

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 242	06-06109-00-BR	CLARK	18	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 95529		

- INDEX OF SHEETS**
- COVER SHEET
 - SUMMARY OF QUANTITIES AND TYPICAL SECTIONS
 - PLAN AND PROFILE
 - 8. STATION CROSS SECTIONS
 - 17. BRIDGE PLANS
 - BORINGS

HIGHWAY STANDARDS:

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
- 515001-02 NAME PLATE FOR BRIDGES
- 635006-02 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701901 TRAFFIC CONTROL DEVICES
- BLR 21-7 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

SCALES

PLAN	0' = 50'
PROFILE HORIZ.	0' = 50'
PROFILE VERT.	0' = 5'
CROSS SECTIONS	0' = 5'

SECTION 06-06109-00-BR

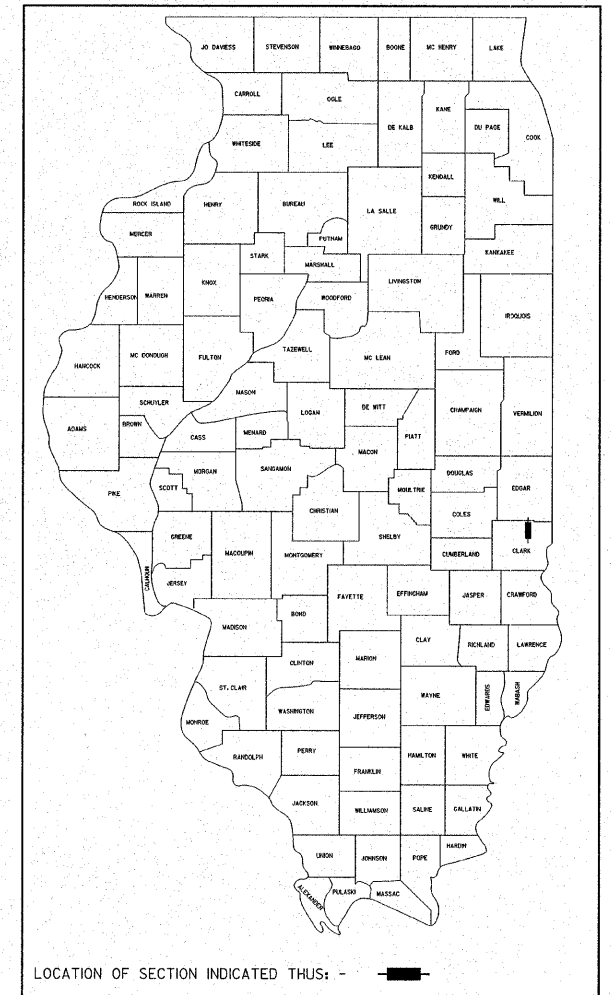
PROJECT BROS-023 (57)

DOUGLAS ROAD DISTRICT

CLARK COUNTY

T.R. 242

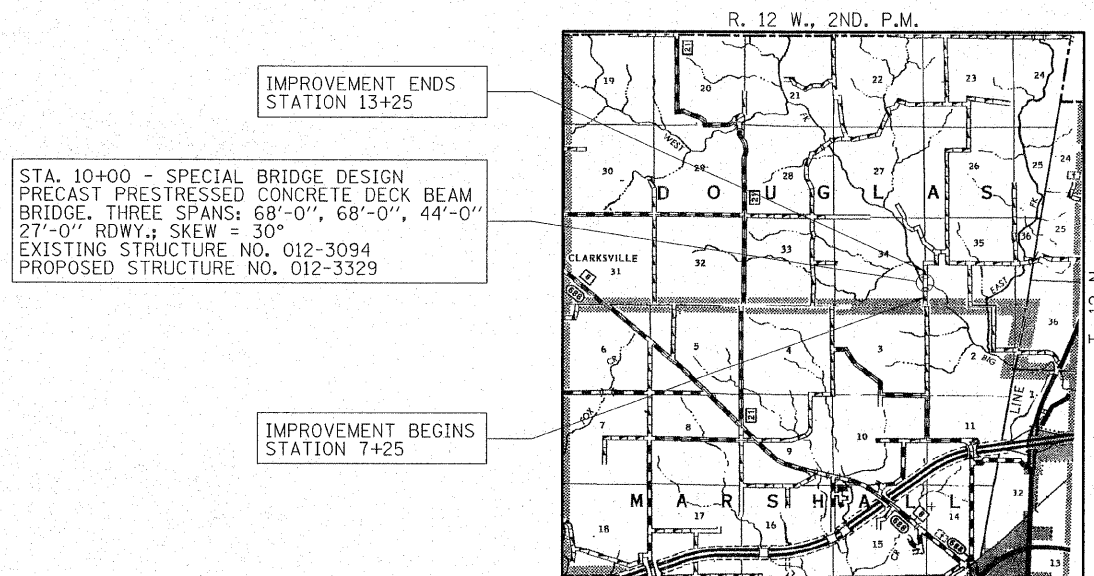
C-97-018-08



UTILITIES

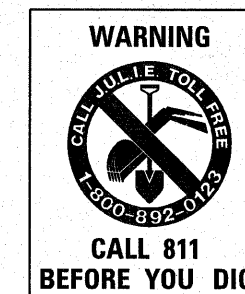
- ENERSTAR POWER COOPERATION
11597 ILLINOIS HIGHWAY 1
PARIS, ILLINOIS 61944
- MARATHON PIPELINE COMPANY
P.O. BOX F
MARTINSVILLE, ILLINOIS 62422
- WOOD RIVER PIPELINE
934 EDWARDSVILLE ROAD
WOOD RIVER, ILLINOIS 62095

DESIGN FUNCTIONAL CLASSIFICATION:
LOCAL ROAD (0-250 ADT)
DESIGN TRAFFIC: 125 ADT
DESIGN SPEED: 30 M.P.H.



LAYOUT

APPROXIMATE SCALE: 0 = 1 MILE
NET LENGTH OF SECTION = 600 FEET = 0.114 MILES



AGENCY RESPONSIBLE FOR LETTING	
APPROVED	20 07
<i>Jack E. Ward</i> COUNTY ENGINEER	
APPROVED	20 07
<i>Biret T. ...</i> ROAD DISTRICT COMMISSIONER	
PASSED	20 07
<i>Thomas ...</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS	
Releasing For Bid Based on Limited Review	20 07
<i>Grant ...</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

DATE: 10/30/07	HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 ELGIN • SPRINGFIELD	
EXPIRES: 11/30/2009	PROJECT NUMBER: 12-23-0026-1	DATE: 10/30/07

CONTRACT NO. 95529
JOB NO. C-97-018-08

ROUTE NO. T.R. 242	SECTION 06-06109 -00-BR	COUNTY CLARK	TOTAL SHEETS 18	SHEET NO. 2
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO.		

SUMMARY OF QUANTITIES			
CODE NO	ITEM	UNIT	QUANTITY
		CONSTRUCTION CODE X081-2A	
> 20300100	CHANNEL EXCAVATION	CU YD	860
28000300	TEMPORARY DITCH CHECKS	EACH	5
28000400	PERIMETER EROSION BARRIER	FOOT	200
> 28101700	RIPRAP, SPECIAL	TON	570
> 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	108.1
50300280	CONCRETE ENCASEMENT	CU YD	3.4
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1,188
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	3,672
50800105	REINFORCEMENT BARS	POUND	11,400
50900205	STEEL RAILING, TYPE S1	FOOT	359
51201400	FURNISHING STEEL PILES HP10X42	FOOT	175
51201600	FURNISHING STEEL PILES HP12X53	FOOT	290
> 51202305	DRIVING PILES	FOOT	175
> 51500100	NAME PLATES	EACH	1
> 67100100	MOBILIZATION	L SUM	1
> 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
> X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION LOCATION 1	EACH	1
> X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION LOCATION 2	EACH	1
> Z0065000	SETTING PILES IN ROCK	EACH	10

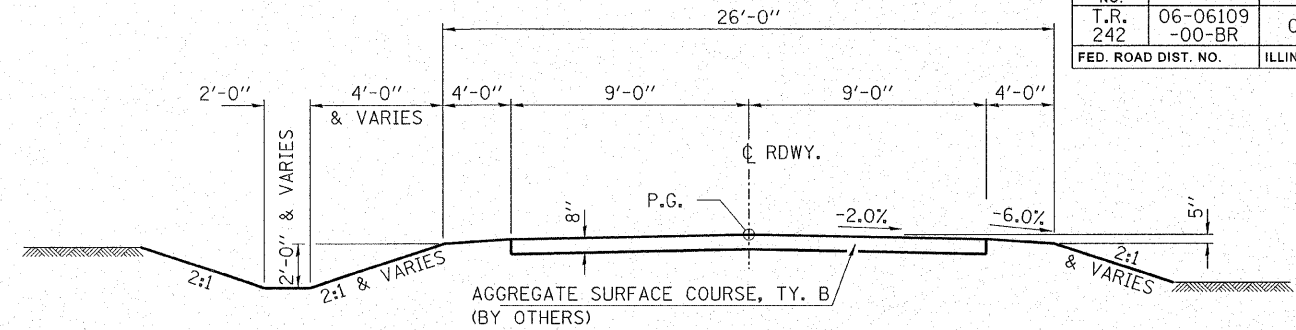
> SEE SPECIAL PROVISIONS

GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," ADOPTED 01/01/07 (HEREINAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS); THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS," ADOPTED 01/01/07; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE "DETAILS" IN THE PLANS AND THE "SPECIAL PROVISIONS" INCLUDED IN THE CONTRACT DOCUMENTS.
- ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED AS THE LATEST STANDARD OF THE DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OWNERS OF ALL UTILITIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF ALL UTILITY EQUIPMENT. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY OWNERS AS PROVIDED FOR IN THE STANDARD SPECIFICATIONS IF UTILITY RELOCATION, ADJUSTMENT OR PROTECTION IS NECESSARY.
- THE LOCATION ON THE PLANS OF EXISTING DRAINAGE STRUCTURES, TELEPHONE LINES, ELECTRIC LINES AND WATER SERVICE LINES IS APPROXIMATE AND THEIR EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND THIS WORK SHALL BE INCLUDED IN THE CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER. THIS WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT.
- SEEDING WILL BE DONE BY THE COUNTY IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- ALL TREE REMOVAL WILL BE DONE BY THE COUNTY IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TO BE COMPLETED BY OTHERS FOR INFORMATION ONLY - EARTHWORK SCHEDULE						
LOCATION	EARTH EXCAVATION (CU YD)	SHRINKAGE FACTOR	PERCENT USED	AVAILABLE* EXCAVATION (CU YD)	EMBANKMENT REQUIRED (CU YD)	EARTHWORK BALANCE (CU YD)
STA. 7+25 TO STA. 9+09.19	40	25%	100%	30	715	-685
STA. 9+09.19 TO STA. 10+90.81	-	25%	100%	-	-	-
STA. 10+90.81 TO STA. 13+25	114	25%	100%	85	661	-576
CHANNEL EXCAVATION ENTRANCES	(860)	25%	70%	452	30	452
TOTAL	154			567	1406	-839
USE:	155					840

* AVAILABLE EXCAVATION = EXC. x (1-SHRINKAGE FACTOR) x 1/2 USED (FURN. EXC.)



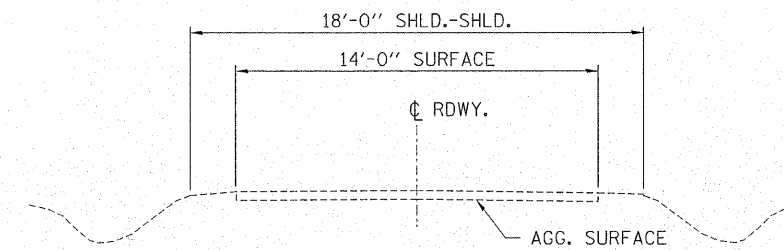
SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

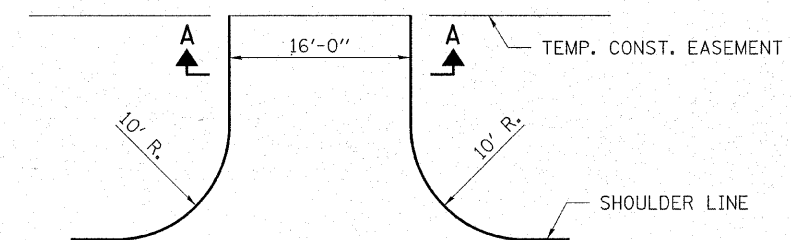
TYPICAL CROSS SECTION - BY OTHERS

STA. 7+25 TO 13+25

TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY IS TO BE CONSTRUCTED FROM STA. 7+25 TO 7+75 AND STA. 12+75 TO 13+25. SEE SHEET 9 FOR TRANSITION AT BRIDGE. (TO BE CONSTRUCTED BY CLARK COUNTY)

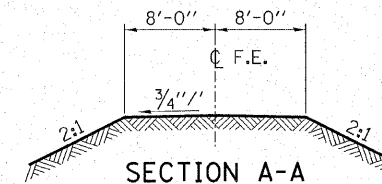


EXISTING CROSS SECTION



FIELD ENTRANCE DETAIL

TO BE CONSTRUCTED BY OTHERS.



SECTION A-A

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

HLR

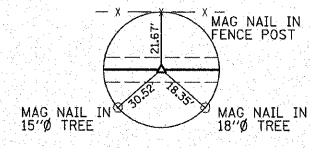
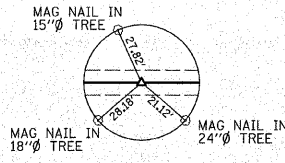
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
DESIGNED: J.W.F. CHECKED: S.W.M. DRAWN: D.T.M.

**SUMMARY OF QUANTITIES
AND TYPICAL SECTIONS**
SECTION 06-06109-00-BR
DOUGLAS ROAD DISTRICT
CLARK COUNTY

CLYDE R. KNOWLES
E 1/2, SEC 34, T. 12 N., R. 12 W., 2ND P.M.

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
242	06-06109-00-BR	CLARK	18	3
STA. 5+00		TO STA. 15+00		
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 95529	
DOUGLAS ROAD DISTRICT				



P.O.T. STA. 4+76.25
1/2" IRON PIN (SET)
N. 476.25
E. 1000.00

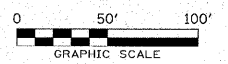
P.O.T. STA. 15+24.52
1/2" IRON PIN (SET)
N. 1524.52
E. 1000.00

STATION 10+00 - SPECIAL BRIDGE DESIGN
PRECAST PRESTRESSED CONCRETE DECK BEAM
BRIDGE. 3 SPANS: 68'-0", 68'-0", 44'-0"
27'-0" RDWY.; SKEW = 30°
PROPOSED STRUCTURE NO. 012-3329

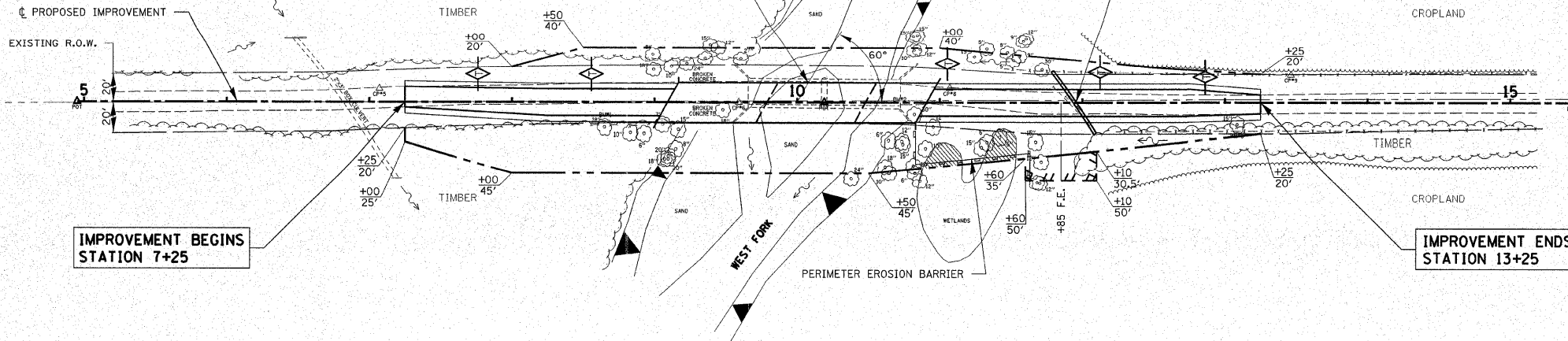
PIPE CULVERTS, CL. A, TY. 1, 24"
(BY OTHERS)
52' FT. LONG
20' RT. STA. 12+09 U.S.F.L. 537.9
22' LT. STA. 11+79 D.S.F.L. 536.7
EXISTING CMP TO BE REMOVED.

S.E. COR., S.E. 1/4
SEC. 34-12-12

N.E. COR., S.E. 1/4
SEC. 34-12-12



PLAN	DATE	BY
SURVEYED		
PLOTTED		
CHECKED		
NO. _____		
NO. _____		
NO. _____		



IMPROVEMENT BEGINS
STATION 7+25

IMPROVEMENT ENDS
STATION 13+25

ENTRANCES TO BE BUILT (BY OTHERS)
RT. STA. 11+85 F.E. -10.0% EARTH 16' SURF.
QUANTITIES INCLUDED IN EARTHWORK TABLE.

CHANNEL EXCAVATION
THE CHANNEL SHALL BE EXCAVATED AS SHOWN IN
THE PLANS WITH 2:1 SIDE SLOPES WITHIN THE LIMITS
OF THE PROPOSED STRUCTURE, THEN TAPER TO THE
EXISTING CHANNEL AT THE R.O.W. LINES. ONLY
SUITABLE EXCAVATED MATERIAL SHALL BE USED IN
THE EMBANKMENT.

