

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2578	532B-1	DU PAGE	117	6
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

CONTRACT #62881

J000-2A

CODE NO.	ITEM DESCRIPTION	UNIT	URBAN TOTAL QUANTITY	80% FEDERAL 20% STATE					100% ITASCA
				RDWY	BRIDGE	LANDSCAPING	RETAINING WALL	GUARD RAIL	TRAFFIC SIGNAL
				J000-2A	X071-2A				Y031-1F
50105220	PIPE CULVERT REMOVAL	FOOT	205	205					
50200100	STRUCTURE EXCAVATION	CU YD	473		193		280		
50300100	FLOOR DRAINS	EACH	4		4				
50300225	CONCRETE STRUCTURES	CU YD	182.7		68.1		114.6		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	209.9		209.9				
50300260	BRIDGE DECK GROOVING	SQ YD	429		429				
50300300	PROTECTIVE COAT	SQ YD	763		592		171		
<del>50300510</del>	<del>RUSTICATION FINISH</del>	<del>SQ FT</del>	<del>1,542</del>				<del>1,542</del>		
50300285	FORM LINER TEXTURED SURFACE	SQ FT	1,542				1,542		
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		1				
50500505	STUD SHEAR CONNECTORS	EACH	3,553		3,201		352		
* 50700209	UNTREATED TIMBER LAGGING	SQ FT	1,857				1,857		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	60,000		47,950		12,110		
50800515	BAR SPLICERS	EACH	395		395				
50900105	ALUMINUM RAILING, TYPE L	FOOT	99		99				
51201600	FURNISHING STEEL PILES HP12X53	FOOT	1,768		1,768				
* 51202210	FURNISHING SOLDIER PILES (HP SECTION)	FOOT	1,011				1,011		
51202305	DRIVING PILES	FOOT	1,768		1,768				
51203600	TEST PILE STEEL HP12X53	EACH	1		1				
51204650	PILE SHOES	EACH	28		28				
51500100	NAME PLATES	EACH	2		1		1		
52100520	ANCHOR BOLTS , 1"	EACH	44		44				
54001000	BOX CULVERT END SECTIONS	EACH	2		2				
54010403	PRECAST CONCRETE BOX CULVERT 4' X 3'	FOOT	94		94				
54200430	PIPE CULVERTS, TYPE 1 RCCP 15"	FOOT	47		47				
54201270	PIPE CULVERTS TYPE 2 RCCP 15"	FOOT	104		104				
54213660	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 15"	EACH	7		7				
54213669	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 24"	EACH	1		1				

\* SPECIALTY ITEM

6/10/2009 5:04:52 PM PDF(Grey\_Lorger).pht Q:\DOT\9356\_A0\_(L53)\SpringBr-cook\Drawings\RDWY\shfts\RCd\5\_Soc.dgn



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
ILLINOIS ROUTE 53 (FAU 2578)

SUMMARY OF QUANTITIES

SCALE: NONE  
DATE: 6/12/09

DRAWN BY: CPK  
CHECKED BY: JJC

Rev. 10-14-09 Rev.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2578	532B-1	DUPAGE	117	47
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

CONTRACT NO. 62881

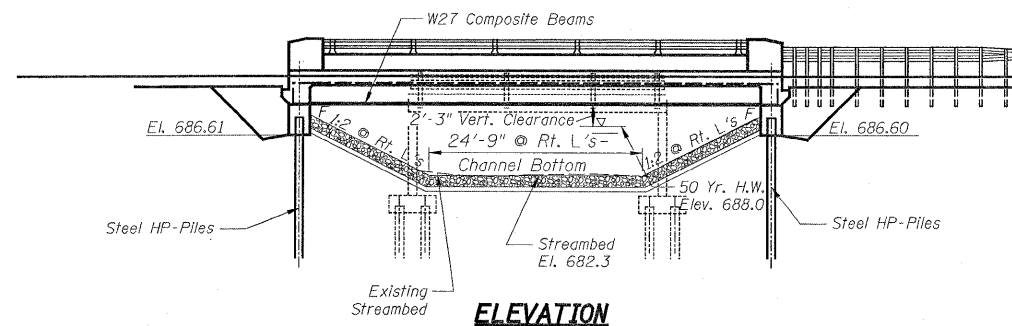
**Bench Mark:**

Cut square in SW corner of parapet on existing bridge. El. 690.92

**Existing Structure**

S.N. 022-0074 was built in 1931 as a single span reinforced concrete slab bridge. The existing structure spans 30 feet, is 46 feet wide and has a 3.5 inch bituminous wearing surface. The existing structure is to be removed and replaced. Traffic is to be maintained utilizing stage construction.

