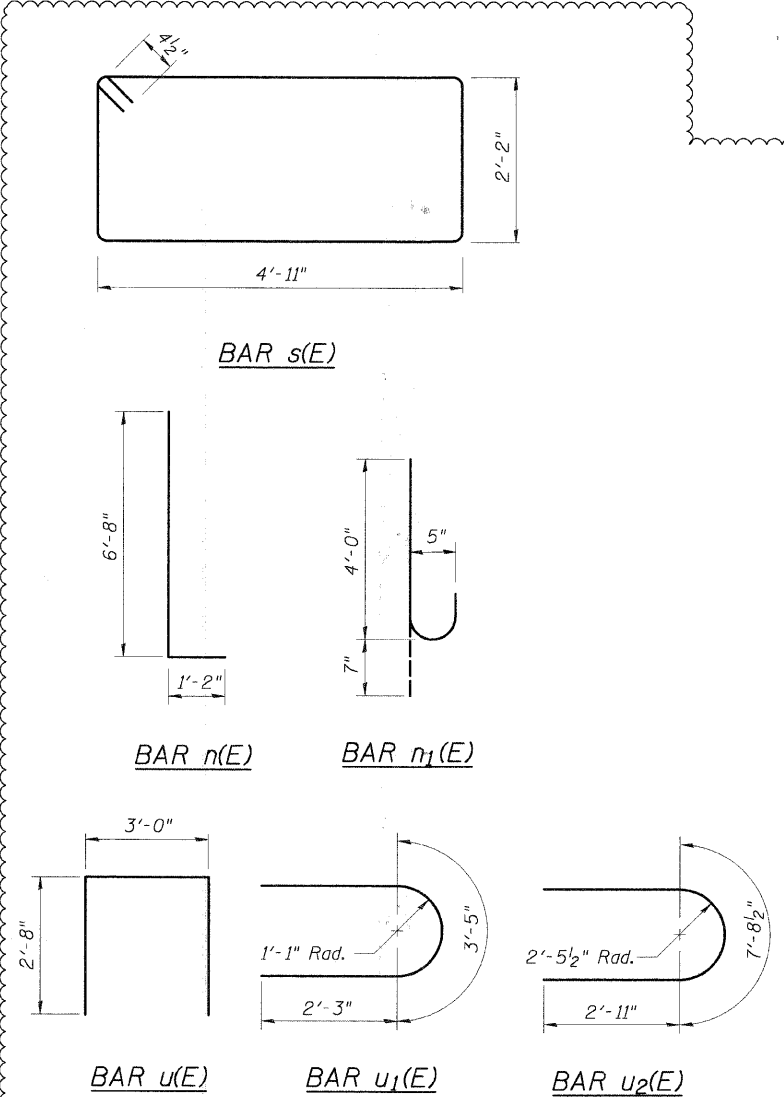
**V FOUNDATION NOTES**

- The minimum allowable bearing capacity on weathered/fractured rock or boulder zone materials shall be 8000 PSF based on the soil report prepared by Testing Service Corporation, File No. L-67,825 dated Aug. 6, 2007 and File No. L-67, 825A dated Sept. 25, 2007. Any loose pieces of soil or rock must be removed.
- The contractor is responsible for design, installation and removal of all excavation support systems.
- The excavation and work area shall be properly drained at all times during construction, all wet, loose, frozen or other unsuitable material shall be removed prior to placement of concrete or compacted backfill.
- All bearing surfaces must be true and level.
- It shall be the responsibility of the Contractor to divert the stream flow during construction in order to keep the construction areas free of water. The method of water diversion shall be subject to the approval of the City and County. The cost shall be included with "Underwater Structure Excavation Protection" at the location shown in the plans.
- The Contractor shall submit a plan to the City and County for approval if dewatering is required. Any dewatering shall not be paid for separately, but shall be included in "Underwater Structure Excavation Protection" at the location shown in the plans.

BAR SIZE	CLASS "B" SPLICE
#4	1'-10"
#5	2'-3"
#6	2'-9"
#7	3'-8"



**FLANK STONE RIPRAP DETAIL**



**BILL OF MATERIAL SOUTH ABUTMENT**

Bar	No.	Size	Length	Shape
a(E)	20	#4	12'-8"	—
b(E)	14	#4	19'-8"	—
h(E)	26	#4	14'-8"	—
h2(E)	40	#4	17'-8"	—
n(E)	88	#7	7'-10"	—
t(E)	46	#6	16'-8"	—
u(E)	42	#4	8'-4"	□
v2(E)	32	#4	4'-4"	—
v5(E)	16	#4	9'-3"	—
v6(E)	16	#6	7'-4"	—
v7(E)	38	#6	10'-0"	—
v8(E)	20	#4	11'-7"	—
w1(E)	36	#6	22'-0"	—
Concrete Structures		Cu. Yd.	65.9	
Reinforcement Bars, Epoxy Coated		Pound	6,160	

\* Includes Approach Slab and Wingwalls

**BILL OF MATERIAL PIER**

Bar	No.	Size	Length	Shape
h3(E)	26	#5	13'-0"	—
n1(E)	30	#5	4'-7"	—
p(E)	14	#5	13'-0"	—
s(E)	14	#4	14'-11"	—
t1(E)	18	#5	4'-2"	—
u1(E)	26	#5	7'-11"	□
u2(E)	6	#4	13'-7"	□
v9(E)	30	#5	14'-5"	—
w2(E)	5	#5	17'-2"	—
Concrete Structures		Cu. Yd.	35.0	
Reinforcement Bars, Epoxy Coated		Pound	1,710	

**BILL OF MATERIAL NORTH ABUTMENT**

Bar	No.	Size	Length	Shape
a(E)	20	#4	12'-8"	—
b(E)	14	#4	19'-8"	—
h(E)	32	#4	14'-8"	—
h1(E)	48	#4	12'-8"	—
n(E)	68	#7	7'-10"	—
t(E)	36	#6	16'-8"	—
u(E)	42	#4	8'-4"	□
v(E)	16	#4	12'-3"	—
v1(E)	16	#6	10'-4"	—
v2(E)	32	#4	4'-4"	—
v3(E)	28	#6	13'-0"	—
v4(E)	14	#4	14'-8"	—
w(E)	36	#6	17'-0"	—
Concrete Structures		Cu. Yd.	65.1	
Reinforcement Bars, Epoxy Coated		Pound	5,370	