EXISTING STRUCTURE NO. 012-3094
STATION 10+19 - TWO SPAN CONCRETE THRU
GIRDER BRIDGE ON CONCRETE PIER & CLOSED
CONCRETE ABUTMENT WITH CONCRETE WINGS.
103.63' FC-FC, ABUTS; 19.83' o-o, DECK
REMOVAL OF EXISTING STRUCTURES = 1 EACH

TEMPORARY DITCH CHECKS
TOTAL = 5 EACH

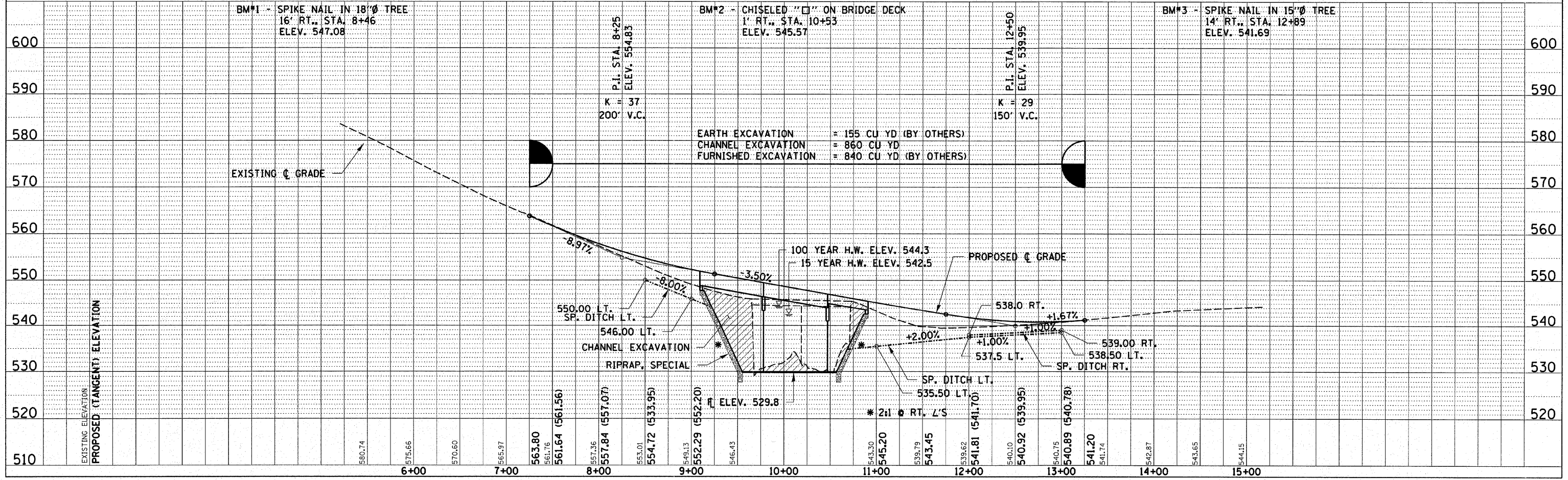
PERIMETER EROSION BARRIER
RT. STA. 10+75 TO STA. 12+10 = 200 FT

INDICATES TEMPORARY
CONSTRUCTION EASEMENT

WETLAND AREA TO
BE DISTURBED

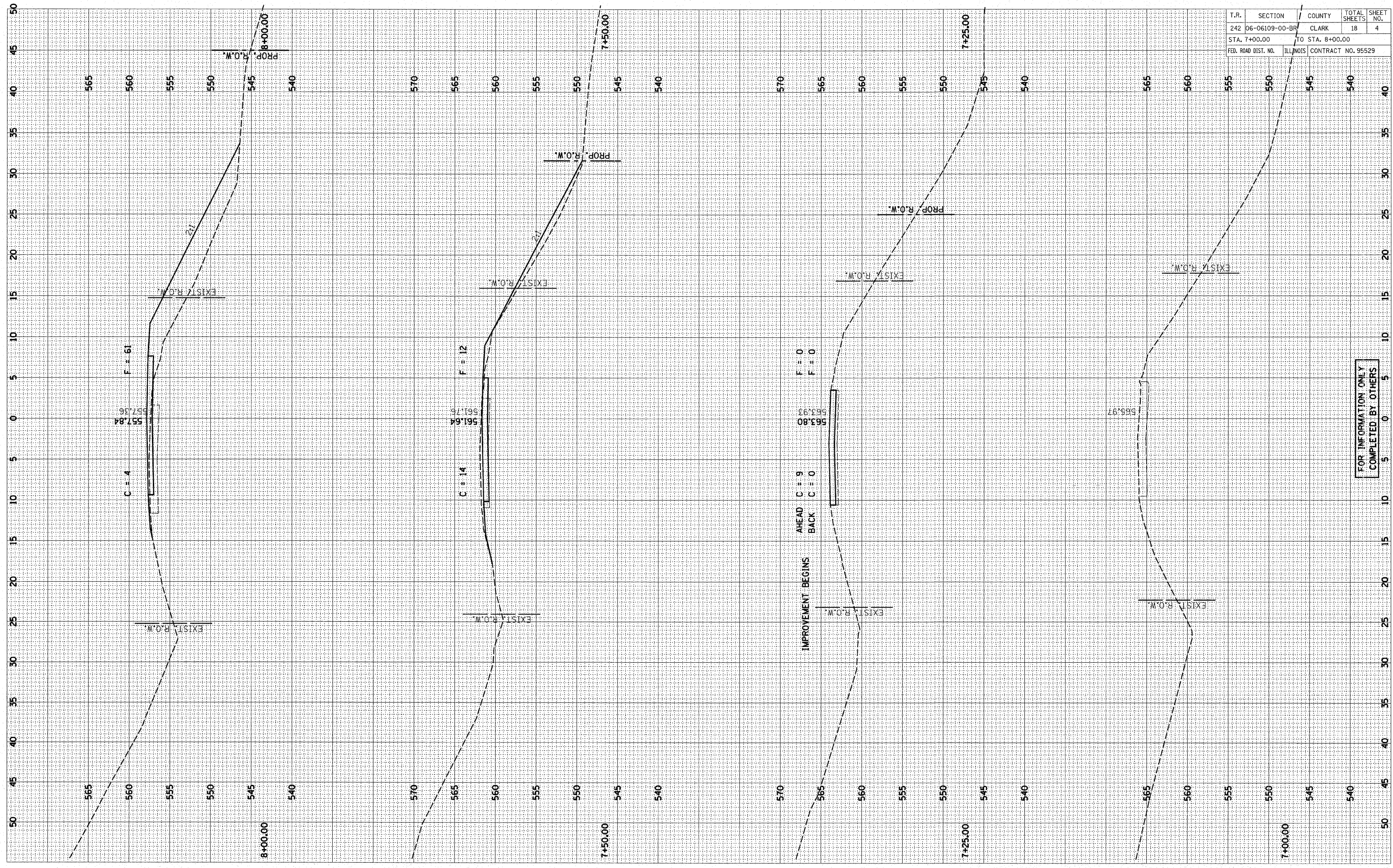
GEORGE PREWETT
W 1/2, SW 1/4, SEC 35, T. 12 N., R. 12 W., 2ND P.M.

PROFILE	DATE	BY
SURVEYED		
PLOTTED		
CHECKED		
NO. _____		
NO. _____		
NO. _____		



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

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

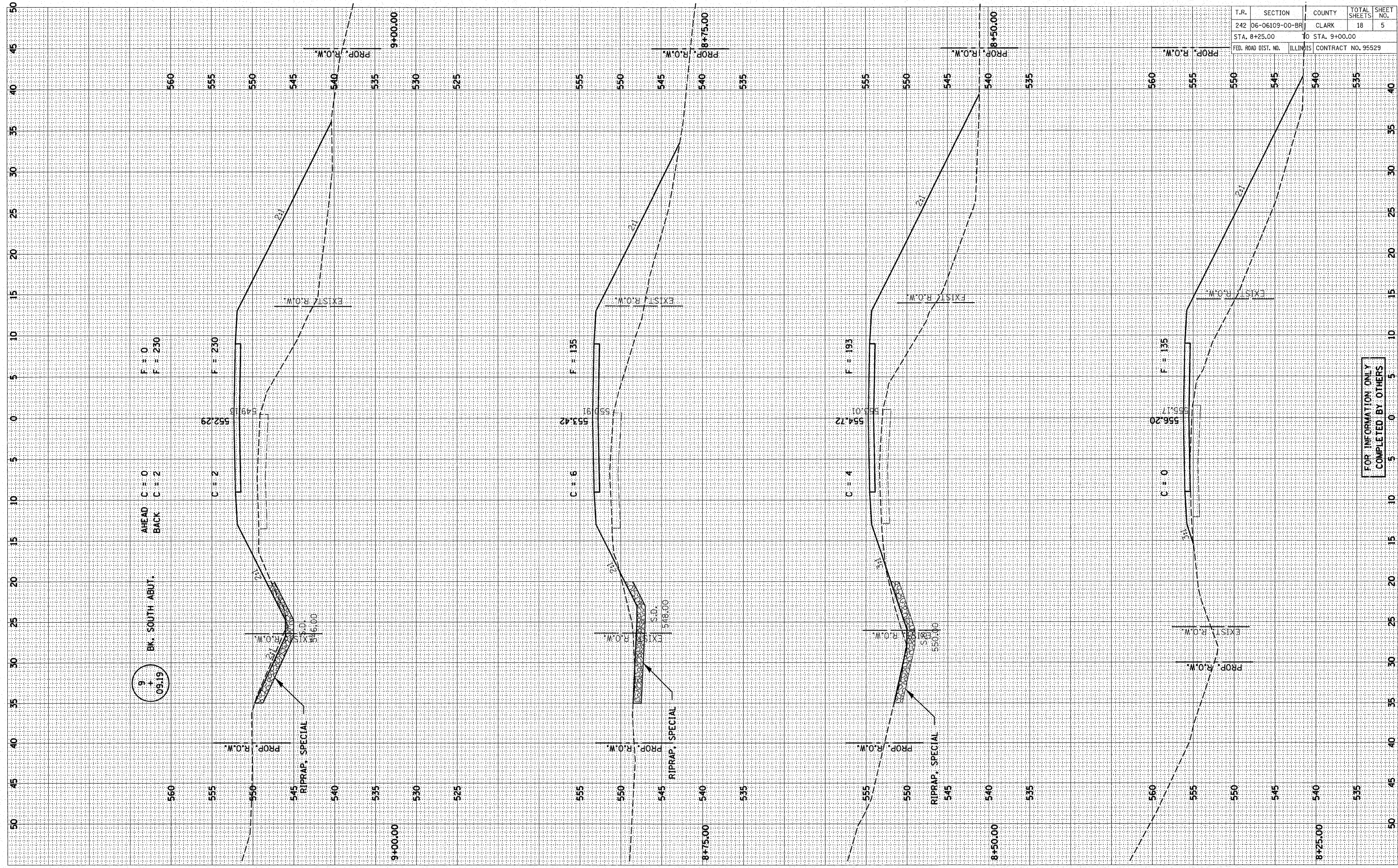


T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
242	06-06109-00-BR	CLARK	18	4
STA. 7+00.00		TO STA. 8+00.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 95529		

FOR INFORMATION ONLY
 COMPLETED BY OTHERS

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

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



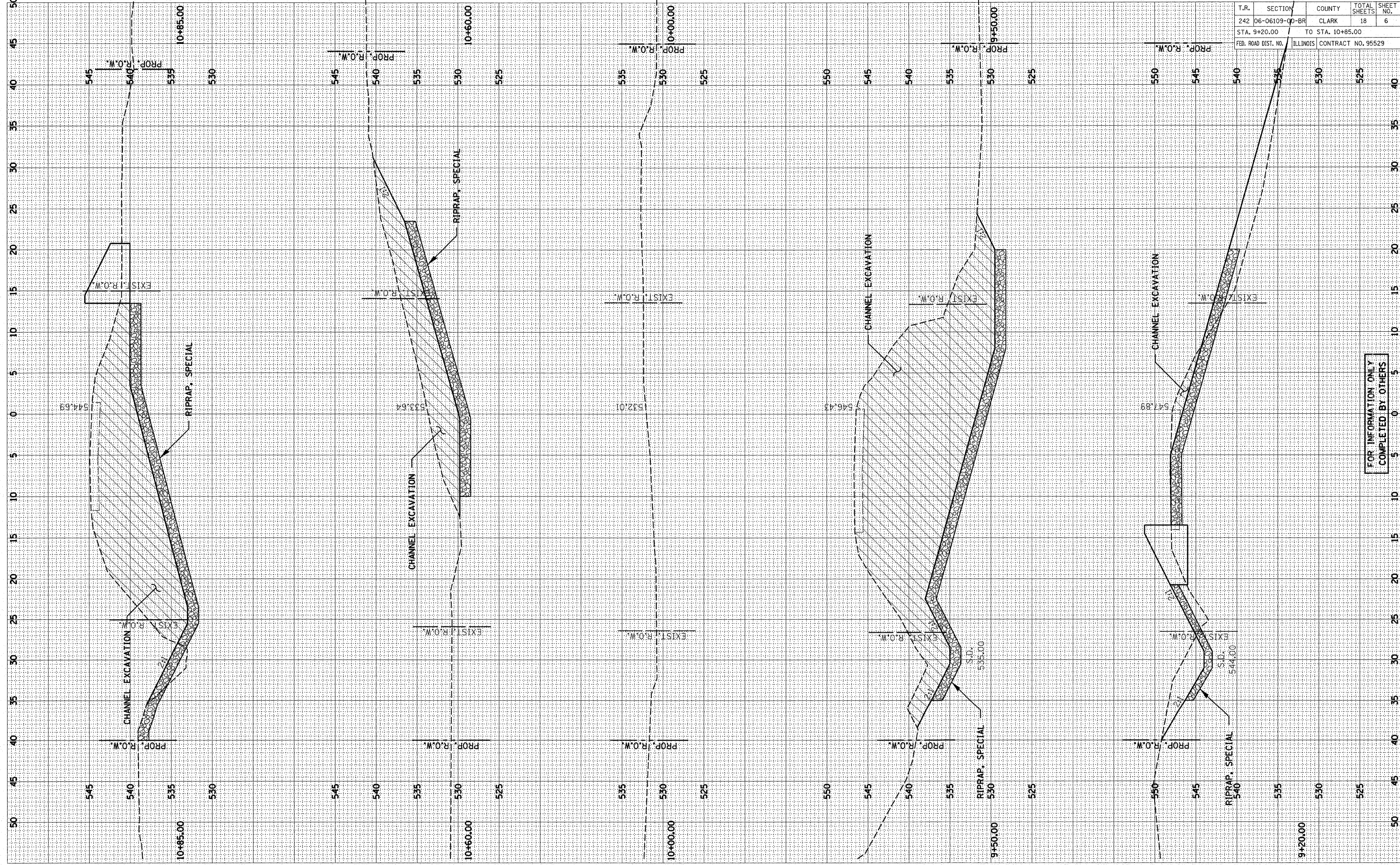
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
242	06-06109-00-BR	CLARK	18	5
STA. 8+25.00		STA. 9+00.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 95529		

FOR INFORMATION ONLY
COMPLETED BY OTHERS

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

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

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
242	06-06109-00-BR	CLARK	18	6
STA. 9+20.00		TO STA. 10+85.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 95529		



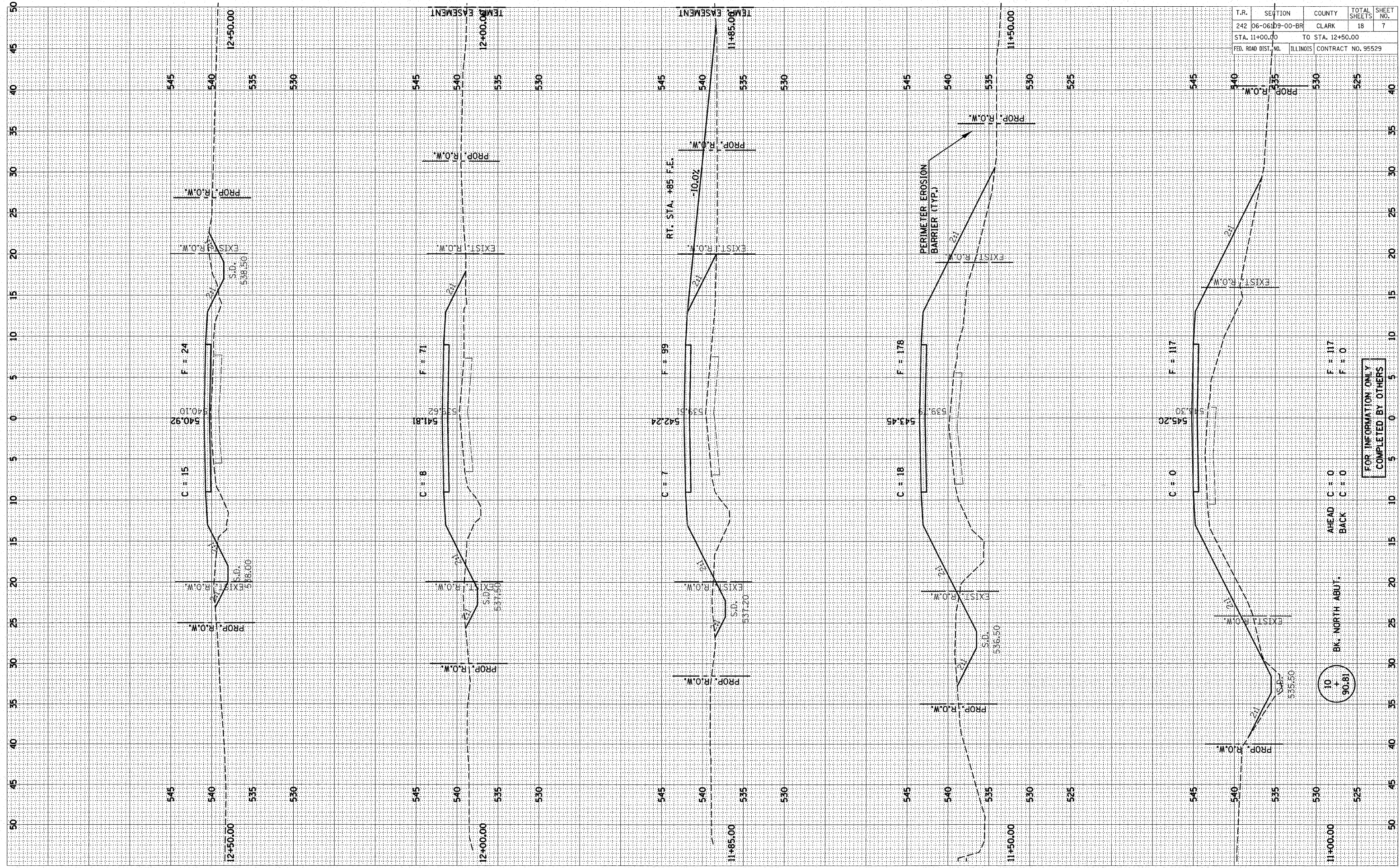
FOR INFORMATION ONLY
COMPLETED BY OTHERS

ORIGINAL SURVEYED SURVEY TEMPLATE NO. AREAS CHECKED

BY DATE

FINAL SURVEYED SURVEY TEMPLATE NO. AREAS CHECKED

BY DATE



T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
242	06-06109-00-BR	CLARK	18	7
STA. 11+00.00		TO STA. 12+50.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 95529		