No salvage



**ELEVATION**

**WATERWAY INFORMATION**

Proposed Low Grade Elev. 691.06 @ Sta. 159+88.53  
Existing Low Grade Elev. 688.6 @ Sta. 162+00

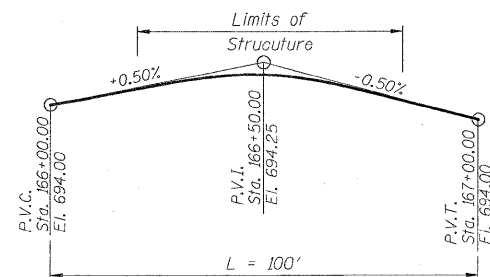
Flood	Freq. Yr.	Q (C.F.S.)	Opening (Sq. Ft.)		Nat. H.W.E.		Head (Ft.)		Headwater Elev.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Overtop	10	416	111	166	687.1	687.1	1.1	0.0	688.2	687.1
Design	40	550	130	208	687.8	687.8	1.0	0.0	688.8	688.8
Base	50	597	136	222	688.0	688.0	1.0	0.0	689.0	688.0
Max. Calc.	100	679	142	309	688.3	688.3	0.8	0.0	689.1	688.3
	500	1153	142	309	690.4	690.4	0.1	0.6	690.5	691.0

