

RYE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	1
		ILLINOIS	CONTRACT NO. 61F44	

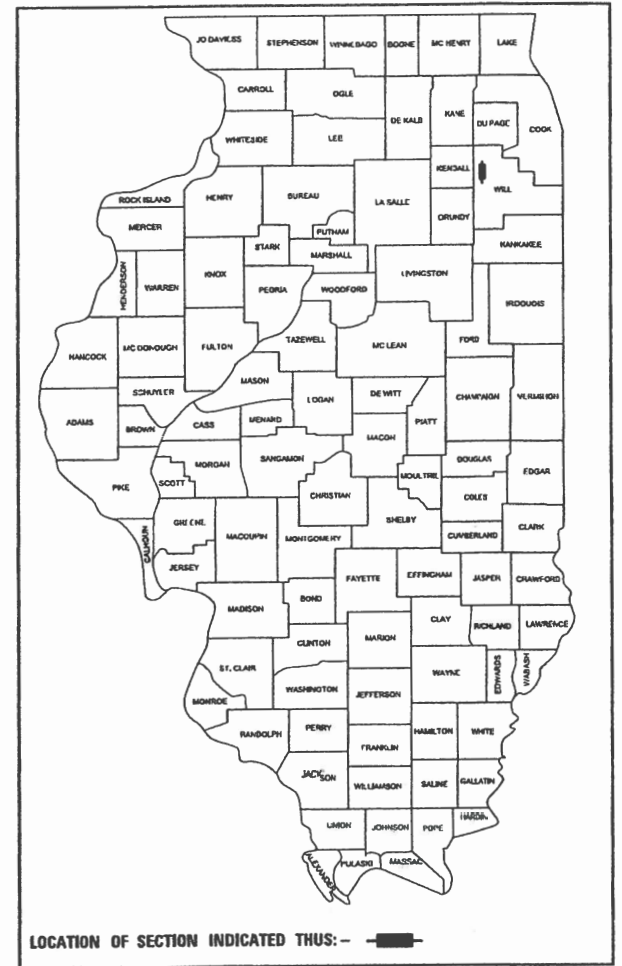
03-08-2019 LETTING ITEM 181

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
**PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY**

FOR INDEX OF SHEETS, SEE SHEET NO. 2  
FOR LIST OF HIGHWAY STANDARDS, SEE SHEET NO. 2

DESIGN DESIGNATION: LOCAL ROAD  
POSTED SPEED: 35 MPH  
CURRENT ADT (2012): 2150 VPD  
DESIGN ADT (2040): 3000 VPD  
DESIGN SPEED: 35 MPH

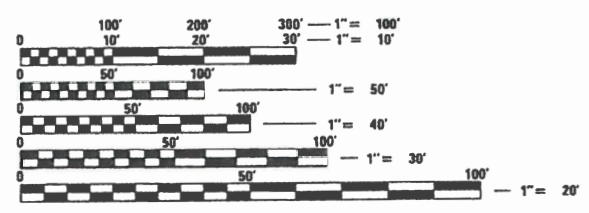
TR 68 (LILY CACHE RD)  
OVER LILY CACHE CREEK  
BRIDGE REPLACEMENT  
SECTION 15-16108-01-BR  
PROJECT NO. XR33(393)  
PLAINFIELD TOWNSHIP  
WILL COUNTY



FEDERAL AID PROGRAM ENGINEER: CARMEN E. RAMOS, P.E. SCHAUMBURG, IL

EXISTING STRUCTURE SN 099-3122

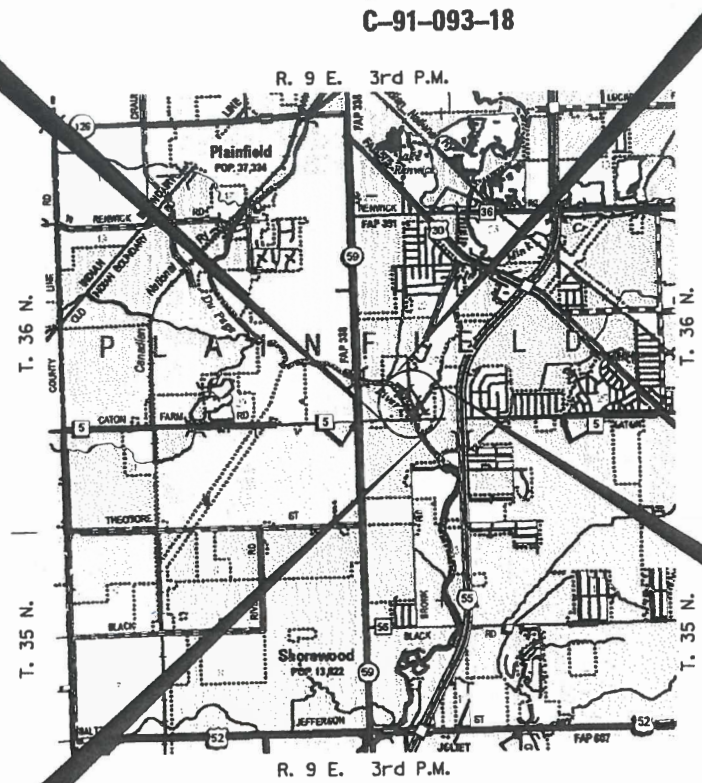
PROJECT ENDS  
STA 22+65



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

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

PROJECT BEGINS  
STA 17+20



PROPOSED STRUCTURE SN 099-9101

GROSS LENGTH = 545.00 FT. = 0.103 MILE  
NET LENGTH = 545.00 FT. = 0.103 MILE

PROJECT ENGINEER ANTHONY MILLER, P.E.  
PROJECT MANAGER DAN MESTELLE, P.E.

CONTRACT NO. 61F44

Since 1945  
**Hutchison Engineering, Inc.**  
JACKSONVILLE • PEORIA • SHOREWOOD • MOLINE  
Illinois Professional Design Firm No. 184-000825

Nov. 13, 2018  
  
ANTHONY W. MILLER  
REGISTERED PROFESSIONAL ENGINEER  
PROJECT ENGINEER

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	<i>Nov 15 2018</i> <i>Ken Mastaglio</i> PLAINFIELD TOWNSHIP HIGHWAY COMMISSIONER
APPROVED	<i>November 15 2018</i> <i>Carol G. Gault</i> PLAINFIELD TOWNSHIP PARK DISTRICT
PASSED	<i>DECEMBER 11 2018</i> <i>CHRISTOPHER HOLT</i> DISTRICT ONE ENGINEER OF LOCAL ROADS & STREETS
RELEASED FOR BID BASED ON LIMITED REVIEW	<i>DECEMBER 11 2018</i> <i>Anthony J. Danigly / AB</i> REGIONAL ENGINEER

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OF THE STATE OF ILLINOIS

**GENERAL NOTES**

THE SCALE SHOWN ON THE DRAWINGS APPLIES ONLY TO FULL SIZE PLANS AND NOT TO THE REDUCED SIZE PLANS.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ACCESS TO ABUTTING PROPERTIES AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT.

EXCEPT AS NOTED ON THE PLANS, PAVEMENT GRADES SHOWN ARE AT THE TOP OF PAVEMENT SURFACES.

FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SAND BAGS PER BARRICADE.

ONLY THOSE TREES DESIGNATED BY THE ENGINEER OR LISTED IN THE TREE REMOVAL SCHEDULE SHALL BE REMOVED. THE CONTRACTOR SHALL PROTECT ALL REMAINING TREES FROM DAMAGE DUE TO HIS/HER OPERATIONS.

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

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE IDOT HIGHWAY STANDARD AS INDICATED BY THE VERSION SHOWN IN THE LIST OF STANDARDS OR THE COPY INCLUDED IN THESE PLANS.

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY.

ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED.

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

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE TOWNSHIP. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, TOWNSHIP, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS/HER CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS. SEE ALSO SPECIAL PROVISION LR 107-4.

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

THE SUBGRADE STABILITY SHALL BE VERIFIED BY PROOF ROLLING WITH A FULLY LOADED TANDEM-AXLE TRUCK.

AGGREGATE SUBGRADE IMPROVEMENT (CU YD) HAS BEEN PROVIDED FOR USE AT THE LOCATIONS INDICATED FOR SOILS THAT TEND TO BE UNSTABLE AND/OR UNSUITABLE. THE ACTUAL NEED FOR REMOVAL AND REPLACEMENT WITH ASI WILL BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE GEOTECHNICAL ENGINEER. ALL POTENTIALLY UNSTABLE SOILS SHOULD BE TESTED WITH A STATIC OR DYNAMIC CONE PENETROMETER AND TREATED IN ACCORDANCE WITH ARTICLE 301.04 OF THE SSRBC AND IDOT SUBGRADE STABILITY MANUAL. IF UNSTABLE AND/OR UNSUITABLE SOILS ARE NOT ENCOUNTERED, THEN THE QUANTITY SHALL BE DEDUCTED AND NO ADDITIONAL COMPENSATION WILL BE DUE TO THE CONTRACTOR.

ANY AGGREGATE SUBGRADE IMPROVEMENT CONTAMINATED AND/OR DAMAGED BY THE CONTRACTOR'S VEHICLES AND/OR EQUIPMENTS IS TO BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER AT CONTRACTOR EXPENSE.

PIPE UNDERDRAINS SHALL BE INSTALLED ACCORDING TO SECTION 601 OF THE SSRBC AND STANDARD 601001-05. TOP OF PIPE UNDERDRAINS SHALL BE PLACED MINIMUM 6" BELOW THE AGGREGATE SUBGRADE IMPROVEMENT LAYER. THE COST OF MAKING PIPE UNDERDRAIN CONNECTIONS TO DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF THE PIPE UNDERDRAINS.

THE ILLINOIS DEPARTMENT OF TRANSPORTATION IS NOT THE OWNER OF RECORD FOR THIS BRIDGE. THOSE SEEKING HISTORIC AS-BUILT OR OTHER RECORD PLANS SHOULD CONTACT THE OWNER OF RECORD. TO MAKE ARRANGEMENTS FOR ACCESS TO THIS INFORMATION PLEASE CONTACT:

KEN MARLAND  
PLAINFIELD TOWNSHIP HIGHWAY COMMISSIONER  
(815) 436-6090

THOSE SEEKING THE FULL HYDRAULIC REPORT SHOULD CONTACT THE OWNER OF RECORD. TO MAKE ARRANGEMENTS FOR ACCESS TO THIS INFORMATION PLEASE CONTACT:

KEN MARLAND  
PLAINFIELD TOWNSHIP HIGHWAY COMMISSIONER  
(815) 436-6090

MEMBERS OF J.U.L.I.E. KNOWN TO BE WITHIN THE LIMITS OF THE IMPROVEMENT ARE:

1. COMED
2. AT&T
3. COMCAST CABLE
4. NICOR GAS
5. ONEOK PARTNERS
5. CITY OF JOLIET

THE CONTRACTOR SHALL CONTACT J.U.L.I.E. AT LEAST 48 HOURS PRIOR TO EXCAVATION TO DETERMINE WHICH UTILITIES ARE IN THE AREA.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN ASSUMED IN CALCULATING PLAN QUANTITIES:

GRANULAR MATERIALS----- 2.05 TONS/CU YD  
NITROGEN FERTILIZER NUTRIENT..... 90 LBS/ACRE (SEEDING)  
PHOSPHORUS FERTILIZER NUTRIENT..... 90 LBS/ACRE (SEEDING)  
POTASSIUM FERTILIZER NUTRIENT..... 90 LBS/ACRE (SEEDING)

**HIGHWAY STANDARDS**

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
601001-05	PIPE UNDERDRAINS
630001-12	STEEL PLATE BEAM GUARDRAIL
630116	BACK SIDE PROTECTION OF GUARDRAIL
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631032-09	TRAFFIC BARRIER TERMINAL, TYPE 6A
701006-05	OFF-RD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701901-08	TRAFFIC CONTROL DEVICES
780001-05	TYPICAL PAVEMENT MARKINGS
782006	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

**INDEX OF SHEETS**

1	COVER SHEET
2	LIST OF STANDARDS, GENERAL NOTES, & LEGEND
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8	SCHEDULES OF QUANTITIES
9	REMOVAL PLANS
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12	ROAD CLOSURE & DETOUR PLAN
13-26	EROSION CONTROL PLANS
27-34	STRUCTURE PLANS
35-40	CROSS SECTIONS

**ALIGNMENT COORDINATES**

STA. 14+93.25	P.O.T.	N: 1,784,190.0096	E: 1,023,782.0854
STA. 15+17.96	P.C.	N: 1,784,214.1535	E: 1,023,776.8318
STA. 15+67.38	P.I.	N: 1,784,262.4448	E: 1,023,766.3238
STA. 16+16.58	P.T.	N: 1,784,308.3658	E: 1,023,748.0556
STA. 18+53.92	P.C.	N: 1,784,529.3022	E: 1,023,661.3383
STA. 18+97.22	P.I.	N: 1,784,569.6122	E: 1,023,645.5166
STA. 19+40.39	P.T.	N: 1,784,607.3550	E: 1,023,624.2870
STA. 26+18.87	P.C.	N: 1,785,198.7077	E: 1,023,291.6627
STA. 27+30.45	P.I.	N: 1,785,295.9597	E: 1,023,236.9603
STA. 28+37.80	P.T.	N: 1,785,407.4666	E: 1,023,232.8960
STA. 30+00.00	P.O.T.	N: 1,785,569.5542	E: 1,023,226.9881

**COMMITMENTS**

TEMPORARY PERIMETER EROSION BARRIER AND HIGH VISIBILITY FENCE WILL BE INSTALLED ALONG COMPENSATORY STORAGE PROJECT LIMITS.

**PROJECT BENCHMARKS**

BM #401: CHISLED "□" ON WING WALL AT NORTH EAST CORNER OF CATON FARM ROAD BRIDGE OVER THE DUPAGE RIVER - ELEVATION = 592.12

BM #403: CHISLED "□" ON WING WALL AT NORTH WEST CORNER OF LILY CACHE ROAD BRIDGE OVER THE DUPAGE RIVER STA. 20+32±, 15± RT - ELEVATION = 592.01

BM #404: SURVEY SPIKE IN POWER POLE STA. 25+53±, 17± LT. - ELEVATION = 590.10

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PLOT DATE = 12/13/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
LIST OF STANDARDS, GENERAL NOTES & LEGEND**

SCALE: N/A SHEET 1 OF 1 SHEETS STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	2
			CONTRACT NO. 61F44	
		ILLINOIS	FED. AID PROJECT	

SUMMARY OF QUANTITIES

CONSTR. CODE

SUMMARY OF QUANTITIES

CONSTR. CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE		
				ROADWAY	TRAINEES	BRIDGE
				0004	0042	0010
						S.N. 099-9101
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	437	437		
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	325	325		
Δ 20101400	NITROGEN FERTILIZER NUTRIENT	POUND	52	52		
Δ 20101500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	52	52		
Δ 20101600	POTASSIUM FERTILIZER NUTRIENT	POUND	52	52		
• 20200100	EARTH EXCAVATION	CU YD	743	743		
20300100	CHANNEL EXCAVATION	CU YD	725			725
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	308	308		
21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	2594	2594		
Δ 25000210	SEEDING, CLASS 2A	ACRE	0.6	0.6		
Δ 25000310	SEEDING, CLASS 4	ACRE	0.1	0.1		
Δ 25100630	EROSION CONTROL BLANKET	SQ YD	2673	2673		
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	57	57		
28000305	TEMPORARY DITCH CHECKS	FOOT	128	128		
28000400	PERIMETER EROSION BARRIER	FOOT	1399	1399		
28000500	INLET AND PIPE PROTECTION	EACH	1	1		
28100109	STONE RIPRAP, CLASS A5	SQ YD	565			565

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE		
				ROADWAY	TRAINEES	BRIDGE
				0004	0042	0010
						S.N. 099-9101
28200200	FILTER FABRIC	SQ YD	565			565
30300001	AGGREGATE SUBGRADE IMPROVEMENT	CU YD	103	103		
• 30300112	AGGREGATE SUBGRADE IMPROVEMENT 12"	SQ YD	1233	1233		
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	343	343		
40603335	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	140	107		33
40700100	BITUMINOUS MATERIALS (TACK COAT)	POUND	494	494		
44000100	PAVEMENT REMOVAL	SQ YD	1145	1145		
48101500	AGGREGATE SHOULDERS, TYPE B 6"	SQ YD	623	623		
• 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1			1
50200100	STRUCTURE EXCAVATION	CU YD	80			80
50200300	COFFERDAM EXCAVATION	CU YD	70			70
50201101	COFFERDAM (TYPE 1) (LOCATION - 1)	EACH	1			1
50201102	COFFERDAM (TYPE 1) (LOCATION - 2)	EACH	1			1
50300225	CONCRETE STRUCTURES	CU YD	86.4			86.4
50300280	CONCRETE ENCASEMENT	CU YD	3.5			3.5
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	3060			3060
50800105	REINFORCEMENT BARS	POUND	8500			8500

• SEE SPECIAL PROVISIONS  
 Δ SPECIALTY ITEMS

• SEE SPECIAL PROVISIONS  
 Δ SPECIALTY ITEMS

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PLOT SCALE = 16,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 12/13/2018	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
 SUMMARY OF QUANTITIES

SCALE: N/A	SHEET 1 OF 3 SHEETS	STA. N/A TO STA. N/A	RTE. NO. TR 68	SECTION 15-16108-01-BR	COUNTY WILL	TOTAL SHEETS 40	SHEET NO. 3
						CONTRACT NO. 61F44	
ILLINOIS FED. AID PROJECT							

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE		
				ROADWAY	TRAINEES	BRIDGE
				0004	0042	0010 S.N. 099-9101
△ 50901050	STEEL RAILING, TYPE SM	FOOT	208			208
51201400	FURNISHING STEEL PILES HP10X42	FOOT	603			603
51202305	DRIVING PILES	FOOT	603			603
51203400	TEST PILE STEEL HP10X42	EACH	4			4
51500100	NAME PLATES	EACH	1			1
• 59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	12.0			12.0
60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	3	3		
60108100	PIPE UNDERDRAINS 4" (SPECIAL)	FOOT	53	53		
60108204	PIPE UNDERDRAINS, TYPE 2, 4"	FOOT	866	866		
△ 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	188	188		
△ 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4	4		
△ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	4		
63200310	GUARDRAIL REMOVAL	FOOT	205	205		
67100100	MOBILIZATION	L SUM	1	1		
△ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4		
△ 78200006	GUARDRAIL REFLECTORS, TYPE B	EACH	8	8		
△ A2001716	TREE, ACER SACCHARUM (SUGAR MAPLE), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		

• SEE SPECIAL PROVISIONS  
 △ SPECIALTY ITEMS

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	DATE -	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE		
				ROADWAY	TRAINEES	BRIDGE
				0004	0042	0010 S.N. 099-9101
△ A2002016	TREE, AESCULUS GLABRA (OHIO BUCKEYE), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2002516	TREE, CARPINUS CAROLINIANA (AMERICAN HORNBEAM), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2002616	TREE, CARYA CORDIFORMIS (BITTERNUT HICKORY), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2002716	TREE, CARYA OVATA (SHAGBARK HICKORY), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2002816	TREE, CATALPA SPECIOSA (NORTHERN CATALPA), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2002916	TREE, CELTIS OCCIDENTALIS (COMMON HACKBERRY), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2004616	TREE, GLEDITSIA TRIACANTHOS INERMIS (THORNLESS COMMON HONEYLOCUST), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2005016	TREE, GYMNOCLADUS DIOICUS (KENTUCKY COFFEETREE), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2005316	TREE, LIQUIDAMBAR STYRACIFLUA (AMERICAN SWEETGUM), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2005416	TREE, LIRIODENDRON TULIPIFERA (TULIP TREE), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2005616	TREE, OSTRYA VIRGINIANA (AMERICAN HOPHORNBEAM), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2005816	TREE, PLATANUS OCCIDENTALIS (SYCAMORE), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2006416	TREE, QUERCUS ALBA (WHITE OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2006516	TREE, QUERCUS BICOLOR (SWAMP WHITE OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2006616	TREE, QUERCUS IMBRICARIA (SHINGLE OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2006716	TREE, QUERCUS MACROCARPA (BUR OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
△ A2006816	TREE, QUERCUS MUEHLENBERGII (CHINKAPIN OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		

• SEE SPECIAL PROVISIONS  
 △ SPECIALTY ITEMS

LILY CACHE RD  
 SUMMARY OF QUANTITIES

SCALE: N/A	SHEET 2 OF 3 SHEETS	STA. N/A	TO STA. N/A	RTE. NO. TR 68	SECTION 15-16108-01-BR	COUNTY WILL	TOTAL SHEETS 40	SHEET NO. 4
							CONTRACT NO. 61F44	
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SUMMARY OF QUANTITIES

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CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE		
				ROADWAY 0004	TRAINEES 0042	BRIDGE 0010 S.N. 099-9101
Δ • A2007116	TREE, QUERCUS RUBRA (RED OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
Δ • A2007150	TREE, QUERCUS VELUTINA (BLACK OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
Δ • A2007616	TREE, TAXODIUM DISTICHUM (COMMON BALD CYPRESS), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
▲ • A2007816	TREE, TILIA AMERICANA (AMERICAN LINDEN/ BASSWOOD), 2" CALIPER, BALLED AND BURLAPPED	EACH	2	2		
Δ • A2C010G3	TREE, ASIMINA TRILOBA (PAW PAW), CONTAINER GROWN, 3-GALLON	EACH	2	2		
Δ • B2000900	TREE, AMELANCHIER ARBOREA (DOWNY SERVICEBERRY), 6' HEIGHT, CLUMP FORM, BALLED AND BURLAPPED	EACH	2	2		
▲ • B2001266	TREE, CORNUS ALTERNIFOLIA (PAGODA DOG WOOD), 6' HEIGHT, CLUMP FORM, BALLED AND BURLAPPED	EACH	2	2		
Δ • B2001616	TREE, CRATAEGUS CRUSGALLI INERMIS (THORN LESS COCKSPUR HAWTHORN), 2" CALIPER, TREE FORM, BALLED AND BURLAPPED	EACH	2	2		
Δ • B2003866	TREE, MALUS IOENSIS (PRAIRIE CRABAPPLE), 6' HEIGHT, CLUMP FORM, BALLED AND BURLAPPED	EACH	2	2		
Δ • X2200003	FENCE (SPECIAL)	FOOT	530	530		
• X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1		
• 70107025	CHANGEABLE MESSAGE SIGN	CAL DA	28	28		
Z0076600	TRAINEES	HOUR	500		500	
Z0076604	TRAINEES TRAINING GRADUATE PROGRAM	HOUR	500		500	
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1		

• SEE SPECIAL PROVISIONS  
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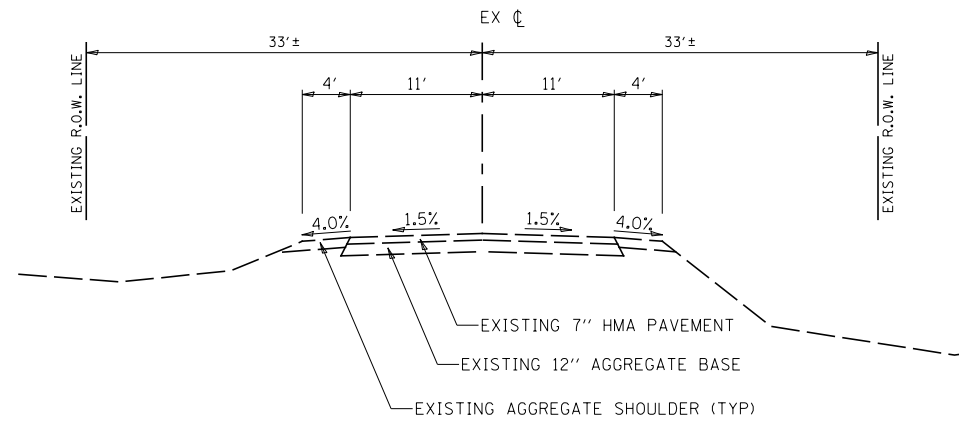
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
 SUMMARY OF QUANTITIES

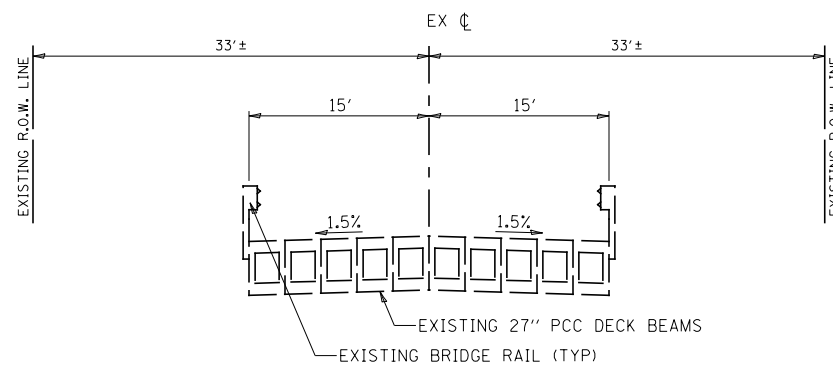
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RYE No.	SECTION	COUNTY	TOTAL SHEETS	SHEET No.
TR 68	15-16108-01-BR	WILL	40	5
			CONTRACT NO. 61F44	
ILLINOIS   FED. AID PROJECT				



**EXISTING TYPICAL SECTION  
TR 68 (LILY CACHE ROAD)**

STA. 17+20.00 TO STA. 19+67.83  
STA. 20+32.17 TO STA. 22+65.00



**EXISTING TYPICAL SECTION  
TR 68 (LILY CACHE ROAD)**

STA. 19+67.83 TO STA. 20+32.17

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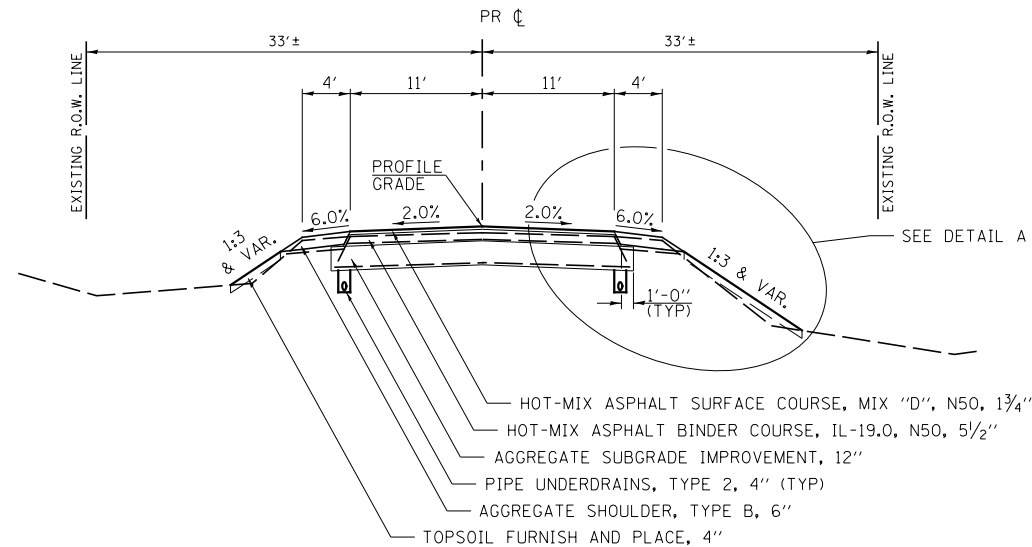
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
EXISTING TYPICAL SECTIONS**

SCALE: N/A SHEET 1 OF 2 SHEETS STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	6
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

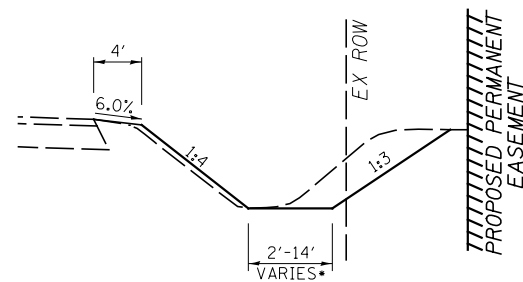


**PROPOSED TYPICAL SECTION  
TR 68 (LILY CACHE ROAD)**

STA. 17+20.00 TO STA. 19+43.00  
STA. 20+47.00 TO STA. 22+65.00

HOT-MIX ASPHALT MIXTURE REQUIREMENTS		
ROADWAY	MIXTURE TYPE	AIR VOIDS @ Ndes
	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50 (IL-9.5mm); 1 3/4" - 1 1/2"	4% @ 50 GYR
	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50 5/2", 2 1/4" MINIMUM	4% @ 50 GYR

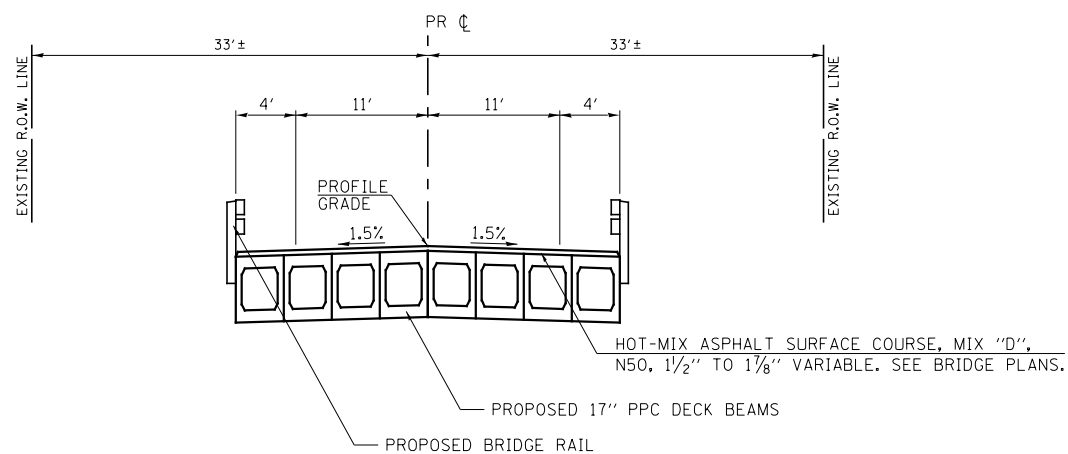
NOTES:  
THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURE QUANTITIES IS 112 LBS/SQ YD/IN.  
THE "AC TYPE" FOR NON-POLYMERIZED HMA MIXES SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.  
FOR USE OF RECYCLED MATERIALS SEE SPECIAL PROVISIONS.