FOR INFORMATION ONLY
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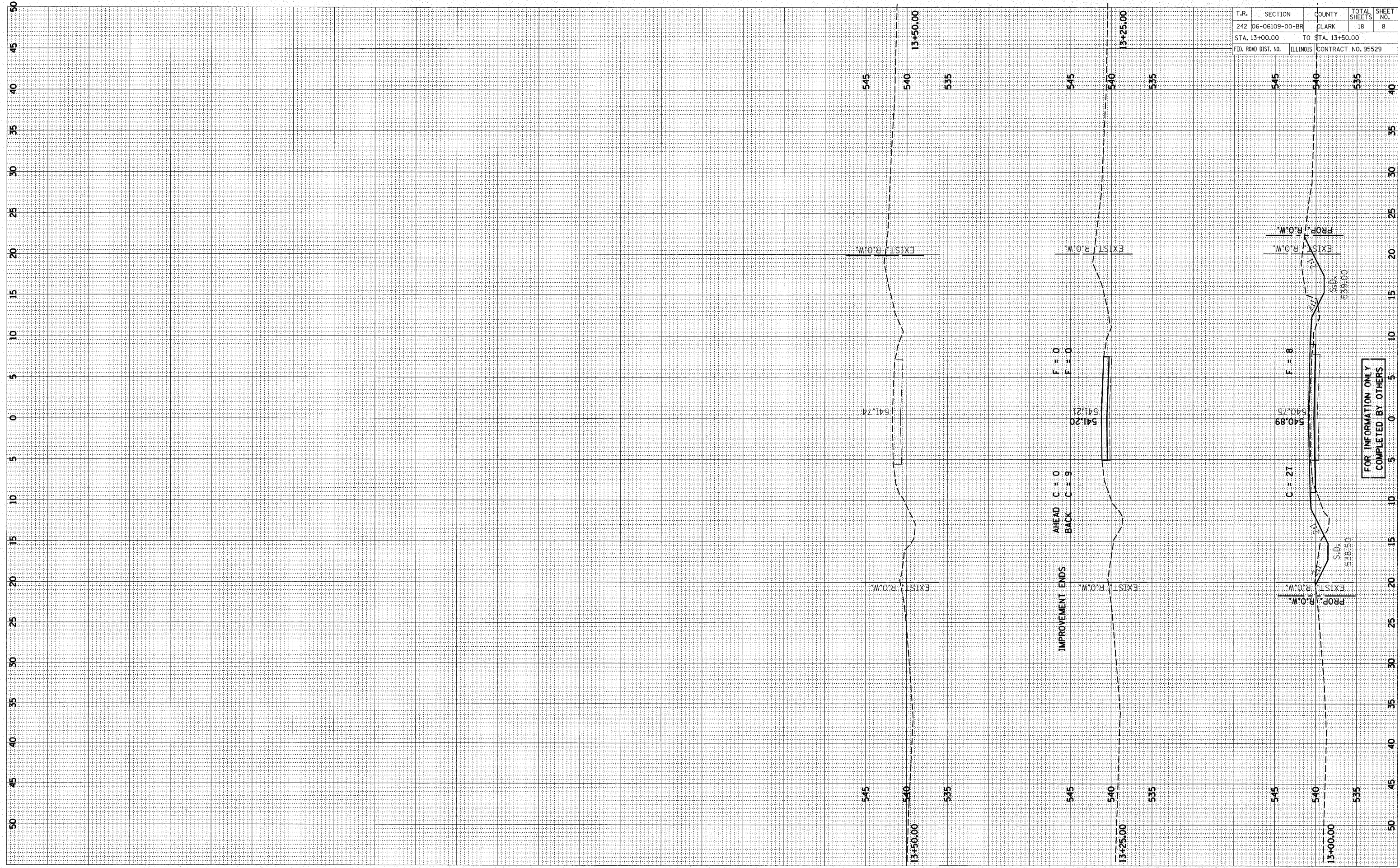
10
+
90.81

BK. NORTH ABUT.

AHEAD C = 0
BACK C = 0

ORIGINAL SURVEY NO. _____ DATE _____
 SURVEYED BY _____
 TEMPLATE NO. _____
 AREAS CHECKED _____
 NO. _____

FINAL SURVEY NO. _____ DATE _____
 SURVEYED BY _____
 TEMPLATE NO. _____
 AREAS CHECKED _____
 NO. _____



T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
242	06-06109-00-BR	CLARK	18	8
STA. 13+00.00		TO STA. 13+50.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 95529		

FOR INFORMATION ONLY
 COMPLETED BY OTHERS

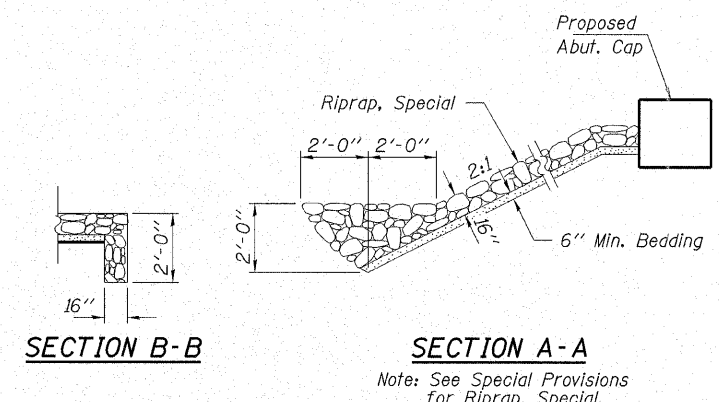
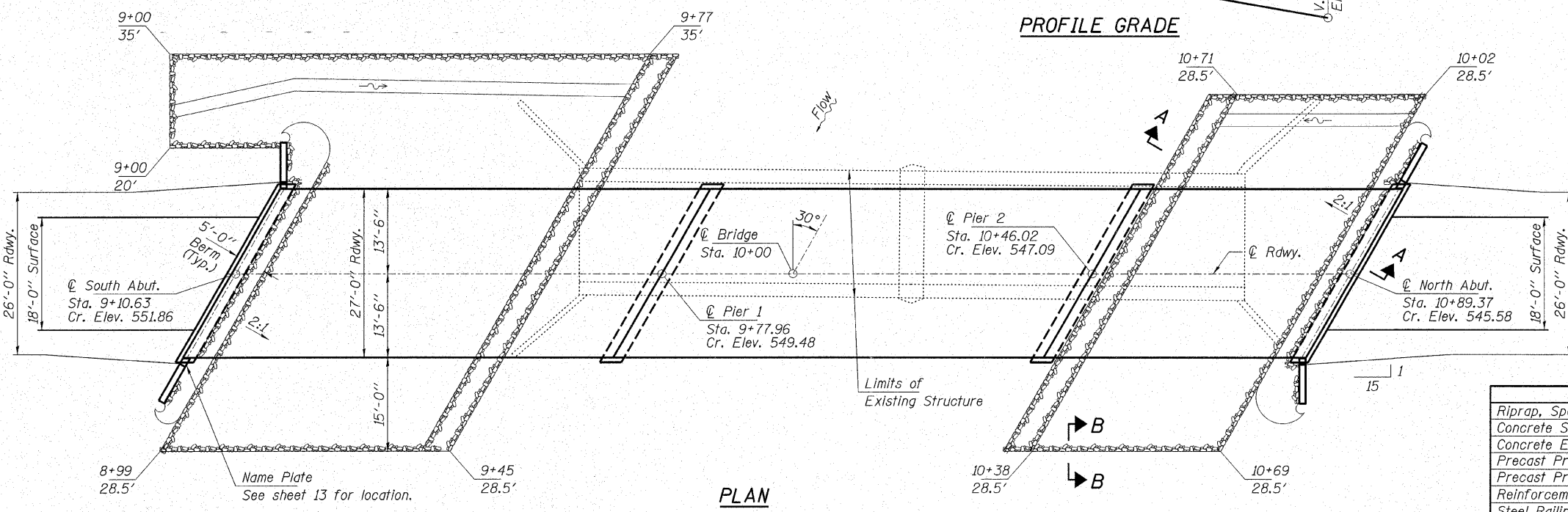
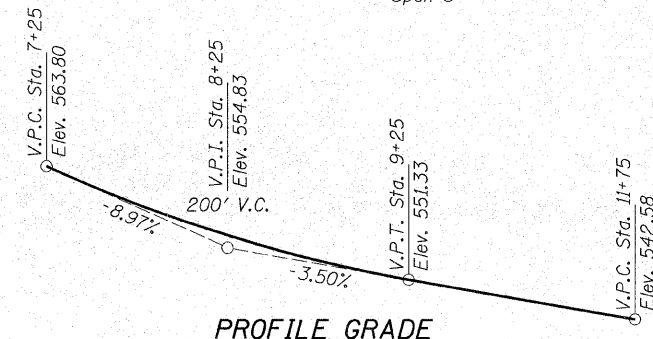
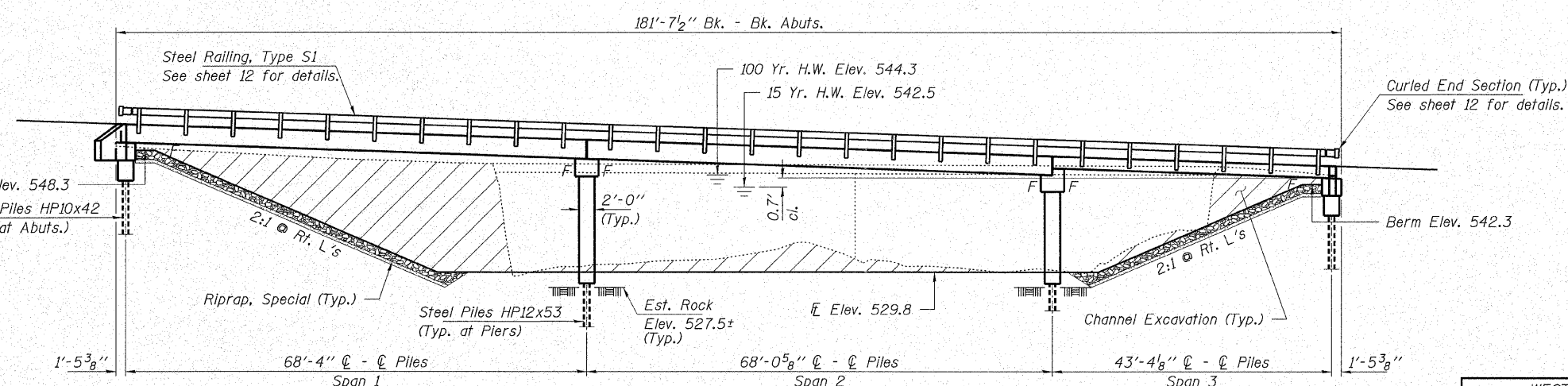
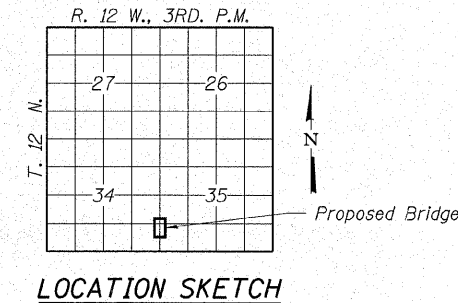
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 242	06-06109-00-BR	CLARK	18	9
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 95529	

GENERAL NOTES

Layout of riprap may be varied in the field to suit ground conditions as directed by the Engineer.
 Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
 Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.
 All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions. See Sheet 18 for Borings.

WEST FORK BIG CREEK
 BUILT 200_ BY
 CLARK COUNTY
 SEC. 06-06109-00-BR
 DOUGLAS ROAD DISTRICT
 STR. NO. 012-3329
 LOADING HS 20

NAME PLATE
 See Std. 515001



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Riprap, Special	Ton			570
Concrete Structures	Cu. Yd.		108.1	108.1
Concrete Encasement	Cu. Yd.		3.4	3.4
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,188		1,188
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	3,672		3,672
Reinforcement Bars	Pound		11,400	11,400
Steel Railing, Type S1	Foot	359		359
Steel Piles HP10x42	Foot		175	175
Steel Piles HP12x53	Foot		290	290
Driving Piles	Foot		175	175
Name Plates	Each		1	1
Setting Piles in Rock	Each		10	10
Underwater Structure Excavation Protection - Loc. 1	Each		1	1
Underwater Structure Excavation Protection - Loc. 2	Each		1	1

DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinf.)

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi
 $f'_{ci} = 4,000$ psi (Span 1 & 2)
 $f'_{ci} = 4,200$ psi (Span 3)
 $f'_s = 270,000$ psi ($\frac{1}{2}$ " low lax. strands)
 $f'_{si} = 201,960$ psi ($\frac{1}{2}$ " low lax. strands)
 $f_y = 60,000$ psi (Reinf.)

Loading HS 20-44
 Design Specifications: 2002 AASHTO & all applicable interims.
 25#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Category (SPC) = A
 Bedrock Acceleration Coefficient (A) = 0.65g
 Site Coefficient (S) = 1.0

WATERWAY INFORMATION

Drainage Area = 38.4 Sq. Mi. Low Grade Elev. 540.9 @ Sta. 13+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	15	4,350	1,080	1,330	542.5	0.2	0.3	542.7	542.8
Base	100	6,890	1,230	1,570	544.3	0.3	0.3	544.6	544.6
Max. Calc.	500	8,940	1,260	1,710	545.3	0.2	0.2	545.5	545.5

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 Specifications for Highway Bridges".

ILLINOIS STRUCTURAL NO. 081-6064 Expires 11-30-08

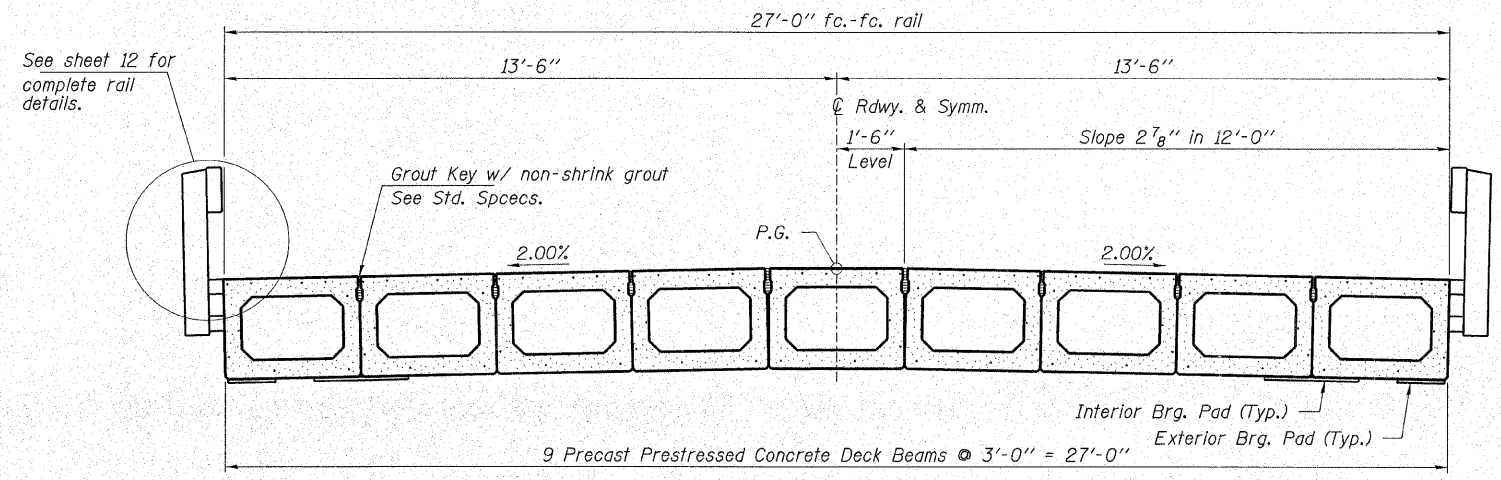
HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

ELGIN • SPRINGFIELD

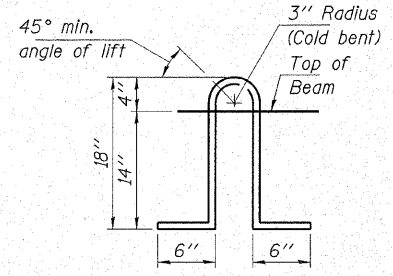
PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.T.M.