**DESIGN SCOUR ELEVATION (ft)**

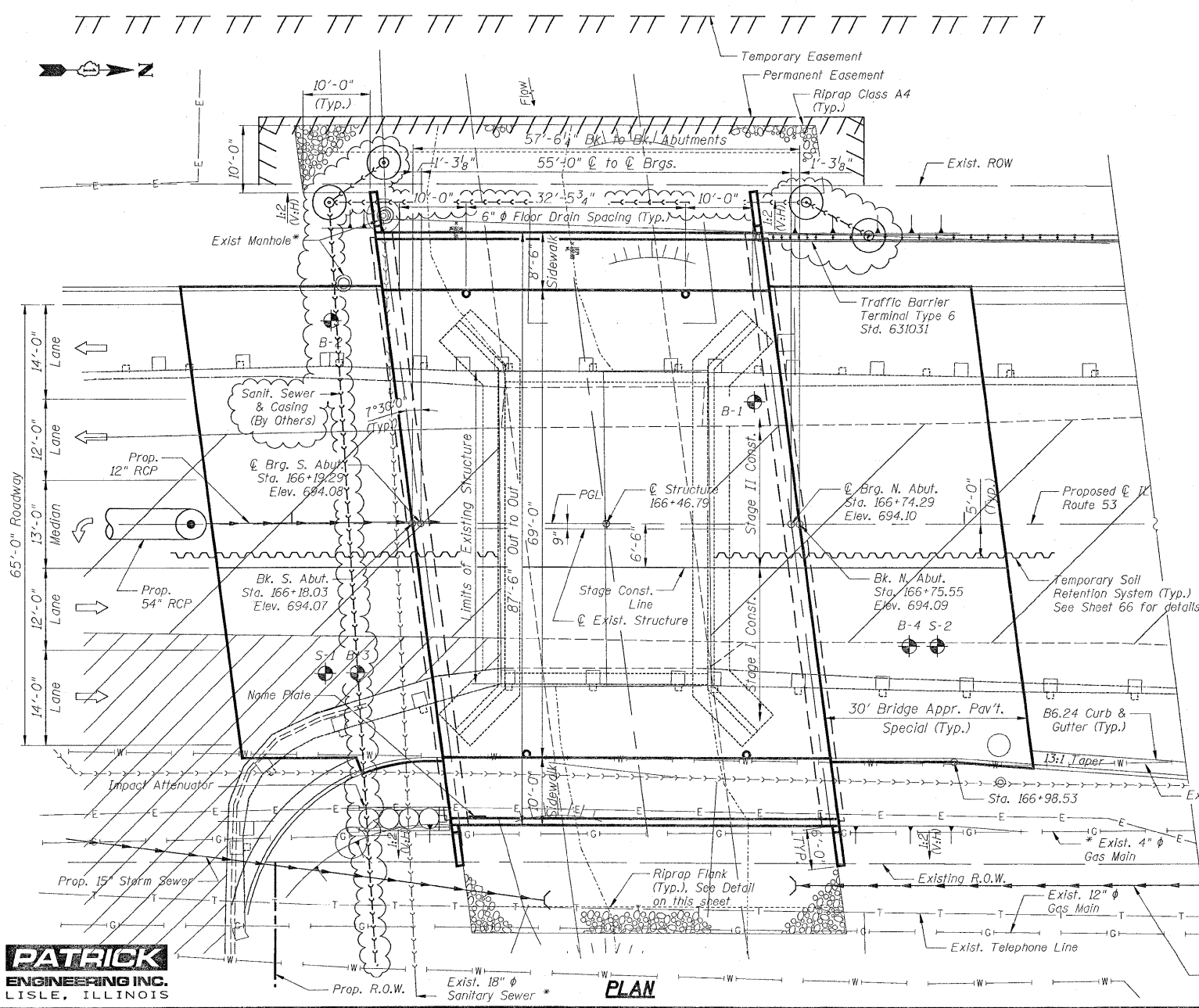
S. Abut	N. Abut
686.61	686.60

**INDEX OF SHEETS**

- S1. GENERAL PLAN & ELEVATION
- S2. GENERAL NOTES, TOTAL BILL OF MATERIAL & STAGING DETAILS
- S3. TOP OF SLAB ELEVATIONS I
- S4. TOP OF SLAB ELEVATIONS II
- S5. TOP OF APPROACH SLAB ELEVATIONS
- S6. DECK PLAN & CROSS SECTION
- S7. SUPERSTRUCTURE DETAILS
- S8. DIAPHRAGM DETAILS
- S9. BRIDGE RAILING DETAILS
- S10. FRAMING PLAN
- S11. BEAM DETAILS
- S12. BLANK SHEET
- S13. SOUTH ABUTMENT
- S14. NORTH ABUTMENT
- S15. TEMPORARY CONCRETE BARRIER
- S16. BAR SPICER DETAILS
- S17. CANTILEVER FORMING BRACKETS
- S18. SOIL BORING LOGS I
- S19. SOIL BORING LOGS II
- S20. SOIL BORING LOGS III
- S21. SOIL BORING LOGS IV



**PROFILE GRADE**  
(Along PGL Roadway)



**PLAN**



Paul M. Lopez  
PAUL M. LOPEZ, P.E., S.E.  
NO. 081-005231  
EXP. DATE: 11/30/10

**LOADING HS20-44**

Allowance for Future Wearing Surface=50 lb/ft<sup>2</sup>

**DESIGN STRESSES**

f'c=3500 psi  
fy=60,000 psi (Reinf.)  
fy=50,000 psi (M270 Grade 50W)

**DESIGN SPECIFICATIONS**

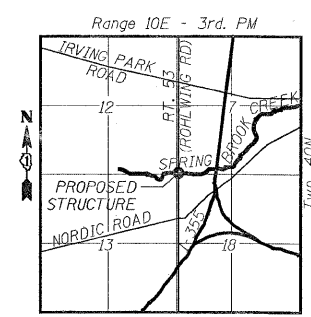
2002 AASHTO Standard Specifications for Highway Bridges