• SEE CROSS SECTIONS

**DETAIL A**

STA. 23+50.00 TO STA. 28+50.00 RT



**PROPOSED TYPICAL SECTION  
TR 68 (LILY CACHE ROAD)**

STA. 19+43.00 TO STA. 20+47.00

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
PROPOSED TYPICAL SECTIONS**

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	7
CONTRACT NO. 61F44				

SCALE: N/A SHEET 2 OF 2 SHEETS STA. N/A TO STA. N/A

ILLINOIS FED. AID PROJECT

TREE REMOVAL SCHEDULE

STATION	OFFSET	SIDE	20100110	20100210
			TREE REMOVAL	
			6 TO 15 UNITS DIAMETER	OVER 15 UNITS DIAMETER
UNIT				
17+49.02	27.4	LT	8	
17+71.55	23.57'	LT	10	
17+86.38	25.21'	LT	6	
17+91.49	16.63'	RT	8	
17+94.62	23.66'	LT	10	
17+96.84	17.99'	RT	15	
18+01.96	25.70'	LT	15	
18+06.96	19.78'	RT	9	
18+08.30	25.92'	LT	15	
18+08.40	25.84'	LT		18
18+13.10	19.65'	RT	9	
18+26.57	22.37'	RT		24
18+33.06	21.66'	RT	11	
18+43.38	22.37'	RT	6	
18+68.26	24.63'	RT		34
18+88.69	20.81'	RT	7	
19+04.09	26.65'	RT	6	
19+05.23	25.95'	RT	15	
19+09.67	25.61'	RT	6	
19+32.20	30.69'	RT	20	
19+35.66	18.25'	LT	8	
19+38.71	18.60'	LT	6	
19+46.68	22.59'	RT	10	
19+53.04	21.12'	LT	11	
19+52.10	25.07'	RT	12	
20+41.92	15.94'	RT	14	
20+54.88	30.18'	LT	12	
20+60.63	27.99'	LT	8	
20+71.89	19.39'	LT	8	
20+77.48	20.14'	LT	8	
20+82.98	23.92'	LT	8	
20+89.57	18.28'	RT		27
21+16.47	21.54'	RT	14	
21+35.71	19.23'	RT	10	
21+40.63	20.20'	RT	8	
21+59.59	18.38'	RT		16
21+60.61	18.30'	RT		16
21+61.68	15.44'	RT		16
21+92.78	14.55'	RT	15	
21+97.51	14.29'	RT	22	
22+49.17	13.89'	RT	25	
23+91.80	17.17'	RT		24
24+27.93	18.02'	RT		18
24+37.83	18.27'	RT		18
24+51.64	18.62'	RT	12	
24+77.39	21.07'	RT		18
25+19.08	19.85'	RT		18
25+26.23	17.88'	RT	15	
25+61.44	21.22'	RT		40
26+58.45	19.71'	RT		20
26+77.76	20.53'	RT		18
27+12.09	19.48'	RT	13	
27+87.21	23.44'	RT	22	
TOTAL			437.0	325.0
USE			437	325

TEMPORARY FENCE SCHEDULE

STATION TO STATION	SIDE	28000400	X2200003	
		PERIMETER EROSION BARRIER	FENCE (SPECIAL)	
		FOOT		
17+20.00	19+33.14	RT	218.1	
17+20.00	19+43.00	LT	220.1	
20+47.00	22+65.00	LT	219.1	
20+56.00	22+65.00	RT	211.3	
23+49.00	28+51.00	RT	529.5	529.5
TOTAL			1398.1	529.5
USE			1399	530

EROSION CONTROL SCHEDULE

STATION	OFFSET	SIDE	28000305	28000500
			TEMPORARY DITCH CHECKS	INLET AND PIPE PROTECTION
			FOOT	EACH
23+50	28.9'	RT	11.5	
24+70	31.8'	RT	25	
26+80	31.5'	RT	17.8	
26+90	17.4'	RT		1
27+10	31.2'	RT	17.8	
27+54	30.8'	RT	19.8	
27+86	30.6'	RT	19.8	
28+18	27.9'	RT	15.5	
TOTAL			127.2	1
USE			128	1

SEEDING SCHEDULE

STATION TO STATION	SIDE	20101400	20101500	20101600	25000210	25000310	25100630	28000250	
		NITROGEN FERTILIZER	PHOSPHOROUS FERTILIZER	POTASSIUM FERTILIZER	SEEDING CLASS 2A	SEEDING CLASS 4	EROSION CONTROL BLANKET	TEMPORARY EROSION CONTROL SEEDING	
		POUND			ACRE	ACRE	SQ YD	POUND	
17+20.00	19+43.00	RT	3.6	3.6	3.6	0.03	0.01	157.7	4.0
17+20.01	19+43.01	LT	5.4	5.4	5.4	0.05	0.01	257.6	6.0
20+47.00	22+65.00	LT	4.5	4.5	4.5	0.04	0.01	223.4	5.0
20+47.01	22+65.01	RT	4.5	4.5	4.5	0.04	0.01	245.2	5.0
23+50.00	28+43.93	RT	33.3	33.3	33.3	0.37		1788.6	37.0
TOTAL			51.3	51.3	51.3	0.53	0.04	2672.5	57.0
USE			52	52	52	0.6	0.1	2673	57

PAVEMENT SCHEDULE

STATION TO STATION	WIDTH	LENGTH	21001000	30300001	30300112	40700100	40603080	40603335	
			GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	AGGREGATE SUBGRADE IMPROVEMENT	AGGREGATE SUBGRADE IMPROVEMENT	BITUMINOUS MATERIALS (TACK COAT)	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	
			SQ YD	CU YD	SQ YD	POUND	TON	TON	
17+20.00	19+43.00	22.00	223.00	156.2	52.1	624.6	250.3	173.6	53.8
20+47.00	22+15.00	22.00	168.00	117.6	39.2	470.6	188.6	130.8	40.5
22+15.00	22+65.00	VAR.	50.00	34.2	11.4	136.9	54.7	38.0	11.8
TOTAL				308.0	102.7	1232.0	493.6	342.4	106.0
USE				308	103	1233	494	343	107

PIPE UNDERDRAINS SCHEDULE

STATION TO STATION	SIDE	60100060	60108100	60108206	
		CONCRETE HEADWALLS FOR PIPE DRAINS	PIPE UNDERDRAINS, 4" (SPECIAL)	PIPE UNDERDRAINS, TYPE 2, 4"	
		EACH	FOOT	FOOT	
17+20.00	19+43.00	LT	1	19.5	217.4
17+20.00	19+43.00	RT		11.5	220.6
20+47.00	22+65.00	LT	1	10.0	214.0
20+47.00	22+65.00	RT	1	12.0	214.0
TOTAL			3	53.0	866.0
USE			3	53	866

PAVEMENT REMOVAL SCHEDULE

STATION TO STATION	WIDTH (AVERAGE)	LENGTH (AVERAGE)	44000100	
			PAVEMENT REMOVAL	
			SQ YD	
17+20.00	19+68.71	21.70	248.71	582.4
20+31.66	22+65.00	21.70	233.34	562.6
TOTAL				1145.0
USE				1145

GUARDRAIL REMOVAL SCHEDULE

STATION TO STATION	SIDE	63200310	
		GUARDRAIL REMOVAL	
		FOOT	
19+16	19+68	LT	52
19+19	19+68	RT	51
20+31	20+82	LT	51
20+31	20+82	RT	51
TOTAL			205
USE			205

GUARDRAIL SCHEDULE

STATION TO STATION	SIDE	63000001	63100087	63100167	72501000	78200006
		STEEL BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	TRAFFIC BARRIER TERMINAL, TYPE 6A	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	TERMINAL MARKER - DIRECT APPLIED	GUARDRAIL REFLECTORS, TYPE B
		FOOT	EACH			
17+59	19+43	LT	100.0	1	1	
18+43	19+43	RT	12.5	1	1	
17+59	21+47	LT				4
18+43	21+97	RT				4
20+47	21+47	LT	12.5	1	1	1
20+47	21+97	RT	62.5	1	1	1
TOTAL			187.5	4	4	8
USE			188	4	4	8

AGGREGATE SHOULDER SCHEDULE

STATION TO STATION	SIDE	WIDTH (AVERAGE)	LENGTH (AVERAGE)	48101500	
				AGGREGATE SHOULDERS, TYPE B 6"	
				SQ YD	
17+20.00	19+42.08	LT	8.00	222.08	184.8
17+20.00	19+42.08	RT	8.00	222.08	150.9
20+48.08	22+63.00	LT	7.75	214.92	126.1
20+48.08	22+63.00	RT	8.00	214.92	160.4
TOTAL					622.2
USE					623

EARTHWORK SCHEDULE

STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	TOPSOIL FURNISH AND PLACE, 4"	STRUCTURE EXCAVATION	COFFERDAM EXCAVATION	FILL	WASTE (SHORTAGE)					
								20200100	20300100	21101615	50200100	50200300
								CU YD		SQ YD	CU YD	
17+20.00	19+43.00		356.9			237	(194)					
20+47.00	22+65.00		448			241	(116)					
23+50.00	28+50.00		1788.6			7.3	456					
CHANNEL		725										
STRUCTURE				80								
COFFERDAMS					70							
TOTAL	743	725	2593.5	80	70	485.3	146					
USE	743	725	2594	80	70	486	146					

\*15% SHRINKAGE FACTOR

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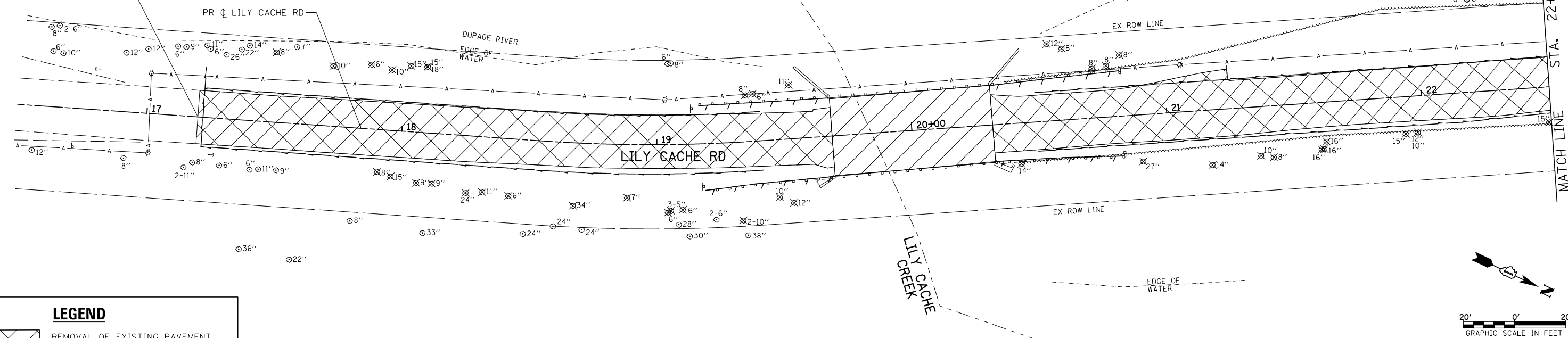
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
SCHEDULES OF QUANTITIES  
SCALE: N/A SHEET 1 OF 1 SHEETS STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	8
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

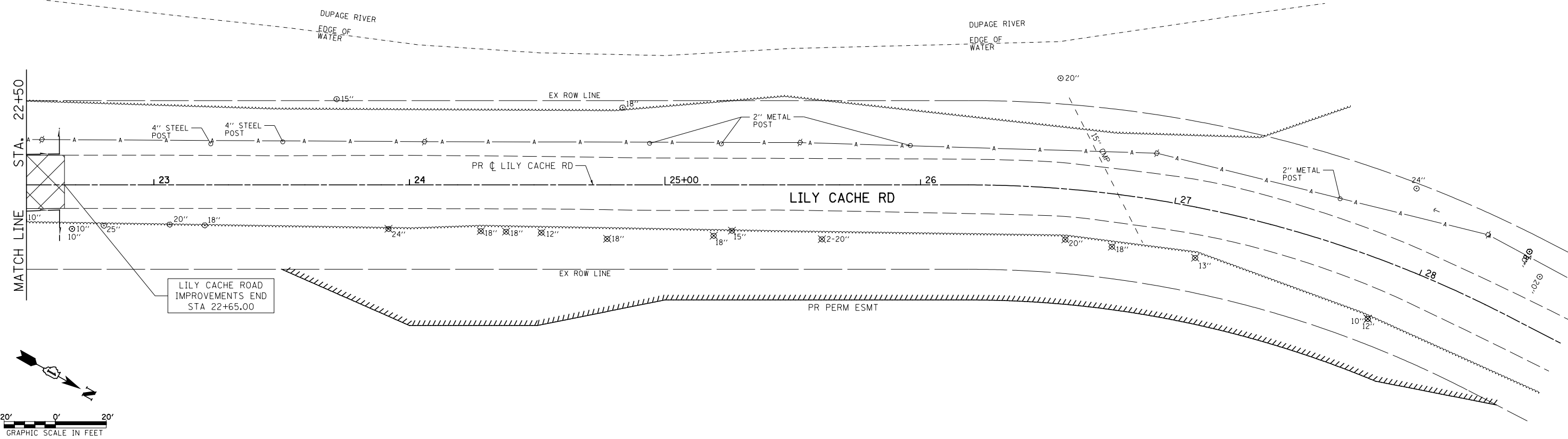


LILY CACHE ROAD  
IMPROVEMENTS BEGIN  
STA 17+20.00



**LEGEND**

- REMOVAL OF EXISTING PAVEMENT
- REMOVAL OF EXISTING STRUCTURES
- REMOVAL OF EXISTING TREES
- GUARDRAIL REMOVAL



LILY CACHE ROAD  
IMPROVEMENTS END  
STA 22+65.00

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

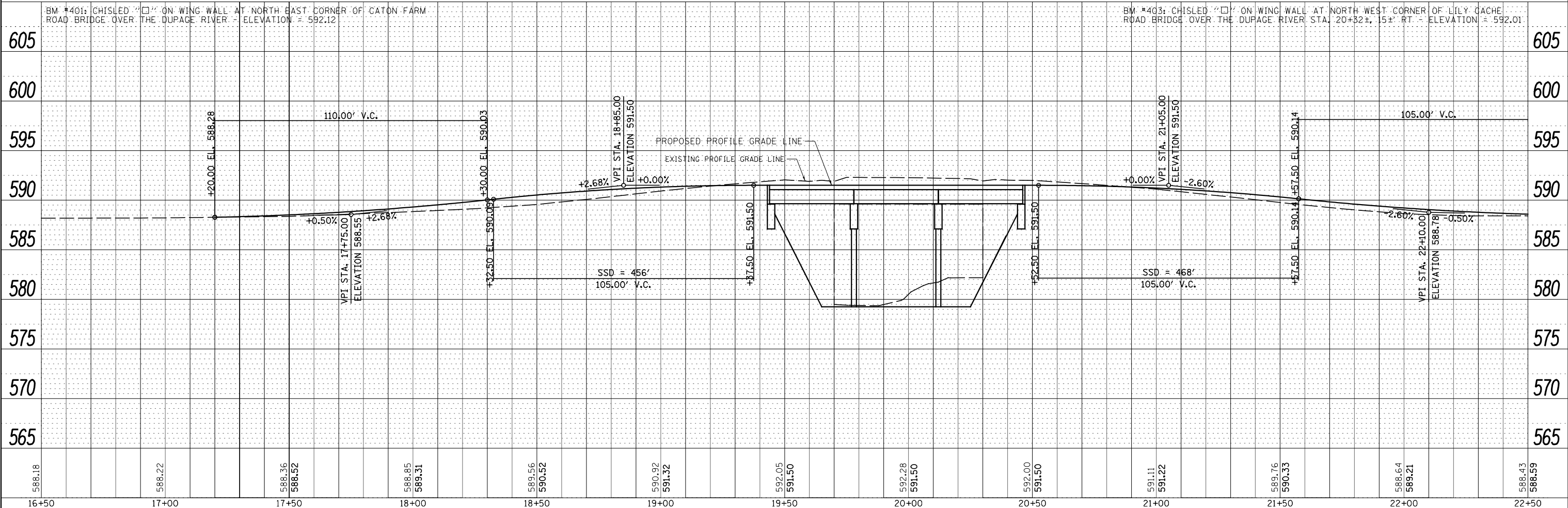
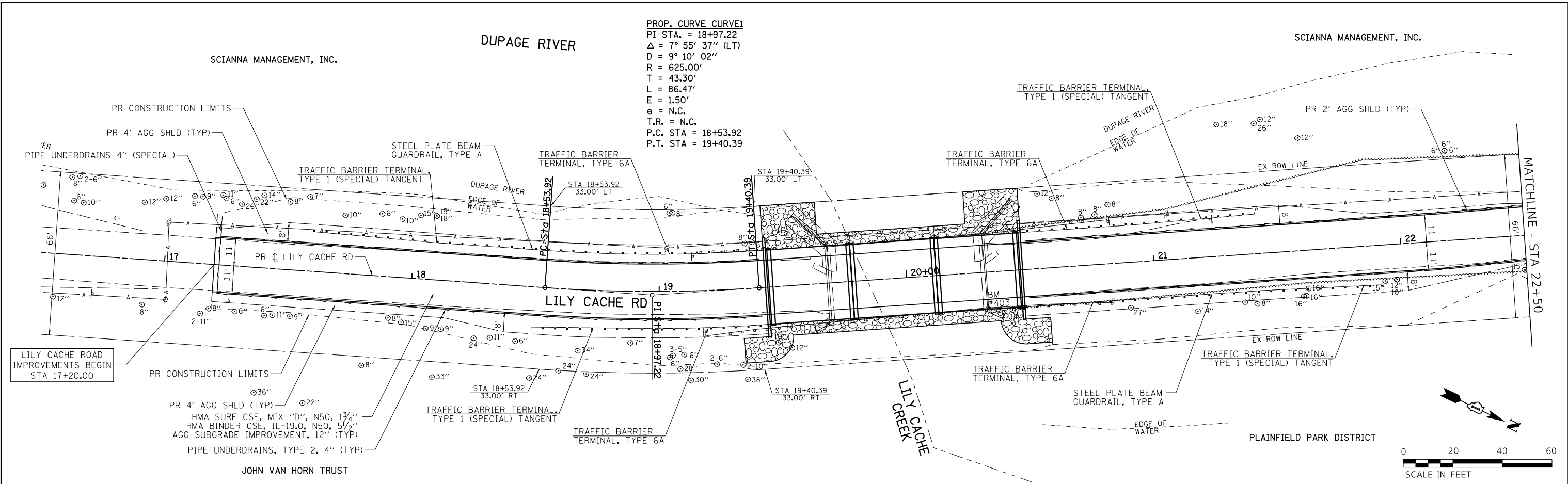
<b>LILY CACHE RD REMOVAL PLAN</b>			
SCALE: 1"=20'-0"	SHEET 1	OF 1 SHEETS	STA. 17+20 TO STA. 28+50

TR 68	SECTION 15-16108-01-BR	COUNTY WILL	TOTAL SHEETS 40	SHEET NO. 9
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNED	CHECKED
	NOTE BOOK	NO.
	FILE NAME	

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
PLAN AND PROFILE**

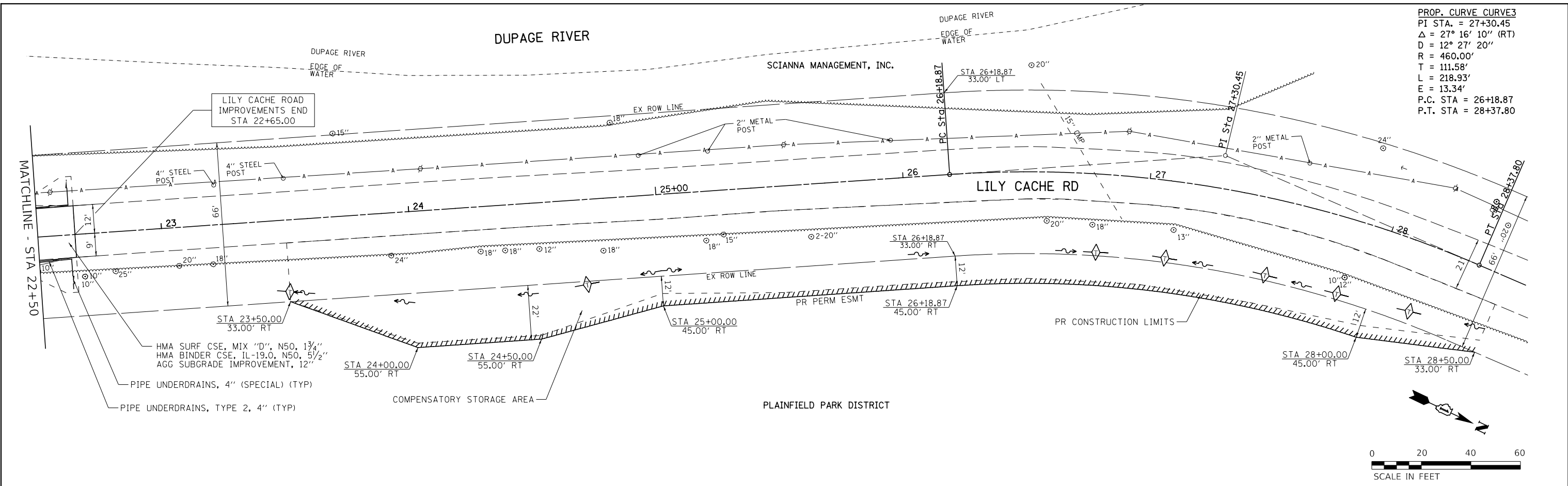
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RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	10
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

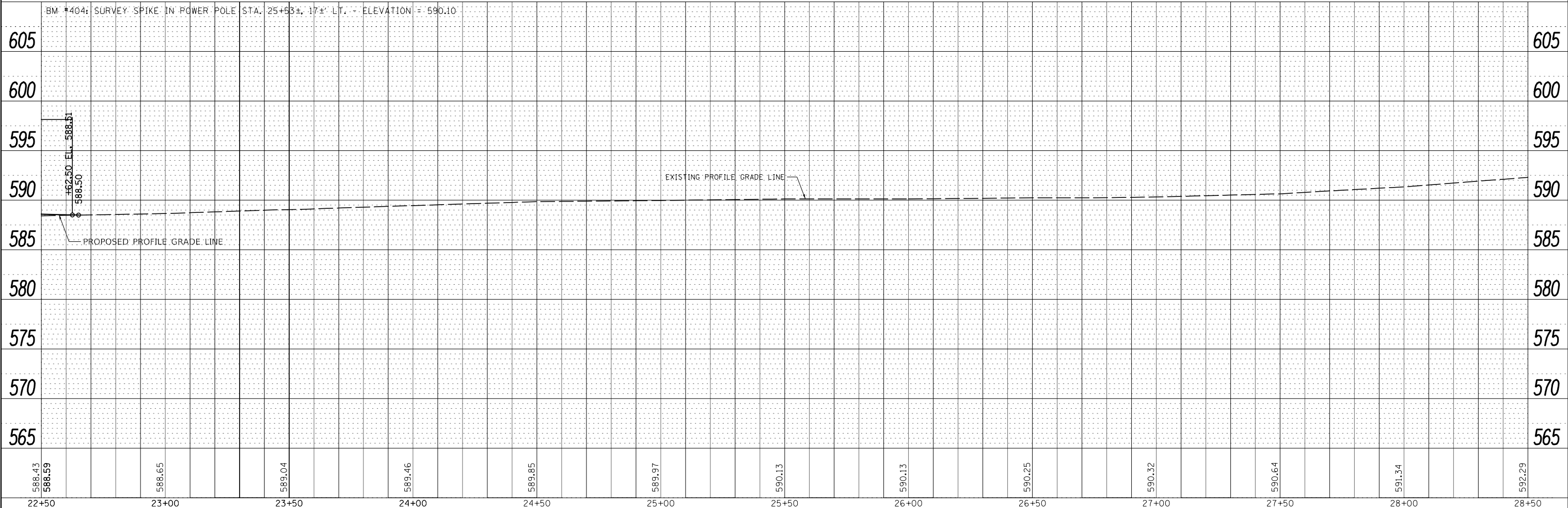
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PROP. CURVE CURVE3  
 PI STA. = 27+30.45  
 Δ = 27° 16' 10" (RT)  
 D = 12° 27' 20"  
 R = 460.00'  
 T = 111.58'  
 L = 218.93'  
 E = 13.34'  
 P.C. STA = 26+18.87  
 P.T. STA = 28+37.80



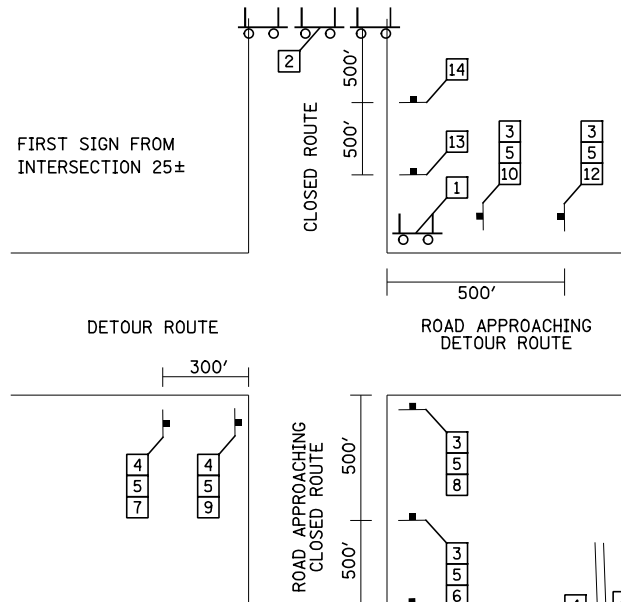
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

LILY CACHE RD PLAN AND PROFILE	
SCALE: H=20 V=5	SHEET 2 OF 2 SHEETS
STA. 22+50	TO STA. 28+50

RT. NO. 68	SECTION 15-16108-01-BR	COUNTY WILL	TOTAL SHEETS 40	SHEET NO. 11
CONTRACT NO. 61F44				ILLINOIS FED. AID PROJECT

**TYPICAL DETOUR & ROAD CLOSURE SIGN SPACING**



**MAP LEGEND**

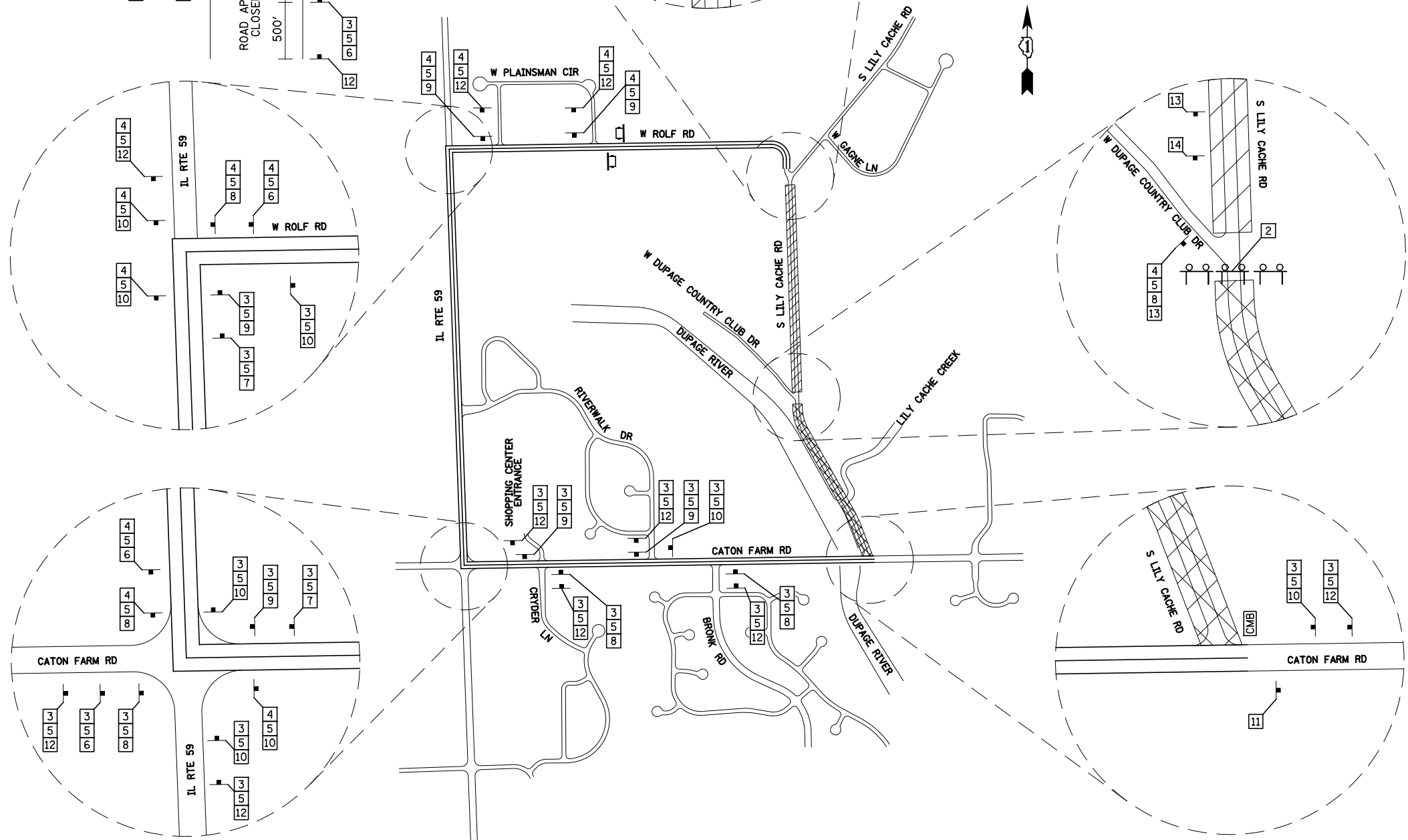
- PROPOSED DETOUR ROUTE
- ROAD CLOSURE PARTIALLY CLOSED PORTION
- ROAD CLOSURE WORK ZONE COMPLETELY CLOSED PORTION
- POST MOUNTED SIGN
- TYPE III BARRICADE
- CHANGEABLE MESSAGE BOARD
- SOLAR POWERED TRAILER MOUNTED SPEED DISPLAY SIGN

- |   |  |   |    |  |                    |
|---|--|---|----|--|--------------------|
| 1 |  | R11-4 60" x 30"   | 10 |  | M4-9 24" x 30"     |
| 2 |  | R11-2 48" x 30"   | 11 |  | M4-8A 24" x 18"    |
| 3 |  | M3-1(0) 24" x 12"   | 12 |  | W20-2(0) 48" x 48" |
| 4 |  | M3-3(0) 24" x 12"   | 13 |  | W20-3(0) 48" x 48" |
| 5 |  | SPECIAL, 30" x 18" 6" BLACK LETTERING ON ORANGE REFLECTIVE BACKGROUND | 14 |  | W20-3(0) 48" x 48" |
| 6 |  | M4-9 30" x 24"  |    |  |                    |
| 7 |  | M4-9 30" x 24"  |    |  |                    |
| 8 |  | M4-9 30" x 24"  |    |  |                    |
| 9 |  | M4-9 30" x 24"  |    |  |                    |

**GENERAL NOTES**

1. TOTAL LENGTH OF THE DETOUR IS 1.75 MILES. CHANGEABLE MESSAGE SIGNS ONLY REQUIRED PRIOR TO LILY CACHE RD. CLOSURE. SIGNS CAN BE REMOVED ONCE THE DETOUR IS IN PLACE.
2. THE CONTRACTOR SHALL CONTACT THE VILLAGE OF PLAINFIELD, PLAINFIELD FIRE DISTRICT, PLAINFIELD SCHOOL DISTRICT, AND PLAINFIELD PARK DISTRICT A MINIMUM OF TWO WEEKS NOTICE PRIOR TO CLOSING THE ROAD.
3. ALL DETOUR SIGNS SHALL BE COMPLETELY COVERED AT ALL TIMES THE ROADWAY IS NOT CLOSED TO TRAFFIC.
4. LONGITUDINAL DIMENSIONS SHOWN ON THE PLANS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
5. THE CONTRACTOR SHALL MAKE ALL CHANGES IN SIGNING THAT ARE DEEMED NECESSARY BY THE ENGINEER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL BARRICADES, SIGNS, LIGHTS, AND OTHER DEVICES INSTALLED BY HIM ARE IN PLACE AND OPERATING 24 HOURS EACH DAY INCLUDING SUNDAYS AND HOLIDAYS DURING THE TIME THE DETOUR IS IN EFFECT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE VISIBILITY OF ALL DETOUR AND CONSTRUCTION SIGNING, BRUSHING BACK VEGETATION IF DEEMED NECESSARY BY THE ENGINEER.
8. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTIONS ADOPTED JAN. 1, 2016", "THE QUALITY STANDARD FOR WORK ZONE TRAFFIC CONTROL DEVICES, LATEST EDITION", THE DETAILS IN THESE PLANS, AND THE LATEST EDITION OF THE STATE OF ILLINOIS "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".
9. AS A MINIMUM, ALL AMBER FLASHING LIGHTS THAT ARE REQUIRED FOR THIS DETOUR SHALL MEET THE REQUIREMENTS FOR TYPE A-LOW INTENSITY FLASHING LIGHTS IN ARTICLE 1106.02 OF THE STANDARD SPECIFICATIONS. ALL LIGHTS SHALL OPERATE DURING THE HOURS OF DARKNESS. ONLY LIGHTS THAT HAVE BEEN APPROVED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION SHALL BE USED.
10. THE CONTRACTOR SHALL SCHEDULE ALL WORK IN AN EXPEDIENT MANNER TO REDUCE THE LENGTH OF TIME THAT THE DETOUR NEEDS TO BE IN EFFECT.