\* Includes Approach Slab and Wingwalls

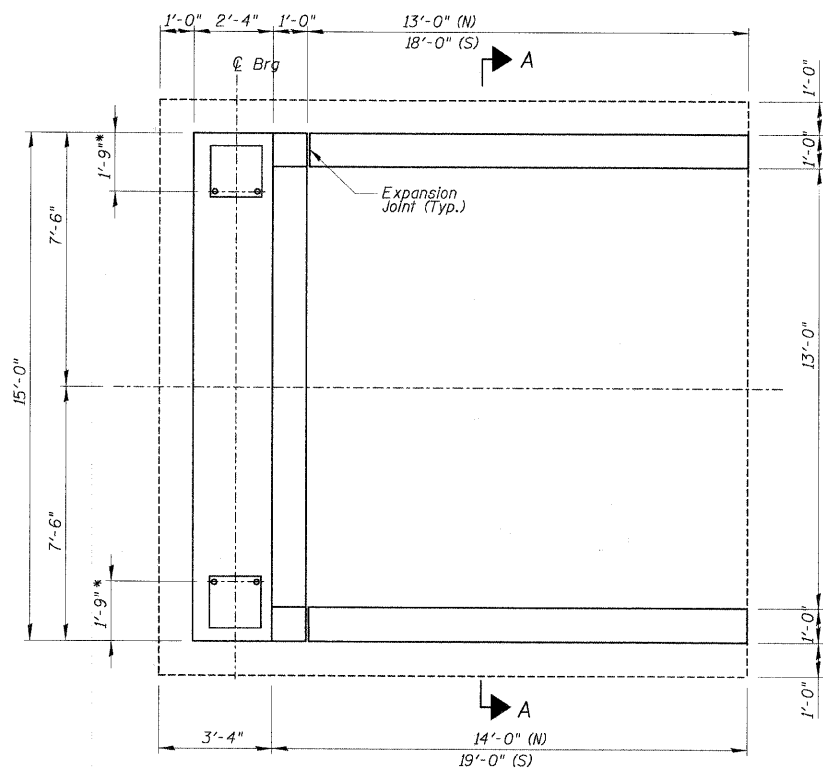
NAME	DATE
1. PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BRIDGE 2**  
**STA. 90 + 40.00**  
**GENERAL NOTES**

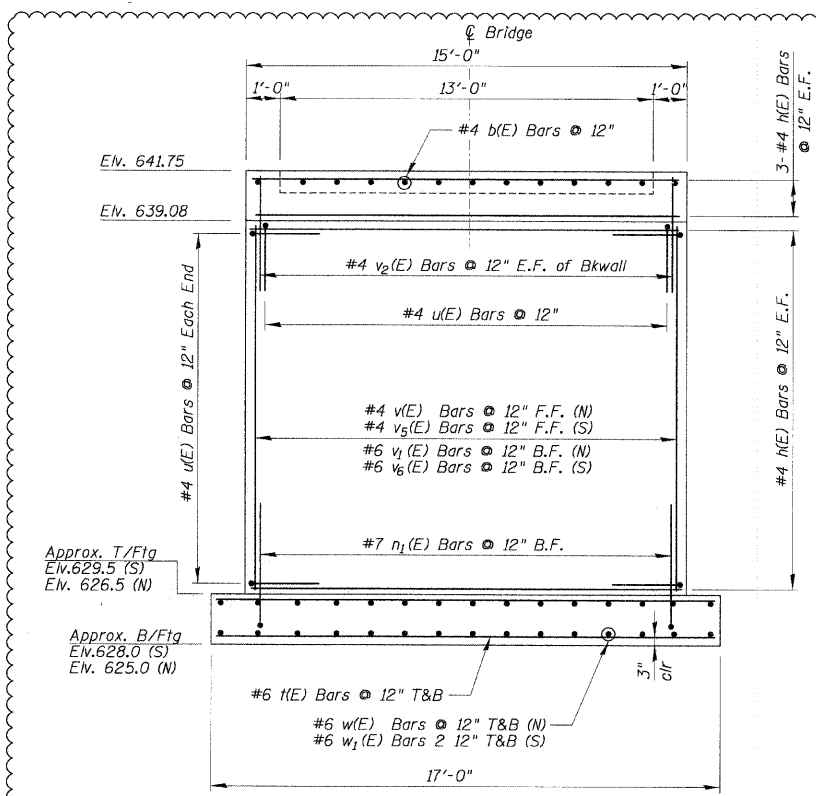
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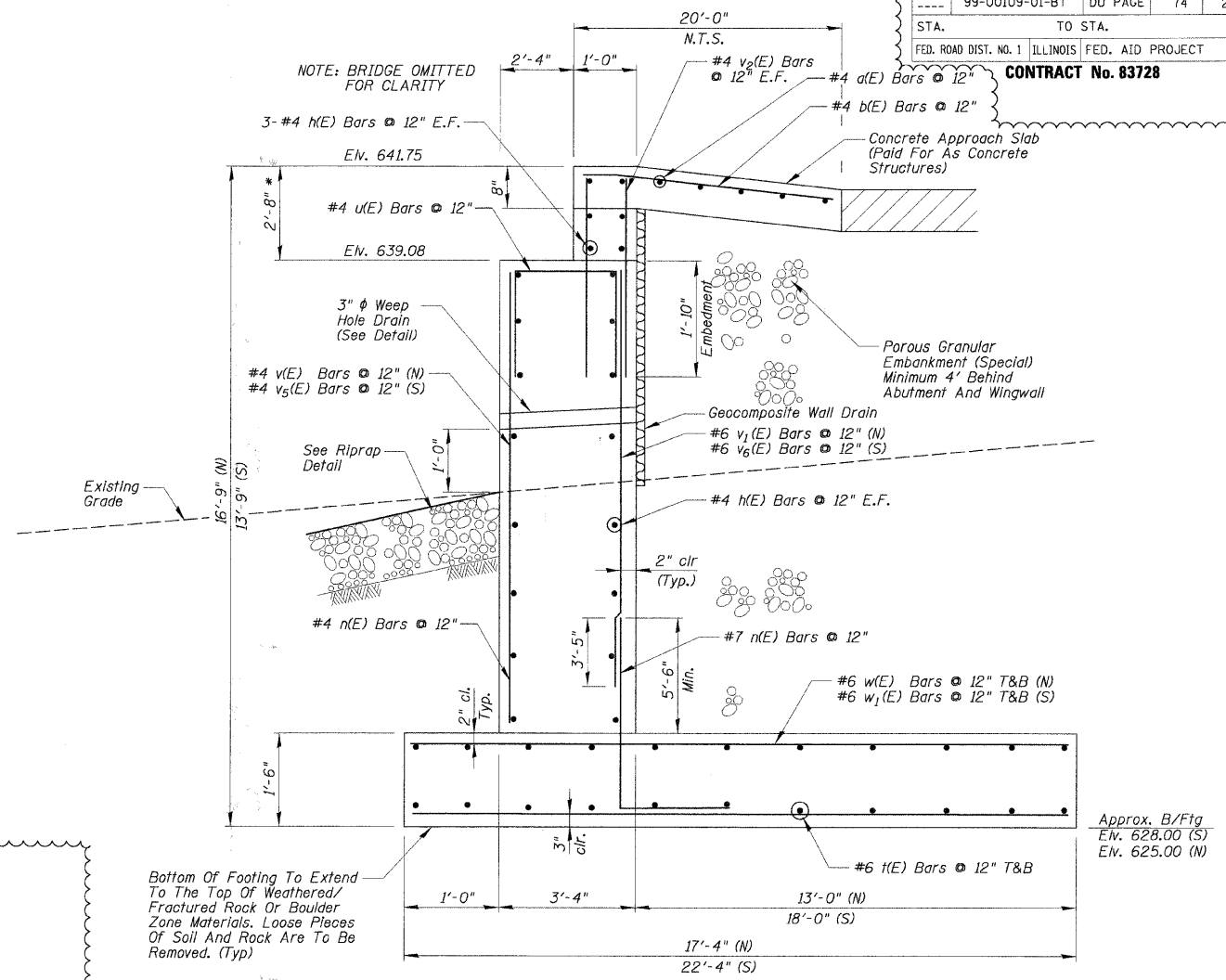
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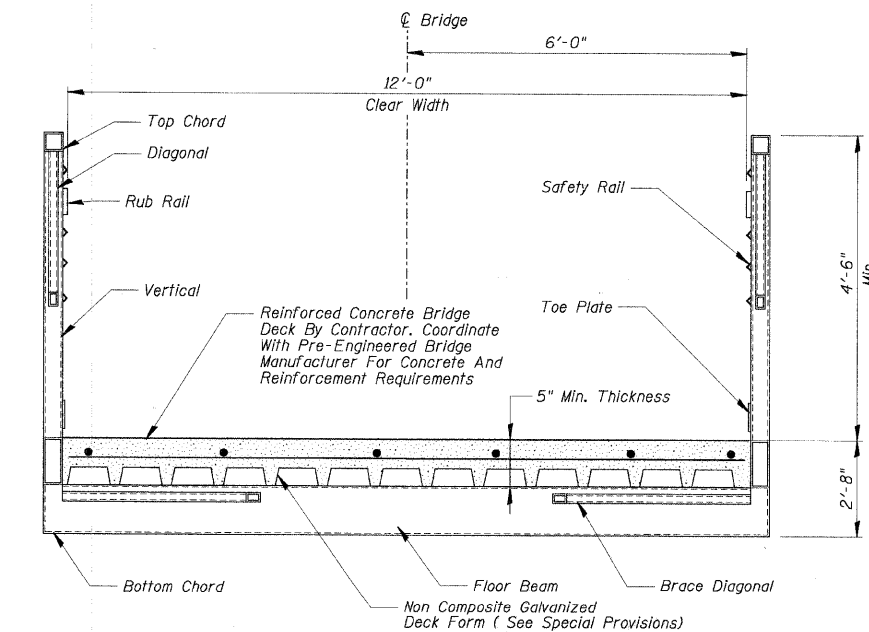
**ABUTMENT PLAN**