GENERAL PLAN AND ELEVATION
SECTION 06-06109-00-BR
DOUGLAS ROAD DISTRICT
CLARK COUNTY
STRUCTURE NO. 012-3329 / STATION 10+00

ROUTE NO. 7.R. 242	SECTION 06-06109 -00-BR	COUNTY CLARK	TOTAL SHEETS 18	SHEET NO. 10
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 95529		



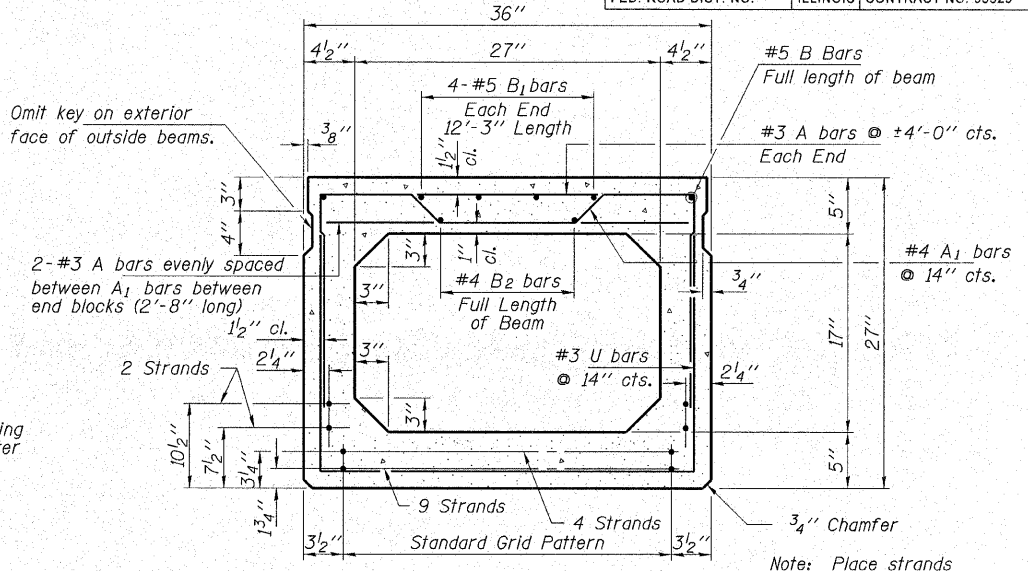
CROSS SECTION



LIFTING LOOP DETAIL

Approved alternate may be substituted for the above detail.

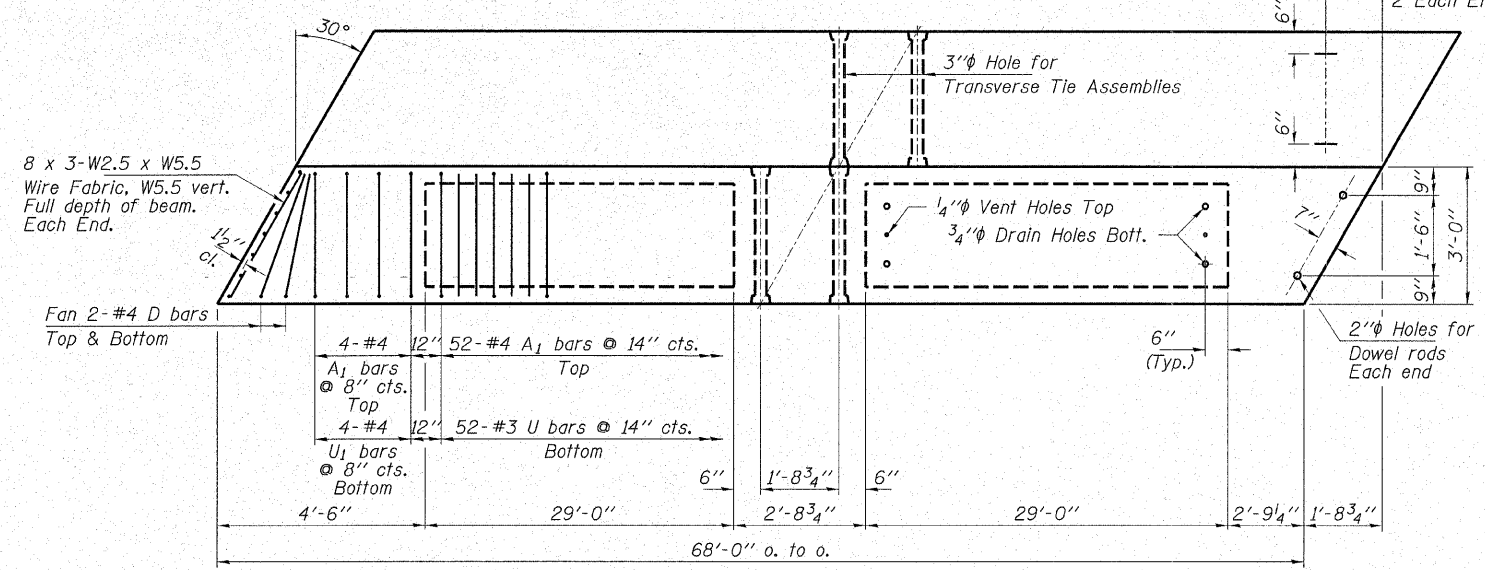
Note: The loop shall be formed in a manner such that all strands are engaged during lifting. Loops shall be burned off after the beams have been erected.



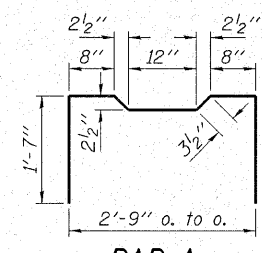
TYPICAL SECTION

17-1/2" φ Strands Each Strand Stressed to 30,900 Lbs.
9-Strands 1 3/4" up, 4-Strands 3/4" up,
2-Strands 7/8" up, 2-Strands 10/16" up
Expected Camber = 1/2"

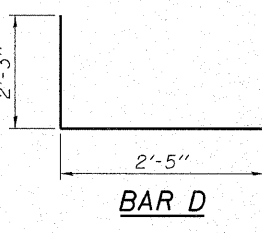
Note: Place strands symmetrically about center of beam.



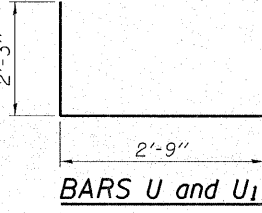
PLAN



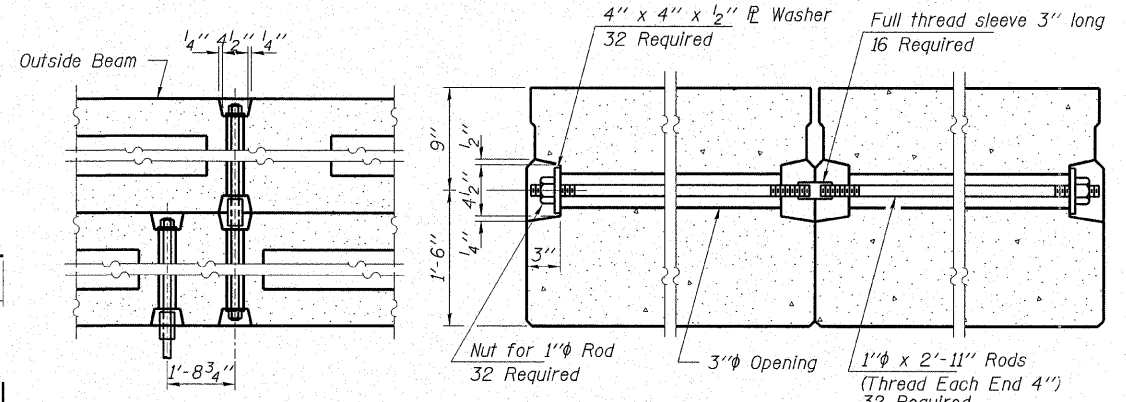
BAR A₁



BAR D



BARS U and U₁



TYPICAL TRANSVERSE TIE ASSEMBLY

NOTES

Prestressing steel shall be uncoated high strength, low-relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2-1/2" φ - 270 ksi strands, as shown.

The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.

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

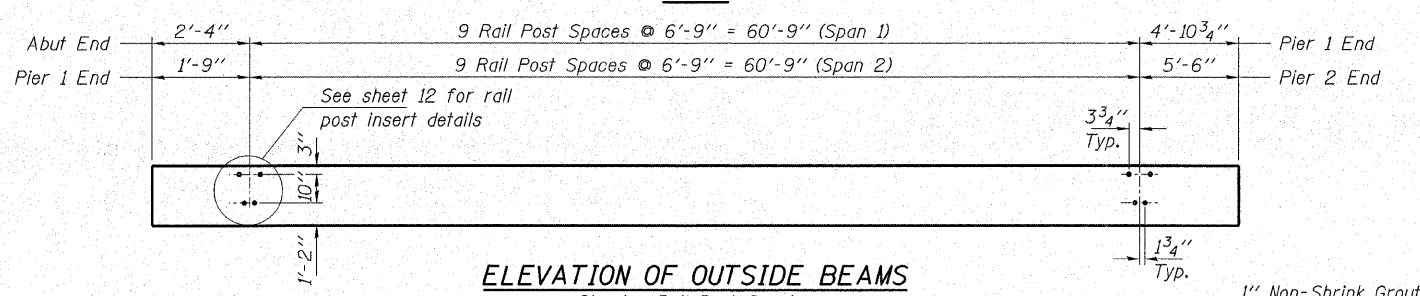
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

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

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

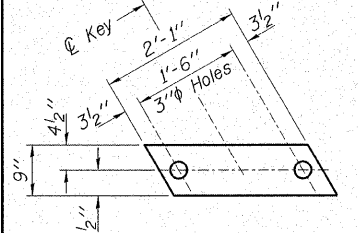
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	3,672

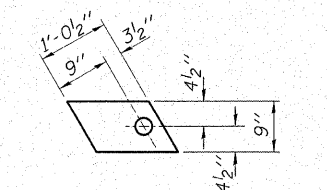


ELEVATION OF OUTSIDE BEAMS

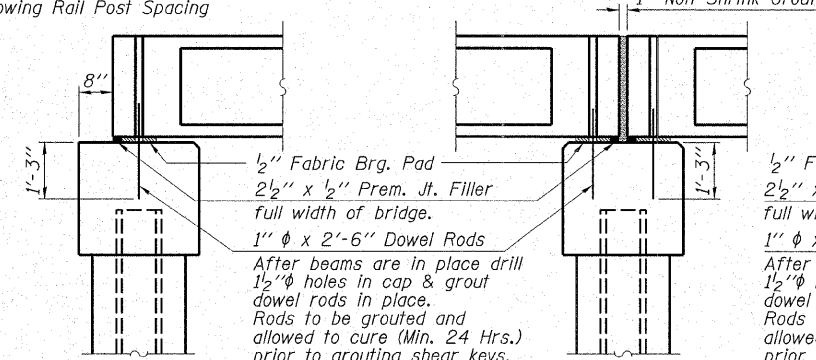
Showing Rail Post Spacing



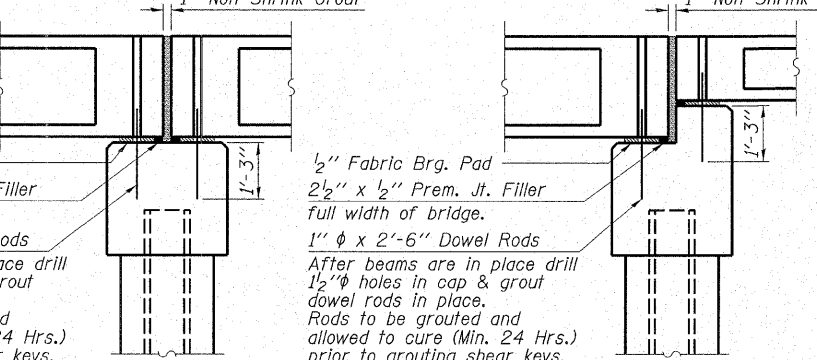
FABRIC BEARING PAD
(Interior - 32 Req'd)



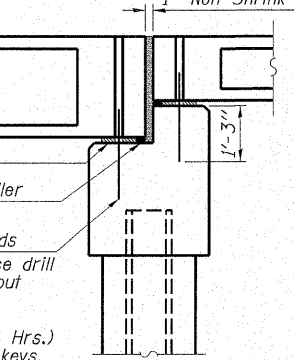
FABRIC BEARING PAD
(Exterior - 8 Req'd)



SECTION AT S. ABUT.
@ Rt. L's



SECTION AT PIER 1
@ Rt. L's



SECTION AT PIER 2
@ Rt. L's

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LAND SURVEYORS

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.T.M.

SUPERSTRUCTURE - SPANS 1 & 2

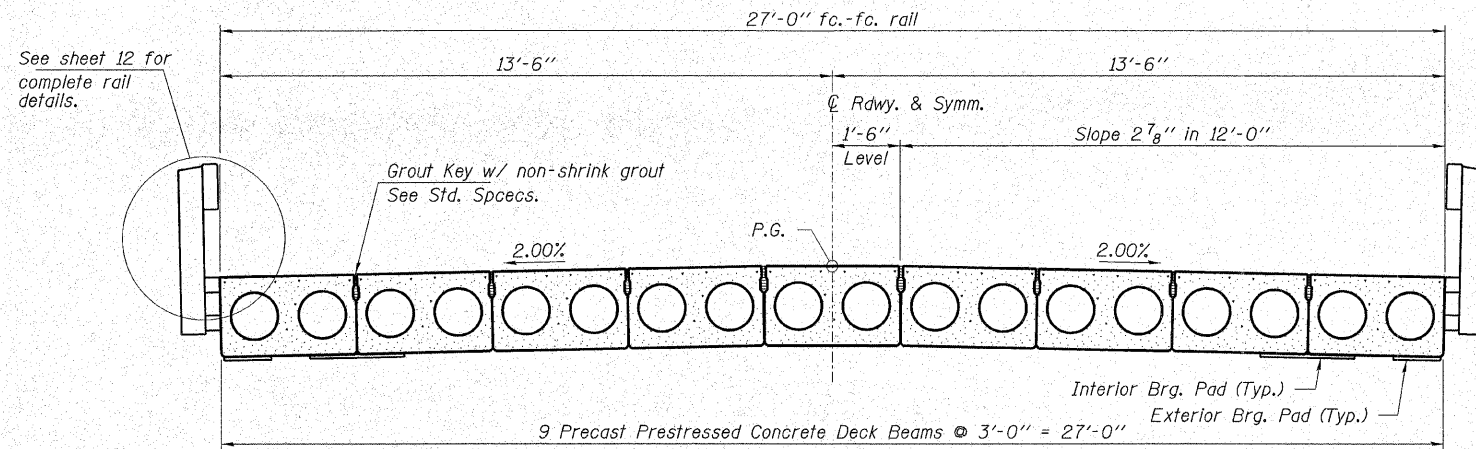
SECTION 06-06109-00-BR

DOUGLAS ROAD DISTRICT

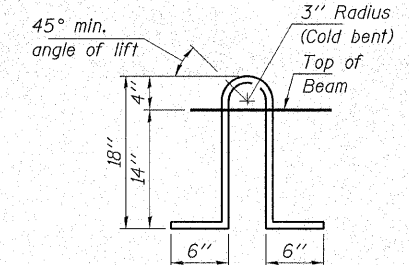
CLARK COUNTY

STRUCTURE NO. 012-3329 / STATION 10+00

ROUTE NO. T.R. 242	SECTION 06-06109 -00-BR	COUNTY CLARK	TOTAL SHEETS 18	SHEET NO. 11
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 95529		



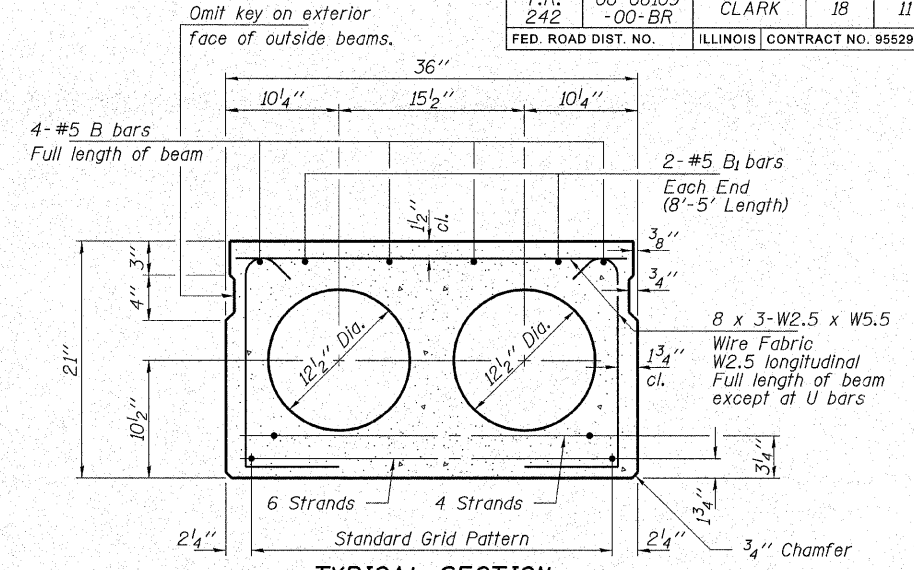
CROSS SECTION



LIFTING LOOP DETAIL

Approved alternate may be substituted for the above detail.

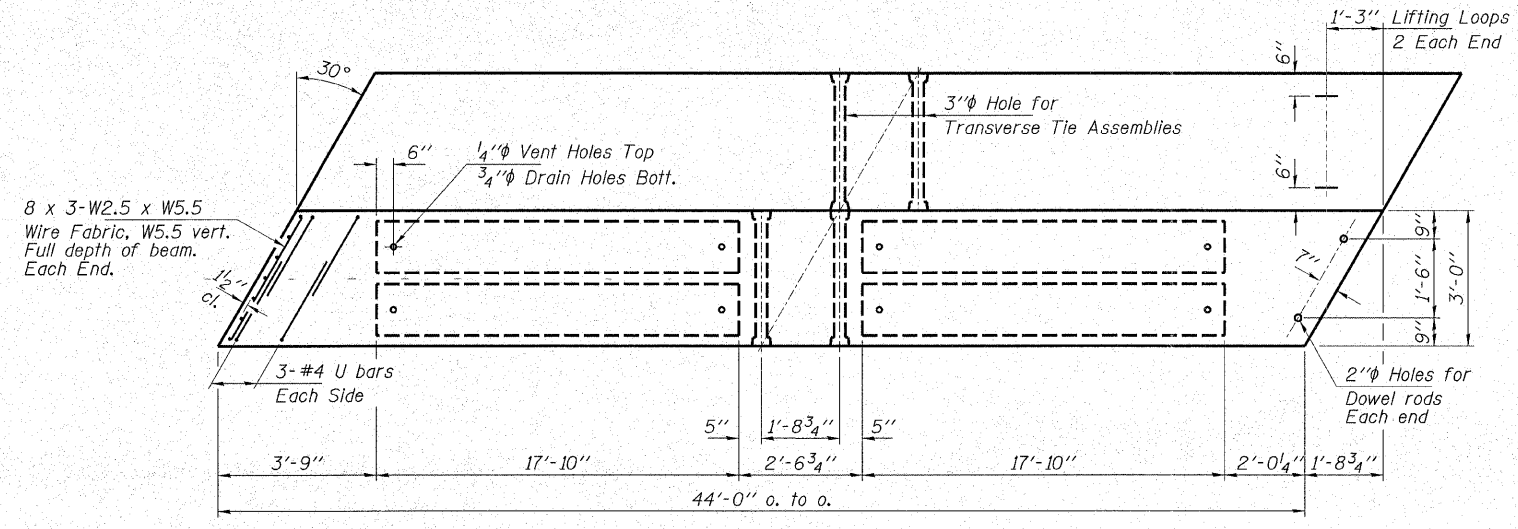
Note: The loop shall be formed in a manner such that all strands are engaged during lifting. Loops shall be burned off after the beams have been erected.