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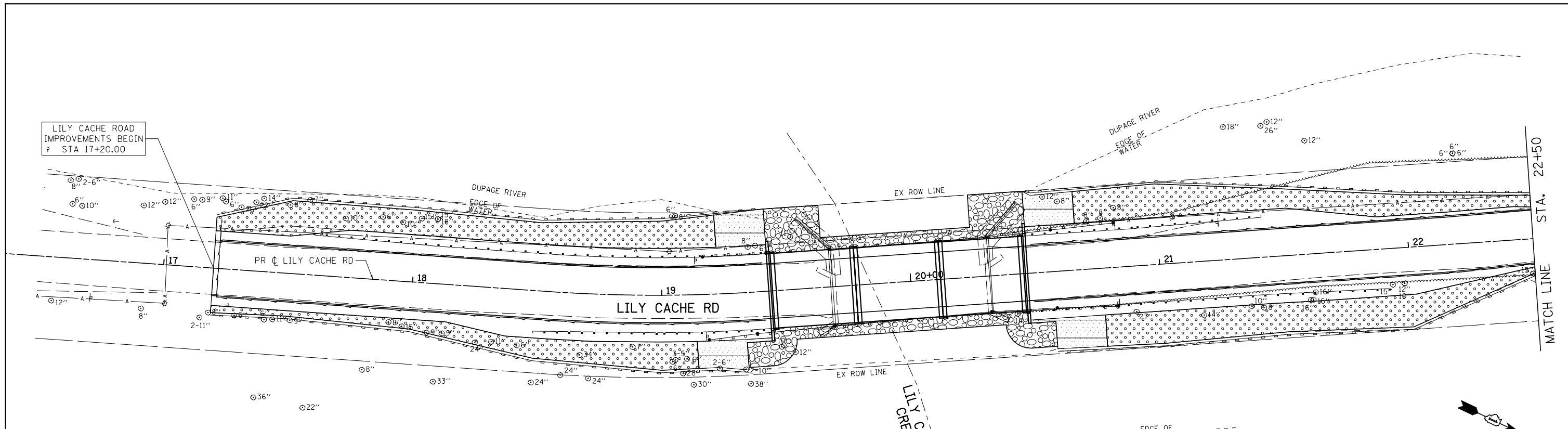


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





**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

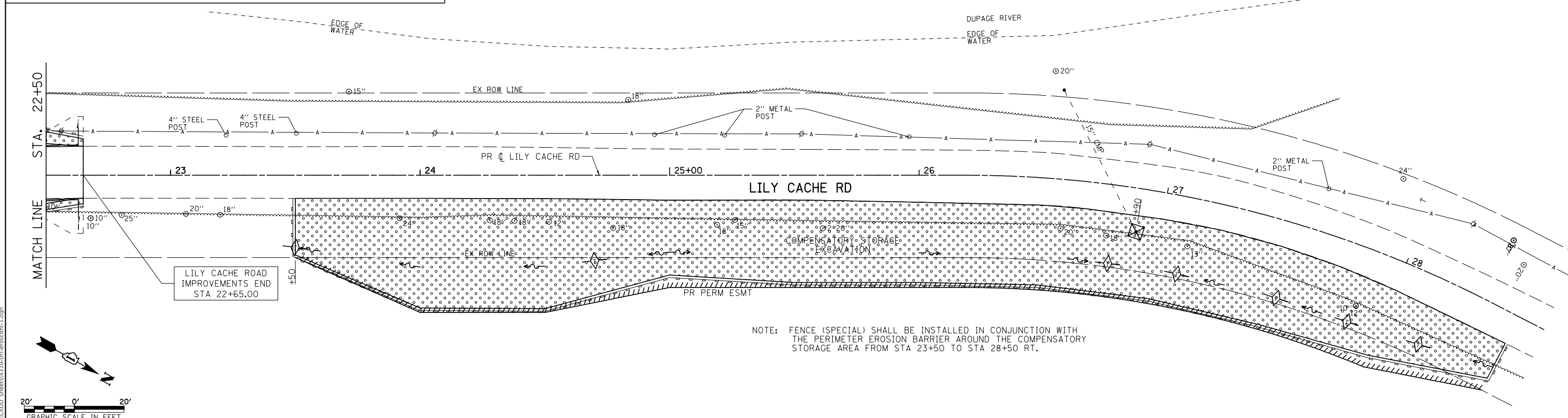
<b>LILY CACHE RD ROAD CLOSURE &amp; DETOUR PLAN</b>			
SCALE: N/A	SHEET 1 OF 1 SHEETS	STA. N/A	TO STA. N/A

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	12
CONTRACT NO. 61F44				
ILLINOIS		FED. AID PROJECT		



**LEGEND**

-  TEMPORARY DITCH CHECKS
-  PERIMETER EROSION BARRIER
-  INLET AND PIPE PROTECTION
-  SEEDING, CLASS 2A AND TOPSOIL FURNISH & PLACE, 4" EROSION CONTROL BLANKET
-  SEEDING, CLASS 4 AND TOPSOIL FURNISH & PLACE, 4" EROSION CONTROL BLANKET
-  STONE RIPRAP



NOTE: FENCE (SPECIAL) SHALL BE INSTALLED IN CONJUNCTION WITH THE PERIMETER EROSION BARRIER AROUND THE COMPENSATORY STORAGE AREA FROM STA 23+50 TO STA 28+50 RT.

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USER NAME = BWedemeyer	DESIGNED -	REVISED -
PLOT SCALE = 40.0000 ' / in.	DRAWN -	REVISED -
PLOT DATE = 12/13/2018	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>LILY CACHE RD EROSION CONTROL PLAN</b>	
SCALE: 1"=20'-0"	SHEET 1 OF 1 SHEETS
STA. 17+20	TO STA. 28+50

ROUTE NO. TR 68	SECTION 15-16108-01-BR	COUNTY WILL	TOTAL SHEETS 40	SHEET NO. 13
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

**EROSION AND SEDIMENT CONTROL NOTES**

1. EROSION AND SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH PLAN DETAILS AND THE STORM WATER POLLUTION PREVENTION PLAN.
2. FAILURE TO COMPLY WITH ANY PROVISIONS OF THE STORM WATER POLLUTION PREVENTION PLAN WILL RESULT IN THE IMPLEMENTATION OF A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/EROSION AND SEDIMENT CONTROL DEFICIENCY DEDUCTION AGAINST THE CONTRACTOR AND/OR PENALTIES UNDER THE PERMIT ILR10 WHICH COULD BE PASSED ON TO THE CONTRACTOR.
3. THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR MAINTENANCE OF ALL SOIL EROSION CONTROL DURING CONSTRUCTION.
4. QUALIFIED PERSONNEL SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE WHICH HAVE NOT YET BEEN FINALLY STABILIZED, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES AND EQUIPMENT ENTER AND EXIT THE SITE USING IDOT STORM WATER POLLUTION PREVENTION PLAN EROSION CONTROL INSPECTION REPORT (BC 2259). SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM, OR BY THE END OF THE WORK DAY FOLLOWING 0.5 INCH OR GREATER OR EQUIVALENT SNOWFALL.
5. INSPECTIONS MAY BE REDUCED TO ONCE PER MONTH WHEN CONSTRUCTION ACTIVITIES HAVE CEASED DUE TO FROZEN CONDITIONS. WEEKLY INSPECTIONS WILL RECOMMENCE WHEN CONSTRUCTION ACTIVITIES ARE CONDUCTED, OR IF THERE IS 0.5 INCH OR GREATER RAIN EVENT, OR A DISCHARGE DUE TO SNOWMELT OCCURS.
6. CROSSINGS OF WATERWAYS AND/OR WETLANDS SHALL BE CULVERTED, BRIDGED OR OTHERWISE DESIGNED TO PREVENT THE RESTRICTION OF EXPECTED HIGH WATER FLOWS. THEY SHALL BE DESIGNED SO AS NOT TO IMPEDE LOW WATER FLOWS OR THE SAFE PASSAGE OF FISH AND AQUATIC ORGANISMS.
7. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
8. SOIL EROSION AND SEDIMENT CONTROL FEATURES SHALL BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.
9. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN 7 CALENDAR DAYS OF THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.
10. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND OTHER DISTURBED SOILS RESULTING FROM THE TEMPORARY MEASURES SHALL BE PROPERLY DISPOSED OF PRIOR TO PERMANENT STABILIZATION.
11. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND REPAIR OF EROSION CONTROL.
12. A STABILIZED MAT OF AGGREGATE UNDERLAIN WITH FILTER FABRIC (OR OTHER APPROPRIATE MEASURE) SHALL BE LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING THE CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA. ANY SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. THIS WORK IS INCLUDED IN THE COST OF THE CONTRACT.
13. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO SEDIMENT BASINS OR SILT TRAPS AND IS INCLUDED IN THE COST OF THE CONTRACT. DEWATERING DIRECTLY INTO STREAMS, WETLANDS, FIELD TILES OR STORMWATER STRUCTURES IS PROHIBITED.
14. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY WILL-SOUTH COOK SWCD AND THE PLAINFIELD TOWNSHIP HIGHWAY DEPARTMENT.
15. THE CONTRACTOR SHALL COMPLY WITH OSHA WORK AND SAFETY RULES.
16. THE WILL SOUTH COOK SOIL AND WATER CONSERVATION DISTRICT AND OTHER INTERESTED REGULATORY AGENCIES AND OFFICIALS SHALL BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND-DISTURBING ACTIVITIES AND ONE WEEK PRIOR TO THE FIRST INSPECTION.
17. UNLESS OTHERWISE INDICATED, ALL VEGETATED AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED IN ACCORDANCE WITH IDOT HIGHWAY STANDARD 280001, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION, OR ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS IN THE ILLINOIS URBAN MANUAL LATEST EDITION.
18. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS FROM THE U.S. ARMY CORPS OF ENGINEERS, WILL SOUTH-COOK SOIL AND WATER CONSERVATION DISTRICT AND THE PLAINFIELD TOWNSHIP HIGHWAY DEPARTMENT.
19. WORK IN THE WATERWAY SHOULD BE TIMED TO TAKE PLACE DURING LOW OR NO-FLOW CONDITIONS AND IN ACCORDANCE WITH ALL PERMITS.
20. WORK MAY NOT BE PERFORMED IN THE WATER, EXCEPT FOR THE PLACEMENT OF THE MATERIALS NECESSARY FOR THE CONSTRUCTION OF THE TEMPORARY STREAM CROSSING. ALL MATERIALS FOR THE TEMPORARY CROSSING MUST BE NON-ERODIBLE. THE TEMPORARY CROSSING MUST BE CONSTRUCTED FROM THE UPLAND AREA AND NO EQUIPMENT MAY ENTER THE WATER AT ANY TIME.
21. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE DETAILS OF THE TEMPORARY CROSSING TO THE PLAINFIELD TOWNSHIP HIGHWAY DEPARTMENT FOR APPROVAL PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
22. IF BYPASS PUMPING IS NECESSARY, THE PUMP SHALL BE PLACED ON A STABLE SURFACE OR FLOATED TO PREVENT SEDIMENT FROM BEING SUCKED INTO THE HOSE. THE BYPASS DISCHARGE SHALL BE PLACED ON A NON-ERODIBLE, ENERGY DISSIPATING SURFACE (ROCK CHECK DAM, PLYWOOD, SHEET PILE, ETC.) PRIOR TO REJOINING THE STREAM FLOW AND SHALL NOT CAUSE EROSION OF DOWNSTREAM AREAS.
23. DEWATERING MEASURES SHALL COMPLY WITH THE ILLINOIS URBAN MANUAL. DURING DEWATERING, THE WATER SHALL BE FILTERED TO REMOVE SEDIMENT PRIOR TO DISCHARGE TO THE STREAM. POSSIBLE OPTIONS FOR SEDIMENT REMOVAL INCLUDE BAFFLE SYSTEMS, ANIONIC POLYMERS, DEWATERING BAGS OR OTHER APPROPRIATE METHODS. WATER SHALL HAVE SEDIMENT REMOVED PRIOR TO BE RE-INTRODUCED TO THE DOWNSTREAM WATERWAY. DISCHARGE WATER IS CONSIDERED CLEAN IF IT DOES NOT RESULT IN A VISUALLY IDENTIFIABLE DEGRADATION OF WATER CLARITY. THE DISCHARGE FROM THE DEWATERING DEVICE SHALL NOT CAUSE EROSION.

24. THE CONTRACTOR SHALL PROVIDE ADEQUATE RECEPTACLES FOR THE DEPOSITION OF ALL CONSTRUCTION MATERIAL DEBRIS GENERATED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOT CAUSE OR PERMIT THE DUMPING, DEPOSITING, DROPPING, THROWING DISCARDING OR LEAVING OF CONSTRUCTION MATERIAL DEBRIS UPON OR INTO ANY DEVELOPMENT SITE, CHANNEL OR WATERS OF THE U.S. THE CONTRACTOR SHALL MAINTAIN THE DEVELOPMENT SITE FREE OF CONSTRUCTION MATERIAL DEBRIS.
25. THE SIDE SLOPES MUST BE RESEEDDED AND STABILIZED IMMEDIATELY AFTER FINAL GRADING WITH AN APPROPRIATE EROSION CONTROL BLANKET PRIOR TO ACCEPTING FLOWS. THE BOTTOM OF THE CHANNEL MUST BE BROUGHT BACK TO ITS ORIGINAL GRADE AND STABILIZED TO ACCEPT FLOWS.
26. THE CONDITION OF THE CONSTRUCTION SITE FOR WINTER SHUTDOWN SHALL BE ADDRESSED EARLY IN THE FALL GROWING SEASON SO SLOPES AND OTHER BARE EARTH AREAS MAY BE STABILIZED WITH TEMPORARY AND/OR PERMANENT VEGETATIVE COVER FOR PROPER EROSION AND SEDIMENT CONTROL. ALL OPEN AREAS TO REMAIN IDLE THROUGHOUT THE WINTER SHALL RECEIVE TEMPORARY EROSION CONTROL BLANKET PRIOR TO THE END OF THE FALL GROWING SEASON. THE AREAS TO BE WORKED BEYOND THE END OF THE GROWING SEASON MUST INCORPORATE SOIL STABILIZATION MEASURES THAT DO NOT RELY ON VEGETATIVE COVER SUCH AS EROSION CONTROL BLANKET OR HEAVY DUTY MULCH.
27. STOCKPILES OF SOIL AND OTHER BUILDING MATERIALS TO REMAIN IN PLACE FOR MORE THAN 3 DAYS SHALL BE FURNISHED WITH EROSION AND SEDIMENT CONTROL MEASURES (I.E. PERIMETER EROSION CONTROL BARRIER AROUND THE BASE). STOCKPILES NOT BEING ACTIVELY WORKED AND TO REMAIN IN PLACE FOR 14 DAYS SHALL RECEIVE TEMPORARY SEEDING.
28. CONCRETE WASHOUT FACILITIES SHALL BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL. COST OF WASHOUT FACILITIES INCLUDED IN THE COST OF THE CONTRACT.
29. ALL ADJACENT ROADWAYS SHALL BE KEPT CLEAR OF DEBRIS, INSPECTED DAILY AND CLEANED WHEN NECESSARY.
30. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON SITE AT ALL TIMES.
31. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN THOSE INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO, ADDITIONAL PHASES OF DEVELOPMENT AND OFF-SITE BORROW OR WASTE AREAS) A SUPPLEMENTARY EROSION CONTROL PLAN SHALL BE SUBMITTED FOR REVIEW BY WSCSWCD AND THE PLAINFIELD TOWNSHIP HIGHWAY DEPARTMENT.
32. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM ALL SUB-CONTRACTORS OF THE REQUIREMENTS IN IMPLEMENTING AND MAINTAINING THE EROSION CONTROL PLANS TO ASSURE COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
33. FINAL ACCEPTANCE OF THE PROJECT WILL BE CONTINGENT ON RECORD DRAWING APPROVAL BY THE ENGINEER.
34. CONTRACTOR CERTIFICATION SIGNOFF SHALL BE REQUIRED BY THE GENERAL NPDES PERMIT NUMBER ILR10 AS FOLLOWS:

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM NPDES PERMIT ILR10 THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE AS PART OF THIS CERTIFICATION."

**TEMPORARY EROSION CONTROL SEQUENCE OF CONSTRUCTION**

1. ESTABLISH TEMPORARY EROSION CONTROL MEASURES AND ERECT PERIMETER EROSION CONTROL BARRIER ALONG SITE BOUNDARIES PRIOR TO THE COMMENCEMENT OF EARTH DISTURBING ACTIVITIES.
2. ALL AREAS OF BARE GROUND SHALL BE TEMPORARILY SEEDED EVERY 7 DAYS UNTIL PERMANENT EROSION CONTROL IS IN PLACE.
3. TEMPORARY DITCH CHECKS SHALL BE INITIATED IMMEDIATELY UPON COMPLETION OR CESSATION OF DISTURBANCE FOR 14 DAYS, AND THE INSTALLATION SHALL BE COMPLETED BY THE 14TH DAY AFTER NO DISTURBANCE.
4. INLET AND PIPE PROTECTION OR INLET FILTERS (IN PAVED AREAS) SHALL BE INITIATED IMMEDIATELY UPON COMPLETION OR CESSATION OF DISTURBANCE FOR 14 DAYS, AND THE INSTALLATION SHALL BE COMPLETED BY THE 14TH DAY AFTER NO DISTURBANCE.
5. ESTABLISH PERMANENT STABILIZATION WITHIN 14 DAYS OF FINAL GRADING OR WHEN DISTURBED AREA IS LEFT IDLE FOR MORE THAN 14 DAYS.
6. EROSION CONTROL BLANKET SHALL BE USED IN AREAS OF CONCENTRATED FLOW AND ON 1:3 (V:H) OR STEEPER SLOPES. TEMPORARY MULCH SHALL BE USED IN AREA OF SHEET FLOW.
7. PERFORM ONGOING MAINTENANCE OF EROSION CONTROL ITEMS.

**POST-CONSTRUCTION**

1. PERFORM ONGOING MAINTENANCE OF EROSION CONTROL ITEMS.
2. AFTER FINAL SEEDING IS ESTABLISHED, REMOVE EROSION CONTROL DEVICES.
3. PERFORM RESTORATION OF AREAS DISTURBED FROM THE REMOVAL OF EROSION CONTROL DEVICES.

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USER NAME = BWedemeier	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>				<b>LILY CACHE ROAD EROSION CONTROL GENERAL NOTES</b>				RTÉ. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 2.0000' / in.	DRAWN -	REVISED -									TR 68	15-16108-01-BR	WILL	40	14
PLOT DATE = 12/13/2018	CHECKED -	REVISED -	SCALE: N/A				SHEET 1	OF 1	SHEETS	STA. N/A	TO STA. N/A	ILLINOIS FED. AID PROJECT			
	DATE -	REVISED -	CONTRACT NO. 61F44												

## DUST CONTROL

(acres)  
CODE 825

### DEFINITION

Control of dust blowing and movement on construction sites and roads.

### PURPOSE

The purposes of this practice are to prevent blowing and movement of dust from exposed soil surfaces, to reduce on and off-site damage, to minimize health hazards, and to improve traffic safety.

### CONDITIONS WHERE PRACTICE APPLIES

This practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

### CRITERIA

The following are temporary and permanent methods for dust control.

#### Temporary Methods

Mulches - See practice standard MULCHING 875. Chemical or wood cellulose fiber binders may be used instead of asphalt to bind mulch material.

Vegetative Cover - See practice standard TEMPORARY SEEDING 965.

Spray-on Adhesives - These may be used on mineral soils. They are not effective on muck soils. Keep traffic off these areas after application.

Anionic asphalt emulsion: water dilution - 7:1, coarse spray, 1,200 gal/acre.

Latex emulsion: water dilution - 12.5:1, fine spray, 235 gal/acre.

Resin-in-water emulsion: water dilution - 4:1, fine spray, 300 gal/acre.

Tillage - Roughen the surface and bring clods to the surface. This is an emergency measure that should be used before soil blowing starts. Begin tillage on windward side of site. Chisel plows with shanks spaced about 12"-18" apart and spring-toothed harrows are examples of equipment that may produce the desired effect.

Irrigation - This is commonly used and affords fast protection for haul roads and other heavy traffic roads. The site is sprinkled with water until the surface is moist. Repeat as needed.

Barriers - Solid board fences, snow fences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and blowing soil. Barriers placed at right angles to prevailing wind currents at intervals of about 10 times their height are effective in controlling soil blowing.

Calcium Chloride - Apply at a rate that will keep the surface moist. This chemical may be applied by a mechanical spreader as

loose, dry granules or flakes at a rate that keeps the surface moist but not so much as to cause water pollution or plant damage. Application rates should be strictly in accordance with the manufacturer's specified rates. Periodic re-treatment may be needed.

8. Stone - Stone can be used to stabilize roads or other areas during construction using crushed stone or coarse gravel. See practice standard STABILIZED CONSTRUCTION ENTRANCE 930.
9. Street cleaning - Paved areas that have soil on them from construction sites should be cleaned daily, or as needed, utilizing a street sweeper or bucket-type endloader or scraper.

#### Permanent Method:

1. Permanent vegetation - See the practice standard PERMANENT SEEDING 880 or SODDING 925. Existing trees or large shrubs may afford valuable protection if left in place.

### CONSIDERATIONS

The easiest way to control dust is to avoid exposed soil surfaces. This is not possible on most construction sites, but the area exposed can usually be reduced by careful planning of controlled traffic patterns and by phasing of clearing and grading operations. Consider use of undisturbed vegetative buffers (min. 50 ft.) between graded areas and protected areas.

### PLANS AND SPECIFICATIONS

Plans and specifications for dust control shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. At a minimum the following items should be included:

1. The area to be treated.
2. The methods that are acceptable to use.

Specifications should indicate when dust control is needed and the method of control to be used. Appropriate industry standards should be used.

All plans shall include the installation, inspection, and maintenance schedules with the responsible party identified.

### OPERATION AND MAINTENANCE

When temporary dust control measures are used, repetitive treatment should be applied as needed to accomplish control.

NRCS IL February 1994

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
EROSION CONTROL DETAILS

SCALE: N/A SHEET 1 OF 12 SHEETS STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	15
CONTRACT NO. 61F44			ILLINOIS FED. AID PROJECT	

## EROSION BLANKET

(sq. ft.)  
CODE 830

### DEFINITION

A temporary protective blanket of degradable materials; e.g. straw, wood, coconut, jute or, blend of these materials bound into a mat, usually with a plastic or degradable mesh or netting on one or both sides.

### PURPOSE

The purposes of this practice are to protect the soil surface from raindrop impacts and overland flow during the establishment of grass or other vegetation, and to reduce soil moisture loss due to evaporation.

### CONDITIONS WHERE PRACTICE APPLIES

This practice applies on exposed slopes and newly seeded areas. These mats are used on slopes that are 1.5:1 or flatter. The most common application for erosion control blankets is on slopes and flat areas where turf will need to be established. For swales, channels, and slopes steeper than 1.5:1 please refer to practice standard TURF REINFORCEMENT MAT 831. A designer should determine blanket type.

### CRITERIA

Blanket type should be selected by slope steepness, shear stress, degradation of the blanket, and the duration of time that the blanket will be protecting the soil solely without vegetation. Erosion Control Blankets shall be installed after the seed bed preparation, fertilizing, or liming and seeding is completed. Refer to practice standards TEMPORARY SEEDING 965 and PERMANENT VEGETATION 880.

The blanket shall be in firm contact with the soil. All rocks or soil clods 1.5 inches or larger must be removed prior to installation. Under no circumstance should the blanket be allowed to bridge over surface irregularities. It shall be anchored with the proper number and spacing of wire staples. The staples/pins shall be the proper width and length to meet the performance required.

On slopes and in low flow channels, the blanket shall be unrolled upstream to downstream parallel to the direction of flow. The upstream end of each blanket shall be anchored in a minimum 6-inch deep anchor trench, backfilled, and compacted. These blankets, when laid side by side, shall overlap a minimum of 4 inches. When more than one blanket length is needed, the material shall be shingled at a minimum of 4 inches over the downstream piece as shown in standard drawing EROSION CONTROL BLANKET IL-530. All edges shall be stapled or trenched per manufacturers recommendation or at least as stringent as that stated in standard drawing IUM-530.

### CONSIDERATIONS

Different types of Erosion Control Blankets may be needed for each slope on a construction site and these variations should be reflected on the site's development plan. Erosion Control Blanket materials and netting will break down over time. The proper blanket type should be chosen so that it lasts long enough for the grass or other vegetation to become established. For swales and channels and in other areas of concentrated flow or where permanent blanket is needed for stabilization refer to practice standard TURF REINFORCEMENT MAT 831.

In some cases you may need to avoid accidental wildlife entrapment in environmentally sensitive areas. If so then use an all-natural leno weave netting in place of a plastic net to avoid any potential entrapment. Natural nets do not provide long term reinforcement and shall not be used in areas where reinforcement is needed.

Bio degradable stakes or staples shall be used in areas where kids may play to avoid being cut by metal staples.

### PLANS AND SPECIFICATIONS

Plans and specifications for installing Erosion Control Blankets shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. At a minimum erosion control plans should include the following items:

1. Location of the Erosion Control Blanket
2. Type of blanket
3. Location and cross section of anchor trenches
4. Staple spacing
5. Installation procedures

Standard drawing EROSION BLANKET PLAN IL-530 may be used as the plan sheet. Also, consider adding material specs 800, 801, 802, or 803.

### OPERATION AND MAINTENANCE

Inspect all Erosion Control Blankets periodically and after rainstorms to check for damage due to water running under the blanket or if the blankets that have been displaced by wind. Also, inspect locations in the flow channels where the blanket terminates and transitions into another BMP (such as riprap) for erosion under the blanket. Any areas where water seeped under the blanket, more staples may be needed per given area or more frequent anchoring trenches installed with better compaction. If significant erosion has occurred under the blanket then grading and reseeding may also be necessary. Any Erosion Control Blankets that have been displaced will need to be re-installed and re-stapled. This may indicate that the wrong type of blanket was chosen. One may need to revisit the site characteristics and then select a different type of Erosion Control Blanket or choose a different practice.