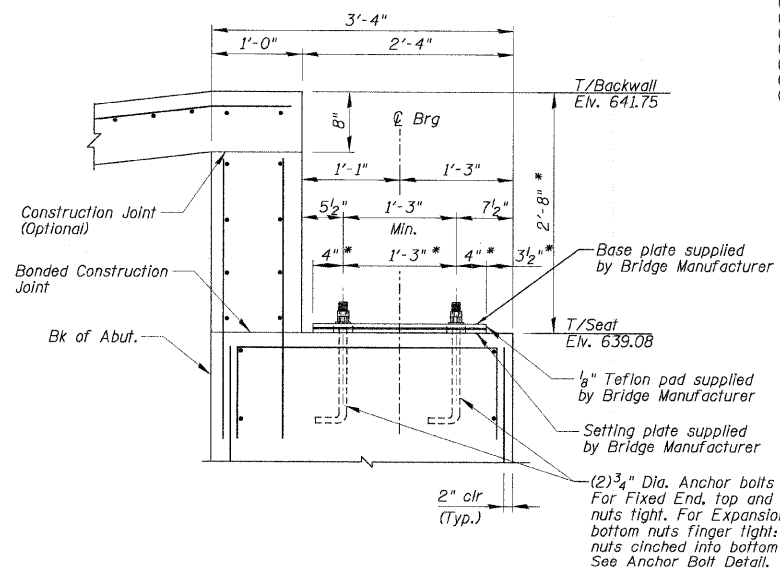
**ABUTMENT ELEVATION**



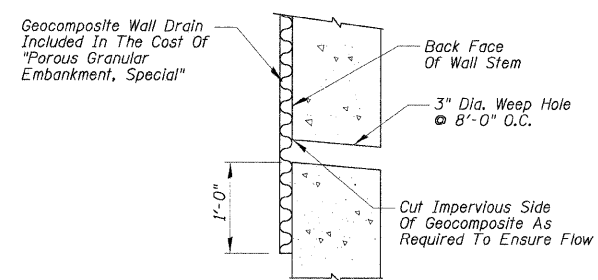
**SECTION THRU ABUTMENT**



**SECTION THRU FABRICATED BRIDGE SUPERSTRUCTURE**



**BEARING DETAIL AT ABUTMENTS**



**WEEP HOLE DRAIN**

**NOTES:**

- \* Contractor shall coordinate all dimensions with Bridge Manufacturer prior to construction.
- \*\* Contractor has the option of substituting anchor bolts with 4-3/4"  $\phi$  HILTI HAS-EE AISI 304 SS Bolts embedded 6 5/8" into HIT HY 150 Injection adhesive. Bolts shall not be placed less than 5" from the edge of the structure or less than 6" apart. Contractor shall coordinate plate dimensions, bolt spacing and bolt quantity with Bridge Manufacturer prior to construction.