**SEISMIC DATA**

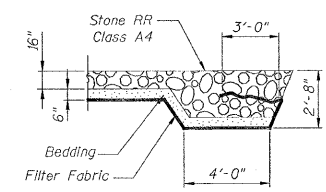
Seismic Performance Category (SPC)=A  
Bedrock Acceleration Coefficient (A)=0.035g  
Site Coefficient (S)=1.0

STATION 166+46.79  
BUILT 200 BY  
STATE OF ILLINOIS  
F.A.U. 2578 SEC. 532B-1  
LOADING HS20  
STR. NO. 022-0189

**NAME PLATE**  
See Standard 515001



**LOCATION SKETCH**



**RIPRAP FLANK DETAIL**

REVISIONS	
NAME	DATE
R. DiGiulio	10/8/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL PLAN & ELEVATION**  
ILLINOIS ROUTE 53 OVER  
SPRING BROOK CREEK  
FAU 2578 SECTION 532B-1  
STRUCTURE NO. 022-0189  
DUPAGE COUNTY STATION 166+46.79  
SCALE: NONE DRAWN BY: E. MROCEK  
DATE: 6/12/09 CHECKED BY: G. HATLESTAD

\* - To Be Relocated by Others

REV. 10-14-09



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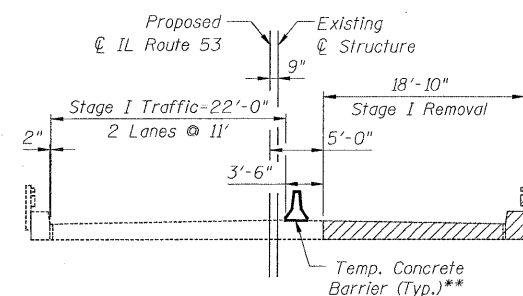
**GENERAL NOTES**

- Fasteners shall be AASHTO M 164, Type 1, mechanically galvanized bolts in painted areas and AASHTO M 164, Type 3 in unpainted areas. Bolts 3/4", open holes 5/8", unless otherwise noted.
- Calculated weight of Structural Steel: M 270 Grade 50W = 85,500 lbs.
- All structural steel shall be AASHTO M 270 Grade 50W
- No field welding is permitted except as specified in the contract documents.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions
- Reinforcement bars designated (E) shall be epoxy coated.
- Layout of slope protection system may be varied to suit ground conditions in the field 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 construction joints shall be bonded.
- 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 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".
- Excavation behind the existing abutment walls shall be performed to balance the front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.
- If the contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of the additional bracket locations.
- Slipforming of the concrete barriers will not be allowed
- The contractor is advised that the existing slab bridge is in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the existing structure when developing construction procedures for the complete or partial removal, or replacement of the structure. An Existing Structure Information Package is available upon request as noted in the special provisions.
- If the contractor's procedure for existing slab removal or placement of new beams involves placement of cranes or other heavy equipment on the bridge, a detailed procedure shall be submitted to the Engineer for approval. The procedures shall include calculations prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new beams or existing slab. To distribute load and protect the existing surface in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. Cost included with Removal of Existing Structures.
- The Contractor shall submit Structural Assessment Report(s) as required for Contractor's means and methods of construction. See Special Provisions.
- Current Ratings on File for Existing Structure:  
Inventory: 11.5  
Operating: 19.1  
Live Load Restrictions: No  
Inventory and Operating Ratings and Live Load Restrictions are provided for information only. Inventory and Operating Ratings are based on HS loading and configuration. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and Live Load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.

**BRIDGE BILL OF MATERIAL**

ITEM	UNIT	SUPER.	SUB.	TOTAL
* Porous Granular Embankment, Special	Cu. Yd.		237	237
Stone Riprap, Class A4	Sq. Yd.		784	784
Filter Fabric	Sq. Yd.		839	839
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		193	193
Floor Drains	Each	4		4
Concrete Structures	Cu. Yd.		68.1	68.1
Concrete Superstructure	Cu. Yd.	209.9		209.9
Bridge Deck Grooving	Sq. Yd.	429		429
Protective Coat	Sq. Yd.	592		592
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	3,201		3,201
Reinforcement Bars, Epoxy Coated	Lb.	40,550	7,400	47,950
Bar Splicers	Each	379	16	395
Aluminum Railing, Type L	Foot	99		99
Furnishing Steel Piles HP12x53	Ft.		1,768	1,768
Driving Piles	Ft.		1,768	1,768
Test Pile Steel HP12x53	Each		1	1
Pile Shoes	Each		28	28
Name Plates	Each	1		1
Geocomposite Wall Drain	Sq. Yd.		140	140
* Pipe Underdrains for Structures, 4"	Foot		236	236
Anchor Bolts, 1"	Each		44	44