August 2015  
urbst830.doc

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PLOT DATE = 12/13/2018	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
EROSION CONTROL DETAILS

SCALE: N/A SHEET 2 OF 12 SHEETS STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	16
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				



# CULVERT INLET PROTECTION

(no.)  
CODE 808

## DEFINITION

A temporary sediment filter located at the inlet to storm sewer culverts.

## PURPOSE

The purpose of this practice is to prevent sediment from entering, accumulating in and being transferred by a culvert and associated drainage system prior to permanent stabilization of a disturbed project area.

## CONDITIONS WHERE PRACTICE APPLIES

This practice applies where a culvert and associated drainage system are to be made operational prior to the stabilization of the disturbed drainage area.

## CRITERIA

All culvert inlet protection shall be constructed in a manner that will facilitate cleanout and disposal of trapped sediment and minimizes interference with construction activities.

All culvert inlet protection shall be constructed in such a manner that any resultant ponding of stormwater will not cause inconvenience or damage to adjacent areas or structures.

### Stone Culvert Inlet Protection

Stone culvert inlet protection has a maximum expected useful life of 18 months.

The maximum area draining to this practice shall be 3 acres. For drainage areas larger than 3 acres install a temporary sediment trap meeting the requirements of practice standard TEMPORARY SEDIMENT TRAP 960.

The stone culvert inlet protection is a small stone berm in a horseshoe shape around the culvert inlet. The upstream half of the stone berm shall consist of coarse aggregate meeting IDOT CA-1, CA-2, CA-3 or CA-4 gradation and the downstream half of the stone berm shall consist of riprap meeting IDOT RR-3 or RR-4 gradation. In addition, any riprap that is used for permanent protection on the culvert inlet embankment shall meet IDOT Quality Designation A.

The downstream toe of the stone berm shall be no closer than 24 inches from the culvert opening in order to provide an acceptable emergency outlet for flows from larger storm events.

Maximum height of the stone berm shall be 3 feet.

Side slopes of the stone berm section shall not exceed 2:1 horizontal to vertical.

The stone berm shall be tied into the culvert embankment a minimum of 1 foot above the design elevation of the stone berm.

## CONSIDERATIONS

When construction on a project reaches a stage where culverts and other storm sewer appurtenances are installed and many areas are brought to a desired grade, the erosion control measures used in the early stages normally need to be modified or may need to be removed altogether. At that time, there is a need to provide protection at the points where runoff will leave the area via culverts and drop or curb inlets.

Similar to drop and curb inlets, culverts that are made operational prior to the stabilization of the associated drainage areas can convey large amounts of sediment to drainageways or water bodies. In cases of extreme sediment loading, the pipe or pipe system itself may clog or lose a major portion of its capacity. To avoid these problems it is necessary to prevent sediment from entering the culvert by using one of the culvert inlet protection types identified in this standard.

Filter fabric may be used under the stone to provide a stable foundation and to facilitate removal of the stone.

Other protection strategies should be used if this practice has hydraulic impacts off of the subject property.

## PLANS AND SPECIFICATIONS

Plans and specifications for installing culvert inlet protection shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. As a minimum include the following:

1. Location where the practice is to be installed
2. Type of culvert inlet protection to be used
3. Type of materials
4. Dimensions and elevations of the practice

All plans shall include installation, inspection, and maintenance schedules with the responsible party identified.

Standard drawing IL-508ST CULVERT INLET PROTECTION - STONE may be used as the plan sheet(s).

## OPERATION AND MAINTENANCE

The structure shall be inspected after every runoff producing rain and repairs made as needed.

If aggregate is used, it shall be replaced or cleaned when inspection reveals that clogged voids are causing ponding problems. Sediment shall be removed and the impoundment restored to its original dimensions when sediment has accumulated to one-half the height of the fence or stone berm.

Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems.

Temporary structures shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

## REFERENCES

Illinois Department of Transportation, 1997. Standard Specifications for Road and Bridge Construction, IL

IUM September 2016 urbst808.doc

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USER NAME = BWedemeyer	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>LILY CACHE RD EROSION CONTROL DETAILS</b>			RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN -	REVISED -		SCALE: N/A	SHEET 3	OF 12 SHEETS	STA. N/A	TO STA. N/A	ILLINOIS	FED. AID PROJECT	
PLOT SCALE = 2.0000' / in.	CHECKED -	REVISED -					TR 68	15-16108-01-BR	WILL	40	17
PLOT DATE = 12/13/2018	DATE -	REVISED -					CONTRACT NO. 61F44				

# MULCHING FOR SEEDING AND SOIL STABILIZATION

(no.)  
CODE 875

## DEFINITION

The application of mulch materials over seeded areas or for soil stabilization.

## PURPOSE

The purposes of this practice are as follows:

1. To prevent erosion and prevent surface compaction or crusting by protecting the soil surface from raindrop impact and reducing the velocity of overland flow.
2. To foster the growth of vegetation by conserving available moisture and providing insulation against extreme heat and cold.

## CONDITIONS WHERE PRACTICE APPLIES

1. Areas that have been seeded to provide permanent vegetation.
2. Areas that have been seeded to provide temporary erosion control.
3. Areas requiring soil stabilization.
4. Areas with slopes of 3:1 (H:V) or flatter.

This practice does not apply to tree and shrub planting areas. Follow the requirements of practice standard TREE AND SHRUB PLANTING 985 for mulching in these areas.

This practice does not apply to areas where concentrated flows are present. Follow the requirements set forth in other practice standards, such as EROSION BLANKET: TURF REINFORCEMENT MAT (TRM) 831 or SODDING 925.

For slopes greater than 3:1 (H:V), follow the requirements of practice standard EROSION BLANKET 830, EROSION BLANKET: TURF REINFORCEMENT MAT (TRM) 831, SOIL BIOENGINEERING 926, or SURFACE ROUGHENING 953.

## CRITERIA

When used over seeded areas, mulching Methods 1, 2 and 3 shall be performed within 24 hours of the application of seed. Seed shall be applied in accordance with practice standard PERMANENT VEGETATION 880 or TEMPORARY SEEDING 965.

Areas to receive mulch shall be prepared in accordance with construction specification 6 SEEDING, SPRIGGING AND MULCHING.

Foot and vehicular traffic and equipment movement shall be prohibited in mulched areas.

The choice of materials and application method shall be based on the soil type, slope length, slope angle, and season.

**Mulch Materials** - Straw mulch shall come from oats, wheat, rye or barley and be free of diseased plant residue, weed seeds, and harmful chemical residues. Hydraulic mulch shall consist of wood, cotton, straw, or paper - or a combination of the four. Compost shall be thoroughly decomposed organic waste. Chemical mulch binder shall be approved as safe for the surrounding ecosystem. Manufactured mulches shall be installed in accordance with manufacturer's specifications.

**Method 1** - This method shall consist of the application of straw mulch at a rate of 2 tons/acre. This method shall be used on relatively flat surfaces in areas protected from wind.

**Method 2** - This method shall consist of the application of stabilized straw mulch at a rate of 2 tons/acre. This method shall be used in areas of moderate slope, when the ground is not frozen. Mulch shall be stabilized using one of the following methods:

1. Anchoring by means of mechanical stabilizer, or crimper, with dull, flat, parallel disks spaced approximately eight inches apart. Mulch material shall be tucked 2" to 3" into the soil surface. Anchoring operation shall operate as close to the contour as possible.
2. Stabilizing by the application of an overspray of hydraulic mulch after the application of straw mulch. The hydraulic mulch shall be applied by an approved hydraulic mulcher at a minimum rate of 900 lb. of mulch per acre. The hydraulic mulch shall be mixed in accordance with manufacturer's recommendations. Hydraulic mulch shall not be applied when the ambient temperature is at or below freezing.

3. Anchoring by means of stabilizing the mulch with a chemical mulch binder applied with the straw or as an overspray.

**Method 3** - This method shall consist of machine application of hydraulic mulch using an approved hydraulic mulcher. The mulch shall be applied at a rate of 1 ton of mulch per acre. The hydraulic mulch shall be mixed in accordance with manufacturer's recommendations.

Hydraulic mulch shall not be applied when the ambient temperature is at or below freezing. To achieve full and even coverage, the hydraulic mulch shall be applied from two opposing directions.

**Method 4** - This method shall consist of the application of compost. Compost shall be applied using a pneumatic blower to a depth of 2 inches. Compost shall be produced at an IEPA permitted facility and be United States Composting Council (USCC) certified.

When compost is used for seeding applications, the seed shall be blended through the mulch or applied to the top of the mulch. Compost shall not be applied over soil that has been seeded.

## CONSIDERATIONS

Organic mulch materials such as paper, cotton, straw and wood fiber do not need to be removed since they can incorporate naturally into the soil. Organic mulches should be used where practical. Mulch that can be windblown, such as straw, should be anchored to stay in place.

Chemical mulch binders may be used as recommended by the manufacturer to anchor mulch. When using chemical mulch binder it is important to allow for the required curing time or drying time.

Erosion control blankets also meet the purposes of mulching and can be used in lieu of this standard. See practice standard EROSION BLANKET 830 and/or EROSION BLANKET: TURF REINFORCEMENT MAT (TRM) 831.

When Polyacrylamide (PAM) is used in place of or in addition to mulch products, it shall be applied per practice standard POLYACRYLAMIDE (PAM) FOR TEMPORARY SOIL STABILIZATION 893.

Mulch may also be used for aesthetic reasons or to minimize weed growth, however, these are not the primary purposes of this practice standard.

## PLANS AND SPECIFICATIONS

Plans and specifications for applying mulch shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. At a minimum include the following items:

1. Method(s) to be used
2. Application rates for mulch and anchoring material
3. Anchoring method, if applicable
4. Times of application
5. Location of different materials if more than one material is used on the site

## OPERATION AND MAINTENANCE

All mulches shall be inspected periodically, in particular after rain events greater than 1/2 inch, to check for rill erosion and uniform coverage. Where erosion is observed or where mulch has been displaced, the seeding and mulch, as well as other damages, shall be repaired or replaced immediately. Inspections shall occur until seeded areas are firmly established or soil stabilization is no longer required.

Operations by equipment on or near the site shall not damage the intended purpose of the mulch. Any damage shall be repaired or replaced immediately.

April 2010

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USER NAME = BWedemeier	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>LILY CACHE RD EROSION CONTROL DETAILS</b>			RT#	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN -	REVISED -		TR 68	15-16108-01-BR	WILL	40	18	CONTRACT NO. 61F44		
PLOT SCALE = 2.0000' / in.	CHECKED -	REVISED -		SCALE: N/A	SHEET 4	OF 12 SHEETS	STA. N/A	TO STA. N/A	ILLINOIS FED. AID PROJECT		
PLOT DATE = 12/13/2018	DATE -	REVISED -									

## PERMANENT VEGETATION

(acres or sq. ft.)  
CODE 880

### DEFINITION

Establishing permanent vegetative cover to stabilize disturbed areas.

### PURPOSE

The purpose of this practice are to:

1. Permanently stabilize disturbed or exposed areas in a manner that adapts to site conditions and allows selection of the most appropriate plant materials.
2. Reduce erosion and sedimentation from such areas.
3. Create a landscape that enhances soil permeability and the filtering of runoff pollutants, while improving wildlife habitat.

### CONDITIONS WHERE PRACTICE APPLIES

1. Disturbed areas where long-lived vegetative cover is needed to stabilize the soil.
2. Rough graded areas that will not be brought to final grade for a year or more.
3. Other areas where permanent cover is desired.

### CRITERIA

#### Selection of plant materials

Selection of plant materials shall be based on climate, topography, soils, moisture conditions, land use, available light (shade tolerance), aesthetics, planned use of the area, and the degree of maintenance desired. All seed shall be of high quality and comply with Illinois Seed and Weed Laws.

See Tables A, B and C for selection of grasses, forbs, ground covers, and vines under different moisture and light conditions. These tables provide information for selected species that are generally commercially available and suitable for use in urban and agricultural settings. The native species presented represent those that are more tolerant of disturbed urban situations where this practice would be applied. See the references given with the tables for information on additional species. The tables in this standard are not meant to be all-inclusive and the information in this standard can be applied to other species that may be desired or suitable for a given application. For trees and shrubs see practice standard TREE AND SHRUB PLANTING 985. For manicured turf grass sod, see practice standard SODDING 925.

#### Site Preparation

The site shall not be worked when frozen or saturated. Install necessary erosion and sediment control practices before seeding, and complete grading according to the approved plan. The grading plan shall utilize techniques and equipment that minimize soil compaction. If the final graded site consists of subsoil that may have been compacted by heavy equipment during grading activities, the subgrade shall be scarified to a depth of at least four inches by chisel plowing, disking or harrowing. This practice will create at least limited pore space for water and root penetration and bonding of the topsoil and the subsoil.

After the grading operation, spread topsoil where needed following practice standard TOPSOILING 981. Topsoil shall meet criteria in material specification 804 MATERIAL FOR TOPSOILING.

#### Seedbed Preparation

If needed based upon soil conditions and desired vegetation type, incorporate the lime and fertilizer into the soil with a disk harrow, springtooth harrow, or similar tools to a depth of at least 3 inches. On sloping areas the final operation shall be on the contour.

Prior to seeding or plantings, the seedbed shall be relatively free of all weeds (>= 80% weed free), stones, roots, sticks, rivulets, gullies, crusting and caking, or other debris which may interfere with seeding or planting operations or plant establishment.

The seedbed shall not be worked when frozen or saturated. Prior to seeding or planting the surface shall be disked or raked to a depth of 2-3 inches either by hand or mechanical means to create a smooth uniform seedbed. This operation should result in a seedbed comprised of soil aggregates ranging from fine to coarse, with none larger than two inches in diameter.

In areas that have not been regraded, which have grown up in weeds, or to be no-till seeded, a herbicide application may be necessary to reduce competition with the desired vegetation. An approved herbicide may be used to treat such areas to kill all existing vegetation. Herbicide application shall be done at least 15 days prior to seeding or planting.

#### Fertilization

Fertilizer or lime is generally not recommended for native vegetation establishment unless soil tests indicate pH < 5.5, P < 15 lb./ac., or K < 150 lb./ac. If levels are below this, apply lime and fertilizer according to soil test and the needs of the vegetation selected.

### Seed

All legumes shall be inoculated with the proper inoculant prior to seeding. Seeding rates given in Tables A and B are based upon Pure Live Seed (PLS).

Seed mixtures shall be selected according to site conditions and desired use and appearance. Other considerations include soil moisture condition, shade tolerance, mowing tolerance, winter hardiness, flooding tolerance, mature height, emergence time, and salt tolerance.

All seeds shall have the proper stratification and/or scarification to break seed dormancy for spring or early summer plantings. No treatments are needed for late summer, early fall, or dormant seeding.

### Seeding

Seeding may be done by any of the following methods:

1. Conventional Drill
  - a. Apply seed uniformly at a depth of 1/4 to 1/2 inch with a drill (band seed) or cultipacker seeder. On sloping land, seeding operations should be on the contour wherever possible.
  - b. Apply mulch or erosion blanket following seeding as required.
2. Broadcast Seeding
  - a. Cultipack or roll seedbed, then apply seed uniformly and cover to 1/4 to 1/2 inch depth with a cultipacker, or similar tool. Spinning disc type broadcasters equipped with an agitator are effective with native seed mixes. Often broadcasters require the use of a carrying agent such as oats or vermiculite. Attention should be given to seed mixes with seeds of varying size and weight so that the seed remains effectively mixed during seeding operations.
  - b. On sloping land, dragging, harrowing or cultipacking should be done on the contour to ensure seed-soil contact and reduce erosion.
  - c. Apply mulch or erosion blanket following seeding as required.
3. Hydroseeding
  - a. For areas to be hydroseeded, final seedbed preparation shall leave the soil surface in a slightly roughened condition.
  - b. Lime and fertilizer shall be incorporated prior to seeding unless they are to be applied at the same time as the seed (applying lime with a hydroseeder may be abrasive to the equipment). Do not use hydrated lime in a slurry mix.
  - c. A minimum of 1000 gallons of water per acre shall be used. The hydraulic seeding equipment shall include a pump rated and operated at no less than 100 gallons per minute and at no less than 100 pounds per square inch pressure. The tank shall have a mechanical agitator powerful enough to keep all materials in a uniform suspension in the water. Calibration of the hydraulic equipment shall be accurate.
  - d. When seeding legumes, increase the recommended rate for inoculant four times for hydroseeding. If legume inoculant is added to a fertilizer and/or lime, seeding should be applied within 30 minutes.
  - e. If seed and fertilizer are mixed together they should be seeded within 2 hours of mixing.
4. Dormant Seeding
 

Dormant seeding may be done between November 15 and March 15 by using conventional drill or broadcast methods.

If soil conditions are suitable during the dormant seeding period, prepare the seedbed and seed as indicated in this specification. Apply mulch or erosion blanket following seeding.
5. No-till
 

In some instances it may be desirable to sow seed into existing sod, a temporary cover crop, or natural vegetation. Drilling may be done after herbicide application to non-native sod or undesirable weeds such as Canada thistle. A rangeland type grass drill with a no-till attachment shall be used. Seeds should be drilled to the depth appropriate for the species, according to the supplier's recommendations.

The seeds of some plants require light to stimulate germination and growth. In situations with some of these species, particularly some native forbs, a combination of broadcasting and no-till drilling may be used. Grasses should be drilled first, followed by broadcasting of the desired forbs.

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### Plugs and Rootstock

Some plants cannot be grown readily from seed and must be planted vegetatively (see Table A). Plugs are young plants that are grown in a nursery or greenhouse for transplant. Rootstock may consist of fragments of horizontal stems or roots that include at least one node (joint).

### Plugs

Plugs shall be planted in designated areas according to site plans and the recommendations of the supplier for that species. Attention should be given to soil moisture, anticipated flooding, shade, and other factors.

- a. Plugs shall be planted in a hole dug with a trowel, spade, planting bar, or suitable instrument such that the hole is of a minimum diameter and depth to accommodate the plug, with its roots, without damage.
- b. The soil excavated from the planting hole should be used to backfill around the plant and lightly packed to secure the roots in the soil.
- c. Plugs shall be watered upon completion of planting enough to keep soil moist but not saturated.
- d. If planting is delayed more than six hours after delivery, store plugs in the shade, protect from the weather and mechanical damage, and keep them moist and cool. All plugs should be planted within 24 hours of delivery.
- e. Plugs shall be obtained from a reputable nursery or grown from seed. Plugs shall not be collected from wild populations of plants.

### Rootstock

Plant tubers and other rootstock into a properly prepared area according to the following and in accordance with the suppliers recommendations for that species.

- a. Tubers and rootstock should be freshly dug before planting. If planting is delayed, protect material from weather and mechanical damage, and keep moist and cool. Do not use materials that have been in cold storage more than 45 days.
- b. Holes for planting rootstock shall be dug in locations shown on plans or as adjusted in the field.
- c. Holes shall be dug with a trowel, spade, planting bar or other suitable instrument, such that holes are of a minimum depth and diameter to accommodate the tuber or rootstock without damage.
- d. Rootstock shall be obtained from a reputable nursery or grown from seed. Rootstock shall not be collected from wild populations of plants.

### Ground Covers

Most shrub and vine type ground covers are available as bare root stock, balled and burlapped, or in containers or pots. Many ground covers and vines perform best when planted in the spring. Container-grown plants can be planted throughout the growing season if adequate water is provided.

Ground covers and vines are plants that naturally grow very close together and close to the ground or climbing over other plants. This can cause severe competition for space, nutrients and water. Soil for ground covers should be well-prepared. A well-drained soil high in organic matter is best. If the area to be planted is so large or difficult to prepare due to steepness or rockiness that adding amendments to the soil as a whole would be impractical, organic matter and fertilizer may be added to each planting hole.

Lime and fertilize according to soil test, if needed. If no soil test is available and the soil is believed to be deficient, add 30 lbs. of 10-10-10 fertilizer and 100 lbs. of ground agricultural limestone per 1000 square feet. Incorporate into the top 4 to 6 inches of the soil.

When planting individual plants, prepare a hole slightly larger than the container or ball and deep enough that the roots can extend to the bottom. Most ground covers should be planted 1/2" to 1" deeper than they have grown in the pot or container.

### Mulching/Erosion Blanket

All permanent seedings shall be mulched upon completion of seed application or planting. Refer to practice standard MULCHING 875. Erosion blanket should be substituted for mulch on steep slopes (10% slope or greater) or wherever highly erosive conditions exist (e.g. in drainage swales or waterbody shorelines). Refer to practice standard EROSION BLANKET 830. When planting plugs and tubers, particularly in wetland plantings, mulch or erosion blanket should NOT be used except in specific areas with erosive conditions. When planting ground covers it may be advantageous to apply mulch or erosion blanket prior to planting. Plants should then be tucked into the soil through slits or holes. In all cases, planting should be done in a staggered pattern to minimize erosion.

### CONSIDERATIONS

Where feasible, deep-rooted native species are preferred because of their abilities to enhance soil permeability and pollutant filtering and their reduced needs for fertilizer, herbicides, irrigation, and mowing. Care also should be taken to avoid non-native aggressive species that could spread beyond the site boundaries.

The best time for seeding depends upon the species; there is no single best time to seed. There are certain groups of species which do best fall planted and are compromised by spring seeding. There are other groups of species that do best spring planted and are compromised by fall seeding. Some species are not tolerant of nurse or temporary cover crops while others benefit by them. Some species are difficult to establish in the field from seed and are far more practical to install as plugs.

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USER NAME = BWedemeier	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>LILY CACHE RD EROSION CONTROL DETAILS</b>		RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN -	REVISED -		TR 68	15-16108-01-BR	WILL	40	19		
PLOT SCALE = 2,0000 ' / in.	CHECKED -	REVISED -		CONTRACT NO. 61F44						
PLOT DATE = 12/13/2018	DATE -	REVISED -		SCALE: N/A	SHEET 5	OF 12 SHEETS	STA. N/A	TO STA. N/A	ILLINOIS	FED. AID PROJECT

## PERMANENT VEGETATION

(acres or sq. ft.)  
CODE 880

Some species require light for germination and are thus less successful if drilled into the soil, while others require burial to have successful germination. Broadcasting is generally favored for native species for this reason, and so the plants do not become established in unnatural looking rows. A temporary cover crop may be necessary to hold soil until permanent vegetation becomes established. See practice standard TEMPORARY SEEDING 965.

Using an intact native soil is the most desirable situation, but in most cases stabilization is needed because of earthwork activities. In many instances, the topsoil may have been removed and/or stockpiled during earthwork activities.

Evaluate the capabilities and limitations of the soil to be seeded or planted and the desired use and appearance of the area. Special attention needs to be given to soil pH, texture, internal water movement, moisture regime, steepness, and stability in order to plan the appropriate treatment.

### PLANS AND SPECIFICATIONS

The plans and specifications for seeding or planting and mulching shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. At a minimum include the following items:

1. Seed mixtures and rates or plant species and density.
2. Site preparation methods.
3. Fertilization rates and methods of application.
4. Seeding or planting methods.
5. Seeding or planting periods.
6. Mulching or erosion blanket materials and application rates.

All plans shall include the installation, inspection and maintenance schedules with the responsible party identified.

### OPERATION AND MAINTENANCE

High-maintenance areas are mowed frequently, fertilized and pesticide treated regularly, and either (1) receive intensive use (e.g., athletic fields or golf courses) or (2) require maintenance to a particular aesthetic standard (e.g., home lawns). Grasses or ground covers used for these situations are long-lived perennials that form a tight sod and are fine-leaved in appearance. They must be well adapted to the geographic area where they are planted and able to endure the stress of frequent mowing. Sites where high-maintenance vegetative cover is commonly utilized include homes, industrial parks, schools, churches, and active recreational areas.

High-maintenance seedings should be fertilized one year after planting to strengthen the plants and insure proper stand density. The following recommendations may be used:

1. For grass only stands, apply 200 lbs./acre (5 lbs/1000 sq. ft.) of 27-3-3, or equivalent.
2. For grass-legume or pure legume stands, apply 500 lbs/ac. (12 lbs./1000 sq. ft.) of 10-20-20, or equivalent.
3. The best time to apply fertilizer is between March 1 and May 30 or August 1 and September 30.

Do not mow high-maintenance turf seedings until the stand is at least 6 inches tall. Do not mow closer than 3 inches during the year of establishment.

In areas adjacent to waterbodies and wetlands, fertilizer should be used sparingly to minimize runoff of nutrients causing undesired growth of aquatic plants (eutrophication).

Low-maintenance areas are mowed infrequently or not at all, and do not receive lime, pesticide or fertilizer on a regular basis. Plants must persist with little maintenance over long periods of time. Native grass, forb, and legume mixtures are favored for these sites because they are deep-rooted and can add nutrients to the soil. Legumes in particular are a source of soil nitrogen. Mixed stands are more resistant to adverse conditions. Sites suitable for low-maintenance vegetation include steep slopes, stream or channel banks, lake shorelines, stormwater drainage and detention facilities, office campuses, low-density residential properties, some commercial properties and areas adjacent to roadways.

Native plants typically do not require fertilization to become established. Experience in prairie restoration suggests that fertilizing adds to weed problems and promotes undesirable species. For this reason, conventional fertilizing is not recommended for native plantings.

Low-maintenance stands should be mowed only as needed to control weeds. Native plantings should be mowed to control weeds prior to August 15 during the establishment period (2-3 years). Mowing should be done before undesirable weeds set seed. Keep mowing height above the height of the seeded plants (6-12 inches).

Prescribed burning is the preferred maintenance technique for native prairie vegetation. Burns should be performed after the establishment period (2-3 years) on a 2-3 year rotational basis to control invasive weeds and to encourage a balance between grass and forb species. Less-frequent burning may be appropriate once the prairie is well established.

Goose or other nuisance wildlife control may be needed on some plantings. For example, plantings (plants, rootstock or seed) of native wetland plants must be protected from depredation by Canada geese. Goose exclosures constructed of fence posts and "chicken wire" netting is usually recommended during the first year of establishment.

Vine and shrub type ground covers may need hand weeding until the area is well covered.

For ground covers and vines, prune old growth in the spring as needed to improve appearance and promote growth. If pruning is desired, it should be done every year rather than when the plants have developed into an overgrown state.

High and low maintenance areas

Vegetation cannot be expected to provide erosion control cover and prevent soil slippage on a soil that is not stable due to its structure, water movement, or excessive slope.

The operation of equipment is restricted and may be unsafe on slopes steeper than 3:1. Where steepness prohibits the use of farm machinery, seedbed preparation, fertilization, and seeding or planting may need to be done by hand.

Moisture is essential for seed germination and seedling establishment. Supplemental irrigation can be very helpful in assuring adequate stands in dry seasons or to speed development of full cover.

Protect the planted area from human, animal and vehicular traffic until the stand is adequately established.

Inspect all planted areas for failures and make necessary repairs, replacements, reseedings, and remulching within the planting season, if possible. If a stand has less than 70% ground cover, re-evaluate the choice of plant materials, quantities of lime and fertilizer, seeding or planting methods, time of seeding or planting and available light and moisture. Re-establish the stand with modifications based on the evaluation.

After initial planting and/or seeding, irrigate to keep the seedbed moist (not wet) for at least 7 to 10 days after seeding depending on conditions. This may require watering daily the first week, especially during hot weather, and less frequently thereafter. Water application rates and delivery must be carefully controlled to prevent runoff and erosion. Inadequate or excessive amounts of water can be more harmful than no supplemental water. Irrigation is seldom needed for low-maintenance seedings made at the appropriate time of the year.

Herbicides may also be used for weed control. Apply all herbicides according to rates specified on the label.