REVISIONS	
NAME	DATE
L. PER IDOT COMMENTS	5/22/09

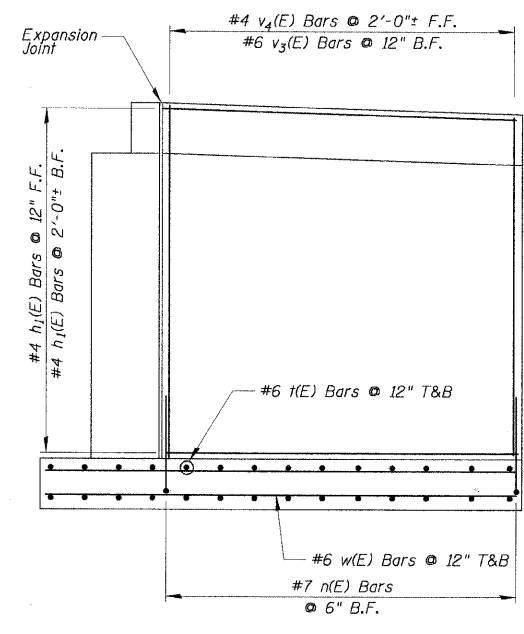
DATE	BY	REVISIONS

DATE	BY	REVISIONS

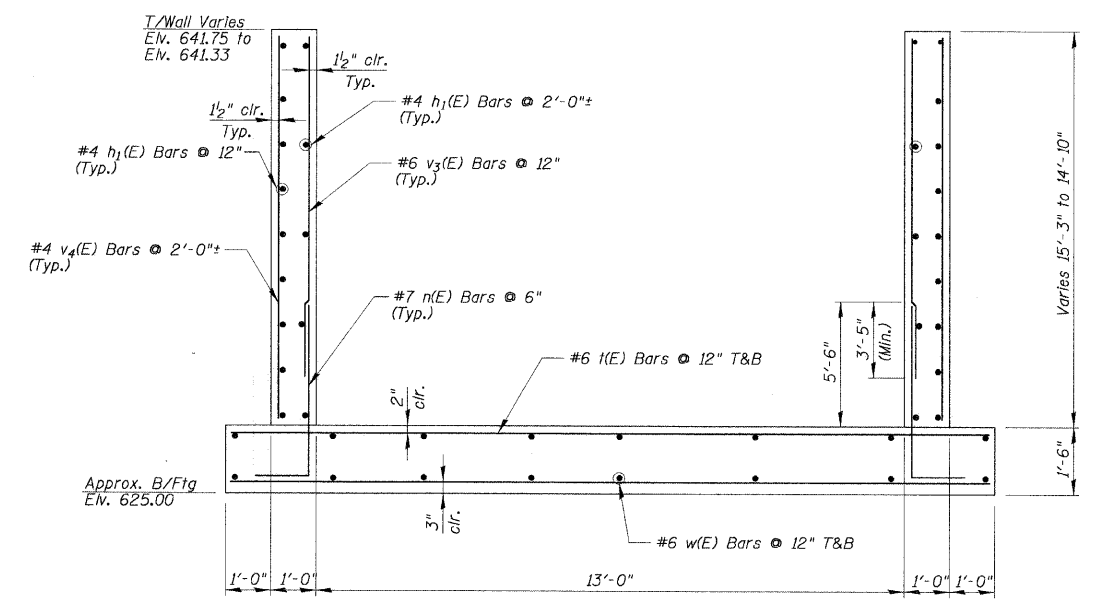


DATE	BY

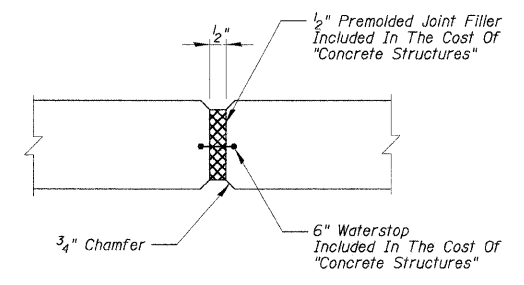
DATE	BY



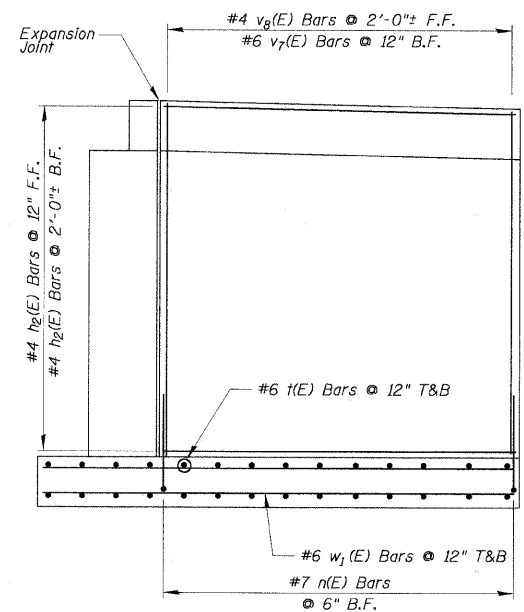
**WINGWALL ELEVATION (N)**



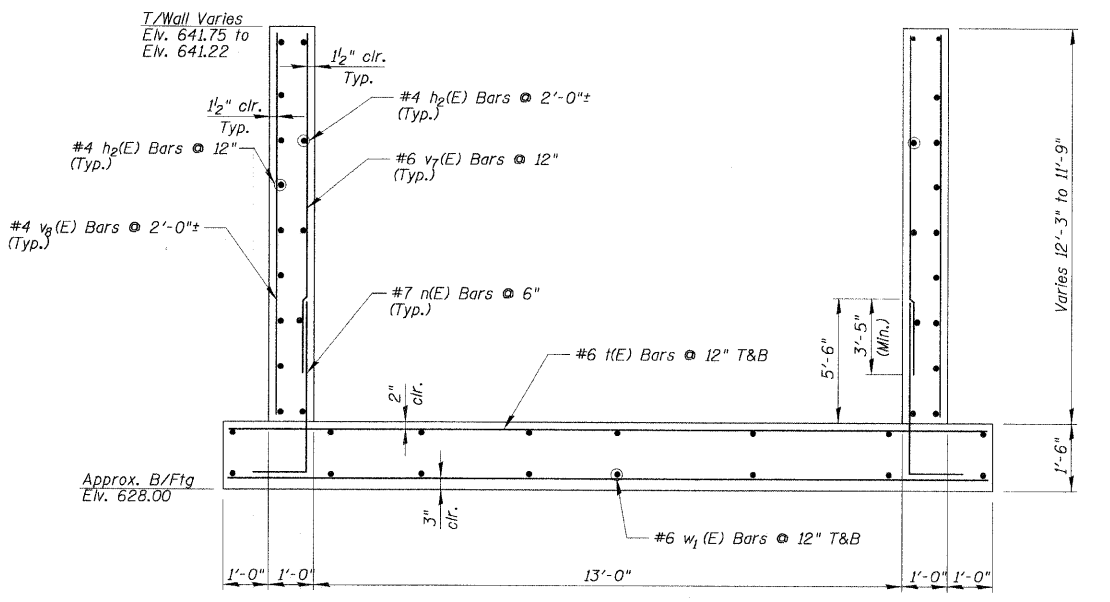