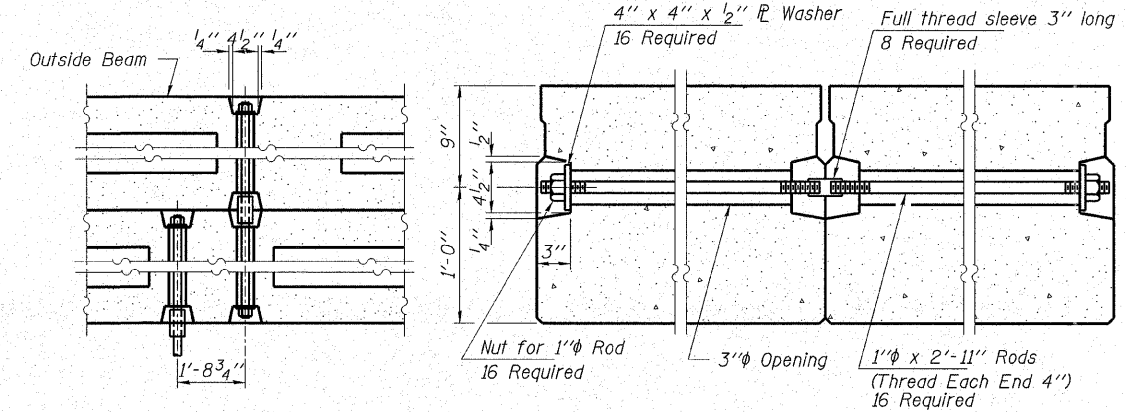
TYPICAL SECTION

10-1/2" φ Strands, Each Strand Stressed to 30,900 Lbs. 6-Strands 1 3/4" up, 4-Strands 3/4" up Expected Camber = 0 3/4"

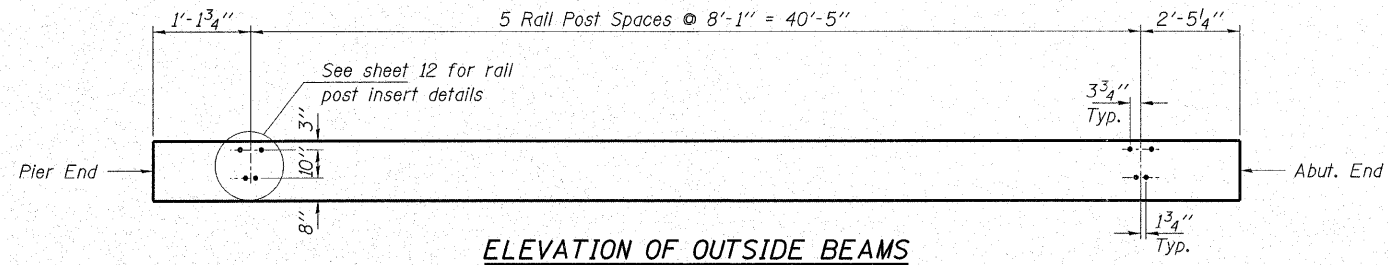
Note: Place strands symmetrically about center of beam.



PLAN



TYPICAL TRANSVERSE TIE ASSEMBLY



ELEVATION OF OUTSIDE BEAMS

Showing Rail Post Spacing

NOTES

Prestressing steel shall be uncoated high strength, low-relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2-1/2" φ - 270 ksi strands, as shown.

The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.

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

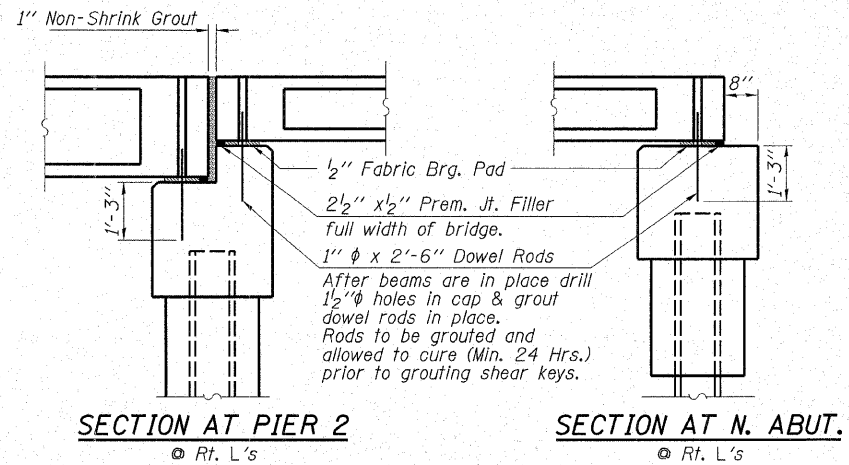
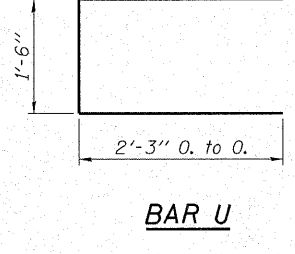
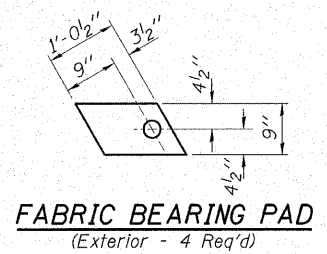
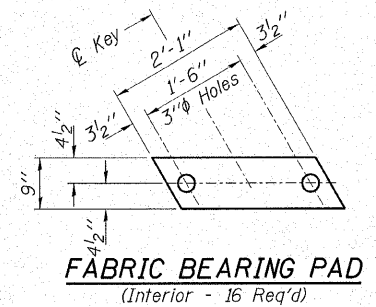
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/2" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

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

Required Release Strength, f'cl, shall be 4,200 p.s.i.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,188



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LAND SURVEYORS

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.T.M.

SUPERSTRUCTURE - SPAN 3

SECTION 06-06109-00-BR

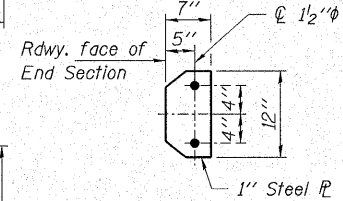
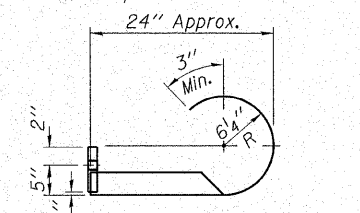
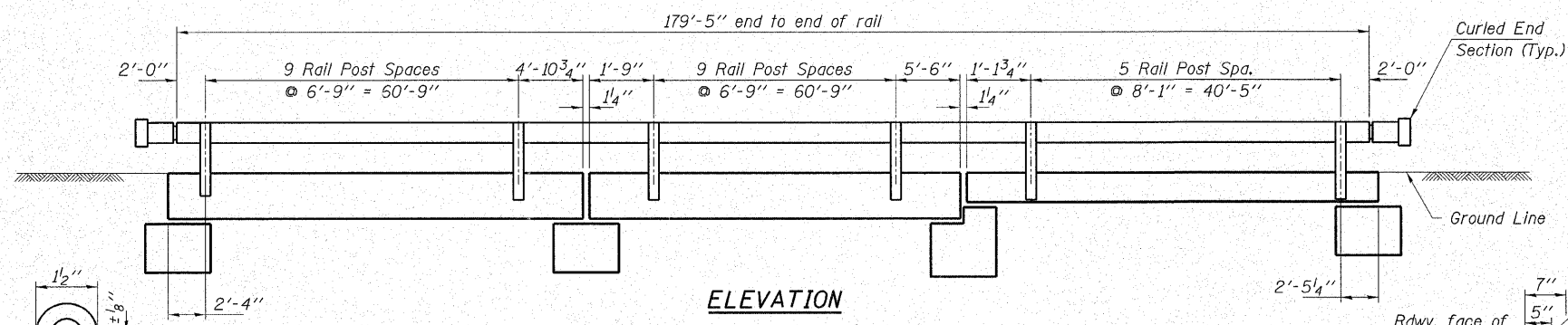
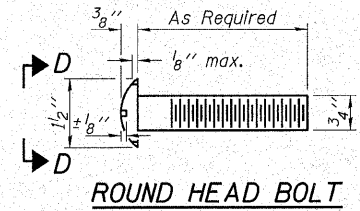
DOUGLAS ROAD DISTRICT

CLARK COUNTY

STRUCTURE NO. 012-3329 / STATION 10+00

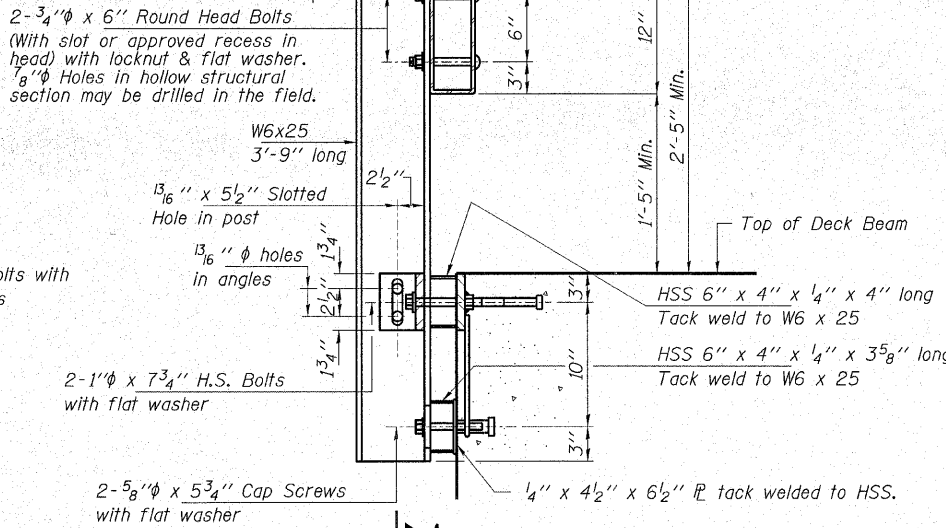
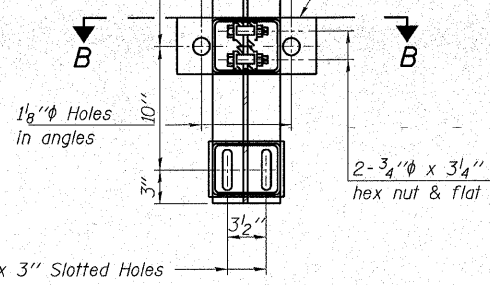
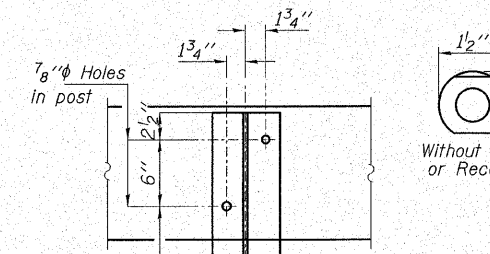
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 242	06-06109-00-BR	CLARK	18	12
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 95529	

Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)

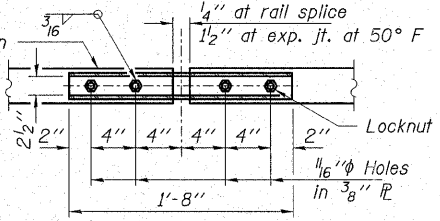
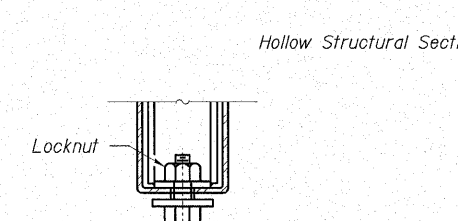
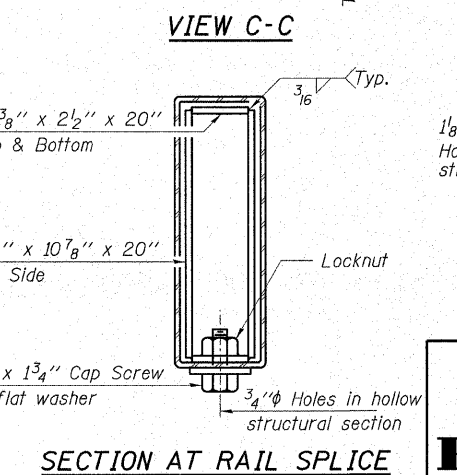
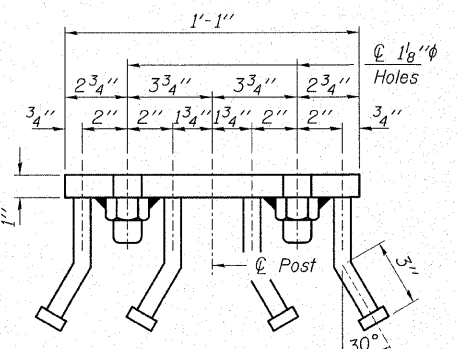
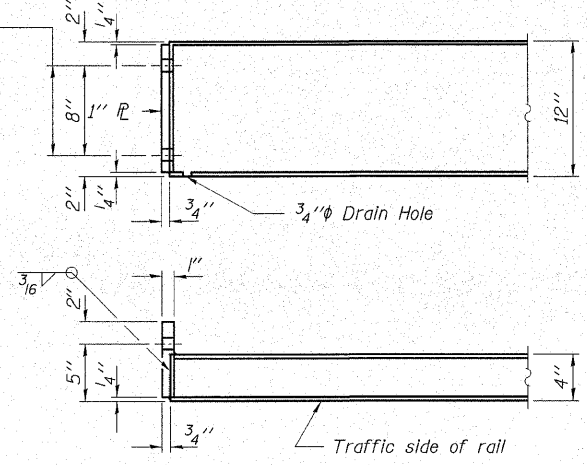


SECTION E-E CURLED END SECTION DETAILS NOTES

Hollow structural sections shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F. All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. designation M-270 Grade 36 except posts and angles shall conform to A.A.S.H.T.O. designation M-270 Grade 50. Bolts, cap screws, and nuts shall conform to the requirements of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. designation M-164. All bolts, nuts, cap screws, washers and lockwashers shall be galvanized in accordance with A.A.S.H.T.O. designation M-232. All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.S.T.M. A-385 and A.A.S.H.T.O. M-111. Galvanized rail shall not be painted. Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per foot for STEEL RAILING, TYPE S1. All field drilled holes shall be coated with an approved zinc rich paint before erection. The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/2 inch fabric bearing pad between the post and concrete. The 3/4 inch high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Art. 505.04(f)(2) of the Standard Specifications. The 1 inch high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8 inch cap screws in bottom of posts shall be tightened to a snug fit only. For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S1.



** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.



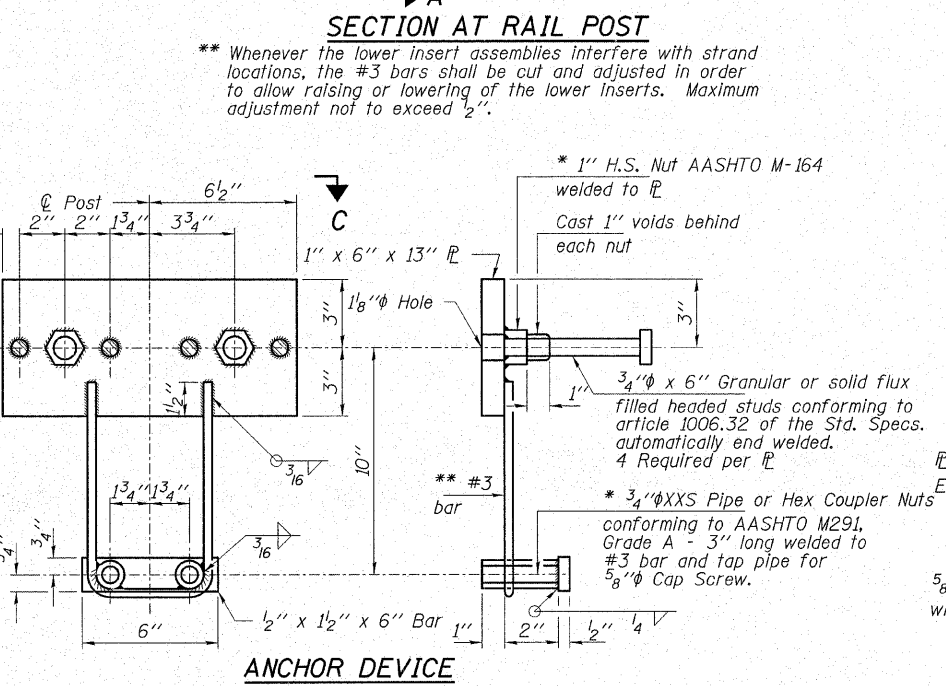
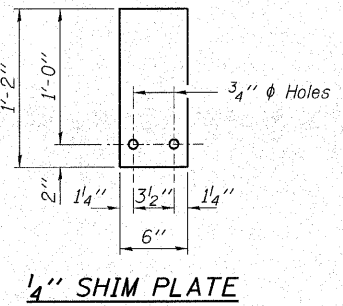
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	359

RAILING DETAILS
SECTION 06-06109-00-BR
DOUGLAS ROAD DISTRICT
CLARK COUNTY
STRUCTURE NO. 012-3329 / STATION 10+00

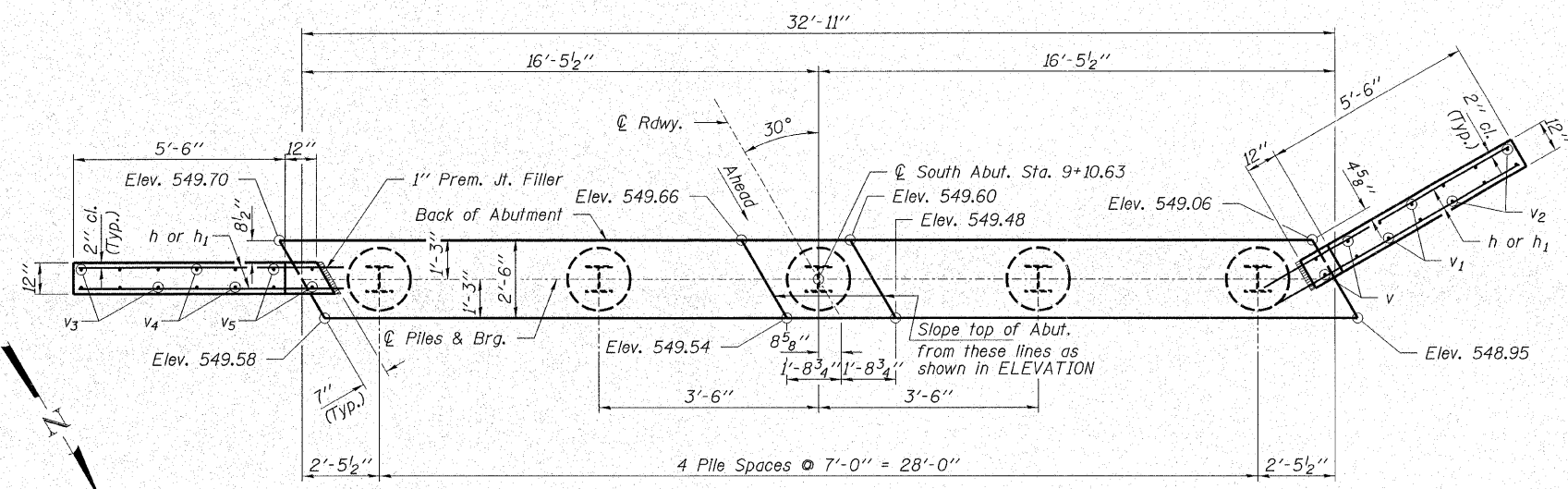
HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD
PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.T.M.