### REFERENCES

U.S. Department of Agriculture - Natural Resources Conservation Service, U.S. Environmental Protection Agency - Region 5, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers - Chicago District, 1997. Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois. IL

NRCS IL October 2001 urbst880.doc

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
EROSION CONTROL DETAILS

SCALE: N/A SHEET 6 OF 12 SHEETS STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	20
CONTRACT NO. 61F44				
ILLINOIS		FED. AID PROJECT		

# PERMANENT VEGETATION

(acres or sq. ft.)  
CODE 880

TABLE A - GRASS, FORB, AND SEDGE SPECIES FOR LOW MAINTENANCE AREAS

Species <sup>1</sup>	Common Name	Native	Moisture	Sunlight	Seeding Rate <sup>2</sup>	Aggressive	Salt Tolerance	Seeds/oz. <sup>3</sup>	Recommended Planting Method
<b>GRASSES</b>									
Agrostis alba	red top	N	mesic-wet	full-partial	.5-1.0	N	High	312000	seed
Andropogon gerardi	big blue stem	Y	mesic	full	2.0-5.0	N	No consensus	8200-10000	seed
Avena sativa	oats	N	mesic-dry	full	30-50	N	Moderate		seed
Bouteloua curtipendula	side oats grama	Y	mesic-dry	full	5	N	Low	6000-8000	seed
Bromus inermis	smooth brome	N	mesic-dry	full	24	Y	High	8500	seed
Bromus pubescens	woodland brome	Y	mesic	shade-partial	0.031	N	Low to Moderate	70875	seed
Calamagrostis canadensis	blue joint grass	Y	wet	full	.03-.25	N	Low	95000-280000	transplants (plugs)
Cinna arundinacea	common wood reed	Y	mesic	shade-partial	0.1-1.0	N	Low to Moderate	56700	seed
Dactylis glomerata	orchard grass	N	mesic-wet	full-partial	4-8	N	High	41000	seed
Echinochloa crusgalli	barn yard grass	Y	mesic-wet	full-partial	.375-4.0	Y	High	31500	seed
Elymus canadensis	nodding wild rye	Y	mesic-wet	full-partial	.02-3.0	N	Low-Moderate	4200-5200	seed
Elymus virginicus	Virginia wild rye	Y	mesic-wet	full-partial	.06-1.0	N	No consensus	4200-4500	seed
Festuca elatior	tall fescue (many varieties)	N	mesic-dry	full-partial	10-30	N	Moderate to High	14000	seed
Festuca rubra	red fescue (many varieties)	N	mesic	full-partial	10-20	N	Moderate to High	38000	seed
Glyceria striata	fowl manna grass	Y	mesic-wet	full-partial	.05-1.0	N	Low to Moderate	113000-160000	seed
Hystrix patula	bottlebrush grass	Y	mesic	shade-partial	0.062	N	Low to Moderate	4700-7600	seed
Leersia oryzoides	rice cut grass	Y	wet	full-partial	.1-1.0	N	No consensus	34000-94000	seed, rhizomes
Lolium multiflorum	annual ryegrass	N	mesic-dry	full-partial	10-30	N	Moderate to High	14000	seed
Lolium perenne	perennial ryegrass	N	mesic-dry	full-partial	10-30	N	Moderate to High	14000	seed
Panicum virgatum	switch grass	Y	mesic-wet	full-partial	.125-1.0	N	Moderate to High	14000-18000	seed
Phleum pratense	timothy	N	mesic	full-partial	.375-2.0	N	High	77000	seed
Schizachyrium scoparium	little blue stem	Y	dry	full	1.0-6.0	N	No consensus	8800-15000	seed
Sorghastrum nutans	Indian grass	Y	mesic	full	2.5-6.0	N	Moderate to High	8300	seed
Spartina pectinata	prairie cord grass	Y	wet	full-partial	.125-2.0	N	High	157500	rhizomes, transplants
Sporobolus heterolepis	prairie drop seed	Y	dry	full	0.5	N	Low	14000-16000	seed
Zizania aquatica	wild rice	Y	wet	full	3	N	No consensus		seed
<b>FORBS &amp; GRAMINOIDS (grass-like)</b>									
Acorus calamus	sweet flag	Y	6-20in. water	full-partial	.006-.25	N	No consensus	750-3300	rhizomes
Asclepias incarnata	swamp milkweed	Y	wet	full	0.31	N	Moderate to High	4650	seed
Alisma subcordatum	water plantain	Y	0-6in. water	full	.06-.5	N	Moderate to High	60000-70000	seed
Aster leavis	smooth blue aster	Y	mesic-dry	full-partial	.02-.125	N	Low	48000-55000	seed
Aster lanceolatus	panicled aster	Y	mesic-wet	full-partial	.03-.06	N	Low to Moderate		seed
Aster novae-angliae	New England aster	Y	mesic-wet	full-partial	.03-.375	N	Low to Moderate	66000-70000	seed
Bidens cernua	nodding beggarsticks	Y	wet	full-partial	.25-.5	N	Moderate to High	14000-21000	seed
Bidens frondosa	common beggarsticks	Y	wet	full-partial	0.125	Y	Moderate to High	28000	seed
Carex comosa	bristly sedge	Y	0-12in. water	full-partial	.125-.375	N	Low to Moderate	29000	transplants (plugs)
Carex cristatella	crested oval sedge	Y	wet	full-partial	0.125	N	Low to Moderate	141750	fresh seed
Carex granularis	pale sedge	Y	wet	full-partial	0.031	N	Low		fresh seed
Carex hystricina	porcupine sedge	Y	wet	full-partial	0.125	N	Low	29840	seed
Carex lanuginosa	wooly sedge	Y	wet	full	0.125	N	Moderate to High	23625	seed
Carex scoparia	lance-fruited oval sedge	Y	wet	full-partial	0.125	N	Low	84000	seed
Carex stipata	awl-fruited sedge	Y	wet	full-partial	0.125	N	Low to Moderate	35000	seed
Carex vulpinoidea	fox sedge	Y	wet	full-partial	.06-.5	N	Moderate	100000-141000	seed
Coreopsis tripteris	tall coreopsis	Y	mesic	full-partial	.25-.5	N	Low to Moderate	11500-14000	seed
Coreopsis palmata	prairie coreopsis	Y	mesic	full	.015-.5	N	Low	8800	seed
Echinacea pallida	pale purple cone flower	Y	mesic	full	.25-.5	N	Low	5100	seed
Eleocharis obtusa	blunt spike rush	Y	wet	full	.02-.4	N	Moderate		seed
Eleocharis smallii	creeping spike rush	Y	wet	full	.02-.4	N	Moderate		seed
Eupatorium maculatum	spotted joe pye weed	Y	wet	full	.06-2.0	N	Low to Moderate	85000-95000	seed
Eupatorium perforatum	common boneset	Y	wet	full	.06-.125	N	Low to Moderate	160000-200000	seed
Gentiana andrewsii	bottle gentian	Y	mesic-wet	full-partial	.015-.125	N	Low to Moderate	800000	seed
Geranium maculatum	wild geranium	Y	mesic	shade-partial	0.54	N	Low	350	seed
Helenium autumnale	sneezeweed	Y	wet	full-partial	.12-.5	N	Low to Moderate	130000	seed
Helianthus grosseserratus	sawtooth sunflower	Y	wet	full	.15-.31	Y	Moderate to High	15000	seed
Iris virginica	blue flag iris	Y	wet	full-partial	.06-.625	N	Low to Moderate	850-1000	rhizomes, transplants
Juncus effusus	common rush	Y	wet	full-partial	0.37	N	Moderate to High		rhizomes
Juncus torreyi	Torrey's rush	Y	wet	full-partial	.006-.375	N	Moderate to High	70875	rhizomes
Liatris pycnostachya	prairie blazing star	Y	mesic-wet	full	0.125	N	Low	11500	seed
Liatris spicata	marsh blazing star	Y	wet	full	0.125	N	Low	11500	seed
Lotus corniculatus*	bird's foot trefoil	N	mesic	full	8	Y	High	25000	seed
Medicago sativa*	alfalfa	N	mesic	full	8	Y	Moderate to High	12500	seed
Lobelia cardinalis	cardinal flower	Y	wet	full-partial	0.06	N	No consensus	300000-400000	seed
Monarda fistulosa	wild bergamot	Y	mesic	full-partial	.125-1.0	N	Moderate	75000-78000	seed
Petalostemum purpureum*	purple prairie clover	Y	mesic	full	0.25	N	Low to Moderate	19000	seed
Phlox divaricata	woodland phlox	Y	mesic	shade-partial	0.13	N	Low	12500	seed
Polygonum amphibium	water smartweed	Y	0-20in. water	full	.5-1.5	N	No consensus		seed
Pycnanthemum virginianum	common mountain mint	Y	mesic-wet	full	.02-.06	N	No consensus	220000-284000	seed
Ratibida pinnata	yellow cone flower	Y	mesic	full	.125-.25	N	No consensus	27000-30000	seed
Rudbeckia hirta	black-eyed susan	Y	mesic	full-partial	.125-.5	N	Moderate	92000-100000	seed
Sagittaria latifolia	broadleaf arrowhead	Y	6-20in. water	full-partial	.06-.25	N	Moderate	56700	rhizomes, transplants
Scirpus acutus	hardstem bulrush	Y	0-36in. water	full	.06-.25	N	High	18000-30000	rhizomes
Scirpus americanus (pungens)	chairmaker's rush	Y	0-16.5in. water	full	.06-.125	N	Moderate to High		rhizomes
Scirpus fluviatilis	river bulrush	Y	0-30in. water	full-partial	.06-.125	N	Moderate to High	3375	rhizomes
Scirpus tabernaemontani (validus)	soft-stem bulrush	Y	12-20in. water	full	.06-.25	N	Moderate to High	31000-38000	rhizomes
Silphium laciniatum	compass plant	Y	mesic	full	.03-.19	N	Low to Moderate	655	seed
Silphium terebinthinaceum	prairie dock	Y	mesic-wet	full	.03-.19	N	Moderate	1050	seed
Smilacina racemosa	false solomon's seal	Y	mesic	shade-partial		N	Low to Moderate	900-1000	seed, transplants
Solidago gigantea	late goldenrod	Y	mesic-wet	full	.06-.3	N	Moderate to High	378000	seed
Sparganium eurycarpum	common burreed	Y	0-12in. water	full-partial	.2-.375	N	Low to Moderate	550	rhizomes
Tradescantia ohniensis	spiderwort	Y	mesic-dry	full-partial	.06-1.0	N	Low to Moderate	8000	seed
Trifolium hybridum*	alsike clover	N	mesic	full-partial	4-8	N	High	44000	seed
Trifolium pratense*	red clover	N	mesic	full-partial	4-8	N	Moderate to High	17000	seed
Verbena hastata	blue vervain	Y	wet	full	.015-.125	N	Moderate to High	93000-100000	seed
Veronica fasciculata	common iron weed	Y	wet	full	.01-.19	N	No consensus	20000-24000	seed, transplants

1 - The nomenclature (plant names) used follow Kartesz (1994) which has been largely adopted as a national standard. Some commonly used synonyms are given in parentheses.  
2 - All seeding rate information is pounds per acre and based upon Pure Live Seed (PLS). Seeding rates are given as ranges, since the actual seeding rate desired depends upon whether it is used as part of a mix or for a pure stand.  
3 - The seeds per ounce data is taken from supplier catalogues where available.  
Where no data was available or where large conflicts between sources existed this entry is blank.  
\* Legumes requiring proper inoculant.

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TABLE B - HIGH MAINTENANCE (TURF GRASS) SEED MIXTURES

Seed Mixture	Moisture Regime	Sun Light	Salt Tolerance	Seeding Rates (PLS) lbs./ac.	lbs./1000 sq. ft.
Kentucky blue grass	dry-well drained	full-partial	moderate	88-130	2 to 3
use at least 3 varieties					
Kentucky blue grass	dry-well drained	full	moderate	110	2.5
Red fescue				44	1
Tall fescue (turf type)	dry-wet	full-shade	moderate	220-260	5 to 6
Red fescue	dry-well drained	full-partial	moderate to high	110	2.5
Kentucky blue grass				44	1.0
Kentucky blue grass	dry-well drained	full-partial	moderate	86	2.0
Perennial ryegrass				43	1.0
Red fescue	wet-moist	full-partial	high to very high	35	0.8
Alkali grass				35	0.8
Squirreltail grass				15	0.35

Seeding Dates

Season	Region	Seeding Dates
Spring	Northern Illinois	Early spring to June 1
	Central Illinois	Early spring to May 15
	Southern Illinois	Early spring to May 15
Fall	Northern Illinois	August 1 to September 1
	Central Illinois	August 1 to September 10
	Southern Illinois	August 1 to September 20
Dormant	Northern Illinois	November 1 to March 15
	Central Illinois	November 15 to March 1
	Southern Illinois	November 15 to March 1

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TABLE C - GROUND COVERS AND VINES

Species	Common Name	Native	Mature Height	Moisture	Sunlight	Spacing	Invasive	Flowers
Ajuga reptans	bugleweed	No	6-12"	mesic-dry	full sun-shade	12"	Yes	blue
Asarum canadense	wild ginger	Yes	6"	mesic	partial-shade	18"	No	red
Celastrus scandens	American bittersweet	Yes	vine	mesic-dry	full-partial	12"	Yes	green
Ceanothus americanus	New Jersey tea	Yes	18-30"	mesic-dry	full	18"	No	white
Clematis terniflora	sweet autumn clematis	No	vine	mesic-dry	partial-shade	12"	No	white
Clematis virginiana	Virginia's bower	Yes	vine	wet	partial	12"	No	white
Convallaria majalis	lily of the valley	No	6-12"	mesic-dry	partial-shade	12"	slightly	white
Cotoneaster adpressa	creeping cotoneaster	No	6-12"	mesic-dry	full	18"	No	pink
Dioscorea villosa	wild yam	Yes	vine	wet-mesic	partial-shade	12"	slightly	green
Duchesnea indica	false strawberry	No	6-12"	wet-dry	full-shade	18"	Yes	yellow
Euonymus fortunei	wintercreeper	No	12-18"	mesic-dry	full-shade	12"	Yes	purple
Galium odoratum	sweet woodruff	No	<6"	mesic-dry	partial-shade	12"	No	white
Gysophylla repens	creeping baby's breath	No	6-12"	mesic-dry	full	12"	No	white
Hedera helix	English ivy	No	<6"	mesic-dry	full-shade	12"	No	
Hemerocallis fulva	day lily	No	12-18"	wet-dry	full-shade	18"	Yes	various
Hosta lancifolia	hosta (plains lily)	No	12-18"	wet-mesic	partial-shade	18"	No	various
Hydrangea petiolaris	climbing hydrangea	No	vine	wet-mesic	partial	36"	No	white
Ilex verticillata	winterberry holly	Yes	18-36"	wet	partial	12"	No	white
Juniperus horizontalis	creeping juniper	Yes	6-18"	mesic-dry	full	30"	No	
Lonicera prolifera	yellow honeysuckle	Yes	vine	mesic	partial-shade	12"	No	yellow
Pachysandra terminalis	Japanese spurge	No	6-12"	mesic	partial-shade	12"	No	green
Parthenocissus quinquefolia	Virginia creeper	Yes	vine	mesic	partial-shade	18"	No	green
Phlox stolonifera	creeping phlox	No	6-12"	mesic	partial	12"	No	various
Phlox subulata	moss phlox	No	12-18"	mesic	full	12"	No	various
Polygonum Reynoutria	dwarf fleece flower	No	<6"	mesic	full-partial	12"	Yes	white
Potentilla fruticosa	shrubby cinquefoil	Yes	18-36"	mesic-dry	full	36"	No	yellow
Ranunculus repens	creeping buttercup	No	6-12"	wet-mesic	full-partial	36"	slightly	yellow
Ribes alpinum p								

## SILT FENCE

(feet)  
CODE 920

### DEFINITION

A temporary barrier of entrenched geotextile fabric (filter fabric) stretched across and attached to supporting posts used to intercept sediment laden sheet flow runoff from small drainage areas of disturbed soil so as to settle out suspended soil particles.

### PURPOSE

The purpose of this practice is to cause interception and deposition of transported sediment load from sheet flow leaving disturbed areas.

### CONDITIONS WHERE PRACTICE APPLIES

1. Where runoff occurs causing sheet erosion.
2. Downslope areas for perimeter protection from sheet flow.
3. Where adjacent areas are to be protected from silt laden runoff.
4. Where effectiveness is required until permanent stabilization of disturbed areas.

### CRITERIA

The maximum drainage area for overland flow to a silt fence shall not exceed 1/2 acre per 100 feet of fence.

All silt fence shall be placed as close to the contour as possible, with the ends extending upslope.

Silt fence should not be placed across, or in areas of concentrated flow such as; streams, swales, or ditches.

The maximum allowable slope distances contributing runoff to a silt fence are listed in the following table:

Slope (%)	Maximum spacing along slope (ft.)
25	50
20	75
15	125
10	175
Flatter than 10	200

When one row of fence is used, or it is the last in a series, the area below the fence must be undisturbed or stabilized.

Silt fence fabric shall be selected using material specification IUM 592 GEOTEXTILE, Table 1, Class 2.

Fence posts shall be a minimum of 48 inches long. Wood posts shall be of sound quality wood with a nominal cross sectional area of 2 x 2 inches. Steel posts shall be standard T and U sections weighing not less than 1.33 pounds per linear foot or other steel posts having equivalent strength and bending resistance. The maximum spacing between posts shall be 5 feet. The posts shall be driven a minimum of 18 inches into the ground or as approved by the engineer. Spacing may need to be adjusted so the posts are located in low areas where water may pond. Additional posts may be required at low areas.

When splices are necessary, the fabric shall be spliced at a support post and posts twisted together per drawing IUM- 620BW so silt-laden water cannot escape around, or beneath the fence.

The height of a silt fence shall be a minimum of 24 inches above the original ground surface. The silt fence shall be entrenched to a minimum depth of 6 inches, with an additional 6 inches extending along the bottom of the trench in the upslope direction. The 6 inch extension of fabric along the bottom may need to be cut where two fences are spliced per the method mentioned above.

The posts shall be set, fabric installed, trench backfilled, and the soil compacted over the fabric to 95%.

The silt fence may also be entrenched by static slicing. Static slicing consists of the insertion of a narrow custom- shaped blade approximately 10 inches into the ground, while simultaneously pulling the silt fence fabric into the opening created as the blade is pulled through the ground. The blade shall impart no vibration or oscillatory motion. The tip of the blade shall be designed to slightly disrupt the soil upward, preventing horizontal compaction of the soil and creating optimum soil conditions for mechanical compaction. Compact (2 passes typically) using a tire on the tractor. Post driving followed by tying or stapling the fabric to the post shall finalize the installation.

The filter fabric shall be securely fastened to the upslope side of the wooden posts using heavy duty wire staples at least 1 inch long, or in accordance with manufacturer's recommendations. Fabric shall be attached to steel posts according to manufacturer's recommendations.

If a silt fence crosses contours, J-Hooks shall be installed perpendicular to the upslope side of the fence in order to minimize concentrated flow and erosion along the upslope side of the fence and more broadly distribute sediment deposition

Silt fence shall be installed prior to the clearing of existing vegetation and grading work if the clearing results in the exposure of bare soil.

### CONSIDERATIONS

Silt fence may be sold with additional support systems including wire backing or polymeric mesh. Post spacing can be lengthened to 10 feet if wire or poly mesh backed silt fence is used. When traditional silt fence is used appropriately along with multiple erosion & sediment control practices, wire or poly mesh fences are often not necessary.

Wire fence shall be a minimum 14- gauge wire with a maximum 6-inch mesh opening. The filter fabric shall be furnished in a continuous roll cut to the length of the wire fence needed to avoid

splices. The wire mesh shall not be buried and compacted in the anchor trench; the bottom level of mesh stops at ground level.

The filter fabric and wire support, if used, shall be securely fastened to the upslope side of the wooden posts using heavy duty wire staples at least one inch long or in accordance with manufacturer's recommendations. The fabric shall be attached to the wire support to prevent sagging of the fabric. Fabric shall be attached to steel posts according to manufacturer's recommendations.

Where space allows, silt fence at the end of a slope should be placed an adequate distance from the toe to allow for sediment storage.

### PLANS AND SPECIFICATIONS

Plans and specifications for installing silt fence shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. At a minimum include the following:

1. Location(s) where the silt fence is to be installed.
2. The type, size, spacing, material and insertion depth of fence posts.
3. Location and interval distance of J- hooks, if used.
4. The type and size of wire or other approved support mesh backing, if used.
5. The type of filter fabric used.
6. The method of anchoring the filter fabric.
7. The method of fastening the filter fabric to the fence posts.
8. The rock size and location of gravel check dams, if used.

All plans shall include the installation, inspection, and maintenance schedules with the responsible party identified.

Standard Drawing IL-620A SILT FENCE PLAN or IL-620A(W) SILT FENCE WITH WIRE SUPPORT PLAN can be used as the plan sheets.

### OPERATION AND MAINTENANCE

Silt fence shall be removed once upslope areas have been permanently stabilized.

Silt fence shall be inspected no less frequently than every week during construction. Should any part of the silt fence installation ( fabric, posts, backfill seal, etc.) become ineffective prior to the required duration of it's use, the individual part, or the entire system shall be replaced promptly.

Sediment deposits shall be removed when the level of deposition reaches no greater than one-half the height of the silt fence.

Any sediment deposits remaining in place after the silt fence is no longer required shall be dressed to conform to the existing grade, a seedbed prepared, and the site vegetated. See IUM STANDARD, PERMANENT VEGETATION 880.

### REFERENCES

North Carolina Sedimentation Control Commission, 1988. Erosion and Sediment Control Planning and Design Manual.

Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1992. Virginia Erosion and Sediment Control Handbook, 3rd ed., VA

Washington State Department of Ecology, 2000. Stormwater Management Manual for Western Washington. WA

International Erosion Control Association, 2008. Silt Fence Installation Efficacy: Definitive Research Calls for Toughening Specifications and Introducing New Tech.

October 2017 urbst920.doc

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
EROSION CONTROL DETAILS

SCALE: N/A SHEET 8 OF 12 SHEETS STA. N/A TO STA. N/A

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	22
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

## TEMPORARY SEEDING

(acres or square feet)  
CODE 965

### DEFINITION

Planting rapid-growing annual grasses or small grains, to provide initial, temporary cover for erosion control on disturbed areas.

### PURPOSE

The purpose of this practice is to temporarily stabilize denuded areas that will not be brought to final grade or on which construction will be stopped for a period of more than 14 working days.

Temporary seeding helps reduce runoff and erosion until permanent vegetation or other erosion control measures can be established. In addition, it provides residue for soil protection during seedbed preparation and reduces problems of mud and dust production from bare soil surfaces during construction.

### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all cleared, unvegetated, or sparsely vegetated soil surfaces where vegetative cover is needed for less than 1 year. Applications of this practice include diversions, dams, temporary sediment basins, temporary road banks, topsoil stockpiles and any other exposed areas of a construction site.

### CRITERIA

Plant selection - Select plants appropriate to the season and site conditions from Table 1.

Site preparation - Prior to seeding, install necessary erosion control and sediment control practices if possible.

Remove large rocks or other debris that may interfere with seedbed preparation or seeding operations.

#### Seedbed preparation:

1. Liming: Where the pH of the soil is below 5.5, apply one and one half to two tons per acre of finely ground agricultural limestone. If the seeding period is less than 30 days liming will not be required.
2. Fertilizer: Apply 500 pounds per acre of 10-10-10 fertilizer or equivalent. Incorporate lime and fertilizer into the top 2 - 4 inches of soil. If the seeding period is less than 30 days fertilizer will not be required.
3. Prepare a seedbed of loose soil to a depth of 3 to 4 inches. If recent tillage or grading operations have resulted in a loose surface, additional tillage or roughening may not be required except to break up large clods. If rainfall caused the surface to become sealed or crusted, loosen it just prior to seeding by disking, raking, harrowing, or other suitable methods. Groove or furrow slopes steeper than 3:1 on the contour before seeding.

Seeding - Seed shall be evenly applied with a cyclone seeder, drill, cultipacker seeder or hydroseeder. Small grains shall be planted no more than one inch deep. Grasses shall be planted no more than one half inch deep.

Cover broadcast seedings by cultipacking, dragging a harrow, or raking.

Mulching - Seedings made during optimum spring and summer seeding dates, with favorable soil and site conditions, will not require mulch.

When temporary protection is needed see practice standard 875, MULCHING.

### CONSIDERATIONS

Temporary seedings should be used to protect earthen structures such as dikes, diversions, dams and other structures used for sediment control during construction. Temporary seedings can also reduce the amount of maintenance these structures may need. For example, the frequency of sediment basin clean-outs will be reduced if watershed areas, outside the active construction zone, are stabilized.

Proper seedbed preparation, selection of appropriate species, and use of quality seed are as important in this practice as in practice standard 880, PERMANENT SEEDING. Failure to follow established guidelines and recommendations carefully might result in an inadequate or short-lived stand of vegetation that will not control erosion.

Temporary seeding provides protection for no more than 1 year, during which time permanent stabilization should be initiated.

### PLANS AND SPECIFICATIONS

Plans for temporary seeding shall include plant species to be used, dates of seeding, seedbed preparation, fertilization and seeding rates and methods.

### OPERATION AND MAINTENANCE

Reseed areas where seedling emergence is poor, or where erosion occurs, as soon as possible. Protect from vehicular and foot traffic. Control weeds by mowing.

NRCS IL December 1994

urbst965.doc

TABLE 1  
TEMPORARY SEEDING SPECIES, RATES AND DATES

Species	Lbs./Acre	Lbs./1000 ft. <sup>2</sup>	Seeding Dates
Oats	90	2	Early spring - July 1
Cereal Rye	90	2	Early spring - Sept. 30
Wheat	90	2	Early spring - Sept. 30
Perennial Ryegrass	25	6	Early spring - Sept. 30

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
EROSION CONTROL DETAILS

SCALE: N/A SHEET 9 OF 12 SHEETS STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	23
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

## TEMPORARY STREAM CROSSING

(no.)  
CODE 975

### DEFINITION

A bridge or culvert crossing installed across a stream or watercourse for short-term use by construction equipment and traffic.

### PURPOSE

The purpose of this practice is to minimize or limit the impact of Temporary Stream Crossings that enable construction traffic to cross streams or watercourses. The intent is to minimize, to the extent practicable, the discharge of erodible soil into the waterway, the damage or alteration of the stream banks and stream channel, the adverse alteration of flood flows, and the impact to stream flora and fauna.

### CONDITIONS WHERE PRACTICE APPLIES

1. Where any construction equipment must be moved from one side of a stream channel to another, and/or where construction traffic must cross the stream channel for a short period of time.
2. Where an existing permanent stream crossing is not available.
3. Where no endangered or threatened species are present that would be impacted by the crossing.
4. Where the stream bed can support culverts, or where stream banks can support a bridge.
5. Where the drainage area is one square mile or less in an urban/suburban watershed, or ten (10) square miles or less in a rural watershed.
6. Where riparian wetlands along the stream channel would not be impacted by the temporary crossing unless compensatory mitigation or credits are purchased or restored in accordance with any permits.
7. Where the temporary crossing can be removed within a year or less.
8. Where crossing intermittent or flowing streams, and non-navigable waters.
9. Where there are no underlying utilities.

More exacting and site-specific engineering analysis and design than contained in this standard shall be used for crossing streams with larger tributary drainage areas (as defined above) or as dictated by site-specific conditions such as base flow, or local regulations.

### CRITERIA

Professional engineering analysis and design shall be completed for all temporary stream crossings.

Temporary stream crossings shall be designed to be overtopped by high flows or by debris or ice-laden flows.

Design the crossing to pass the peak flow from a 2-year frequency, 24-hour duration storm event (using ISWS Bulletin 70 rainfall data and applicable local rainfall data requirements). The design shall include a designated overflow route for storm events greater than the 2-year frequency, 24-hour duration storm event and provide a protected overflow path.

In cases where channel banks are overtopped by this design storm event, the crossing structure shall be designed and constructed such that it will not cause erosion or damage due to increases in water surface profiles to adjacent properties.

The design capacity of the crossing structure shall not create a damaging or potentially damaging increase in flood heights (<0.10 feet) or velocities over existing conditions.

It shall not create a threat to public health, safety and welfare, or impair the natural hydrologic functions of the floodplain or channel.

Erosion and sediment control, structural stability, utility protection, and overall safety must all be evaluated when designing temporary stream crossings.

Approach grades to the temporary crossing shall be less than 10%.

The width of the crossing shall be sized to the vehicles using the crossing and to prevent spillage directly into the stream.

Placement of temporary structures in or over a surface water will likely require permits from state, local, and/or federal regulatory agencies. Local, state or federal requirements supersede and may go beyond the criteria in this standard.

Temporary stream crossings represent channel constrictions in most cases and thus they shall be in service for the shortest practical period of time and shall be removed as soon as their purpose is complete to avoid the potential to cause or exacerbate flooding.

Select locations for stream crossings where erosion potential is low by evaluating channel geometry, slopes and side slope material. Evaluate the stream channel conditions, overflow areas, and surface runoff control at the site before choosing the location and type of crossing.

Ensure that velocity at design flow at the outlet of the crossing structure is non-erosive for the receiving stream channel. This shall be accomplished by carefully evaluating the placement of the crossing, the size of the downstream opening in the crossing, and flow velocities under all conditions.

Aggregate used for the roadway approach and crossing shall be properly sized based on expected flows and velocities. A minimum layer of stone or recycled concrete that is 1/2 the diameter of the culvert pipe or 12 inches thick, whichever is greater shall be used. Aggregate meeting one of the following IDOT coarse aggregate gradations: CA-1, CA-2, CA-3 or CA-4 shall be used unless conditions warrant larger material. The aggregate used shall be sized to meet site specific conditions to ensure stability in the design storm event.

The aggregate shall be placed on geotextile fabric meeting the requirements in Material Specification GEOTEXTILE 592 Table 2, class 1, and/or the appropriate IDOT material specification.

Streams shall be crossed in a straight reach, rather than on a bend, if possible. Crossings shall be installed as close to perpendicular to the stream channel flow path as possible.

Ensure that all necessary materials and equipment are on-site before any work is begun. Complete construction in an expedient manner so that the crossing can be removed and then any disturbed areas stabilized immediately.

Equipment or vehicles shall not be stored on the crossing.

Upon removal of the crossing, the portion of the side slope that is above the observed water elevation shall be stabilized as specified in the plans prior to accepting flows. The substrate and toe of slope that has been disturbed due to construction activities shall be restored to proposed or pre-construction conditions and fully stabilized prior to accepting flows.

Limit the area of ground disturbance and implement appropriate soil erosion and sediment control measures. Alteration to the stream banks and bed shall be kept to the minimum necessary for an effective and safe crossing.

Fish passage shall be evaluated when crossing a stream with aquatic life, which may require an assessment of what is present in the stream. Timing of crossing activities shall avoid impacting fish spawning runs. Impacts to mussel beds and endangered or threatened species shall be avoided.

Plans and specifications shall be followed by the site superintendent and field personnel during the construction process.

Stream crossings are of two general types:

1. bridges
2. culverts

Determine which method best suits the specific site conditions.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
EROSION CONTROL DETAILS

SCALE: N/A SHEET 10 OF 12 SHEETS STA. N/A TO STA. N/A

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	24
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				



## TEMPORARY STREAM CROSSING

(no.)  
CODE 975

### Bridges

Bridge designs shall be completed by an Illinois Licensed Structural Engineer.

Materials and designs shall be adequate to bear the expected loading. This requires site-specific engineering analysis.

The design adequacy of the bridge supports shall be based on site soil borings and geotechnical evaluation.

Bridges shall be properly supported and anchored to prevent, at a minimum, settlement, uplift, and overturning. The design evaluation shall include hydraulic loading, impact loading, and live loads.

### Culvert crossings

If not sized correctly, culverts can offer the greatest obstruction to flood flows and are subject to blockage and washout. Culverts shall be sized and materials specified based on site-specific conditions and meet all flow criteria described above.

Culverts shall be installed with the inverts at the same elevation as the stream bed to allow for fish passage and to maintain low flow conditions. This may involve slight excavation of the channel bed to place a riprap base and then set culvert inverts at the proper elevation relative to the streambed.

The downstream invert of the culvert shall be lower than the upstream invert to allow for positive drainage at low flow conditions.