**SECTION A-A (N)**



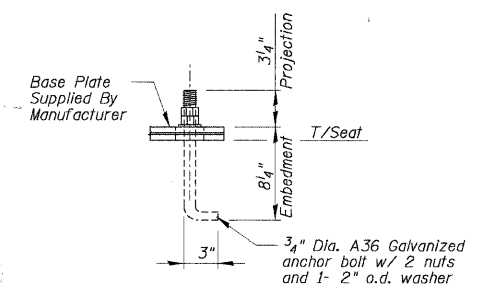
**TYPICAL EXPANSION JOINT DETAIL**



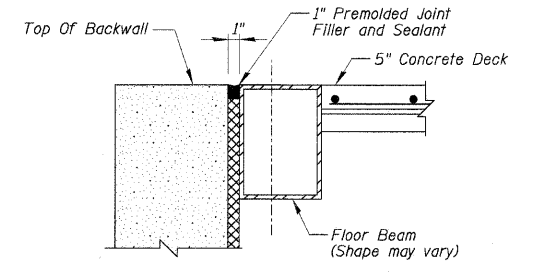
**WINGWALL ELEVATION (S)**



**SECTION A-A (S)**



**ANCHOR BOLT DETAIL**



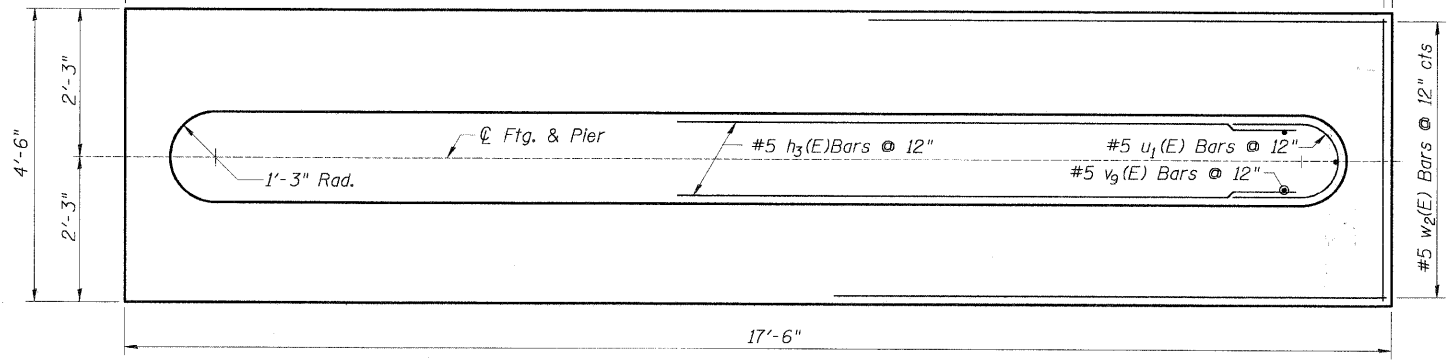
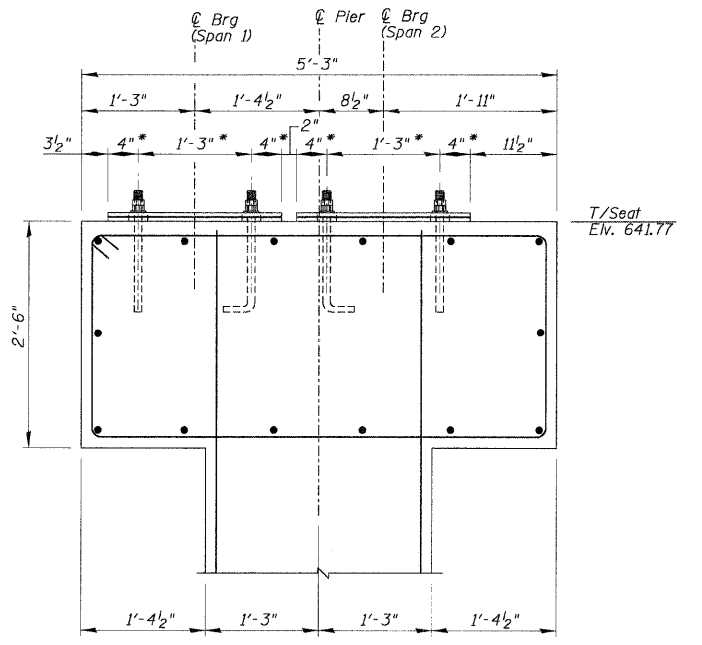
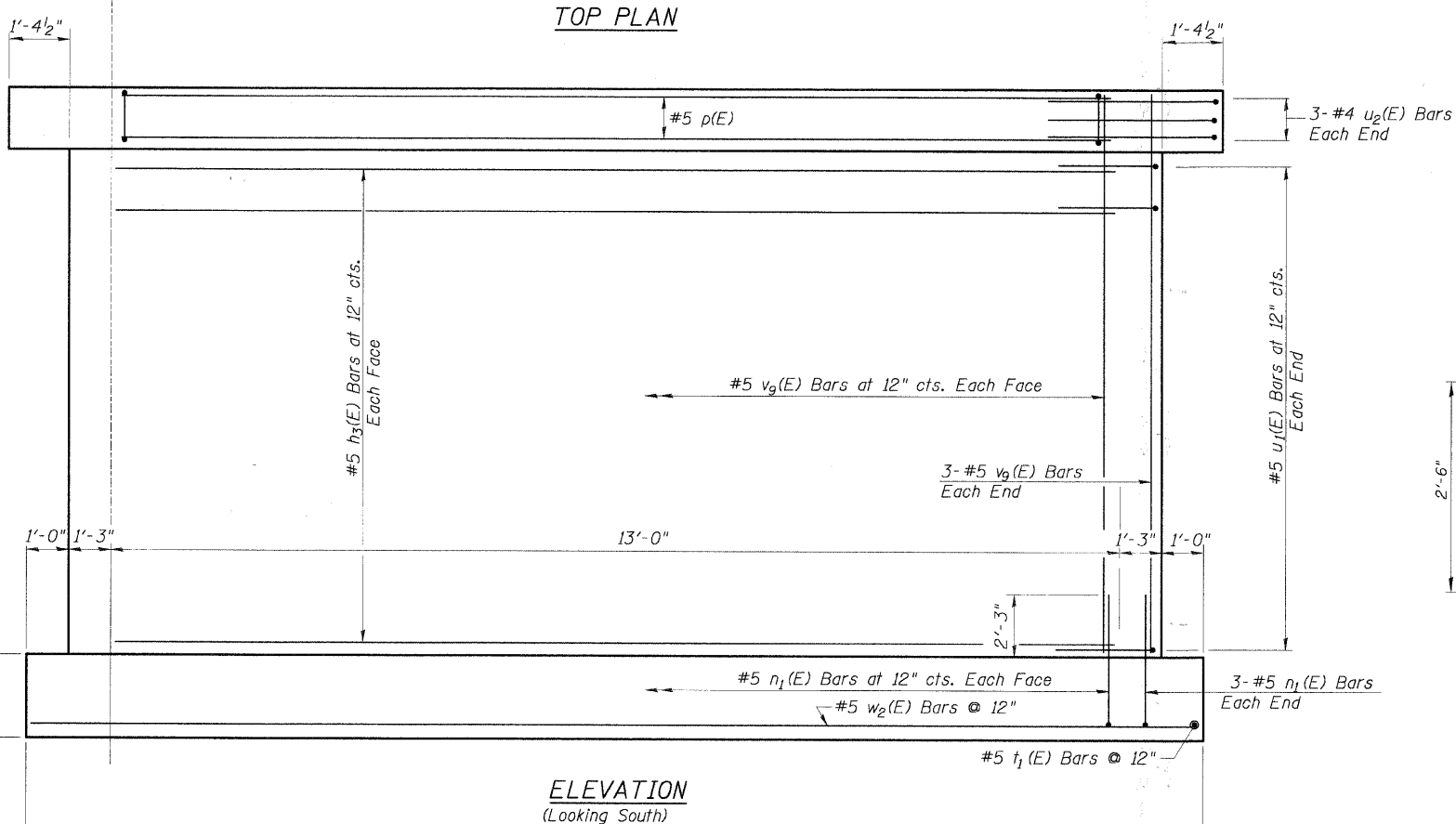
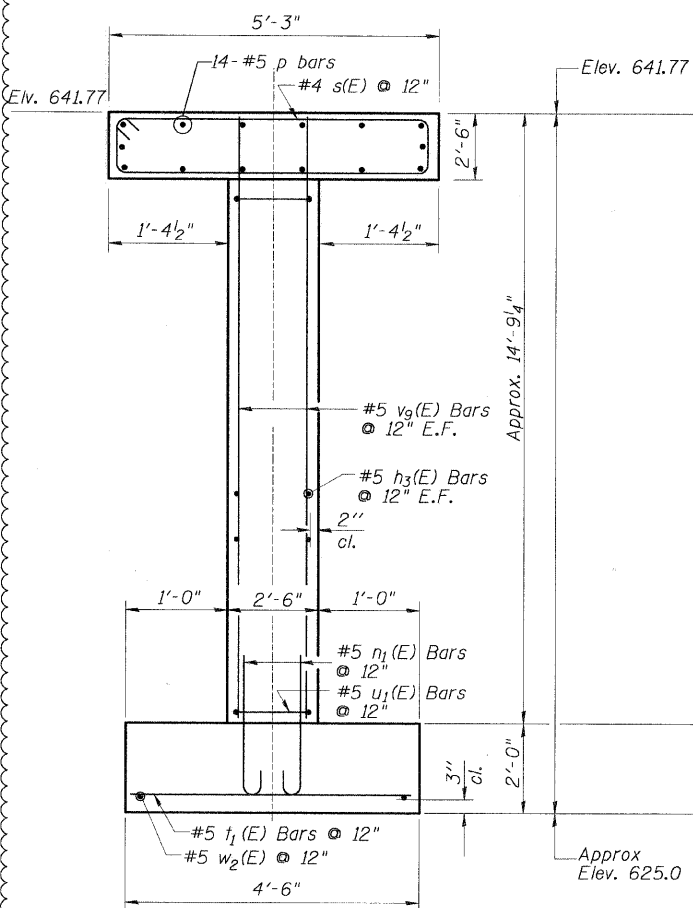