SECTION B-B

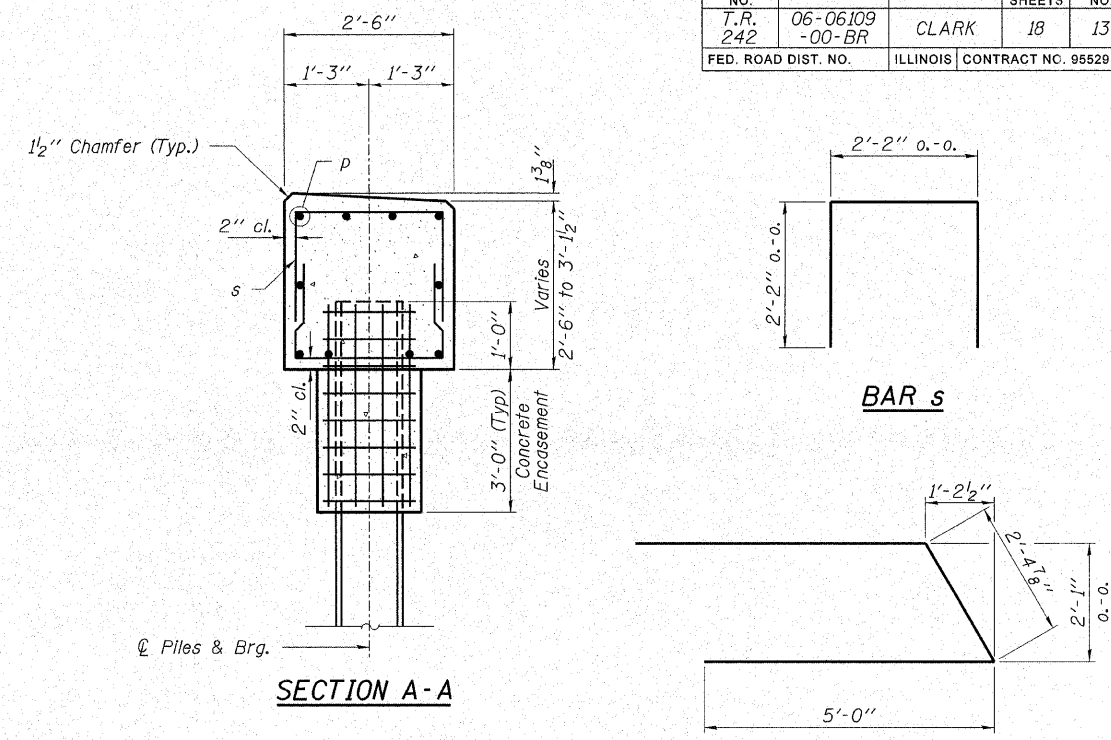


* Threaded areas shall be plugged or blocked off during casting of beam.

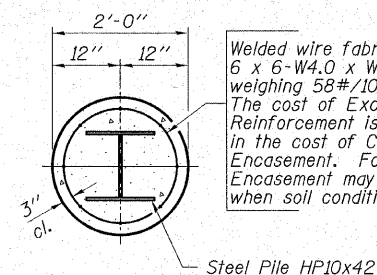
ROUTE NO. T.R. 242	SECTION 06-06109 -00-BR	COUNTY CLARK	TOTAL SHEETS 18	SHEET NO. 13
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 95529	



PLAN

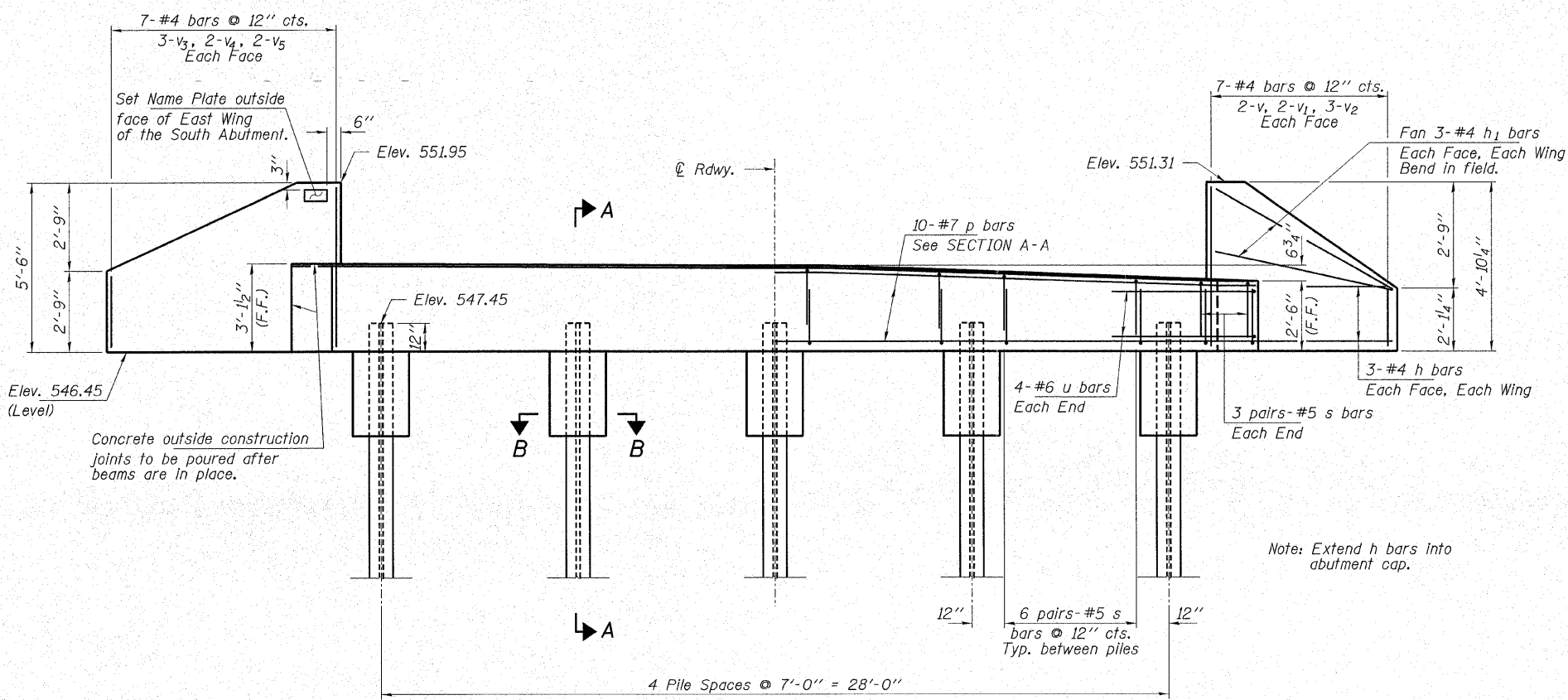


SECTION A-A



SECTION B-B

Welded wire fabric
6 x 6-W4.0 x W4.0
weighing 58#/100 sq. ft.
The cost of Excavation and
Reinforcement is included
in the cost of Concrete
Encasement. Forms for
Encasement may be omitted
when soil conditions will permit.



ELEVATION
(Looking South)

BILL OF MATERIAL - S. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	12	#4	7'-9"	—
h ₁	12	#4	6'-0"	—
p	10	#7	32'-7"	—
s	60	#5	6'-6"	U
u	8	#6	12'-5"	—
v	4	#4	4'-6"	—
v ₁	4	#4	3'-6"	—
v ₂	6	#4	2'-0"	—
v ₃	6	#4	2'-6"	—
v ₄	4	#4	4'-0"	—
v ₅	4	#4	5'-0"	—
Concrete Structures			Cu. Yd.	11.0
Concrete Encasement			Cu. Yd.	1.7
Reinforcement Bars			Pound	1,400
Steel Piles HP10x42			Foot	100
Name Plates			Each	1

PILE DATA

Type.....Steel HP10x42
No. Req'd.....5
Allowable Resistance Available.....112 Kips/Pile
Nominal Req'd Bearing.....336 Kips/Pile
Est. Length.....20 Ft/Pile

Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.
See Sheet 17 for pile details.

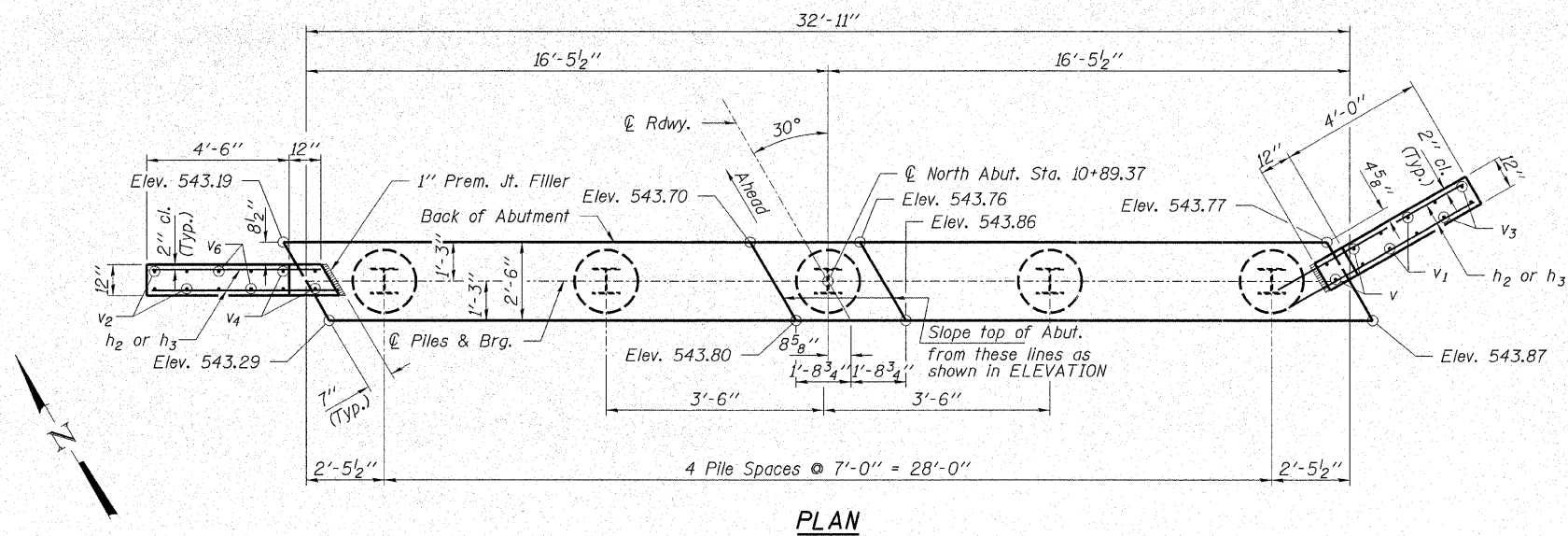
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CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

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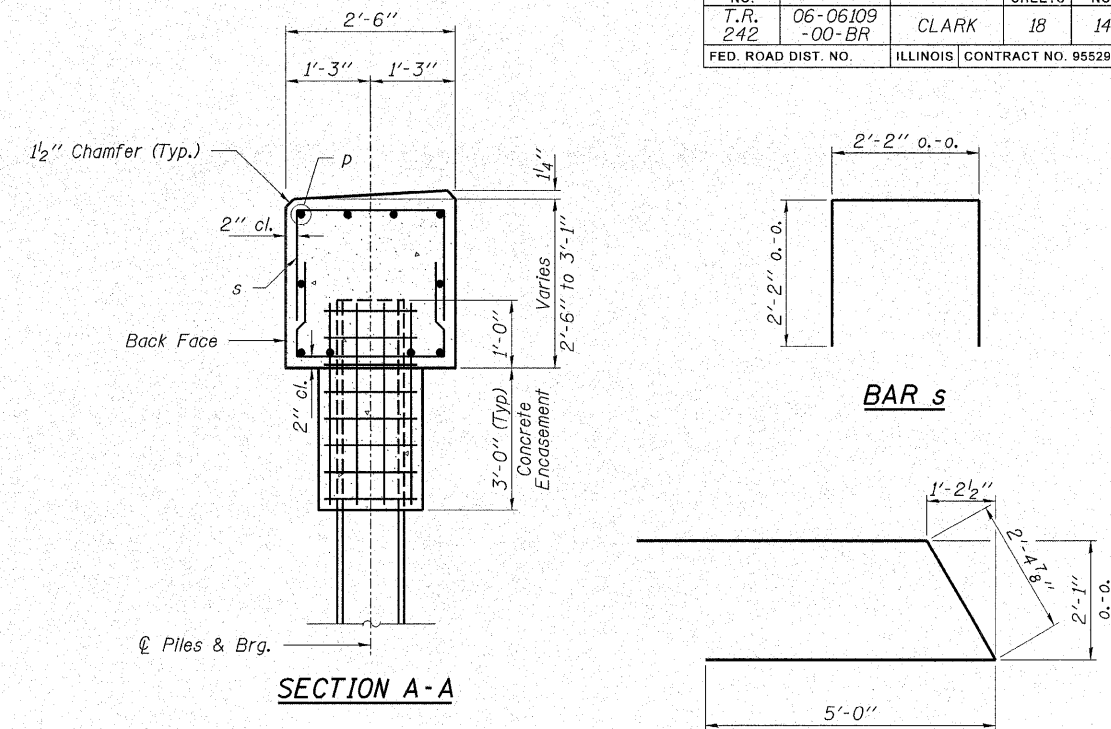
PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.T.M.

SOUTH ABUTMENT
SECTION 06-06109-00-BR
DOUGLAS ROAD DISTRICT
CLARK COUNTY
STRUCTURE NO. 012-3329 / STATION 10+00

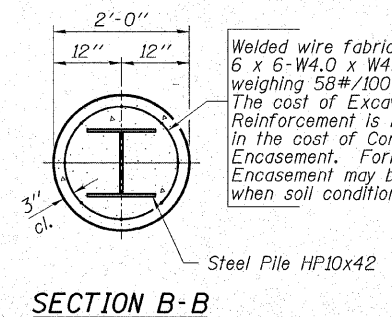
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 242	06-06109-00-BR	CLARK	18	14
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 95529		



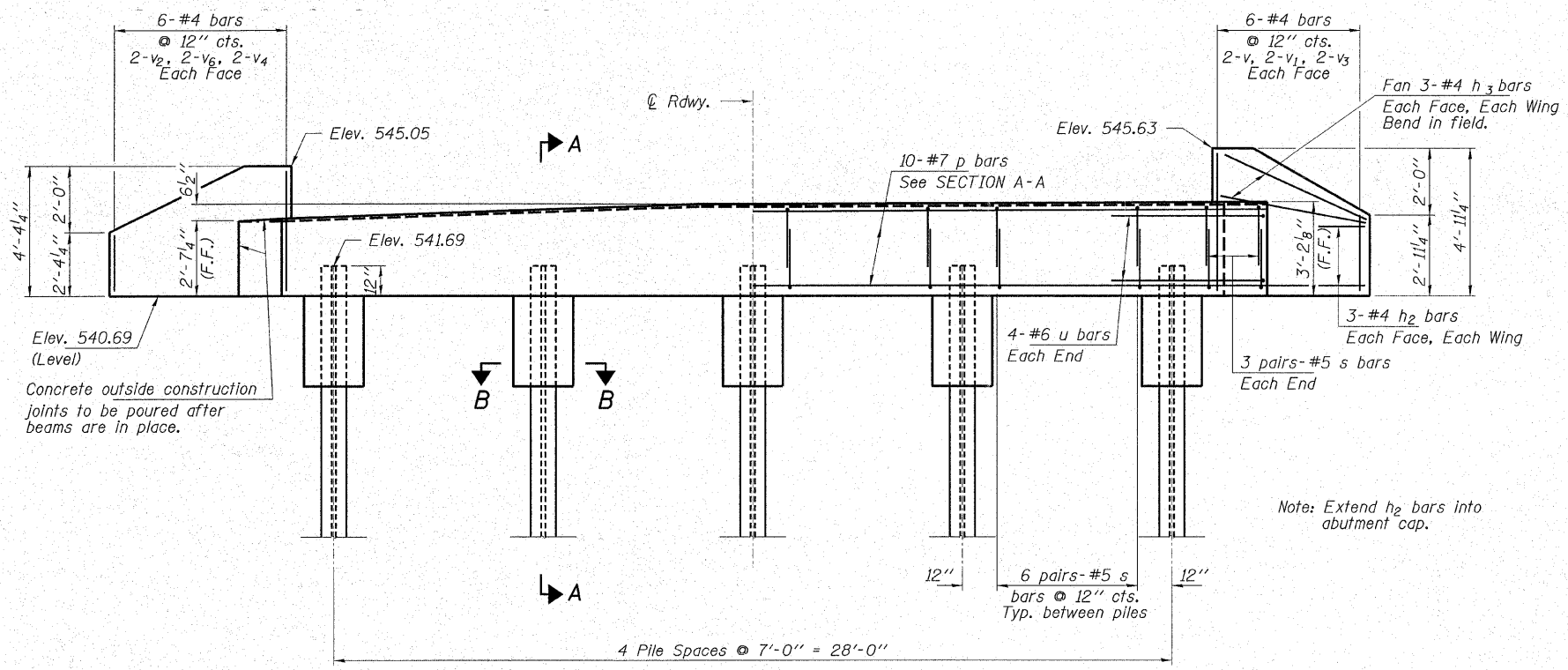
PLAN



SECTION A-A



SECTION B-B



ELEVATION
(Looking North)

Note: Extend h₂ bars into abutment cap.