Both the length and diameter of the culvert must be determined in the design. Multiple pipes shall be evaluated to provide adequate flow capacity while keeping the vertical height of the crossing at a minimum.

Aggregate cover over the culvert pipes shall be at least  $\frac{1}{2}$  the diameter of the pipe, or 12 inches thick, whichever is greater, to support anticipated loads.

### CONSIDERATIONS

Careful planning can minimize the need for stream crossings. Use existing crossings whenever possible. Consider completing the project on each side of the watercourse separately and leaving a natural buffer zone intact along the stream.

Most projects that impact surface waters require permits, and it may take several months to obtain the necessary permits. A temporary stream crossing may be considered an impact under local, state or federal regulations. Advance planning can help avoid costly permitting delays.

If a temporary stream diversion is needed to divert flow during the installation of a temporary stream crossing, Practice Standard TEMPORARY STREAM DIVERSION 976 shall be followed.

Bridges usually cause the least disturbance to the streambed, banks,

and surrounding area. They provide the least obstruction to flow and fish passage. They generally require little or no maintenance, can be designed to fit most site conditions, and can be easily removed. However, bridges are generally the most expensive to design and construct. Further, they may offer the greatest safety hazard if not adequately designed, installed, and maintained, and if washed out, they cause a longer construction delay and are more costly to repair.

Temporary bridges can be constructed of wood, steel, or pre-cast concrete. They can be pre-fabricated or constructed on site.

Culverts are the most commonly used temporary stream crossing. In many cases, they are the least costly to install, can safely support heavy loads, and are adaptable to most site conditions. Construction materials are readily available and can often be salvaged for reuse.

The installation and removal of culverts can cause considerable disturbance to the stream and surrounding area if not done properly.

In-stream construction projects such as utility crossings, may include a temporary stream crossing, but will likely include other in-stream work with their own set of considerations and criteria.

To the extent possible, work that requires a temporary stream crossing should be timed to take place during low or no-flow conditions. When practical and if applicable, locate temporary stream crossings where permanent crossings will be constructed to minimize the total area of disturbance.

### PLANS AND SPECIFICATIONS

Plans and specifications for temporary stream crossings shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. At a minimum include the following items:

1. The location of the crossing.
2. Required material specifications.
3. Crossing geometry and dimensions.
4. Any necessary engineering design for flow capacity and loading considerations.
5. Removal and restoration plan.
6. Soil erosion and sediment control plan.
7. Soil boring and geotechnical analysis to determine bridge support design/capacity if needed.

All plans shall include installation, inspection, and maintenance schedules with the responsible party identified.

### OPERATION AND MAINTENANCE

Inspect temporary stream crossings after runoff-producing precipitation events to check for blockage in channel, erosion of abutments, channel scour, riprap displacement, or piping. Make repairs immediately to prevent further damage to the structure.

Remove temporary stream crossings immediately when they are no longer needed. Restore the stream channel to its original cross-section, and smooth and appropriately stabilize all disturbed areas.

### REFERENCES

Dindorf, C., and K. Voznyuk. 2009. Temporary Stream, Wetland, and Soft Soil Crossings. Minnesota Erosion Control Association.

Connecticut Department of Environmental Protection, Bureau of Natural Resources, Division of Forestry. 2007. Best Management Practices, 2007 Connecticut Field Guide. Stream Crossings pp 23-36.

Iowa State University, Center for Transportation Research and Education. 2003. Low Water Stream Crossings in Iowa: A Selection and Design Guide. 25pp.

Indiana Drainage Handbook. Revised 1999. Prepared by Christopher B. Burke Engineering Ltd. 495pp.

Illinois Department of Transportation Drainage Manual. 2011. Drainage Manual Committee for Illinois Department of Transportation, Springfield, IL. 794pp.

Stream Crossing, Temporary - from Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas. Accessed at [http://projects.geosyntec.com/NPSManual/Fact%20Sheets/Stream%20Crossing\\_Temporary.pdf](http://projects.geosyntec.com/NPSManual/Fact%20Sheets/Stream%20Crossing_Temporary.pdf) on 9 January 2015.

USEPA Water: Best Management Practices, Temporary Stream Crossings accessed at <http://water.epa.gov/polwaste/npdes/swbmp/Temporary-Stream-Crossings.cfm> on 9 January 2015.

Caltrans Storm Water Quality Handbooks. Construction Site Best Management Practices Manual, Temporary Stream Crossing. 2003.

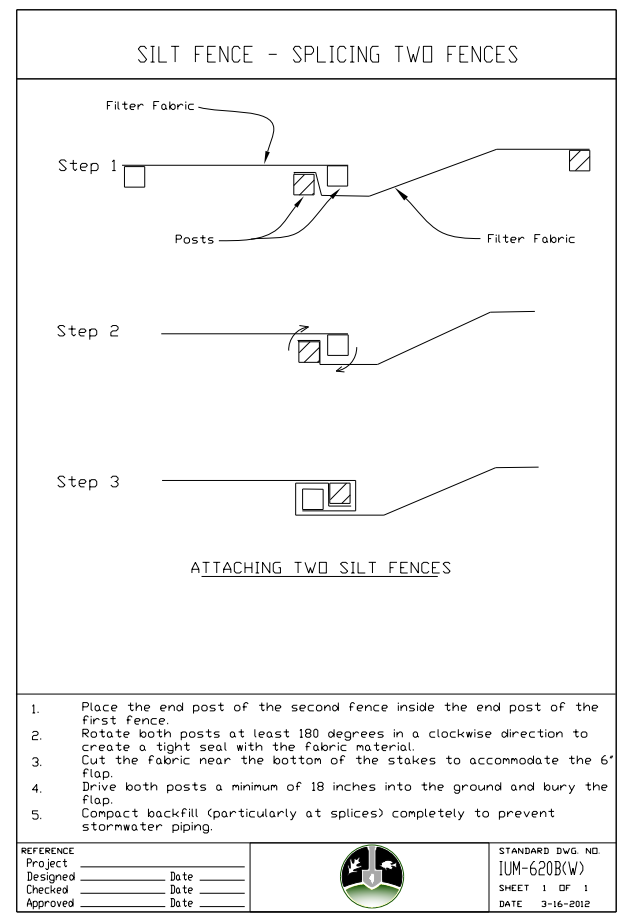
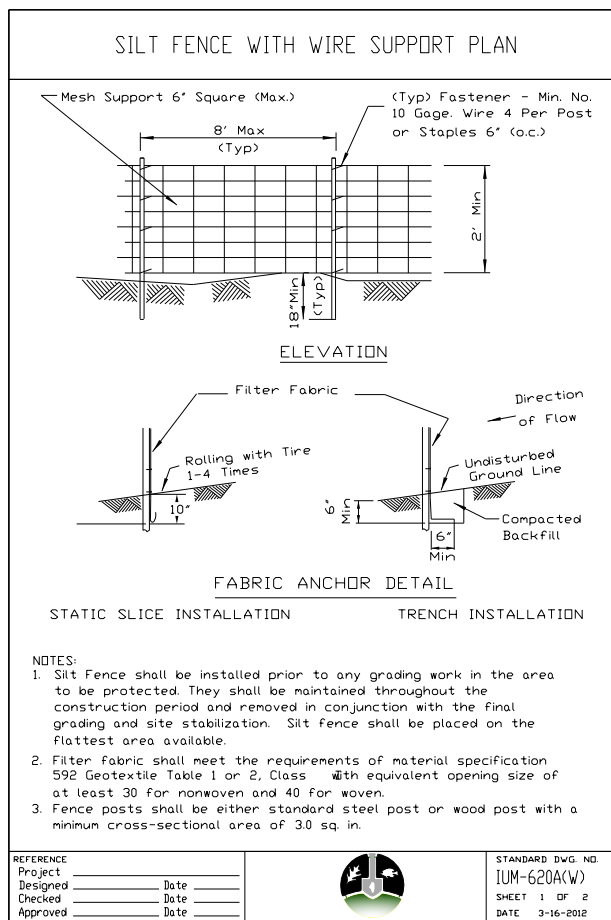
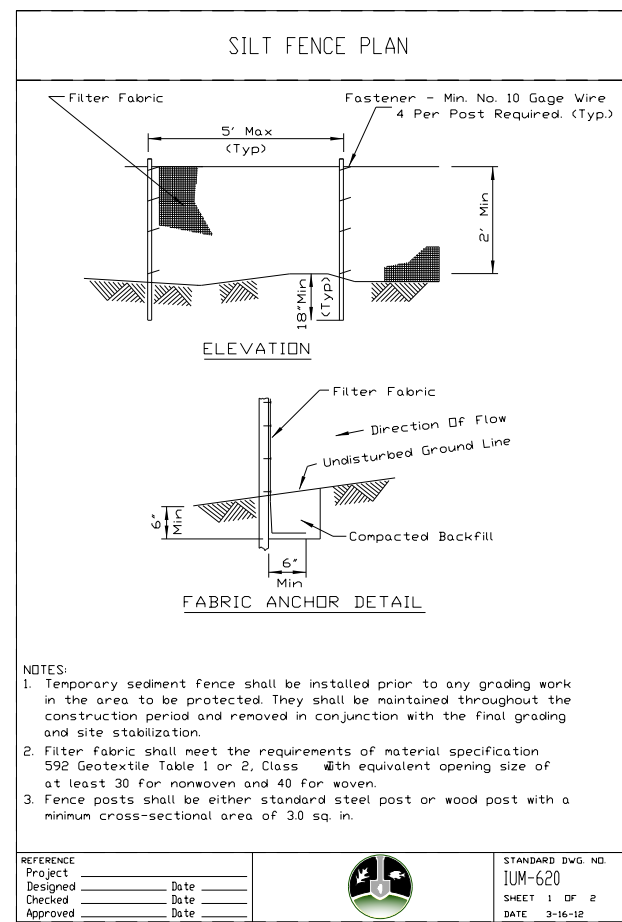
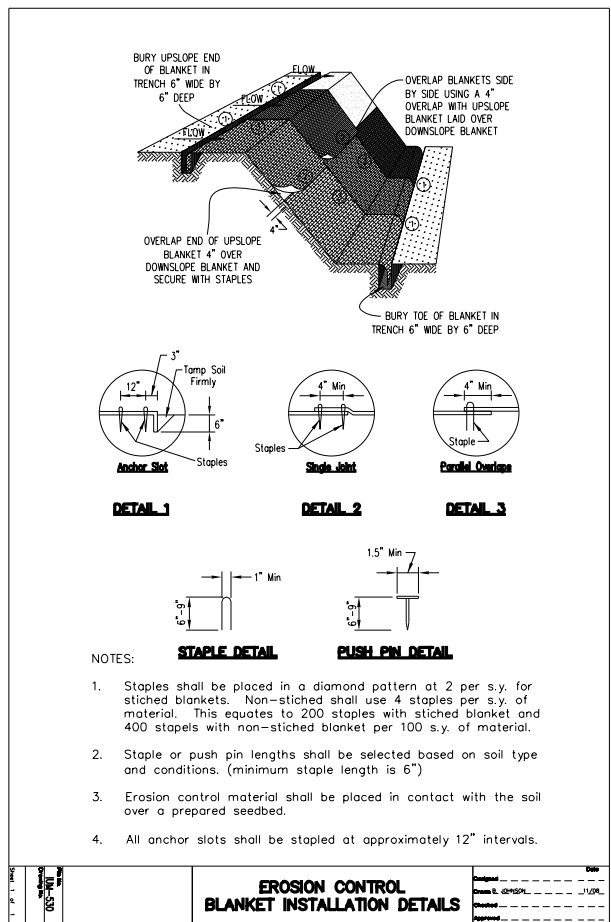
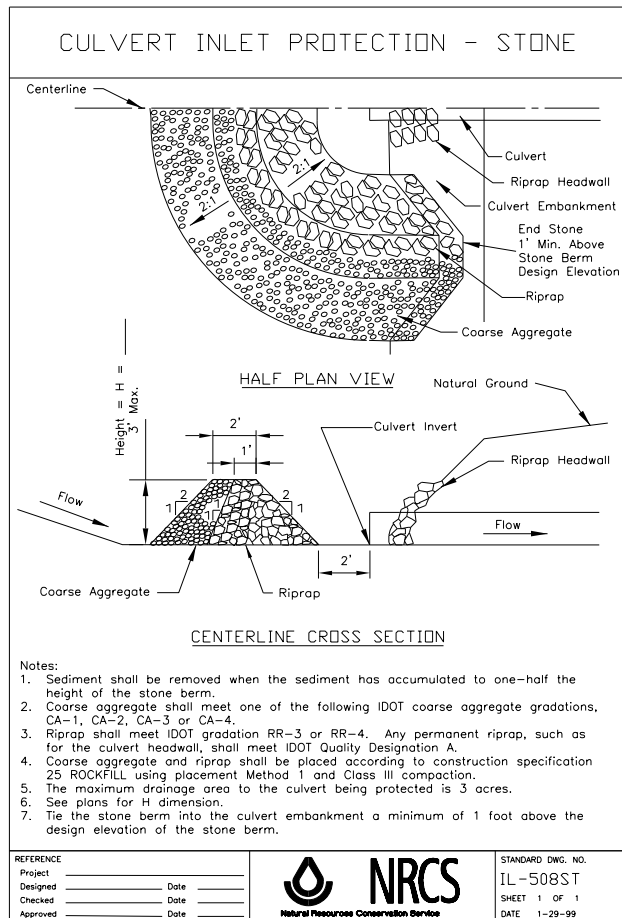
August 2015

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LILY CACHE RD  
EROSION CONTROL DETAILS

SCALE: N/A SHEET 11 OF 12 SHEETS STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	25
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				



MODEL: Default  
FILE NAME: \\s310\CADD\_Sheets\4310-01-eroc-detailed.dwg

USER NAME = BWedemeier	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 2,000' / in.	CHECKED -	REVISED -	
PLOT DATE = 12/13/2018	DATE -	REVISED -	

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
EROSION CONTROL DETAILS**

SCALE: N/A      SHEET 12 OF 12 SHEETS      STA. N/A TO STA. N/A

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	26
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

B.M.: RR Spike in Power Pole  
Sta. 25+53, 17' Lt.  
Elev. 590.10

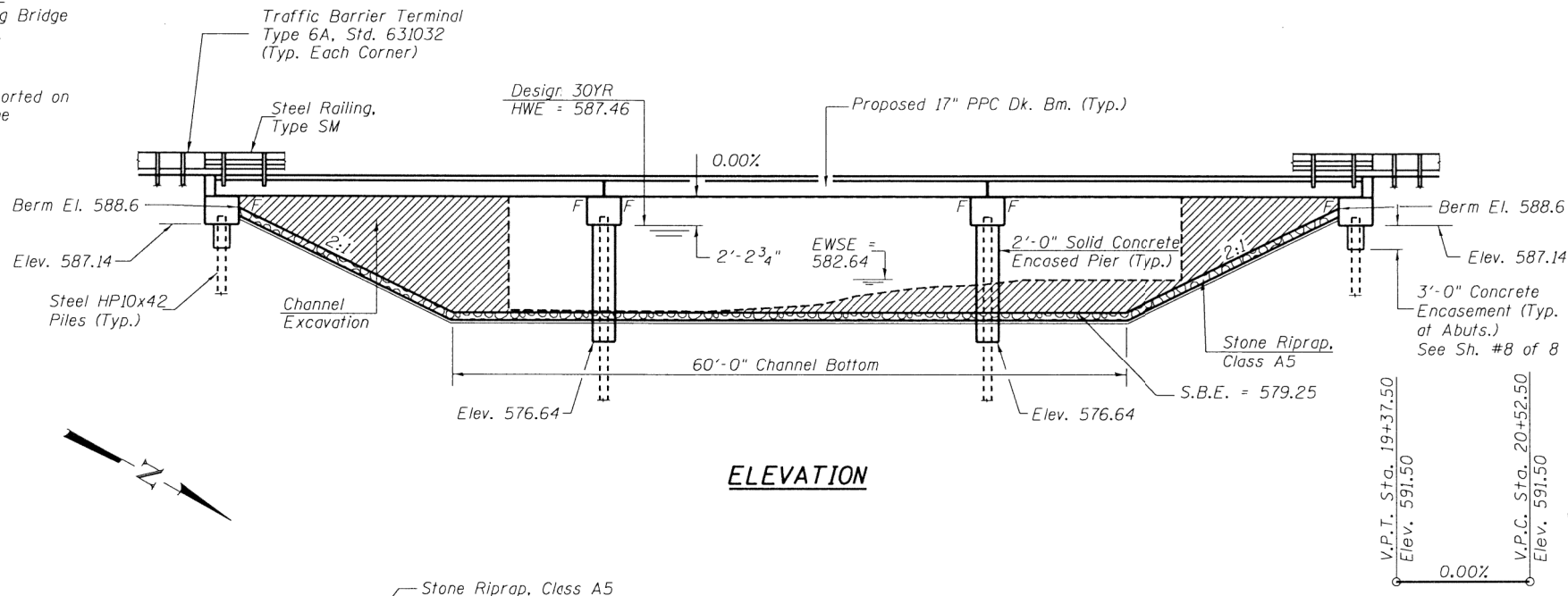
Chiseled "□" on NE  
Wingwall of Existing Bridge  
On Caton Farm Rd.  
Elev. 592.12

**Existing Structure:**

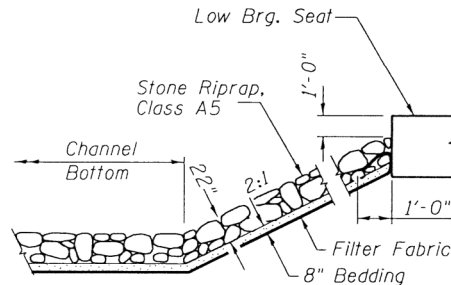
Single span PPC Deck Beam superstructure supported on stacked stone and concrete closed abutments. The structure is ±64'-4" back to back of abutments, 30'-0" out to out deck, and is not skewed. Str. No. 099-3122

Salvage: None

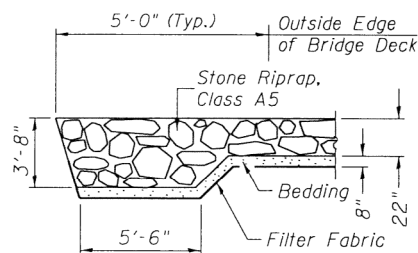
Road to be closed to traffic during construction.



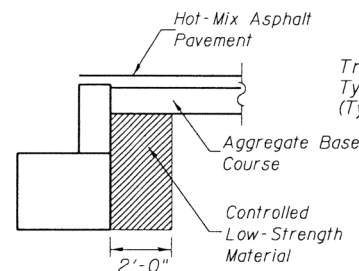
**ELEVATION**



**STONE RIPRAP DETAIL**



**SECTION A-A**



**SECTION B-B**

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevations (ft.)					Item 113
	S. Abut.	Pier 1	Pier 2	N. Abut.	
Q100	587.14	573.27	573.27	587.14	8
Q200	587.14	574.12	574.12	587.14	
Design	587.14	573.27	573.27	587.14	
Check	587.14	574.12	574.12	587.14	

**DESIGN SPECIFICATIONS**

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

**DESIGN STRESSES**

(PRECAST PRESTRESSED UNITS)  
f'c = 6,000 p.s.i.  
f'ci = 5,000 p.s.i.  
f's = 270,000 p.s.i. (1/2" Strands)  
f'si = 201,960 p.s.i. (1/2" Strands)

(FIELD UNITS)  
f'c = 3,500 p.s.i.  
fy = 60,000 p.s.i. (Rein.)

**LOADING HL - 93**

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

**WATERWAY INFORMATION**

Drainage Area = 46.10 Sq. Mi.		Low Grade Elev. = 588.18 @ Sta. 16+50.00			
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Nat. Head - Ft.	Headwater El.
Design	30	2,800	407	596	587.46
Base	100	4,055	466	683	588.44

IDNR/OWR has issued permit DIL-17-006 for the construction of this project.

DESIGNED	E.M.L.
CHECKED	B.A.N.
DRAWN	E.M.L.
CHECKED	B.A.N.

**GENERAL NOTES**

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles.  
For Soil Boring Logs. See Special Provisions.  
A Corrosion Inhibitor shall be used in the concrete for Precast Prestressed Concrete Deck Beams according to Articles 1020.05(b)(10) and 1021.07 of the Standard Specifications.  
Reinforcement Bars designated (E) shall be epoxy coated.  
Layout of the slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.  
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.  
Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.  
See Special Provisions for existing plans.

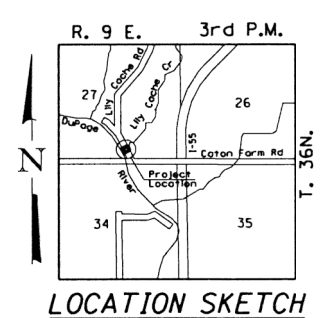
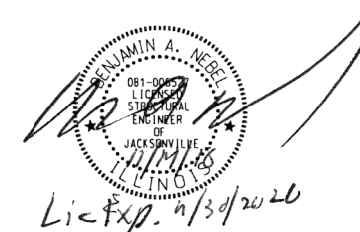
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD	—	725	725
Stone Riprap, Class A5	SQ YD	—	565	565
Filter Fabric	SQ YD	—	565	565
① Removal of Existing Structures	EACH	—	—	1
Structure Excavation	CU YD	—	80	80
Cofferdam Excavation	CU YD	—	70	70
Cofferdam (Type 1) (Location-1) (Pier #1)	EACH	—	1	1
Cofferdam (Type 1) (Location-2) (Pier #2)	EACH	—	1	1
Concrete Structures	CU YD	—	86.4	86.4
Concrete Encasement	CU YD	—	3.5	3.5
Precast Prestressed Concrete Deck Beams (17" Depth)	SQ FT	3,060	—	3,060
Reinforcement Bars	POUND	—	8,500	8,500
Furnishing Steel Piles HPI0x42	FOOT	—	603	603
Driving Piles	FOOT	—	603	603
Test Pile Steel HPI0x42	EACH	—	4	4
Name Plates	EACH	—	1	1
Hot-Mix Asphalt Surface Course, Mix "D", N50	TON	33	—	33
① Controlled Low-Strength Material	CU YD	—	12.0	12.0
Steel Railing, Type SM	FOOT	208	—	208

① See Special Provisions

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 Bridges.  
This design complies with all requirements of the current AASHTO Guide Specifications for Seismic Design of highway bridges.

*[Signature]*  
Illinois Structural No. 6527  
Expires 11/30/2020



**LOCATION SKETCH**

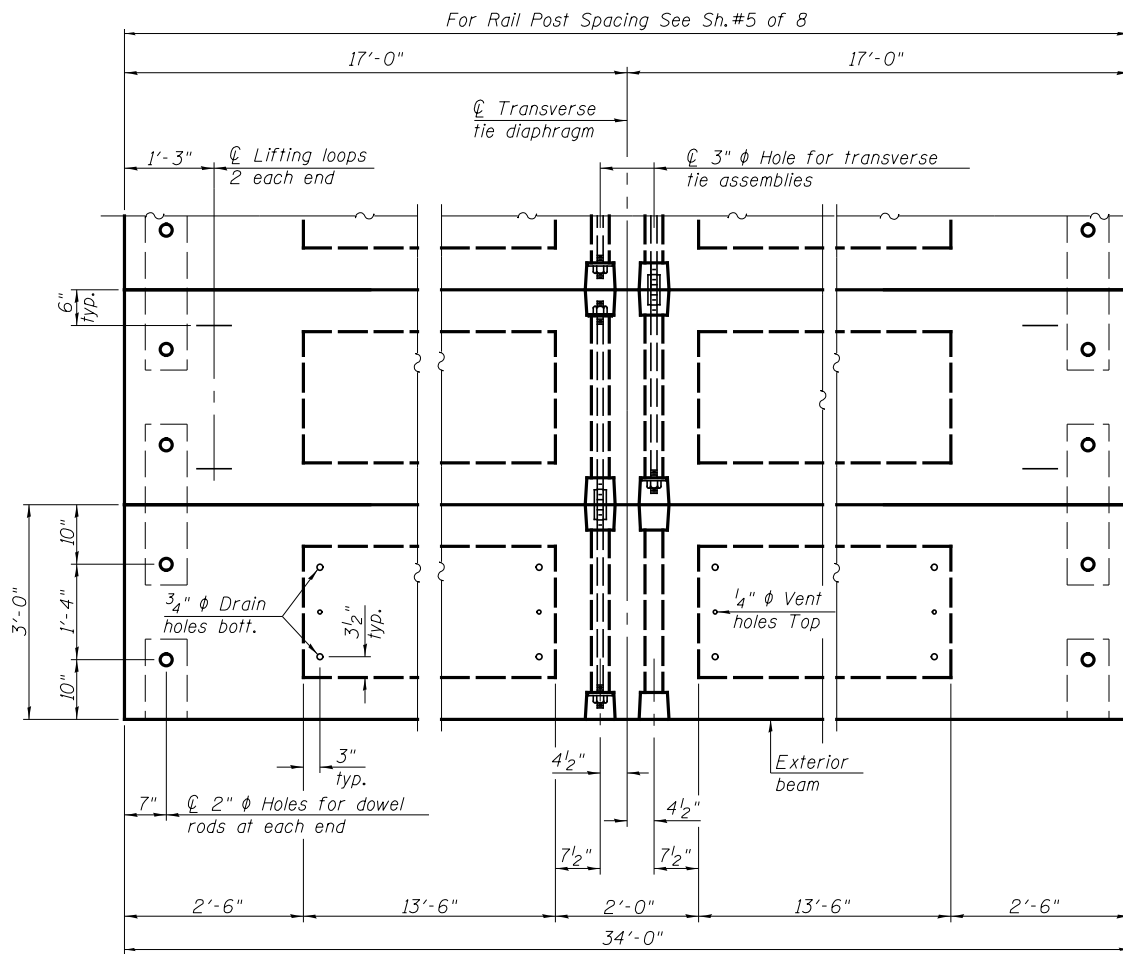
LILY CACHE CREEK  
BUILT 20... BY PLAINFIELD TOWNSHIP  
WILL COUNTY  
SEC. 15-16108-01-BR  
T.R. 68 STATION 19+95.00  
F.A. PROJ. BRKT(249)  
STR. NO. 099-9101 LOADING HL-93

**NAME PLATE**

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

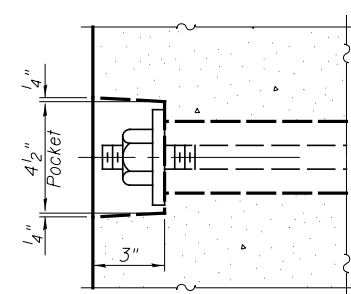
**GENERAL PLAN & ELEVATION  
WILL COUNTY  
SECTION 15-16108-01-BR  
LILY CACHE ROAD (T.R. 68)  
OVER LILY CACHE CREEK**

SHEET NO. 1 B SHEETS	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 68	15-16108-01-BR	WILL	40	27
	S.N. 099-9101		CONTRACT NO. 61F44		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO.			

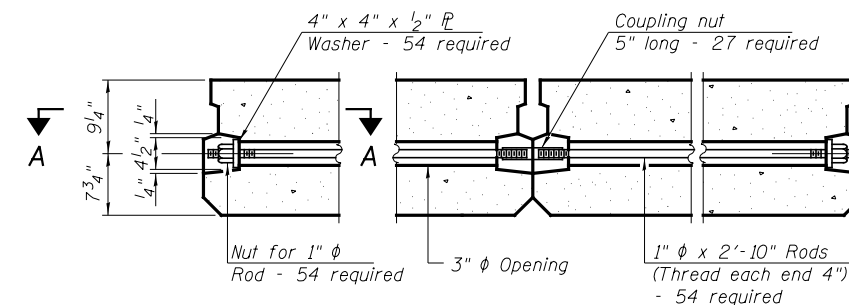


**PLAN VIEW**

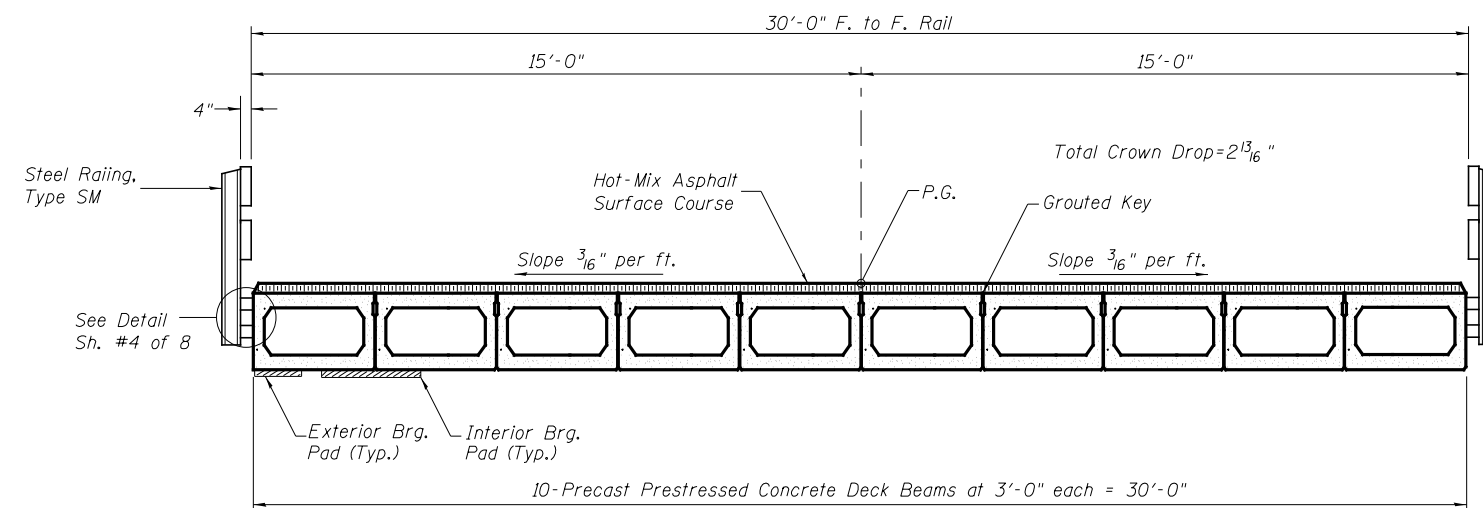
Note: Connect beams in pairs with the transverse tie configuration shown.