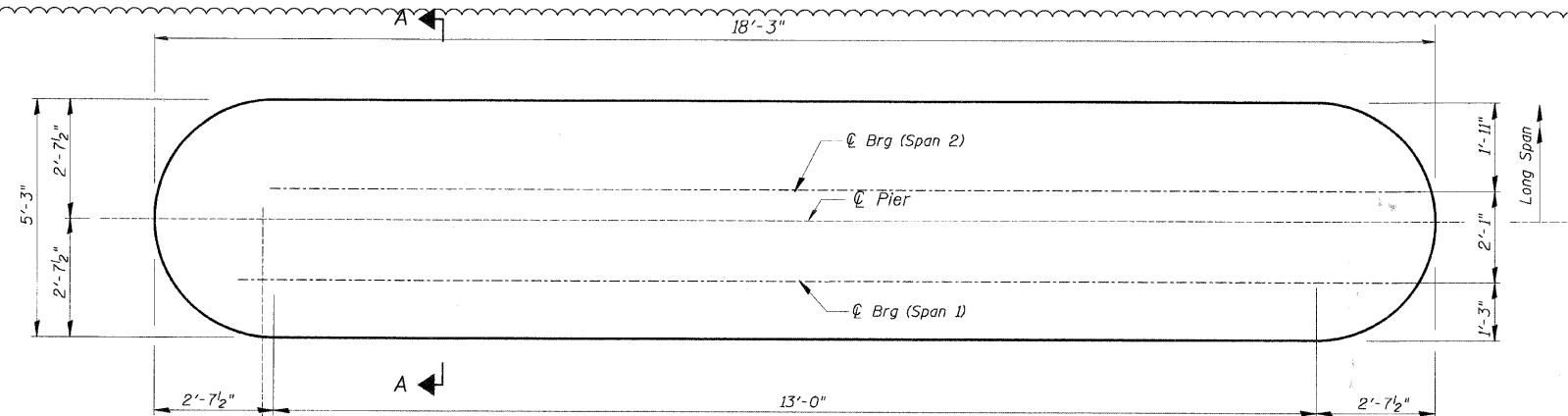
**JOINT SEAL AT ABUTMENT**

REVISIONS	
NAME	DATE
1. PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BRIDGE 2**  
**STA. 90 + 40.00**  
**WINGWALL AND DETAILS**

SCALE: NOT TO SCALE  
 DATE 5/22/2009  
 DRAWN BY PDR  
 CHECKED BY PLB

Notes:  
Space reinforcement in cap to miss anchor bolts.