PILE DATA

Type..... Steel HP10x42
 No. Req'd..... 5
 Allowable Resistance Available..... 112 Kips/Pile
 Nominal Req'd Bearing..... 336 Kips/Pile
 Est. Length..... 15 Ft/Pile

Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

See Sheet 17 for pile details.

BILL OF MATERIAL - N. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h ₂	12	#4	6'-9"	—
h ₃	12	#4	5'-0"	—
p	10	#7	32'-7"	—
s	60	#5	6'-6"	U
u	8	#6	12'-5"	T
v	4	#4	4'-6"	—
v ₁	4	#4	3'-6"	—
v ₂	4	#4	2'-0"	—
v ₃	4	#4	2'-6"	—
v ₄	4	#4	4'-0"	—
v ₆	4	#4	3'-0"	—
Concrete Structures			Cu. Yd.	10.5
Concrete Encasement			Cu. Yd.	1.7
Reinforcement Bars			Pound	1,370
Steel Piles HP10x42			Foot	75

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS

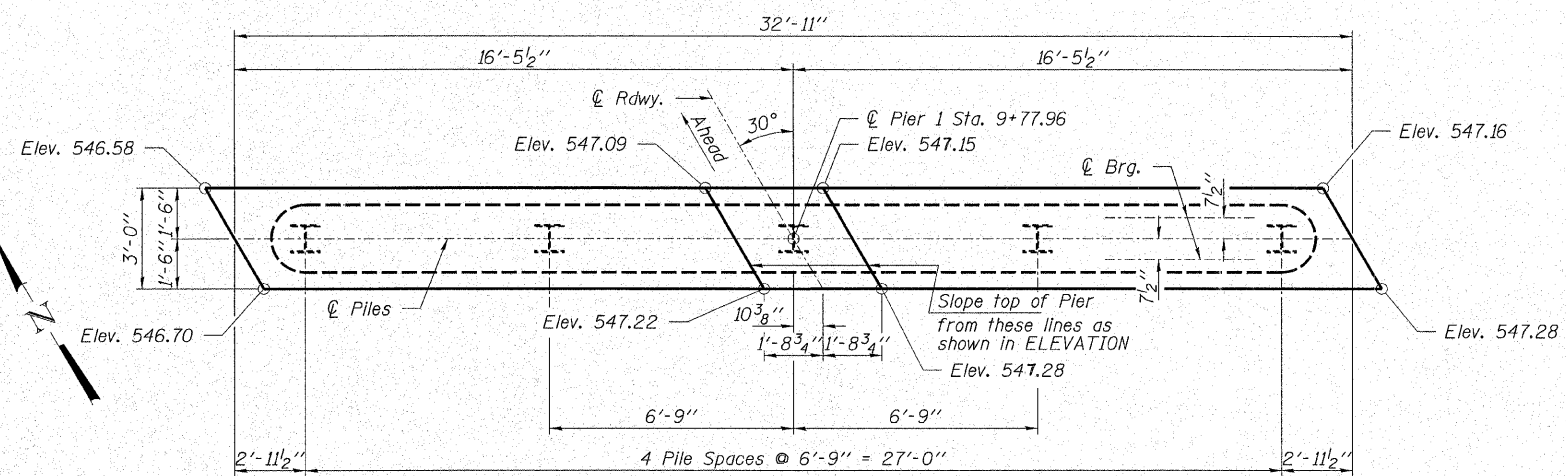
3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

ELGIN • SPRINGFIELD

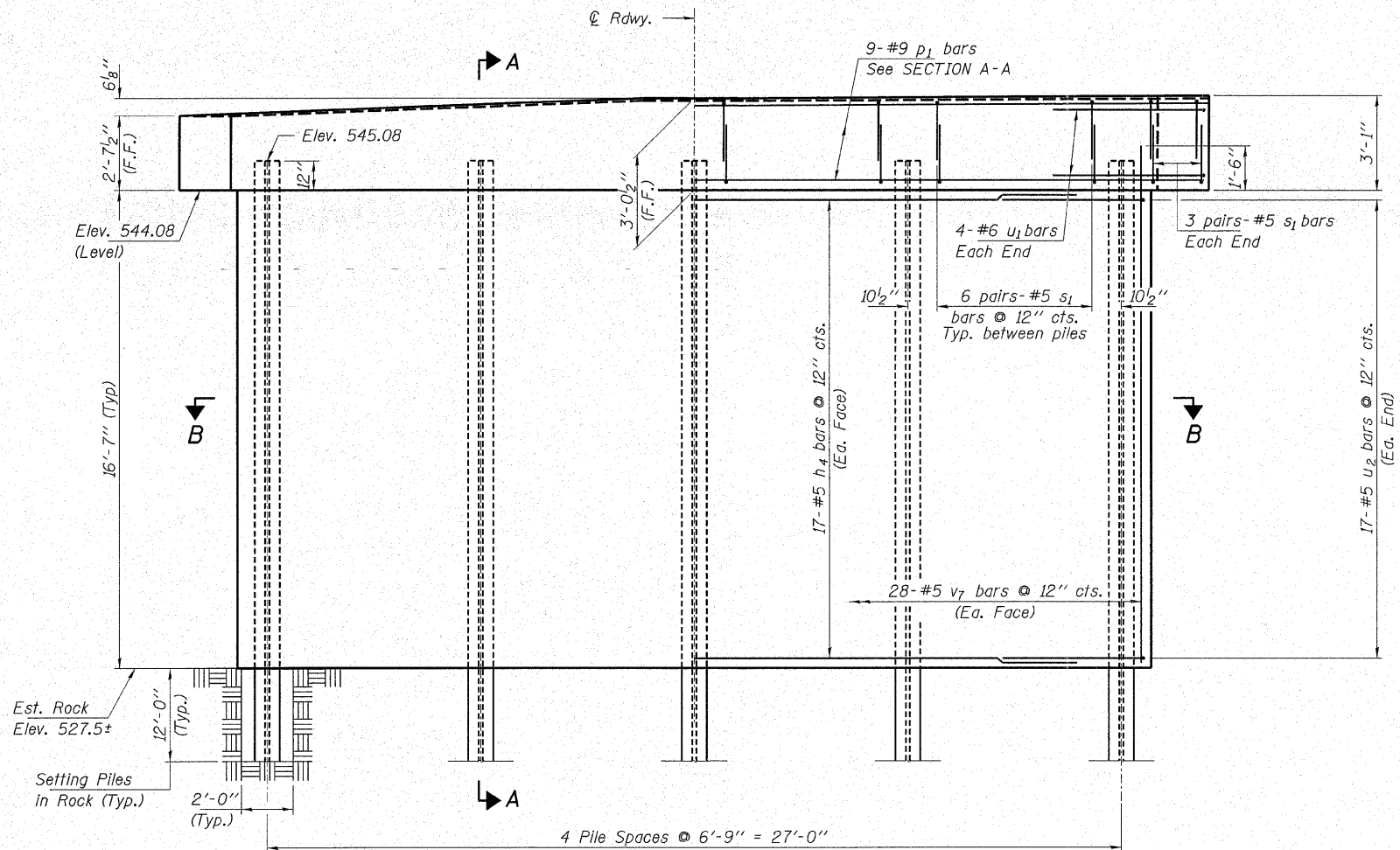
PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.T.M.

NORTH ABUTMENT
SECTION 06-06109-00-BR
DOUGLAS ROAD DISTRICT
CLARK COUNTY
STRUCTURE NO. 012-3329 / STATION 10+00

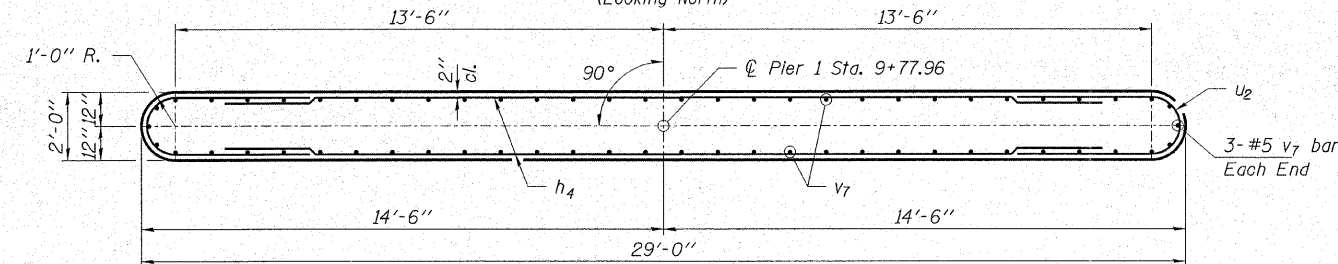
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 242	06-06109-00-BR	CLARK	18	15
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 95529	



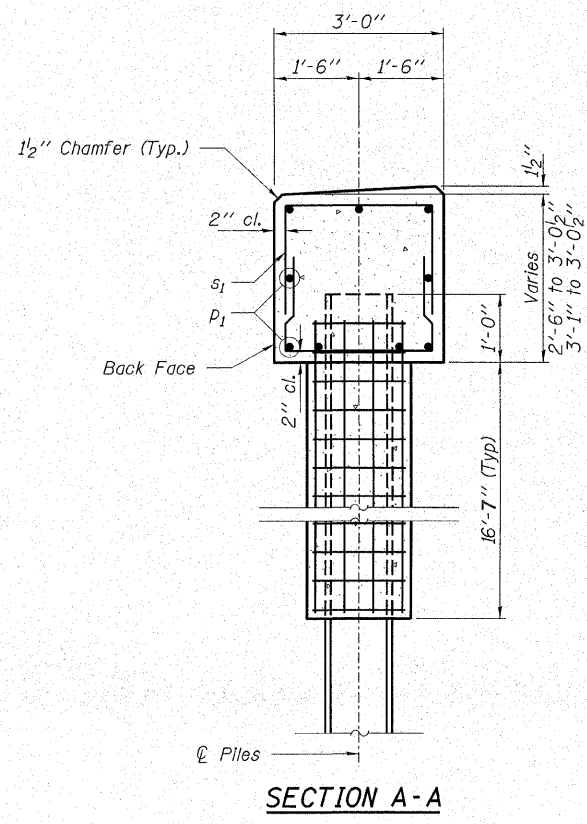
PLAN



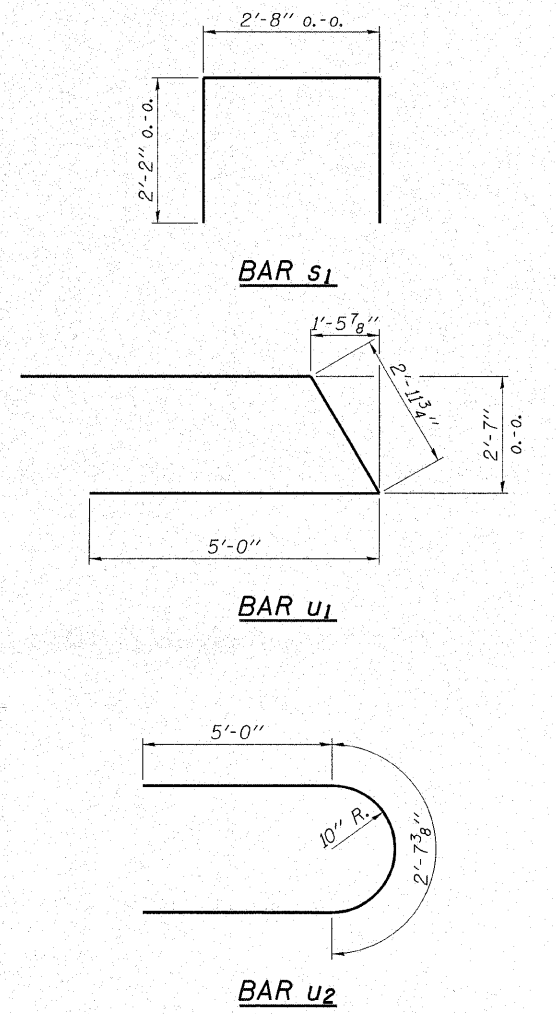
ELEVATION
(Looking North)



SECTION B-B



SECTION A-A



PILE DATA

Type..... Steel HP12x53
 No. Req'd..... 5
 Allowable Resistance Available..... 140 Kips/Pile
 Est. Length..... 30 Feet/Pile

Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.
 See Sheet 17 for pile details.

BILL OF MATERIAL - PIER 1

BAR	NO.	SIZE	LENGTH	SHAPE
h4	34	#5	27'-0"	—
p1	9	#9	32'-7"	—
s1	60	#5	7'-0"	□
u1	8	#6	13'-0"	U
u2	34	#5	12'-8"	U
v7	62	#5	18'-0"	—
Concrete Structures			Cu. Yd.	44.8
Reinforcement Bars			Pound	4,160
Steel Piles HP12x53			Foot	150
Setting Piles in Rock			Each	5
Underwater Str. Exc. Prof. Loc. 1			Each	1

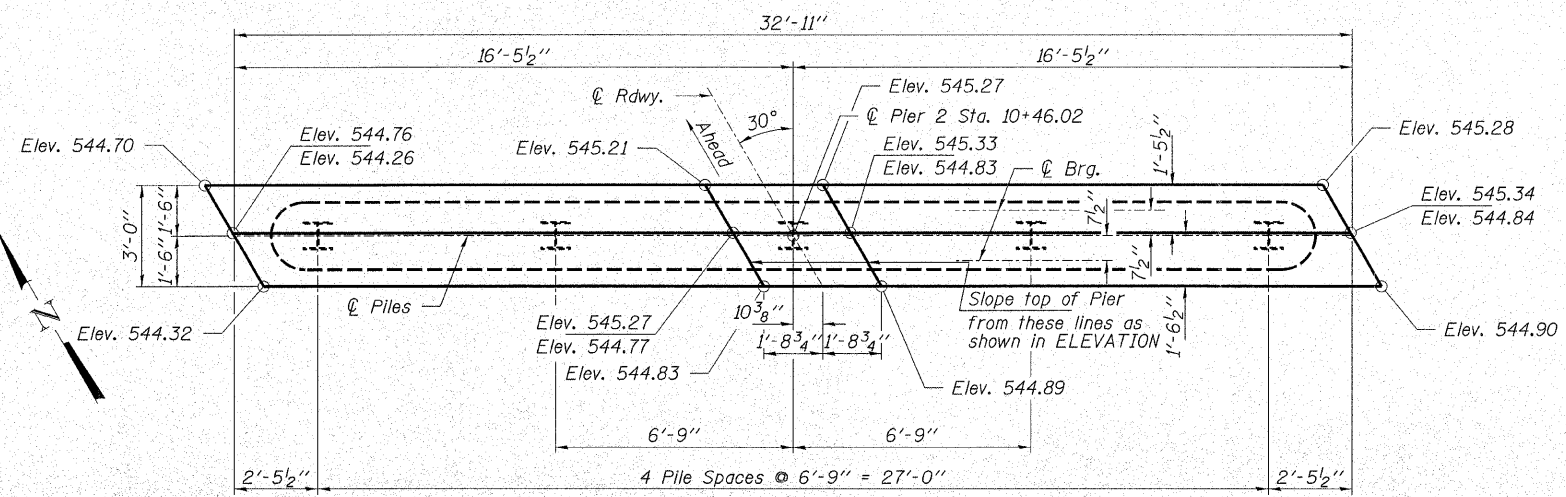
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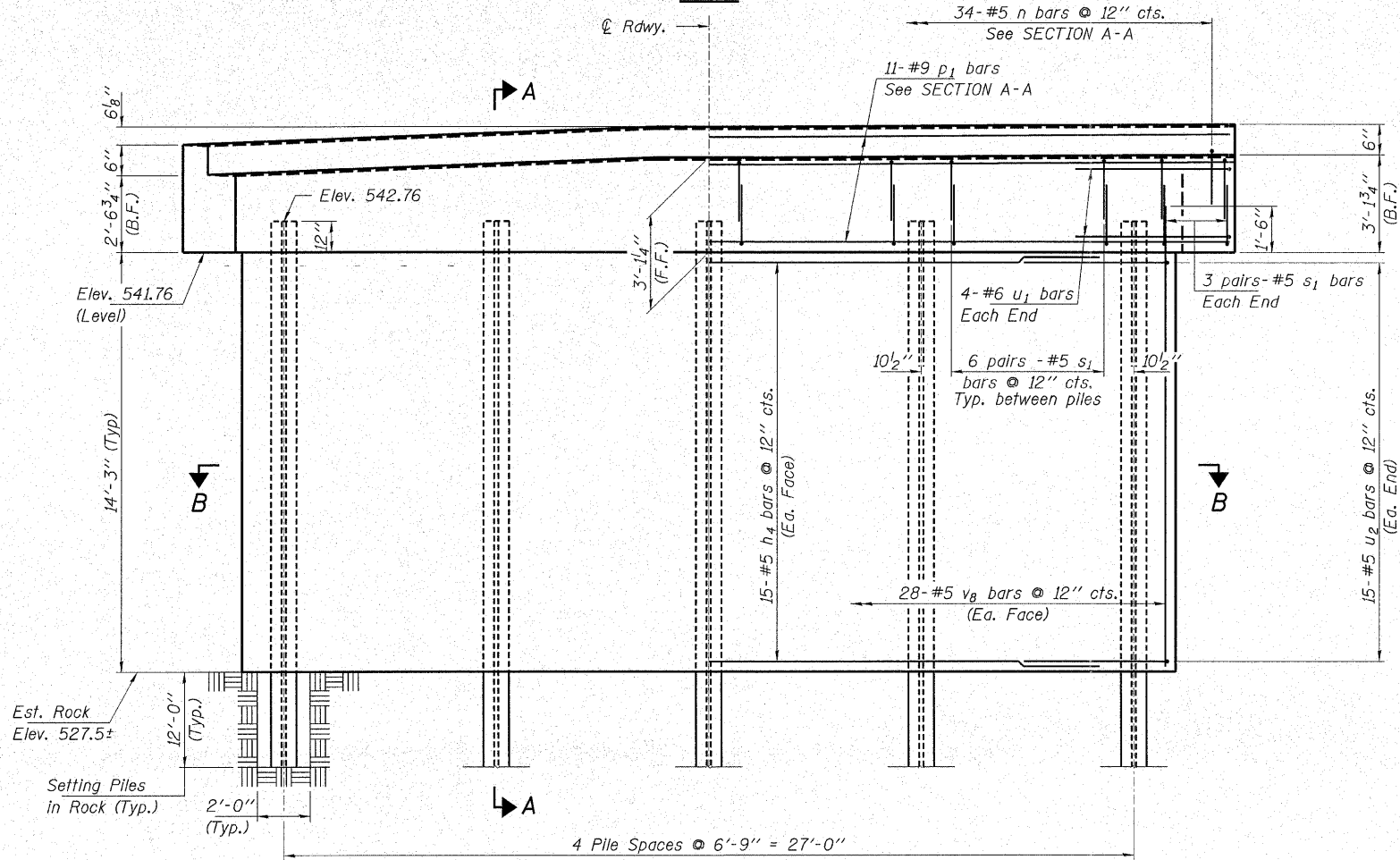
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.T.M.