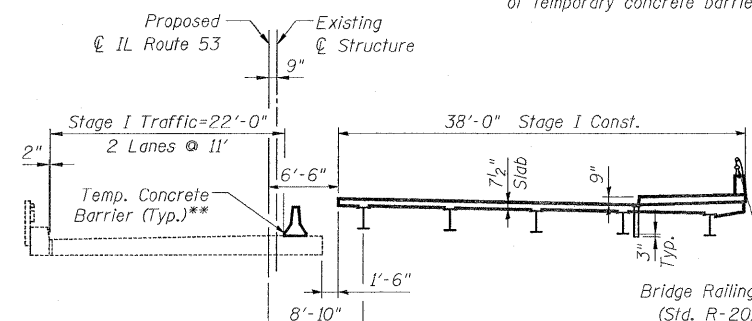
\* See Special Provisions



**STAGE I REMOVAL**

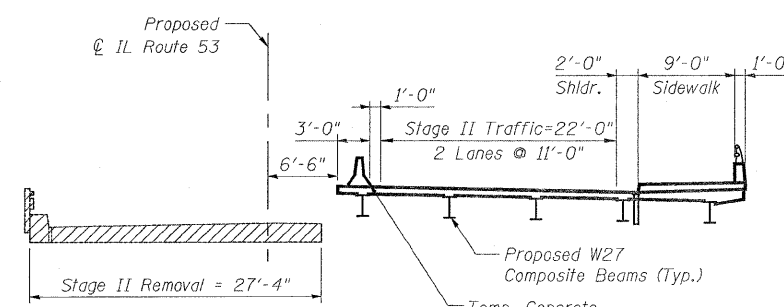
(Looking North)

\*\* See Roadway plans for the quantity of temporary concrete barrier.



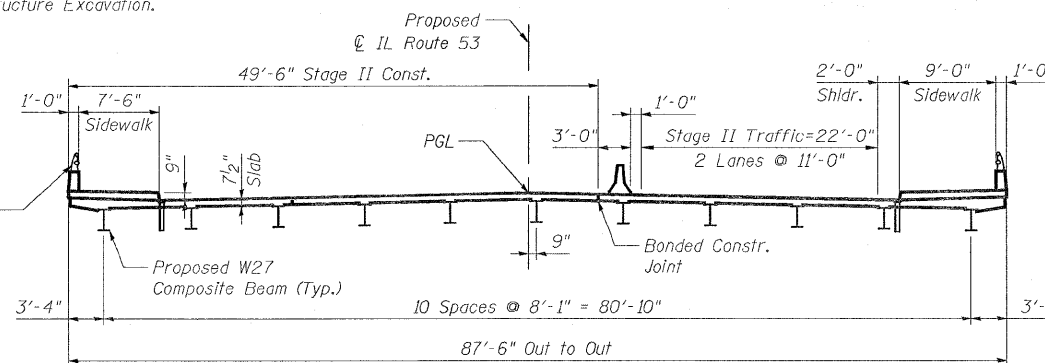
**STAGE I CONSTRUCTION**

(Looking North)