\* Contractor Shall Coordinate All Dimensions With Bridge Manufacturer Prior To Construction.

REVISIONS	
NAME	DATE
1. PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BRIDGE 2**  
**STA. 90 + 40.00**  
**PIER**

SCALE: NOT TO SCALE  
 DATE: 5/22/2009  
 DRAWN BY: PDR  
 CHECKED BY: PLB

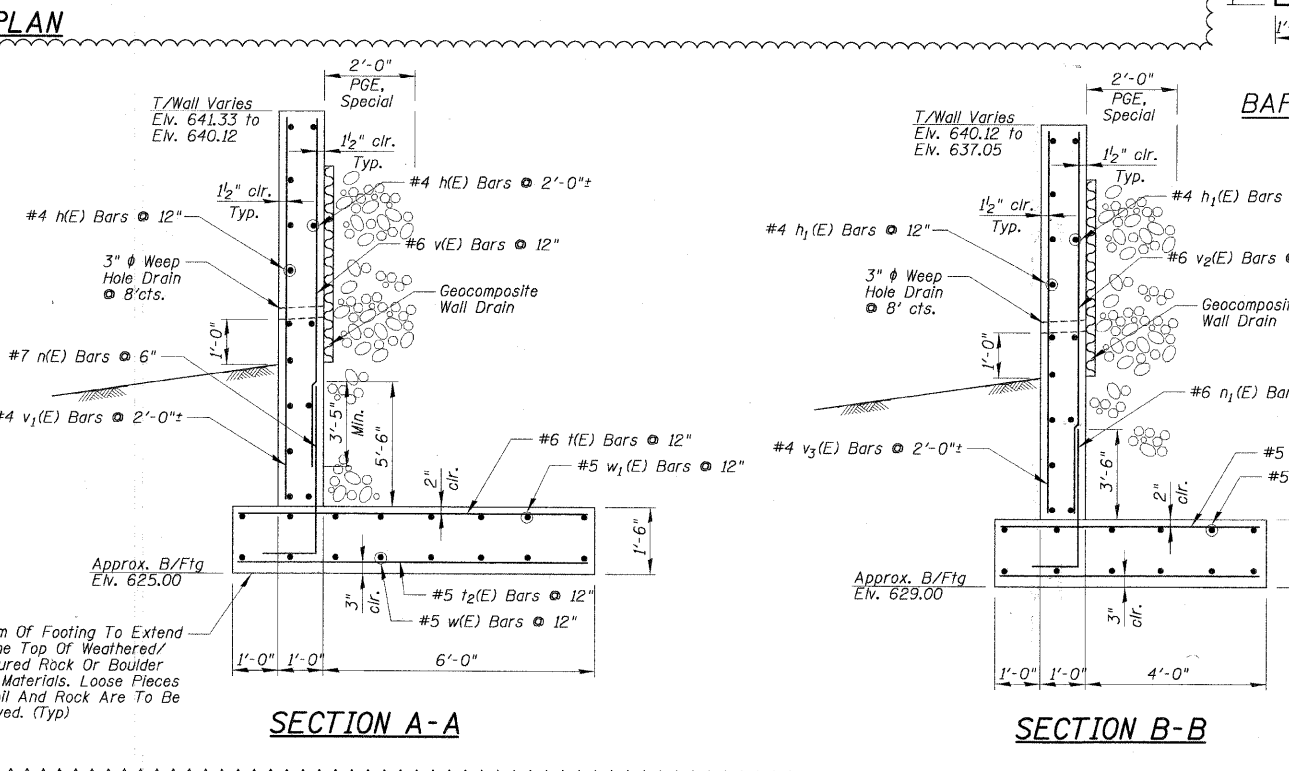
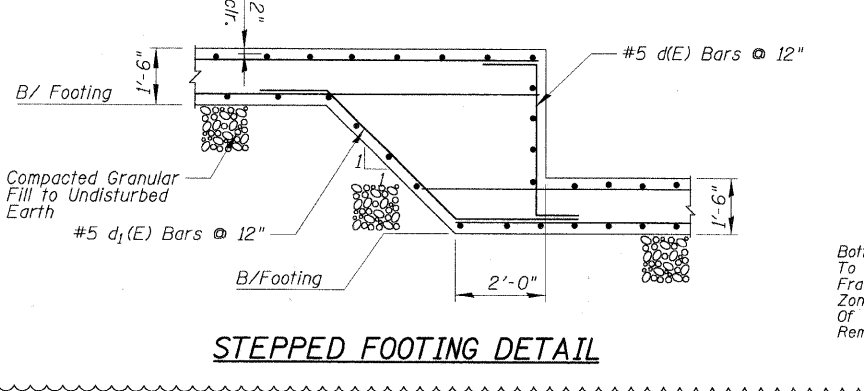
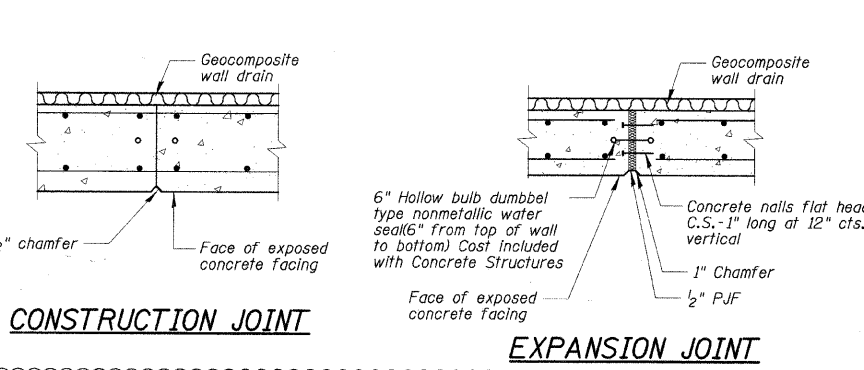
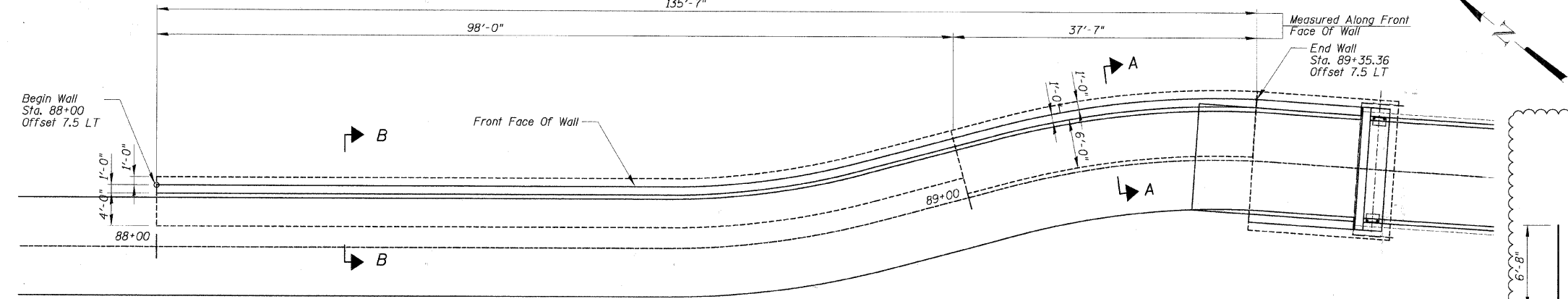
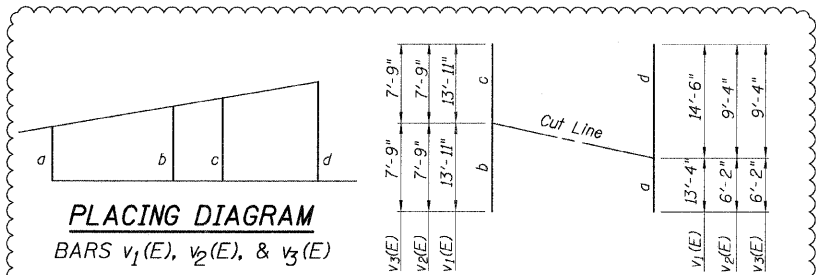
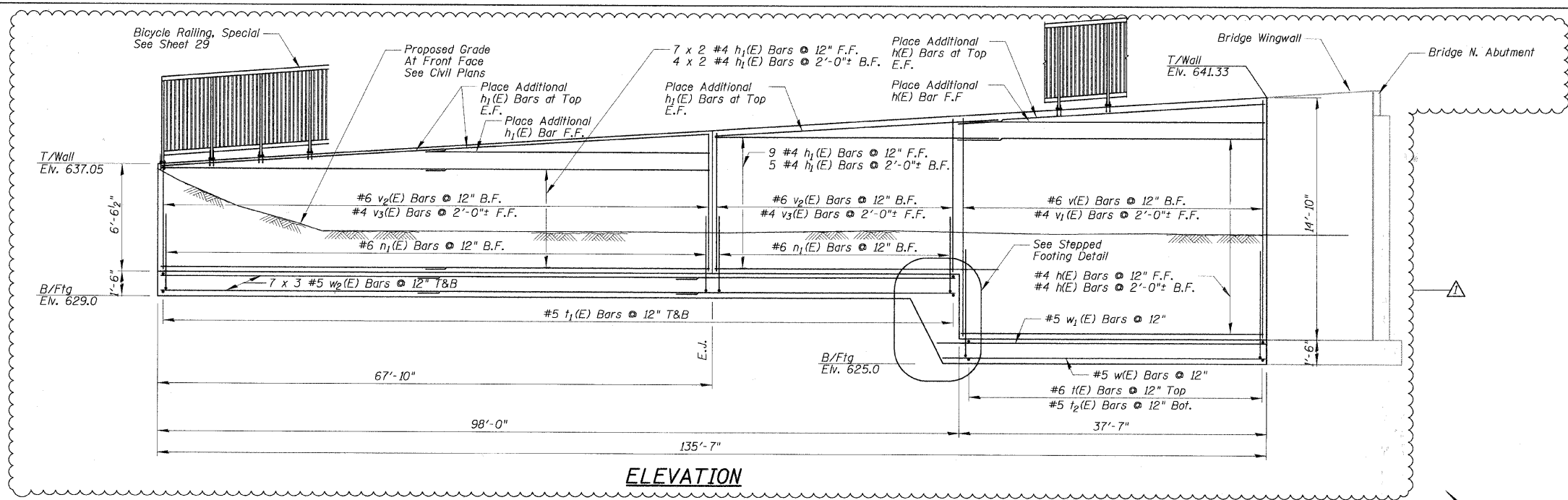
DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLAN: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 NO.: \_\_\_\_\_  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 PROFILE: \_\_\_\_\_  
 GRADES CHECKED: \_\_\_\_\_  
 NO.: \_\_\_\_\_  
 STRUCTURE NOTATIONS: \_\_\_\_\_