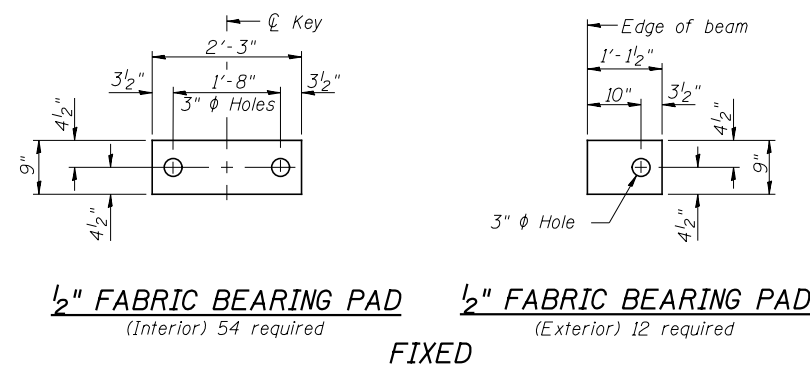
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**



**CROSS SECTION**  
(Looking North)



**1/2" FABRIC BEARING PAD** (Interior) 54 required  
**1/2" FABRIC BEARING PAD** (Exterior) 12 required  
**FIXED**

**NOTES**

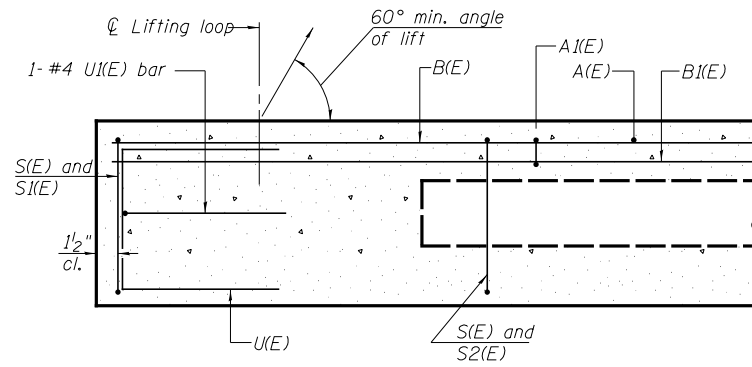
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.  
The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.  
Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	3,060

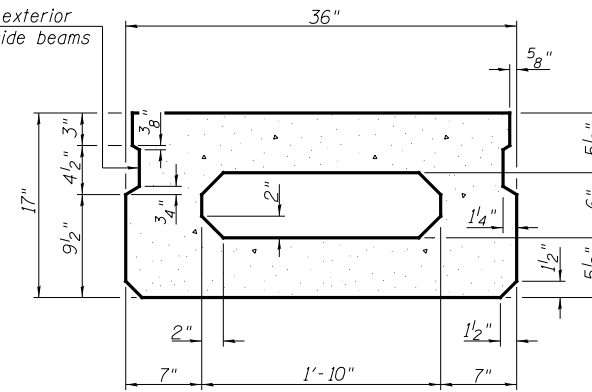
**SUPERSTRUCTURE**  
**WILL COUNTY**  
**SECTION 15-16108-01-BR**  
**LILY CACHE ROAD (T.R. 68)**  
**OVER LILY CACHE CREEK**

SHEET NO. 2	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
8 SHEETS	TR 68	15-16108-01-BR	WILL	40	28
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 61F44		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO.		

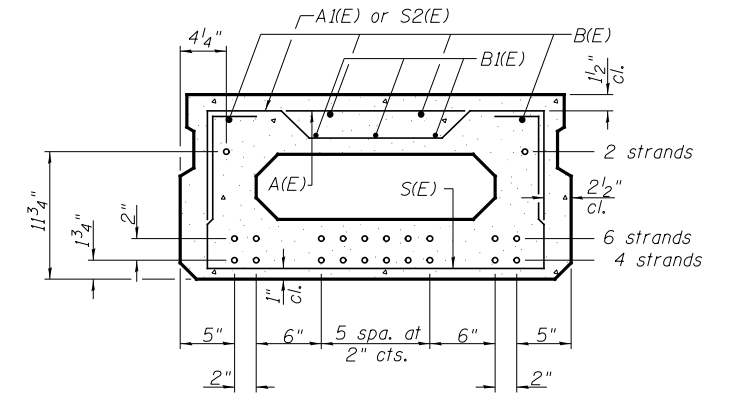


**SECTION C-C**

Omit key on exterior face of outside beams

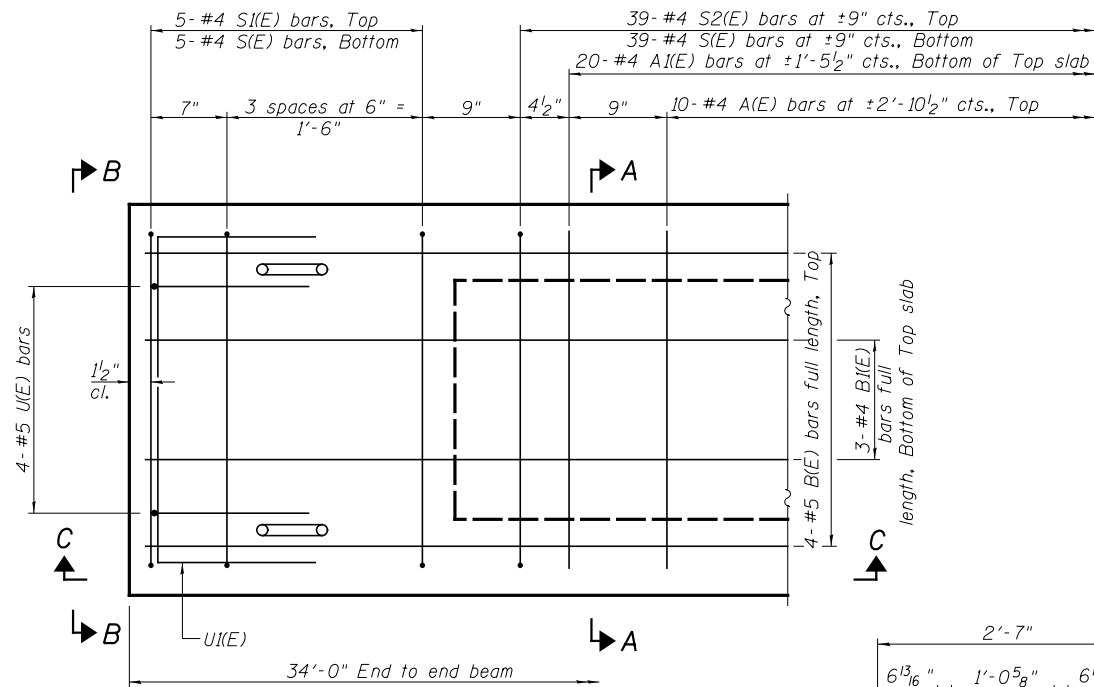


**SECTION A-A**  
(Showing dimensions)

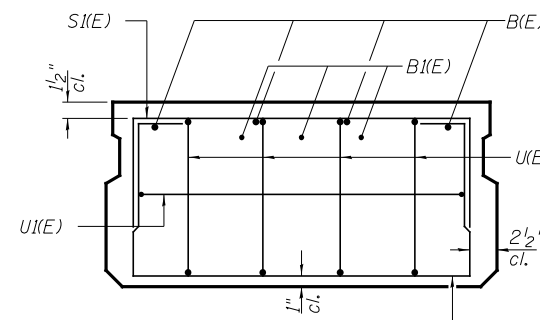


**SECTION A-A**

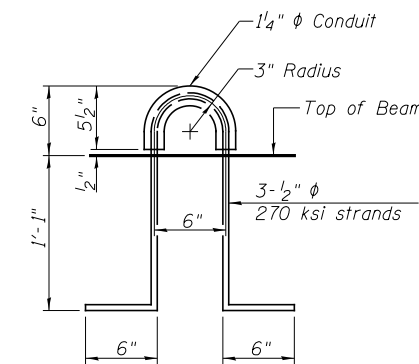
12-1/2"  $\phi$  Strands Each Strand Stressed to 30,900 Lbs.  
 4-Strands 1 3/4" up, 6-Strands 3 3/4" up, 2-Strands 11 3/4" up  
 Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.



**PLAN VIEW**



**VIEW B-B**



**LIFTING LOOP DETAIL**

**MINIMUM BAR LAP**  
 #4 bar = 1'-11"  
 #5 bar = 2'-6"

**BAR LIST**  
**ONE BEAM ONLY**

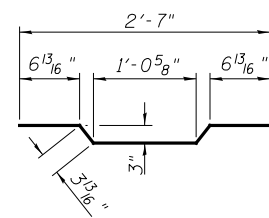
(For information only)

Bar	No.	Size	Length	Shape
A(E)	10	#4	2'-7"	—
A1(E)	20	#4	2'-10"	—
B(E)	4	#5	*33'-9"	—
B1(E)	3	#4	*33'-9"	—
S(E)	49	#4	5'-9"	□
S1(E)	10	#4	4'-3"	□
S2(E)	39	#4	4'-6"	□
U(E)	8	#5	3'-8"	□
U1(E)	2	#4	5'-0"	□

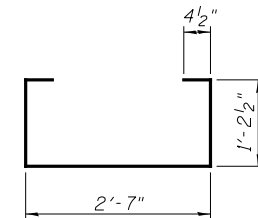
Note: See sheet 2 of 8 for additional details and Bill of Material.

\* Total Length,  
 Lap as necessary

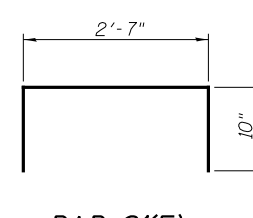
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



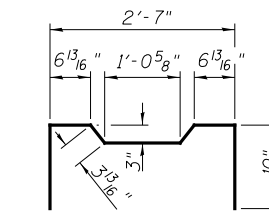
**BAR A1(E)**



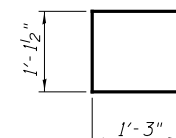
**BAR S(E)**



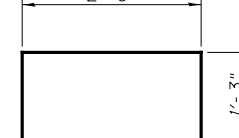
**BAR S1(E)**



**BAR S2(E)**



**BAR U(E)**

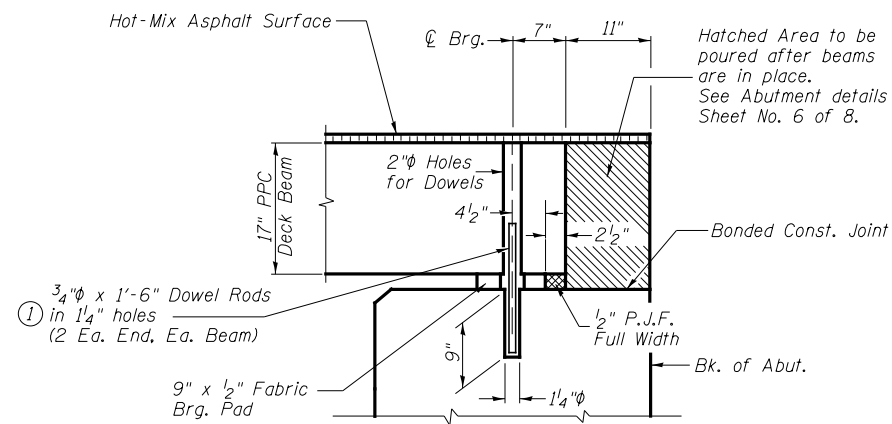
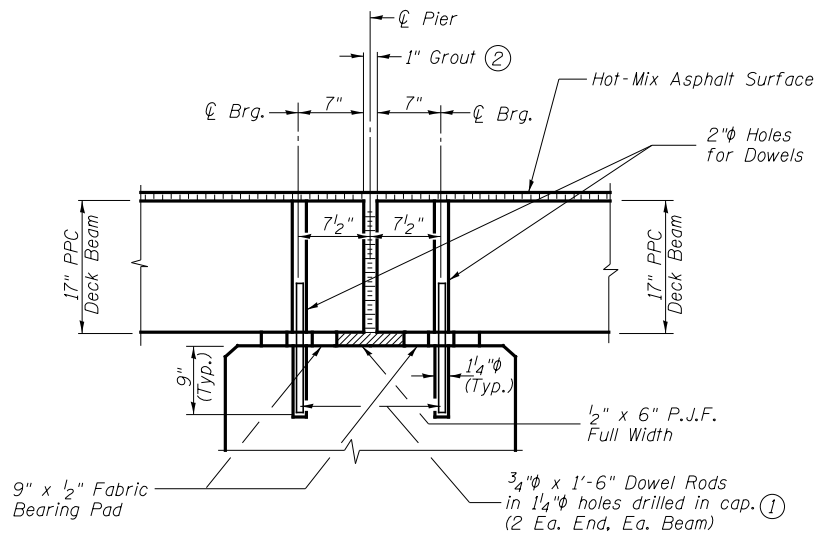
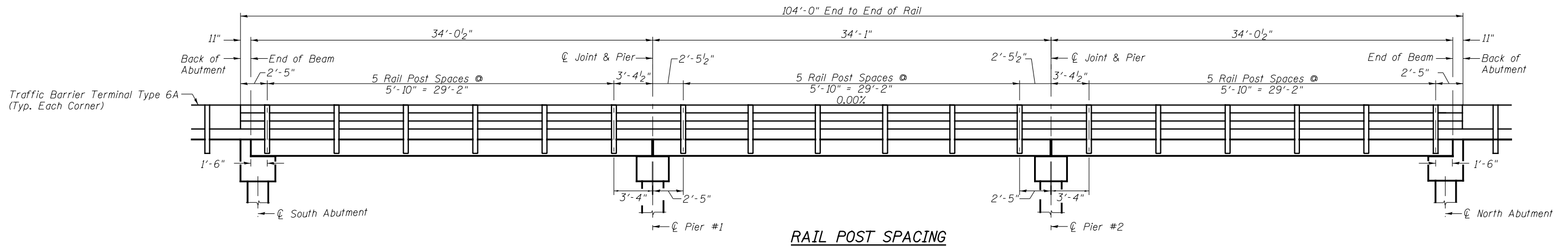


**BAR U1(E)**

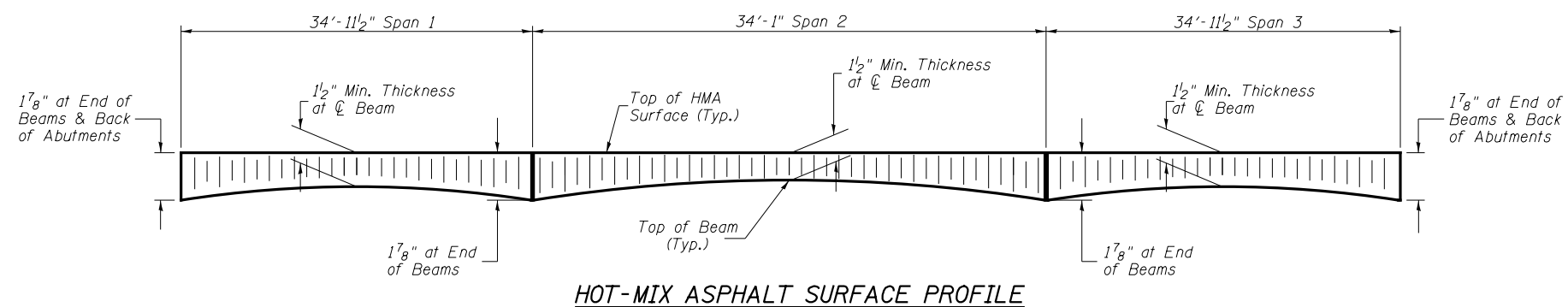
**SUPERSTRUCTURE DETAILS**  
**WILL COUNTY**  
**SECTION 15-16108-01-BR**  
**LILY CACHE ROAD (T.R. 68)**  
**OVER LILY CACHE CREEK**

SHEET NO. 3 8 SHEETS	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 68	15-16108-01-BR	WILL	40	29
	S.N. 099-9101		CONTRACT NO. 61F44		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO.		





- ① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.
- ② 1" Joint shall be packed with nonshrink grout in accordance with Standard Specifications. 1" Dimension may vary plus or minus to accommodate tolerance in beam lengths.



**RAIL POST SPACING AND  
SUPERSTRUCTURE DETAILS  
WILL COUNTY  
SECTION 15-16108-01-BR  
LILY CACHE ROAD (T.R. 68)  
OVER LILY CACHE CREEK**

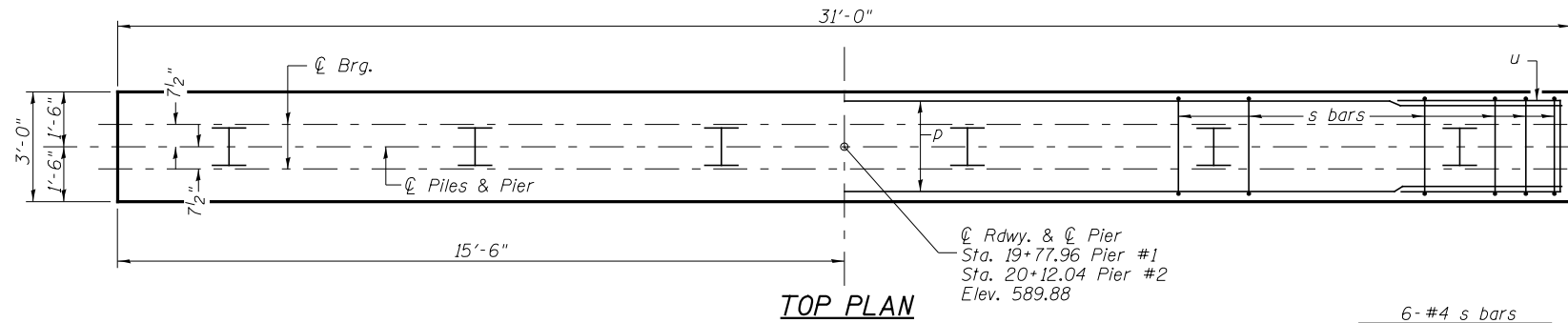
SHEET NO. 5  8 SHEETS	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 68	15-16108-01-BR	WILL	40	31
	S.N. 099-9101		CONTRACT NO. 61F44		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO.		



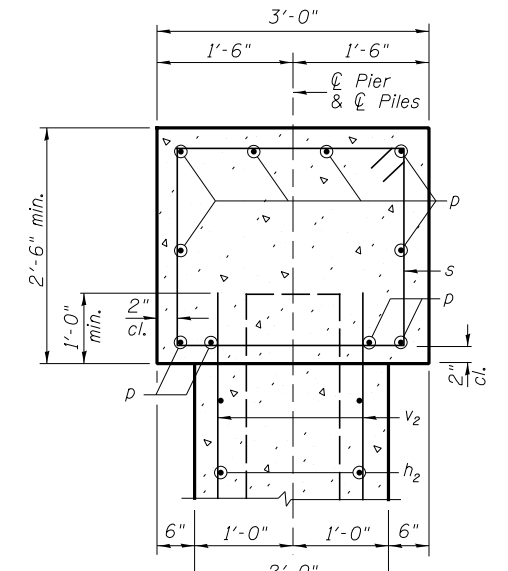


Notes:

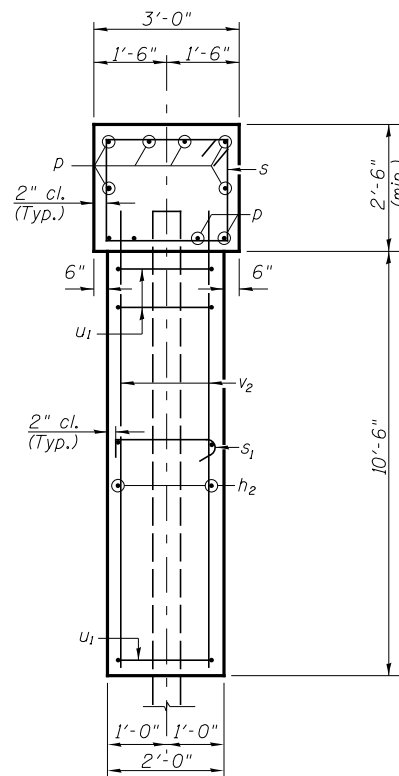
All edges shall have standard 3/4" chamfer.  
See Sheet 8 of 8 for Pile Details.



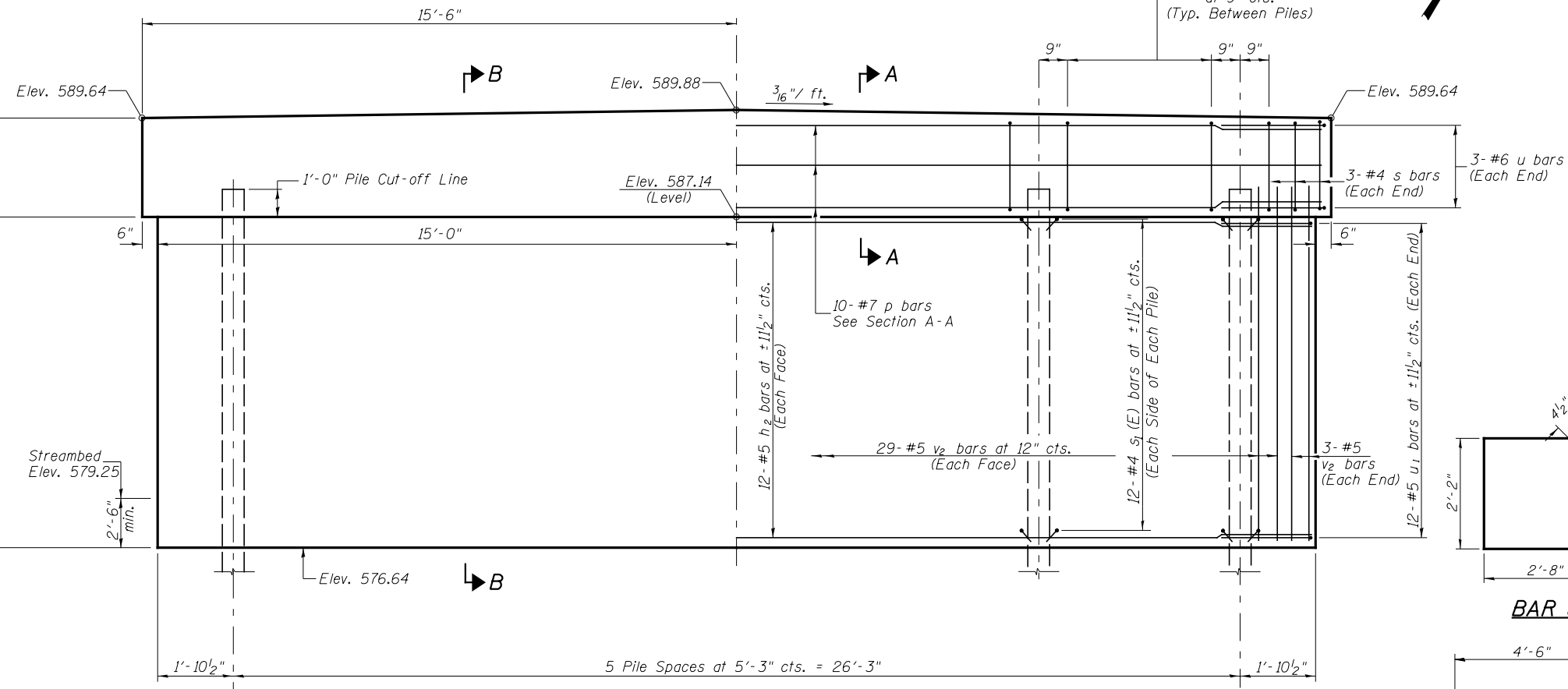
TOP PLAN



SECTION A-A



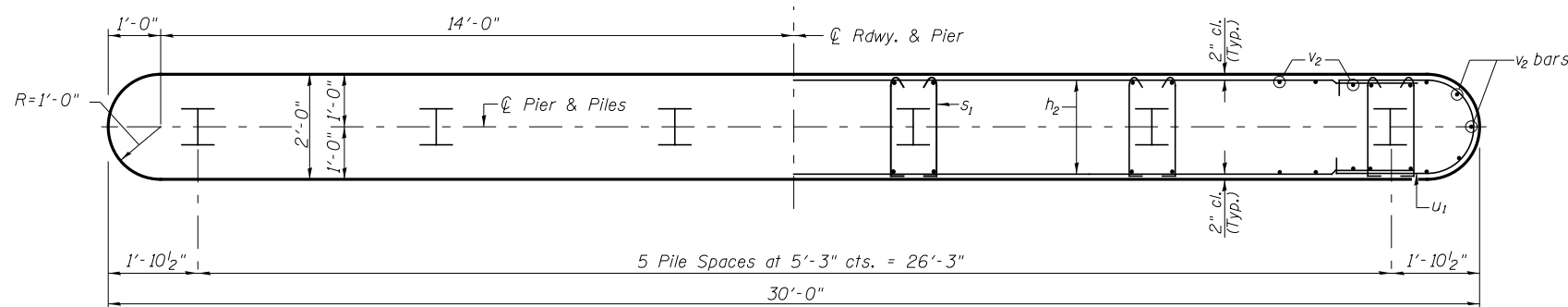
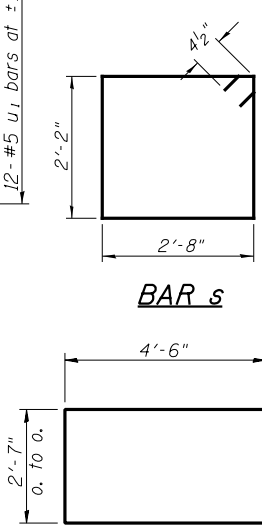
SECTION B-B



ELEVATION  
(Looking North)

TWO PIERS  
BILL OF MATERIAL

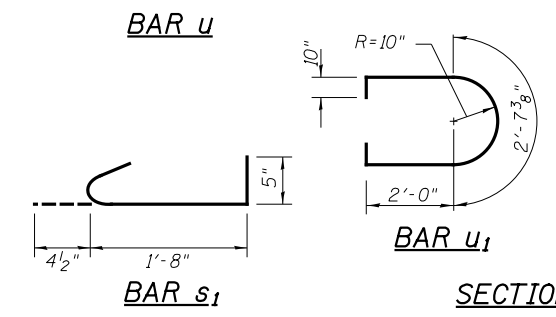
BAR	NO.	SIZE	LENGTH	SHAPE
h <sub>2</sub>	48	#5	28'-0"	—
p	20	#7	30'-9"	—
s	72	#4	10'-5"	□
s <sub>1</sub>	288	#4	2'-6"	U
u	12	#6	11'-7"	□
u <sub>1</sub>	48	#5	8'-4"	□
v <sub>2</sub>	128	#5	11'-4"	—
Concrete Structures	CU YD		63.5	
Reinforcement Bars	POUND		5,780	
Cofferdam Excavation	CU YD		70	
Furnishing Steel Piles HP10x42	FOOT		335	
Driving Piles	FOOT		335	
Test Pile Steel HP10x42	EACH		2	
Cofferdam (Type 1) (Location-1)	EACH		1	
Cofferdam (Type 1) (Location-2)	EACH		1	



FOOTING PLAN

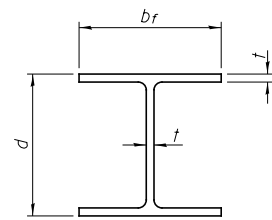
PILE DATA

Type & Size: Steel HP10x42  
Nominal Required Bearing: 335 kips  
Factored Resistance Available: 184 kips  
Est. Length: 34' Pier #1  
33' Pier #2  
No. Req'd.: 12 (Includes 1 Test  
Pile at Each Pier)



PIERS  
WILL COUNTY  
SECTION 15-16108-01-BR  
LILY CACHE ROAD (T.R. 68)  
OVER LILY CACHE CREEK

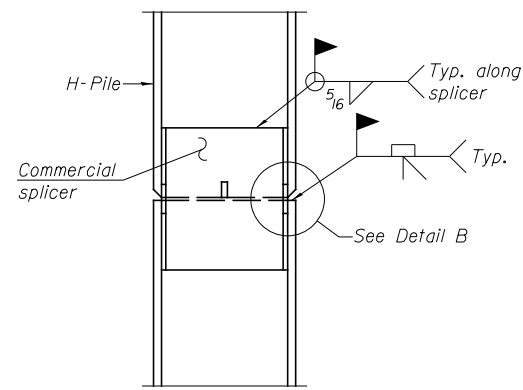
SHEET NO. 7 8 SHEETS	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 68	15-16108-01-BR	WILL	40	33
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 61F44 FED. AID PROJECT NO.		