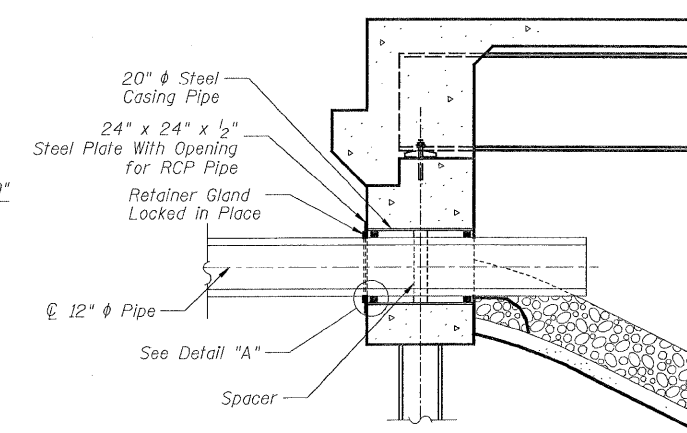
**STAGE II REMOVAL**

(Looking North)



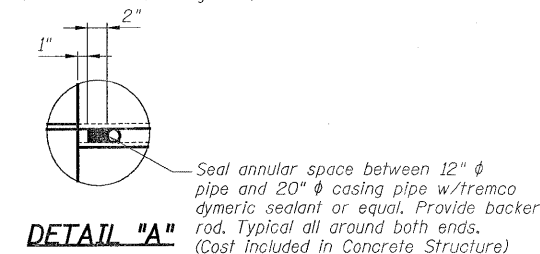
**STAGE II CONSTRUCTION**

(Looking North)



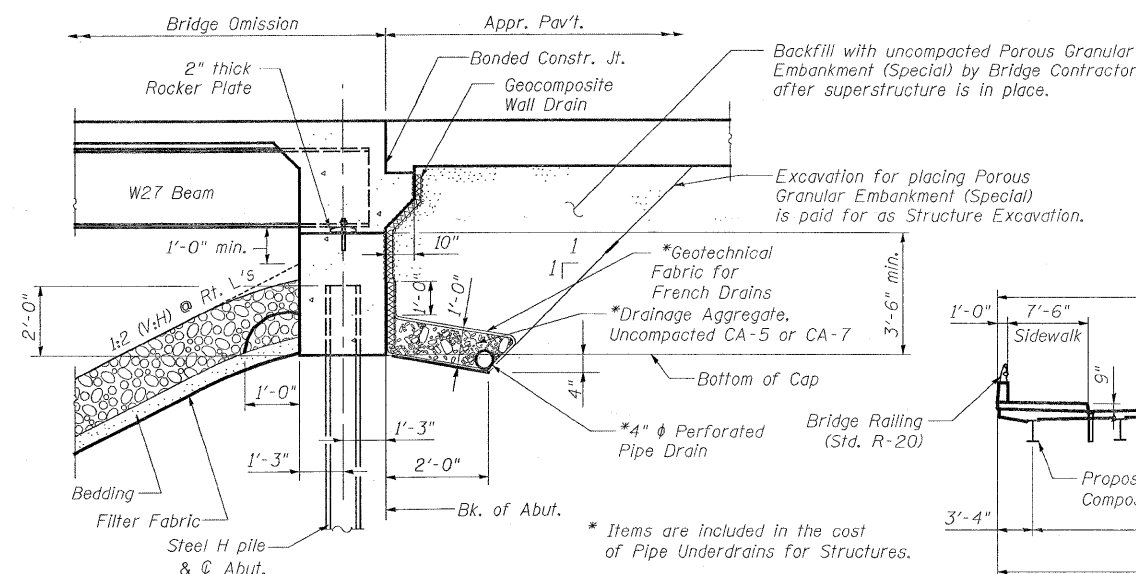
**SECTION THRU S. ABUTMENT**

Showing 12" RCP Isolation Detail



**DETAIL "A"**

Seal annular space between 12" RCP pipe and 20" casing pipe w/tremco dymeric sealant or equal. Provide backer rod. Typical all around both ends. (Cost included in Concrete Structure)



**SECTION THRU INTEGRAL ABUTMENT**

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

Note:  
All drainage system components shall extend 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).