CONTRACT No. 83728

**BILL OF MATERIAL (NORTH RETAINING WALL)**

ITEM	DESCRIPTION	UNIT	QUANTITY
* 20700220	Porous Granular Embankment	Cu. Yd.	20
20700400	Porous Granular Embankment, Special	Cu. Yd.	106
50200100	Structure Excavation	Cu. Yd.	400
50300225	Concrete Structures	Cu. Yd.	102
50800205	Reinforcement Bars, Epoxy Coated	Pound	10,290
50901725	Bicycle Railing, Special	L.F.	135

- \* Special Provision
- RETAINING WALL NOTES:
- Contractor Shall Provide 1/2" Control Joints At 30'-0" Max. Spacing.
  - The Walls Shall Be Backfilled To Proposed Elevation On The Front Face Prior To Backfilling Behind The Walls.



REINFORCEMENT BARS

Bar	No.	Size	Length	Shape
d(E)	7	#5	9'-6"	L
d1(E)	7	#5	10'-2"	L
n(E)	23	#4	37'-3"	—
h1(E)	41	#4	34'-8"	—
n(E)	76	#7	7'-10"	—
n1(E)	100	#6	5'-8"	—
f(E)	38	#6	7'-8"	—
t1(E)	202	#5	5'-8"	—
t1(E)	38	#5	7'-8"	—
v(E)	38	#6	12'-7"	—
v1(E)	10	#4	27'-10"	—
v2(E)	50	#6	15'-6"	—
v3(E)	25	#4	15'-6"	—
w(E)	9	#65	39'-6"	—
w1(E)	9	#5	40'-6"	—
w2(E)	42	#5	34'-1"	—
Reinforcement Bars, Epoxy Coated		Pound	10,290	

REVISIONS

NO.	NAME	DATE
1.	PER IDOT COMMENTS	5/22/09

ILLINOIS DEPARTMENT OF TRANSPORTATION

**NORTH RETAINING WALL**

SCALE: NOT TO SCALE

DATE 5/22/2009

DRAWN BY PDR

CHECKED BY PLB

DATE: \_\_\_\_\_

BY: \_\_\_\_\_

PROJECT: \_\_\_\_\_

NO. \_\_\_\_\_

DATE: \_\_\_\_\_

BY: \_\_\_\_\_

PROJECT: \_\_\_\_\_

NO. \_\_\_\_\_