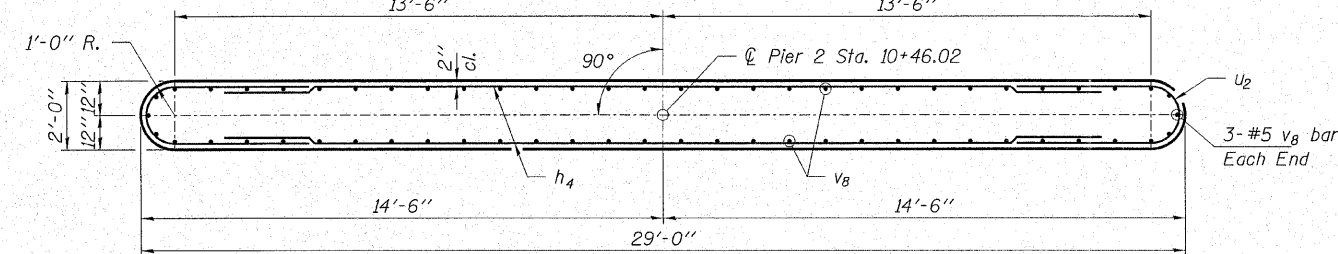
PIER 1
SECTION 06-06109-00-BR
DOUGLAS ROAD DISTRICT
CLARK COUNTY
STRUCTURE NO. 012-3329 / STATION 10+00



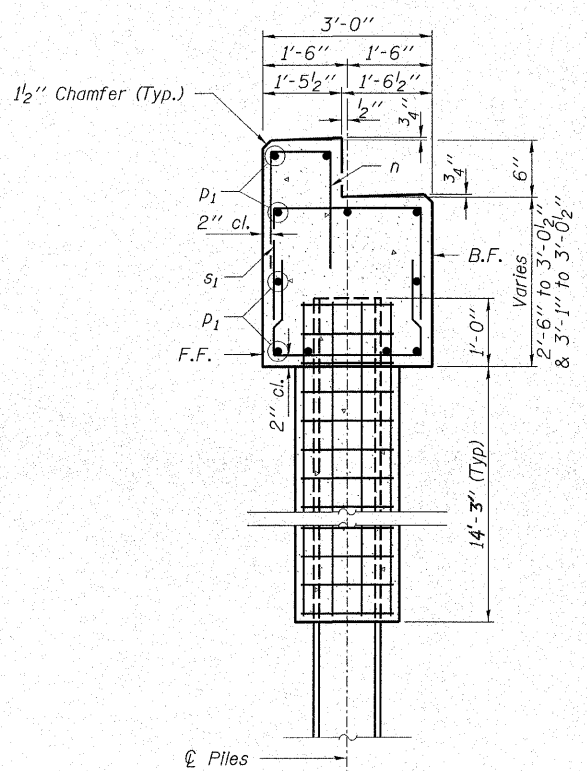
PLAN



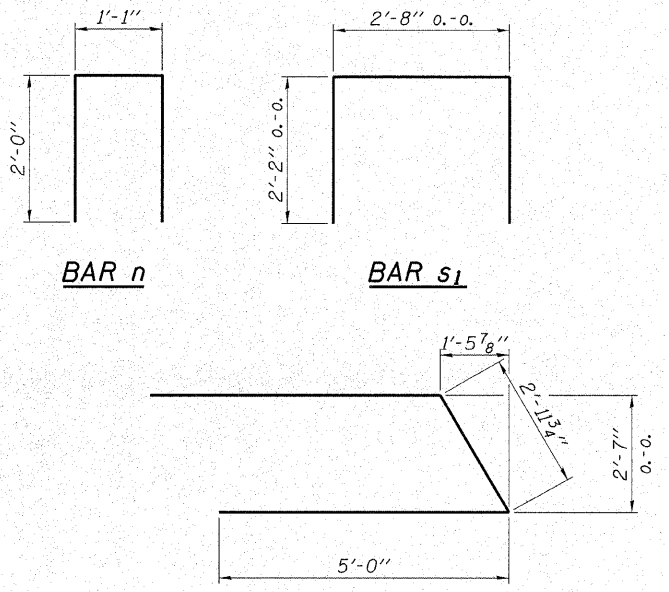
ELEVATION
(Looking North)



SECTION B-B



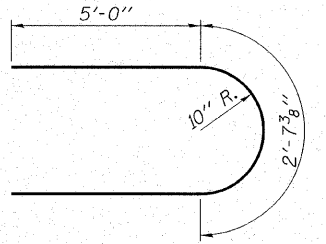
SECTION A-A



BAR n

BAR s1

BAR u1



BAR u2

BILL OF MATERIAL - PIER 2

BAR	NO.	SIZE	LENGTH	SHAPE
h4	30	#5	27'-0"	—
n	34	#5	5'-1"	Π
p1	11	#9	32'-7"	—
s1	60	#5	6'-6"	Π
u1	8	#6	13'-0"	U
u2	30	#5	12'-8"	U
v8	62	#5	15'-7"	—
Concrete Structures			Cu. Yd.	41.8
Reinforcement Bars			Pound	4,470
Steel Piles HP12x53			Foot	140
Setting Piles in Rock			Each	5
Underwater Str. Exc. Prot. Loc. 2			Each	1

PILE DATA

Type.....Steel HP12x53
 No. Req'd.....5
 Allowable Resistance Available.....140 Kips/Pile
 Est. Length.....28 Feet/Pile

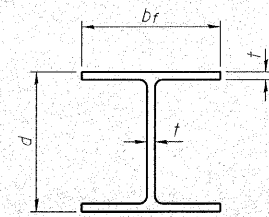
Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.
 See Sheet 17 for pile details.

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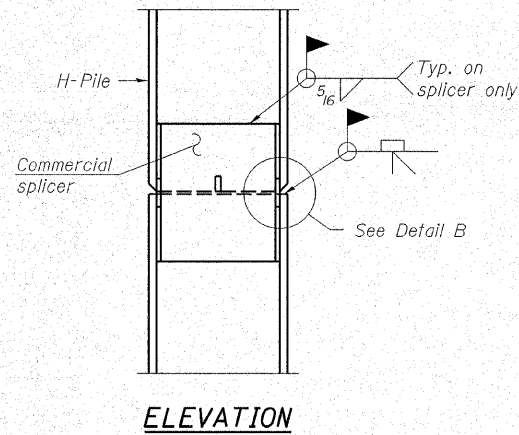
PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
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PIER 2
 SECTION 06-06109-00-BR
 DOUGLAS ROAD DISTRICT
 CLARK COUNTY
 STRUCTURE NO. 012-3329 / STATION 10+00

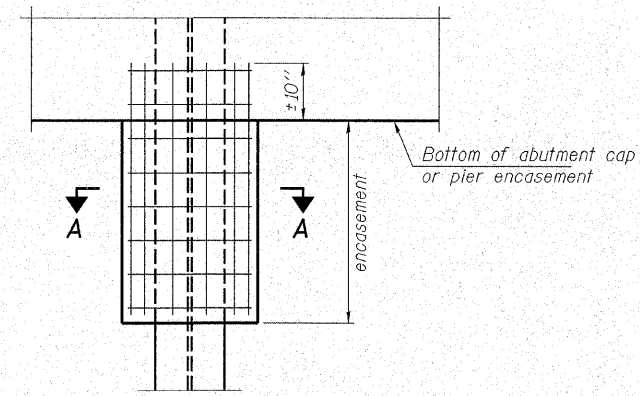


STEEL PILE TABLE

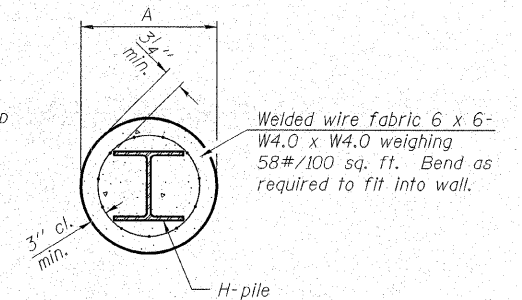
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION



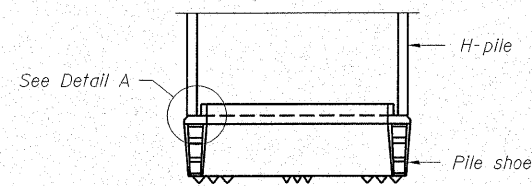
ELEVATION



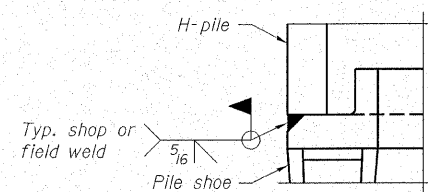
SECTION A-A

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

PILE ENCASEMENT

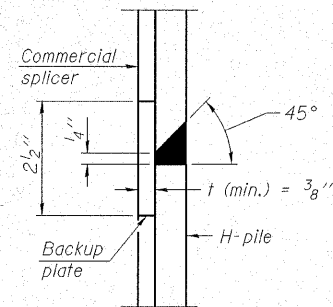


ELEVATION



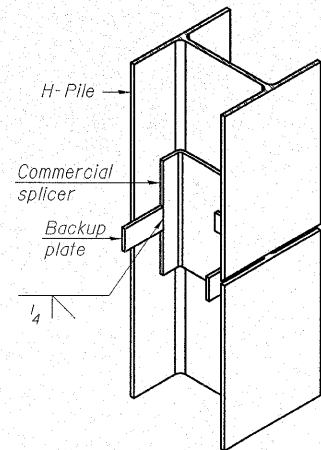
DETAIL A

H-PILE SHOE ATTACHMENT

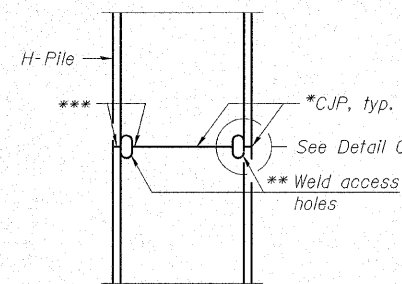


DETAIL "B"

WELDED COMMERCIAL SPLICE

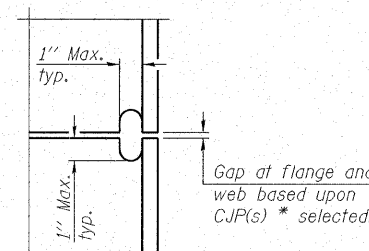


ISOMETRIC VIEW

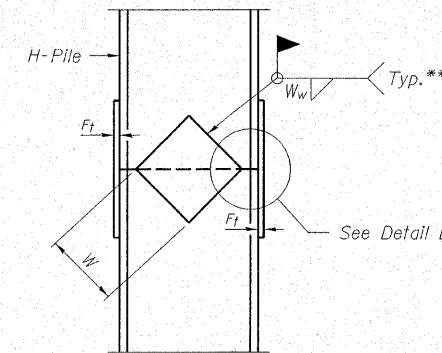


ELEVATION

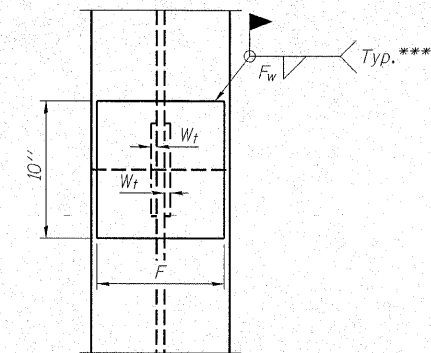
COMPLETE PENETRATION WELD SPLICE



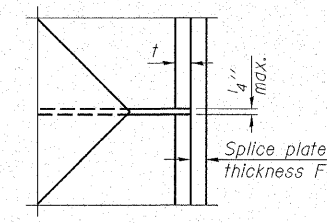
DETAIL C



ELEVATION



END VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 1/2"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 1/2"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5 1/2"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 1/2"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

- * Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- ** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- *** Interrupt welds 1/4" from end of each pile.

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 (217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-23-0026-1 DATE: 10/30/07
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.T.M.

STEEL H-PILE DETAILS
 SECTION 06-06109-00-BR
 DOUGLAS ROAD DISTRICT
 CLARK COUNTY
 STRUCTURE NO. 012-3329 / STATION 10+00

U.S.G.S. ELEV. 546.0

NOBLE		BORING No. B-1		water level reading					
ENGINEERING CONSULTANTS		County: Clark, IL		Sheet No. 1 of 1					
Client: Clark County Highway Dept.		Weather: sunny		Temperature: upper 60's					
Driller: Noble Engineering Consultants		Date Start: 4-19-07		Surface Elevation: n/a					
Location: structure # 3329 (new)		Date Finished: 4-19-07		Driller: Eric Seals					
Backfill: soil cuttings									
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qu (tsf)	Soil Description	Moisture (%)	Elev.
1							0.0'-0.3' Gravel		
543.5	SS-1	1.0'-2.5'	13	5-5-8	80	-	0.3'-9.5' sandy, clayey, etc. FILL	9.2	
541.0	SS-2	3.5'-5.0'	4	1-2-2	100	-		16.6	
538.5	SS-3	6.0'-7.5'	5	2-2-3	80	-		14.2	
536.0	SS-4	8.5'-10.0'	6	2-3-3	90	-	9.5'-18.0' SILTY FINE SAND moist to saturated below 14', loose to v. loose, bwn	16.2	
531.0	SS-5	13.5'-15.0'	3	2-1-2	100	-		17.9	
526.0	SS-6	18.5'-20.0'	100+	100/3"	100	-	18.0'-18.5' HIGHLY WEATHERED ROCK. (527.5±)	12.1	
							AR 18.5'		
							EOB 18.5'		
Drilling Method: HSA (3-3/4" ID)		comments							
Depth: 0' to 18.5'									
Drill Rig: Mobile B-47									
Sampling: split-spoon (SS)									

BORING 1

U.S.G.S. ELEV. 545.5

NOBLE		BORING No. B-2		water level reading					
ENGINEERING CONSULTANTS		County: Clark, IL		Sheet No. 1 of 1					
Client: Clark County Highway Dept.		Weather: sunny		Temperature: upper 60's					
Driller: Noble Engineering Consultants		Date Start: 4-19-07		Surface Elevation: n/a					
Location: structure # 3329 (new)		Date Finished: 4-19-07		Driller: Eric Seals					
Backfill: soil cuttings									
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qu (tsf)	Soil Description	Moisture (%)	Elev.
1							0.0'-0.4' Gravel		
543.0	SS-1	1.0'-2.5'	10	3-1-6	90	-	0.4'-6.5' sandy, clayey, etc. FILL	10.7	
540.5	SS-2	3.5'-5.0'	5	2-2-3	90	-		13.8	
538.0	SS-3	6.0'-7.5'	3	2-1-2	20	-		12.9	
535.5	SS-4	8.5'-10.0'	2	1-1-1	20	-	10.5'-18.0' SILTY SAND moist to saturated below 14', loose, bwn.	15.9	
530.5	SS-5	13.5'-15.0'	7	2-4-3	20	-		12.0	
525.5	SS-6	18.5'-20.0'	100/3"	100/3"	100	-	18.0'-18.5' HIGHLY WEATHERED ROCK. (527.5±)	18.3	
							AR 18.5'		
Drilling Method: HSA (3-3/4" ID)		comments							
Depth: 0' to 18.5'									
Drill Rig: Mobile B-47									
Sampling: split-spoon (SS)									

BORING 2

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BORINGS
SECTION 06-06109-00-BR
DOUGLAS ROAD DISTRICT
CLARK COUNTY
STRUCTURE NO. 012-3329 / STATION 10+00