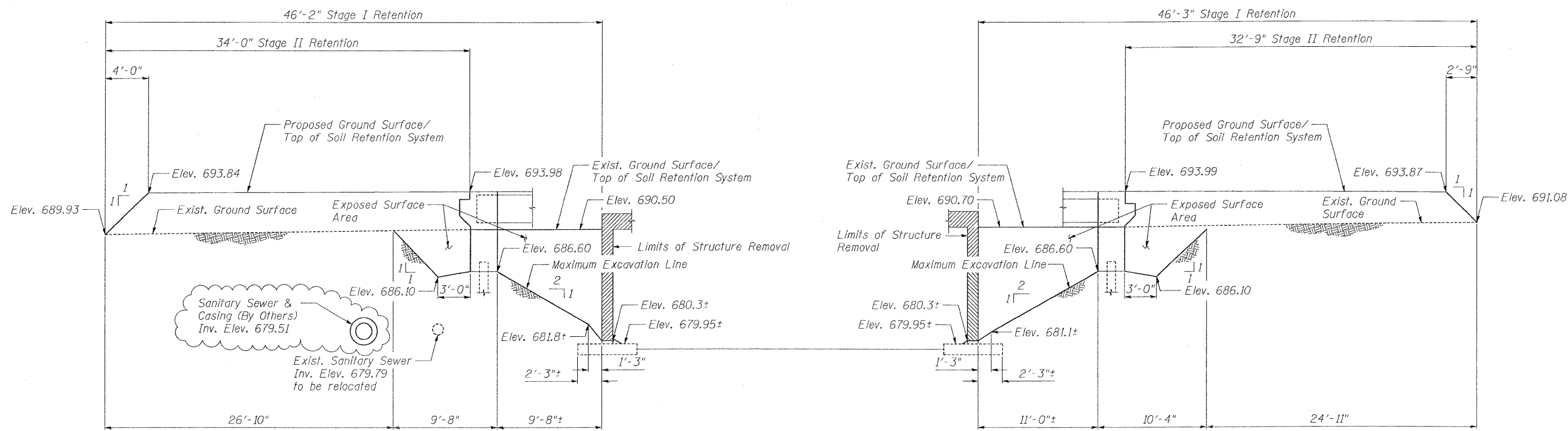
Rev. 10-14-09

REVISIONS	
NAME	DATE
R. DiGiulio	10/8/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL NOTES, TOTAL BILL OF MATERIALS & STAGING DETAILS**  
 ILLINOIS ROUTE 53 OVER  
 SPRING BROOK CREEK  
 FAU 2578 SECTION 532B-1  
 STRUCTURE NO. 022-0189  
 DUPAGE COUNTY STATION 166+46.79  
 SCALE: NONE DRAWN BY: E. MROCEK  
 DATE: 6/12/09 CHECKED BY: G. HATLESTAD







**SOUTH TEMPORARY SOIL RETENTION SYSTEM**

(Looking West)  
Slopes and Distances Along Alignment of Sheet piling (for proposed structure with 7°30' skew)

**NORTH TEMPORARY SOIL RETENTION SYSTEM**

(Looking West)  
Slopes and Distances Along Alignment of Sheet piling (for proposed structure with 7°30' skew)

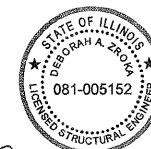
**Notes:**

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

For Plan location of Temporary Soil Retention Systems, see "General Plan" sheet of Bridge Plans.

**BILL OF MATERIAL**

Item	Unit	Quantity
Temporary Soil Retention System	Sq Ft	416



*Deborah A. Zboka*  
DEBORAH A. ZBOKA, S.E.  
NO. 081-005152  
EXP. DATE: 11/30/2010

REVISIONS	
NAME	DATE
R. DiGiulio	10/8/09

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TEMPORARY SOIL RETENTION SYSTEM  
ILLINOIS ROUTE 53 OVER  
SPRING BROOK CREEK  
FAU 2578 SECTION 532B  
STRUCTURE NO. 022-0189  
DUPAGE COUNTY  
STA. 166+46.79

SCALE: NONE  
DATE 6/12/09  
DRAWN BY SAW  
CHECKED BY LAS

**BRANCO & ZROKA**  
ENGINEERING, P.C.



Rev. 10-14-09