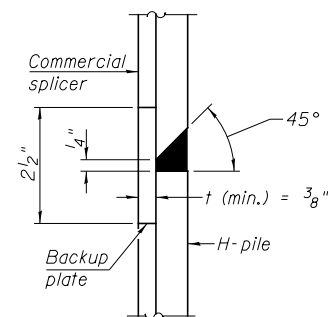
**STEEL PILE TABLE**

Designation	Depth d	Flange width b <sub>f</sub>	Web and Flange thickness t	Encasement diameter
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	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"	1/16"	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"

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

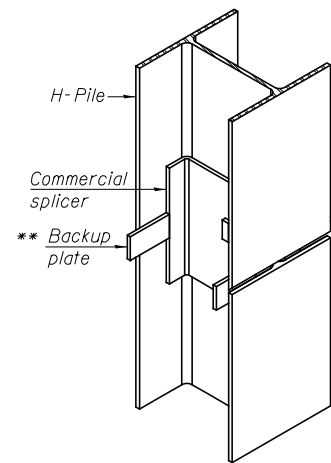


**ELEVATION**

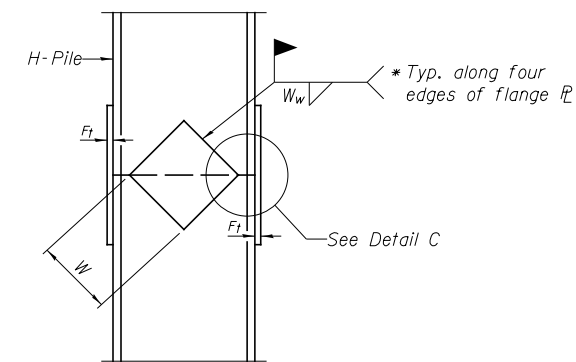


**DETAIL "B"**

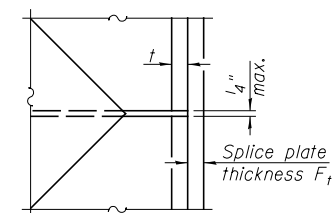
**WELDED COMMERCIAL SPLICE**



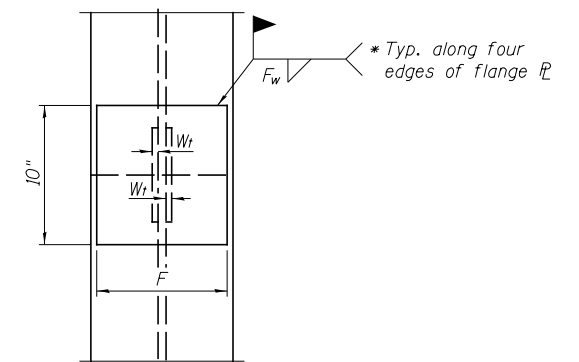
**ISOMETRIC VIEW**



**ELEVATION**



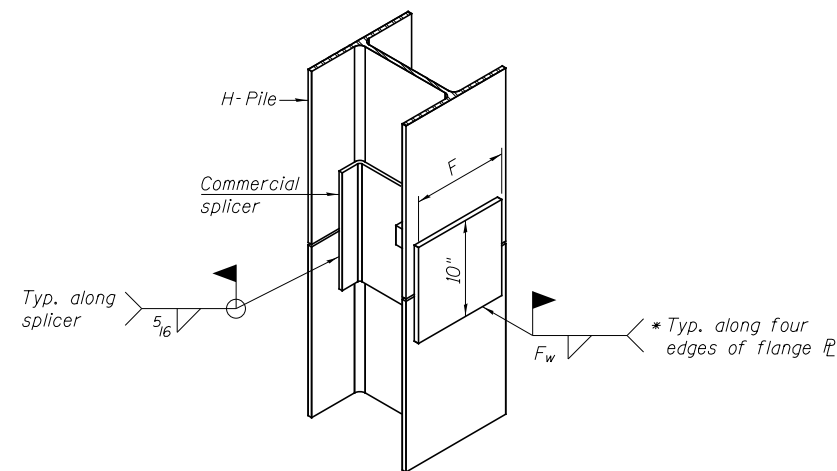
**DETAIL C**



**END VIEW**

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	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"

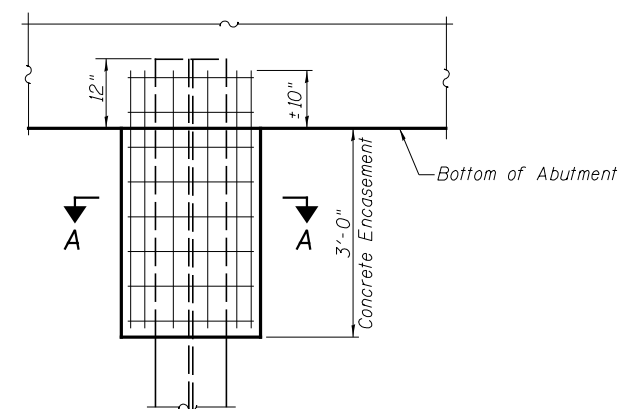
**WELDED PLATE FIELD SPLICE**



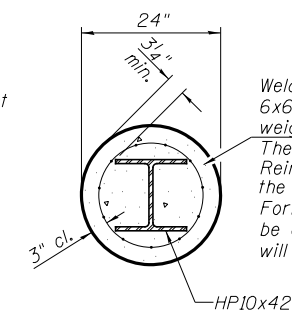
**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

\* Interrupt welds 1/4" from end of web and/or each flange.  
\*\* Remove portions of backup plates that extend outside the flanges.



**ABUTMENT ELEVATION**



**SECTION A-A**

Welded wire fabric  
6x6-W4.0xW4.0  
weighing 58#/100 sq. ft.  
The cost of Excavation and  
Reinforcement is included with  
the cost of Concrete Encasement.  
Forms for encasement may  
be omitted when soil conditions  
will permit.

**PILE ENCASEMENT**

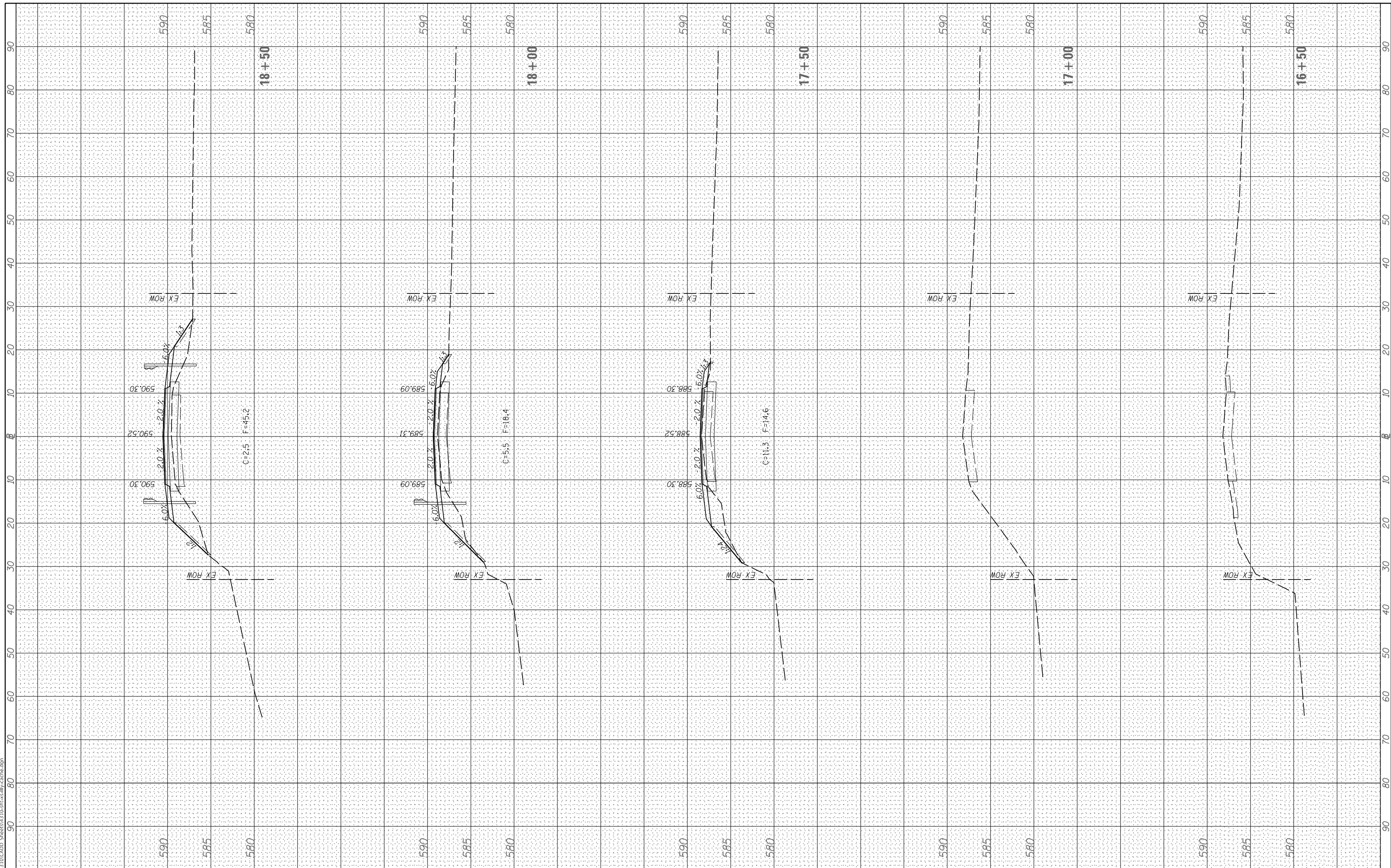
**HP PILE DETAILS  
WILL COUNTY  
SECTION 15-16108-01-BR  
LILY CACHE ROAD (T.R. 68)  
OVER LILY CACHE CREEK**

SHEET NO. 8 8 SHEETS	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 68	15-16108-01-BR	WILL	40	34
S.N. 099-9101			CONTRACT NO. 61F44		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO.		

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

MODEL: Defnair  
FILE NAME: V:\310CAD00\_Sheets\310-shs-illy-cache.dgn



USER NAME = BWedemeier	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/13/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
PROPOSED CROSS SECTIONS**

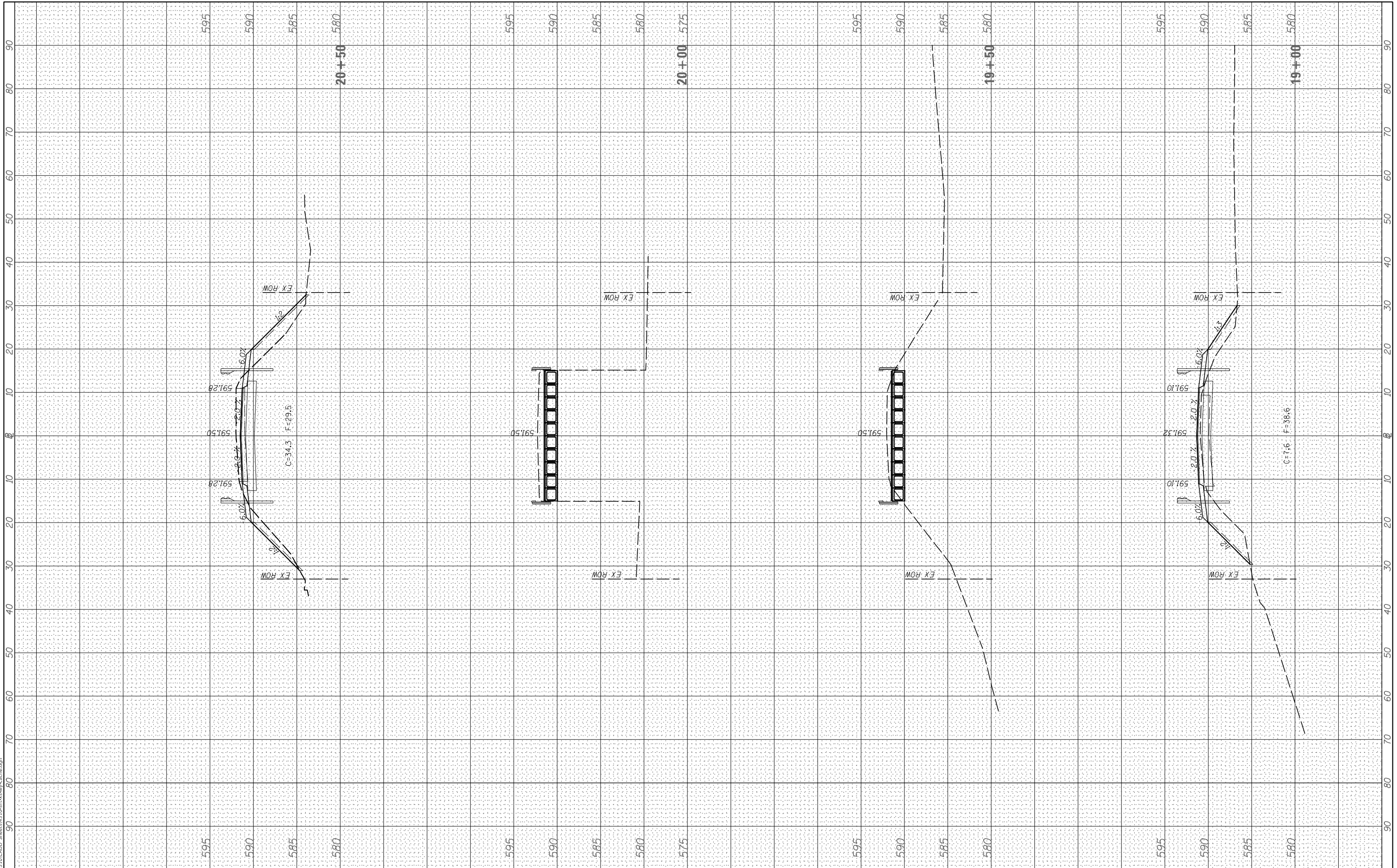
SCALE: H=10 V=5    SHEET 1 OF 6 SHEETS    STA. 16+50 TO STA. 18+50

RT. NO. TR 68	SECTION 15-16108-01-BR	COUNTY WILL	TOTAL SHEETS 40	SHEET NO. 35
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

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

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

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PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 12/13/2018	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
PROPOSED CROSS SECTIONS**

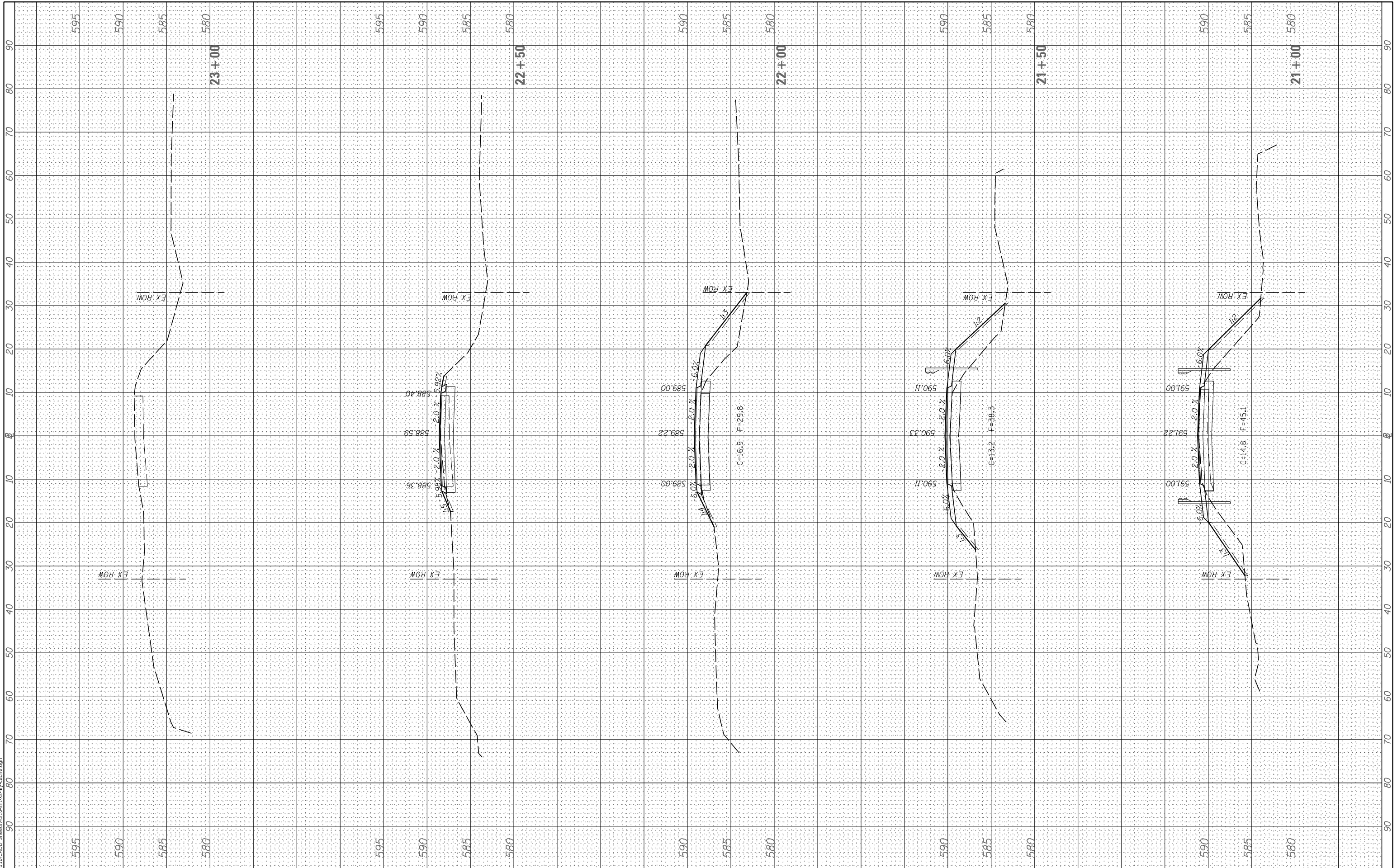
SCALE: H=10 V=5    SHEET 2 OF 6 SHEETS    STA. 19+00 TO STA. 20+50

ROUTE NO. TR 68	SECTION 15-16108-01-BR	COUNTY WILL	TOTAL SHEETS 40	SHEET NO. 36
CONTRACT NO. 61F44				
ILLINOIS		FED. AID PROJECT		

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

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

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FILE NAME: W:\3100\ADD Sheets\310-sh-cs-lily-cache.dgn



USER NAME = BWedemeier	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/13/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
PROPOSED CROSS SECTIONS**

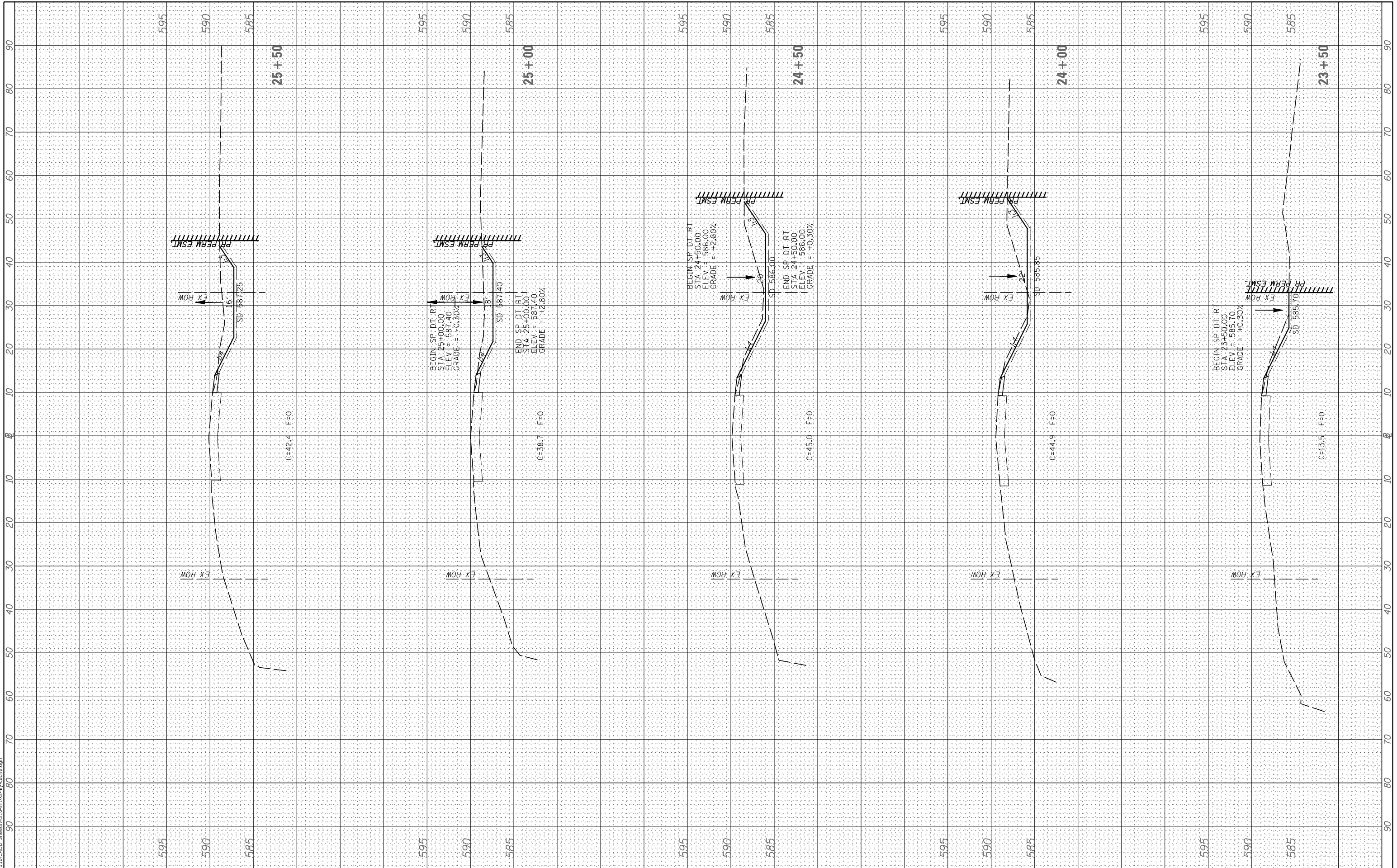
SCALE: H=10 V=5    SHEET 3 OF 6 SHEETS    STA. 21+00 TO STA. 23+00

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	37
CONTRACT NO. 61F44				
ILLINOIS		FED. AID PROJECT		

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

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

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	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/13/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
PROPOSED CROSS SECTIONS**

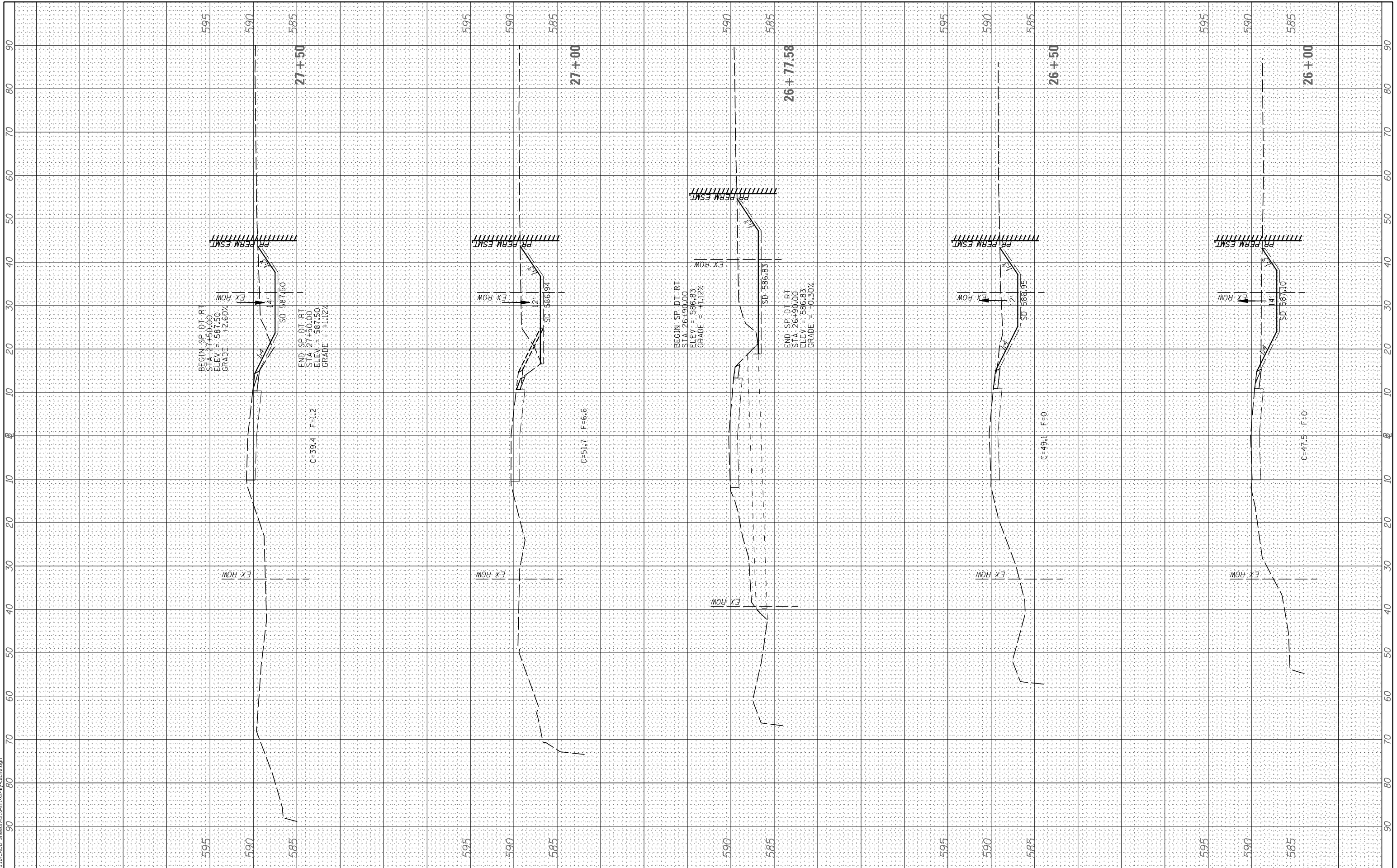
SCALE: H=10 V=5 SHEET 4 OF 6 SHEETS STA. 23+50 TO STA. 25+50

ROUTE NO. TR 68	SECTION 15-16108-01-BR	COUNTY WILL	TOTAL SHEETS 40	SHEET NO. 38
			CONTRACT NO. 61F44	
		ILLINOIS	FED. AID PROJECT	

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

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

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USER NAME =	BWedemeier
DESIGNED -	
DRAWN -	
CHECKED -	
DATE -	12/13/2018

REVISED -	
REVISED -	
REVISED -	
REVISED -	

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
PROPOSED CROSS SECTIONS**

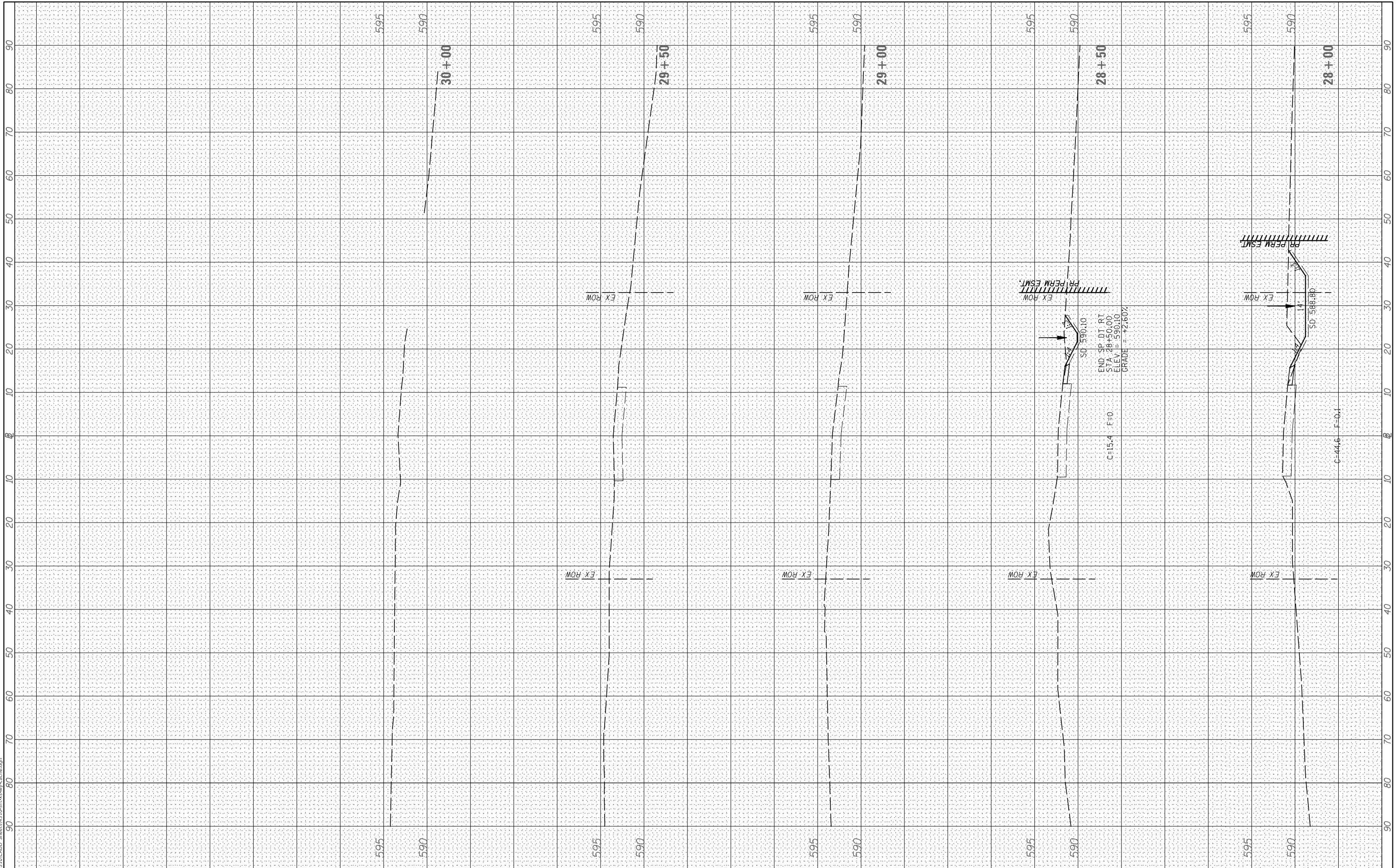
SCALE: H=10 V=5    SHEET 5 OF 6 SHEETS    STA. 26+00 TO STA. 27+50

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	39
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	SURVEYED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED AREAS CHECKED	BY	DATE

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FILE NAME: V:\310CAD\00\_Sheets\310-ht-ss-lily-cache.dgn



USER NAME = BWedemeier	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 12/13/2018	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LILY CACHE RD  
PROPOSED CROSS SECTIONS**

SCALE: H=10 V=5    SHEET 6 OF 6 SHEETS    STA. 28+00 TO STA. 30+00

RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 68	15-16108-01-BR	WILL	40	40
CONTRACT NO. 61F44				
ILLINOIS FED. AID PROJECT				